APD ENGINEERING | ARCHITECTURE

APD Project No. 21-0239

January 21, 2022

Town of West Seneca Planning Board
c/o Jeffrey Schieber
Code Enforcement Officer
1250 Union Road, Room 210
West Seneca, NY 14224

RE: Burger King (1997, 2003, 2007 Ridge Road) – Planning Board submittal

Dear Members of the Planning Board,

On behalf of our Client, JSC Management Group, LLC, we are enclosing the application and supporting information for the above-referenced property for site plan review.

The proposed project includes demolition of the existing houses and construction of a new Burger King restaurant with an associated drive-thru. This includes a ±2,730 SF building with associated sitework including new driveways, parking, double drive-thru, utilities, landscaping, and lighting.

As required, we are submitting hard copies of the following items for your review and consideration:

- Letter of Intent
- Site Plan Application
- Site Plans including property survey (12 copies)
- Stormwater Management Report
- Fee -- $850

We have previously submitted the required Environmental Assessment Form, and we will submit the traffic study once completed (anticipated mid-February). As of the Town Board meeting on January 20, 2022, the properties have been rezoned to C-2 (S) Commercial. We are also scheduled to appear in front of the ZBA on January 26, 2022 for the required parking setback variance from Ridge Road. We are also in the process of coordinating with the local utilities.

We are requesting to be placed on the February 10, 2022 Planning Board agenda for site plan review. Should you have any comments, questions, or are in need of additional information, please feel free to contact me at (585) 742-2222.

Sincerely,

Todd Markevicz

Todd Markevicz
Owner / Member

Headquarters
615 Fishers Run, Victor, NY 14564
phone 585.742.2222 • fax 585.924.4914
web www.apd.com • email info@apd.com

Office Locations
P.O. Box 11626, Santa Ana, CA 92711 • phone/fax 714.987.1380

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TOWN OF WEST SENECA

APPLICATION FOR SITE PLAN REVIEW APPROVAL

TO BE COMPLETED BY APPLICANT

DATE _____ FILE # _____

PROJECT NAME Burger King - West Sencea

PROJECT LOCATION (Include address and distance to nearest intersection)
2007 Ridge Rd, West Seneca 14224

APPLICANT JSC management Group PH/FAX 585-735-7198

ADDRESS PO Box 217 Lyndonville NY 14098

PROPERTY OWNER Mark Lorenz and Jonathan Fox PH/FAX 401-946-4000

ADDRESS 180 Canal View Blvd, Suite 600, Rochester NY 14623

ENGINEER/ ARCHITECT APD Engineering & Architecture, PLLC PH/ FAX 585-742-2222

ADDRESS 615 Fishers Run , Victor NY 14564

SBL # 143.06-1-13

PROJECT DESCRIPTION (Include all uses and any required construction)

New +/- 3500 sqft restaurant with double drive-thru and associated parking lot

SIZE OF LOT (acres) +/- 1 acre ACREAGE TO BE REZONED _____

ADJACENT ROAD NAMES AND AMOUNT OF FRONTAGE ON EACH

106 ft of frontage on Ridge Rd

EXISTING ZONING _____ PROPOSED ZONING _____

EXISTING USE(S) ON PROPERTY _____

PROPOSED USE(S) ON PROPERTY Restaurant with drive-thru

EXISTING USE(S) AND ZONING ON ALL PROPERTY WITHIN 500 FEET
R-60A - Residential // C-1 - Orchard Ridge Medical Center & Sunoco Gas Station // C-2 - Chiropractic Office, Oral & Maxillofacial Surgery Office, Tax preparation service, Paint store // C-2 (S) - Existing Wendy's Restaurant, Verizon store, Used car dealer, Previously approved lots at 1997-2003 Ridge Rd // M-1 - Retail store parking lot

PUBLIC SEWER YES x NO ___ PUBLIC WATER YES x NO ___

VARIANCES AND OTHER APPROVALS OR PERMITS REQUIRED

Traffic Impact Study is being performed per DOT request Variance for front parking setback

APPLICATIONS WILL NOT BE ACCEPTED WITHOUT COMPLETION OF ALL REQUIREMENTS LISTED HEREIN

TO BE COMPLETED BY THE TOWN OF WEST SENECA

DATE RECEIVED _____ BY _____

PLANNING BOARD MEETING DATE _____

TOWN BOARD MEETING DATE _____

TOWN BOARD RESOLUTION DATE _____

NON – REFUNDABLE FILING FEE (Payable to the Town Clerk) $

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TOWN OF WEST SENECA

APPLICANT CHECKLIST FOR SITE PLAN REVIEW

PLEASE REFER TO APPENDICES A, B, & C AND THE TOWN OF WEST SENECA ZONING ORDINANCE FOR ADDITIONAL DESIGN INFORMATION. THE APPLICANT/ AGENT MUST INITIAL EACH ELEMENT AS PROOF THAT ALL REQUIREMENTS HAVE BEEN MET.

I. SITE PLAN All site plan drawings shall be prepared, signed, and sealed by an architect, landscape architect, engineer, or surveyor licensed in the State of New York, drawn to scale, and must include the following elements (also see checklist in Appendix A) :

_✓_ Title of drawing.

_✓_ Name, address, and telephone number of applicant, owner of record, and person who prepared the drawing. If owner of record is different from applicant, a letter of authorization from the owner or a contract of sale is required.

_✓_ North arrow, scale, revisions block and date.

_✓_ Site location map.

_✓_ Name, location, width, and jurisdiction of existing roads and sidewalks.

_✓_ Location of curb cuts on project site and on adjacent properties (including properties across the street).

_✓_ Location of all existing and proposed buildings and structures, paving, curbs, and pedestrian and bicycle facilities with those to be removed clearly identified.

_____ Show all zoning district boundaries, zoning classifications for all adjacent properties (including across the street), and zoning setback dimensions. If a portion of the site is proposed to be rezoned, the new zoning district boundaries should be shown.

_✓_ Zoning data block comparing existing and proposed requirements, including greenspace and parking calculations.

_____ Location of any areas proposed for outdoor display and sale of merchandise, if applicable.

_✓_ Layout of all off-street parking areas showing access drives, aisles, parking spaces, handicapped accessible spaces, and loading areas (conforming to all requirements of the Town of West Seneca Zoning Ordinance). A cross-section of proposed pavement must be provided.

_____ Existing and proposed rights-of-way and easements and location of areas to be in common ownership or to be offered for dedication.

_____ Existing and proposed watercourses including wetlands, floodways, and floodplains (this information should also appear in the drainage plan and grading plan).

_✓_ Location of all proposed signage (conforming to all requirements of the Town of West Seneca Zoning Ordinance).

_____ Any other information as might be required by the Planning Board.

II. BOUNDARY SURVEY

_✓_ A **topographic boundary survey** and a **written legal description.** (metes and bounds) Provide in Electronic Form as well as written

III. UTILITY PLAN – to include the following elements (also see checklist in Appendix A)

_✓_ Location of existing water mains, showing main size and material type, o-site and off-site fire hydrant locations, and on-site main line valve locations.

_✓_ Location of proposed water service showing material type and diameter of water main.

_✓_ Location of existing and proposed gas and electric service.

_____ Sanitary service showing location, proposed line, and existing main size. Include all manhole rim and invert elevations, pipe slope, and construction materials, if appropriate

_____ The estimated daily sanitary sewage flow calculations must be included in the site plan Engineering Report.

_✓_ Written confirmation that the process has been initiated with County or State Highway Departments for sanitary sewer connection, curb cuts, work permits, etc. (Applicant must furnish a letter from the appropriate County or State agency indicating their approval of the proposal prior to issuance of a Building Permit)(if necessary).

IV. GRADING PLAN – To include the following elements (also see checklist in Appendix A).

_✓_ Existing and proposed grade elevation with contour lines at 1-foot intervals.

_✓_ Finished floor elevations for all proposed and adjacent structures.

V. DRAINAGE PLAN – to include the following elements (also see checklist in Appendix A):

_✓_ All catch basins, line size, and proposed construction materials. No stormwater shall drain onto adjoining properties. All downspouts shall be connected to the stormwater collection system.

_✓_ Systems shall be designed for a minimum 10-year storm.

_✓_ Stormwater calculations, prepared by a person licensed to design a storm drainage system in New York State.

_✓_ Site plan Engineering Report (refer to requirements in Appendices A & B).

_✓_ Any proposed project that will involve one or more acres of soil disturbance is required to comply with NYSDEC SPDES General Permit requirements for stormwater discharges. A copy of the Notice of Intent (NOI) and Stormwater Pollution Prevention Plan (WPPP) must be provided with the site plan Engineering Report..

VI. LANDSCAPING PLAN – to include the following elements (also see Appendix C).

_____ All existing and proposed tree lines.

_✓_ All proposed trees, shrubs, and other plantings with appropriate labeling.

_✓_ Planting schedule data block with legend key, species name (botanical and common names), quantity, size, and spacing.

_✓_ Planting details for trees and evergreens must illustrate the crown of root ball at six (6) inches above finished grade; three (3) inches for shrubs.

_____ Refer to the Town of West Seneca Zoning Ordinance for applicable landscaping and screening requirements.

VII. CLEARING 7 SOIL EROSION CONTROL PLAN - to include the following elements:

_✓_ Site preparation and clearing shall be designed to fit with the vegetation, topography, and other natural features of the site and shall preserve as many of these features of the sight and shall preserve as many of these features as possible.

_____ Show clearing limits, stock pile area, and all temporary and permanent drainage facilities. Erosion and sediment control facilities must be shown.

_____ A time schedule that is keyed to the operation must be provided.

_____ Include a note on the plan to indicate that stumps and brush may not be buried in the Town and that topsoil may not be removed from the work site without a permit.

VII. LIGHTING PLAN – to include the following elements:

_____ Location of all lighting fixtures and standards on the property and structures, including a fixture schedule.

_____ Photometric data for site illumination.

IX. BUILDING HEIGHT AND DESIGN

_____ Building elevations and floor plans of all non – residential structures and all residential structures containing three (3) or more dwelling units (including net floor area calculations).

DocuSigned by:

I, Todd George Markewicz as owner/applicant of Burger King, located at 2007 Ridge Rd. Town of West Seneca, to the best of my knowledge has submitted a complete application package for a site plan for review.

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TOWN OF WEST SENECA

APPENDIX A-SITE PLAN APPLICATION CHECKLIST

I. GENERAL

_____All elevations must reference the actual elevation of the site and proposed building (utilize Town of West Seneca data). Setting a base elevation at the centerline of the road to use as reference is not acceptable.

_____All profiles provided must be drawn so that the horizontal scale is no more than 1" = 10' horizontal, and 1" = 5' vertical.

_____Profiles be provided for utility crossings, the sanitary sewer system, and storm sewer system.

_____Profiles for any utilities as deemed necessary by the engineer for construction.

II. UTILITY PLAN

_✓_Add a note to the plan that states: "A minimum of 10 feet of horizontal and 18 inches of vertical separation must be maintained between all sanitary sewer and water services".

_✓_Add a note to the plan that states: "The Erie County Water Authority is to be notified a minimum of 48-hours prior to starting the connection to the new water service.

_✓_Add a note to the plan that states: "Select backfill is required for all utilities (gas, water, storm, sanitary) that cross through any pavement area." The limits of the select backfill must be shown on the utility plan.

_____The plans must clearly state the type of proposed connection to the existing waterline to be made. Will it saddle with corporation stop or tapping sleeve and valve.

_✓_All existing utilities, grading, etc. must be shown as a grey line type.

_✓_All proposed utilities, grading, etc. must be shown as a black line type.

_✓_Provide a trench detail for the proposed waterline installation. The detail must show the depth of cover, stone bedding, and indicate the use of underground waterline marker tape.

_✓_Provide a trench detail for the proposed sanitary sewer lateral. The detail must show the depth of cover, stone bedding, and indicate the use of underground waterline marker tape. /when connecting the Erie County Sewer District No. 1 or No. 3 system, their details must be provided.

_✓_Provide a profile for the proposed sanitary sewer service showing the connection to the existing system and connection at the facility.

III. PAVEMENT

_____Asphalt pavement grades should be at least 1.5%, preferably 2.0% to drain properly, minimize public safety concerns, and avoid liability issues. Theses grades must be shown on the drainage plan with flow arrows showing the direction of water flow.

_____Show on the plans a cross-section of the proposed sidewalk.

__✓__Show on the plans a cross-section of the proposed asphalt pavement. It is suggested that a thicker asphalt section be used for high traffic travel areas, where the dumpster is located, or where the deliveries will occur.

__✓__On the asphalt pavement cross-section, show the use of filter fabric (Mirafi 140N, or equal) under the pavement sub-base.

_____If connections to cross –access driveways are being made with adjacent sites, a detail must be shown on the plans for the proposed connection. The pavement transition detail must include a V-shaped saw cut into the existing pavement and tack coat.

IV. DRAINAGE/GRADING

_____The stockpile area for topsoil and fill must be shown on the design plans.

_____Spot elevations for adjacent properties must be provided on the grading plan.

_____A minimum of 6-nches of cover are required for all storm sewer pipes in grass area. A minimum of 12-inches of cover are required for all storm sewer pipes in pavement. Storm sewer pipe located within the sub-base of the pavement is not allowed.

_____Invert elevations must be shown for all culverts under driveways.

_____Provide stone rip rap at the pipe outlets from the detention pond.

_____Provide emergency overflow for the detention pond for the 100-year storm elevation.

_____All culverts under driveways must be shown with galvanized end sections.

_____Diameter, material type, and inverts of all roof leader downspouts must be shown.

_____Diameter, material type, and inverts of all storm sewer pipes must be shown on the plans.

_____For sites with less than one (1) acre of disturbance, the design engineer is required to detain the difference between the 10-year pre-developed storm and the 25-year post-developed storm.

_____For sites with greater than one (1) acre of disturbance, the design engineer is required to comply with all NYSDEC Stormwater Phase 2 regulations and design guidance.

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V. SITE PLAN ENGINEERING REPORT

__✓__The applicant must provide three (3) copies of the site plan Engineering Report. This report will contain (at a minimum), the following sections:

- General Project Description.
- Project Location Map.
- Water System Calculations.
- Sanitary Sewer System Calculations.
- Stormwater Calculations

_____Provide the following information related to the proposed waterline for the facility in the design report. This would include the following:

- Domestic water demand (include calculations).
- Static waterline pressure (at the water right-of way).

_____Anticipated pressure at the facility (include head loss calculations through the water service and backflow preventer/RPZ and meter); the design engineer must comment on the need to provide a sprinkler system for the facility. Provide fire flow calculation s for the facility (if applicable). Provide the following information related to the proposed sanitary sewer system for the facility in the design report. This would include the following:

- Number of employees at the facility.
- Sanitary sewer demand and lateral pipe sizing (include calculations).

_____Provide the following information related to the stormwater calculations for the facility in the design report. This would include the following:
Soil types of the site.

- Permeability and depth of water table of the soil.
- Description/dialogue on existing grading and stormwater runoff.
- Description/dialogue on proposed grading and stormwater runoff.
- Comment on the presence and show location of any NYSDEC or Federal Wetlands or 100-year Floodplain boundary.
- For sites with less than one (1) acre of disturbance, the design engineer is required to detain the difference between the 10-year pre-developed storm and the 25-year post-developed storm. Calculations must be provided
- For sites with greater than one (1) acre of disturbance, the design engineer is required to comply with all NYSDEC Stormwater Phase 2 regulations. Calculations must be provided.
- Calculations to be provided must include all assumptions, time of concentration, and detention pond sizing, and stormwater pipe sizing.
- All existing headwater and tailwater conditions must be considered for the design calculations.

Refer to APPENDIX B "Design of Stormwater Detention Facilities" for design guidance.

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APPENDIX B-DESIGN OF STORMWATER DETENTION FACILITIES

The following method of determining the size of stormwater detention and retention facilities is presented as a guide for engineers, architects, and developers involved with construction projects in the Town of West Seneca.

Detention facilities are those facilities that detain the flow of stormwater runoff and discharge it at a reduced rate from the detention area. /this type of system operates by gravity with a large inlet and a small inlet. Retention facilities retain stormwater runoff, and it is necessary to pump the collected water into the downstream drainage system after peak flows have passed. Normally, detention facilities are installed much more frequently than retention facilities.

The Town of West Seneca requires that the stormwater detention system be designed in accordance with the following documents:

1. NYS Stormwater Design Manual
2. NYSDEC:SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001)
3. NYSDEC: Standards and Specifications for Erosion and Sediment Control

A copy of the Notice of Intent (NOI) and Storm Water Pollution Prevention Plan(SWPPP) as required by the New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Construction Activity (Permit No. GP-0-10-001) must be received and accepted by the Town prior to construction activities.

- For projects accepted by the town, construction cannot begin until:
  * Five (5) business days from the date the NYSDEC receives a copy of the NOI; or the applicant receives an Acknowledgement Letter from the NYSDEC.

The engineer must provide all calculation and mappings, and state all assumptions necessary for review by the Town of West Seneca.

JSC
Management Group

BURGER KING

P.O. Box 217 Lyndonville, NY 14098
p: 585.735.7198
f: 585.735.9278
www.jscmanagement.com

August 9, 2021

Town of West Seneca
1250 Union Road
West Seneca, NY 14224

RE: Property at 1997-2003 Ridge Road – Authorization Letter

We at JSC Management Group, LLC are under contract to purchase the property noted above contingent upon securing all required municipal approvals. With that in mind, we are pursuing those necessary approvals at this time, and authorize APD Engineering & Architecture, PLLC. to act on our behalf as needed including any required coordination with the Town, submittals, presentation at meetings, etc.

We appreciate your understanding and look forward to working with the Town through this approval process. Please feel free to contact us with any questions.

Sincerely,

James Cammilleri

James Cammilleri
Owner, Franchisee
JSC Management Group, LLC

SITE DEVELOPMENT PLANS

FOR

BURGER KING - TOWN OF WEST SENECA, NY

1997, 2003, & 2007 RIDGE ROAD
WEST SENECA, NY, 14224

LOCATION SKETCH
N.T.S.

DRAWING LIST:

CS	Cover Sheet
SV	Survey
C1	Demolition Plan
C2	Overall Site Plan
C2.1	Site Plan
C3	Grading & Drainage Plan
C3.1	Stormwater Plan
C4	Utility Plan
C5	Planting & Lighting Plan
C6	Details Sheet
C7	Details Sheet
C8	Details Sheet
C9	Details Sheet
C10	Specifications

CLIENT:

JSC MANAGEMENT GROUP
BURGER KING FRANCHISEE
PO BOX 217
LYNDONVILLE NY 14098
(585) 755-3950

ENGINEER:

APD ENGINEERING & ARCHITECTURE
615 FISHERS RUN
VICTOR, NY 14564
(585) 742-0222
CONTACT: TODD MARKEVICZ, P.E.

AGENCY & MUNICIPALITY CONTACTS:

TOWN OF WEST SENECA
1250 UNION ROAD, ROOM 210
WEST SENECA, NY 14224
716-558-3242
CONTACT: JEFFREY SCHIEBER

APPROVED BY

SIGNED:_____ DATE:_____

SITE PLAN VALID FOR YEARS FROM APPROVAL DATE

UTILITY CONTACTS:

ELECTRIC SERVICE: NYSEG LANCASTER ELECTRIC
ADDRESS: 150 ERIE ST, LANCASTER, NY 14086
PHONE: 1-716-681-5030
CONTACT:

GAS SERVICE: NATIONAL FUEL GAS | BUFFALO - NFG101
ADDRESS: 409 MAIN ST., BUFFALO, NY 14203
PHONE: 716-857-7431
CONTACT: TIM NUGENT

PHONE SERVICE: VERIZON
ADDRESS: 65 FRANKLIN STREET, ROOM 602, BUFFALO, NY 14202
PHONE: 716-398-5785
CONTACT: CAROLYN YUNKE

WATER SERVICE: ERIE COUNTY WATER AUTHORITY
ADDRESS: 295 MAIN STREET, ROOM 350, BUFFALO, NY 14203
PHONE: 716-685-8207
CONTACT: ADAM MASSARO

SANITARY SEWER SERVICE: ERIE COUNTY DIVISION OF SEWER MANAGEMENT
ADDRESS: 95 FRANKLIN STREET, ROOM 1034, BUFFALO, NY 14202
PHONE: 716-558- 3241
CONTACT: WEST SENECA CODE ENFORCEMENT - JEFF BASKA

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Revisions:		Date:
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STATE OF NEW YORK · TODD GEORGE MARKEVICZ · 080577 · LICENSED PROFESSIONAL ENGINEER
Seal 1/21/22 Seal

FOR APPROVAL ONLY/NOT FOR CONSTRUCTION

CIVIL ENGINEER OF RECORD
Name: Todd G. Markevicz
New York License No.: 080577
Exp. Date. November 30, 2023
Firm Reg. No.: 0014815
Exp. Date: December 31, 2023

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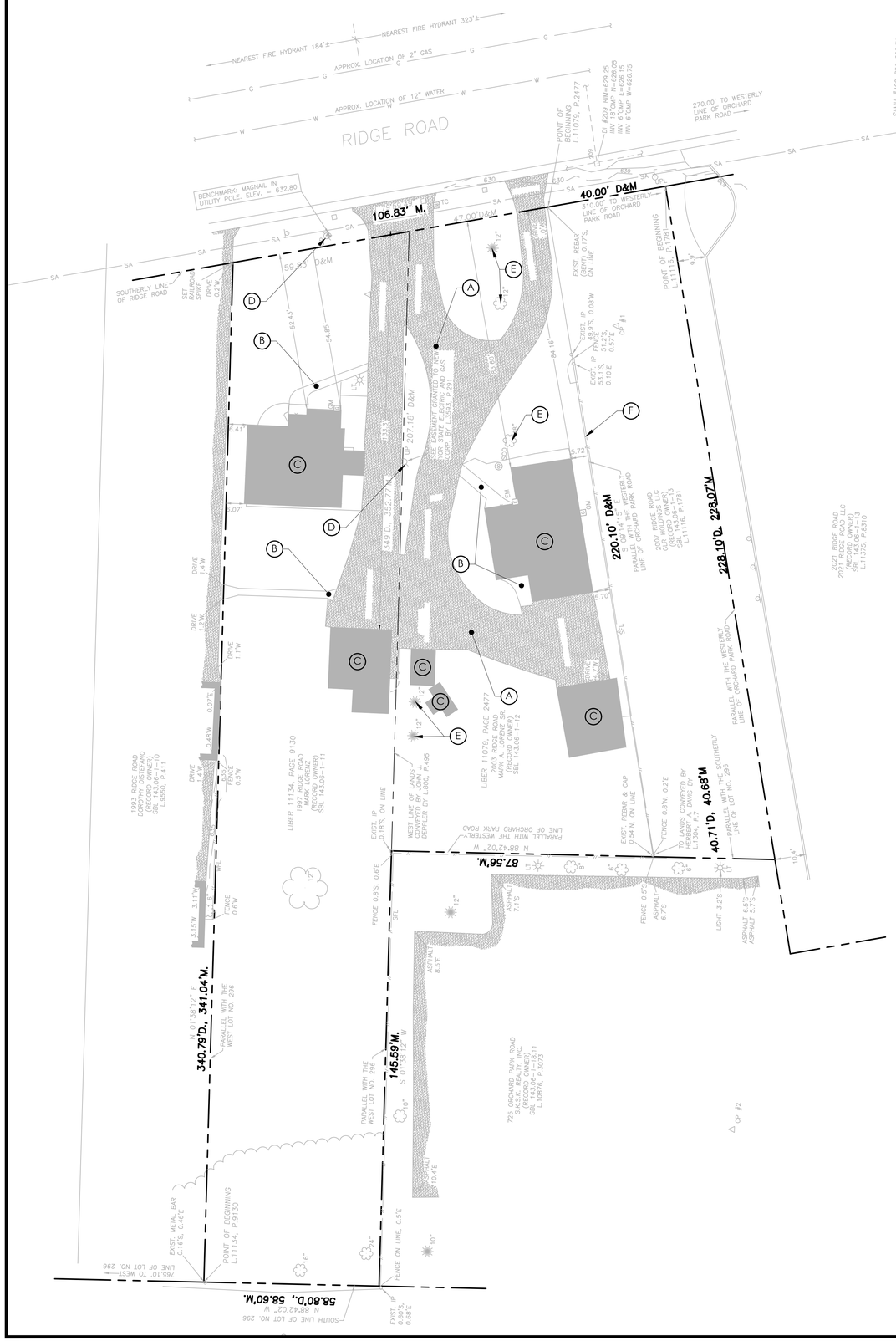
APD ENGINEERING ARCHITECTURE
615 Fishers Run Victor, NY 14564
585.742.2222 - www.apd.com

Burger King
JSC MANAGEMENT GROUP
ATTN: JAMES CAMMILLERI
BURGER KING FRANCHISEE
585.755.3950

Burger King Store #:
S.B.L. No. 143.06-1-11, 12, & 13
1997, 2003, & 2007 Ridge Road
West Seneca, NY 14224
Erie County (Town of West Seneca)
Project Name & Location:

Cover Sheet
Drawing Name:

Date: 04/19/21
Project No. 21-0239
Type:
Drawn By: SAS
Scale: N.T.S.
CS
Drawing No.



DEMOLITION LEGEND:

- (A) PAVEMENT TO BE REMOVED
- (B) SIDEWALK TO BE REMOVED
- (C) BUILDING/SHED TO BE REMOVED
- (D) UTILITY POLE TO BE RELOCATED
- (E) TREES TO BE REMOVED
- (F) FENCE TO BE REMOVED

0 10 20 40 60

Graphic Scale: 1"=20'

NORTH

AS REQUIRED BY NEW YORK STATE LAW, CONTRACTOR SHALL CONTACT "DIG SAFELY NEW YORK" (UFPO) @ 1-800-962-7962 FOR LOCATION STAKE-OUT OF ALL UTILITIES, AT LEAST 2 FULL WORKING DAYS PRIOR TO ANY EXCAVATION.

REFERENCE:

1. 4775 1997-2003 RIDGE RD BURGER KING.DWG, SHEET NUMBER 1, LAST REVISED ON 12/13/2021, PREPARED BY FRANDINA ENGINEERING AND LAND SURVEYING, PC

LEGEND OF IMPROVEMENTS

- SUBJECT PARCEL PROPERTY LINE
- EXISTING FEATURES/STRUCTURES TO REMAIN
- EXISTING FEATURES TO BE DEMOLISHED
- X — EXISTING STRUCTURE TO BE DEMOLISHED
- P.D.C. — P.D.C. = PROTECT DURING CONSTRUCTION

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Revisions:		Date:
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STATE OF NEW YORK · TODD GEORGE MARKEVICZ · 080577 · LICENSED PROFESSIONAL ENGINEER

Seal 1/21/22 Seal

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CIVIL ENGINEER OF RECORD
Name: Todd G. Markevicz
New York License No.: 080577
Exp. Date. November 30, 2023
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APD ENGINEERING ARCHITECTURE
615 Fishers Run Victor, NY 14564
585.742.2222 - www.apd.com

Burger King

JSC MANAGEMENT GROUP
ATTN: JAMES CAMMILLERI
BURGER KING FRANCHISEE
585.755.3950

Burger King Store #:

S.B.L. No. 143.06-1-11, 12, & 13

1997, 2003, & 2007 Ridge Road

West Seneca, NY 14224

Erie County (Town of West Seneca)

Project Name & Location:

Demolition Plan

Drawing Name:

Date: 04/19/21

Project No. 21-0239

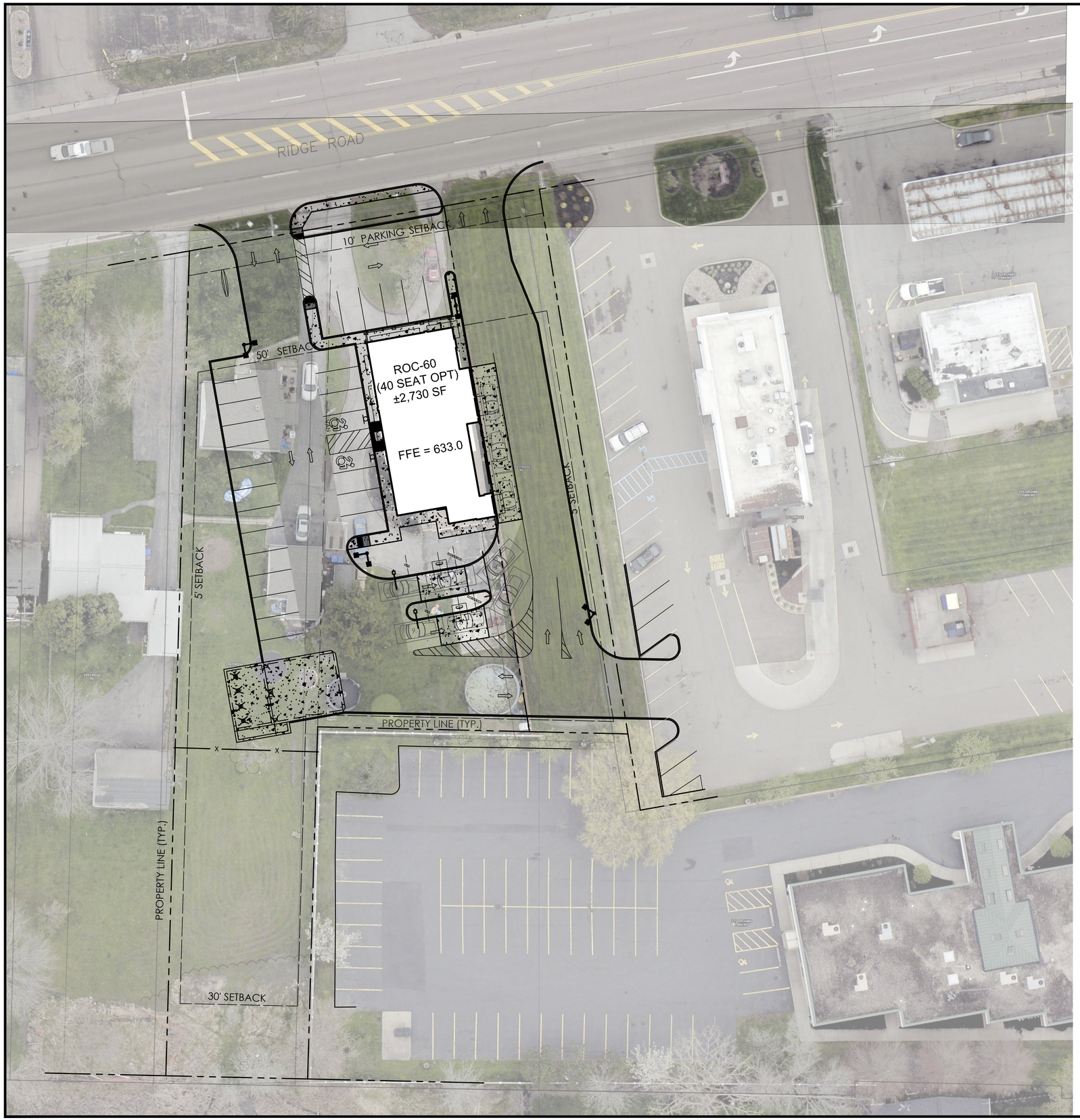
Type:

Drawn By: SAS

Scale: 1"=20'

C1

Drawing No.



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Graphic Scale: 1"=20'

AS REQUIRED BY NEW YORK STATE LAW, CONTRACTOR SHALL CONTACT "DIG SAFELY NEW YORK" (UFPO) @ 1-800-962-7962 FOR LOCATION STAKE-OUT OF ALL UTILITIES, AT LEAST 2 FULL WORKING DAYS PRIOR TO ANY EXCAVATION.

NORTH

REFERENCE:

1. 4775 1997-2003 RIDGE RD BURGER KING.DWG, SHEET NUMBER 1, LAST REVISED ON 12/13/2021, PREPARED BY FRANDINA ENGINEERING AND LAND SURVEYING, PC

SITE DATA:

LOCAL JURISDICTION:	**TOWN OF WEST SENECA**
ZONING CLASSIFICATION:	**C-2 (S) - COMMERCIAL *REZONED AT 1/20/22 TOWN BOARD MEETING**
PERMITTED USES:	**SPECIAL USE PERMIT TO ALLOW OPERATION AS A EATING OR DRINKING ESTABLISHMENTS, PROVIDED THAT ANY ENTERTAINMENT SHALL BE LIMITED TO TELEVISION, RADIO OR RECORDED MUSIC, AND FURTHER PROVIDED THAT NO SALES OF ALCOHOLIC BEVERAGES FOR CONSUMPTION ON THE PREMISES SHALL BE PERMITTED ON ANY LOT WHERE A SIDE LOT ABUTS ANY R DISTRICT BOUNDARY.**
OWNER:	**MARK A. LORENZ, SR. (CURRENT), GLR HOLDINGS, LLC (CURRENT) JSC MANAGEMENT GROUP, LLC (UNDER CONTRACT)**
PROPERTY ACREAGE:	**1.000+/- ACRES PER 8/12/2021 SURVEY**

BULK REQUIREMENTS	REQUIRED	PROPOSED	VARIANCE
FRONT YARD	40 FT MINIMUM + 10 FEET	50 FT	NO
REAR YARD	10 FT; IF REAR YARD ABUTS R DISTRICT BOUNDARIES, THE REAR YARD SHALL BE 30 FT OR A DISTANCE EQUAL TO THE HEIGHT OF THE PRINCIPAL BUILDING, WHICHEVER IS GREATER.	± 235 FT	NO
SIDE YARD	5 FT. IF SIDE YARD ABUTS AN R DISTRICT ZONE, MINIMUM REQUIRED FOR SIDE YARDS FOR MULTIFAMILY DWELLING/MIXED OCCUPANCY IN THE ABUTTING R DISTRICT (5 FT FOR SINGLE FAMILY).	± 36 FT	NO
MINIMUM LOT AREA	900 SF	± 43,550 SQ FT	NO
MINIMUM LOT FRONTAGE	50 FT	± 147 FT	NO
MAXIMUM BUILDING COVERAGE	50% (43,550 SQ FT)	±6.3%	NO
MAXIMUM BUILDING HEIGHT	40 FT	24 FT	NO
INGRESS/EGRESS MINIMUM DRIVE WIDTH	A 30 FT DRIVE FOR INGRESS / EGRESS SHALL BE PROVIDED FOR ALL MULTIFAMILY AND SPECIAL DEVELOPMENTS OR 20 FT MIN. FOR SEPARATE INGRESS / EGRESS DRIVES.	24 FT & 24 FT	NO
PARKING REQUIREMENT	3 SPACES FOR EACH 5 SEATS (40 SEATS = 24 SPACES)	28 SPACES	NO
PARKING STALL WIDTH	9 FT MIN	9 FT	NO
PARKING STALL LENGTH	18 FT MIN	18 FT	NO
MINIMUM STACKING REQUIREMENTS	5 SPACES PER BOOTH / SERVICE WINDOW	9 SPACES	NO
OFF-STREET PARKING SETBACK (PAVEMENT)	NO OPEN OFF-STREET PARKING SPACE WITHIN 10 FT OF ANY STREET LINE OR ANY R DISTRICT BOUNDARY.	3' (N)	YES

Issued:		Date:
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Revisions:		Date:
1	Minor Site Plan Revisions	01/06/22
2		
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STATE OF NEW YORK · TODD GEORGE MARKEVICZ · 080577 · LICENSED PROFESSIONAL ENGINEER

01/06/22

Seal Seal

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CIVIL ENGINEER OF RECORD
Name: Todd G. Markevicz
New York License No.: 080577
Exp. Date. November 30, 2023
Firm Reg. No.: 0014815
Exp. Date: December 31, 2023

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Burger King

JSC MANAGEMENT GROUP
ATTN: JAMES CAMMILLERI
BURGER KING FRANCHISEE
585.755.3950

Burger King Store #:

S.B.L. No. 143.06-1-11, 12, & 13

1997, 2003, & 2007 Ridge Road

West Seneca, NY 14224

Erie County (Town of West Seneca)

Project Name & Location:

Overall Site Plan

Drawing Name:

Date: 04/19/21

Project No. 21-0239

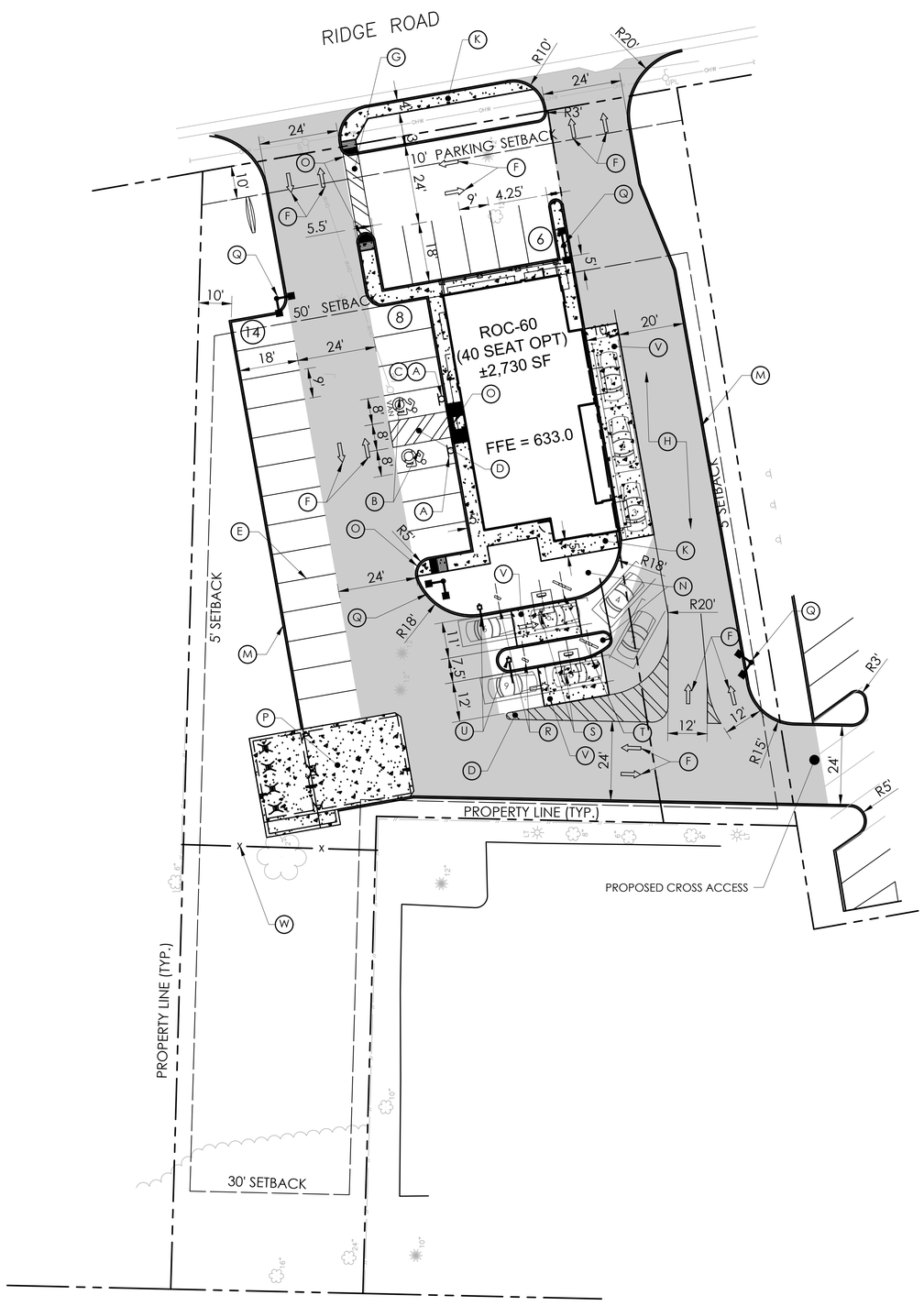
Type:

Drawn By: SAS

Scale: 1"=20'

C2

Drawing No.



SITE LEGEND:

- (A) ACCESSIBLE PARKING SIGN, POST & BOLLARD (REFER TO DETAIL)
- (B) PAINTED ACCESSIBLE PARKING SYMBOL (REFER TO DETAIL)
- (C) "VAN ACCESSIBLE" SIGN (REFER TO DETAIL)
- (D) PAINTED PARKING ISLAND AREA TO BE STRIPED WITH 4" SYSL @ 2'-0" O.C. AND AT 45° TO PARKING SPACE.
- (E) SYSL/4" PARKING STALL STRIPING
- (F) PAVEMENT MARKINGS - ARROWS (REFER TO DETAIL)
- (G) PEDESTRIAN CROSSWALK (REFER TO DETAIL)
- (H) HEAVY DUTY PAVEMENT (REFER TO DETAIL)
- (I) HEAVY DUTY CONCRETE (REFER TO DETAIL)
- (J) EDGE OF PAVEMENT
- (K) CONCRETE SIDEWALK (REFER TO DETAIL)
- (L) TRANSFORMER PAD, INSTALL PER ELECTRIC COMPANY REQUIREMENTS. INCLUDE BOLLARDS AS NECESSARY.
- (M) CONCRETE CURB (REFER TO DETAIL)
- (N) LAWN/MULCH AREA (REFER TO PLANTING PLAN FOR DELINEATION)
- (O) ADA RAMP AND DETECTABLE WARNING (REFER TO DETAIL)
- (P) DUMPSTER LOCATION (REFER TO ARCH. PLAN DETAIL)
- (Q) LIGHT POLE (REFER TO DETAIL)
- (R) OPTIONAL PREVIEW BOARD (REFER TO DETAIL)
- (S) ORDER CONFIRMATION UNIT (REFER TO DETAIL)
- (T) MENU BOARD (REFER TO DETAIL)
- (U) CLEARANCE BAR (REFER TO DETAIL)
- (V) CONCRETE PAD FOR DRIVE-THRU LANE (REFER TO DETAIL)
- (W) 6' BOARD ON BOARD FENCE

SITE DATA:

LOCAL JURISDICTION:	**TOWN OF WEST SENECA**
ZONING CLASSIFICATION:	**C-2 (S) - COMMERCIAL *REZONED AT 1/20/22 TOWN BOARD MEETING**
PERMITTED USES:	**SPECIAL USE PERMIT TO ALLOW OPERATION AS A EATING OR DRINKING ESTABLISHMENTS, PROVIDED THAT ANY ENTERTAINMENT SHALL BE LIMITED TO TELEVISION, RADIO OR RECORDED MUSIC, AND FURTHER PROVIDED THAT NO SALES OF ALCOHOLIC BEVERAGES FOR CONSUMPTION ON THE PREMISES SHALL BE PERMITTED ON ANY LOT WHERE A SIDE LOT ABUTS ANY R DISTRICT BOUNDARY.**
OWNER:	**MARK A. LORENZ, SR. (CURRENT), GLR HOLDINGS, LLC (CURRENT) JSC MANAGEMENT GROUP, LLC (UNDER CONTRACT)**
PROPERTY ACREAGE:	**1.000+/- ACRES PER 8/12/2021 SURVEY**

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0 10 20 40 60
Graphic Scale: 1"=20'

AS REQUIRED BY NEW YORK STATE LAW, CONTRACTOR SHALL CONTACT "DIG SAFELY NEW YORK" (UFPO) @ 1-800-962-7962 FOR LOCATION STAKE-OUT OF ALL UTILITIES, AT LEAST 2 FULL WORKING DAYS PRIOR TO ANY EXCAVATION.

NORTH

REFERENCE:

1. 4775 1997-2003 RIDGE RD BURGER KING.DWG, SHEET NUMBER 1, LAST REVISED ON 12/13/2021, PREPARED BY FRANDINA ENGINEERING AND LAND SURVEYING, PC

LEGEND OF IMPROVEMENTS

- BACK OF CURB / FACE OF CURB — FACE OF CURB/BACK OF CURB
- SUBJECT PARCEL PROPERTY LINE
- SETBACK LINE
- PROPOSED BUILDING
- TRANSFORMER PAD
- CONCRETE SIDEWALK/PAD (REFER TO DETAILS)
- HEAVY DUTY PAVEMENT (REFER TO DETAIL)
- PEDESTRIAN CROSSWALK (REFER TO DETAIL)
- LIGHT POLES
- STOP — SITE SIGN, PAINTED STOP BAR & "STOP" LETTERING
- x — FENCE

Issued:	Date:
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Revisions:	Date:
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Firm Reg. No.: 0014815
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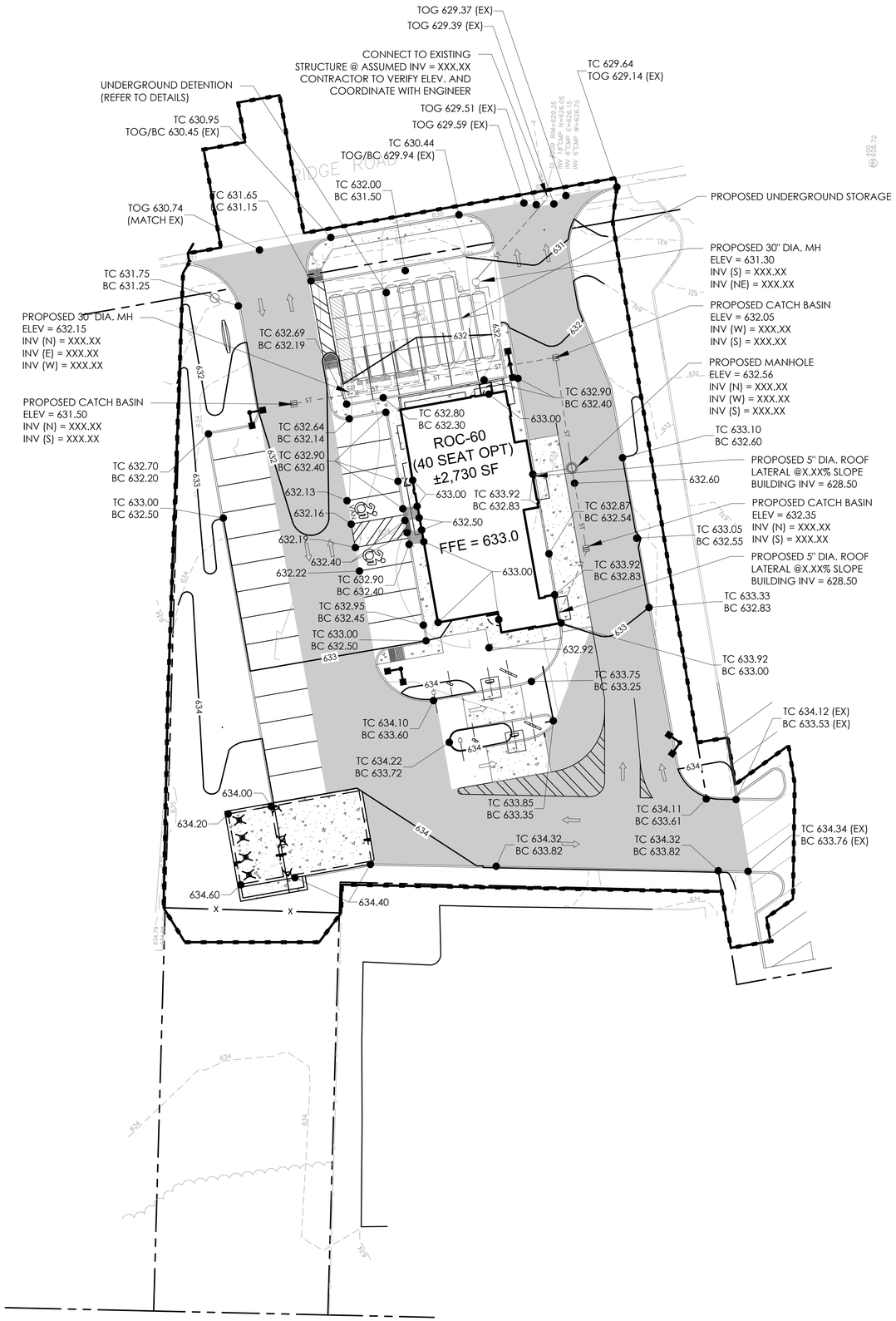
Burger King Store #:
S.B.L. No. 143.06-1-11, 12, & 13
1997, 2003, & 2007 Ridge Road
West Seneca, NY 14224
Erie County (Town of West Seneca)
Project Name & Location:

Site Plan
Drawing Name:

Date: 04/19/21
Project No. 21-0239
Type:
Drawn By: SAS
Scale: 1"=20'
C2.1
Drawing No.



ABBREVIATION

AC	-ASPHALT CONCRETE
LF	-LINEAR FEET
SF	-SQUARE FEET
DIA	-DIAMETER
INV	-INVERT
CPP	-CORRUGATED POLYETHYLENE PIPE (SMOOTHED LINE)
HDPE	-HIGH DENSITY POLYETHYLENE PIPE
PVC	-POLYVINYL CHLORIDE
TG	-TOP OF GRATE
GE	-GROUND ELEVATION
TOG	-TOP OF GUTTER
TC	-TOP OF CURB
BC	-BOTTOM OF CURB/EDGE OF PAVEMENT
HP	-HIGH POINT
F.F.E.	-FINISH FLOOR ELEVATION
TW	-TOP OF WALL
BW	-BOTTOM OF WALL

0 10 20 40 60

Graphic Scale: 1"=20'

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LEGEND OF IMPROVEMENTS

- SUBJECT PARCEL PROPERTY LINE
- PROPOSED BUILDING
- E — E — UNDERGROUND ELECTRIC
- T — T — UNDERGROUND TELEPHONE
- G — G — GAS SERVICE
- W — W — W — WATER SERVICE
- C/O — SA — SANITARY SEWER LATERAL & CLEANOUT
- UD — UNDERDRAIN
- ST — STORM LATERAL
- STORM SEWER & STRUCTURES
- LIGHT POLES
- TC 895.50 / X BC 895.50 / TW 895.50 — SPOT ELEVATION TC/BC=TOP & BOTTOM OF CURB TW=TOP OF WALL
- 895 — CONTOUR
- LOD — LIMIT OF DISTURBANCE

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Revisions:	Date:
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Seal 1/21/22 Seal

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1997, 2003, & 2007 Ridge Road

West Seneca, NY 14224

Erie County (Town of West Seneca)

Project Name & Location:

Grading & Drainage Plan

Drawing Name:

Date: 04/19/21	Project No. 21-0239
Type:	
Drawn By: SAS	C3
Scale: 1"=20'	Drawing No.

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

ADS Advanced Drainage Systems, Inc.

SiteASSIST™ FOR STORMTECH INSTRUCTIONS, DOWNLOAD THE INSTALLATION APP

21-0239
WEST SENECA, NY

DC-780 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH DC-780.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418-16a, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. 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/IN/IN. 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.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF THE DC-780 CHAMBER SYSTEM

1. STORMTECH DC-780 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH DC-780 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2" (20-50 mm).
8. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
9. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH DC-780 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
2. THE USE OF CONSTRUCTION EQUIPMENT OVER DC-780 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

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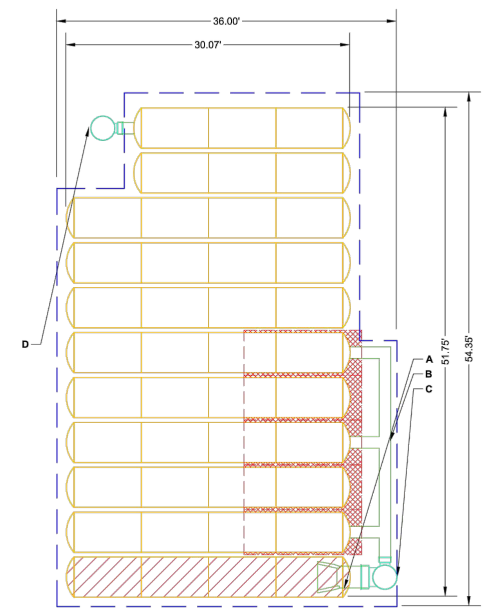
PROPOSED LAYOUT	
42	STORMTECH DC-780 CHAMBERS
22	STORMTECH DC-780 END CAPS
6	STONE ABOVE (in)
9	STONE BELOW (in)
40	STONE VOID
3838	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
1782	SYSTEM AREA (SF)
180.7	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS	
MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	641.75
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	631.75
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	631.25
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	631.25
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	631.25
TOP OF STONE:	630.25
TOP OF DC-780 CHAMBER:	629.75
12" x 12" TOP MANIFOLD INVERT:	628.29
12" BOTTOM CONNECTION INVERT:	627.35
24" ISOLATOR ROW PLUS INVERT:	627.26
BOTTOM OF DC-780 CHAMBER:	627.25
BOTTOM OF STONE:	626.50

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM PREFABRICATED END CAP, PART#: SC740EPE24BR / TYP OF ALL 24" ISOLATOR ROW PLUS CONNECTIONS	0.10"	
MANIFOLD	B	12" x 12" TOP MANIFOLD, ADS N-12	12.50"	
NYLOPLAST (INLET W/ ISO PLUS ROW)	C	30" DIAMETER (24.00" SUMP MIN)		5.7 CFS IN
NYLOPLAST (OUTLET)	D	30" DIAMETER (DESIGN BY ENGINEER)		2.0 CFS OUT



ISOLATOR ROW PLUS (SEE DETAIL)

PLACE MINIMUM 12.50' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

21-0239 WEST SENECA, NY | DATE: | PROJECT #: | DRAWN: SS | CHECKED: N/A | DATE | DRW | CHK | DESCRIPTION

StormTech® Chamber System 888-892-2694 | WWW.STORMTECH.COM
ADS 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473

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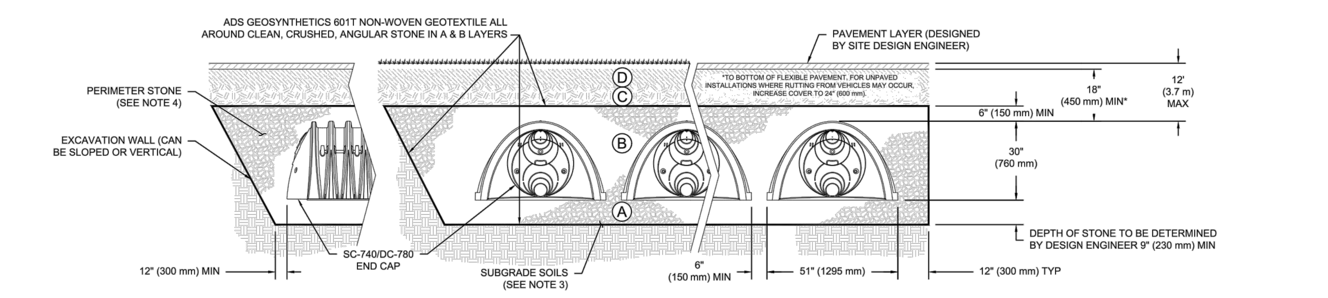
SHEET 2 OF 6

ACCEPTABLE FILL MATERIALS: STORMTECH DC-780 CHAMBER SYSTEMS

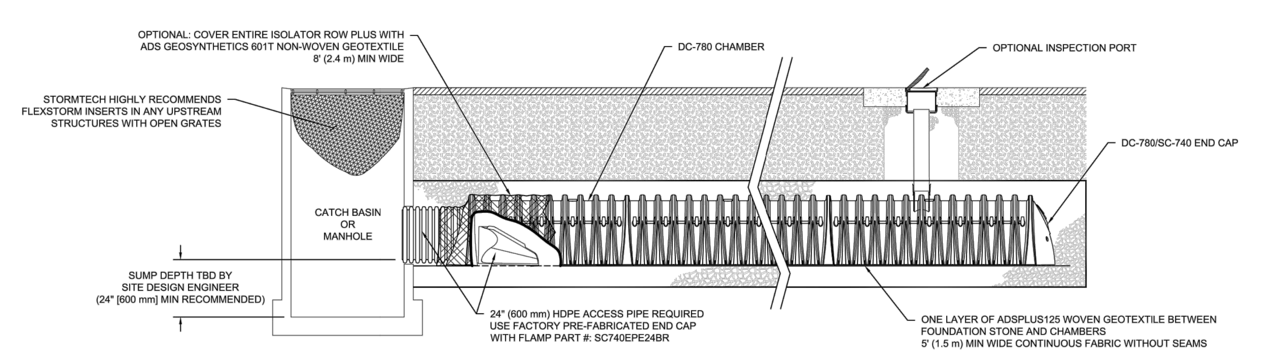
	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	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 F2418-16a, "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/IN/IN. 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.

SHEET 3 OF 6



DC-780 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

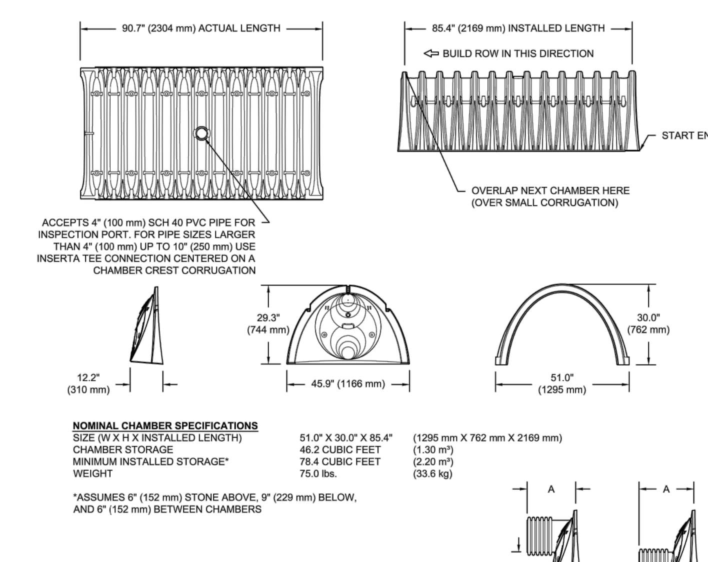
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES
1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

SHEET 4 OF 6

DC-780 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	46.2 CUBIC FEET	(1.30 m³)
MINIMUM INSTALLED STORAGE*	78.4 CUBIC FEET	(2.20 m³)
WEIGHT	75.0 lbs.	(33.6 kg)

*ASSUMES 6" (152 mm) STONE ABOVE, 9" (229 mm) BELOW, AND 6" (152 mm) BETWEEN CHAMBERS

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC			---	0.5" (13 mm)
SC740EPE08T / SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC			---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC			---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC			---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC			---	1.3" (33 mm)
SC740EPE18T/ SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC			---	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

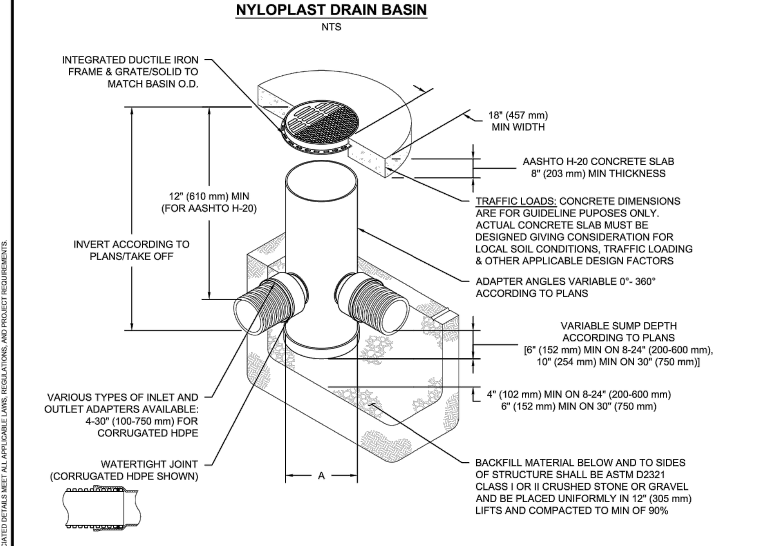
ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

SHEET 5 OF 6

NYLOPLAST DRAIN BASIN
NTS



NOTES
1. 8-30" (200-750 mm) GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
2. 12-30" (300-750 mm) FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
5. FOR COMPLETE DESIGN AND PRODUCT INFORMATION: **WWW.NYLOPLAST-US.COM**
6. TO ORDER CALL: **800-821-6710**

A	PART #	GRATE/SOLID COVER OPTIONS		
8" (200 mm)	2808AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
10" (250 mm)	2810AG	PEDESTRIAN LIGHT DUTY	STANDARD LIGHT DUTY	SOLID LIGHT DUTY
12" (300 mm)	2812AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
15" (375 mm)	2815AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
18" (450 mm)	2818AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
24" (600 mm)	2824AG	PEDESTRIAN AASHTO H-10	STANDARD AASHTO H-20	SOLID AASHTO H-20
30" (750 mm)	2830AG	PEDESTRIAN AASHTO H-20	STANDARD AASHTO H-20	SOLID AASHTO H-20

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SHEET 6 OF 6

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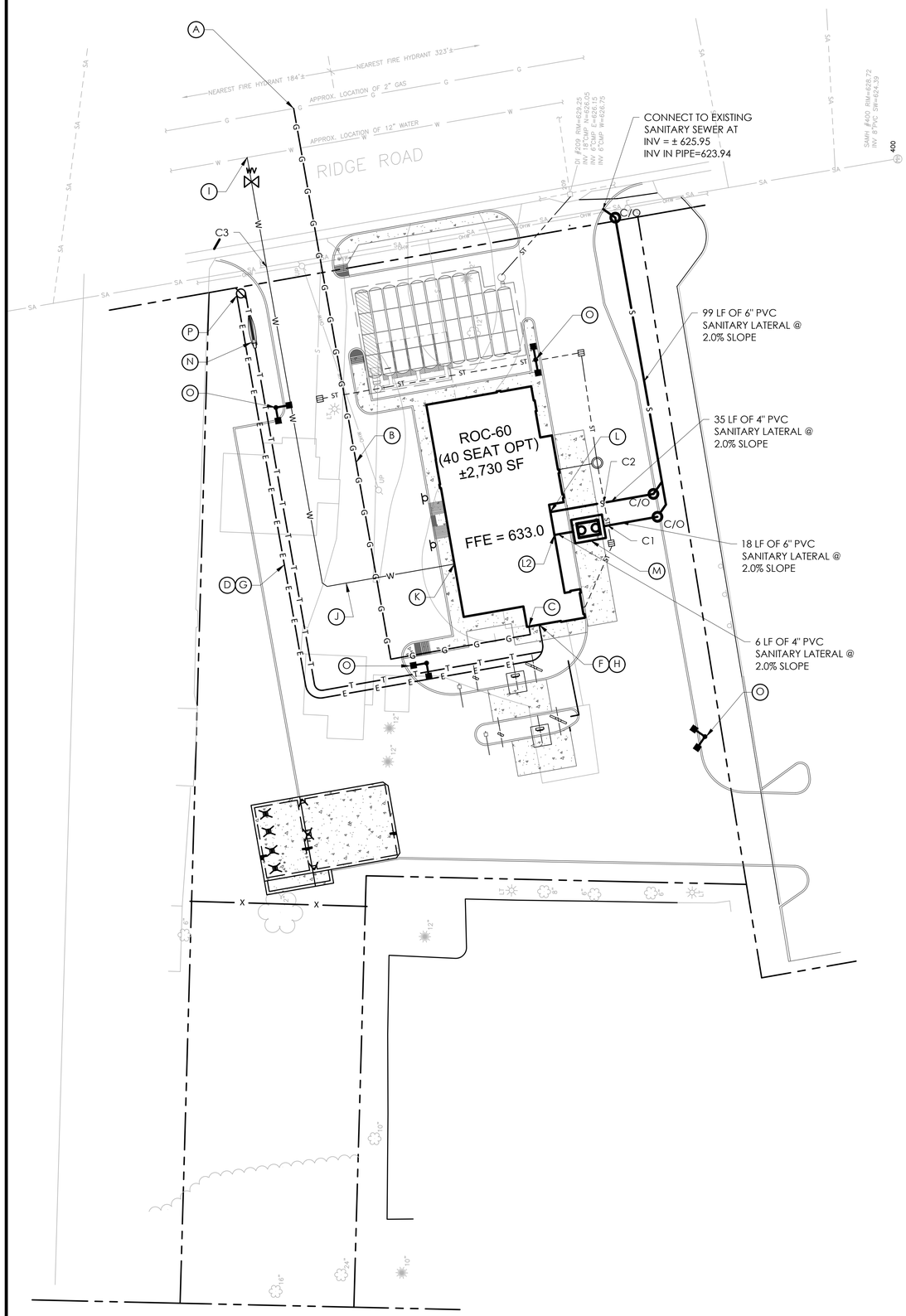
BURGER KING FRANCHISEE
585.755.3950

Burger King Store #:
S.B.L. No. 143.06-1-11, 12, & 13
1997, 2003, & 2007 Ridge Road
West Seneca, NY 14224
Erie County (Town of West Seneca)
Project Name & Location:

Stormwater Plan

Drawing Name:

Date: 04/19/21	Project No. 21-0239
Type:	
Drawn By: SAS	C3.1
Scale: N.T.S.	Drawing No.



UTILITY LEGEND:

- (A) CONNECTION TO EXISTING GAS MAIN. CONTRACTOR TO COORDINATE WITH GAS COMPANY FOR INSTALLATION AND FINAL CONNECTION
- (B) UNDERGROUND GAS SERVICE
- (C) GAS METER AND SERVICE ENTRY
- (D) UNDERGROUND ELECTRIC SERVICE. CONTRACTOR SHALL COORDINATE WITH ELECTRIC COMPANY FOR FINAL CONNECTION AND INSTALL CONDUIT AND REQUIRED PULL BOXES PER THEIR REQUIREMENTS
- (E) PAD-MOUNTED ELECTRIC TRANSFORMER. CONTRACTOR SHALL COORDINATE EXACT LOCATION, SIZE, INSTALLATION, AND PROTECTION OF TRANSFORMER WITH ELECTRIC COMPANY.
- (F) ELECTRIC METER AND SERVICE ENTRY.
- (G) UNDERGROUND TELEPHONE LINE. CONTRACTOR SHALL COORDINATE WITH TELEPHONE COMPANY AND INSTALL CONDUIT AND REQUIRED PULL BOXES PER THEIR REQUIREMENTS
- (H) TELEPHONE SERVICE ENTRY
- (I) CONNECT TO EXISTING 12" CAST IRON WATER MAIN WITH TAPPING SLEEVE AND VALVE
- (J) 1 1/2" TYPE K DOMESTIC WATER SERVICE
- (K) DOMESTIC WATER SERVICE ENTRY
- (L) 4" SANITARY SERVICE ENTRY @ INV = 628.50 WITH CLEAN-OUT, REFER TO BUILDING PLANS
- (L2) 6" SANITARY SERVICE ENTRY @ INV = 628.83 WITH CLEAN-OUT, REFER TO BUILDING PLANS
- (M) 1200 GALLON GREASE INTERCEPTOR (REFER TO DETAIL) INV. IN = 628.71, INV. OUT = 628.50
- (N) PROVIDE ELECTRIC TO ILLUMINATED SIGN
- (O) LIGHT POLE (REFER TO SITE PLAN)
- (P) PROPOSED UTILITY POLE, COORDINATE WITH ELECTRIC COMPANY

0 10 20 40 60

Graphic Scale: 1"=20'

NORTH

AS REQUIRED BY NEW YORK STATE LAW, CONTRACTOR SHALL CONTACT "DIG SAFELY NEW YORK" (UFPO) @ 1-800-962-7962 FOR LOCATION STAKE-OUT OF ALL UTILITIES, AT LEAST 2 FULL WORKING DAYS PRIOR TO ANY EXCAVATION.

REFERENCE:

1. 4775 1997-2003 RIDGE RD BURGER KING.DWG, SHEET NUMBER 1, LAST REVISED ON 12/13/2021, PREPARED BY FRANDINA ENGINEERING AND LAND SURVEYING, PC

LEGEND OF IMPROVEMENTS

- SUBJECT PARCEL PROPERTY LINE
- PROPOSED BUILDING
- UNDERGROUND ELECTRIC
- UNDERGROUND TELEPHONE
- GAS SERVICE
- WATER SERVICE
- SANITARY SEWER LATERAL & CLEANOUT
- STORM LATERAL
- STORM SEWER & STRUCTURES
- LIGHT POLES

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Seal 1/21/22 Seal

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Burger King Store #:

S.B.L. No. 143.06-1-11, 12, & 13

1997, 2003, & 2007 Ridge Road

West Seneca, NY 14224

Erie County (Town of West Seneca)

Project Name & Location:

Utility Plan

Drawing Name:

Date: 04/19/21

Type:

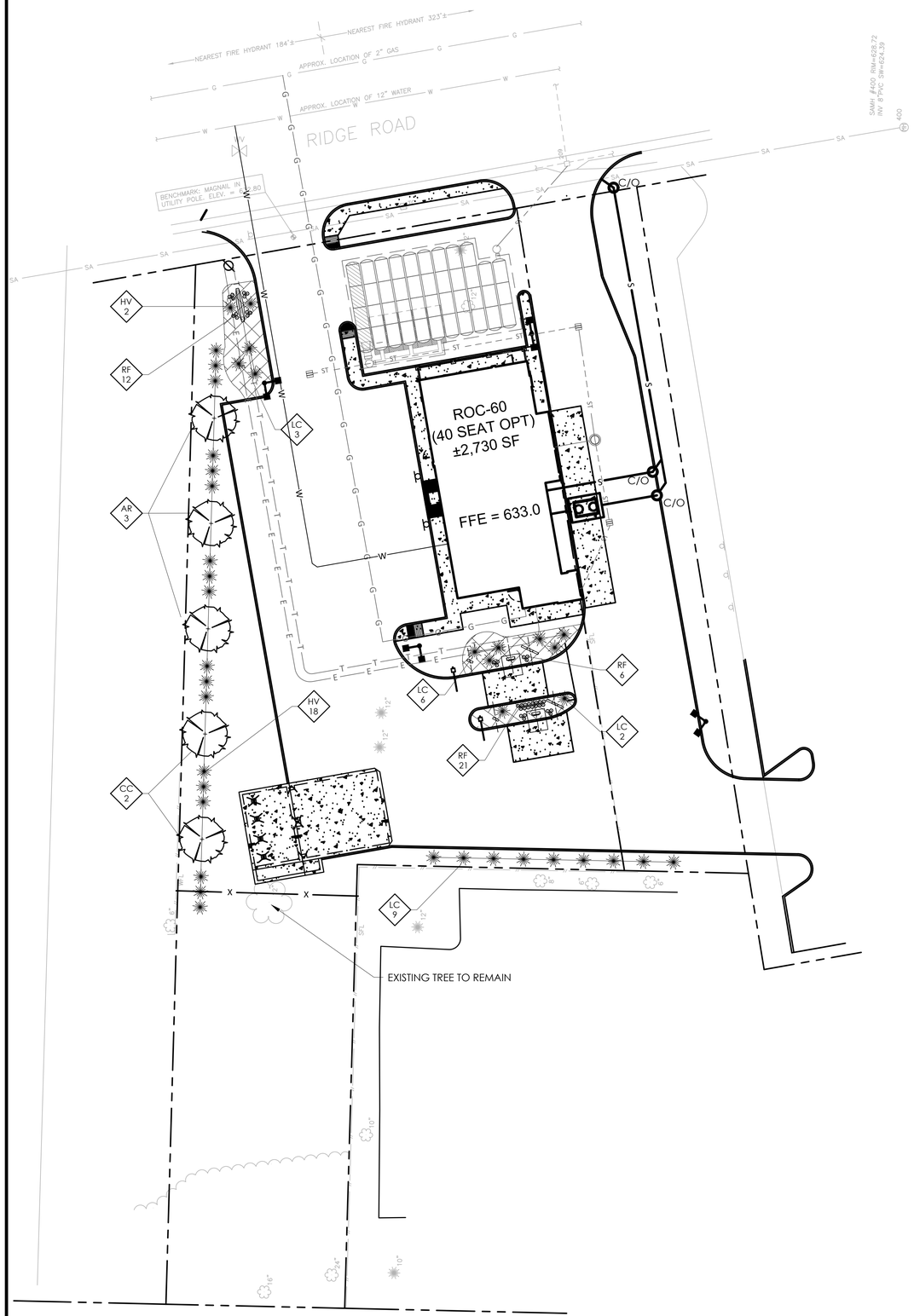
Drawn By: SAS

Scale: 1"=20'

Project No. 21-0239

C4

Drawing No.



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Graphic Scale: 1"=20'

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NORTH

REFERENCE:

1. 4775 1997-2003 RIDGE RD BURGER KING.DWG, SHEET NUMBER 1, LAST REVISED ON 12/13/2021, PREPARED BY FRANDINA ENGINEERING AND LAND SURVEYING, PC

LEGEND OF IMPROVEMENTS

- SUBJECT PARCEL PROPERTY LINE
- PROPOSED BUILDING
- E — UNDERGROUND ELECTRIC
- T — UNDERGROUND TELEPHONE
- G — GAS SERVICE
- W — WATER SERVICE
- C/O SA — SANITARY SEWER LATERAL & CLEANOUT
- UD — UNDERDRAIN
- ST — STORM LATERAL
- STORM SEWER & STRUCTURES
- PROPOSED STEEP SLOPES
- LIGHT POLES
- SHRUBS/BUSHES
- DECIDUOUS TREE

PLANT LIST						
QUANT.	KEY	LATIN NAME	COMMON NAME	CAL.	ROOTS	HT. OR. SP
20	HV	HAMAMELIS VIRGINIANA	COMMON WITCH HAZEL		#5 CONT.	18" SP, 5' O.C.
20	LC	LOBELIA CARDINALIS (ZONES 4, 5, 6)	CARDINAL FLOWER		#2 CONT.	6' SP, 24" O.C.
2	CC	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	2.5"	B&B	20' HT, 20' O.C.
3	AR	ACER RUBRUM	RED MAPLE	2.5"	B&B	15' HT, 10' O.C.
39	RF	RUDBECKIA FULGIDA 'GOLDSTURM'	BLACK EYED SUSAN		#2 CONT.	24" O.C.

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1997, 2003, & 2007 Ridge Road

West Seneca, NY 14224

Erie County (Town of West Seneca)

Project Name & Location:

Planting and Lighting Plan

Drawing Name:

Date: 04/19/21

Type:

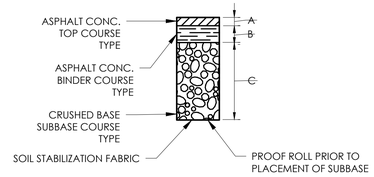
Drawn By: SAS

Scale: 1"=20'

Project No. 21-0239

C5

Drawing No.

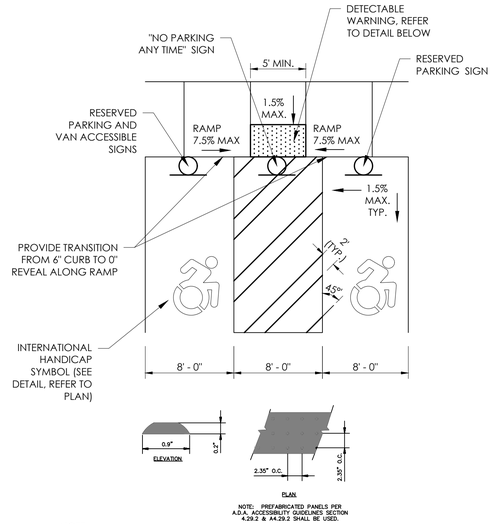


	REGULAR DUTY	HEAVY DUTY
A	TBD	TBD
B	TBD	TBD
C	TBD	TBD

NOTES:

1. PAVEMENT SECTIONS ARE PROVIDED BASED ON THE GEOTECHNICAL ENGINEERING REPORT PROVIDED BY PENDING.

PAVING SECTION DETAIL
N.T.S



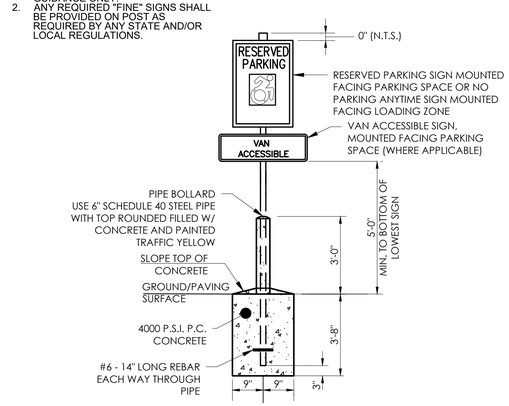
NOTE:

1. REFER TO SITE PLAN FOR ACCESSIBLE PARKING STRIPING LAYOUT.
2. ALL SIDEWALK, RAMPS, LANDING AREAS, DETECTABLE WARNING, ETC. ALONG THE ACCESSIBLE PATH SHALL BE CONSTRUCTED IN ACCORDANCE WITH ADA STANDARDS.
3. CONTRACTOR TO REFER TO THE GRADING AND DRAINAGE PLAN FOR SLOPES.
   - 3.A. CROSS SLOPES FOR SIDEWALKS AND RAMPS SHALL BE 1.5% AT A MAXIMUM
   - 3.B. RUNNING SLOPES FOR SIDEWALKS SHALL BE 4.5% AT A MAXIMUM
   - 3.C. RUNNING SLOPES FOR RAMPS SHALL BE AT 7.5% MAXIMUM
   - 3.D. SLOPES FOR ADA PARKING STALLS AND UNLOADING BAYS SHALL BE 1.5% AT A MAXIMUM
4. SIGNS TO BE PLACED IN CENTER OF PARKING STALL OR UNLOADING BAY (IF APPLICABLE) WHENEVER POSSIBLE. SHIFT "NO PARKING ANYTIME" SIGN SLIGHTLY OFF CENTER TO MAINTAIN THE MINIMUM OF 32" CLEAR SPACE REQUIRED IN ACCORDANCE WITH ADA REQUIREMENTS

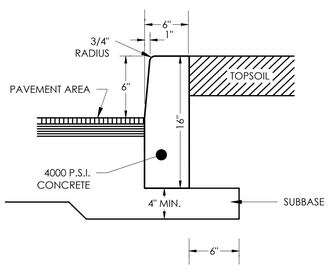
ACCESSIBLE PARKING DETAIL
N.T.S

NOTES:

1. CONTRACTOR SHALL REVIEW ALL FEDERAL, STATE, AND LOCAL CODE AND PROVIDE SIGNAGE IN ACCORDANCE WITH ALL ADA REQUIREMENTS. THIS DETAIL IS PROVIDED FOR GENERAL GUIDANCE ONLY.
2. ANY REQUIRED "FINE" SIGNS SHALL BE PROVIDED ON POST AS REQUIRED BY ANY STATE AND/OR LOCAL REGULATIONS.



ACCESSIBLE SIGN POST INSTALLATION DETAIL
N.T.S

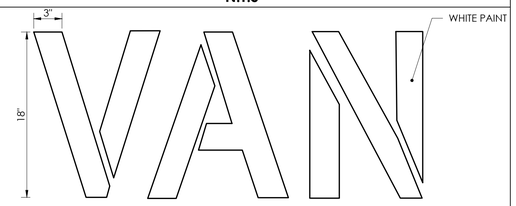


6" REVEAL

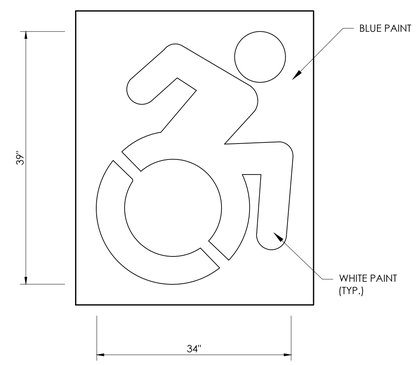
NOTES:

1. CONTROL JOINTS 10 FEET ON CENTER TO DEPTH OF $\frac{1}{3}$ THE CURB THICKNESS
2. EXPANSION JOINTS WITH PREMOLDED FILLER 50 FEET ON CENTER

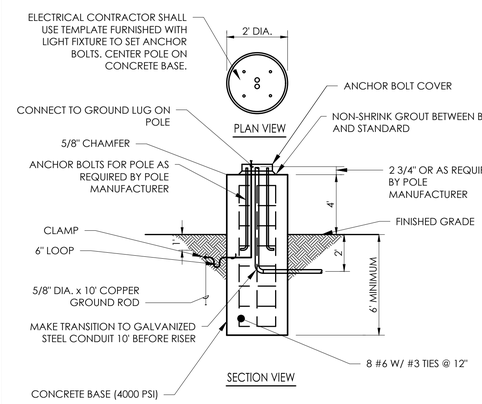
CONCRETE CURB DETAIL
N.T.S



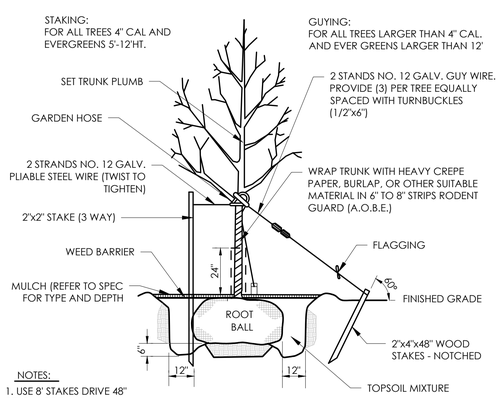
VAN ACCESSIBLE PARKING DETAIL
N.T.S.



ACCESSIBLE PARKING STRIPING DETAIL (NYS)
N.T.S.



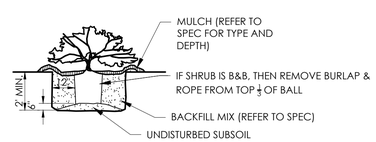
LIGHTING STANDARD DETAIL
N.T.S.



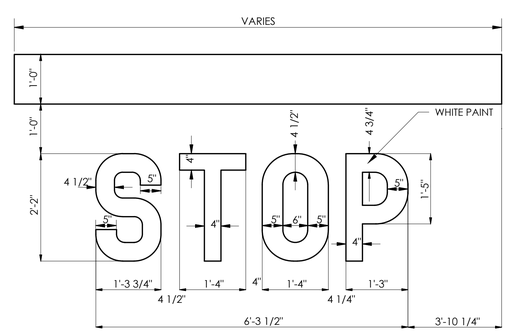
NOTES:

1. USE 8' STAKES DRIVE 48" BELOW GROUND.
2. ROOT COLLAR TO BE SLIGHTLY ABOVE SURROUNDING GRADE.

TREE PLANTING DETAIL
N.T.S



SHRUB PLANTING DETAIL
N.T.S



PARKING LOT DRIVE AISLE STOP BAR DETAIL
N.T.S

Issued:		Date:
A		
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Revisions:		Date:
1		
2		
3		
4		
5		
6		
7		
8		

STATE OF NEW YORK · TODD GEORGE MARKEVICZ · 080577 · LICENSED PROFESSIONAL ENGINEER

Seal 1/21/22 Seal

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CIVIL ENGINEER OF RECORD
Name: Todd G. Markevicz
New York License No.: 080577
Exp. Date. November 30, 2023
Firm Reg. No.: 0014815
Exp. Date: December 31, 2023

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Burger King
JSC MANAGEMENT GROUP
ATTN: JAMES CAMMILLERI
BURGER KING FRANCHISEE
585.755.3950

Burger King Store #:
S.B.L. No. 143.06-1-11, 12, & 13
1997, 2003, & 2007 Ridge Road
West Seneca, NY 14224
Erie County (Town of West Seneca)

Project Name & Location:

Details Sheet

Drawing Name:

Date: 04/19/21

Project No. 21-0239

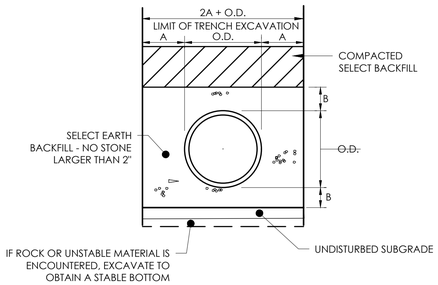
Type:

Drawn By: SAS

Scale: N.T.S.

C6

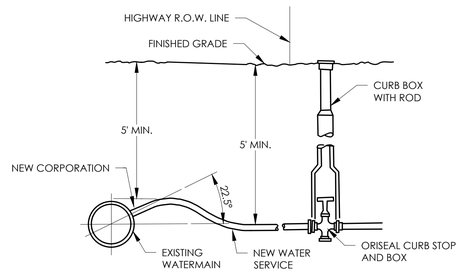
Drawing No.



MIN. DIMENSIONS FOR PIPE BEDDING		
PIPE DIA. (INCHES)	A (INCHES)	B (INCHES)
UP TO 18	12	6
21 TO 36	12	9
OVER 36	18	12

WATER TRENCH DETAIL

N.T.S.

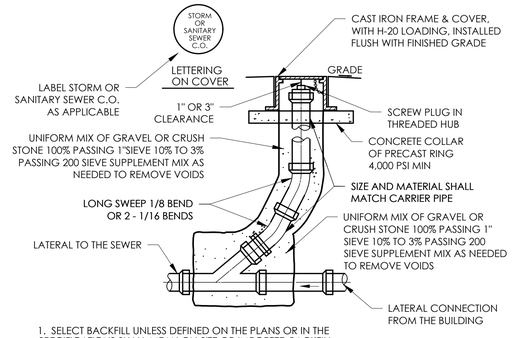


NOTES:

1. TYPE K VIRGIN COPPER-ASTM SPEC. B88 (LATEST REVISION) OR PE 3408 SDR-9-ASTM D2737 -200 PSI WITH #10 SOLID COPPPER TRACING WIRE.
2. NEW WATER SERVICE LATERAL TO BE A SIZE AND TYPE AS APPROVED BY THE LOCAL WATER SUPPLIER.
3. TRACING WIRE TO BE WRAPPED AROUND CURB STOP AND CORPORATION FOR POLYETHLENE SERVICE ONLY.
4. ALL WATER TAPS SHALL BE COORDINATED WITH OR PERFORMED BY THE LOCAL WATER AUTHORITY.

WATER SERVICE INSTALLATION DETAIL

N.T.S.



1. SELECT BACKFILL UNLESS DEFINED ON THE PLANS OR IN THE SPECIFICATIONS SHALL MEAN ON-SITE OR IMPORTED BACKFILL MEETING THE REQUIRED SPECIFICATIONS, ASTM 2321 WITH THE ADDED REQUIREMENT OF NO MATERIAL HAVING A DIMENSION EXCEEDING 4 INCHES.

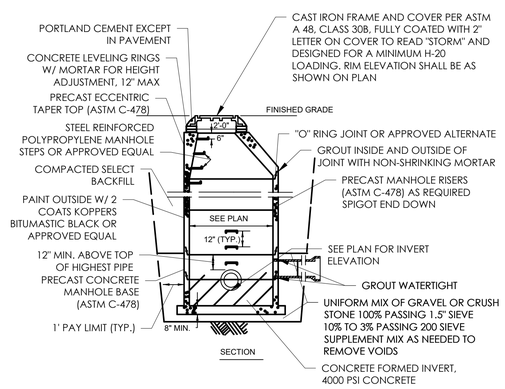
2. IF CLEAN STONE BEDDING IS USED THE BEDDING SHALL BE ENCIRCLED WITH FILTER FABRIC TO PREVENT SOILS FROM ENTERING THE VOIDS OF THE STONE.

3. THIS DETAIL APPLIES TO BOTH SANITARY AND STORM.

4. CLEANOUTS SHALL BE SPACED NO MORE THAN 90' APART.

SEWER CLEANOUT DETAIL

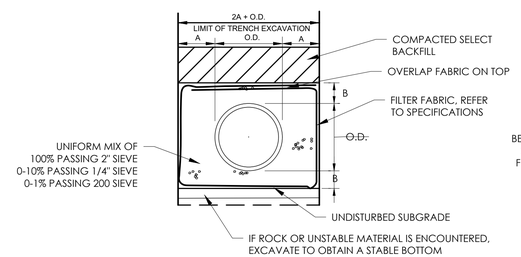
N.T.S.



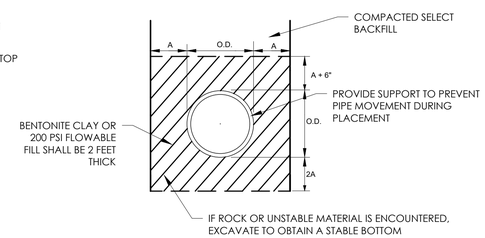
1. SELECT BACKFILL UNLESS DEFINED ON THE PLANS OR IN THE SPECIFICATIONS SHALLMEAN ON-SITE OR IMPORTED BACKFILL MEETING THE REQUIRED SPECIFICATIONS, ASTM 2321 FOR WELL GRADED MATERIALWITH THE ADDED REQUIREMENT OF NO MATERIAL HAVING A DIMENSION EXCEEDING 3 INCHES.

STORM MANHOLE DETAIL

N.T.S.

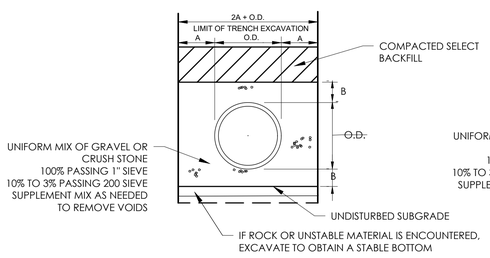


PERFORATED STORM ENCASEMENT

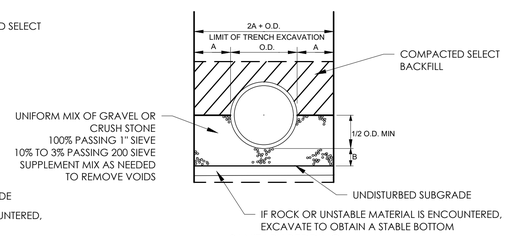


ANTI-SEEPAGE COLLAR

MUST BE PLACED WHEN HOLE IS CLEAN AND DRY AND ALLOWED TO CURE IN SINGLE PLACEMENT.



STORM ENCASEMENT

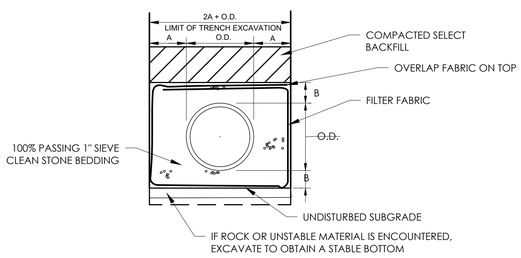


SANITARY BEDDING

MIN.DIMENSIONS FOR PIPE BEDDING		
PIPE DIA. (INCHES)	A (INCHES)	B (INCHES)
Up to 18	12	6
21 to 36	12	9
Over 36	18	12

NOTES:

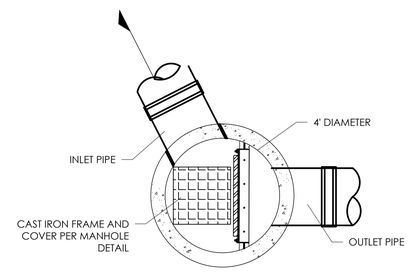
1. SELECT BACKFILL UNLESS DEFINED ON THE PLANS OR IN THE SPECIFICATIONS, SHALL MEAN ON-SITE OR IMPORTED BACKFILL MEETING THE REQUIRED SPECIFICATIONS, ASTM 2321 FOR WELL GRADED MATERIAL WITH THE ADDED REQUIREMENT OF NO MATERIAL HAVING A DIMENSION EXCEEDING 3 INCHES.
2. IF CLEAN STONE BEDDING IS USED THE BEDDING SHALL BE ENCIRCLED WITH FILTER FABRIC TO PREVENT SOILS FROM ENTERING THE VOIDS OF THE STONE.
3. [REVIEW/UPDATE ON PROJECT SPECIFIC BASIS] ANTI-SEEPAGE COLLARS SHALL BE PROVIDED AT PROJECT LIMIT/PROPERTY LINE AND EVERY 1 FOOT ELEVATION DIFFERENCE ALONG SANITARY PIPE AND AT LEAST TWO ALONG STORM OUTLET PIPES THAT ARE PLACED IN DIKES OR BASIN RETAINMENT AREAS.



OPTIONAL STORM AND SANITARY ENCASEMENT WHEN USING CLEAN STONE

PIPE BEDDING DETAILS

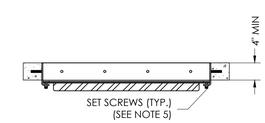
N.T.S



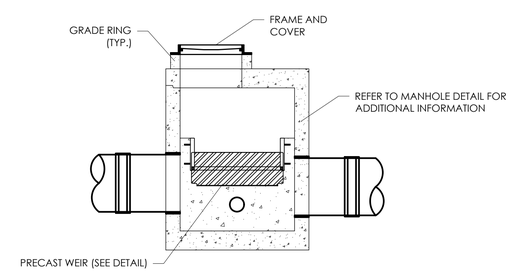
OUTLET STRUCTURE - PLAN VIEW

GENERAL NOTES

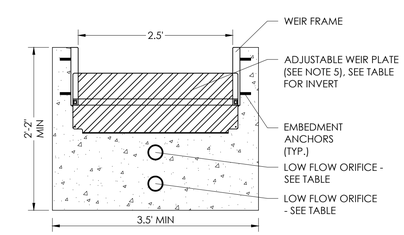
1) STORMGATE BY CONTECH STORMWATER SOLUTIONS; PORTLAND, OR (800) 548-4667; SCARBOROUGH, ME (877) 907-8676; LINTHICUM, MD (866) 740-3318.
2) PRECAST MANHOLE TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478. DETAIL DRAWING REFLECTS DESIGN INTENT ONLY. ACTUAL DIMENSIONS AND CONFIGURATION OF STRUCTURE WILL BE SHOWN ON PRODUCTION SHOP DRAWING.
3) STRUCTURE AND ACCESS COVERS TO MEET AASHTO H-20 LOAD RATING.
4) INLET AND OUTLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR. PRECAST STORMGATE MANHOLE EQUIPPED WITH EITHER CORED OPENINGS OR KNOCKOUTS AT INLET AND OUTLET LOCATIONS.
5) CONTRACTOR TO ADJUST WEIR TO DESIGN ELEVATION SPECIFIED IN DATA TABLE BELOW. DO NOT EXCEED 5.0 FT-LBS TORQUE WHEN TIGHTENING SCREWS ON WEIR FRAME. SEAL WEIR TO FRAME WITH RTV SILICONE SEALANT AFTER FINAL ADJUSTMENT.



WEIR DETAIL - PLAN VIEW



OUTLET STRUCTURE - SECTION VIEW



WEIR DETAIL - SECTION VIEW

	OUTLET STRUCTURE
TOP OF RIM ELEVATION	TBD
LOW FLOW ORIFICE (SIZE/INVERT)	TBD
HIGH FLOW ORIFICE (SIZE/INVERT)	TBD
OUTLET PIPE (SIZE/INVERT)	TBD
WEIR INVERT	TBD

OUTLET STRUCTURE DETAIL

N.T.S.

Issued:	Date:
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Revisions:	Date:
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Seal 1/21/22 Seal

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Exp. Date. November 30, 2023
Firm Reg. No.: 0014815
Exp. Date: December 31, 2023

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Burger King
JSC MANAGEMENT GROUP
ATTN: JAMES CAMMILLERI
BURGER KING FRANCHISEE
585.755.3950

Burger King Store #:
S.B.L. No. 143.06-1-11, 12, & 13
1997, 2003, & 2007 Ridge Road
West Seneca, NY 14224
Erie County (Town of West Seneca)

Project Name & Location:

Details Sheet

Drawing Name:

Date: 04/19/21

Project No. 21-0239

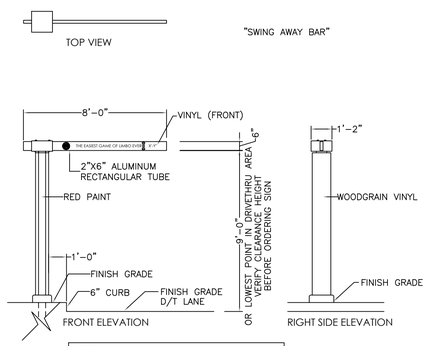
Type:

Drawn By: SAS

Scale: N.T.S.

C7

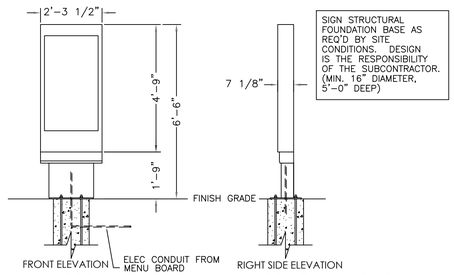
Drawing No.



NOTE:
SIGN STRUCTURAL FOUNDATION AS REQUIRED BY SITE CONDITIONS. DESIGN IS THE RESPONSIBILITY OF THE SUBCONTRACTOR.

DRIVE-THRU CLEARANCE SIGN 2020 STANDARD IMAGE

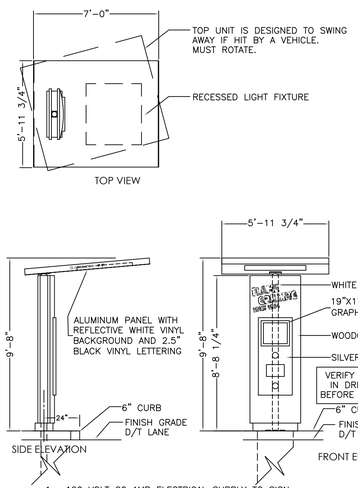
N.T.S. NOVEMBER 1, 2017



SIGN STRUCTURAL FOUNDATION BASE AS REQ'D BY SITE CONDITIONS. DESIGN IS THE RESPONSIBILITY OF THE SUBCONTRACTOR. (MIN. 16" DIAMETER, 5'-0" DEEP)

OPTIONAL PREVIEW BOARD ELEVATIONS

N.T.S.

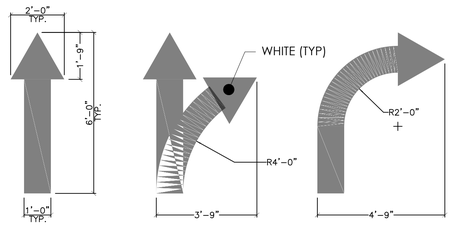


1. 120 VOLT 20 AMP ELECTRICAL SUPPLY TO SIGN
2. DATA CABLE REQUIRED

NOTE:
SIGN STRUCTURAL FOUNDATION AS REQUIRED BY SITE CONDITIONS. DESIGN IS THE RESPONSIBILITY OF THE SUBCONTRACTOR.

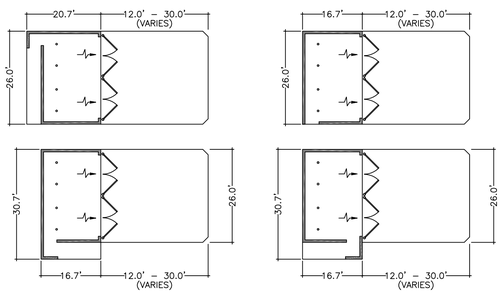
ORDER CONFIRMATION UNIT

N.T.S.

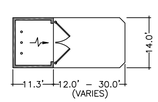


PAINTED TRAFFIC ARROWS

N.T.S.



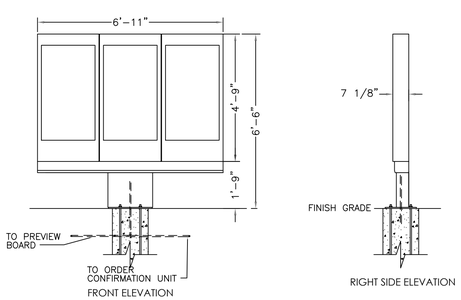
DOUBLE WIDTH CONFIGURATIONS



SINGLE WIDTH CONFIGURATION

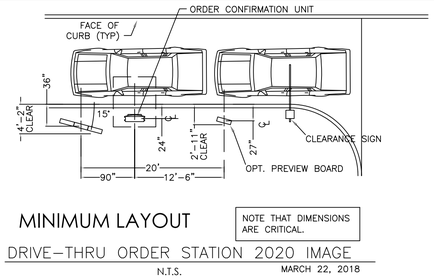
NOTES:

1. REFER TO DETAIL 13 – 3E
2. TRASH ENCLOSURE MUST CONFORM TO ALL BUILDING SETBACKS. (CHECK WITH LOCAL CODES.)
3. FLOOR DRAIN MAY BE REQUIRED (CHECK WITH LOCAL CODES.)
4. SLAB TO SLOPE 0.1' FROM BACK TO FRONT FOR DRAINAGE. IF FLOOR DRAIN IS REQUIRED, SLOPE TO GRATE MIN. 0.1' BELOW PERIMETER OF SLAB.
5. LOCATE PERSONNEL ACCESS (WHEN USED) SO THAT IT IS MOST ACCESSIBLE FROM REAR DOOR OF BUILDING.
6. REVERSES OF THE ABOVE CONFIGURATIONS ARE ALSO ACCEPTABLE.
7. IT IS RECOMMENDED THAT TRASH EN^LOSURE APRONS BE BLA^K



MENUBOARD ELEVATIONS

N.T.S.

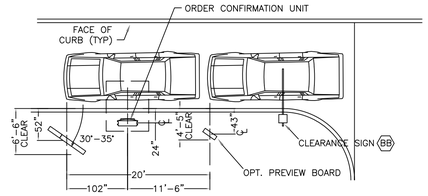


MINIMUM LAYOUT

NOTE THAT DIMENSIONS ARE CRITICAL.

DRIVE-THRU ORDER STATION 2020 IMAGE

N.T.S. MARCH 22, 2018



PREFERRED LAYOUT

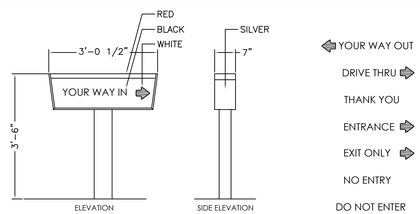
NOTE THAT DIMENSIONS ARE CRITICAL.

NOTE: THE PREFERRED LAYOUT SHOULD BE USED WHENEVER SPACE ALLOWS. 30° ROTATION ANGLE SHOULD BE CONSIDERED OPTIMAL. ANGLES BETWEEN THE PREFERRED LAYOUT AND MINIMUM LAYOUT ARE ACCEPTABLE AS LONG AS:
(1) THE DISTANCES FROM THE CENTERLINES OF THE SUPPORT POLES OF THE MENU BOARD AND PREVIEW BOARD TO THE FACE OF CURB ARE REDUCED BY 4" FOR EVERY 5 DEGREES OF ROTATION, AND:
(2) THE DISTANCE FROM THE CENTERLINE OF THE ORDER CONFIRMATION UNIT AND THE CENTERLINE OF THE MENU BOARD IS REDUCED BY 3" FOR EVERY 5 DEGREES OF ROTATION.

THE CENTERLINE OF MENU BOARD TO CENTERLINE OF PREVIEW BOARD REMAINS AT 20'.

DRIVE-THRU ORDER STATION 2020 IMAGE

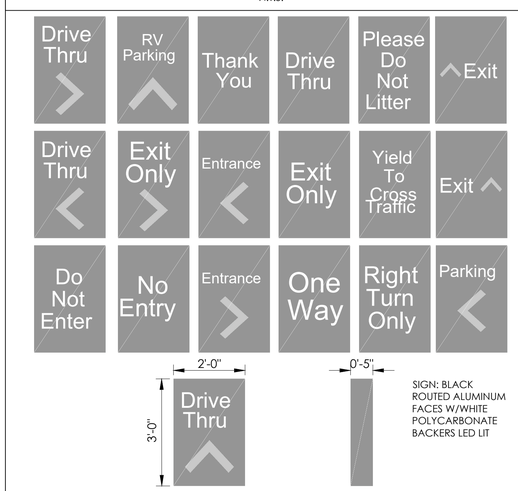
N.T.S.



NOTE:
SIGN STRUCTURAL FOUNDATION AS REQ'D. BY SITE CONDITIONS. DESIGN IS THE RESPONSIBILITY OF THE SUBCONTRACTOR.

DIRECTIONAL SIGN 2020 IMAGE

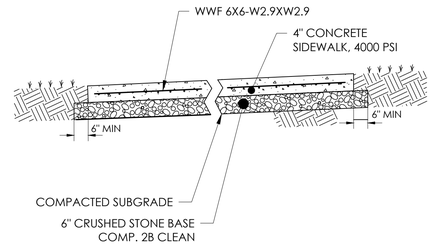
N.T.S.



SIGN: BLACK ROUTED ALUMINUM FACES W/WHITE POLYCARBONATE BACKERS LED LIT

DIRECTIONAL SIGN

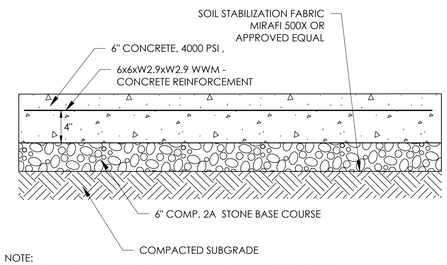
N.T.S



NOTES:
1. SEE SIDEWALK JOINTS DETAIL FOR JOINT SIZE AND SPACING
2. EXPOSED CONCRETE SURFACE TO HAVE LIGHT BROOM FINISH

CONCRETE SIDEWALK DETAIL

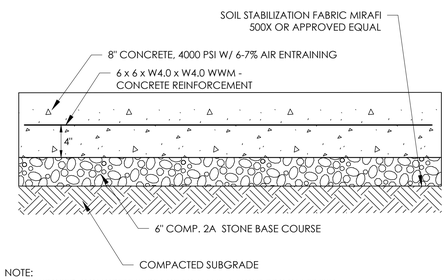
N.T.S.



NOTE:
1. EXPOSED CONCRETE SURFACE TO HAVE A LIGHT BROOM FINISH. CONTRACTION JOINTS 20' ON CENTER MAX., BOTH DIRECTIONS. SAWCUT 1/8 - 1/4" WIDE TO 1/4 THE SLAB DEPTH. STEEL REINFORCING TO BE DISCONTINUOUS THROUGH JOINT.
2. PAVEMENT SECTIONS ARE PROVIDED BASED ON THE GEOTECHNICAL ENGINEERING REPORT PROVIDED BY PENDING.

HEAVY DUTY CONCRETE (DRIVE THRU) DETAIL

N.T.S



NOTE:
1. EXPOSED CONCRETE SURFACE TO HAVE A LIGHT BROOM FINISH. CONTRACTION JOINTS 20' ON CENTER MAX., BOTH DIRECTIONS. SAWCUT 1/8 - 1/4" WIDE TO 1/4 THE SLAB DEPTH. STEEL REINFORCING TO BE DISCONTINUOUS THROUGH JOINT.
2. PAVEMENT SECTIONS ARE PROVIDED BASED ON THE GEOTECHNICAL ENGINEERING REPORT PROVIDED BY PENDING.

DUMPSTER PAD CONCRETE DETAIL

N.T.S

Issued:		Date:
A		
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Revisions:		Date:
1		
2		
3		
4		
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8		

STATE OF NEW YORK · TODD GEORGE MARKEVICZ · 080577 · LICENSED PROFESSIONAL ENGINEER

Seal 1/21/22 Seal

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CIVIL ENGINEER OF RECORD
Name: Todd G. Markevicz
New York License No.: 080577
Exp. Date. November 30, 2023
Firm Reg. No.: 0014815
Exp. Date: December 31, 2023

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Victor, NY 14564
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585.742.2222

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Burger King
JSC MANAGEMENT GROUP
ATTN: JAMES CAMMILLERI
BURGER KING FRANCHISEE
585.755.3950

Burger King Store #:

S.B.L. No. 143.06-1-11, 12, & 13

1997, 2003, & 2007 Ridge Road

West Seneca, NY 14224

Erie County (Town of West Seneca)

Project Name & Location:

Details Sheet

Drawing Name:

Date: 04/19/21

Project No. 21-0239

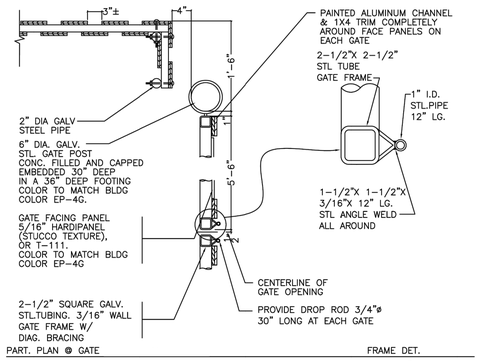
Type:

Drawn By: SAS

Scale: N.T.S.

C8

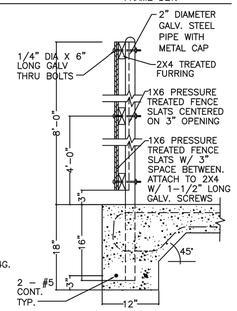
Drawing No.



PART. PLAN @ GATE — FRAME DET.

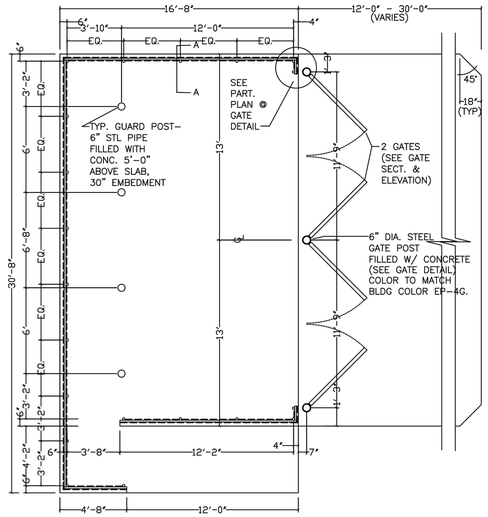
NOTES:

1. 6" CONC. SLAB W/6"X6" W2.9XW2.9 W.W.F.
2. TYP. WALL FTG. 12" X 18" CONT. W/2#5 BOT. REINF.
3. 6" CONC. APRON W/#4 BARS 16" O.C. BOTH WAYS.
4. FOR SLAB FINISHED GRADES, SEE GRADING PLAN.
5. ALL STEEL & ALUMINUM FINISHES ARE TO BE PAINTED TO MATCH BUILDING COLOR EP-4G.
6. ALL PANELS FOR GATES ARE TO BE THRU-BOLTED TO TUBE FRAME WITH 3/8" GALV. BOLTS AND HARDWARE.
7. PRESSURE TREATED FENCE SLATS ARE TO BE PAINTED TO MATCH BUILDING COLOR EP-4G.



SECTION "A-A"

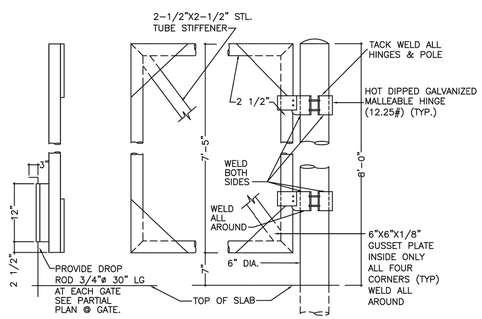
BURGER KING CORPORATION		
SCALE		WOOD TRASH ENCLOSURE
DATE	3/4/04	
REVISED	7/5/16	



WALL PLAN

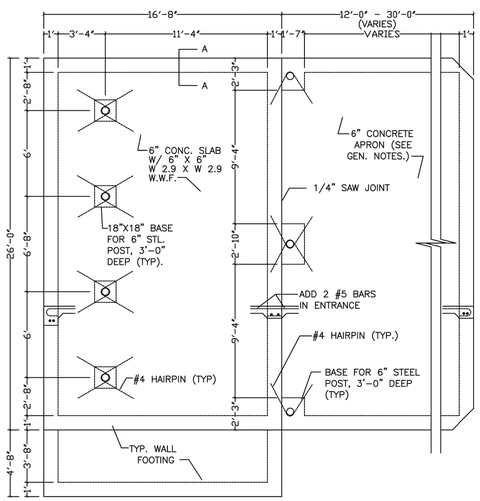
DEPTH OF T/E APRON VARIES DEPENDING ON SITE CONDITIONS.

BURGER KING CORPORATION		
SCALE		WOOD TRASH ENCLOSURE
DATE	3/4/04	
REVISED	7/5/16	



PART. GATE SECTION — GATE ELEV.

BURGER KING CORPORATION		
SCALE		WOOD TRASH ENCLOSURE
DATE	3/4/04	
REVISED	7/5/16	

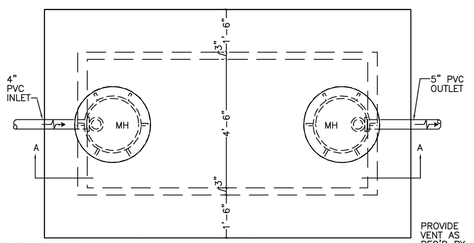


FOUNDATION PLAN 3/16"=1'-0"

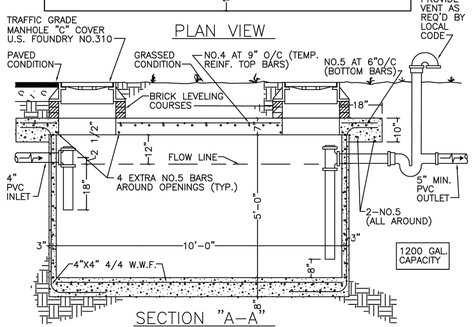
NOTE:
THE CONCRETE TRASH ENCLOSURE APRON SHALL BE 6" THICK OF 3,000 PSI CONC. REINFORCED W/ #4 @16" O.C. EACH WAY. OPTIONAL TO COLOR CONCRETE BLACK USING ADMIXTURE (CHROMIX C-24 CHARCOAL BY SCOFIELD CO., OR EQUAL.)

WOOD TRASH ENCLOSURE — SCALE AS SHOWN — JULY 5,2016 — 13B

BURGER KING CORPORATION		
SCALE		WOOD TRASH ENCLOSURE
DATE	3/4/04	
REVISED	7/5/16	



PLAN VIEW



SECTION "A-A"

NOTES:

1. PRECAST UNITS ARE APPROVED FOR USE PER ABOVE DESIGN AND DIMENSIONS.
2. BITUMASTIC COATING ON BOTTOM AND ALL SIDES (EXTERIOR ONLY).
3. LOCAL STANDARD CODE SHALL APPLY IF REQUIREMENTS EXCEED THIS STANDARD DETAIL.

TYPICAL GREASE INTERCEPTOR — NOT TO SCALE — APRIL 21, 2008 — 23

BURGER KING CORPORATION		
SCALE		TYPICAL GREASE INTERCEPTOR
DATE	7/15/86	
REVISED	4/21/08	

Issued:		Date:
A		
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Revisions:		Date:
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Seal 1/21/22 Seal

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CIVIL ENGINEER OF RECORD
Name: Todd G. Markevicz
New York License No.: 080577
Exp. Date. November 30, 2023
Firm Reg. No.: 0014815
Exp. Date: December 31, 2023

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Burger King Store #:

S.B.L. No. 143.06-1-11, 12, & 13

1997, 2003, & 2007 Ridge Road

West Seneca, NY 14224

Erie County (Town of West Seneca)

Project Name & Location:

Details Sheet

Drawing Name:

Date: 04/19/21

Project No. 21-0239

Type:

Drawn By: SAS

Scale: N.T.S.

Drawing No. C9

THE SPECIFICATIONS ARE NOT PROVIDED AS AN INDICATION OF WORK, BUT PROVIDE REQUIREMENTS AND STANDARDS OF WORK REQUIRED, OR COULD BECOME REQUIRED, DUE TO UNFORESEEN CONDITIONS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH AUTHORITY HAVING JURISDICTIONS REQUIREMENTS. WHEN THESE SPECIFICATIONS ARE IN CONFLICT WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION THE MORE STRINGENT SHALL BE REQUIRED AS DETERMINED BY THE ENGINEER AND AUTHORITY HAVING JURISDICTION.

GENERAL CONSTRUCTION CONDITIONS

1. The term of Owner as used in these specifications and notes shall include the owner of the property, the company or party that hired the Contractor, the company or party that signed the contract for this work, and the agents of each. The Owner's representative shall be the individual or party assigned by the Owner to be the Owner's representative. Owners of adjacent properties shall include the property owner, lessee, legal occupier, and operator of any business on that property.
2. All work and materials shall comply with all local, state, and federal regulations, codes, and O.S.H.A. standards and be constructed to meet or exceed those codes.
3. The Contractor shall be responsible for all temporary permits, connection permits, fees, inspections and record keeping required by all municipal, utility, health, environmental, state, or federal agencies that may have jurisdiction. Furthermore, the Contractor shall be responsible to meet or exceed all requirements of the agencies or authorities having jurisdiction over his work. All conflicts in requirements of different agencies, authorities, and/or the design shall be brought to the attention of the owner' s representative before proceeding.
4. The Contractor shall be responsible to locate and maintain the property and project limits throughout the project. All conflicts between the design and the project/property limits shall be brought to the attention of the owner's representative before proceeding. Unless described in the contract documents or shown on the drawings the Owner has not secured any right of ways, easements or agreements with other property owners or property users. Therefore, it shall be the Contractor's responsibility to secure and maintain any temporary right of ways, easements, permits, or agreements he may need to perform his work. All such agreements shall hold the Owner, Engineer of Record, and his agents harmless and the responsibility of the Contractor to bear all costs. The Contractor shall copy the Owner on releases of all agreements prior to final payment by the Owner to the Contractor. The Contractor shall not interfere with operations of adjacent businesses and work shall be completed off-hours, as necessary. Coordinate with Municipality for any restrictions on allowable working hours.
5. Unless otherwise noted on the drawings or in the contract documents the Contractor shall be responsible for all construction survey, layout, and record drawings for this contract. Any conflicts in survey/layout and the design or agencies requirements shall be brought to the attention of the owner's representative prior to proceeding with the work. The Contractor shall protect and safeguard all existing survey corners, monuments, control and tie-downs. The Contractor shall pay all costs to repair or replace damaged survey monuments, control and tie-downs. Record drawings shall be provided in accordance with any requirements of the authorities having jurisdiction including the required information to be provided, and signatures, seals, and certifications that may be required. **[UPDATE WITH ANY SPECIFIC REQUIREMENTS REGARDING RECORD DRAWINGS AND AS-BUILTS INCLUDING WHO REQUIRES IT, WHAT AND WHEN IT IS REQUIRED]**
6. No changes to the design or materials specified may be made without written authorization by the Engineer of Record or in the case of utilities or road work to be dedicated, the authority receiving dedication. At the end of the contract, the Contractor shall provide to the Owner a record set of drawings reflecting all changes made by the Contractor during construction.
7. Erosion control is necessary whenever sediment, dust, erosion, or contaminated run-off may occur. The Contractor shall be responsible to place and maintain whatever erosion control or run-off protection is required to protect his work, the work of others, the project, adjacent properties and the health and well being of the workers, public and surrounding natural resources. This shall include additional measures beyond the project **SWPPP** and ES plans, as necessary. They shall be familiar with all federal, state and local requirements regarding erosion and run-off control.
8. The Contractor shall be familiar with the project site and all adjacent pedestrian, traffic, and business uses. The Contractor shall take whatever precautions and steps necessary to maintain safety and operation of these uses in accordance with federal, state, county, and local requirements. The Contractor shall be responsible for costs and damages caused from his failure to take proper and adequate precautions. The Contractor shall be familiar with all federal, state, and local requirements regarding these uses.
9. The Contractor shall be responsible for costs and delays associated with weather, groundwater, and other occurrences that could be expected or are common with this type of work. The Contractor shall review all pertinent documents including soils reports, soils borings, and other soil or site data.
10. The Contractor shall be responsible to save and protect his work throughout the contract. Any damages requiring repairs or replacement shall be corrected by the Contractor at his expense.
11. When work is done within a road, utility or private easement, right of way, or other property agreement, the Contractor shall do all work within that area per the authority having jurisdiction.
12. When separate site and building contracts are performed, the site Contractor shall be responsible to bring utilities to within 5 feet of building face unless noted otherwise on drawings or contract documents.
13. All utilities are shown per surface surveys and/or record maps and may vary from actual in-field locations. The Contractor is responsible for all utility stake outs and locating utilities prior to commencing work. Any damage to utilities due to improper stake out, lack of stake out or the failure to verify differences between drawings and actual field conditions will be the responsibility of the Contractor to repair, replace, or pay damages at no expense to the contract.
14. Contractor shall comply to the fullest extent with the latest standards of OSHA directives or any other agency having jurisdiction for excavation and trenching procedures. The Contractor shall use support systems, sloping, benching, and other means of protection. This includes, but is not limited to, access and egress from all excavation and trenching. Contractor is responsible to comply with performance criteria for OSHA. Trench excavation requiring sheeting, shoring or other stabilizing devices shall be designed by a Professional Engineer and meet all O.S.H.A. requirements. All excavations shall maintain safe side slopes in accordance with local, state and O. S. H. A. requirements. No stocking of material close to an open cut or steep slope will be permitted in an effort to prevent cave-ins.
15. The contractor shall select the means and methods for providing support of excavations in accordance with safety requirements, plans, and project specifications. The contractor must evaluate soil conditions during excavations since variations in the soil can occur across the site. The excavations should be monitored continuously for signs of deterioration such as seepage of water or sloughing of soil into the excavation. The contractor is ultimately responsible for excavation safety.
16. The Contractor shall notify the Owner immediately and stop all work in areas where hazardous materials are discovered. When required, the Contractor shall notify the appropriate environmental and health agencies.
17. The Contractor shall coordinate with the Authority having jurisdiction for all required inspections and be responsible to hire any required third party inspectors.
18. For any testing, inspections, and/or certifications requiring a Professional Engineer, the Contractor shall be responsible to hire a third party engineer. A copy of all tests shall be provided to the Engineer of Record.
19. Any discrepancies between plans, details, and specifications shall be immediately brought to the attention of the Engineer of Record.
20. Stabilizing fabric (woven geotextiles), if required, shall meet the following requirements "modulus (load at 10% elongation) =115lb per ASTM D1682-64", "Grab tensile strength 200lb per ASTM D 1682-64", "mullen burst strength = 400psi per ASTM D 3786-87", "trapezoid tear strength when applicable = 115lb per ASTM D1117-80", "coefficient of permeability K CM/SEC = .015 per ASTM D 4491-85", "water flow rate GPM/SF= 60 per ASTM D 4491-85". When stabilization fabric is used it shall be pulled tight and all wrinkles removed. Overlaps shall be in accordance with manufacturer's recommendations. Refer to Geotechnical Engineers report, if available, for additional information.
21. Filter fabric (non-woven geotextile), if required, shall meet the following requirements "grab tensile elongation =50% per ASTM D1682-64", "Grab tensile strength 70lb per ASTM D 1682-64", "mullen burst strength = 200psi per ASTM D 3786-87", "trapezoid tear strength when applicable = 35lb per ASTM D1117- 80", "coefficient of permeability K CM/SEC = .2 per ASTM D 4491-85", "water flow rate GPM/SF= 180 per ASTM D 4491-85". When filter fabric is used it shall be pulled tight and all wrinkles removed. Overlaps shall be in accordance with manufacturer's recommendations.

DEMOLITION

1. The Contractor shall inspect all structures, facilities and areas slated for demolition to gain a full understanding of the work required. The Contractor shall take whatever measures necessary to protect the safety of the public, his employees and agents during the inspections and subsequent work. The Owner, Client, and Engineer of Record are not responsible for the condition of the buildings, facilities, or other areas slated for demolition.
2. All materials not slated for reuse must be disposed of off site in a legal manner. The Contractor may salvage any equipment or materials not designated by the Owner to be saved. All salvaged material or items shall be removed from the site immediately upon removal. No such materials shall be stored on the site. Absolutely no sales of salvaged materials will be allowed on the project site. All salvaged material must be removed, transported, and disposed of in a legal manner.
3. Upon approval by Owner, the Contractor shall be responsible to remove and store safely all materials slated to be saved or reused. The Contractor shall document existing conditions using photographs prior to start of work and notify Owner of any existing damage prior to construction start. The Contractor shall be responsible for all costs to repair or replace existing features to remain (including but not limited to fencing, lighting, curbing, pavement, utilities, storm structures, landscaping, etc.) that are damaged due to his work or failure to protect throughout the duration of his contract.
4. No burning, explosives, or other potentially dangerous methods of demotion will be allowed unless written permission is granted by the Owner and all appropriate permits are granted.
5. The Contractor will provide whatever safety equipment and devices are necessary to protect the adjacent properties, structures and other areas slated to remain. This will also include erosion control, dust control, and settlement.
6. All areas shall be brought back to their original grade or that of the surrounding area, which ever is closer to the final grades of the project for that area. All areas requiring fill shall be compacted to the requirements of the area but in no case less than 90% of modified proctor (ASTM D 1557).
7. All demolition within the proposed building footprint shall be coordinated with the building drawings.
8. Light pole removal shall include complete removal, backfill of concrete base, and capping of any conduit/wiring in to be abandoned in place.

CLEAR AND GRUB

1. Clearing and grubbing shall not commence until erosion control plans, including applicable BMP's, are in place, in accordance with the project **SWPPP**.
2. The Contractor shall review plans and identify and safely mark all plants and trees to be saved. The Contractor shall protect all plants and trees to be saved throughout the contract. This shall include prohibiting any work within the drip line of the tree, except under the supervision of a licensed Landscape Architect.
3. All areas to be cleared and grubbed shall be surveyed in the field to establish the appropriate limits of work.
4. The Contractor shall take whatever measures necessary to locate and protect existing utilities, structures, wetlands, and other facilities to remain.
5. All trees, shrubs, stumps, roots, and other debris shall be removed from site and disposed of in a legal manner.
6. No burning will be allowed on site.

PAVEMENT AND STRUCTURAL SUBBASE

1. The type of subbase required for each use shall be called out on the drawings. If no reference is made on the drawings or details to the type of subbase required the following shall be used:
   - 1.a. The source of the material shall be one approved for use by the State Department of Transportation.
   - 1.b. The material shall be a crushed stone conforming to AASHTO M 147-65 (1980 or latest revision), grade A.
   - 1.c. Gravel or other materials can only be substituted for crushed stone when approved in writing by the Owner and Engineer of Record.
   - 1.d. Material supplied for use as subbase shall have 100% passing the 2 inch sieve, 30% to 65% passing the 3/8 inch sieve, 25% to 55% passing the No. 4 sieve, 15% to 40% passing the No. 40 sieve and 2% to 10% passing the No. 200 sieve.
2. Subbase shall be placed in lifts not to exceed 8 inches and compacted to the requirements stated in the soils report. If not stated, the compaction requirement shall be 95% of maximum dry density per ASTM D1557 (modified proctor).
3. The Contractor will be responsible for all costs in preparing the subgrade to receive subbase. This shall include fine grading and compacting as necessary to meet the requirements stated here and under Earthwork.
4. The amount of testing required to verify the compaction shall be the same as stated under Earthwork.
5. Refer to General Construction Conditions for filter fabric requirements, if applicable.

EARTHWORK

1. Earthwork shall not commence until erosion control plans, including applicable BMP's, are in place, in accordance with the project **SWPPP**.
2. Refer to Project Geotechnical Report for full project recommendations. Where Geotechnical Report is not clear or does not give requirements, the following may be used.
3. Prior to starting any cuts or fills the Contractor shall strip and stockpile all topsoil. Stripping of topsoil can only commence after the clear and grub operations are complete and all erosion control devices are in place in that area. Topsoil shall be stockpiled in areas designated on the plans or approved by the owner's representative. The Contractor shall review the soils reports, boring logs, and, when necessary, his own field verification so as to be familiar with the depth of topsoil. The Contractor shall take all reasonable precautions to prevent over and under removal.
4. Unless otherwise noted, the grades shown on the plans are finished grades. Therefore, pavement, floors, subbase, and other improvements must be subtracted to calculate subgrade elevations.
5. The Contractor shall maintain a survey grid of not less than 100' x 100' or other means acceptable to the Owner's representative that will indicate location and amount of cut or fills remaining. At subgrade this grid shall be 50' x 50' with location and final grade marked clearly or survey shall be completed demonstrating that the subgrade is +/- 0.1 feet of required subgrade.
6. Unless otherwise noted on the drawings or in the contract documents, the Contractor shall retain and pay all cost for soil compaction testing to be performed by an independent testing laboratory. For each lift placed, compaction testing shall be done every 2000 sq. ft. In trenches, compaction testing shall be done every other lift with at least 1 test every 50 LF.
7. Structural fill placed 2 feet or deeper below the finished subgrade elevation or finished grade of graded areas shall have a maximum particle size of 6 inches. Structural fill placed within the upper 2 feet of proposed subgrade or finished grade of graded areas shall have a maximum particle size of 3 inches.
8. Compaction requirements shall be those outlined in the soils report, if provided. If the soils report is not clear or does not give requirements, the following will be used:
   - 8.a. Under and to 20 feet outside the building envelope the soils shall be compacted to a minimum of 95% maximum dry density per ASTM D 1557 (modified proctor).
   - 8.b. Under proposed or future pavement areas, including 10 feet outside such areas, the soil shall be compacted to a minimum of 93% maximum dry density per ASTM D 1557 (modified proctor).
   - 8.c. All landscape and lawn areas shall be compacted to 90% maximum dry density per ASTM D 1557 (modified proctor).
   - 8.d. The testing lab shall test soils in accordance with ASTM D 2922 (nuclear method) with proctors for each soil type.
   - 8.e. Constructed berms shall be compacted to 95% maximum dry density per ASTM D1557.
9. All material to be used for fill shall be free of organics, frozen material, contaminated material, debris, and any rocks larger than 4 inches. For fill placement within 1 foot of subgrade, no rock shall be greater than 2 inches in diameter. The Contractor shall bear all cost associated with drying, segregating, or required methods to treat soils to meet compaction and other requirements.
10. All fill placed within berms that detain/retain water shall be a minimum of 20 percent by weight of material passing the No. 200 sieve, and a maximum particle size of 6 inches. The limit of the berm areas shall include both the upstream and downstream slopes **[UPDATE AS NECESSARY –** down to an elevation equal to the bottom of the planting soil media (excluding this planting soil media area)]. Any on-site cut areas could be utilized as fill material for the berm, as long as all construction requirements and specifications were met (placement, compaction, gradation, permeability, etc.). Inclusion of vegetation, organic material, or frozen soil in the embankment, as well as placing of embankment material on a frozen surface is prohibited. Bedding material for all pipes and conduits within berm area shall be placed in layers not thicker than 4 inches before compaction with particle size limited to 3 inches in the greatest dimension, and compacted to required density of fill material for berm. Anti-seep collars are required for all pipes/utilities within the berm area.
11. The Contractor shall take all necessary precautions to protect earthwork operations from weather and ground water including keeping positive drainage, divert drainage, dewatering, and sealing disturbed areas with a steel drum roller prior to inclement weather.
12. If imported material is required, the source and a random composite sample shall be reviewed by the testing laboratory prior to being brought to site. The testing laboratory shall test for percent passing the 200 sieve that does not exceed the existing on site material or in no case greater than 10%. They shall also verify consistency with existing on site materials and all other requirements. Waivers to these requirements can only be given jointly by Engineer of Record and the Geotechnical Engineer that prepared the soils report.
13. The testing lab may restrict some on site materials from being used as fill in building or pavement areas when it is their opinion that the material will not meet requirements stated here. If such conditions do exist and other material is not available on site, the owner's representative must authorize in writing the use of import material unless there will be no additional cost to the contract.
14. Fills shall be placed in lifts not to exceed 8 inches in mass fills and 6 inches in trench or restricted areas. All subgrades shall be thoroughly proofrolled using a smooth drum roller with a minimum static drum weight of 20 tons, operated in static mode. A minimum of 2 overlapping passes in one direction, followed by 2 overlapping passes in a direction perpendicular to the first 2 passes. Areas which are unsuitable and which cannot be stabilized with repeated compactive effort shall be overexcavated to a suitable subgrade. The undercut should be of adequate depth such that, after backfilling is complete the resulting subgrade surface is firm and stable under proofrolling. Onsite structural fill may be used to attain proposed subgrade elevation to replace the removed unsuitable material. If imported structural fill, base, or subbase course materials are used to backfill the undercuts within the building or pavement areas, a woven geotextile should be placed at the bottom of the undercut area prior to placement of the fill.
15. Contractor is to remove any debris or surficial organic soils (ie. topsoil, organic subsoil, reworked soil) which may be encountered within the proposed building footprint, floor slabs, and pavement areas prior to the placement of any fill.
16. All final subgrade under proposed pavement, building, or other structure shall be proof rolled as described above for the identifying of soft areas. Areas found to be unacceptable shall be scarified, dried, and re- compacted. Retest by proof roll as necessary.
17. All fill material is to be in place and compacted prior to installation of proposed utilities. Refer to pipe bedding details for trench dimensions. Additional width will only be allowed when compaction equipment limitations require and only after approval of the Engineer of Record. No more trench shall be open in one day than can be properly backfilled in that same day to minimize weather and safety concerns. When backfilling around pipes, provide uniform support at invert and proper compaction under, along, and over the pipe. Care shall be given while backfilling around pipes to prevent damage to the pipes including: placing backfill/bedding by hand, using hand operated plate tamps or jumping jacks, and other load restrictive techniques until fills are a minimum of 2 feet or manufactures recommend depth, which ever is greater, above the top of the pipe. Compaction requirements are not relieved in these areas and will remain as stated on the drawings or above. If clean stone is used as a bedding or encasement, filter fabric shall be placed between the natural soils and backfill and the stone to prevent migration of fines. Anti-seep collars shall be provided in accordance with the details. The Contractor is cautioned against the migration of fines from soils adjacent to voids. Where such conditions exist the Contractor shall install or wrap those areas with filter fabric to prevents fines from migrating into voids.
18. If rock is encountered that was not indicated on the plans or soils report, the area for removal should be measured and reviewed with the owner's representative prior to rock removal. Rock will be defined as the natural earth materials that can not be removed with conventional earth working equipment.
19. Where rock is adjacent to a structure or utility, the rock shall be removed to a minimum of 6 inches below and 1 times the diameter, but not less than 1 foot or greater than 3 feet on any side.
20. No explosives will be allowed until all permits are granted and the Owner has signed off. Pre and post blast reports must be kept and recorded. All structures within the area of the blast must receive a pre- blast survey. All blasting must be performed by a licensed blaster.
21. Unless otherwise noted on the drawings, the Contractor shall remove all excess topsoil, cut material, or waste material from site and dispose of in a legal manner.
22. **[NY REQT, UPDATE AS NECESSARY] Full soil restoration deep ripping and de-compaction is required in all areas of cut and fill. Refer to SWPPP for complete requirements.**

TRAFFIC, SIGNAGE AND PAVEMENT MARKINGS

1. Pavement markings shall be the type, color, size, and locations shown on the plans. Contractor shall provide two (2) coats of paint for all pavement markings. If the information on the plans and details is not complete and the authority having jurisdiction does not have requirements regarding this, use the following:
   - 1.a. Paint shall be supplied in accordance with AASHTO: M 248 latest addition.
   - 1.b. Colors shall be as follows:
     - 1.b.1. YELLOW- parking stalls, parking islands, and fire lanes
     - 1.b.2. WHITE – stop bars and lettering, pedestrian crossings, handicap parking symbol and characters, and traffic control lettering and characters
     - 1.b.3. BLUE – background of handicap parking symbol
2. The pavement shall be clean and free of dirt, dust, moisture, oils, and other foreign materials. Any old pavement markings shall be removed unless paints are compatible and overlay identically. The surface of the pavement prior to application shall be 45 degrees F and rising unless manufacturer's recommendations are greater. All painting shall be applied in appropriate weather conditions (e.g. temperature, wind, precipitation), and in accordance with manufacturer's recommendations.
3. The signage and pavement markings shall be the type and at the general location shown on the drawings. The signage and pavement markings shall be provided and located in accordance with the Local Highway, County Highway, and State Department of Transportation. If local, county or state codes do not exist use MUTCD.
4. Posts, brackets, and frames shall be steel per ASTM A-36, A-242, A-441, A-572, A588, Grade 50, and hot dip galvanized in accordance with ASTM A123. All cutting, drilling, or other pole modifications shall be painted with galvanizing paint. All bolts, nuts, and washers shall be stainless steel.
5. Post holes in pavement shall be a minimum of four feet deep and 12 inches in diameter unless poor soils or frost conditions require greater depth. Sign posts shall be kept plumb, 6 inches off bottom and centered as 4000 psi concrete is placed around the post. The overall sign and post system should be able to withstand 33 pounds per square foot.
6. Contractor can place signs on posts after concrete has cured for seven days or 3/4 strength is achieved.
7. All handicap striping and signage, including spaces, crosswalk, accessible path, and curb ramps, shall meet Americans with Disabilities Act (ADA) requirements. Fire lane striping and signage shall meet the requirements of the local building inspector and fire department.

SITE CONCRETE - INCLUDING CURB, SIDEWALKS AND GUTTERS

1. The dimensions shall be those shown on the drawings. The Concrete mix shall be 4000 psi at 28 days made with type I or type II cement per ASTM C 150 and aggregates meeting State Department of Transportation requirements, unless otherwise noted. Slump for slip forming shall be 1 inch +/- 1/2 inch and for formed concrete the slump shall be 3 inch +/- 1 inch. Air entraining mixture shall meet the requirements of ASTM C 260 4% +/- 1 1/2% for slip form work and 6% +/- 1 1/2% for formed and placed concrete. Water reducing agent shall conform to ASTM C 494, type A. Curing compounds shall conform with ASTM C309, type I, class A moisture loss of not more than .055 gr/sq cm when applied at 200 sq ft per gallon.
2. Sidewalks, gutters and curbs shall be placed on compacted subbase consistent with the pavement subbase as shown on the drawings. When subbase details are missing and no agency has jurisdiction use the following: sidewalks and gutters shall be placed on a minimum of 6 inches of compacted subbase and curbs shall be placed on a minimum of 4 inches of compacted subbase.
3. All forming, placement, materials and curing shall conform to the latest addition of ACI 318 "Building code requirements for reinforced concrete" and all similar State Department of Transportation requirements.
4. Reinforcing shall be in accordance with that specified on the drawings and the Concrete Reinforcing Steel Institute (CRSI) "manual of standard practices". Reinforcing steel shall be ASTM A 615, grade 60, deformed. Welded wire fabric shall be ASTM A 185, welded wire steel fabric.
5. Sidewalks, and gutters shall have a broom finish perpendicular to flow with a picture frame edge joint all the way around. Curbs shall have a smooth finish or light rub finish but consistent throughout the project.
6. Expansion joints shall be placed as per details and at adjoining structures such as walls, manholes and vaults. Expansion joint material shall be premolded, 1/2 inch material with 23/64 inch cap in accordance with ASTM D1751. After concrete has set the cap should be removed and void filled with waterproof joint filler. Curb and gutter shall be cut or tool jointed to 1/3 the depth every 10 feet. Sidewalks should have tooled or cut joints to 1/3 the depth in squares or as close to square as possible not exceeding 5ft x5ft.
7. **ADD INFO ON TESTING/CYLINDERS, TEMPERATURE REQUIREMENTS, ETC.**

WATER SYSTEMS AND SERVICES

1. The water systems and services shall be supplied and placed in accordance with all local, state and federal requirements. When the requirements of the authority having jurisdiction differ from those shown on this plan, Contractor shall adhere to the more stringent standards.
2. Refer to Pipe Bedding Detail for pipe bedding requirements.
3. All water piping, fittings and appurtenances shall be placed a minimum of 6 inches below frostline or with a minimum 5 feet of cover, whichever is greater. Pipe sizes 4 inches and up shall be ductile iron or polyvinyl chloride as indicated on the drawings (if not shown use ductile iron). Pipe sizes below 4 inches shall be copper or polyethylene as indicated on the drawings (if not shown use copper). **[Monroe County Water Authority requires 5 feet of cover in lawn and 6 feet of cover in paved areas.]**
4. The minimum separation between water services and sewer lines shall be 18 inches measured vertically from outside to outside of pipe at the crossing. A standard length of water pipe shall be centered at the crossing to maximize the distance between the crossing and the nearest water service pipe joint. The sanitary line shall be ductile iron pipe with mechanical joints at least 10 feet on both sides of crossing, the waterline shall have mechanical joints with appropriate thrust blocking as required to provide a minimum of 18" clearance meeting requirements of ANSI A21.10 or ANSI 21.11 (AWWA C-151) (Class 50). Contractor shall adjust elevation of water as needed to maintain adequate separation and burial depth. When the water service runs under the sewer line, a gravel or crushed stone backfill meeting the requirements of subbase shall be placed and compacted around the water pipe up half the diameter of the sewer pipe to provide adequate support to the sewer line. Ductile iron pipe shall be provided in accordance with AWWA C151, (6 inch diameter and greater shall be Class 50 and 6 inches and smaller shall be Class 51). Ductile iron pipe shall be lined with a cement mortar and seal coated in accordance with AWWA C104. Gaskets shall be provided in accordance with AWWA C111. Fittings shall be ductile iron in accordance with AWWA C153 compact fittings with a pressure rating of 350 psi. Water services and sewer lines running parallel shall have a minimum separation of 10 feet measured from outside of pipe to outside of pipe.At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible. Special structural support for the water and sewer pipes may be required.
5. All pipes shall be installed per manufacturer's recommendations. Ten gauge copper tracer wire shall be placed with all plastic pipe. Pipe material shall be as follows:
   - 5.a. PVC (Polyvinyl Chloride) pipe shall be furnished in accordance with AWWA C900 for pipe 4 inches or greater and ASTM D 1785, schedule 40, gaskets per ASTM F 477- elastomeric seal, solvent cement per ASTM D 2564 for pipes smaller than 4 inches.
   - 5.b. PE (Polyethylene) pipe shall be furnished in accordance with AWWA C901 and ASTM D2737. Ten gauge copper tracer wire will be placed with all plastic pipes.
   - 5.c. DIP (Ductile iron pipe) shall be provided and installed in accordance with AWWA C151 and C600 (6 inches and greater shall be Class 50, smaller than 6 inches shall be Class 51). Ductile iron pipe shall be lined with a cement mortar and seal coated in accordance with AWWA C104. Gaskets shall be provided in accordance with AWWA C111. Fittings shall be ductile iron in accordance with AWWA C153 compact fittings with a pressure rating of 350 psi. Standard ductile iron or cast iron fittings shall be supplied in accordance with AWWA C110 with a pressure rating of 250 psi. The lining and gaskets for the fitting shall meet the same requirements as the pipe. If recommended in the soils report, ductile iron pipes shall be encased in polyethylene in accordance with AWWA C105 and tar coat all fitting bolts whenever soils are primarily clay or not pH balanced.
   - 5.d. Copper water pipe shall be supplied in accordance with ASTM B 88- type K, seamless with fittings per AWWA C800.
6. Gate Valves shall be nonrising stem, double disc, bronze disc Resilient seated, cast iron or ductile iron body and bonnet in accordance with AWWA C509 and pressure rated for 250 psi. Ten gauge copper tracer wire will be placed with all pipes.
7. Valve box shall be cast iron with a base compatible with valve, 5 inches in diameter, screw type extension at top and a cover that reads "WATER".
8. All tap and/or connection material and work shall be done in accordance with and coordinated with the local Water Authority and Health Department. When the Authority so requires, the taps and/or connections shall be done by the Authority themselves and paid for by the Contractor.
9. Thrust restraints shall be used at all fittings, plugs and appurtenances that cause a change in direction, flow or are subject to thrust or hammering by water flow. Thrust restraints will include concrete thrust blocks (3000 psi), anchoring joints and tie rods. Concrete thrust blocks shall be used unless space, access or maintenance restraints prohibit their use.
10. Curb stops shall have a bronze body, ground key plug or ball with wide tee head. The curb stop shall be compatible with adjoining pipes. The service box shall have a telescoping top section with a length that will place the adjustment centered when buried to the appropriate depth. The service box shall be of a size and type that is compatible with the curb stop. The cover shall have the lettering "WATER".
11. All meters, vaults and backflow shall meet the requirements of the health department and other agencies having jurisdiction.
12. Fire hydrants shall conform to the requirements of the local water authority, fire department and AWWA C502. Drain stone shall have 100% passing the 1 1/2 inch sieve, 90 – 100% passing the 1 inch sieve, 35 – 95% passing the 1/2 inch sieve and 0 – 15% passing the 3/8 inch sieve. All hydrants will include a gate valve and box located at the hydrant branch to shut off the hydrant line.
13. All bedding and encasements shall be compacted with care to achieve proper compaction without damaging the pipe, fittings, or appurtenances.
14. If clean stone is required by the local authority having jusidiction and is approved by Owner and/or Engineer of Record, then the bedding material shall be wrapped in filter fabric and anti-seep collars shall be provided to prevent the migration of fines.
15. All water mains fittings and valves shall be tested for pressure and leakage in accordance with AWWA C600. Test water shall be potable. Test pressures shall not be less than 1.25 times the working pressure at the highest point and 1.5 times the working pressure at the testing point. The pressure may not drop more than 5 psi during the 2 hour test. Leakage will not exceed more than (L=SD(P)1/2 /133,200) where "L = allowable leakage, in gallons per hour" "S= length of pipe tested, in feet" " D= nominal diameter of pipe, in inches" "P= average test pressure during test, in pounds per square inch (gauge) during the same 2 hour duration.
16. Other fitting and appurtenances not part of the main line testing shall be tested by visual inspection for leakage under normal working pressures.
17. All main lines and appropriate appurtenances shall be flushed and disinfected in accordance with AWWA C651 and the requirements of the appropriate health department.
18. The Contractor will coordinate all testing and disinfecting with the water authority and health department.
19. Any testing failure shall require the Contractor to repair or replace the failed section at no additional expense to the contract.

STORM WATER SYSTEM

1. The storm water system shall be supplied and placed in accordance with all local, state and federal requirements.
2. Storm design includes many variables, such as pipe roughness coefficient, that can affect the actual final run-off. If no alternative materials are listed on the utility drawings, no substitutions may be made by the Contractor unless first reviewed and accepted by the Engineer of Record.
3. Refer to Pipe Bedding Detail for pipe bedding and anti-seep collar requirements.
4. Storm pipe material shall be as follows:
   - 4.a. 12 inches and up shall be corrugated polyethylene pipe (CPP) with smooth interior, in accordance with AASHTO M252 & M294 and ASTM F405 & F667, with a manning friction number (n) of 0.013 or less. Install in accordance with ASTM F449 and the manufacturer's recommendations.
   - 4.b. Smaller than 12 inches shall be CPP, as per requirements above, or Polyvinyl Chloride (PVC) per ASTM D 3034, SDR 35 with gaskets per ASTM D 3212, elastomeric seal.
5. End sections shall be the same material as the preceding pipe and appropriate collar.
6. Increase size of manhole if in the same horizontal plane there is two areas where the area between two pipes is less than 8 inches or ½ of the circumference is supported by less than ½ of the diameter of the manhole. Inverts shall be smooth cast in place concrete. Gaskets between risers shall be rubber per ASTM C 443. Adjustment rings shall be precast concrete 4000 psi and 5 to 8% air entrainment.
7. Inlets shall meet the same requirements as those listed for manholes, except sumps shall be provided as per details, rather than a smooth invert.
8. Grates shall be galvanized per ASTM A123. Minimum grate opening size will be 24 inches x 24 inches and design for a minimum of H-20 loading. Refer to details for additional information.
9. Dry wells shall meet the same requirements as those listed for manholes with the addition of openings of approximately 15% of the rings interior surface. The openings shall be 1 x 3 inch slots or 1 inch diameter on the inside surface. Dry wells shall be backfilled with a minimum of 1 foot of clean stone sized between 3 and 4 inches. Outside the stone, the entire structure shall be wrapped in filter fabric to prevent outside soils from entering the stone and dry well.
10. Unless otherwise noted, underdrains and trench drains shall be made with 4 inch perforated corrugated polyethylene pipe encased in clean stone sized between 2 inch and ¼ inch and then wrapped in filter fabric. Outside dimensions of the trench drain will not be less than 1 foot.
11. All storm pipe entering structures shall be grouted to ensure connection at structure is watertight and structurally sound. All storm sewer pipes entering and exiting structures shall be flush with the inside of the structure wall.
12. All pipe shall be placed in accordance with the manufacturer's recommendation and to the lines and grades shown on the drawings. Care shall be given during backfill operations not to move or damage pipe or appurtenances while achieving the appropriate compaction requirements.
13. All systems shall be visually inspected for alignment and workmanship. All debris, dirt or other foreign objects shall be removed from system by a method of than flushing and material removed shall be disposed of properly.
14. Any pipes found with diameter deflections greater than 5% of the specified pipe diameter will be repaired or replaced. Any alignment differentials greater than 5% of the diameter of the pipe will be corrected or replaced.
15. Any cleaning, repairs, or replacement required due to failure of testing or poor workmanship shall be done by the Contractor at no additional expense to the contract.

ASPHALT PAVEMENT

1. Asphalt shall be the type or types specified on the drawings. If no type is indicated the Contractor shall use a mix specified by the State Department of Transportation for top and binder. **In New York State that would be type Asphalt Concrete Binder Course Type 19 and Asphalt Concrete Surface Course Type 12.5.** All asphalt shall be produced in state approved plants with state approved products.
2. Asphalt will only be placed when the outside temperature is 45 degrees F and rising. Asphalt will never be placed on frozen material, during medium or heavy precipitation or when preceding precipitation has saturated the subbase and/or subgrade.
3. Surfaces that will abut the new asphalt shall be tack coated prior placement of asphalt including curbs, gutter, existing asphalt and structures. Tack coat shall be applied neatly to match the lines and grades of the proposed abutting asphalt at a rate of .05 to .15 gallons per square yard.
4. When binder is used as a working surface during construction, or there is a prolonged time period between binder and top placement, the surface must be power washed, not just swept, and a tack coat should be applied prior to installation of top course. In addition, any yielding area of pavement binder should be removed and replaced prior to application of the top course.
5. Asphalt shall be placed in layers equal to those specified on the plans. Thickness of each layer or the thickness of all layers combined shall not vary more than 1/4 inch for thickness of 0 to 4 inches and 1/2 inch for thickness of 4 inches or greater, from those specified on the drawings. The asphalt shall also be tested for smoothness by laying a 16 foot straight edge on the pavement and verifying that there are no gaps greater than 1/4" in any direction.
6. Placement and compaction requirements shall be the same as those specified by the State Department of Transportation of which the project is located. The rolling shall be done in such a manner that will match joints and leave a smooth uniform surface while providing the proper compaction which will be 95% of laboratory density.
7. When matching into existing pavement, all match joints shall be saw cut to provide a straight smooth joint. The asphalt depth at the match point shall be equal to that of the proposed or existing which ever is greater.
8. Paving equipment shall be of good condition and quality. Asphalt shall be placed by mechanical equipment except in small areas that are inaccessible to a paver. The binder joints and the top joints shall be offset. The top course shall be placed parallel to the direction of travel. Asphalt shall be transported in covered trucks and scheduled in such a manner that will maintain asphalt temperature. Asphalt shall be rejected when temperatures fall below 250 degrees F or the minimum temperatures specified by the State Department of Transportation.
9. All sub-base, asphalt, curb or other work performed in a State, County or Municipal right-of-way shall be furnished, installed, inspected and completed in accordance with their specifications, details and other requirements.
10. **ADD INFO FOR TESTING OF PAVEMENT INCLUDING CORE THICKNESS, DENSITY, GRADATION, PAVEMENT MIX, ETC.**

SEEDING AND LANDSCAPING

1. Topsoil shall be removed from stockpiles and spread in the areas shown on the plans. The depth of topsoil shall be a minimum of 4 inches in lawn areas and a minimum of 12 inches in landscape planting areas. If enough topsoil is not available onsite, the Contractor is required to import as necessary. All disturbed lawn areas are to receive topsoil, seed, mulching, and water until a healthy stand of grass is established.
2. Topsoil shall consist of fertile, natural agricultural soil substantially free of subsoil, stumps, roots, brush, stone, clay lumps, or similar objects larger than 2 inches in the greatest diameter. Topsoil for reuse shall be screened if required to meet size and debris removal. Topsoil shall be approved by the owner at its source prior to transporting. The topsoil shall be fine graded to the lines and grades shown on the plans. The Contractor is responsible for keeping topsoil, seed, fertilizer, etc. off structures, pavements, and other site amenities; and will clean up unwanted deposits, at his expense.
3. Mow all areas to be cleared & seeded to 6" height maximum prior to beginning any new lawn work.
4. Loosen and till subgrade of lawn areas to a minimum depth of four inches. remove stones measuring 1.5 inches in any dimension. remove sticks, sod, rubbish, and other extraneous matter. Limit preparation to areas which will be planted promptly after preparation.
5. Preparation of unchanged grades: where lawns are to be planted in areas that have not been altered of disturbed by excavating, grading, or stripping operations, prepare soil for lawn planting as follows: till to a depth of six inches. apply soil amendments and initial fertilizers as specified. till soil to a homogenous mixture and fine texture and complete fine grading.
6. Clean all new lawn areas to be seeded of all debris, branches, stumps, brush, logs, metal, sticks, stones, etc. larger than two inches in diameter.
7. Roll, rake, and/or drag lawn areas to remove ridges and fill depressions to meet finish grades and to create a smooth, mowable lawn surface.
8. Lime: natural dolomitic limestone containing at least 85% of total carbonates, and 30% magnesium carbonates; ground so that at least 90% passes a ten mesh sieve, and at least 50% passes a 100 mesh sieve.
9. The topsoil shall have a pH of 6.0 to 6.8 and an organic content of 3 to 20%. The gradation of the topsoil shall be 100% passing 2 inch sieve, 85 to 100% passing the 1 inch sieve, 65 to 100% passing the 1/4 inch sieve and 20 to 80% passing the No. 200 sieve.
10. Lawn fertilizer shall be 55% nitrogen, 10% phosphorus and 10% potash where 50% of the nitrogen is derived from ureaform source. Work into soil at a rate of 100 lbs per acre before seeding.
11. Lawn seed shall be "50% by weight, 85% purity, 85% germination of Pennfine Perennial Rye", "30% by weight, 97% purity, 85% germination of Pennlawn Red Fescue", "20% by weight, 85% purity, 80% germination of Common Kentucky Bluegrass" at a rate of 200 lbs per acre. Mulch all seeded areas with approved straw at rate of 4000 lbs per acre. Maintain mulch as necessary and clean up upon satisfactory germination.
12. Steep slope mix (Type B unmowed – 1V:3H or steeper **[UPDATE FOR PA WHEN USING SOIL AMENDMENT TO A 30% MAX SLOPE, ALSO THINK ABOUT MOWABLE VS NON-MOWABLE FOR SITE: BERM BY THE ROAD WE MAY WANT LAWN SEED INSTEAD OF STEEP SLOPE]**) apply at a rate of 100 lbs. per acre using the following proportions by weight: 15% Creeping Red Fescue, 35% Chemung Crownvetch, 25% Kentucky 31 Tall Fescue, and 25% Empire Birdsfoot Trefoil.
13. Hydroseeding shall be applied in accordance with the following; fertilizer shall be placed at 80 pounds per acre, hydromulch at 1,200 pounds per acre, water at 500 gallons per acre, and seed at a minimum of 220 pounds per acre. Inoculate at 4x manufacturer's rate. A non-harmful color additive which colors the hydroseed mixture green shall be added to the mixture to allow visual metering of its application. The hydroseed mixture shall be sprayed upgrade and uniformly on the surface of the soil to form an absorbent cover, allowing percolation of water to the underlying soil.
14. The Contractor will be responsible to water, reseed, or any other means necessary to ensure the growth of the lawn until a complete and uniform stand of grass has grown and been cut at least three times. Water by approved means immediately after mulching and thereafter a minimum of two times each week, or more when weather conditions require to a depth of one inch soil saturation. Mow all seeded areas to two inch height until final acceptance. In the event grass becomes too long, resulting in excessive clippings that could damage the lawn, the contractor shall remove all clippings at his expense. Lawn shall be presented to Owner in a condition that it may be maintained with standard mowing equipment.
15. Where substantial lawn remains (but is thin), mow, rake, aerate (if compacted), fill low spots, remove bumps, and scarify soil, fertilize, and seed. Remove weeds before seeding, if extensive. Apply selective chemical weed killers as required. Apply mulch if required to maintain moist condition.
16. Plantings shall be supplied in accordance with the plans and ANSI 260.1 "American Standard for Nursery Stock" in good health, vigorous, and free of insects, larvae, eggs, defects and disease.
17. Plants shall be located per the plans. The holes shall be excavated per the details on the drawings with the center slightly higher to promote drainage. Use a topsoil backfill mix of 4 parts topsoil, 1 part peat moss, 1/2 part well rotted manure, 2 pounds 5-10-5 planting fertilizer properly mixed per cubic yard. Berm around plants to form a bowl shape.
18. Two layers of weed barrier made from fiberglass and ultraviolet light resistant shall be placed under all planting beds prior to mulching.
19. All trees and shrubs shall be staked as detailed on the drawings. Tree wrapping will be provided at the base of all trees as detailed.
20. **Mulch all beds with 3 inch river rock graded gravel, 1" to 2" size range on fiber mat week barrier.(Taco Bell-check with client, Taco Bell is generally ok with mulch anywhere but against the building: stone required here)** Mulch shall be 50% shredded bark and 50% wood chips, 3/4 to 2 inch in size, uniformly mixed and free of elm wood. Mulch shall be placed uniformly over the planting bed allowing no weed barrier to be seen to a minimum depth of 3". Color to be chosen by Owner.
21. All landscaping shall be guaranteed for **one year** after final acceptance. Any plantings needing replacement will be guaranteed from the time of replacement if after final acceptance. Contractor shall maintain plants until completion and final acceptance of the entire project. Maintenance shall include pruning, cultivating, edging, remulching, fertilizing, weeding, watering as required for healthy growth, and application of appropriate insecticides and fungicides necessary to maintain plants free of insect and disease. Repair all washouts, gullies, and areas of unsatisfactory germination by replacing topsoil, restaking, and reseeding, as required. Reset settled plants to proper grade and position. Restore planting saucer and remove dead material. Tighten and repair guide wires and deficiencies within the first 24 hours of initial planting, and not less than twice per week until final acceptance. Contractor shall request an inspection by the Owner upon establishment of the uniformly germinated lawn. Following the final acceptance, the Owner shall be responsible for maintenance of all landscaping on the premises.
22. Antidesiccant: protective film emulsion, providing a protective film over plant surfaces, but permeable to permit transpiration. Mixed and applied in accordance with manufacturer's instructions. Apply to all broadleaf evergreen shrubs per manufacturer's recommendations.

SANITARY SEWER SYSTEMS

1. The sanitary sewer system shall be supplied and placed in accordance with all local, state and federal requirements.
2. Refer to pipe bedding detail for bedding and anti-seep collar requirements.
3. Unless otherwise noted, sanitary pipe and fittings shall be Polyvinyl Chloride (PVC) per ASTM D 3034, SDR 35, with gaskets per ASTM D 3212, elastomeric seal.
4. Forcemain pipe shall be Polyvinyl Chloride (PVC) per ASTM D 2241, SDR 21 (or lower if pressures are high in system) with gaskets per ASTM D 3139, and elastomeric seal. The pipe shall be encased in a run of crush stone or gravel material with 100% passing the 1.0" sieve and 10% to 3% passing the 200 sieve. The mix shall be supplemented as needed to remove voids. Incorporate filter fabric around bedding or cradle stone if ground water, silts, or sands are encountered.
5. All pipe shall be placed in accordance with the manufacturer's recommendation and to the lines and grades shown on the drawings. Care shall be given during backfill operations not to move or damage pipe or appurtenances while achieving the appropriate compaction requirements.
6. All systems shall be visually inspected for alignment and workmanship. All debris, dirt or other foreign objects shall be removed from the system.
7. All taps to main lines shall be made with saddles when the tap is 1/2 the diameter or less of the existing pipe, but made with a sleeve when the tap is greater than 1/2 the diameter or equal to the existing pipe. If connections are required to equal size pipes of 8 inches or greater, a manhole should be installed over the connection point and inverts formed. When connecting to an existing manhole, the connecting pipe hole shall be cored and a press wedge installed. The connection shall be mortared up with waterproof/plug mortar. Inside the existing manhole, the existing invert shall be broke out in a manner that protects from debris entering the live system, while a new invert is formed.
8. Sanitary manholes shall be visually lamped after backfill to verify alignment, cleanliness and there is no damage to the system. After the system has been backfilled for 30 days, the system shall be relamped and tested with a mandrel sized at 95% of the intended inside diameter.
9. Gravity systems shall be air tested between manholes to 3.5 psi for 5 minutes per ASTM F 1417 for plastic pipes.
10. Manholes shall be tested separately for leakage or infiltration using ASTM C 969. The allowed leakage = 0.1 gallons/(feet of diameter)(feet of head)(# of hours) and the test shall run for 24 hours.
11. The sanitary sewer system shall be tested for infiltration and exfiltration using ASTM C 969. The system shall be broken up into sections when necessary to consider groundwater depth, length and elevation differences. The allowable leakage shall be 100 gal/inch of pipe diameter/mile/day.
12. Any testing failure shall require the Contractor to repair or replace the failed section at no additional expense to the contract.
13. After all testing is complete, and before the system is turned over to the authority having jurisdiction, the system shall be checked to verify it is clean and free of dirt, debris and other foreign matter. The Contractor shall clean any sections required at no additional expense to the contract.
14. Grease traps, if required, shall have cast iron lids and shall be installed per manufacturer's requirements.
15. The pipe slope shall always meet the minimum, as listed in Section 33.4 of the Recommended Standards for Wastewater Facilities (Ten State Standards).
16. Increase size of manhole if in the same horizontal plane there is two areas where the area between two pipes is less than 8 inches or ½ of the circumference is supported by less than ½ of the diameter of the manhole. Inverts shall be smooth cast in place concrete. Gaskets between risers shall be rubber per ASTM C 443. Adjustment rings shall be precast concrete 4000 psi and 5 to 8% air entrainment. Inside and outside of structures shall receive bitumastic coating.
17. **CONSIDER/ADD SPECS FOR THE FOLLOWING ITEMS, IF APPLICABLE TO PROJECT: CLEANOUTS, PUMP STATIONS, AIR RELIEF VALVES, SEPTIC, FORCE MAIN TESTING CRITERIA, ETC.**

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Burger King
JSC MANAGEMENT GROUP
ATTN: JAMES CAMMILLERI
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Burger King Store #:
S.B.L. No. 143.06-1-11, 12, & 13
1997, 2003, & 2007 Ridge Road
West Seneca, NY 14224
Erie County (Town of West Seneca)
Project Name & Location:

Specifications
Drawing Name:

Date: 04/19/21
Project No. 21-0239
Type:
Drawn By: SAS
Scale: N.T.S.
C10
Drawing No.

POST CONSTRUCTION
STORMWATER MANAGEMENT PLAN
for
BURGER KING – WEST SENECA, NY

TOWN OF WEST SENECA
ERIE COUNTY, NY

Prepared for:

JSC Management Group, LLC
PO Box 217
Lyndonville, NY 14098

Prepared by:

APD ENGINEERING & ARCHITECTURE PLLC
615 Fishers Run, Victor, New York 14564
Phone: 585.742.2222 | Fax: 585.924.4914 | Website: www.apd.com | eMail: info@apd.com

Original Date: January 18, 2022

APD Project No.: 21-0239

STATE OF NEW YORK
TODD GEORGE MARKEVICZ
080577
LICENSED PROFESSIONAL ENGINEER

1/20/22

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Site Description

The Stormwater Management Plan for the proposed Burger King in the Town of West Seneca, NY (Erie County) is outlined in this report. The total property area is approximately ±1.000 acres. The property is located at 1997, 2003, and 2007 Ridge Road, which is on the south side of the road towards the intersection of Ridge Road and Orchard Park Road. The general area surrounding the site consists of residential houses, medical facilities, a gas station, and fast-food restaurants. The existing properties consist of a shared access drive to two houses with a two-car detached garage and shed on-site on 1997 & 2003 Ridge Road with 2007 Ridge Road as a vacant grass lot. There is a utility pole between the lots to service both houses, a total of 4 trees in the grass lawns, and an above-ground pool at 2003 Ridge Road. The proposed project will demolish the existing houses and garage on-site to construct the Burger King building, associated parking lot, underground stormwater facilities, utilities, lighting, and landscaping.

The existing site runoff drains to the concrete gutter and stormwater system along Ridge Road with a portion of the southern lawn area sheet flowing to a wooded marsh area south of the property. The ultimate discharge from the property is Cazenovia Creek located approximately 500 feet to the east of the site.

Methodology

Stormwater runoff rates discharged from the site under existing conditions provide the basis on which to compare the impacts of the proposed site improvements. Points of analysis are established where runoff exits the site to provide a fixed location at which existing and proposed stormwater quantities can be compared. The areas draining to each analysis point are delineated using topographic survey maps, USGS maps, field verifications, and grading plans.

Peak runoff rates for the design storms are based on the USDA Soil Conservation Service's TR-55 method of modeling runoff. Hydraflow Hydrographs Extension for AutoCAD Civil 3D 2020 computer model was used to analyze discharges from drainage areas and to route runoff hydrographs through the SMP.

Soils Information

According to the Web Soil Survey of Erie County, the soils encountered at the project site are listed as NfA (Niagara silt loam). Niagara silt loam consists of 75% Niagara soils and 5% each Canandaigua, Collamer, Cosad, Raynham, and Swormville soils. The Hydrologic Soil Group rating is C/D. Based on the NRCS Hydric Rating by Map Unit for Erie County, the main soils are not hydric. However, the Canandaigua soil, which makes up about 5% of the soil, is hydric. Refer to Appendix III for the site soil map.

Hydrology

Existing Conditions

The overall drainage area evaluated under existing conditions consists of ±1.12 acres. Under Existing Conditions, the site consists of a mixture of buildings, pavement, gravel, and lawn areas. Slopes on the site generally range from 0.5-12% for the lawn areas and 0.5-10% for the pavement/gravel areas. The northern area of the site ultimately discharges to the east of the site via a culvert under Ridge Road,

while the southern area (Drainage Area 2) discharges to a marsh to the south. Both areas ultimately discharge to Cazenovia Creek to the east.

The overall drainage area for the existing conditions was divided into four (4) sub areas: Drainage Area 1A, 1B, 1C, and Drainage Area 2, as shown on the Existing Drainage Conditions Plan located in Appendix I.

Drainage Area 1A is comprised of the shared driveway, two houses, a 2-car detached garage, a shed, and concrete sidewalks. Stormwater runoff from this area sheet flows across the lots until it reaches a concrete gutter along Ridge Road that discharges to the storm sewer system at Analysis Point #1.

Drainage Area 1B is comprised of a small shed and a small portion of lawn area between the driveway and garage while following the fence line across the southern lawn area. Stormwater runoff from this area flow to the western property line across the western neighbor's asphalt driveway until it reaches a concrete gutter along Ridge Road that discharges to the storm sewer system at Analysis Point #1.

Drainage Area 1C is comprised of lawn area from 2007 Ridge Road and western lawn from Wendy's to the east. Stormwater runoff from this area flows across the lawn to Wendy's parking lot and ultimately to the concrete gutter along Ridge Road. It discharges to the storm sewer system at Analysis Point #1.

Drainage Area 2 is comprised of a small portion of the lawn area along the southern property line of 1997 Ridge Road. Stormwater runoff from this area sheet flows along the lawn to the southern property line and discharges to the marsh at Analysis Point #2.

Table I summarizes the hydrologic characteristics of the existing drainage areas described above.

Table I – Existing Conditions

Drainage Area	Description	Size (ac)	Composite CN	Tc (min.)
Area 1A	Shared Driveway, Two Houses, 2-Car Detached Garage, Shed, and Concrete Sidewalks	±0.52	85	5*
Area 1B	Small Shed and Portion of Lawn Area	±0.19	74	21.4
Area 1C	Eastern portion of Lawn Area and Western Area of Wendy's	±0.18	74	11.7
Area 2	Portion of the Lawn Area	±0.23	74	22.1
Total	Total Drainage Area	±1.12	79	N/a

* The actual computed Tc was less than 5 minutes, therefore a direct user input of 5 minutes was used in Hydraflow

Table III in the Summary of Results provides the existing and proposed peak discharge rates from the site at the analysis point(s).

Proposed Conditions
The overall drainage area for the proposed conditions was divided into five (5) sub areas: Drainage Area 1A, 1B, 1C, 1D and Drainage Area 2, as shown on the Proposed Drainage Conditions Plan located in Appendix II.

Drainage Area 1A is comprised of the western lawn and landscaped area of the lot. Stormwater will collect via a swale next to parking lot curb before emptying to the concrete gutter and discharging to the stormwater system under Ridge Road at Analysis Point #1.

Drainage Area 1B is comprised of the Burger King building, the western parking areas, drive-thru areas, concrete dumpster pad, and rear cross-access to Wendy's to the east. Stormwater will collect via on-site storm sewer piping before emptying to the underground stormwater detention system and then discharging to the Ridge Road stormwater system at Analysis Point #1.

Drainage Area 1C is comprised of the eastern portion of the lawn neighboring Wendy's. The lawn area discharges to the Wendy's parking lot and ultimately Analysis Point #1, similar to the existing use.

Drainage Area 1D is comprised of both entrances from Ridge Road, northern parking area, and lawn island. The area sheet flow to the concrete gutter and discharges to Analysis Point #1.

Drainage Area 2 is comprised of the portion of lawn area south of the south property lines of 2003 & 2007 Ridge Road. The lawn areas discharges to the nearby marsh to the south at Analysis Point #2. This area is the same size under existing and proposed conditions. The flow path will remain unchanged.

Table II summarizes the hydrologic characteristics of the proposed drainage areas described above.

Table II – Proposed Conditions

Drainage Area	Description	Size (ac)	Composite CN	Tc (min.)
Area 1A	Western Lawn and Landscaped Area	±0.10	74	21.2
Area 1B	Burger King Building, Western Parking Areas, Drive-Thru Areas, Concrete Dumpster Pad, and Rear Cross-Access	±0.59	95	5*
Area 1C	Eastern Portion of the Lawn Neighboring Wendy's	±0.06	74	21.1
Area 1D	Both Entrances from Ridge Road, Northern Parking Area, and Lawn Island.	±0.14	96	5*
Area 2	Portion of Lawn Area	±0.23	74	22.1
Total	Total Drainage Area	±1.12	88	N/a

* The actual computed Tc was less than 5 minutes, therefore a direct user input of 5 minutes was used in Hydraflow

Table III in the Summary of Results provides the existing and proposed peak discharge rates from the site at the analysis points.

SPDES Phase II Requirements
The overall project disturbance will be under 1-acre, thus a NYSDEC SPDES General Permit for Construction Activities is not needed. This project was designed to prevent overbank flooding and help control extreme floods.

Flood Control
The Overbank Flood Control Criteria (Q_p – 10-yr storm control) is required to attenuate the post-development 10-year, 24-hour peak discharge rates to prevent an increase in the frequency and magnitude of out-of-bank flooding generated by urban development. This requirement is met by reducing the post-construction peak discharge rates to at or below pre-development peak discharge rates for the 10-year, 24-hour storm event. Refer to Table III, Appendix I, and Appendix II for additional information.

Extreme Storm
The Extreme Flood Control Criteria (Q_f – 100-yr storm control) is required to attenuate the post-development 100-year, 24-hour peak discharge rates to pre-development rates with the intent of (a) preventing the increased risk of flood damage from large storm events, (b) maintaining the boundaries of the predevelopment 100-year floodplain, and (c) protecting the physical integrity of stormwater management practices. This requirement is met by reducing the post-construction peak discharge rates to at or below pre-development peak discharge rates for the 100-year, 24-hour storm event. Refer to Table III, Appendix I, and Appendix II for additional information.

Additional Town Requirements
In addition of the criteria listed above, the Town of West Seneca also requires the stormwater detention facilities to reduce the 25-year post-development runoff rate to the 10-year pre-development runoff rate.

Summary of Results
Table III depicts the existing and proposed peak discharge rates from the site at the analysis points. The rainfall rates used in Hydraflow were provided from NOAA's Precipitation Frequency Data Servers website.

Table III - Peak Discharge Rates at the Analysis Point – 1, 2, 10, 25, 100-YR Storms

		Analysis Point 1		Analysis Point 2	
Design Storm	Rainfall Int. (in.)	Existing Condition Peak Discharge (cfs)	Proposed Condition Peak Discharge (cfs)	Existing Condition Peak Discharge (cfs)	Proposed Condition Peak Discharge (cfs)
1-year Storm	1.88	0.673	0.530	0.051	0.051
2-year Storm	2.26	0.982	0.702	0.097	0.097
10-year Storm	3.40	2.030	1.393	0.275	0.275

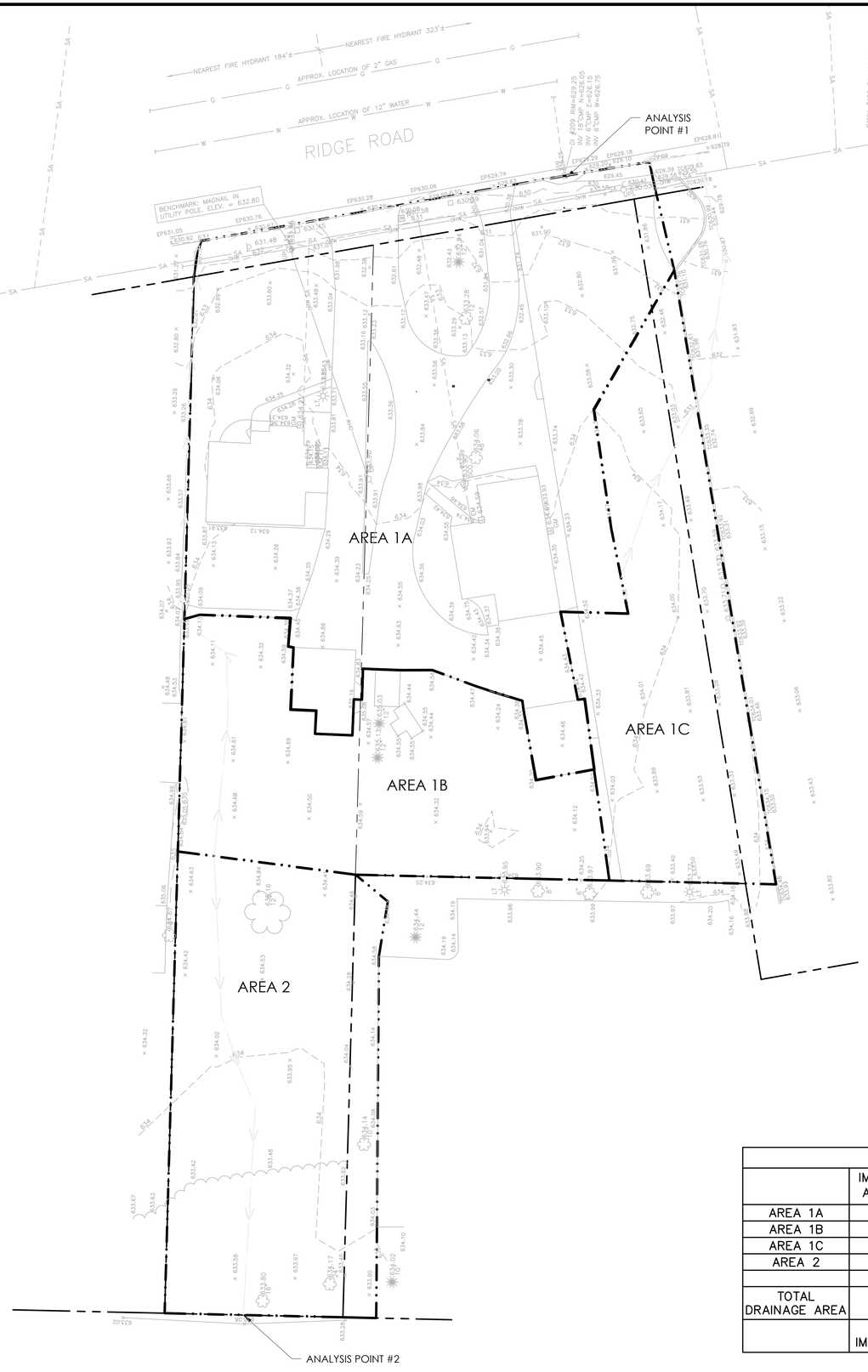
25-year Storm	4.11	2.729	1.750	0.403	0.403
100-year Storm	5.21	3.846	3.704	0.619	0.619

As can be seen from the tables above, the peak discharge from the site for each of the design storms will be at or below existing discharge rates after this project is constructed and the stormwater management plan is implemented. Furthermore, the post-construction peak discharge for the 25-year storm will be reduced below the pre-construction 10-year storm event, as per the Town of West Seneca requirements for Analysis Point #1. Note that Analysis Point #2 is the same under existing and proposed conditions and this project will not alter the overall area or flow path.

Based on the calculations, attached in the appendices, this project will maintain or decrease the peak discharge rates leaving the site for the design storm events evaluated. Therefore, this project has provided sufficient mitigation to minimize effects to downstream storm systems, properties and waterways.

APPENDIX I

Existing Drainage Conditions Plan (DR 1)
And Hydraflow Hydrographs Output for Existing Conditions
(including TR-55 Time of Concentration Calculations)



0 10 20 40 60

Graphic Scale: 1"=20'

AS REQUIRED BY NEW YORK STATE LAW, CONTRACTOR SHALL CONTACT "DIG SAFELY NEW YORK" (UFPO) @ 1-800-962-7962 FOR LOCATION STAKE-OUT OF ALL UTILITIES, AT LEAST 2 FULL WORKING DAYS PRIOR TO ANY EXCAVATION.

NORTH

REFERENCE:

1. 4775 1997-2003 RIDGE RD BURGER KING.DWG, SHEET NUMBER 1, LAST REVISED ON 12/13/2021, PREPARED BY FRANDINA ENGINEERING AND LAND SURVEYING, PC

LEGEND OF IMPROVEMENTS

DRAINAGE AREA

TIME OF CONCENTRATION

EXISTING CONDITIONS							
	IMPERVIOUS AREA (SF)	CN	PERVIOUS AREA (SF)	CN	TOTAL AREA (SF)	TOTAL AREA (AC)	COMPOSITE CN
AREA 1A	10073	98	12363	74	22435	0.52	85
AREA 1B	161	98	8253	74	8415	0.19	74
AREA 1C	0	98	7905	74	7905	0.18	74
AREA 2	0	98	10095	74	10095	0.23	74
TOTAL DRAINAGE AREA						1.12	79
	TOTAL EXISTING IMPERVIOUS (AC) =					0.23	

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S.B.L. No. 143.06-1-11, 12, & 13

1997, 2003, & 2007 Ridge Road

West Seneca, NY 14224

Erie County (Town of West Seneca)

Project Name & Location:

Existing Drainage Map

Drawing Name:

Date: 04/19/21

Project No. 21-0239

Type: Sketch

Drawn By: SAS

Scale: 1" = 20'

DR 1

Drawing No.

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Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4

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	------	0.627	0.873	-------	-------	1.681	2.208	-------	3.032	Area 1a
2	SCS Runoff	------	0.042	0.080	-------	-------	0.227	0.333	-------	0.511	Area 1b
3	SCS Runoff	------	0.059	0.110	-------	-------	0.297	0.431	-------	0.657	Area 1c
4	Combine	1, 2, 3	0.673	0.982	-------	-------	2.030	2.729	-------	3.846	Analysis Point #1
6	SCS Runoff	------	0.051	0.097	-------	-------	0.275	0.403	-------	0.619	Area 2 (Analysis Point #2)

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4

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	0.627	2	718	1,254	------	------	------	Area 1a
2	SCS Runoff	0.042	2	730	207	------	------	------	Area 1b
3	SCS Runoff	0.059	2	722	199	------	------	------	Area 1c
4	Combine	0.673	2	718	1,636	1, 2, 3	------	------	Analysis Point #1
6	SCS Runoff	0.051	2	730	251	------	------	------	Area 2 (Analysis Point #2)

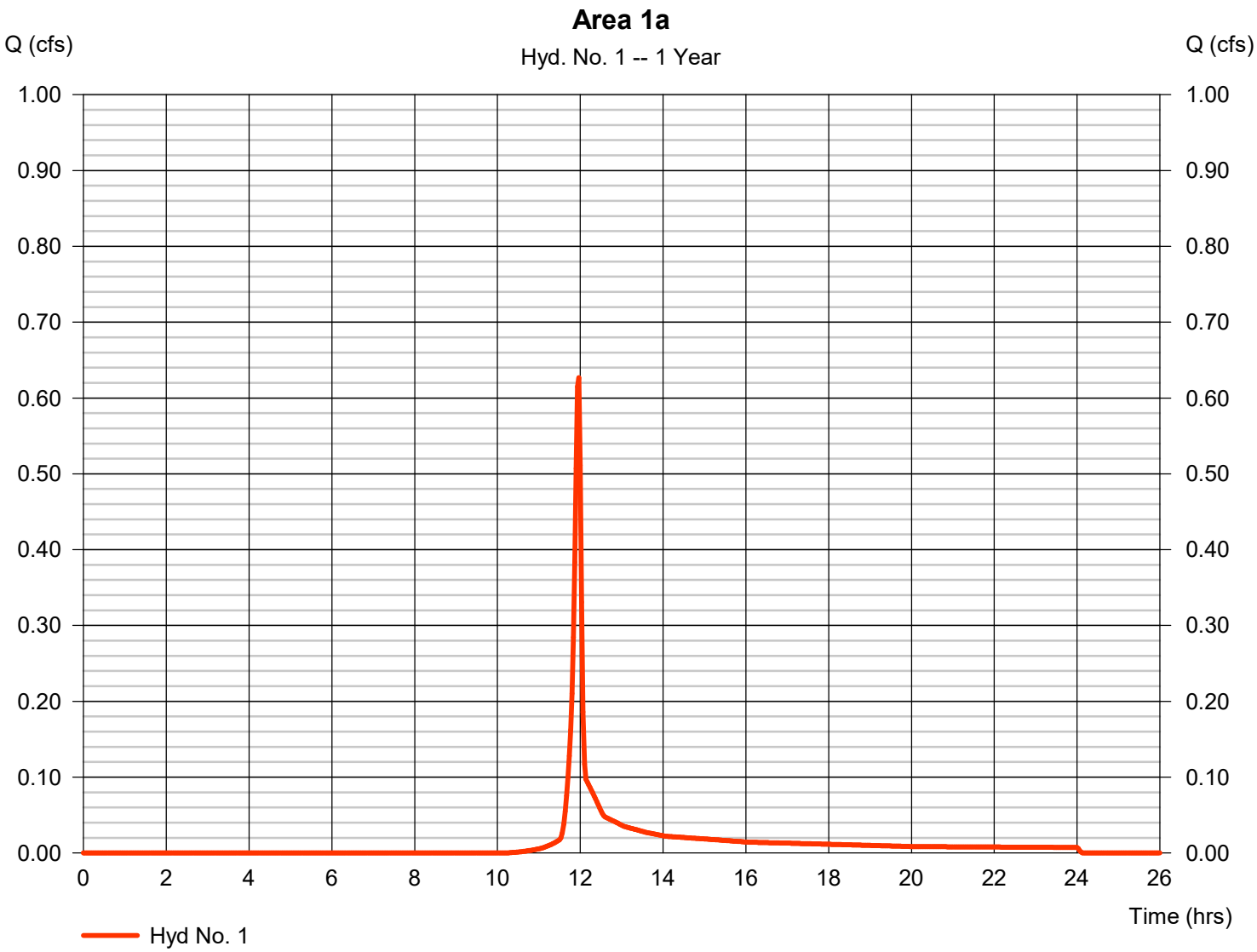
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 1

Area 1a

Hydrograph type	= SCS Runoff	Peak discharge	= 0.627 cfs
Storm frequency	= 1 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 1,254 cuft
Drainage area	= 0.520 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 1.88 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



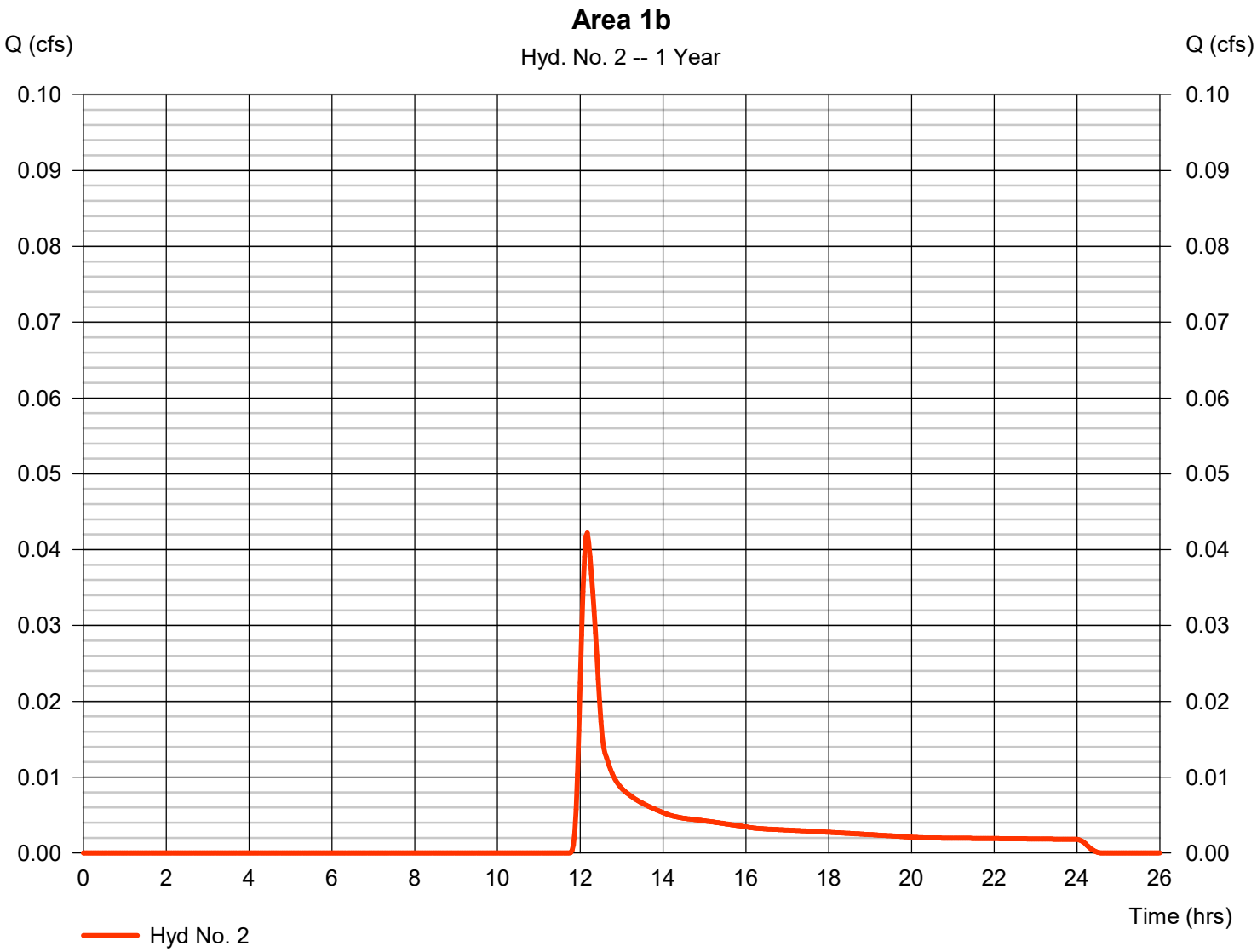
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 2

Area 1b

Hydrograph type	= SCS Runoff	Peak discharge	= 0.042 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 207 cuft
Drainage area	= 0.190 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.40 min
Total precip.	= 1.88 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



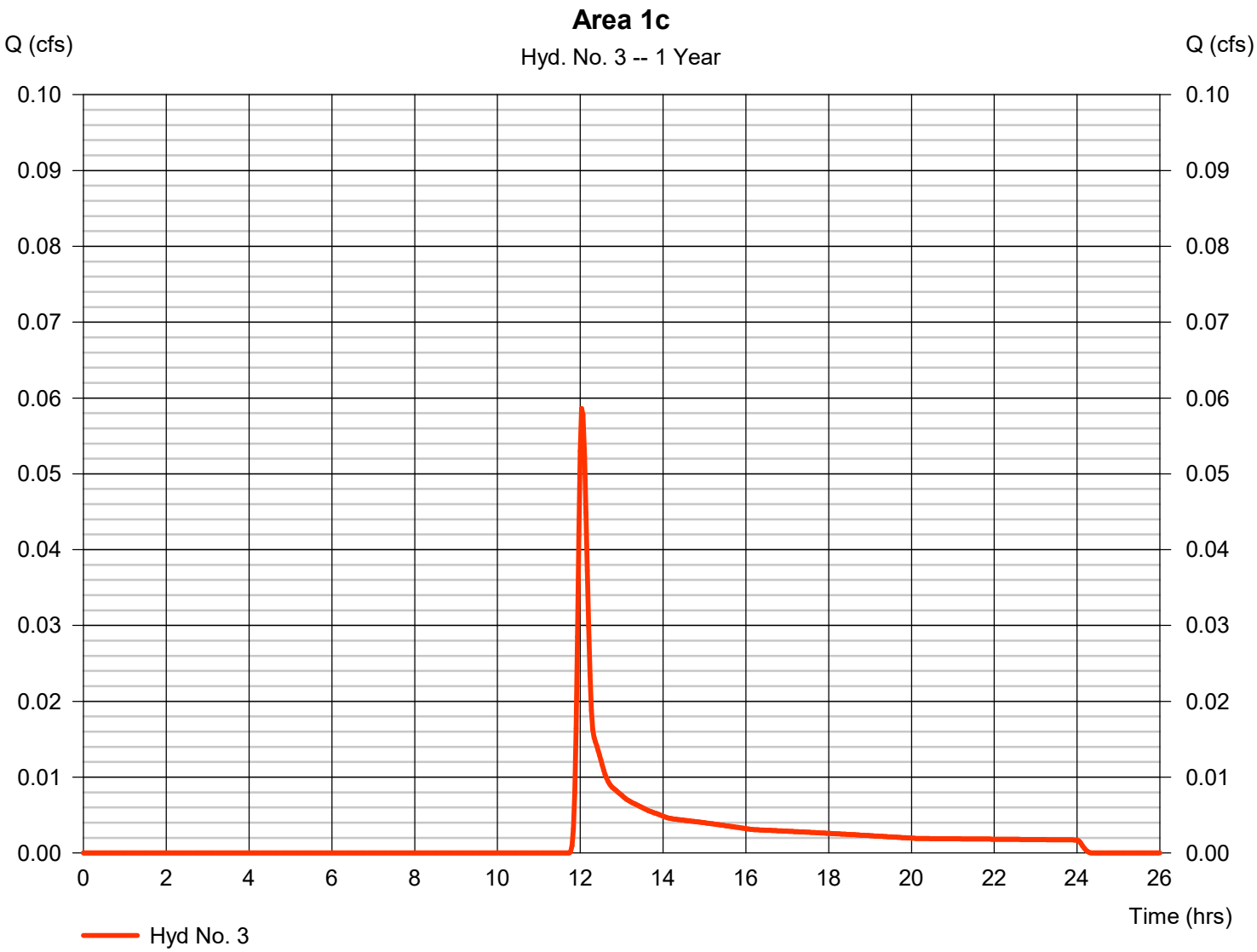
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 3

Area 1c

Hydrograph type	= SCS Runoff	Peak discharge	= 0.059 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 199 cuft
Drainage area	= 0.180 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.70 min
Total precip.	= 1.88 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



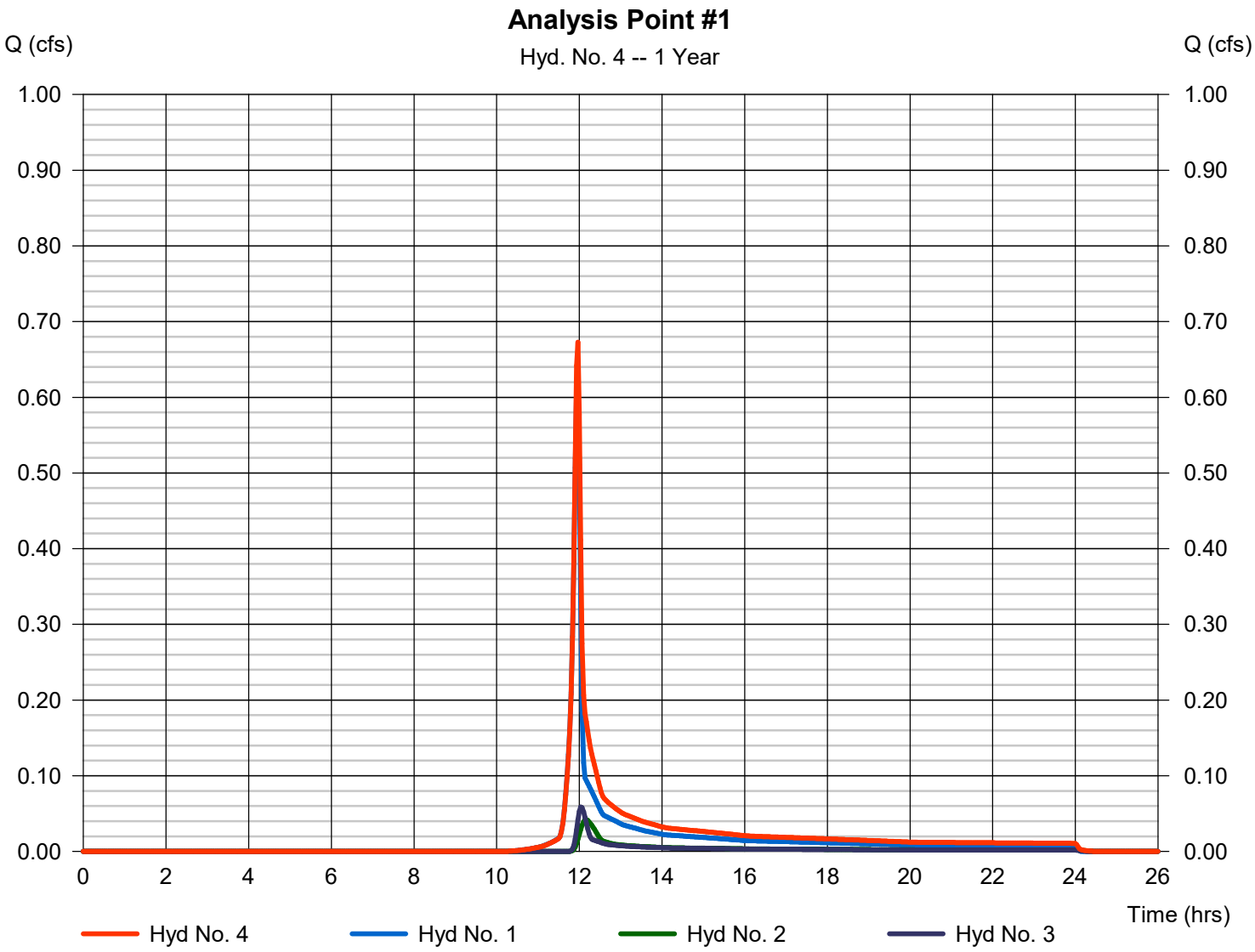
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 4

Analysis Point #1

Hydrograph type	= Combine	Peak discharge	= 0.673 cfs
Storm frequency	= 1 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 1,636 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 0.890 ac



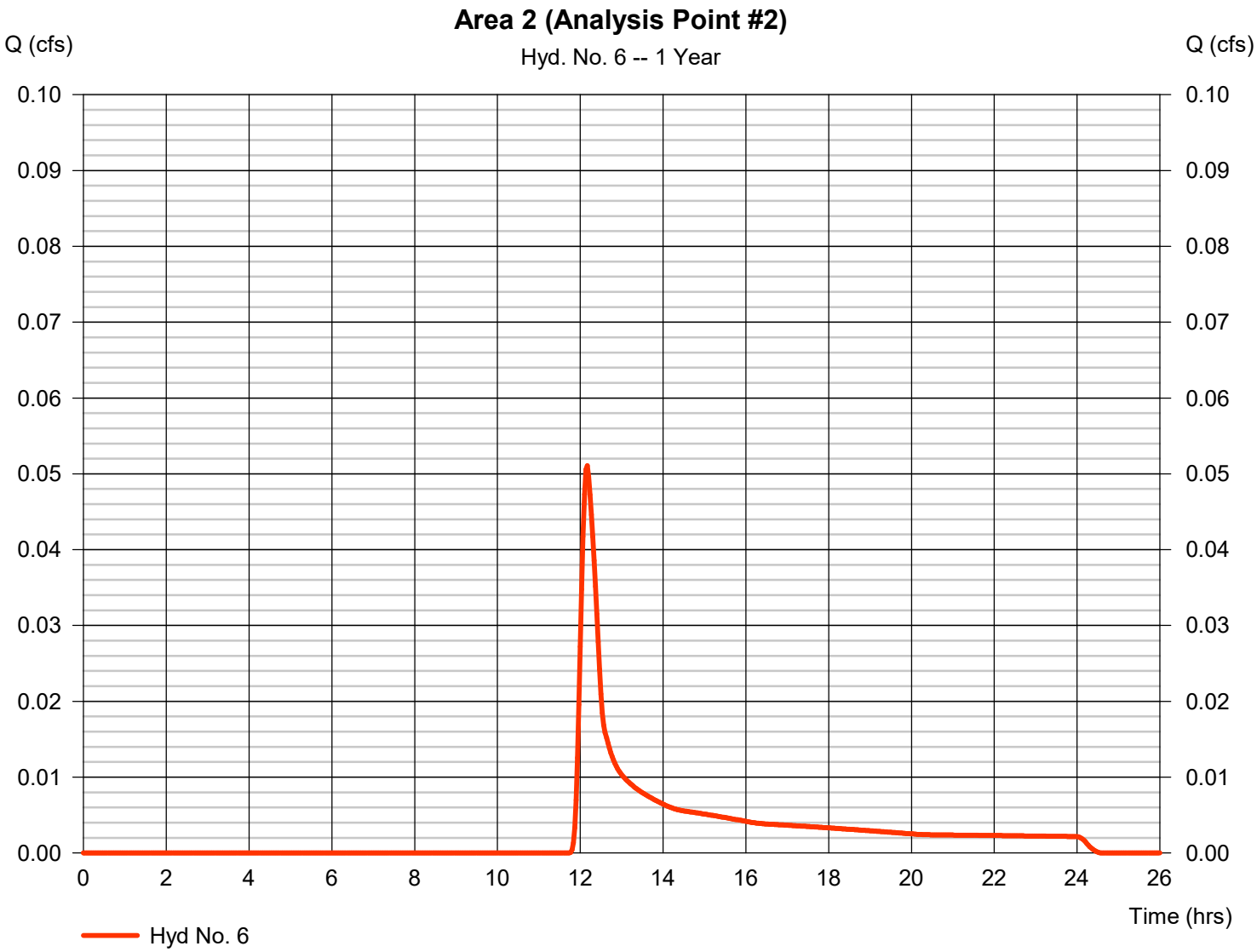
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 6

Area 2 (Analysis Point #2)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.051 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 251 cuft
Drainage area	= 0.230 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 22.06 min
Total precip.	= 1.88 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4

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	0.873	2	718	1,753	------	------	------	Area 1a
2	SCS Runoff	0.080	2	728	336	------	------	------	Area 1b
3	SCS Runoff	0.110	2	722	322	------	------	------	Area 1c
4	Combine	0.982	2	718	2,377	1, 2, 3	------	------	Analysis Point #1
6	SCS Runoff	0.097	2	728	406	------	------	------	Area 2 (Analysis Point #2)

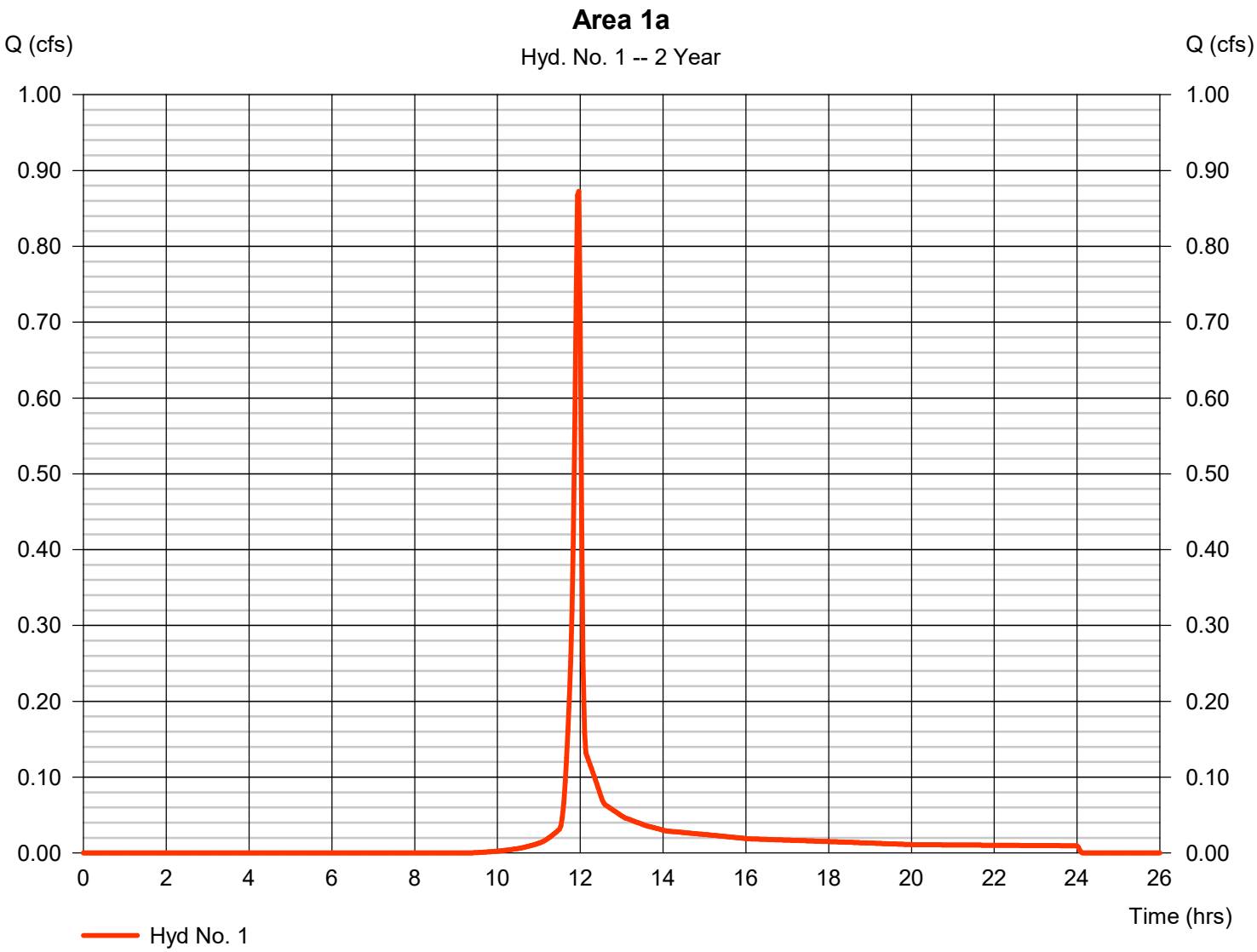
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 1

Area 1a

Hydrograph type	= SCS Runoff	Peak discharge	= 0.873 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 1,753 cuft
Drainage area	= 0.520 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



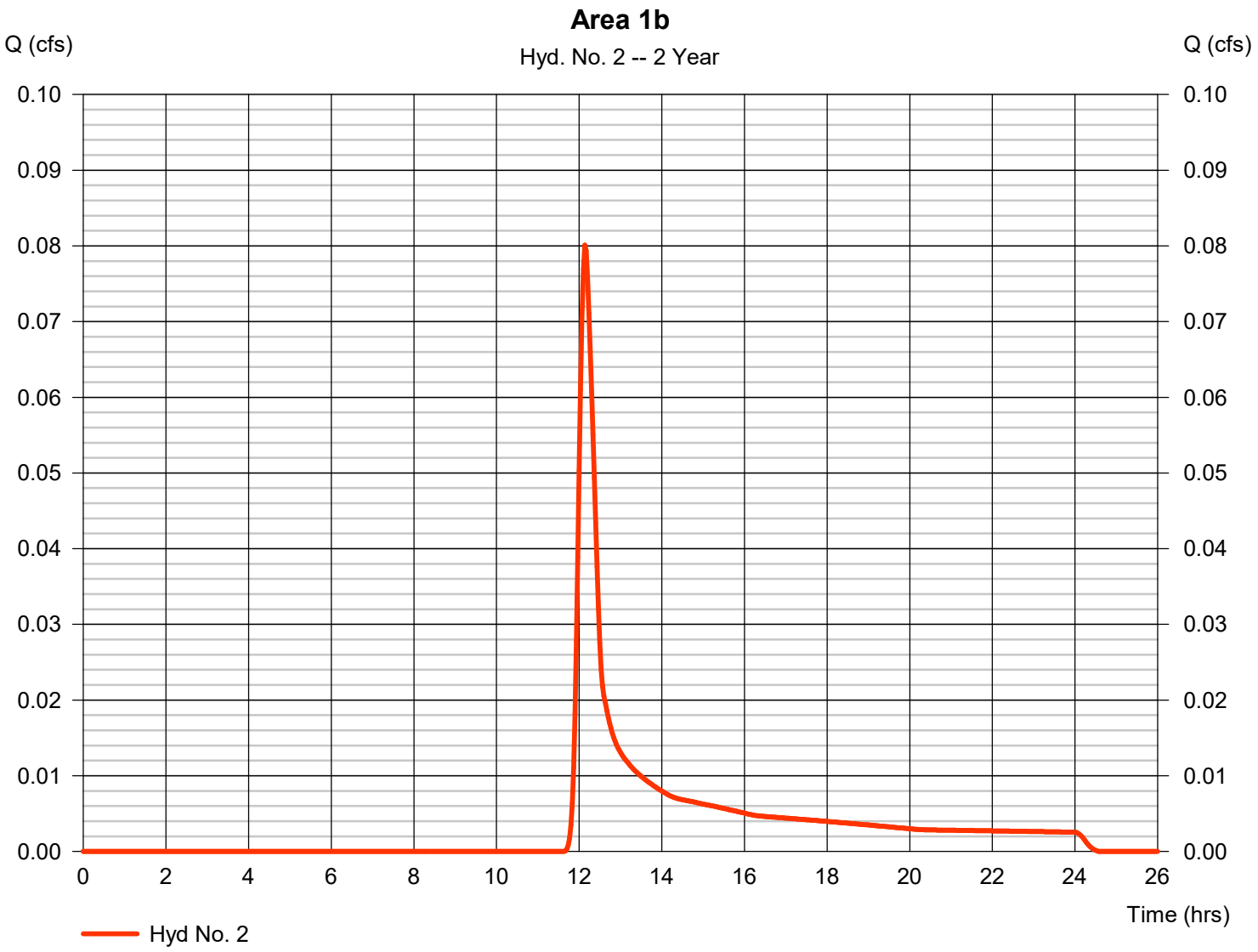
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 2

Area 1b

Hydrograph type	= SCS Runoff	Peak discharge	= 0.080 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 336 cuft
Drainage area	= 0.190 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.40 min
Total precip.	= 2.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



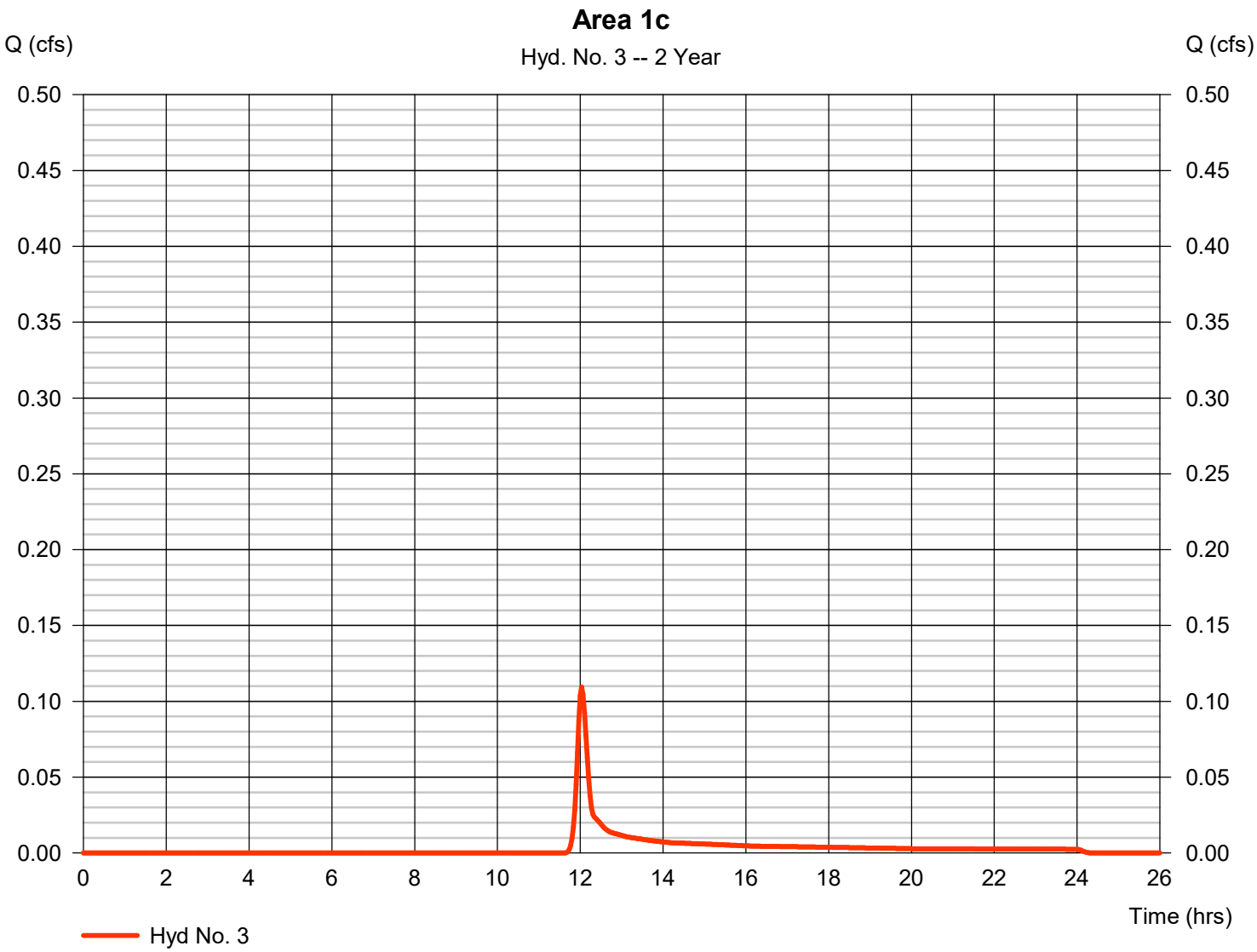
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 3

Area 1c

Hydrograph type	= SCS Runoff	Peak discharge	= 0.110 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 322 cuft
Drainage area	= 0.180 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.70 min
Total precip.	= 2.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



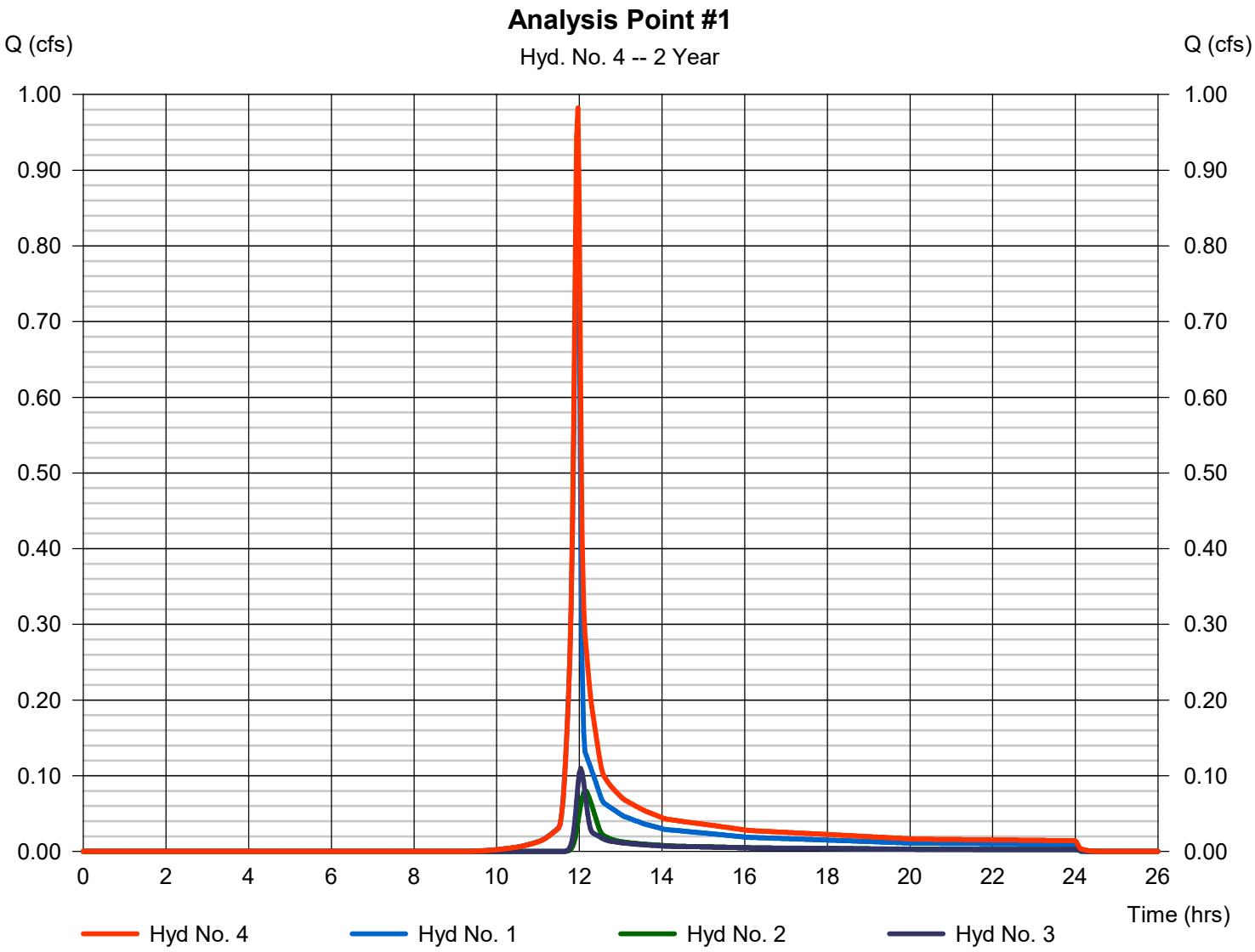
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 4

Analysis Point #1

Hydrograph type	= Combine	Peak discharge	= 0.982 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 2,377 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 0.890 ac



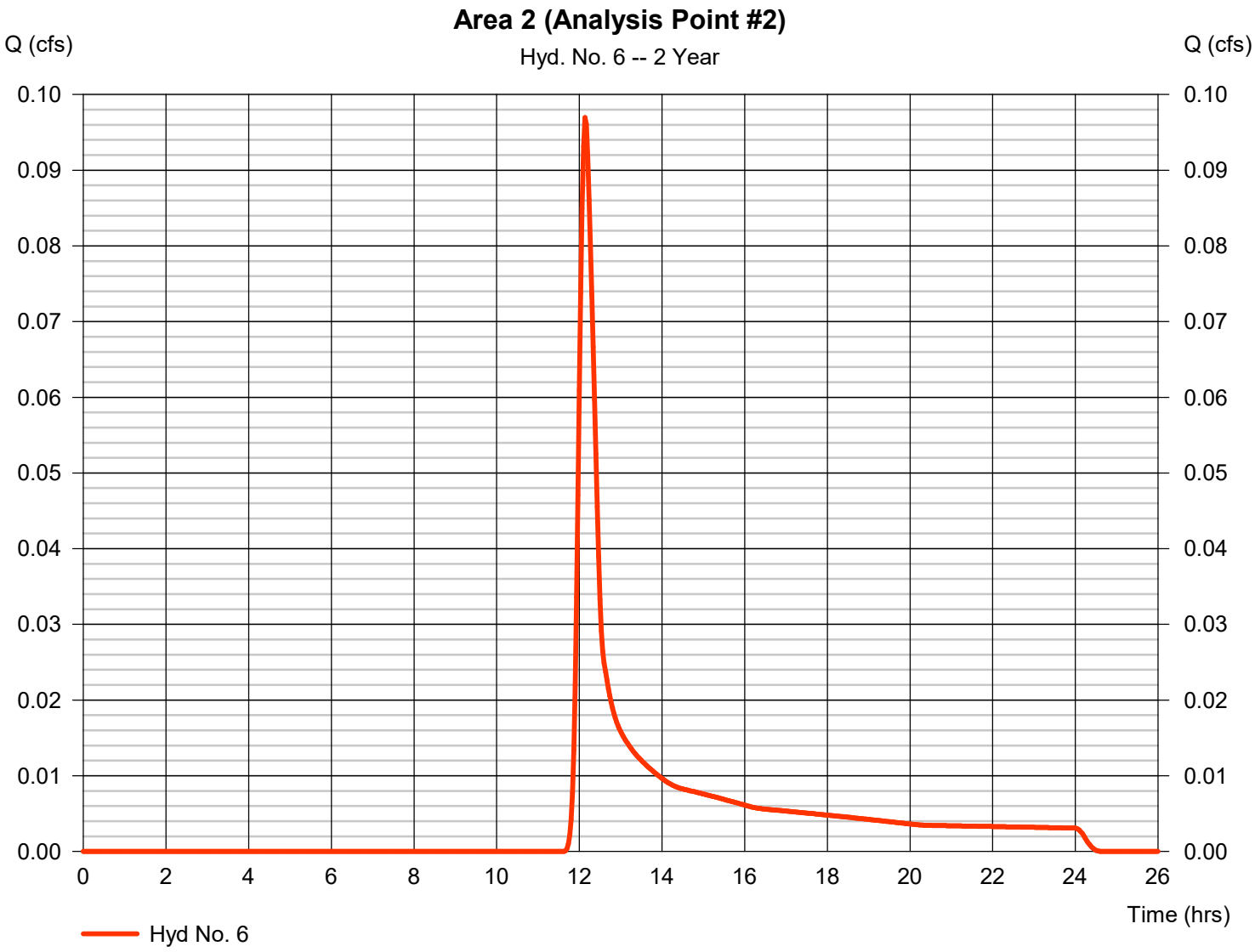
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 6

Area 2 (Analysis Point #2)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.097 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 406 cuft
Drainage area	= 0.230 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 22.06 min
Total precip.	= 2.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4

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	1.681	2	716	3,415	------	------	------	Area 1a
2	SCS Runoff	0.227	2	728	822	------	------	------	Area 1b
3	SCS Runoff	0.297	2	722	789	------	------	------	Area 1c
4	Combine	2.030	2	718	4,961	1, 2, 3	------	------	Analysis Point #1
6	SCS Runoff	0.275	2	728	995	------	------	------	Area 2 (Analysis Point #2)

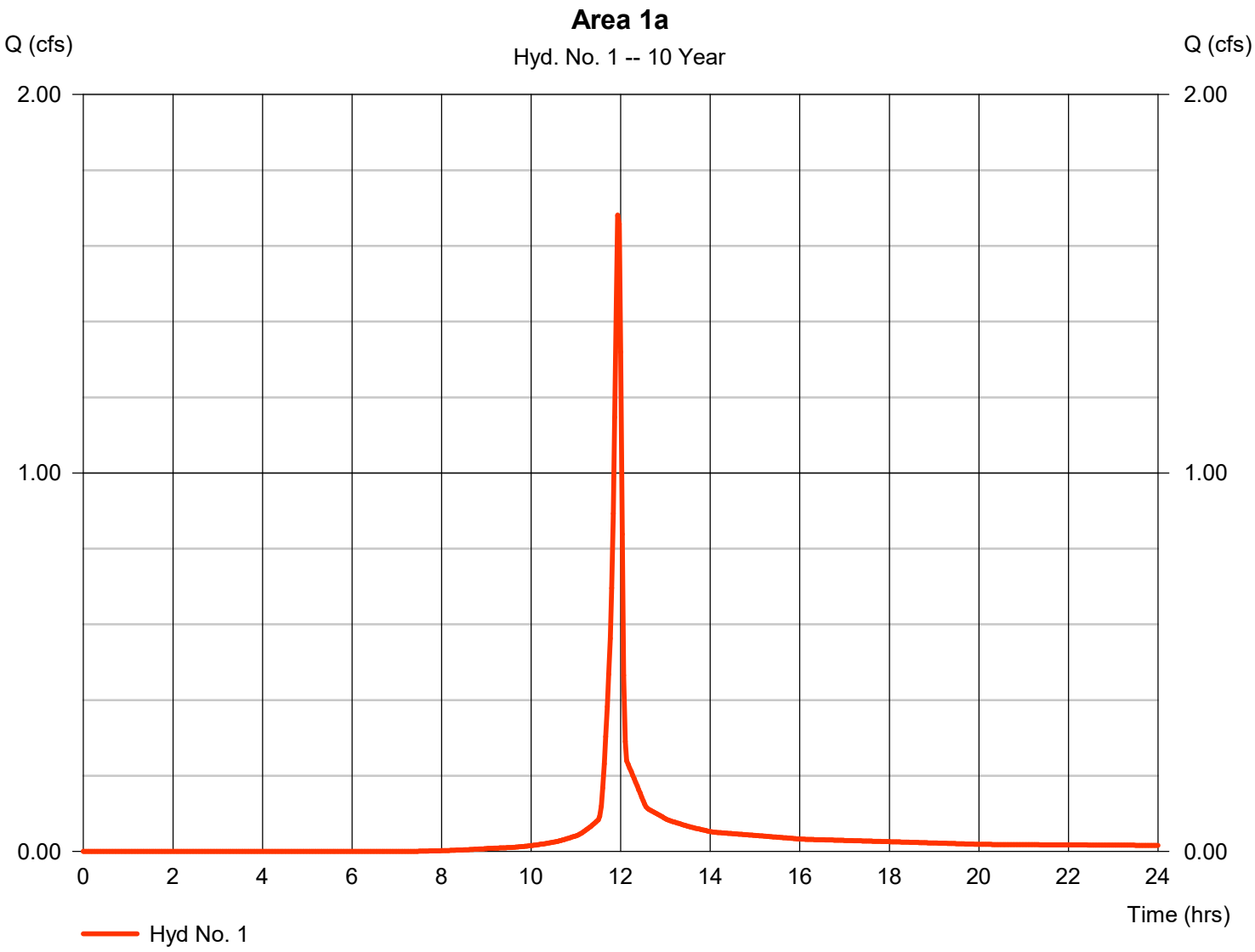
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 1

Area 1a

Hydrograph type	= SCS Runoff	Peak discharge	= 1.681 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,415 cuft
Drainage area	= 0.520 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



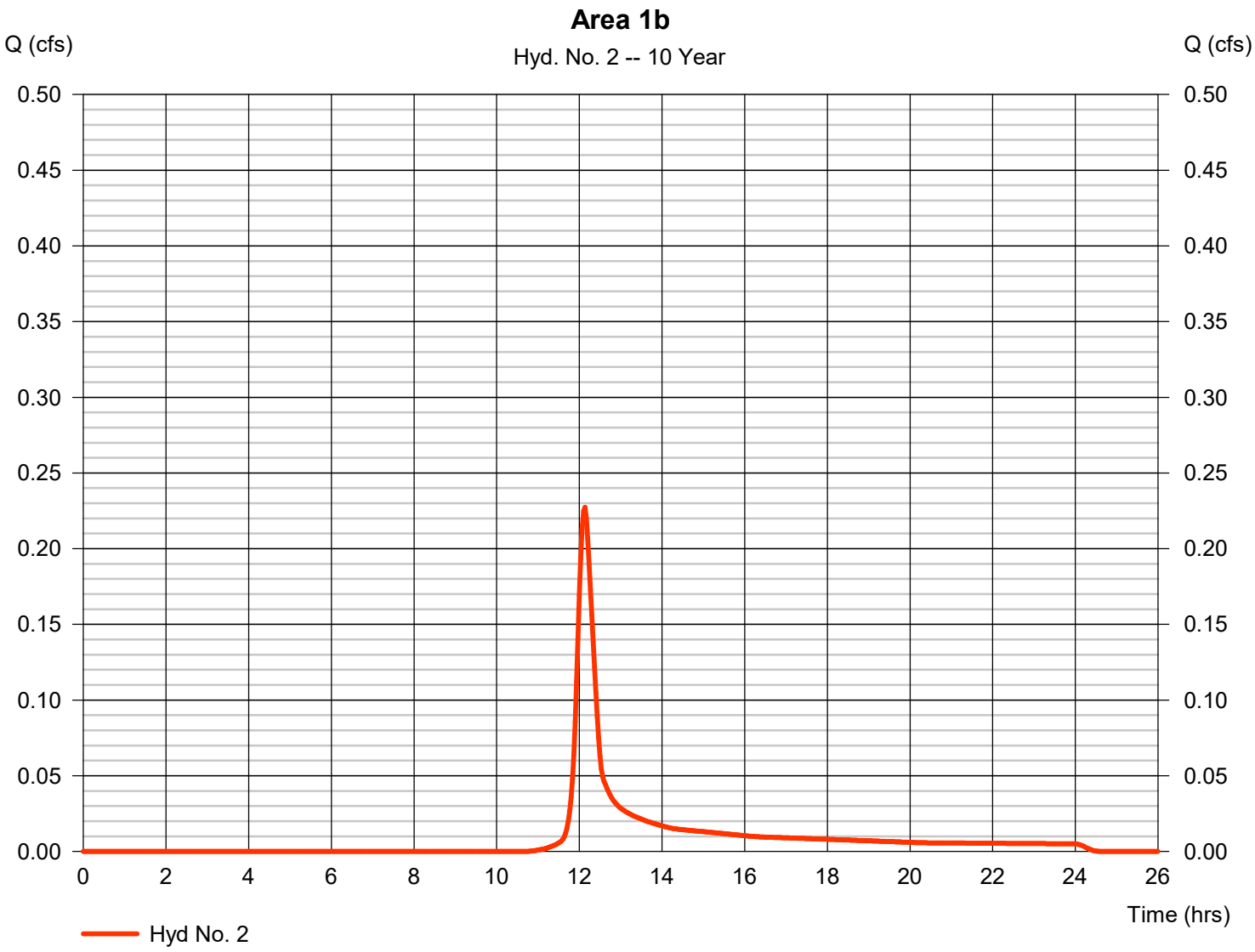
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 2

Area 1b

Hydrograph type	= SCS Runoff	Peak discharge	= 0.227 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 822 cuft
Drainage area	= 0.190 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.40 min
Total precip.	= 3.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



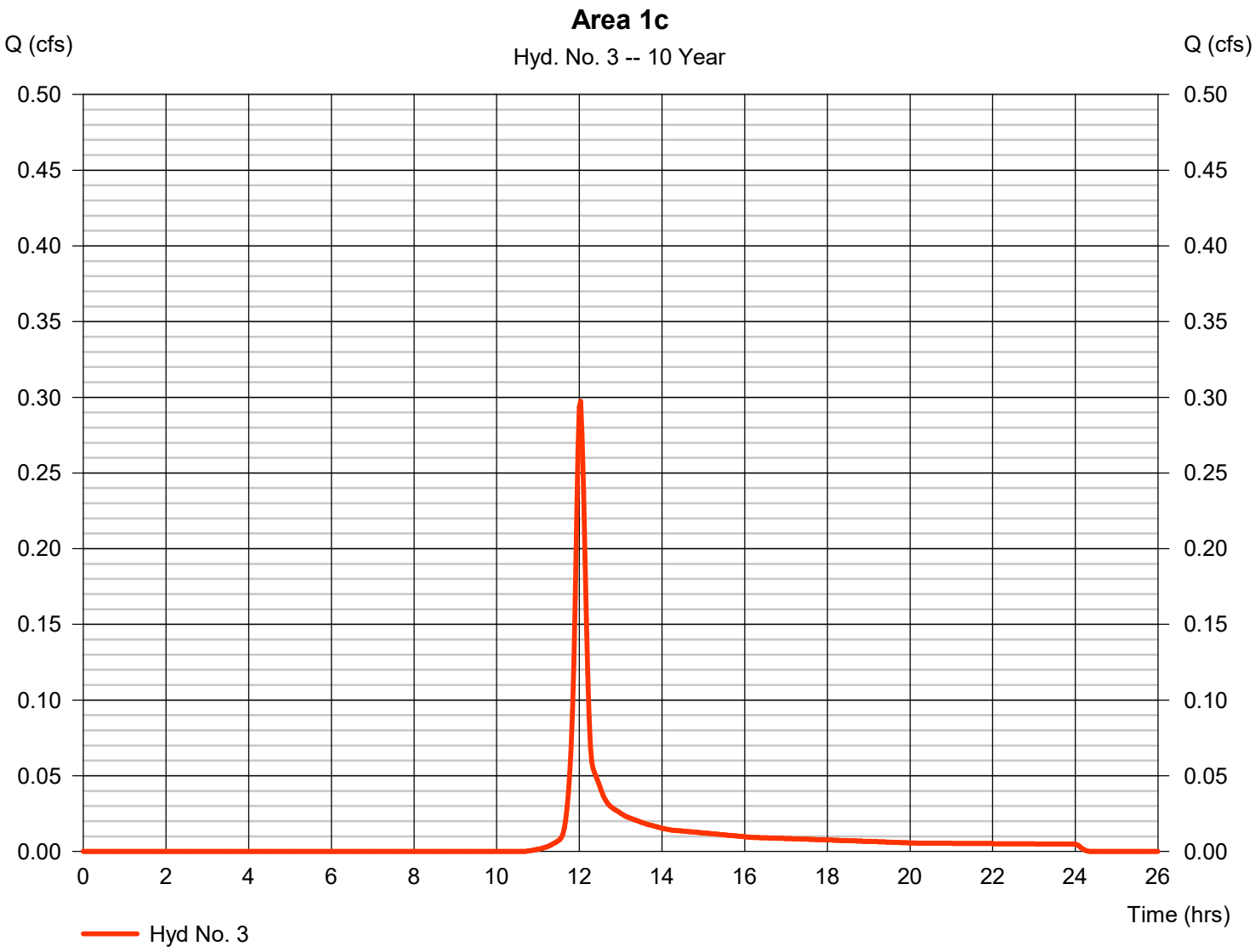
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 3

Area 1c

Hydrograph type	= SCS Runoff	Peak discharge	= 0.297 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 789 cuft
Drainage area	= 0.180 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.70 min
Total precip.	= 3.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



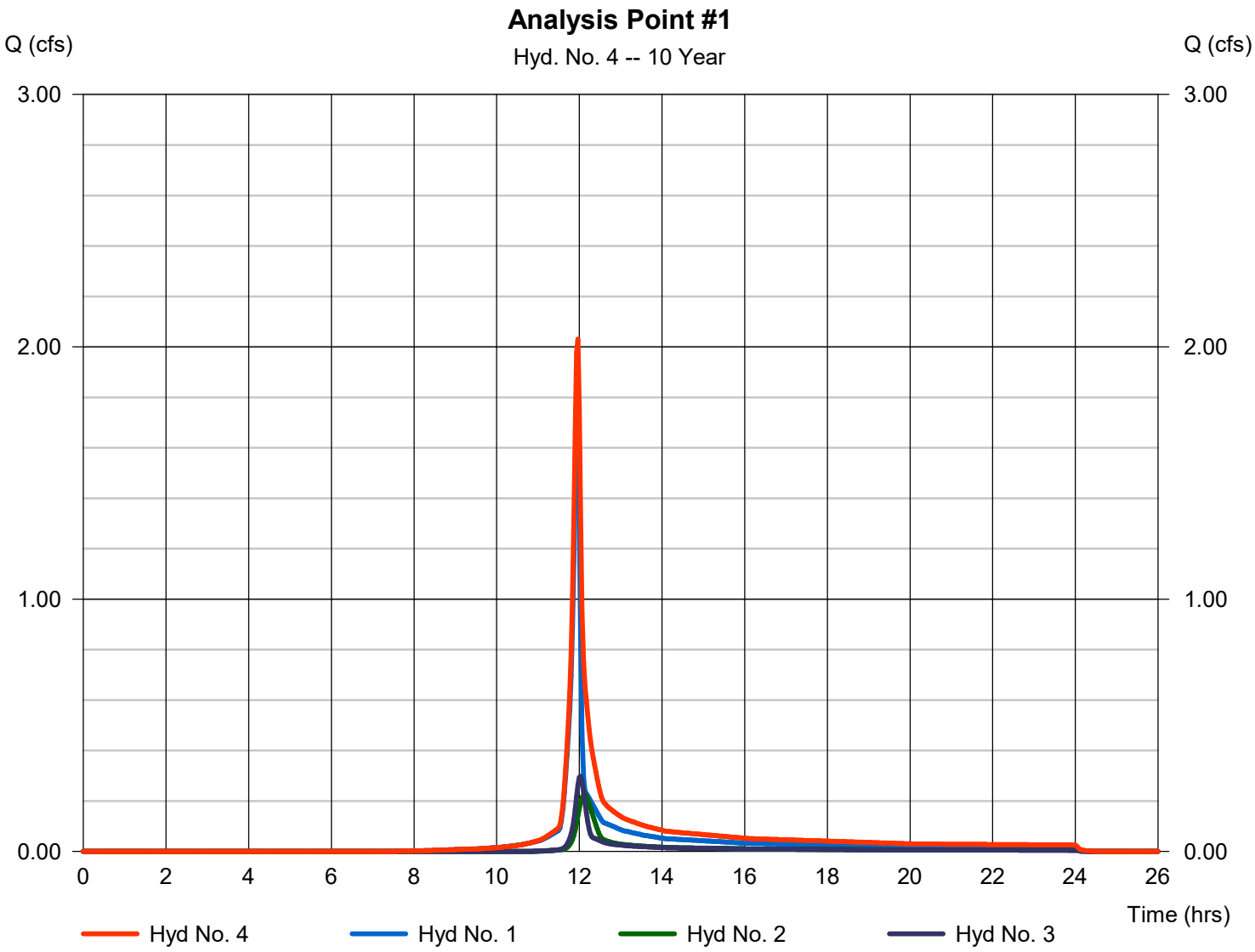
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 4

Analysis Point #1

Hydrograph type	= Combine	Peak discharge	= 2.030 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 4,961 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 0.890 ac



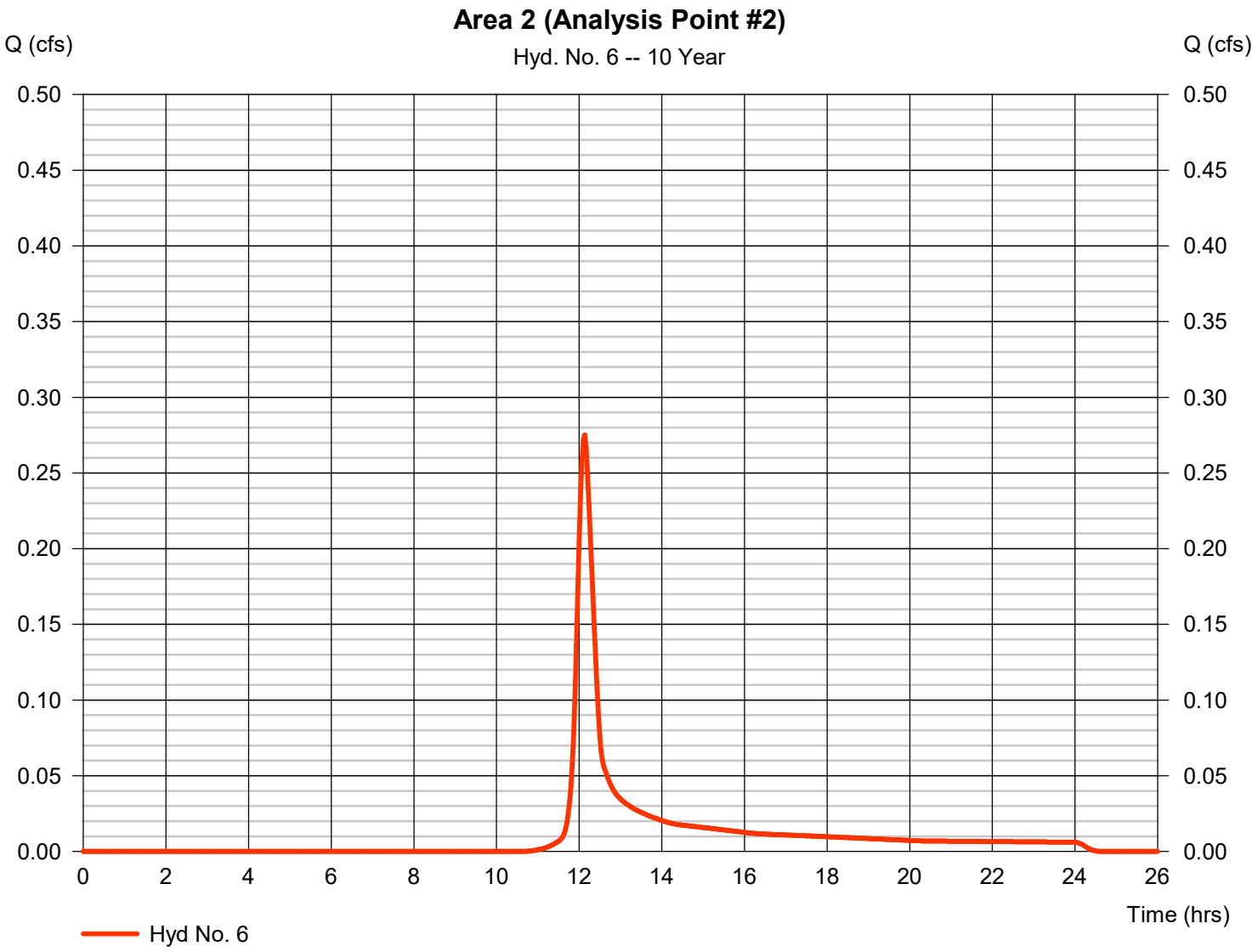
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 6

Area 2 (Analysis Point #2)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.275 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 995 cuft
Drainage area	= 0.230 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 22.06 min
Total precip.	= 3.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4

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	2.208	2	716	4,524	------	------	------	Area 1a
2	SCS Runoff	0.333	2	728	1,178	------	------	------	Area 1b
3	SCS Runoff	0.431	2	722	1,130	------	------	------	Area 1c
4	Combine	2.729	2	718	6,745	1, 2, 3	------	------	Analysis Point #1
6	SCS Runoff	0.403	2	728	1,426	------	------	------	Area 2 (Analysis Point #2)

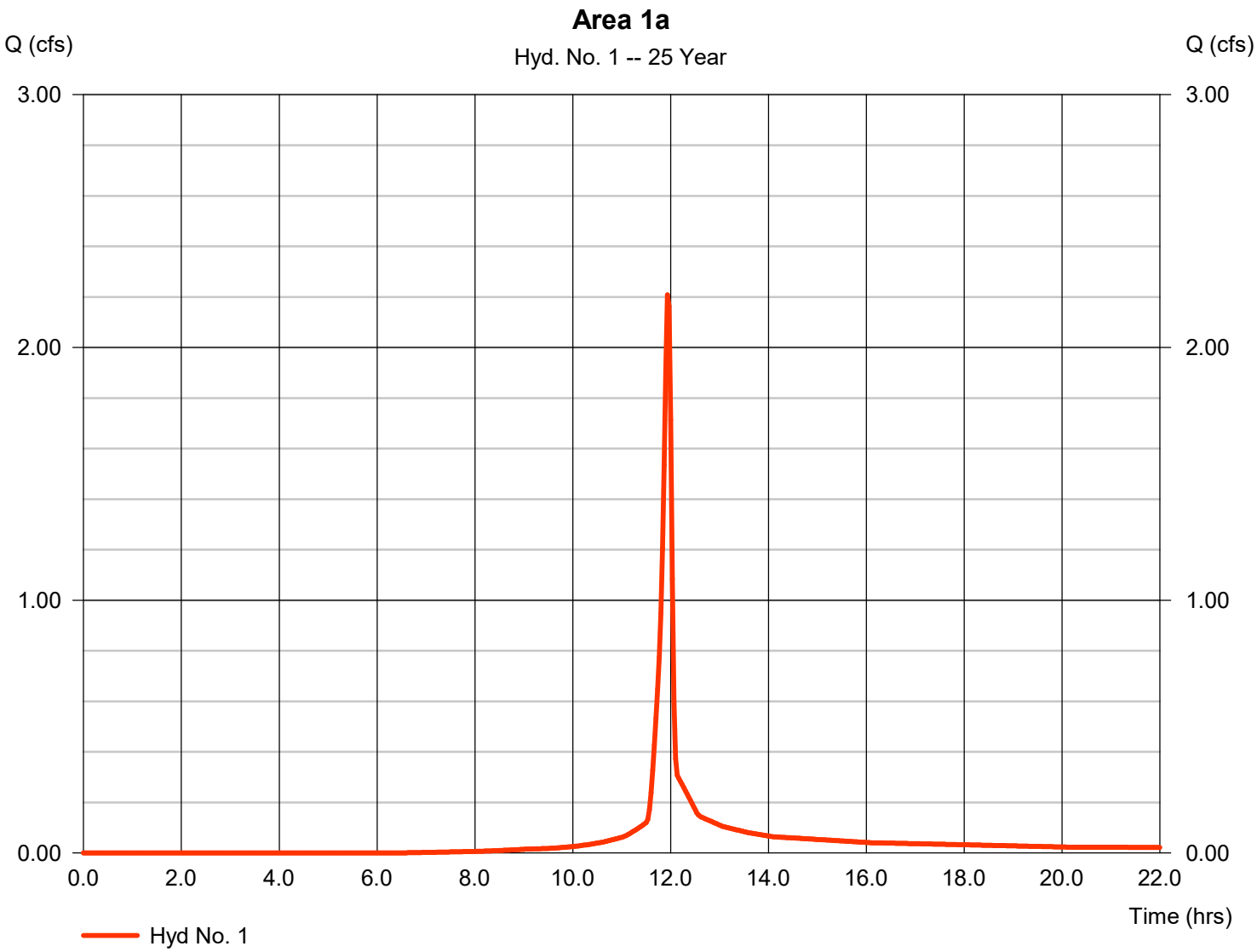
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 1

Area 1a

Hydrograph type	= SCS Runoff	Peak discharge	= 2.208 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 4,524 cuft
Drainage area	= 0.520 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.11 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



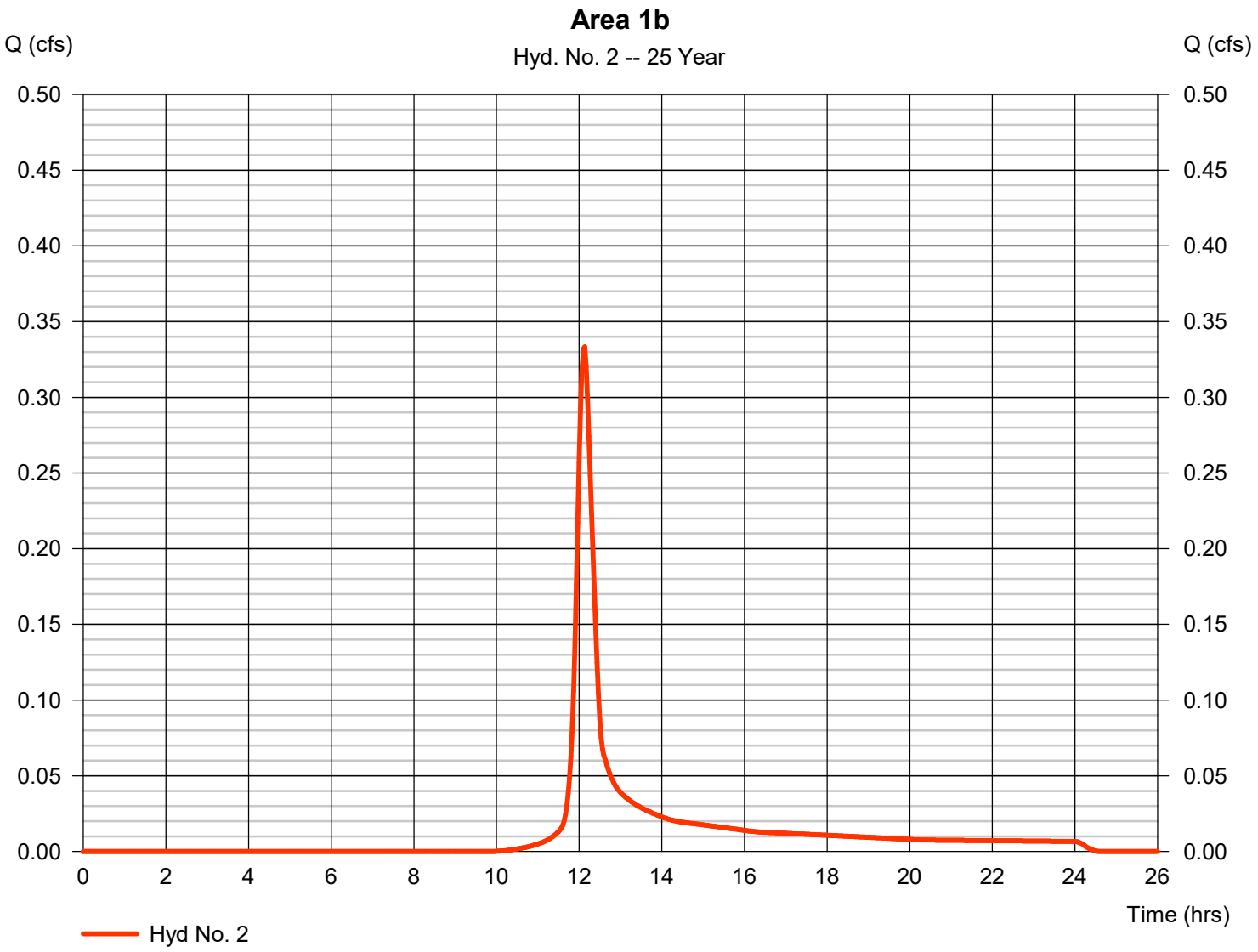
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 2

Area 1b

Hydrograph type	= SCS Runoff	Peak discharge	= 0.333 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 1,178 cuft
Drainage area	= 0.190 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.40 min
Total precip.	= 4.11 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



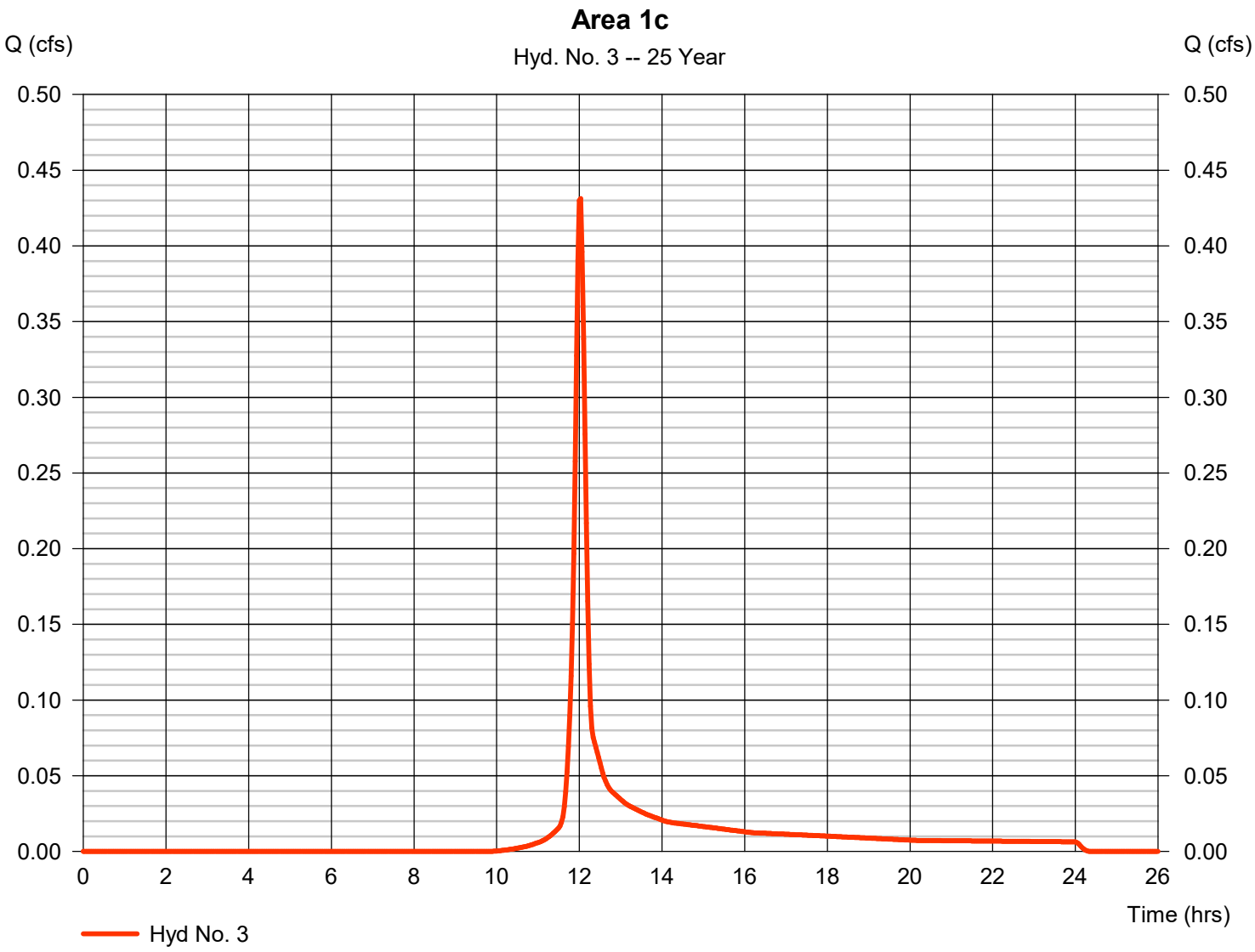
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 3

Area 1c

Hydrograph type	= SCS Runoff	Peak discharge	= 0.431 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 1,130 cuft
Drainage area	= 0.180 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.70 min
Total precip.	= 4.11 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



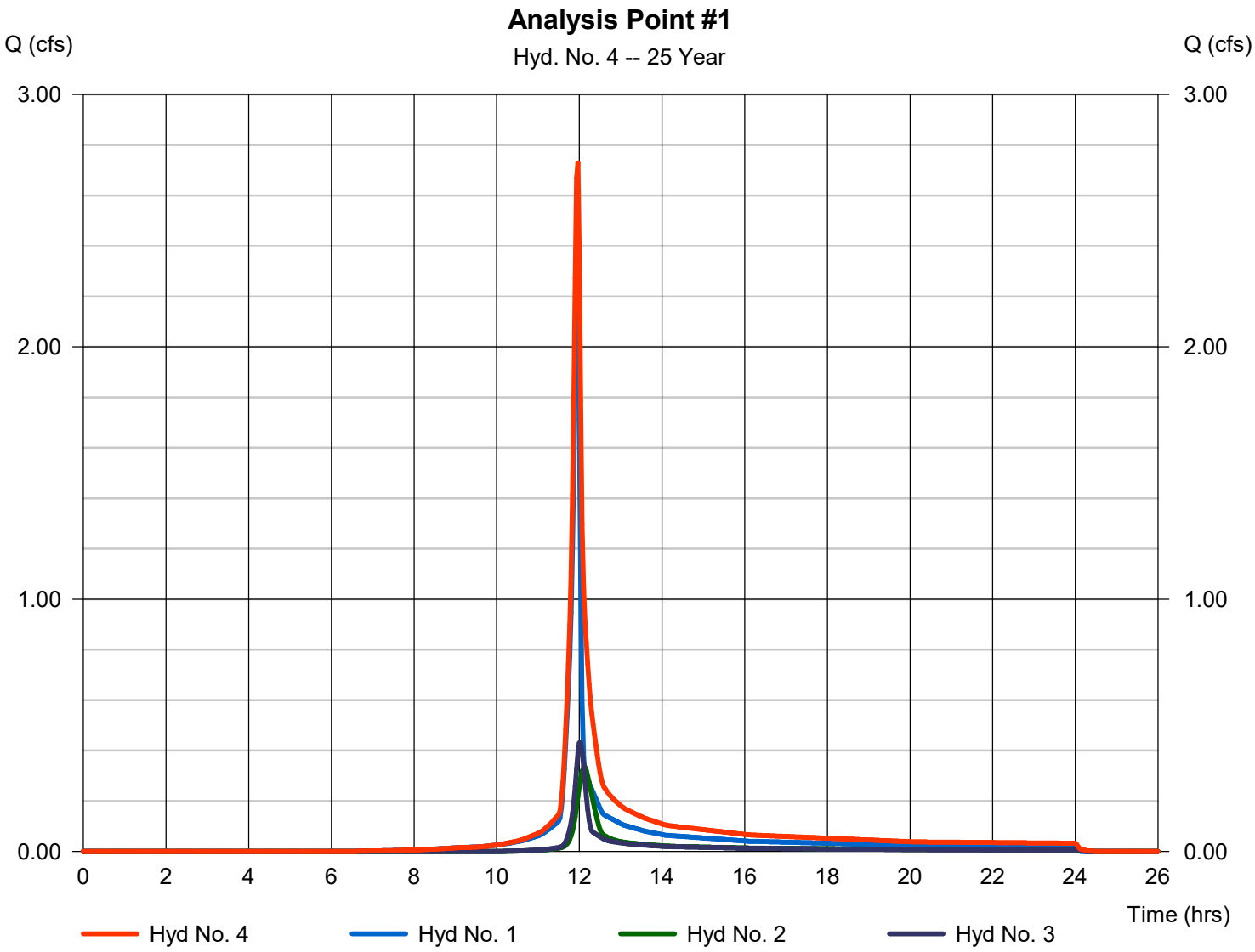
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 4

Analysis Point #1

Hydrograph type	= Combine	Peak discharge	= 2.729 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 6,745 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 0.890 ac



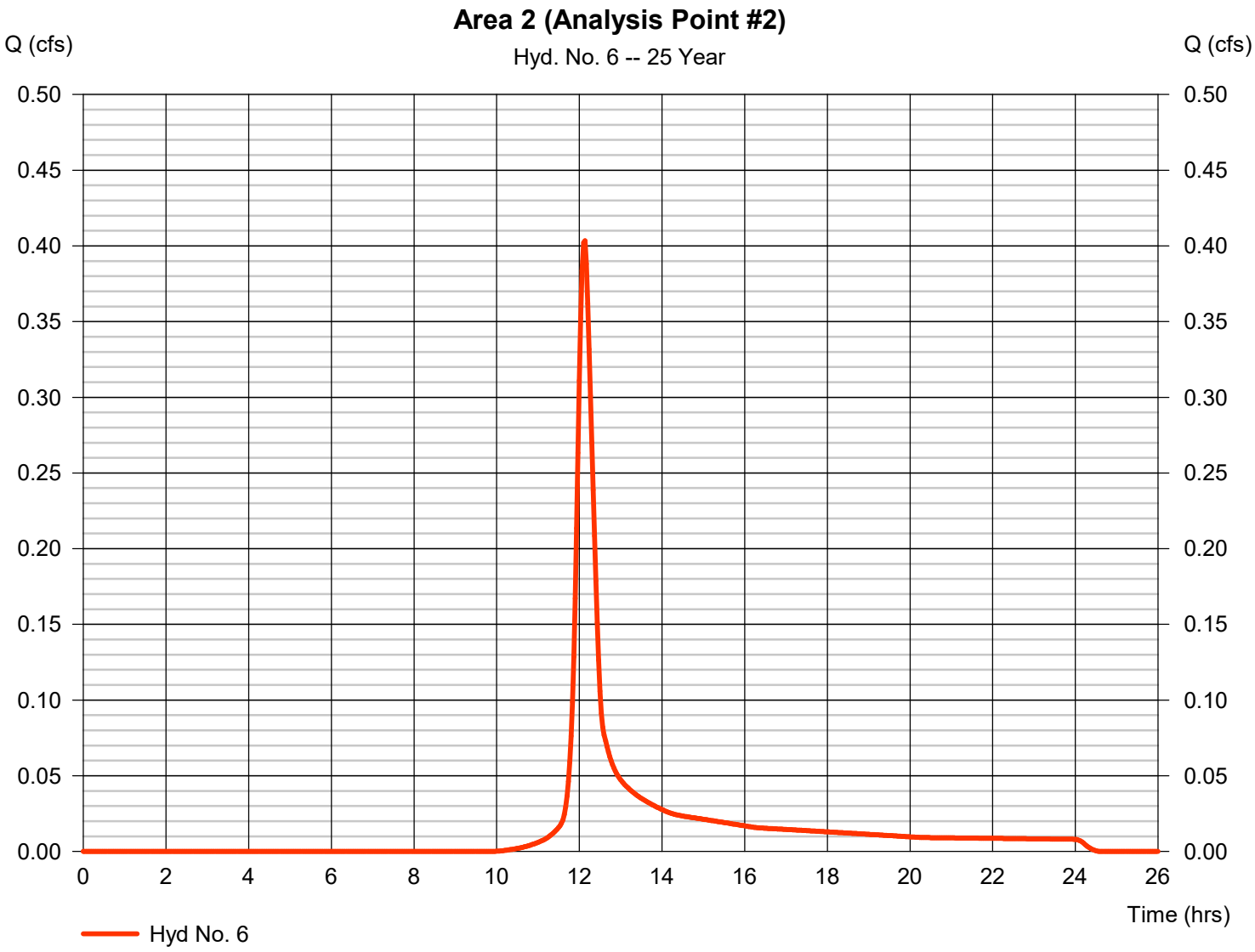
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 6

Area 2 (Analysis Point #2)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.403 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 1,426 cuft
Drainage area	= 0.230 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 22.06 min
Total precip.	= 4.11 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4

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	3.032	2	716	6,305	------	------	------	Area 1a
2	SCS Runoff	0.511	2	726	1,778	------	------	------	Area 1b
3	SCS Runoff	0.657	2	720	1,707	------	------	------	Area 1c
4	Combine	3.846	2	718	9,668	1, 2, 3	------	------	Analysis Point #1
6	SCS Runoff	0.619	2	726	2,152	------	------	------	Area 2 (Analysis Point #2)

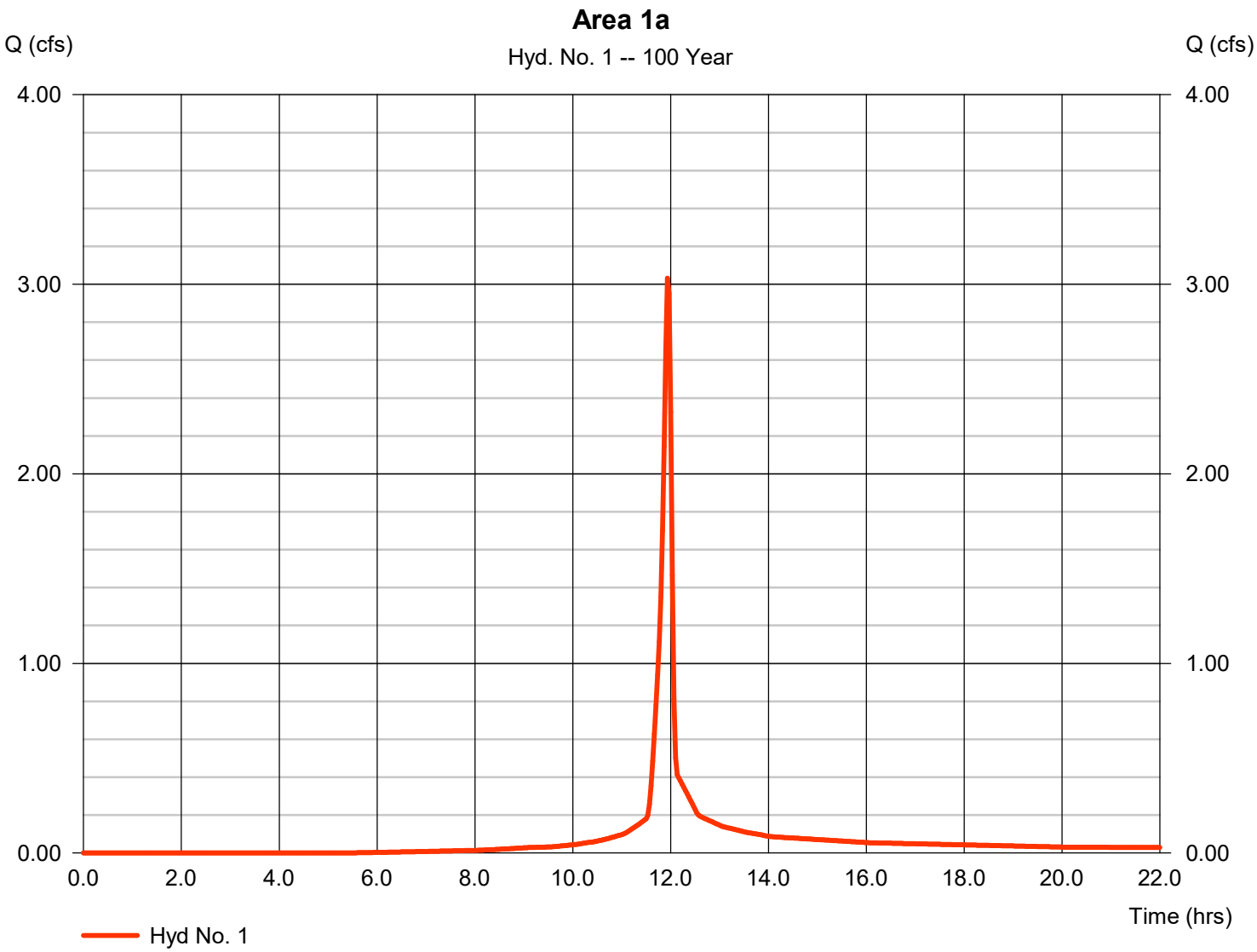
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 1

Area 1a

Hydrograph type	= SCS Runoff	Peak discharge	= 3.032 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 6,305 cuft
Drainage area	= 0.520 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



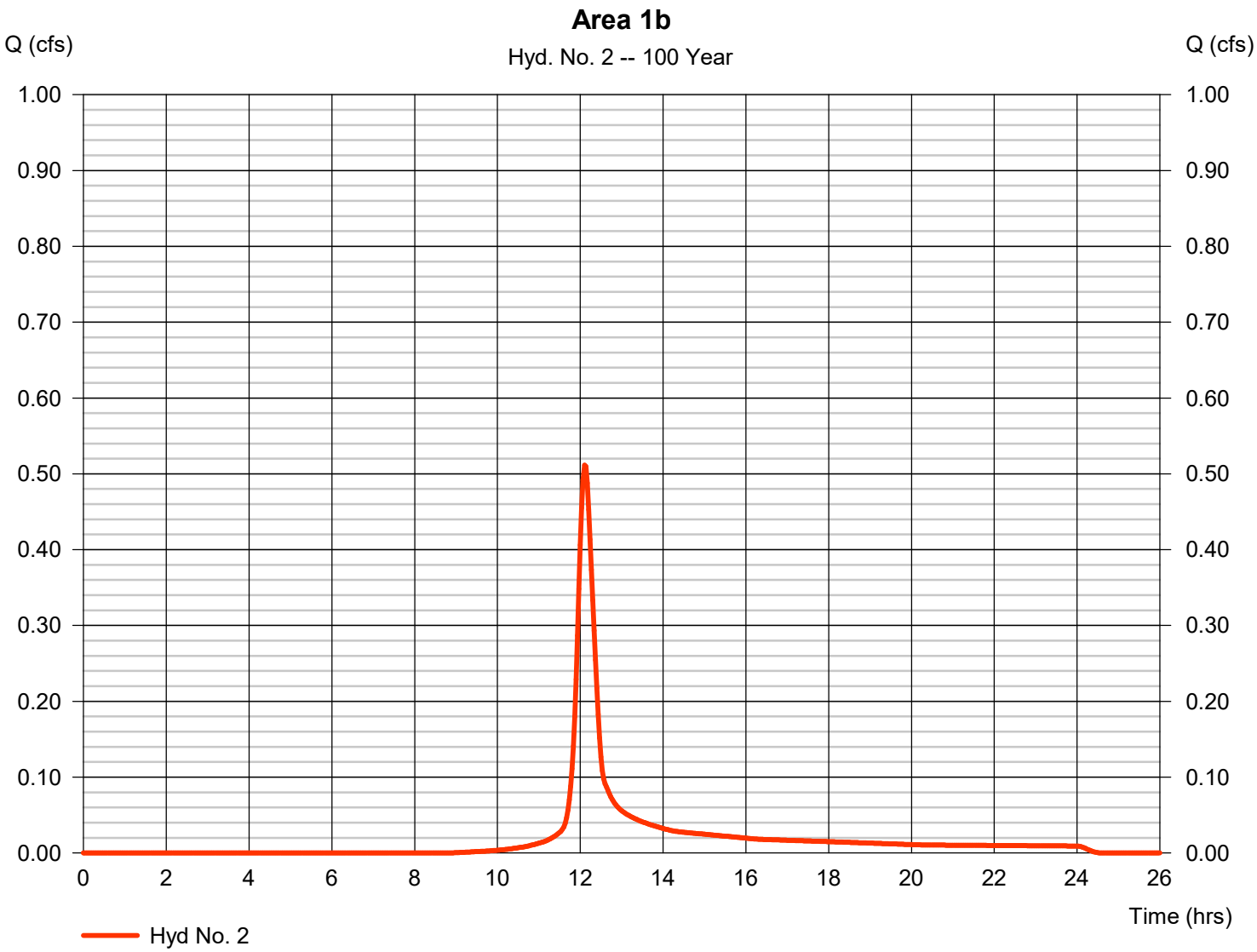
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 2

Area 1b

Hydrograph type	= SCS Runoff	Peak discharge	= 0.511 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 1,778 cuft
Drainage area	= 0.190 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.40 min
Total precip.	= 5.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



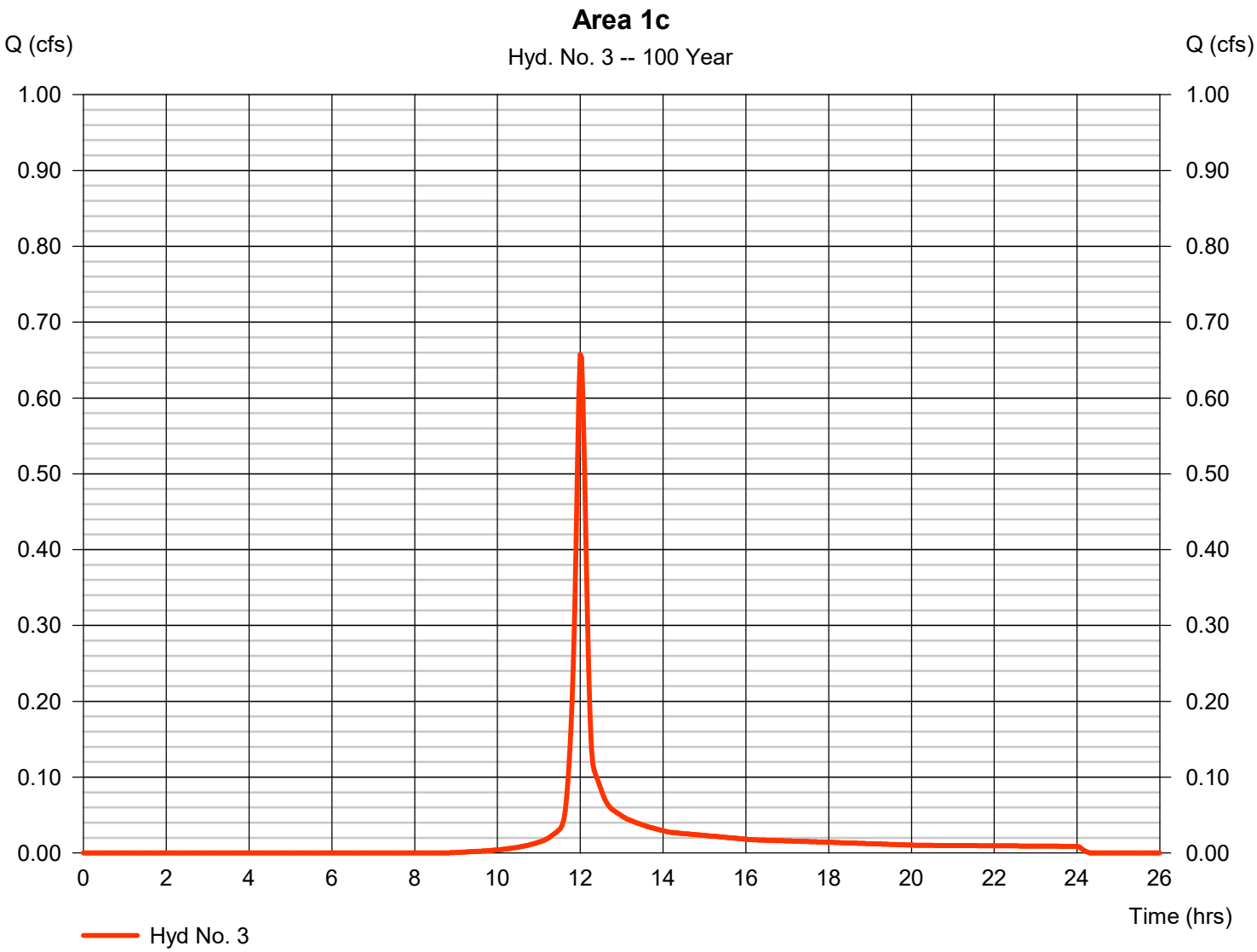
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 3

Area 1c

Hydrograph type	= SCS Runoff	Peak discharge	= 0.657 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 1,707 cuft
Drainage area	= 0.180 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.70 min
Total precip.	= 5.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



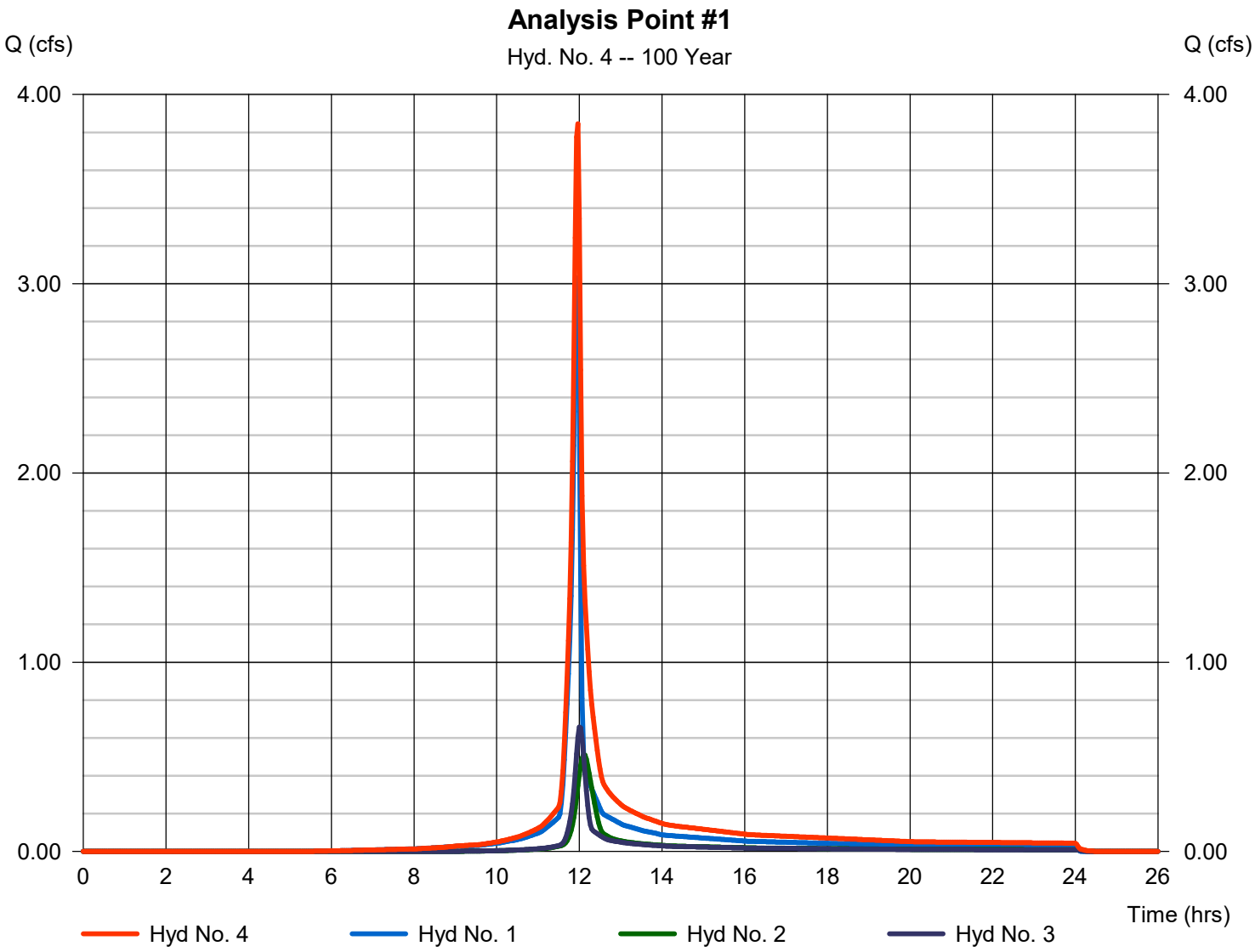
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 4

Analysis Point #1

Hydrograph type	= Combine	Peak discharge	= 3.846 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 9,668 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 0.890 ac



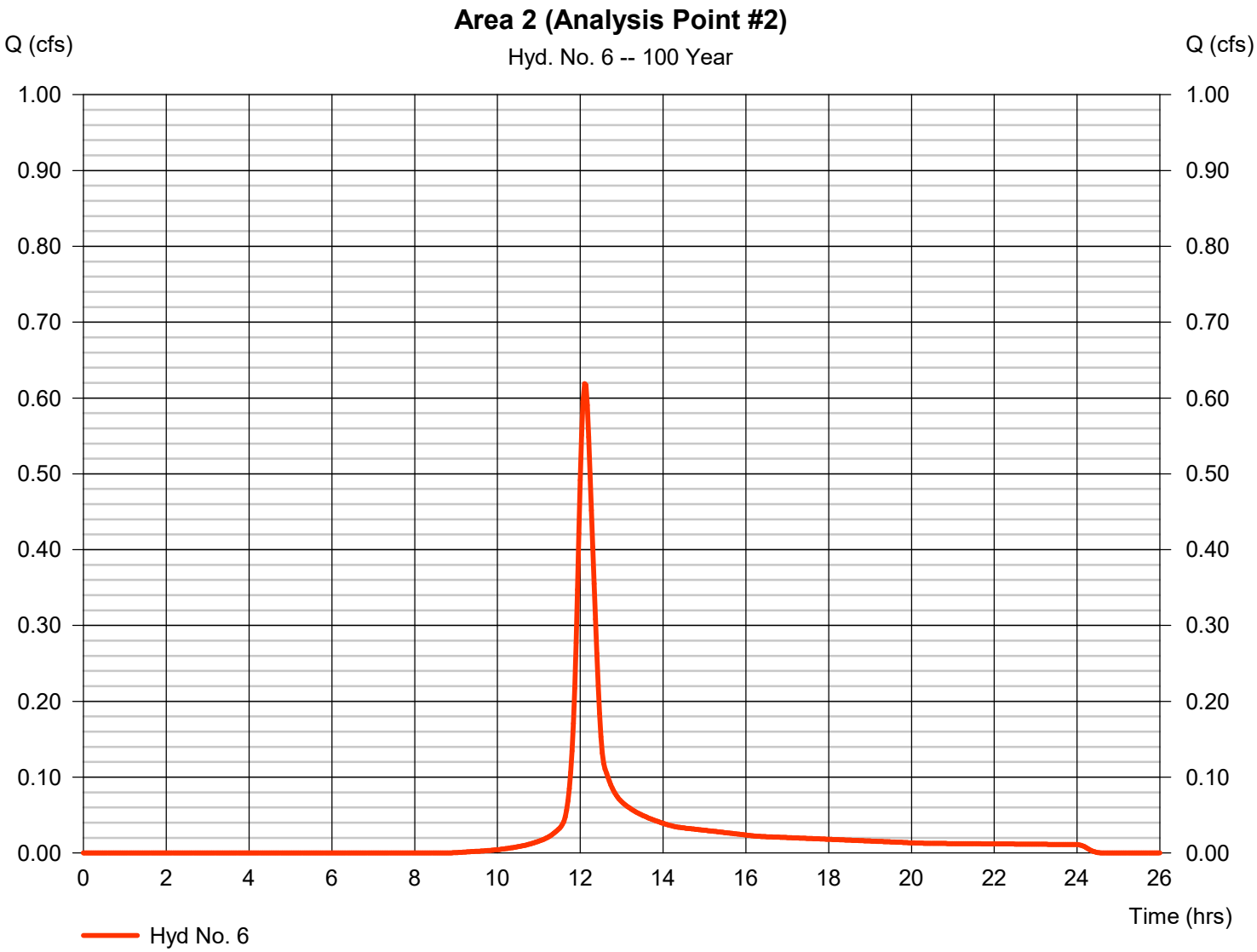
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 6

Area 2 (Analysis Point #2)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.619 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 2,152 cuft
Drainage area	= 0.230 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 22.06 min
Total precip.	= 5.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	0.0000	0.0000	0.0000	--------
3	0.0000	0.0000	0.0000	--------
5	0.0000	0.0000	0.0000	--------
10	0.0000	0.0000	0.0000	--------
25	0.0000	0.0000	0.0000	--------
50	0.0000	0.0000	0.0000	--------
100	0.0000	0.0000	0.0000	--------

File name: null.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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

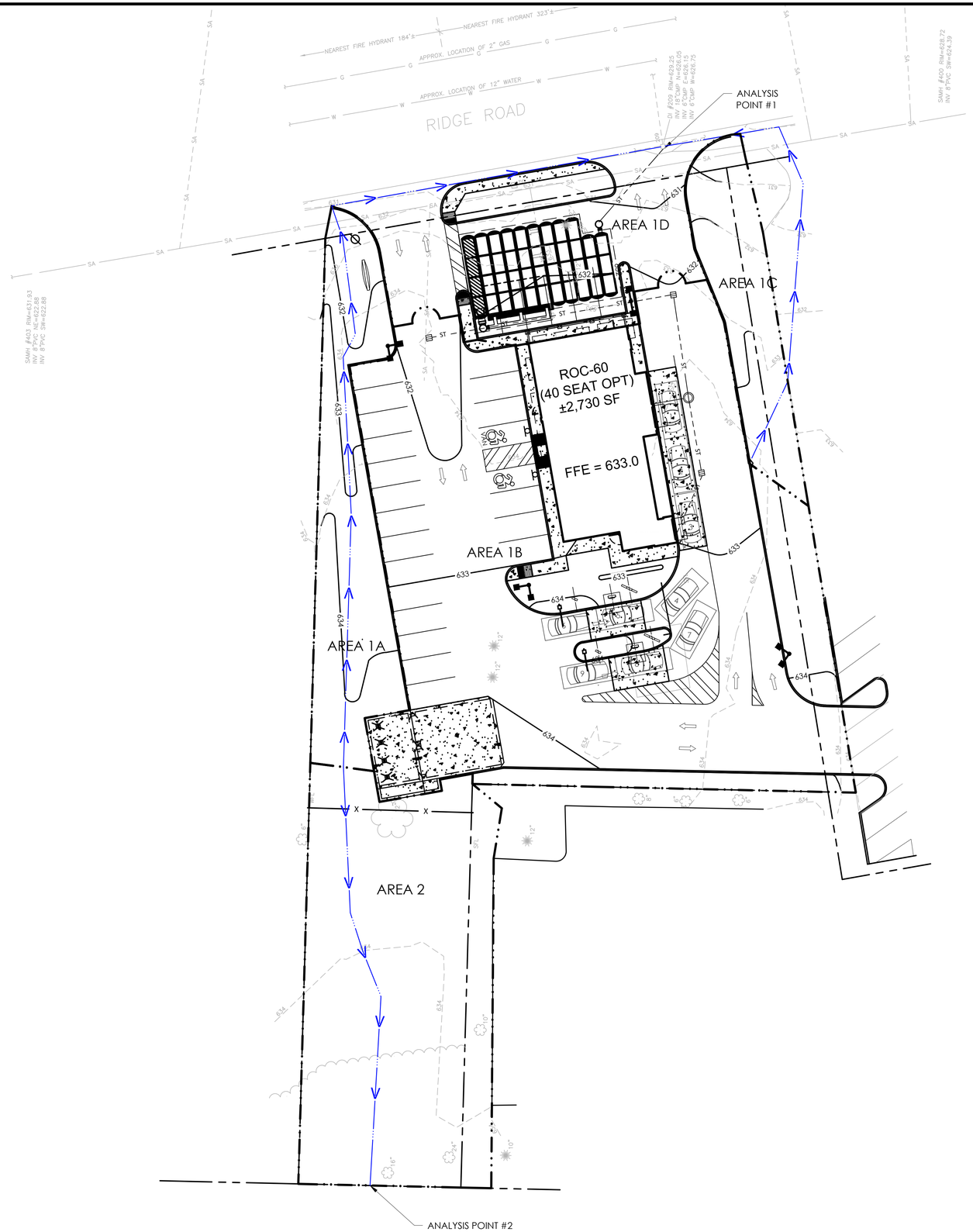
Tc = time in minutes. Values may exceed 60.

- JSC - BKxxxx - West Seneca NY\Civil\Design Documents\Reports\Storm\21-0239 BK West Seneca Rainfall Data.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	1.88	2.26	0.00	0.00	3.40	4.11	0.00	5.21
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

APPENDIX II

Proposed Drainage Conditions Plan (DR 2)
And Hydraflow Hydrographs Output for Proposed Conditions
(including TR-55 Time of Concentration Calculations)



0 10 20 40 60

Graphic Scale: 1"=20'

AS REQUIRED BY NEW YORK STATE LAW, CONTRACTOR SHALL CONTACT "DIG SAFELY NEW YORK" (UFPO) @ 1-800-962-7962 FOR LOCATION STAKE-OUT OF ALL UTILITIES, AT LEAST 2 FULL WORKING DAYS PRIOR TO ANY EXCAVATION.

NORTH

REFERENCE:

1. 4775 1997-2003 RIDGE RD BURGER KING.DWG, SHEET NUMBER 1, LAST REVISED ON 12/13/2021, PREPARED BY FRANDINA ENGINEERING AND LAND SURVEYING, PC

LEGEND OF IMPROVEMENTS

DRAINAGE AREA

TIME OF CONCENTRATION

Issued:	Date:
A	
B	
C	
D	
E	
F	
G	
H	

Revisions:	Date:
1	
2	
3	
4	
5	
6	
7	
8	

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New York License No.: 080577
Exp. Date. November 30, 2023
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ATTN: JAMES CAMMILLERI
BURGER KING FRANCHISEE
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S.B.L. No. 143.06-1-11, 12, & 13

1997, 2003, & 2007 Ridge Road

West Seneca, NY 14224

Erie County (Town of West Seneca)

Project Name & Location:

Proposed Drainage Map

Drawing Name:

Date: 04/19/21	Project No. 21-0239
Type: Sketch	
Drawn By: SAS	DR 2
Scale: 1" = 20'	Drawing No.

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Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4

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	------	0.022	0.042	-------	-------	0.120	0.175	-------	0.269	Area 1a
2	SCS Runoff	------	1.304	1.627	-------	-------	2.585	3.175	-------	4.083	Area 1b
3	SCS Runoff	------	0.013	0.025	-------	-------	0.072	0.105	-------	0.161	Area 1c
4	SCS Runoff	------	0.324	0.400	-------	-------	0.625	0.764	-------	0.978	Area 1d
6	Reservoir	2	0.261	0.430	-------	-------	0.795	0.962	-------	2.635	Route 1
7	Combine	1, 3, 4, 6	0.530	0.702	-------	-------	1.393	1.750	-------	3.704	Combine 1a,1c,1d, pond
9	SCS Runoff	------	0.051	0.097	-------	-------	0.275	0.403	-------	0.619	Area 2

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4

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	0.022	2	730	109	------	------	------	Area 1a
2	SCS Runoff	1.304	2	716	2,748	------	------	------	Area 1b
3	SCS Runoff	0.013	2	730	66	------	------	------	Area 1c
4	SCS Runoff	0.324	2	716	695	------	------	------	Area 1d
6	Reservoir	0.261	2	726	2,738	2	627.62	1,052	Route 1
7	Combine	0.530	2	718	3,607	1, 3, 4, 6	------	------	Combine 1a,1c,1d, pond
9	SCS Runoff	0.051	2	730	251	------	------	------	Area 2

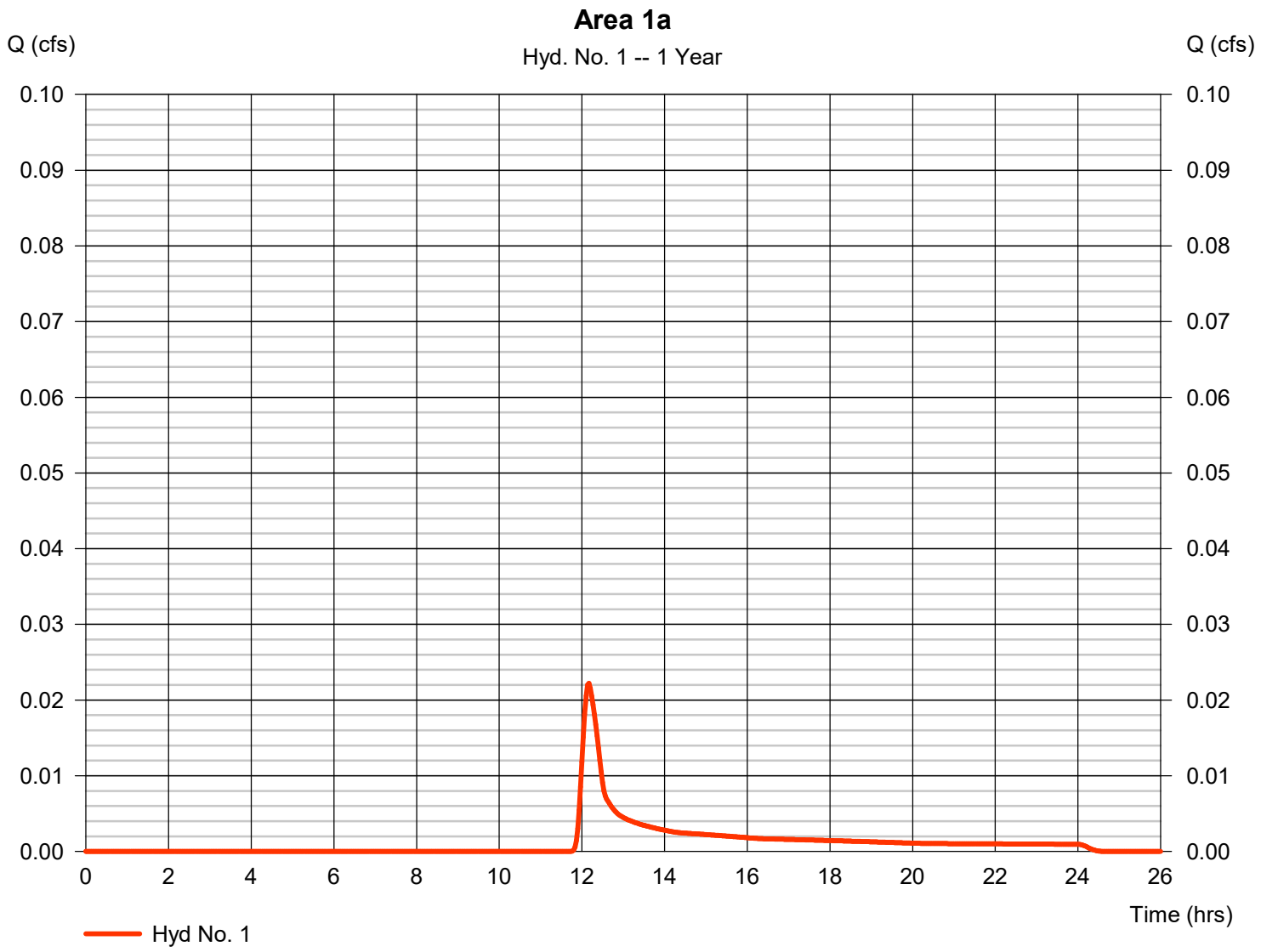
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 1

Area 1a

Hydrograph type	= SCS Runoff	Peak discharge	= 0.022 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 109 cuft
Drainage area	= 0.100 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.20 min
Total precip.	= 1.88 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



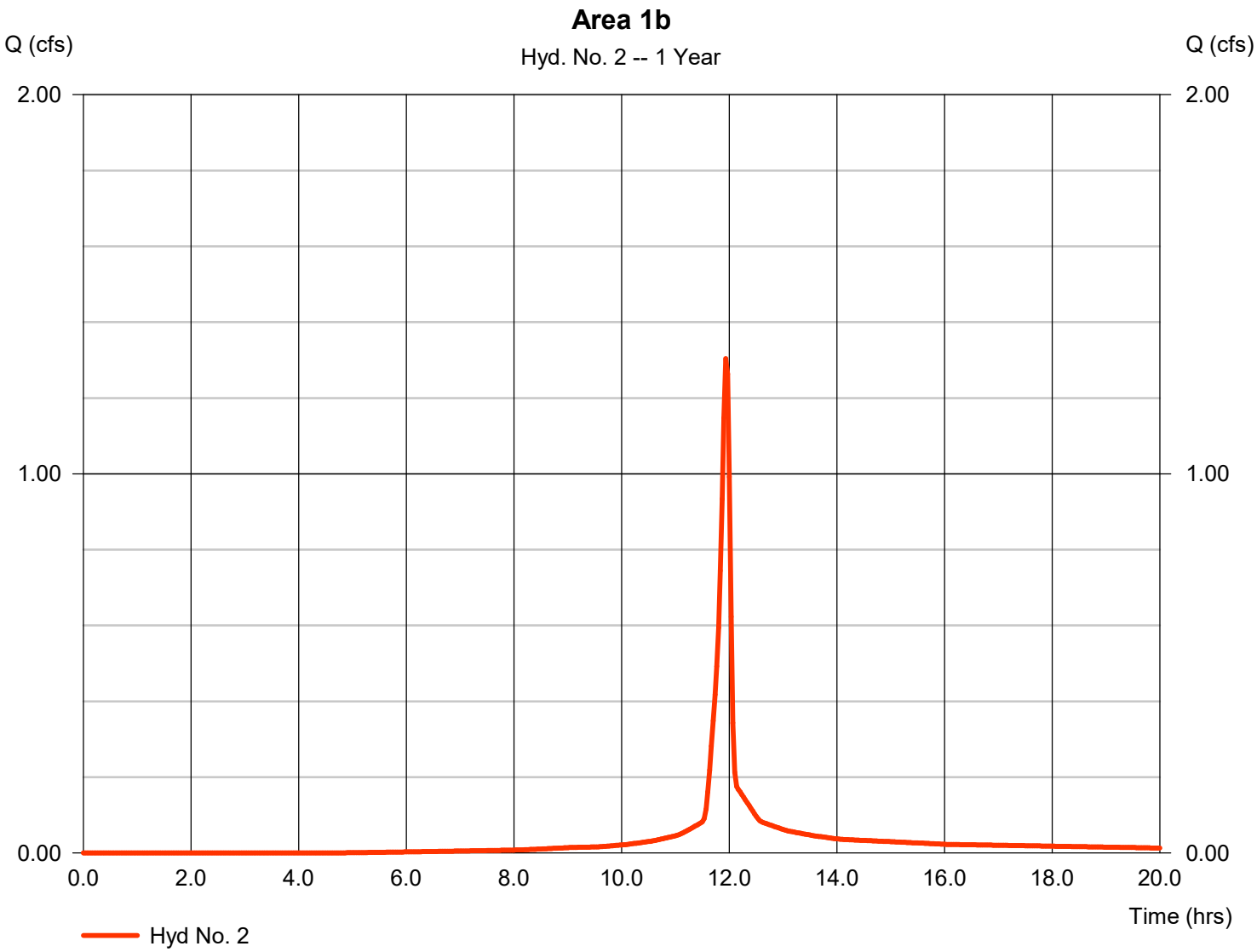
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 2

Area 1b

Hydrograph type	= SCS Runoff	Peak discharge	= 1.304 cfs
Storm frequency	= 1 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,748 cuft
Drainage area	= 0.590 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 1.88 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



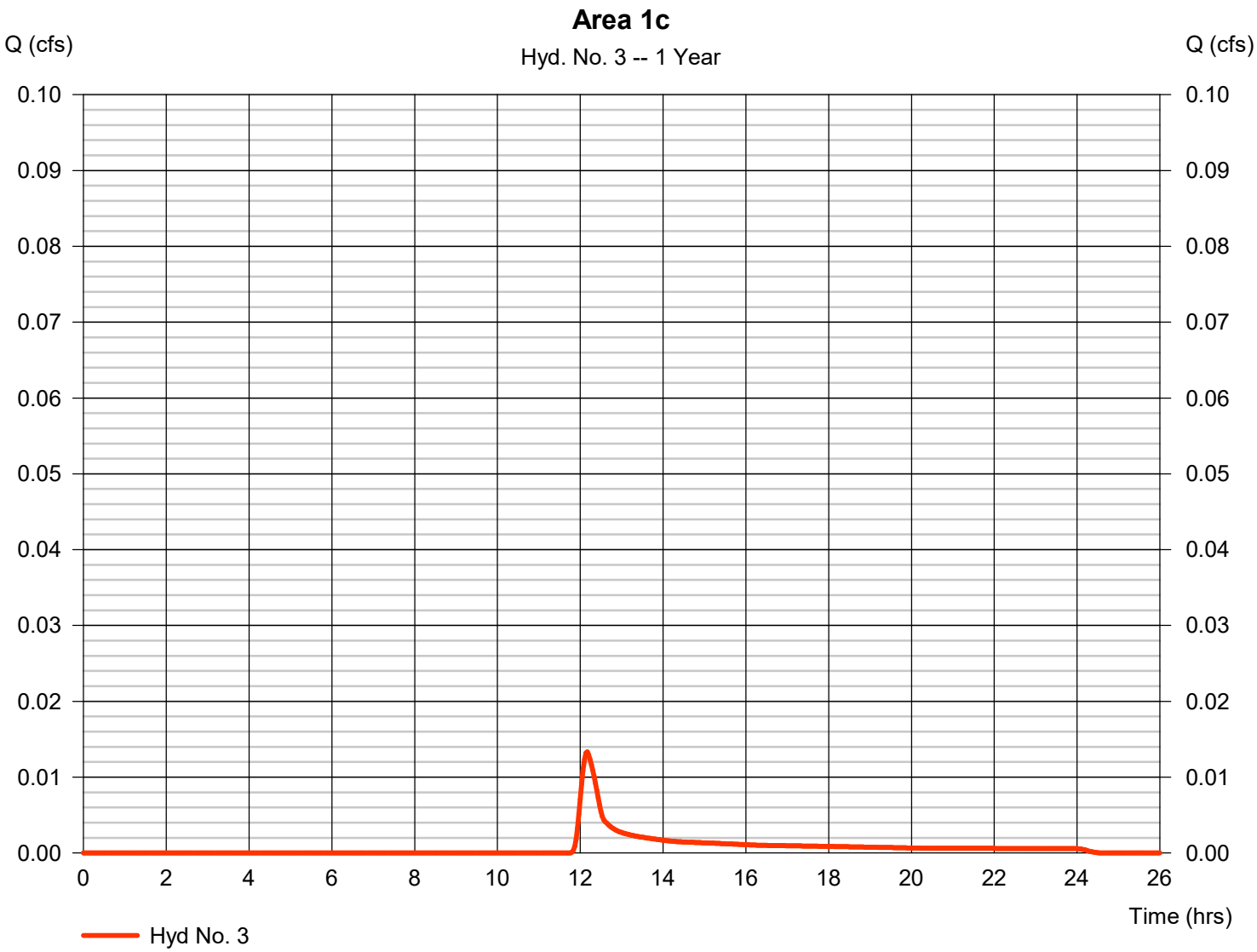
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 3

Area 1c

Hydrograph type	= SCS Runoff	Peak discharge	= 0.013 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 66 cuft
Drainage area	= 0.060 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.10 min
Total precip.	= 1.88 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



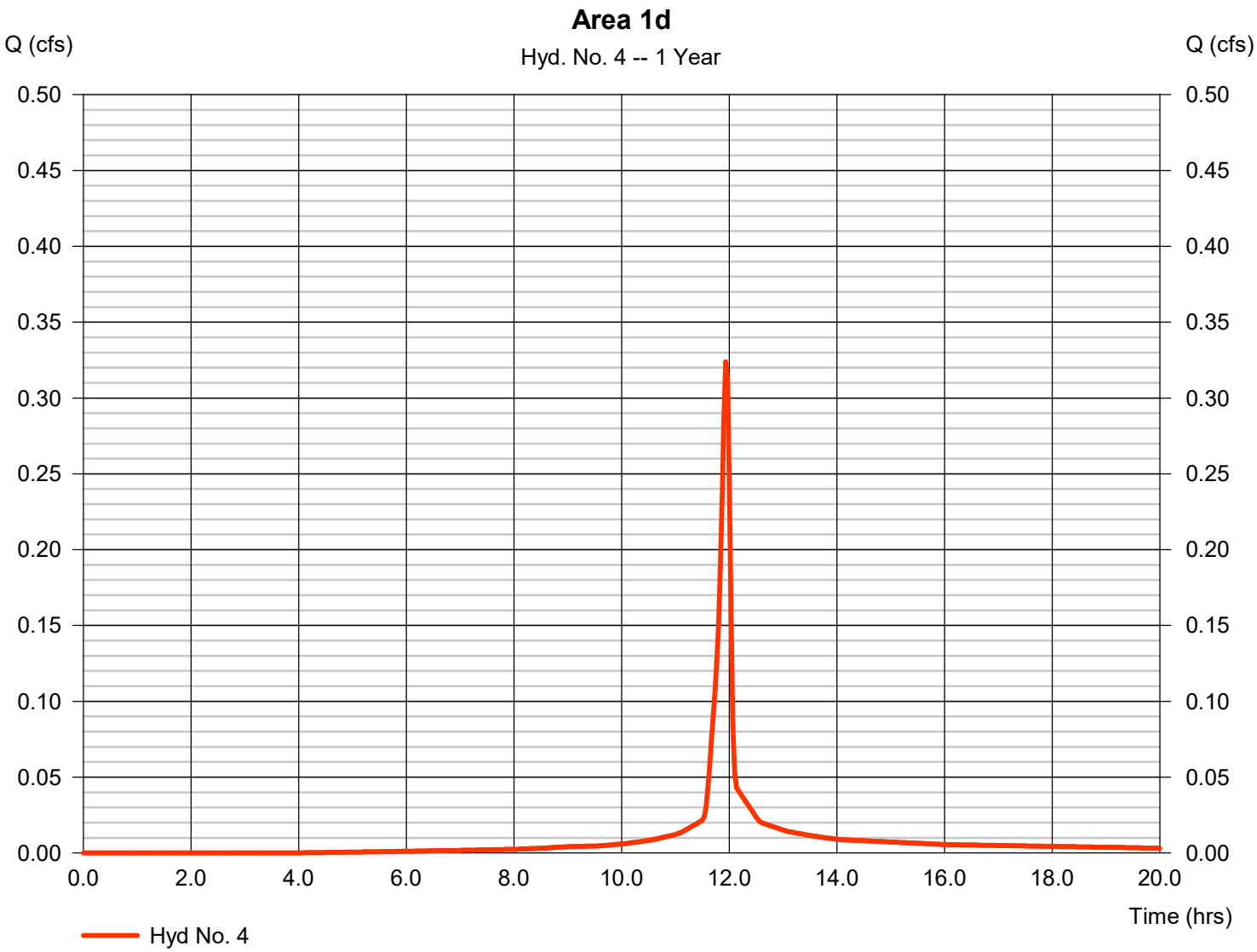
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 4

Area 1d

Hydrograph type	= SCS Runoff	Peak discharge	= 0.324 cfs
Storm frequency	= 1 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 695 cuft
Drainage area	= 0.140 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 1.88 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

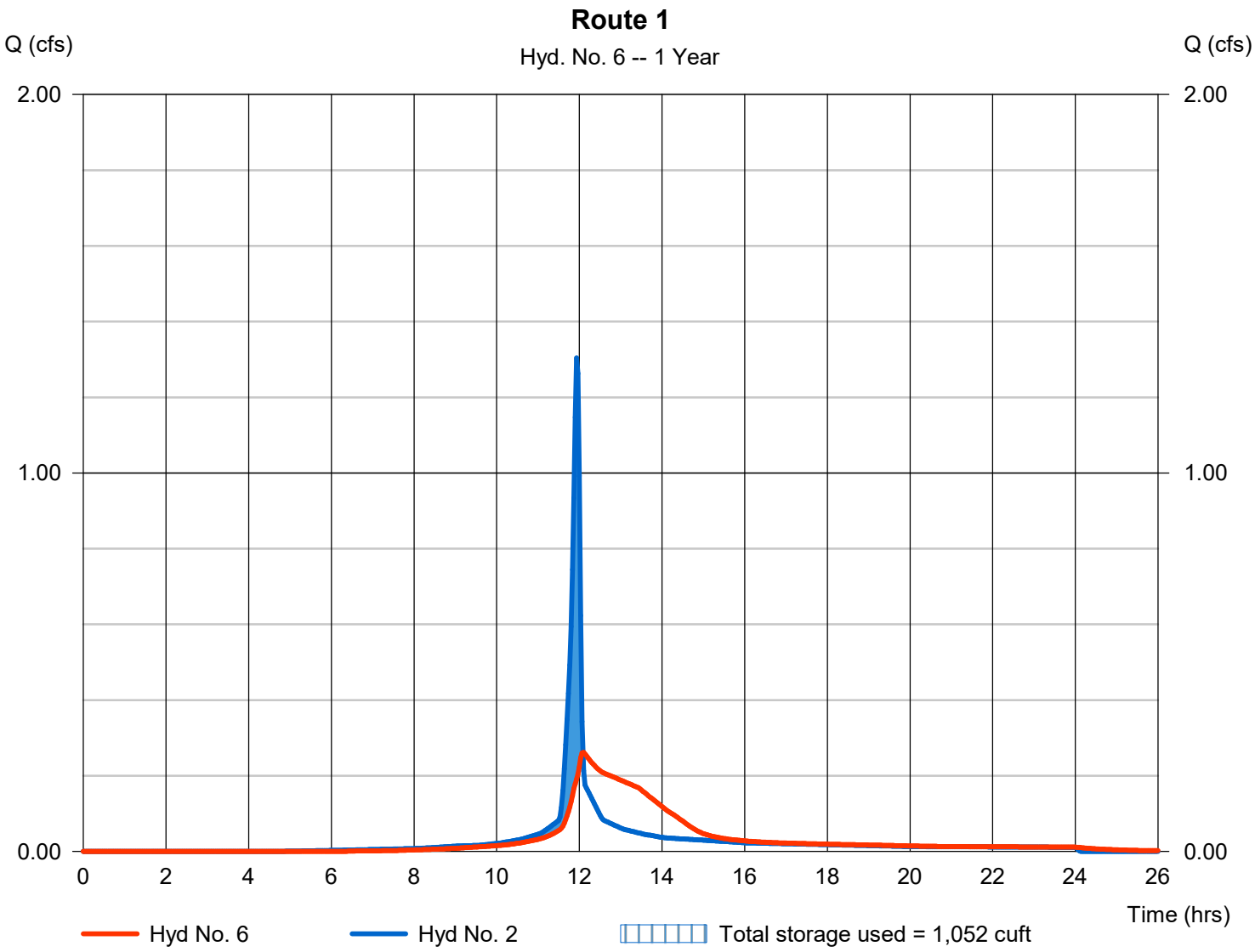
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 6

Route 1

Hydrograph type	= Reservoir	Peak discharge	= 0.261 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 2,738 cuft
Inflow hyd. No.	= 2 - Area 1b	Max. Elevation	= 627.62 ft
Reservoir name	= Detention Basin	Max. Storage	= 1,052 cuft

Storage Indication method used.



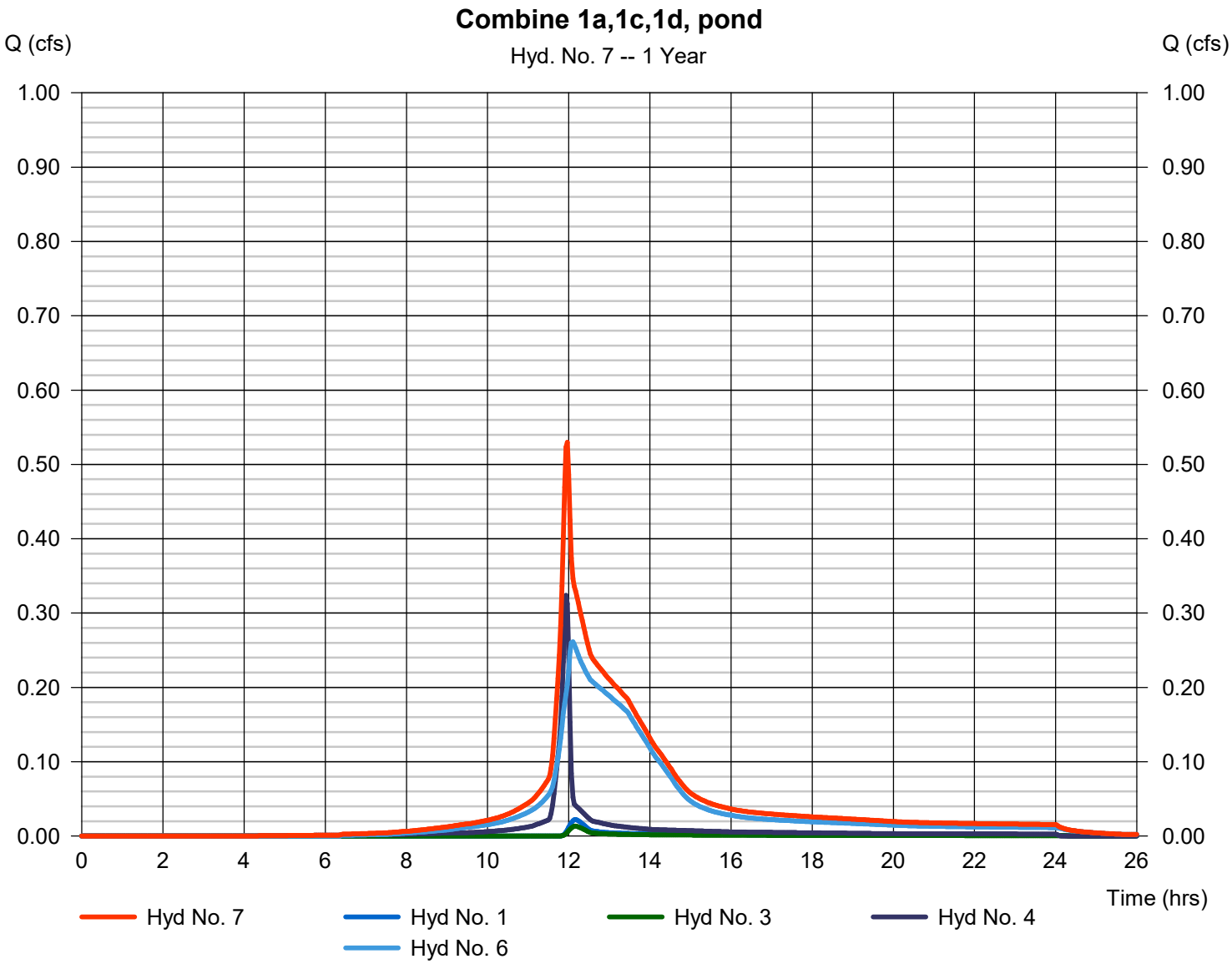
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 7

Combine 1a,1c,1d, pond

Hydrograph type	= Combine	Peak discharge	= 0.530 cfs
Storm frequency	= 1 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 3,607 cuft
Inflow hyds.	= 1, 3, 4, 6	Contrib. drain. area	= 0.300 ac



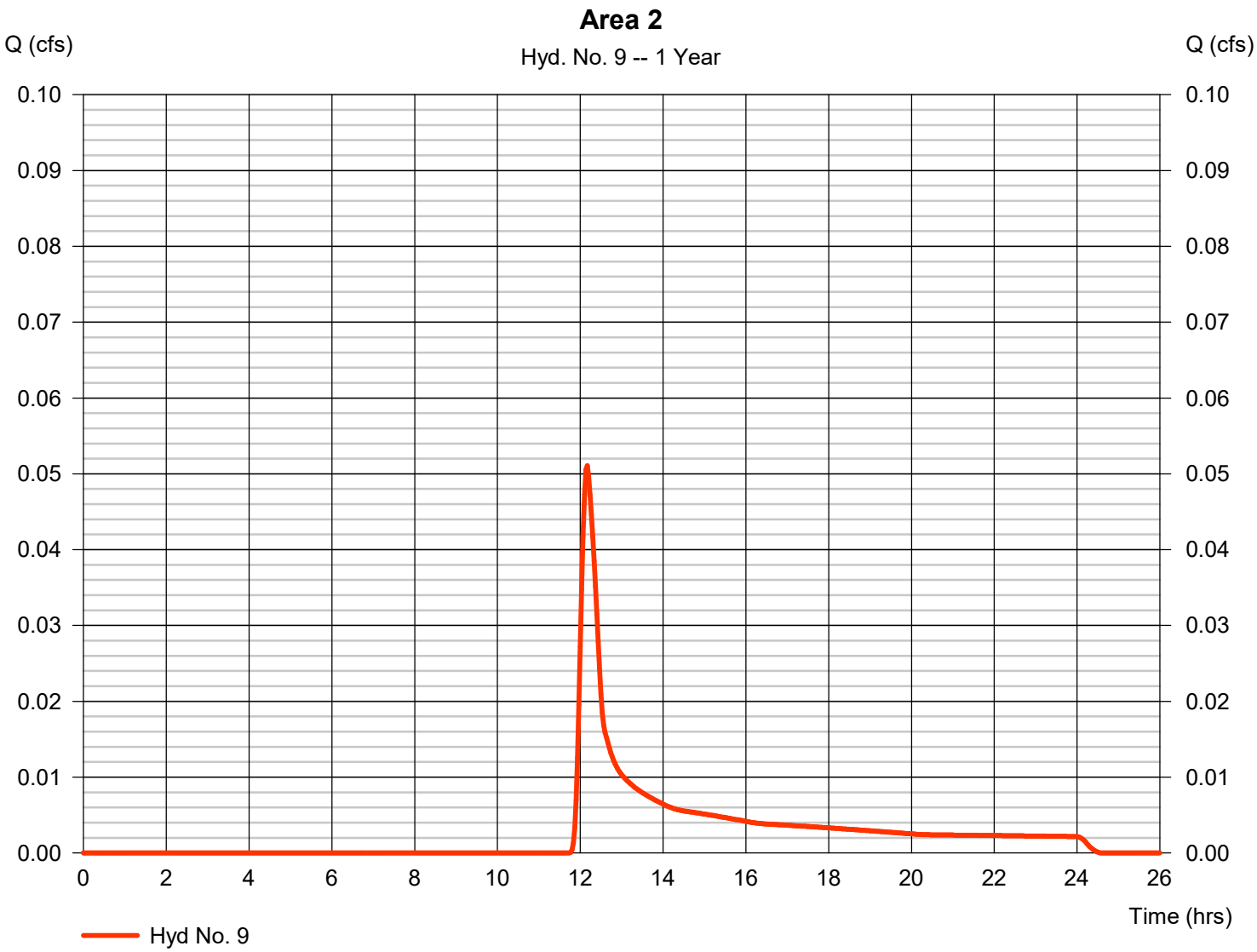
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 9

Area 2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.051 cfs
Storm frequency	= 1 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 251 cuft
Drainage area	= 0.230 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 22.10 min
Total precip.	= 1.88 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4

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	0.042	2	728	177	------	------	------	Area 1a
2	SCS Runoff	1.627	2	716	3,477	------	------	------	Area 1b
3	SCS Runoff	0.025	2	728	106	------	------	------	Area 1c
4	SCS Runoff	0.400	2	716	870	------	------	------	Area 1d
6	Reservoir	0.430	2	724	3,466	2	627.80	1,302	Route 1
7	Combine	0.702	2	720	4,620	1, 3, 4, 6	------	------	Combine 1a,1c,1d, pond
9	SCS Runoff	0.097	2	728	406	------	------	------	Area 2

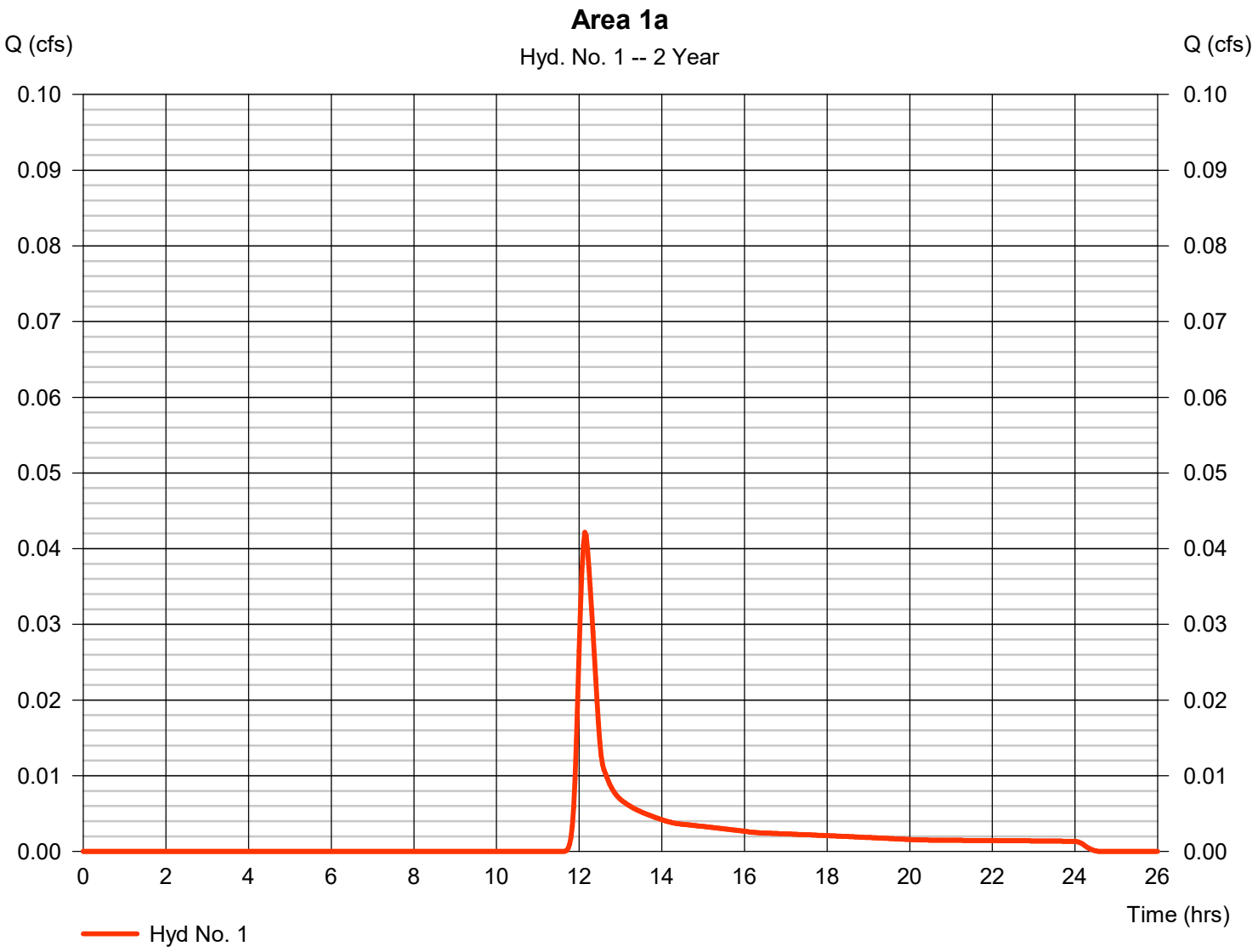
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 1

Area 1a

Hydrograph type	= SCS Runoff	Peak discharge	= 0.042 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 177 cuft
Drainage area	= 0.100 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.20 min
Total precip.	= 2.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



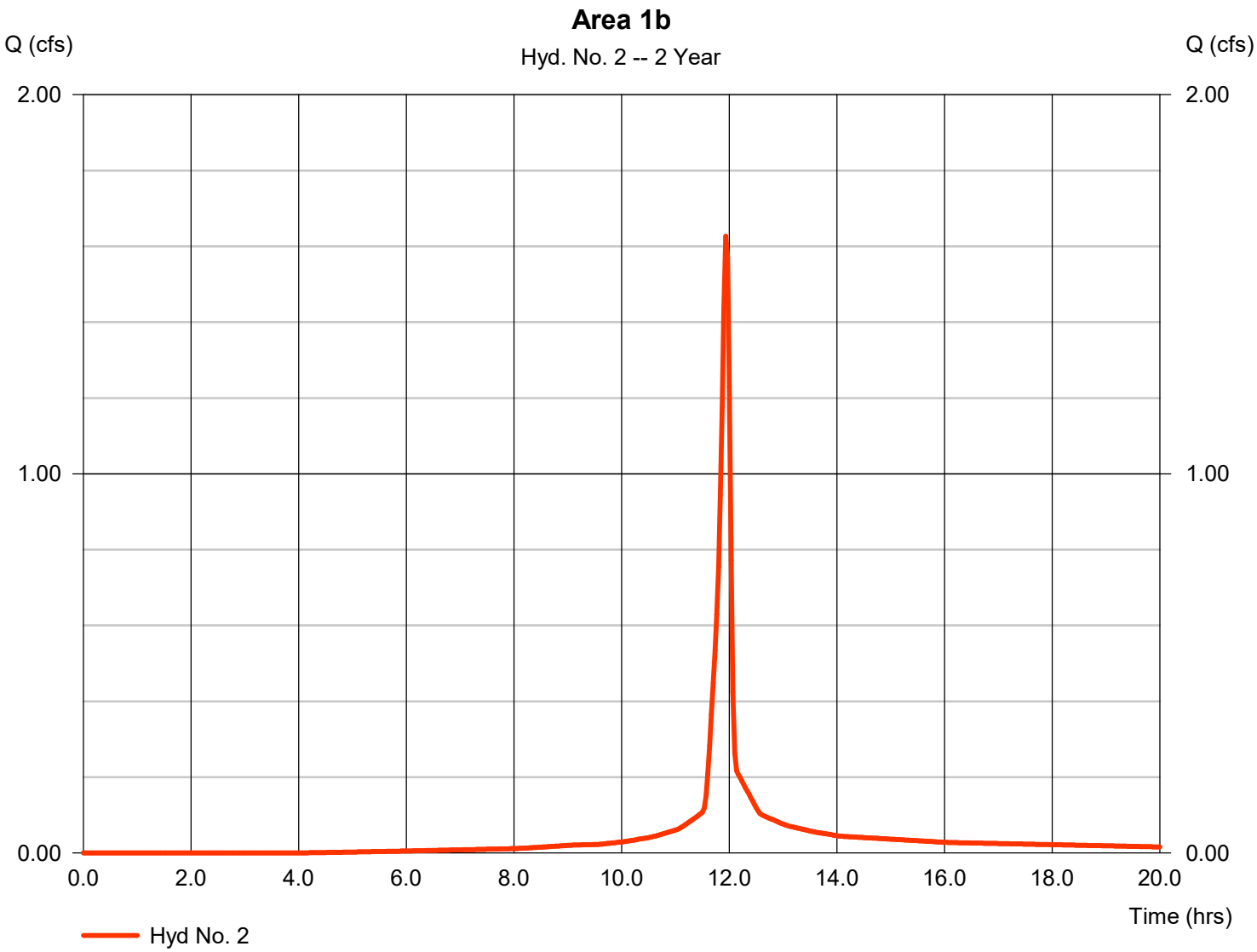
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 2

Area 1b

Hydrograph type	= SCS Runoff	Peak discharge	= 1.627 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 3,477 cuft
Drainage area	= 0.590 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



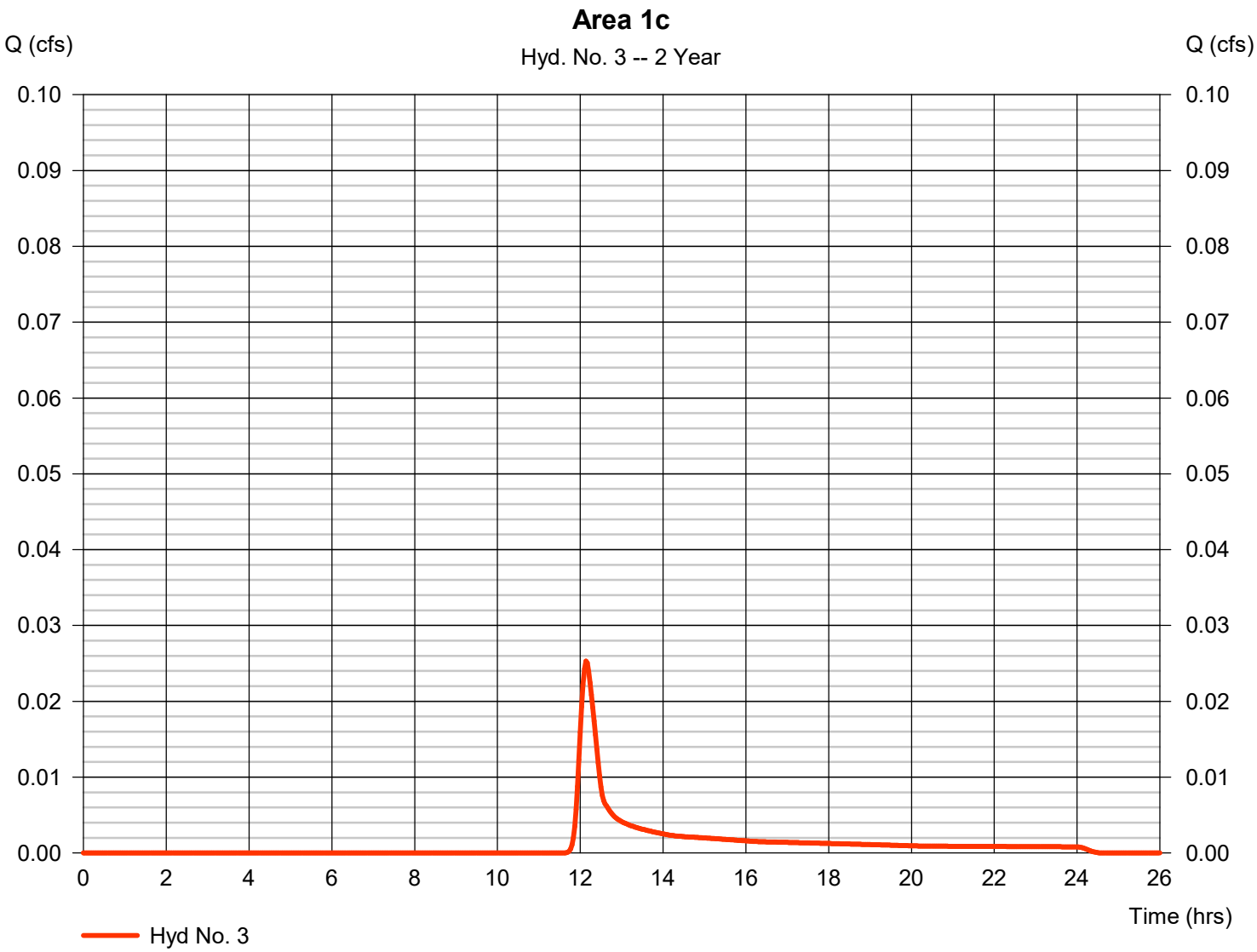
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 3

Area 1c

Hydrograph type	= SCS Runoff	Peak discharge	= 0.025 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 106 cuft
Drainage area	= 0.060 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.10 min
Total precip.	= 2.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



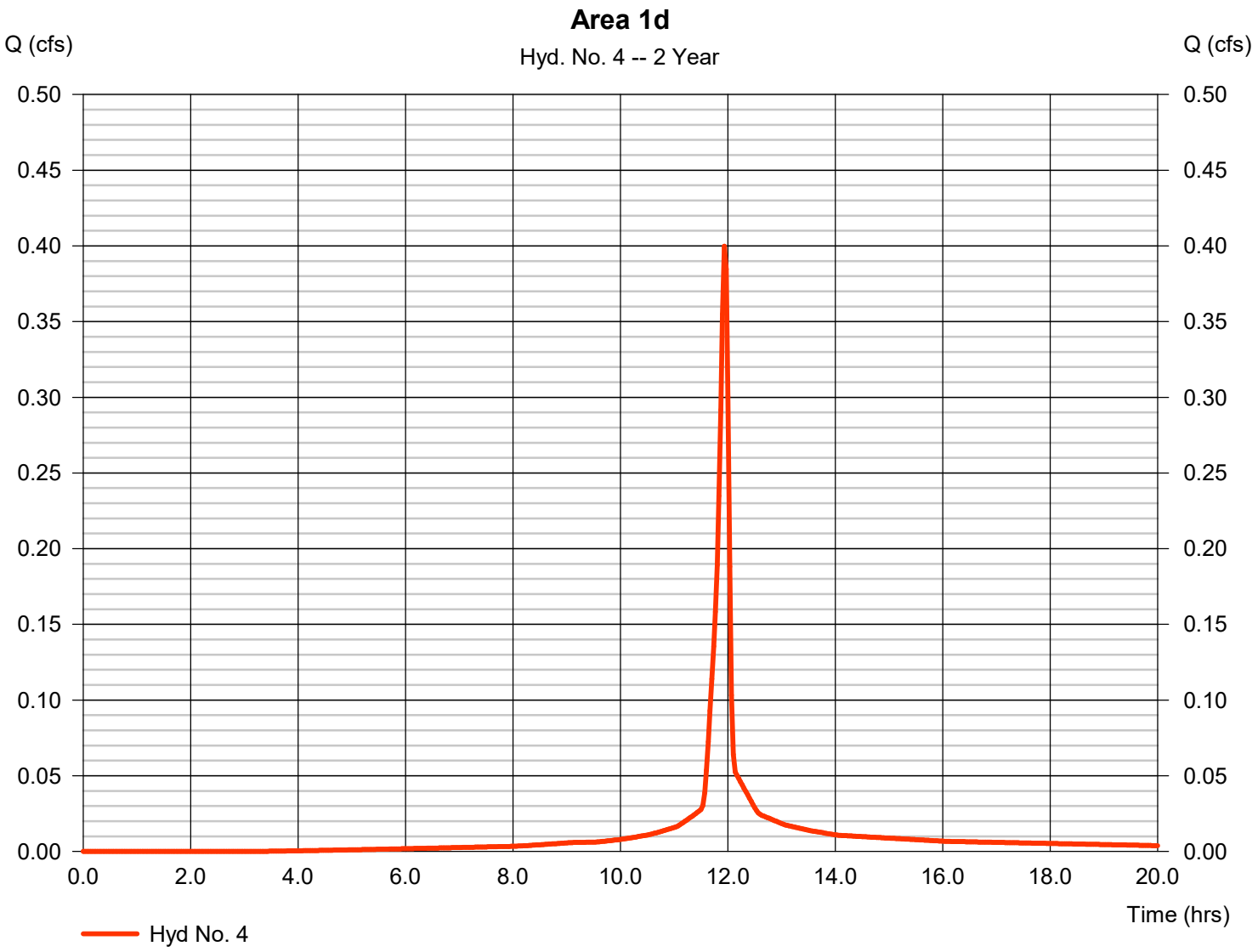
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 4

Area 1d

Hydrograph type	= SCS Runoff	Peak discharge	= 0.400 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 870 cuft
Drainage area	= 0.140 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

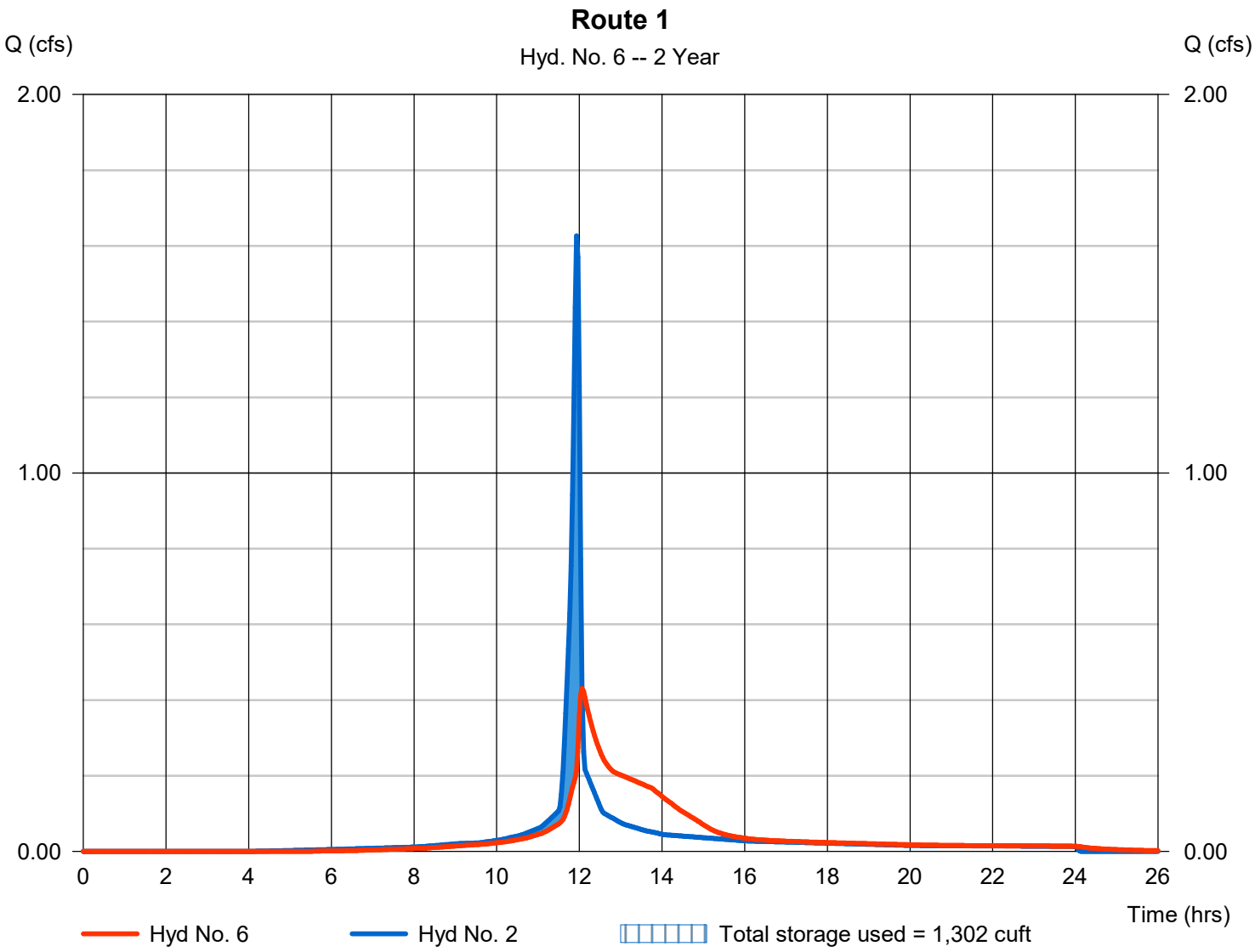
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 6

Route 1

Hydrograph type	= Reservoir	Peak discharge	= 0.430 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 3,466 cuft
Inflow hyd. No.	= 2 - Area 1b	Max. Elevation	= 627.80 ft
Reservoir name	= Detention Basin	Max. Storage	= 1,302 cuft

Storage Indication method used.



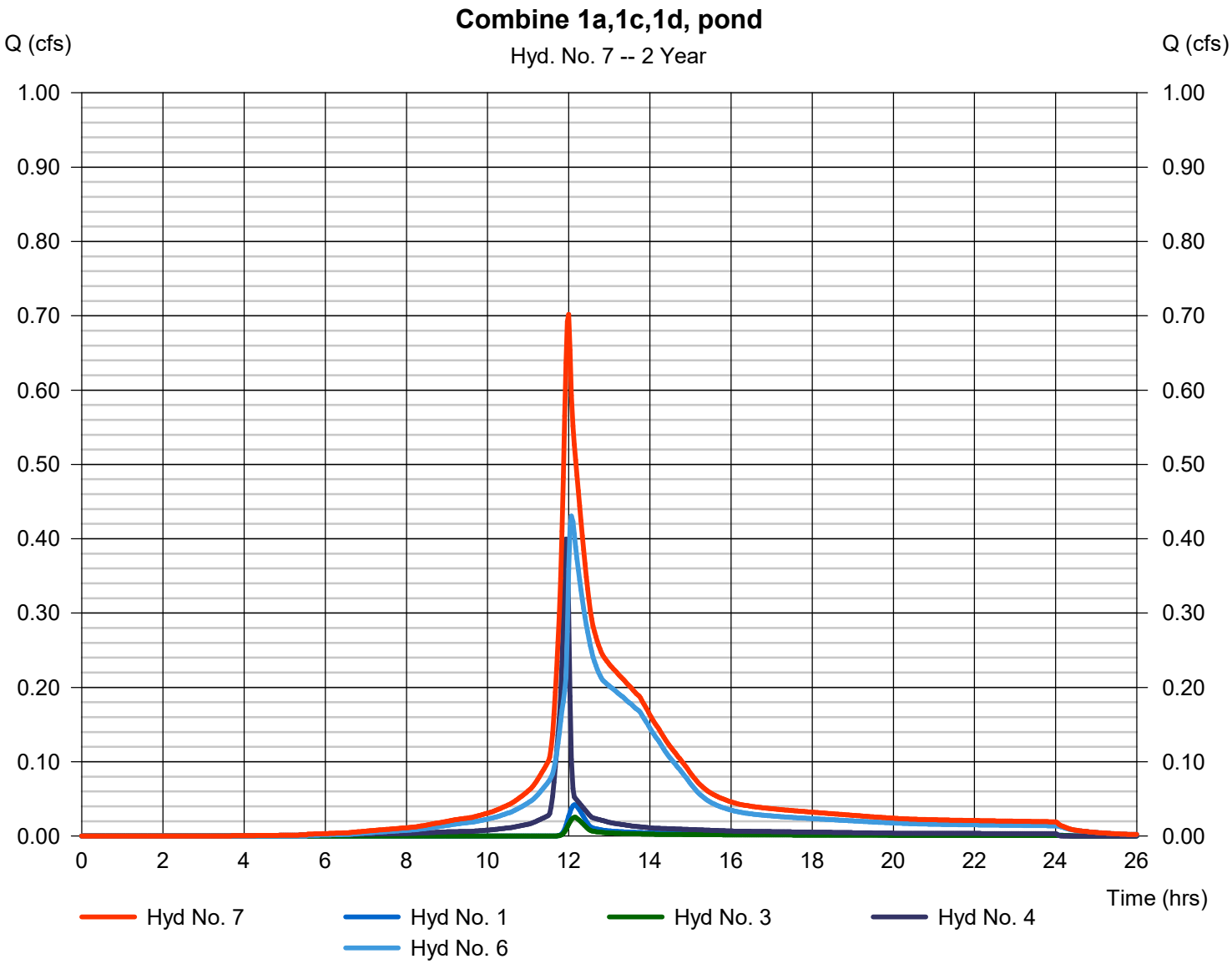
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 7

Combine 1a,1c,1d, pond

Hydrograph type	= Combine	Peak discharge	= 0.702 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 4,620 cuft
Inflow hyds.	= 1, 3, 4, 6	Contrib. drain. area	= 0.300 ac



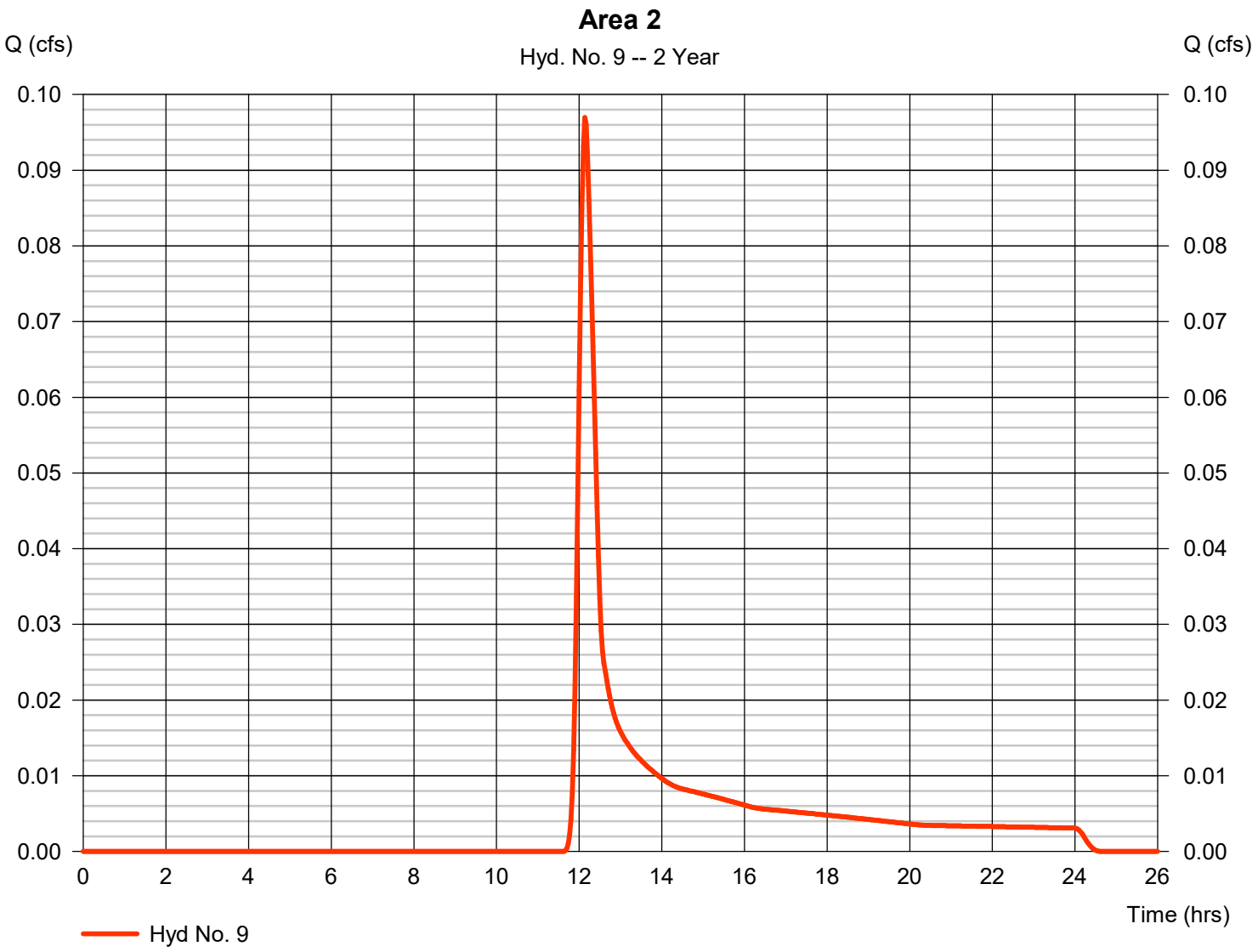
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 9

Area 2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.097 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 406 cuft
Drainage area	= 0.230 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 22.10 min
Total precip.	= 2.26 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4

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	0.120	2	728	433	------	------	------	Area 1a
2	SCS Runoff	2.585	2	716	5,704	------	------	------	Area 1b
3	SCS Runoff	0.072	2	728	260	------	------	------	Area 1c
4	SCS Runoff	0.625	2	716	1,404	------	------	------	Area 1d
6	Reservoir	0.795	2	724	5,693	2	628.34	2,033	Route 1
7	Combine	1.393	2	718	7,790	1, 3, 4, 6	------	------	Combine 1a,1c,1d, pond
9	SCS Runoff	0.275	2	728	995	------	------	------	Area 2

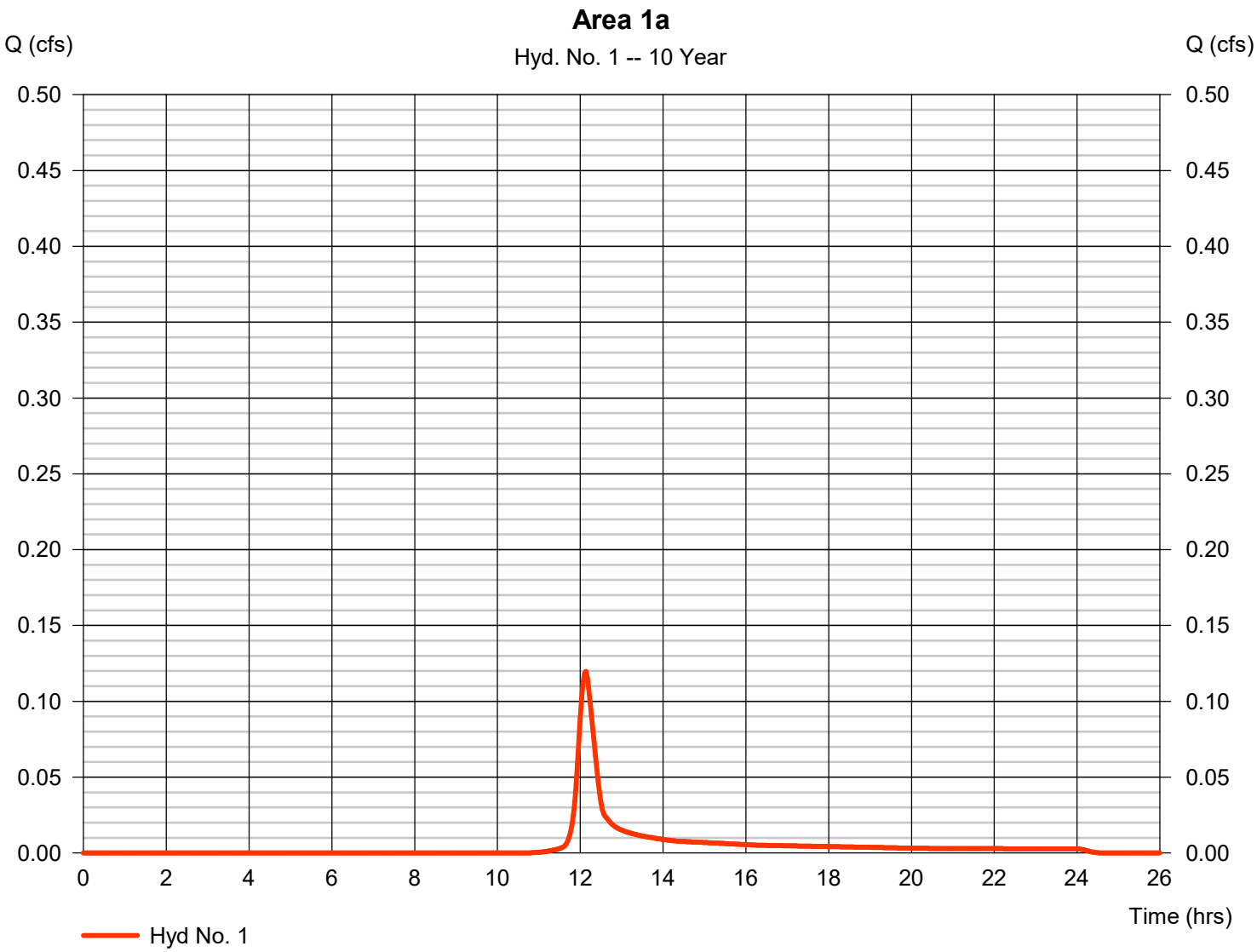
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 1

Area 1a

Hydrograph type	= SCS Runoff	Peak discharge	= 0.120 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 433 cuft
Drainage area	= 0.100 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.20 min
Total precip.	= 3.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



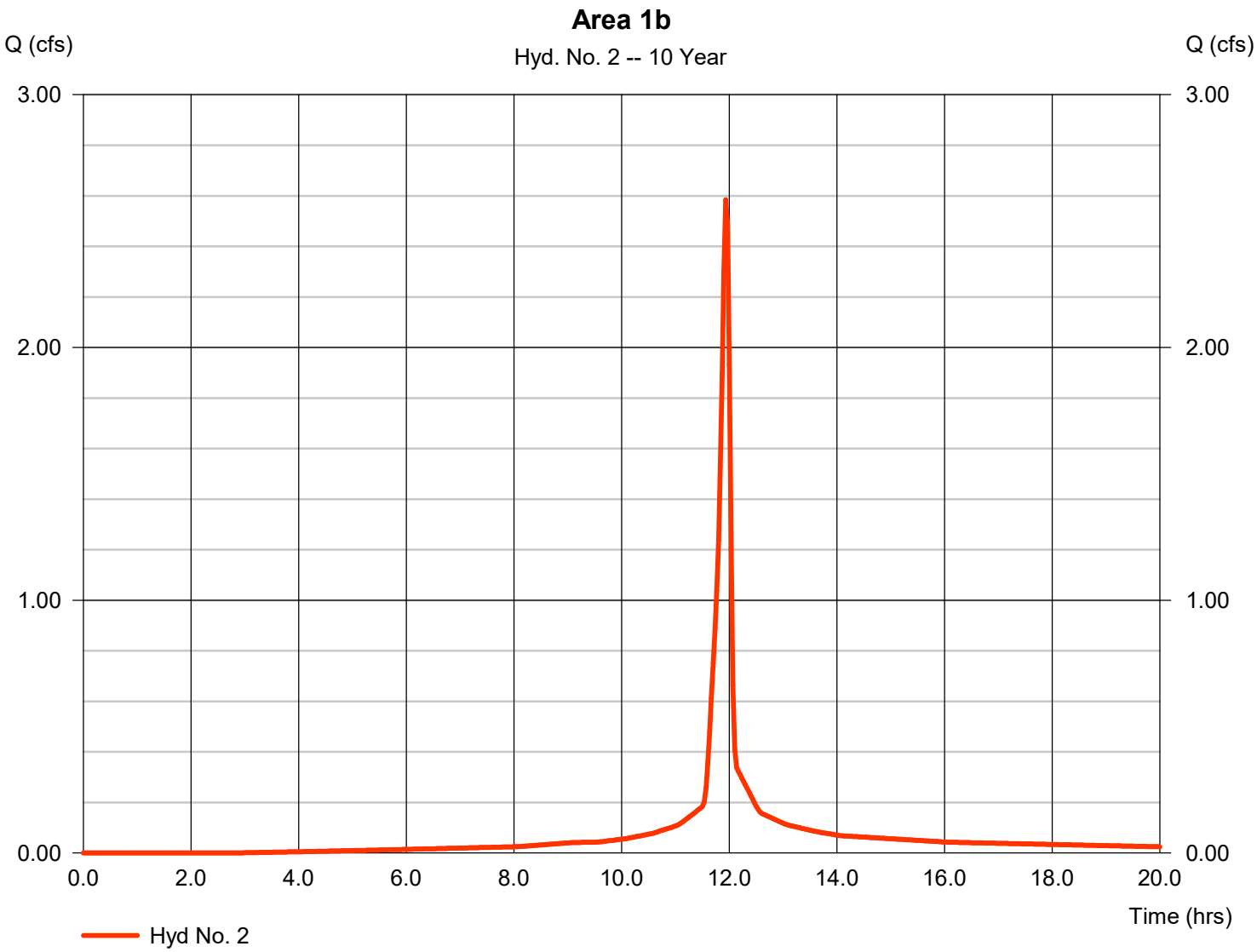
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 2

Area 1b

Hydrograph type	= SCS Runoff	Peak discharge	= 2.585 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 5,704 cuft
Drainage area	= 0.590 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



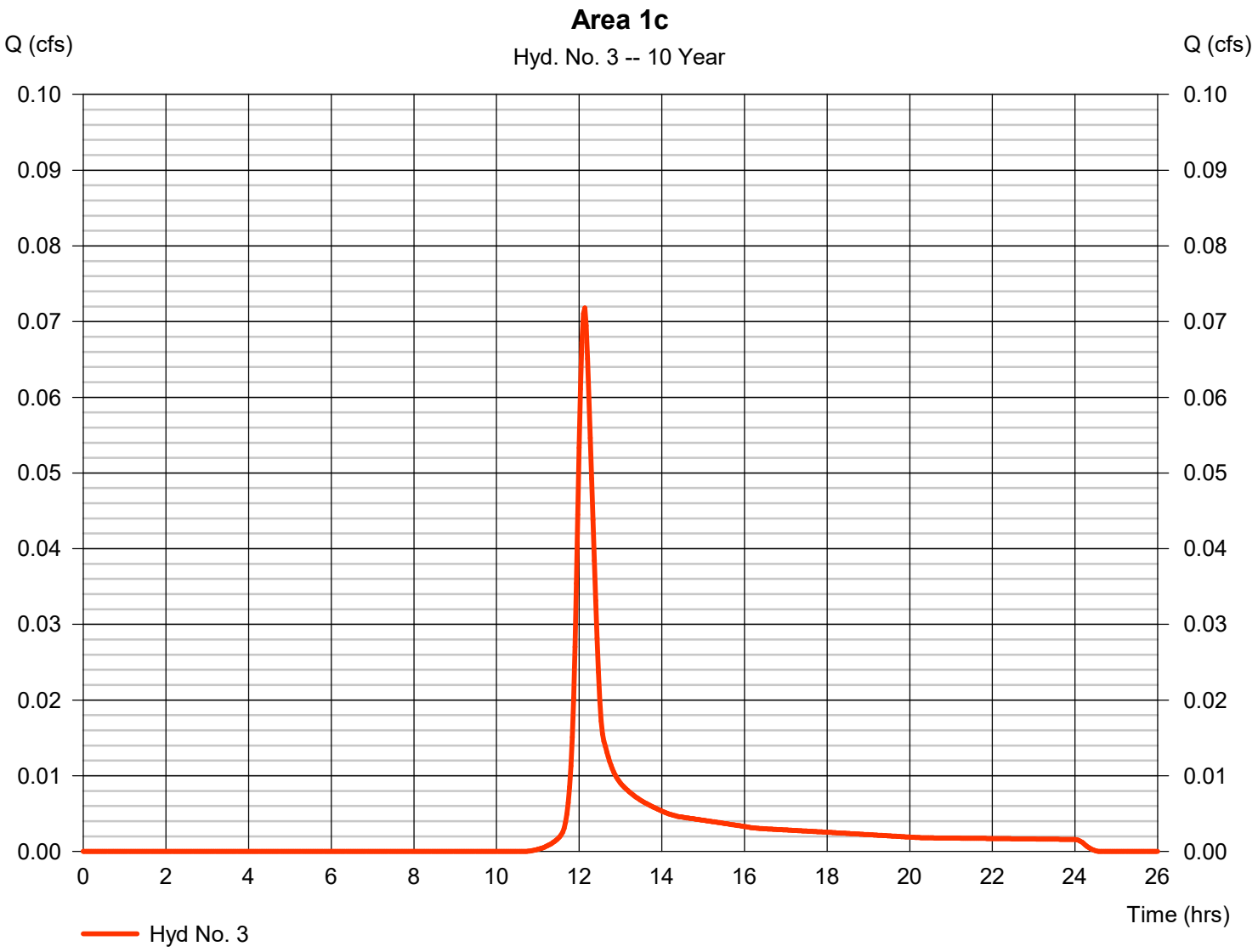
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 3

Area 1c

Hydrograph type	= SCS Runoff	Peak discharge	= 0.072 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 260 cuft
Drainage area	= 0.060 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.10 min
Total precip.	= 3.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



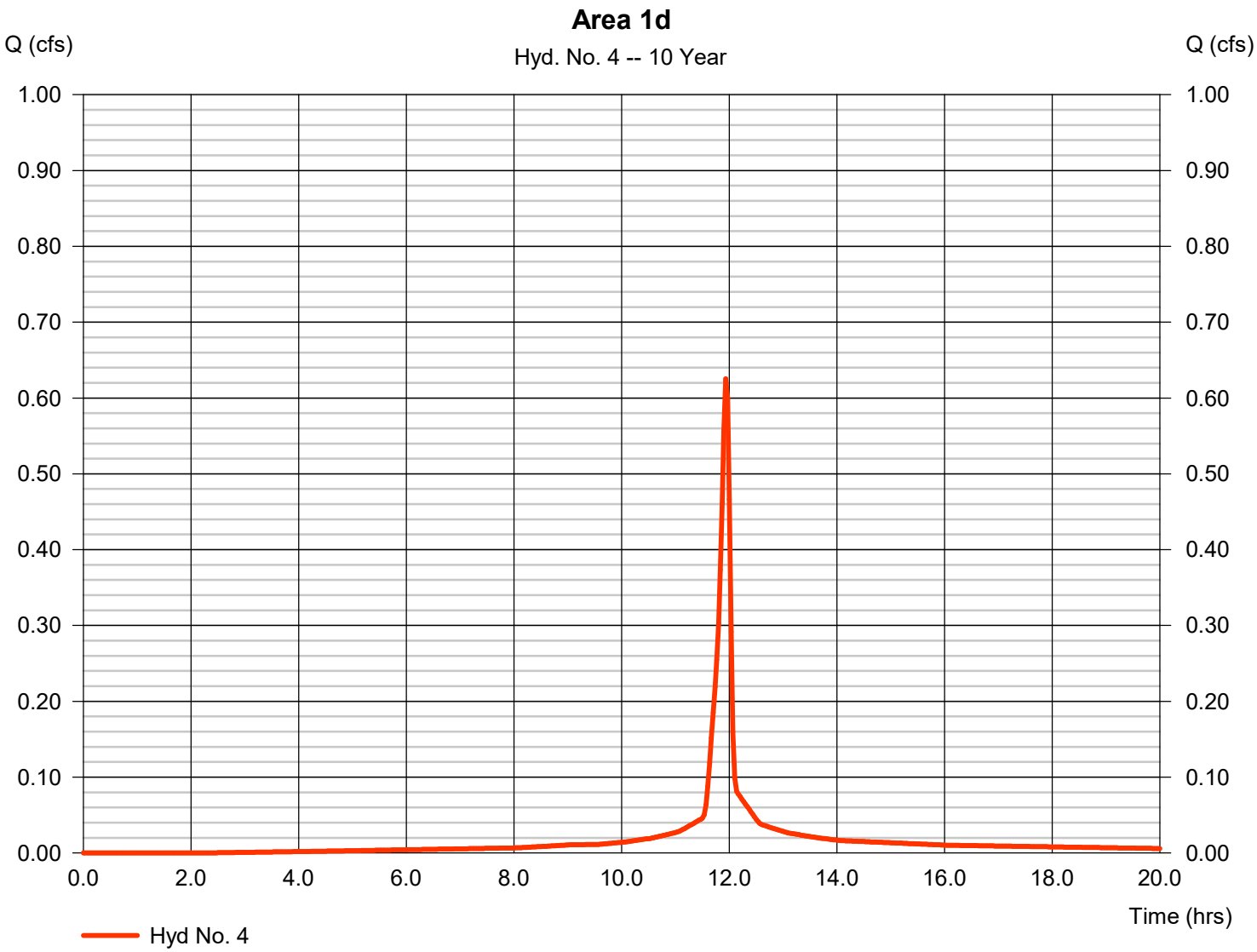
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 4

Area 1d

Hydrograph type	= SCS Runoff	Peak discharge	= 0.625 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,404 cuft
Drainage area	= 0.140 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

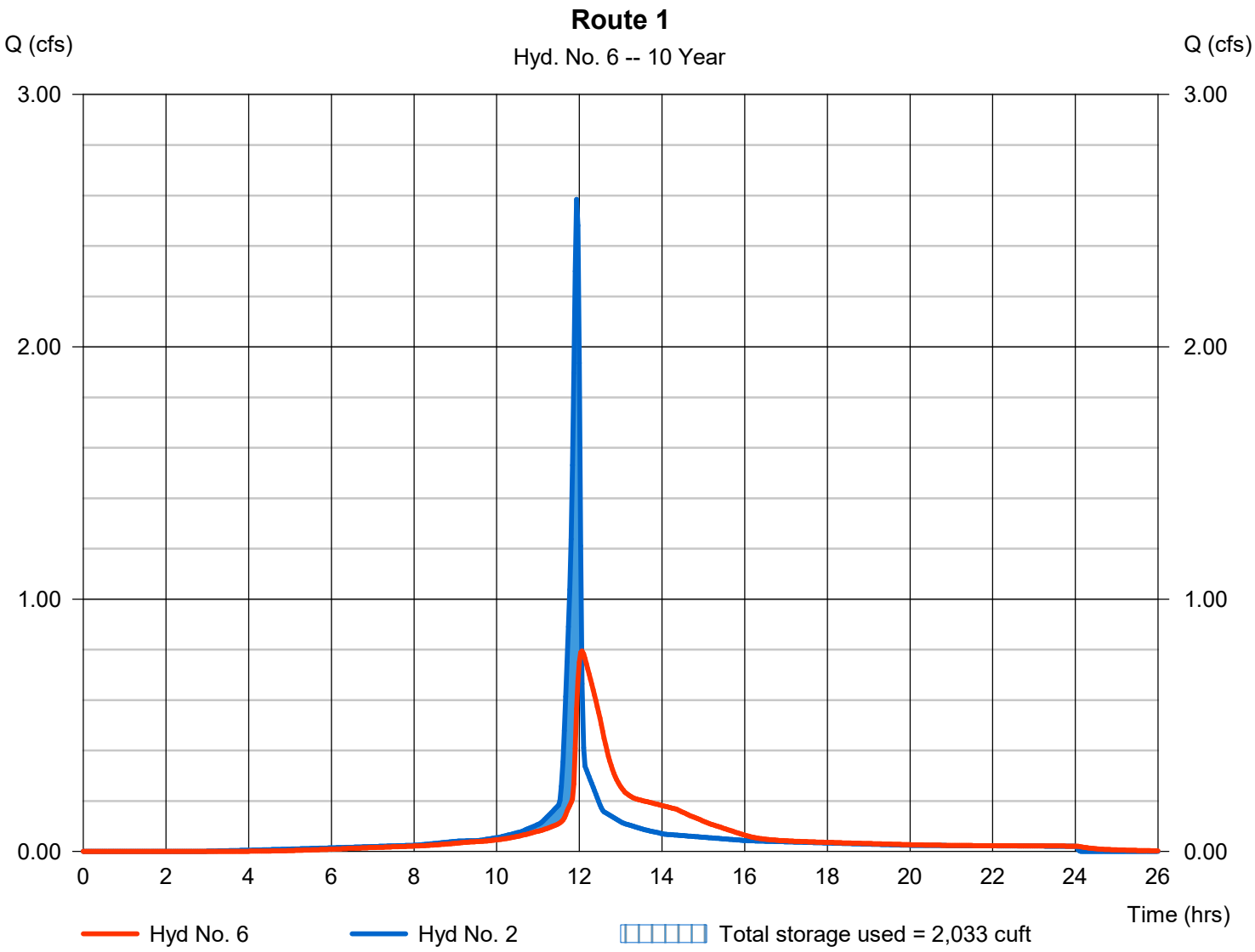
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 6

Route 1

Hydrograph type	= Reservoir	Peak discharge	= 0.795 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 5,693 cuft
Inflow hyd. No.	= 2 - Area 1b	Max. Elevation	= 628.34 ft
Reservoir name	= Detention Basin	Max. Storage	= 2,033 cuft

Storage Indication method used.



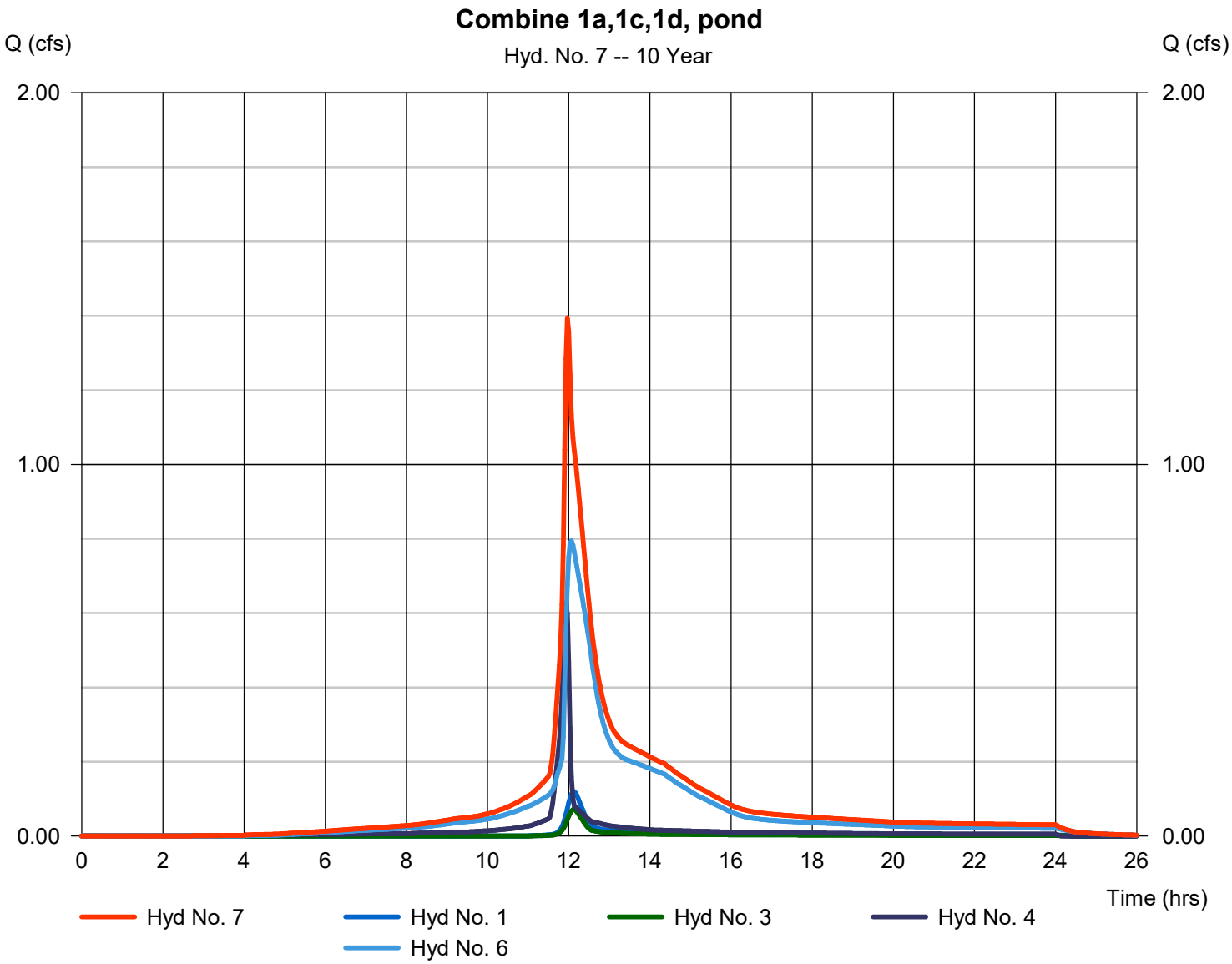
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 7

Combine 1a,1c,1d, pond

Hydrograph type	= Combine	Peak discharge	= 1.393 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 7,790 cuft
Inflow hyds.	= 1, 3, 4, 6	Contrib. drain. area	= 0.300 ac



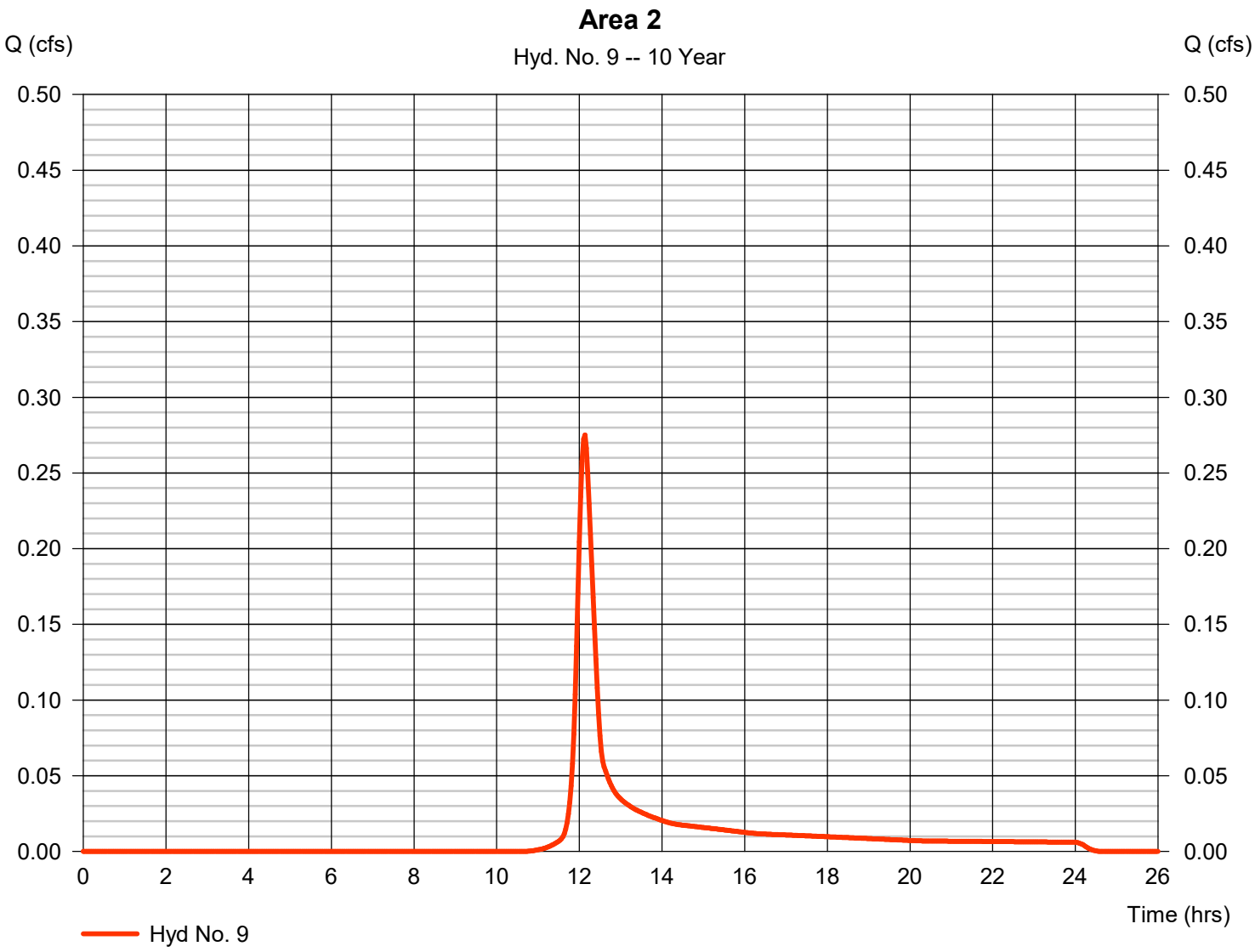
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 9

Area 2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.275 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 995 cuft
Drainage area	= 0.230 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 22.10 min
Total precip.	= 3.40 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4

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	0.175	2	728	620	------	------	------	Area 1a
2	SCS Runoff	3.175	2	716	7,107	------	------	------	Area 1b
3	SCS Runoff	0.105	2	728	372	------	------	------	Area 1c
4	SCS Runoff	0.764	2	716	1,739	------	------	------	Area 1d
6	Reservoir	0.962	2	724	7,096	2	628.72	2,507	Route 1
7	Combine	1.750	2	718	9,826	1, 3, 4, 6	------	------	Combine 1a,1c,1d, pond
9	SCS Runoff	0.403	2	728	1,426	------	------	------	Area 2

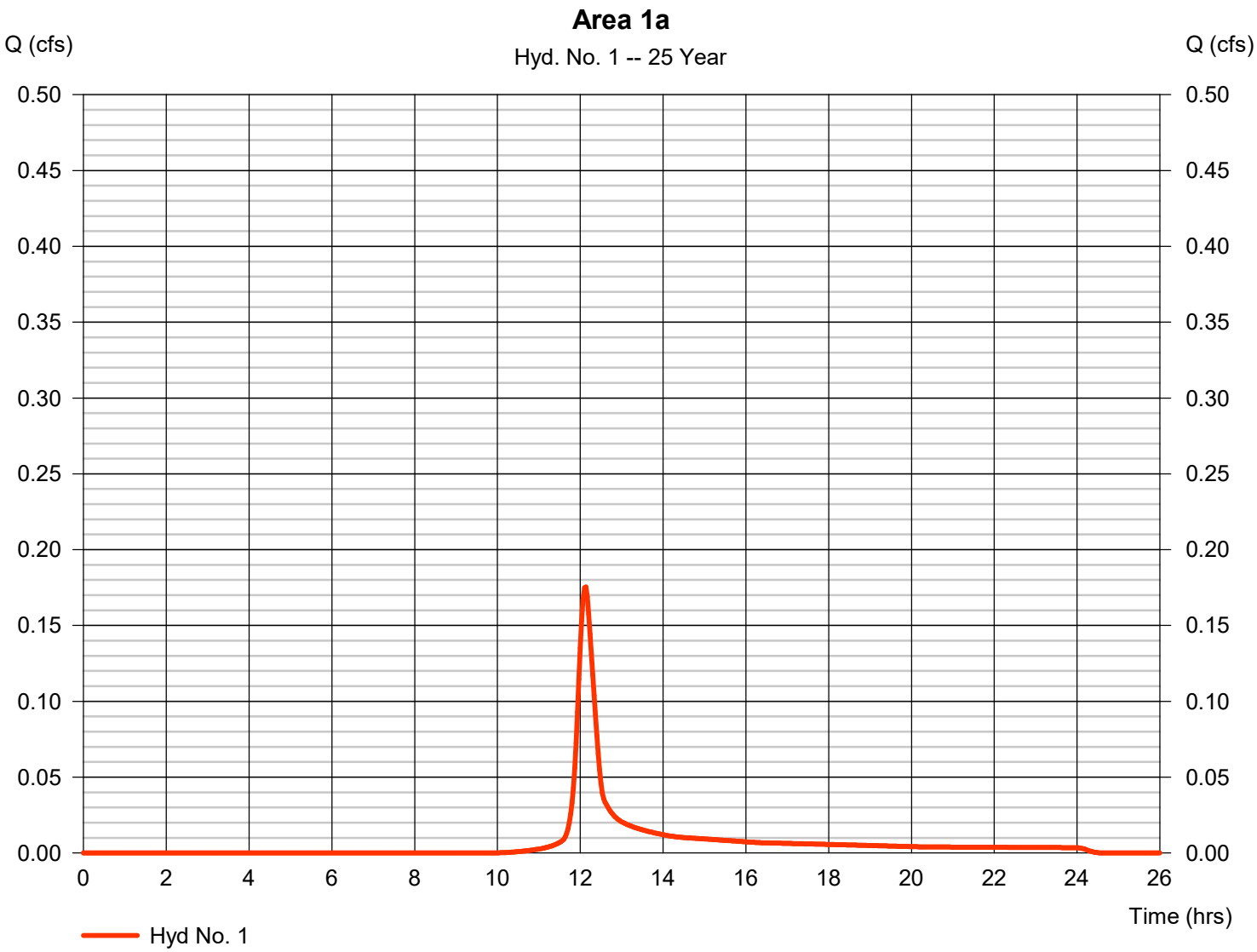
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 1

Area 1a

Hydrograph type	= SCS Runoff	Peak discharge	= 0.175 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 620 cuft
Drainage area	= 0.100 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.20 min
Total precip.	= 4.11 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



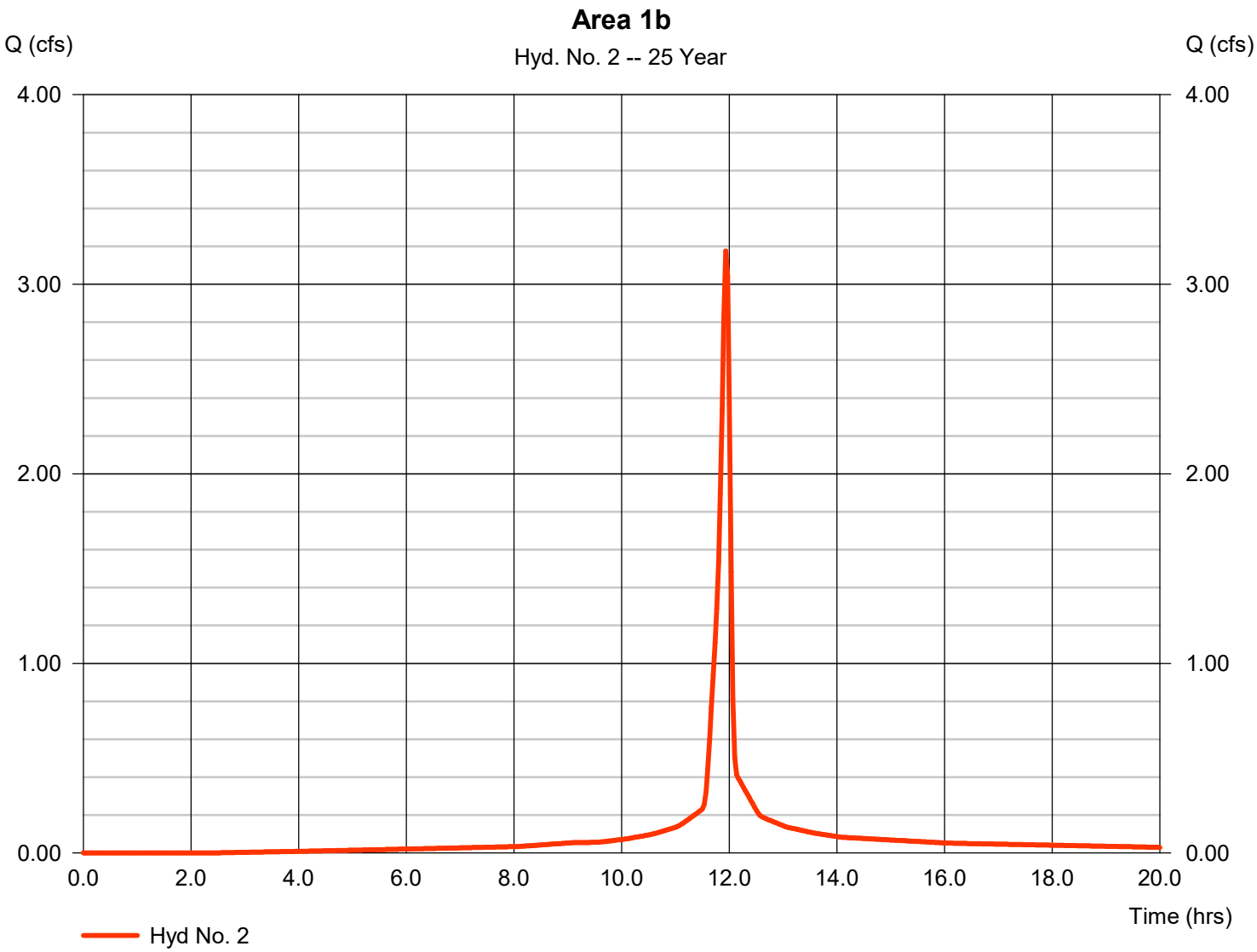
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 2

Area 1b

Hydrograph type	= SCS Runoff	Peak discharge	= 3.175 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 7,107 cuft
Drainage area	= 0.590 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.11 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



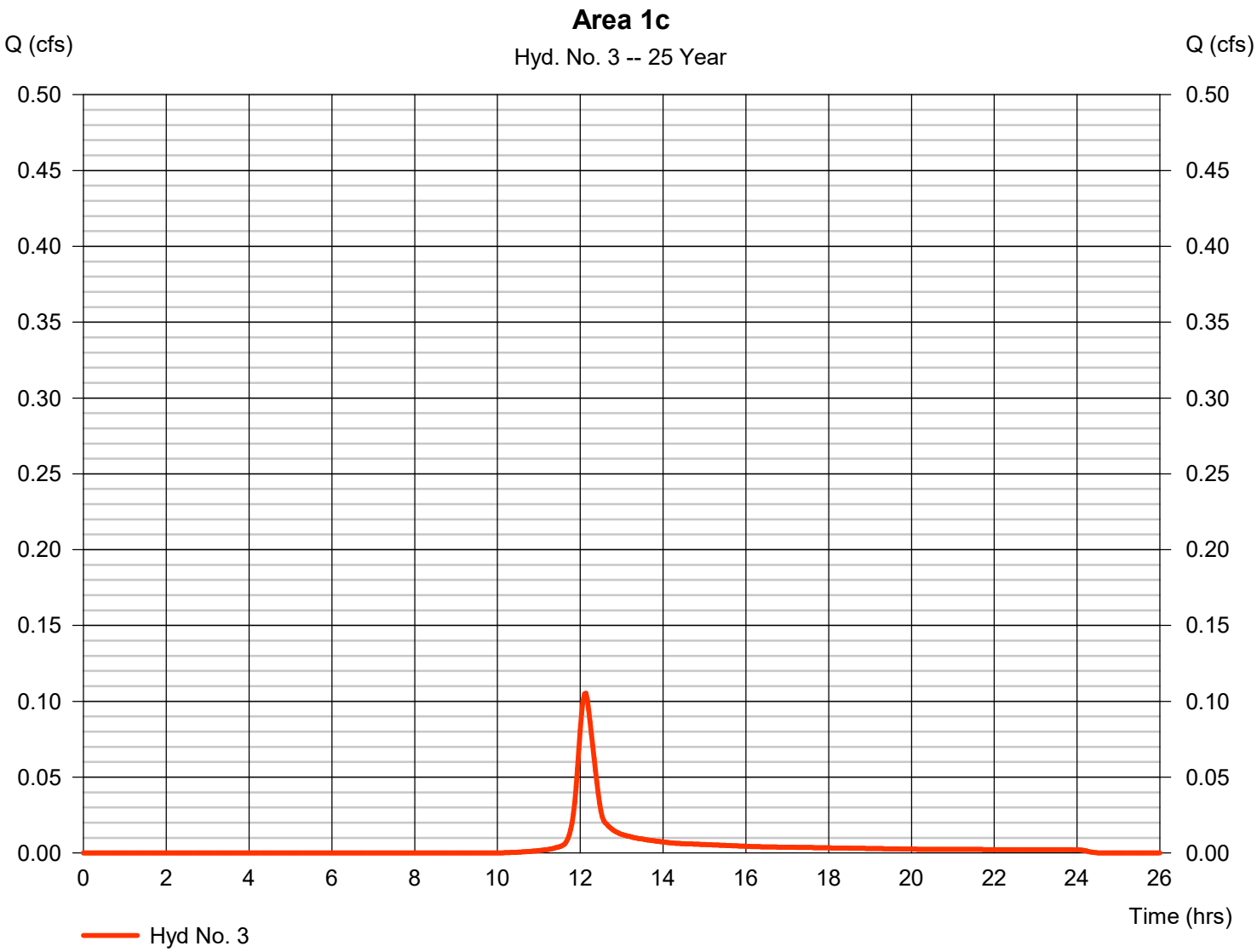
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 3

Area 1c

Hydrograph type	= SCS Runoff	Peak discharge	= 0.105 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 372 cuft
Drainage area	= 0.060 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.10 min
Total precip.	= 4.11 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



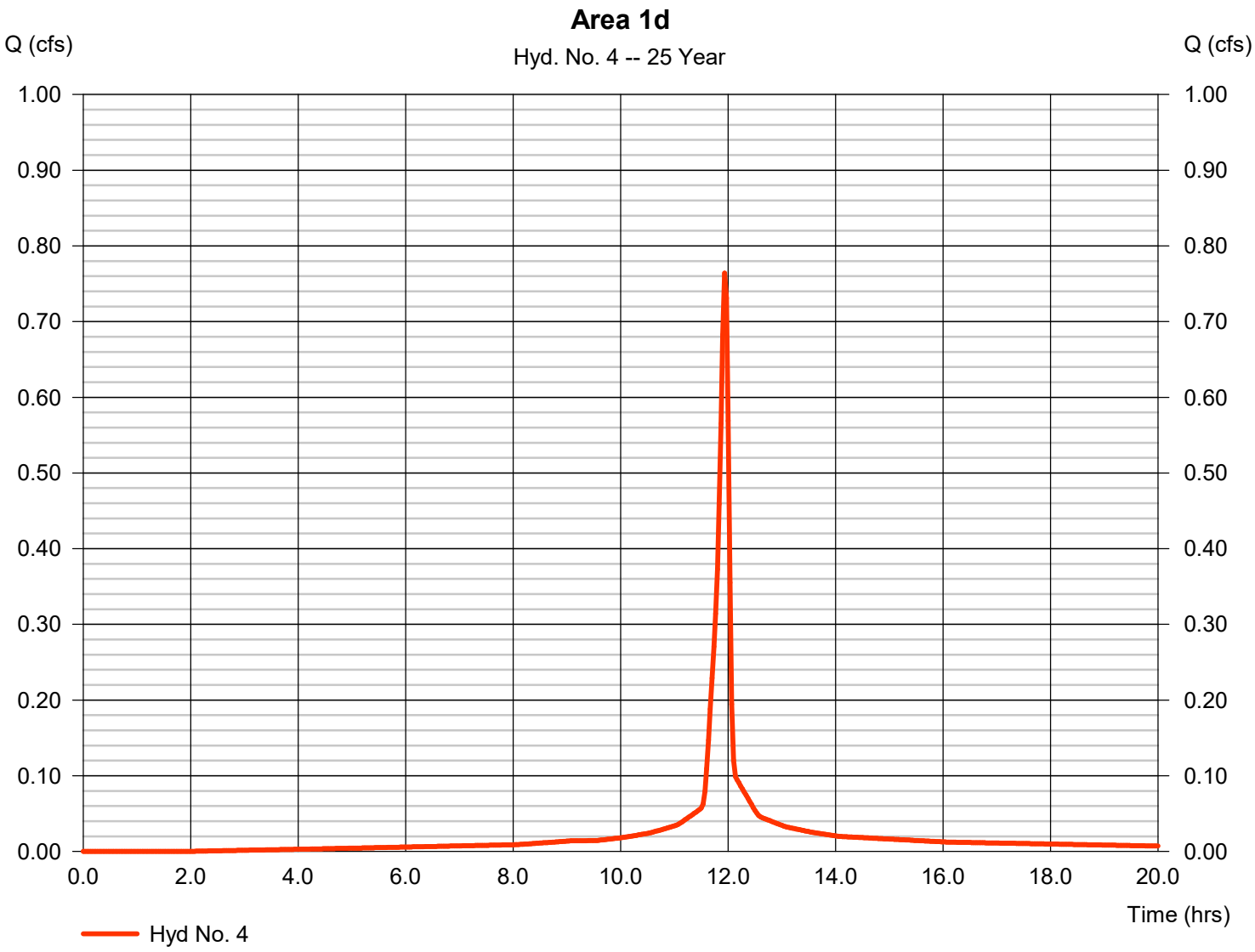
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 4

Area 1d

Hydrograph type	= SCS Runoff	Peak discharge	= 0.764 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 1,739 cuft
Drainage area	= 0.140 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.11 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

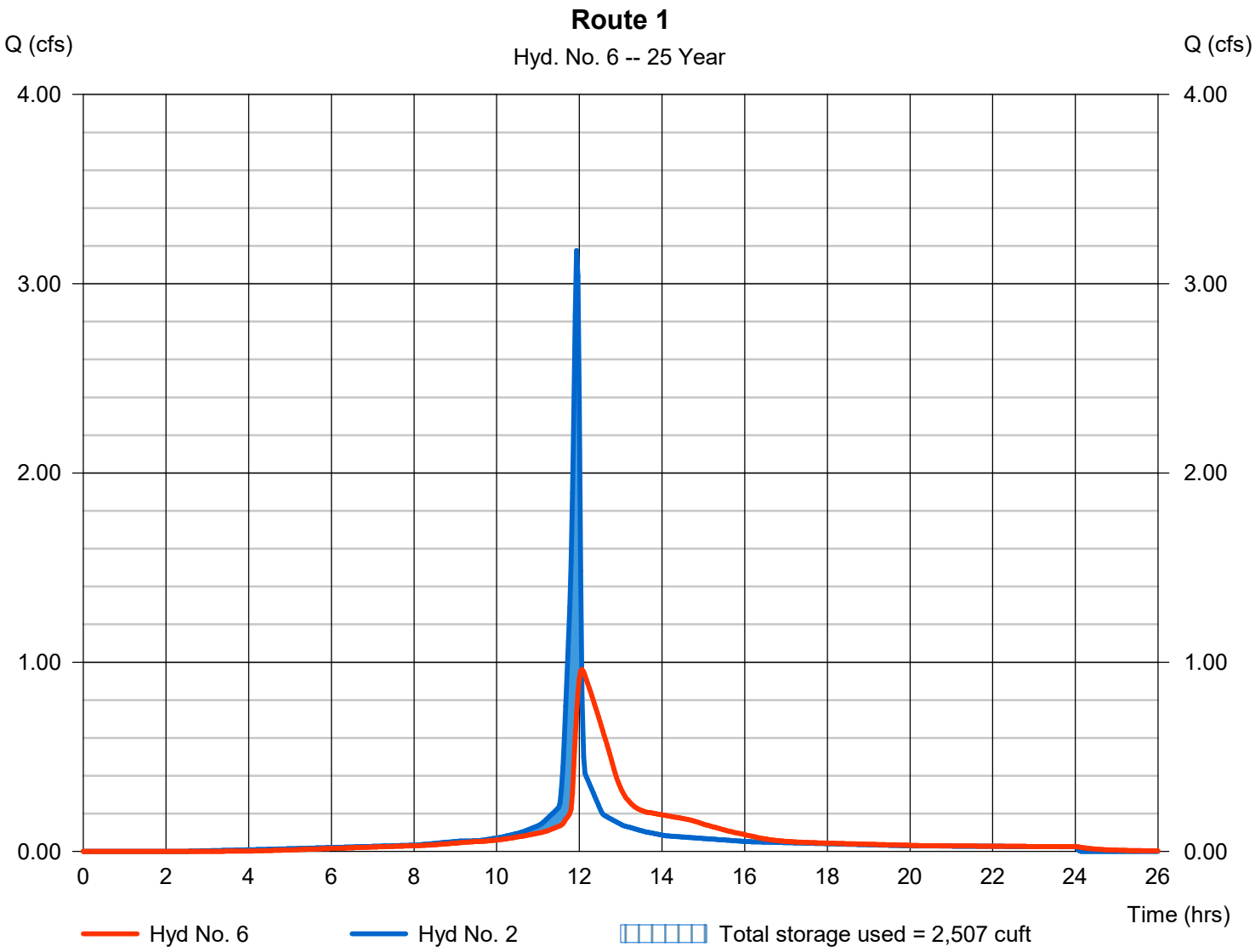
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 6

Route 1

Hydrograph type	= Reservoir	Peak discharge	= 0.962 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 7,096 cuft
Inflow hyd. No.	= 2 - Area 1b	Max. Elevation	= 628.72 ft
Reservoir name	= Detention Basin	Max. Storage	= 2,507 cuft

Storage Indication method used.



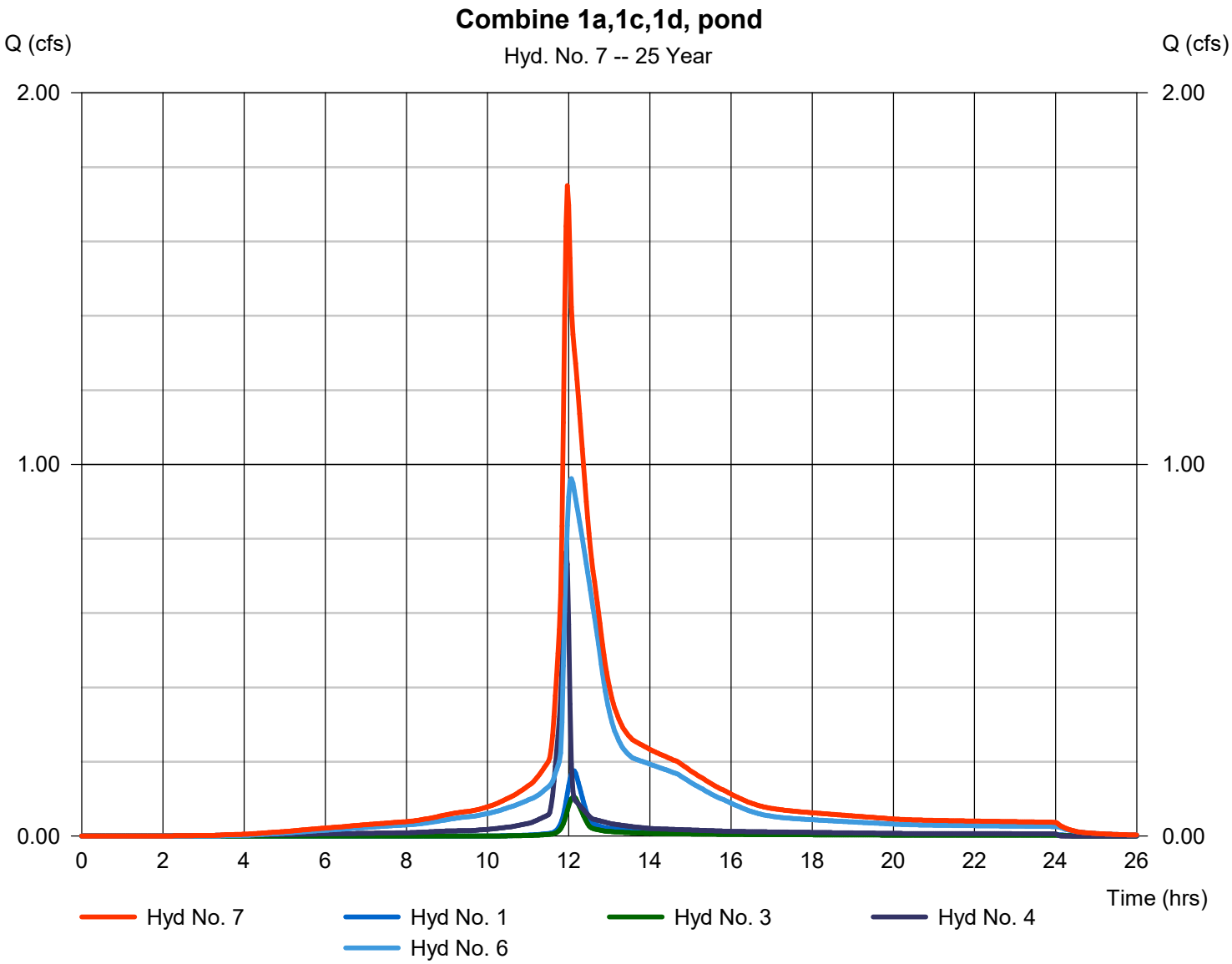
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 7

Combine 1a,1c,1d, pond

Hydrograph type	= Combine	Peak discharge	= 1.750 cfs
Storm frequency	= 25 yrs	Time to peak	= 11.97 hrs
Time interval	= 2 min	Hyd. volume	= 9,826 cuft
Inflow hyds.	= 1, 3, 4, 6	Contrib. drain. area	= 0.300 ac



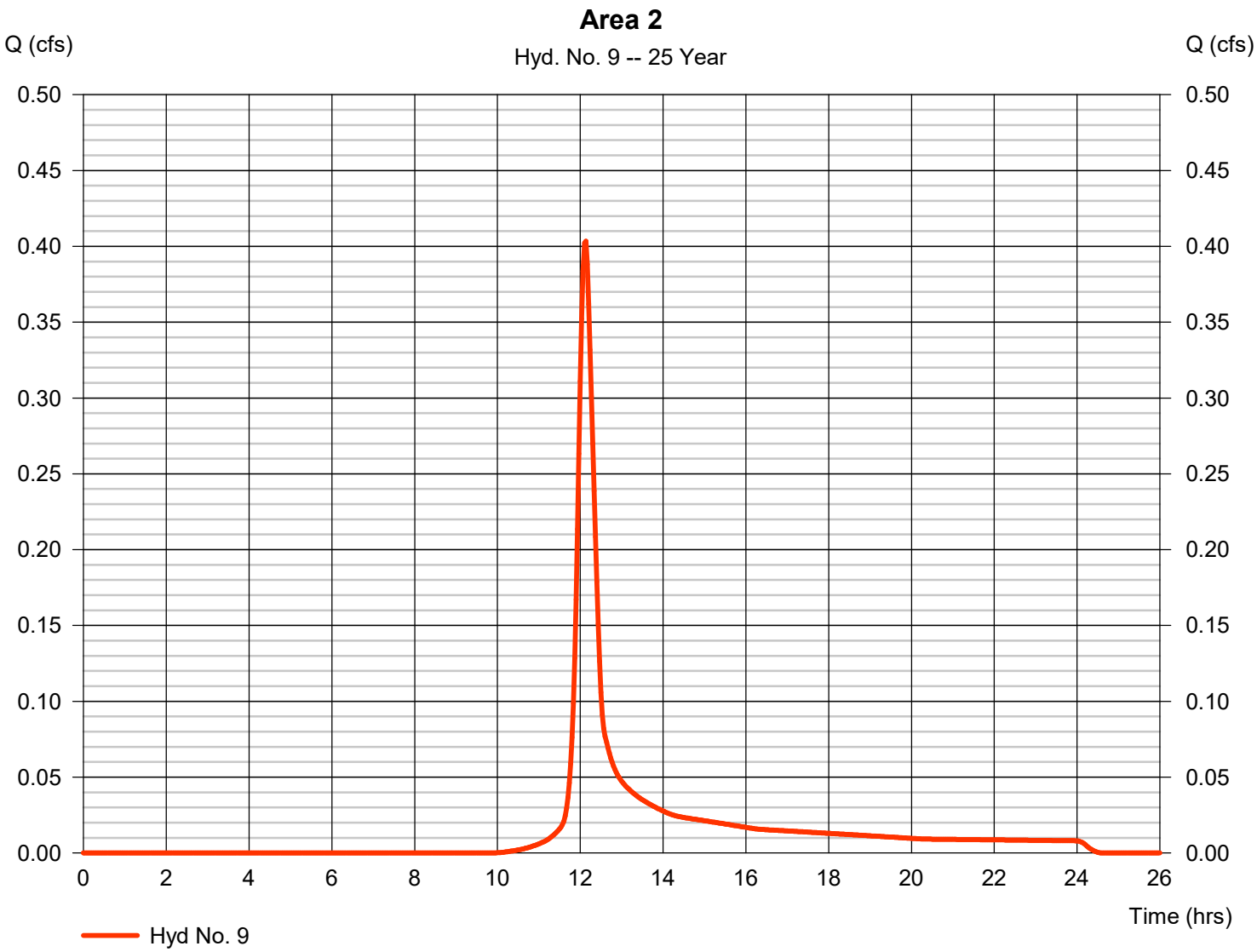
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 9

Area 2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.403 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 1,426 cuft
Drainage area	= 0.230 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 22.10 min
Total precip.	= 4.11 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4

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	0.269	2	726	936	------	------	------	Area 1a
2	SCS Runoff	4.083	2	716	9,292	------	------	------	Area 1b
3	SCS Runoff	0.161	2	726	562	------	------	------	Area 1c
4	SCS Runoff	0.978	2	716	2,259	------	------	------	Area 1d
6	Reservoir	2.635	2	720	9,281	2	629.09	2,908	Route 1
7	Combine	3.704	2	720	13,037	1, 3, 4, 6	------	------	Combine 1a,1c,1d, pond
9	SCS Runoff	0.619	2	726	2,152	------	------	------	Area 2

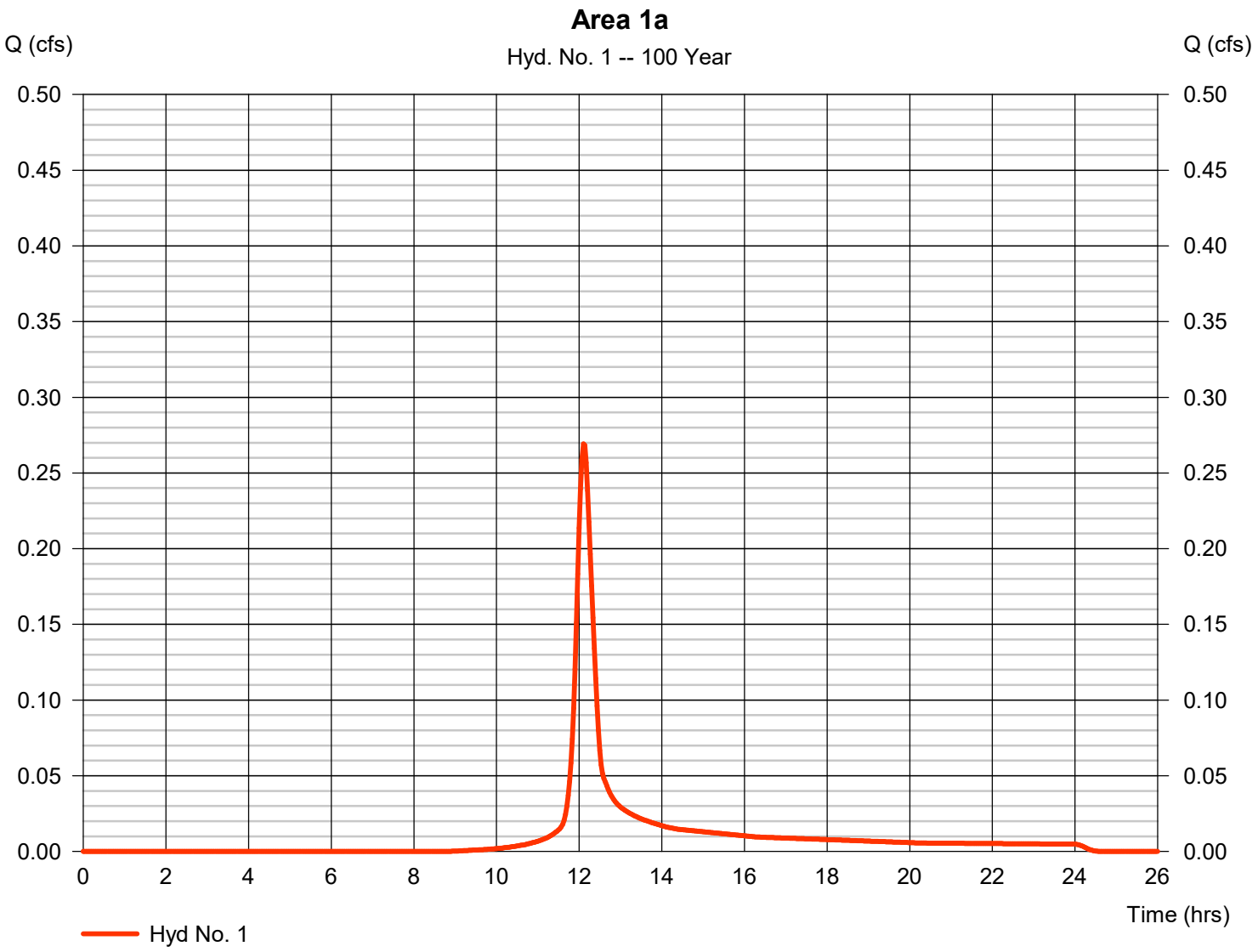
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 1

Area 1a

Hydrograph type	= SCS Runoff	Peak discharge	= 0.269 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 936 cuft
Drainage area	= 0.100 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.20 min
Total precip.	= 5.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



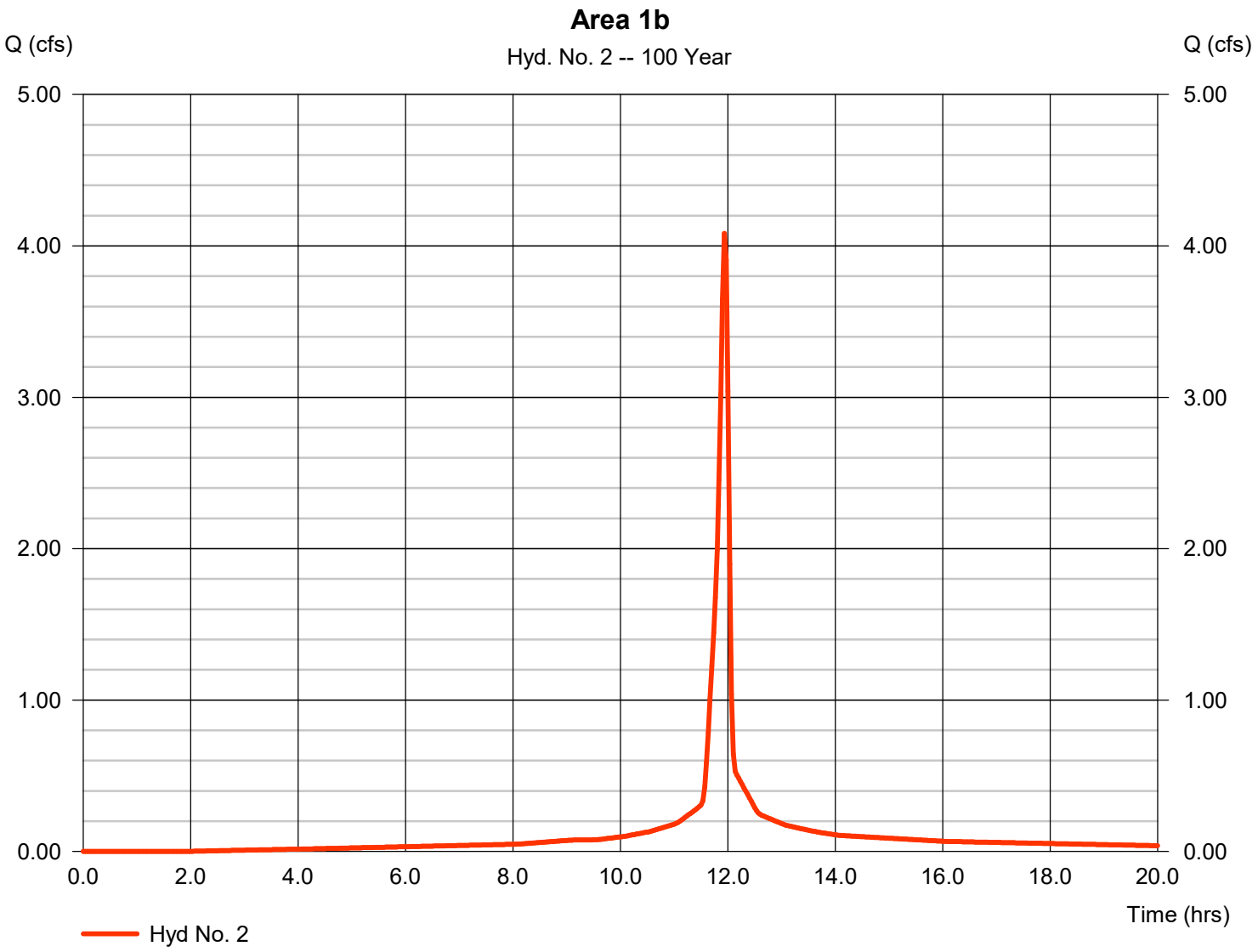
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 2

Area 1b

Hydrograph type	= SCS Runoff	Peak discharge	= 4.083 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 9,292 cuft
Drainage area	= 0.590 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



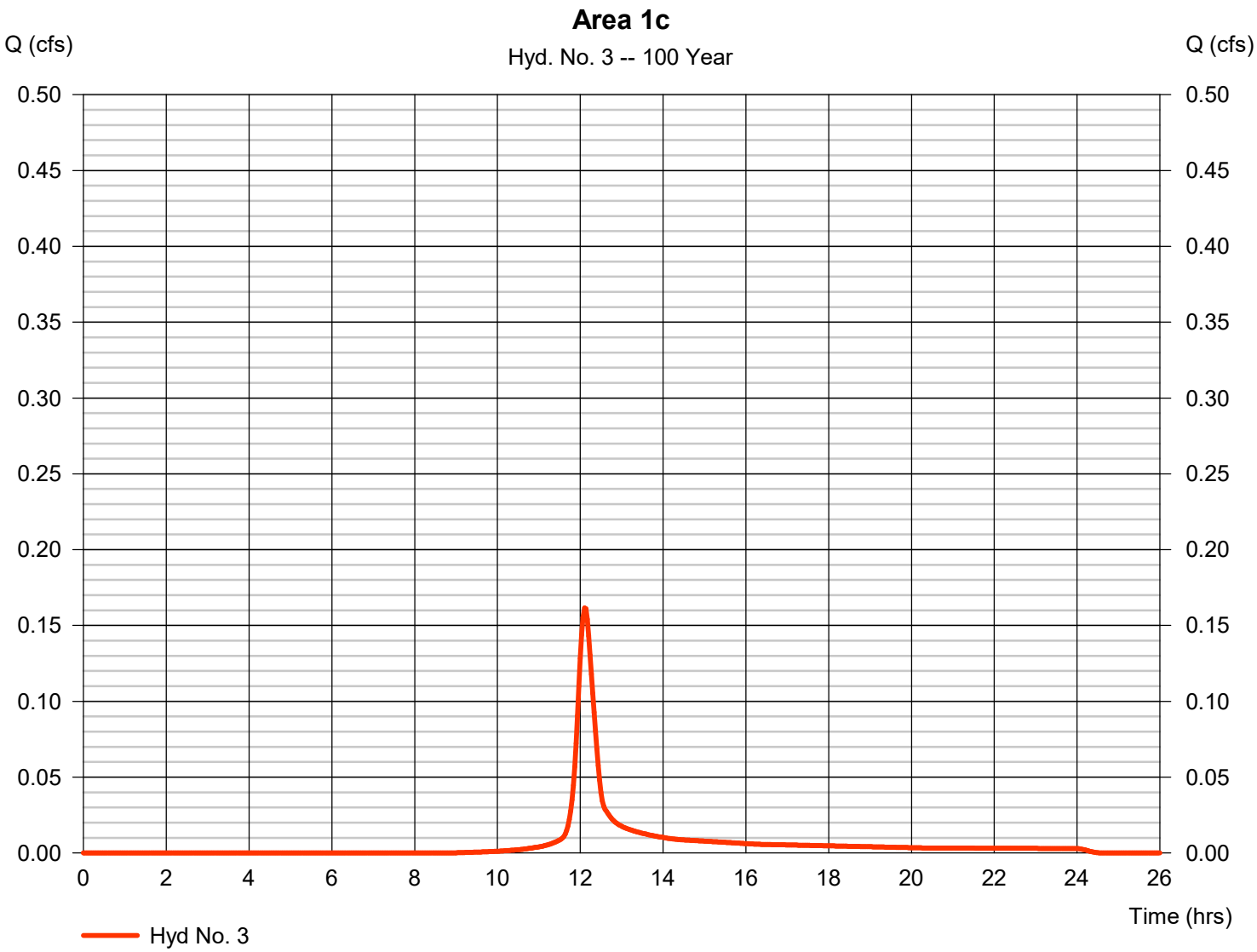
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 3

Area 1c

Hydrograph type	= SCS Runoff	Peak discharge	= 0.161 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 562 cuft
Drainage area	= 0.060 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 21.10 min
Total precip.	= 5.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



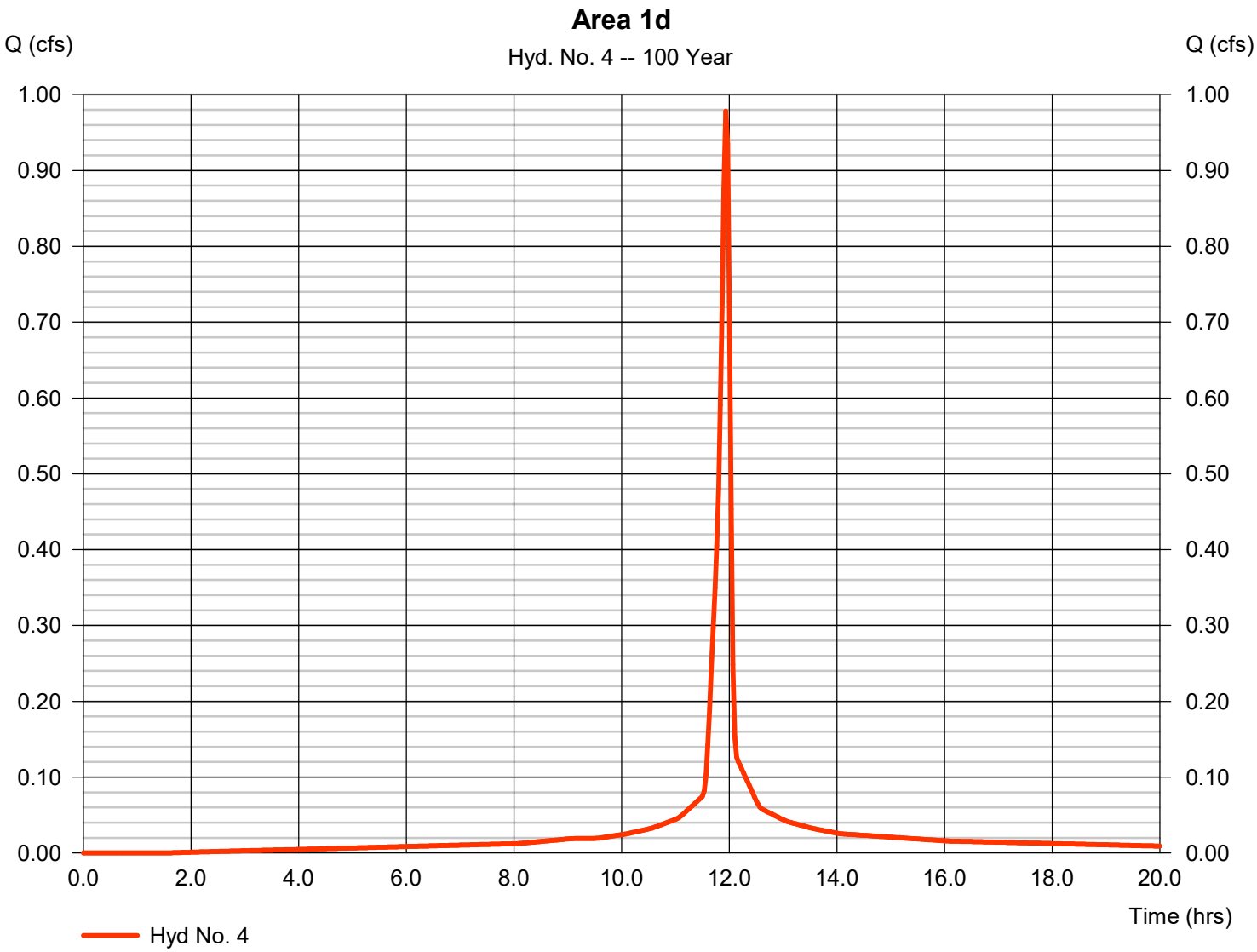
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 4

Area 1d

Hydrograph type	= SCS Runoff	Peak discharge	= 0.978 cfs
Storm frequency	= 100 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 2,259 cuft
Drainage area	= 0.140 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

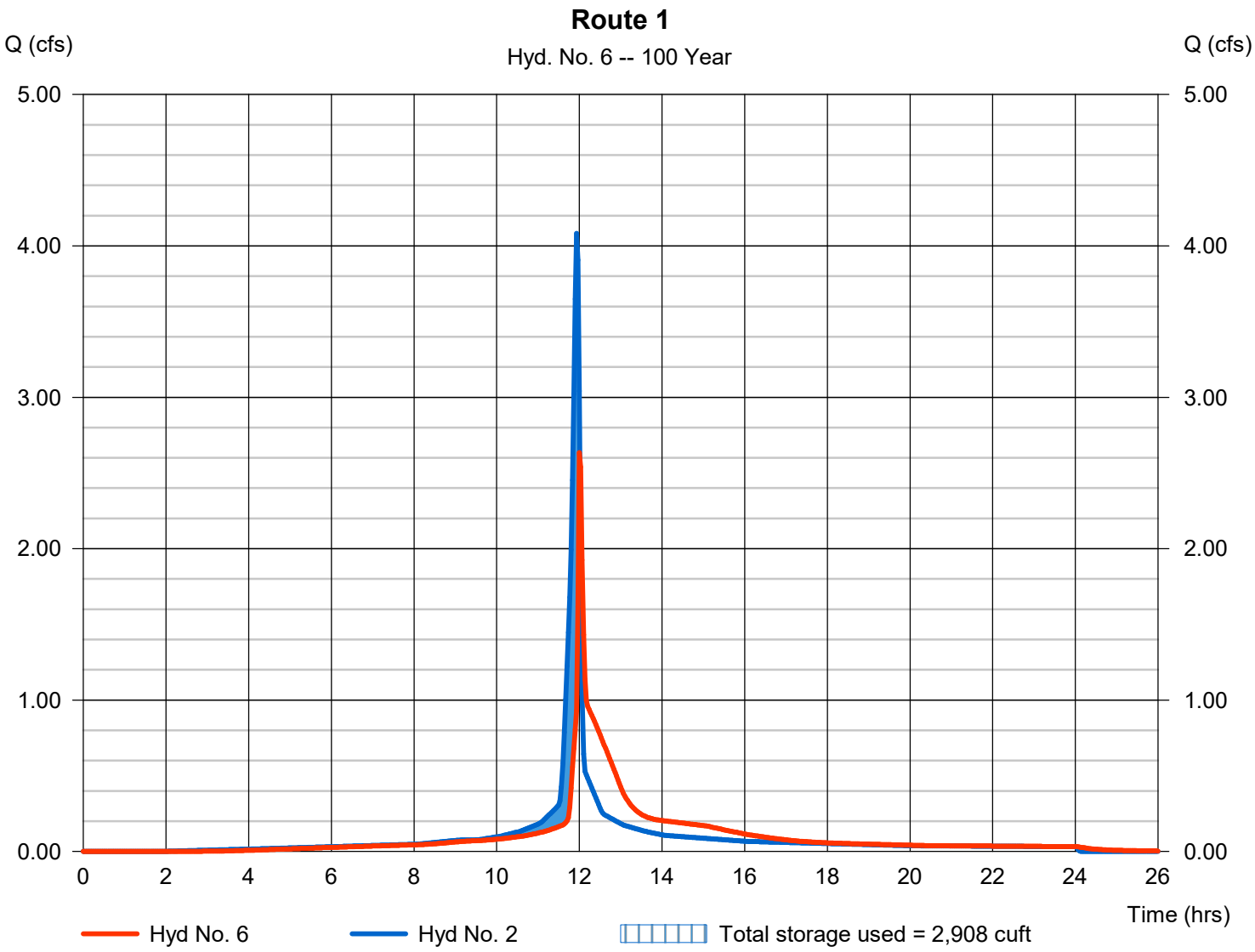
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 6

Route 1

Hydrograph type	= Reservoir	Peak discharge	= 2.635 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 9,281 cuft
Inflow hyd. No.	= 2 - Area 1b	Max. Elevation	= 629.09 ft
Reservoir name	= Detention Basin	Max. Storage	= 2,908 cuft

Storage Indication method used.



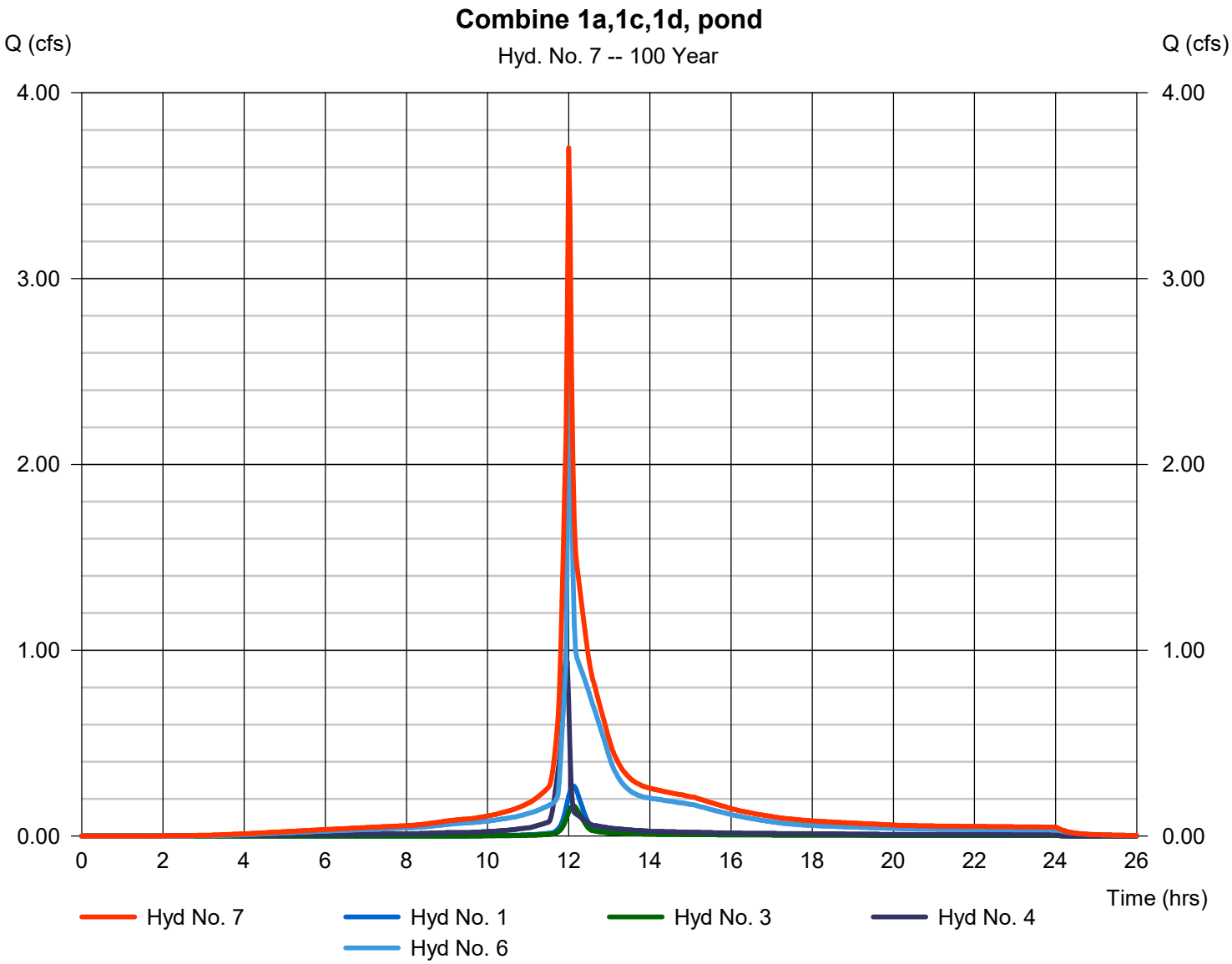
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 7

Combine 1a,1c,1d, pond

Hydrograph type	= Combine	Peak discharge	= 3.704 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 13,037 cuft
Inflow hyds.	= 1, 3, 4, 6	Contrib. drain. area	= 0.300 ac



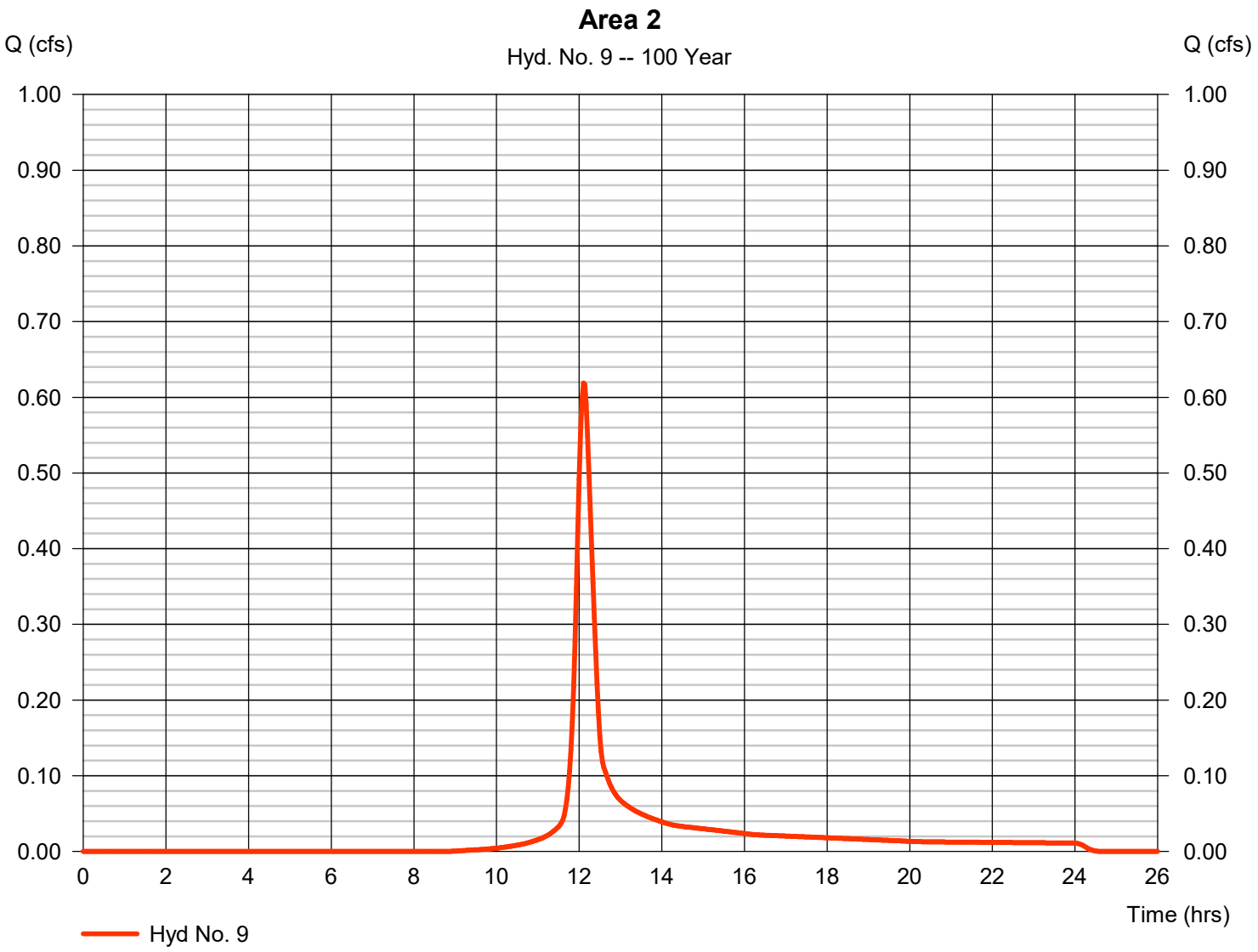
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Hyd. No. 9

Area 2

Hydrograph type	= SCS Runoff	Peak discharge	= 0.619 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 2,152 cuft
Drainage area	= 0.230 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 22.10 min
Total precip.	= 5.21 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020.4 Tuesday, 01 / 18 / 2022

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	0.0000	0.0000	0.0000	--------
3	0.0000	0.0000	0.0000	--------
5	0.0000	0.0000	0.0000	--------
10	0.0000	0.0000	0.0000	--------
25	0.0000	0.0000	0.0000	--------
50	0.0000	0.0000	0.0000	--------
100	0.0000	0.0000	0.0000	--------

File name: null.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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Tc = time in minutes. Values may exceed 60.

- JSC - BKxxxx - West Seneca NY\Civil\Design Documents\Reports\Storm\21-0239 BK West Seneca Rainfall Data.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	1.88	2.26	0.00	0.00	3.40	4.11	0.00	5.21
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

APPENDIX III

Soils Data & Information

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Erie County, New York

1997, 2003, & 2007 Ridge Road

November 5, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:631 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 5 10 20 30

Feet: 0 30 60 120 180

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

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 1:15,800.

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: Erie County, New York
Survey Area Data: Version 21, Aug 29, 2021

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

Date(s) aerial images were photographed: Jul 14, 2019—Jul 27, 2019

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NfA	Niagara silt loam, 0 to 3 percent slopes	1.0	100.0%
Totals for Area of Interest		**1.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Erie County, New York

NfA—Niagara silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9rnq
Elevation: 560 to 1,490 feet
Mean annual precipitation: 36 to 48 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Niagara and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Niagara

Setting

Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Silty and clayey glaciolacustrine deposits

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 27 inches: silt loam
H3 - 27 to 72 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F101XY009NY - Moist Lake Plain
Hydric soil rating: No

Minor Components

Cosad

Percent of map unit: 5 percent
Hydric soil rating: No

Raynham

Percent of map unit: 5 percent
Hydric soil rating: No

Collamer

Percent of map unit: 5 percent
Hydric soil rating: No

Canandaigua

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Swormville

Percent of map unit: 5 percent
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

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.

Map—Hydrologic Soil Group

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 1:15,800.

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

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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: Erie County, New York
Survey Area Data: Version 21, Aug 29, 2021

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

Date(s) aerial images were photographed: Jul 14, 2019—Jul 27, 2019

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.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
NfA	Niagara silt loam, 0 to 3 percent slopes	C/D	1.0	100.0%
Totals for Area of Interest			**1.0**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

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