KAW VALLEY ENGINEERING, INC.

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Address: 2319 N. Jackson
P.O. Box 1304
Junction City, KS 66441

Date: May 16, 2025

Project No.: A24D2009

Subject: Stormwater Report

Project: Smalls Sliders – 1050 SW Jefferson Street, Lee's Summit, Missouri

Introduction

Paxvesta, LLC is proposing to build a new 930 square foot Smalls Sliders at 1050 SW Jefferson Street in Lee's Summit, Missouri. This site will have a total land disturbance of 0.88 acres. This memo is to provide site-specific stormwater calculations. For quality and quality control for this site please refer to the Oldham Village report done by Engineering Solutions dated May 22, 2024.

Proposed Conditions

The proposed site will include the drive-through building, outdoor patio, drive lanes and parking.

0.07 Acres of Pervious Area
0.81 Acres of Impervious Area

See **Appendix A** for proposed site conditions.

Stormwater Runoff Calculation

The project site stormwater runoff was calculated using the data supplied in the Oldham Village report done by Engineering Solutions dated May 22, 2024. See **Appendix B** for the Hydraflow Hydrographs report.

Total Site Discharge 2YR = 3.3 CFS, 10 YR = 5.5 CFS, 100 YR = 8.6 CFS

Storm sewer was sized using Hydraflow Storm Sewers using the Rational Method to handle the 100-year storm. See **Appendix C** for the Hydraulic Grade Line Calculations and Profiles.

Conclusion

The proposed Small Sliders matches the proposed use for this site and all quality and quantity controls were covered by the regional detention listed in the Oldham Village report done by Engineering Solutions dated May 22, 2024. The site-specific run-off is shown above, and the on-site storm sewer was sized to handle the 100-year storm.

Sincerely,

Randy Purdue, P.E.
Project Manager

RCP:smw

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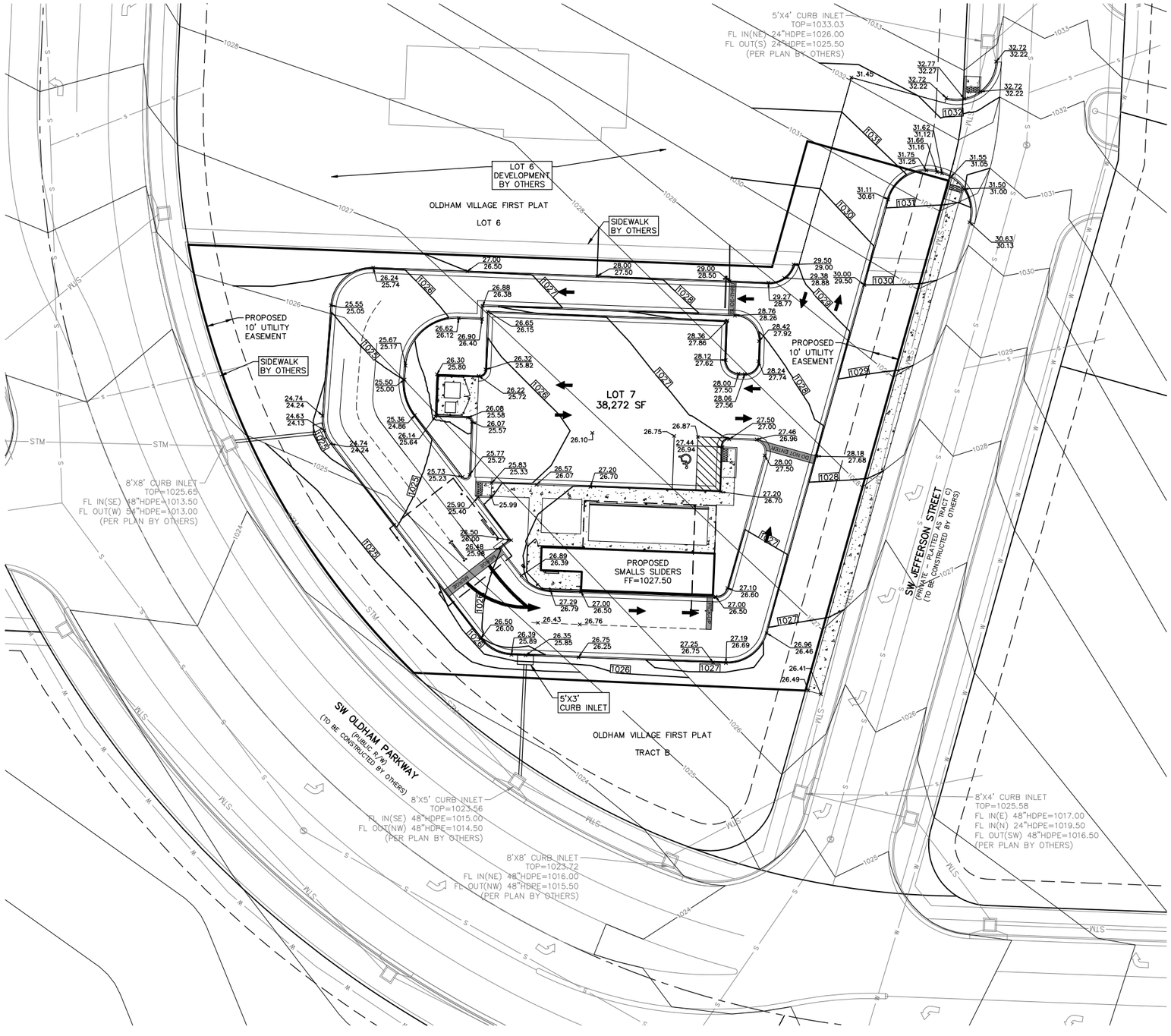
Appendix A
Existing Conditions



REV	DATE	DESCRIPTION	DSN	DWN	CHK

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SMALLS SLIDERS
SW JEFFERSON STREET
LEE'S SUMMIT, MISSOURI

PRELIMINARY DEVELOPMENT PLAN
GRADING PLAN

PROJ. NO.	A24D2009
DESIGNER	DRAWN BY
RCP	JP
CFN	
2009GP_PDP	
SHEET	REV
3	

THIS DRAWING SHALL NOT BE UTILIZED BY ANY PERSON, FIRM, OR CORPORATION IN WHOLE OR IN PART WITHOUT THE SPECIFIC PERMISSION OF KAW VALLEY ENGINEERING, INC.

Appendix B
Hydraflow Hydrographs Report

Hydraulic Grade Line Computations

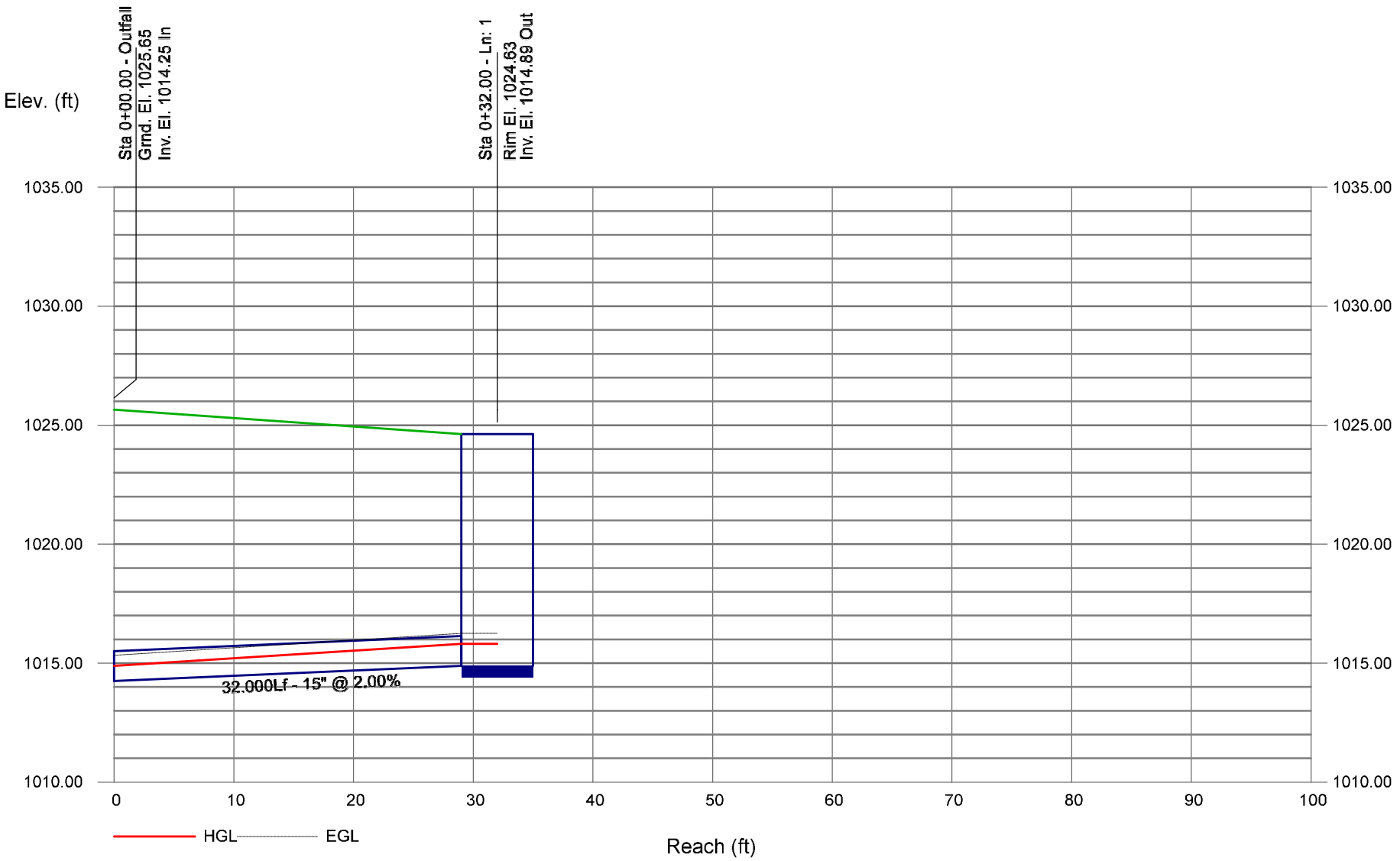
Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf		Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf	Ave Sf	Enrgy loss		
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)
1	15	5.14	1014.25	1014.89	0.64	0.63	8.14	0.44	1015.33	0.000	32.000	1014.89	1015.81	0.92**	0.97	5.32	0.44	1016.25	0.000	0.000	n/a	1.00	0.44
2	15	1.01	1015.00	1015.35	0.35	0.28	3.58	0.14	1015.49	0.000	43.000	1015.86	1016.25	0.39**	0.33	3.04	0.14	1016.40	0.000	0.000	n/a	1.00	0.14

Project File: storm sewer.stm | Number of lines: 2 | Run Date: 5/15/2025

Notes: ; ** Critical depth. ; c = cir e = ellip b = box

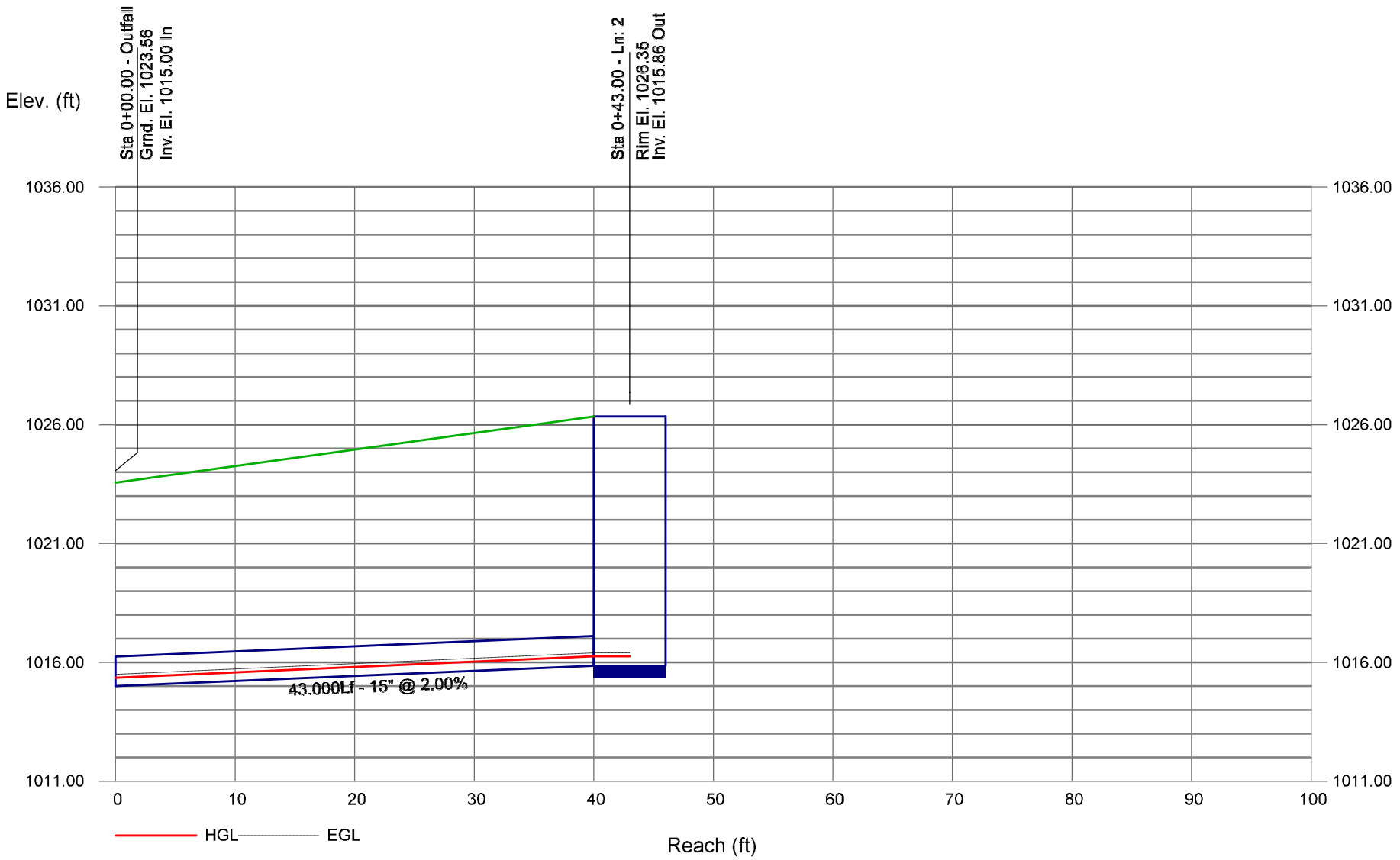
Storm Sewer Profile

Proj. file: storm sewer.stm



Storm Sewer Profile

Proj. file: storm sewer.stm



Appendix C
Hydraulic Grade Line Calculations and Profiles

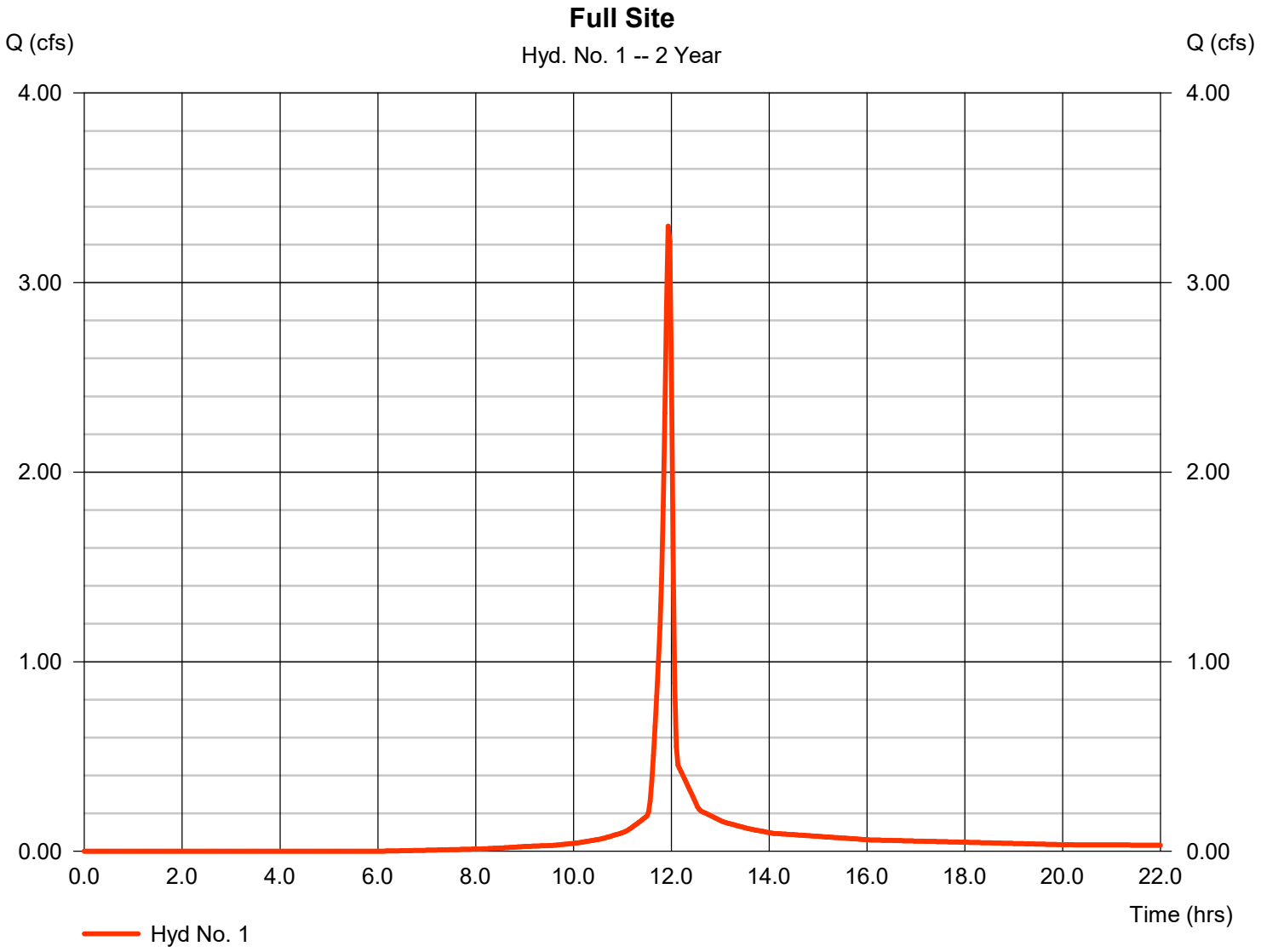
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Thursday, 05 / 15 / 2025

Hyd. No. 1

Full Site

Hydrograph type	= SCS Runoff	Peak discharge	= 3.297 cfs
Storm frequency	= 2 yrs	Time to peak	= 11.93 hrs
Time interval	= 2 min	Hyd. volume	= 6,794 cuft
Drainage area	= 0.880 ac	Curve number	= 88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

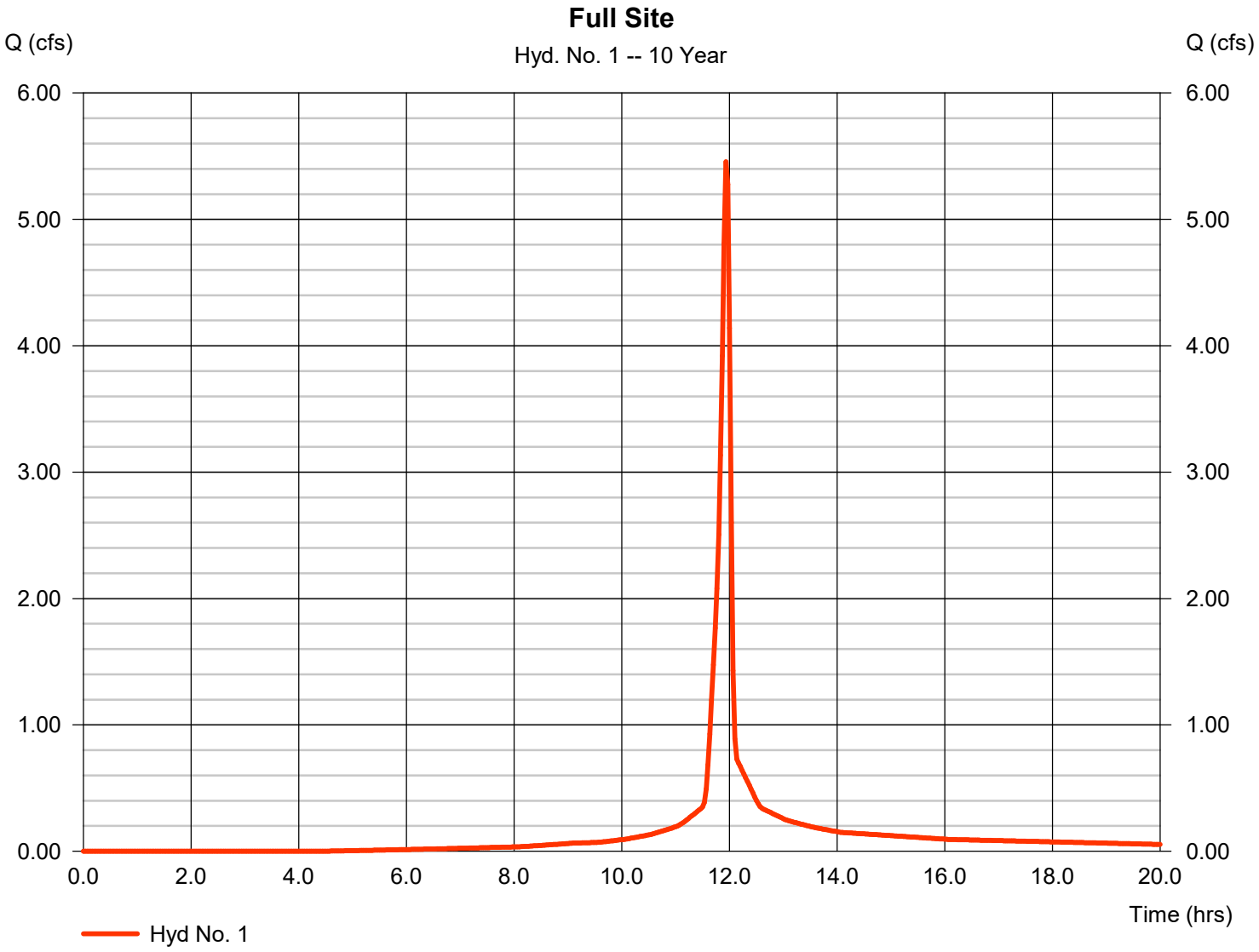


Hydrograph Report

Hyd. No. 1

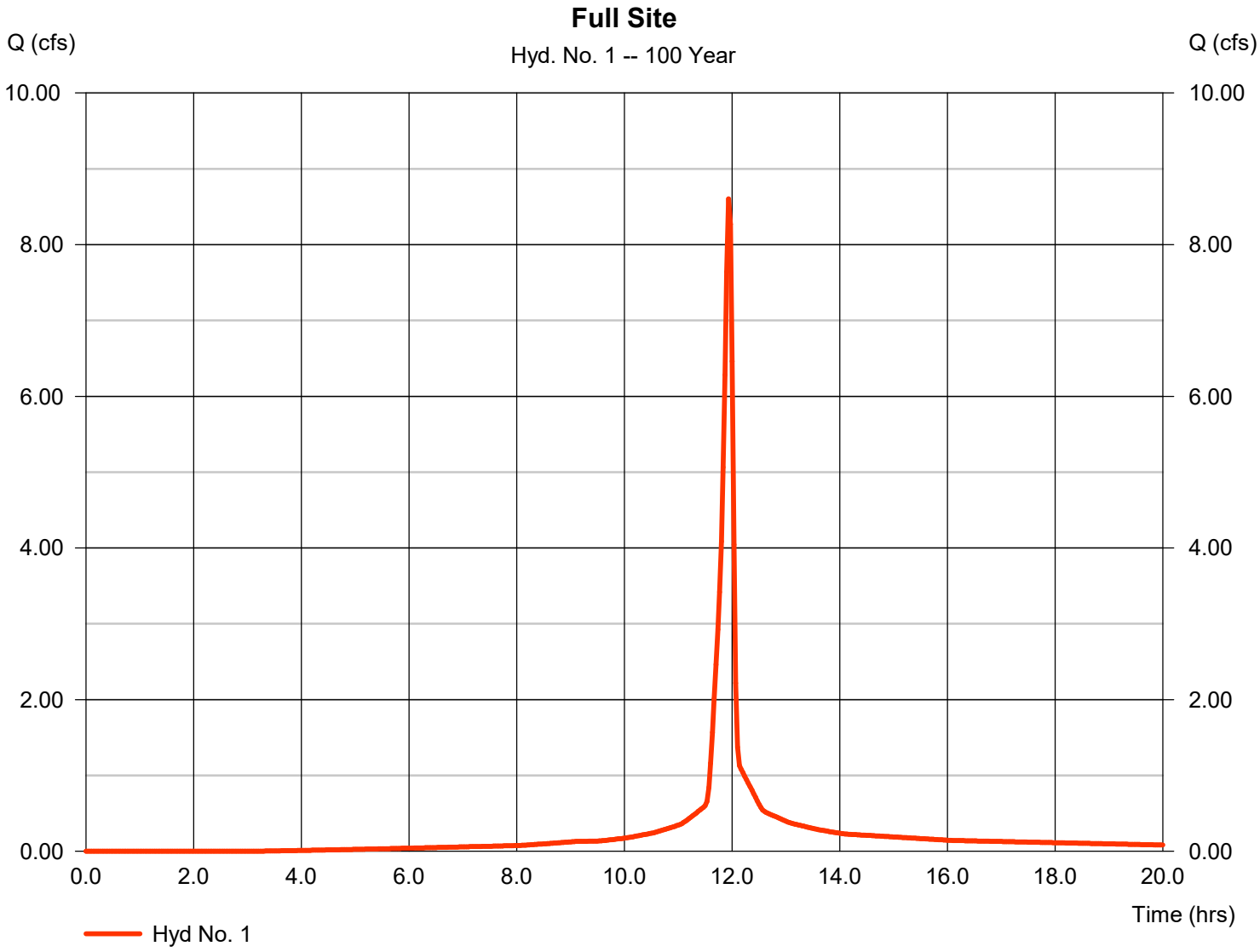
Full Site

Hydrograph type	=	SCS Runoff	Peak discharge	=	5.456 cfs
Storm frequency	=	10 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	11,557 cuft
Drainage area	=	0.880 ac	Curve number	=	88
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	5.20 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484



Hydrograph Report

Hyd. No. 1

Full Site

Hydrograph type	=	SCS Runoff	Peak discharge	=	8.605 cfs
Storm frequency	=	100 yrs	Time to peak	=	11.93 hrs
Time interval	=	2 min	Hyd. volume	=	18,793 cuft
Drainage area	=	0.880 ac	Curve number	=	88
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	5.00 min
Total precip.	=	7.70 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484