KELLER ENGINEERS
of New Jersey, LLC

DRAINAGE CALCULATIONS

MINOR SUBDIVISION & CONSTRUCTION OF A SINGLE-FAMILY DETACHED DWELLING
BLOCK 1501 LOT 1, 2 & 3

LAWRENCE TOWNSHIP

MERCER COUNTY, NEW JERSEY

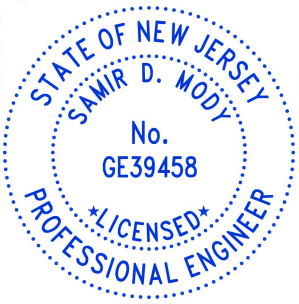
PROJECT NUMBER 4455-1
March 14, 2023

PREPARED BY:

KELLER ENGINEERS OF NEW JERSEY, LLC
121 MARKET STREET, 2nd FLOOR
CAMDEN, NJ 08102

SAMIR D. MODY, P.E.

NEW JERSEY PROFESSIONAL ENGINEER
LICENSE NO. 24GE03945800



PREPARED FOR:

LAWRENCE TOWNSHIP
2207 LAWRENCEVILLE ROAD
P.O. BOX 6006
LAWRENCE TOWNSHIP, NEW JERSEY 08648

TABLE OF CONTENTS

PROJECT NARRATIVE

I. INTRODUCTION

The owner of the subject property is proposing to construct a Single family detached dwelling at 2181-2191 Brunswick Avenue, Lawrence Township, New Jersey 08648 in a Residential 4 (R-4) District. The property is comprised of three lots, Block 1504, Lots 1, 2 & 3, which are proposed to be subdivided into two lots (Lot A & Lot B). Lot B is where this project will be situated and has land totaling 0.23 acres and will be accessed from Brunswick Avenue.

Site improvements include the construction of a new house, grading, landscaping, new access driveways off Brunswick Avenue, and utility connections.

No stormwater management facilities are proposed since the project is not a Major Development for stormwater management purposes and due to a negligible increase in the predevelopment to post-development peak flow rates and runoff volume (<1 cfs). The existing site is approximately 0% impervious and the proposed site is 34% impervious.

There are no floodplains or wetlands within the project area.

II. STORMWATER MANAGEMENT DESIGN:

1. GENERAL PROJECT DESCRIPTION

The construction of a Single-family detached dwelling, a new access driveway off Brunswick Avenue, and utility laterals.

- Total Lot Area: 0.230 acres
- Total Project Impervious Area (Pre): zero square feet
- Total Project Impervious Area (Post): 3,391.5 square feet
- Total Project Disturbed Area: 10,250 square feet

2. STORMWATER DESIGN ANALYSIS SUMMARY

EXISTING DRAINAGE CONDITIONS

The United States Department of Agriculture Natural Resources Conservation Service classifies the site as Udorthents, stratified substratum, 0 to 8 percent slopes (UdstB), and soil D Group; Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Currently, seeps into the ground, and an excess amount of runoff flow to the street. Runoff that reaches Brunswick Avenue enters an existing collection and conveyance system.

PROPOSED DRAINAGE CONDITIONS

The lot will be graded so that runoff from the project will sheet flow away from the house and toward the front of the property. Swales on the side of the property will facilitate runoff and reduce the time of concentration. Landscaping as grass, shrubs, and tress will also be provided in the back, side, and front yards.

3. STORMWATER MANAGEMENT DESIGN PARAMETERS

The stormwater management design is in accordance with the current edition of the Lawrence Township Stormwater Management Ordinance: 507 RSIS Stormwater Management.

Topographic survey mapping and existing topographical features were provided by Trenton Engineering.

The on-site soils, as determined by the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey, are Udorthents, stratified substratum, 0 to 8 percent slopes (UdstB).

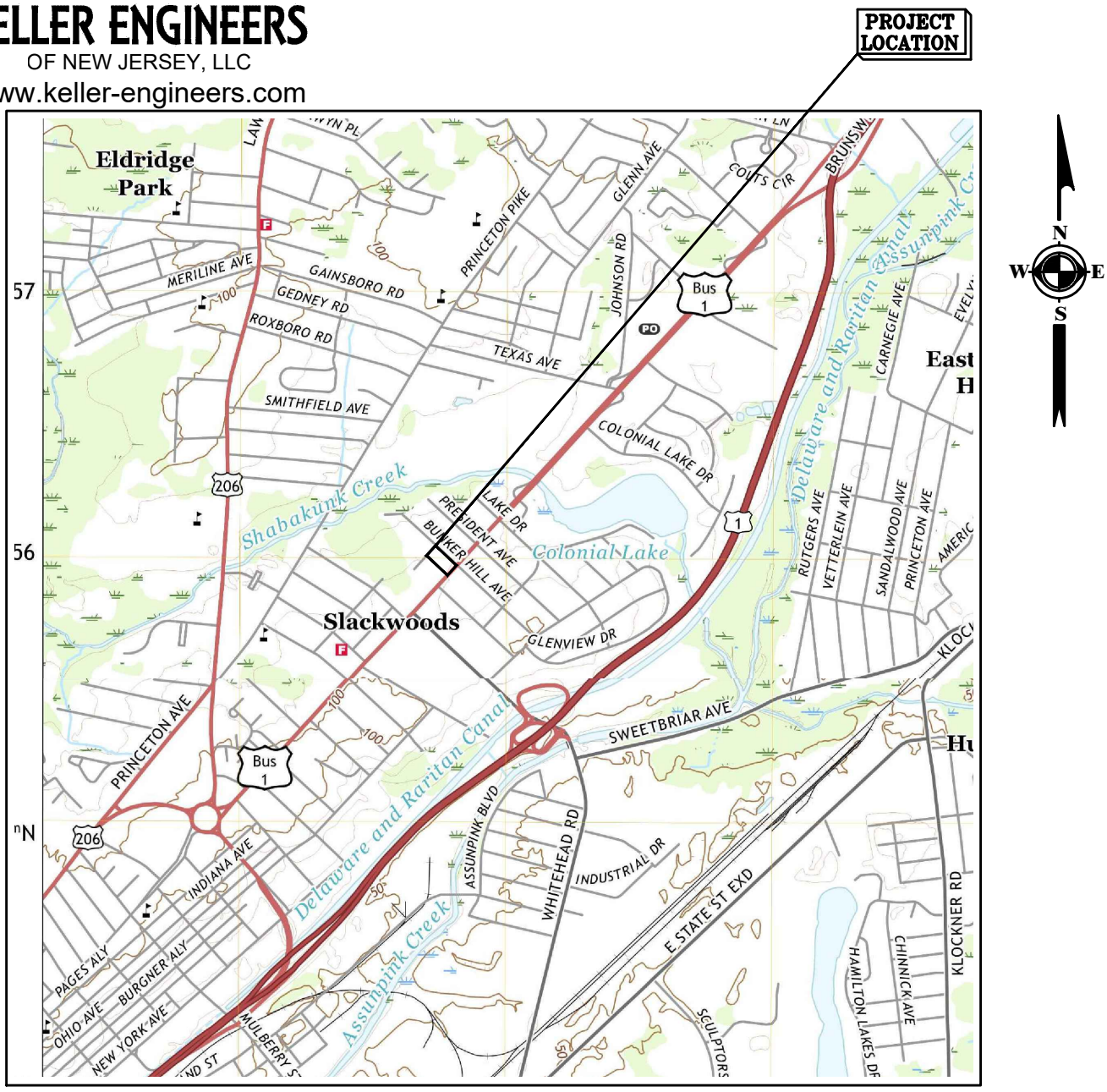
4. REFERENCES

A. *City of Camden Storm Water Management Ordinance*
B. *USDA Urban Hydrology for Small Watersheds, Technical Release 55, June 1986*
C. *New Jersey Department of Agriculture – State Soil Conservation Committee: The Standards for Soil Erosion and Sediment Control in New Jersey, 7th Edition, January 2014, Revised July 2017*
D. *New Jersey Department of Environmental Protection – Division of Watershed Management: Stormwater Best Management Practices Manual, April 2004*

LOCATION MAP

KELLER ENGINEERS
OF NEW JERSEY, LLC
www.keller-engineers.com

USGS



PROJECT:	MINOR SUBDIVISION LAND DEVELOPMENT
LOCATION:	LAWRENCE TOWNSHIP, MERCER COUNTY
U.S.G.S. QUADRANGLE:	PRINCETON, TRENTON EAST QUADRANGLE
PROJECT NO.:	4455-1
FILE NAME:	01 TITLE.DWG

SCALE: 1"=2000'
2000' 0' 2000'

STORMWATER FLOW SUMMARY

Hydrograph Summary Report

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

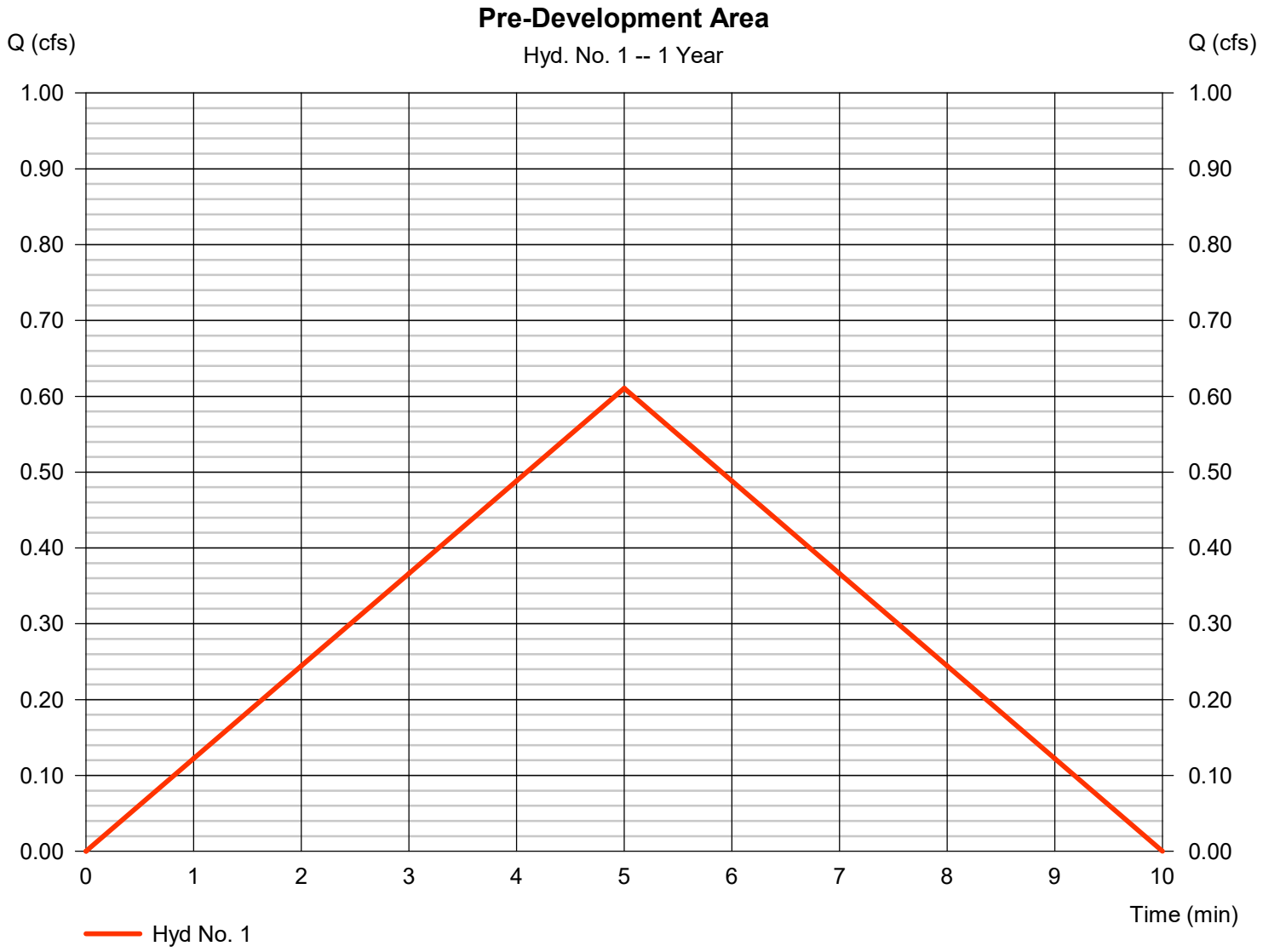
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	0.611	1	5	183	------	------	------	Pre-Development Area
2	Rational	0.671	1	6	242	------	------	------	Post-Development Area

Hydrograph Report

Hyd. No. 1

Pre-Development Area

Hydrograph type	=	Rational	Peak discharge	=	0.611 cfs
Storm frequency	=	1 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	183 cuft
Drainage area	=	0.230 ac	Runoff coeff.	=	0.65
Intensity	=	4.085 in/hr	Tc by TR55	=	5.00 min
IDF Curve	=	Lawrence Twp_Inches_Hour.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

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

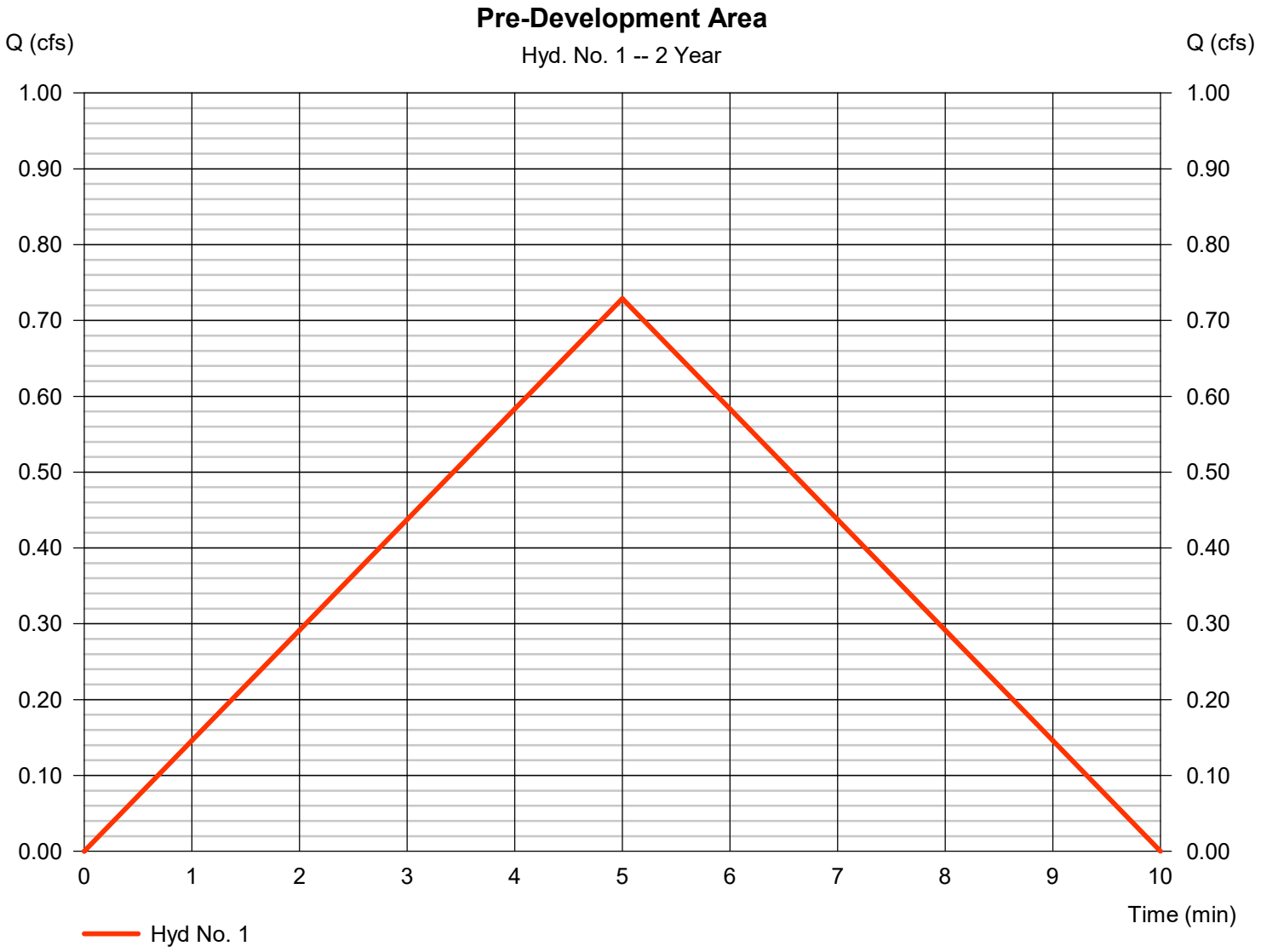
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	0.729	1	5	219	------	------	------	Pre-Development Area
2	Rational	0.802	1	6	289	------	------	------	Post-Development Area

Hydrograph Report

Hyd. No. 1

Pre-Development Area

Hydrograph type	=	Rational	Peak discharge	=	0.729 cfs
Storm frequency	=	2 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	219 cuft
Drainage area	=	0.230 ac	Runoff coeff.	=	0.65
Intensity	=	4.876 in/hr	Tc by TR55	=	5.00 min
IDF Curve	=	Lawrence Twp_Inches_Hour.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

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

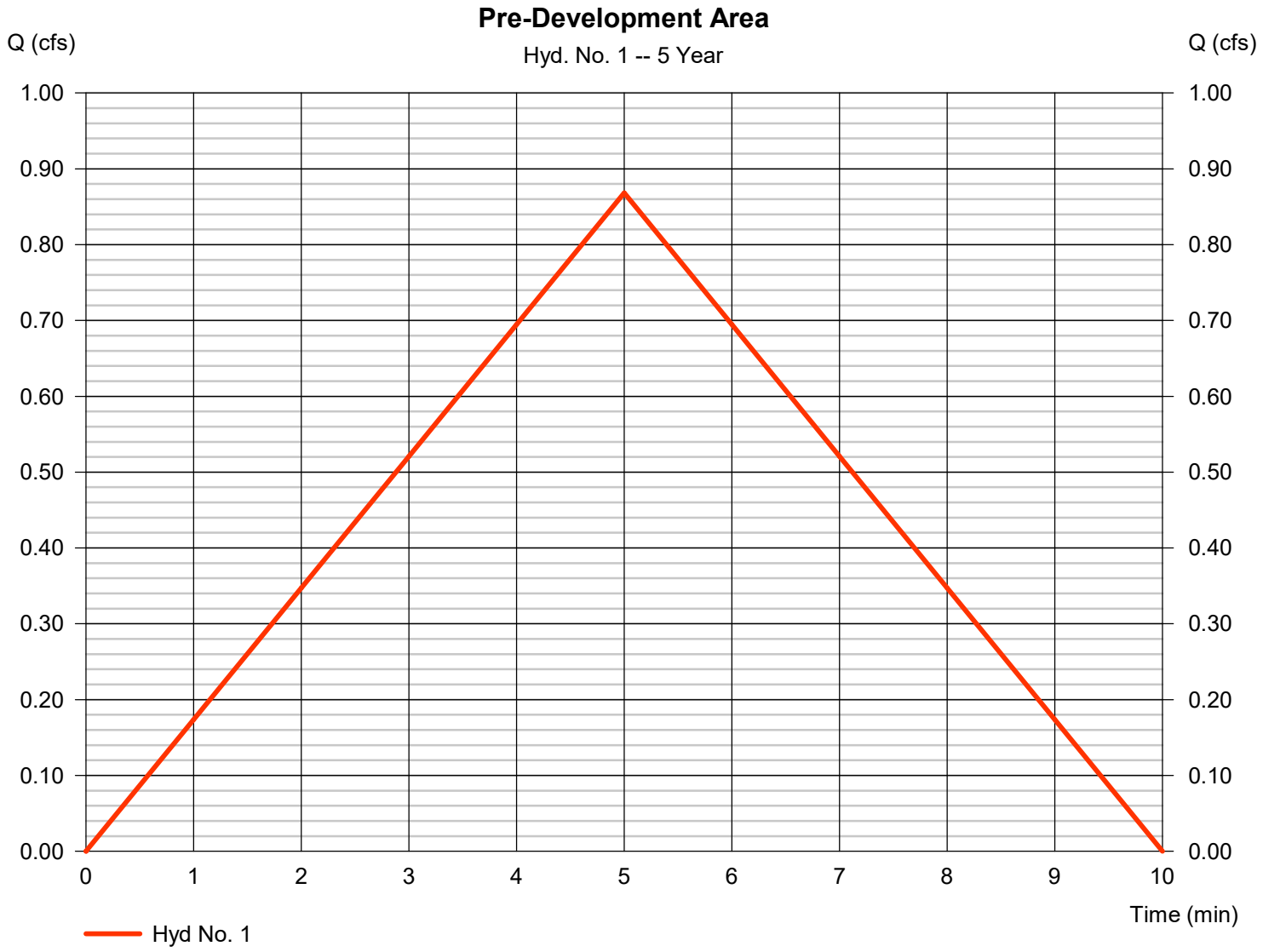
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	0.868	1	5	260	------	------	------	Pre-Development Area
2	Rational	0.957	1	6	345	------	------	------	Post-Development Area

Hydrograph Report

Hyd. No. 1

Pre-Development Area

Hydrograph type	=	Rational	Peak discharge	=	0.868 cfs
Storm frequency	=	5 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	260 cuft
Drainage area	=	0.230 ac	Runoff coeff.	=	0.65
Intensity	=	5.807 in/hr	Tc by TR55	=	5.00 min
IDF Curve	=	Lawrence Twp_Inches_Hour.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

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

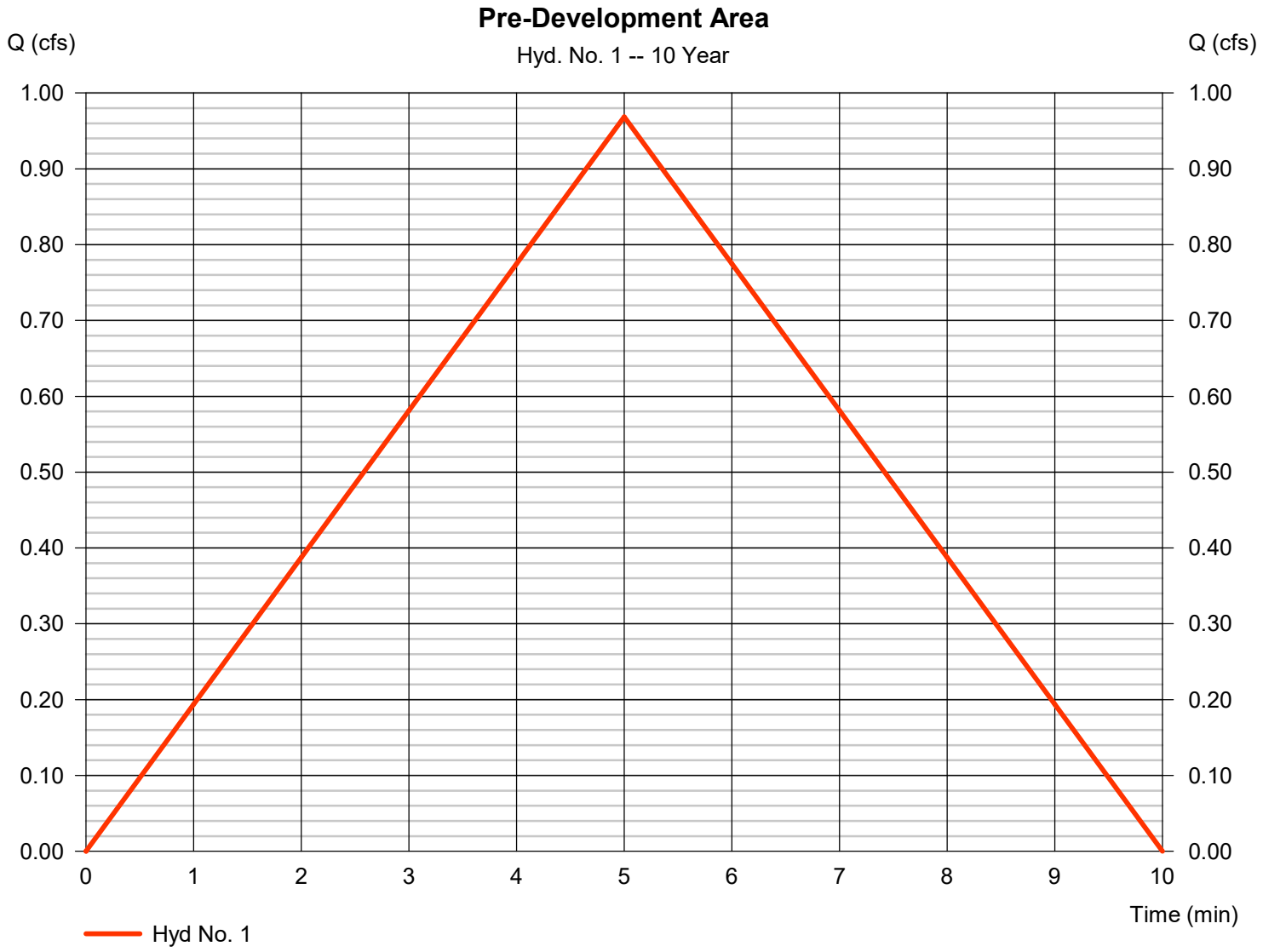
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	0.968	1	5	291	------	------	------	Pre-Development Area
2	Rational	1.069	1	6	385	------	------	------	Post-Development Area

Hydrograph Report

Hyd. No. 1

Pre-Development Area

Hydrograph type	=	Rational	Peak discharge	=	0.968 cfs
Storm frequency	=	10 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	291 cuft
Drainage area	=	0.230 ac	Runoff coeff.	=	0.65
Intensity	=	6.478 in/hr	Tc by TR55	=	5.00 min
IDF Curve	=	Lawrence Twp_Inches_Hour.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

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

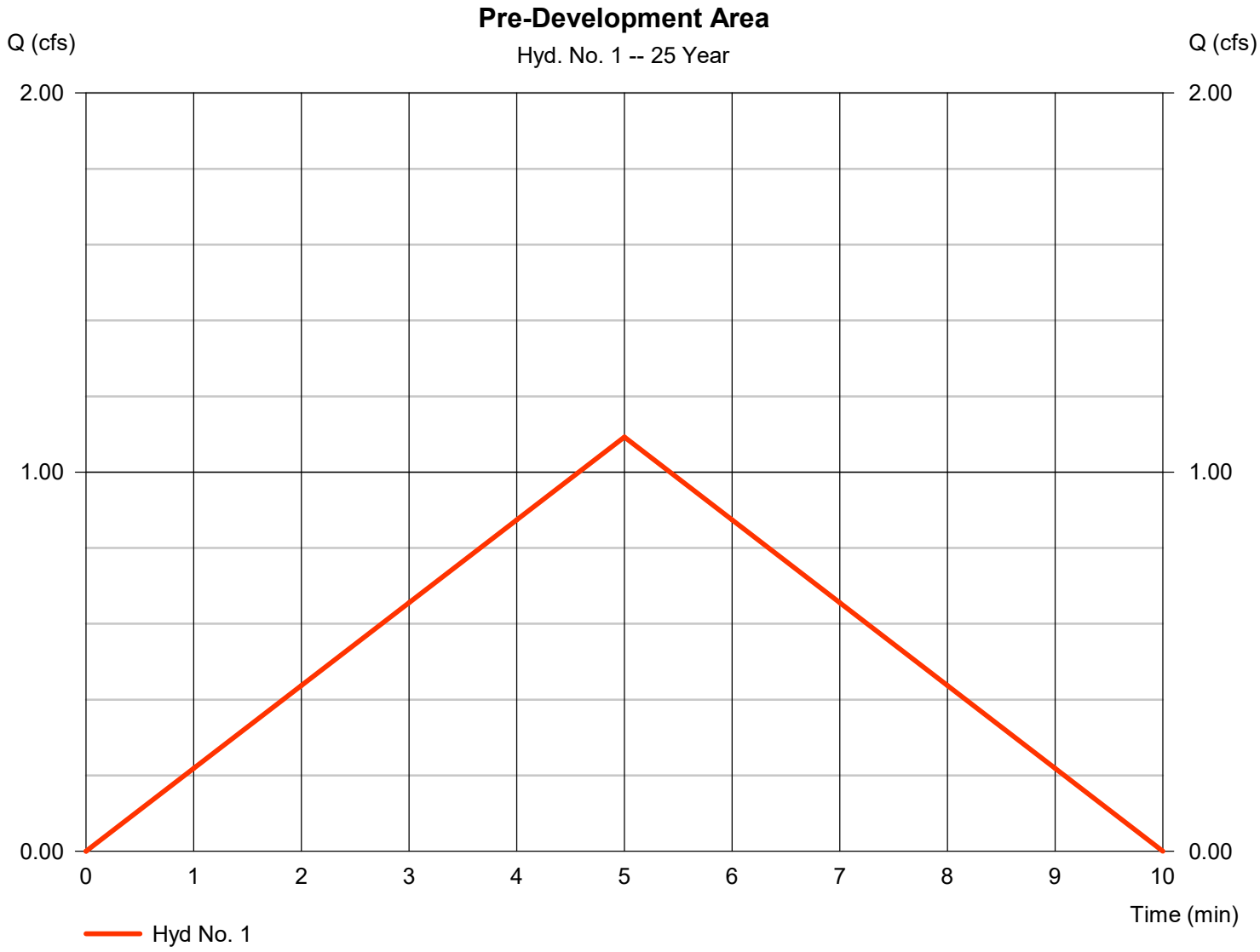
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.092	1	5	328	------	------	------	Pre-Development Area
2	Rational	1.206	1	6	434	------	------	------	Post-Development Area

Hydrograph Report

Hyd. No. 1

Pre-Development Area

Hydrograph type	=	Rational	Peak discharge	=	1.092 cfs
Storm frequency	=	25 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	328 cuft
Drainage area	=	0.230 ac	Runoff coeff.	=	0.65
Intensity	=	7.308 in/hr	Tc by TR55	=	5.00 min
IDF Curve	=	Lawrence Twp_Inches_Hour.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

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

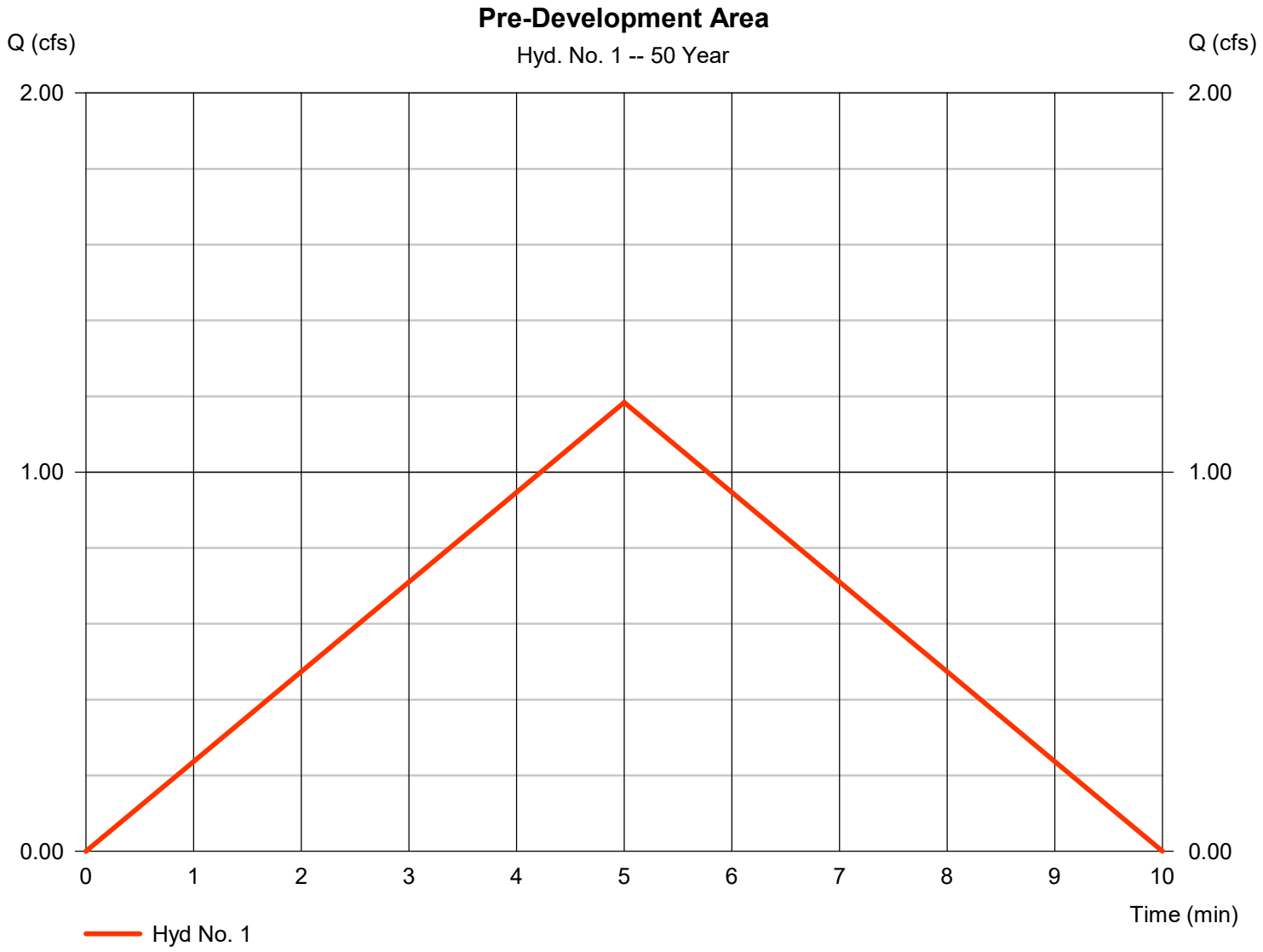
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.184	1	5	355	------	------	------	Pre-Development Area
2	Rational	1.306	1	6	470	------	------	------	Post-Development Area

Hydrograph Report

Hyd. No. 1

Pre-Development Area

Hydrograph type	=	Rational	Peak discharge	=	1.184 cfs
Storm frequency	=	50 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	355 cuft
Drainage area	=	0.230 ac	Runoff coeff.	=	0.65
Intensity	=	7.918 in/hr	Tc by TR55	=	5.00 min
IDF Curve	=	Lawrence Twp_Inches_Hour.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

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

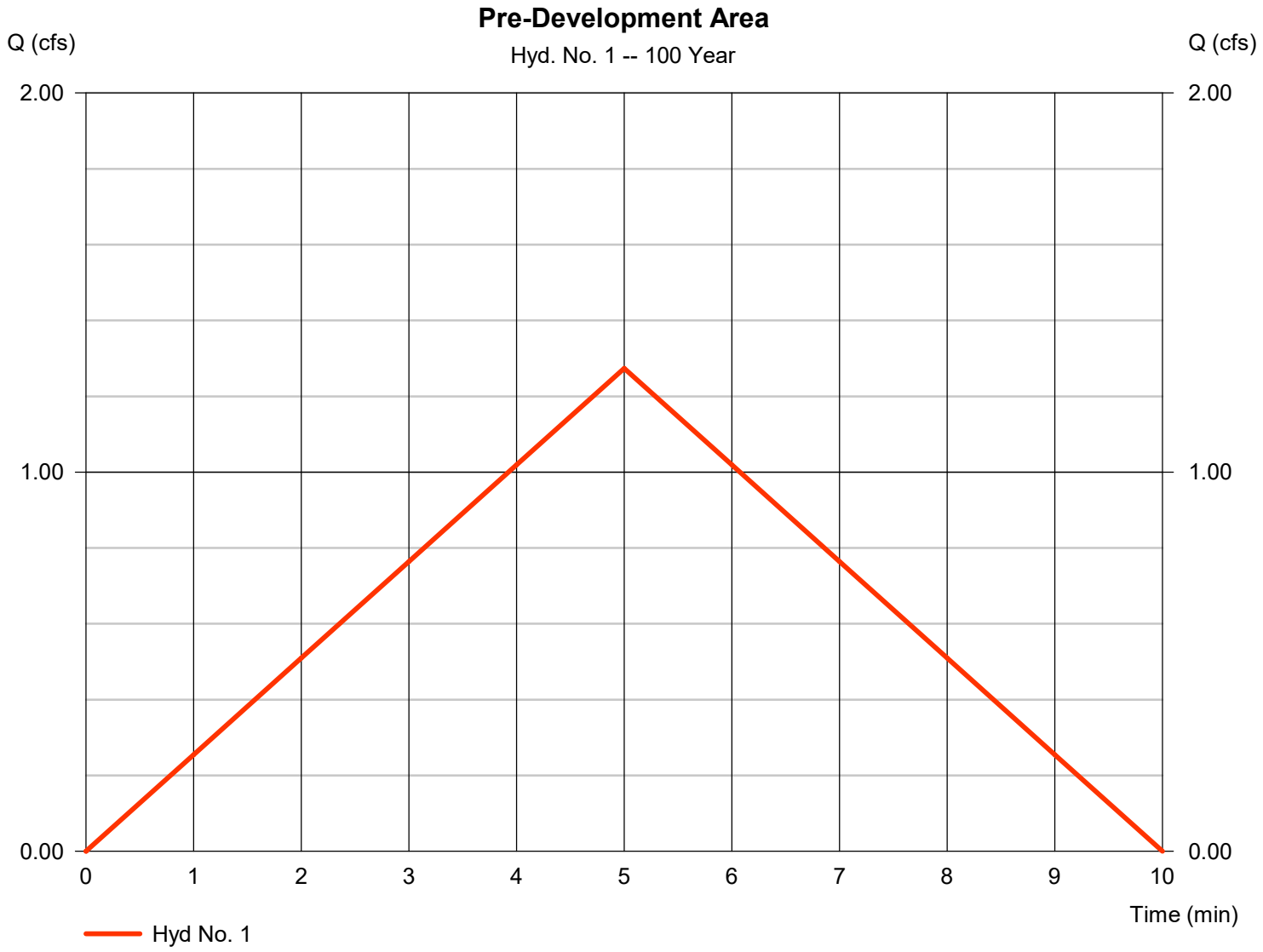
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.274	1	5	382	------	------	------	Pre-Development Area
2	Rational	1.405	1	6	506	------	------	------	Post-Development Area

Hydrograph Report

Hyd. No. 1

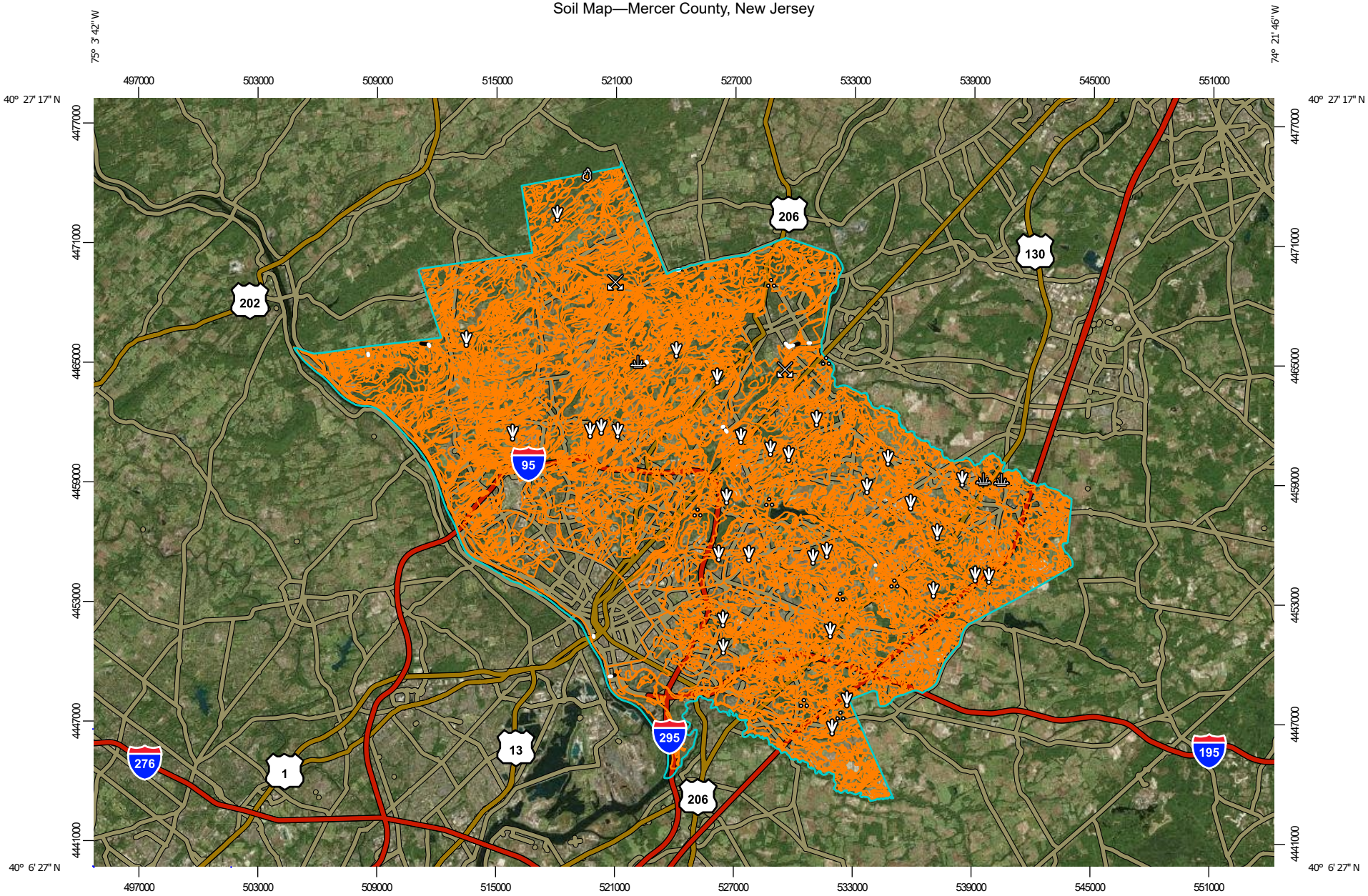
Pre-Development Area

Hydrograph type	=	Rational	Peak discharge	=	1.274 cfs
Storm frequency	=	100 yrs	Time to peak	=	5 min
Time interval	=	1 min	Hyd. volume	=	382 cuft
Drainage area	=	0.230 ac	Runoff coeff.	=	0.65
Intensity	=	8.521 in/hr	Tc by TR55	=	5.00 min
IDF Curve	=	Lawrence Twp_Inches_Hour.IDF	Asc/Rec limb fact	=	1/1



RUNOFF CALCULATIONS

Soil Map—Mercer County, New Jersey



Map Scale: 1:272,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 4000 8000 16000 24000

Feet
0 10000 20000 40000 60000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil 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.

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: Mercer County, New Jersey
Survey Area Data: Version 18, Aug 30, 2022

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

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

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
AbrB	Abbottstown silt loam, 2 to 6 percent slopes	7.8	0.0%
AugmB	Aura sandy loam, moderately firm, 2 to 5 percent slopes	563.5	0.4%
AugmC	Aura sandy loam, moderately firm, 5 to 10 percent slopes	75.8	0.1%
BhmB	Birdsboro loam, 2 to 6 percent slopes	194.6	0.1%
BhmB2	Birdsboro loam, 2 to 6 percent slopes, eroded	165.4	0.1%
BhmC2	Birdsboro loam, 6 to 12 percent slopes, eroded	180.2	0.1%
BhnA	Birdsboro silt loam, 0 to 2 percent slopes	152.8	0.1%
BhnB	Birdsboro silt loam, 2 to 6 percent slopes	382.8	0.3%
BHRSA	Birdsboro sandy subsoil variant soils, 0 to 2 percent slopes	128.3	0.1%
BHRSB	Birdsboro sandy subsoil variant soils, 2 to 6 percent slopes	767.9	0.5%
BHRSC	Birdsboro sandy subsoil variant soils, 6 to 12 percent slopes	303.9	0.2%
BHSGB	Birdsboro gravelly solum variant soils, 0 to 6 percent slopes	749.7	0.5%
BoyAt	Bowmansville silt loam, 0 to 2 percent slopes, frequently flooded	2,074.6	1.4%
BucA	Bucks silt loam, 0 to 2 percent slopes	968.0	0.7%
BucB	Bucks silt loam, 2 to 6 percent slopes	10,082.4	6.9%
BucB2	Bucks silt loam, 2 to 6 percent slopes, eroded	1,491.2	1.0%
BucC	Bucks silt loam, 6 to 12 percent slopes	499.1	0.3%
BucC2	Bucks silt loam, 6 to 12 percent slopes, eroded	1,562.7	1.1%
ChcA	Chalfont silt loam, 0 to 2 percent slopes	740.6	0.5%
ChcB	Chalfont silt loam, 2 to 6 percent slopes	2,824.2	1.9%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ChcB2	Chalfont silt loam, 2 to 6 percent slopes, eroded	660.9	0.5%
ChcBb	Chalfont silt loam, 0 to 6 percent slopes, very stony	110.7	0.1%
ChcC	Chalfont silt loam, 6 to 12 percent slopes	48.0	0.0%
ChcC2	Chalfont silt loam, 6 to 12 percent slopes, eroded	565.6	0.4%
CoxA	Croton silt loam, 0 to 2 percent slopes	8.8	0.0%
DocC	Downer loamy sand, 5 to 10 percent slopes, Northern Coastal Plain	21.0	0.0%
DohgB	Downer fine sandy loam, gravelly clay loam substratum, 0 to 5 percent slopes	305.5	0.2%
DOZA	Doylestown and Reaville variant silt loams, 0 to 2 percent slopes	1,652.6	1.1%
DOZB	Doylestown and Reaville variant silt loams, 2 to 6 percent slopes	1,075.3	0.7%
DOZB2	Doylestown and Reaville variant silt loams, 2 to 6 percent slopes, eroded	194.1	0.1%
DOZC	Doylestown and Reaville variant silt loams, 6 to 12 percent slopes	108.0	0.1%
DOZC2	Doylestown and Reaville variant silt loams, 6 to 12 percent slopes, eroded	9.4	0.0%
EkaAr	Elkton loam, 0 to 2 percent slopes, rarely flooded	15.9	0.0%
EkbA	Elkton silt loam, 0 to 2 percent slopes	1,815.5	1.2%
EveB	Evesboro sand, 0 to 5 percent slopes	21.1	0.0%
EvgB	Evesboro loamy sand, 0 to 5 percent slopes	1,921.0	1.3%
EVXB	Evesboro variant soils, 0 to 5 percent slopes	489.2	0.3%
FamA	Fallsington sandy loams, 0 to 2 percent slopes, northern coastal plain	1,419.2	1.0%
FapA	Fallsington loams, 0 to 2 percent slopes, Northern Coastal Plain	114.5	0.1%
FodB	Fort Mott loamy sand, 0 to 5 percent slopes	926.9	0.6%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
FodC	Fort Mott loamy sand, 5 to 10 percent slopes	212.4	0.1%
FrkB	Freehold sandy loam, 2 to 5 persent slopes	17.4	0.0%
FrkE2	Freehold sandy loam, 15 to 25 percent slopes	1.9	0.0%
GadB	Galestown loamy sand, 0 to 5 percent slopes	1,710.5	1.2%
GafB	Galestown sandy loam, 0 to 5 percent slopes	462.8	0.3%
GASB	Galloway variant soils, 0 to 5 percent slopes	1,423.9	1.0%
GKAWOB	Glassboro and Woodstown sandy loams, 0 to 5 percent slopes	3,981.7	2.7%
HcuAt	Hatboro-Codorus complex, 0 to 3 percent slopes, frequently flooded	2,824.8	1.9%
HdyD	Hazleton channery loam, 12 to 18 percent slopes	2.6	0.0%
HumAt	Humaquepts, 0 to 3 percent slopes, frequently flooded	208.3	0.1%
KkoC	Klinesville channery loam, 6 to 12 percent slopes	929.4	0.6%
KkoD	Klinesville channery loam, 12 to 18 percent slopes	1.6	0.0%
KkoE	Klinesville channery loam, 18 to 35 percent slopes	816.0	0.6%
LbhB	Lansdale sandy loam, 2 to 6 percent slopes	131.5	0.1%
LbmB	Lansdale loam, 2 to 6 percent slopes	7.3	0.0%
LbmCb	Lansdale loam, 0 to 12 percent slopes, very stony	54.3	0.0%
LbmEb	Lansdale loam, 12 to 30 percent slopes, very stony	14.9	0.0%
LbnC2	Lansdale channery loam, 6 to 12 percent slopes, eroded	173.8	0.1%
LbnD2	Lansdale channery loam, 12 to 18 percent slopes, eroded	90.0	0.1%
LdmB	Lawrenceville silt loam, 2 to 6 percent slopes	90.2	0.1%
LdmC	Lawrenceville silt loam, 6 to 12 percent slopes	3.4	0.0%
LDXA	Lawrenceville and Mount Lucas silt loams, 0 to 2 percent slopes	101.7	0.1%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
LDXB	Lawrenceville and Mount Lucas silt loams, 2 to 6 percent slopes	962.9	0.7%
LDXB2	Lawrenceville and Mount Lucas silt loams, 2 to 6 percent slopes, eroded	397.5	0.3%
LDXC2	Lawrenceville and Mount Lucas silt loams, 6 to 12 percent slopes, eroded	305.8	0.2%
LegC	Legore gravelly loam, 6 to 12 percent slopes	196.1	0.1%
LegD	Legore gravelly loam, 12 to 18 percent slopes	383.6	0.3%
LegE	Legore gravelly loam, 18 to 30 percent slopes	724.9	0.5%
LemB	Lehigh silt loam, 2 to 6 percent slopes	468.2	0.3%
LemB2	Lehigh silt loam, 2 to 6 percent slopes, eroded	162.4	0.1%
LemC2	Lehigh silt loam, 6 to 12 percent slopes, eroded	397.6	0.3%
LemD2	Lehigh silt loam, 12 to 18 percent slopes, eroded	17.8	0.0%
LenB	Lenoir-Keyport silt loams, 0 to 5 percent slopes	728.2	0.5%
MakAt	Manahawkin muck, 0 to 2 percent slopes, frequently flooded	270.3	0.2%
MbaAt	Marsh, fresh water, 0 to 2 percent slopes, frequently flooded	2,110.3	1.4%
MbpA	Matapeake loam, 0 to 2 percent slopes	1,970.6	1.3%
MbpB	Matapeake loam, 2 to 5 percent slopes	4,899.8	3.3%
MbpC2	Matapeake loam, 5 to 10 percent slopes, eroded	250.0	0.2%
MBYB	Mattapex and Bertie loams, 0 to 5 percent slopes	7,374.1	5.0%
MonB	Mount Lucas silt loam, 2 to 6 percent slopes	5.0	0.0%
MonBb	Mount Lucas silt loam, 0 to 6 percent slopes, very stony	605.8	0.4%
MonCb	Mount Lucas silt loam, 6 to 12 percent slopes, very stony	98.3	0.1%
MopBb	Mount Lucas-Watchung silt loams, 0 to 6 percent slopes, very stony	78.5	0.1%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MopCb	Mount Lucas-Watchung silt loams, 6 to 12 percent slopes, very stony	14.2	0.0%
MORCE	Mount Lucas and Neshaminy soils, 0 to 12 percent slopes, very rubbly	220.5	0.2%
NehB	Neshaminy silt loam, 2 to 6 percent slopes	1,114.5	0.8%
NehC	Neshaminy silt loam, 6 to 12 percent slopes	145.5	0.1%
NehC2	Neshaminy silt loam, 6 to 12 percent slopes, eroded	177.9	0.1%
NehCb	Neshaminy silt loam, 6 to 12 percent slopes, very stony	1,220.7	0.8%
NehEb	Neshaminy silt loam, 18 to 35 percent slopes, very stony	452.3	0.3%
NehEe	Neshaminy silt loam, 12 to 30 percent slopes, very rubbly	67.0	0.0%
NemCb	Neshaminy-Mount Lucas silt loams, 6 to 12 percent slopes, very stony	116.4	0.1%
NemDb	Neshaminy-Mount Lucas silt loams, 12 to 18 percent slopes, very stony	17.4	0.0%
OthA	Othello silt loams, 0 to 2 percent slopes, northern coastal plain	7,518.0	5.1%
PegB	Pemberton loamy sand, 0 to 5 percent slopes	10.5	0.0%
PeoB	Penn channery silt loam, 2 to 6 percent slopes	3,007.8	2.1%
PeoC	Penn channery silt loam, 6 to 12 percent slopes	1,786.4	1.2%
PeoD	Penn channery silt loam, 12 to 18 percent slopes	566.2	0.4%
PHG	Pits, sand and gravel	421.5	0.3%
PmmA	Plummer sandy loam, 0 to 2 percent slopes	962.5	0.7%
PmmwA	Plummer sandy loam, very wet, 0 to 2 percent slopes	1,047.4	0.7%
PomAs	Pope fine sandy loam, high bottom, 0 to 2 percent slopes, occasionally flooded	129.1	0.1%
PortA	Portsmouth variant silt loam, 0 to 2 percent slopes	1,263.9	0.9%
QukB	Quakertown silt loam, 2 to 6 percent slopes	3,418.8	2.3%
QukB2	Quakertown silt loam, 2 to 6 percent slopes, eroded	459.3	0.3%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
QukC	Quakertown silt loam, 6 to 12 percent slopes	425.4	0.3%
QukC2	Quakertown silt loam, 6 to 12 percent slopes, eroded	800.2	0.5%
QukD	Quakertown silt loam, 12 to 18 percent slopes	28.3	0.0%
QukD2	Quakertown silt loam, 12 to 18 percent slopes, eroded	1.4	0.0%
QumB	Quakertown channery silt loam, 2 to 6 percent slopes	257.9	0.2%
QumC	Quakertown channery silt loam, 6 to 12 percent slopes	137.8	0.1%
QumC2	Quakertown channery silt loam, 6 to 12 percent slopes, eroded	215.5	0.1%
QumD2	Quakertown channery silt loam, 12 to 18 percent slopes, eroded	261.8	0.2%
RedC2	Readington silt loam, 6 to 12 percent slopes, eroded	5.9	0.0%
REFA	Readington and Abbottstown silt loams, 0 to 2 percent slopes	924.9	0.6%
REFB	Readington and Abbottstown silt loams, 2 to 6 percent slopes	2,284.0	1.6%
REFB2	Readington and Abbottstown silt loams, 2 to 6 percent slopes, eroded	296.5	0.2%
REFC2	Readington and Abbottstown silt loams, 6 to 12 percent slopes, eroded	137.1	0.1%
RehA	Reaville silt loam, 0 to 2 percent slopes	470.8	0.3%
RehB	Reaville silt loam, 2 to 6 percent slopes	1,761.7	1.2%
RehB2	Reaville silt loam, 2 to 6 percent slopes, eroded	439.5	0.3%
RehC2	Reaville silt loam, 6 to 12 percent slopes, eroded	351.9	0.2%
RepwA	Reaville poorly drained variant silt loam, 0 to 2 percent slopes	6.5	0.0%
RksC	Riverhead gravelly sandy loam, 8 to 15 percent slopes	0.5	0.0%
ROPF	Rough broken land, shale	11.9	0.0%
RorAt	Rowland silt loam, 0 to 2 percent slopes, frequently flooded	1,944.3	1.3%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SaaD	Sandy and silty land, strongly sloping	227.7	0.2%
SaaE	Sandy and silty land, steep	385.3	0.3%
SacA	Sassafras sandy loam, 0 to 2 percent slopes, Northern Coastal Plain	859.9	0.6%
SacB	Sassafras sandy loam, 2 to 5 percent slopes, Northern Coastal Plain	8,855.2	6.0%
SacC	Sassafras sandy loam, 5 to 10 percent slopes, Northern Coastal Plain	6,761.6	4.6%
SacD	Sassafras sandy loam, 10 to 15 percent slopes	1.7	0.0%
SacE	Sassafras sandy loam, 15 to 25 percent slopes	12.7	0.0%
SadB	Sassafras gravelly sandy loam, 2 to 5 percent slopes	1,533.6	1.0%
SadC	Sassafras gravelly sandy loam, 5 to 10 percent slopes	19.9	0.0%
SadD	Sassafras gravelly sandy loam, 10 to 15 percent slopes	3.3	0.0%
SafA	Sassafras loam, 0 to 2 percent slopes	62.0	0.0%
SagC3	Sassafras sandy clay loam, 5 to 10 percent slopes, severely eroded	338.9	0.2%
SaoB	Sassafras-Woodstown sandy loams, 2 to 5 percent slopes	614.3	0.4%
ThgB	Tinton loamy sand, 0 to 5 percent slopes	698.0	0.5%
ThoAs	Tioga fine sandy loam, 0 to 2 percent slopes, occasionally flooded	355.6	0.2%
UdbB	Udorthents, bedrock substratum, 0 to 8 percent slopes	2,987.6	2.0%
UdcB	Udorthents, clayey substratum, 0 to 8 percent slopes	168.9	0.1%
UddcB	Udorthents, dredged coarse materials, 0 to 8 percent slopes	627.6	0.4%
UdgB	Udorthents, gravelly substratum, 0 to 8 percent slopes	2,202.6	1.5%
UdstB	Udorthents, stratified substratum, 0 to 8 percent slopes	2,815.9	1.9%
UR	Urban land	4,639.9	3.2%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
USGALB	Urban land-Galestown complex, 0 to 5 percent slopes	1,100.8	0.8%
USSASB	Urban land-Sassafras complex, 0 to 5 percent slopes	614.0	0.4%
WasA	Watchung silt loam, 0 to 2 percent slopes	197.2	0.1%
WasAe	Watchung silt loam, 0 to 3 percent slopes, very rubbly	235.6	0.2%
WATER	Water	2,629.0	1.8%
WoeB	Woodstown sandy loam, 2 to 5 percent slopes, Northern Coastal Plain	12.4	0.0%
WogA	Woodstown loam, 0 to 2 percent slopes, Northern Coastal Plain	29.8	0.0%
WomfB	Woodstown-Fallsington sandy loams, 0 to 5 percent slopes	1,551.3	1.1%
Totals for Area of Interest		**146,510.5**	**100.0%**

Map Scale: 1:3,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Mercer County, New Jersey
Survey Area Data: Version 18, Aug 30, 2022

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

Date(s) aerial images were photographed: Jun 4, 2022—Jul 22, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
UdstB	Udorthents, stratified substratum, 0 to 8 percent slopes	D	0.1	100.0%
Totals for Area of Interest			**0.1**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

NOAA Atlas 14, Volume 2, Version 3
Location name: Lawrence Township, New Jersey, USA*
Latitude: 40.2538°, Longitude: -74.732°
Elevation: m/ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

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

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**4.09** (3.72-4.52)	**4.88** (4.44-5.39)	**5.81** (5.26-6.41)	**6.48** (5.86-7.14)	**7.31** (6.56-8.05)	**7.92** (7.08-8.74)	**8.53** (7.58-9.42)	**9.10** (8.05-10.1)	**9.80** (8.59-10.9)	**10.4** (8.99-11.6)
10-min	**3.27** (2.97-3.61)	**3.91** (3.55-4.31)	**4.65** (4.21-5.13)	**5.18** (4.68-5.71)	**5.83** (5.23-6.42)	**6.31** (5.64-6.95)	**6.77** (6.03-7.48)	**7.21** (6.38-7.99)	**7.76** (6.79-8.65)	**8.15** (7.08-9.14)
15-min	**2.72** (2.47-3.01)	**3.28** (2.97-3.61)	**3.92** (3.55-4.32)	**4.37** (3.95-4.82)	**4.92** (4.42-5.42)	**5.32** (4.76-5.87)	**5.71** (5.08-6.31)	**6.06** (5.36-6.72)	**6.51** (5.70-7.25)	**6.82** (5.92-7.65)
30-min	**1.87** (1.70-2.06)	**2.26** (2.05-2.49)	**2.79** (2.52-3.07)	**3.17** (2.86-3.49)	**3.65** (3.28-4.02)	**4.01** (3.59-4.42)	**4.37** (3.89-4.83)	**4.72** (4.18-5.23)	**5.18** (4.54-5.77)	**5.53** (4.80-6.19)
60-min	**1.16** (1.06-1.29)	**1.42** (1.29-1.57)	**1.79** (1.62-1.97)	**2.06** (1.86-2.27)	**2.43** (2.18-2.68)	**2.72** (2.43-2.99)	**3.01** (2.68-3.33)	**3.31** (2.93-3.67)	**3.72** (3.25-4.14)	**4.03** (3.50-4.52)
2-hr	**0.706** (0.639-0.780)	**0.860** (0.780-0.950)	**1.09** (0.986-1.20)	**1.26** (1.14-1.39)	**1.51** (1.35-1.66)	**1.70** (1.52-1.87)	**1.90** (1.69-2.10)	**2.11** (1.86-2.34)	**2.40** (2.09-2.67)	**2.63** (2.26-2.95)
3-hr	**0.516** (0.466-0.574)	**0.628** (0.568-0.699)	**0.797** (0.718-0.887)	**0.929** (0.834-1.03)	**1.11** (0.994-1.24)	**1.26** (1.12-1.40)	**1.42** (1.25-1.58)	**1.58** (1.38-1.77)	**1.81** (1.56-2.03)	**2.00** (1.70-2.25)
6-hr	**0.327** (0.295-0.366)	**0.397** (0.358-0.444)	**0.503** (0.452-0.560)	**0.588** (0.526-0.654)	**0.712** (0.631-0.792)	**0.815** (0.718-0.907)	**0.927** (0.807-1.03)	**1.05** (0.902-1.17)	**1.22** (1.03-1.37)	**1.37** (1.14-1.54)
12-hr	**0.197** (0.178-0.222)	**0.239** (0.215-0.269)	**0.304** (0.273-0.341)	**0.359** (0.321-0.403)	**0.442** (0.391-0.494)	**0.514** (0.450-0.575)	**0.592** (0.513-0.663)	**0.680** (0.579-0.763)	**0.811** (0.676-0.916)	**0.923** (0.756-1.05)
24-hr	**0.115** (0.106-0.125)	**0.139** (0.128-0.151)	**0.176** (0.162-0.192)	**0.208** (0.191-0.227)	**0.256** (0.233-0.278)	**0.297** (0.268-0.322)	**0.342** (0.306-0.371)	**0.391** (0.347-0.425)	**0.465** (0.406-0.507)	**0.529** (0.454-0.577)
2-day	**0.066** (0.061-0.073)	**0.080** (0.074-0.088)	**0.102** (0.094-0.112)	**0.120** (0.110-0.132)	**0.147** (0.134-0.160)	**0.170** (0.153-0.185)	**0.194** (0.174-0.212)	**0.221** (0.196-0.241)	**0.260** (0.227-0.285)	**0.293** (0.253-0.323)
3-day	**0.047** (0.043-0.051)	**0.057** (0.052-0.062)	**0.072** (0.066-0.078)	**0.084** (0.077-0.092)	**0.102** (0.093-0.111)	**0.117** (0.106-0.127)	**0.134** (0.120-0.145)	**0.151** (0.135-0.165)	**0.177** (0.156-0.193)	**0.198** (0.173-0.217)
4-day	**0.037** (0.034-0.040)	**0.045** (0.041-0.049)	**0.056** (0.052-0.061)	**0.066** (0.061-0.072)	**0.080** (0.073-0.086)	**0.091** (0.083-0.099)	**0.103** (0.093-0.112)	**0.116** (0.105-0.126)	**0.135** (0.120-0.147)	**0.151** (0.133-0.164)
7-day	**0.025** (0.023-0.027)	**0.030** (0.028-0.032)	**0.037** (0.034-0.040)	**0.043** (0.040-0.047)	**0.052** (0.047-0.056)	**0.059** (0.053-0.064)	**0.066** (0.060-0.072)	**0.074** (0.067-0.081)	**0.086** (0.077-0.094)	**0.096** (0.084-0.104)
10-day	**0.020** (0.018-0.021)	**0.024** (0.022-0.026)	**0.029** (0.027-0.031)	**0.033** (0.031-0.036)	**0.039** (0.036-0.042)	**0.044** (0.041-0.048)	**0.049** (0.045-0.053)	**0.055** (0.050-0.059)	**0.062** (0.056-0.068)	**0.069** (0.061-0.074)
20-day	**0.013** (0.013-0.014)	**0.016** (0.015-0.017)	**0.019** (0.018-0.020)	**0.021** (0.020-0.023)	**0.025** (0.023-0.026)	**0.027** (0.026-0.029)	**0.030** (0.028-0.032)	**0.033** (0.030-0.035)	**0.036** (0.033-0.039)	**0.039** (0.036-0.042)
30-day	**0.011** (0.010-0.012)	**0.013** (0.012-0.014)	**0.015** (0.014-0.016)	**0.017** (0.016-0.018)	**0.019** (0.018-0.020)	**0.021** (0.020-0.022)	**0.023** (0.021-0.024)	**0.024** (0.023-0.026)	**0.027** (0.025-0.028)	**0.028** (0.026-0.030)
45-day	**0.009** (0.009-0.010)	**0.011** (0.011-0.012)	**0.013** (0.012-0.013)	**0.014** (0.013-0.015)	**0.016** (0.015-0.017)	**0.017** (0.016-0.018)	**0.018** (0.017-0.019)	**0.019** (0.018-0.020)	**0.021** (0.019-0.022)	**0.022** (0.020-0.023)
60-day	**0.008** (0.008-0.009)	**0.010** (0.009-0.010)	**0.011** (0.011-0.012)	**0.012** (0.012-0.013)	**0.014** (0.013-0.014)	**0.015** (0.014-0.015)	**0.016** (0.015-0.016)	**0.016** (0.016-0.017)	**0.018** (0.017-0.018)	**0.018** (0.017-0.019)

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

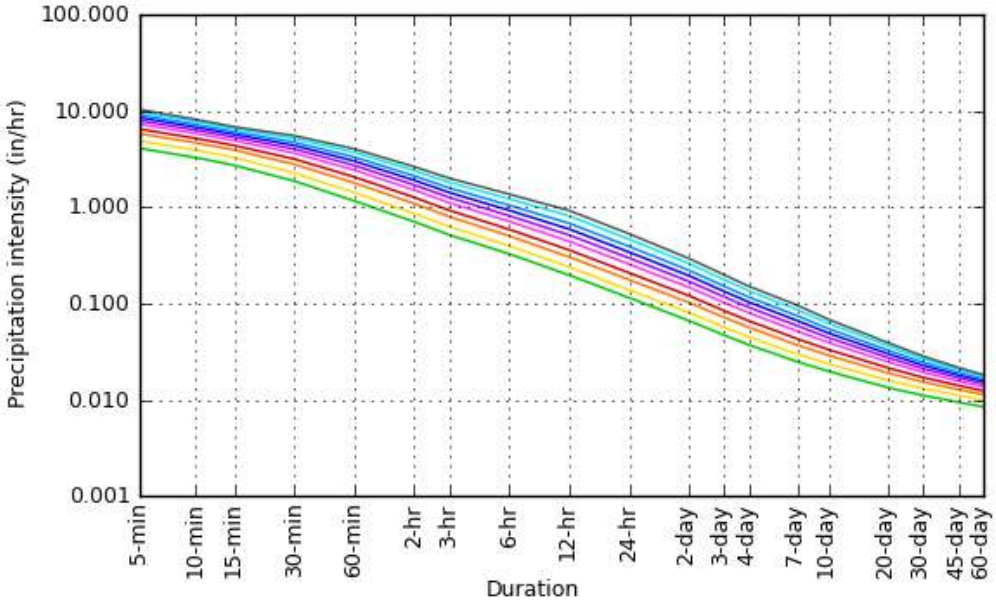
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper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

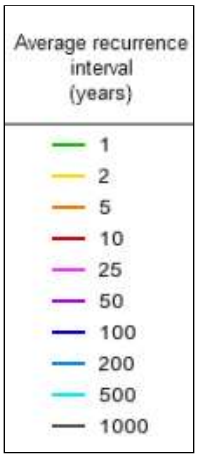
Please refer to NOAA Atlas 14 document for more information.

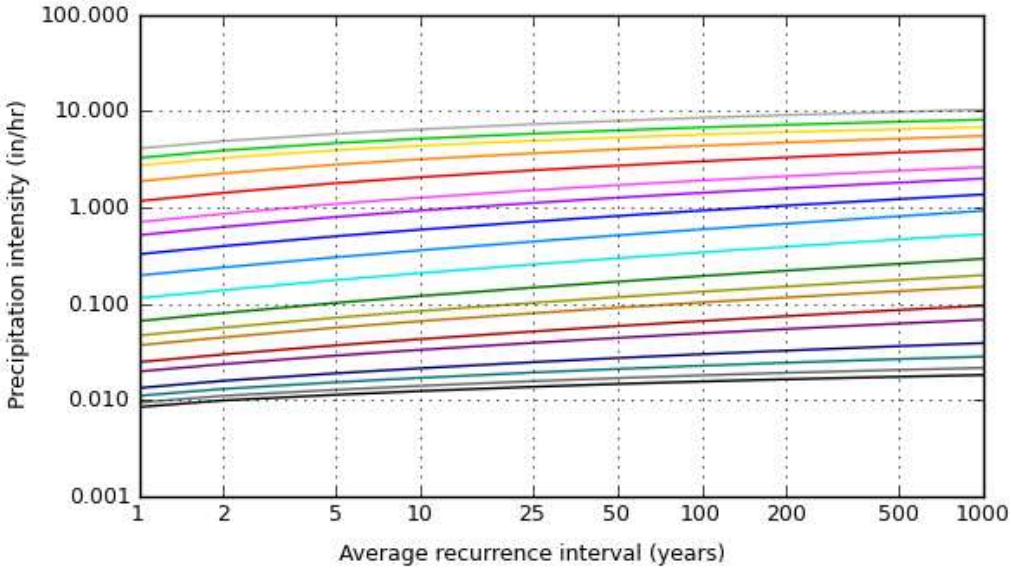
Back to Top

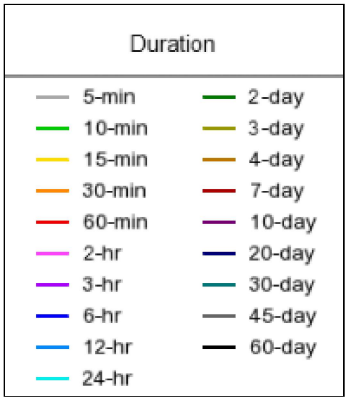
PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 40.2538°, Longitude: -74.7320°









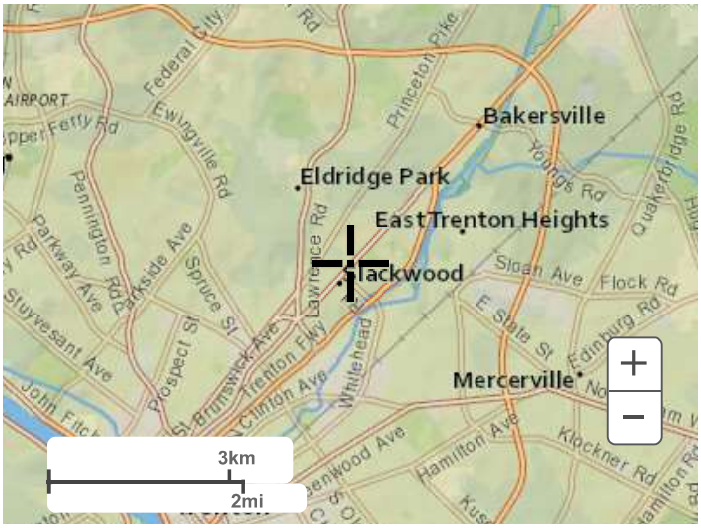
NOAA Atlas 14, Volume 2, Version 3

Created (GMT): Tue Mar 14 18:04:22 2023

Back to Top

Maps & aerials

Small scale terrain



Large scale terrain

Large scale map

Large scale aerial

Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

NOAA Atlas 14, Volume 2, Version 3
Location name: Lawrence Township, New Jersey, USA*
Latitude: 40.2538°, Longitude: -74.732°
Elevation: m/ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

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

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.341** (0.310-0.377)	**0.407** (0.370-0.449)	**0.484** (0.438-0.534)	**0.540** (0.488-0.595)	**0.609** (0.547-0.671)	**0.660** (0.590-0.728)	**0.711** (0.632-0.785)	**0.758** (0.671-0.840)	**0.817** (0.716-0.911)	**0.863** (0.749-0.967)
10-min	**0.545** (0.495-0.601)	**0.651** (0.591-0.718)	**0.775** (0.701-0.855)	**0.864** (0.780-0.952)	**0.971** (0.872-1.07)	**1.05** (0.940-1.16)	**1.13** (1.00-1.25)	**1.20** (1.06-1.33)	**1.29** (1.13-1.44)	**1.36** (1.18-1.52)
15-min	**0.681** (0.618-0.752)	**0.819** (0.743-0.903)	**0.981** (0.887-1.08)	**1.09** (0.987-1.20)	**1.23** (1.11-1.36)	**1.33** (1.19-1.47)	**1.43** (1.27-1.58)	**1.52** (1.34-1.68)	**1.63** (1.43-1.81)	**1.71** (1.48-1.91)
30-min	**0.934** (0.848-1.03)	**1.13** (1.03-1.25)	**1.39** (1.26-1.54)	**1.58** (1.43-1.74)	**1.82** (1.64-2.01)	**2.01** (1.79-2.21)	**2.19** (1.95-2.42)	**2.36** (2.09-2.62)	**2.59** (2.27-2.89)	**2.76** (2.40-3.10)
60-min	**1.16** (1.06-1.29)	**1.42** (1.29-1.57)	**1.79** (1.62-1.97)	**2.06** (1.86-2.27)	**2.43** (2.18-2.68)	**2.72** (2.43-2.99)	**3.01** (2.68-3.33)	**3.31** (2.93-3.67)	**3.72** (3.25-4.14)	**4.03** (3.50-4.52)
2-hr	**1.41** (1.28-1.56)	**1.72** (1.56-1.90)	**2.18** (1.97-2.40)	**2.53** (2.28-2.79)	**3.02** (2.70-3.32)	**3.41** (3.04-3.75)	**3.81** (3.37-4.20)	**4.22** (3.72-4.67)	**4.80** (4.18-5.35)	**5.26** (4.53-5.89)
3-hr	**1.55** (1.40-1.72)	**1.89** (1.71-2.10)	**2.39** (2.16-2.66)	**2.79** (2.50-3.10)	**3.34** (2.99-3.71)	**3.79** (3.36-4.21)	**4.26** (3.75-4.74)	**4.75** (4.15-5.30)	**5.44** (4.68-6.09)	**5.99** (5.09-6.76)
6-hr	**1.96** (1.77-2.19)	**2.38** (2.14-2.66)	**3.01** (2.70-3.36)	**3.52** (3.15-3.92)	**4.26** (3.78-4.75)	**4.88** (4.30-5.43)	**5.55** (4.84-6.18)	**6.27** (5.40-6.99)	**7.31** (6.19-8.20)	**8.17** (6.82-9.23)
12-hr	**2.38** (2.14-2.67)	**2.88** (2.59-3.24)	**3.66** (3.29-4.11)	**4.33** (3.87-4.85)	**5.33** (4.71-5.95)	**6.19** (5.43-6.93)	**7.14** (6.18-7.98)	**8.19** (6.98-9.20)	**9.77** (8.15-11.0)	**11.1** (9.11-12.6)
24-hr	**2.75** (2.54-3.00)	**3.32** (3.07-3.63)	**4.23** (3.89-4.61)	**5.00** (4.59-5.44)	**6.14** (5.59-6.67)	**7.12** (6.43-7.72)	**8.20** (7.34-8.90)	**9.39** (8.32-10.2)	**11.2** (9.73-12.2)	**12.7** (10.9-13.9)
2-day	**3.18** (2.93-3.48)	**3.85** (3.54-4.22)	**4.91** (4.50-5.37)	**5.78** (5.28-6.32)	**7.06** (6.41-7.70)	**8.14** (7.34-8.87)	**9.32** (8.34-10.2)	**10.6** (9.40-11.6)	**12.5** (10.9-13.7)	**14.1** (12.2-15.5)
3-day	**3.37** (3.11-3.68)	**4.08** (3.76-4.45)	**5.16** (4.75-5.63)	**6.06** (5.56-6.60)	**7.36** (6.71-7.99)	**8.44** (7.65-9.17)	**9.62** (8.65-10.4)	**10.9** (9.72-11.8)	**12.7** (11.2-13.9)	**14.3** (12.5-15.6)
4-day	**3.57** (3.30-3.87)	**4.31** (3.98-4.68)	**5.42** (5.01-5.89)	**6.33** (5.84-6.88)	**7.65** (7.01-8.29)	**8.74** (7.96-9.47)	**9.91** (8.97-10.7)	**11.2** (10.0-12.1)	**13.0** (11.5-14.1)	**14.5** (12.8-15.8)
7-day	**4.18** (3.86-4.55)	**5.01** (4.63-5.46)	**6.22** (5.74-6.78)	**7.22** (6.65-7.86)	**8.66** (7.93-9.41)	**9.86** (8.99-10.7)	**11.1** (10.1-12.1)	**12.5** (11.2-13.6)	**14.5** (12.9-15.7)	**16.1** (14.2-17.5)
10-day	**4.76** (4.43-5.14)	**5.69** (5.29-6.15)	**6.96** (6.46-7.51)	**7.99** (7.41-8.63)	**9.44** (8.71-10.2)	**10.6** (9.77-11.5)	**11.9** (10.8-12.8)	**13.1** (12.0-14.2)	**15.0** (13.5-16.2)	**16.4** (14.7-17.9)
20-day	**6.42** (6.03-6.84)	**7.62** (7.16-8.12)	**9.11** (8.55-9.71)	**10.3** (9.65-11.0)	**11.9** (11.1-12.6)	**13.1** (12.2-14.0)	**14.4** (13.4-15.3)	**15.7** (14.5-16.7)	**17.4** (16.0-18.6)	**18.8** (17.1-20.1)
30-day	**8.00** (7.56-8.45)	**9.43** (8.92-9.97)	**11.0** (10.4-11.7)	**12.3** (11.6-13.0)	**13.9** (13.1-14.7)	**15.2** (14.3-16.0)	**16.4** (15.4-17.3)	**17.6** (16.5-18.6)	**19.2** (17.8-20.4)	**20.4** (18.9-21.7)
45-day	**10.2** (9.68-10.7)	**12.0** (11.4-12.6)	**13.8** (13.1-14.5)	**15.2** (14.4-16.0)	**17.0** (16.1-17.9)	**18.3** (17.3-19.3)	**19.6** (18.4-20.6)	**20.8** (19.5-21.9)	**22.3** (20.9-23.5)	**23.4** (21.8-24.7)
60-day	**12.2** (11.6-12.8)	**14.3** (13.7-15.0)	**16.4** (15.6-17.2)	**17.9** (17.0-18.8)	**19.8** (18.8-20.8)	**21.2** (20.1-22.3)	**22.5** (21.3-23.6)	**23.7** (22.4-24.9)	**25.2** (23.8-26.6)	**26.3** (24.7-27.7)

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

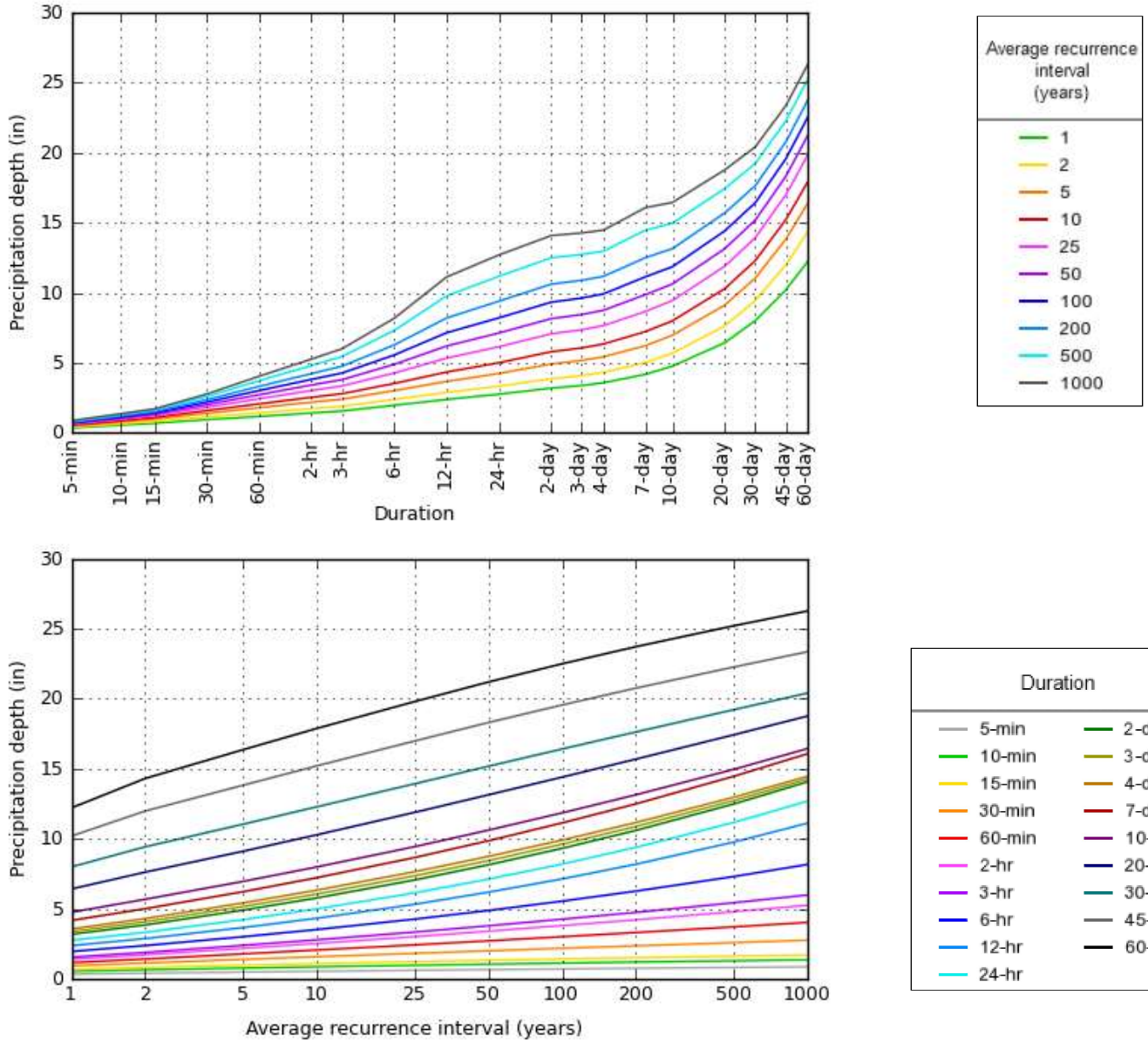
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper 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.

Back to Top

PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 40.2538°, Longitude: -74.7320°



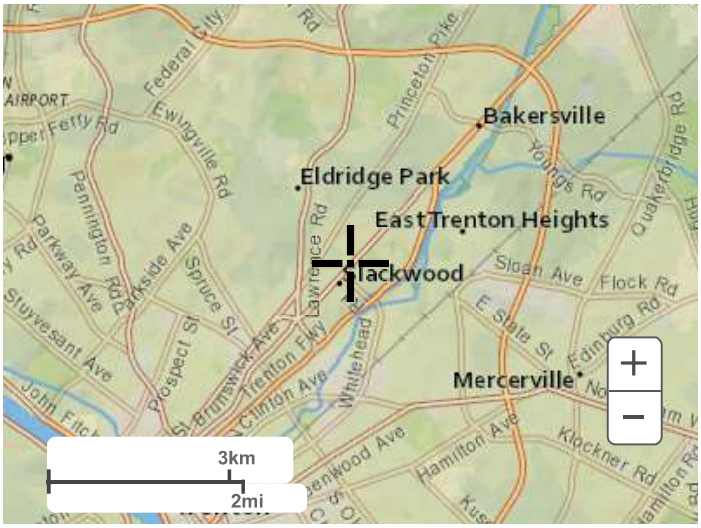
NOAA Atlas 14, Volume 2, Version 3

Created (GMT): Tue Mar 14 17:50:43 2023

Back to Top

Maps & aerials

Small scale terrain



Large scale terrain

Large scale map

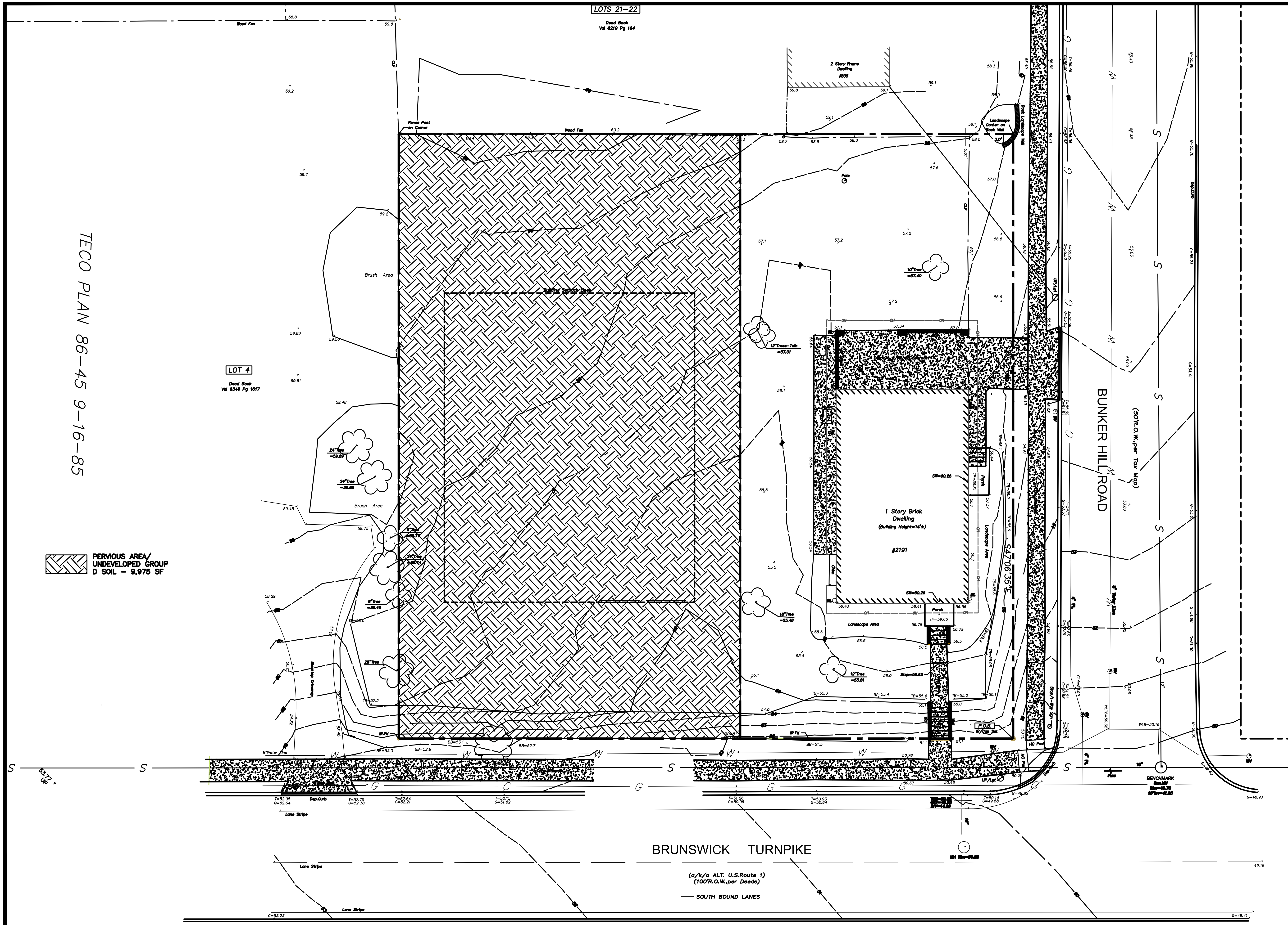
Large scale aerial

Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

LAND COVER MAPS



121 Market Street, 2nd Floor
Camden, NJ 08102
P:(856) 536-3169
www.keller-engineers.com

KELLER ENGINEERS
OF NEW JERSEY, LLC

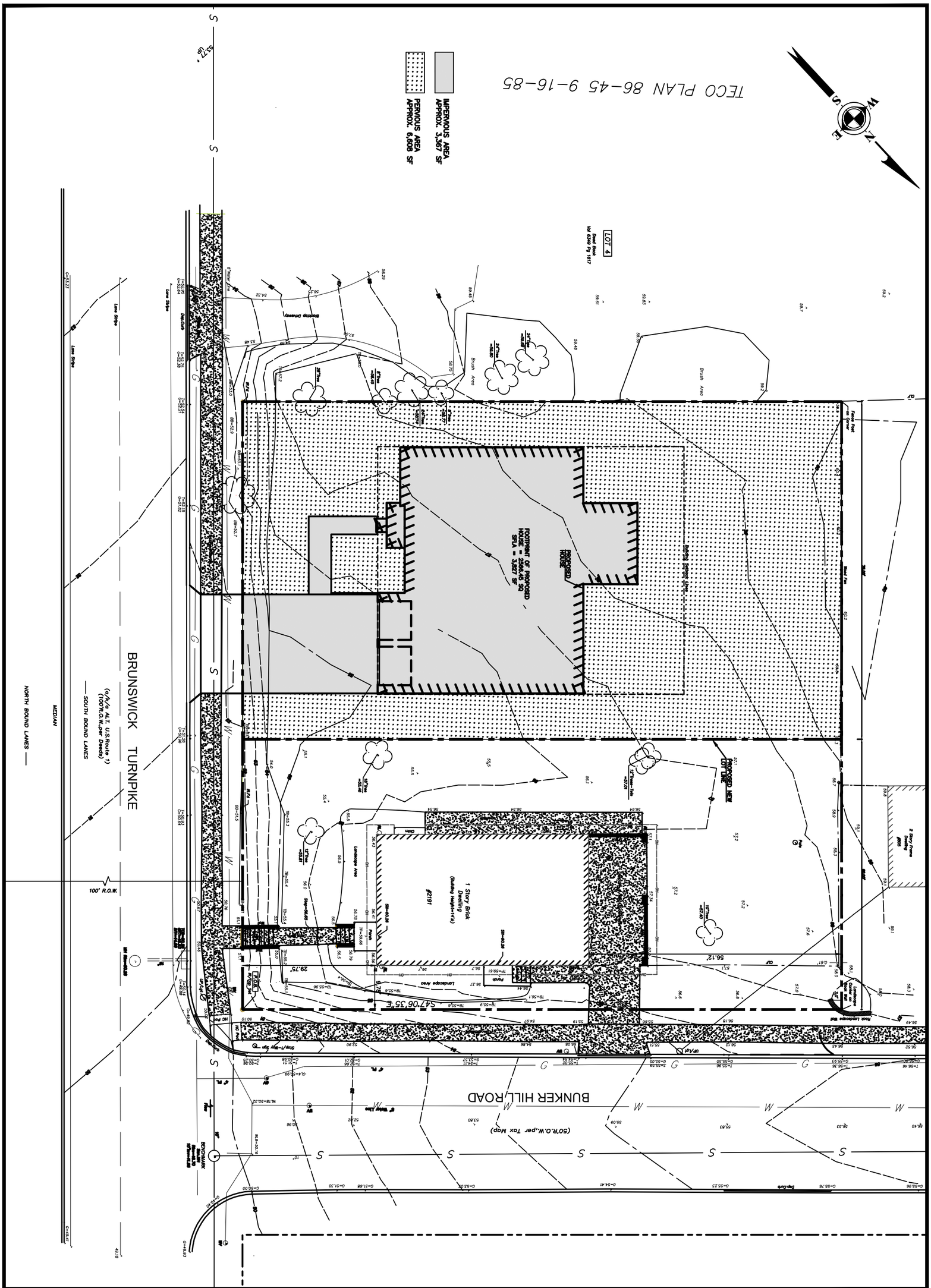
STATE OF NEW JERSEY
SAMIR D. MODY
No. GE39458
LICENSED PROFESSIONAL ENGINEER

PRE DEVELOPMENT LAND COVER MAP

MINOR SUBDIVISION
TAX MAP SHEET NUMBER 15
BLOCK 1504, LOT 1, 2, & 3
2181-2191 BRUNSWICK AVENUE
LAWRENCE TOWNSHIP, MERCER COUNTY NEW JERSEY

PROJECT NO.:	4559-1
FILE NAME:	PRE-POST.DWG
DATE:	03/01/2023
DESIGNED BY:	SA
DRAWN BY:	SA
CHECKED BY:	SDM
PAGE NO.:	1

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



PROJECT NO.:	4559-1
FILE NAME:	PRE-POST.DWG
DATE:	03/01/2023
DESIGNED BY:	SA
DRAWN BY:	SA
CHECKED BY:	SDM
PAGE NO.:	1

SCALE: 1"=20'

20' 0' 20'

POST DEVELOPMENT LAND COVER MAP

MINOR SUBDIVISION
TAX MAP SHEET NUMBER 15
BLOCK 1504, LOT 1, 2, & 3
2181-2191 BRUNSWICK AVENUE
LAWRENCE TOWNSHIP, MERCER COUNTY NEW JERSEY

STATE OF NEW JERSEY
SAMIR D. MODY
No. GE39458
LICENSED PROFESSIONAL ENGINEER

121 Market Street, 2nd Floor
Camden, NJ 08102
P:(856) 536-3169
www.keller-engineers.com

KELLER ENGINEERS
OF NEW JERSEY, LLC