Project Application

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City Of Sedona
Community Development Department
102 Roadrunner Drive Sedona, AZ 86336
(928) 282-1154 • www.sedonaaz.gov/cd

Application for (check all that apply):

❑ Conceptual Review ❑ Comprehensive Review ❑ Appeal ❑ Time Extension

❑ Community Plan Amendment ❑ Development Review ■ Subdivision ❑ Minor Modification
❑ Zone Change ❑ Conditional Use Permit ❑ Variance

Project Information	Project Name	Canyon Vista Subdivision		
	Project Address	463 Brewer Road	Parcel No. (APN)	401-20-027G
	Primary Contact	Sefton Engineering Consultants	Primary Phone	928-202-3999
	Email	dn@sefengco.com	Alt. Phone	Ext. 104
	Address	40 Stutz Bearcat	City/State/ZIP	sedona/AZ/86336
Office Use Only	*Application No*		*Date Received*	
	Received by		*Fee Paid*	

Project Description	The proposed Canyon Vista Subdivision is an eleven -lot single-family residential subdivision, on a 5.72-acre parcel located on the west side of Brewer Road, Assessors Parcel Number: 401-20-027G, addressed 463 Brewer Road.

Additional Contact Information: Please complete the following for all companies/people *authorized* to discuss the project with the City. Please attach additional sheets if necessary.

Contact #1	Company	CV Development Sedona. INC	Contact Name	William M. Heyer
	Project Role	Owner	Primary Phone	
	Email	wmheyer@gmail.com	Alt. Phone	
	Address	5018 Shoal Creek Blvd	City/State/ZIP	Austin/TX/78756
Contact #2	Company		Contact Name	
	Project Role		Primary Phone	
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David Nicolella, Planner
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CV Development Sedona, Inc.
c/o William M. Heyer, President
5018 Shoal Creek Blvd.
Austin, Texas 78756

Letter of Authorization

Granted by: William M. Heyer

Granted to: Sefton Engineering Consultants

Regarding: Canyon Vista Subdivision Applications. William Heyer, owner, hereby gives authorization to Sefton Engineering Consultants, to act as agent in the effort of the submittal and approval of the above referenced property

Sincerely,

CV Development Sedona, Inc.
c/o William M. Heyer, President

Project No.: 140505

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LETTER OF INTENT

Project Name: Canyon Vista Subdivision Preliminary Plat Application
Located within the City of Sedona, Coconino County, Arizona. More specifically described as Assessor's Parcel Number 401-20-027G: Northwest ¼ of Northeast ¼ of Section 18, Township 17 North, Range 6 East of the Gila and Salt River Meridian.
Applicant: Sefton Engineering Consultants
Owner: CV Development Sedona, Inc. c/o William M. Heyer, President

February 23, 2024

Cari Meyer, Planning Manager
Community Development
102 Road Runner Drive
Sedona, Arizona. 86366

Re: Letter of Intent and Comment Response for Canyon Vista – Preliminary Plat Submittal

Dear Ms. Meyer:

We represent CV Development Sedona, Inc., the owner of the subject property. The purpose of this letter is to provide City of Sedona Community Development Department staff with additional information regarding the proposed Canyon Vista Subdivision. Detailed below is a thorough description of the proposed development along with conformance and/or requested deviations from the City of Sedona development codes and ordinances.

The proposed 11-lot cluster subdivision is on a 5.72-acre parcel located on the west side of Brewer Road, just north of Juniper Lane (Coconino County APN 401-20-027G), addressed as 463 Brewer Road (the "Property"), as shown on the image to the right.

LDC Section 5.4.E(3)e – Driveways providing access to single-family residential lots shall be located a minimum of 30 feet from any road intersection.

The nearest driveway is 45 feet from the Intersection with Brewer Road.

Street Width and Curvature

LDC Section 7.3F(4)a. and 4(b) - Streets shall be related appropriately to the expected use of the property. Minimum requirements for street right-of-way, pavement width, and other standards for public and private streets are set forth in the Engineering Standards Manual. -AND- Other designs and materials may

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be required for the construction of streets, curbs, and sidewalks when, in the determination of the City Engineer, such methods would be more environmentally desirable or more in keeping with the design of the development or neighborhood.

DREAM 3.3.A.1.c.1 - Streets with an anticipated average daily traffic (ADT) of 2,500 or less shall have a minimum right-of-way width of 50 feet. The City Engineer may allow a minimum right-of-way width less than 50 feet based on unique site and design characteristics inherent to the subdivision design and layout.

The applicant is seeking permission to construct Denise Lane, with ROW width of 30 feet instead of the required 50 feet. This road serves only 11 lots, with 5 of them located near the beginning of Denise Lane, and therefore, it does not need to carry a significant amount of traffic. The road climbs a steep hill, and if it is made wider, then larger cuts and fills would be required. Hence, it is proposed that Denise Lane should be built to reflect the minimal needs of the proposed subdivision so that the visual impact on surrounding communities is appropriately considered.

Moreover, the applicant wishes to participate in the city's multi-use path planned for Brewer Road instead of sidewalks, which will significantly reduce the disturbance on the road's uphill side. The driveway to lots 4 and 5 is placed as far from Brewer Road as possible, and it does not get into the steep slopes. Lots 1 and 2 have a shared access easement. Lastly, Lot 3 could connect to Denise Lane but also has an easement with lots 4 and 5's easements

.DREAM 3.3.A.3.c - The tangent length between reverse curves shall not be less than 50 feet.

This road is designed for low-speed travel and is not a through street. Parking on the street is prohibited. We have assessed the recommended radius by the City and found that implementing it would have a significant impact on an area that is currently designated as an untouched natural area.

LDC Section 7.3D(3) – Sidewalks may be replaced by trials or pathways.

LDC Section 7.3F(5) - Unless otherwise provided in this Code, sidewalks shall be provided by the developer and installed on both sides of all arterials, collector streets, and local streets (including loop lanes and cul-de-sacs), and within and along the frontage of all new development.

LDC Section 5.4H.1.b.2 – Steep-slope areas where sidewalks on one side of the street may be approved to reduce excessive slope disturbance, adverse impacts on natural resources, and potential soil erosion and drainage problems.

The applicant proposes to forego installing sidewalks within the subdivision to avoid excessive disturbance on the slope. Constructing sidewalks on this steeply sloped property would require significant cuts and fills, which would widen the access points and create visible impacts from outside the property. Moreover, neither access road in this subdivision connects to any other roads or community gathering places. With only 11 lots on this right of way, the rights of way have minimal vehicular traffic. Considering all these factors, it is recommended that the subdivision should not install sidewalks. Instead, residents may use

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the side of the right of way when they want to walk. In place of sidewalks, the applicant proposes to participate in the multi-use path on Brewer Road.

LDC Section 7.3D(1)b – The sensitive lands are protected through a cluster subdivision pursuant to Section 7.3.J(2), Cluster Subdivision.

Our proposed clustering subdivision is the perfect solution to protect the natural and hillside areas from any potential harm. We understand the importance of preserving the environment and have taken all necessary steps to ensure it remains undisturbed. With a site density that permits up to 20 units on this site, we have strategically placed only 11 building pads to protect the sensitive lands and leave more open space.

Our method of subdivision is designed with the environment in mind. By grouping homes together, we aim to reduce the project's impact on the environment. We strongly believe that our approach to development is the best one, as it not only helps to maintain the natural beauty of the area but also ensures that any enhancements are made in a sustainable and responsible manner.

Context and History

In 2006, the City approved the final plat for the Canyon Vista Subdivision (SUB2005-14). However, due to the Great Recession, the owner had decided not to proceed with the community development at that time. Consequently, as the recession continued, the final plat had expired. The new design adheres to the current Land Development Code by employing clustering to minimize disturbance.

The property is currently vacant. It is shaped like a triangle, with its northern and western edges being straight. The hypotenuse runs from northeast to southwest and follows the existing lot lines, with a narrow opening onto Brewer Road. This opening limits the number of homes that the property can service. The Canyon Vista Subdivision is located in hilly terrain, with a slope that typically descends from west to east at 20 to 40 percent. The property has two levels, with a higher plateau to the west and northwest and a smaller valley to the east. The property's steepest part is a spur that cuts across the middle of the property. To the right is a topographic map of the property. Due to the steep terrain, a geotechnical soil report has been included with the submitted materials. The terrain consists of approximately 50 percent vegetative cover, consisting of mesquite, brush, and grass. There are no major drainage ways, irrigation ditches or canals within the property.

The property is located in an area designated by the Sedona Community Plan Land Use Map for Single Family Medium Density 2-4 du/ac. The 5.72-acre parcel is zoned for Single-Family Residential (RS-10 Single-Family Residential; 10,000 minimum lot). This zoning theoretically allows up to 22 platted lots, but the proposed Canyon Vista Subdivision has only 11 lots, which proposes 2 du/ac. As the proposed subdivision aligns with the Community Plan designation and zoning, no Community Plan Amendment or zone change is needed. This means that the proposal is "by right". The Property is not located within any

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special planning area designated by the City and will comply with all other ordinances and regulations of the City.

The proposed subdivision has been designed to blend in with the surrounding area in terms of style, layout, and size. The property is mainly surrounded by similar single-family homes, except for the southern portion of the west perimeter, which is adjacent to the Coconino National Forest. As a result, the property can be considered as an infill parcel, requiring some level of consideration for the surrounding lots. To the northwest, the 1985 Les Spring subdivision consists of 106 single-family homes within the PD zoning district, with building pads ranging from 3,200 to 9,000 square feet. The recently approved but unrecorded Sky Ridge subdivision is located directly to the north, consisting of 18 lots ranging in size from 18,000 to 36,000 square feet and zoned RS-18. All the land to the east and south is zoned RS-10 and consists of single-family residential homes and lots. On the west side of Brewer Road, the seven lots adjacent to the Canyon Ridge plat are not part of any subdivision, with each lot being at least 0.45 acres. On the east side of Brewer Road, the 1961 Juniper Hills subdivision comprises 17 lots.

The Proposed Subdivision

The purpose of this development is to create residential building lots that blend seamlessly into the natural surroundings while adhering to an orderly and harmonious design. This will ensure the promotion of public health, safety, and welfare. The community comprises eleven lots, each having an average pad size of 2,700 square feet. These pad sizes are ideal for protecting areas outside of the pad. Despite the zoning requirements mandating a minimum size of 10,000 square feet for up to 22 lots, this design limits the site to only 11 pads that are, on average, 2,700 square feet. The design is more like RS-18 density, but with small building pads. All eleven lots comply with zoning standards concerning lot size, setbacks, and impervious coverage. It is evident that the landowner has no intention of increasing the density of this challenging parcel.

There are multiple reasons for this low-density approach. First, the topography of the site sharply limits buildable areas and access to those buildable areas. Second, the narrow access onto Brewer Road dictates keeping the density well below the zoning maximum, both for purposes of daily traffic concerns and for public safety access. Finally, as explained above, as an infill project, it is more appropriate to be compatible with the immediately adjacent 18,000 square foot lots to the north and the east.

It is the developer's intent, among other elements, to protect the natural topography, watercourses, drainage ways, trees and to control erosion. The lot lines and streets have been located near the crest of the ridges with the intent of minimizing adverse environmental impacts. The proposed grading and drainage techniques are designed to protect the natural topography, watercourses, drainage ways, and trees, and to control erosion. The careful design and layout of the subdivision not only minimizes slope disturbance but also disturbance to the existing natural landscape, preserving existing plant life. Although the topography made the site design challenging, the design team has provided a design that requires minimal deviations.

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The proposed Denise Lane and common driveways will each provide safe access for vehicular traffic for The lots in question have been designed to follow the natural topography in an effort to minimize cutting and grading. Denise Lane, in particular, has been laid out to closely follow the natural contours of the property along the slope that divides it into its tiers, and it has been designed to serve the upper tier. However, due to the steep slope, vehicular access for lots 1 to 5's driveways as proposed will limit the disturbance to the steep slopes.

Utilities

Water. The project will be connected to Arizona Water Company's public water system at Brewer Road. A mainline extension will be developed up to the hammerhead at the north end within Denise Lane, as well as along the private drive. Fire hydrants will be per ADEQ, Arizona Water Company, and Fire Department standards. The waterline will be submitted for ADEQ approval. Refer to preliminary utility plans for additional details.

A main sewer line will run along Denise Lane, connecting all proposed residential units within the development. The mainlines will be linked to the existing City sewer line on Brewer Road to another manhole in Denise Lane. To connect the sewer to lots 6 to 10, we will install a pressure sewer system. Due to the road's slopes, limited space, and rock, a pressure system will be used instead of digging deep trenches and drop manholes. This approach will also help preserve the open area that would otherwise have been disturbed to install the gravity sewer line. To comply with ADEQ's requirement of not allowing over 10 fps velocity in the pipe, manholes 12 to 15 feet would be needed. The project will coordinate with the City on the main tie-in location and requirements. Refer to preliminary utility plans for additional details.

Electric/Telephone/Internet. Electric service will be provided through APS and the main distribution lines will be located within the proposed drive alignments. Telephone and internet services will follow a similar arrangement. The power pole in the Right of the way brings the utility line across the street, and from this pole, the utilities are underground.

Patriot Disposal will be the Solid Waste provider.

Streetlighting. No street lighting is proposed for this development.

Emergency Services. The Sedona Police Department has provided a Letter of Service that is enclosed in this submittal. The letter states emergency services will service this address and the average response time would be approximately five minutes.

Traffic. An eleven-lot single family subdivision will have minimal traffic volume and impact on the existing roadway system.

Consistency with Sedona Community Plan

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As previously detailed, the proposed subdivision conforms to the Community Plan Land Use Map designation for the property, as well as the property's longstanding RS-10 zoning. In addition, the Property is not within any CFA or other designated special planning areas. By these standards, this subdivision is a "by right" proposal. In addition, the design and layout of the lots are designed to accommodate topography, natural vegetation, soil conditions, drainage, street traffic, and other conditions as outlined in Article 7 of the Sedona Land Development Code. The following provisions of the Community Plan are worth specifically noting.

LAND USE, HOUSING, AND GROWTH

- Grow only within currently established residential and commercial limits

  The proposed infill development is within currently established residential limits.

- Ensure harmony between the built and natural environments

  Great care and thought went into the design and layout of the proposed development in order to disturb the least amount of natural environment and topography. This includes appropriately developing access to respect the two-tier nature of the Property. This also includes developing a reasonable number of lots that internally respond to the topography of the Property itself, and externally respond to the lot size of the adjacent lots to the east and north of this infill location.

ENVIRONMENT

- Promote environmentally responsible building and design

  The same reasoning set forth immediately above also applies to this element of the Community Plan.

Analysis of Conformance to the Land Development Code

Section 7.3 of the Land Development Code establishes the City's Subdivision Standards. This part of the Owner's letter of intent addresses the proposed subdivision's compliance with each of those Standards. Of the 48 provisions within Article 7, the Subdivision section of the Land Development Code, only one subject matter deviations are being requested with this proposal. As indicated previously, all requested deviations result from the impact of the Property's topography on the street system. This application meets all other applicable standards of Section 7.3.

In addition to Article 7, this detailed analysis also addresses a few relevant provisions of Article 5 and of the Design Review, Engineering and Administrative Manual. This Analysis concludes by touching on Article 8 Citizen Notice.

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ARTICLE 7: SUBDIVISION STANDARDS

Section 7.3.C. Lot Planning
The design and layout of lots shall be dependent upon topography, natural vegetation, soil conditions, drainage, street traffic, or other conditions. The following standards shall apply:

(1) *Number of Lots Created*

a. *Subdivision*
For a new subdivision, the number of lots created shall comply with the maximum density limits set forth for the applicable zoning district in Article 2: Zoning Districts.

In compliance. The proposed subdivision is less than half the allowed density at 2 dwelling units/acre.

b. *Lot Split*
For a lot split, the lots created shall comply with the maximum lot size limits set forth for the applicable zoning district in Article 2: Zoning Districts.

Not Applicable.

(2) *Lot Size and Configuration*

a. Lot width, area, and building setbacks shall comply with the minimum requirements of this Code. It shall be appropriate for the location and character of the development proposed and for the type and extent of street and utility improvements being installed. Modifications may be granted pursuant to Section 8.8.B, Minor Modification.

In compliance. No modifications are requested to this provision.

b. Side lot lines shall be at right angles or radial to street lines, except where other terrain makes such design impractical.

In compliance. The side lot lines here have been designed to respond to the terrain of this significantly sloped site.

c. Double frontage lots are discouraged in new subdivisions.

In compliance. Due to the topography constraints, one access point is provided in the proposed subdivision. Lot three has Denise Lane and a common driveway on two side. Lot 4 has Denise Lane on one side and a private Driveway to lot 5 on the other to avoid a steep slope. A non-vehicular access easement (NVAE) has been applied at various locations throughout the subdivision to restrict access points. The NVAE brings the design into compliance by preventing

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double-frontage lots. In addition to the NVAE, the natural slope would make access difficult from these locations.

d. Flag lots and other irregularly shaped lots are discouraged in new and existing subdivisions.

In compliance. The lot shapes here are designed to respond to the Property's natural topography, and thereby result in minimal disruption to that existing topography. Regularly shaped lots on this Property would be wholly inappropriate for the Property itself and the surrounding neighborhoods, resulting in a significantly disruptive design. In responding to the Property's slopes, we have clustering lots that are accessed thru common areas or easements.

e. Corner lots may be required to be wider than interior lots to provide for setback requirements.

Not applicable. As detailed above, the Property does not lend itself to a soldier course approach, and as a result, there are no corner lots.

f. No lot shall be divided by a city, county, school district, or other taxing agency boundary.

In compliance.

g. The construction envelope on a lot shall be determined by the setback requirements for the lot and the location of natural and/or topographic features such as drainage ways, rock outcrops, native vegetation, and trees.

We have limited the construction envelopes with clustering so as to reduce the area of disturbance.

(3) *Drainage*

Lots shall be designed and located to provide positive drainage away from all buildings, comply with the standards in Section 5.3, Grading and Drainage, and allow for the infiltration of stormwater runoff to the maximum extent feasible.

In compliance. Due to the downstream residence only having a 12-inch culvert under the home, we are proposing to meter the flow to help with the undersize downstream channel and pipes.

(4) *Access*

a. Every residential lot shall be a public or private street. Access to residential lots shall be from local streets except as specifically authorized by the Director and the City Engineer.

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In compliance. Each lot has been designed to have access to a right of way. Each lot has been designed to access locally. There is no direct access of lots to Brewer Road proposed.

b. For subdivisions, at least two points of vehicular access into a proposed subdivision shall be provided, where feasible, unless it can be shown to the satisfaction of the City Engineer that legal, topographical, and/or engineering constraints preclude such access. For lot splits, shared common access shall be provided to the maximum extent practicable.

Discretion of City Engineer. As detailed above, the Property has steep topography and essentially consists of two tiers. Thus, the Property cannot accommodate a traditional loop road providing two access points to each lot. A hammerhead for turning around has been provided at the top of Denise Lane. We have reached out to the adjacent development for a shared emergency access that would benefit both properties but were unsuccessful.

(5) *Flag Lots*

a. Notwithstanding any other provision of this Code, if access is serving five lots or less (including the flag lot), the width of the flagpole portion of a flag-shaped lot shall be no less than:

1. Thirty feet when both public water and sewer systems are to serve such a residential lot
2. Forty feet when both public water and sewer systems are to serve such a commercial or industrial lot
3. Twenty -four feet when only a public water or public sewer system is to serve such a lot
4. Twenty-four feet when the lot will not be served by a public water or public sewer system

In compliance. Lots 1 and 2 are accessed by a common easement that complies with the street standard for three or fewer lots. The site is now a clustering subdivision with limited building pads. Thus, this provision (five lots or less) applies. As both public water and wastewater are proposed, subsection (1) applies, so the flagpole width must be at least thirty feet. Lot 1 has a thirty-foot-wide ingress Easement at its flagpole. The width of the flagpole for Lot 2 exceeds thirty feet. [

b. The length of the flag pole portion of the lot shall not exceed 300 feet and shall comply with all other standards and measurements of this Code and other regulating agencies.

In compliance.

c. Flag lots where the length of the flag pole portion exceeds 130 feet shall provide a permanent turnaround approved by the City Engineer and the Sedona Fire District.

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A permanent turnaround has been provided for lots one and two. We have met with the Fire Marshall, so when Fire reviews the site layout she can make a final decision on the access.

(6) *Modification of Construction Envelope*

We clustered the pads to reduce the construction envelope.

Section 7.3.D. Sensitive Lands

(1) *Generally*

Development of lands that are subject to periodic inundation, subsidence of the earth's surface, high water table, or have difficult topography, unstable soils, or other natural or manmade hazards to life or property shall be avoided to the maximum extent practicable, unless it can be substantiated that:

a. The proposed lot configurations and sizes, grading and drainage techniques or other special development approaches are reasonable and necessary to protect the public health, safety, or general welfare on any lands to be subdivided that are impacted by these characteristics.

In compliance.

b. The sensitive lands are protected through a cluster subdivision, pursuant to Section 7.3.J(2), Cluster Subdivision.

Due to the topographical constraints of the Property, a cluster design option simply will not work. As previously detailed, the site has two separate topographical constraints. First, the topography splits the Property into two distinct tiers. The lower tier is too small to accommodate a cluster. Second, the site only has a narrow opening onto Brewer Road, which has a limited ability to accommodate traffic. Thus, a cluster design that would increase the number of trips would exacerbate the road access challenges of the Property, as opposed to properly respecting the narrow access to the existing public street.

In addition to the internal difficulties of using a cluster approach, as previously stated the density of a cluster approach would be inconsistent with the surroundings of this infill location. The adjacent lot sizes, which include both long-standing communities and newly approved Plats, are dominated by half acre lots. The eight lots proposed here will be compatible with the existing pattern of development.

c. The Council may approve subdivision of such land upon receipt of evidence from the City Engineer, the County Flood Control Districts, State and County Health Authorities, and other area Emergency Services Authorities that the construction of specific

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improvements can be expected to render the land suitable. Construction upon such land shall be prohibited until specified improvements have been planned and construction guaranteed.

In compliance.

(2) *Steep Slope and Ridgeline Development*

a. Lot lines and streets shall be located on or near the crest of ridges or hilltops to preclude prominent line of sight building construction. Building pads shall not be located on or near the crest of ridge lines; and

In compliance.

b. Building pads located near the crest of ridge lines shall be set back from the ridge edge so that they would not be silhouetted, and existing trees shall be preserved to screen proposed structures. (See Figure 7-1.)

In compliance.

(3) *Hillside Development Area*

Because of the unique and peculiar problems inherent in the development of hillsides, special standards and conditions for hillside development areas (an area with average slopes exceeding 15 percent) apply.

a. Sidewalks may be replaced by trails or pathways

Due to the substantial slope conditions on the Property, no sidewalks are proposed. There are only five lots on Denise Lane and three lots in the lower bowl. Neither of these public rights of way connect anywhere, so the only persons who will be using them will be residents and visitors. Sidewalks, with their own cuts and fills, would be an unnecessary scar on the existing land. The occupants of the community can use the streets themselves.

b. Each private access way serving more than one lot shall have a minimum paved surface of 16 feet in width or as may be required by the Engineering Standards Manual. Where needed, as determined by the City Engineer, additional easements for drainage or utilities shall be provided.

In compliance.

Section 7.3.E. Block Layout

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Not applicable as this subdivision is not designed in a typical residential block layout.

Section 7.3.F. Street Design

All public and private streets shall comply with the Engineering Standards Manual and the Sedona City Code, and shall comply with the following standards:

(1) Conformance with Adopted Plans

Whenever a tract to be subdivided is located within an area for which a CFA or Specific Area Plan has been approved by the City Council, the street arrangement shall conform substantially to this plan.

Not applicable.

(2) Coordination of Streets

a. All new collector and local streets shall connect with surrounding streets at safe and convenient locations as required by the Director to allow convenient movement of traffic and reasonable access for emergency vehicles.

In compliance.

b. When connections to surrounding streets are proposed or required by the City, public right-of-way shall be dedicated, and streets developed to existing paved rights-of-way.

In compliance.

c. Where there is no paved street between the subdivision and an existing paved street, an interim street, improved in accordance with local street standards, shall be constructed by the applicant for developments with densities in excess of one residential unit per two acres of land.

Not Applicable.

d. Whenever possible, proposed intersections along one side of a street shall coincide with existing or proposed intersections on the opposite side of such street. Where a centerline offset (jog) occurs at an intersection, the distance between centerlines of the intersecting streets shall be not less than required by the Engineering Standards Manual.

Not Applicable.

e. The street pattern shall not cause adjacent property to be landlocked nor prevent access to public land.

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In compliance. There are driveways along Brewer Road, but no nearby intersections.

(3) Street Intersections

a. Streets shall be arranged in relation to existing topography to produce streets of reasonable gradient to facilitate adequate drainage and to produce desirable lots of maximum utility.

In compliance.

b. Where a subdivision abuts or contains the right-of-way of a drainage way, a limited access highway or an irrigation ditch or abuts a commercial or industrial land use, the Director may require the location of a street approximately parallel to and on each side of this right-of-way at a distance suitable for appropriate use of the intervening land. This distance shall be determined with due regard for approach grades, drainage, bridges or future grade separations.

Not applicable. Brewer is a local residential collector street that does not meet to need a frontage road. No irrigation or abutting commercial or industrial land. The plat includes the onsite drainage in a easement.

(4) Street Design Standards

a. Streets shall be related appropriately to the expected use of the property. Minimum requirements for street right-of-way, pavement width, and other standards for public and private streets are set forth in the Engineering Standards Manual.

Discretion of City Engineer. Due to topographical constraints, the standard 50' right-of-way on Denise Lane has been reduced to 30' for the proposed development. The volume of traffic on this roadway is minimal. Thus, the street is "related appropriately to the expected use of the property." A wider street serves no public purpose and needlessly increases the number of cuts and fills on the land.

b. Other designs and materials may be required for the construction of streets, curbs, and sidewalks when, in the determination of the City Engineer, such methods would be more environmentally desirable or more in keeping with the design of the development or neighborhood.

See immediately above.

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Luke Sefton PE, CFM
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Leonard Filner, Planner

c. Turnarounds shall be provided at the ends of cul-de-sacs and at elbows on one-way streets. Turnarounds shall meet the minimum requirements of the Sedona Fire District.

In compliance. We have preliminary met with the Fire Marshall for input and as part of the review the Fire Marshall will give the official comments on the site.

(5) Sidewalks

Unless otherwise provided in this Code, sidewalks shall be provided by the developer and installed on both sides of all arterials, collector streets, and local streets (including loop lanes and cul-de-sacs), and within and along the frontage of all new development. Also see Section 5.4.H, Pedestrian and Bicycle Circulation.

To clarify, we will not be constructing any sidewalks on the Property due to the steep slope conditions. The public rights of way that exist do not connect to any other areas, and will only be used by residents and visitors. Building sidewalks would require additional cuts and fills which would damage the land unnecessarily. Instead, the community can use the streets themselves, and we are proposing to contribute to the Brewer Road multi-use trail.

Section 7.3.G. Street Naming and Traffic Control Signs

(1) *Continuation of Existing Names*

The subdivider shall indicate the street name for public streets on the preliminary plat by projecting existing north-south and east-west street names that fall in alignment. Where no current streets are in alignment, the subdivider may propose a name subject to final approval by the City Engineer and City Council.

In compliance. We are proposing Denise Lane road has historically been called.

(2) *Street Signage*

a. All streets in a subdivision shall be named and identified by signs installed at every street intersection.

In compliance. In addition will be no parking signs

b. These signs shall be standard street signs as indicated in the current Manual on Uniform Traffic Control Devices edition.

In compliance.

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c. All traffic control signs, as well as street name signs, required in a subdivision shall be provided and installed by the City at the expense of the subdivider in conformance with the current edition of the Manual on Uniform Traffic Control Devices and any relevant Arizona state supplements.

In compliance.

Section 7.3.H. Easement Planning

(1) Easements for utilities shall be provided as necessary to ensure the provision of services to each lot. The developer will provide the Director written documentation of approval by the utilities with respect to easements.

In compliance.

(2) Areas dedicated for easements shall have sufficient width for roadway and other improvements, including roadway, drainage, utilities, pedestrian access with consideration of sidewalks, slope, landscaping, and consideration of bike lanes.

In compliance.

(3) Land within a public street or land within a utility easement for major power transmission (tower) lines or pipelines, or land within an access and/or ingress/egress easement, shall not be considered part of the minimum required lot area or lot width except where lots exceed one-half acre in area. This shall not be applicable to land involved in utility easements for distribution or service purposes.

Not applicable.

(4) Drainage easements shall be provided to the satisfaction of the City Engineer and the County Flood Control District. Drainage easements shall be provided as required by the Engineering Standards Manual. Such easements shall not necessarily prohibit construction over drainage ways so long as required flows are maintained.

In compliance.

(5) Buildings above drainage easements shall be constructed such that the supporting foundation bridges the drainage easement and allows for the removal and replacement of the drainage facility.

Using the clustering design we have avoided any major or city drainage.

In compliance

Luke Sefton PE, CFM
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(6) Easements necessary to ensure nonmotorized access to adjacent public lands shall be provided to the satisfaction of the Director and the Forest Service.

In compliance. No formal trails are on adjacent Forest Service lands, so no access is provided to prevent wildcat access.

(7) Trails and/or walkways may be required where essential for circulation or access to schools, playgrounds, shopping centers, transportation and other community facilities. Such trails and/or walkways may be used for utility purposes. [Ord. 2020-04 § 1, 9-8-20 (Res. 2020-16)].

Not Applicable. The Property provides no access to any community facilities.

Section 7.3.I. Reservation of Land for Public Use

Land areas within a subdivision may be reserved for parks, trails, recreational facilities, and other public facilities including open space, drainage facilities, storm water facilities, and wastewater facilities; provided, that the reservations are in accordance with adopted specific plans and other goals, objectives and standards adopted by the City Council to ensure that City-identified amenities and community benefits are provided.

Not Applicable, due to small size of subdivision.

Section 7.3.J. Alternatives to Subdivision Standards

(1) *Alternatives Generally*

As indicated above, the applicant is seeking approval from the City Engineer and Director regarding ---

(2) *Cluster Subdivision*

This will be a cluster subdivision.

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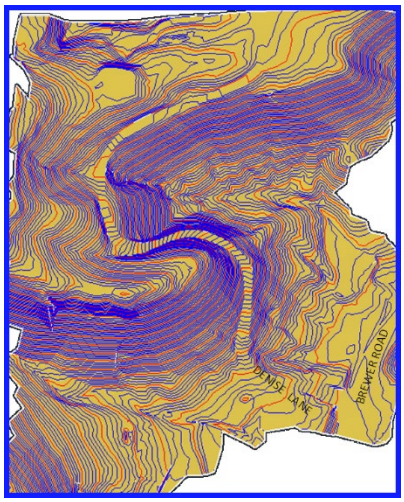
ARTICLE 5: ACCESS, CONNECTIVITY, AND CIRCULATION



Section 5.4.E(1)b.3 Driveways and Access

> Shared driveways are provided to the maximum extent feasible to minimize the number of access points to streets (except for driveways within residential subdivisions or along private residential streets).

We have made some changes to the driveways in the area. Lots four and five will now share a driveway, which means we no longer need a second connection to Brewer Road. Additionally, to reduce the impact on the neighbor to the southeast, we have consolidated the driveways for lots 1, 2, and 3 with a shared driveway.

Section 5.4.E.(3)e Driveways and Access

> Driveways providing access to single-family residential lots shall be located a minimum of 30 feet from any road intersection.

The topography limits the Property's access locations. Additionally, the current easement for the neighboring property has been considered, which means that the Property will not have a driveway onto Brewer Road. The speed limit on Brewer Road is only 25 MPH. A shared driveway 45 feet from the Brewer Road intersection will be used to access lots four and five. This eliminates the need to connect the lower lots to Brewer and avoids the steep slopes.

LDC Section 5.4H.(1)b.2

> Steep-slope areas where sidewalks on one side of the street may be approved to reduce excessive slope disturbance, adverse impacts on natural resources, and potential soil erosion and drainage problems.
>
> As previously stated, installing sidewalks in this subdivision would result in excessive slope disturbance. Given the minimal need for sidewalks, the impact should be avoided. The rights of way here serve only five and three lots and do not connect any other communities.

DESIGN REVIEW, ENGINEERING AND ADMINISTRATIVE MANUAL

ARTICLE 3: ENGINEERING

DREAM 3.3.A(3)c Streets and Driveway Design

> The tangent length between reverse curves shall not be less than 50 feet.

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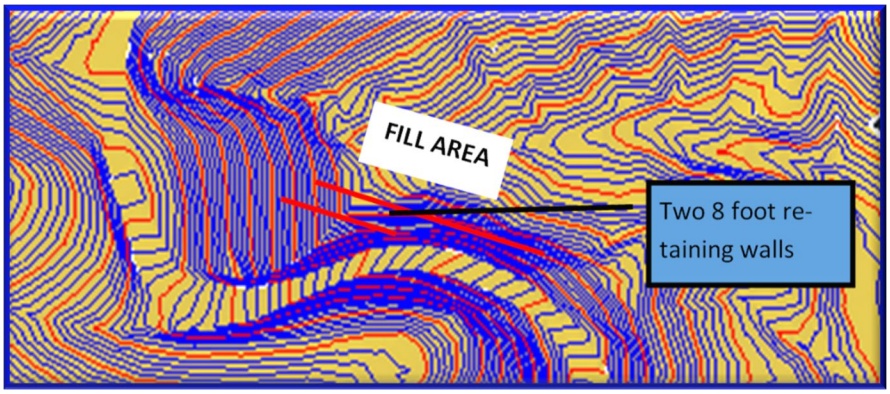
We are facing a challenge with reverse curves on a roadway due to the topography with a 1:1.2 sides lope, which only allows for a +/- 30-foot tangent length between curves. Unfortunately, because of the National Forest regulations, we can only widen the downhill side of the road. Therefore, lengthening the tangent and curve will have a negative impact on an area that is otherwise undisturbed.



On the lower side of the road, achieving the desired curve and tangent length would require a significant amount of filling and the construction of 22-foot vertical retaining walls. However, the city regulations limit the height of retaining walls to 8 feet, with a total height of 16 feet, including setbacks. If we follow the required setback between retaining walls, then the height needed to retain would increase to almost 30 feet. This would result in filling an area that otherwise could be undisturbed with 10 feet of fill and then starting the walls to comply with setbacks and road dimensions.

Although this approach would create space for two additional building pads, we have decided to prioritize protecting the slope with the proposed road design and forgo any additional pads. DREAM 3.3.A.(1).c.1 Streets and Driveway Design

> Streets with an anticipated average daily traffic (ADT) of 2,500 or less shall have a minimum right-of-way width of 50 feet. The City Engineer may allow a minimum right-of-way width less than 50 feet based on unique site and design characteristics inherent to the subdivision design and layout.
>
> The average daily traffic is under 104 trips per day. Again, as stated previously, the topographical and engineering constraints on this Property limit the development to a 30' ROW to minimize cut and fill. This reduced right-of-way is justified by the minimal traffic that will be traveling these drives.

ARTICLE 8: ADMINISTRATION AND PROCEDURES

8.3.D Citizen Review Process: On September 27, 2021, notification letters were mailed to all property owners, homeowners' associations, and neighborhood associations within 300 feet of the property's boundary in accordance with Section 8.3.D. This letter described the request and provided contact

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information for the applicant with an invitation to contact the applicant to discuss the project via email, zoom meeting, telephone, or regular mail. The applicant shall make a good-faith effort to address the concerns of the surrounding property owners in the immediate neighborhood *8.3.E (5).e*. An Affidavit of Mailing will be prepared and submitted to the City of Sedona Community Development Division. [See Neighborhood Meeting Report]

Summary

This Letter of Intent and accompanying documentation affirms that the proposed Canyon Vista Preliminary Plat will comply with the subdivision requirements outlined within Articles 5 and 7 of the Sedona Land Development Code, as well as the Design Review, Engineering, and Administrative Manual. The development will be executed with utmost care to minimize the impact on the neighboring properties and the environment. It will offer an efficient road system that blends seamlessly with the surrounding area, ensures safe entry and exit for vehicles, and provides necessary water supply, sewage disposal, electric service, storm drainage, and other utilities. With meticulous planning and execution, this subdivision promises to be a well-organized and harmonious addition to the community.

The proposed Canyon Vista Subdivision aims to blend seamlessly into the existing community with a well-organized and harmonious design, promoting the surrounding residential area's public health, safety, and welfare. The residential development will be constructed in a way that minimizes adverse environmental impacts by protecting the natural topography, watercourses, drainage ways, and trees, and controlling erosion. We respectfully request the approval of the Preliminary Plat. Further details and analysis will be developed at the time of the Final Plat and construction plans.

Should you have any questions, or need any additional information, please get in touch with David Nicolella at (928)-202-3999 Ext. 104 or dn@sefengco.com.

Sincerely,

Luke A. Sefton, P.E.
President/Principle Engineer

Project No.: 140505

PRELIMINARY PLAT
CANYON VISTA

APN: 401-20-027G
PZ23-00005(SUB)

(CONTAINING 5.72 ACRES)
A PORTION OF THE NW 1/4 OF THE NE 1/4 OF SECTION 18, TOWNSHIP 17 NORTH, RANGE 6 EAST, GILA AND SALT RIVER MERIDIAN, CITY OF SEDONA, COCONINO COUNTY, ARIZONA, ZONED RS-10
CONTAINING 5.75 ACRES ±

SHEET INDEX

PRELIMINARY PLAT NOTES:

1. THE SUBDIVIDER HEREBY DECLARES AND AGREES THAT THE NUMBERED LOTS ARE SHOWN AT THE MINIMUM SIZE PERMISSIBLE AND SHALL NOT BE FURTHER DIVIDED. THIS PROHIBITION AGAINST FURTHER DIVISIONS OF NUMBERED LOTS SHALL BECOME BINDING UPON EACH AND EVERY SUCCESSIVE OWNER. THIS PROHIBITION SHALL NOT APPLY TO THE CREATION OF EASEMENTS, OR RIGHTS-OF-WAY, NOR TO THE CONVEYANCE OF MINOR PORTIONS OF A LOT TO THE OWNER OF A CONTIGUOUS LOT FOR ATTACHMENT TO THAT LOT. IN NO CASE SHALL ANY LOT BE SO DIVIDED AS TO CREATE A LOT OF LESSER SIZE THAN THAT ALLOWED WITHIN THE ZONING DISTRICT IN FORCE OVER THIS PLAT.
2. NO STRUCTURE OF ANY KIND SHALL BE CONSTRUCTED OR PLACED WITHIN OR OVER UTILITY EASEMENTS EXCEPT: UTILITIES, WOOD, WIRE, OR REMOVABLE SECTION TYPE OF FENCING; ASPHALT PAVING, GRAVEL, CONCRETE, OR OTHER DRIVEWAY MATERIALS OR SUITABLE LANDSCAPING. IT SHALL BE FURTHER UNDERSTOOD THAT THE UTILITY COMPANIES SHALL NOT BE REQUIRED TO REPLACE OBSTRUCTIONS, PAVING, OR PLANTING THAT MUST BE REMOVED DURING THE COURSE OF MAINTENANCE, CONSTRUCTION OR RECONSTRUCTION OF UTILITIES.
3. EACH OF THE LOTS SHOWN HEREON ARE SUBJECT TO COMPLIANCE WITH: THE COVENANTS, CONDITIONS AND RESTRICTIONS FOR CANYON VISTA, TO BE RECORDED WITH THE COUNTY RECORDER OF COCONINO COUNTY, ARIZONA, FOLLOWING THE RECORDING OF THIS PLAT. THE BUILDING SETBACKS SHOWN HEREON, AND ALL APPLICABLE CODES, REGULATIONS, AND CONDITIONS OF APPROVAL BY CITY OF SEDONA.
4. LOT CORNERS SHALL BE SET WITHIN 120 DAYS OF APPROVAL AND RECORDING OF THIS FINAL PLAT, AND WILL BE MONUMENTED WITH 1/2" REBAR WITH ALUMINUM CAPS MARKED "LS29263". CENTERLINE MONUMENTS SHALL BE MAG 120 TYPE "B" MARKED "LS29263".
5. NO LINES, WIRES, OR OTHER SERVICES FOR THE COMMUNICATION OR TRANSMISSION OF ELECTRIC CURRENT OR POWER OR ELECTROMAGNETIC IMPULSES, INCLUDING TELEPHONE, TELEVISION, AND RADIO SIGNALS, SHALL BE ERECTED, PLACED, OR MAINTAINED ANYWHERE IN OR UPON THE PROPERTY UNLESS THEY ARE CONTAINED IN CONDUITS TO CABLES INSTALLED AND MAINTAINED UNDERGROUND OR CONCEALED IN, UNDER, OR ON BUILDINGS OR OTHER STRUCTURES APPROVED BY THE ASSOCIATION.

EASEMENT DEDICATION:

EASEMENTS ARE HEREBY GRANTED BY THE PROPERTY OWNER(S) OF THIS SUBDIVISION FOR DRAINAGE PURPOSES, AS SHOWN ON THIS PLAT IN THE AREAS MARKED "DRAINAGE EASEMENT", "DRAINAGE EASEMENT / DETENTION BASIN", AND THE STREET AND COMMON DRIVES. THE OWNER(S) OF ALL LOTS ARE JOINTLY RESPONSIBLE, EITHER ACTING THROUGH A HOMEOWNERS ASSOCIATION OR INDIVIDUALLY (AS FURTHER SPECIFIED IN THE CC&Rs), FOR MAINTAINING THE DRAINAGE EASEMENTS' CONDITION AS IT WAS WHEN THE CONSTRUCTION OF THE SUBDIVISION WAS APPROVED. DRAINAGE EASEMENTS ARE INTENDED TO CONFORM TO THE NATURAL OR MAN-MADE WATERCOURSES EXISTING AT THE TIME OF CONSTRUCTION OF THE SUBDIVISION (UNLESS OTHERWISE APPROVED BY THE CITY OF SEDONA).

THESE DETENTION BASINS, WATERCOURSES, AND 30' COMMON DRIVE WILL REQUIRE PERIODIC MAINTENANCE TO CONVEY ON-SITE OR OFF-SITE DISCHARGES. PERIODIC MAINTENANCE WILL CONSIST OF THE REMOVAL OF EARTH AND / OR VEGETATIVE MATERIAL THAT HAS BUILT UP SINCE THE ORIGINAL CONSTRUCTION OF THE SUBDIVISION. ACCESS EASEMENTS TO SUCH AFFECTED LOTS, FOR MAINTENANCE, IS ALSO HEREBY GRANTED, AS FURTHER DESCRIBED IN THE CC&Rs.

PROPERTY OWNER(S) HEREBY DECLARES THAT THE EASEMENTS SHOWN UPON THIS PLAT SHALL BE ESTABLISHED AND RESERVED IN ACCORDANCE WITH THE NOTATION ON SAID PLAT AND SHALL PROVIDE TO THE PUBLIC THE USE THEREOF FOREVER FOR INGRESS, EGRESS PURPOSES AND FOR INSTALLATION, OPERATION, AND MAINTENANCE OF PUBLIC UTILITY LINES AND FACILITIES, INCLUDING WITHOUT LIMITATION, WATER, SANITARY SEWER, ELECTRIC, NATURAL GAS, TELEPHONE, CABLE SERVICES, WATERCOURSES AND/OR DRAINAGE FACILITIES. THE PROPERTY OWNER(S) ALSO DECLARES THAT THE STREETS CONSTRUCTED AND LOCATED WITHIN THE SUBJECT EASEMENTS PROVIDING ACCESS TO, FROM AND THROUGHOUT THE SUBDIVISION SHALL REMAIN PRIVATE, AND ARE NOT DEDICATED TO THE PUBLIC BUT ARE RESERVED FOR THE USE, ENJOYMENT AND BENEFIT OF THE ADJACENT OWNERS; THE MAINTENANCE OF THE SAID STREET WILL BE THE RESPONSIBILITY OF THE INDIVIDUAL LOT OWNERS WITHIN THE SUBDIVISION.

IF THE EASEMENTS ARE NOT ADEQUATELY MAINTAINED, THE CITY OF SEDONA WILL NOT BE RESPONSIBLE OR LIABLE FOR ANY DAMAGE. HOWEVER, IT HAS THE AUTHORITY TO ENTER ONTO THE SITE AND MAINTAIN THE DRAINAGE EASEMENTS. IF THE CITY OF SEDONA HAS TO DO THE MAINTENANCE, THE PROPERTY OWNER(S) WILL BE BILLED. SHOULD COURT ACTION BE NECESSARY TO COLLECT PAYMENT, THE PROPERTY OWNER(S) SHALL BE RESPONSIBLE FOR ATTORNEY'S FEES AND COURT COSTS.

DRAINAGE NOTES:

NATURAL GROUND CONDITIONSMAY CONVEY FLOWS THROUGH INDIVIDUAL LOTS. BUILDINGS SHOULD BE CONSTRUCTED IN THE APPROVED LOCATIONS AND IN COMPLIANCE WITH APPROVED GRADING AND DRAINAGE PLAN.

CIVIL ENGINEER:

SEFTON ENGINEERING
40 STUTZ BEARCAT DR. #8
SEDONA, ARIZONA 86336
PHONE: (928) 202-3999
LUKE SEFTON, P.E. 37322

OWNER / DEVELOPER:

CV DEVELOPMENT SEDONA, INC.
WILLIAM HEYER
5018 SHOAL CREEK BLVD.
AUSTIN, TX 78756
PHONE: 512 917 2780

SURVEYOR:

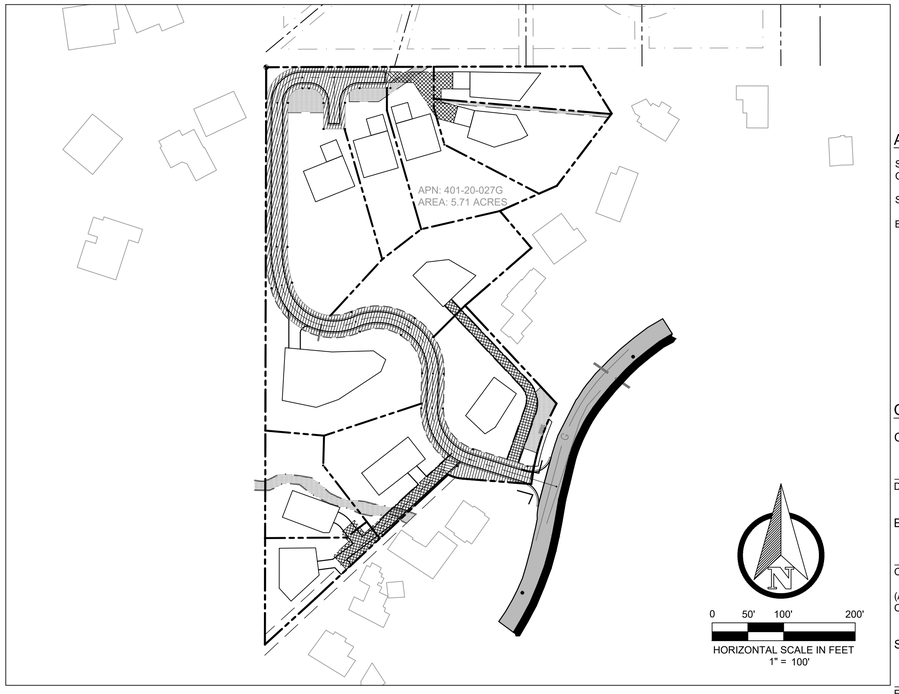
HAMMES SURVEYING LLC
2100 VIA SILVERADO
CAMP VERDE, ARIZONA 86322
PHONE: (928) 282-5686
TIMOTHY L. HAMMES, R.L.S. 29263

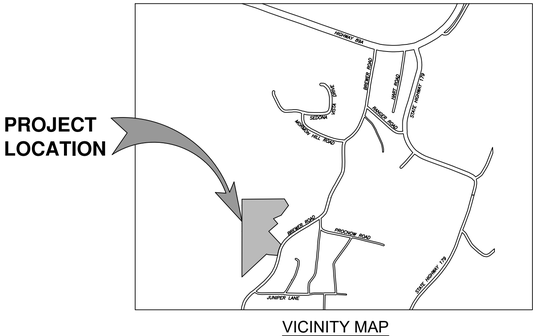
UTILITIES FURNISHED BY:

ELECTRIC - ARIZONA PUBLIC SERVICE
TELEPHONE - QWEST
POLICE DEPARTEMENT - CITY OF SEDONA
SEWAGE DISPOSAL - CITY OF SEDONA
SEDONA FIRE DISTRICT - EMERGENCY SERVICES
SOLID WASTE DISPOSAL - MOUNTAIN WASTE
WATER - ARIZONA WATER COMPANY
NATURAL GAS - UNISOURCE ENERGY SERVICES
TELEVISION - SEDONA CABLEVISION

LOT AREAS		
LOT	GROSS (SF)	NET (SF)
1	12603	3186
2	15322	2808
3	19437	3229
4	22336	2816
5	23165	3159
6	29318	8261
7	28414	3290
8	14085	3276
9	20538	3276
10	19517	3599
11	12516	3731

* NET AREA REFERS TO THE BUILDING PAD AREA.





VICINITY MAP
SEDONA, ARIZONA
NO SCALE

DECLARATION AND DEDICATION:

STATE OF ARIZONA
COUNTY OF COCONINO } SS

KNOW ALL MEN BY THESE PRESENTS:

1. THAT WMH DEVELOPMENT, LLC ("OWNER"), AS OWNER OF THE REAL PROPERTY DESCRIBED AND DEPICTED HEREON, HAS SUBDIVIDED UNDER THE NAME "CANYON VISTA" A PORTION OF SECTION 18, TOWNSHIP 17 NORTH, RANGE 6 EAST, GILA AND SALT RIVER MERIDIAN, CITY OF SEDONA, COCONINO COUNTY, ARIZONA, AND HEREBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF CANYON VISTA (THE "PLAT"). OWNER HEREBY DECLARES THAT THE PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS, TRACTS, STREETS, AND EASEMENTS, AND THAT SUCH LOTS, TRACTS AND STREETS SHALL BE KNOWN BY THE NUMBER, LETTER OR NAME GIVEN HEREON.
2. OWNER HEREBY DECLARES THAT ALL STREETS SHOWN HEREON SHALL BE DEDICATED TO THE PUBLIC FOR PUBLIC USE AND GRANTS TO THE APPLICABLE PUBLIC AND PRIVATE UTILITY COMPANIES AND SERVICE AND EMERGENCY PROVIDERS AN EASEMENT IN, OVER, UNDER, UPON AND ACROSS ALL STREETS SHOWN HEREON FOR (I) INGRESS AND EGRESS TO THE LOTS AND TRACTS, AND (II) THE INSTALLATION, OPERATION AND FURNISHING OF MAINTENANCE TO PUBLIC UTILITY LINES AND FACILITIES, INCLUDING WITHOUT LIMITATION, WATER, SEWER, ELECTRIC, NATURAL GAS, TELEPHONE AND CABLE TV.
3. OWNER HEREBY GRANTS TO THE APPLICABLE PUBLIC AND PRIVATE UTILITY COMPANIES THE PUBLIC UTILITY EASEMENTS AS SHOWN HEREON.

IN WITNESS WHEREOF, OWNER HAS CAUSED THIS PLAT TO BE DULY EXECUTED AS OF THIS _____ DAY OF _____, 2024.

BY:_____
WILLIAM M. HEYER, MANAGER, CV DEVELOPMENT SEDONA, INC.

ACKNOWLEDGEMENT:

STATE OF ARIZONA
COUNTY OF COCONINO } SS

SUBSCRIBED AND SWORN TO BEFORE ME ON THIS _____ DAY OF _____, 2024

BY: _____, MY COMMISSION EXPIRES _____

_____
NOTARY PUBLIC

CERTIFICATE OF APPROVALS

COMMUNITY DEVELOPMENT DEPARTMENT

_____ _____
DIRECTOR OF COMMUNITY DEVELOPMENT DATE

ENGINEERING SERVICES

_____ _____
CITY ENGINEER DATE

(ACCEPTANCE OF THE RIGHT-OF-WAY DEDICATION AND PUBLIC IMPROVEMENTS IS CONTINGENT UPON CONSTRUCTION OF REQUIRED IMPROVEMENTS TO THE SATISFACTION OF THE CITY ENGINEER.)

SEDONA FIRE DISTRICT

_____ _____
FIRE MARSHAL DATE

CITY COUNCIL

_____ _____
MAYOR DATE

_____ _____
CITY CLERK DATE

CERTIFICATION OF LAND SURVEYOR:

I, TIMOTHY L. HAMMES, BEING A REGISTERED LAND SURVEYOR WITHIN THE STATE OF ARIZONA, WITH AND BY MY SIGNATURE BEING PLACED HEREON, DO CERTIFY THE IMPLEMENTATION AND THEREFOR THE EXECUTION OF AN OWNERSHIP NAME CHANGE UPON THIS PLAT. ALL OTHER ITEMS, PREVISIONS, DEDICATIONS AND RESERVATIONS SHOWN HEREON SHALL REMAIN UNCHANGED AND IN FULL FORCE.

_____
TIMOTHY L. HAMMES, RLS

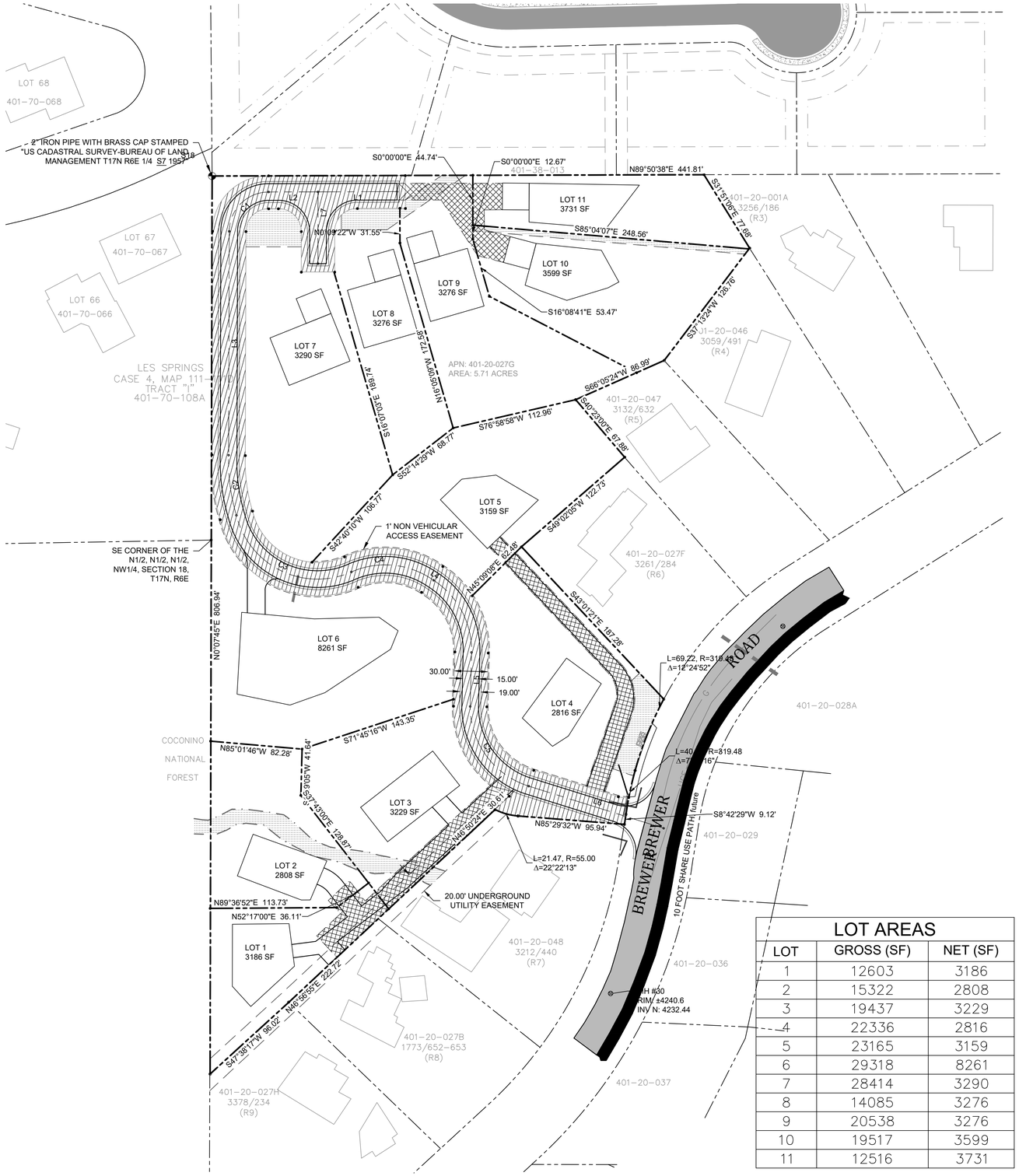
Registered Professional Engineer (Civil)
CERTIFICATE NO.
37322
LUKE A. SEFTON
REGISTERED
ARIZONA, U.S.A.

Sefton Engineering Consultants
Your Ideas to Completion
Surveying • Engineering • Land Planning
40 STUTZ BEARCAT DR. #8
SEDONA, ARIZONA 86336
PH: (928) 202-3999 LS@SEFENGCO.COM

SHEET TITLE: COVER SHEET
PROJECT TITLE: CANYON VISTA SUBDIVISION
SEDONA, ARIZONA

DRAWN BY: TBJ
SCALE: AS SHOWN
DATE: 02-26-2024
PROJECT NO: 140505
SHEET NO. C-1

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811 BLUE STAKE, INC.
Call 811 or click Arizona811.com



LEGEND

- ROAD CENTERLINE
- PARCEL & RIGHT-OF-WAY LINE
- BUILDING ENVELOPE
- PROPOSED EASEMENT LINE
- EXIST EASEMENT LINE
- FOUND 5/8" REBAR ADDED TAG "LS 29263"
- FOUND 1" PIPE ADDED TAG "LS 29263"
- FOUND 1/2" REBAR OB CAP. ADDED TAG "LS 29263"
- FOUND 1/2" REBAR TAG "LS 32224"
- FOUND 1/2" REBAR "LS 14184"
- 30' PUBLIC, UTILITY & DRAINAGE EASEMENT
- DRIVEWAY EASEMENT
- DRAINAGE EASEMENT

ROAD LINE TABLE

LINE #	LENGTH	DIRECTION
L1	71.00	S89° 50' 37.20"W
L2	44.34	S89° 50' 39.64"W
L3	201.06	S0° 08' 52.54"W
L4	3.16	S56° 53' 17.04"E
L5	48.56	S1° 28' 10.34"W
L6	126.97	S72° 38' 53.47"E
L7	64.50	S0° 00' 00.00"E

ROAD CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHD BEARING	CHD LEN
C1	55.57	35.50	89.70	S44° 59' 46"W	50.07
C2	54.75	168.30	18.64	S7° 21' 25"E	54.51
C3	131.23	75.00	100.25	S63° 44' 43"E	115.12
C4	74.59	75.00	56.98	S85° 22' 48"E	71.56
C5	95.10	75.00	72.65	S36° 19' 27"E	88.85

LOT AREAS

LOT	GROSS (SF)	NET (SF)
1	12603	3186
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11	12516	3731

* NET AREA REFERS TO THE BUILDING PAD AREA.

0 25' 50' 100'
HORIZONTAL SCALE IN FEET
1" = 50'

LINETYPE LEGEND

- EXISTING STORM SEWER LINE
- EXISTING WATER SERVICE — W —
- EXISTING SANITARY SERVICE — SS —
- EXISTING UNDERGROUND ELECTRIC LINE — UGE —
- EXISTING GAS LINE — G —
- EXISTING CONTOURS 4095 / 4096
- PROPOSED CONTOURS 4095 / 4096
- PROPOSED STORM SEWER LINE
- PROPOSED 6" WATER MAIN — 6"W —
- PROPOSED 8" SANITARY MAIN — 8"SS —
- PROPOSED 6" SANITARY MAIN — 6"SS —
- PROPOSED 4" SANITARY SERVICE — 4"SS —
- PROPOSED UNDERGROUND ELECTRIC LINE — UGE —
- PROPOSED COMMUNICATION LINE — COMM —
- PROPOSED GAS LINE — G —
- PROPOSED ROAD CENTERLINE
- PARCEL BOUNDARY & RIGHT-OF-WAY LINE
- PROPOSED LOT LINE
- BUILDING SETBACK LINE
- EXISTING EASEMENT LINE
- PROPOSED EASEMENT LINE
- PROPOSED SIGHT DISTANCE TRIANGLE
- PROPOSED FLOW LINE
- PROPOSED FENCE
- PROPOSED CHAIN-LINK FENCE

Registered Professional Engineer (Civil)
37322
LUKE A. SEFTON
CERTIFICATION NO.
SIGNED: 06-30-25
ARIZONA, U.S.A.

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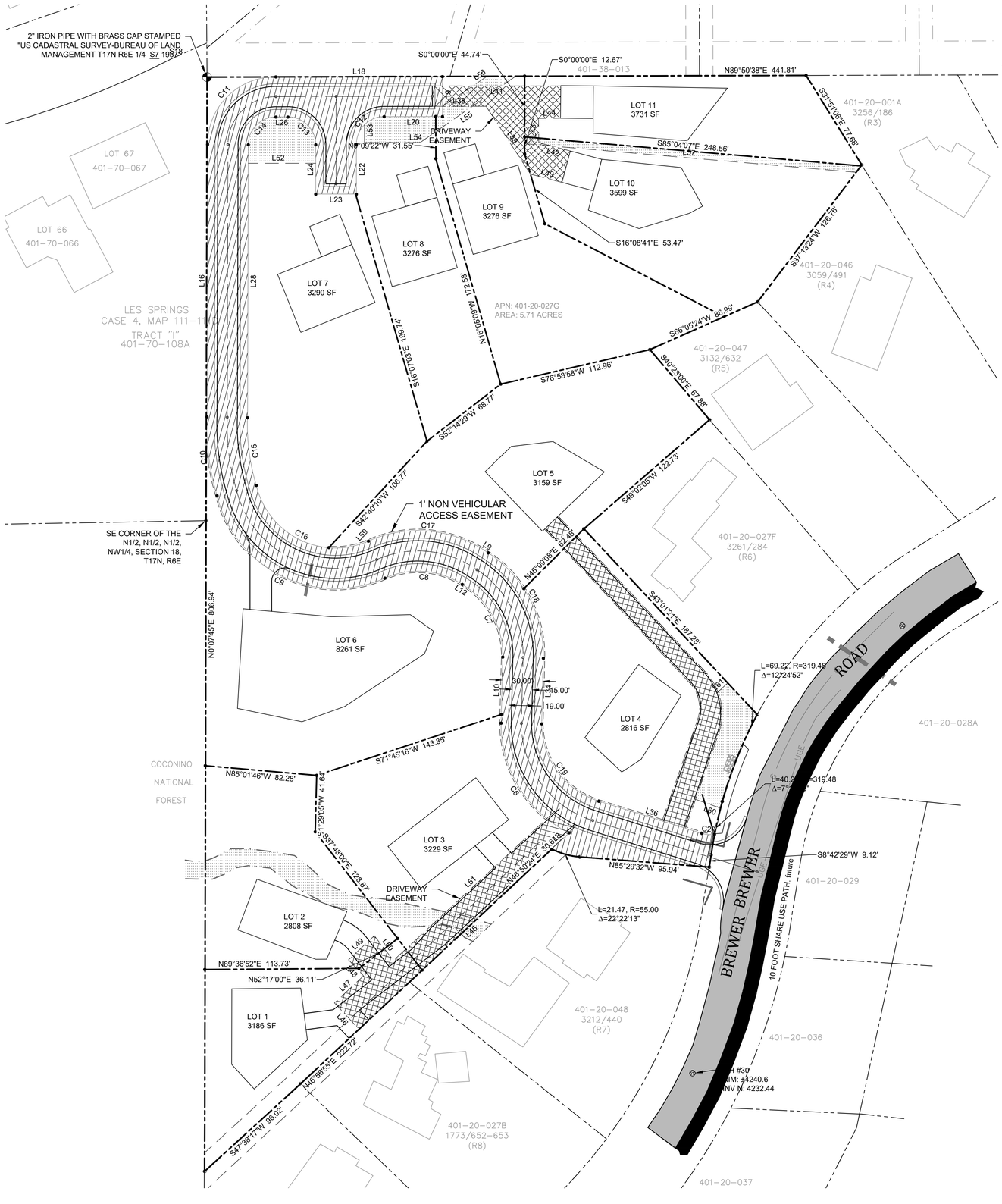
SEDONA, ARIZONA 86336
PH: (928) 202-3999 LS@SEFENGCO.COM

PRELIMINARY PLAT

CANYON VISTA SUBDIVISION

SEDONA, ARIZONA

SHEET TITLE:	PROJECT TITLE:
DRAWN BY:	TBJ
SCALE:	AS SHOWN
DATE:	02-26-2024
PROJECT NO:	140505
SHEET NO.	C-2



ACCESS, UTILITY & DRAINAGE EASEMENTS LINE TABLE		
LINE #	LENGTH	DIRECTION
L8	17.46	N47° 03' 44.79"E
L9	3.16	S56° 53' 17.04"E
L10	48.75	N1° 28' 10.35"E
L12	3.16	N56° 53' 17.04"W
L16	200.82	N0° 08' 52.54"E
L18	122.84	N89° 50' 38.14"E
L19	29.50	S0° 09' 21.86"E
L20	43.10	S89° 50' 38.14"W
L22	36.60	S0° 00' 00.00"E
L23	30.00	N90° 00' 00.00"W
L24	36.40	N0° 00' 00.00"E
L26	8.74	S89° 50' 38.14"W
L28	201.30	S0° 08' 52.54"W
L34	48.35	S1° 28' 10.32"W
L36	79.66	S72° 38' 53.47"E
L38	39.64	N90° 00' 00.00"E
L39	59.75	S33° 12' 08.55"E
L40	24.04	S75° 10' 56.22"E
L41	94.74	N90° 00' 00.00"W
L42	24.04	N75° 10' 56.22"W

ACCESS, UTILITY & DRAINAGE EASEMENTS LINE TABLE		
LINE #	LENGTH	DIRECTION
L43	17.88	N0° 32' 30.57"W
L44	16.18	N89° 27' 29.43"E
L45	219.96	S46° 53' 49.33"W
L46	26.34	N43° 03' 05.02"W
L47	29.29	N46° 56' 54.98"E
L48	16.16	N43° 03' 05.02"W
L49	26.03	N46° 56' 54.98"E
L50	23.09	S37° 37' 44.39"E
L51	161.60	N47° 12' 59.94"E
L52	49.78	N90° 00' 00.00"E
L53	13.11	S0° 00' 00.00"E
L54	41.07	N90° 00' 00.00"E
L55	85.76	N55° 14' 06.65"E
L56	39.57	N56° 01' 48.32"E
L57	245.38	S85° 04' 07.50"E
L58	76.39	S42° 41' 08.58"W
L59	64.46	S42° 41' 08.58"W
L60	20.50	N70° 39' 41.55"W
L61	10.87	N46° 58' 39.42"E

ACCESS, UTILITY & DRAINAGE EASEMENTS CURVE TABLE					
CURVE #	LENGTH	RADIUS	DELTA	CHD BEARING	CHD LEN
C6	100.33	90.00	63.87	N31° 48' 30"W	95.22
C7	61.16	60.01	58.40	N27° 41' 06"W	58.55
C8	59.67	60.00	56.98	N85° 22' 48"W	57.24
C9	157.07	90.00	99.99	N63° 52' 33"W	137.88
C10	59.00	183.30	18.44	N7° 20' 02"W	58.75
C11	78.93	49.65	91.08	N45° 16' 57"E	70.88
C12	32.15	20.50	89.84	S44° 55' 19"W	28.95
C13	32.26	20.50	90.16	N45° 04' 41"W	29.03
C14	32.09	20.50	89.70	S44° 59' 46"W	28.91
C15	50.52	153.30	18.88	S7° 23' 27"E	50.29
C16	105.37	60.00	100.62	S63° 33' 37"E	92.34
C17	89.51	90.00	56.98	S85° 22' 48"E	85.87
C18	91.73	90.00	58.40	S27° 41' 17"E	87.81
C19	75.90	60.00	72.47	S36° 24' 39"E	70.94
C20	9.47	20.50	26.48	S85° 53' 18"E	9.39
C22	212.40	36.21	336.09	N47° 14' 48"W	15.00

LEGEND

- ROAD CENTERLINE
- PARCEL & RIGHT-OF-WAY LINE
- BUILDING ENVELOPE
- PROPOSED EASEMENT LINE
- EXIST EASEMENT LINE
- FOUND ⅝" REBAR ADDED TAG "LS 29263"
- FOUND 1" PIPE ADDED TAG "LS 29263"
- FOUND 1/2" REBAR OB CAP. ADDED TAG "LS 29263"
- FOUND 1/2" REBAR TAG "LS 32224"
- FOUND 1/2" REBAR "LS 14184"
- 30' PUBLIC, UTILITY & DRAINAGE EASEMENT
- DRIVEWAY EASEMENT
- DRAINAGE EASEMENT

LINETYPE LEGEND

- EXISTING STORM SEWER LINE
- EXISTING WATER SERVICE — W —
- EXISTING SANITARY SERVICE — SS —
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- PROPOSED CHAIN-LINK FENCE

0 25' 50' 100'
HORIZONTAL SCALE IN FEET
1" = 50'

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
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SEDONA, ARIZONA 86336
PH: (928) 202-3999 LS@SEFENGCO.COM

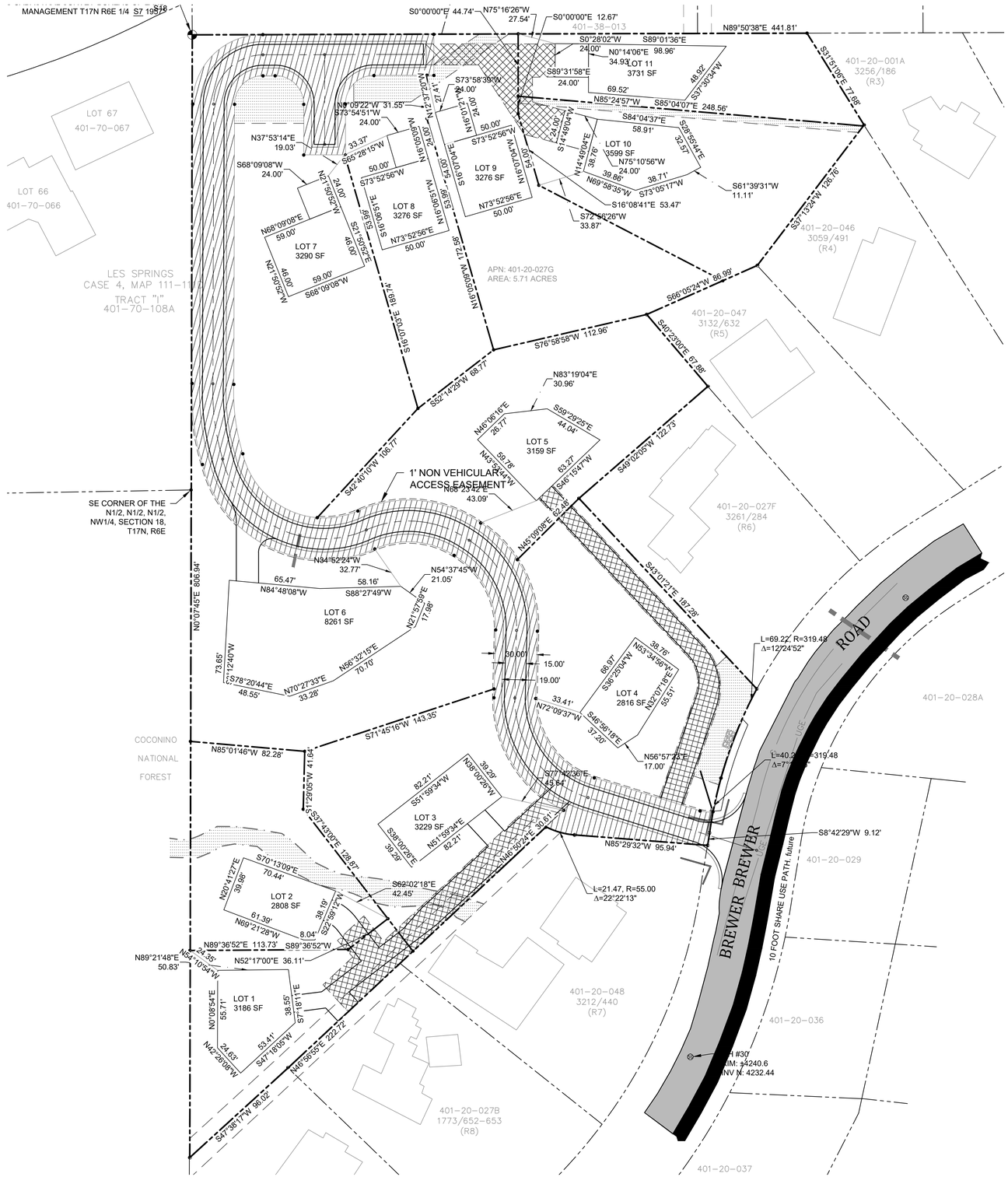
SHEET TITLE: PRELIMINARY PLAT EASEMENTS

PROJECT TITLE:

CANYON VISTA SUBDIVISION

SEDONA, ARIZONA

DRAWN BY:	TBJ
SCALE:	AS SHOWN
DATE:	02-26-2024
PROJECT NO:	140505
SHEET NO.	C-3



0 25' 50' 100'

HORIZONTAL SCALE IN FEET
1" = 50'

LINETYPE LEGEND

- EXISTING STORM SEWER LINE
- EXISTING WATER SERVICE — W —
- EXISTING SANITARY SERVICE — SS —
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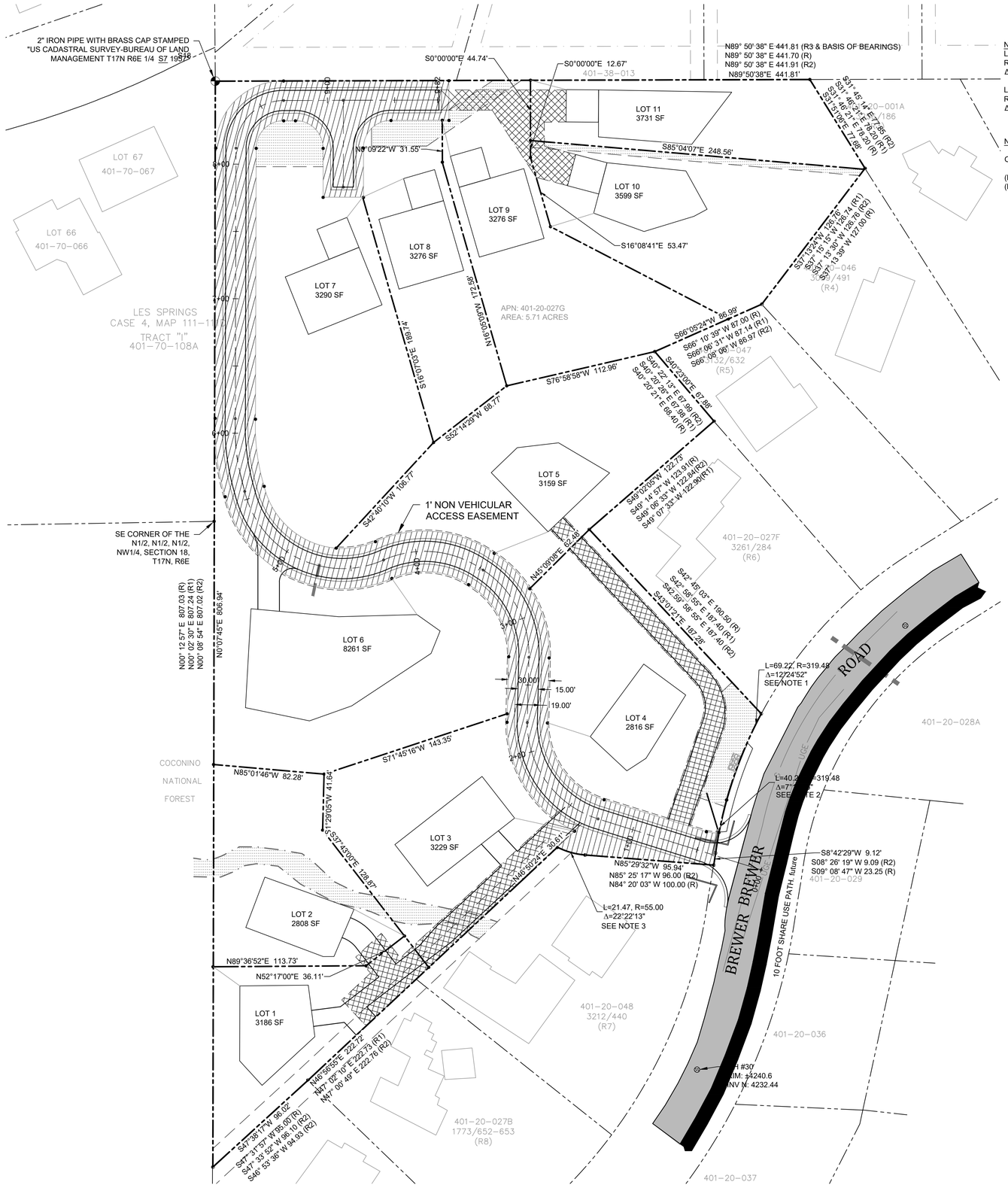
PRELIMINARY PLAT BUILDING ENVELOPES

CANYON VISTA SUBDIVISION

SEDONA, ARIZONA

SHEET TITLE:
PROJECT TITLE:

DRAWN BY:	TBJ
SCALE:	AS SHOWN
DATE:	02-26-2024
PROJECT NO:	140505
SHEET NO.	C-4



NOTE 1:
L=69.40' (R1)
R=319.48' (R1)
Δ= 12° 29' 47" (R1)

L=69.41' (R2)
R=319.48' (R2)
Δ= 12° 26' 51" (R2)

NOTE 2:
L=40.14' (R1)
R=319.48' (R1)
Δ= 07° 13' 40" (R1)

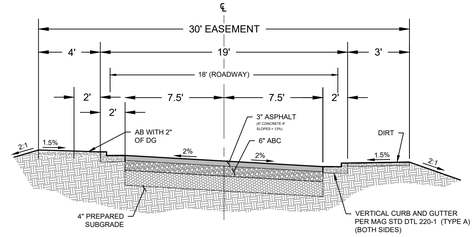
L=40.16' (R2)
R=319.48' (R2)
Δ= 07° 12' 10" (R2)

NOTE 3:
L=21.22' (R)
R=55' (R)
Δ= 22° 06' 33" (R)

L=21.41 (R2)
R=55' (R2)
Δ= 22°18'29" (R2)

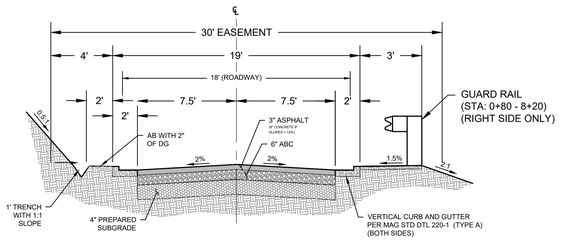
NOTE 4:
(R)= TITLE POLICY YAVAPAI TITLE AGENCY INC.
ORDER #07007878-710-A02 DATED 09/08/2023 AT 7:30AM

(R1)= BK 17, L.S. PG. 66
(R2)=PRELIMINARY FINAL PLAT CANYON VISTA SUBDIVISION
*BEARINGS WITHOUT ANY OF THE ABOVE CODES ARE MEASURE BEARINGS



NOTES:
1) INSTALLATION, SEPARATION, AND COVER OF UTILITIES IN TRENCHES TO MEET UTILITY COMPANY STANDARDS.

ROAD SECTION
STA 8+67.50 TO 9+82.00



NOTES:
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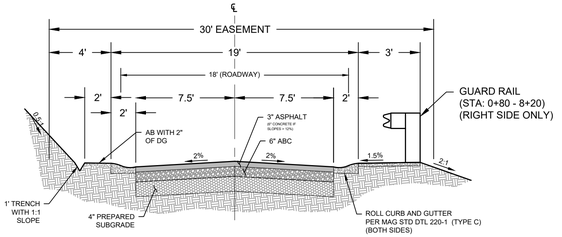
ROAD SECTION
STA 0+00.00 TO 7+50.00

NOT TO SCALE



NOTES:
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ROAD SECTION
STA 7+50.00 TO 8+67.50

NOT TO SCALE

LINETYPE LEGEND

- EXISTING STORM SEWER LINE
- EXISTING WATER SERVICE — W —
- EXISTING SANITARY SERVICE — SS —
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REGISTERED PROFESSIONAL ENGINEER
CERTIFICATION NO.
37322
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PRELIMINARY PLAT DETAILS

CANYON VISTA SUBDIVISION

SEDONA, ARIZONA

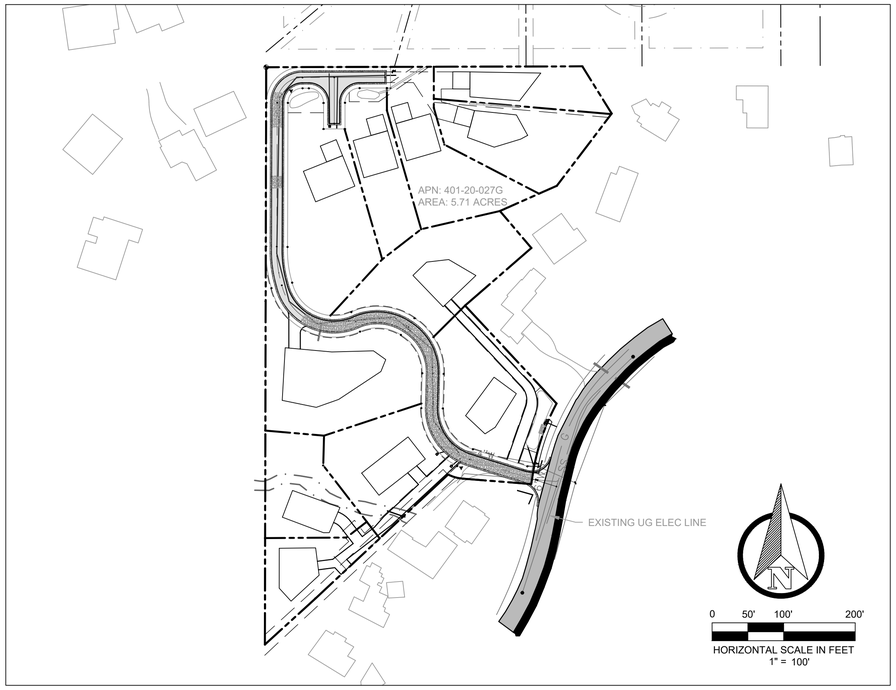
SHEET TITLE:	
PROJECT TITLE:	
DRAWN BY:	TBJ
SCALE:	AS SHOWN
DATE:	02-26-2024
PROJECT NO:	140505
SHEET NO.	C-5

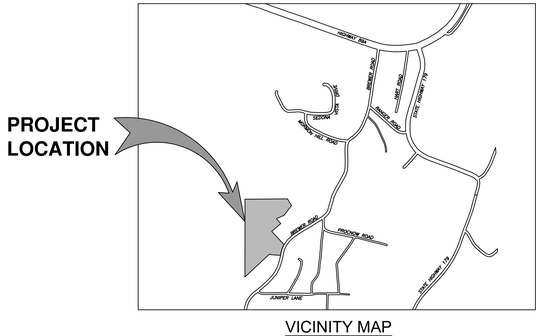
CANYON VISTA

APN: 401-20-027G
PZ23-00005(SUB)

(CONTAINING 5.72 ACRES)
A PORTION OF THE NW 1/4 OF THE NE 1/4 OF SECTION 18, TOWNSHIP 17 NORTH, RANGE 6 EAST, GILA AND SALT RIVER MERIDIAN, CITY OF SEDONA, COCONINO COUNTY, ARIZONA, ZONED RS-10
CONTAINING 5.75 ACRES ±

SHEET INDEX





VICINITY MAP
SEDONA, ARIZONA
NO SCALE

CIVIL ENGINEER:
SEFTON ENGINEERING
40 STUTZ BEARCAT DR. #8
SEDONA, ARIZONA 86336
PHONE: (928) 202-3999
LUKE SEFTON, P.E. 37322

OWNER / DEVELOPER:
CV DEVELOPMENT SEDONA, INC.
WILLIAM HEYER
5018 SHOAL CREEK BLVD.
AUSTIN, TX 78756
PHONE: 512 917 2780

SURVEYOR:
HAMMES SURVEYING LLC
2100 VIA SILVERADO
CAMP VERDE, ARIZONA 86322
PHONE: (928) 282-5686
TIMOTHY L. HAMMES, R.L.S. 29263

UTILITIES FURNISHED BY:
ELECTRIC - ARIZONA PUBLIC SERVICE
TELEPHONE - QWEST
POLICE DEPARTEMENT - CITY OF SEDONA
SEWAGE DISPOSAL - CITY OF SEDONA
SEDONA FIRE DISTRICT - EMERGENCY SERVICES
SOLID WASTE DISPOSAL - MOUNTAIN WASTE
WATER - ARIZONA WATER COMPANY
NATURAL GAS - UNISOURCE ENERGY SERVICES
TELEVISION - SEDONA CABLEVISION

Contact Arizona 811 at least two full working days before you begin excavation
Call 811 or click Arizona811.com

Registered Professional Engineer
CERTIFICATION NO.
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LUKE A. SEFTON
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ARIZONA, U.S.A.

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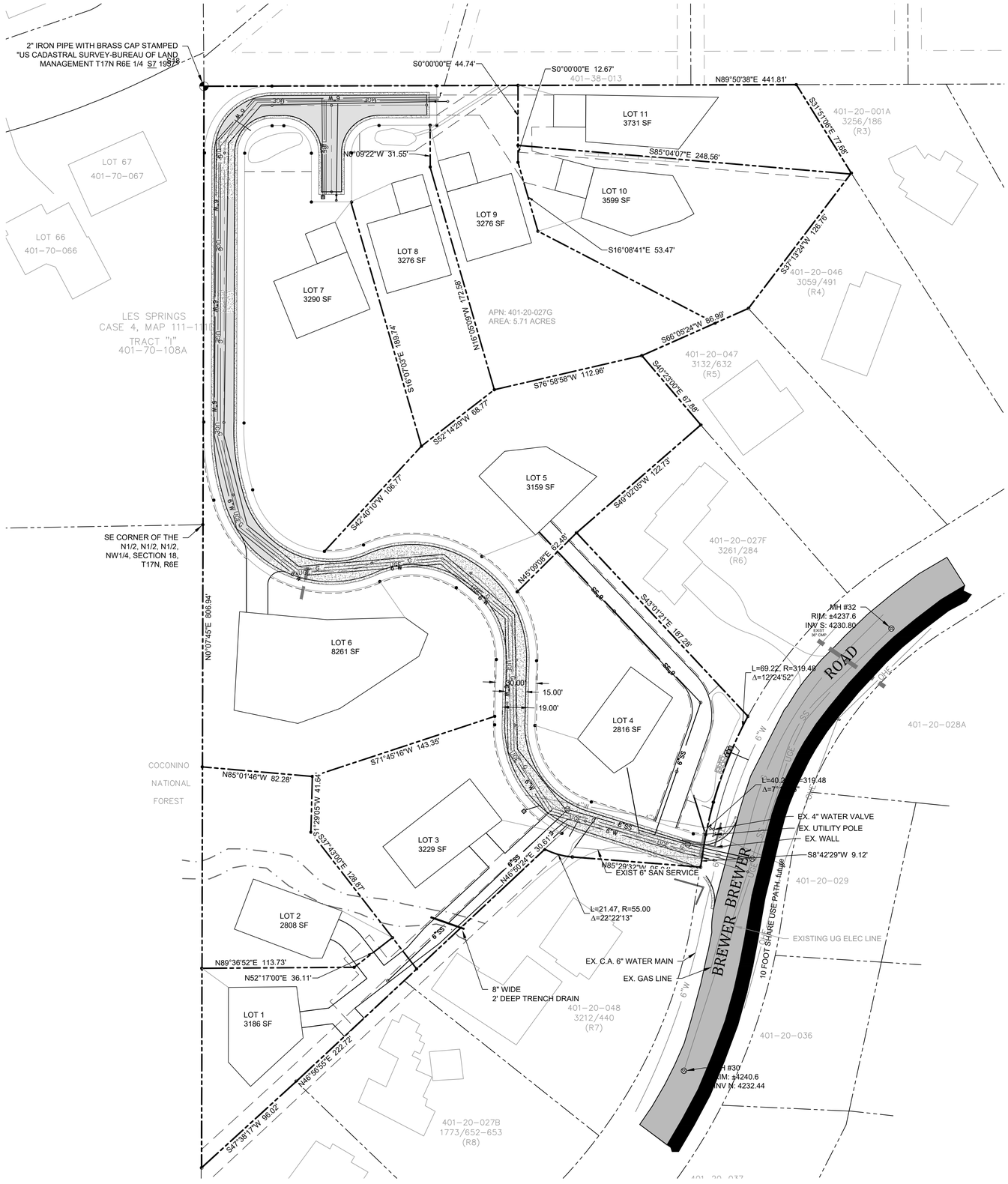
PH: (928) 202-3999 LS@SEFENGCO.COM

SHEET TITLE: COVER SHEET

PROJECT TITLE:
CANYON VISTA SUBDIVISION
SEDONA, ARIZONA

DRAWN BY:	TBJ
SCALE:	AS SHOWN
DATE:	02-26-2024
PROJECT NO:	140505
SHEET NO.	C-1



LEGEND

- ROAD CENTERLINE
- PARCEL & RIGHT-OF-WAY LINE
- BUILDING ENVELOPE
- PROPOSED EASEMENT LINE
- EXIST EASEMENT LINE
- FOUND ⅝" REBAR ADDED TAG "LS 29263"
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- FOUND 1/2" REBAR OB CAP. ADDED TAG "LS 29263"
- FOUND 1/2" REBAR TAG "LS 32224"
- FOUND 1/2" REBAR "LS 14184"
- 6" CONCRETE PAVEMENT OVER 4" AB
- ASPHALT PAVEMENT

Registered Professional Engineer (Civil) CERTIFICATE NO. 37322 LUKE A. SEFTON SIGNED 02-26-24 ARIZONA, U.S.A.

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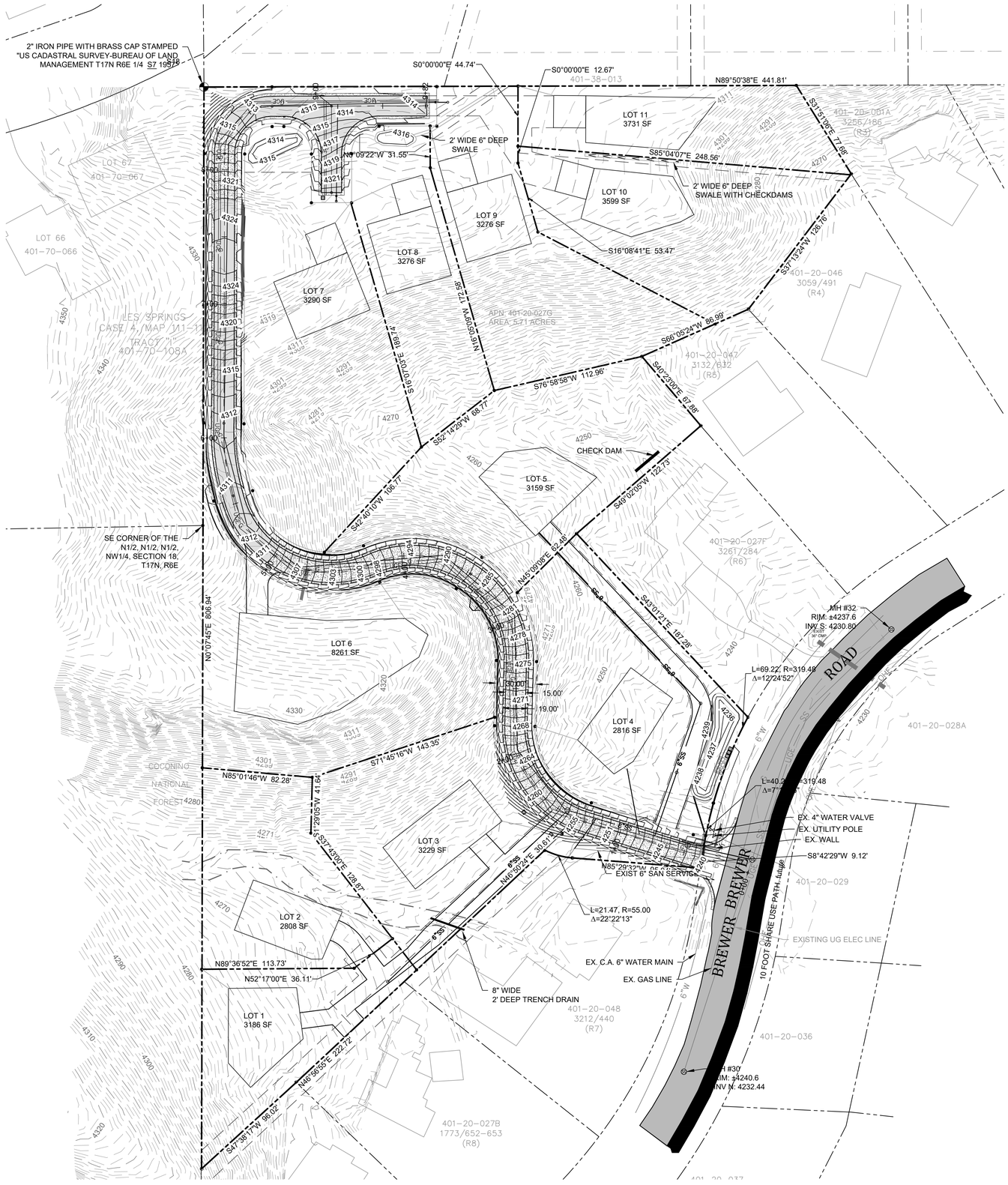
Surveying • Engineering • Land Planning
40 STUTZ BEARCAT DR. #8
SEDONA, ARIZONA 86336
PH: (928) 202-3999 LS@SEFENGCO.COM

SHEET TITLE: SITE PLAN

PROJECT TITLE: **CANYON VISTA SUBDIVISION**
SEDONA, ARIZONA

DRAWN BY:	TBJ
SCALE:	AS SHOWN
DATE:	02-26-2024
PROJECT NO:	140505
SHEET NO.	C-2



VOLUMES

EARTHWORKS:
CUT: 688 CY
FILL: 1697 CY
NET: 1009 CY (SURPLUS FILL)

NOTE: VOLUMES ARE APPROXIMATE

GENERAL GRADING AND DRAINAGE NOTES:

1. SURVEY AND TOPOGRAPHY DATA PROVIDED BY HERITAGE LAND SURVEYING & MAPPING INC, AND WAS PERFORMED IN APRIL OF 2023.
2. SITE BENCHMARK IS 2" IRON PIPE RASS CAP STAMPED "US CADASTRIAL SURVEY BUREAU OF LAND MANAGEMENT: T17N R6E ¼ S7/S18 1957".
3. TOP OF CUT SLOPES SHALL BE MADE NOT NEARER TO A SITE BOUNDARY LINE THAN 1/5 OF THE THE VERTICAL HEIGHT OF THE CUT WITH A MINIMUM OF 2 FEET. THE TOE OF FILL SLOPES SHALL BE MADE NOT NEARER TO A SITE BOUNDARY LINE THAN 1/2 OF THE VERTICAL HEIGHT OF THE FILL, WITH A MINIMUM OF 2 FEET. ALL CUT OR FILL SLOPES STEEPER THAN 2:1 SHALL BE STABILIZED WITH RIPRAP.
4. THE GROUND SURFACE SHALL BE PREPARED TO RECEIVE FILL BY REMOVING ALL VEGETATION, NON-COMPLYING FILL, AND OTHER UNSUITABLE MATERIALS.
5. NO ROCK OR SIMILAR IRREDUCIBLE MATERIAL WITH A MAXIMUM DIMENSION GREATER THAN 12" SHALL BE ALLOWED IN FILLS IN THE ABSENCE OF A SOILS REPORT AND INSPECTION BY A SOILS ENGINEER.
6. ALL FILLS SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DENSITY AND VERIFIED BY A COMPACTION REPORT WHEN SUPPORTING A STRUCTURE.
7. ALL SLOPES GREATER THAN 12% MUST BE 6" CONCRETE OVER 4" AB(FROM STA 0+35.77 TO 5+01.03, STA 6+92.50 TO 7+09.37 AND STA 7+77.36 TO 8+26.57)

LEGEND

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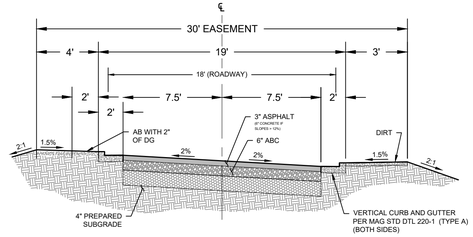
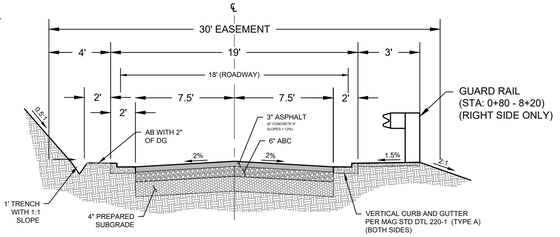


NOTES:
1) INSTALLATION, SEPARATION, AND COVER OF UTILITIES IN TRENCHES TO MEET UTILITY COMPANY STANDARDS.

ROAD SECTION
STA 8+67.50 TO 9+82.00



NOTES:
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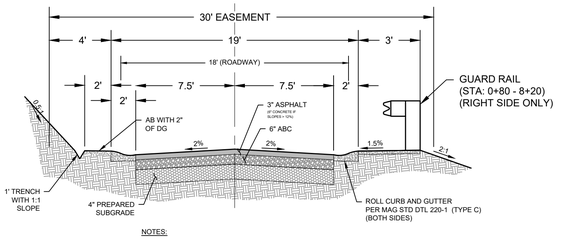
ROAD SECTION
STA 0+00.00 TO 7+50.00

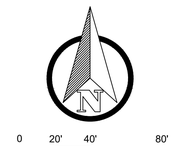
NOT TO SCALE



NOTES:
1) INSTALLATION, SEPARATION, AND COVER OF UTILITIES IN TRENCHES TO MEET UTILITY COMPANY STANDARDS.

ROAD SECTION
STA 7+50.00 TO 8+67.50

NOT TO SCALE



0 20' 40' 80'
HORIZONTAL SCALE IN FEET
1" = 40'

37322
LUKE A. SEFTON
REGISTERED PROFESSIONAL ENGINEER (CIVIL)
ARIZONA, U.S.A.

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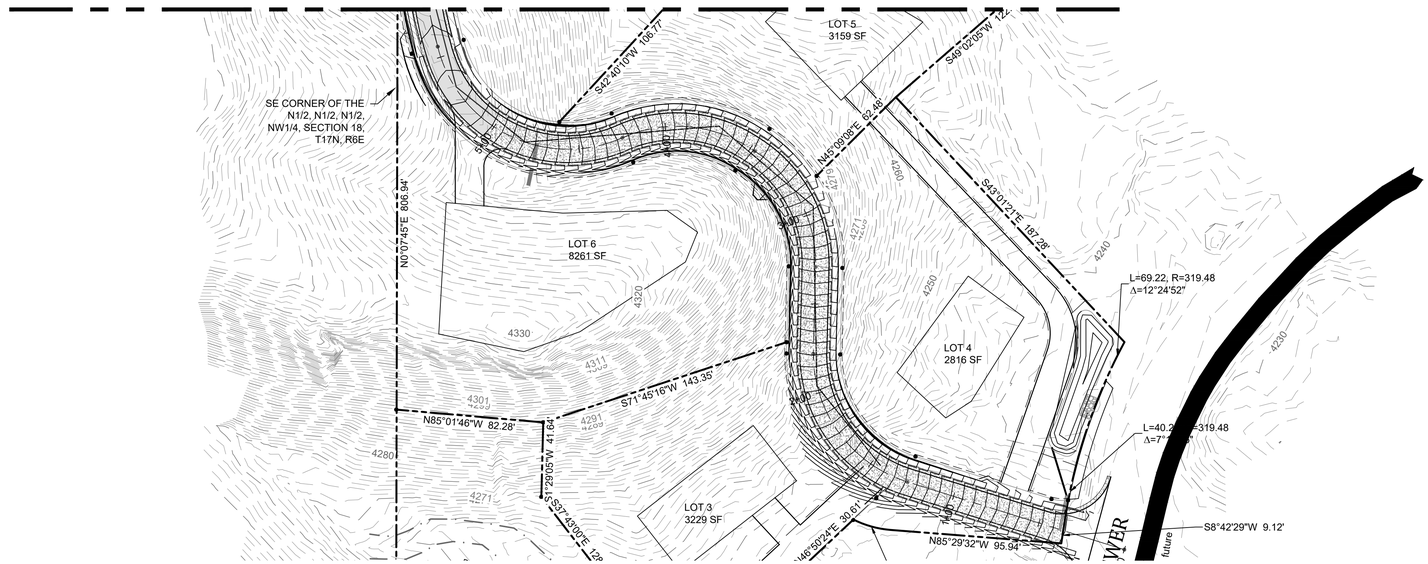
SEDONA, ARIZONA 86336
PH: (928) 202-3999 LS@SEFENGCO.COM

SHEET TITLE: GRADING & DRAINAGE PLAN

PROJECT TITLE:
CANYON VISTA SUBDIVISION
SEDONA, ARIZONA

DRAWN BY:	TBJ
SCALE:	AS SHOWN
DATE:	02-26-2024
PROJECT NO:	140505
SHEET NO.	C-3

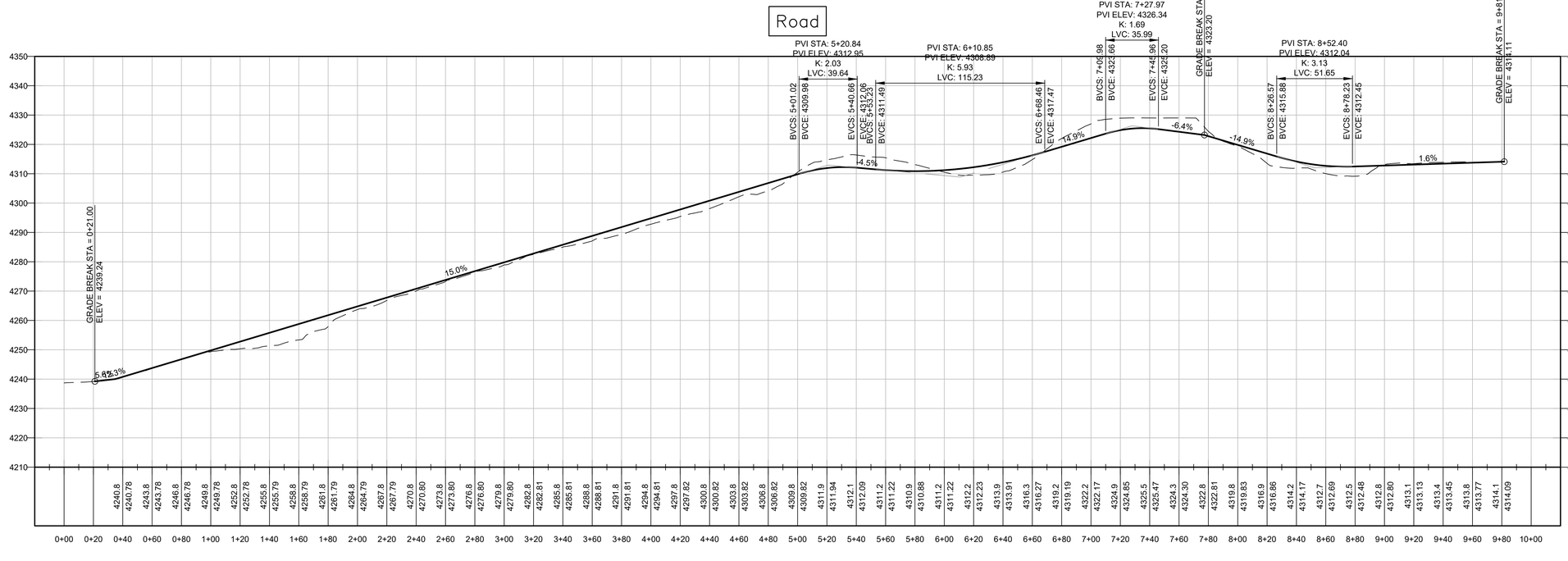
MATCH LINE SEE SHEET C-3



ROAD PLAN

0 20' 40' 80'

HORIZONTAL SCALE IN FEET
1" = 40



ROAD PROFILE

0 20' 40' 80'

HORIZONTAL SCALE IN FEET
1" = 20'

VERTICAL SCALE IN FEET
1" = 10'

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Registered Professional Engineer (Civil)
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SIGNED 09-30-24
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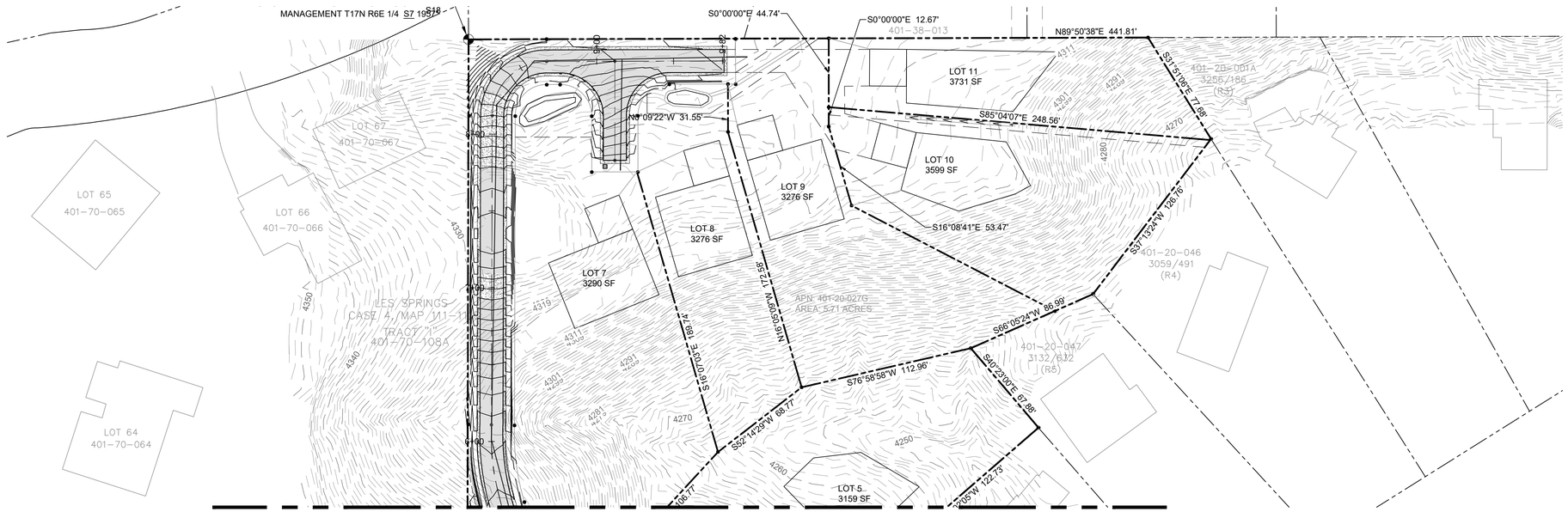
CANYON VISTA SUBDIVISION

SEDONA, ARIZONA

PROJECT TITLE:

SHEET TITLE: PLAN & PROFILE

DRAWN BY:	TBJ
SCALE:	AS SHOWN
DATE:	02-26-2024
PROJECT NO:	140505
SHEET NO.	C-4

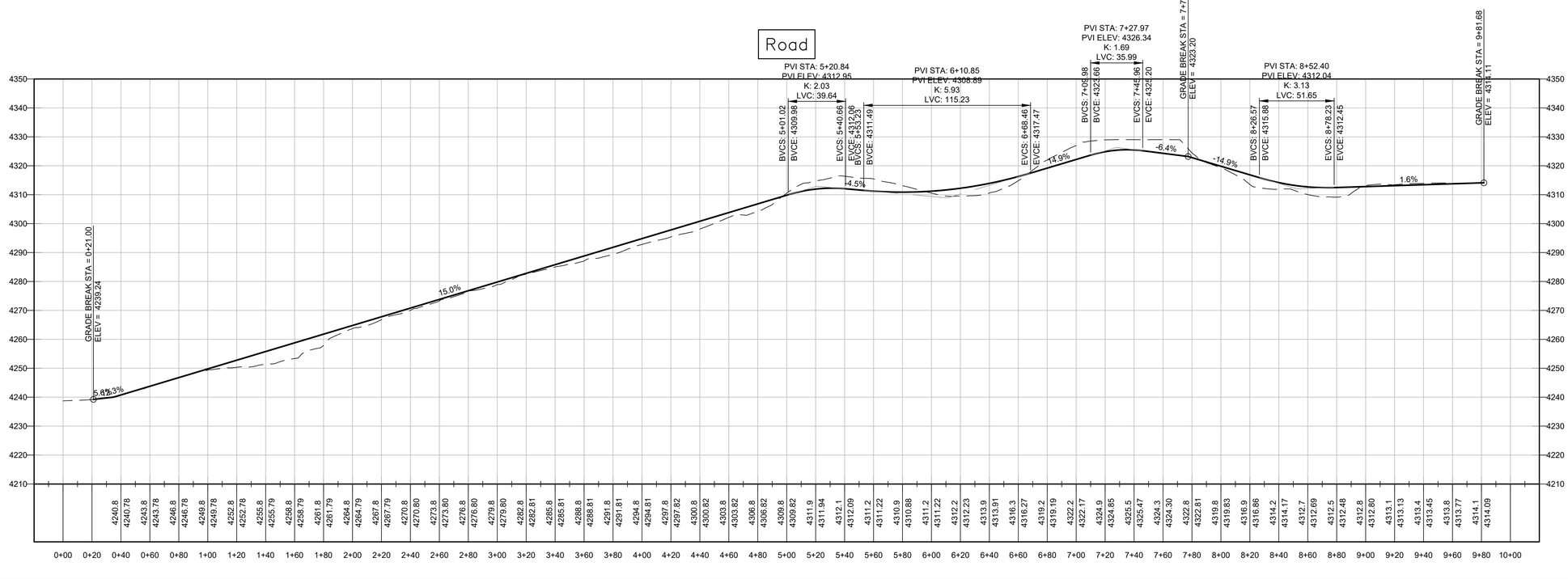


MATCH LINE SEE SHEET C-2

ROAD PLAN

0 20' 40' 80'

HORIZONTAL SCALE IN FEET
1" = 40



ROAD PROFILE

0 20' 40' 80'

HORIZONTAL SCALE IN FEET
1" = 20'

VERTICAL SCALE IN FEET
1" = 10'

Registered Professional Engineer (Civil)
CERTIFICATION NO.
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SEFTON
DATE SIGNED 05/31/24
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CANYON VISTA SUBDIVISION

SEDONA, ARIZONA

SHEET TITLE: PLAN & PROFILE

PROJECT TITLE:

DRAWN BY:	TBJ
SCALE:	AS SHOWN
DATE:	02-26-2024
PROJECT NO:	140505
SHEET NO.	C-5

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David Nicolella, Planner
Leonard Filner, Planner

February 22, 2024

Sedona Community Development Department

102 Roadrunner Dr. Bldg. 104

Sedona, AZ 86336

Subject: Canyon Vista Subdivision Preliminary Plat – Traffic Impacts

Dear Sedona Community Development Department,

Sefton Engineering has prepared this Traffic Generation Assessment as required by the City of Sedona in accordance with the Community Development Design, Review, Engineering and Administrative Manual for the proposed subdivision preliminary plat of the property located off Brewer Rd. Identified as APN 401-20-027G in Coconino County, Arizona. More specifically located in the NW ¼ of the NE ¼ of Section 18 of Township 17 North, Range 6 East of the Gila-Salt River Principal Meridian.

The proposed development includes 11 lots. The property is in an area zoned RS-10 while some surrounding areas that abut the parcel are zoned RS-18, PD, and NF. Brewer Rd must be accessed from W State Route 89A or Ranger Rd. Access for the proposed subdivision will be off Brewer Rd. approximately 0.1 miles north of Juniper Ln and 0.35 miles south of Ranger Rd. Brewer Rd is classified as a collector road and SR-89A is classified as a Major Arterial Road. The posted speed limit on Brewer Rd is 25 MPH and the posted speed limit on SR-179 is 35 MPH.

The Institute of Transportation Engineers (ITE) Trip Generation Rates 10th Edition was used to obtain the trip generation rates for the proposed development based on eleven single-family homes. These estimations were calculated for the Average Weekday, AM Peak Hour and PM Peak Hour using land use Variety Store (ITE Code 210). The results of the calculations are shown below:

Land Use	ITE Code	Intensity	Average Weekday	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Trip Generation Rates									
Single-Family Detached Housing	210	1 du	9.44	25%	75%	0.75	63%	37%	99%
Trip Generation Summary									
Description		Size	Average Weekday	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
PROPOSED USE									
Single-Family Detached Housing		11	103.84	2.063	6.188	8.25	6.93	4.07	10.89
Proposed Project Trips			**103.84**	**2.063**	**6.188**	**8.25**	**6.93**	**4.07**	**10.89**

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Leonard Filner, Planner

It is shown in the table above that this subdivision will produce approximately 11 total traffic moves during the PM Peak Hour. This subdivision will be a minimal impact on traffic counts.

Sincerely,

Luke Sefton, P.E., CFM

TEL: (928) 202-3999

Email: ls@sefengco.com

Prepared by: Shivaraj Shanmukh

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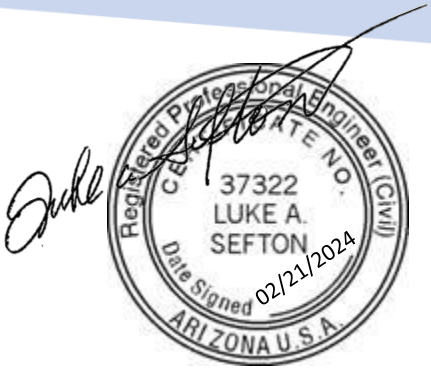
PRELIMINARY DRAINAGE REPORT



Prepared for:

CV DEVELOMPMENT Sedona, Inc
463 BREWER RD SEDONA,
AZ 86336

Prepared by:

Sefton Engineering Consultants
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100% Veteran Owned

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CONTENTS

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02/21/2024

140505
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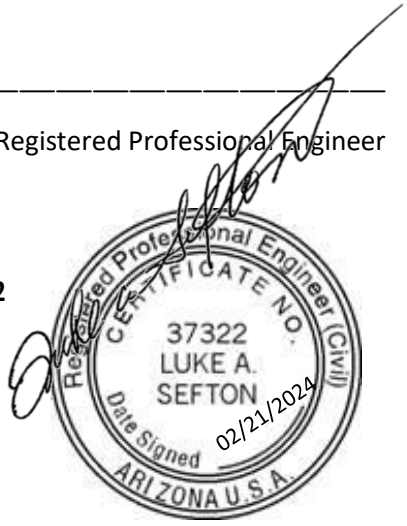
ENGINEERING CERTIFICATION

This report and drainage plan for the Phase Ill drainage design of Canyon Vista Subdivision was prepared by me (or under my direct supervision) in accordance with the provisions of the "Drainage Planning Submittal Requirements" of Coconino County and other regulations of the Coconino County Flood Control District. I understand that Coconino County does not, and will not, assume liability for the drainage facilities designed by others.

SIGNATURE: ————————————————————————

Luke Sefton, Registered Professional Engineer

State of **ARIZONA** **No: 37322**



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DEVELOPER CERTIFICATION

William Heyer hereby certifies that the drainage facilities for Canyon Vista Subdivision shall be constructed according to the design presented in this report.

I understand that the City of Sedona do not, and will not, assume liability for the drainage facilities designed and/or certified by my engineer, and that the City of Sedona review drainage plans pursuant to the Arizona Revised Statues, Chapter 21, Article 1, 48-3601 to 48-3628; but cannot, on behalf of Canyon Vista Subdivision, guarantee that final drainage design review will absolve William Heyer and/or their successors and/or assigns of future liability for improper design. I further understand that approval of the Final Plat does not imply approval of my engineer's drainage design.

SIGNATURE: ————————————————————————

William Heyer

140505

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Robert Lane, Public Lands
Cheri Baker, Office Manager
Crockett Saline, PE
David Nicolella, Planner
Leonard Filner, Planner

I. LOCATION AND DESCRIPTION

A. LOCATION

Canyon Vista Subdivision is situated in the Coconino County, Arizona, within the City of Sedona. It is specifically located at Assessor's Parcel Number 401-20-027G, which is the NW ¼ of the NE ¼ Section 18, Township 17 North, Range 6 East, and Gila & Salt River Base & Meridian. The property can be accessed from Brewer Road and is situated to the north of Brewer Road along Denise Lane.

1. Project Owner/Developer: CV DEVELOMPMENT Sedona, Inc
   5018 Shoal Creek Blvd
   Austin, Texas 78756

2. Streets and Roadway: Private roadways (Proposed on-site)

3. Major Drainage Ways and Facilities:

There are no major drainage ways on the property, but two major ones are located within half a mile. The Oak Creek Floodplain is situated half a mile south of the property, while the Soldier Wash Floodplain is located half a mile east. Two washes, named Juniper Creek Tributary 2 and Juniper Creek Tributary 1, are identified in the City of Sedona Flood Plain Management Study conducted by the United States Department of Agriculture Soil Conservation Service (Appendix B). The wash identified as Juniper Creek Tributary 2 is situated just north of the property boundary and flows from west to east direction towards Soldier Wash. The wash identified as Juniper Creek Tributary 1 flows in a west to east direction through the southern end of the property and towards Oak Creek Wash. These washes are tributaries to Oak Creek.

A flood status report shows this property being out of any floodplain area (Map 04025C7657H, March 21, 2023) (See Appendix A).

Les Springs Subdivision lies to the northwest of the property with Coconino National Forest to the west and north of the property. Surrounding zoning is National Forest (NF) to the west, Planned Residential Development (PRD) to the northwest, Single Family Residential (RS-18b) to the north and Single Family Residential (RS-10b) to the east and south.

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B. DESCRIPTION OF PROPERTY

The proposed development of Canyon Vista Subdivision encompasses 5.71 acres of land. The site has an existing primitive road named Denise Lane that runs through the property from Brewer Road. The project area consists of approximately 50 percent vegetative cover consisting of mesquite, brush and grass. The general area consists of a SCS D type soil which consists of nearly level to very steep, well-drained soils that are only 8 to 20 inches deep over basal, permeability is slow. There are no irrigation ditches or canals on this site. The site is situated at the base of a large ridge which extends along the north and west property boundary with two drainage channels running in a west to east direction through the project area. The drainage channel on the south end of the property can be identified as Juniper Creek Tributary 1 in the City of 2022 Sedona Storm Water Master Plan Update. The area has a high 10 to 15 percent slope, with some 100% slopes in some areas, which declines in a northwest to southeast direction. The site is currently zoned as Single Family Residential (RS-10b).

II. DRAINAGE BASINS AND SUB-BASINS

A. MAJOR BASIN

The City of Sedona Stormwater Master Plan dated May 2022 was referenced and used in this report.

The proposed Canyon Vista Subdivision development will be situated among two major drainage basins as shown in the City of Sedona 2022 Stormwater Master Plan. The major drainage basins are identified as Juniper Creek Tributary 2 and Juniper Creek Tributary 1 (See Appendix B). The 0.47 acres located on the northwest corner of the proposed development area, Sub-Basin 3A (See Appendix D) will be considered as a portion of drainage basin Juniper Creek Tributary 2. The remaining 5.24 acres of the proposed development will be considered as a portion of drainage basin Juniper Creek Tributary 1. Drainage basins Juniper Creek Tributary 2 and Juniper Creek Tributary 1 typically drain in a west to east direction consisting of sheet flow and shallow channel flow.

There are no irrigation facilities within the project area. The soil type is SCS type D and soil texture classification is moderately fine texture to sandy texture. No detention basins are currently located on-site.

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B. SUB-BASIN DESCRIPTION

The two major drainage basins were sub-divided into on-site and off-site basins to further determine the impact of development on the surrounding areas (See Appendix D).

1. On-site Basin:

Four sub-basins were delineated within the boundaries of the proposed development. The sub-basins are identified as sub-basins 3A, 4A, 5A and 6A. Sub-Basin 3A is a portion of the drainage area of Juniper Creek Tributary 2. Drainage in Sub-Basin 3A will typically consist of sheet flow in a southwest to north direction. Sub-Basins 4A, 5A and 6A are portions of the drainage area for Juniper Creek Tributary 1. Drainage in Sub-Basin 4A will consist of sheet flow to localized shallow channel flow which flows in a west to east direction from the western property boundary to the eastern property boundary. Drainage in Sub-Basin 5A will consist of sheet flow to localized shallow channel flow which flows in a west to east direction from the western property boundary to the southern property boundary. Drainage in Sub-Basin 6A will also consist of sheet flow to localized shallow channel flow which flows in a north to south direction within the proposed development area.

2. Off-site Basin:

Two sub-basins were delineated beyond the proposed development area in order to determine the off-site drainage basins which contribute to the on-site basins. Sub-Basin 1A is a portion of the drainage area of Juniper Creek Tributary 1. Drainage in Sub-Basin 1A is predominately channel flow in a west to east direction entering the proposed development area on the western property boundary and continuing to flow through the site. The defined drainage network of Sub-Basin 1A encompasses portion of the undeveloped area of the Coconino National Forest. Sub-Basin 2A is also a portion of the drainage area of Juniper Creek Tributary 1. Drainage in Sub-Basin 2A consists of sheet flow in a west to east direction entering the proposed development area on the western property boundary and continuing to flow through the site.

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Table 1 addresses the physical properties of the Sub-Basins delineated for this drainage study (See Pre-Development Map, Appendix D).

Table 1 – Pre-Development Basin Characteristics

Basin Designation	Area	Channel Length	Elevation Delta	Slope
	(Acre)	(Ft)	(Ft)	(Ft/Ft)
1A	20.6	2231	601	0.27
2A	1.34	207	16.7	0.08
3A	1.09	251	61.5	0.25
4A	1.53	334	65	0.19
5A	2.64	276	71.3	0.26
6A	1.06	310	71	0.23
7A	0.25	101	15.4	0.15
8A	0.22	61	5.75	0.09

III. DRAINAGE DESIGN CRITERIA

A. DEVELOPMENT CRITERIA AND RESULTS

The development of Canyon Vista Subdivision is within the study area of the "City of Sedona 2022 Stormwater Master Plan, dated June 2022. Development within the proposed project area therefore is constrained in that the natural drainage patterns and networks should not be significantly altered or post-development discharge conditions should not increase beyond pre-development discharge conditions.

B. HYDROLOGIC CRITERIA AND RESULTS

1. Design Rainfall

Information for Intensity-Duration-Frequency curves was gathered from the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service website. The following data from the NOAA National Weather Service website was used for all the calculations for runoff. (See Appendix F)

Using the values from the National Weather Service the following table was developed which was then used to create an Intensity-Duration-Frequency curve. The values in the table were then imported and used in the HydraFlow Hydrographs 2024 modeling program to conduct a hydrologic analysis of the area.

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2. Runoff Method (Appendix C)

a. The Runoff Method is a continuation of the Rational Method with watershed areas less than the 160-acre limit and was conducted as outlined in Chapter 2 Rational Method of the Highway Drainage Design Manual.

b. The Rational Method is based on the equation Q=CIA (Appendix C, equation 2-1) where Q is the peak flow in cubic feet per second, C is the runoff coefficient, i is the average rainfall intensity in inches per hour and A is the contributing drainage area in acres.

c. The intensity in the Rational Method equation is the average rainfall intensity for rainfall of a selected return period for a rainfall duration that is equal to the time of concentration. Minimum rainfall duration of 10 minutes was used if the calculated Time of Concentration was less than 10 minutes.

d. The Time of Concentration was determined by using the equation of Tc=11.4*L0.5 *Kb 0.52 *S-0.31*i-0.38 (Appendix C, equation 2-2) where L is the length of the longest flow path in miles, Kb is the resistance coefficient, S is the slope of the longest flow path in feet per mile and i is the average rainfall intensity in inches per hour. The Resistance Coefficient (Kb) for the undeveloped site was foothills (0.05), and for the developed site, was paved and buildings with undeveloped land (0.03) (Appendix C, Table 2-1). The results and calculations can be found in Appendix C within this report.

e. For the pre-development condition sub-basins 1A through 8A are undeveloped with 50% vegetative cover and has the SCS Type-D soil. See table 2 for the pre and Post development runoff co-efficients.

Table 2 – Pre & Post Development Areas and Runoff Co-Efficient

1A	Pre-Development		Post-Development	
	Area(Ac)	C	Area(Ac)	C
Undeveloped area	2.60	0.45	0.00	0.00
Pavements and Rooftops	-	-	0.00	0.00

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Composite Co-efficient	**2.60**	**0.45**	**0.00**	**0.00**
2A	**Pre-Development**		**Post-Development**	
	Area(Ac)	**C**	**Area(Ac)**	**C**
Undeveloped area	1.34	0.45	1.08	0.45
Pavements and Rooftops	-	-	0.26	0.95
Composite Co-efficient	**1.34**	**0.45**	**1.34**	**0.55**
3A	**Pre-Development**		**Post-Development**	
	Area(Ac)	**C**	**Area(Ac)**	**C**
Undeveloped area	1.09	0.45	0.00	0.00
Pavements and Rooftops	-	-	0.00	0.00
Composite Co-efficient	**1.09**	**0.45**	**0.00**	**0.00**
4A	**Pre-Development**		**Post-Development**	
	Area(Ac)	**C**	**Area(Ac)**	**C**
Undeveloped area	1.53	0.45	1.36	0.45
Pavements and Rooftops	-	-	0.17	0.95
Composite Co-efficient	**1.53**	**0.45**	**1.53**	**0.50**
5A	**Pre-Development**		**Post-Development**	
	Area(Ac)	**C**	**Area(Ac)**	**C**
Undeveloped area	2.64	0.45	2.49	0.45
Pavements and Rooftops	-	-	0.15	0.95
Composite Co-efficient	**2.64**	**0.45**	**2.64**	**0.48**
6A	**Pre-Development**		**Post-Development**	
	Area(Ac)	**C**	**Area(Ac)**	**C**
Undeveloped area	1.06	0.45	0.73	0.45
Pavements and Rooftops	-	-	0.33	0.95

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Leonard Filner, Planner

Composite Co-efficient	**1.06**	**0.45**	**1.06**	**0.61**
7A	**Pre-Development**		**Post-Development**	
	Area(Ac)	**C**	**Area(Ac)**	**C**
Undeveloped area	0.25	0.45	0.15	0.45
Pavements and Rooftops	-	-	0.10	0.95
Composite Co-efficient	**0.25**	**0.45**	**0.25**	**0.65**
8A	**Pre-Development**		**Post-Development**	
	Area(Ac)	**C**	**Area(Ac)**	**C**
Undeveloped area	0.22	0.45	0.18	0.45
Pavements and Rooftops	-	-	0.04	0.95
Composite Co-efficient	**0.22**	**0.45**	**0.22**	**0.54**

3. Detention calculation method

HydraFlow Hydrographs 2024 were utilized to compute the detention ponds. Two retention ponds, designated as A7 and A8, were chosen due to the impracticality of installing a detention pond with an outlet. These two ponds will retain the difference between pre and post-development flows for a 100-year return period, and they are capable of storing the initial flush quantity.

In areas 1A and 2A, a rectangular drainage channel measuring 8 inches by 24 inches in depth has been installed at disposal point -2 under the drive way. This channel is installed to gradually release water. If the water volume exceeds the capacity of this channel, overflow onto the road will occur, allowing natural drainage through the pre-existing channel.

In areas 3A and 4A, Pond -2 is present with a single 18-inch diameter pipe, 35 feet in length at an 8% slope, serving as an outlet. This pond effectively controls post-development flows, ensuring runoff quantities remain below pre-development levels. Although it does not receive water from area 5A, Pond -2 is capable of mitigating flows from all three areas to levels lower than pre-development flows through its designated outlet.

For area 6A, Pond -3 is designated, featuring a 15-inch diameter pipe outlet, 41 feet in length at a 4.5% slope. This setup aids in managing post-development flows, ensuring they remain below pre-development levels. HydraFlow Hydrographs 2024 were instrumental in the calculation of these detention ponds.

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Due to limitations, ponds with outlets cannot be provided for areas 7A and 8A. Therefore, Pond 4 and Pond 5 have been allocated to these respective areas. These ponds has the capacity to contain the augmented flow resulting from post-development conditions for a 100-year return period.

4. Storm Recurrence Intervals

Results are presented for the 2, 5, 10, 25, 50 and 100-year events

5. Other Hydrologic Criteria / Methods

No additional hydrologic criteria / methods are requested or anticipated.

6. Hydrologic Results

Using HydraFlow Hydrographs 2024 hydrologic modeling program the first model created was to establish the pre-development drainage of all off-site and on-site sub-basins affecting the project area. The following table summarizes the results of the pre-development model in Appendix G.

Table 3 Pre-Development Discharges

PRE-DEVELOPMENT DISHARGES (cfs)						
Design Pt.	2-yr Peak	5-yr Peak	10-yr Peak	25-yr Peak	50-yr Peak	100-yr Peak
1A	23.56	31.68	38.61	48.35	56.43	65.05
2A	1.532	2.061	2.511	3.145	3.67	4.232
3A	1.246	1.676	2.043	2.558	2.986	3.442
4A	1.75	2.353	2.868	3.591	4.191	4.832
5A	3.019	4.06	4.948	6.196	7.231	8.337
6A	1.212	1.63	1.987	2.488	2.903	3.347
7A	0.286	0.384	0.469	0.587	0.685	0.789
8A	0.252	0.338	0.412	0.516	0.603	0.695

The second model created was to establish the post-development drainage which takes into account the development of the project area but no drainage mitigation is established. The following table summarizes the results of the post-development model in Appendix G.

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Table 4 Post-Development Discharges-no mitigation

POST-DEVELOPMENT DISHARGES (cfs)						
Design Pt.	2-yr Peak	5-yr Peak	10-yr Peak	25-yr Peak	50-yr Peak	100-yr Peak
1A	23.56	31.68	38.61	48.35	56.43	65.05
2A	1.873	2.519	3.069	3.844	4.486	5.172
3A	1.532	2.061	2.511	3.145	3.67	4.232
4A	1.944	2.614	3.186	3.99	4.657	5.368
5A	3.22	4.331	5.278	6.609	7.713	8.893
6A	1.643	2.21	2.693	3.372	3.936	4.538
7A	0.413	0.555	0.677	0.847	0.989	1.14
8A	0.302	0.406	0.495	0.62	0.723	0.834

The third model created was to establish the post-development drainage with the establishment of a drainage network that will mitigate the runoff discharges. The following table summarizes the results of the post-development with detention model in Appendix G.

Table 5 Post-Development with Detention Implementation

POST-DEVELOPMENT W/ DETENTION DISHARGES (cfs)							WITHOUT DETENTION BASIN (cfs)	Difference (cfs)
Design Pt.	**2-yr Peak**	**5-yr Peak**	**10-yr Peak**	**25-yr Peak**	**50-yr Peak**	**100-yr Peak**	**100-yr Peak**	**100-yr Peak**
1A	22.47	30.04	36.48	44.15	50.55	55.76	65.05	-9.29
2A	1.87	2.52	3.07	3.84	4.49	5.17	5.17	0.00
3A	1.53	2.06	2.51	3.15	3.67	4.23	4.23	0.00
4A	2.36	0.00	4.12	5.25	0.00	7.02	5.37	1.65
5A	3.22	4.33	5.28	6.61	7.71	8.89	8.89	0.00
6A	1.49	2.03	2.49	3.13	3.62	4.02	4.54	-0.52
7A	0.41	0.56	0.68	0.85	0.99	1.14	1.14	0.00
8A	0.30	0.41	0.50	0.62	0.72	0.83	0.83	0.00
					Total	87.07	95.23	-8.15

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The increase in runoff from the Pre-Development to the Post-Development is due to the development of the project area. The decrease in runoff between Pre-Development and Post-Development with detention is due to the implementation of a detention basin that mitigates the off-site and on-site drainage areas. The increase in runoff will have no significant impact to the surrounding areas or drainage ways.

C. HYDRAULIC CRITERIA

The procedure and design criteria outlined in Yavapai County Drainage Manual Chapter 6 and Chapter 8 was followed when performing hydraulic analysis. HydraFlow Express was also used in sizing and designing culverts and channels used in this project. No additional hydrologic criteria/methods are requested or anticipated.

IV. DRAINAGE FACILITY DESIGN

A. GENERAL CONCEPT

1. The development of Canyon Vista Subdivision increased the overall runoff as shown when comparing the Post-development discharges (Table 5) to the Pre-development discharges (Table 4). To reduce the Post-development discharges Three detention basins and Two retention basins will be implemented into the development of the site to reduce the overall runoff discharges below the Pre-development levels.

2. To reduce the impact of development on overall runoff peak discharges the Pre-development drainage patterns will typically be followed with little modifications. Areas of development that obstruct the pre-development drainage patterns will be modified with a drainage structure that returns the runoff discharge to a pre-development condition.

3. The following tables and figures were included in this report for further clarification and summarization of data.

a. Table 1: Summarizes the physical characteristics of each sub-basin delineated for this project.

b. Table 2: Shows pre and post developments runoff co efficient and areas

c. Table 3: Shows the calculated Pre-development peak discharge for the required storm recurrence intervals for each sub-basin and concentration point.

d. Table 4: Shows the calculated Post-development peak discharges for the required storm recurrence intervals for each sub-basin and concentration point.

j. Table 5: Shows the calculated Post-development with Detention Implementation peak discharges for the required storm recurrence intervals for each sub-basin and concentration point.

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B. SPECIFIC DETAILS

1. Design Point 1, with a 100-year peak discharge (Q100) of 65.05 cfs, represents the influx from off-site sub-basin 1A into on-site sub-basin 2A along the western property boundary. Then this will be directed towards the channel provided at Design Point 2 where the peak discharge reaches (Q100) 70.22 cfs. If the water volume exceeds the capacity of this channel, overflow onto the road will occur, allowing natural drainage through the pre-existing channel.

2. Design Point 3, with a Q100 of 3.442 cfs, represents the 100-year peak discharge from off-site sub-basin 3A into on-site sub-basin 4A along the western property boundary. This discharge will be directed through a detention basin **(Pond -2)** to reduce its peak.

3. Design Point 4, having a Q100 of 7.571 cfs, denotes the 100-year peak discharge from off-site sub-basin 3A and on-site sub-basin 4A, exiting on-site sub-basin 4A. This discharge will be managed through one 18-inch diameter corrugated metal pipe to the east side, passing through on-site sub-basin 5A, and into a pre-existing channel.

4. Design Point 5, with a Q100 of 10.39 cfs, signifies the 100-year peak discharge from off-site sub-basin 3A and on-site sub-basin 4A, leaving on-site sub-basin 4A. This discharge will be routed through a pre-existing channel, ultimately flowing to the east side of the adjacent property.

5. To mitigate post-development peak discharges from Sub-Basin 4A & 5A to levels below or equal to pre-development levels, a detention basin with a storage volume of 3,843 cubic feet will be built on the east side boundary of the 4A on-site sub-basin. This basin **(Pond -2)** will have a total depth of 4 feet, including a 1-foot freeboard, with maximum 2:1 side slope lined with D50= 6" aggregate rock. The outlet structure will comprise one 18-inch diameter corrugated metal pipe at an 8% slope.

V. CONCLUSIONS

In the engineer's professional assessment, it is recommended that the site be constructed according to the proposed plan. This plan is designed to meet all necessary conditions while ensuring cost-effectiveness and requiring minimal maintenance for drainage facilities. The implemented facilities will effectively mitigate any expected increases in runoff associated with the development. Furthermore, the project fully adheres to the criteria set forth by both Coconino County and the City of Sedona.

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VI. REFERENCES

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ii. Arizona Department of Transportation, Highway Drainage Design Manual Hydrology, March 2014.

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VI. APPENDIX A

FIRM MAP

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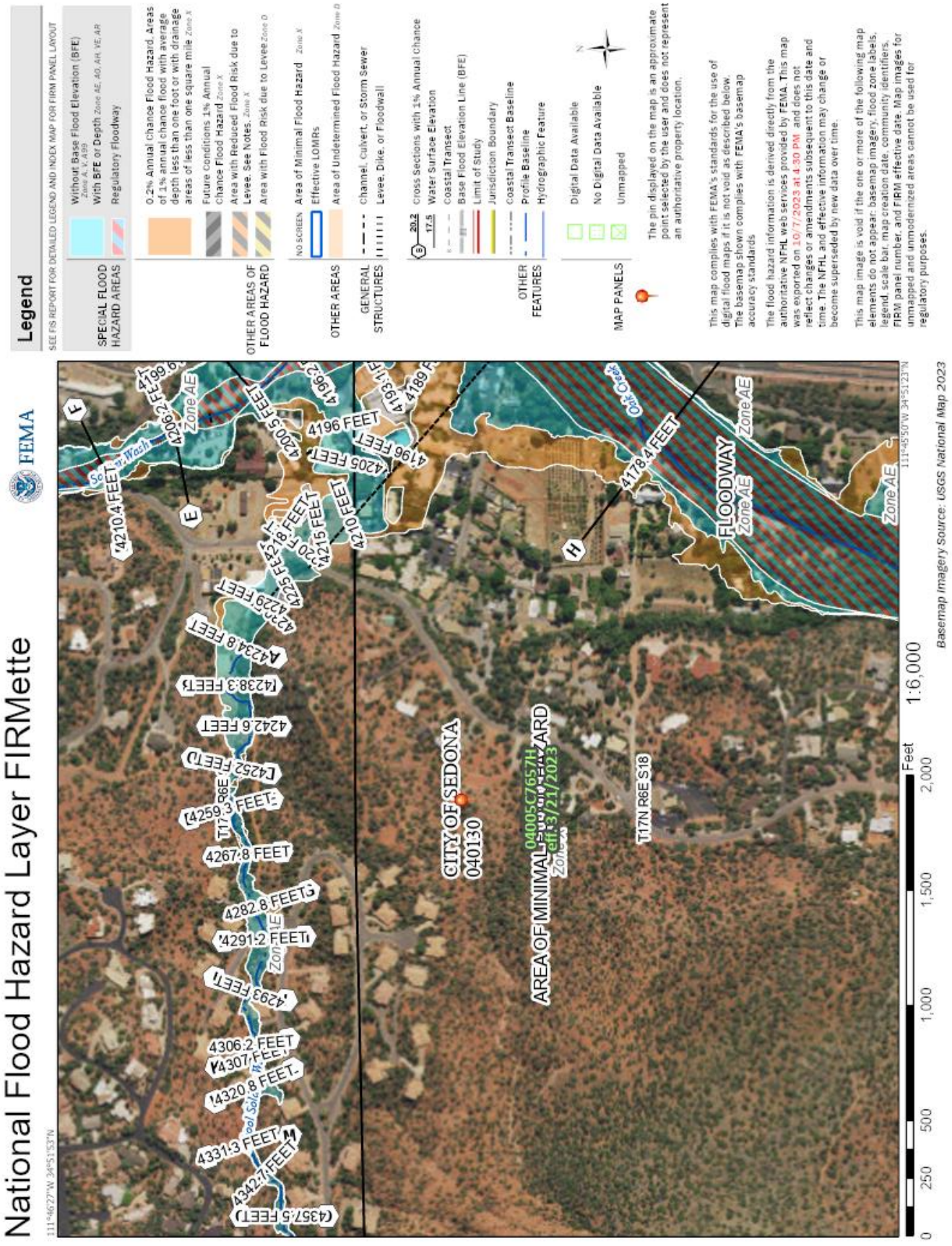

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VII. APPENDIX B

City of Sedona Storm Water Master Plan

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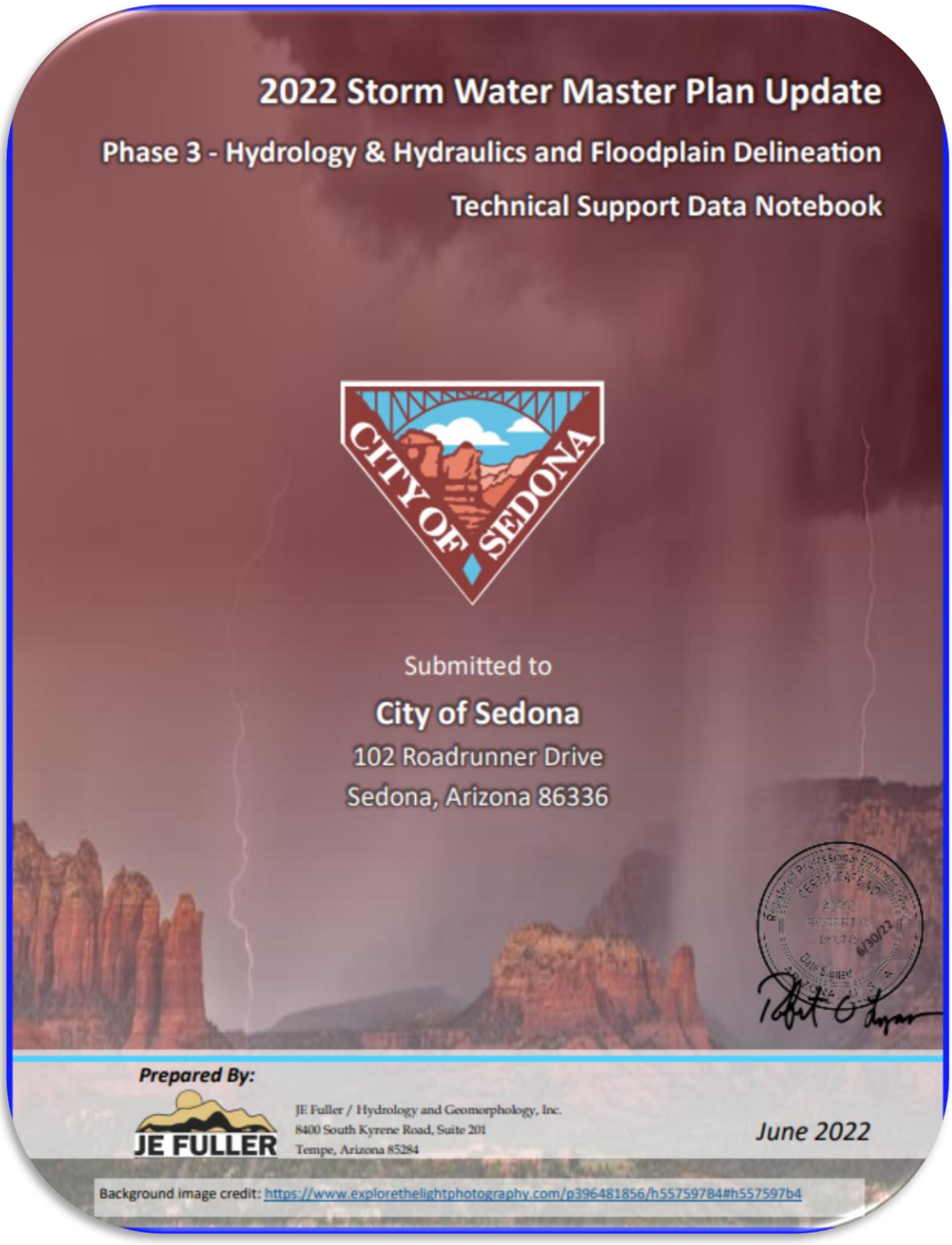

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VIII. APPENDIX C

ADOT DRAINAGE DESIGN MANUAL EXCERPTS AND CALCULATIONS

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CHAPTER 2
RATIONAL METHOD

2.1 INTRODUCTION

The Rational Method relates rainfall intensity, a runoff coefficient and a drainage area size to the direct runoff from the drainage basin.

Three basic assumptions of the Rational Method are:

a. The frequency of the storm runoff is the same as the frequency of the rainfall producing the runoff (i.e., a 25-year runoff event results from a 25-year rainfall event).

b. The peak runoff occurs when all parts of the drainage basin are contributing to the runoff.

c. Rainfall is uniform over the watershed.

2.1.1 General Discussion

The Rational Method, as presented herein, can be used to estimate peak discharges, the runoff hydrograph shape, and runoff volume for small, uniform drainage areas that are not larger than 160 acres in size. The method is usually used to size drainage structures for the peak discharge of a selected return period. An extension of the basic method is provided to estimate the shape of the runoff hydrograph if it is necessary to design retention/detention facilities and/or to design drainage facilities that will require routing of the runoff hydrograph through the structure.

The Rational Method is based on the equation: $Q = CiA$ (2-1)

where Q = the peak discharge, in cfs, of selected return period,
C = the runoff coefficient,
i = the average rainfall intensity, in inches/hr, of calculated rainfall duration for the selected rainfall return period, and
A = the contributing drainage area, in acres.

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2.2 PROCEDURE

2.2.1 General Considerations

1. Depending on the intended application, the runoff coefficient (C) should be selected based on the character of the existing land surface or the projected character of the land surface under future development conditions. In some situations, it may be necessary to estimate C for both existing and future conditions.

2. Land-use must be carefully considered because the evaluation of land-use will affect both the estimation of C and also the estimation of the watershed time of concentration (T_C).

3. The peak discharge (Q) is generally quite sensitive to the calculation of T_C and care must be exercised in obtaining the most appropriate estimate of T_C.

4. Both C and the rainfall intensity (i) will vary if peak discharges for different flood return periods are desired.

5. Since the T_C equation is a function of rainfall intensity (i), T_C will also vary for different flood return periods.

2.2.2 Applications and Limitations

1. The total drainage area must be less than or equal to 160 acres.

2. T_C shall not exceed 60 minutes.

3. The land-use of the contributing area must be fairly consistent over the entire area; that is, the area should not consist of a large percentage of two or more land-uses, such as 50 percent commercial and 50 percent undeveloped. This will lead to inconsistent estimates of T_C (and therefore i) and errors in selecting the most appropriate C coefficient.

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4. The contributing drainage area cannot have drainage structures or other facilities in the area that would require flood routing to correctly estimate the discharge at the point of interest.

5. Drainage areas that do not meet the above conditions will require the use of an appropriate rainfall-runoff model (the HEC-1 Program) to estimate flood discharges.

2.2.3 Estimation of Area (A)

An adequate topographic map of the drainage area and surrounding land is needed to define the drainage boundary and to estimate the area (A), in acres. The map should be supplemented with aerial photographs, if available, especially if the area is developed. If the area is presently undeveloped but is to undergo development, then the land development plan and maps should be obtained because these may indicate a change in the drainage boundary due to road construction or land grade changes. If development plans are not available, then land-use should be based on current zoning of the area.

The delineation of the drainage boundary needs to be carefully determined. The contributing drainage area for a lower intensity storm does not always coincide with the drainage area for more intense storms. This is particularly true for urban areas where roads can form a drainage boundary for small storms but more intense storm runoff can cross roadway crowns, curbs, etc. resulting in a larger contributing area. Floods on alluvial fans (active and inactive) and in distributary flow systems can result in increased contributing drainage areas during larger and more intense storms. It is generally prudent to consider the largest reasonable drainage area in such situations.

2.2.4 Estimation of Rainfall Intensity (i)

The intensity (i) in Equation 2-1 is the average rainfall intensity in inches/hour for the period of maximum rainfall of a specified return period (frequency) having a duration equal to the time of concentration (T_C) for the drainage area. The frequency is usually specified according to a design criteria or standard for the intended application. The

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rainfall intensity (i) is obtained from an intensity-duration-frequency (I-D-F) graph. Two methods can be used for obtaining I-D-F information: 1) two generalized I-D-F graphs are provided that can be used for any site in Arizona, and 2) a site-specific I-D-F graph can be developed, if desired. The two generalized I-D-F graphs are shown in **Figure 2-1** for Zone 6, and **Figure 2-2** for Zone 8, respectively. The delineation of the two rainfall zones for Arizona is shown in **Figure 1-1** of Chapter 1 - Rainfall. Procedures for developing a site-specific I-D-F graph are described in Chapter 1.

The intensity (i) in Equation 2-1 is the average rainfall intensity for rainfall of a selected return period from an I-D-F graph for a rainfall duration that is equal to the time of concentration (T_C) as calculated according to the procedure described below. A minimum rainfall duration of 10 minutes is to be used if the calculated T_C is less than 10 minutes. The Rational Method should not be used if the calculated T_C is greater than 60 minutes.

2.2.5 Estimation of Time of Concentration (T_C)

Time of concentration (T_C) is to be calculated by Equation 2-2:

$$T_C = 11.4\ L^{0.5}\ K_b^{0.52}\ S^{-0.31}\ i^{-0.38} \qquad (2\text{-}2)$$

Note: Reference Papadakis and Kazan, 1987.

where T_C = the time of concentration, in hours,
L = the length of the longest flow path, in miles,
K_b = the watershed resistance coefficient,
S = the slope of the longest flow path, in ft/mile, and
i = the average rainfall intensity, in inches/hr, for a duration of rainfall equal to T_C (the same (i) as Equation 2-1) unless T_C is less than 10 minutes, in which case the (i) of Equation 2-1 is for a 10-minute duration).

The longest flow path will be estimated from the best available map and the length (L) measured from the map.

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FIGURE 2-1
GENERALIZED I-D-F GRAPH FOR ZONE 6 OF ARIZONA

Example: For a selected 10-year return period, P_1 = 2.0 inches. T_C is calculated as 20 minutes. Therefore, (i) = 4.25 in/hr.

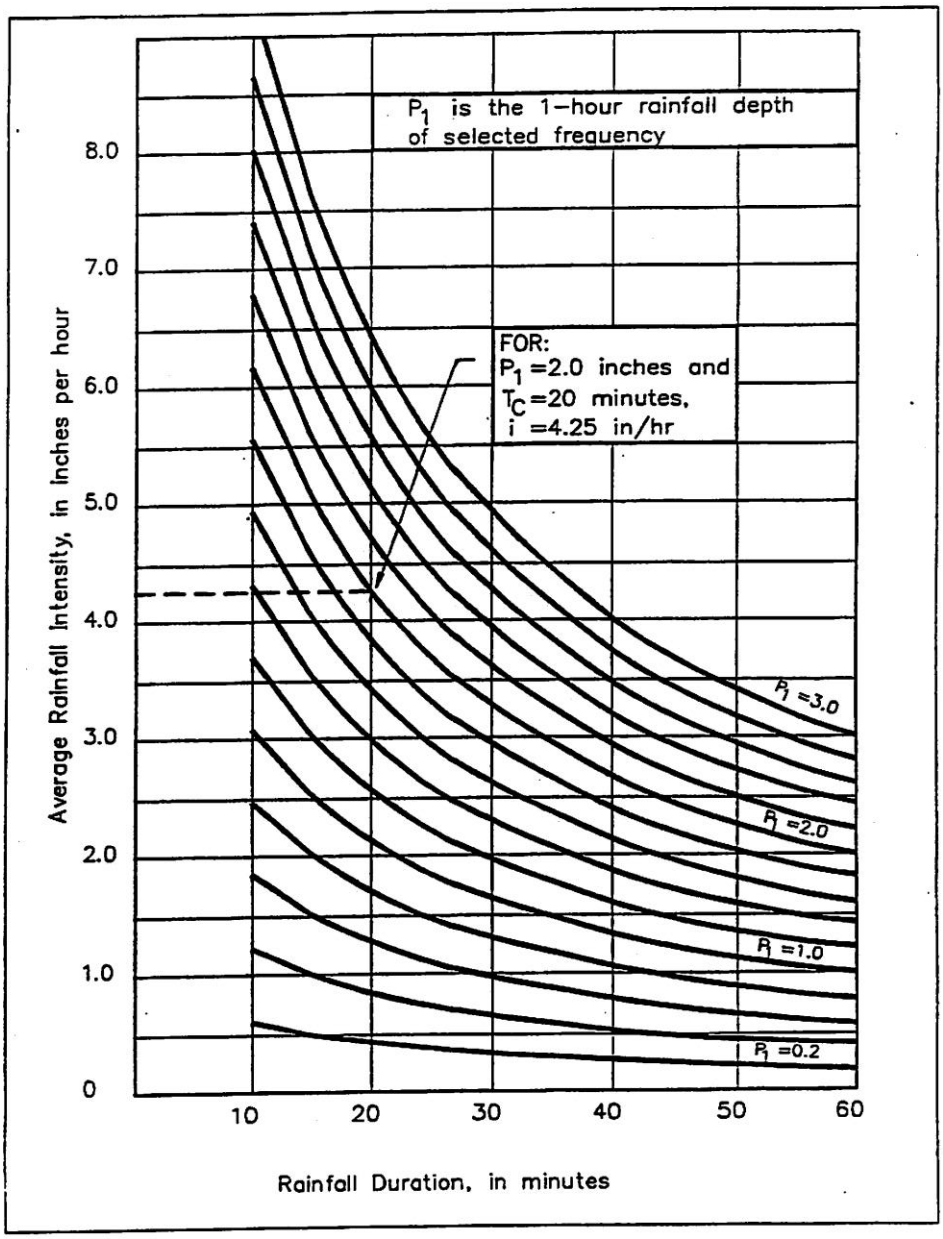

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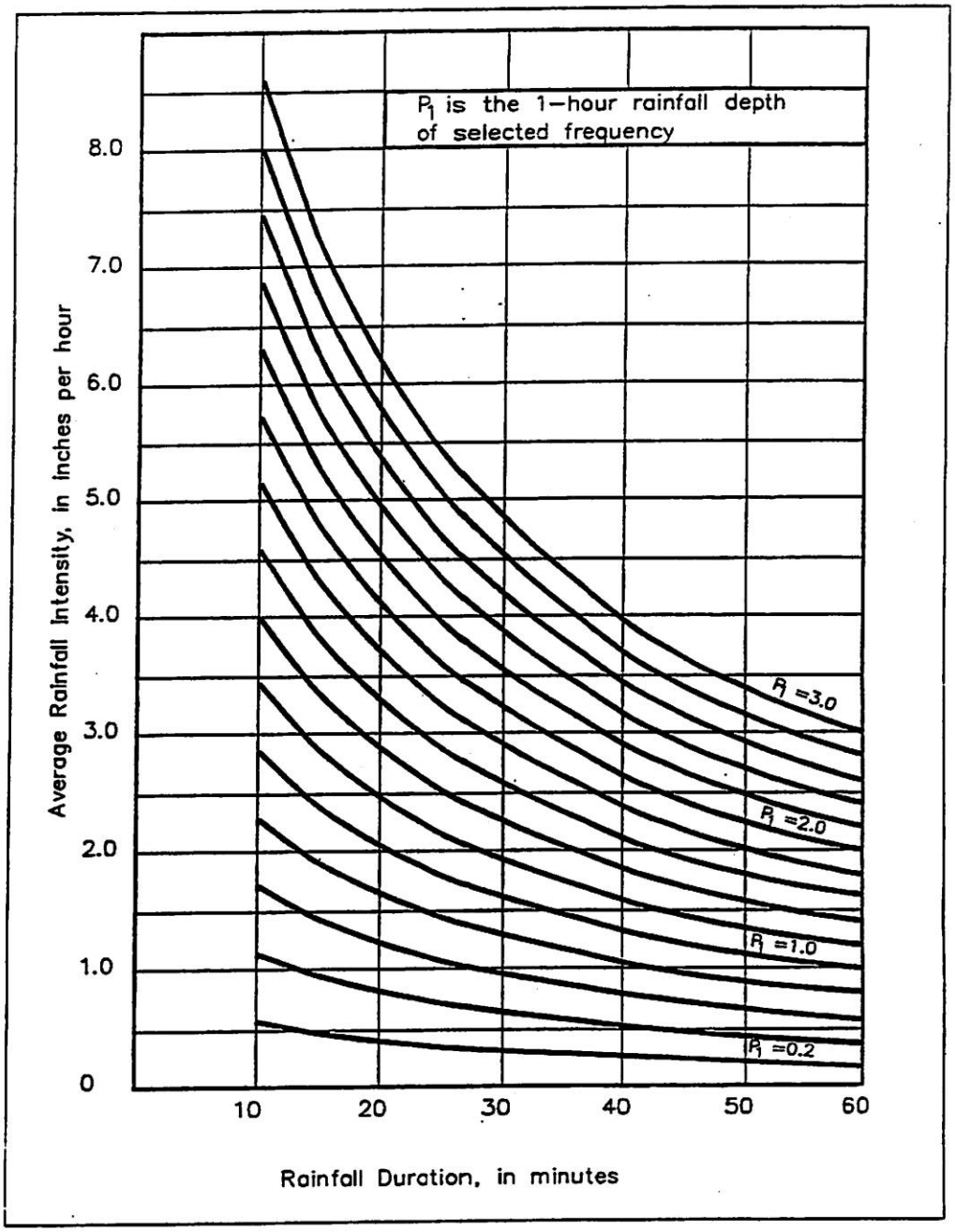
FIGURE 2-2
GENERALIZED I-D-F GRAPH FOR ZONE 8 OF ARIZONA



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The slope (S), in ft/mile, will be calculated by one of two methods:

1. If the longest flow path has a uniform gradient with no appreciable grade breaks, then the slope is calculated by Equation 2-3;

$$S = \frac{H}{L} \qquad (2\text{-}3)$$

where H = the change in elevation, in feet, along L, and
L = as defined in Equation 2-2.

2. If the longest flow path does not have a uniform gradient or has distinct grade breaks, then the slope is calculated by Equation 2-4:

$$S = 5{,}280 \left(\frac{d}{j}\right)^2 \qquad (2\text{-}4)$$

where $d = 5{,}280 \times L$

$$j = \sum \left(\frac{d_i^{\,3}}{H_i}\right)^{1/2}$$

Note: Reference, Pima County Department of Transportation and Flood Control District, September 1979.

and d_i = an incremental change in length, in feet, along the longest flowpath and
H_i = an incremental change in elevation, in feet, for each length segment, d_i.

The resistance coefficient (K_b) is selected from **Table 2-1**. Use of **Table 2-1** requires a classification as to the landform and a determination of the nature of runoff; whether in a defined drainage network of rills, gullies, channels, etc., or predominantly as overland flow.

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TABLE 2-1
RESISTANCE COEFFICIENT (K_b) FOR USE WITH THE RATIONAL METHOD T_c EQUATION

Description of Landform	K_b	
	Defined Drainage Network	Overland Flow Only
Mountain, with forest and dense ground cover (overland slopes - 50% or greater)	0.15	0.30
Mountain, with rough rock and boulder cover (overland slopes - 50% or greater)	0.12	0.25
Foothills (overland slopes - 10% to 50%)	0.10	0.20
Alluvial fans, Pediments and Rangeland (overland slopes - 10% or less)	0.05	0.10
Irrigated Pasture [a]	—	0.20
Tilled Agricultural Fields [a]	—	0.08
URBAN		
Residential, L is less than 1,000 ft[b]	0.04	—
Residential, L is greater than 1,000 ft[b]	0.025	—
Grass; parks, cemeteries, etc. [a]	—	0.20
Bare ground; playgrounds, etc. [a]	—	0.08
Paved; parking lots, etc. [a]	—	0.02

Notes: a - No defined drainage network.
b - L is length in the T_c equation. Streets serve as drainagae network.

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The solution of Equation 2-2 is an iterative process since the determination of (i) requires the knowledge of the value of T_C. Therefore, Equation 2-2 will be solved by a trial-and-error procedure. After L, K_b, and S are estimated and after the appropriate I-D-F graph is selected or prepared, a value for T_C will be estimated (a trial value) and (i) will be read from the I-D-F graph for the corresponding value of duration = T_C. That (i) will be used in Equation 2-2 and T_C will be calculated. If the calculated value of T_C does not equal the trial value of T_C, then the process is repeated until the calculated and trial values of T_C are acceptably close (a difference of less than 10 percent should be acceptable).

2.2.6 Selection of Runoff Coefficient (C)

The runoff coefficient (C) is selected from **Figure 2-3** through **Figure 2-8** depending on the classification of the nature of the watershed. **Figure 2-3** is the C graph to be used for urbanized (developed) watersheds. Select the appropriate curve in **Figure 2-3** based on an estimate of the percent of effective impervious area in the watershed. Effective impervious area is that area that will drain directly to the outlet without flowing over pervious area. (Refer to Chapter 3 - Rainfall Losses, 3.1.1 and Table 3-3, for discussion of effective impervious areas.) **Figure 2-4** through **Figure 2-8** are to be used for undeveloped (natural) watersheds in Arizona, and the C graphs are shown as functions of Hydrologic Soil Group (HSG) and percent vegetation cover. The Hydrologic Soil Group is used to classify soil according to its infiltration rate. The Hydrologic Soil Groups, as defined by USDA, Soil Conservation Service (SCS), 1972 are:

HSG	Definition
A	Soils having high infiltration rates even when thoroughly wetted and consisting chiefly of deep, well to excessively drained sands and gravels. These soils have a high rate of water transmission.
B	Soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.

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HSG	Definition
C	Soils having slow infiltration rates when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water, c soils with moderately fine to fine texture. These soils have a slow rate of water transmission.
D	Soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission.

The percent vegetation cover is the percent of land surface that is covered by vegetation. Vegetation cover is evaluated on plant basal area for grasses and forbs, and on canopy cover for trees and shrubs (see Appendix C).

Information on Hydrologic Soil Group and percent vegetation cover can usually be obtained from the detailed soil surveys that are prepared by the SCS. When detailed soil surveys are not available for the watershed, then the general soil maps and accompanying reports by the SCS for each county in Arizona are to be used. A site visit is encouraged to confirm watershed and soil conditions.

It may be required to select the appropriate C value for existing conditions and another C value for anticipated future conditions, if the watershed is undergoing development. Estimation of peak discharges for various conditions of development in the drainage area or for different periods will also require separate estimates of T_C for each existing or assumed land-use condition and for each flood return period.

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FIGURE 2-3
RATIONAL "C" COEFFICIENT
DEVELOPED WATERSHEDS

AS A FUNCTION OF RAINFALL DEPTH AND TYPE OF DEVELOPMENT

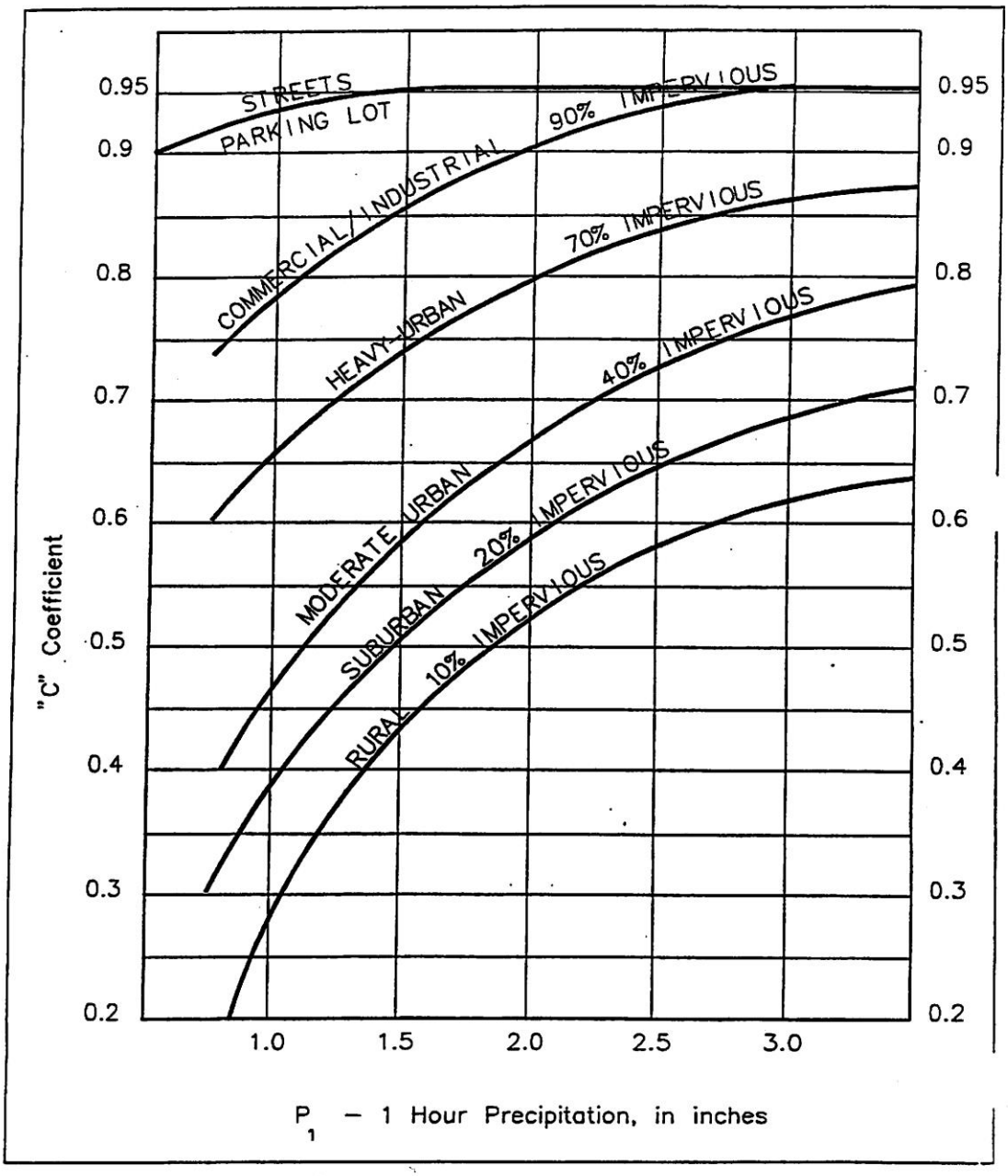

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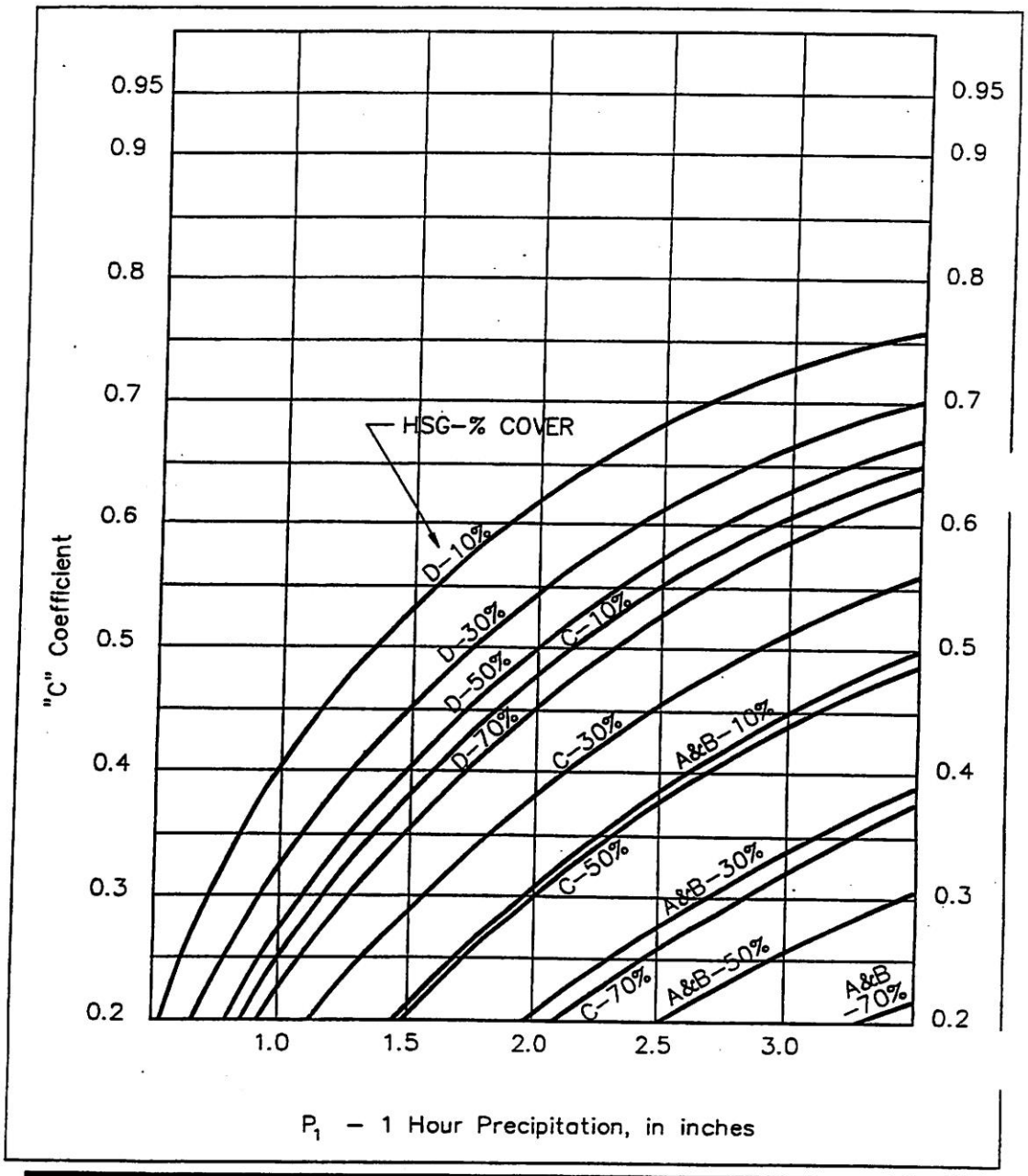
FIGURE 2-5
RATIONAL "C" COEFFICIENT
UPLAND RANGELAND
(GRASS & BRUSH)

AS A FUNCTION OF RAINFALL DEPTH, HYDROLOGIC SOIL GROUP (HSG), AND % OF VEGETATION COVER



MARCH 1993

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IX. APPENDIX D

Pre- Post-Development Delineated Basin Plan

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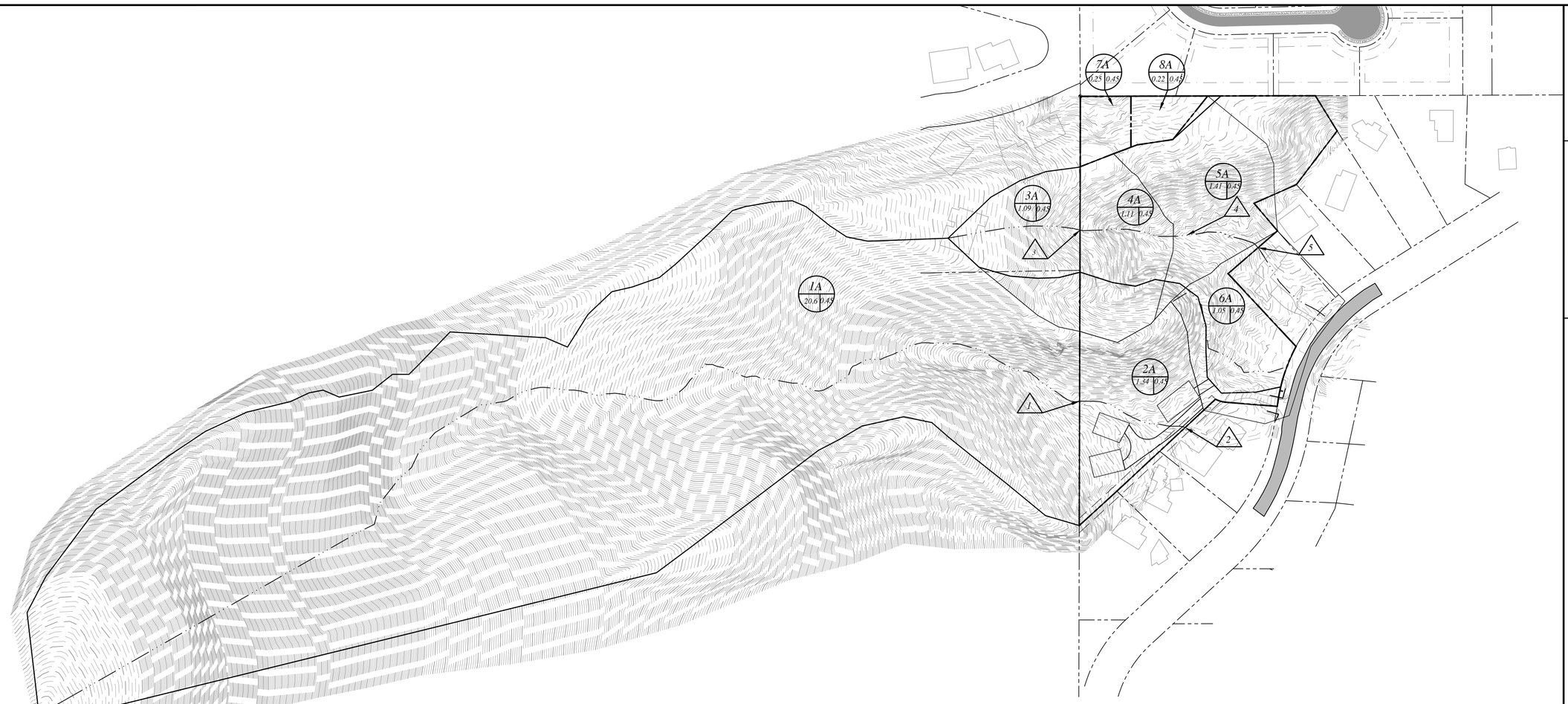

PRE-DEVELOPMENT DISHARGES (cfs)						
Design Pt.	2-yr Peak	5-yr Peak	10-yr Peak	25-yr Peak	50-yr Peak	100-yr Peak
1A	23.56	31.68	38.61	48.35	56.43	65.05
2A	1.532	2.061	2.511	3.145	3.67	4.232
3A	1.246	1.676	2.043	2.558	2.986	3.442
4A	1.75	2.353	2.868	3.591	4.191	4.832
5A	3.019	4.06	4.948	6.196	7.231	8.337
6A	1.212	1.63	1.987	2.488	2.903	3.347
7A	0.286	0.384	0.469	0.587	0.685	0.789
8A	0.252	0.338	0.412	0.516	0.603	0.695

LEGEND

A = BASIN DESIGNATION
B = ARE IN ACRES
C = COMPOSITE RUNOFF COEFFICIENTS
D = DESIGN POINT DESIGNATION

0 50' 100' 200'
HORIZONTAL SCALE IN FEET
1" = 100'

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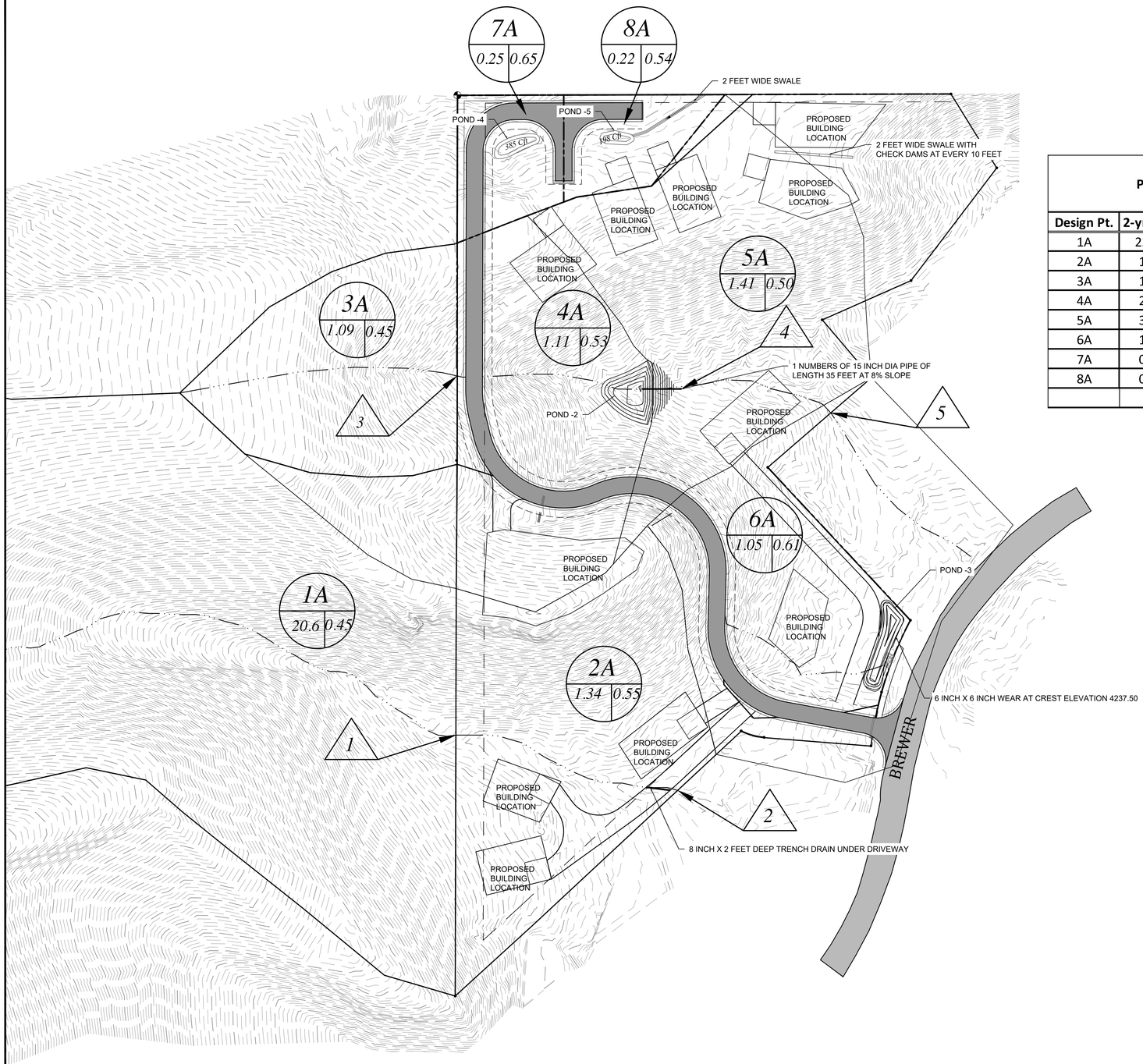
SHEET TITLE: PRE-DEVELOPMENT DRAINAGE MAP

PROJECT TITLE:

CANYON VISTA SUBDIVISION

APN: 401-20-027G COCONINO COUNTY, SEDONA, ARIZONA

DRAWN BY: SS
SCALE: 1" = 100'
DATE: 24/02/2024
PROJECT NO: 140505
SHEET NO. D-1



POST-DEVELOPMENT W/ DETENTION DISHARGES (cfs)							WITHOUT DETENTION BASIN (cfs)	Difference
Design Pt.	2-yr Peak	5-yr Peak	10-yr Peak	25-yr Peak	50-yr Peak	100-yr Peak	100-yr Peak	100-yr Peak
1A	22.47	30.04	36.48	44.15	50.55	55.76	65.05	-9.29
2A	1.87	2.52	3.07	3.84	4.49	5.17	5.17	0.00
3A	1.53	2.06	2.51	3.15	3.67	4.23	4.23	0.00
4A	2.36	0.00	4.12	5.25	0.00	7.02	5.37	1.65
5A	3.22	4.33	5.28	6.61	7.71	8.89	8.89	0.00
6A	1.49	2.03	2.49	3.13	3.62	4.02	4.54	-0.52
7A	0.41	0.56	0.68	0.85	0.99	1.14	1.14	0.00
8A	0.30	0.41	0.50	0.62	0.72	0.83	0.83	0.00
					Total	87.07	95.23	-8.15

LEGEND

A / B C = A = BASIN DESIGNATION; B = ARE IN ACRES; C = COMPOSITE RUNOFF COEFFICIENTS

D = DESIGN POINT DESIGNATION

N

0 25' 50' 100'

HORIZONTAL SCALE IN FEET
1" = 50'

Professional Engineer — CERTIFICATION NO. 37322 — LUKE A. SEFTON — DATE SIGNED — ARIZONA, U.S.A.

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SHEET TITLE: POST-DEVELOPMENT DRAINAGE MAP

PROJECT TITLE:

CANYON VISTA SUBDIVISION

APN: 401-20-027G COCONINO COUNTY, SEDONA, ARIZONA

DRAWN BY:	SS
SCALE:	1" = 50'
DATE:	24/02/2024
PROJECT NO:	140505
SHEET NO.	D-2

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x. APPENDIX E

USDA Soil Map

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Map Scale: 1:1,240 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N 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 1:24,000.

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

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

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Black Hills-Sedona Area, Arizona, Parts of Coconino and Yavapai Counties
Survey Area Data: Version 13, Sep 8, 2023

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

Date(s) aerial images were photographed: Oct 29, 2022—Oct 31, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
405	Turist soils, Rock outcrop and Urban land, 15 to 90 percent slopes	3.2	48.1%
406	Sedona soils, Turist soils and Urban land, 3 to 15 percent slopes	3.5	51.9%
Totals for Area of Interest		**6.7**	**100.0%**

Black Hills-Sedona Area, Arizona, Parts of Coconino and Yavapai Counties

405—Turist soils, Rock outcrop and Urban land, 15 to 90 percent slopes

Map Unit Setting

National map unit symbol: 1ylc
Elevation: 3,900 to 5,500 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 57 to 62 degrees F
Frost-free period: 160 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Turist and similar soils: 34 percent
Urban land: 33 percent
Rock outcrop: 33 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Turist

Setting

Landform: Buttes, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

A - 0 to 2 inches: extremely channery sandy loam
Bw - 2 to 12 inches: extremely channery loam
Bk - 12 to 18 inches: extremely channery loam
2R - 18 to 60 inches: bedrock

Properties and qualities

Slope: 15 to 90 percent
Surface area covered with cobbles, stones or boulders: 15.0 percent
Depth to restrictive feature: 12 to 18 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R038XB218AZ - Sandstone Hills 16-20
Hydric soil rating: No

Description of Urban Land

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Rock Outcrop

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Data Source Information

Soil Survey Area: Black Hills-Sedona Area, Arizona, Parts of Coconino and Yavapai Counties
Survey Area Data: Version 13, Sep 8, 2023

Black Hills-Sedona Area, Arizona, Parts of Coconino and Yavapai Counties

406—Sedona soils, Turist soils and Urban land, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1yld
Elevation: 3,700 to 5,000 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 57 to 62 degrees F
Frost-free period: 160 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Sedona and similar soils: 34 percent
Turist and similar soils: 33 percent
Urban land: 33 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sedona

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Colluvium and/or residuum weathered from shale and/or mudstone

Typical profile

A - 0 to 2 inches: extremely channery loam
Btk1 - 2 to 10 inches: extremely channery silty clay loam
Btk2 - 10 to 18 inches: extremely flaggy silt loam
Cr - 18 to 60 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 12 to 18 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: R038XB218AZ - Sandstone Hills 16-20
Hydric soil rating: No

Description of Turist

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone

Typical profile

A - 0 to 1 inches: very channery sandy loam
Bw - 1 to 5 inches: channery clay loam
Bk1 - 5 to 10 inches: extremely channery loam
Bk2 - 10 to 16 inches: extremely channery loam
2R - 16 to 60 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent
Depth to restrictive feature: 12 to 18 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: R038XB218AZ - Sandstone Hills 16-20
Hydric soil rating: No

Description of Urban Land

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

Hydric soil rating: No

Data Source Information

Soil Survey Area: Black Hills-Sedona Area, Arizona, Parts of Coconino and Yavapai Counties
Survey Area Data: Version 13, Sep 8, 2023

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XI. APPENDIX F

NOAA Atlas 14 Map

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NOAA Atlas 14, Volume 1, Version 5
Location name: Sedona, Arizona, USA*
Latitude: 34.8602°, Longitude: -111.7688°
Elevation: 4246 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	2.56 (2.12-3.05)	3.29 (2.74-3.92)	4.42 (3.67-5.29)	5.38 (4.48-6.42)	6.73 (5.54-8.00)	7.86 (6.43-9.35)	9.07 (7.37-10.8)	10.4 (8.32-12.4)	12.3 (9.67-14.8)	13.9 (10.8-16.8)
10-min	1.94 (1.62-2.32)	2.50 (2.08-2.99)	3.37 (2.80-4.02)	4.09 (3.40-4.88)	5.12 (4.22-6.08)	5.98 (4.90-7.11)	6.91 (5.60-8.22)	7.90 (6.33-9.43)	9.36 (7.36-11.2)	10.6 (8.21-12.8)
15-min	1.60 (1.34-1.92)	2.07 (1.72-2.47)	2.78 (2.31-3.32)	3.38 (2.81-4.04)	4.23 (3.49-5.03)	4.94 (4.04-5.88)	5.71 (4.63-6.79)	6.53 (5.23-7.79)	7.74 (6.08-9.29)	8.74 (6.79-10.6)
30-min	1.08 (0.900-1.29)	1.39 (1.16-1.66)	1.87 (1.55-2.24)	2.28 (1.89-2.72)	2.85 (2.35-3.39)	3.33 (2.72-3.96)	3.84 (3.12-4.57)	4.40 (3.52-5.24)	5.21 (4.09-6.26)	5.89 (4.57-7.11)
60-min	0.669 (0.557-0.799)	0.862 (0.716-1.03)	1.16 (0.961-1.39)	1.41 (1.17-1.68)	1.76 (1.45-2.10)	2.06 (1.68-2.45)	2.38 (1.93-2.83)	2.72 (2.18-3.24)	3.22 (2.53-3.87)	3.64 (2.83-4.40)
2-hr	0.395 (0.343-0.460)	0.499 (0.430-0.583)	0.659 (0.568-0.768)	0.794 (0.679-0.926)	0.988 (0.841-1.15)	1.15 (0.965-1.34)	1.32 (1.10-1.55)	1.52 (1.24-1.77)	1.80 (1.45-2.10)	2.03 (1.61-2.38)
3-hr	0.282 (0.248-0.327)	0.357 (0.315-0.414)	0.456 (0.400-0.528)	0.544 (0.474-0.629)	0.668 (0.577-0.772)	0.774 (0.665-0.893)	0.892 (0.755-1.03)	1.02 (0.852-1.18)	1.21 (0.991-1.41)	1.36 (1.10-1.60)
6-hr	0.172 (0.154-0.191)	0.214 (0.192-0.237)	0.265 (0.237-0.295)	0.311 (0.278-0.346)	0.377 (0.334-0.419)	0.430 (0.379-0.478)	0.488 (0.425-0.544)	0.549 (0.472-0.615)	0.639 (0.541-0.722)	0.712 (0.594-0.810)
12-hr	0.110 (0.099-0.122)	0.136 (0.123-0.151)	0.166 (0.149-0.183)	0.191 (0.171-0.210)	0.225 (0.202-0.248)	0.252 (0.224-0.277)	0.279 (0.246-0.308)	0.307 (0.268-0.340)	0.346 (0.298-0.385)	0.378 (0.322-0.423)
24-hr	0.069 (0.063-0.076)	0.086 (0.079-0.095)	0.108 (0.098-0.119)	0.125 (0.113-0.138)	0.149 (0.134-0.164)	0.167 (0.151-0.184)	0.186 (0.167-0.206)	0.206 (0.184-0.228)	0.233 (0.206-0.259)	0.255 (0.222-0.284)
2-day	0.040 (0.037-0.045)	0.050 (0.046-0.056)	0.063 (0.057-0.069)	0.073 (0.066-0.080)	0.087 (0.078-0.095)	0.098 (0.088-0.107)	0.109 (0.097-0.120)	0.121 (0.107-0.133)	0.137 (0.120-0.151)	0.149 (0.130-0.165)
3-day	0.029 (0.026-0.032)	0.036 (0.033-0.040)	0.045 (0.041-0.050)	0.052 (0.048-0.058)	0.063 (0.057-0.069)	0.071 (0.064-0.078)	0.079 (0.071-0.087)	0.088 (0.078-0.097)	0.101 (0.089-0.111)	0.110 (0.096-0.122)
4-day	0.023 (0.021-0.025)	0.029 (0.026-0.032)	0.036 (0.033-0.040)	0.042 (0.038-0.046)	0.051 (0.046-0.056)	0.058 (0.052-0.063)	0.065 (0.058-0.071)	0.072 (0.064-0.079)	0.083 (0.073-0.091)	0.091 (0.079-0.101)
7-day	0.015 (0.014-0.017)	0.019 (0.017-0.021)	0.024 (0.022-0.026)	0.028 (0.025-0.030)	0.033 (0.030-0.036)	0.037 (0.034-0.041)	0.042 (0.038-0.046)	0.047 (0.042-0.051)	0.053 (0.047-0.059)	0.058 (0.051-0.064)
10-day	0.012 (0.011-0.013)	0.015 (0.014-0.017)	0.019 (0.017-0.021)	0.022 (0.020-0.024)	0.026 (0.023-0.028)	0.029 (0.026-0.031)	0.032 (0.028-0.035)	0.035 (0.031-0.038)	0.039 (0.034-0.043)	0.042 (0.037-0.046)
20-day	0.008 (0.007-0.008)	0.010 (0.009-0.011)	0.012 (0.011-0.013)	0.013 (0.012-0.015)	0.015 (0.014-0.017)	0.017 (0.015-0.019)	0.019 (0.017-0.020)	0.020 (0.018-0.022)	0.022 (0.020-0.024)	0.023 (0.021-0.026)
30-day	0.006 (0.005-0.007)	0.008 (0.007-0.008)	0.009 (0.008-0.010)	0.011 (0.010-0.011)	0.012 (0.011-0.013)	0.013 (0.012-0.015)	0.014 (0.013-0.016)	0.016 (0.014-0.017)	0.017 (0.015-0.019)	0.018 (0.016-0.020)
45-day	0.005 (0.004-0.005)	0.006 (0.005-0.007)	0.007 (0.007-0.008)	0.008 (0.007-0.009)	0.010 (0.009-0.011)	0.011 (0.010-0.012)	0.011 (0.010-0.013)	0.012 (0.011-0.014)	0.014 (0.012-0.015)	0.014 (0.013-0.016)
60-day	0.004 (0.004-0.004)	0.005 (0.005-0.006)	0.006 (0.006-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.010)	0.010 (0.009-0.011)	0.010 (0.009-0.011)	0.011 (0.010-0.012)	0.012 (0.010-0.013)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical

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XII. APPENDIX G

Hydroflow Hydrograph Result

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In affiliation with:
Heritage Land Surveying & Mapping, Inc. with offices in Sedona, Camp Verde & Colorado

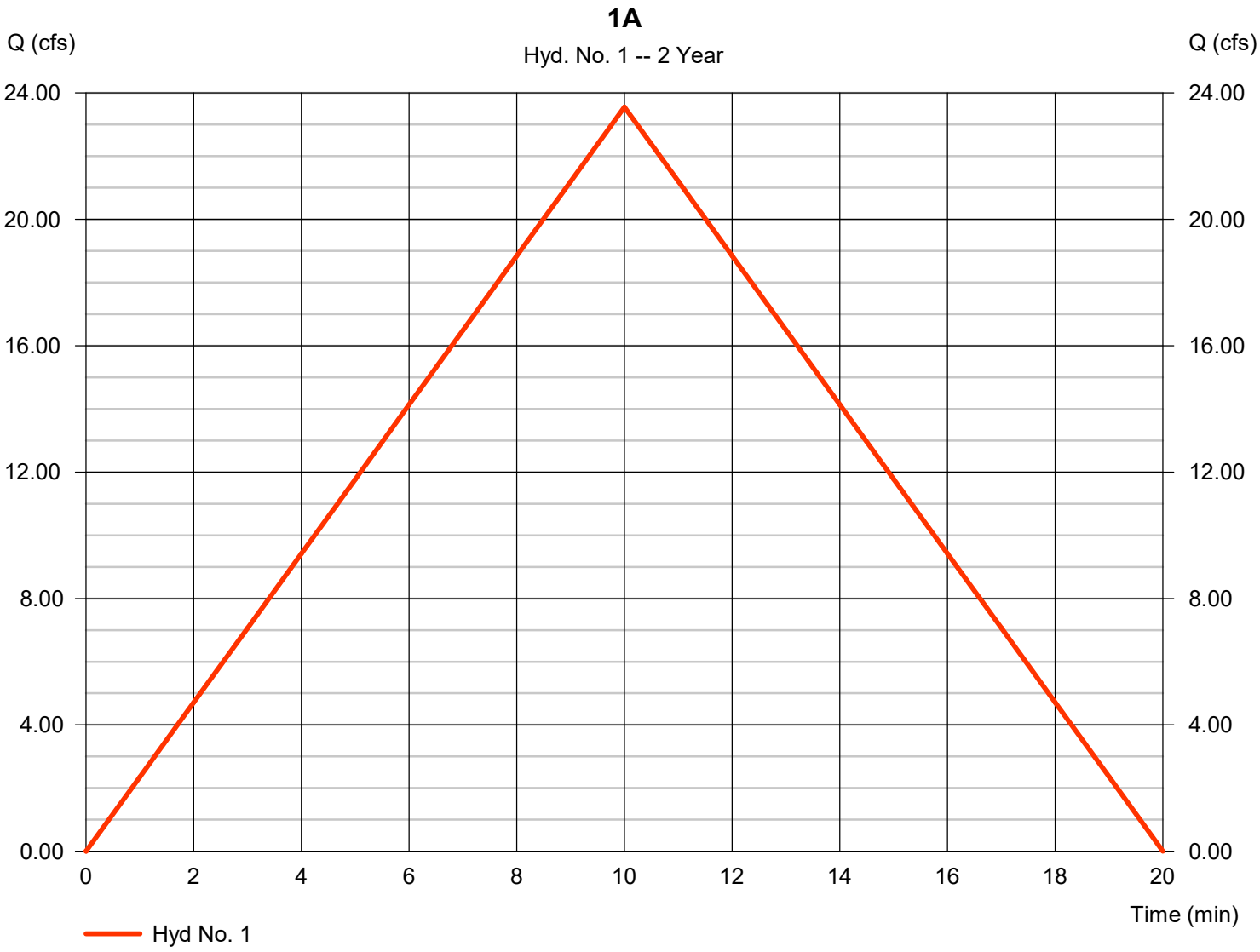
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Saturday, 02 / 24 / 2024

Hyd. No. 1

1A

Hydrograph type	=	Rational	Peak discharge	=	23.56 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	14,134 cuft
Drainage area	=	20.600 ac	Runoff coeff.	=	0.45
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

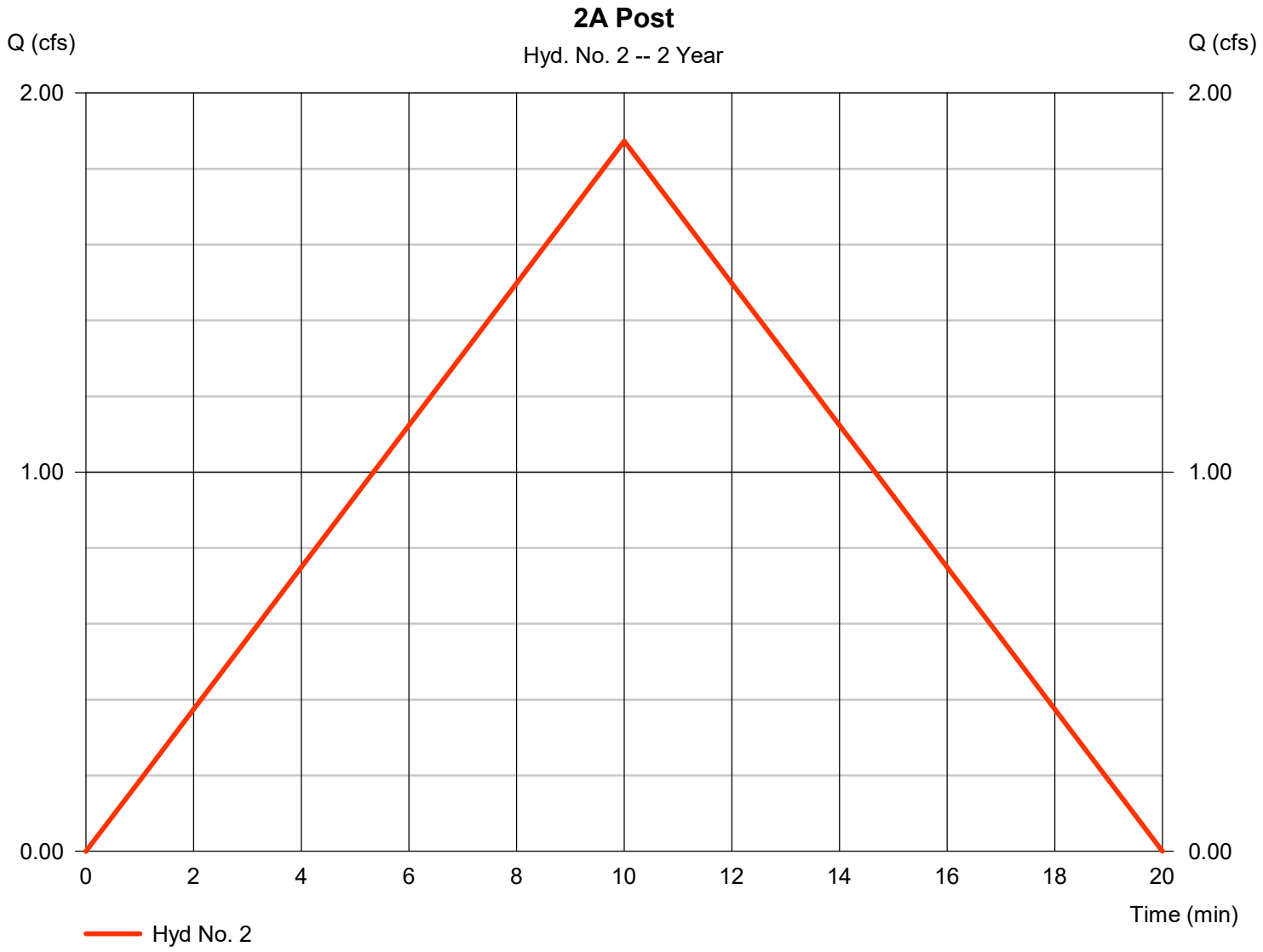


Hydrograph Report

Hyd. No. 2

2A Post

Hydrograph type	=	Rational	Peak discharge	=	1.873 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,124 cuft
Drainage area	=	1.340 ac	Runoff coeff.	=	0.55
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

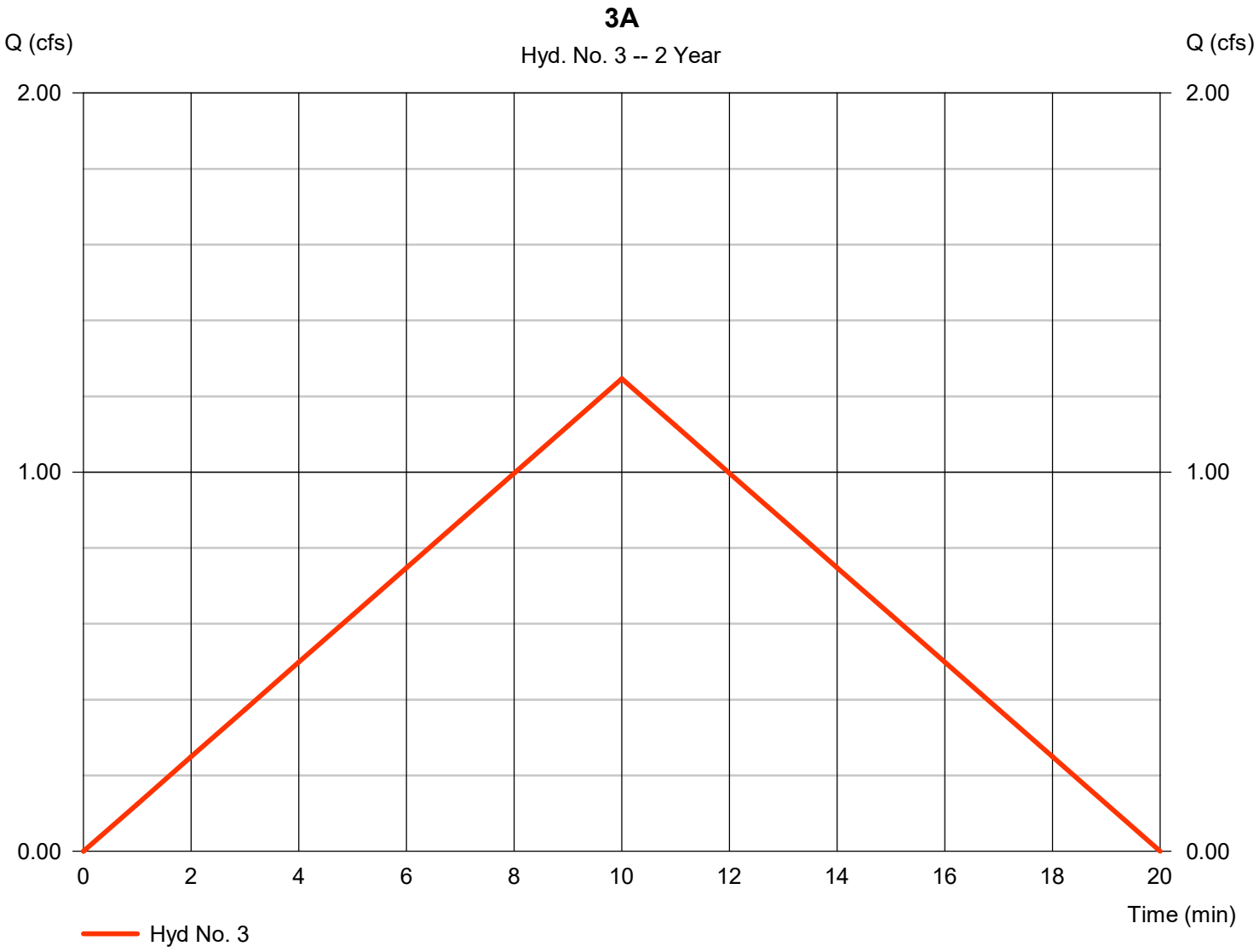


Hydrograph Report

Hyd. No. 3

3A

Hydrograph type	=	Rational	Peak discharge	=	1.246 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	748 cuft
Drainage area	=	1.090 ac	Runoff coeff.	=	0.45
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

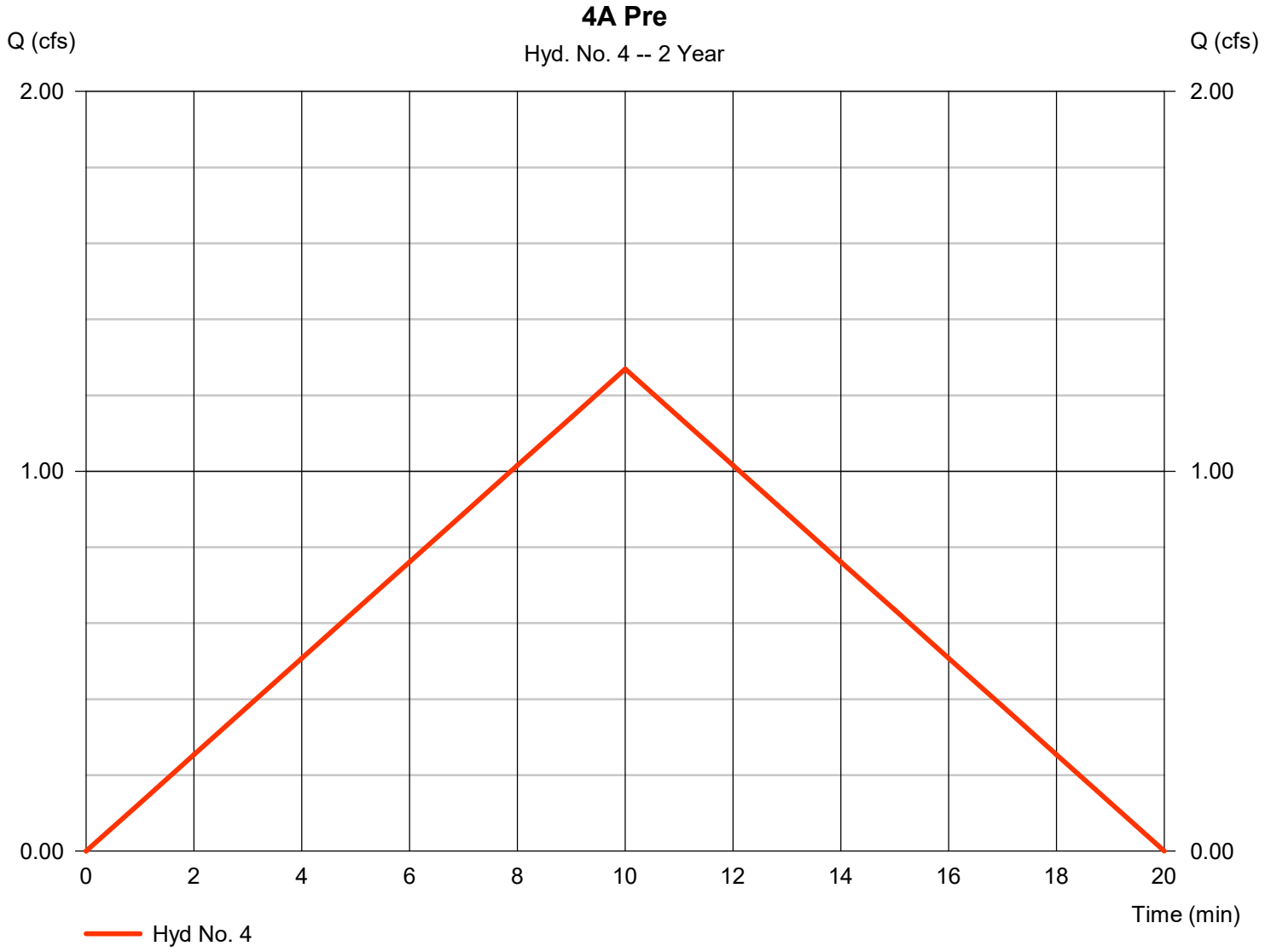


Hydrograph Report

Hyd. No. 4

4A Pre

Hydrograph type	=	Rational	Peak discharge	=	1.269 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	762 cuft
Drainage area	=	1.110 ac	Runoff coeff.	=	0.45
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

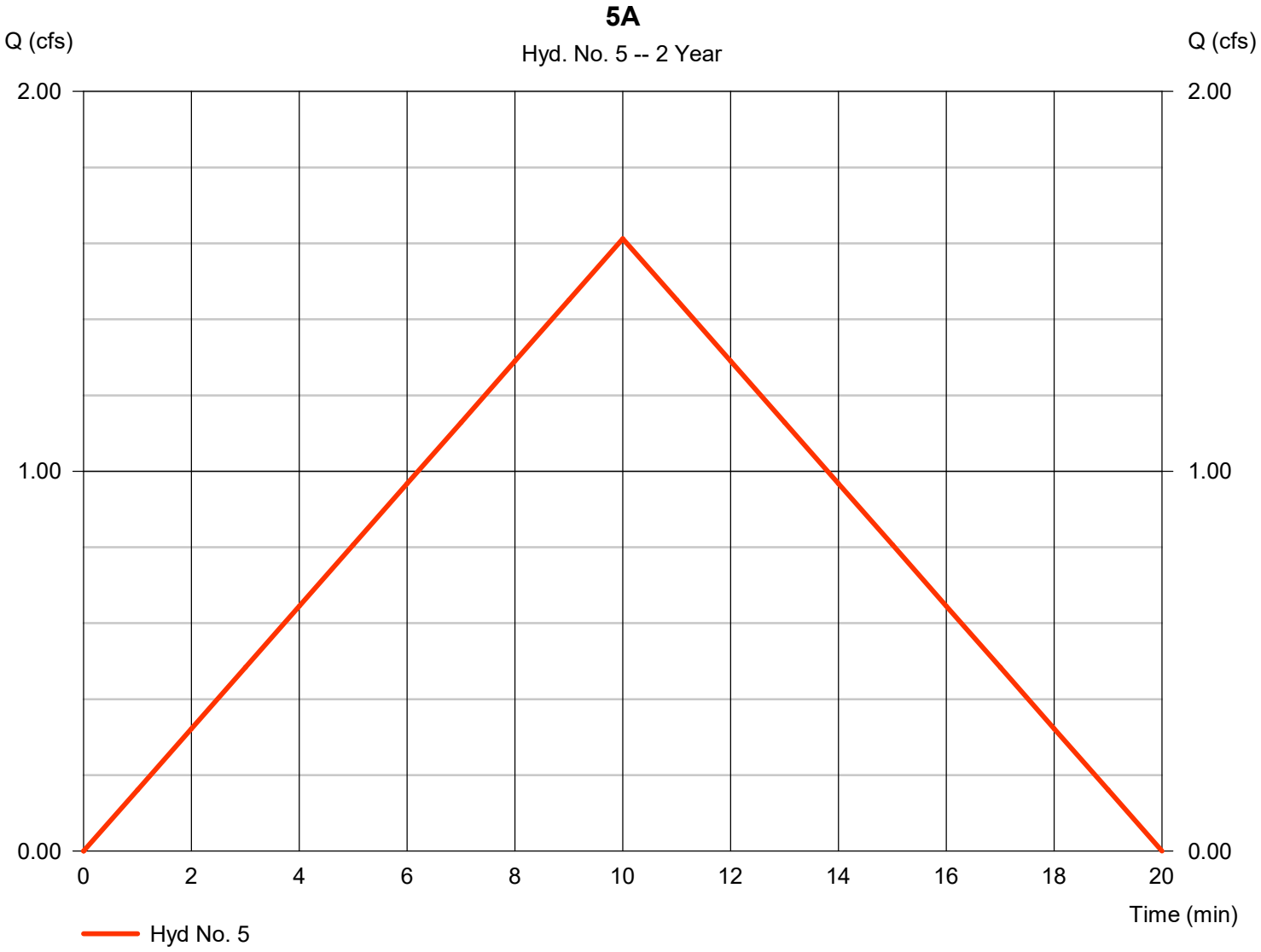


Hydrograph Report

Hyd. No. 5

5A

Hydrograph type	=	Rational	Peak discharge	=	1.612 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	967 cuft
Drainage area	=	1.410 ac	Runoff coeff.	=	0.45
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

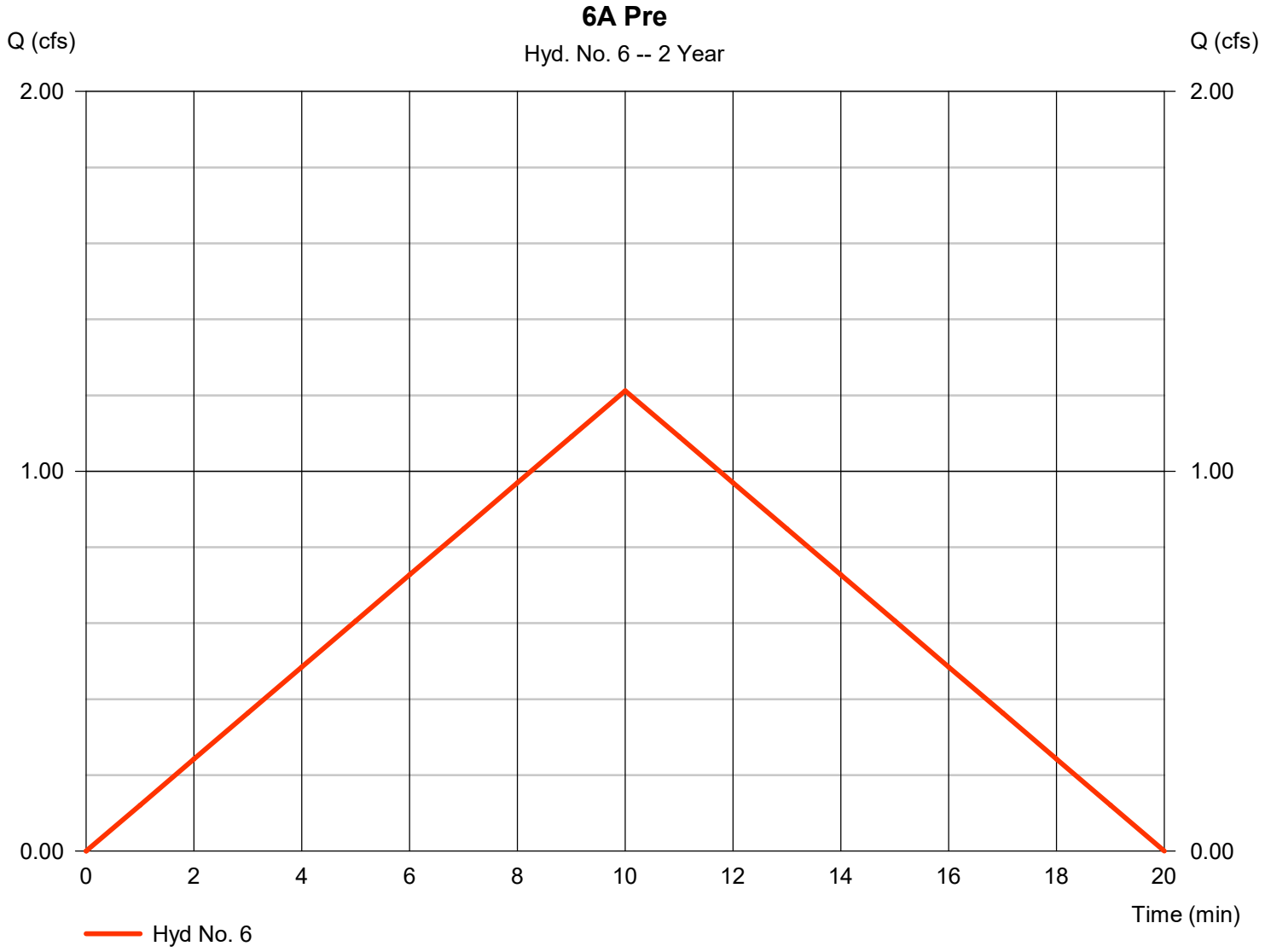


Hydrograph Report

Hyd. No. 6

6A Pre

Hydrograph type	=	Rational	Peak discharge	=	1.212 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	727 cuft
Drainage area	=	1.060 ac	Runoff coeff.	=	0.45
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

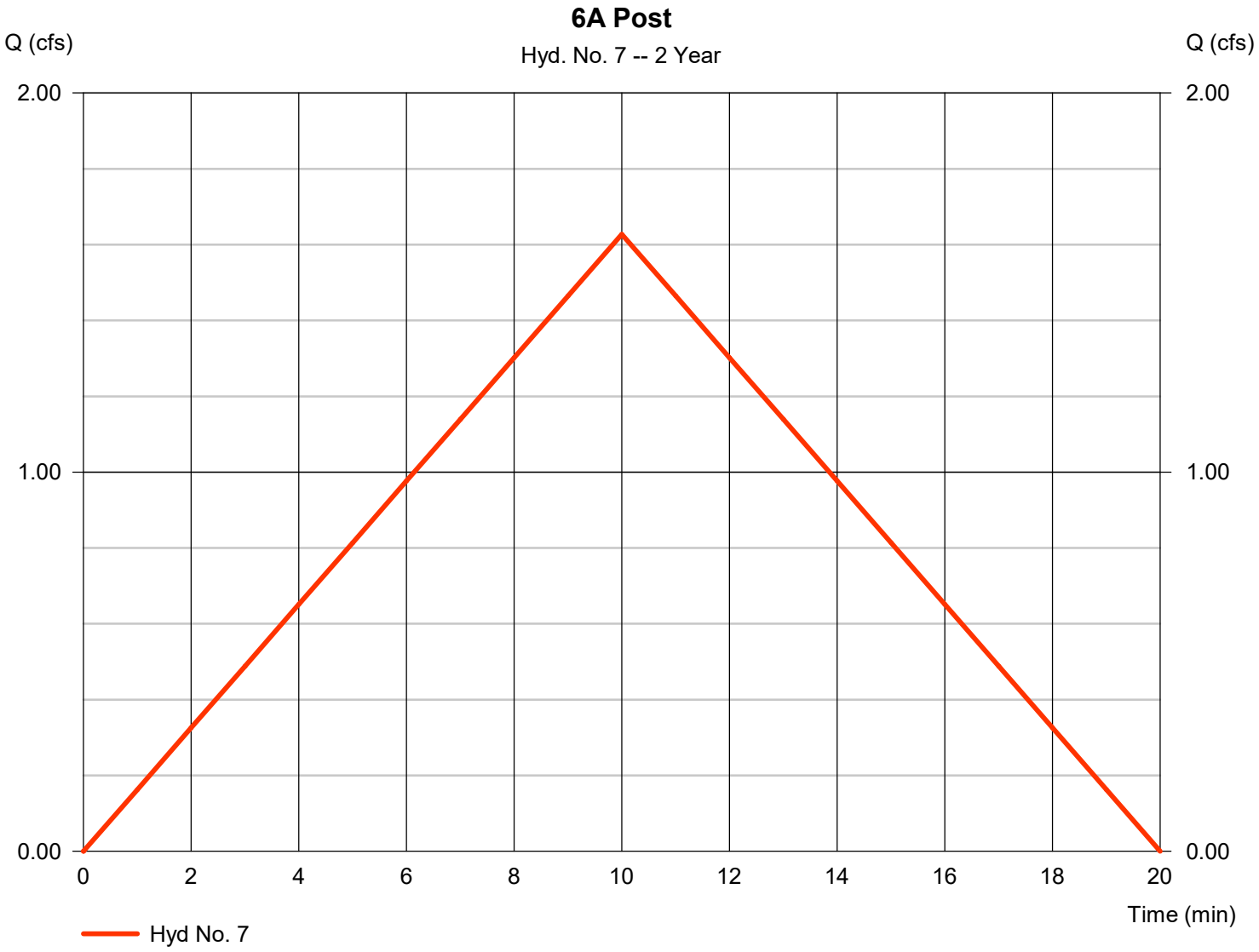


Hydrograph Report

Hyd. No. 7

6A Post

Hydrograph type	=	Rational	Peak discharge	=	1.628 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	977 cuft
Drainage area	=	1.050 ac	Runoff coeff.	=	0.61
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Report

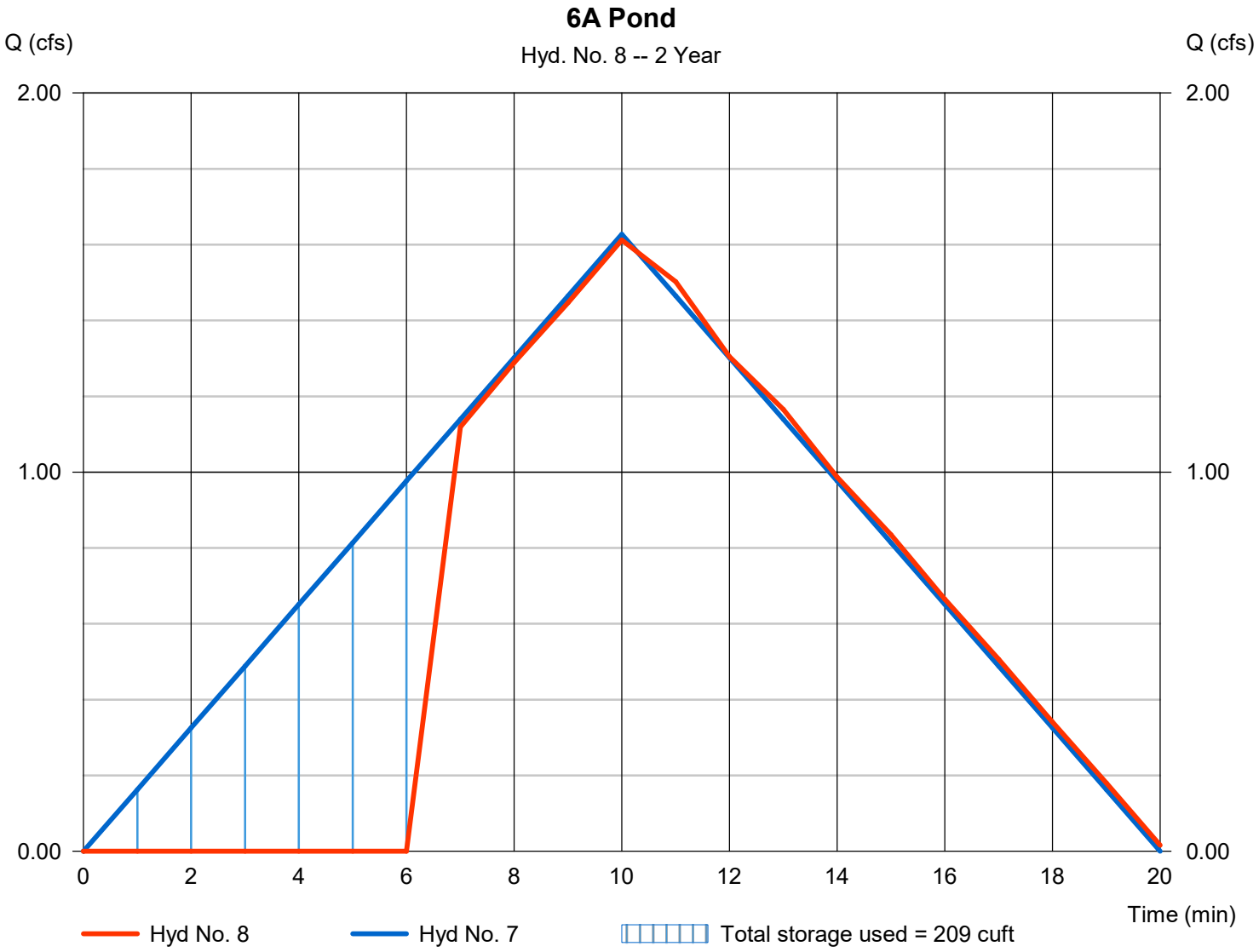
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Saturday, 02 / 24 / 2024

Hyd. No. 8

6A Pond

Hydrograph type	=	Reservoir	Peak discharge	=	1.613 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	778 cuft
Inflow hyd. No.	=	7 - 6A Post	Max. Elevation	=	4238.04 ft
Reservoir name	=	Pond -3	Max. Storage	=	209 cuft

Storage Indication method used.



Pond Report

Pond No. 4 - Pond -3

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 4236.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	4236.00	53	0	0
1.00	4239.50	455	221	221
2.00	4238.00	941	683	904

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	Inactive	Inactive	Inactive	0.00
Span (in)	= 6.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 4238.00	0.00	0.00	0.00
Length (ft)	= 5.00	0.00	0.00	0.00
Slope (%)	= 0.20	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

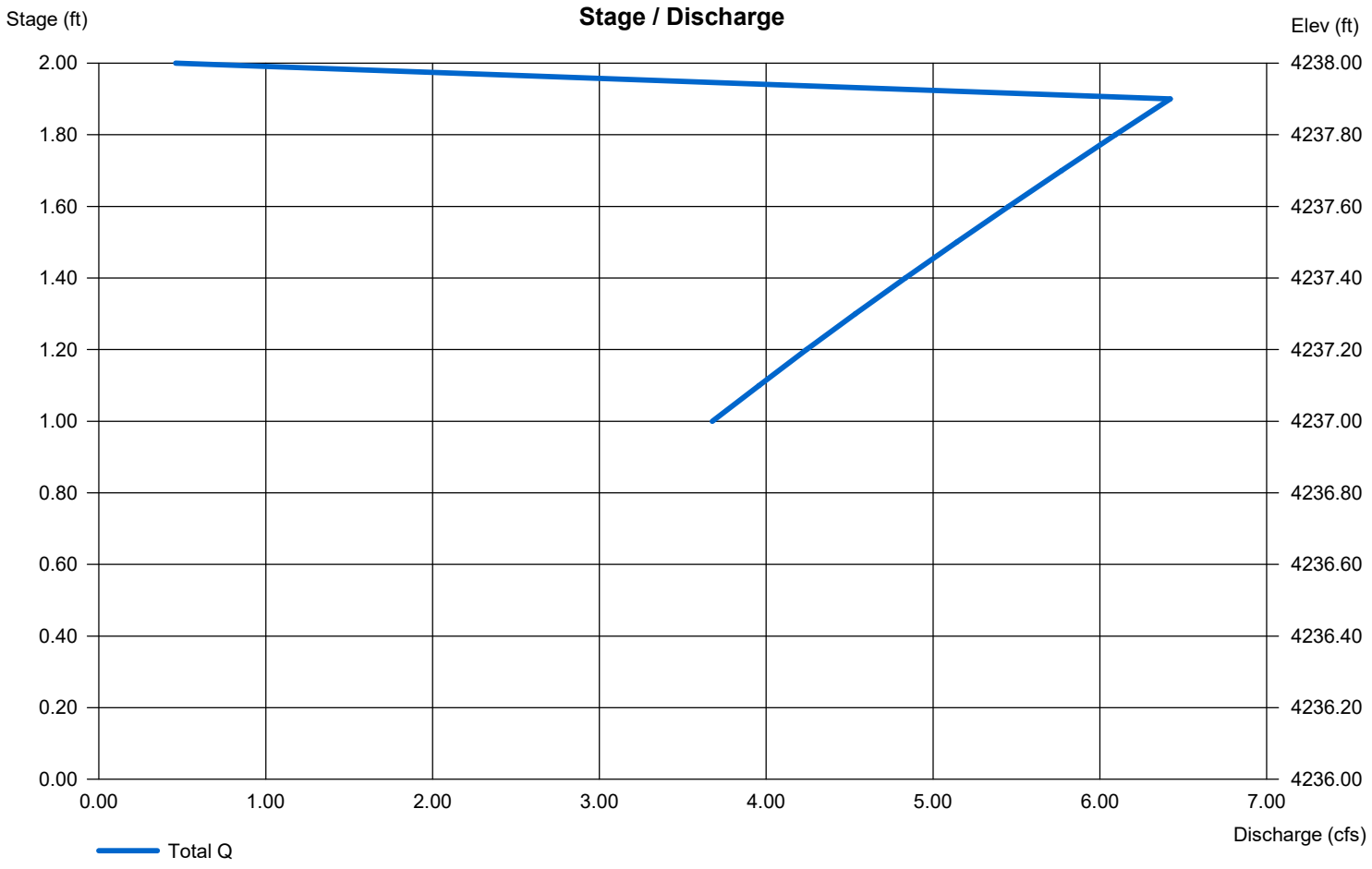
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.50	Inactive	Inactive	0.00
Crest El. (ft)	= 4237.50	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	2.60	3.33
Weir Type	= Broad	---	Broad	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

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

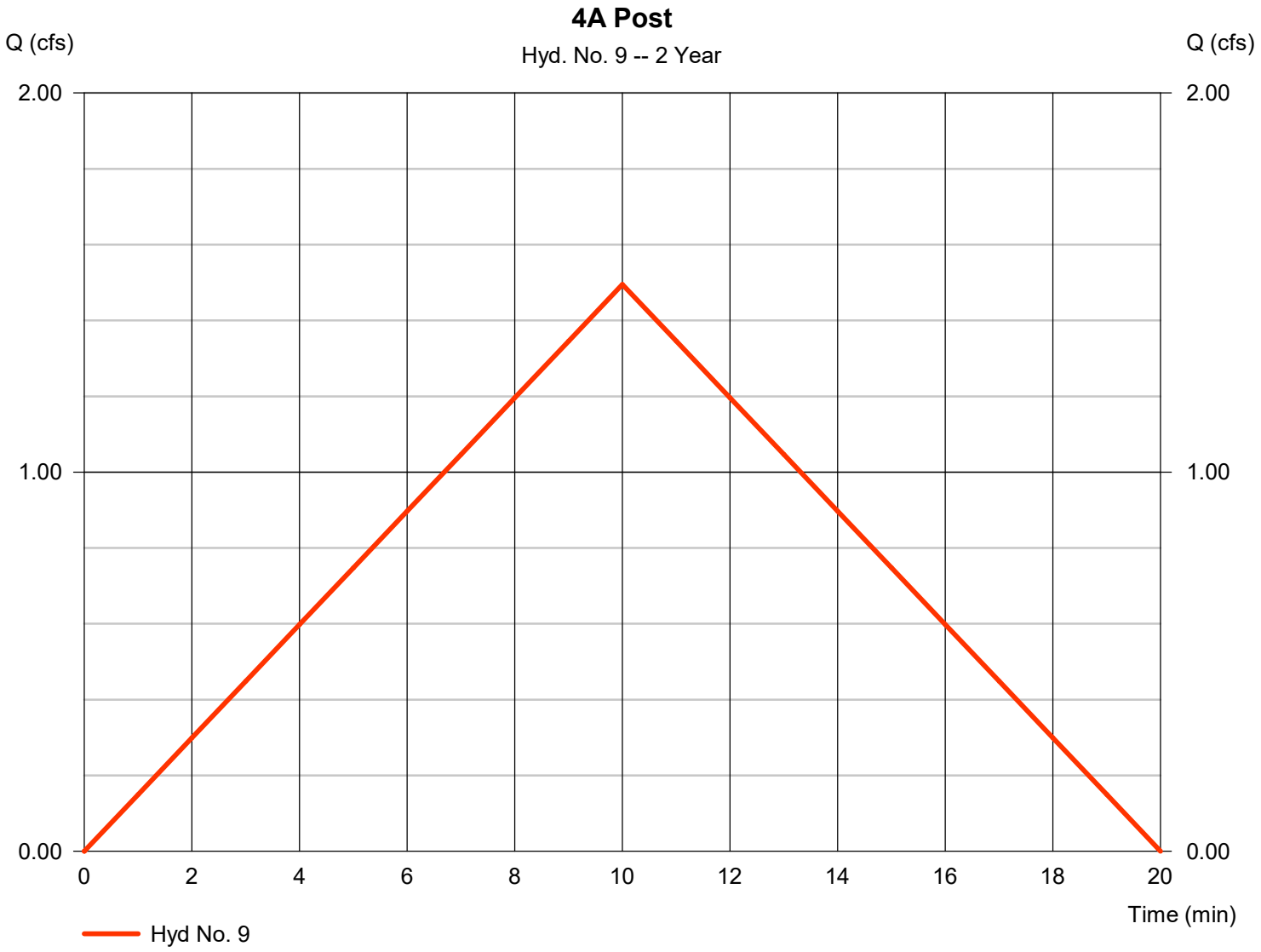


Hydrograph Report

Hyd. No. 9

4A Post

Hydrograph type	=	Rational	Peak discharge	=	1.495 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	897 cuft
Drainage area	=	1.110 ac	Runoff coeff.	=	0.53
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

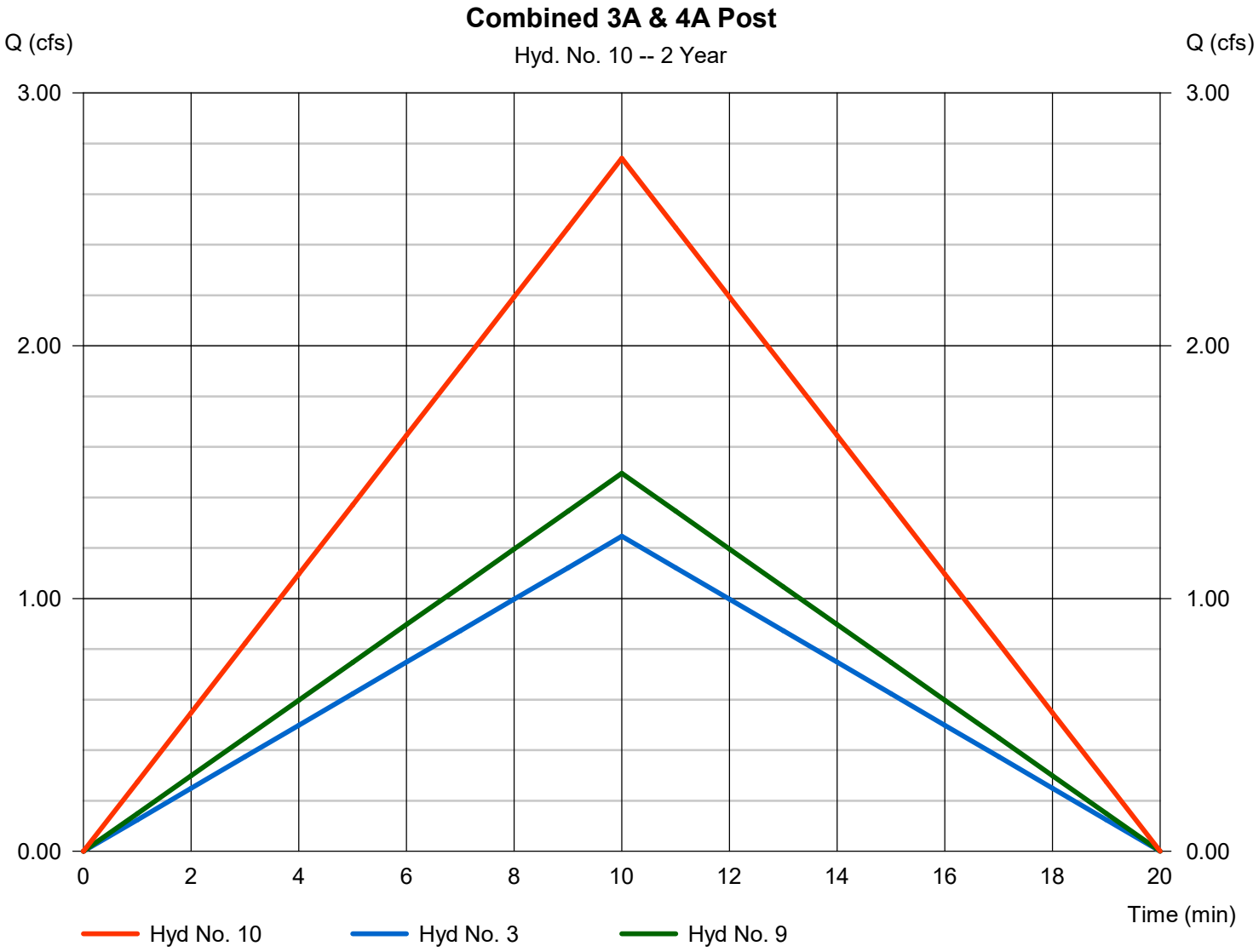


Hydrograph Report

Hyd. No. 10

Combined 3A & 4A Post

Hydrograph type	= Combine	Peak discharge	= 2.741 cfs
Storm frequency	= 2 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 1,645 cuft
Inflow hyds.	= 3, 9	Contrib. drain. area	= 2.200 ac



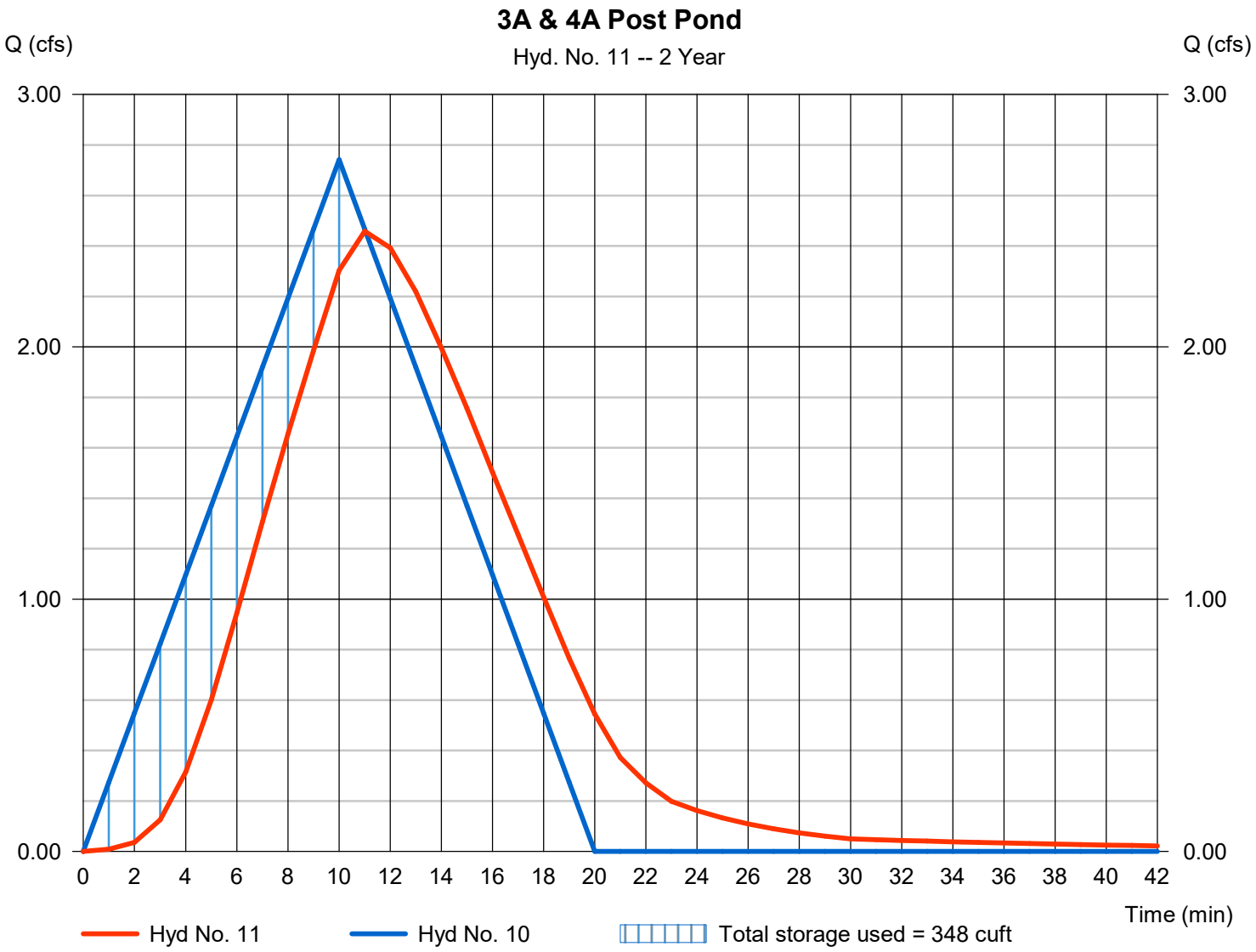
Hydrograph Report

Hyd. No. 11

3A & 4A Post Pond

Hydrograph type	=	Reservoir	Peak discharge	=	2.458 cfs
Storm frequency	=	2 yrs	Time to peak	=	11 min
Time interval	=	1 min	Hyd. volume	=	1,644 cuft
Inflow hyd. No.	=	10 - Combined 3A & 4A Post	Max. Elevation	=	4263.79 ft
Reservoir name	=	Pond -2	Max. Storage	=	348 cuft

Storage Indication method used.



Pond Report

Pond No. 2 - Pond -2

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 4263.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	4263.00	274	0	0
1.00	4264.00	637	443	443
2.00	4265.00	945	786	1,229
3.00	4266.00	1,301	1,118	2,347
4.00	4267.00	1,701	1,496	3,843

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	0.00	0.00	0.00
Span (in)	= 15.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 4263.00	0.00	0.00	0.00
Length (ft)	= 35.00	0.00	0.00	0.00
Slope (%)	= 8.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

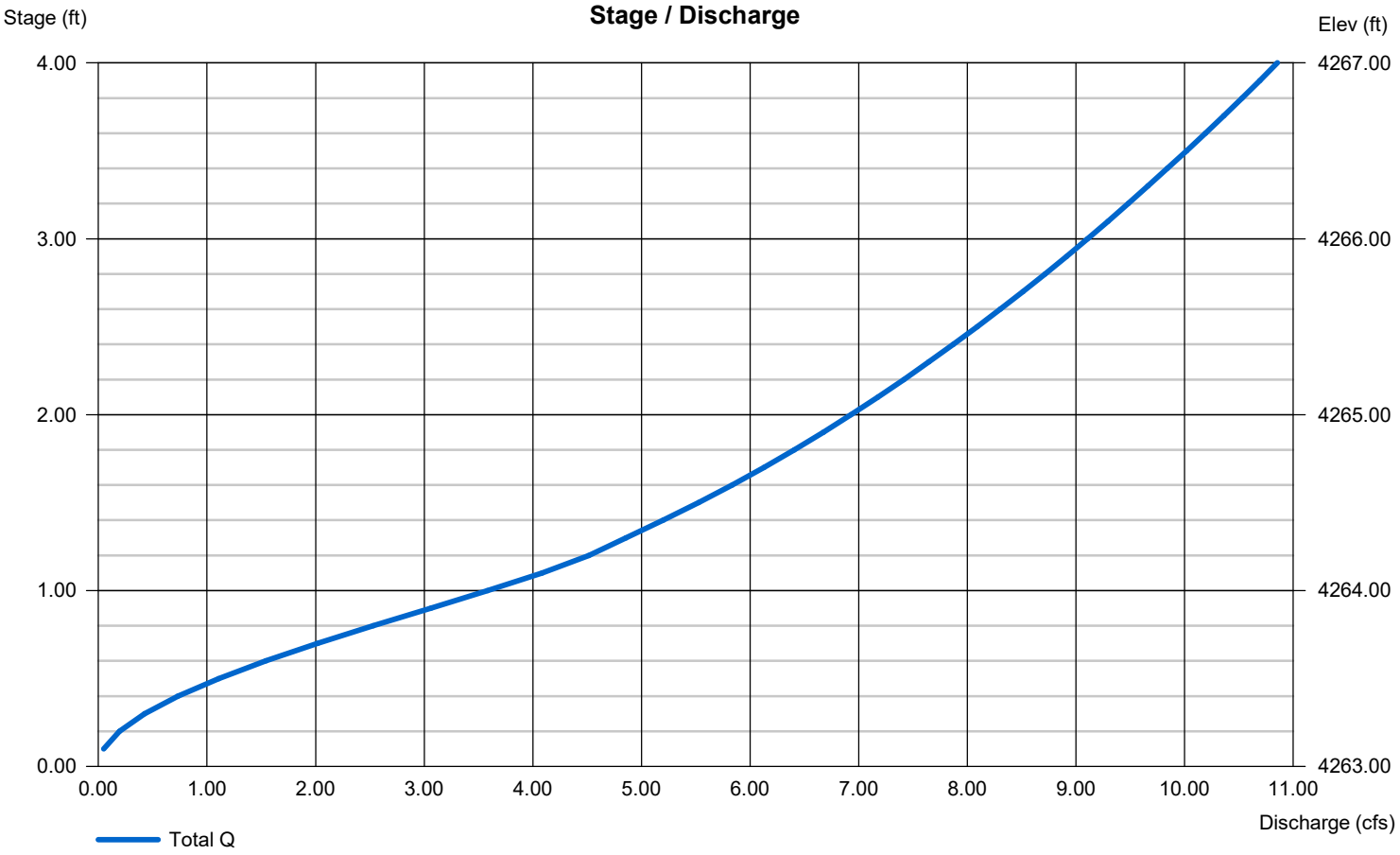
Weir Structures

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

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

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

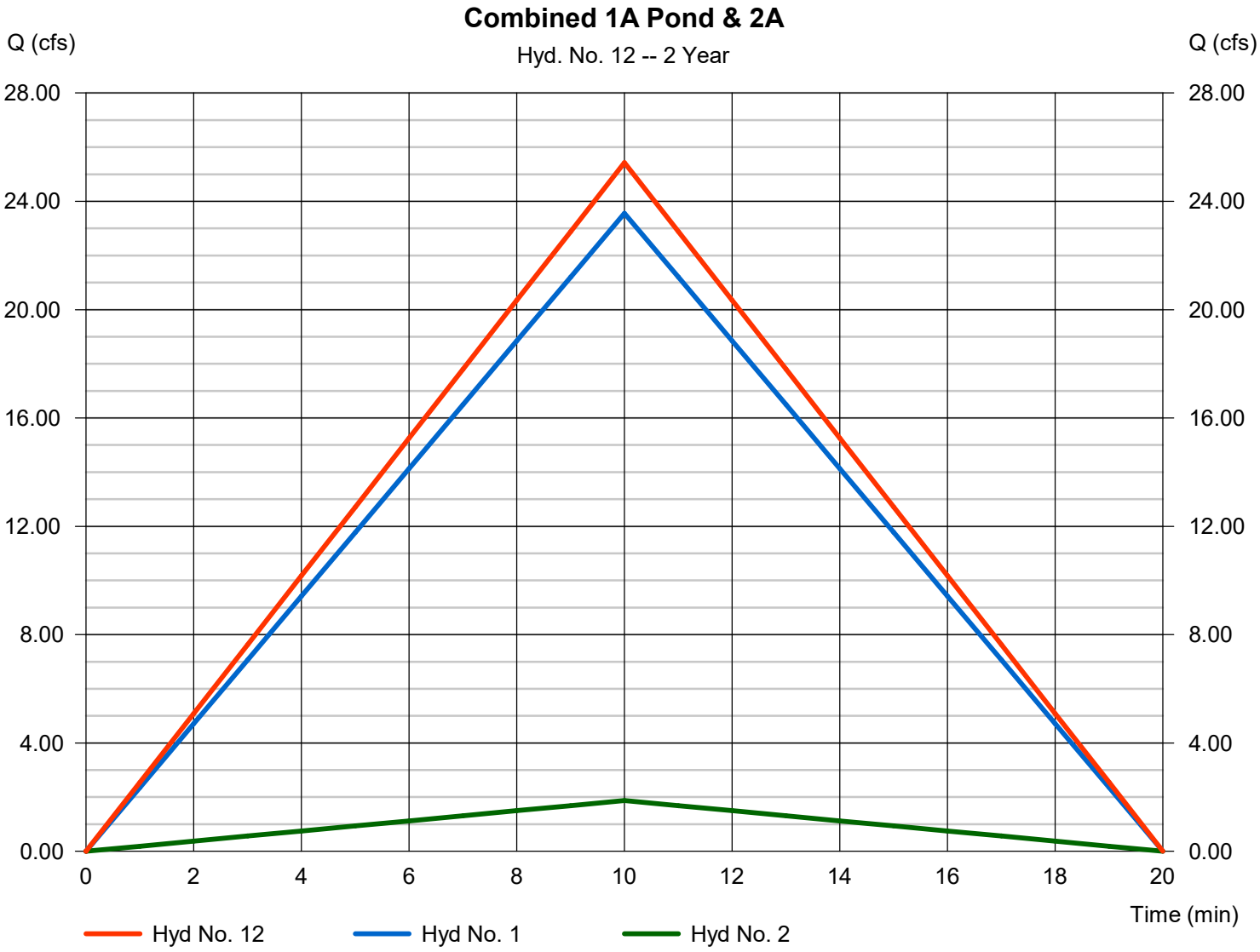


Hydrograph Report

Hyd. No. 12

Combined 1A Pond & 2A

Hydrograph type	= Combine	Peak discharge	= 25.43 cfs
Storm frequency	= 2 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 15,258 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 21.940 ac

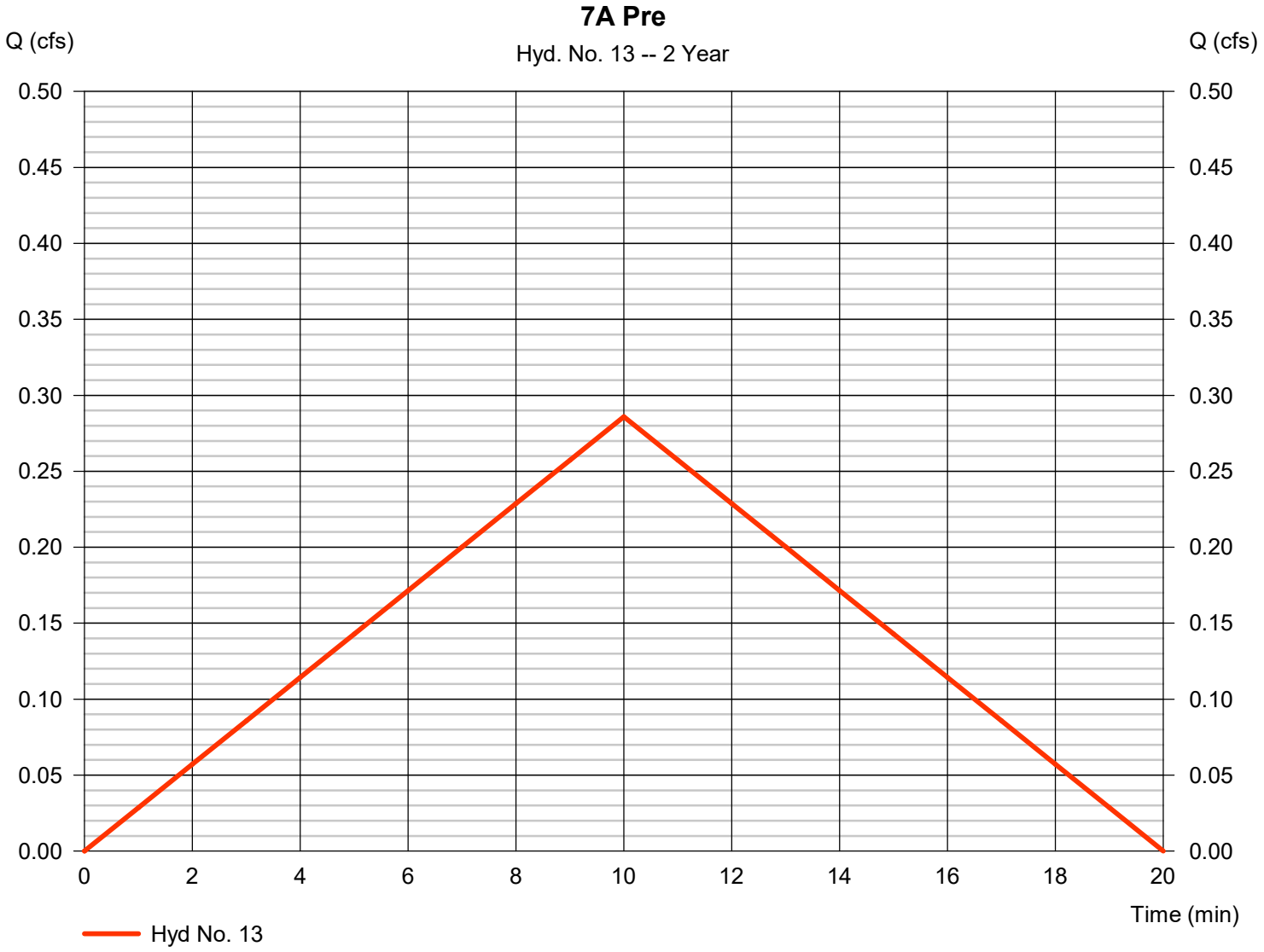


Hydrograph Report

Hyd. No. 13

7A Pre

Hydrograph type	=	Rational	Peak discharge	=	0.286 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	172 cuft
Drainage area	=	0.250 ac	Runoff coeff.	=	0.45
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

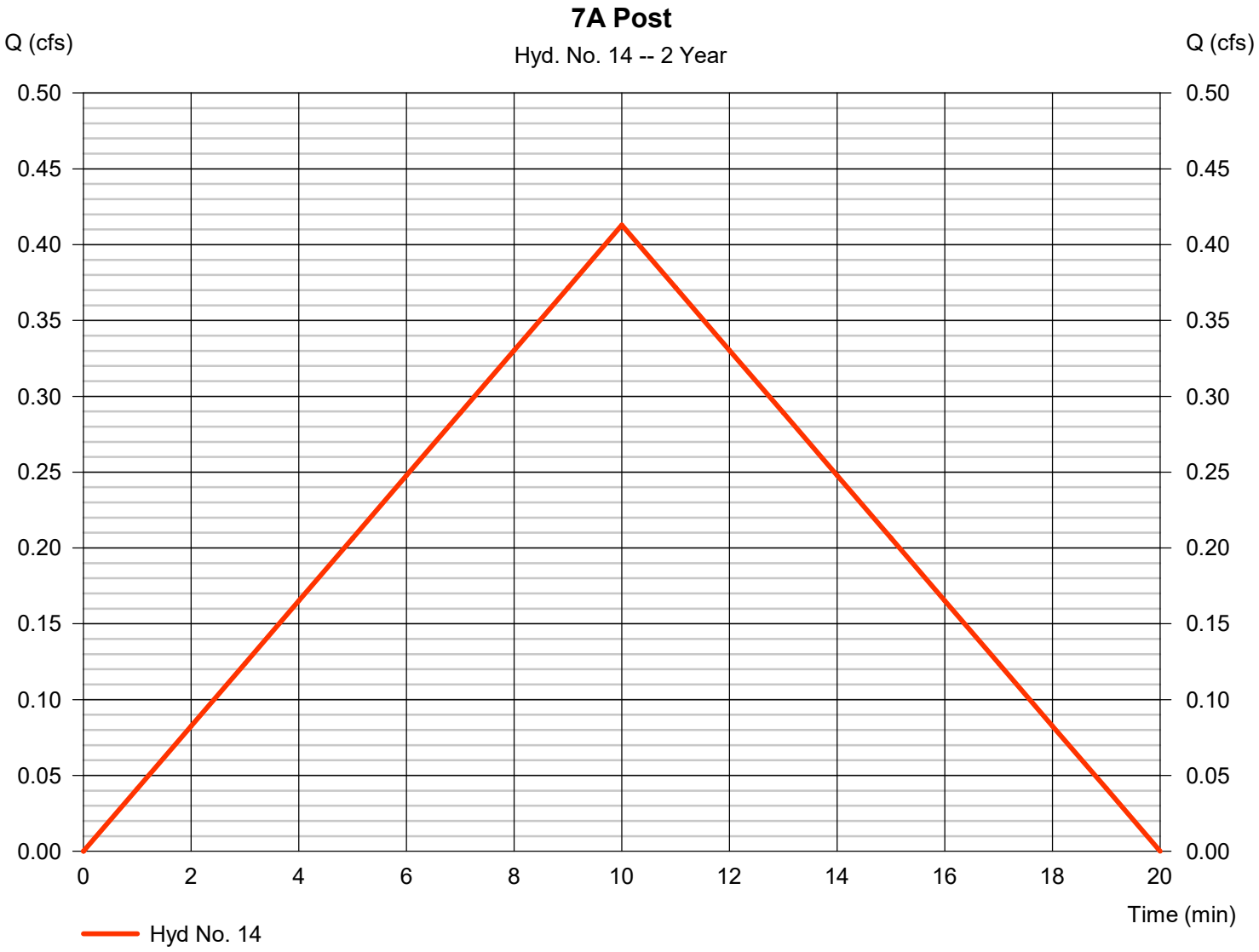


Hydrograph Report

Hyd. No. 14

7A Post

Hydrograph type	=	Rational	Peak discharge	=	0.413 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	248 cuft
Drainage area	=	0.250 ac	Runoff coeff.	=	0.65
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

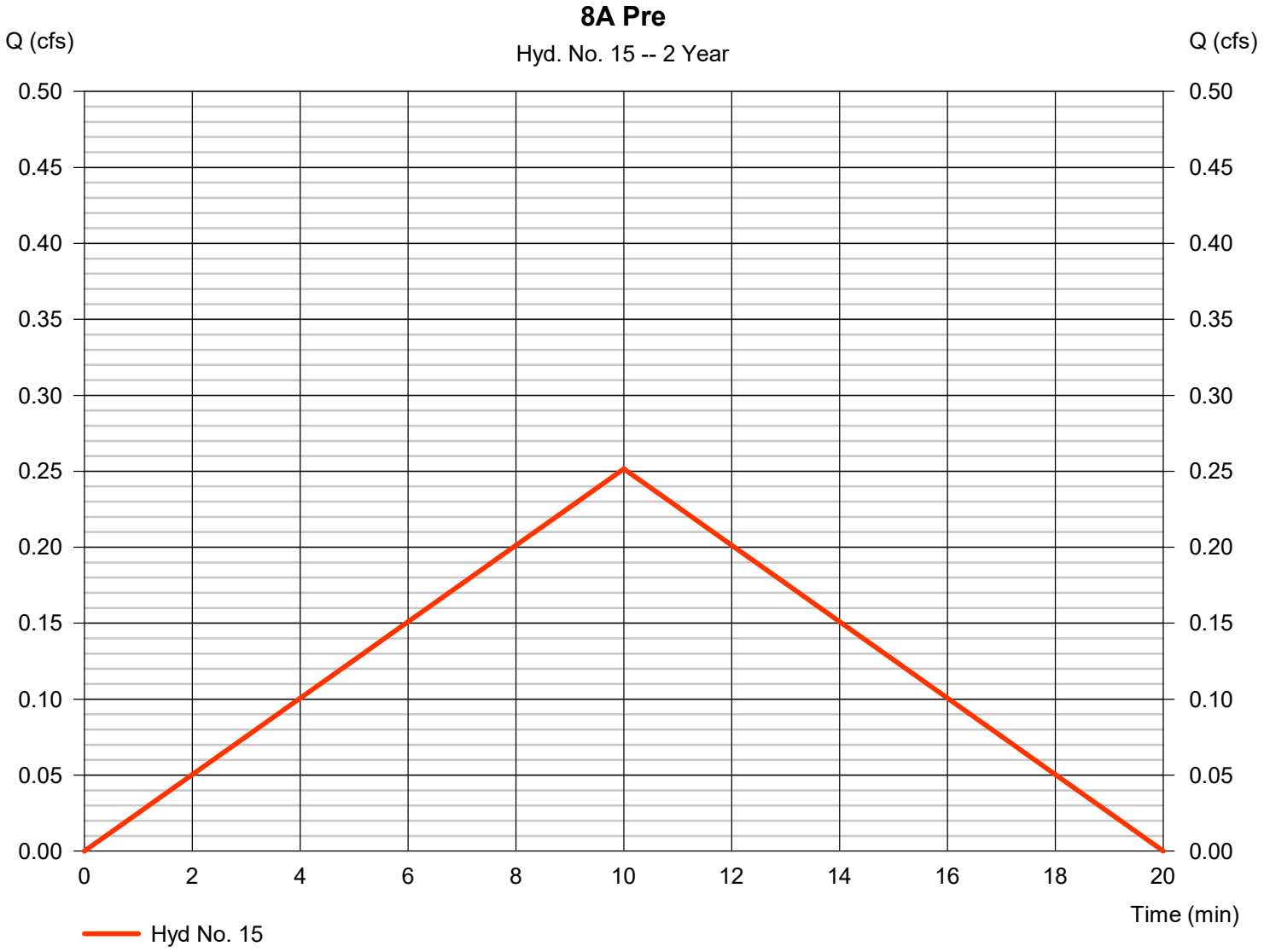


Hydrograph Report

Hyd. No. 15

8A Pre

Hydrograph type	=	Rational	Peak discharge	=	0.252 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	151 cuft
Drainage area	=	0.220 ac	Runoff coeff.	=	0.45
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

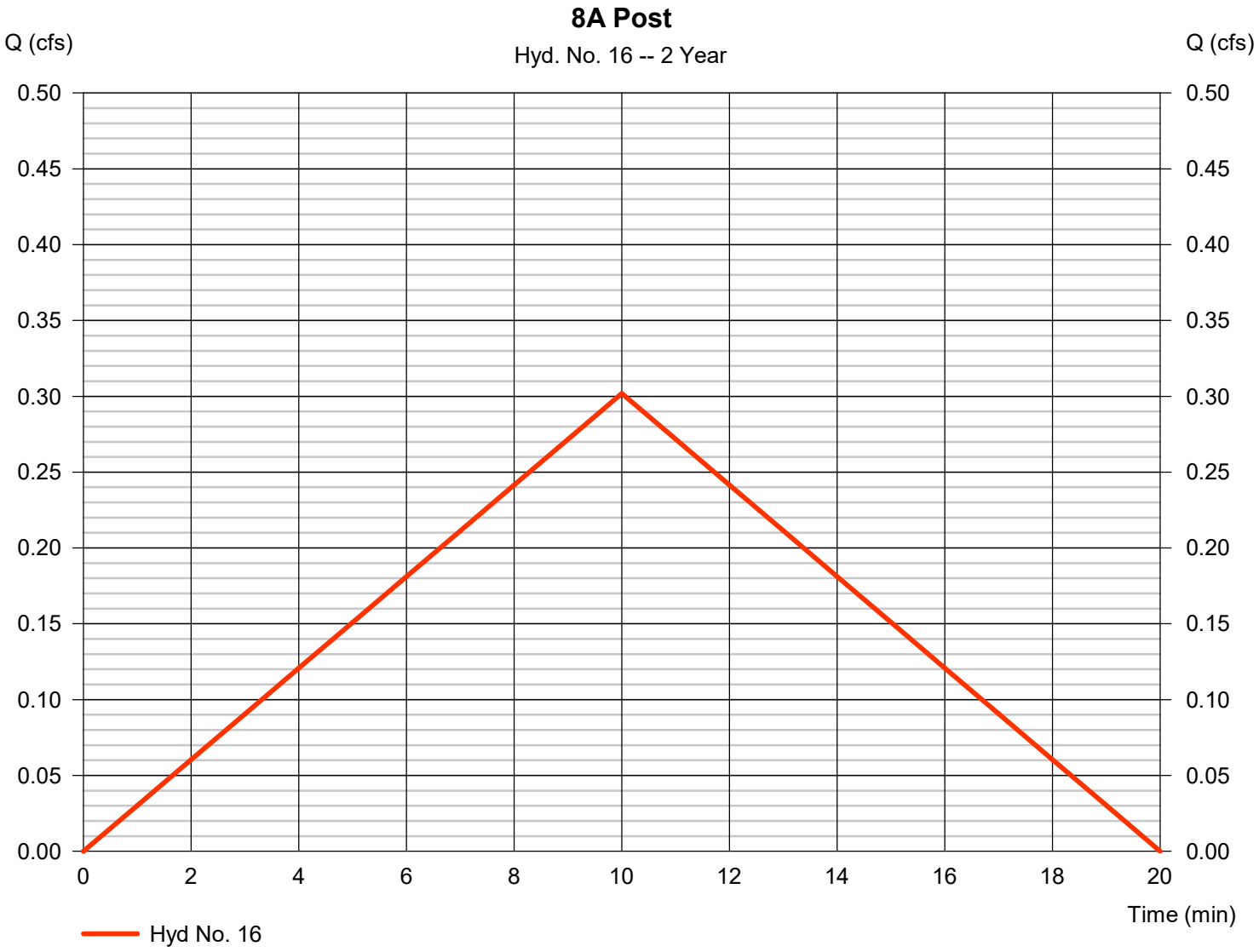


Hydrograph Report

Hyd. No. 16

8A Post

Hydrograph type	=	Rational	Peak discharge	=	0.302 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	181 cuft
Drainage area	=	0.220 ac	Runoff coeff.	=	0.54
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Report

Hyd. No. 17

2A Pre

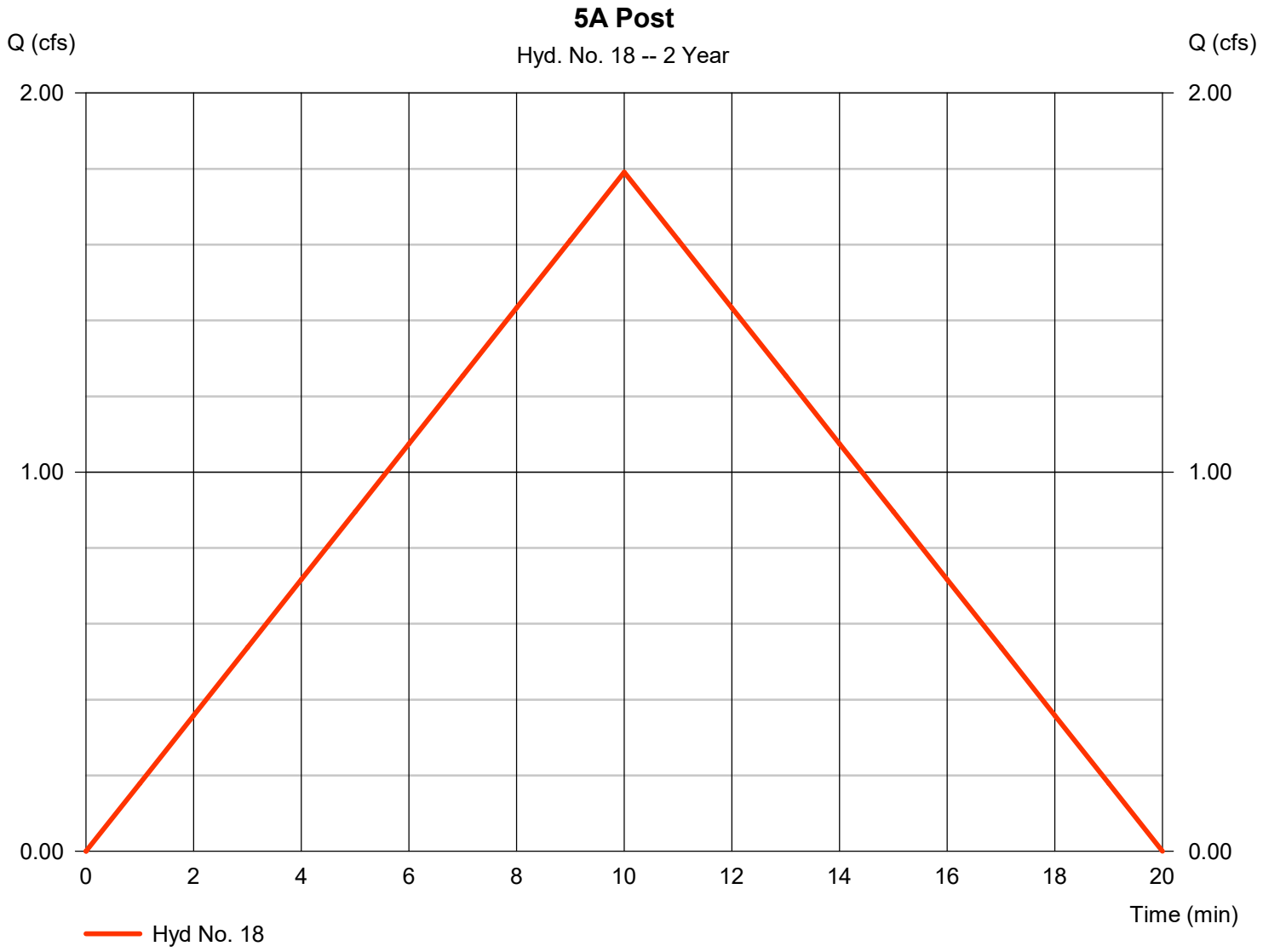
Hydrograph type	=	Rational	Peak discharge	=	1.532 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	919 cuft
Drainage area	=	1.340 ac	Runoff coeff.	=	0.45
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

Hydrograph Report

Hyd. No. 18

5A Post

Hydrograph type	=	Rational	Peak discharge	=	1.792 cfs
Storm frequency	=	2 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,075 cuft
Drainage area	=	1.410 ac	Runoff coeff.	=	0.5
Intensity	=	2.541 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

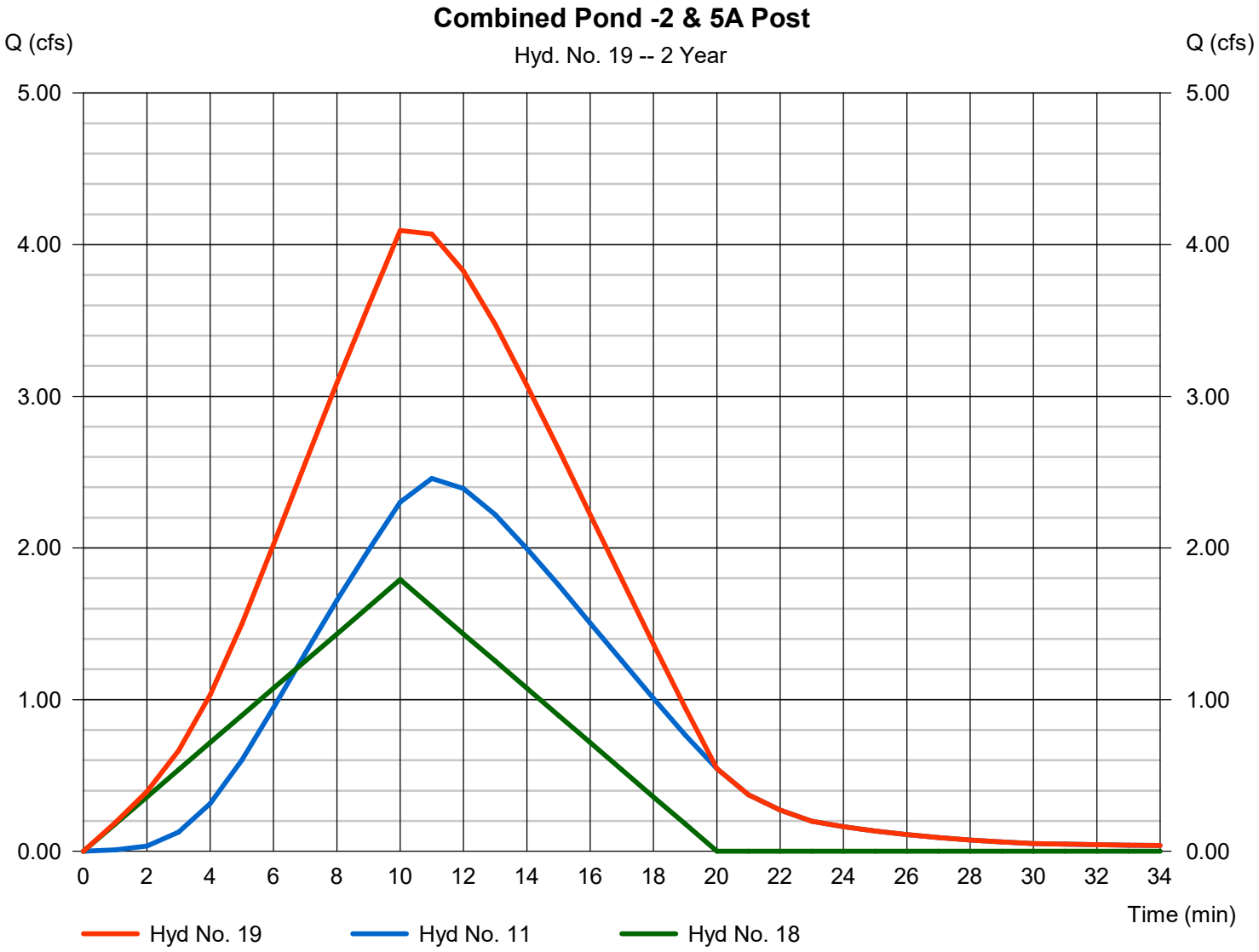


Hydrograph Report

Hyd. No. 19

Combined Pond -2 & 5A Post

Hydrograph type	= Combine	Peak discharge	= 4.094 cfs
Storm frequency	= 2 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 2,719 cuft
Inflow hyds.	= 11, 18	Contrib. drain. area	= 1.410 ac

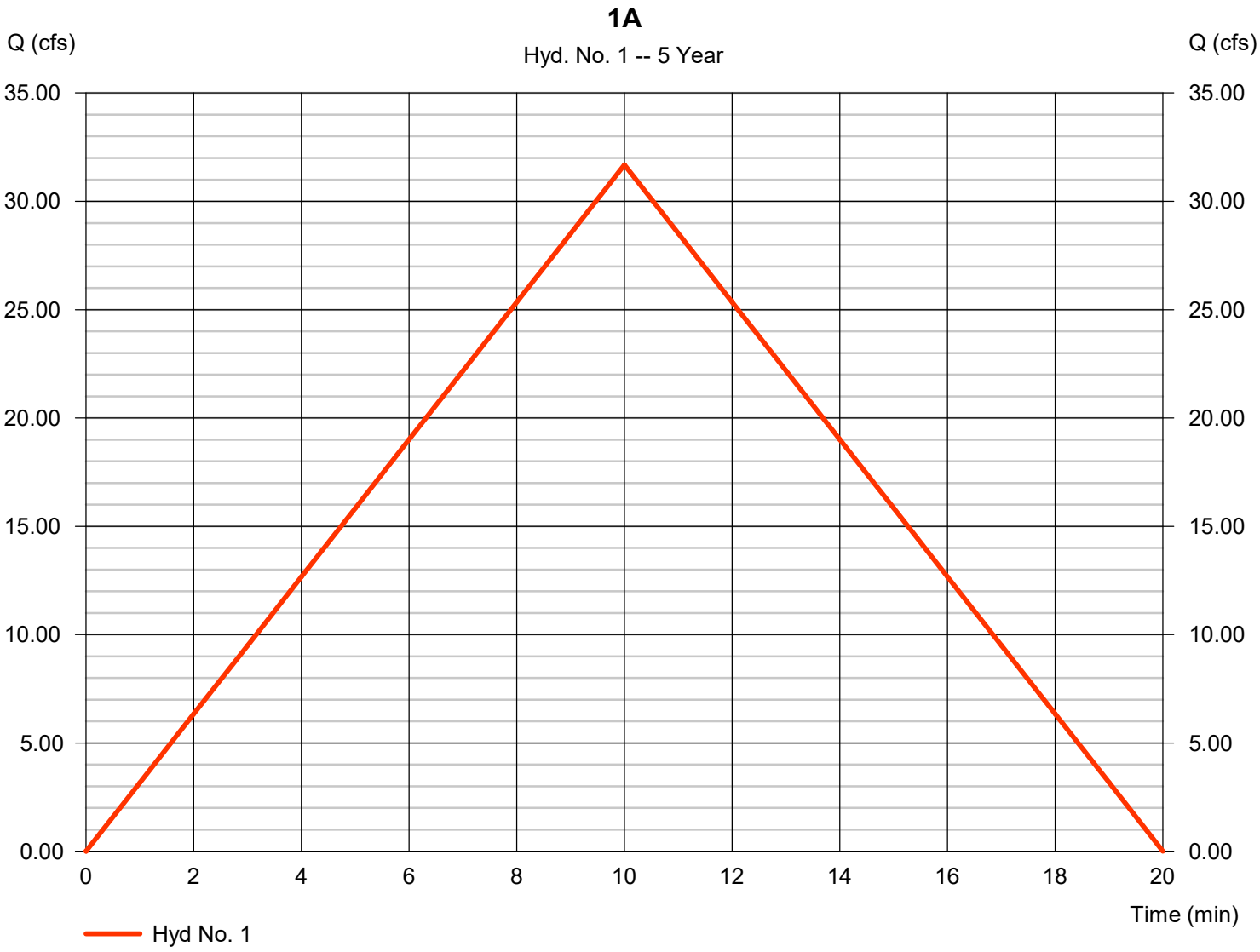


Hydrograph Report

Hyd. No. 1

1A

Hydrograph type	=	Rational	Peak discharge	=	31.68 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	19,008 cuft
Drainage area	=	20.600 ac	Runoff coeff.	=	0.45
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

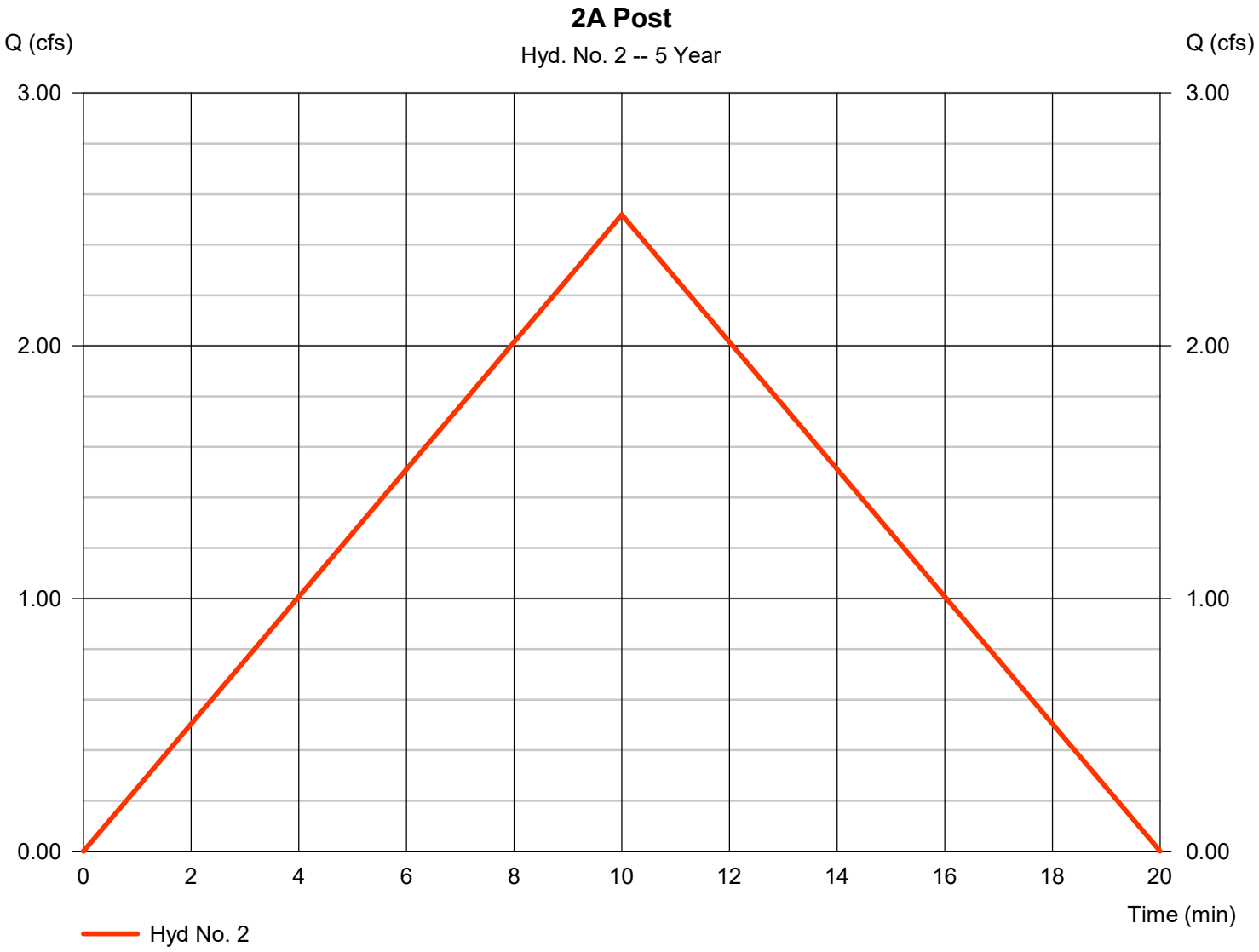


Hydrograph Report

Hyd. No. 2

2A Post

Hydrograph type	=	Rational	Peak discharge	=	2.519 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,511 cuft
Drainage area	=	1.340 ac	Runoff coeff.	=	0.55
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

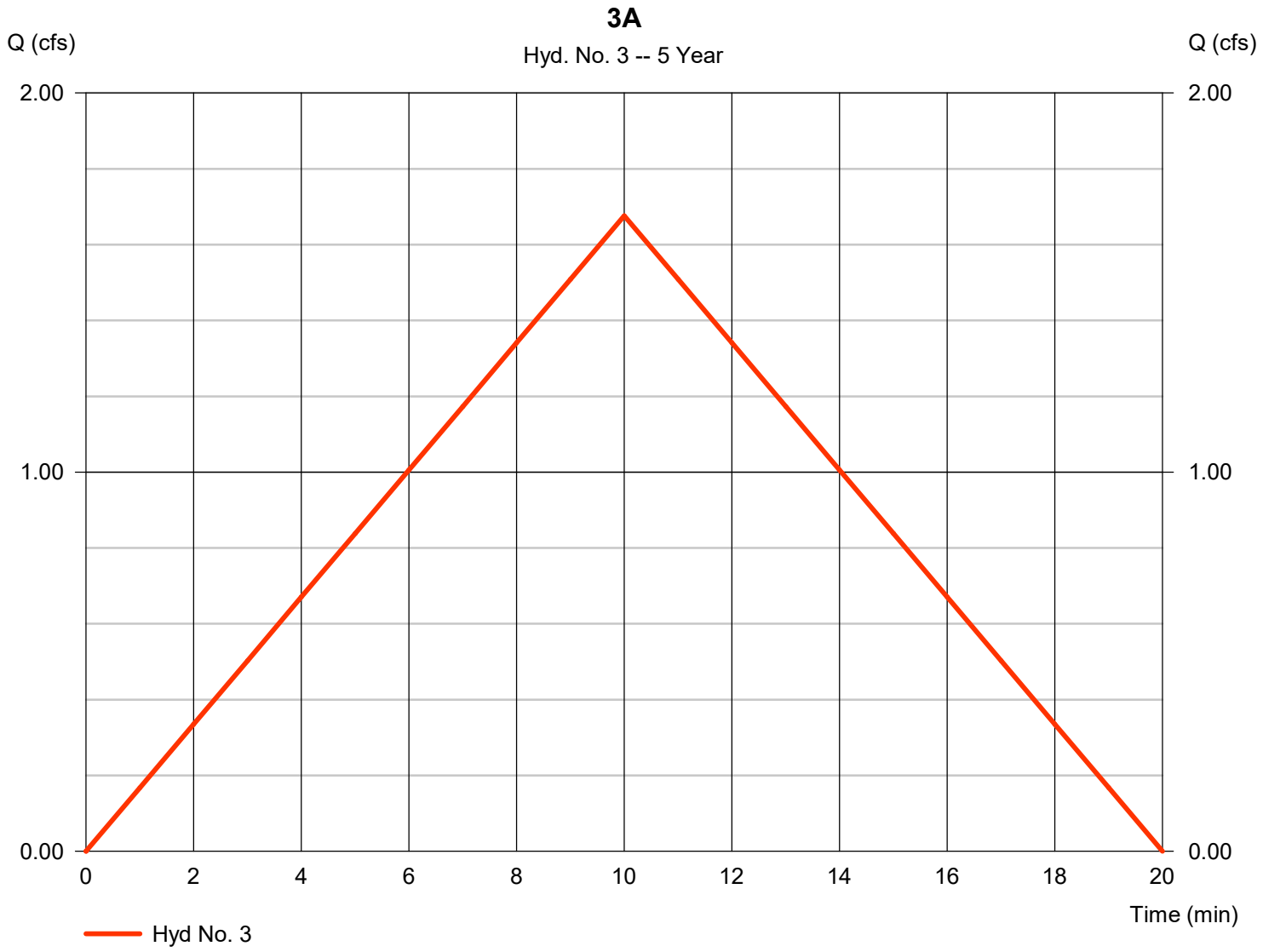


Hydrograph Report

Hyd. No. 3

3A

Hydrograph type	=	Rational	Peak discharge	=	1.676 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,006 cuft
Drainage area	=	1.090 ac	Runoff coeff.	=	0.45
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

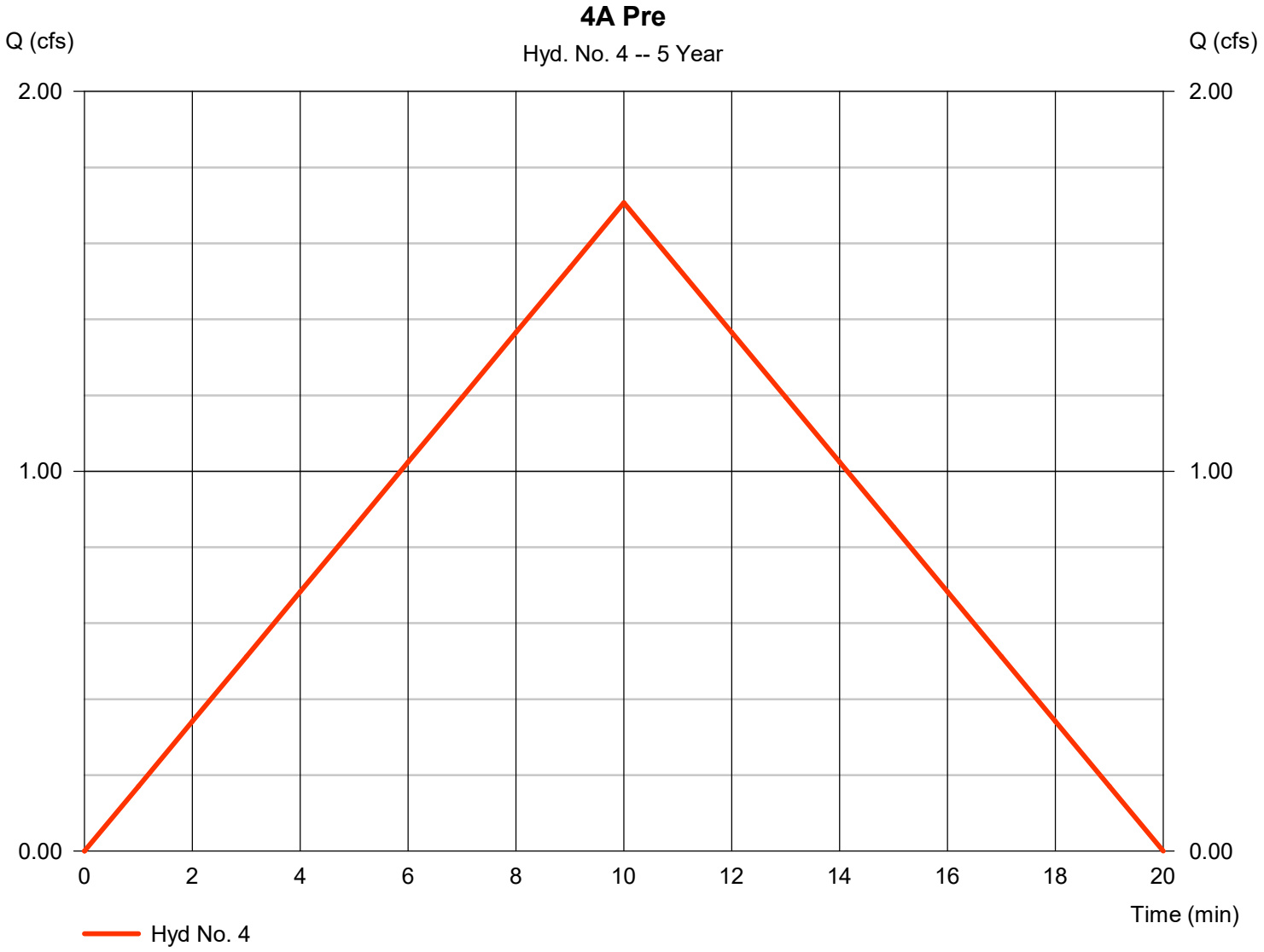


Hydrograph Report

Hyd. No. 4

4A Pre

Hydrograph type	=	Rational	Peak discharge	=	1.707 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,024 cuft
Drainage area	=	1.110 ac	Runoff coeff.	=	0.45
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

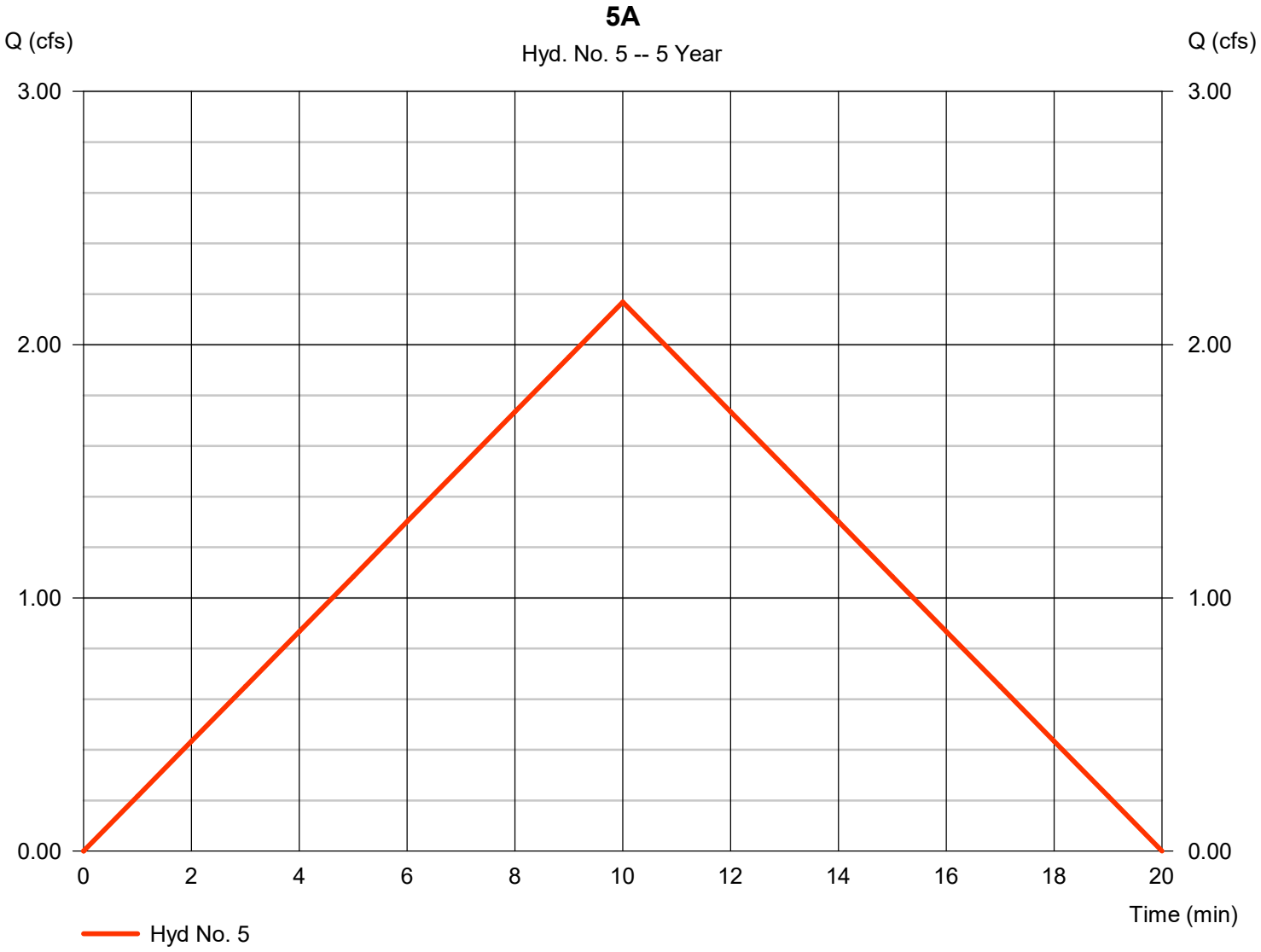


Hydrograph Report

Hyd. No. 5

5A

Hydrograph type	=	Rational	Peak discharge	=	2.168 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,301 cuft
Drainage area	=	1.410 ac	Runoff coeff.	=	0.45
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

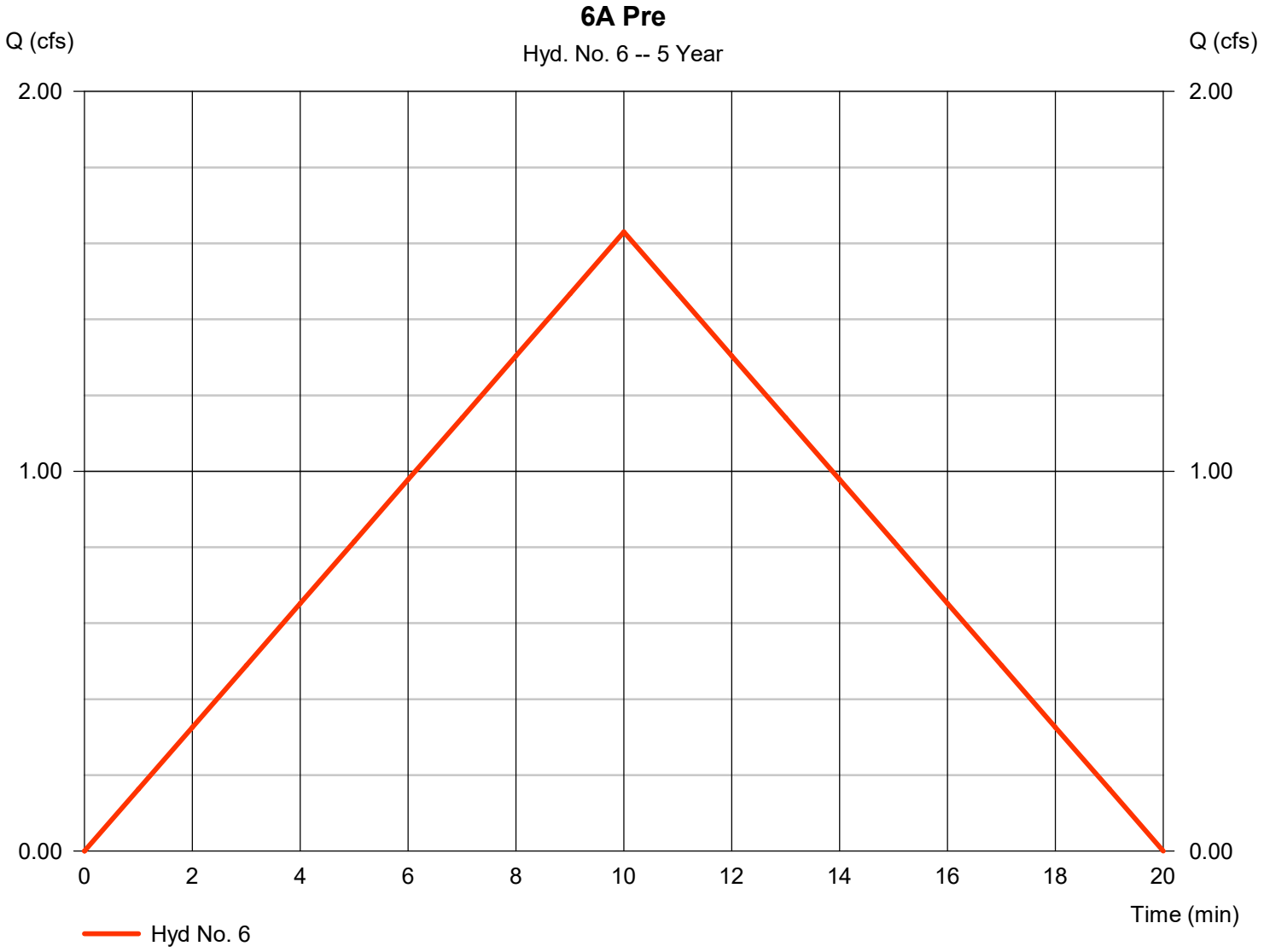


Hydrograph Report

Hyd. No. 6

6A Pre

Hydrograph type	=	Rational	Peak discharge	=	1.630 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	978 cuft
Drainage area	=	1.060 ac	Runoff coeff.	=	0.45
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

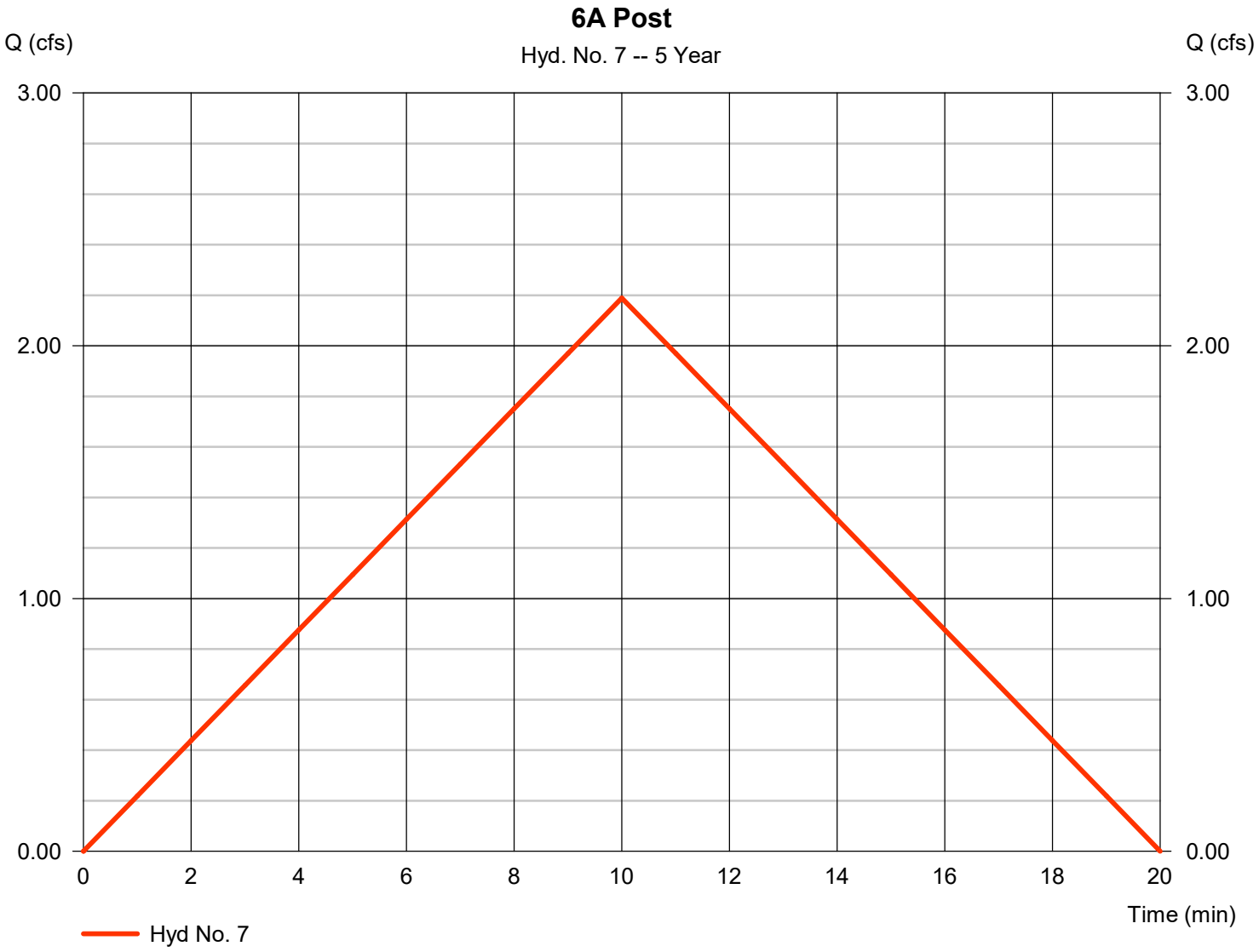


Hydrograph Report

Hyd. No. 7

6A Post

Hydrograph type	=	Rational	Peak discharge	=	2.189 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,313 cuft
Drainage area	=	1.050 ac	Runoff coeff.	=	0.61
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1



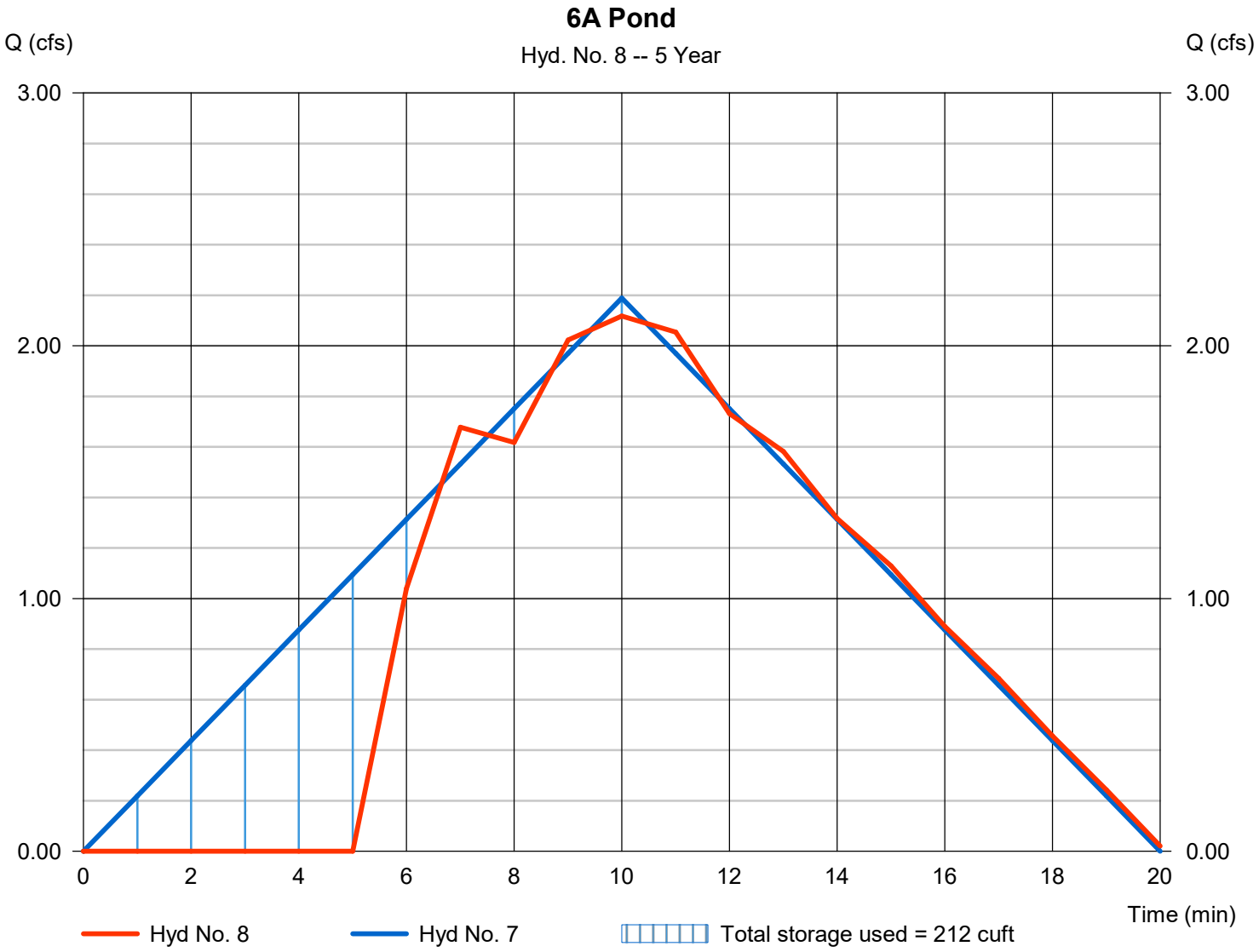
Hydrograph Report

Hyd. No. 8

6A Pond

Hydrograph type	=	Reservoir	Peak discharge	=	2.117 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,115 cuft
Inflow hyd. No.	=	7 - 6A Post	Max. Elevation	=	4238.40 ft
Reservoir name	=	Pond -3	Max. Storage	=	212 cuft

Storage Indication method used.

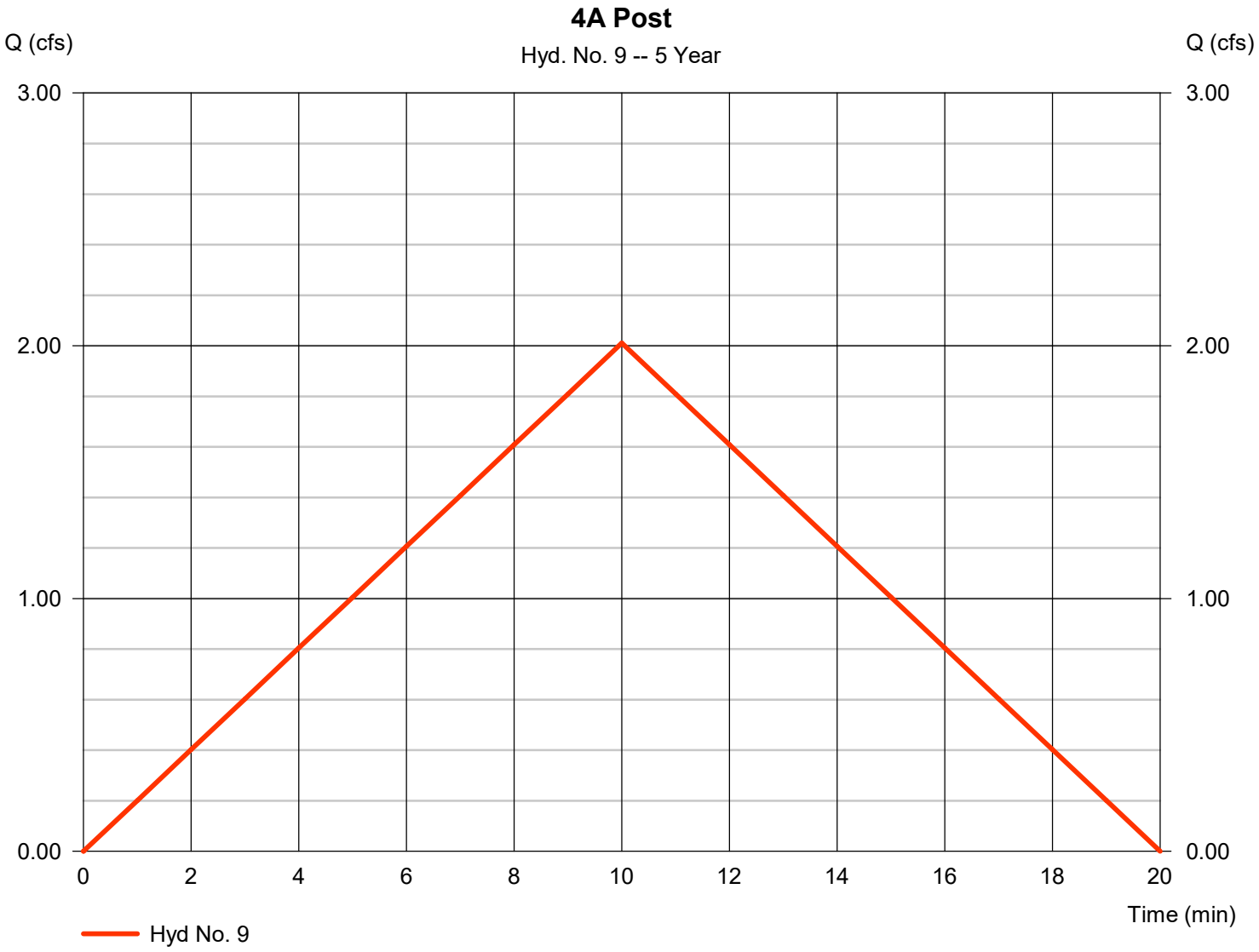


Hydrograph Report

Hyd. No. 9

4A Post

Hydrograph type	=	Rational	Peak discharge	=	2.010 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,206 cuft
Drainage area	=	1.110 ac	Runoff coeff.	=	0.53
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

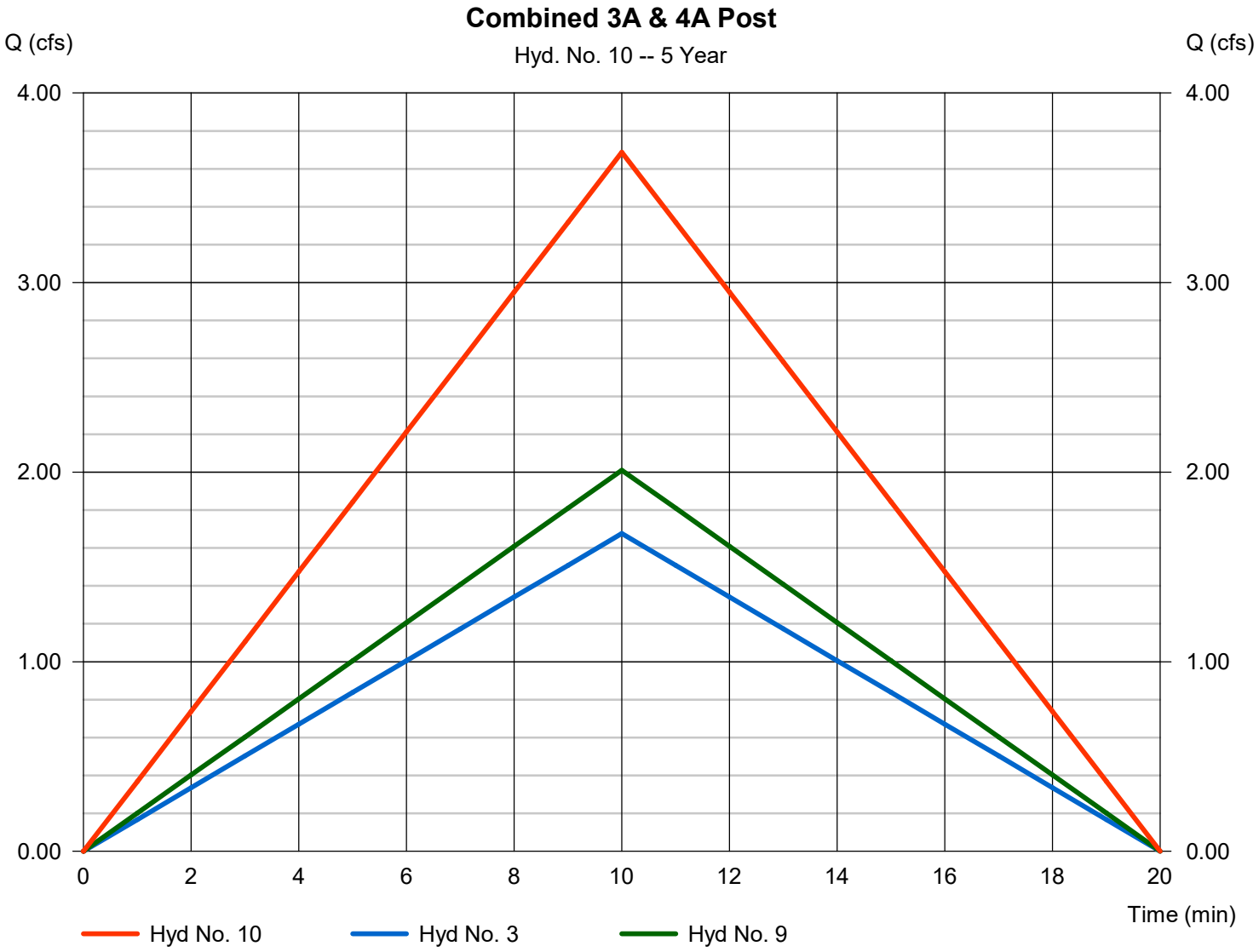


Hydrograph Report

Hyd. No. 10

Combined 3A & 4A Post

Hydrograph type	= Combine	Peak discharge	= 3.687 cfs
Storm frequency	= 5 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 2,212 cuft
Inflow hyds.	= 3, 9	Contrib. drain. area	= 2.200 ac



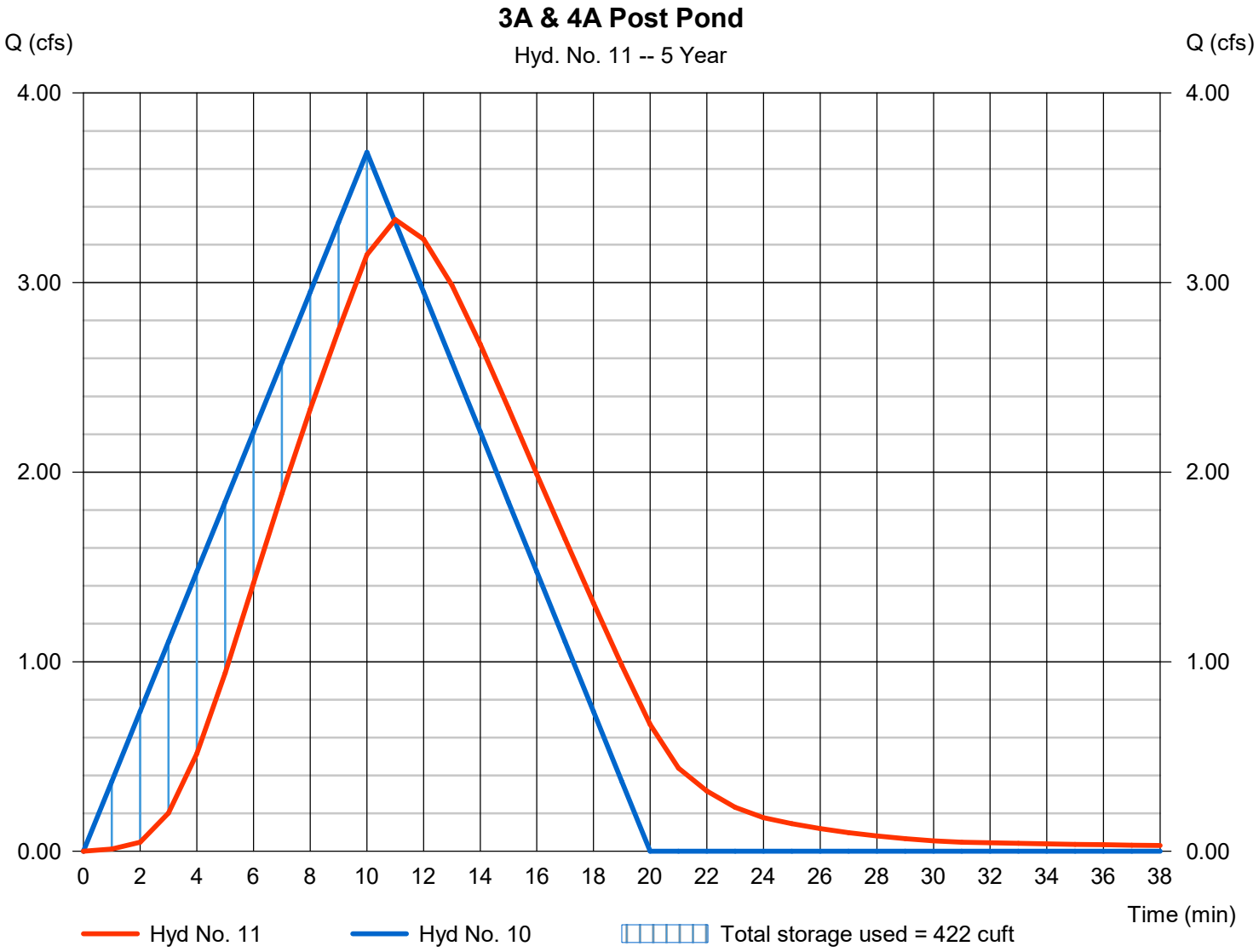
Hydrograph Report

Hyd. No. 11

3A & 4A Post Pond

Hydrograph type	=	Reservoir	Peak discharge	=	3.333 cfs
Storm frequency	=	5 yrs	Time to peak	=	11 min
Time interval	=	1 min	Hyd. volume	=	2,211 cuft
Inflow hyd. No.	=	10 - Combined 3A & 4A Post	Max. Elevation	=	4263.95 ft
Reservoir name	=	Pond -2	Max. Storage	=	422 cuft

Storage Indication method used.

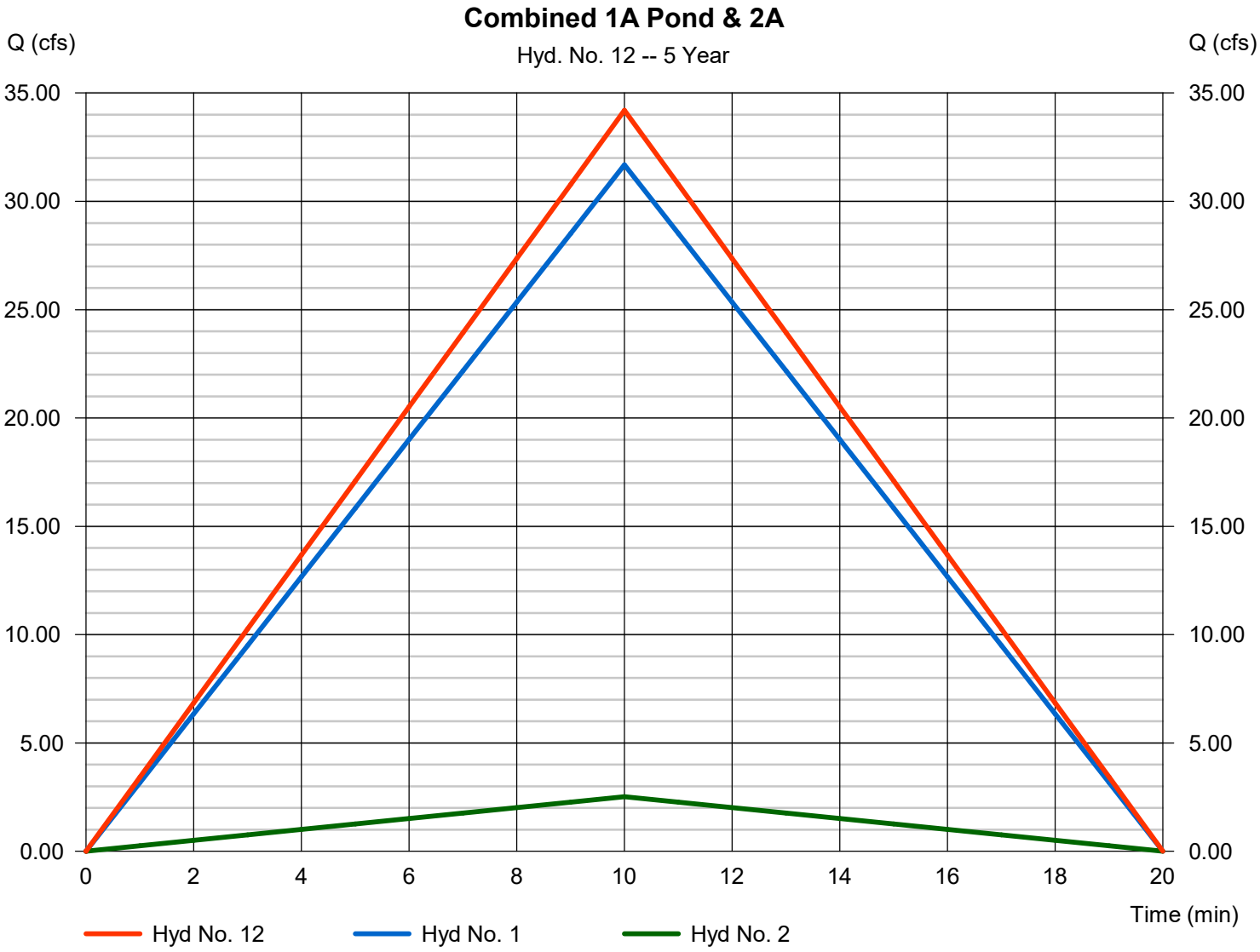


Hydrograph Report

Hyd. No. 12

Combined 1A Pond & 2A

Hydrograph type	= Combine	Peak discharge	= 34.20 cfs
Storm frequency	= 5 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 20,519 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 21.940 ac

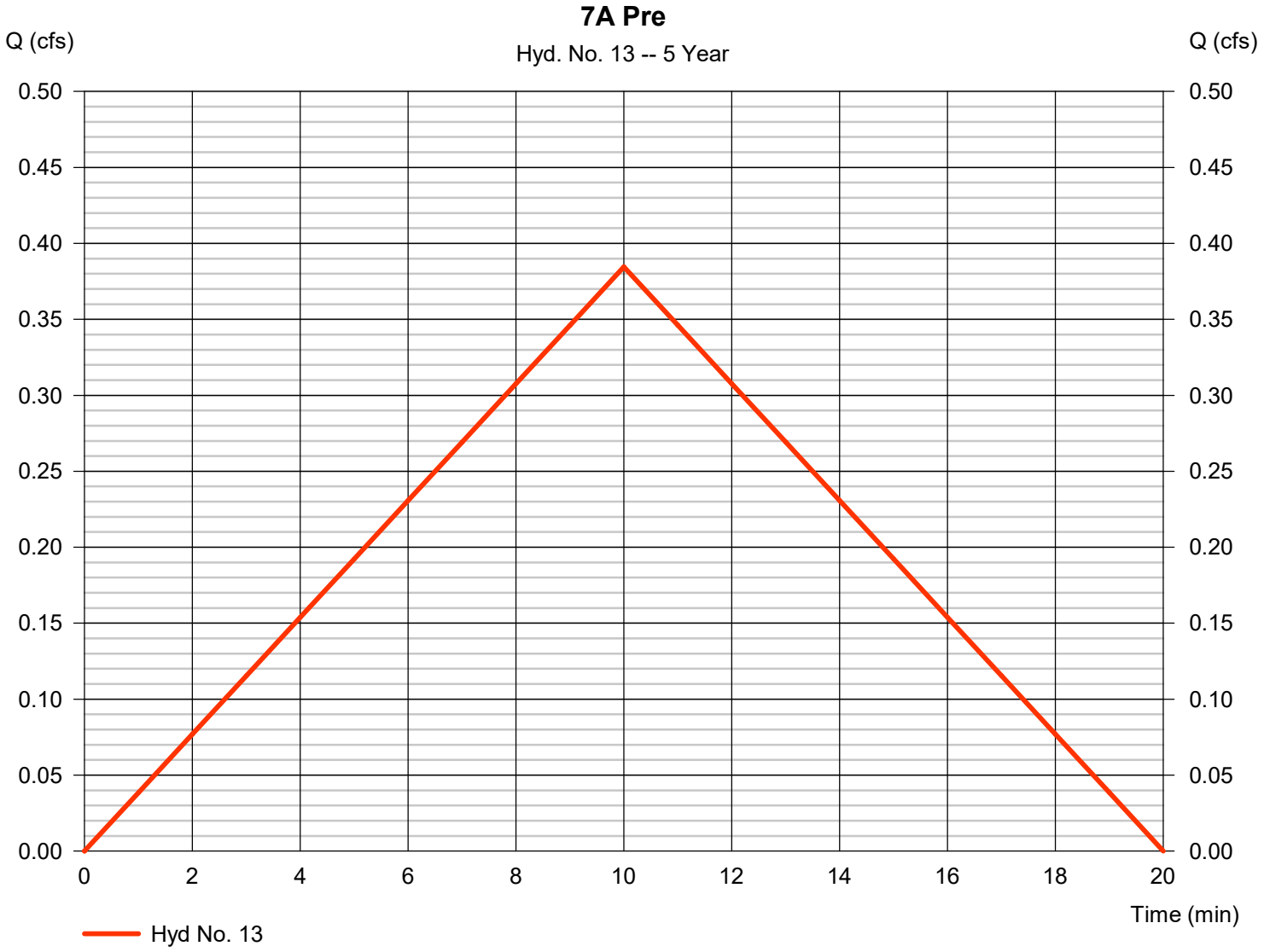


Hydrograph Report

Hyd. No. 13

7A Pre

Hydrograph type	=	Rational	Peak discharge	=	0.384 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	231 cuft
Drainage area	=	0.250 ac	Runoff coeff.	=	0.45
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

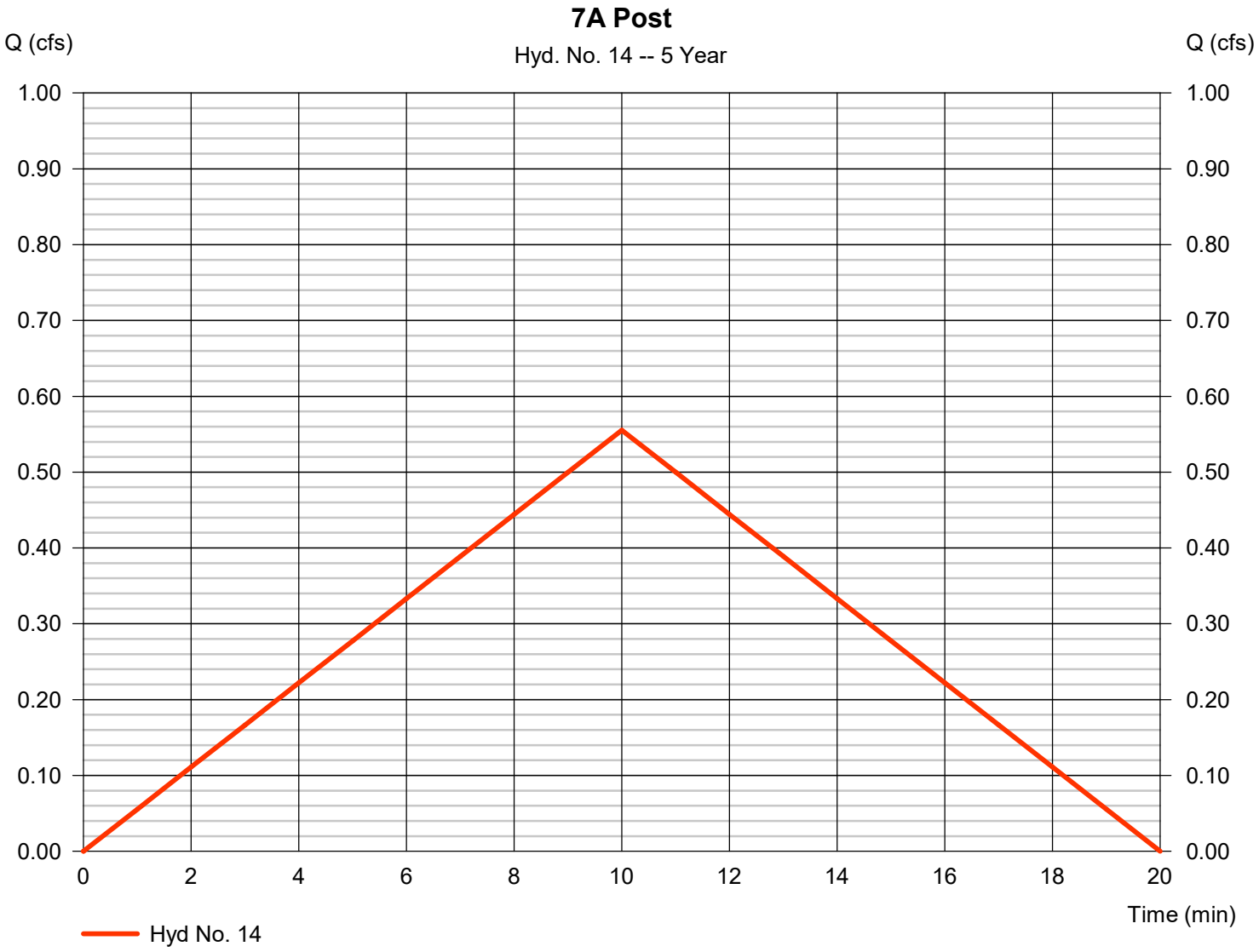


Hydrograph Report

Hyd. No. 14

7A Post

Hydrograph type	=	Rational	Peak discharge	=	0.555 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	333 cuft
Drainage area	=	0.250 ac	Runoff coeff.	=	0.65
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

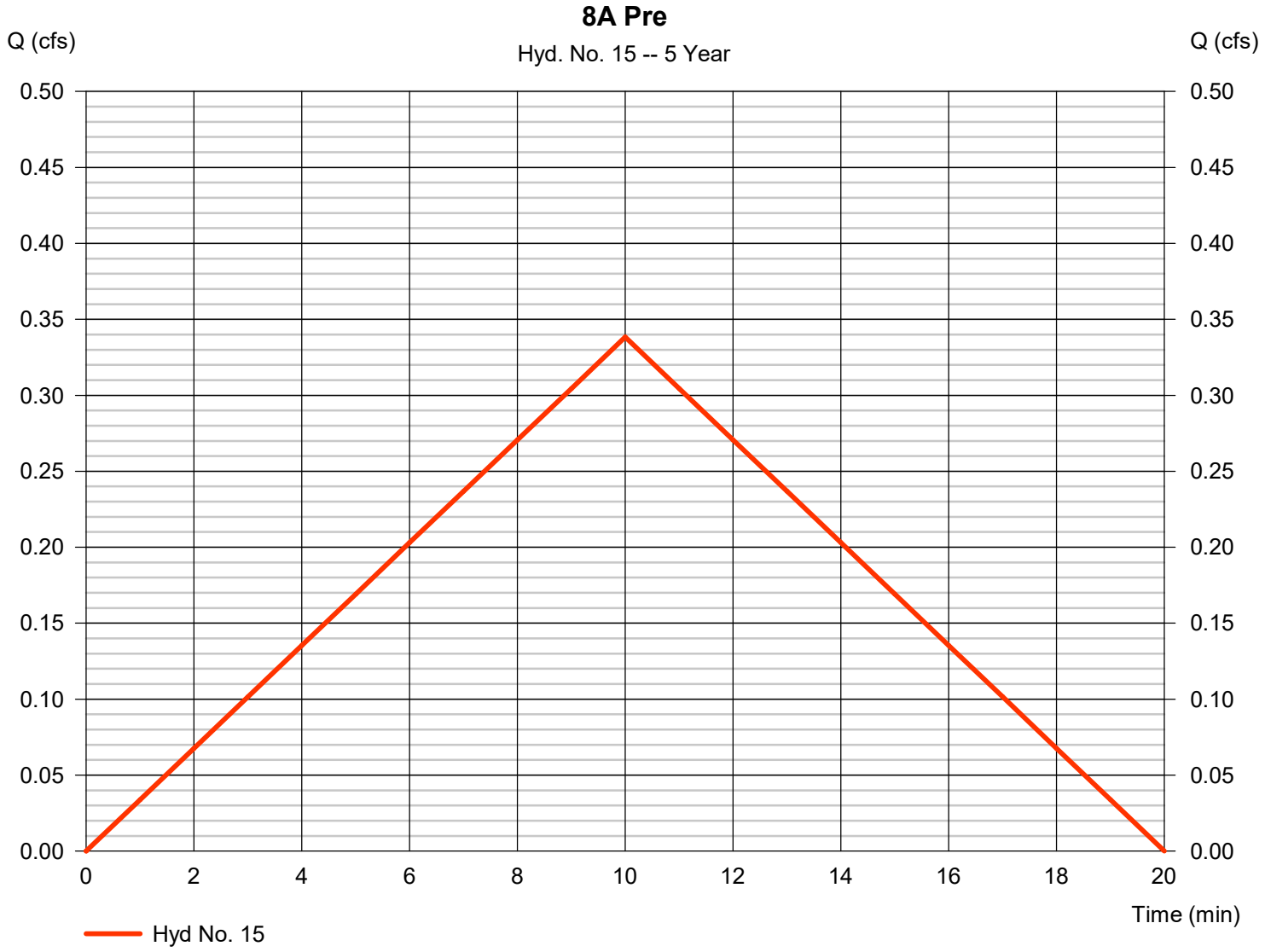


Hydrograph Report

Hyd. No. 15

8A Pre

Hydrograph type	=	Rational	Peak discharge	=	0.338 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	203 cuft
Drainage area	=	0.220 ac	Runoff coeff.	=	0.45
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

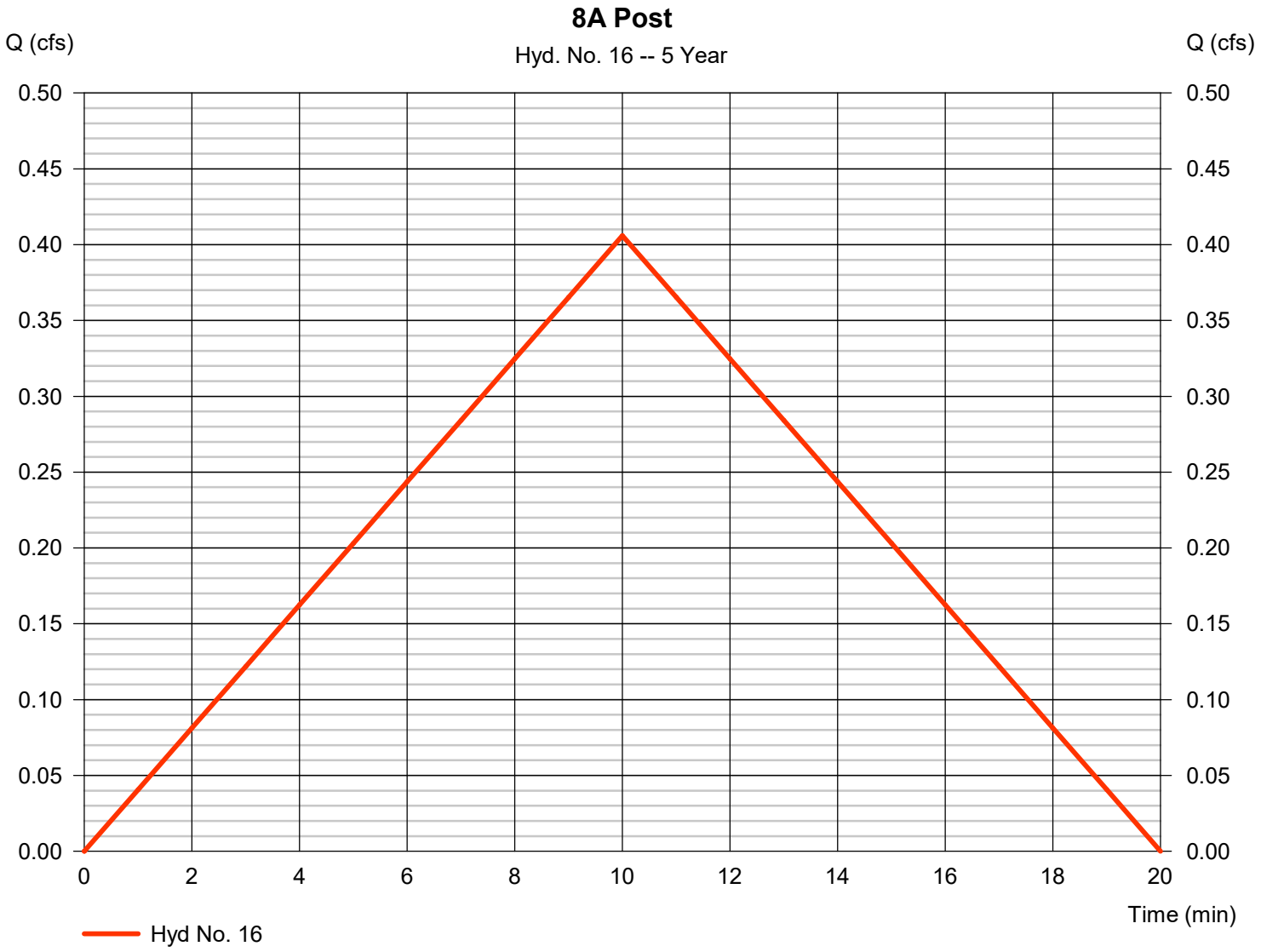


Hydrograph Report

Hyd. No. 16

8A Post

Hydrograph type	=	Rational	Peak discharge	=	0.406 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	244 cuft
Drainage area	=	0.220 ac	Runoff coeff.	=	0.54
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

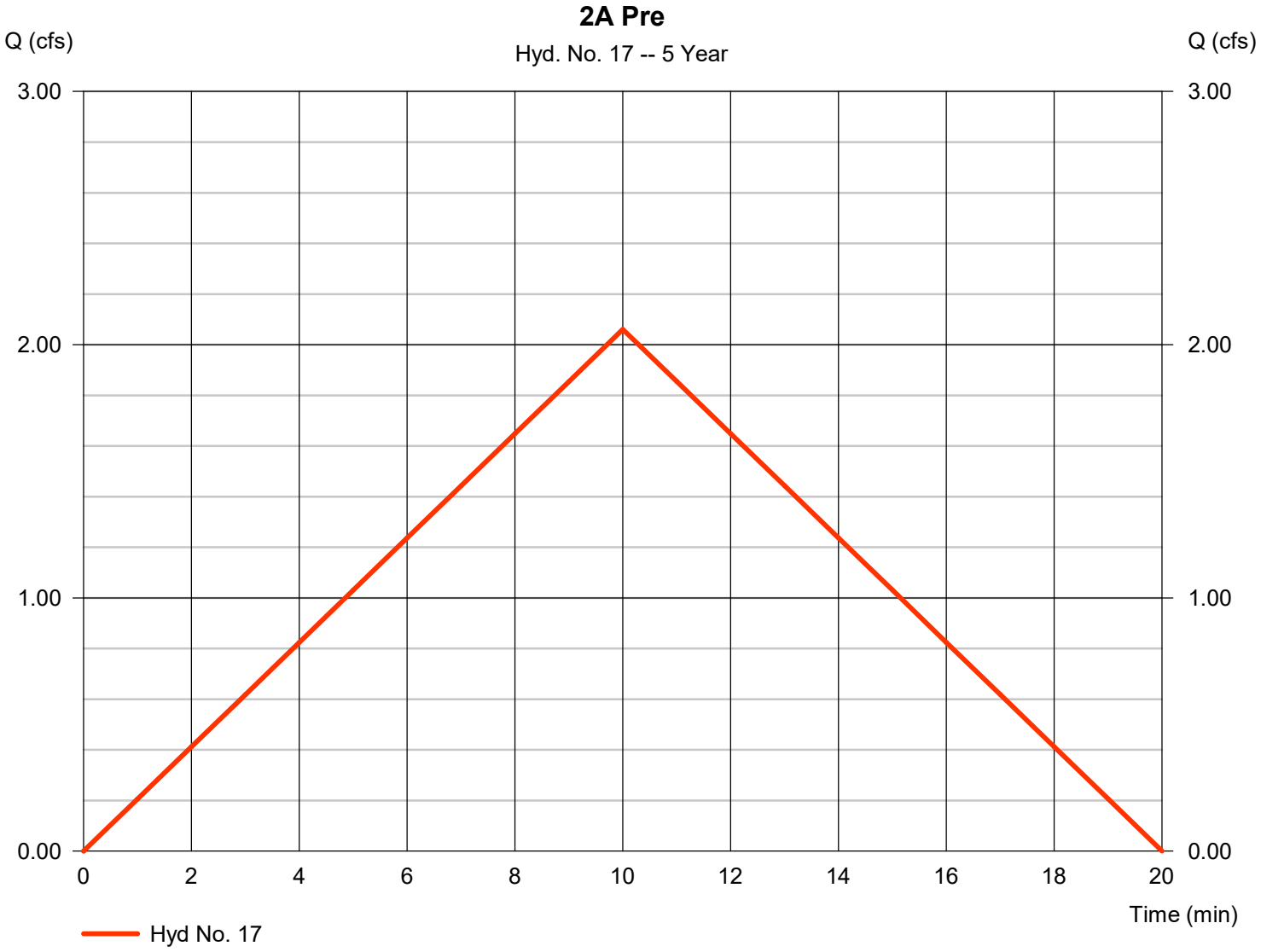


Hydrograph Report

Hyd. No. 17

2A Pre

Hydrograph type	=	Rational	Peak discharge	=	2.061 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,236 cuft
Drainage area	=	1.340 ac	Runoff coeff.	=	0.45
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

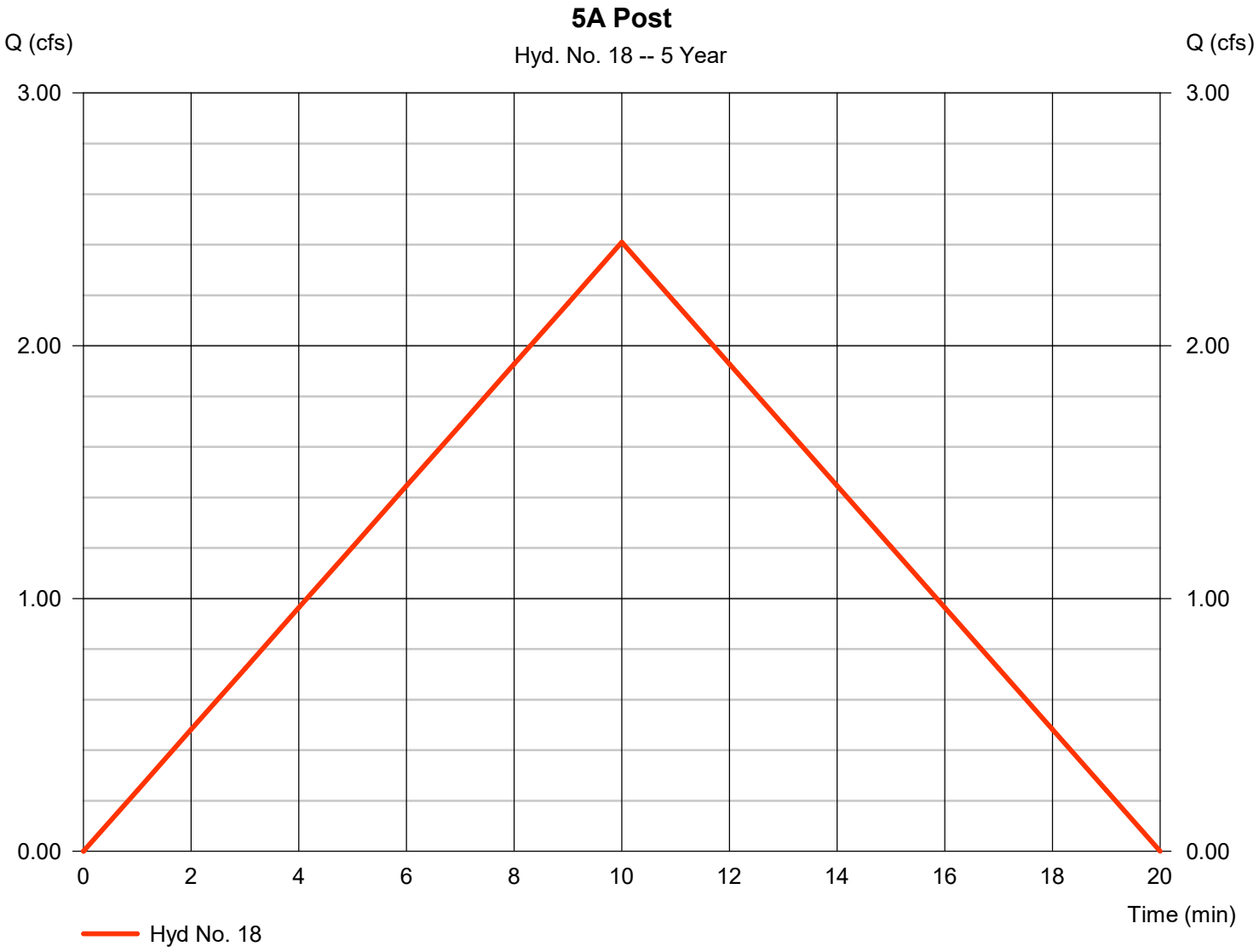


Hydrograph Report

Hyd. No. 18

5A Post

Hydrograph type	=	Rational	Peak discharge	=	2.409 cfs
Storm frequency	=	5 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,446 cuft
Drainage area	=	1.410 ac	Runoff coeff.	=	0.5
Intensity	=	3.417 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

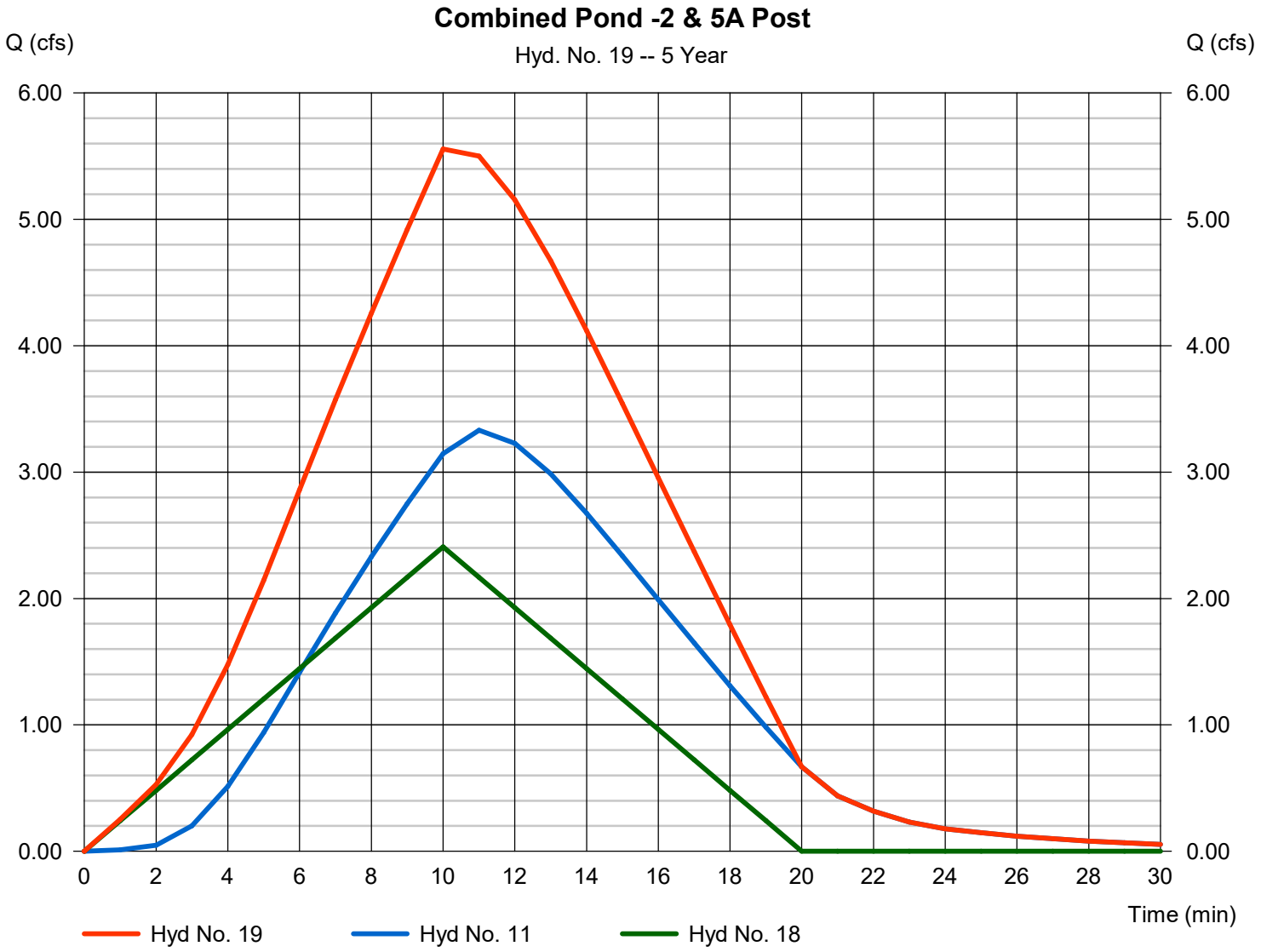


Hydrograph Report

Hyd. No. 19

Combined Pond -2 & 5A Post

Hydrograph type	= Combine	Peak discharge	= 5.557 cfs
Storm frequency	= 5 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 3,657 cuft
Inflow hyds.	= 11, 18	Contrib. drain. area	= 1.410 ac

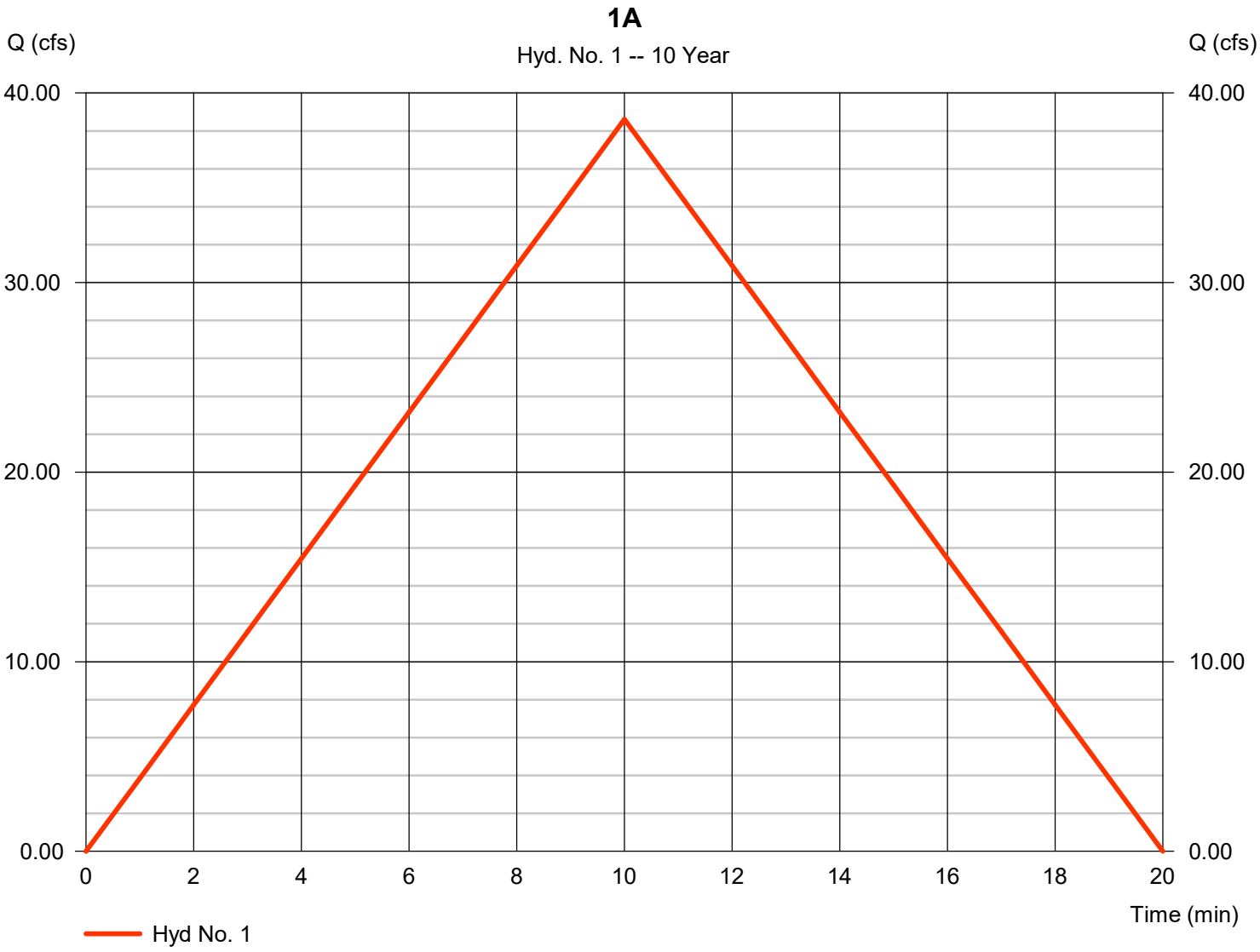


Hydrograph Report

Hyd. No. 1

1A

Hydrograph type	=	Rational	Peak discharge	=	38.61 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	23,165 cuft
Drainage area	=	20.600 ac	Runoff coeff.	=	0.45
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

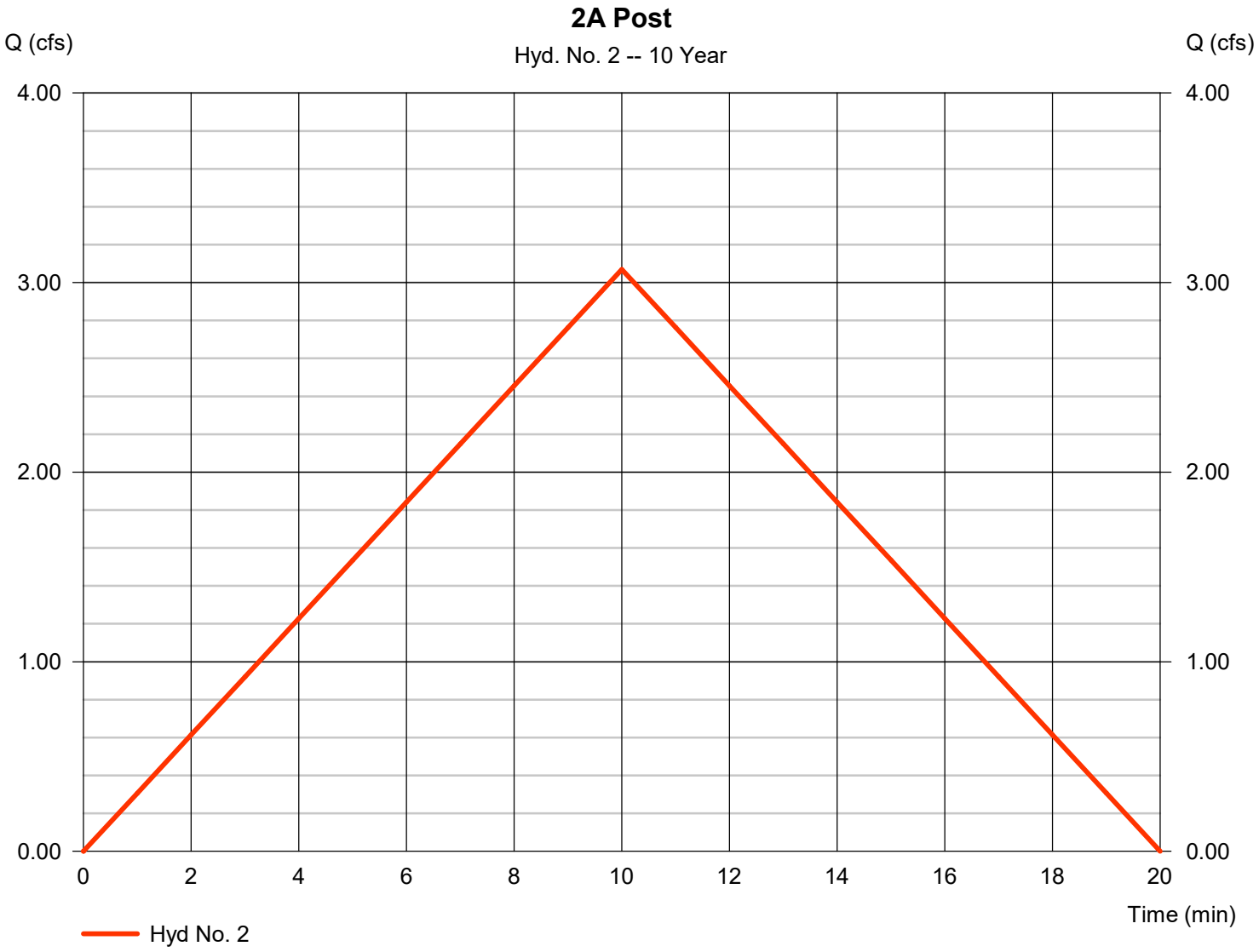


Hydrograph Report

Hyd. No. 2

2A Post

Hydrograph type	=	Rational	Peak discharge	=	3.069 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,842 cuft
Drainage area	=	1.340 ac	Runoff coeff.	=	0.55
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

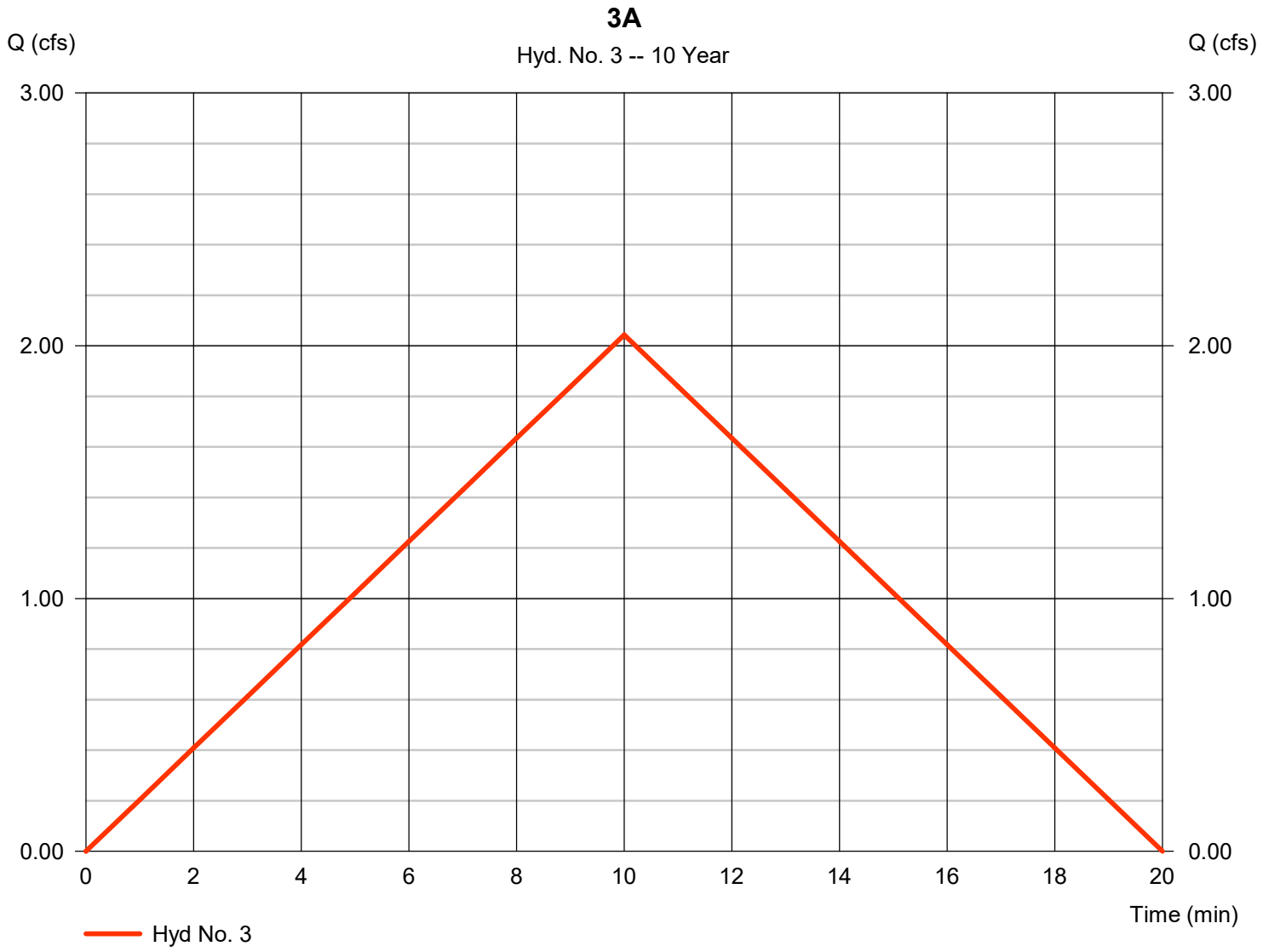


Hydrograph Report

Hyd. No. 3

3A

Hydrograph type	=	Rational	Peak discharge	=	2.043 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,226 cuft
Drainage area	=	1.090 ac	Runoff coeff.	=	0.45
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

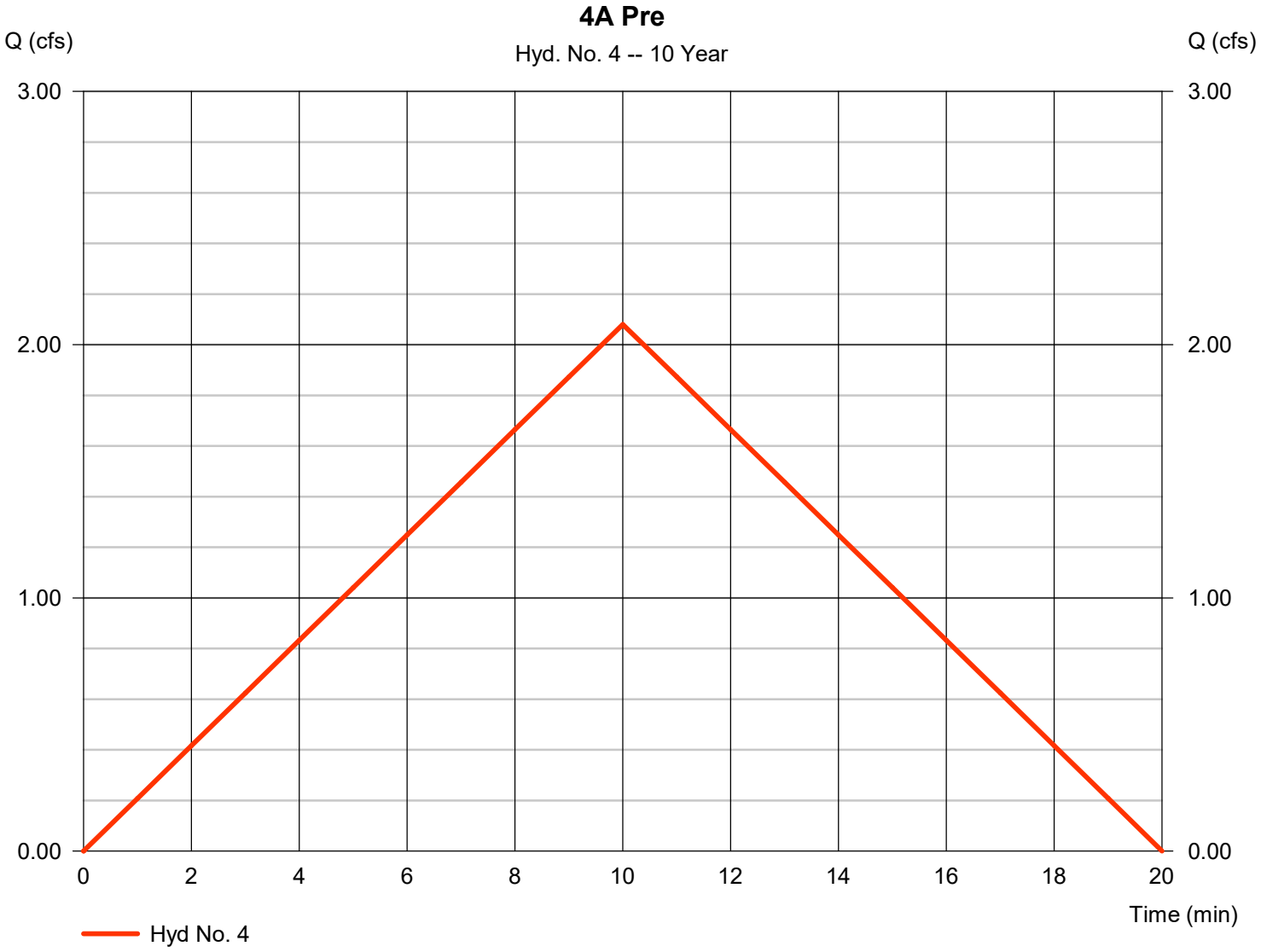


Hydrograph Report

Hyd. No. 4

4A Pre

Hydrograph type	=	Rational	Peak discharge	=	2.080 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,248 cuft
Drainage area	=	1.110 ac	Runoff coeff.	=	0.45
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

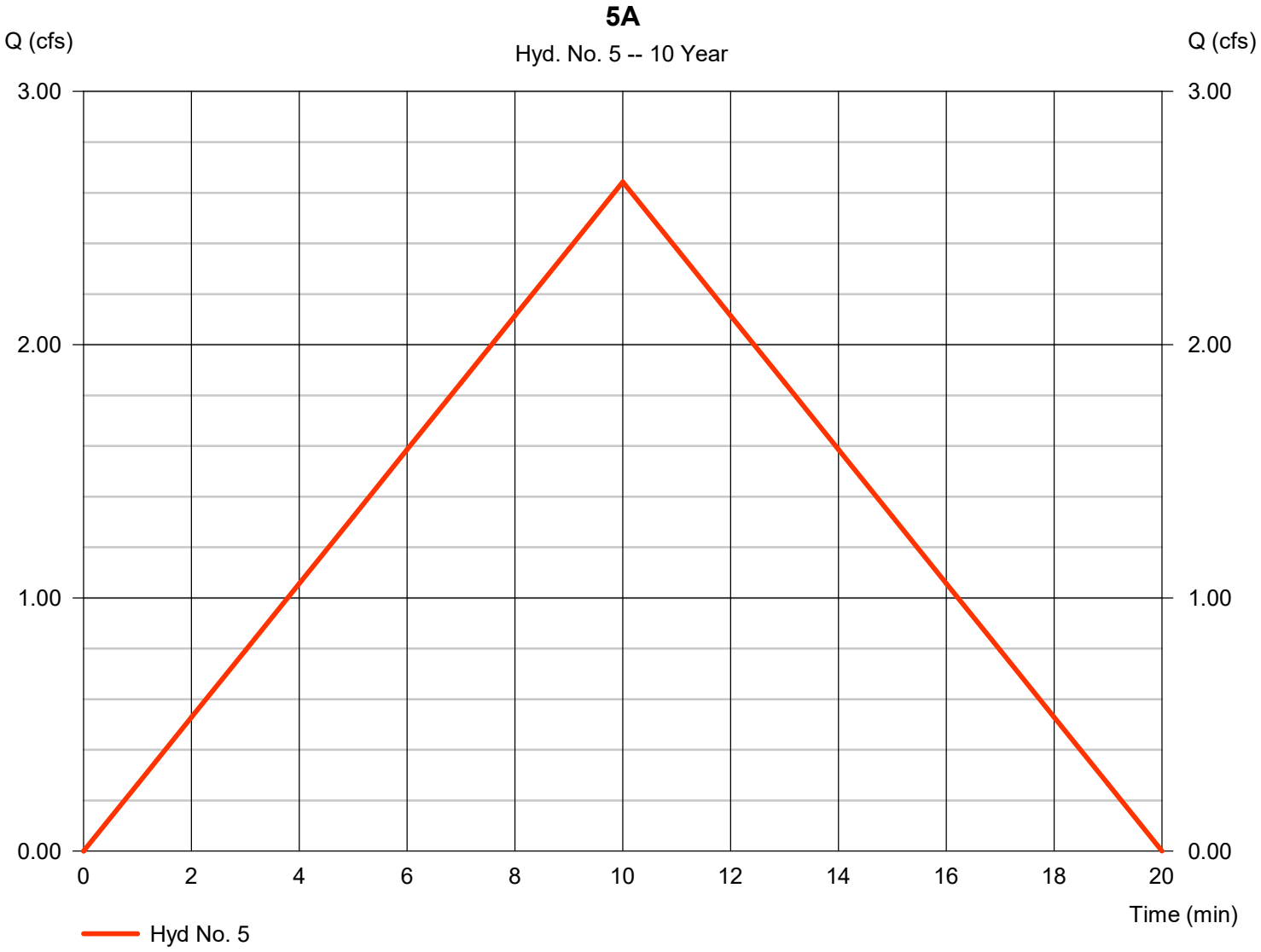


Hydrograph Report

Hyd. No. 5

5A

Hydrograph type	=	Rational	Peak discharge	=	2.643 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,586 cuft
Drainage area	=	1.410 ac	Runoff coeff.	=	0.45
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

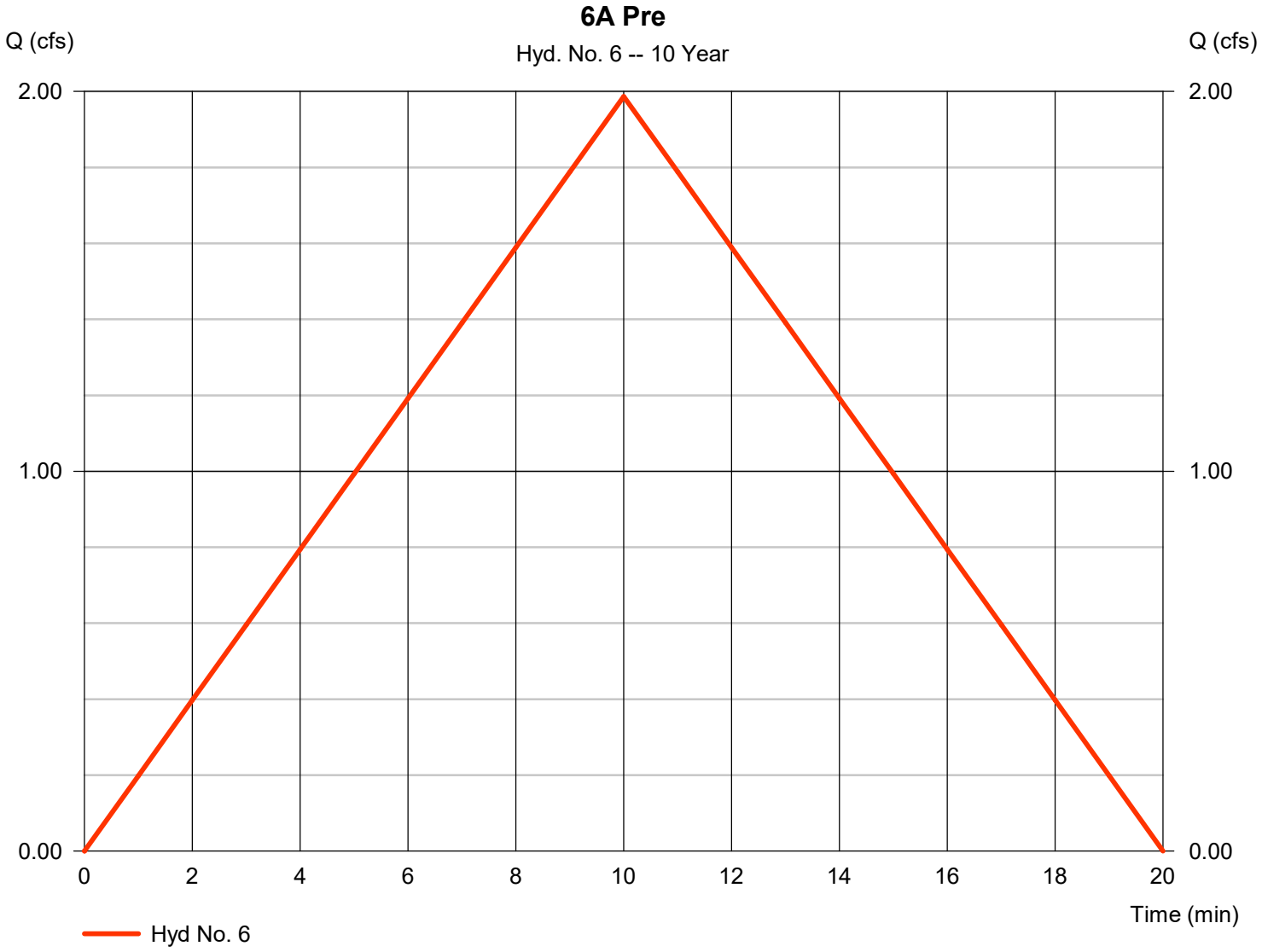


Hydrograph Report

Hyd. No. 6

6A Pre

Hydrograph type	=	Rational	Peak discharge	=	1.987 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,192 cuft
Drainage area	=	1.060 ac	Runoff coeff.	=	0.45
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

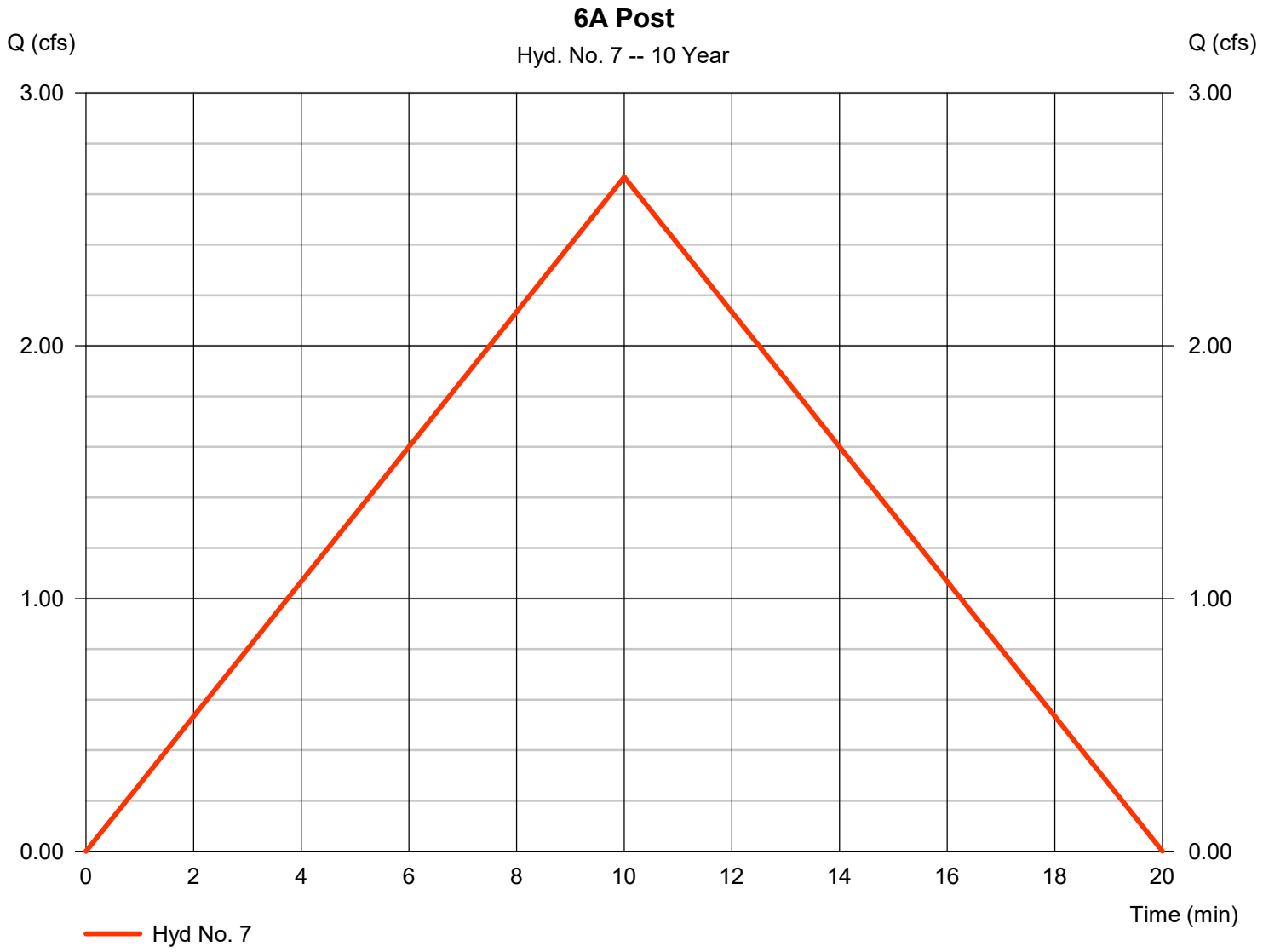


Hydrograph Report

Hyd. No. 7

6A Post

Hydrograph type	=	Rational	Peak discharge	=	2.668 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,601 cuft
Drainage area	=	1.050 ac	Runoff coeff.	=	0.61
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1



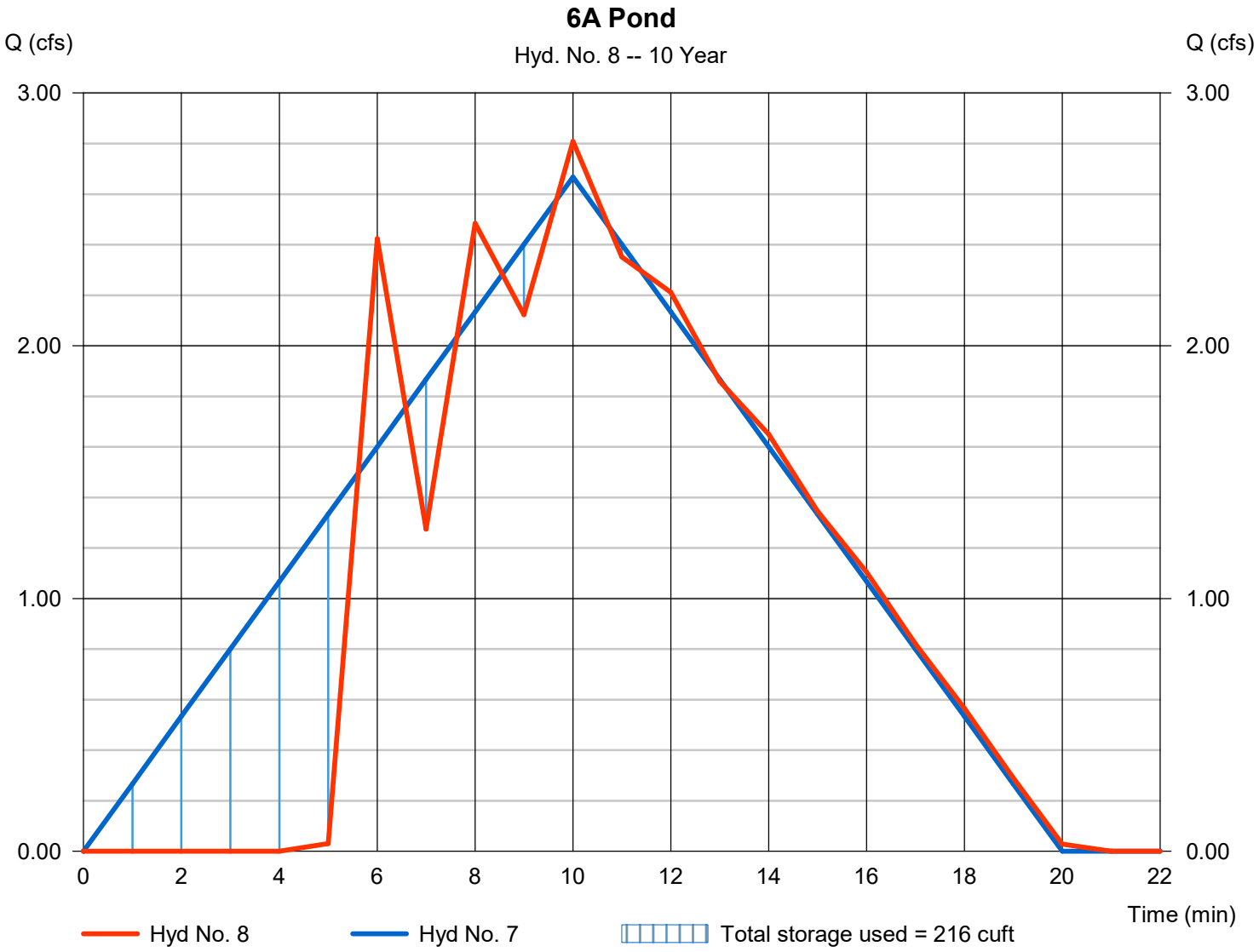
Hydrograph Report

Hyd. No. 8

6A Pond

Hydrograph type	=	Reservoir	Peak discharge	=	2.808 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,402 cuft
Inflow hyd. No.	=	7 - 6A Post	Max. Elevation	=	4238.89 ft
Reservoir name	=	Pond -3	Max. Storage	=	216 cuft

Storage Indication method used.

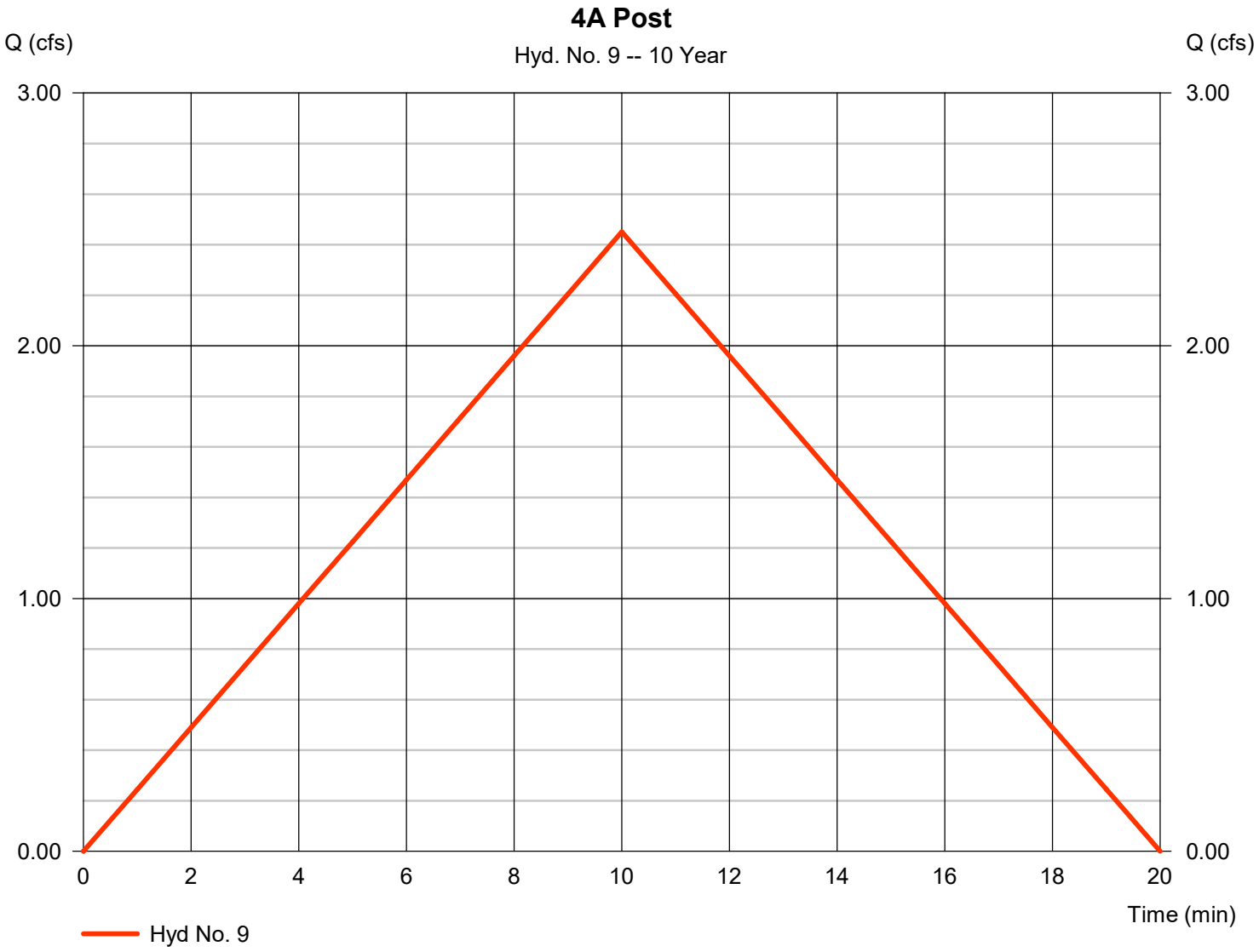


Hydrograph Report

Hyd. No. 9

4A Post

Hydrograph type	=	Rational	Peak discharge	=	2.450 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,470 cuft
Drainage area	=	1.110 ac	Runoff coeff.	=	0.53
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

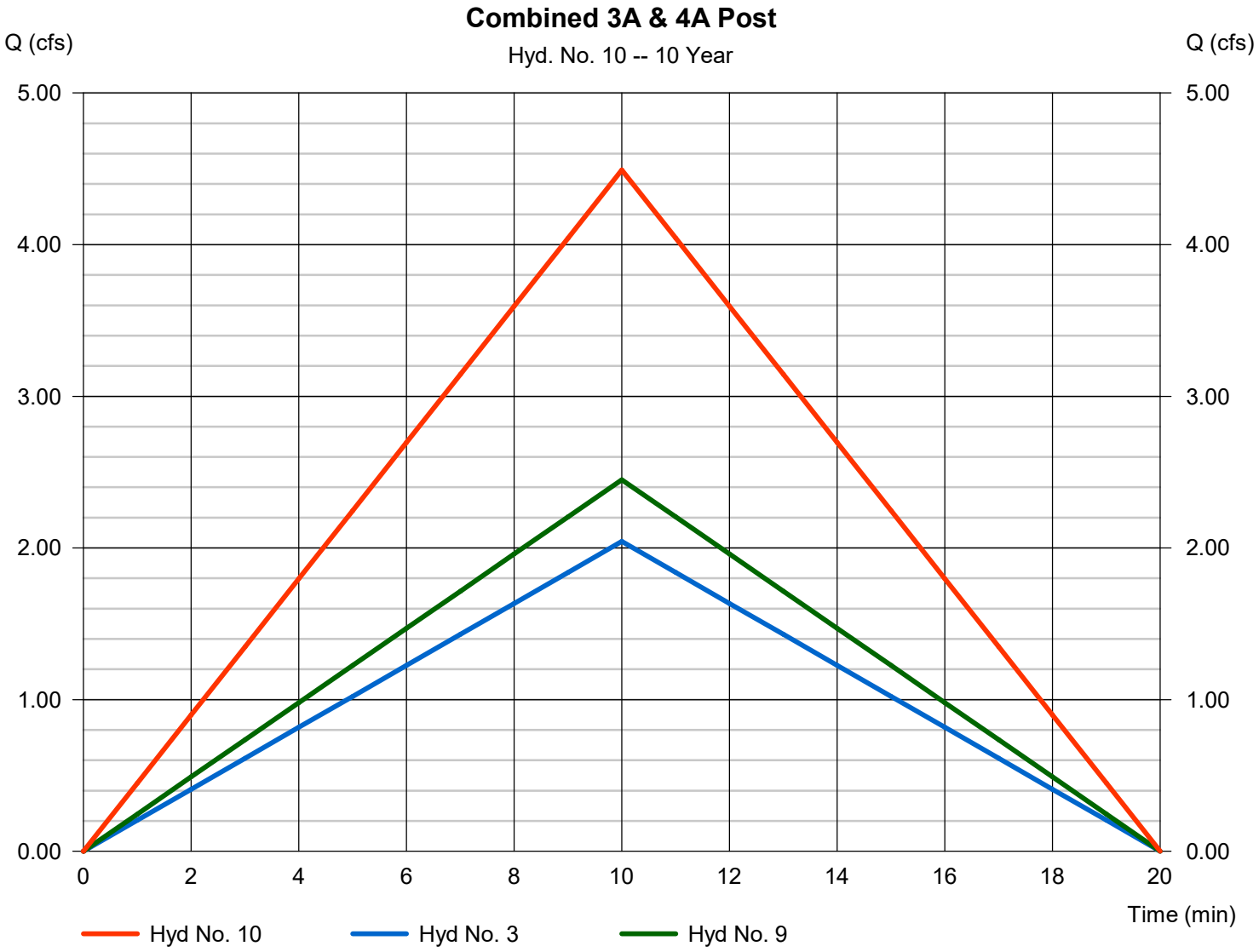


Hydrograph Report

Hyd. No. 10

Combined 3A & 4A Post

Hydrograph type	= Combine	Peak discharge	= 4.493 cfs
Storm frequency	= 10 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 2,696 cuft
Inflow hyds.	= 3, 9	Contrib. drain. area	= 2.200 ac



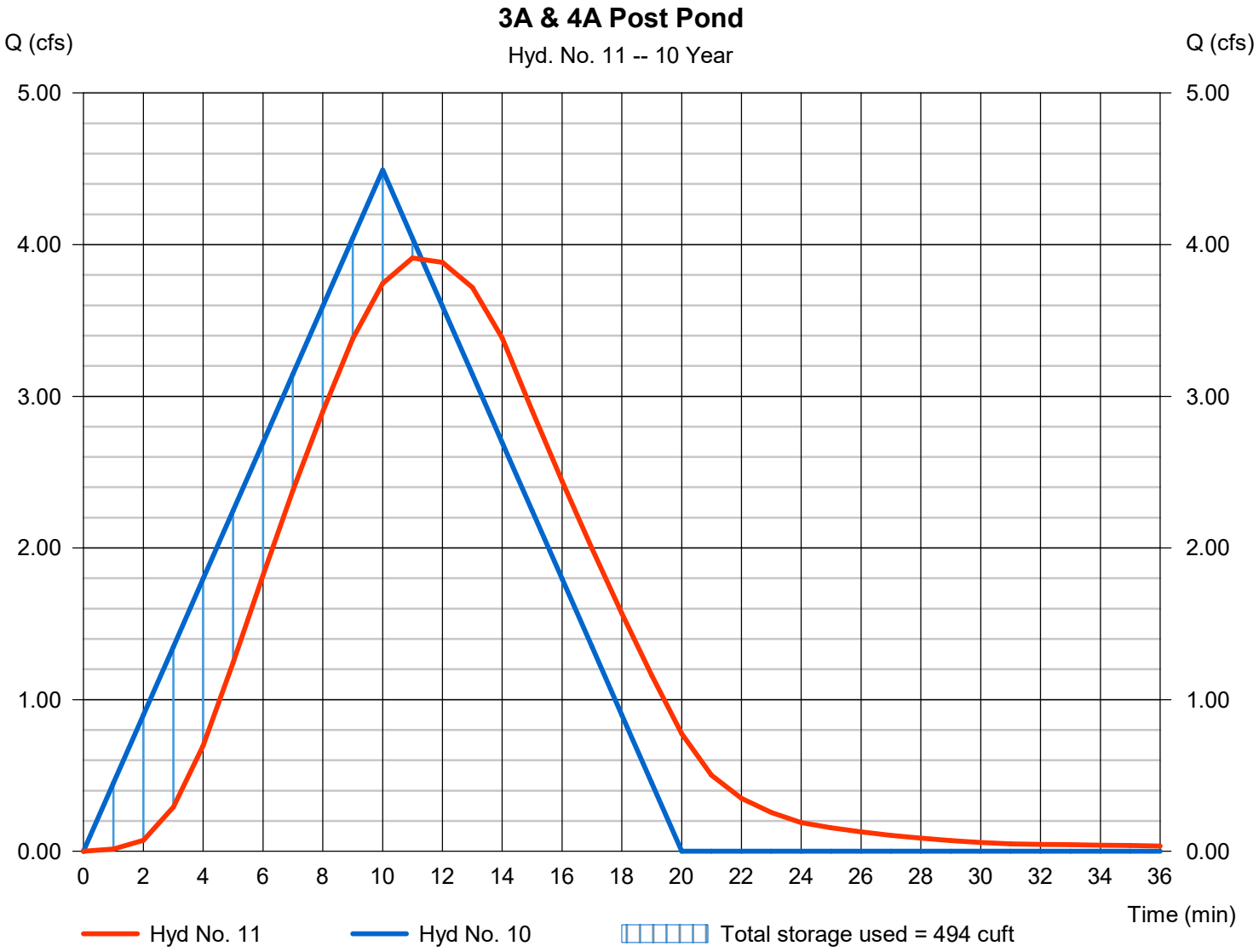
Hydrograph Report

Hyd. No. 11

3A & 4A Post Pond

Hydrograph type	=	Reservoir	Peak discharge	=	3.912 cfs
Storm frequency	=	10 yrs	Time to peak	=	11 min
Time interval	=	1 min	Hyd. volume	=	2,695 cuft
Inflow hyd. No.	=	10 - Combined 3A & 4A Post	Max. Elevation	=	4264.07 ft
Reservoir name	=	Pond -2	Max. Storage	=	494 cuft

Storage Indication method used.

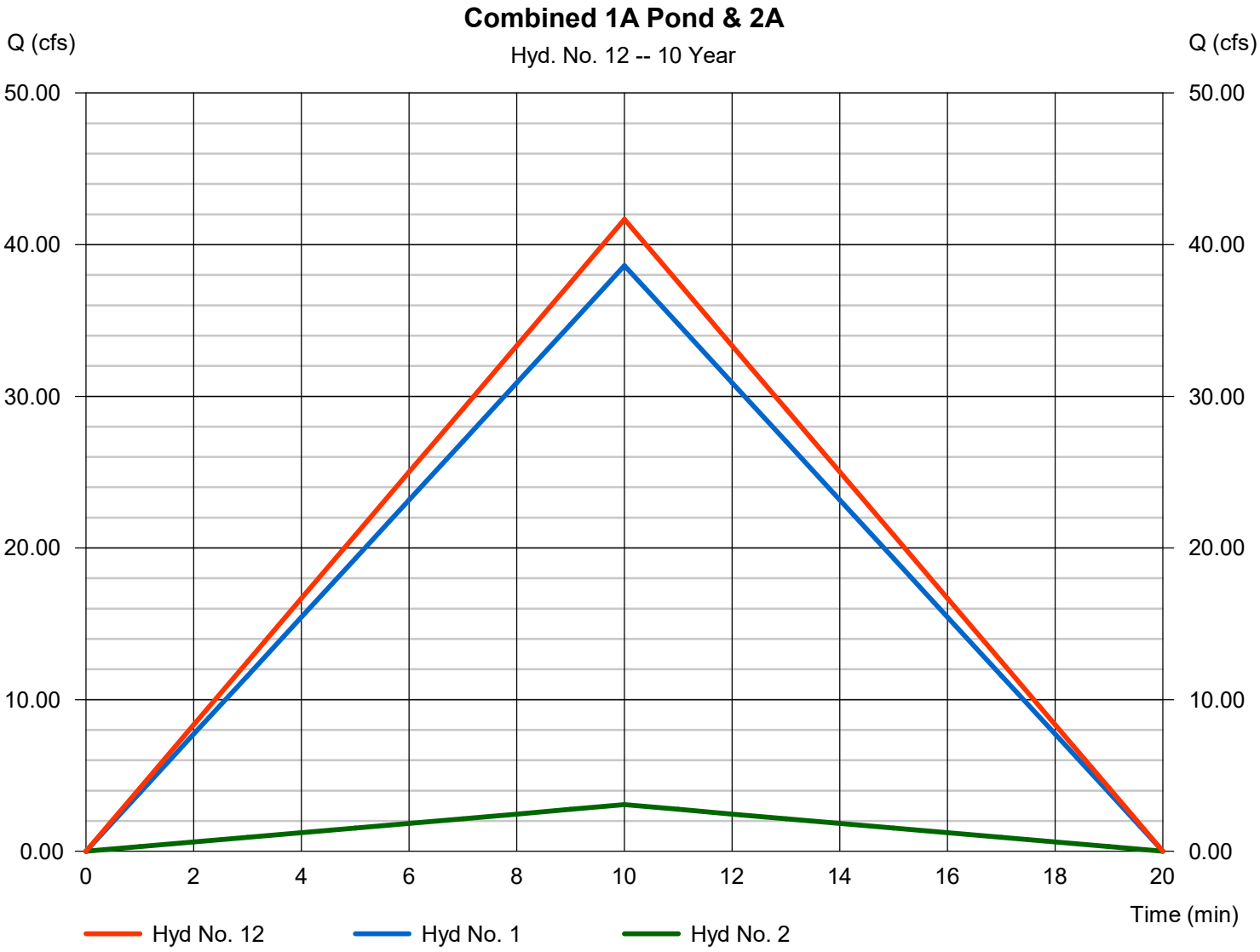


Hydrograph Report

Hyd. No. 12

Combined 1A Pond & 2A

Hydrograph type	= Combine	Peak discharge	= 41.68 cfs
Storm frequency	= 10 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 25,007 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 21.940 ac

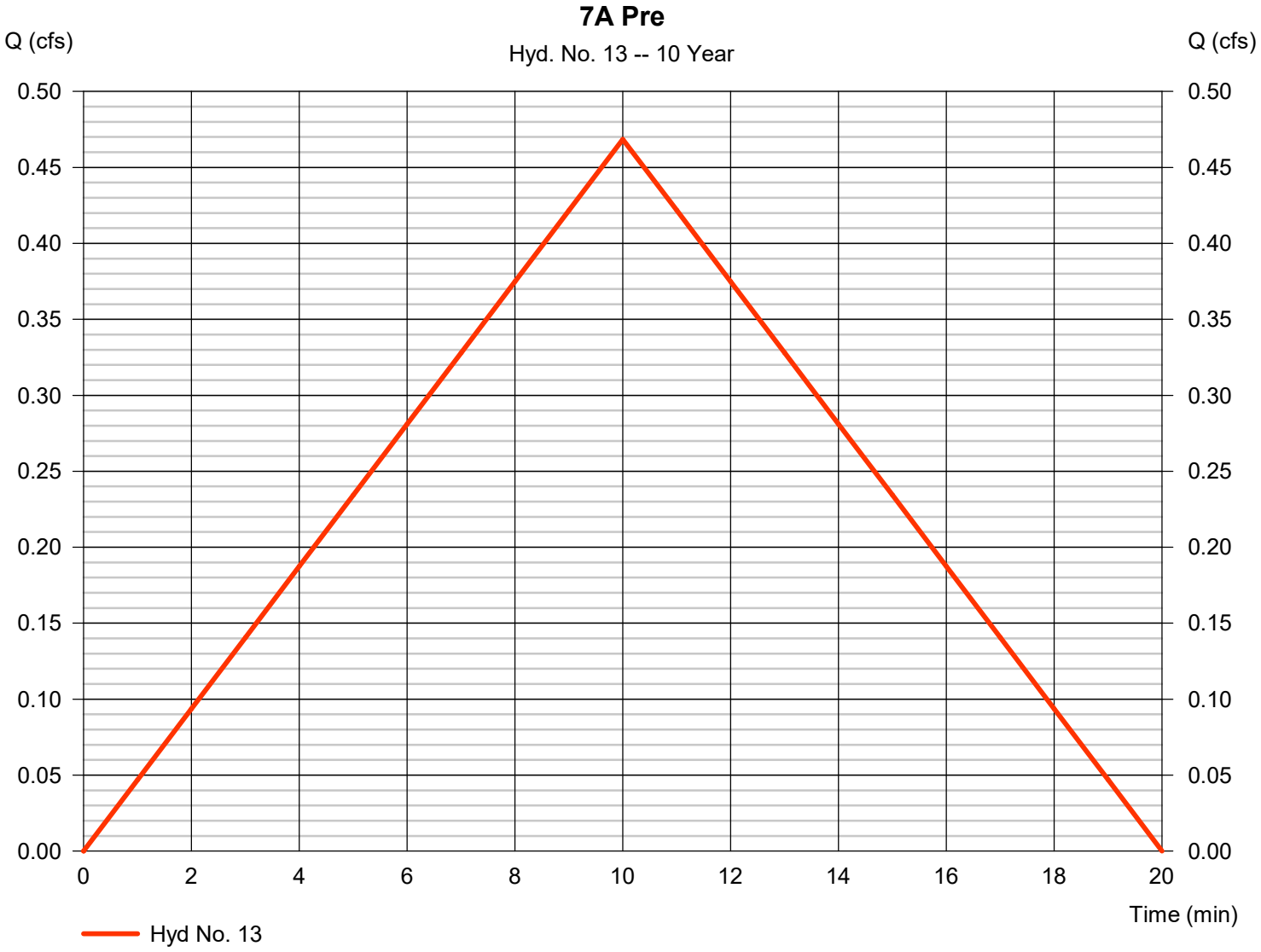


Hydrograph Report

Hyd. No. 13

7A Pre

Hydrograph type	=	Rational	Peak discharge	=	0.469 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	281 cuft
Drainage area	=	0.250 ac	Runoff coeff.	=	0.45
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

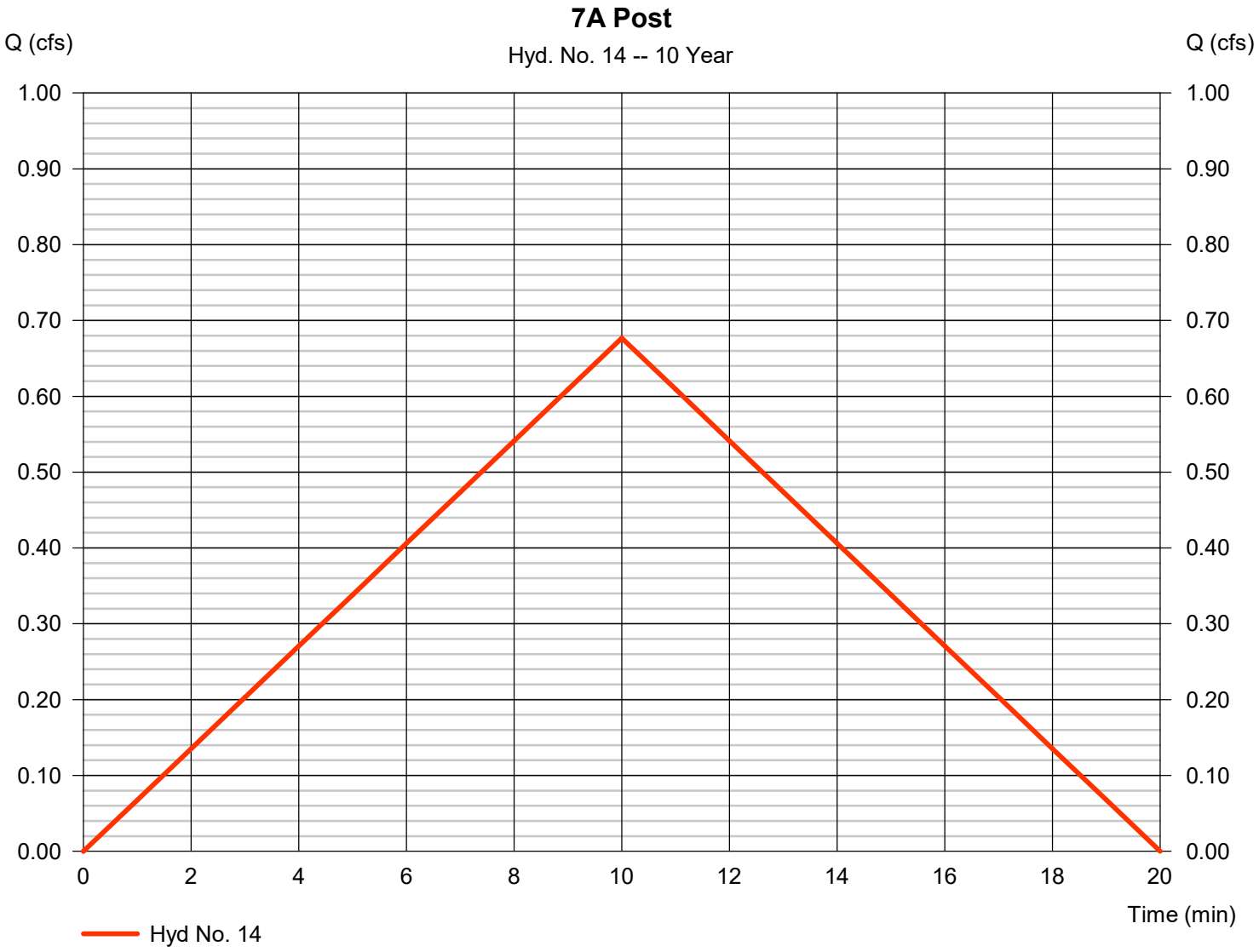


Hydrograph Report

Hyd. No. 14

7A Post

Hydrograph type	=	Rational	Peak discharge	=	0.677 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	406 cuft
Drainage area	=	0.250 ac	Runoff coeff.	=	0.65
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

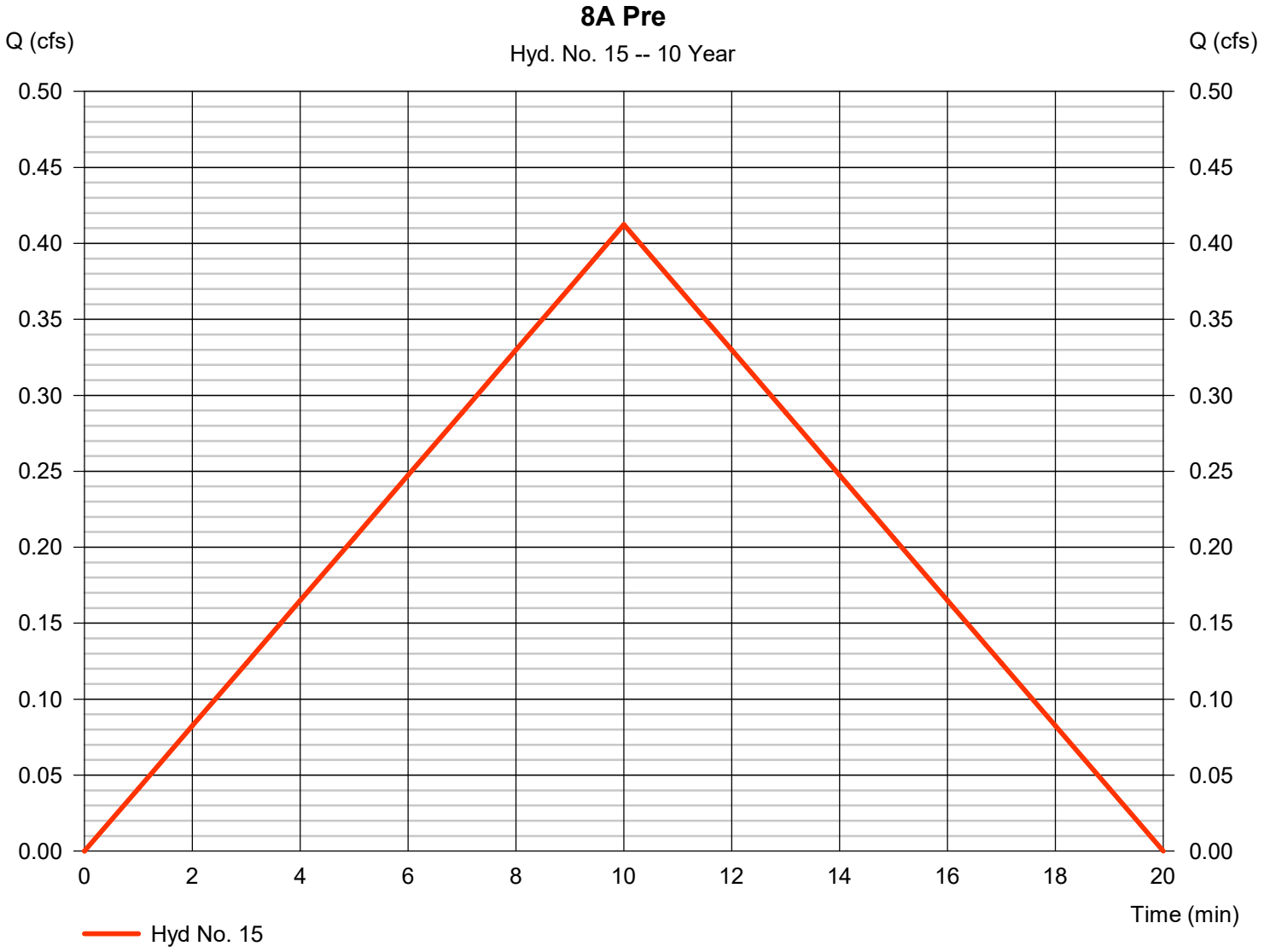


Hydrograph Report

Hyd. No. 15

8A Pre

Hydrograph type	=	Rational	Peak discharge	=	0.412 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	247 cuft
Drainage area	=	0.220 ac	Runoff coeff.	=	0.45
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

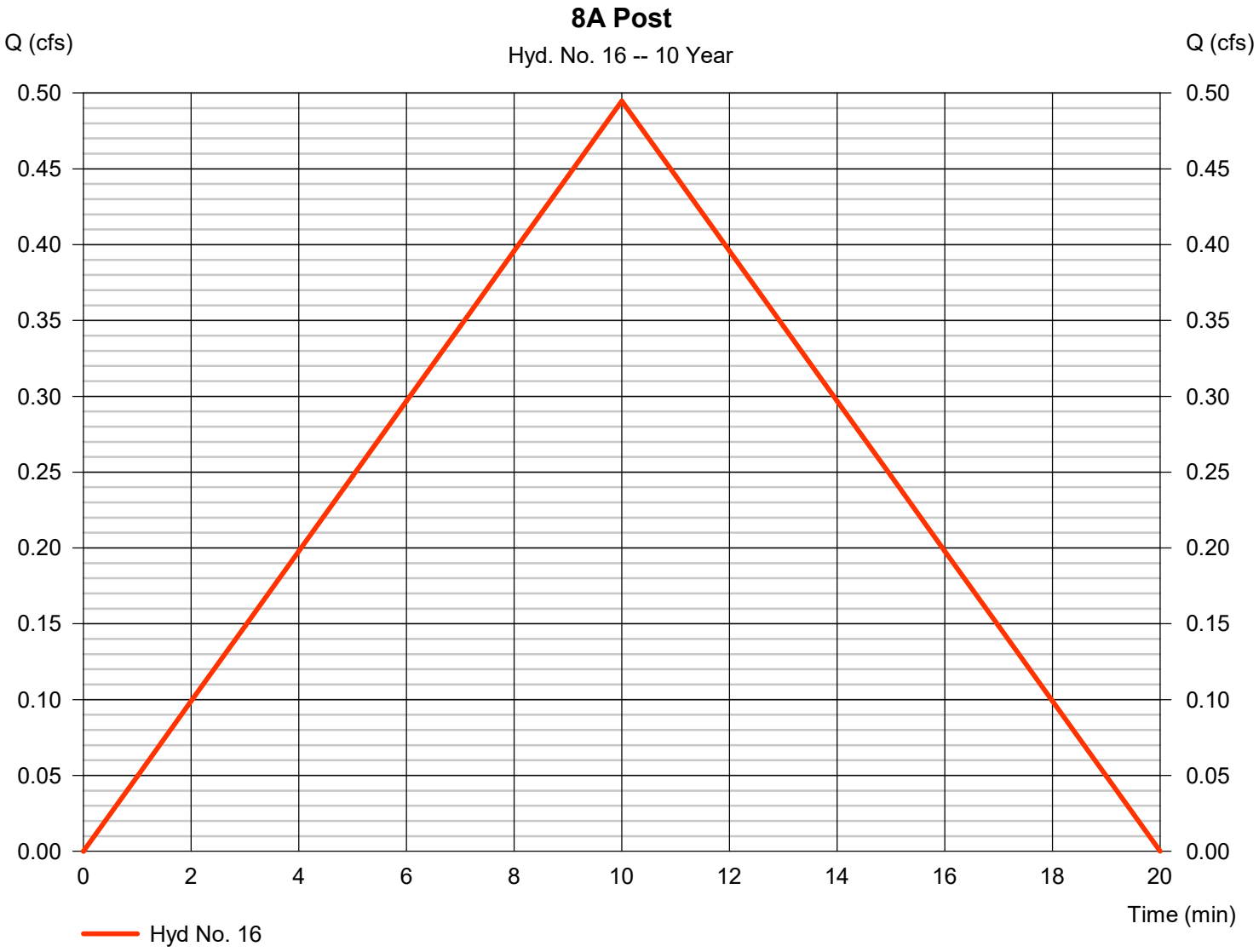


Hydrograph Report

Hyd. No. 16

8A Post

Hydrograph type	=	Rational	Peak discharge	=	0.495 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	297 cuft
Drainage area	=	0.220 ac	Runoff coeff.	=	0.54
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

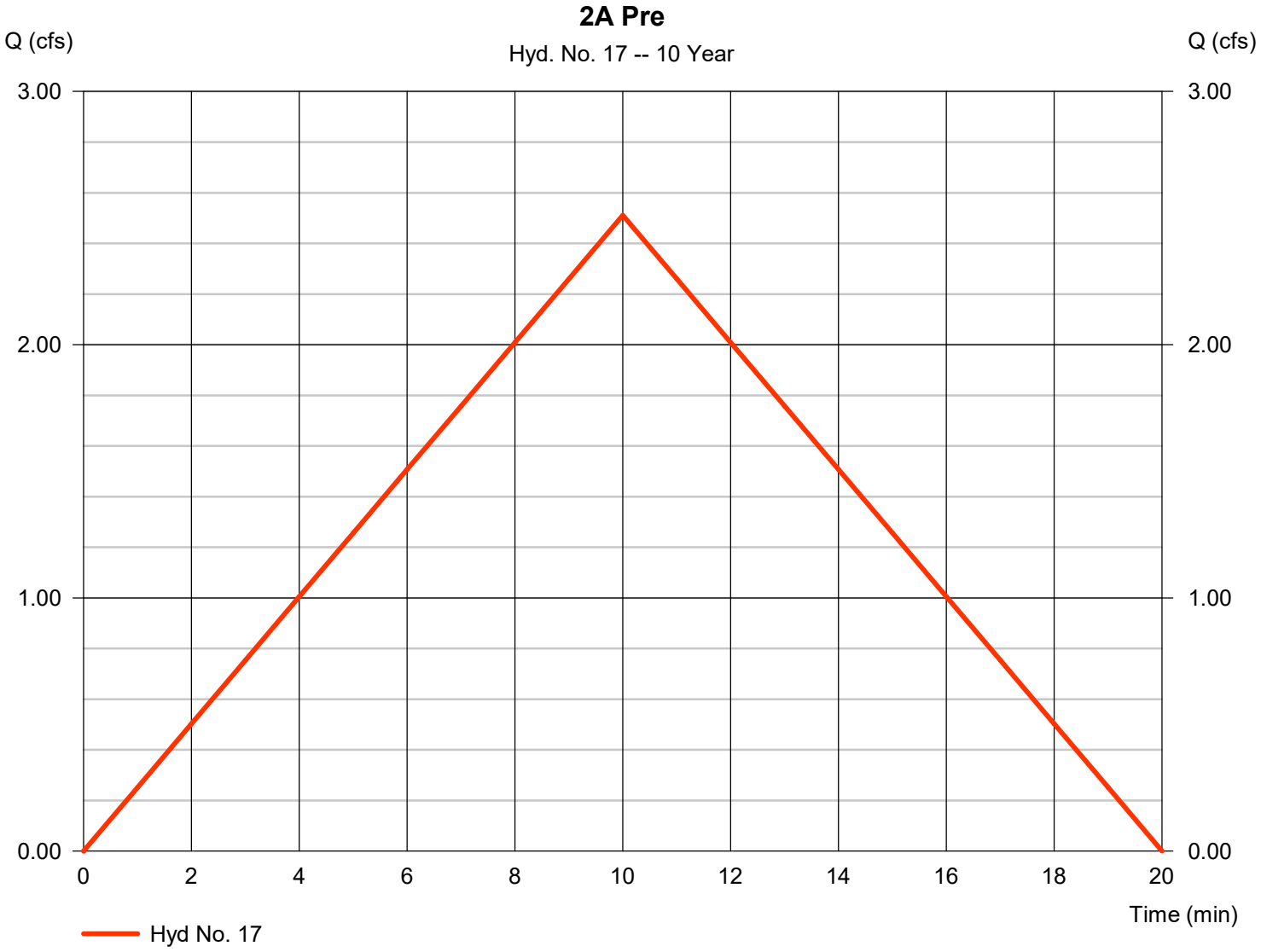


Hydrograph Report

Hyd. No. 17

2A Pre

Hydrograph type	=	Rational	Peak discharge	=	2.511 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,507 cuft
Drainage area	=	1.340 ac	Runoff coeff.	=	0.45
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

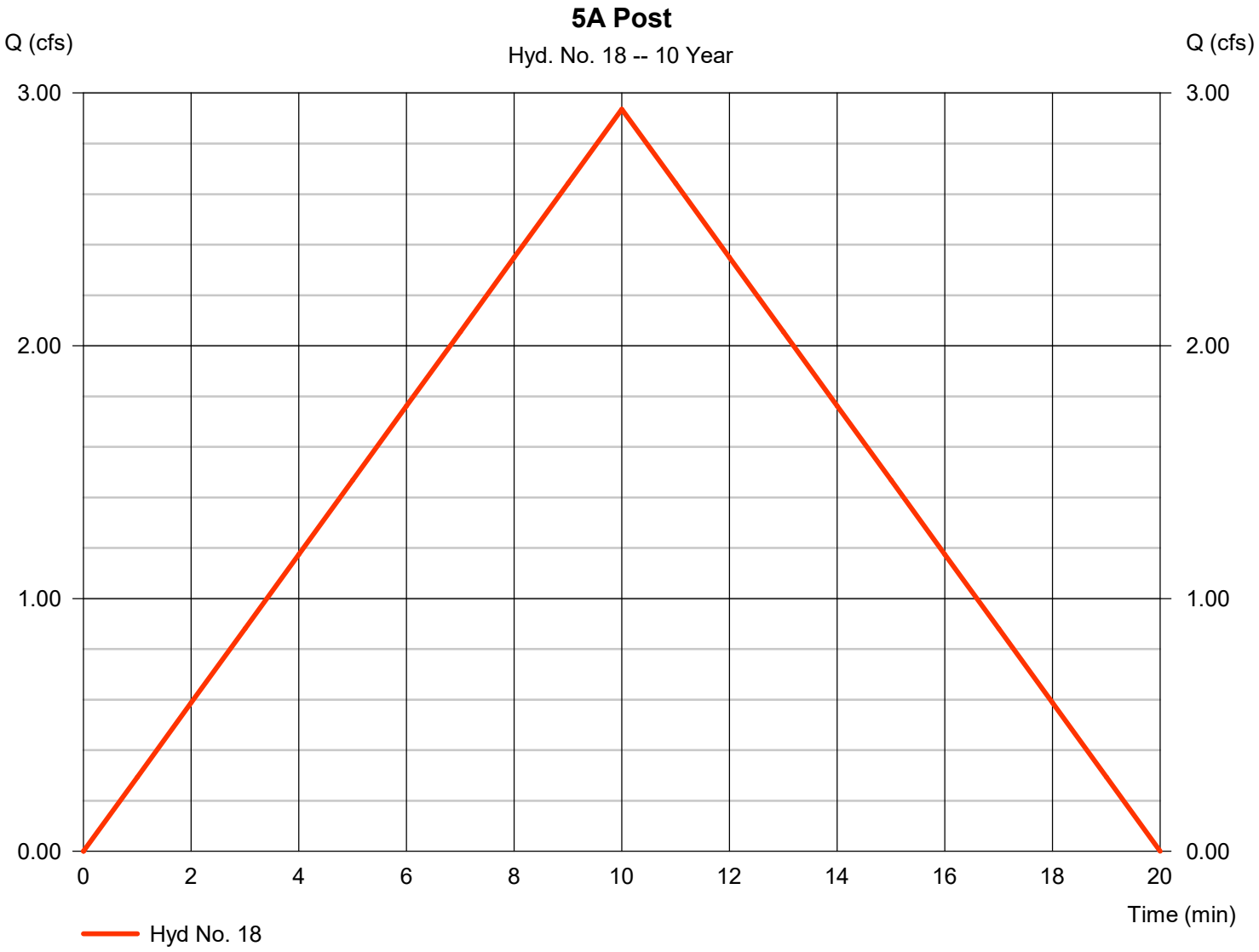


Hydrograph Report

Hyd. No. 18

5A Post

Hydrograph type	=	Rational	Peak discharge	=	2.936 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,762 cuft
Drainage area	=	1.410 ac	Runoff coeff.	=	0.5
Intensity	=	4.165 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

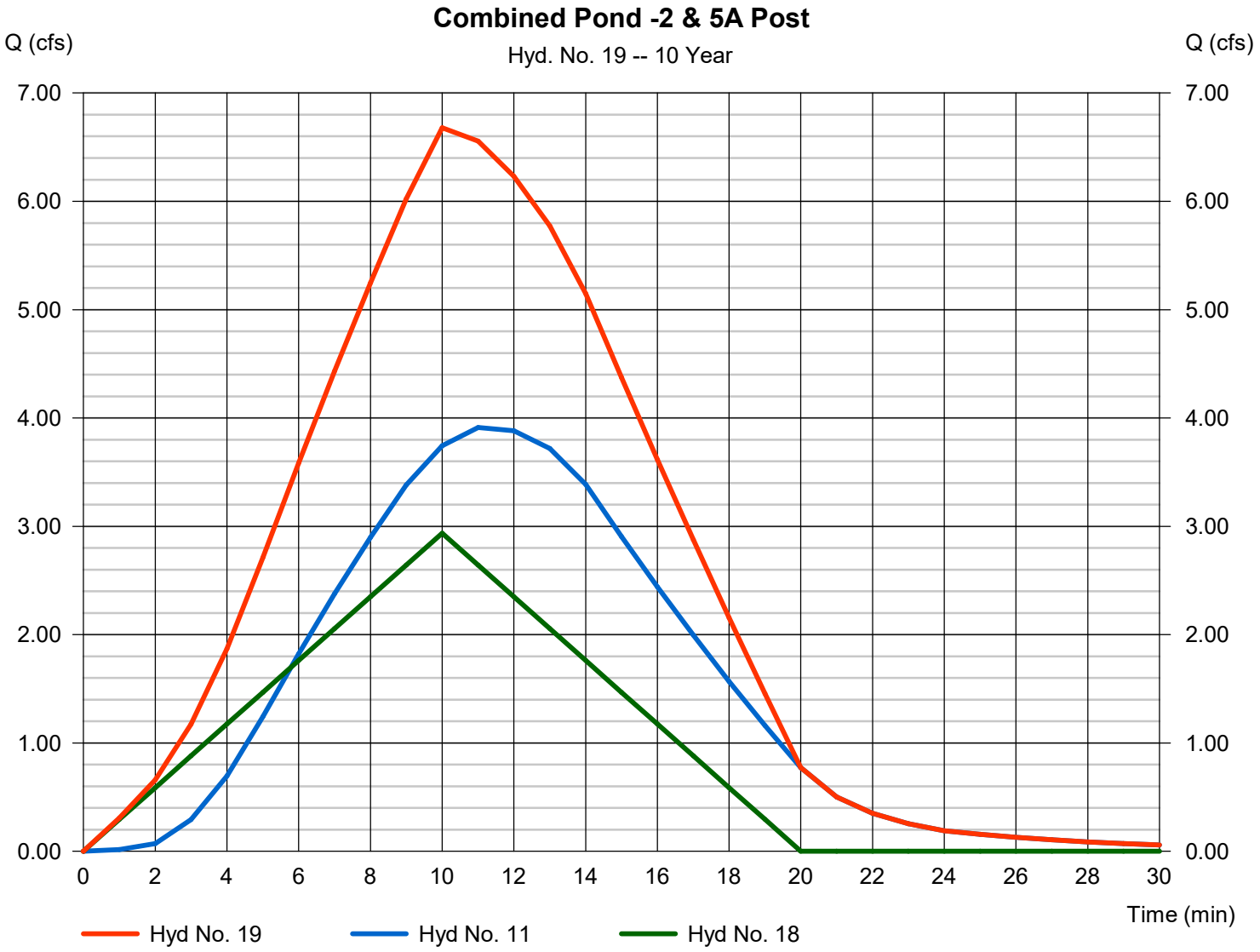


Hydrograph Report

Hyd. No. 19

Combined Pond -2 & 5A Post

Hydrograph type	= Combine	Peak discharge	= 6.680 cfs
Storm frequency	= 10 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 4,457 cuft
Inflow hyds.	= 11, 18	Contrib. drain. area	= 1.410 ac

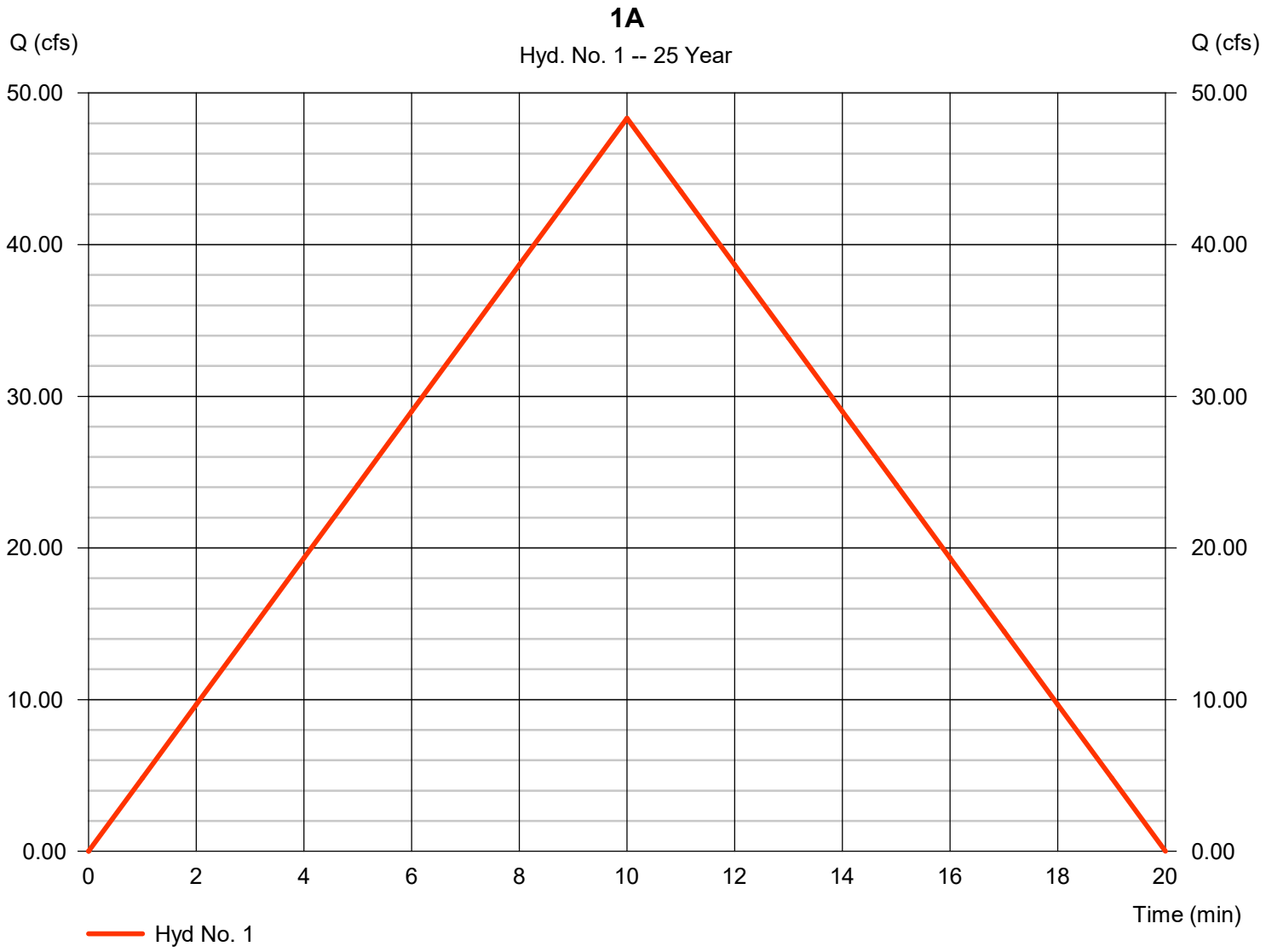


Hydrograph Report

Hyd. No. 1

1A

Hydrograph type	=	Rational	Peak discharge	=	48.35 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	29,008 cuft
Drainage area	=	20.600 ac	Runoff coeff.	=	0.45
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

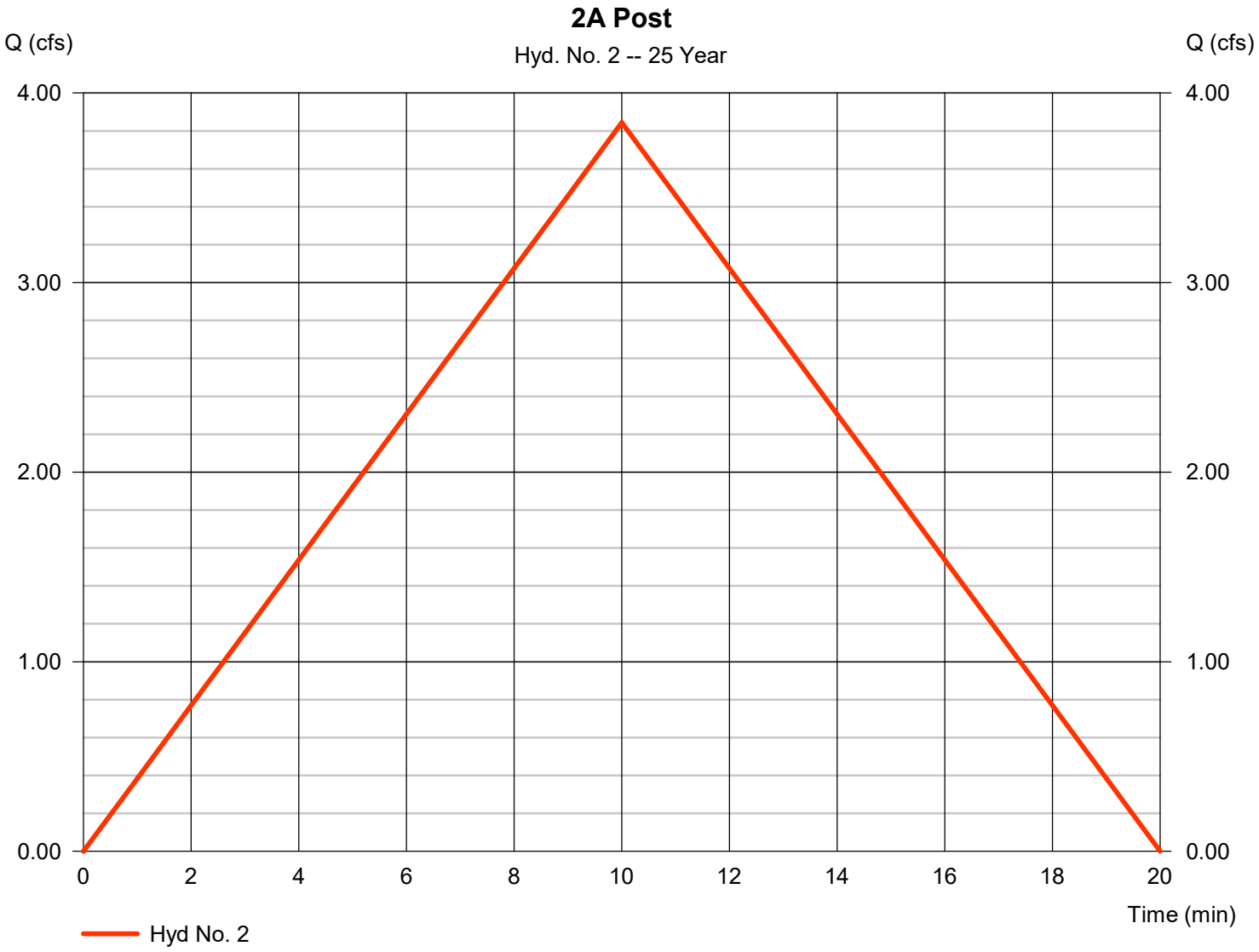


Hydrograph Report

Hyd. No. 2

2A Post

Hydrograph type	=	Rational	Peak discharge	=	3.844 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,306 cuft
Drainage area	=	1.340 ac	Runoff coeff.	=	0.55
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

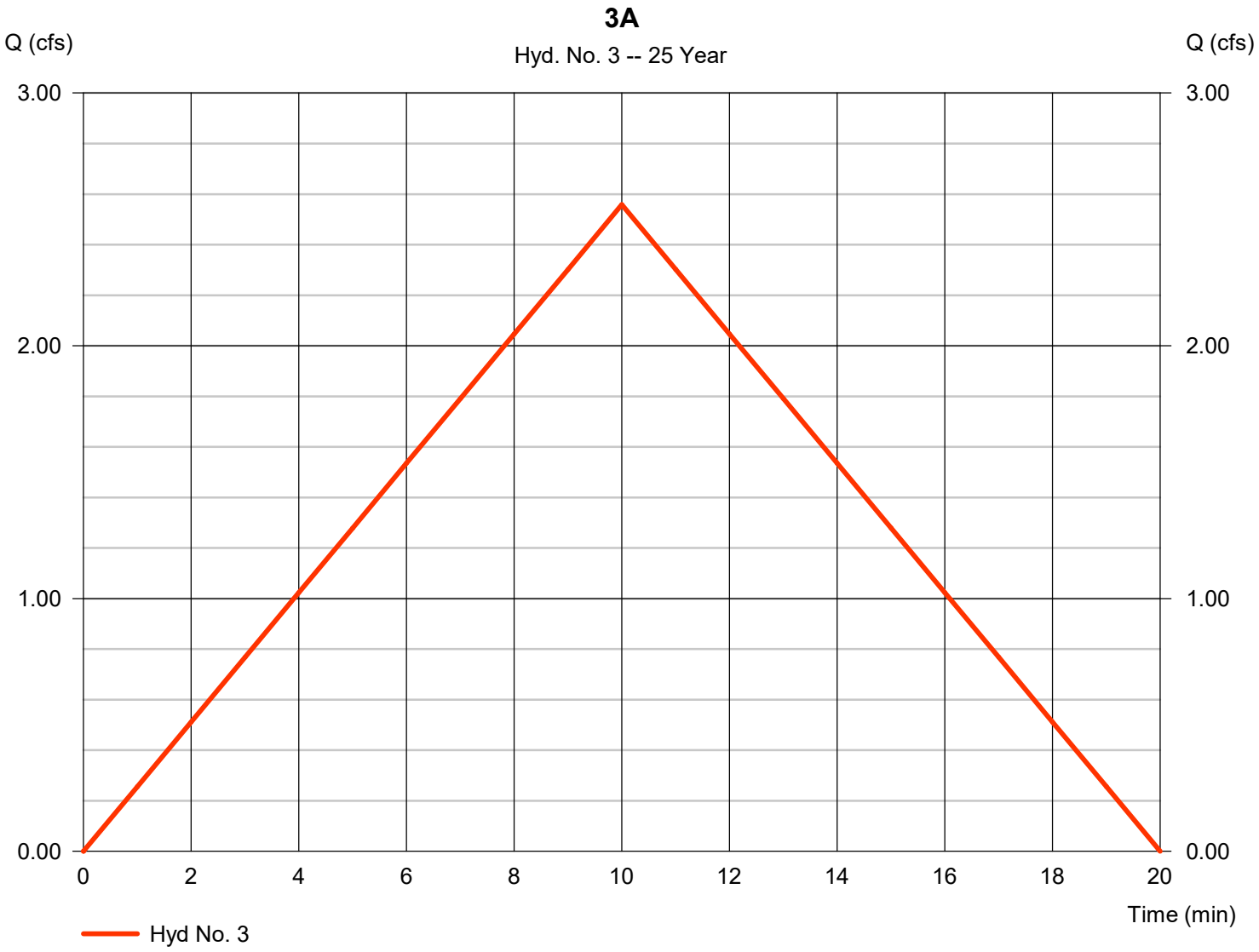


Hydrograph Report

Hyd. No. 3

3A

Hydrograph type	=	Rational	Peak discharge	=	2.558 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,535 cuft
Drainage area	=	1.090 ac	Runoff coeff.	=	0.45
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

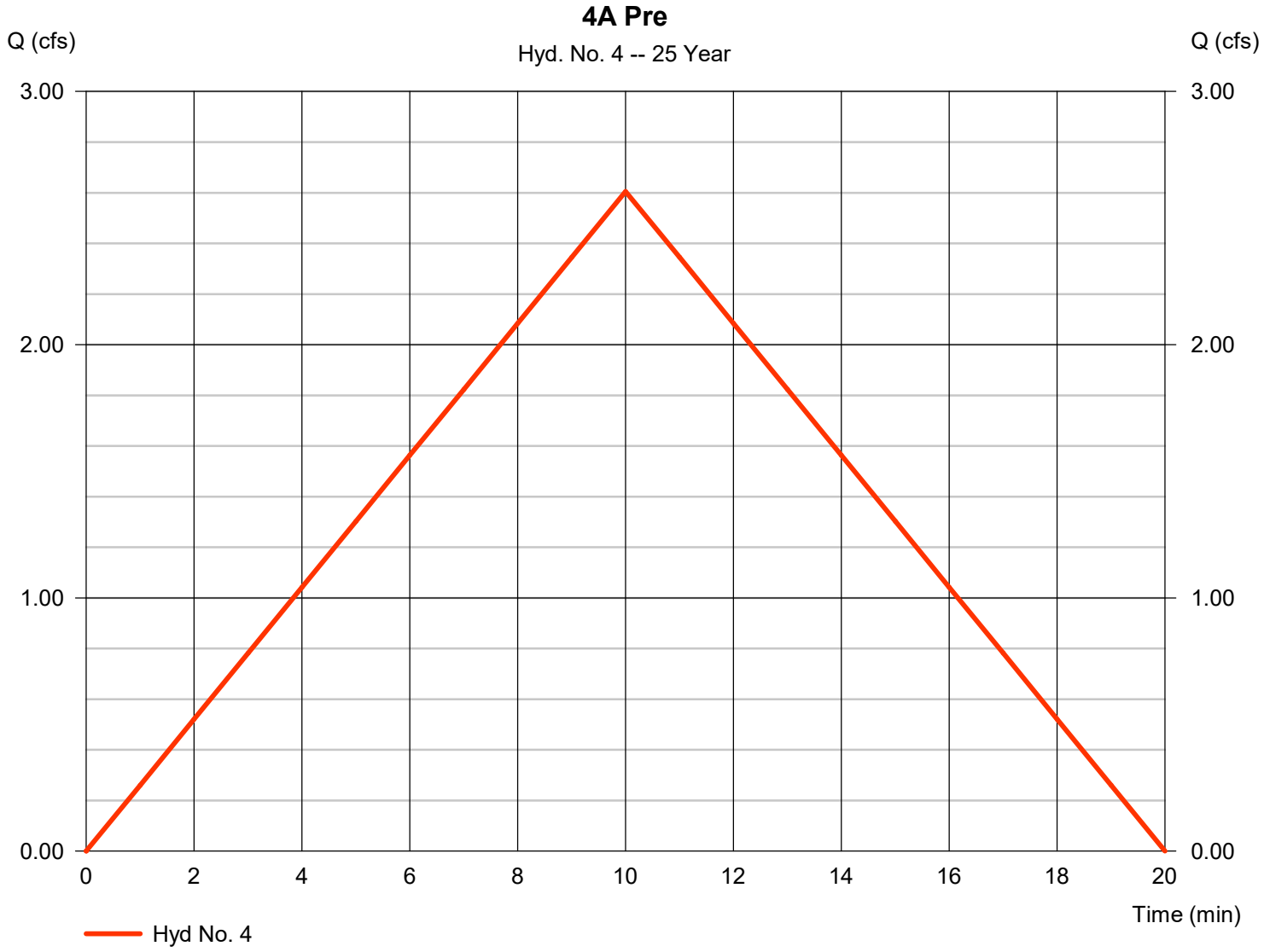


Hydrograph Report

Hyd. No. 4

4A Pre

Hydrograph type	=	Rational	Peak discharge	=	2.605 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,563 cuft
Drainage area	=	1.110 ac	Runoff coeff.	=	0.45
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

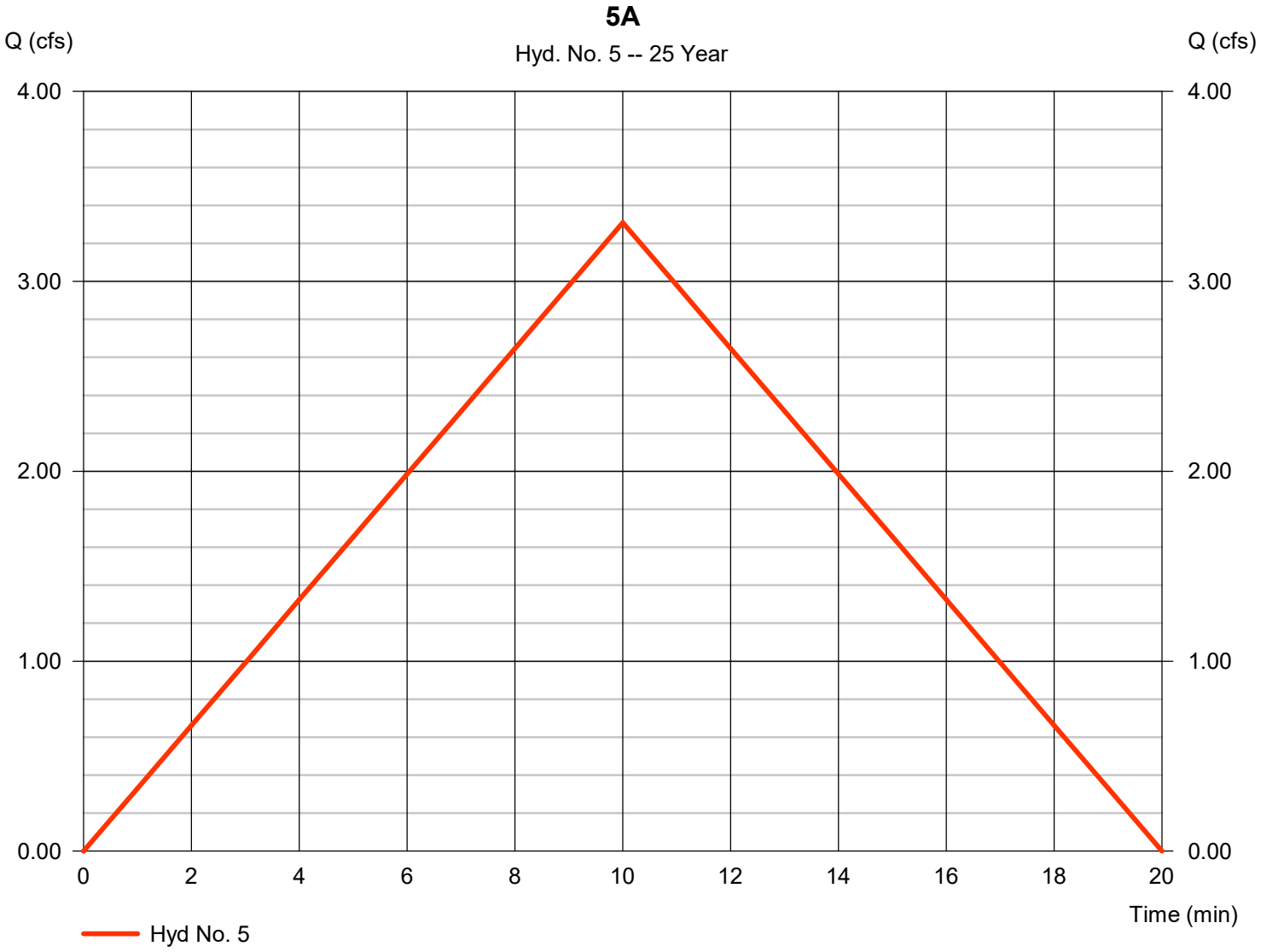


Hydrograph Report

Hyd. No. 5

5A

Hydrograph type	=	Rational	Peak discharge	=	3.309 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,985 cuft
Drainage area	=	1.410 ac	Runoff coeff.	=	0.45
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

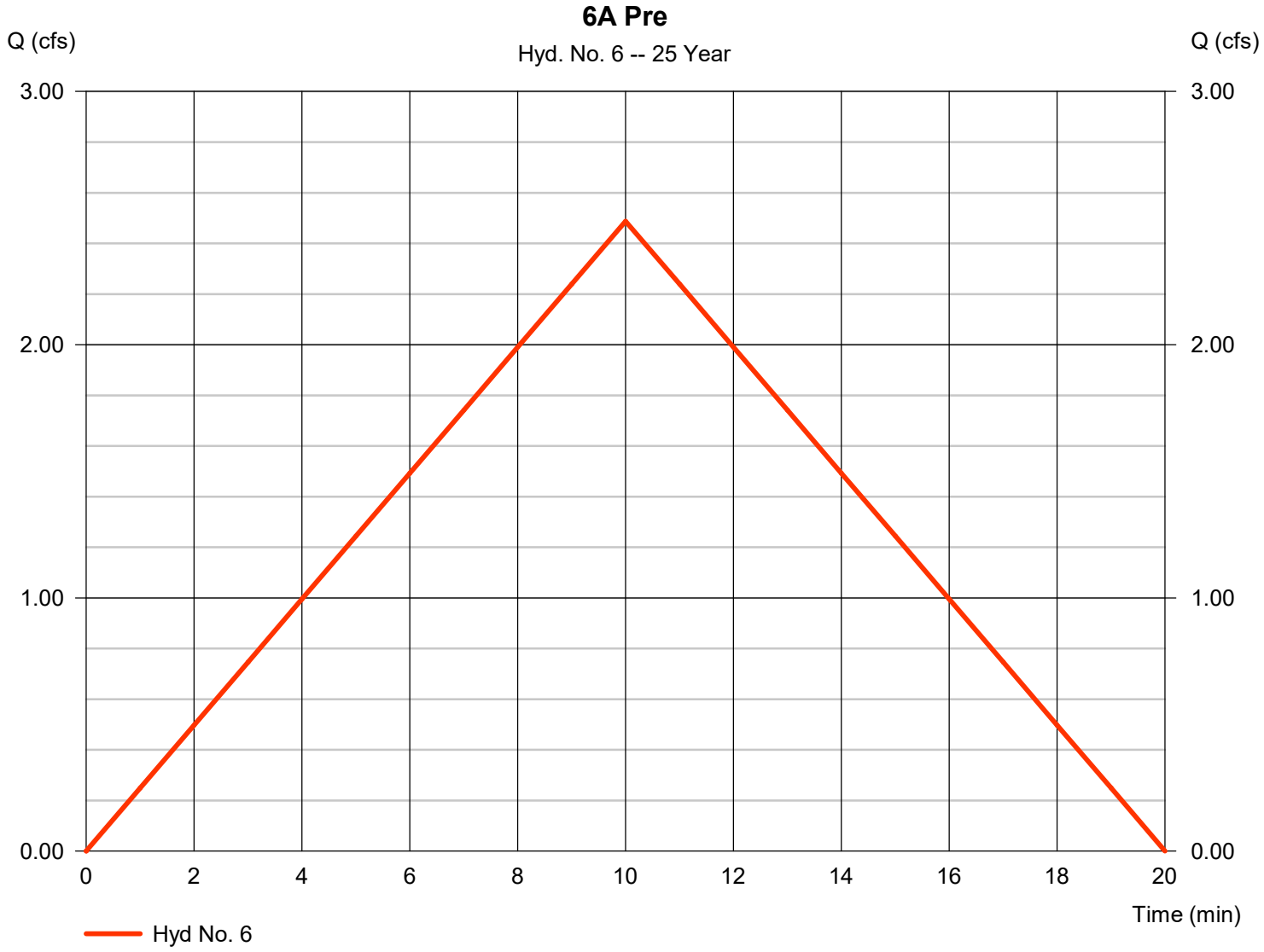


Hydrograph Report

Hyd. No. 6

6A Pre

Hydrograph type	=	Rational	Peak discharge	=	2.488 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,493 cuft
Drainage area	=	1.060 ac	Runoff coeff.	=	0.45
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

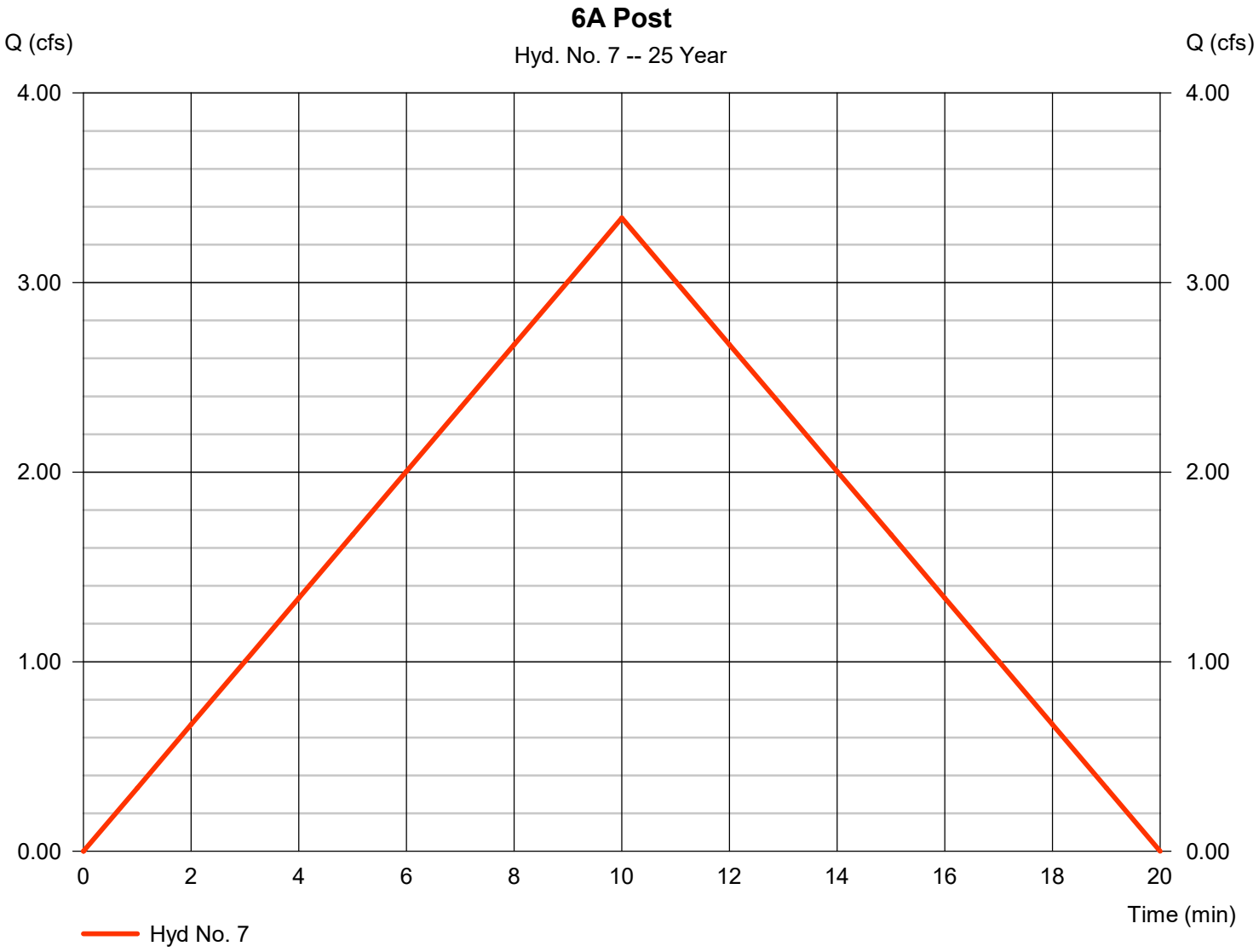


Hydrograph Report

Hyd. No. 7

6A Post

Hydrograph type	=	Rational	Peak discharge	=	3.340 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,004 cuft
Drainage area	=	1.050 ac	Runoff coeff.	=	0.61
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1



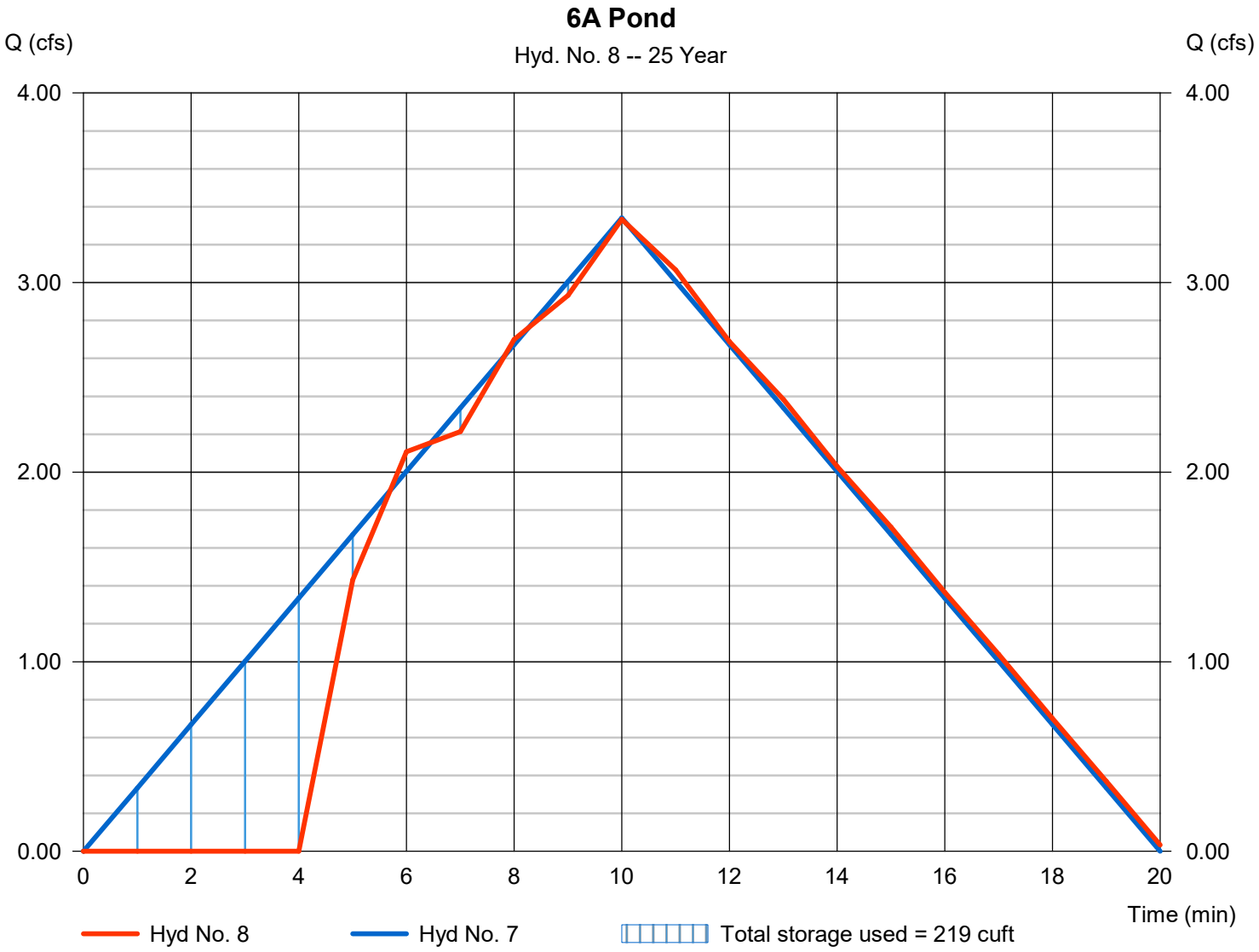
Hydrograph Report

Hyd. No. 8

6A Pond

Hydrograph type	=	Reservoir	Peak discharge	=	3.334 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,806 cuft
Inflow hyd. No.	=	7 - 6A Post	Max. Elevation	=	4239.26 ft
Reservoir name	=	Pond -3	Max. Storage	=	219 cuft

Storage Indication method used.

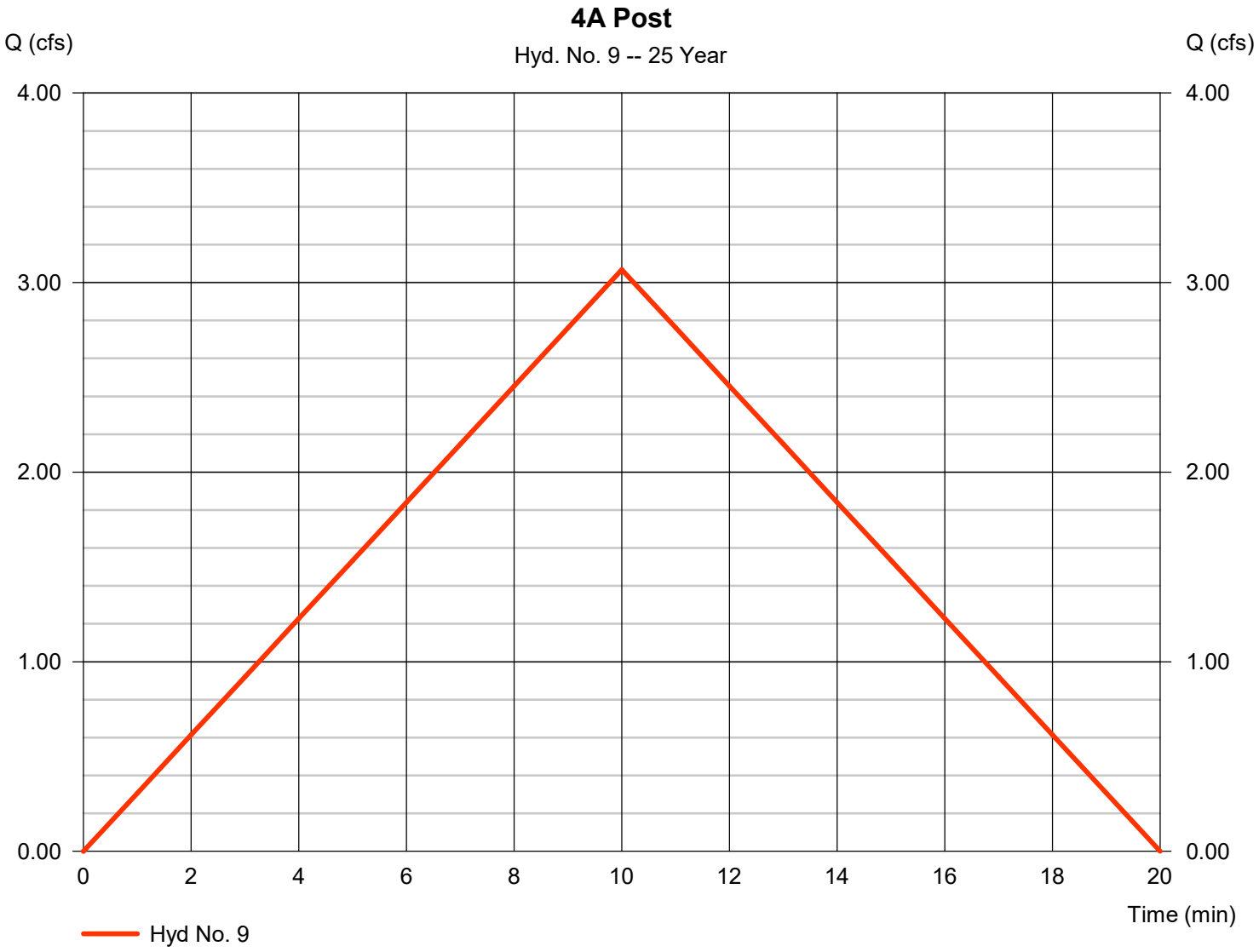


Hydrograph Report

Hyd. No. 9

4A Post

Hydrograph type	=	Rational	Peak discharge	=	3.068 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,841 cuft
Drainage area	=	1.110 ac	Runoff coeff.	=	0.53
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Report

Hyd. No. 10

Combined 3A & 4A Post

Hydrograph type	= Combine	Peak discharge	= 5.626 cfs
Storm frequency	= 25 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 3,376 cuft
Inflow hyds.	= 3, 9	Contrib. drain. area	= 2.200 ac

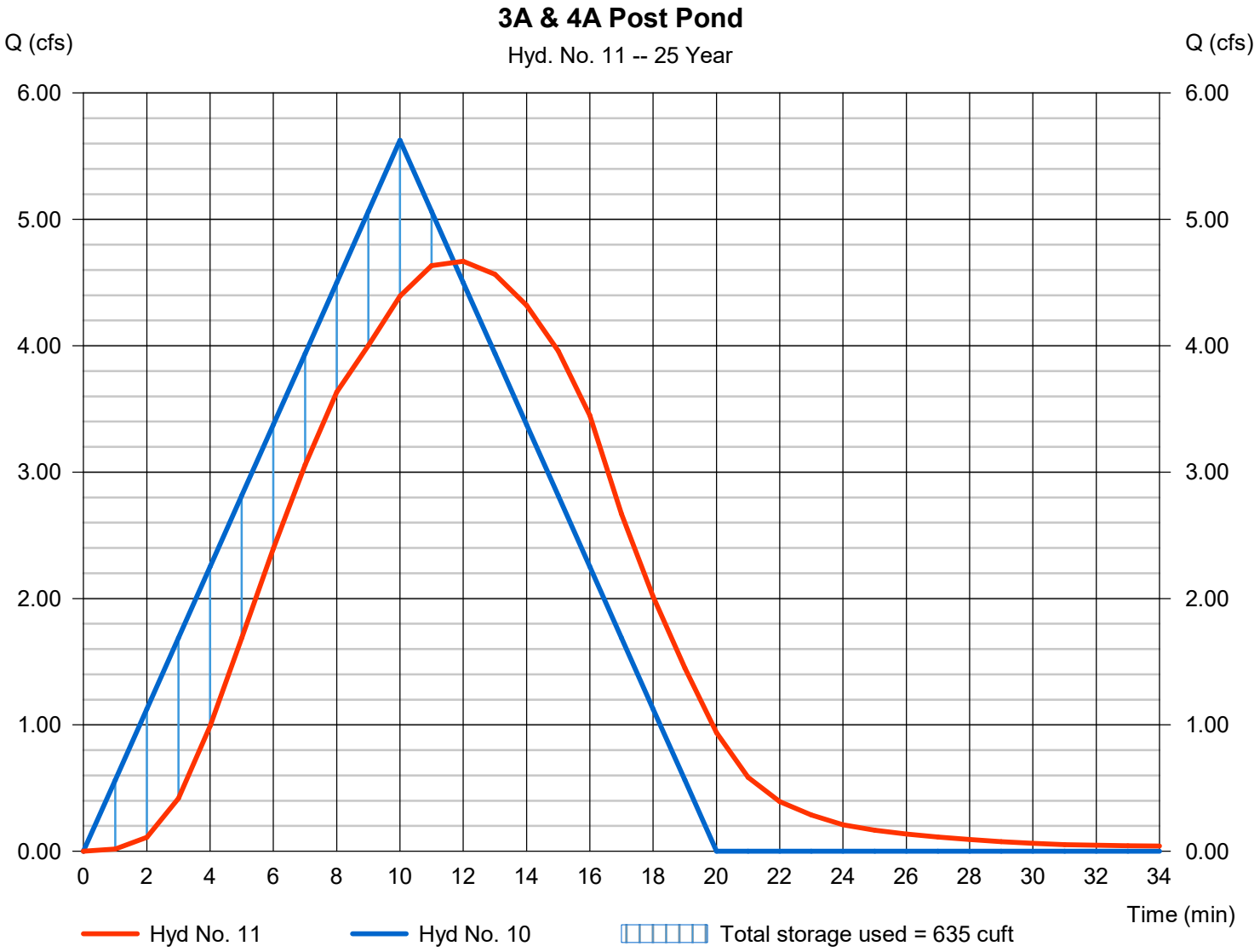
Hydrograph Report

Hyd. No. 11

3A & 4A Post Pond

Hydrograph type	=	Reservoir	Peak discharge	=	4.668 cfs
Storm frequency	=	25 yrs	Time to peak	=	12 min
Time interval	=	1 min	Hyd. volume	=	3,375 cuft
Inflow hyd. No.	=	10 - Combined 3A & 4A Post	Max. Elevation	=	4264.25 ft
Reservoir name	=	Pond -2	Max. Storage	=	635 cuft

Storage Indication method used.

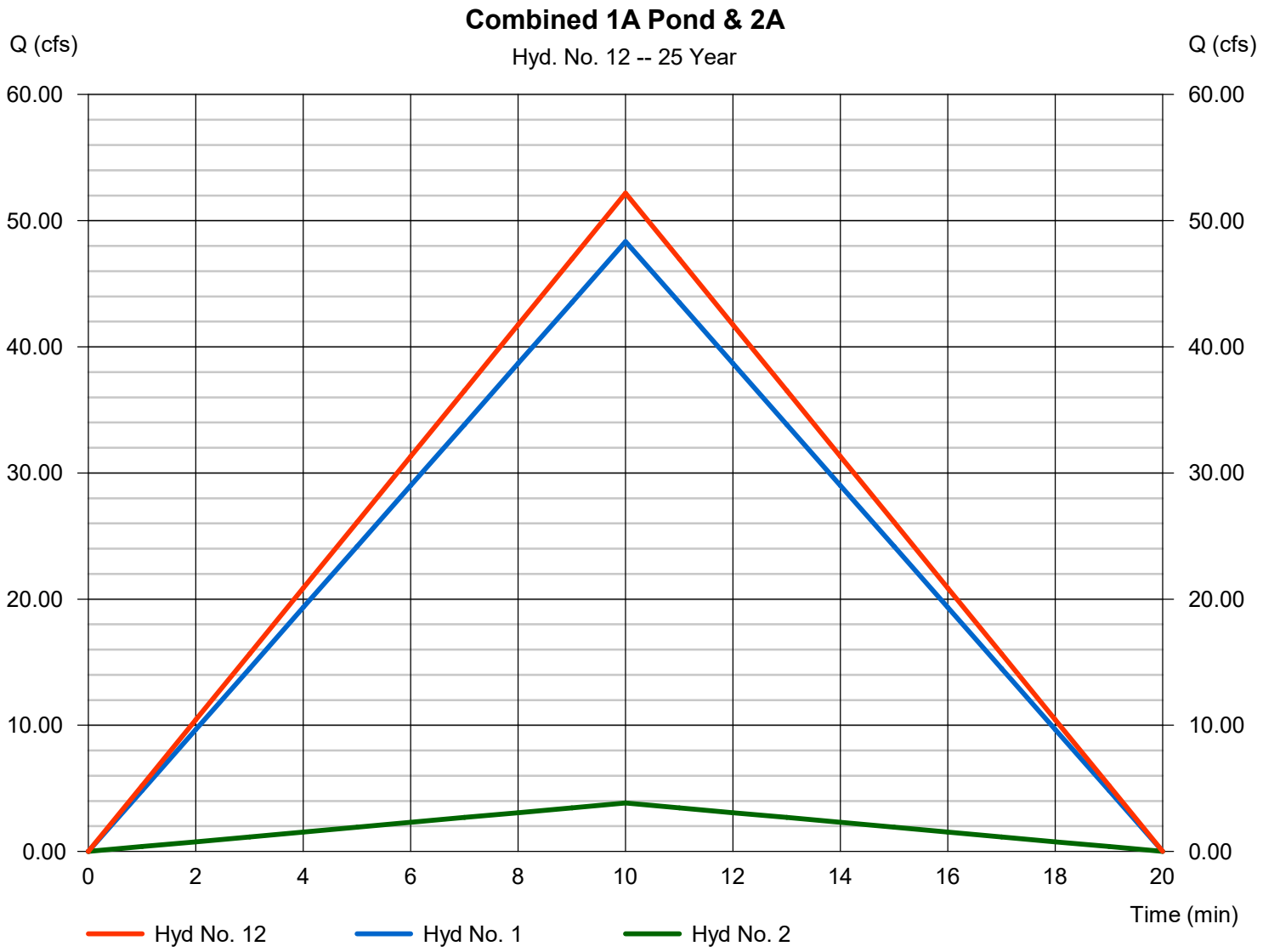


Hydrograph Report

Hyd. No. 12

Combined 1A Pond & 2A

Hydrograph type	= Combine	Peak discharge	= 52.19 cfs
Storm frequency	= 25 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 31,314 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 21.940 ac

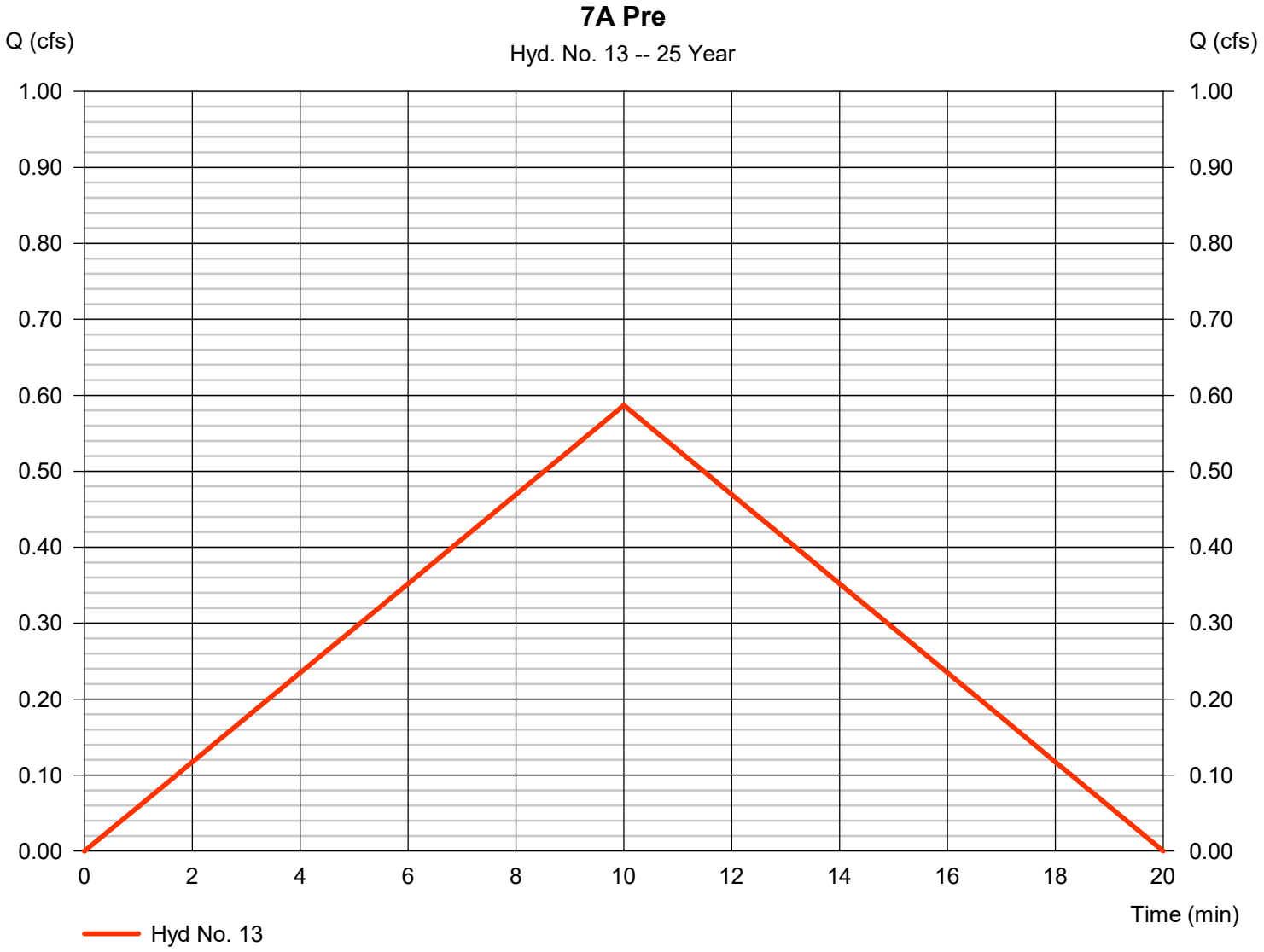


Hydrograph Report

Hyd. No. 13

7A Pre

Hydrograph type	=	Rational	Peak discharge	=	0.587 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	352 cuft
Drainage area	=	0.250 ac	Runoff coeff.	=	0.45
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

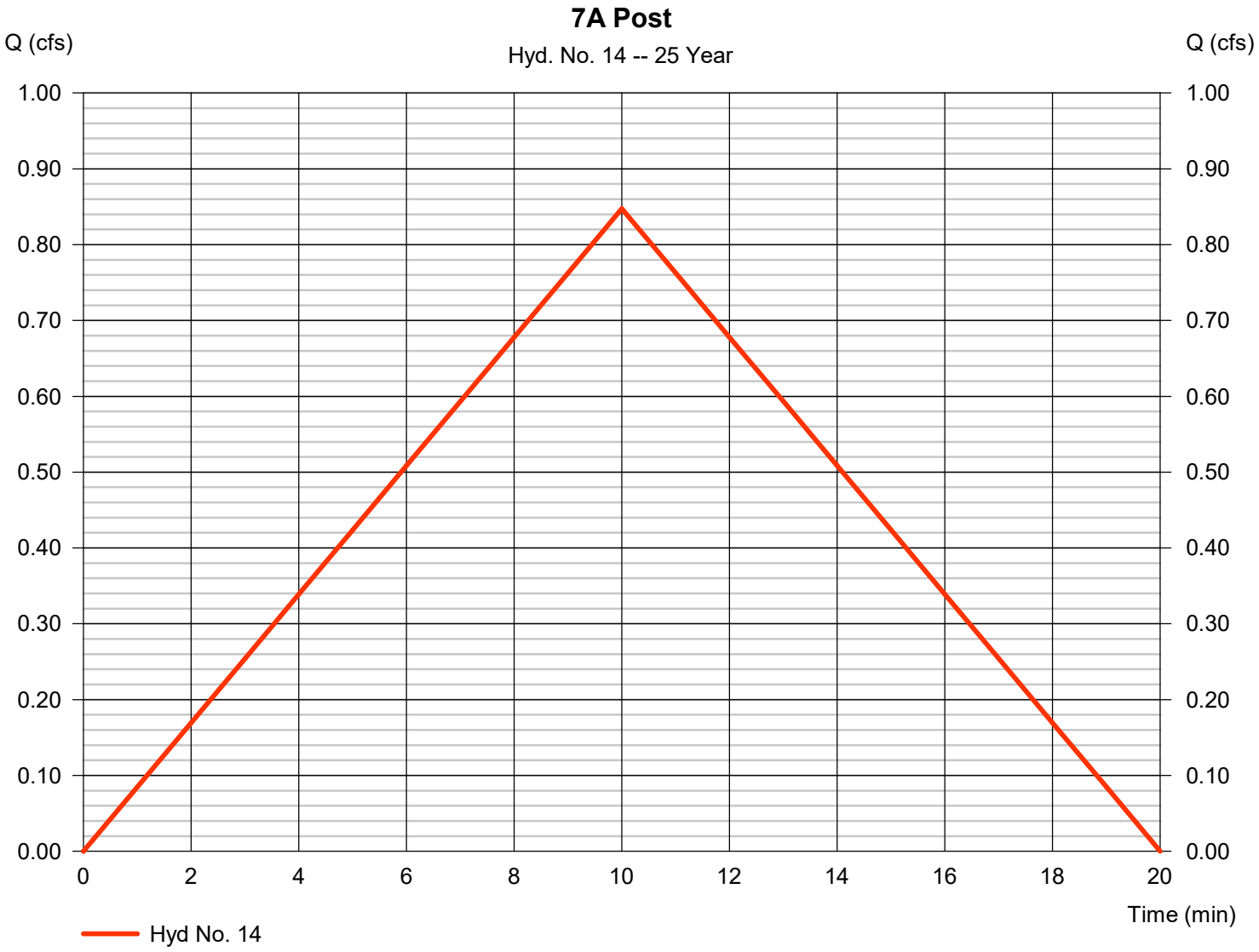


Hydrograph Report

Hyd. No. 14

7A Post

Hydrograph type	=	Rational	Peak discharge	=	0.847 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	508 cuft
Drainage area	=	0.250 ac	Runoff coeff.	=	0.65
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

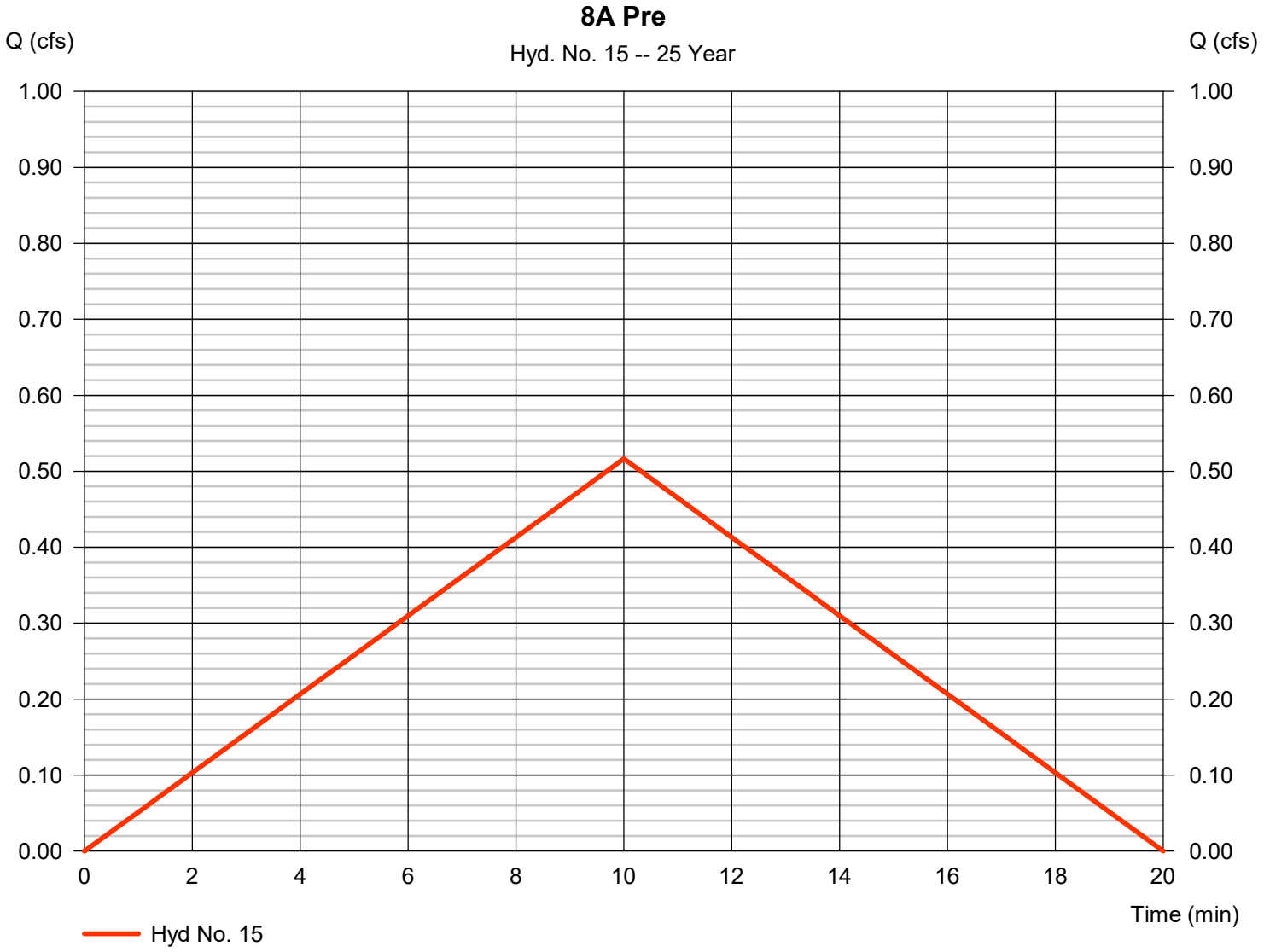


Hydrograph Report

Hyd. No. 15

8A Pre

Hydrograph type	=	Rational	Peak discharge	=	0.516 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	310 cuft
Drainage area	=	0.220 ac	Runoff coeff.	=	0.45
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

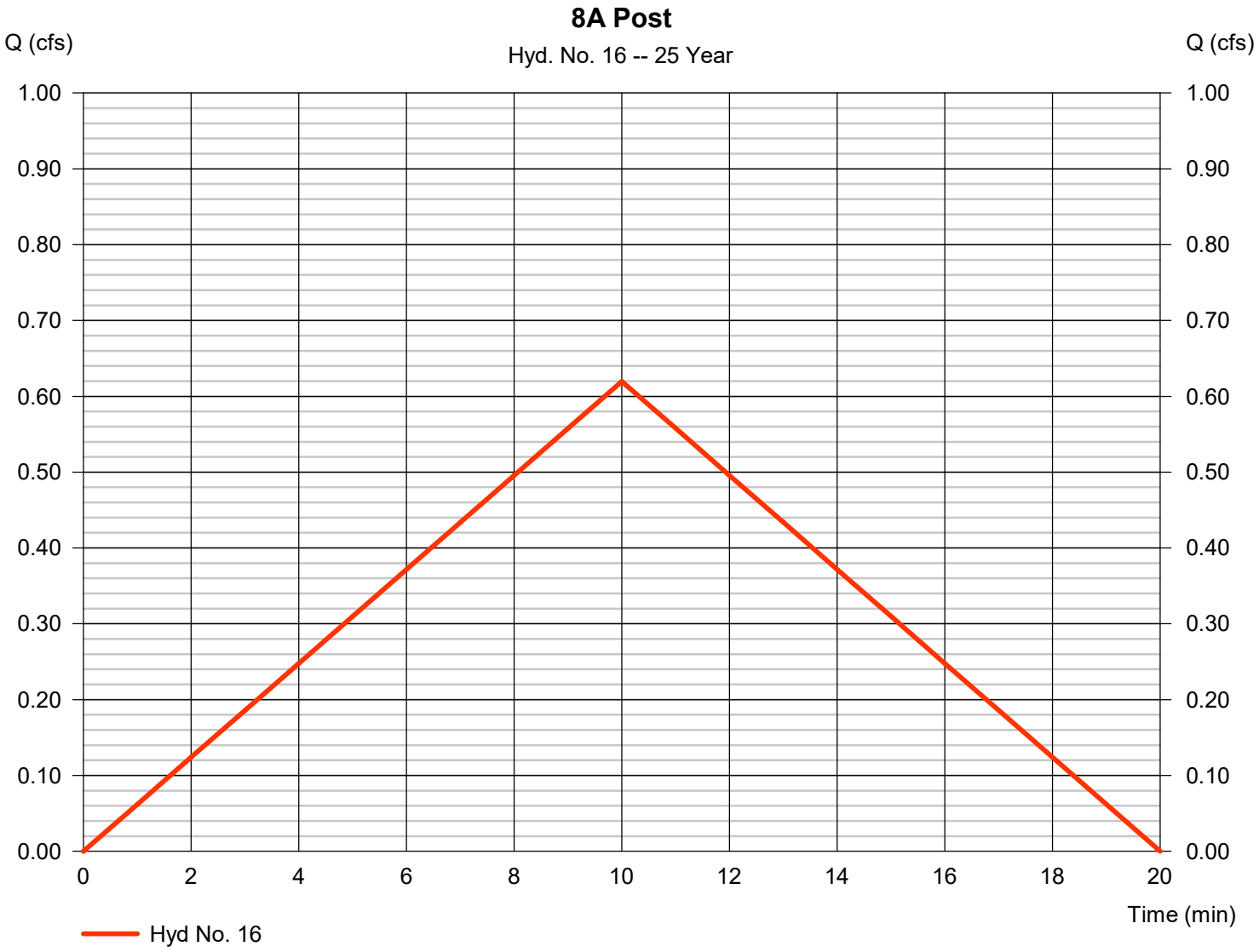


Hydrograph Report

Hyd. No. 16

8A Post

Hydrograph type	=	Rational	Peak discharge	=	0.620 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	372 cuft
Drainage area	=	0.220 ac	Runoff coeff.	=	0.54
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

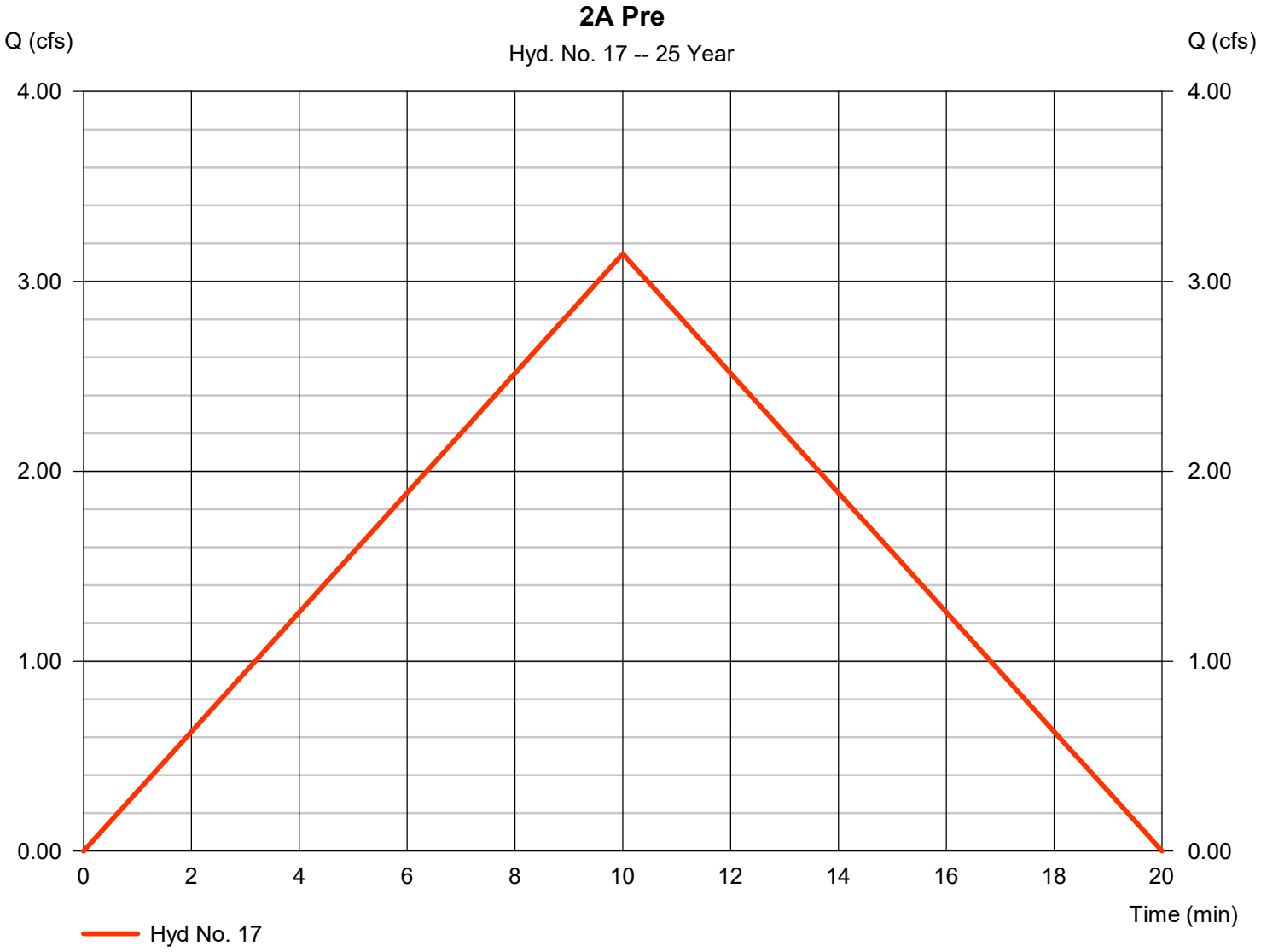


Hydrograph Report

Hyd. No. 17

2A Pre

Hydrograph type	=	Rational	Peak discharge	=	3.145 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,887 cuft
Drainage area	=	1.340 ac	Runoff coeff.	=	0.45
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

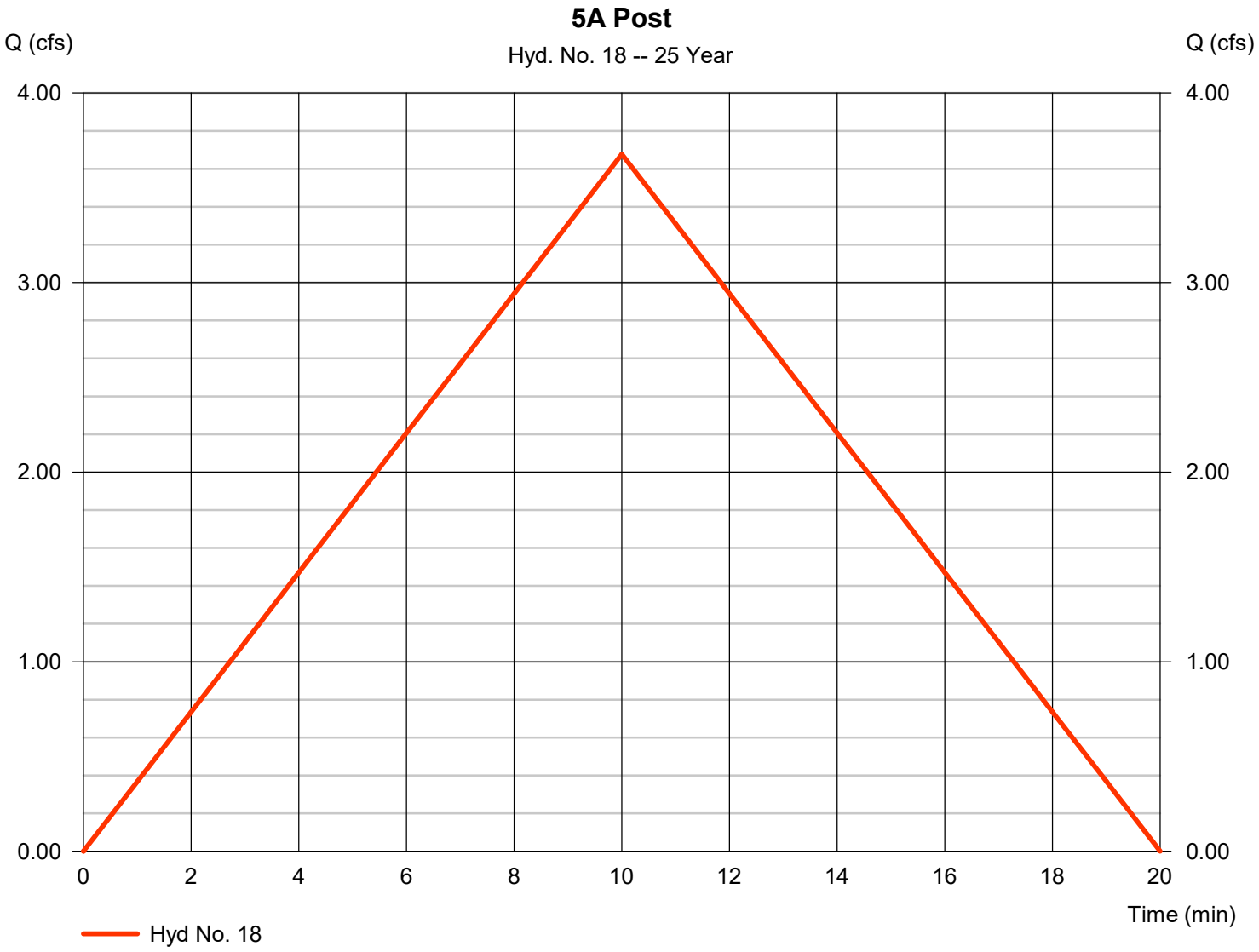


Hydrograph Report

Hyd. No. 18

5A Post

Hydrograph type	=	Rational	Peak discharge	=	3.677 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,206 cuft
Drainage area	=	1.410 ac	Runoff coeff.	=	0.5
Intensity	=	5.215 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

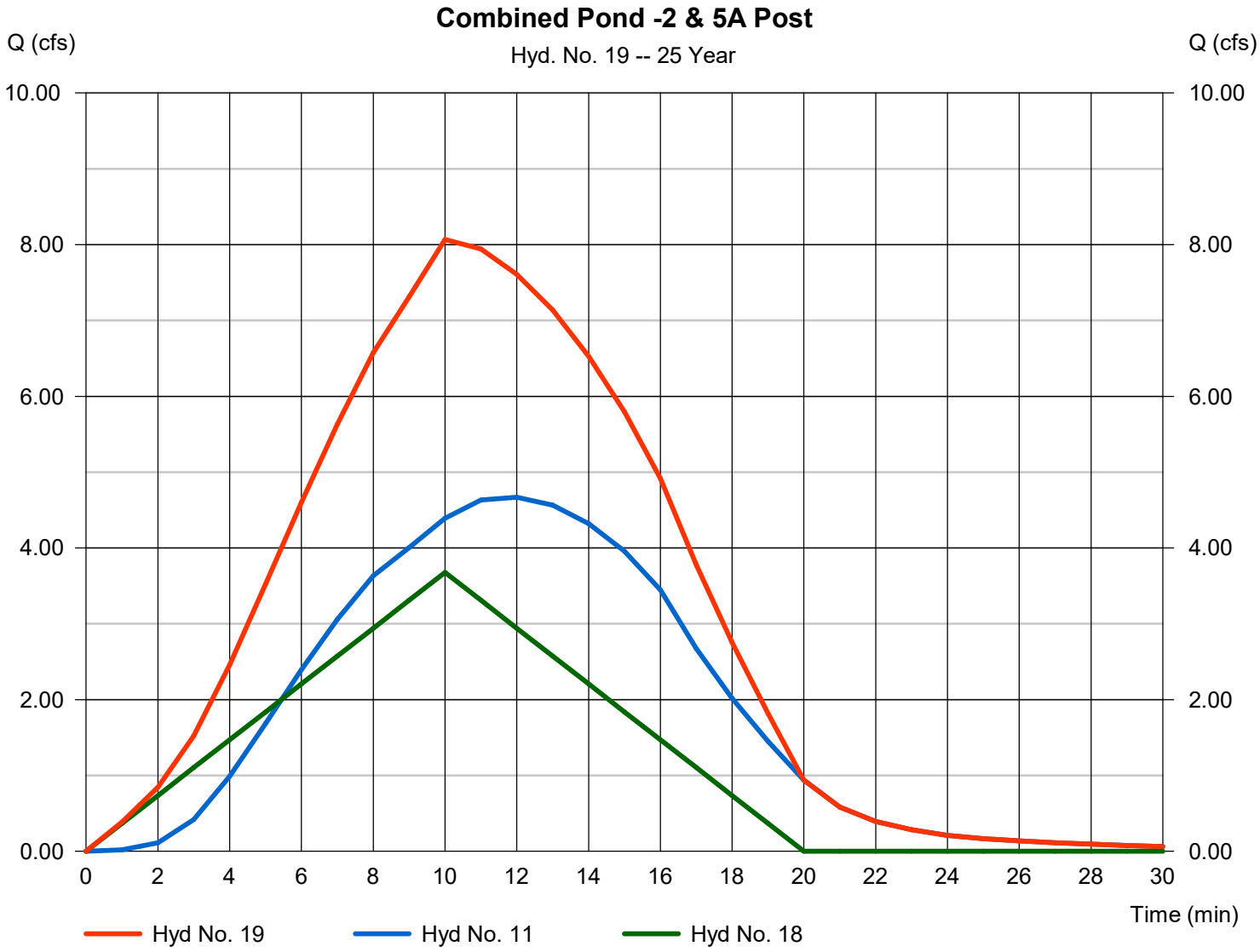


Hydrograph Report

Hyd. No. 19

Combined Pond -2 & 5A Post

Hydrograph type	= Combine	Peak discharge	= 8.069 cfs
Storm frequency	= 25 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 5,581 cuft
Inflow hyds.	= 11, 18	Contrib. drain. area	= 1.410 ac

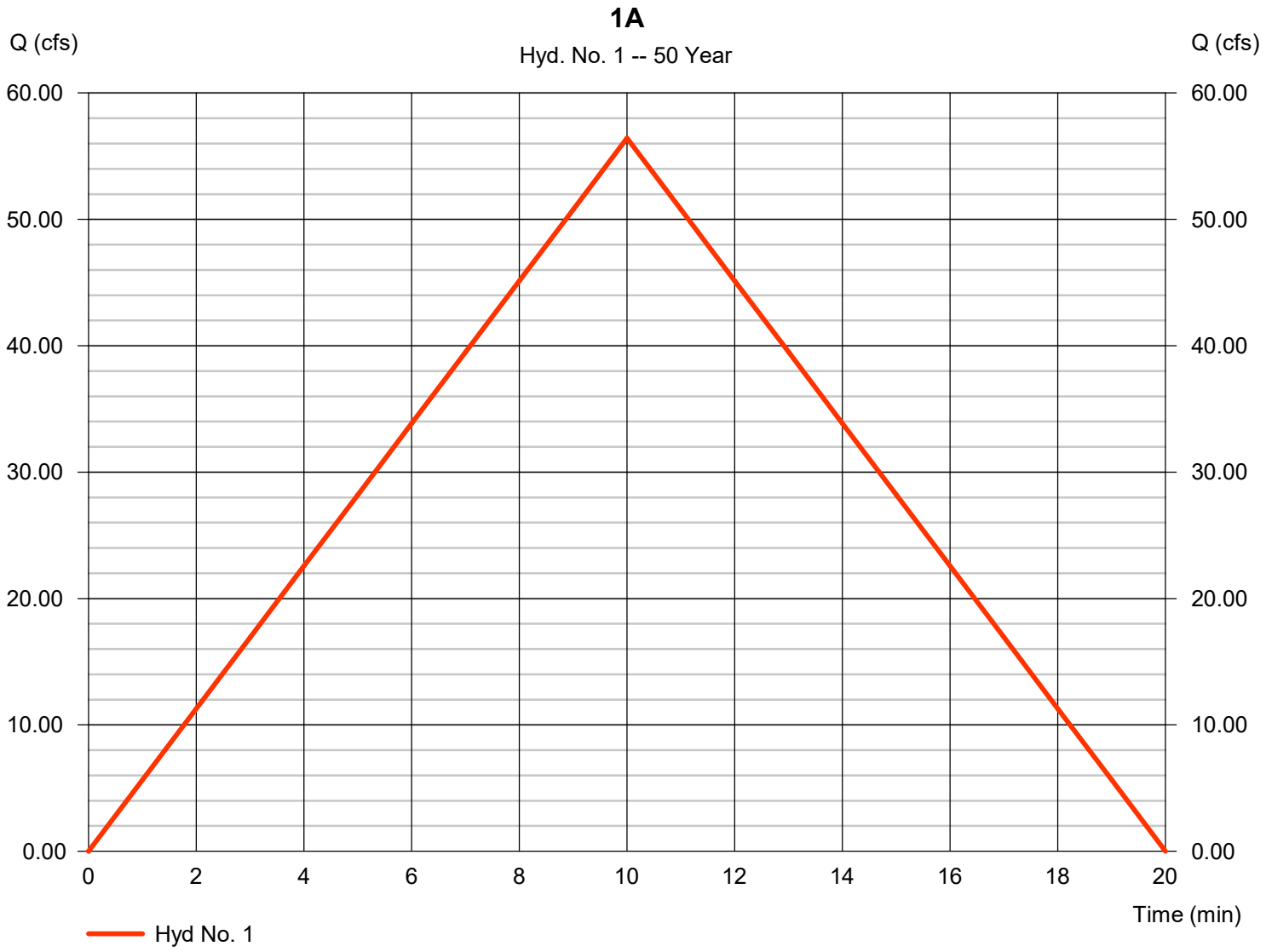


Hydrograph Report

Hyd. No. 1

1A

Hydrograph type	=	Rational	Peak discharge	=	56.43 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	33,856 cuft
Drainage area	=	20.600 ac	Runoff coeff.	=	0.45
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

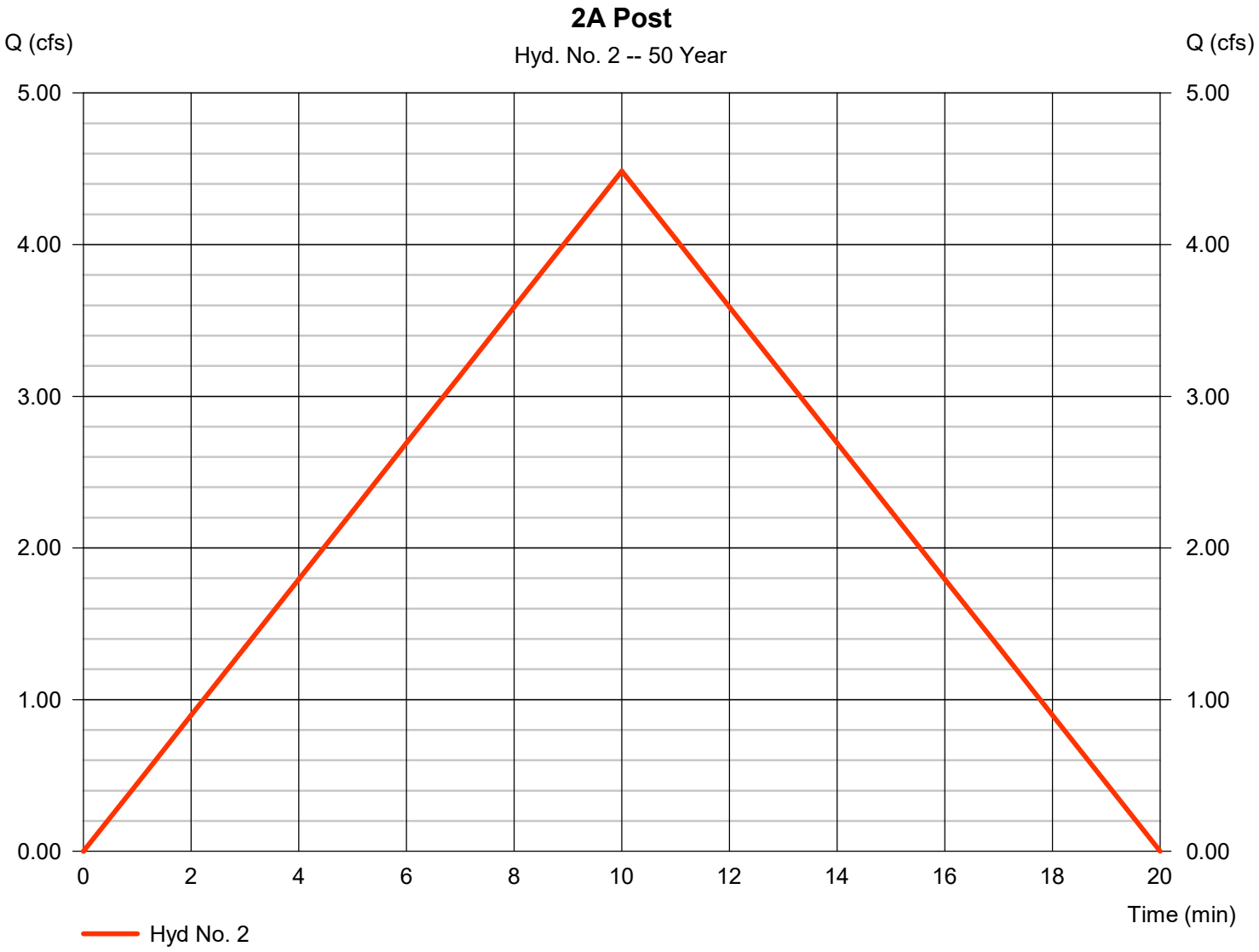


Hydrograph Report

Hyd. No. 2

2A Post

Hydrograph type	=	Rational	Peak discharge	=	4.486 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,692 cuft
Drainage area	=	1.340 ac	Runoff coeff.	=	0.55
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

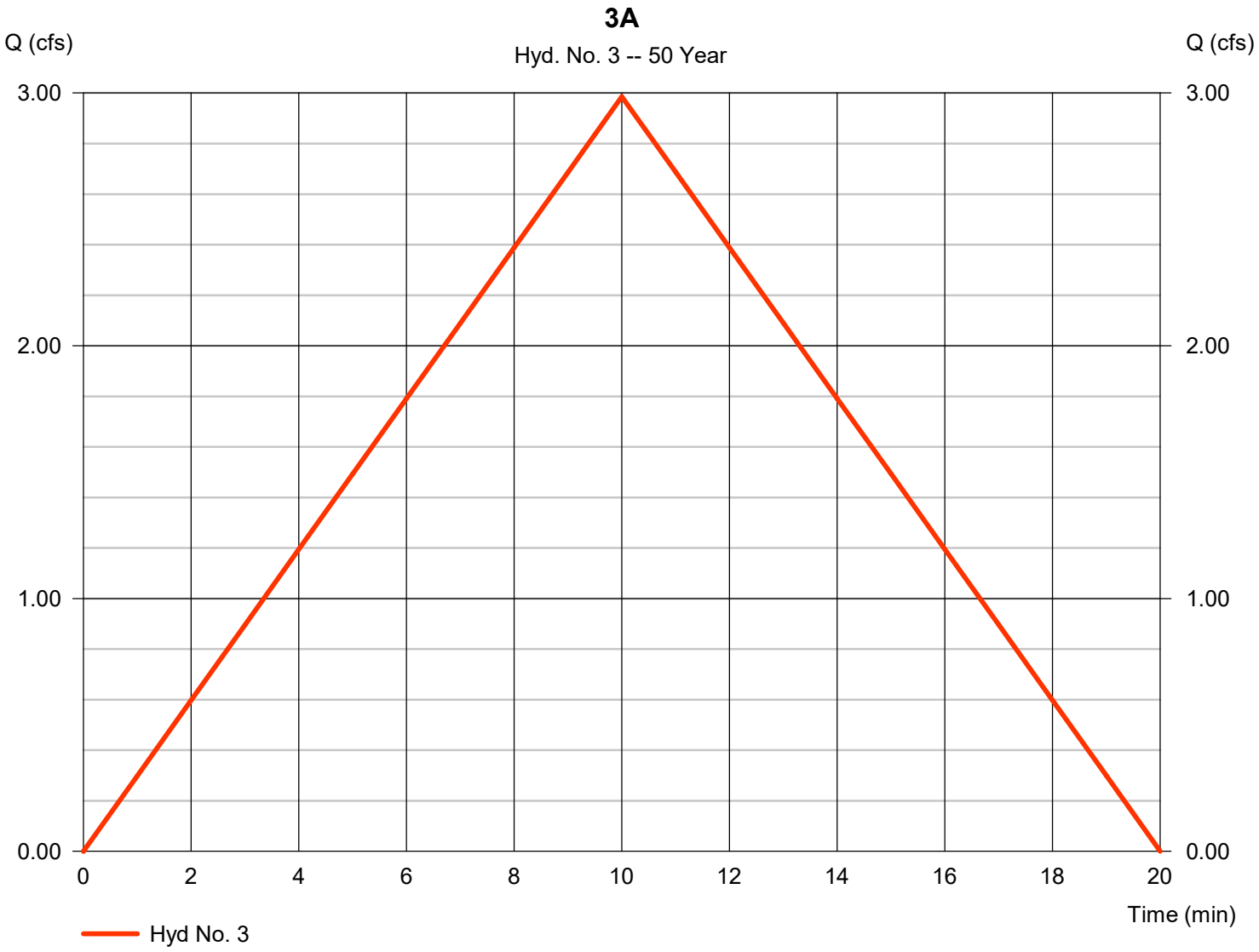


Hydrograph Report

Hyd. No. 3

3A

Hydrograph type	=	Rational	Peak discharge	=	2.986 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,791 cuft
Drainage area	=	1.090 ac	Runoff coeff.	=	0.45
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

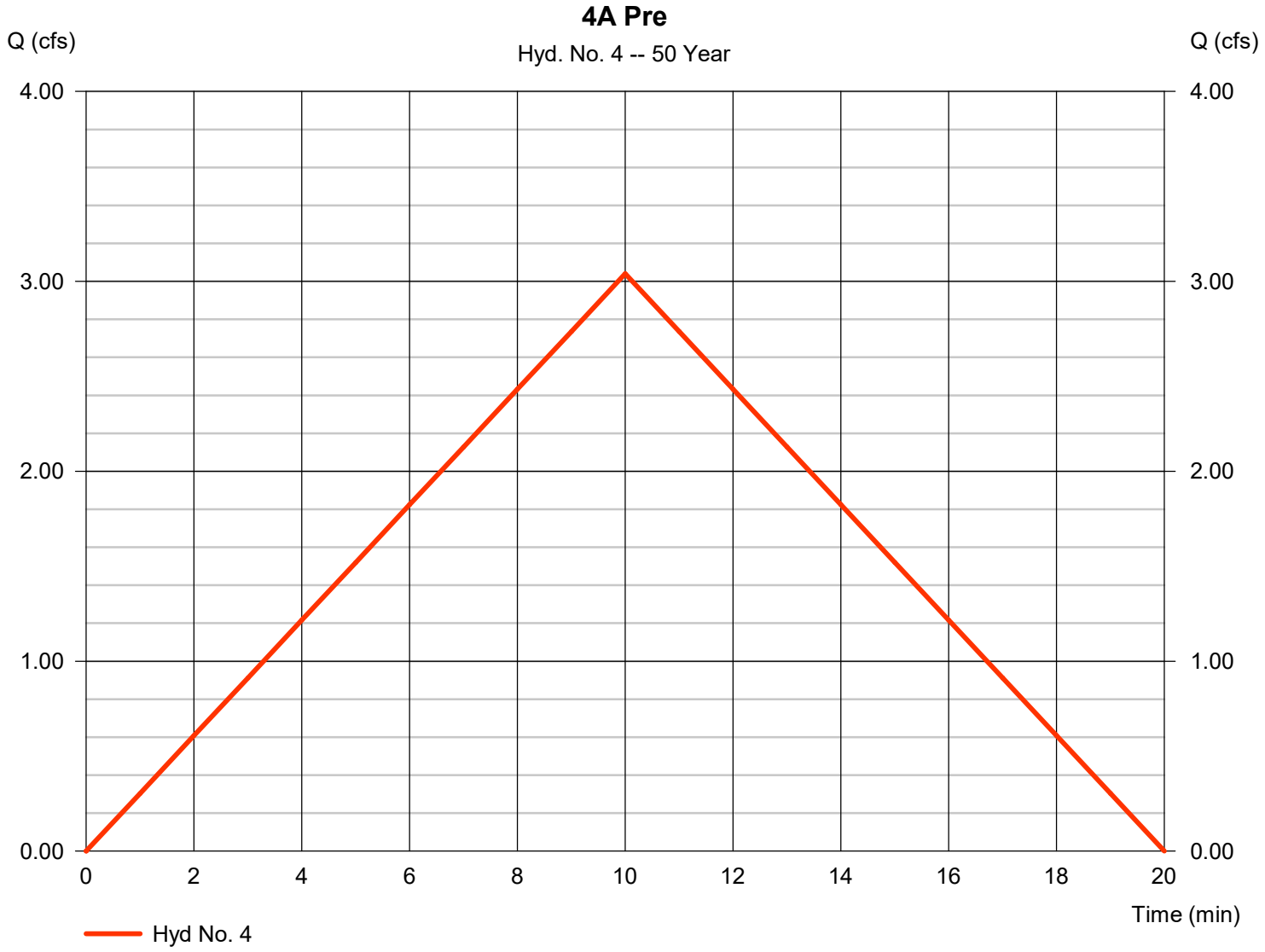


Hydrograph Report

Hyd. No. 4

4A Pre

Hydrograph type	=	Rational	Peak discharge	=	3.040 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,824 cuft
Drainage area	=	1.110 ac	Runoff coeff.	=	0.45
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

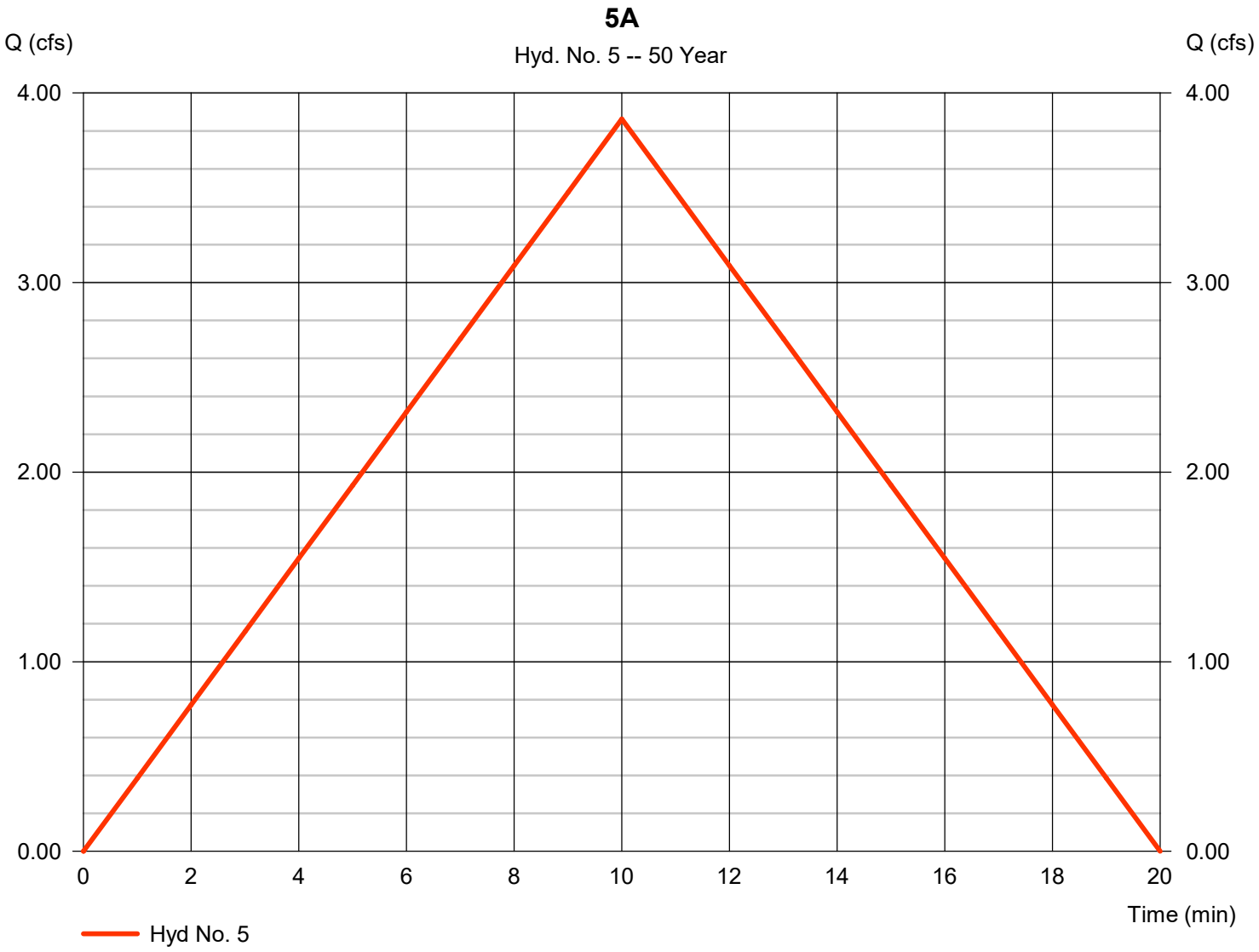


Hydrograph Report

Hyd. No. 5

5A

Hydrograph type	=	Rational	Peak discharge	=	3.862 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,317 cuft
Drainage area	=	1.410 ac	Runoff coeff.	=	0.45
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

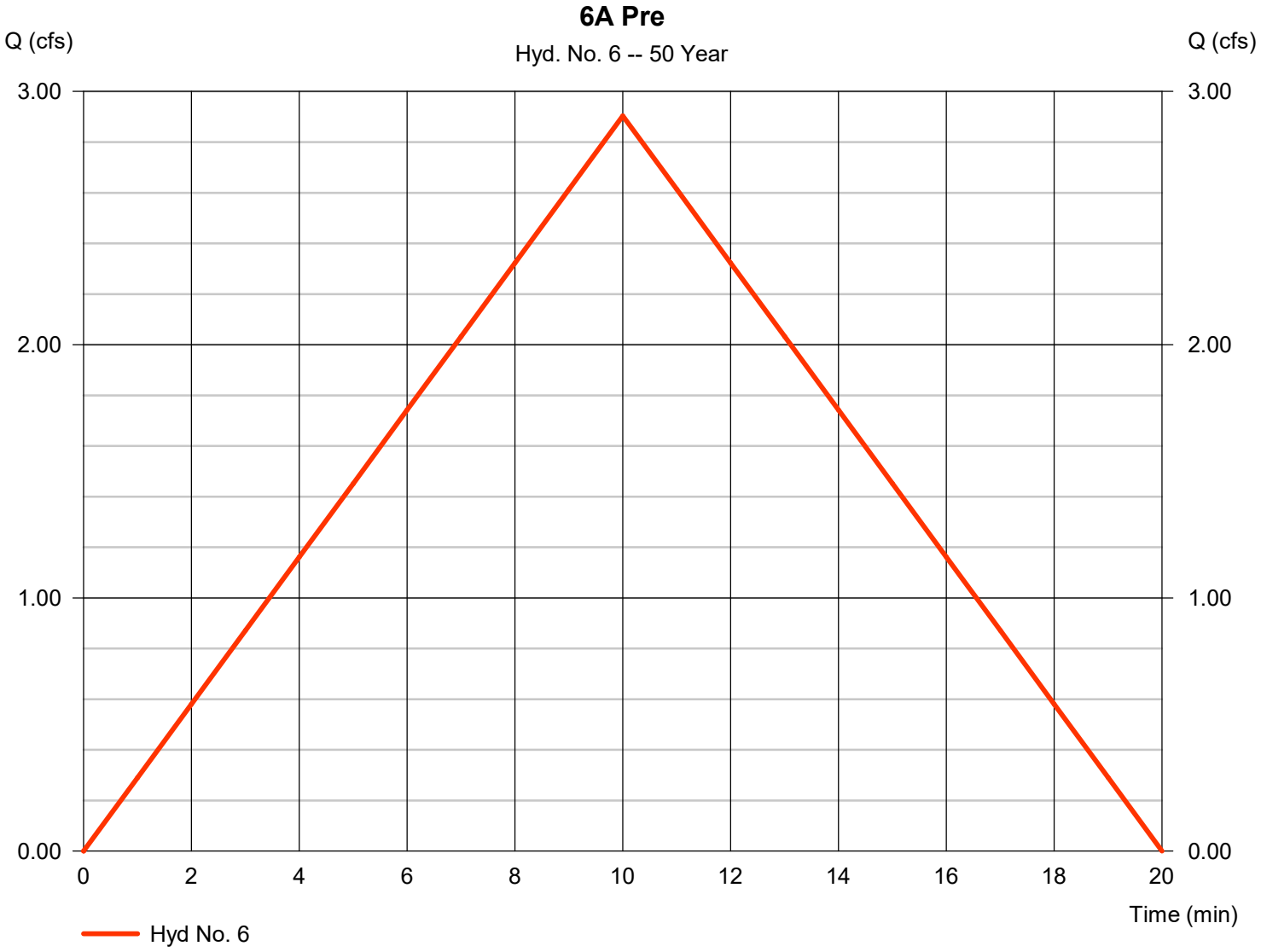


Hydrograph Report

Hyd. No. 6

6A Pre

Hydrograph type	=	Rational	Peak discharge	=	2.903 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	1,742 cuft
Drainage area	=	1.060 ac	Runoff coeff.	=	0.45
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

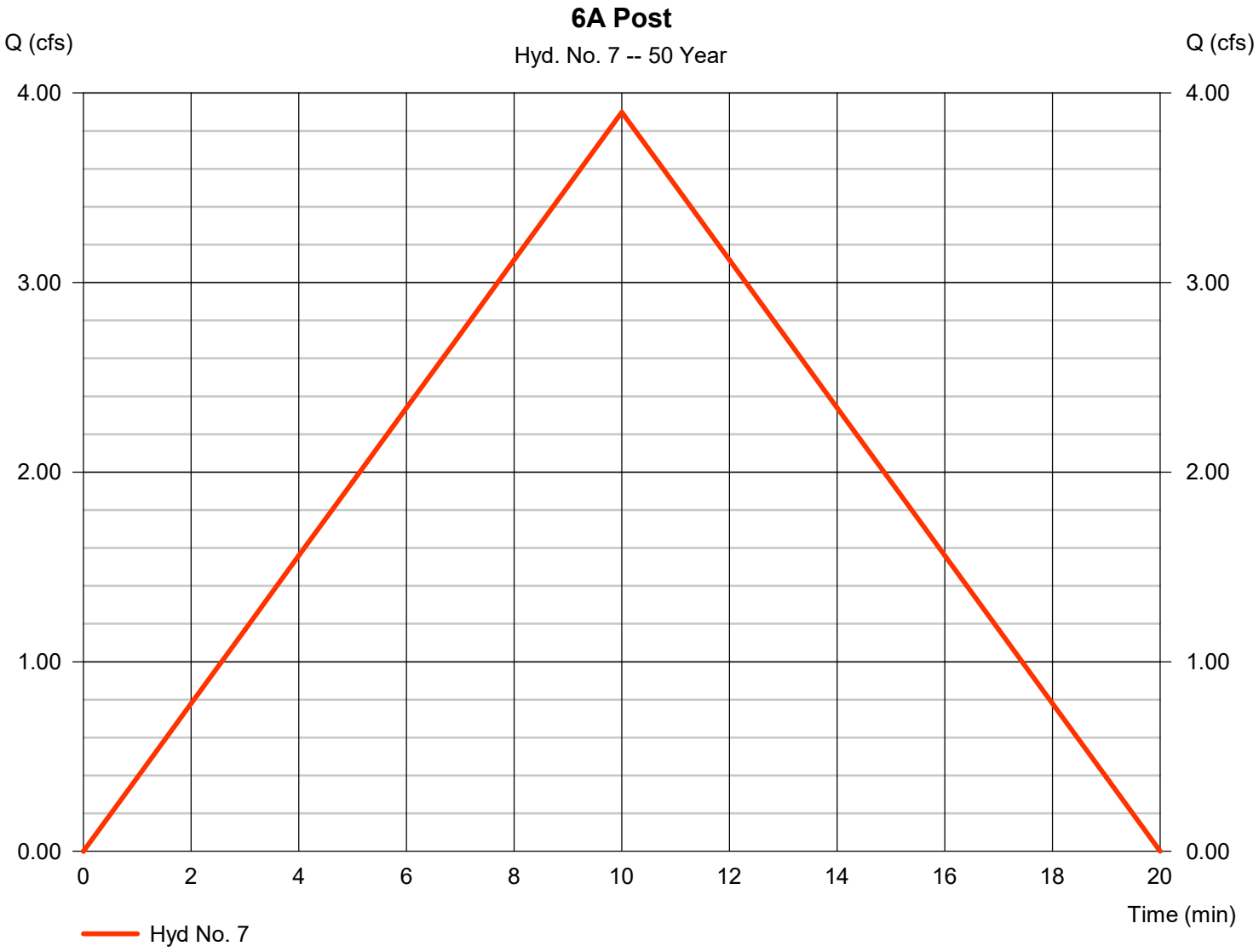


Hydrograph Report

Hyd. No. 7

6A Post

Hydrograph type	=	Rational	Peak discharge	=	3.899 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,339 cuft
Drainage area	=	1.050 ac	Runoff coeff.	=	0.61
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1



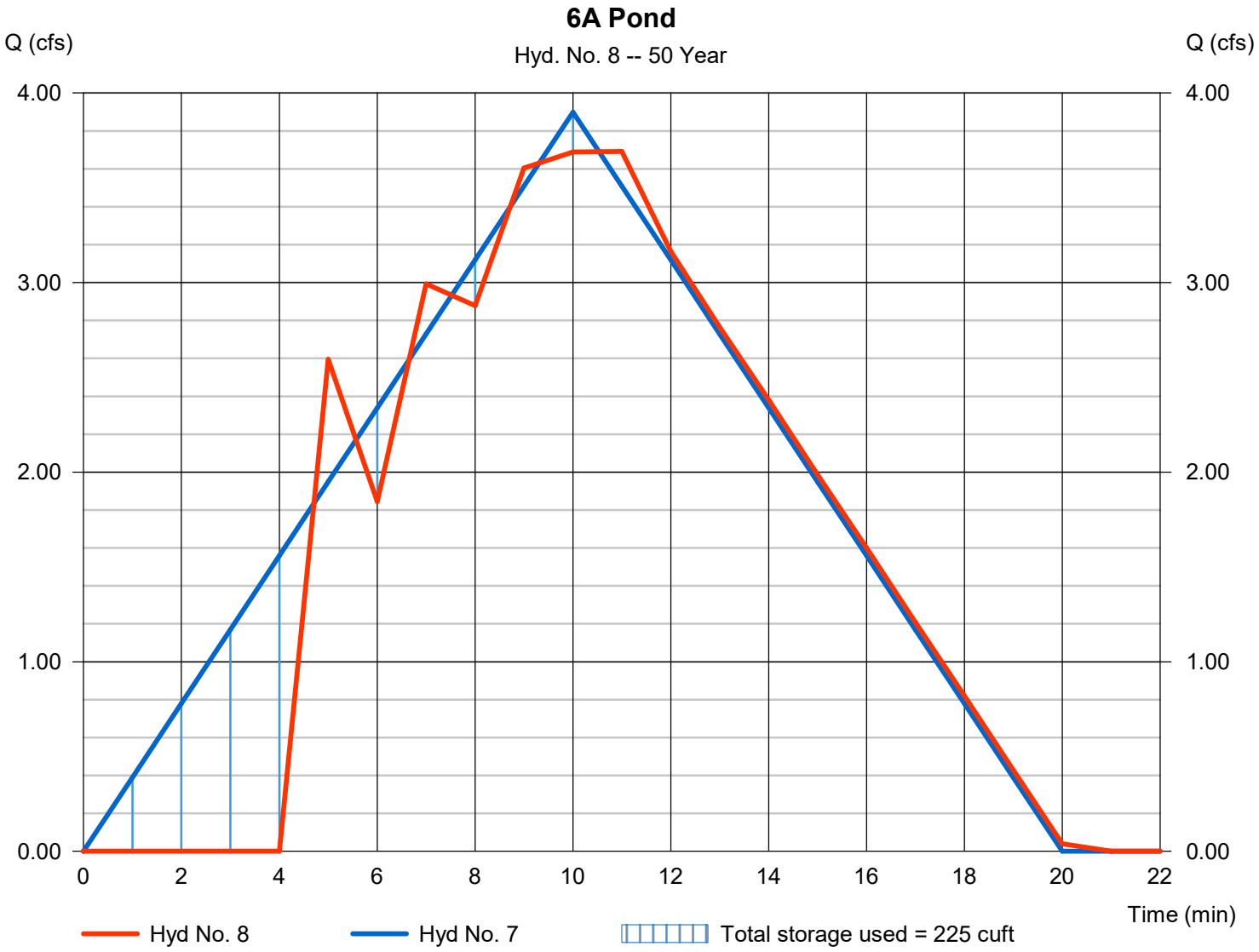
Hydrograph Report

Hyd. No. 8

6A Pond

Hydrograph type	=	Reservoir	Peak discharge	=	3.692 cfs
Storm frequency	=	50 yrs	Time to peak	=	11 min
Time interval	=	1 min	Hyd. volume	=	2,141 cuft
Inflow hyd. No.	=	7 - 6A Post	Max. Elevation	=	4239.51 ft
Reservoir name	=	Pond -3	Max. Storage	=	225 cuft

Storage Indication method used.

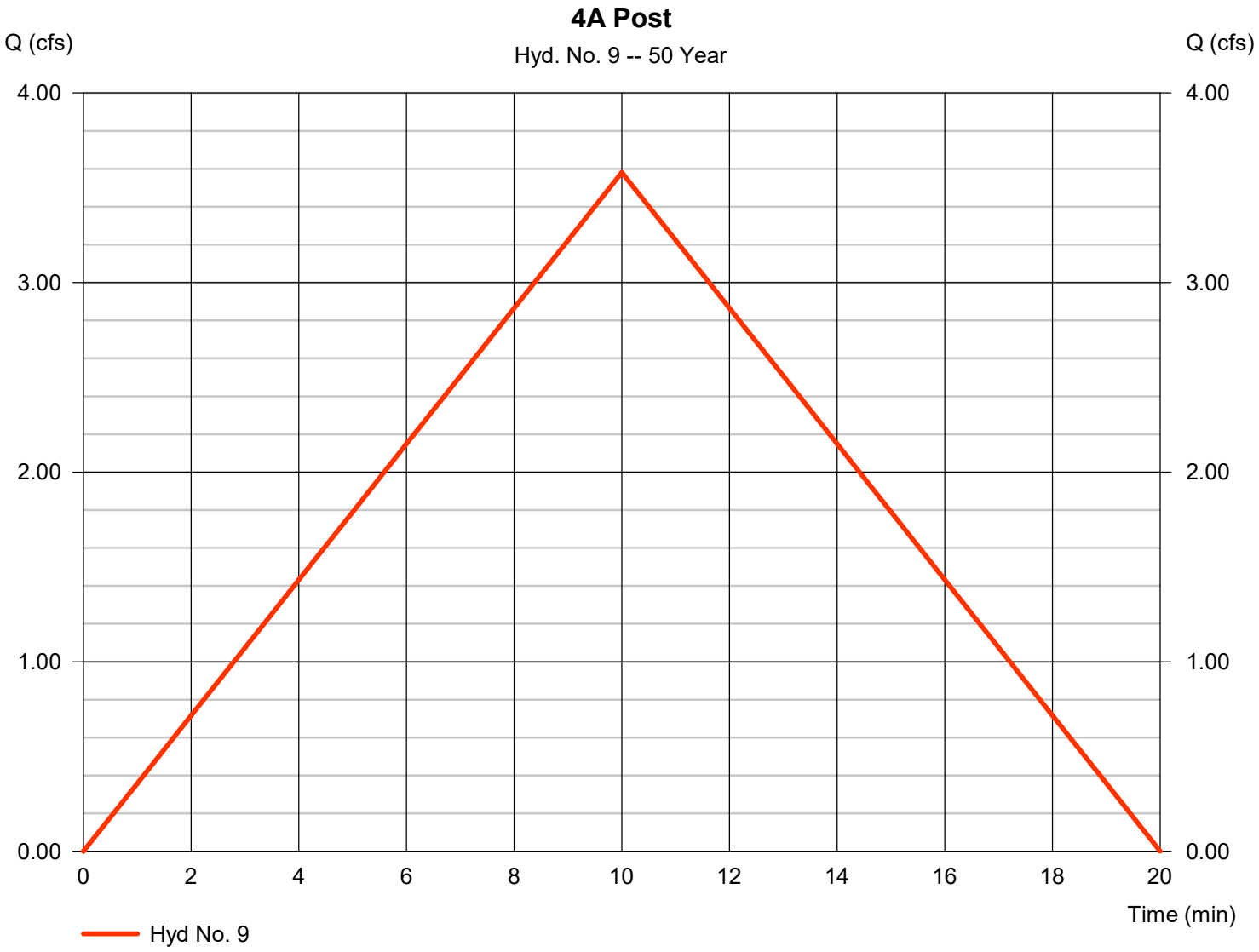


Hydrograph Report

Hyd. No. 9

4A Post

Hydrograph type	=	Rational	Peak discharge	=	3.581 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,149 cuft
Drainage area	=	1.110 ac	Runoff coeff.	=	0.53
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

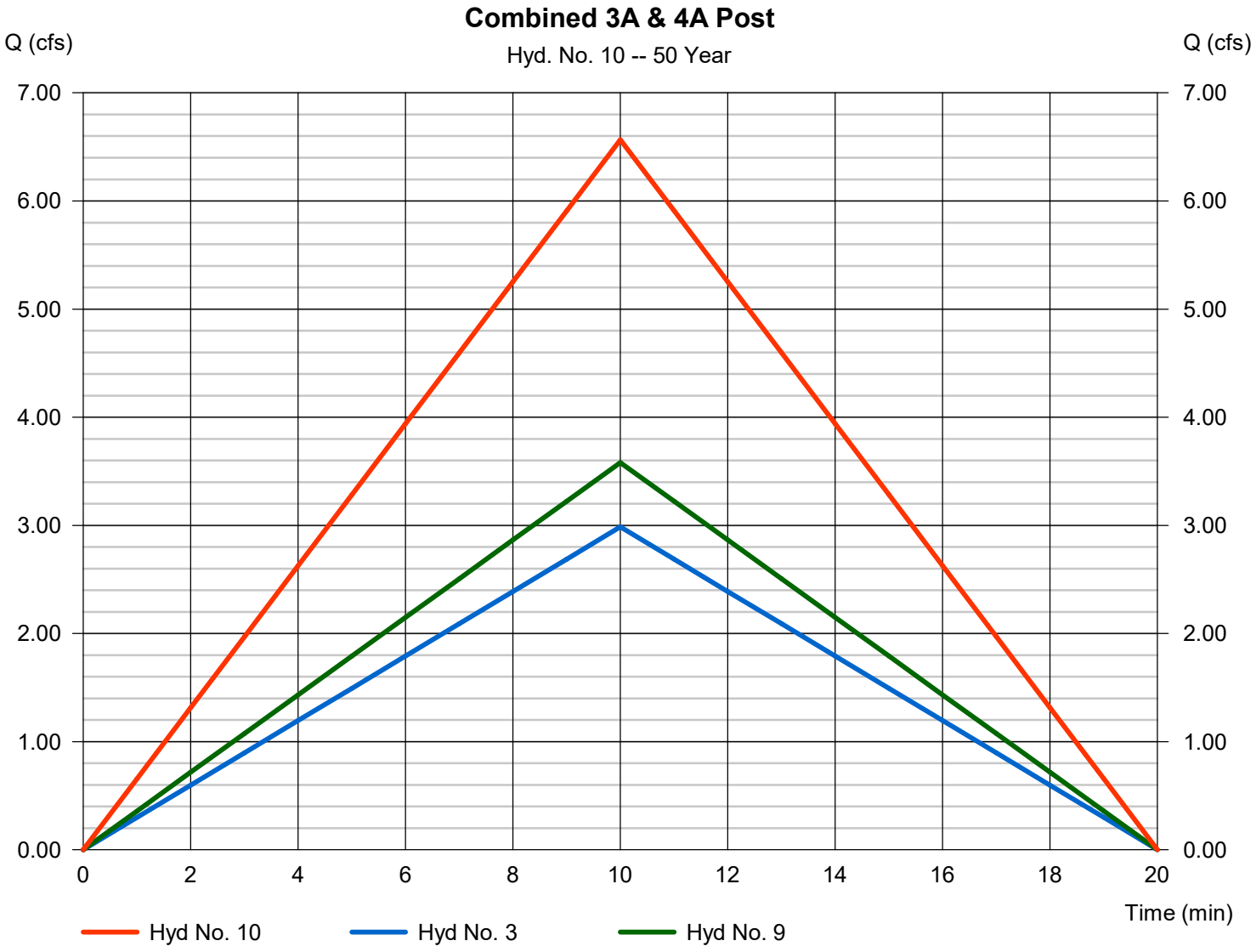


Hydrograph Report

Hyd. No. 10

Combined 3A & 4A Post

Hydrograph type	=	Combine	Peak discharge	=	6.567 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	3,940 cuft
Inflow hyds.	=	3, 9	Contrib. drain. area	=	2.200 ac



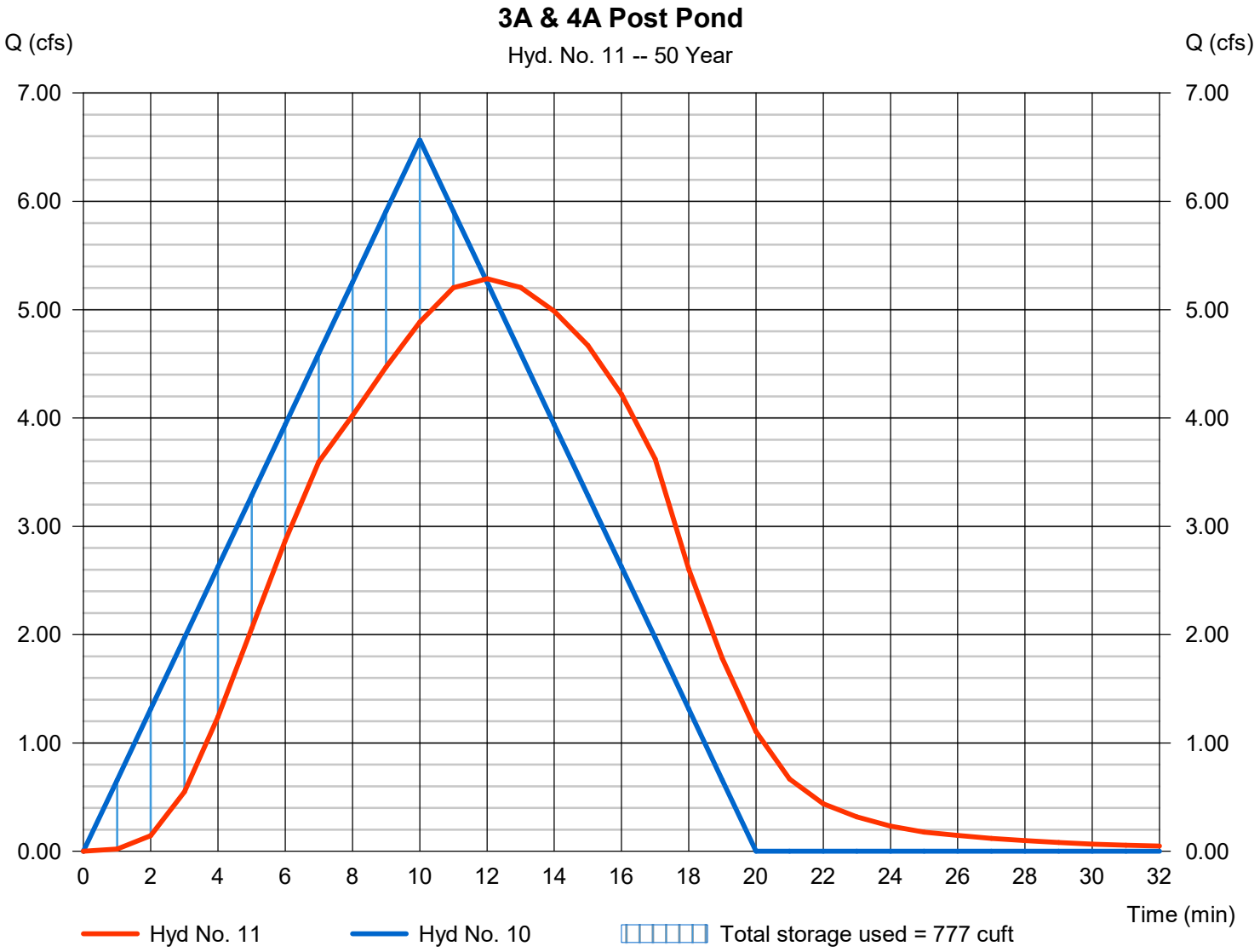
Hydrograph Report

Hyd. No. 11

3A & 4A Post Pond

Hydrograph type	=	Reservoir	Peak discharge	=	5.286 cfs
Storm frequency	=	50 yrs	Time to peak	=	12 min
Time interval	=	1 min	Hyd. volume	=	3,939 cuft
Inflow hyd. No.	=	10 - Combined 3A & 4A Post	Max. Elevation	=	4264.43 ft
Reservoir name	=	Pond -2	Max. Storage	=	777 cuft

Storage Indication method used.

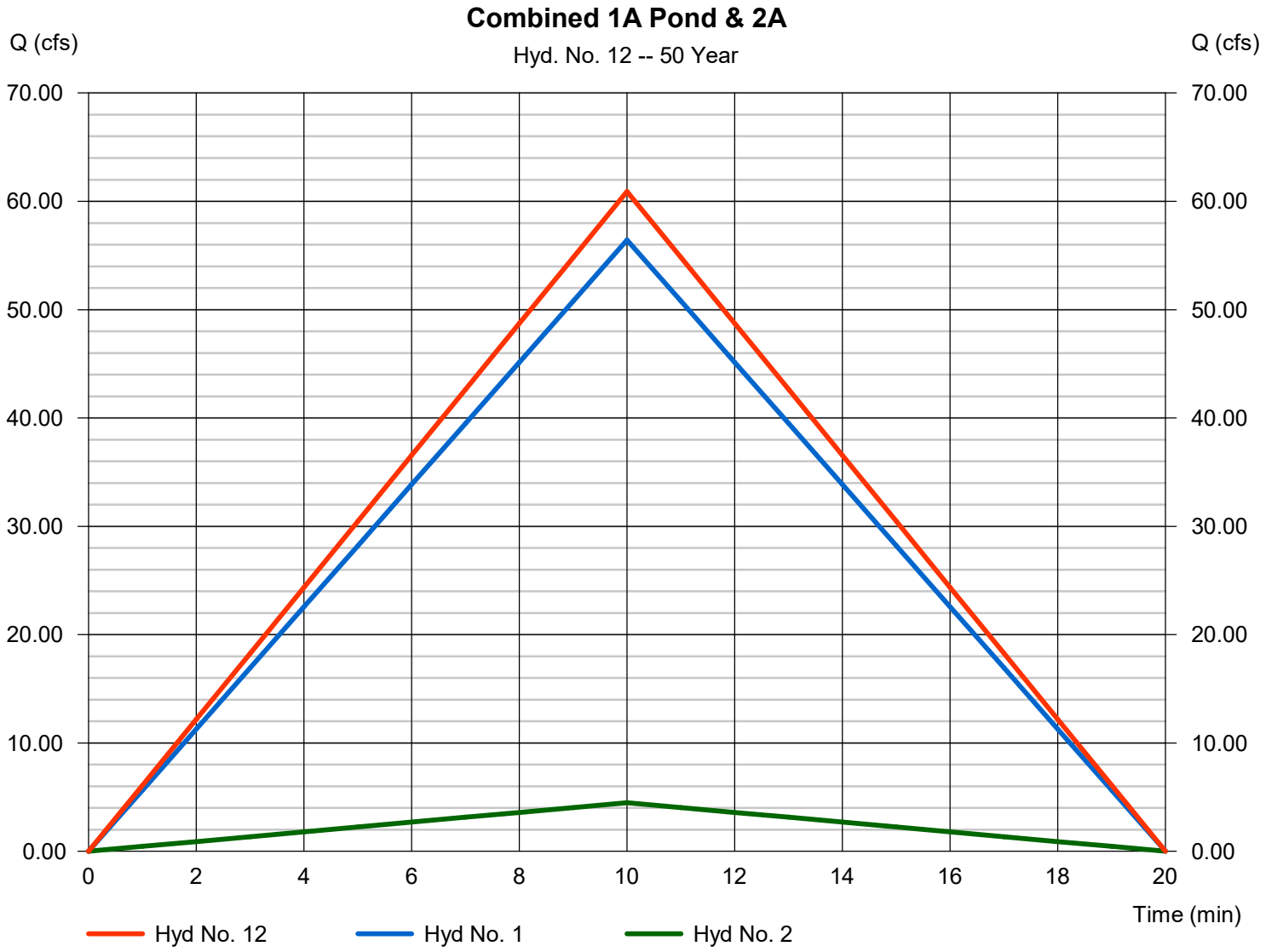


Hydrograph Report

Hyd. No. 12

Combined 1A Pond & 2A

Hydrograph type	= Combine	Peak discharge	= 60.91 cfs
Storm frequency	= 50 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 36,547 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 21.940 ac

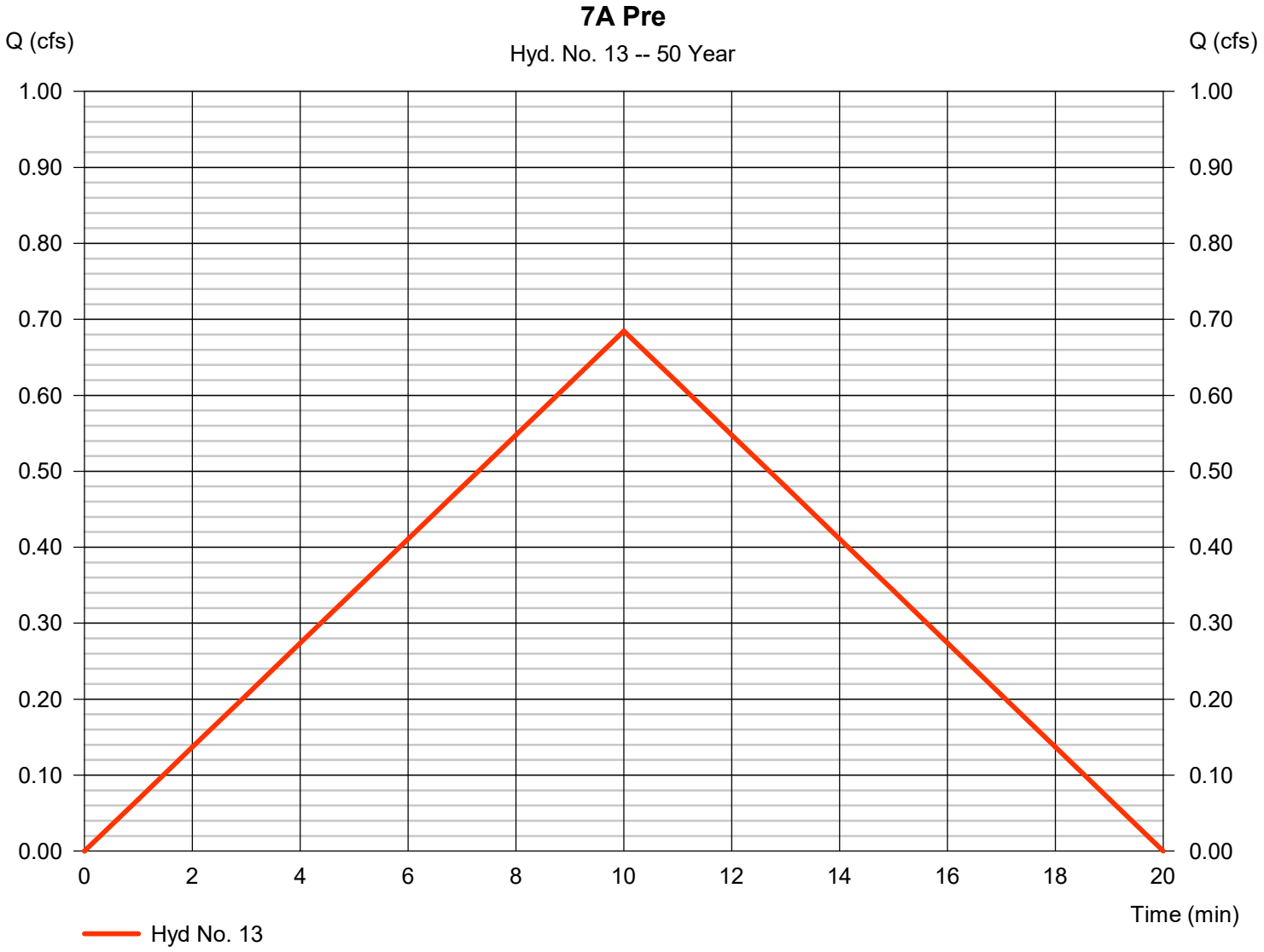


Hydrograph Report

Hyd. No. 13

7A Pre

Hydrograph type	=	Rational	Peak discharge	=	0.685 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	411 cuft
Drainage area	=	0.250 ac	Runoff coeff.	=	0.45
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Report

Hyd. No. 14

7A Post

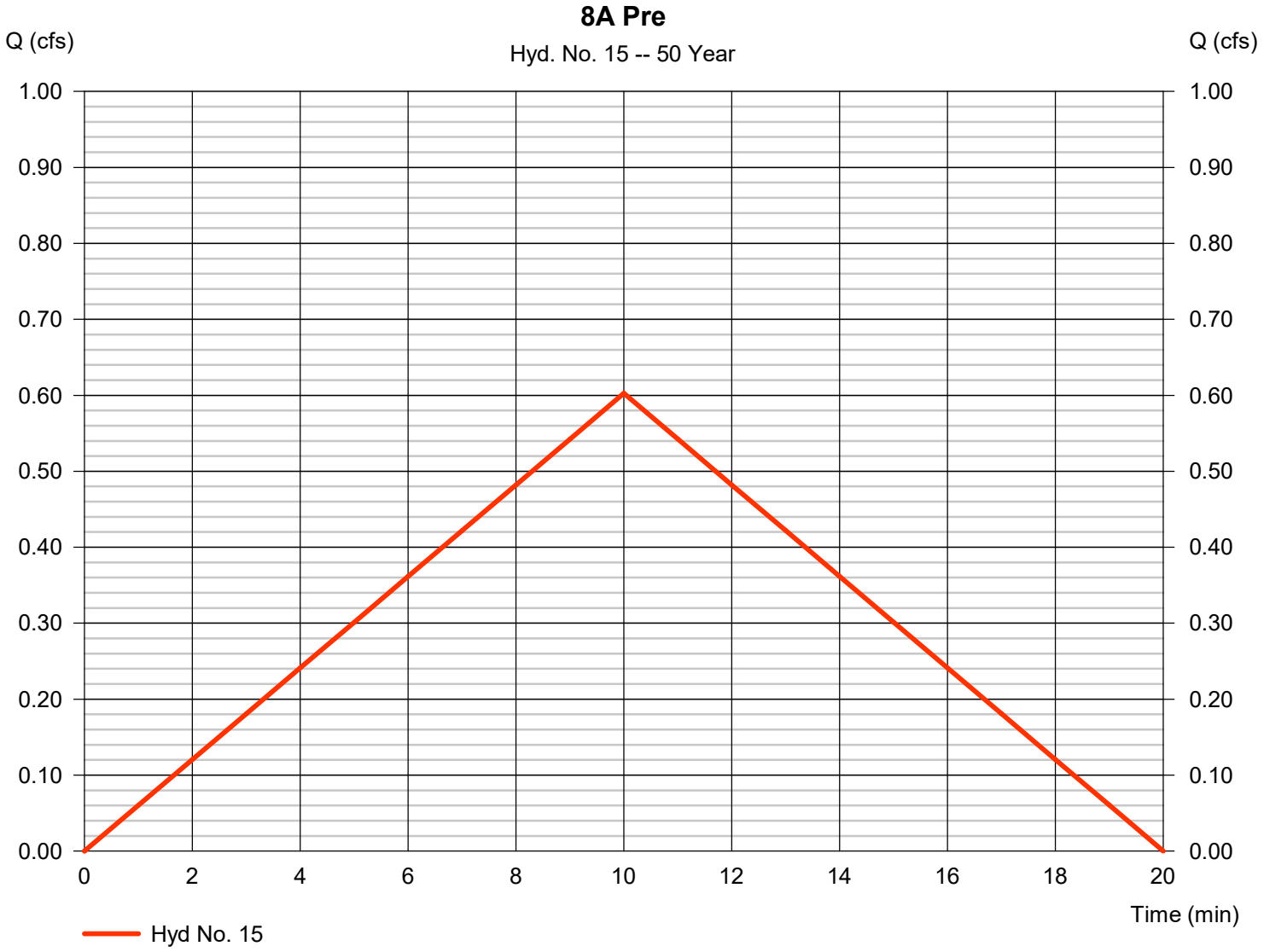
Hydrograph type	=	Rational	Peak discharge	=	0.989 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	593 cuft
Drainage area	=	0.250 ac	Runoff coeff.	=	0.65
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

Hydrograph Report

Hyd. No. 15

8A Pre

Hydrograph type	=	Rational	Peak discharge	=	0.603 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	362 cuft
Drainage area	=	0.220 ac	Runoff coeff.	=	0.45
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

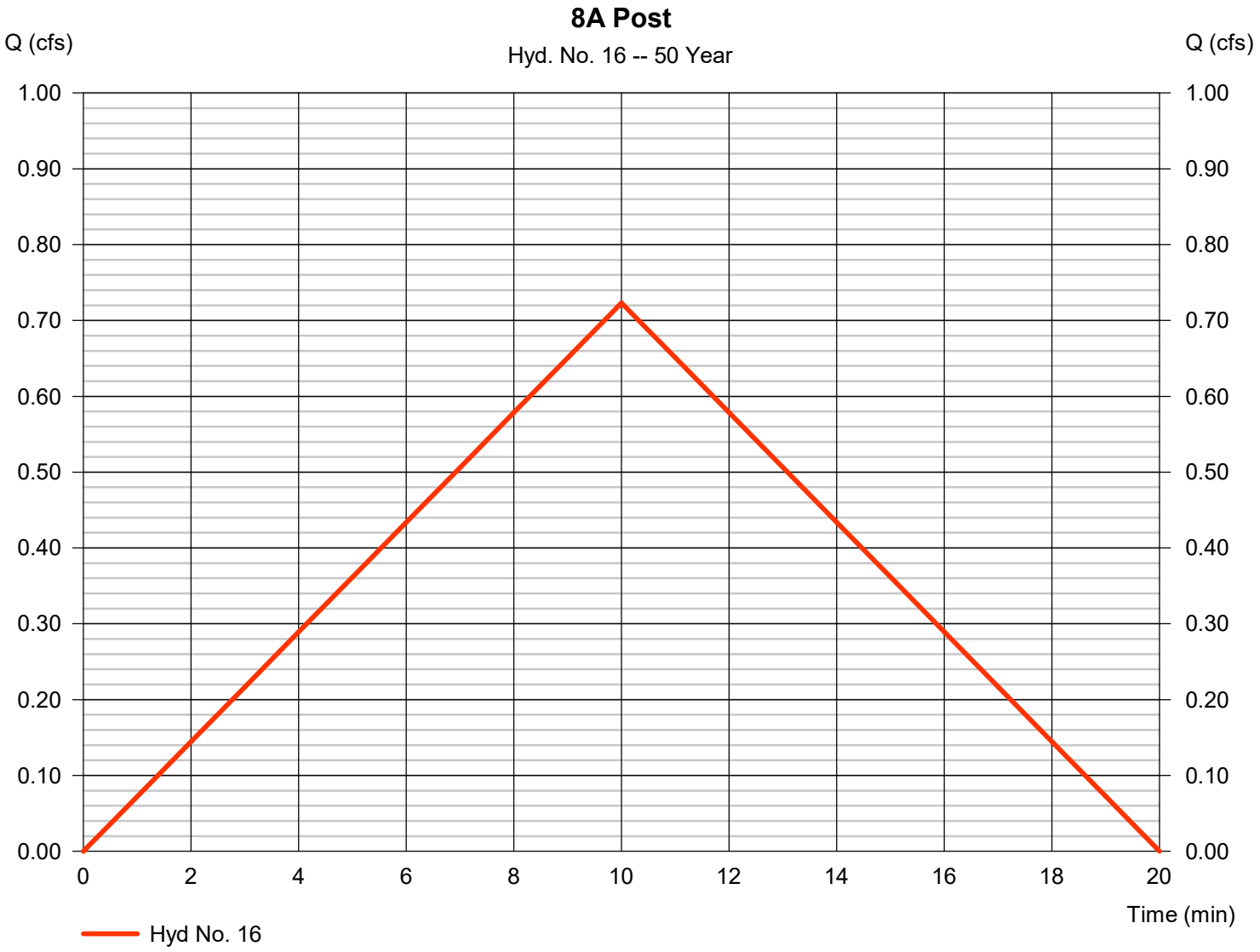


Hydrograph Report

Hyd. No. 16

8A Post

Hydrograph type	=	Rational	Peak discharge	=	0.723 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	434 cuft
Drainage area	=	0.220 ac	Runoff coeff.	=	0.54
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

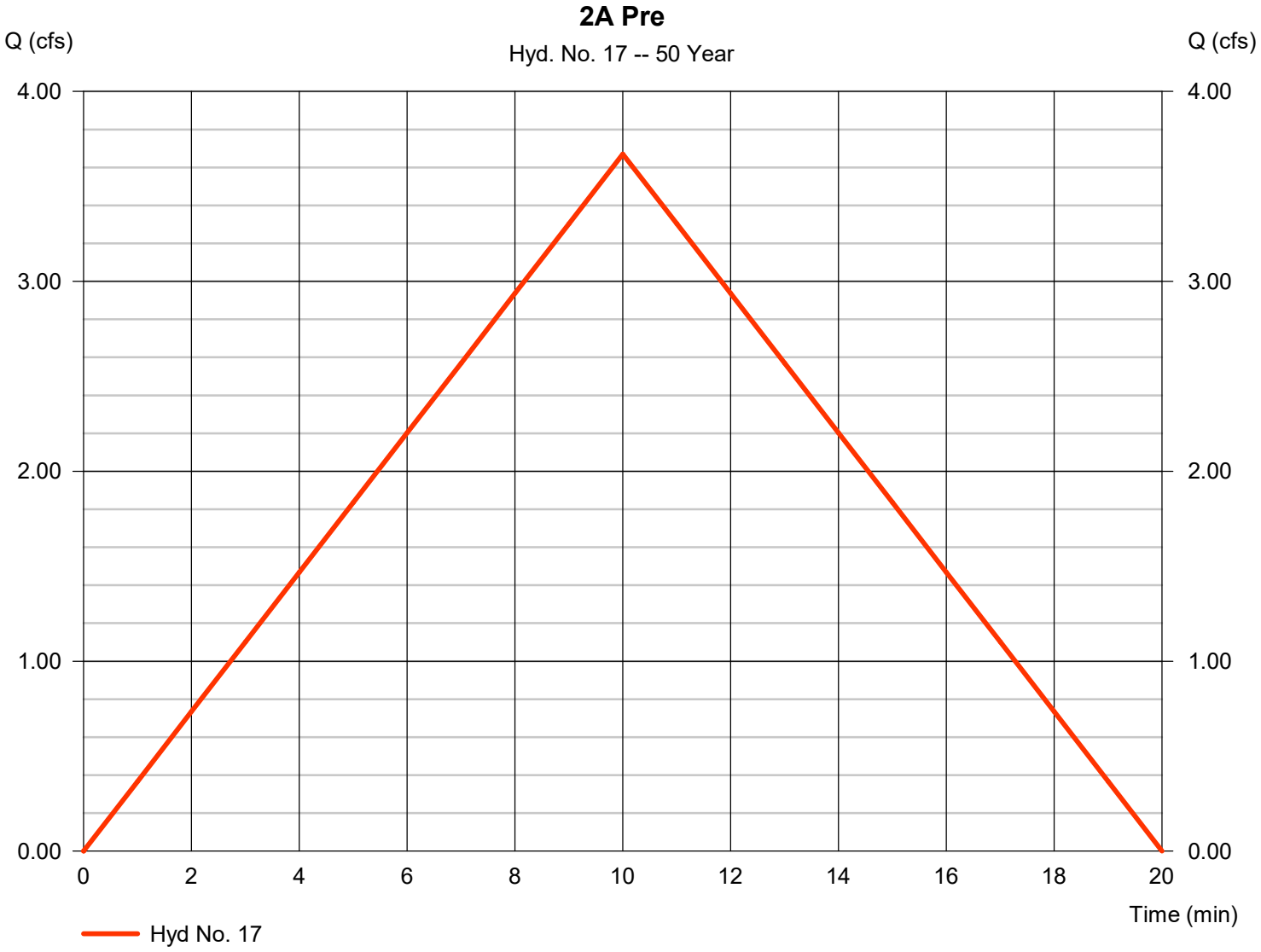


Hydrograph Report

Hyd. No. 17

2A Pre

Hydrograph type	=	Rational	Peak discharge	=	3.670 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,202 cuft
Drainage area	=	1.340 ac	Runoff coeff.	=	0.45
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

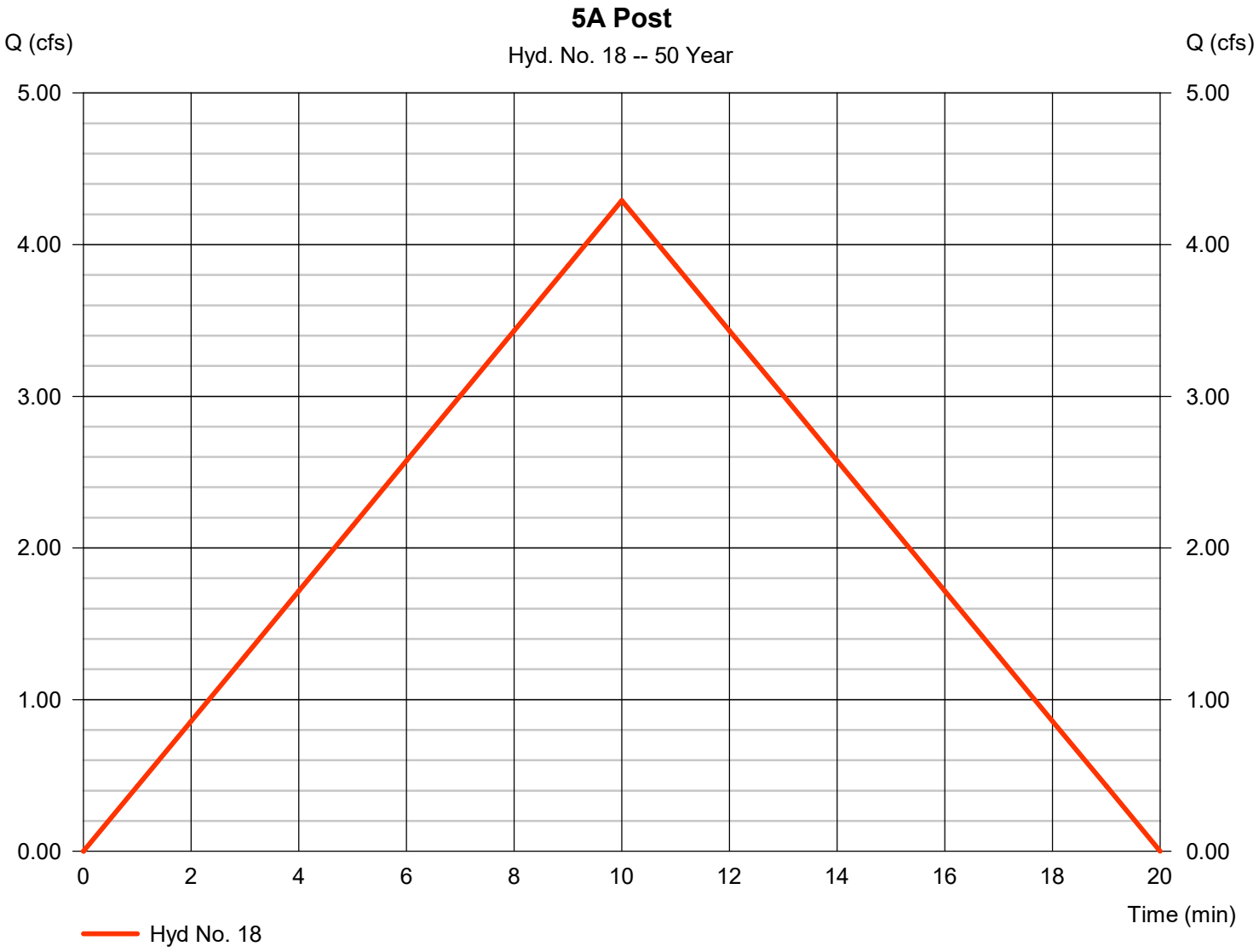


Hydrograph Report

Hyd. No. 18

5A Post

Hydrograph type	=	Rational	Peak discharge	=	4.291 cfs
Storm frequency	=	50 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,575 cuft
Drainage area	=	1.410 ac	Runoff coeff.	=	0.5
Intensity	=	6.087 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

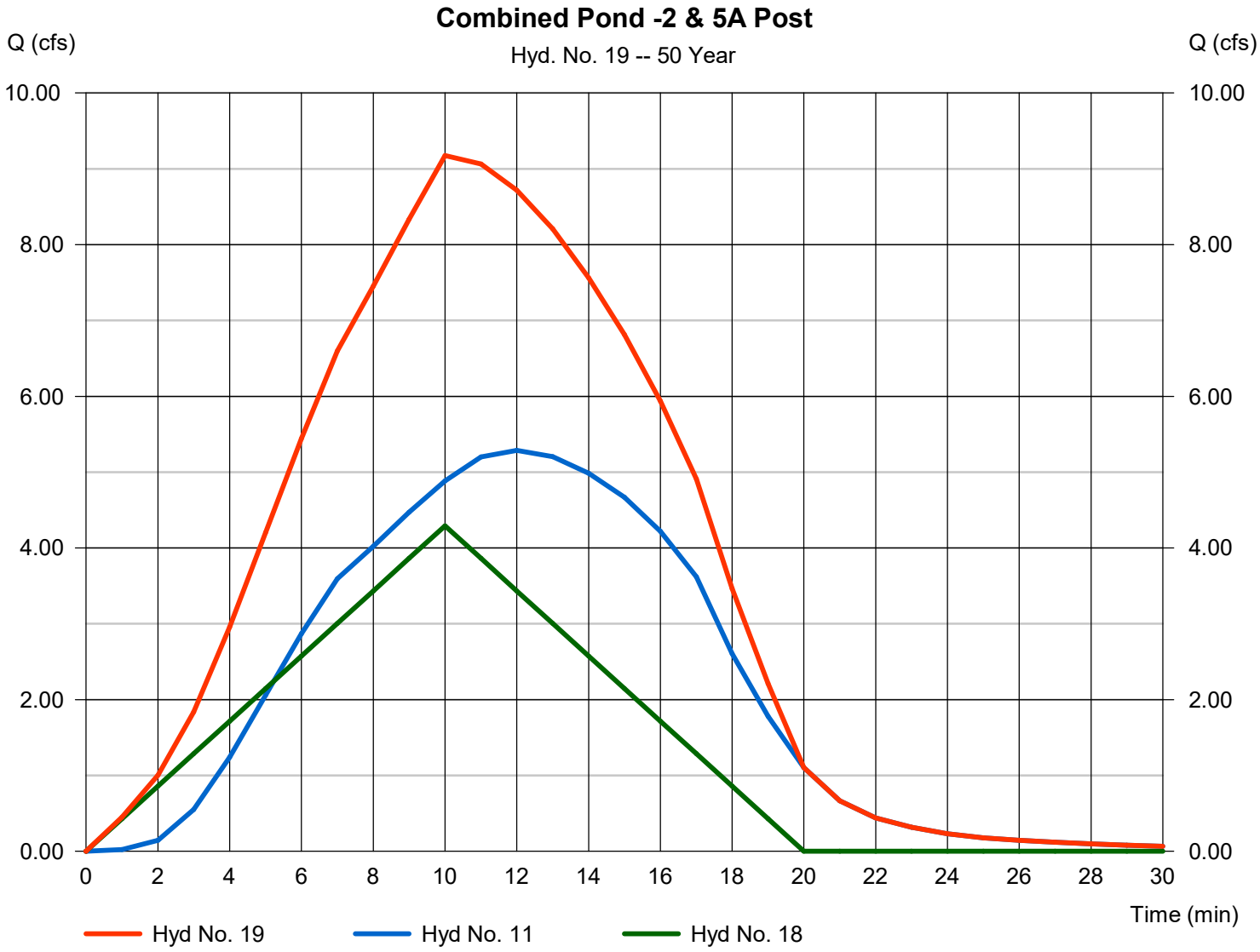


Hydrograph Report

Hyd. No. 19

Combined Pond -2 & 5A Post

Hydrograph type	= Combine	Peak discharge	= 9.176 cfs
Storm frequency	= 50 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 6,514 cuft
Inflow hyds.	= 11, 18	Contrib. drain. area	= 1.410 ac

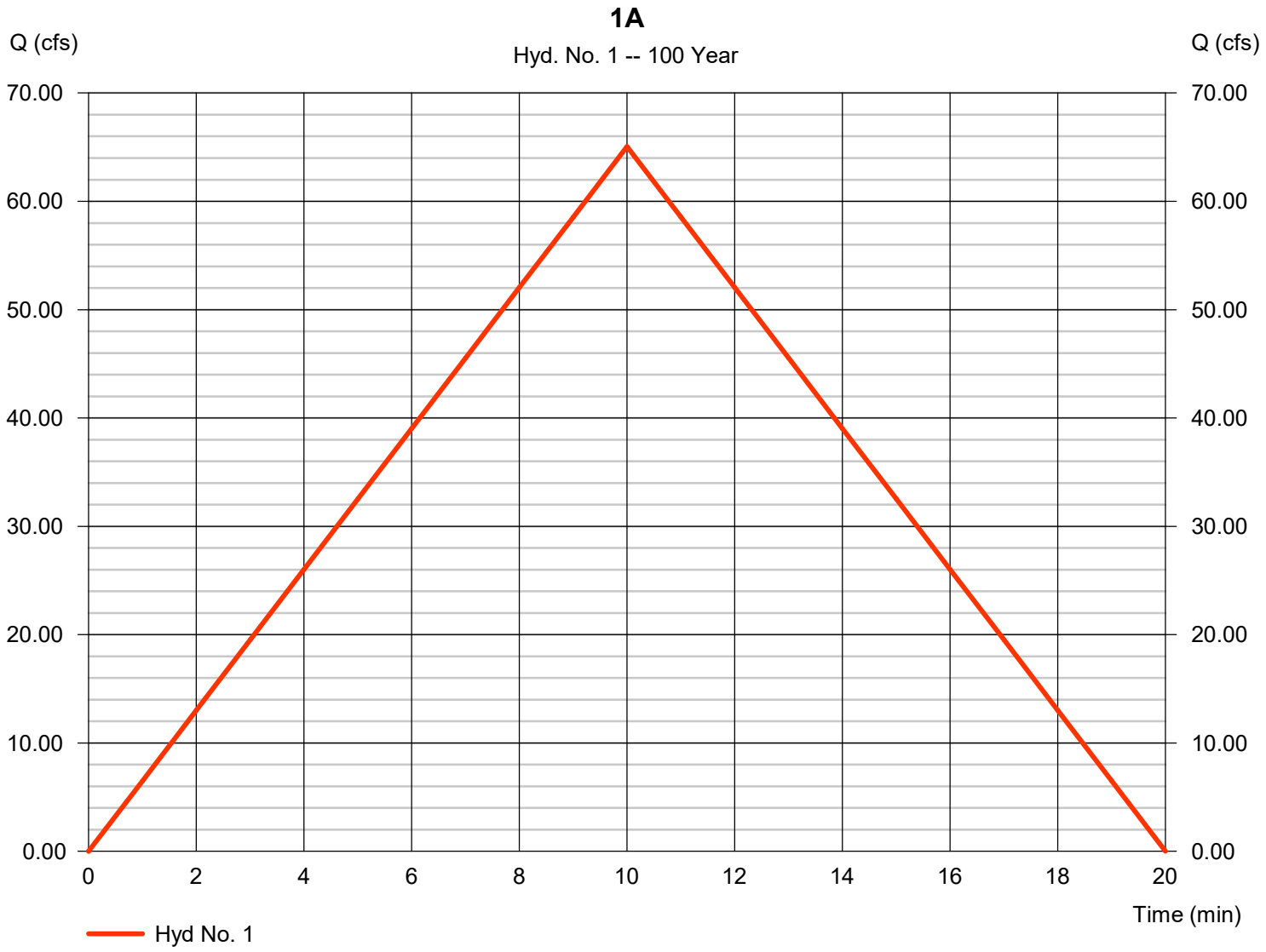


Hydrograph Report

Hyd. No. 1

1A

Hydrograph type	=	Rational	Peak discharge	=	65.05 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	39,032 cuft
Drainage area	=	20.600 ac	Runoff coeff.	=	0.45
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

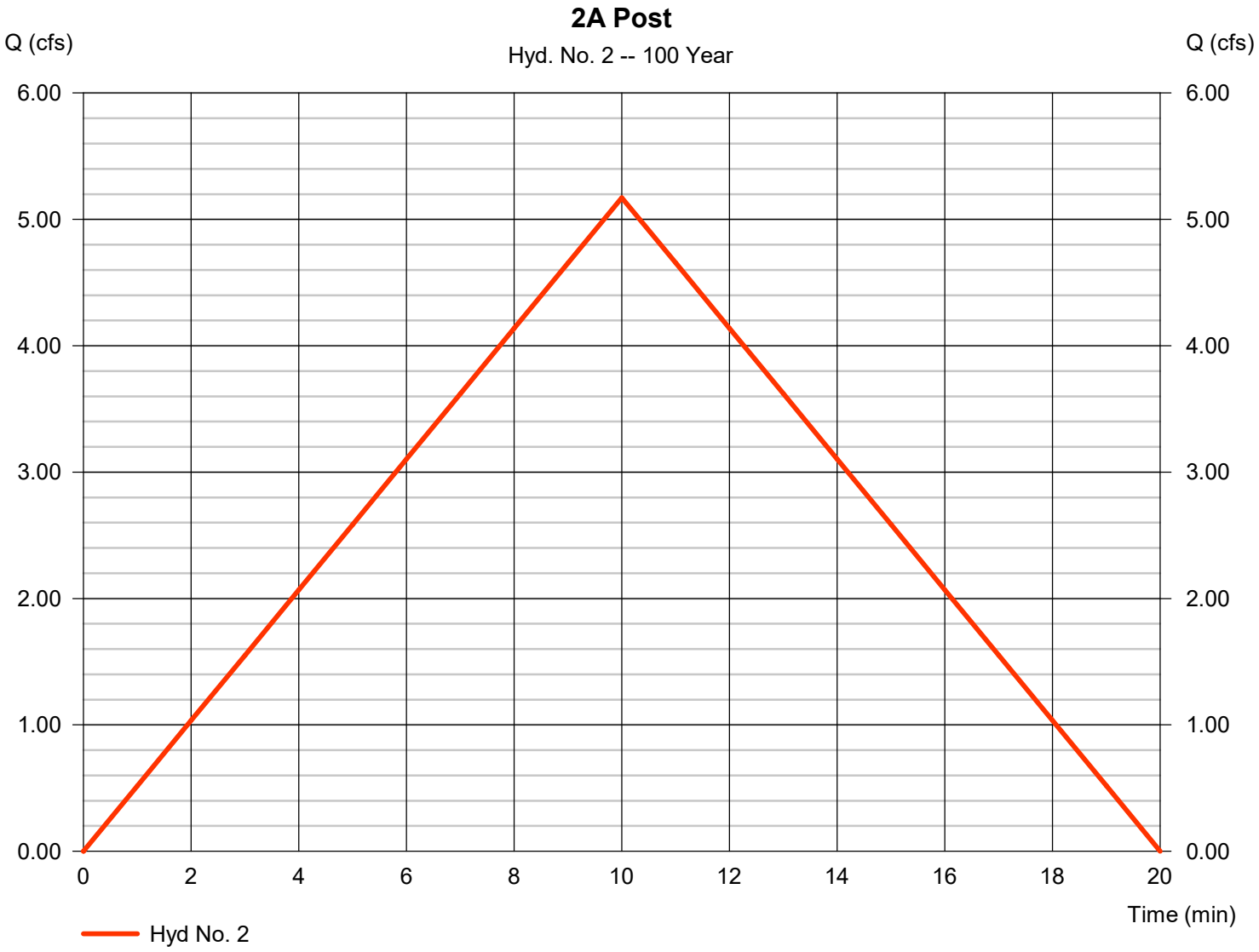


Hydrograph Report

Hyd. No. 2

2A Post

Hydrograph type	=	Rational	Peak discharge	=	5.172 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	3,103 cuft
Drainage area	=	1.340 ac	Runoff coeff.	=	0.55
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

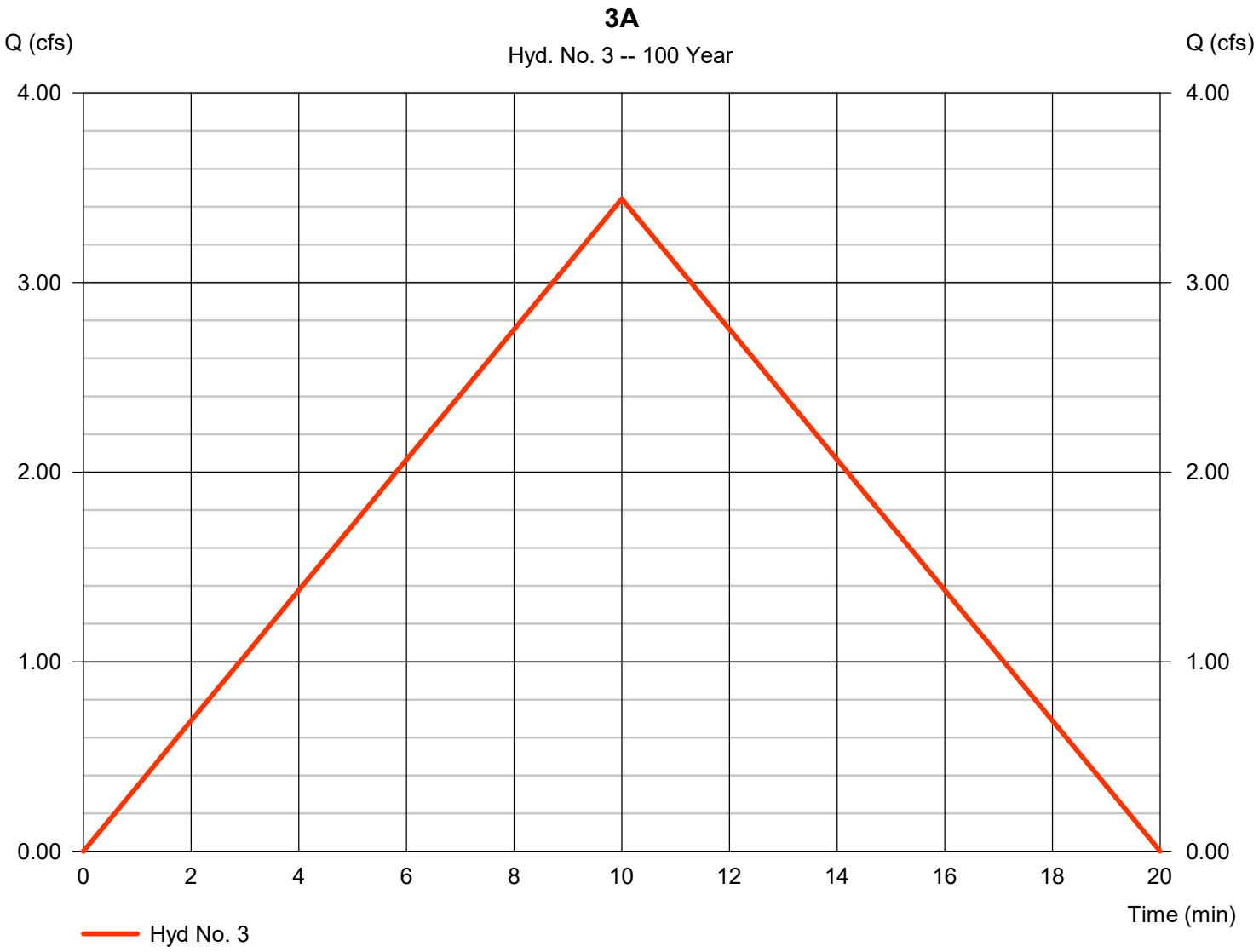


Hydrograph Report

Hyd. No. 3

3A

Hydrograph type	=	Rational	Peak discharge	=	3.442 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,065 cuft
Drainage area	=	1.090 ac	Runoff coeff.	=	0.45
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

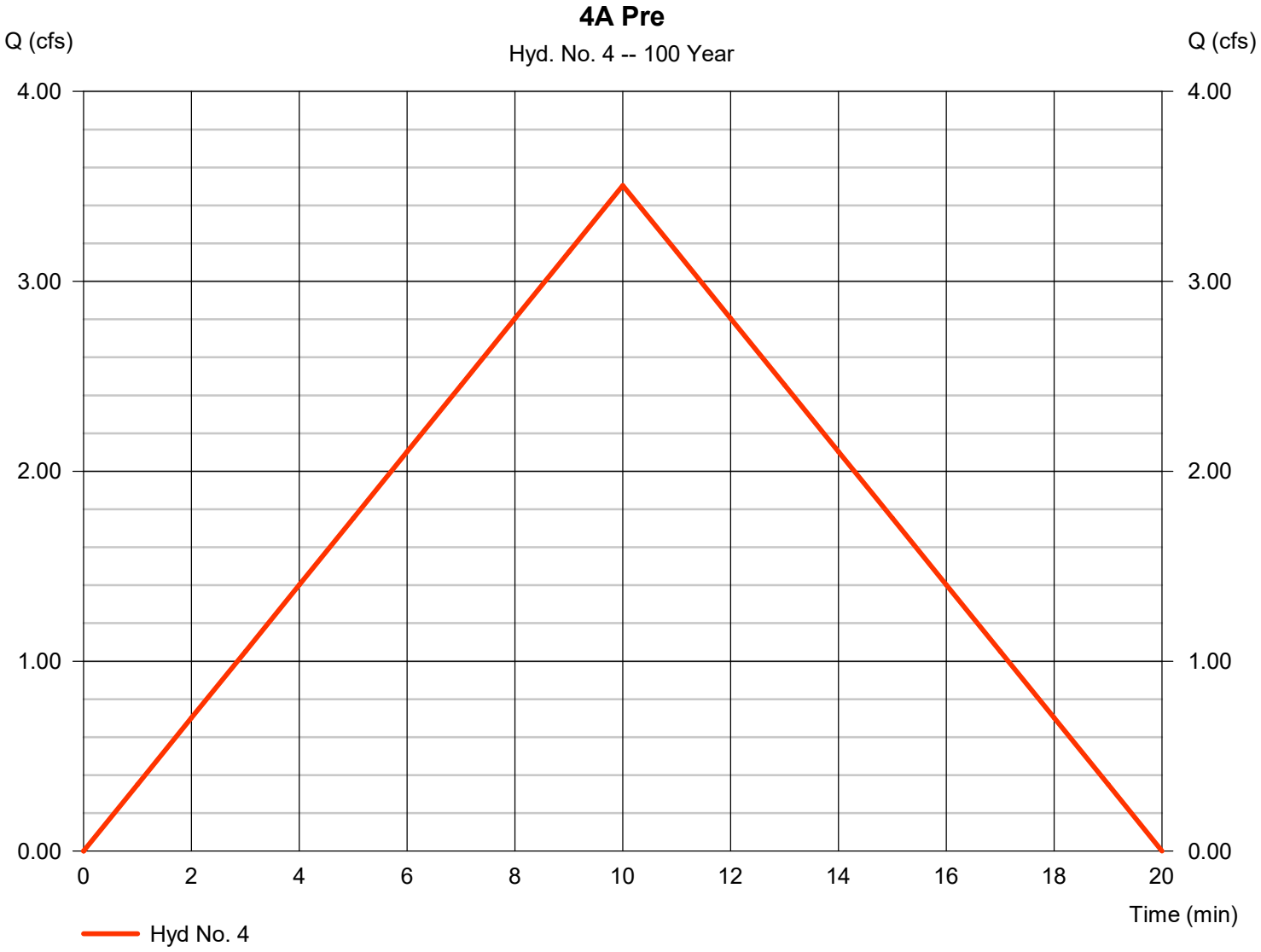


Hydrograph Report

Hyd. No. 4

4A Pre

Hydrograph type	=	Rational	Peak discharge	=	3.505 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,103 cuft
Drainage area	=	1.110 ac	Runoff coeff.	=	0.45
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

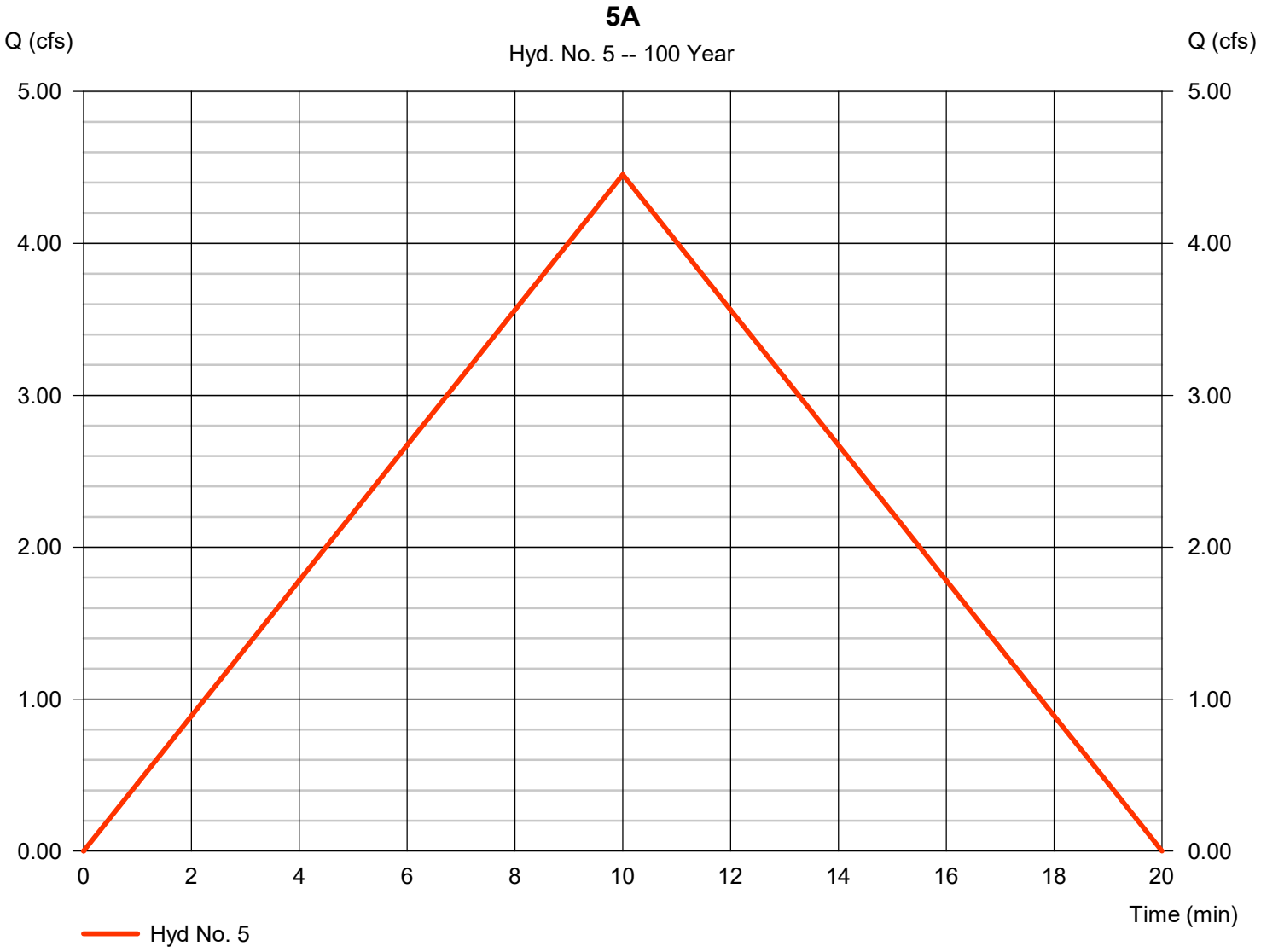


Hydrograph Report

Hyd. No. 5

5A

Hydrograph type	=	Rational	Peak discharge	=	4.453 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,672 cuft
Drainage area	=	1.410 ac	Runoff coeff.	=	0.45
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

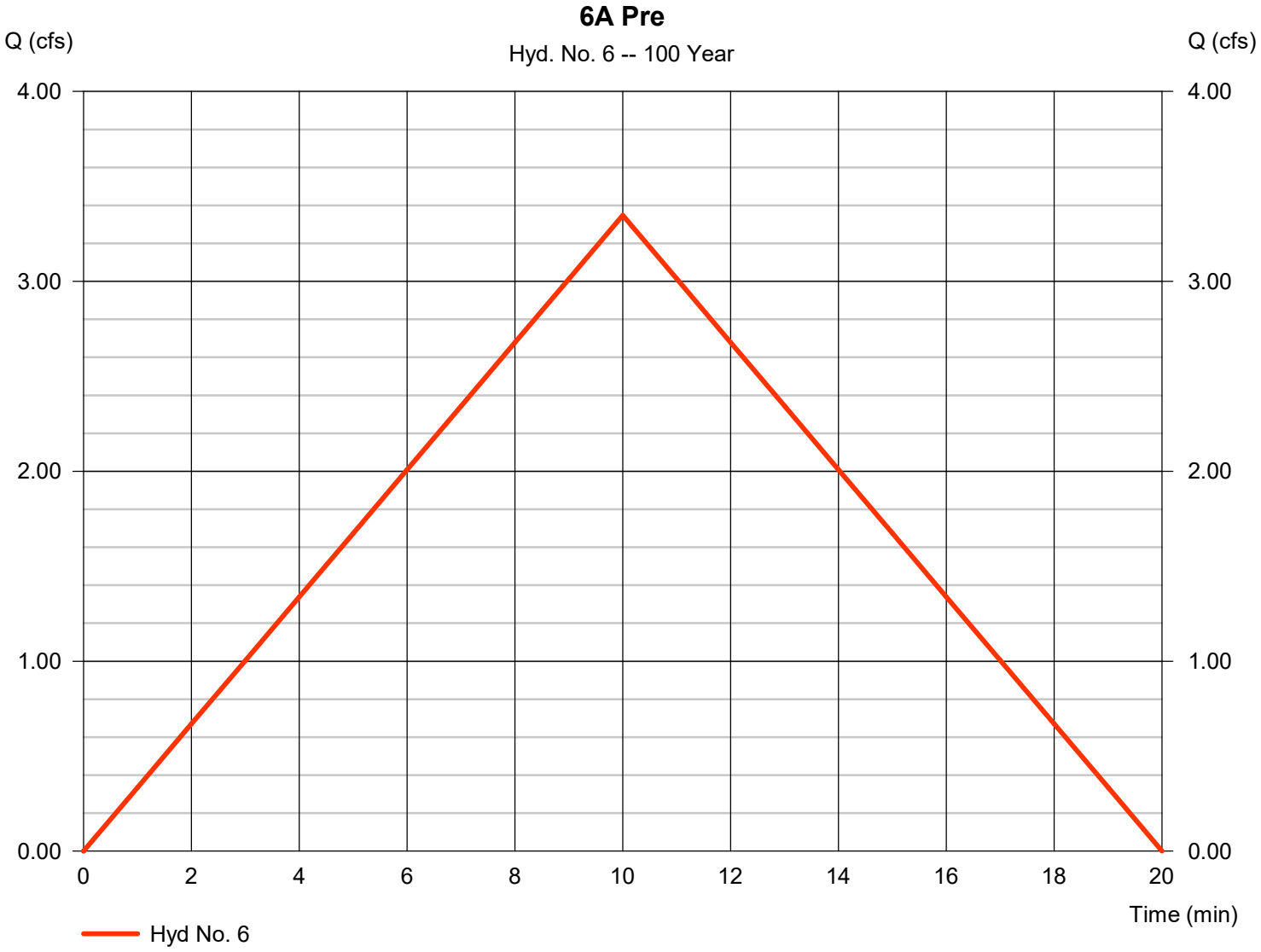


Hydrograph Report

Hyd. No. 6

6A Pre

Hydrograph type	=	Rational	Peak discharge	=	3.347 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,008 cuft
Drainage area	=	1.060 ac	Runoff coeff.	=	0.45
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

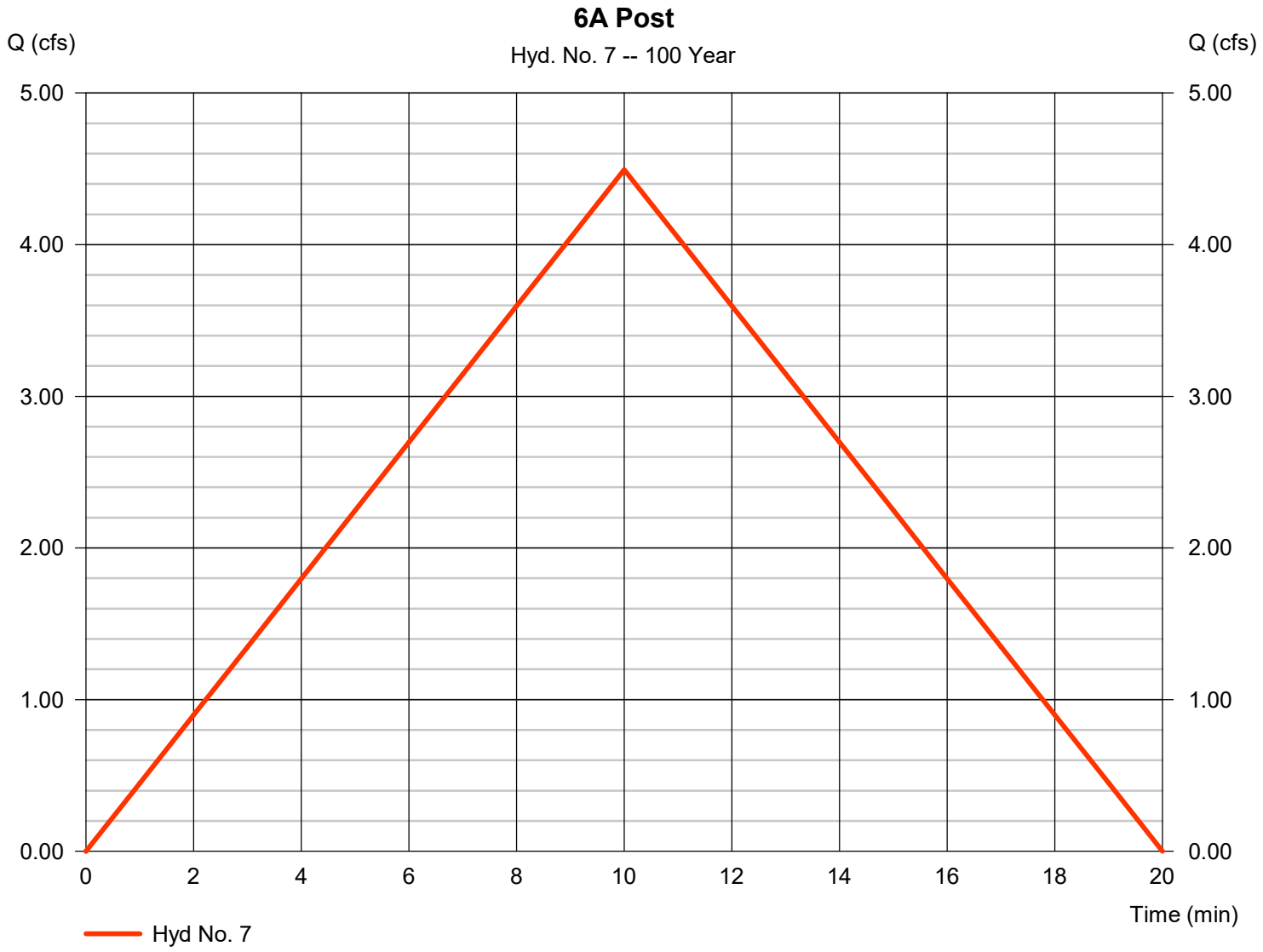


Hydrograph Report

Hyd. No. 7

6A Post

Hydrograph type	=	Rational	Peak discharge	=	4.495 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,697 cuft
Drainage area	=	1.050 ac	Runoff coeff.	=	0.61
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1



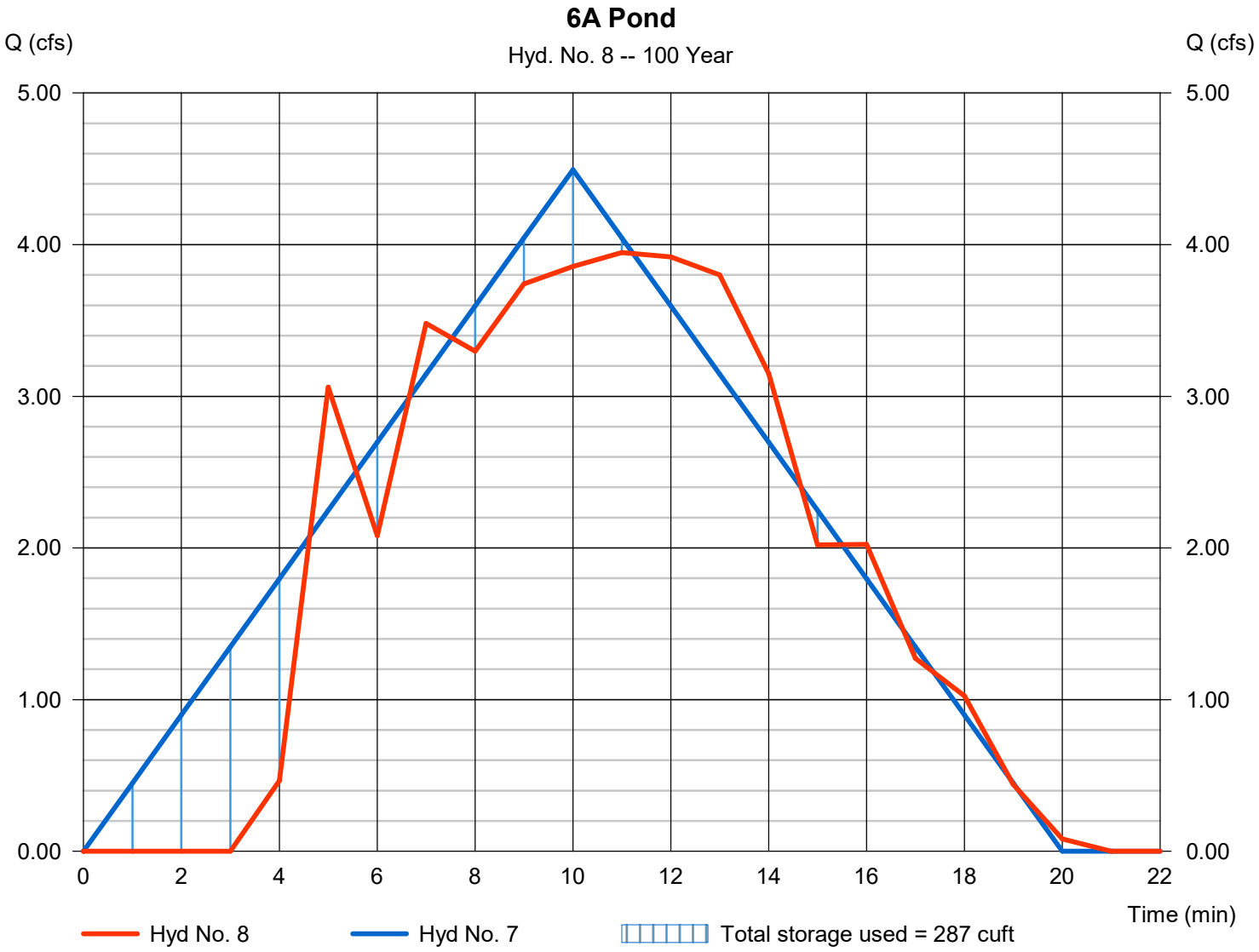
Hydrograph Report

Hyd. No. 8

6A Pond

Hydrograph type	=	Reservoir	Peak discharge	=	3.947 cfs
Storm frequency	=	100 yrs	Time to peak	=	11 min
Time interval	=	1 min	Hyd. volume	=	2,500 cuft
Inflow hyd. No.	=	7 - 6A Post	Max. Elevation	=	4239.60 ft
Reservoir name	=	Pond -3	Max. Storage	=	287 cuft

Storage Indication method used.

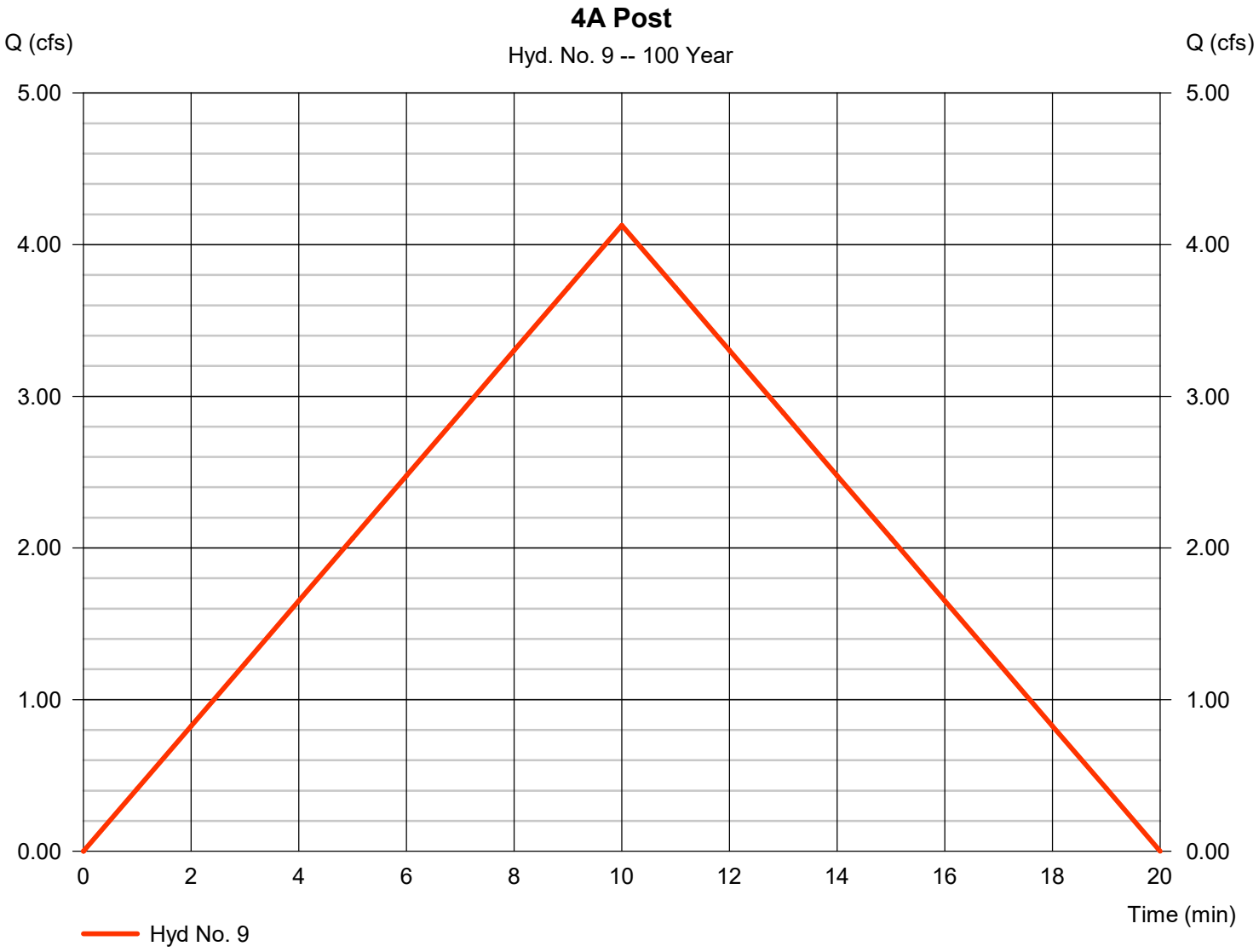


Hydrograph Report

Hyd. No. 9

4A Post

Hydrograph type	=	Rational	Peak discharge	=	4.128 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,477 cuft
Drainage area	=	1.110 ac	Runoff coeff.	=	0.53
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

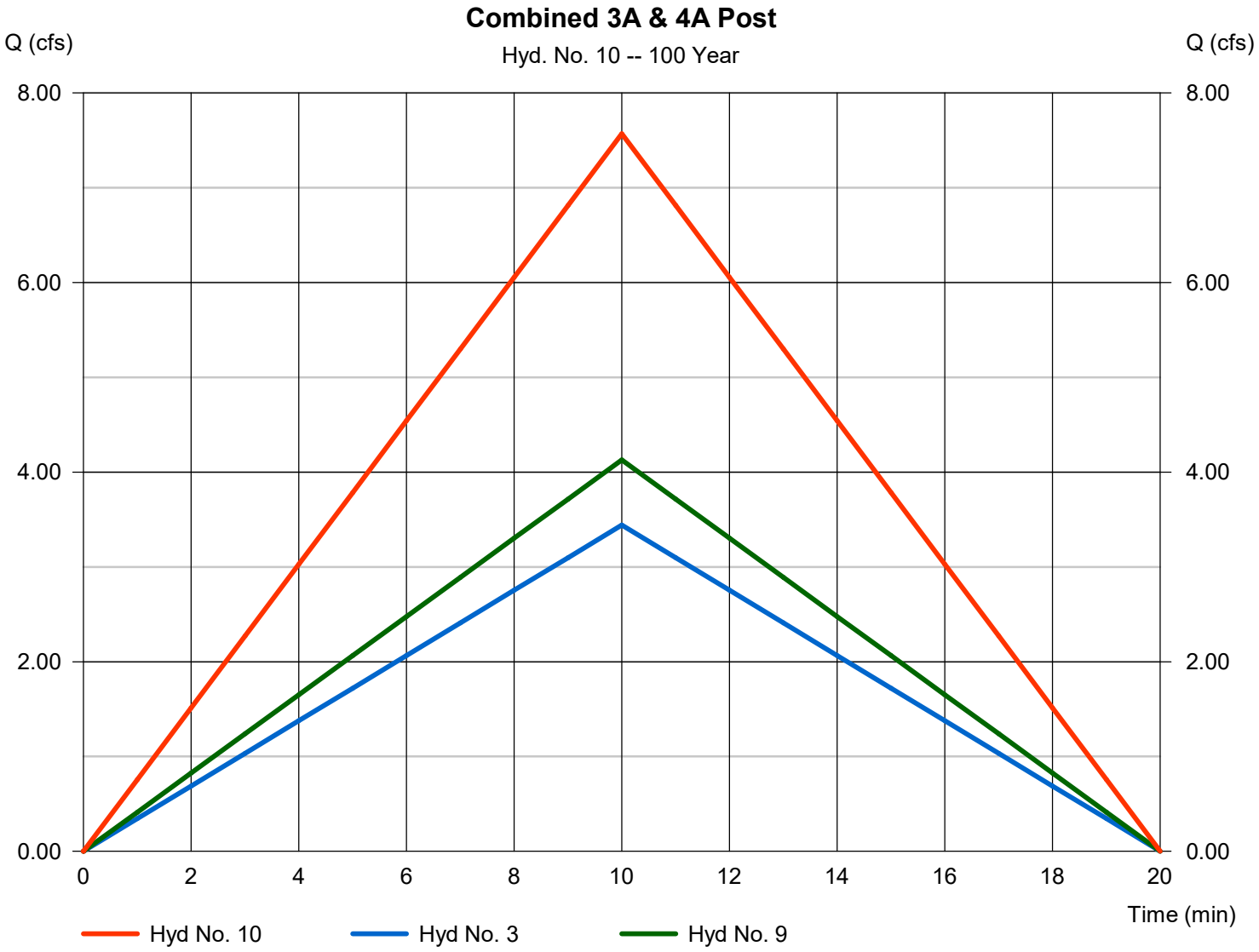


Hydrograph Report

Hyd. No. 10

Combined 3A & 4A Post

Hydrograph type	= Combine	Peak discharge	= 7.571 cfs
Storm frequency	= 100 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 4,542 cuft
Inflow hyds.	= 3, 9	Contrib. drain. area	= 2.200 ac



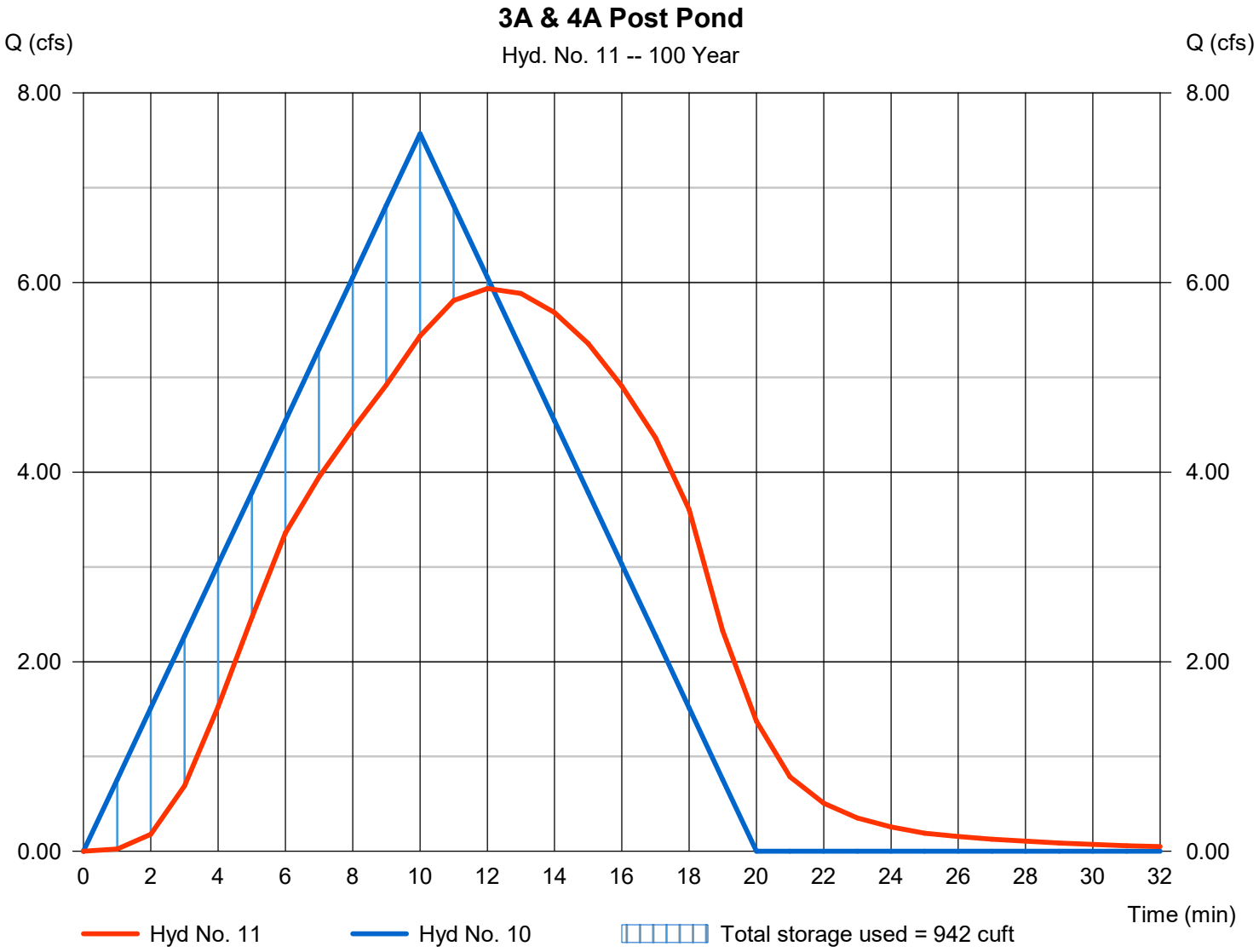
Hydrograph Report

Hyd. No. 11

3A & 4A Post Pond

Hydrograph type	=	Reservoir	Peak discharge	=	5.937 cfs
Storm frequency	=	100 yrs	Time to peak	=	12 min
Time interval	=	1 min	Hyd. volume	=	4,541 cuft
Inflow hyd. No.	=	10 - Combined 3A & 4A Post	Max. Elevation	=	4264.64 ft
Reservoir name	=	Pond -2	Max. Storage	=	942 cuft

Storage Indication method used.

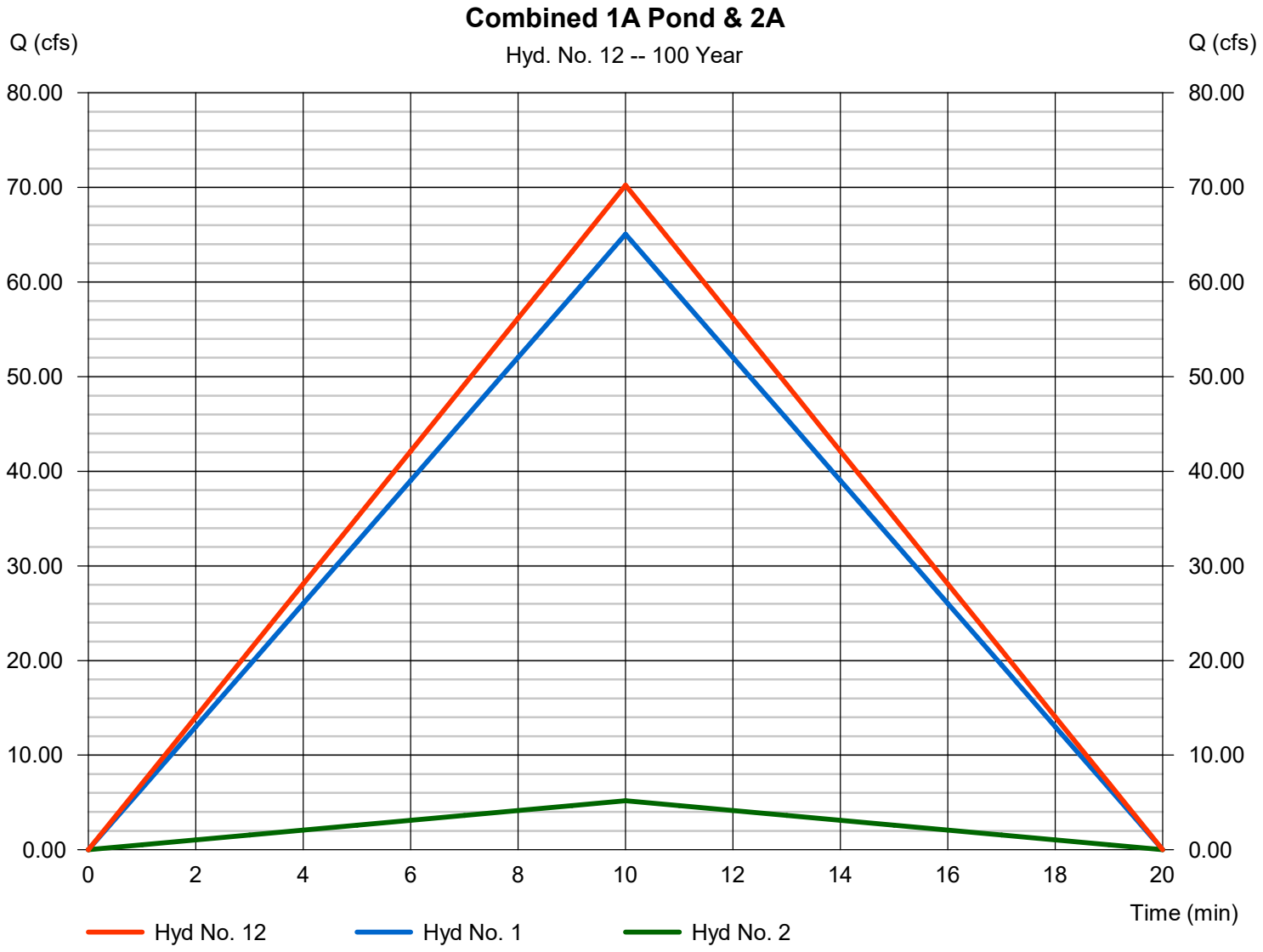


Hydrograph Report

Hyd. No. 12

Combined 1A Pond & 2A

Hydrograph type	= Combine	Peak discharge	= 70.22 cfs
Storm frequency	= 100 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 42,135 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 21.940 ac

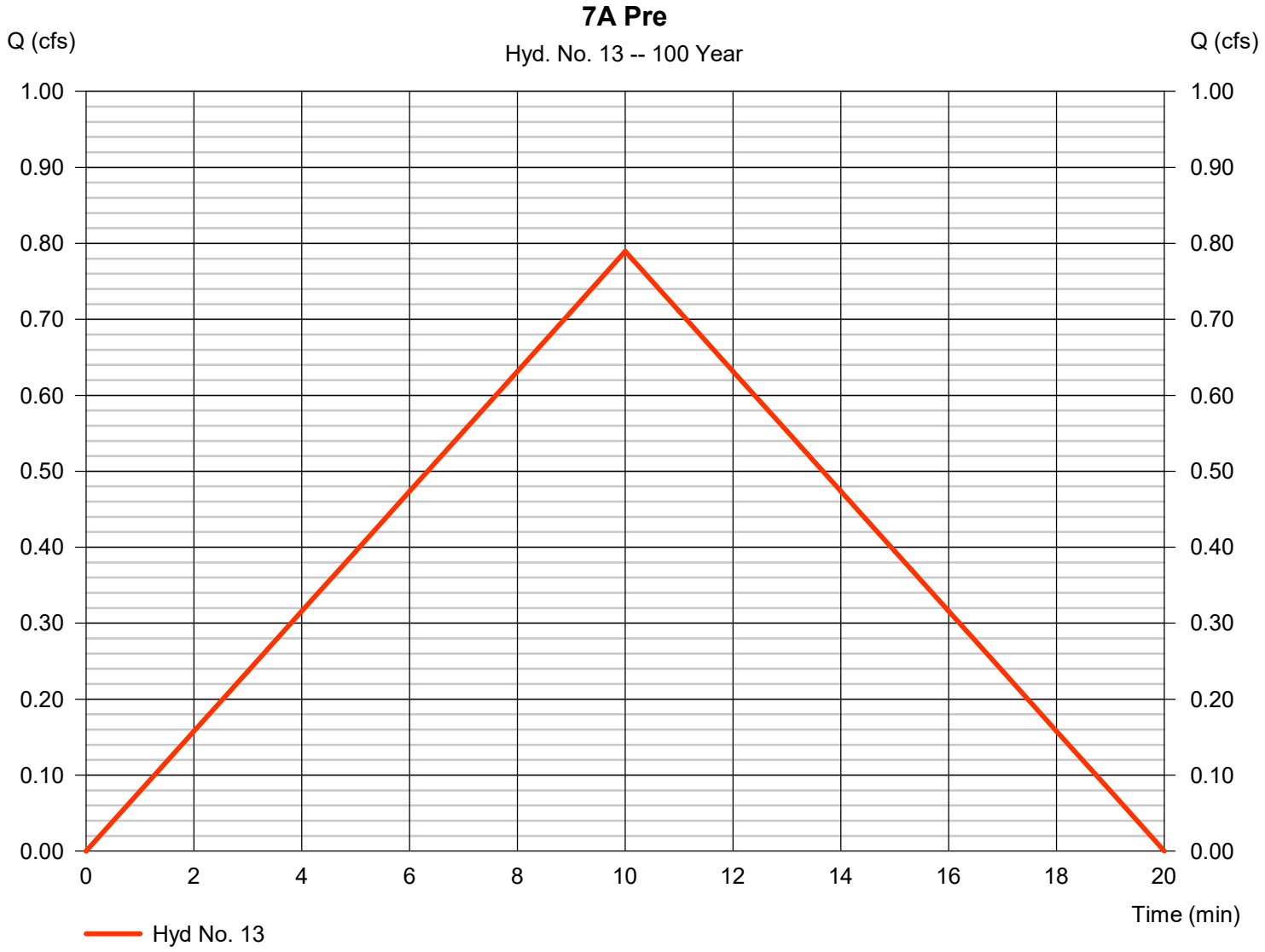


Hydrograph Report

Hyd. No. 13

7A Pre

Hydrograph type	=	Rational	Peak discharge	=	0.789 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	474 cuft
Drainage area	=	0.250 ac	Runoff coeff.	=	0.45
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024 Saturday, 02 / 24 / 2024

Hyd. No. 14

7A Post

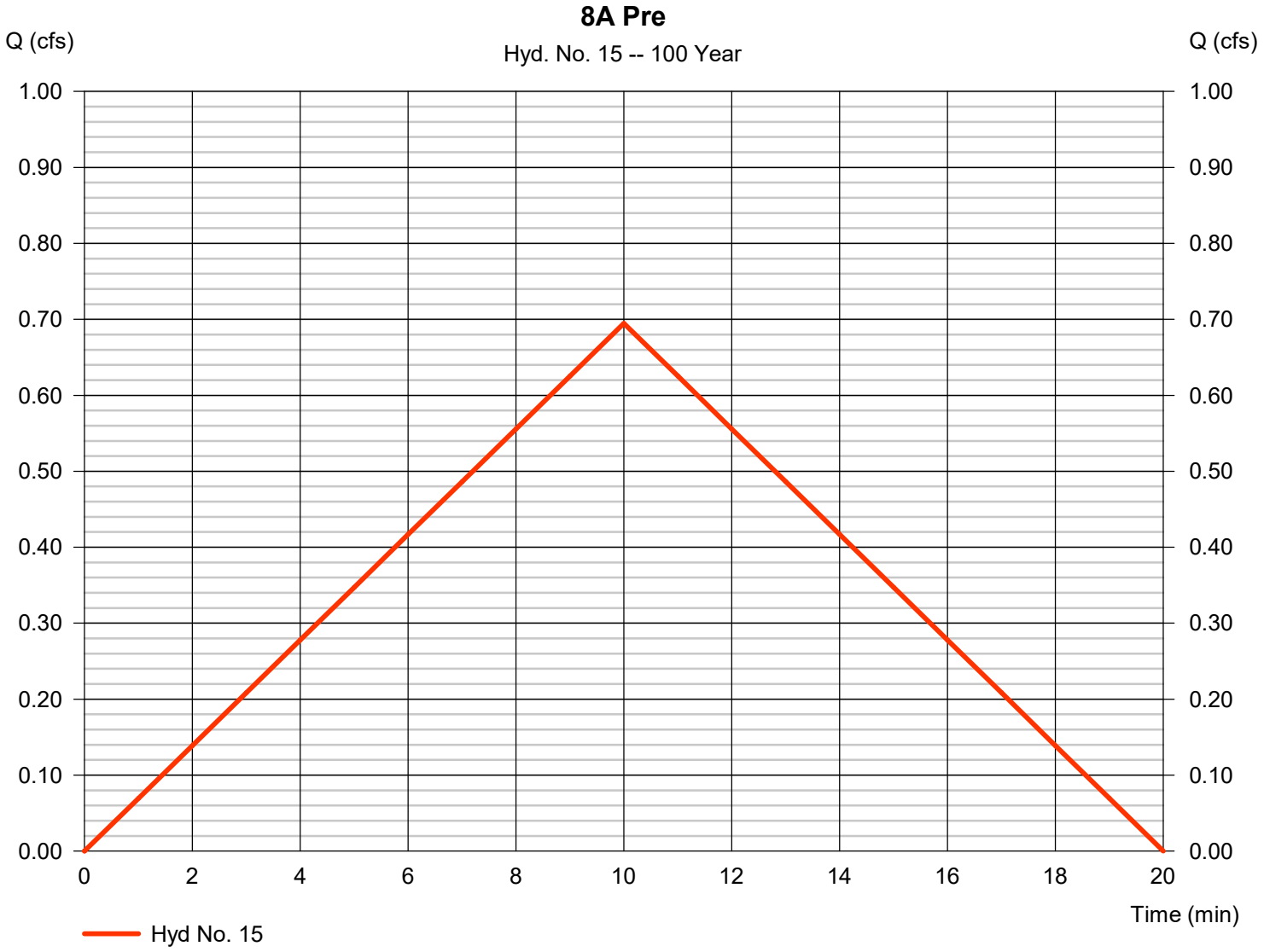
Hydrograph type	=	Rational	Peak discharge	=	1.140 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	684 cuft
Drainage area	=	0.250 ac	Runoff coeff.	=	0.65
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

Hydrograph Report

Hyd. No. 15

8A Pre

Hydrograph type	=	Rational	Peak discharge	=	0.695 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	417 cuft
Drainage area	=	0.220 ac	Runoff coeff.	=	0.45
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

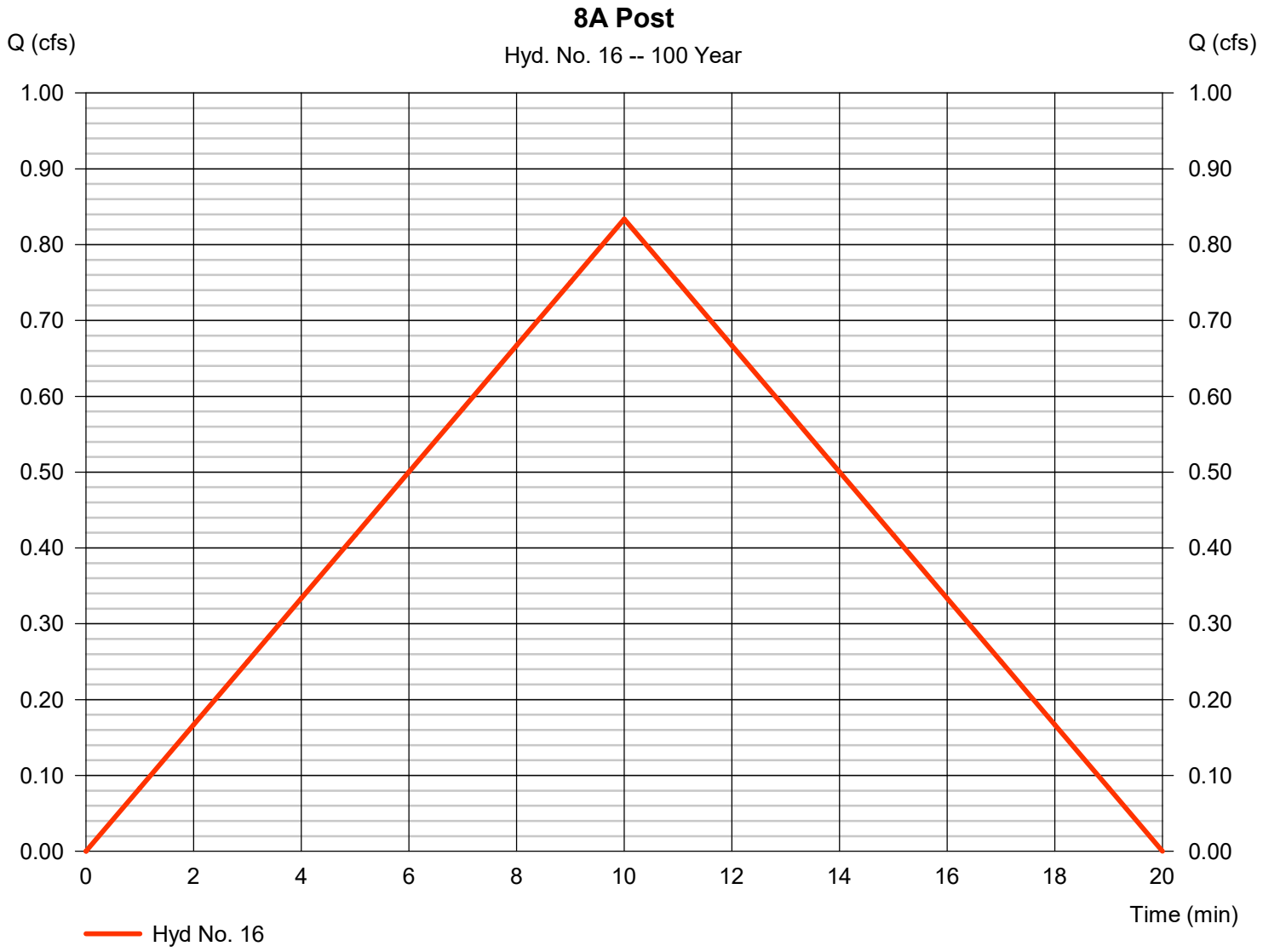


Hydrograph Report

Hyd. No. 16

8A Post

Hydrograph type	=	Rational	Peak discharge	=	0.834 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	500 cuft
Drainage area	=	0.220 ac	Runoff coeff.	=	0.54
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

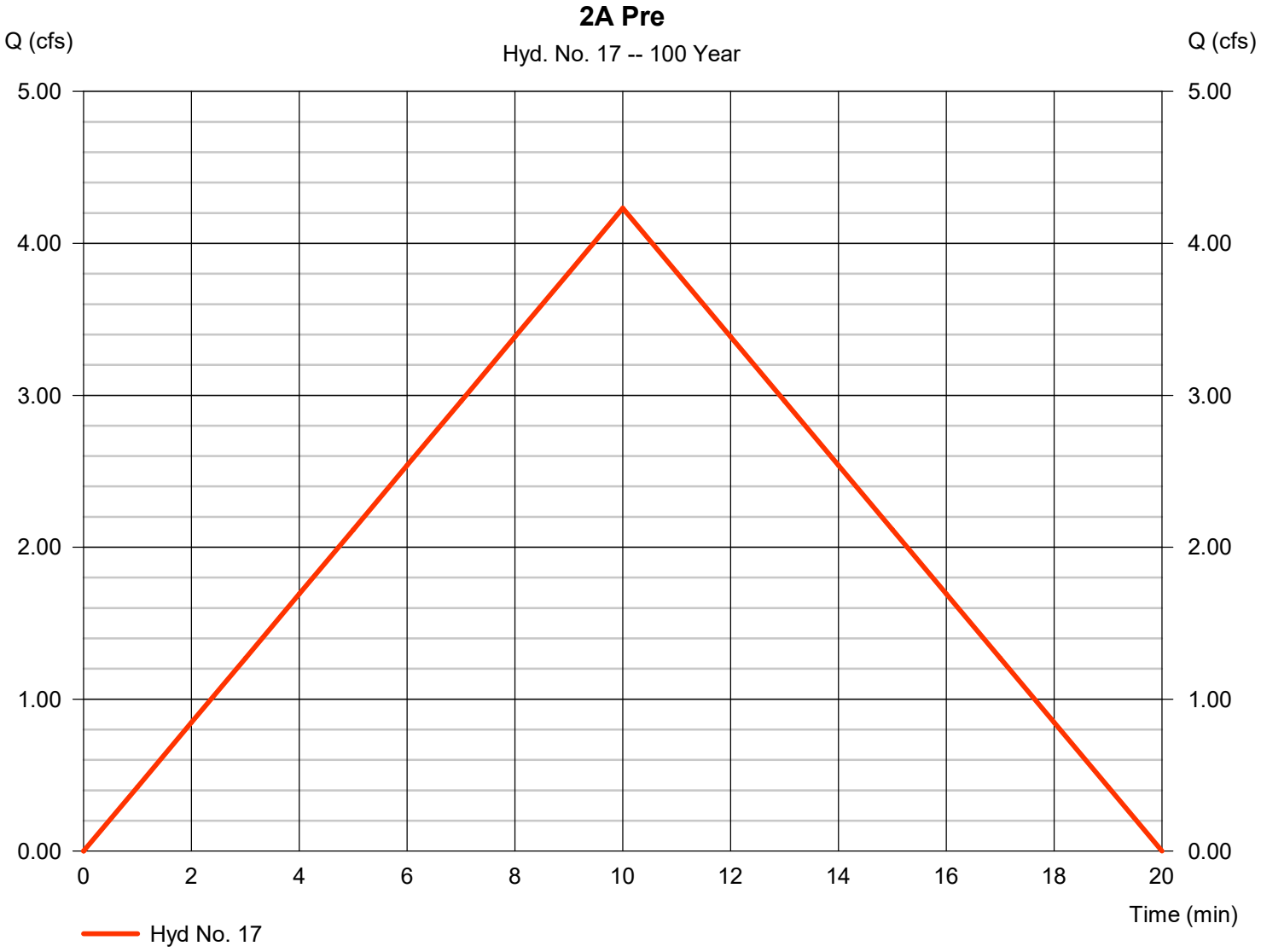


Hydrograph Report

Hyd. No. 17

2A Pre

Hydrograph type	=	Rational	Peak discharge	=	4.232 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,539 cuft
Drainage area	=	1.340 ac	Runoff coeff.	=	0.45
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

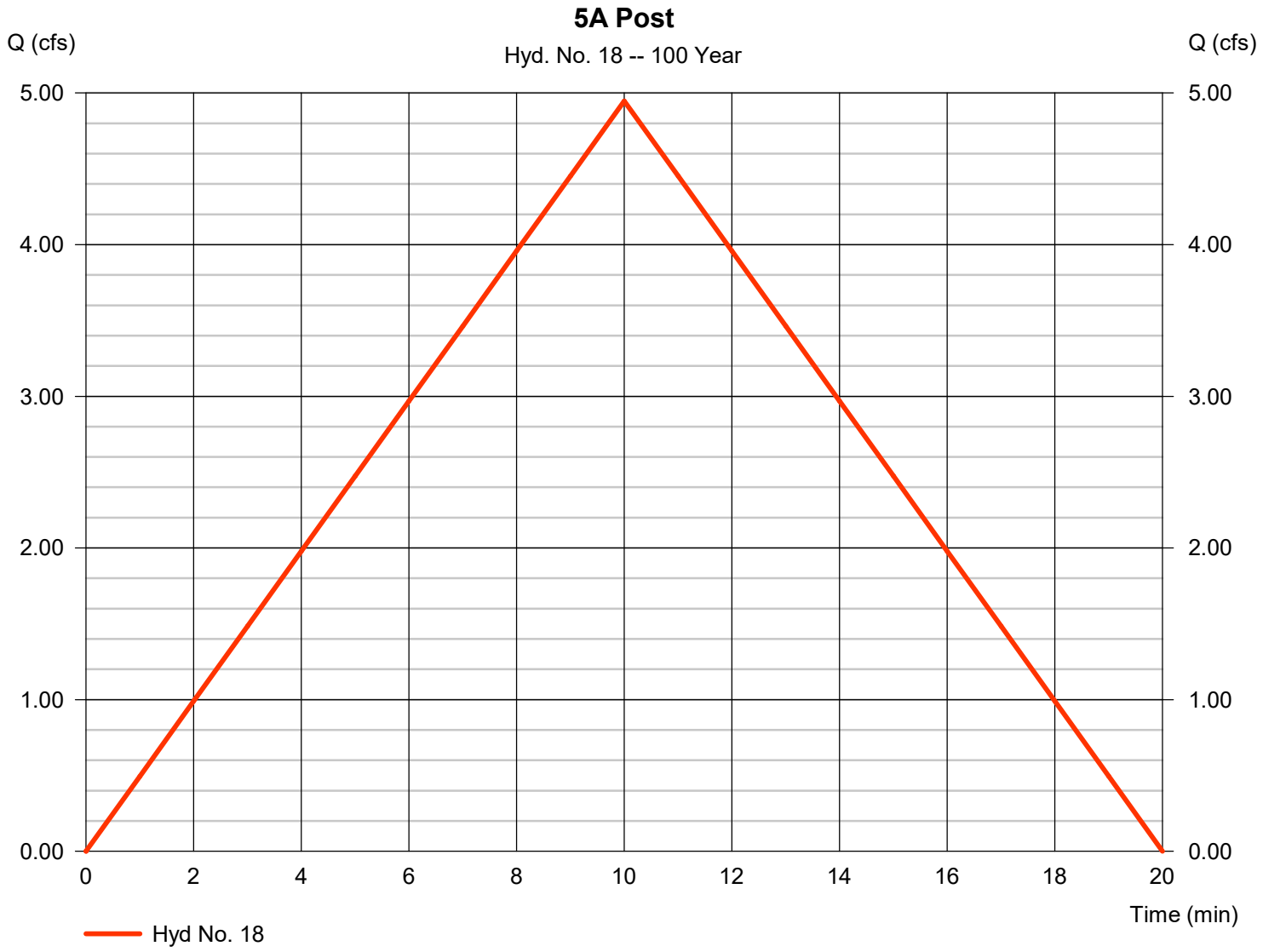


Hydrograph Report

Hyd. No. 18

5A Post

Hydrograph type	=	Rational	Peak discharge	=	4.947 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	2,968 cuft
Drainage area	=	1.410 ac	Runoff coeff.	=	0.5
Intensity	=	7.018 in/hr	Tc by User	=	10.00 min
IDF Curve	=	Verde Village Intensity.IDF	Asc/Rec limb fact	=	1/1

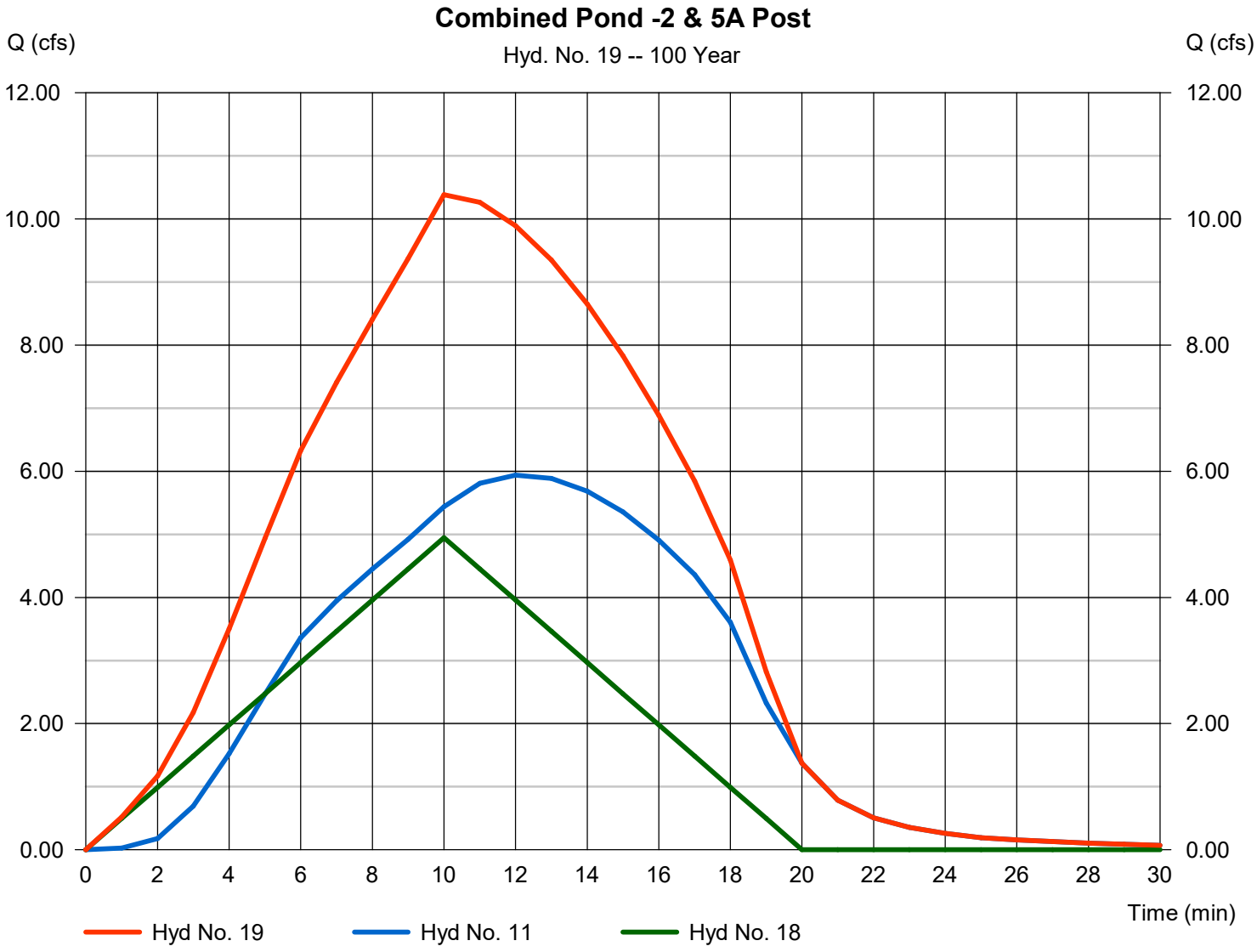


Hydrograph Report

Hyd. No. 19

Combined Pond -2 & 5A Post

Hydrograph type	= Combine	Peak discharge	= 10.39 cfs
Storm frequency	= 100 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 7,510 cuft
Inflow hyds.	= 11, 18	Contrib. drain. area	= 1.410 ac



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XIII. APPENDIX H

Detention pond data

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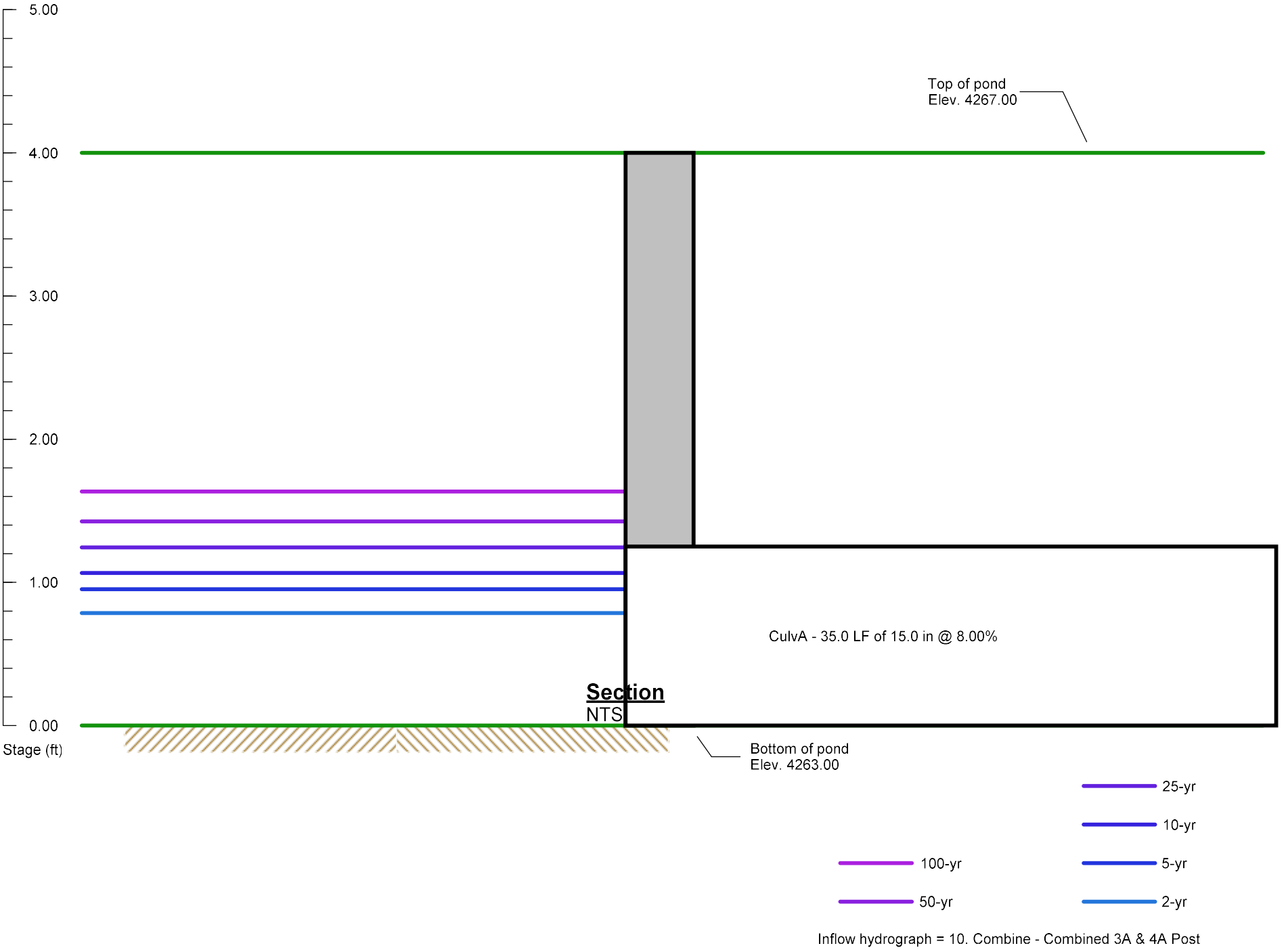
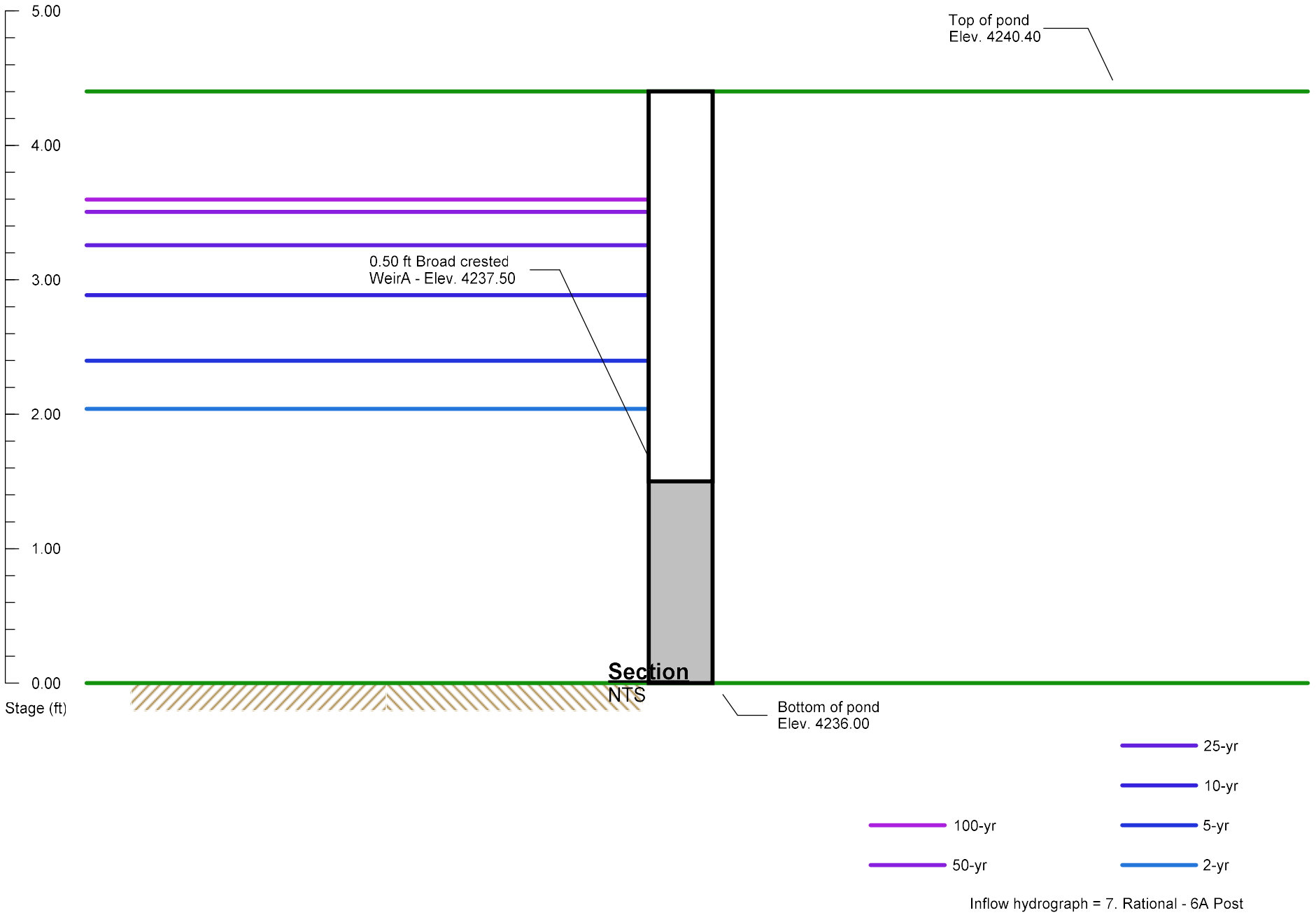
In affiliation with:
Heritage Land Surveying & Mapping, Inc. with offices in Sedona, Camp Verde & Colorado

Pond No. 2 - Pond -2



Inflow hydrograph = 10. Combine - Combined 3A & 4A Post

Pond No. 4 - Pond -3



Inflow hydrograph = 7. Rational - 6A Post