

**STORMWATER
MANAGEMENT REPORT
FOR
PENZONE LIVE-WORK**

(2024-####-COM)

DUBLIN, OHIO

Prepared By:



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Date:

May 1, 2024



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EXHIBITS:

- EXHIBIT 1: Pre-Development Tributary Map
- EXHIBIT 2: Post-Development Tributary Map

Project Summary:

Project Name: Penzone Live-Work
Location: Dublin, Ohio
Reviewing Agency: Dublin, Ohio, Ohio EPA

Hydrologic Summary:

Rainfall Data: Dublin Stormwater Management Design Manual - January 2019

| | |
|---------|-------|
| 1-yr: | 2.20" |
| 2-yr: | 2.63" |
| 5-yr: | 3.24" |
| 10-yr: | 3.74" |
| 25-yr: | 4.44" |
| 50-yr: | 5.02" |
| 100-yr: | 5.63" |

Rainfall Distribution: NSRS Type II 24 Hour
Detention Policy: City of Dublin
Water Quality: Ohio EPA
Hydrology Modeling Program: HydroCAD

Design Summary:

Detention: n/a
Water Quality: n/a
Receiving Water Body: Scioto River

Executive Summary:

Critical Storm Summary Table:

| | |
|---|----------------------|
| 1 YR pre-development storm runoff volume | 0.173 Ac. Ft. |
| 1 YR post-development storm runoff volume | 0.090 Ac. Ft. |
| Volume Increase | -48.0% |
| Critical Storm | n/a |

Stormwater Runoff Summary Table:

| Storm Event | Pre-Development Peak Flow (cfs) | Post-Development Peak Flow (cfs) | Allowable Release Rate (cfs) | Post-Development Release Rate (cfs) |
|-------------|---------------------------------|----------------------------------|------------------------------|-------------------------------------|
| 1-YR | 3.11 | 1.60 | 3.11 | 1.60 |
| 2-YR | 3.94 | 2.29 | 3.94 | 2.29 |
| 5-YR | 5.12 | 3.34 | 5.12 | 3.34 |
| 10-YR | 6.08 | 4.24 | 6.08 | 4.24 |
| 25-YR | 7.42 | 5.54 | 7.42 | 5.54 |
| 50-YR | 8.53 | 6.64 | 8.53 | 6.64 |
| 100-YR | 9.69 | 7.80 | 9.69 | 7.80 |

Detention Summary Table:

| | |
|--------------------------------|-------------|
| Water Quality Volume Required | n/a |
| Water Quality Volume Provided | 0 CF |
| Water Quantity Volume Required | n/a |
| Water Quantity Volume Provided | 0 CF |

Site Summary:

Penzone Live-Work is located south of the intersection of Cooperstone Drive and Village Parkway; bound by Village Parkway to the east; the existing Penzone Base One and a regional stormwater basin to the south; and the Greystone Mews subdivision to the west in Dublin, Ohio. The project will disturb approximately 1.47 acres onsite, consisting primarily of an existing parking lot. The proposed development will construct a 3,000 square foot live-work residence with supporting facilities. Stormwater management is provided for the site as required by City of Dublin Stormwater Management Design Manual - January 2019 following the “AMC Theatre Expansion” Record Plans, dated “As Constructed” June, 1991 and the “Dublin Village Center” Record Calculations, dated December 17, 1990.

Design Methodology:

Stormwater management calculations within this report follow the guidance of the City of Dublin Stormwater Management Design Manual - January 2019. The water quality for this site follows the specifications and requirements per the Ohio EPA. Hydrologic parameters such as Runoff Curve Number (RCN) and Time of Concentration were determined using standard Natural Resources Conservation Service (NRCS) Methodology. The peak flow rates were modeled with the HydroCAD software suite using TR-55 methodology and NSCR Type-II rainfall distribution, 24-hr storm duration. The City of Dublin Stormwater Management Design Manual - January 2019, precipitation frequency estimates for the 1, 2, 5, 10, 25, 50, and 100 year storm events were used to evaluate rainfall and runoff on the proposed development.

Pre-Developed Conditions:

The soils on site are predominately Crosby silt-loam and Kokomo silt-loam classified within hydrologic groups “C/D”. Natural drainage predominately flows north to south into existing storm sewers which outlet into the existing detention basin constructed as a part of the “AMC Theatre Expansion”. The basin established a developed curve number of 95 for the tributary area. Pre-developed areas are detailed in Table 1 and the peak runoff rates are detailed in Table 2 for the disturbance limits of the project.

| Tributary Area (acres) | CN | Description (Land Use) |
|---------------------------|----|------------------------|
| 1.11 | 98 | Impervious |
| 0.36 | 74 | Pervious |

Table 1 - Pre-Developed Characteristics

| Area (Ac.) | Curve Number | TC (Min.) | 1-yr (cfs) | 2-yr (cfs) | 5-yr (cfs) | 10-yr (cfs) | 25-yr (cfs) | 50-yr (cfs) | 100-yr (cfs) |
|---------------|-----------------|--------------|---------------|---------------|---------------|----------------|----------------|----------------|-----------------|
| 1.47 | 92 | 10 | 3.11 | 3.94 | 5.12 | 6.08 | 7.42 | 8.53 | 9.69 |

Table 2 – Pre-Developed Peak Runoff Rates

Per the City of Dublin Stormwater Manual – January 2019, the allowable release rates from the site are determined by following the critical storm method. For all storms up to and including the critical storm, runoff must be discharged from the site at a rate not to exceed the 1-year pre-developed runoff rate. Storm events with less frequent recurrence intervals than the critical storm may be discharged at the corresponding pre-developed rate. Using the SCS curve number method, runoff volumes from a 2.2 inch rainfall event (1-yr) were calculated and compared to determine the critical storm, as detailed in Table 3.

| Ex Imp. Area (Ac.) | Curve Number | Ex 1-Yr Runoff Volume (Ac. Ft.) | Proposed Imp. Area (Ac.) | Curve Number | Prop 1-Yr Runoff Volume (Ac. Ft.) | Percent Increase (%) | Critical Storm |
|--------------------|--------------|---------------------------------|--------------------------|--------------|-----------------------------------|----------------------|----------------|
| 1.11 | 92 | 0.173 | 0.44 | 81 | 0.090 | -50.0 | N/A |

Table 3 -Critical Storm Summary

The allowable release rates based on the critical storm calculations are summarized in Table 4.

| | 1-yr (cfs) | 2-yr (cfs) | 5-yr (cfs) | 10-yr (cfs) | 25-yr (cfs) | 50-yr (cfs) | 100-yr (cfs) |
|-------------|------------|------------|------------|-------------|-------------|-------------|--------------|
| Total (cfs) | 3.11 | 3.94 | 5.12 | 6.08 | 7.42 | 8.53 | 9.69 |

Table 4 – Allowable Release Rates

Post-Construction Conditions:

For post-developed conditions, the existing drainage is being maintained with roof drains and pavement areas being routed to the existing storm sewer before flowing south into the existing detention basin. The basin design had assumed a curve number of 95 for all tributary areas, and the project will reduce its impervious for a post-developed curve number of 81.

Stormwater Quantity Control:

No additional stormwater controls are planned for the development as the project will reduce its overall impervious area to the basin it was designed to be tributary. The reduction also meets the critical storm requirements.

Table 5 summarizes peak release rates for the proposed conditions, including comparison against allowable release rates for the site.

| Storm Event | Allowable Release Rate (cfs) | Post-Developed Release Rate (cfs) |
|-------------|------------------------------|-----------------------------------|
| 1 | 3.11 | 1.60 |
| 2 | 3.94 | 2.29 |
| 5 | 5.12 | 3.34 |
| 10 | 6.08 | 4.24 |
| 25 | 7.42 | 5.54 |
| 50 | 8.53 | 6.64 |
| 100 | 9.69 | 7.80 |

Table 5 – Proposed Site Release Rate Summary

Stormwater Quality Control:

Per the City of Dublin Stormwater manual and the Ohio EPA General Construction Permit, the Ohio EPA encourages the redevelopment of untreated impervious areas through a reduction of the water quality treatment requirement for previous developments that were not obligated to obtain Construction General Permit coverage and provide management of the water quality volume under the general permit, before April 21, 2003. The “AMC Theatre Expansion” was constructed before the April 21, 2003 which

allows for water quality to be addressed by meeting a 20 percent net reduction of the site's volumetric runoff coefficient through impervious area reduction with soil restoration. The project will remove 60.19% of the existing impervious area within the disturbance limits, far exceeding the minimum requirements.

Erosion and Sediment Control:

Inlet protection and silt fence will be utilized to meet the Ohio EPA requirements that during construction the site must provide means by which to control the sediment laden runoff from the construction site. A temporary sediment basin with skimmer will not be required since each inlet protection will not exceed an acre of tributary area. Sediment barriers will not exceed maximum drainage area per 100 linear feet for the drainage area slope.

Conclusion:

The proposed Penzone Live-Work development will utilize an impervious area reduction to meet the detention and water quality requirements for the site. The development will reduce the stormwater volume being routed to the existing detention basin it was designed to be tributary to.

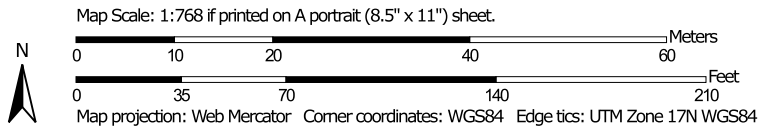
APPENDIX A

SOILS MAP

Soil Map—Franklin County, Ohio




Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features





-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

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

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

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

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

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

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

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

Soil Survey Area: Franklin County, Ohio
 Survey Area Data: Version 22, Sep 6, 2023

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

Date(s) aerial images were photographed: May 21, 2023—Aug 8, 2023

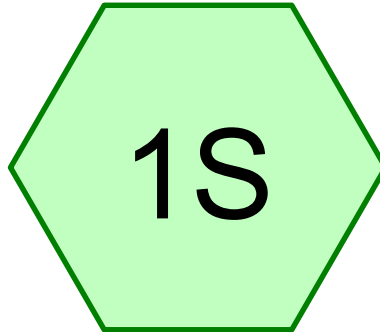
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

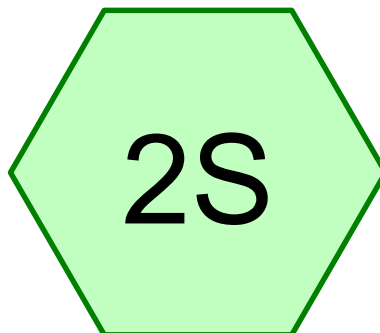
| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|------------------------------------|---|--------------|----------------|
| CrB | Crosby silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes | 0.2 | 10.7% |
| Ko | Kokomo silty clay loam, 0 to 2 percent slopes | 1.5 | 89.3% |
| Totals for Area of Interest | | 1.6 | 100.0% |

APPENDIX B

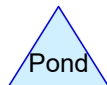
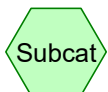
CRITICAL STORM CALCULATIONS



Ex. Conditions w/in
Disturbance Limits



Prop. Conditions w/in
Disturbance Limits



Routing Diagram for 24-0047-76

Prepared by Advanced Civil Design, Inc, Printed 5/1/2024
HydroCAD® 10.20-3c s/n 02822 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Runoff = 3.11 cfs @ 12.01 hrs, Volume= 0.173 af, Depth> 1.41"

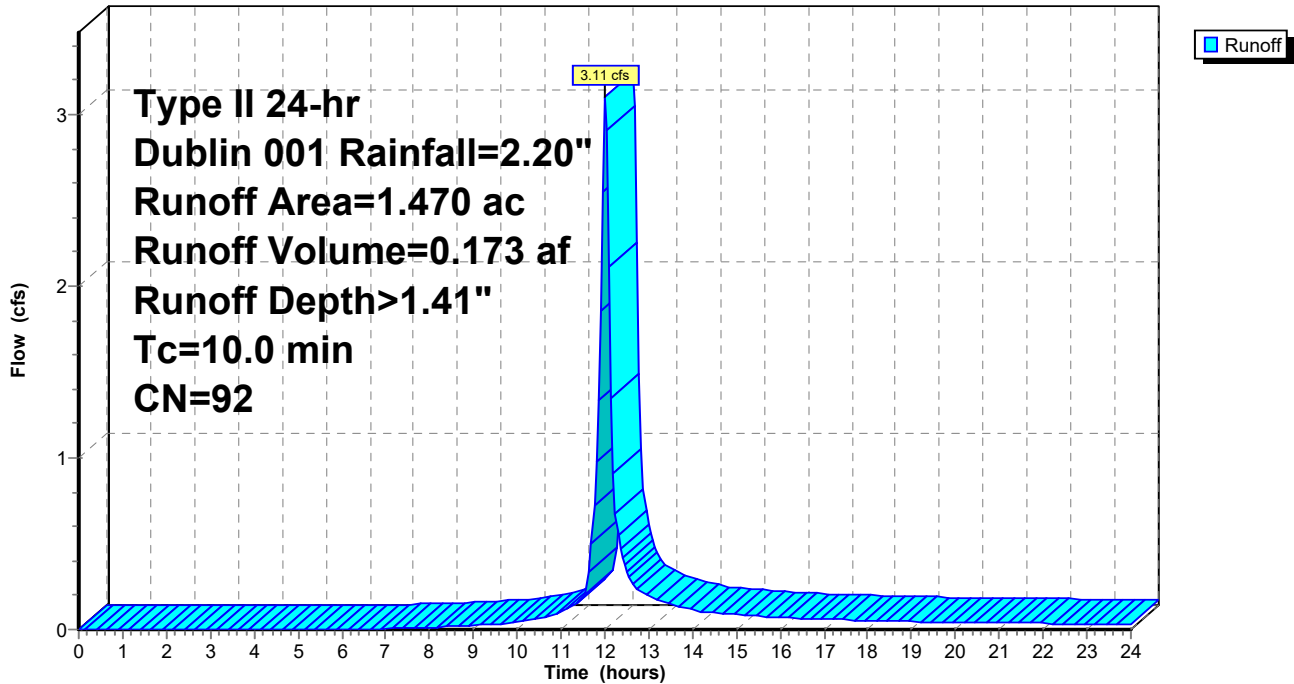
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 001 Rainfall=2.20"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.110 | 98 | Paved parking, HSG C |
| 0.360 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 92 | Weighted Average |
| 0.360 | | 24.49% Pervious Area |
| 1.110 | | 75.51% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Runoff = 1.60 cfs @ 12.02 hrs, Volume= 0.090 af, Depth> 0.73"

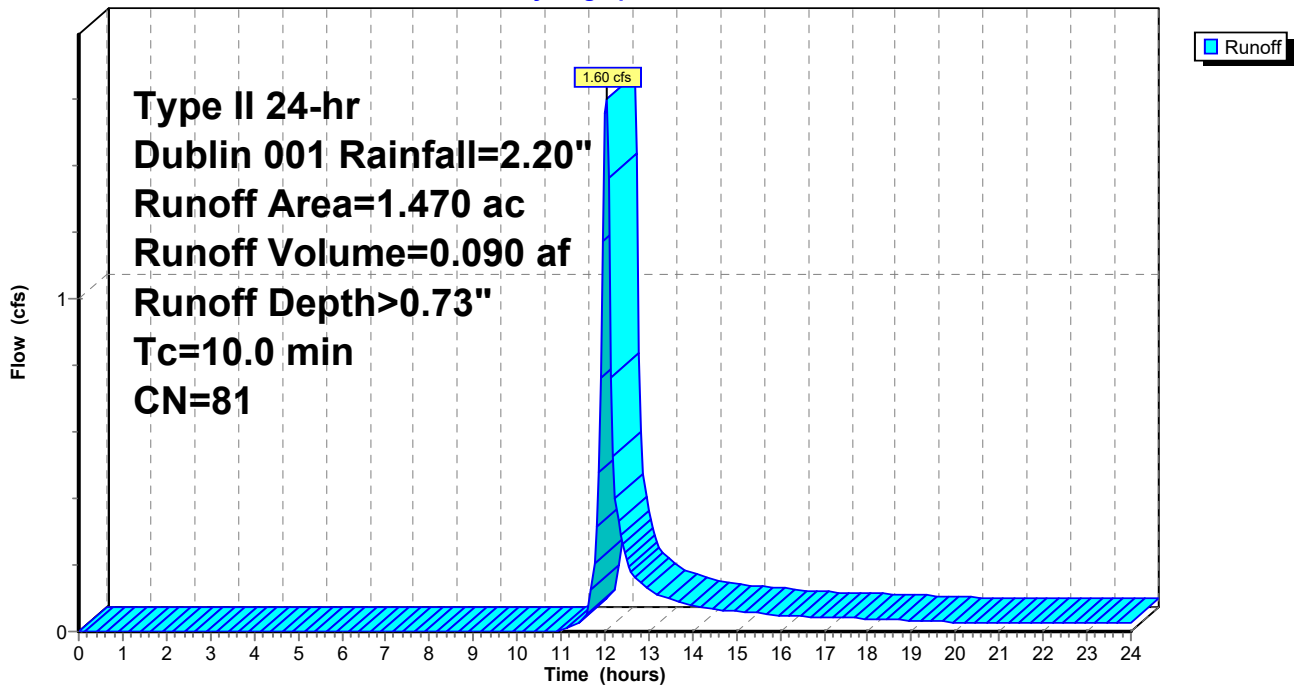
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 001 Rainfall=2.20"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 0.440 | 98 | Paved parking, HSG C |
| 1.030 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 81 | Weighted Average |
| 1.030 | | 70.07% Pervious Area |
| 0.440 | | 29.93% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

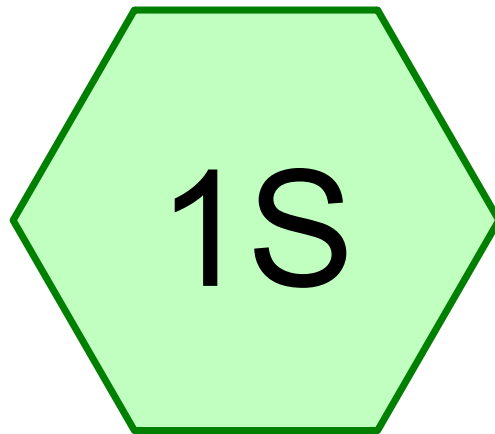
Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Hydrograph

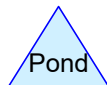
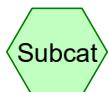


APPENDIX C

PRE-DEVELOPMENT HYDROCAD CALCULATIONS



Ex. Conditions w/in Disturbance Limits



Routing Diagram for 24-0047-76

Prepared by Advanced Civil Design, Inc., Printed 5/1/2024
HydroCAD® 10.20-3c s/n 02822 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Runoff = 3.11 cfs @ 12.01 hrs, Volume= 0.173 af, Depth> 1.41"

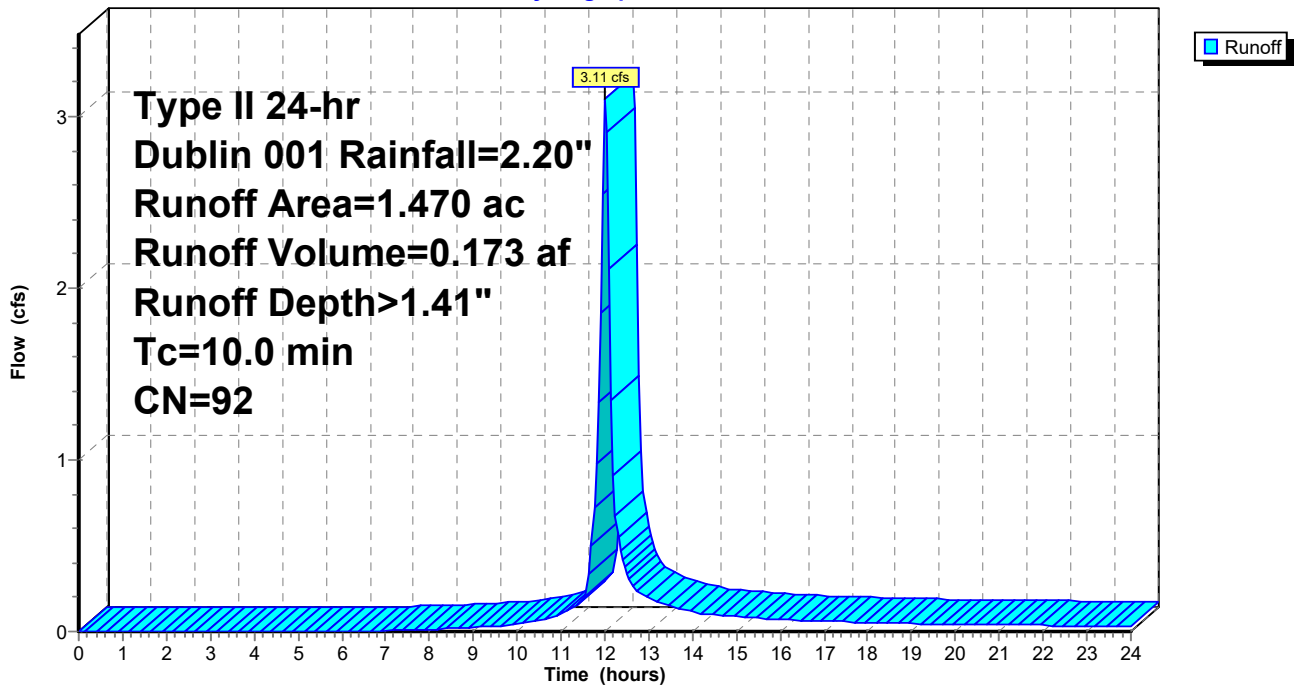
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 001 Rainfall=2.20"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.110 | 98 | Paved parking, HSG C |
| 0.360 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 92 | Weighted Average |
| 0.360 | | 24.49% Pervious Area |
| 1.110 | | 75.51% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Runoff = 3.94 cfs @ 12.01 hrs, Volume= 0.222 af, Depth> 1.81"

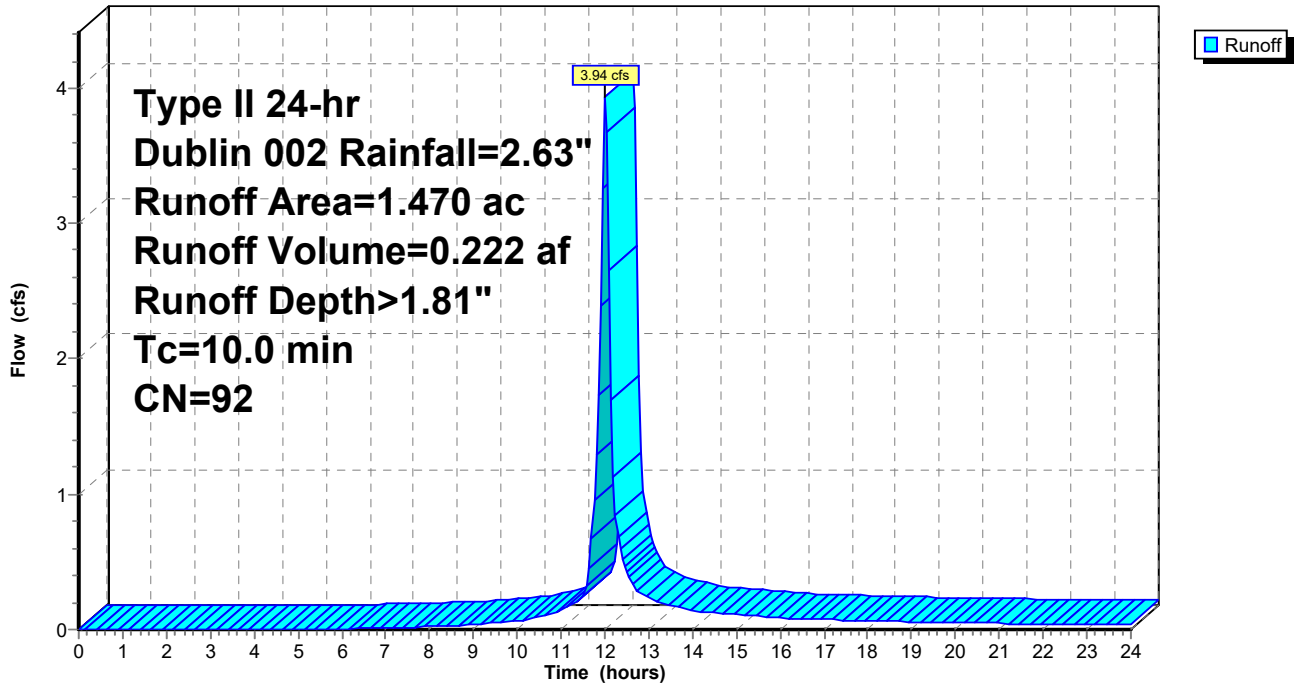
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 002 Rainfall=2.63"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.110 | 98 | Paved parking, HSG C |
| 0.360 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 92 | Weighted Average |
| 0.360 | | 24.49% Pervious Area |
| 1.110 | | 75.51% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Runoff = 5.12 cfs @ 12.01 hrs, Volume= 0.292 af, Depth> 2.38"

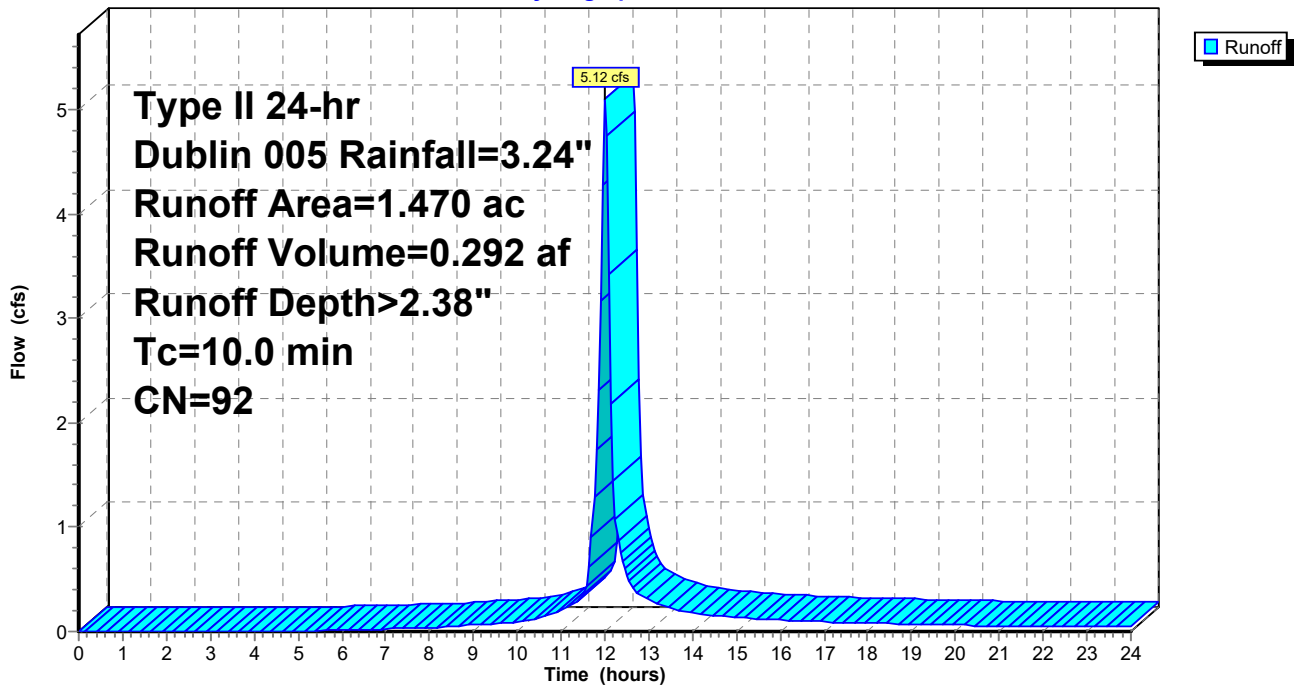
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type II 24-hr Dublin 005 Rainfall=3.24"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.110 | 98 | Paved parking, HSG C |
| 0.360 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 92 | Weighted Average |
| 0.360 | | 24.49% Pervious Area |
| 1.110 | | 75.51% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Runoff = 6.08 cfs @ 12.01 hrs, Volume= 0.351 af, Depth> 2.86"

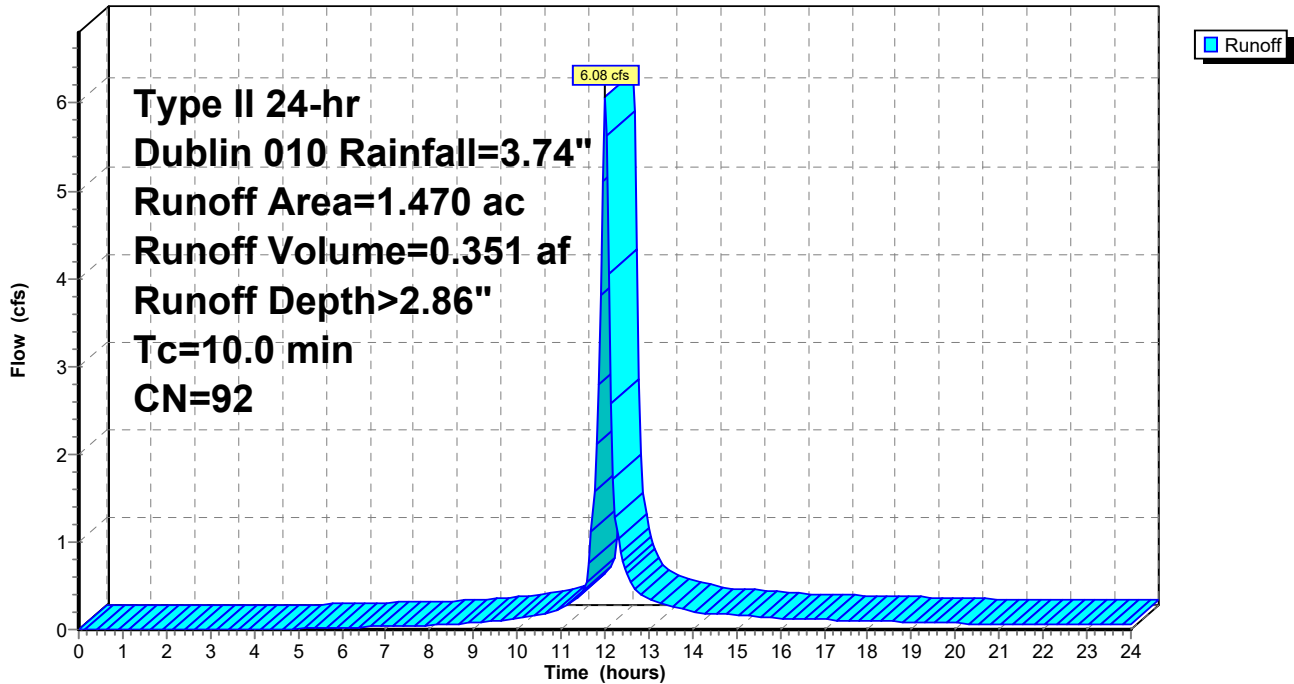
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 010 Rainfall=3.74"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.110 | 98 | Paved parking, HSG C |
| 0.360 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 92 | Weighted Average |
| 0.360 | | 24.49% Pervious Area |
| 1.110 | | 75.51% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Runoff = 7.42 cfs @ 12.01 hrs, Volume= 0.433 af, Depth> 3.54"

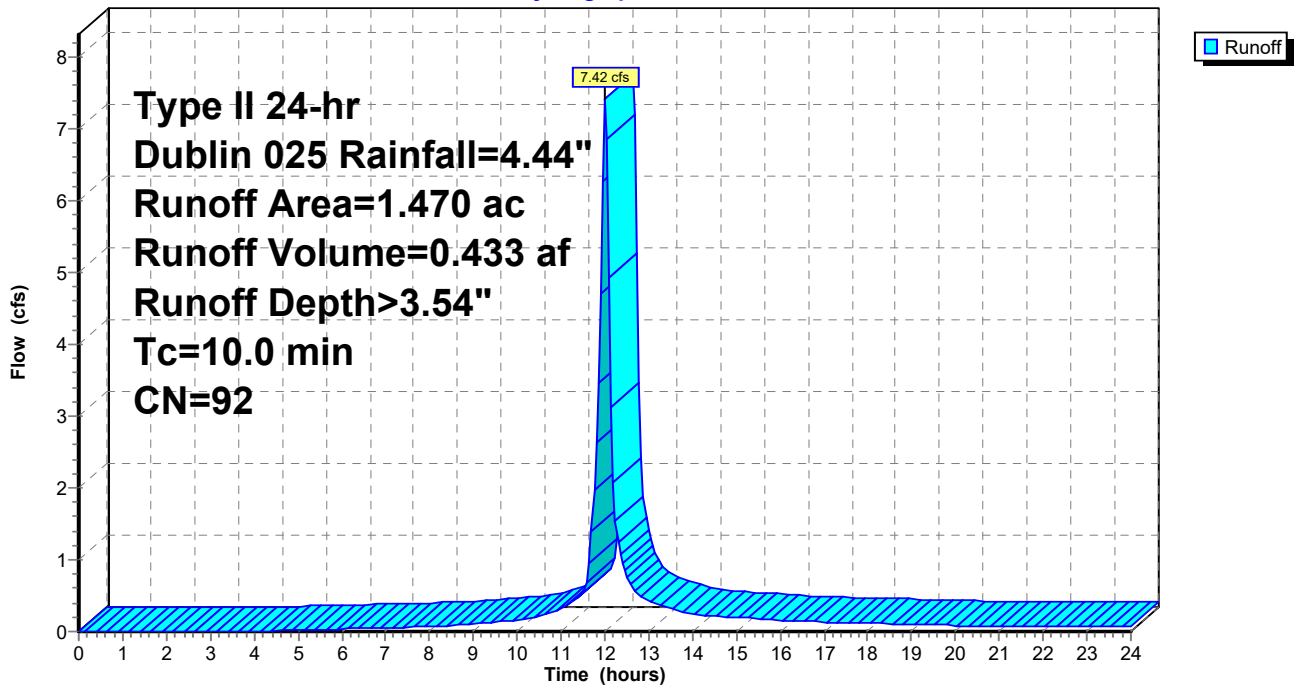
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 025 Rainfall=4.44"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.110 | 98 | Paved parking, HSG C |
| 0.360 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 92 | Weighted Average |
| 0.360 | | 24.49% Pervious Area |
| 1.110 | | 75.51% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Runoff = 8.53 cfs @ 12.01 hrs, Volume= 0.502 af, Depth> 4.10"

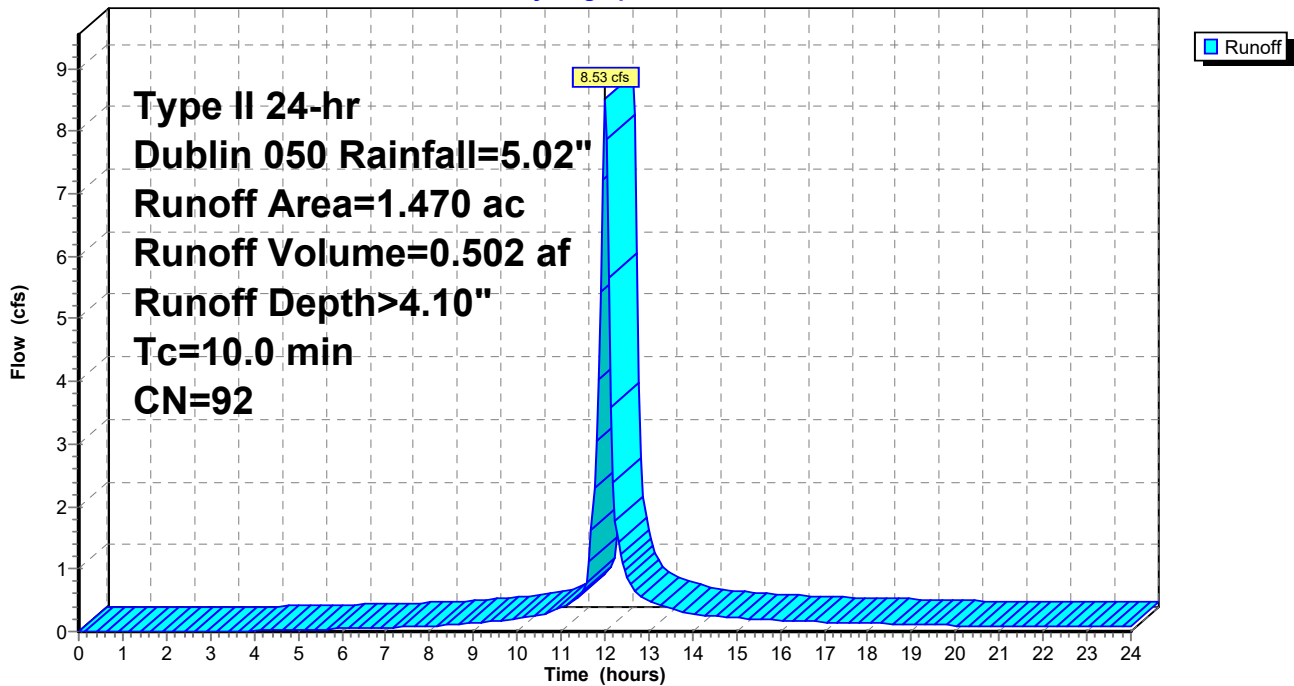
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 050 Rainfall=5.02"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.110 | 98 | Paved parking, HSG C |
| 0.360 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 92 | Weighted Average |
| 0.360 | | 24.49% Pervious Area |
| 1.110 | | 75.51% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Runoff = 9.69 cfs @ 12.01 hrs, Volume= 0.576 af, Depth> 4.70"

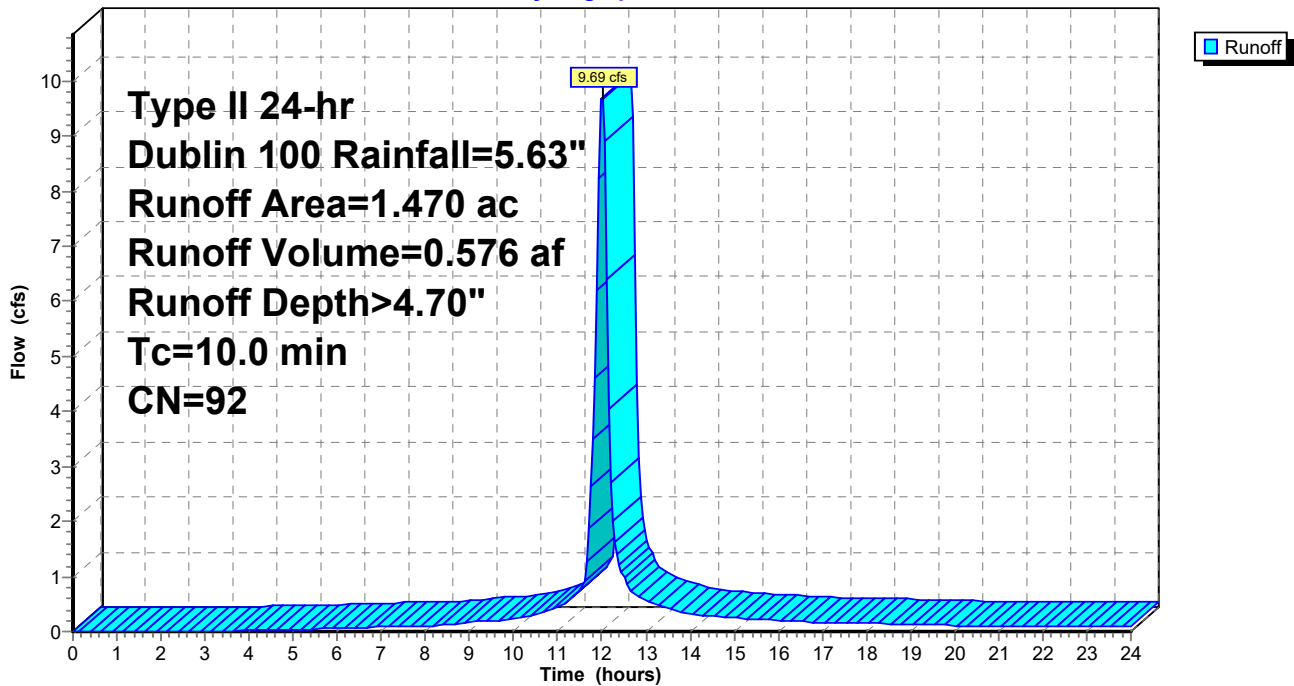
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 100 Rainfall=5.63"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.110 | 98 | Paved parking, HSG C |
| 0.360 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 92 | Weighted Average |
| 0.360 | | 24.49% Pervious Area |
| 1.110 | | 75.51% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

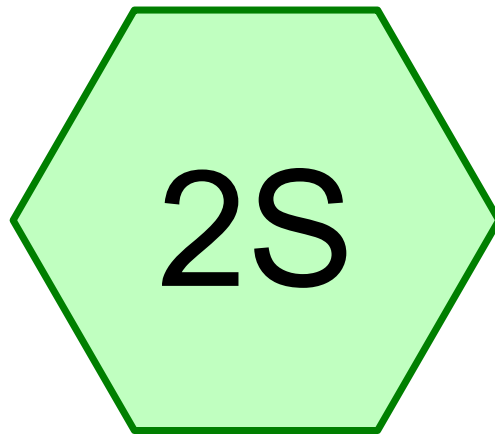
Subcatchment 1S: Ex. Conditions w/in Disturbance Limits

Hydrograph

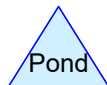
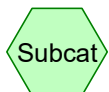


APPENDIX D

POST-DEVELOPMENT HYDROCAD CALCULATIONS



Prop. Conditions w/in Disturbance Limits



Routing Diagram for 24-0047-76

Prepared by Advanced Civil Design, Inc, Printed 5/1/2024
HydroCAD® 10.20-3c s/n 02822 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Runoff = 1.60 cfs @ 12.02 hrs, Volume= 0.090 af, Depth> 0.73"

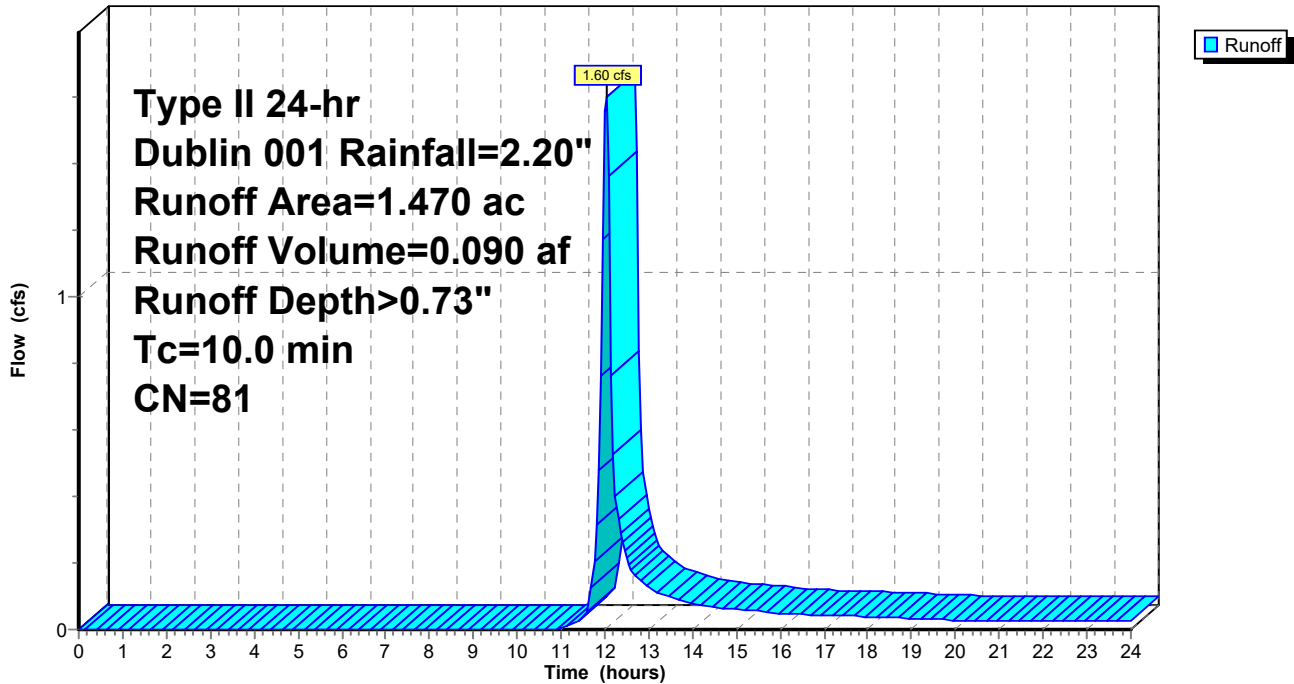
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 001 Rainfall=2.20"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 0.440 | 98 | Paved parking, HSG C |
| 1.030 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 81 | Weighted Average |
| 1.030 | | 70.07% Pervious Area |
| 0.440 | | 29.93% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Runoff = 2.29 cfs @ 12.02 hrs, Volume= 0.127 af, Depth> 1.03"

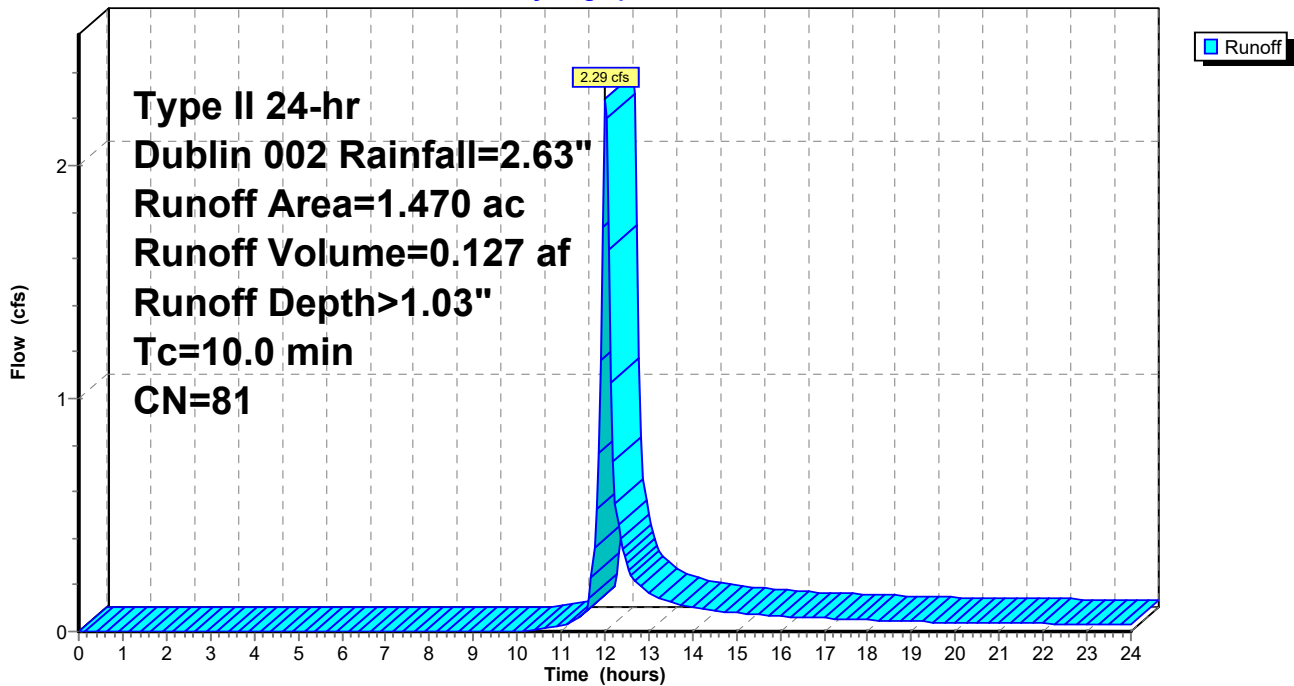
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 002 Rainfall=2.63"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 0.440 | 98 | Paved parking, HSG C |
| 1.030 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 81 | Weighted Average |
| 1.030 | | 70.07% Pervious Area |
| 0.440 | | 29.93% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Runoff = 3.34 cfs @ 12.02 hrs, Volume= 0.183 af, Depth> 1.50"

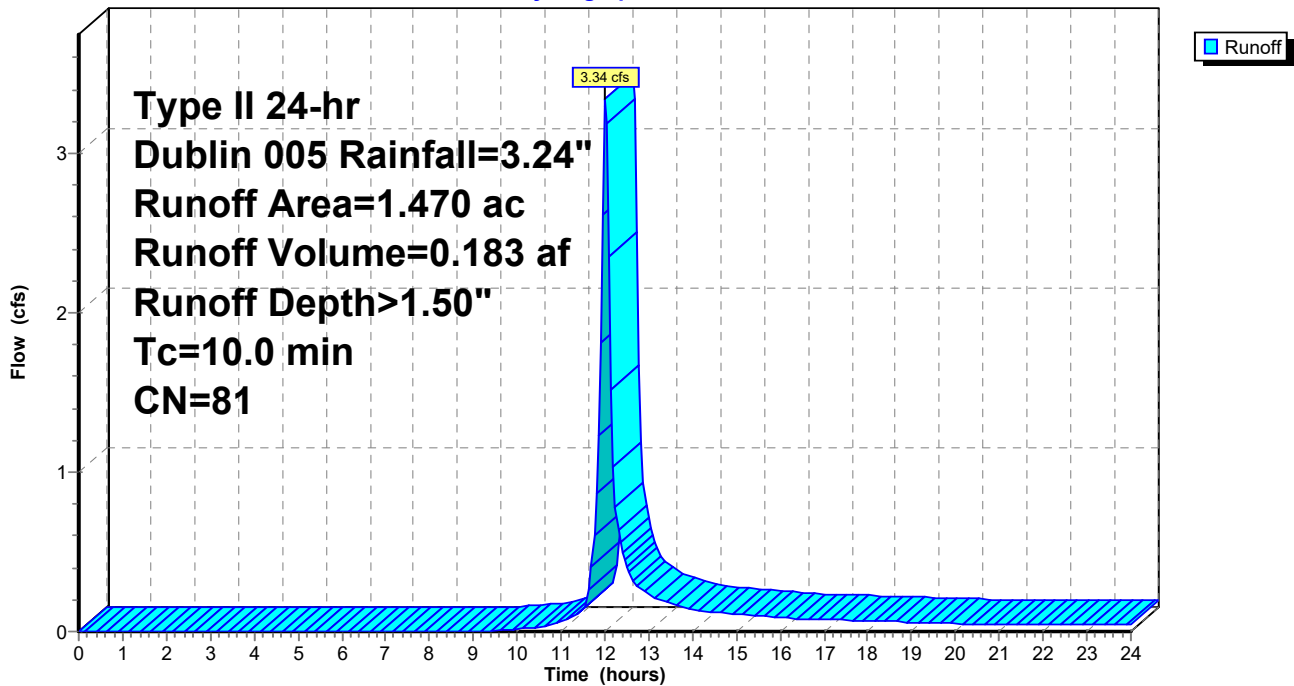
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 005 Rainfall=3.24"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 0.440 | 98 | Paved parking, HSG C |
| 1.030 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 81 | Weighted Average |
| 1.030 | | 70.07% Pervious Area |
| 0.440 | | 29.93% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Runoff = 4.24 cfs @ 12.02 hrs, Volume= 0.233 af, Depth> 1.90"

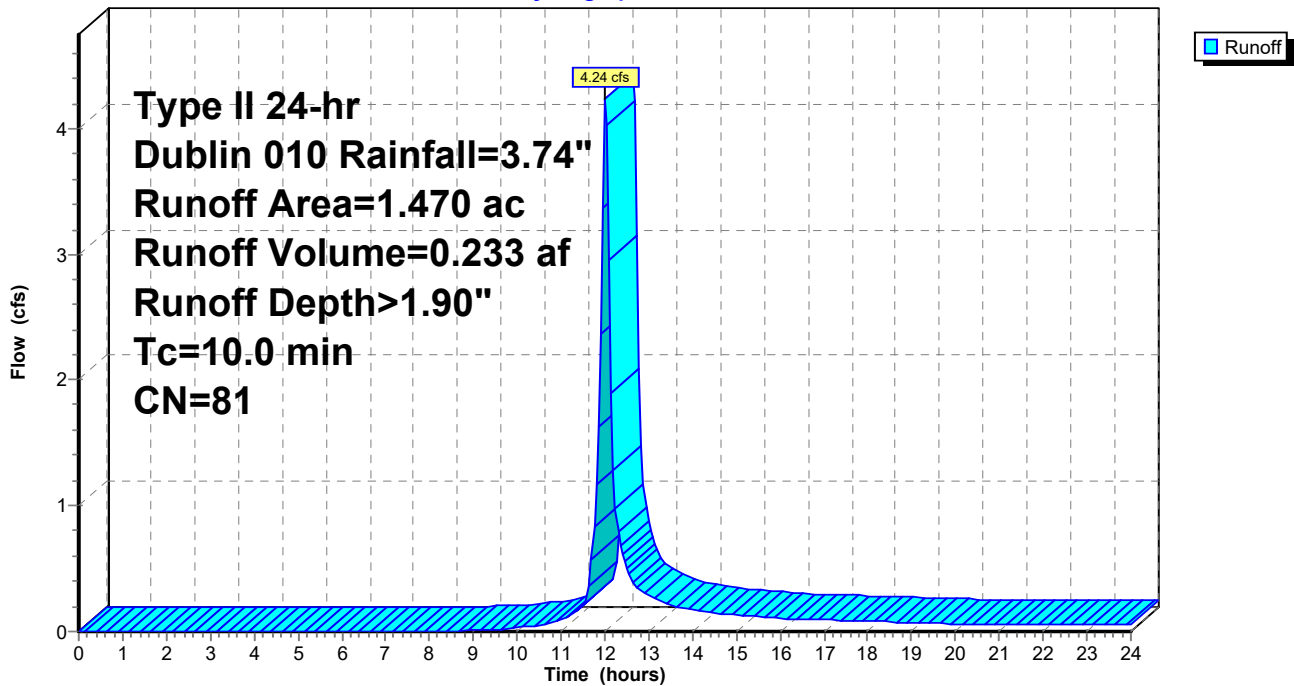
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 010 Rainfall=3.74"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 0.440 | 98 | Paved parking, HSG C |
| 1.030 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 81 | Weighted Average |
| 1.030 | | 70.07% Pervious Area |
| 0.440 | | 29.93% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Runoff = 5.54 cfs @ 12.01 hrs, Volume= 0.305 af, Depth> 2.49"

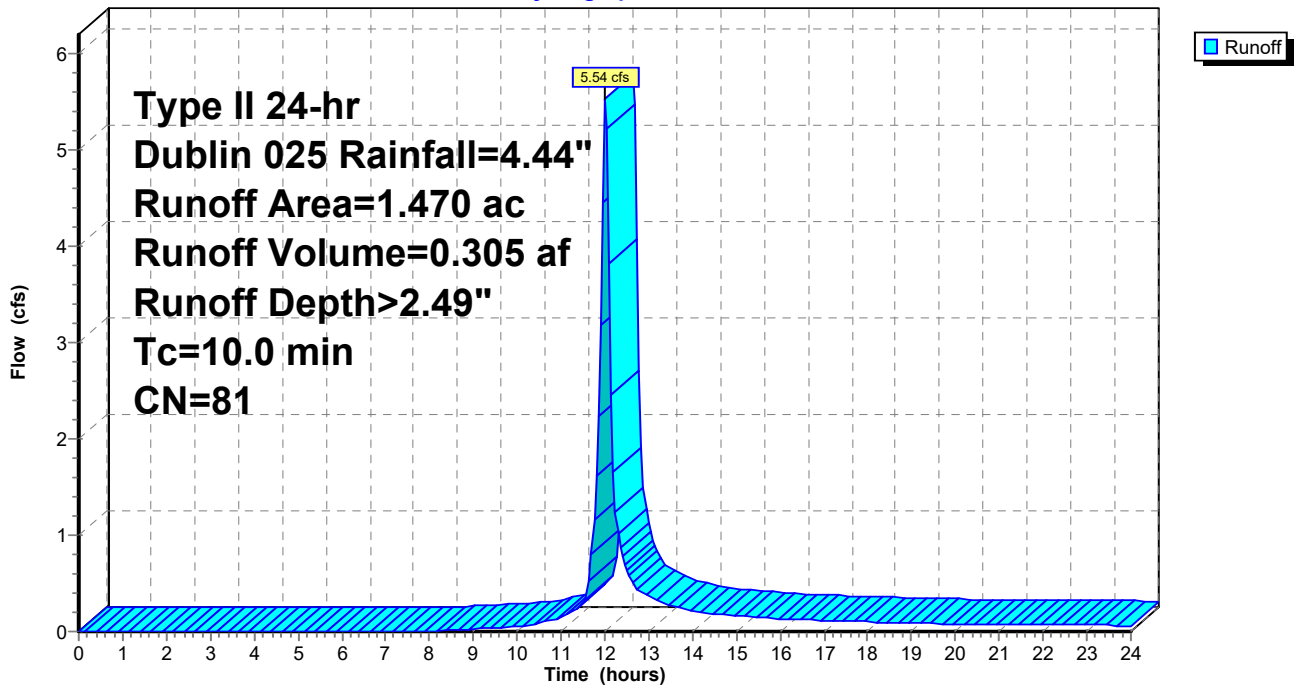
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 025 Rainfall=4.44"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 0.440 | 98 | Paved parking, HSG C |
| 1.030 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 81 | Weighted Average |
| 1.030 | | 70.07% Pervious Area |
| 0.440 | | 29.93% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Runoff = 6.64 cfs @ 12.01 hrs, Volume= 0.367 af, Depth> 3.00"

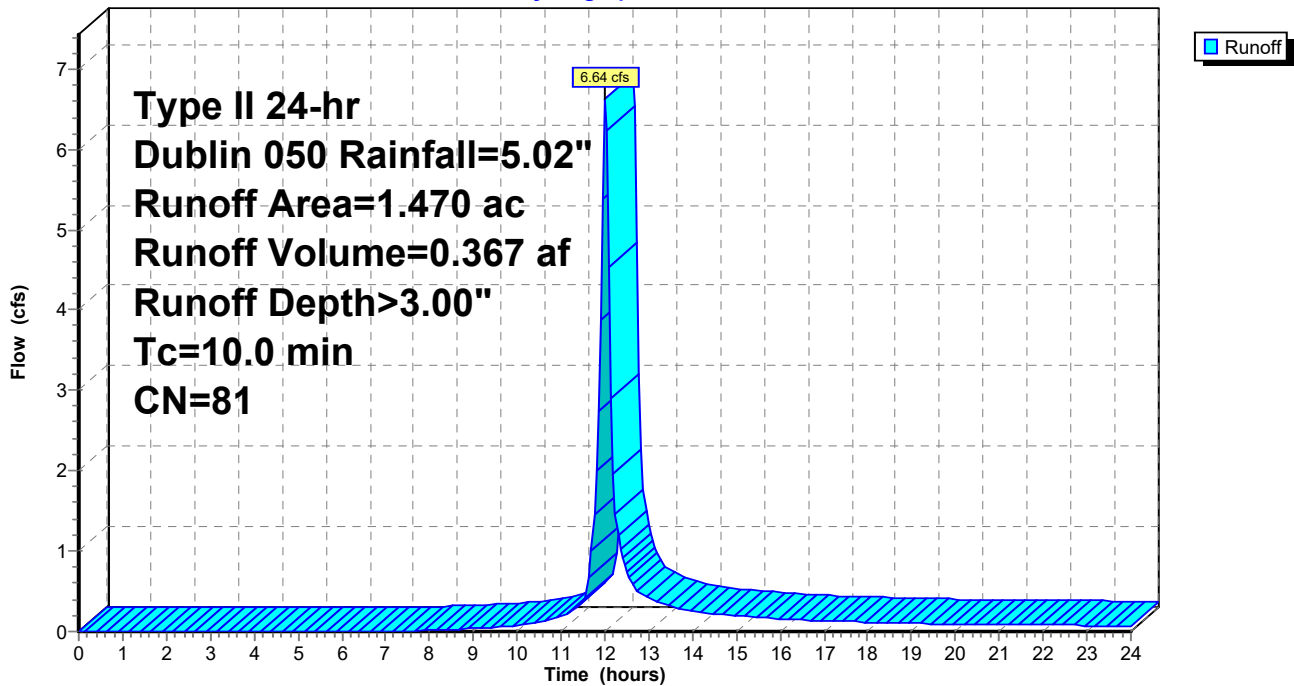
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Type II 24-hr Dublin 050 Rainfall=5.02"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 0.440 | 98 | Paved parking, HSG C |
| 1.030 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 81 | Weighted Average |
| 1.030 | | 70.07% Pervious Area |
| 0.440 | | 29.93% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Hydrograph



Summary for Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Runoff = 7.80 cfs @ 12.01 hrs, Volume= 0.434 af, Depth> 3.54"

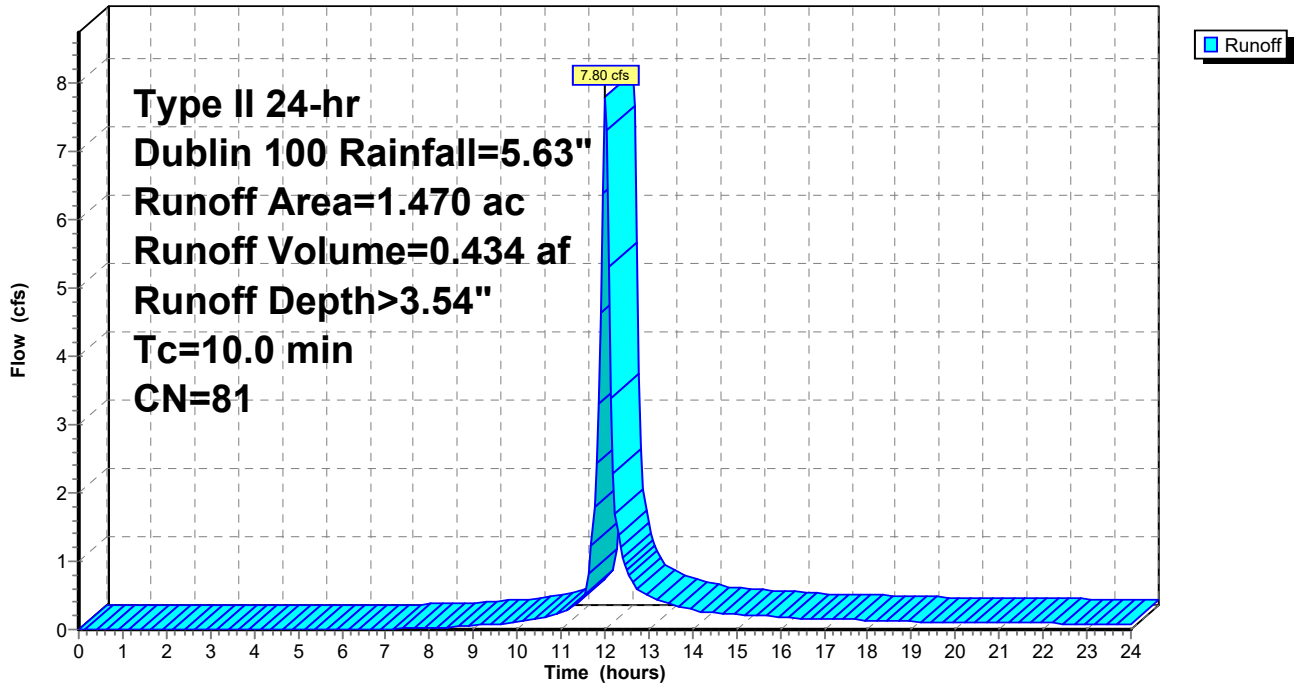
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr Dublin 100 Rainfall=5.63"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 0.440 | 98 | Paved parking, HSG C |
| 1.030 | 74 | >75% Grass cover, Good, HSG C |
| 1.470 | 81 | Weighted Average |
| 1.030 | | 70.07% Pervious Area |
| 0.440 | | 29.93% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 10.0 | | | | | Direct Entry, |

Subcatchment 2S: Prop. Conditions w/in Disturbance Limits

Hydrograph



APPENDIX E

STORM SEWER CALCULATIONS



ADVANCED
CIVIL DESIGN

2 Yr Design Storm n= 0.013

Storm Sewer Design Sheet

Project: Penzone Live-Work
Job No.: 24-0047-76
By: RCF

Date: 5/2/2024
Revised:
Revised:
Revised:

| Struc. | Struc. Index | Sta. | Drainage Area | | | Time | | Intensity in/hr | Des Q CFS | Length ft. | Dia. In | Slope% | Vel | Cap. Flowing Full | Status | Drop Default 0.1 or Match Tops | Out | In | TC | Cover | |
|--------|--------------|---------|---------------|--------|------|----------|--------------|-----------------|-----------|------------|---------|--------|--------|-------------------|--------|--------------------------------|-----|--------|--------|--------|------------|
| | | | Trib | Cumul. | C | Cumul CA | Delta t Min. | | | | | | | | | | | | | | Sum t Min. |
| 2 | | 1+56.50 | 0.10 | 0.10 | 0.90 | | 10.00 | 10.00 | 3.80 | 0.34 | | | | | | | | | | 892.40 | 2.83 |
| | | | | | | 0.09 | | | | | 77.52 | 12 | 1.510% | 5.58 | 4.38 | OK | | 888.40 | 888.40 | | |
| 1 | | 0+78.98 | 0.28 | 0.38 | 0.90 | | 0.23 | 10.23 | 3.78 | 1.29 | | | | | | | | | | 892.10 | 3.68 |
| | | | | | | 0.34 | | | | | 78.98 | 15 | 0.100% | 1.67 | 2.04 | OK | | 886.98 | 887.23 | | |
| EX8 | | 0+00.00 | 0.51 | 1.14 | 0.90 | | 0.79 | 11.02 | 3.69 | 3.78 | | | | | | | | | | 890.57 | 2.06 |
| | | | 0.25 | | 0.90 | 1.03 | | | | | | 18 | 0.500% | 4.21 | 7.43 | OK | | 886.80 | 886.90 | | |
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5 Yr Design Storm

Storm Sewer Check Sheet

Project: Penzone Live-Work
 Job No.: 24-0047-76
 By: RCF

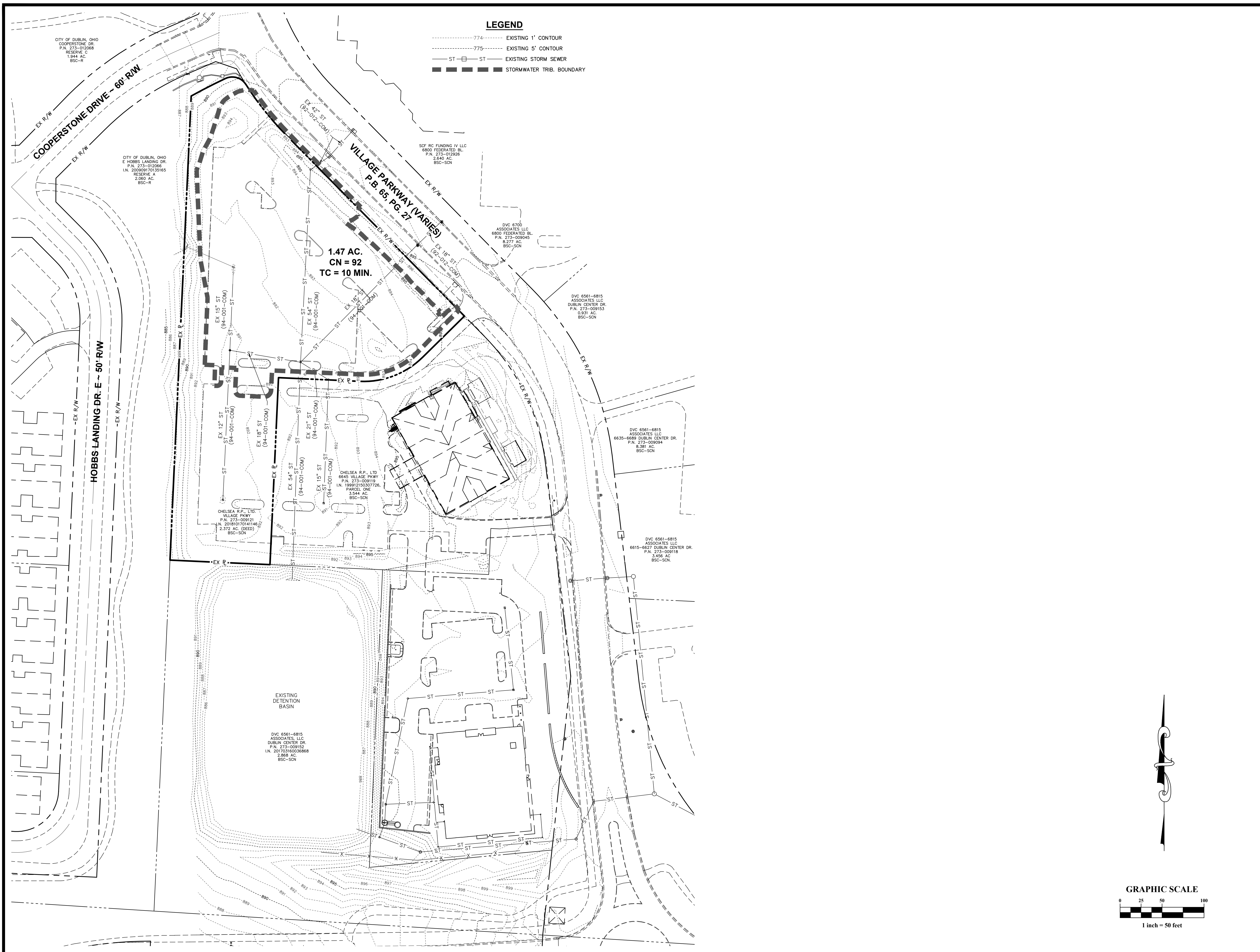
Date: 5/2/2024
 Revised:
 Revised:
 Revised:

| Struc. | Station | Sum CA | Sum t | Intensity in/hr | Des Q CFS | Pipe Length | Pipe Dia. | Des @ Slope % | Sf % | Sf L ft. | HGL | OR | 0.8D | HW Elev | Crit Elev | |
|--------|---------|--------|-------|--------------------|--------------|----------------|--------------|------------------|---------|-------------|--------|----|--------|---------|-----------|----|
| 2 | 156.50 | 0.09 | 10.00 | 4.56 | 0.41 | 77.52 | 12 | 1.510% | 0.01% | 0.01 | 888.04 | / | 889.20 | 889.20 | 892.40 | OK |
| 1 | 78.98 | 0.34 | 10.23 | 4.53 | 1.55 | 78.98 | 15 | 0.100% | 0.06% | 0.05 | 887.95 | / | 888.03 | 888.03 | 892.10 | OK |
| EX8 | 0.00 | 1.03 | 11.02 | 4.41 | 4.53 | 0.00 | 18 | 0.500% | 0.19% | 0.00 | 0.00 | / | 887.90 | 887.90 | 890.57 | OK |
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APPENDIX F

EXHIBITS

Z:\V4-0047-76\DWG\production drawings\1 PRE-DEVELOPED TRIBUTARY MAP_1 PRE-DEVELOPED TRIBUTARY MAP May 02, 2024 - 8:24:54am rflower



LEGEND

- 774 ----- EXISTING 1' CONTOUR
- 775 ----- EXISTING 5' CONTOUR
- ST ST EXISTING STORM SEWER
- STORNGWATER TRIB. BOUNDARY

CITY OF DUBLIN, OHIO
COOPERSTONE DR.
P.N. 273-012068
RESERVE C
1.944 AC.
BSC-R

CITY OF DUBLIN, OHIO
HOBBS LANDING DR.
P.N. 273-012066
LN. 200809170135165
RESERVE A
2.060 AC.
BSC-R

SCF RC FUNDING IV LLC
6800 FEDERATED BL.
P.N. 273-012928
2.640 AC.
BSC-SCN

DVC 6700
ASSOCIATES LLC
6900 FEDERATED BL.
P.N. 273-009045
8.277 AC.
BSC-SCN

DVC 6561-6815
ASSOCIATES LLC
DUBLIN CENTER DR.
P.N. 273-009153
0.931 AC.
BSC-SCN

DVC 6561-6815
ASSOCIATES LLC
6635-6689 DUBLIN CENTER DR.
P.N. 273-009094
8.389 AC.
BSC-SCN

DVC 6561-6815
ASSOCIATES LLC
6615-6627 DUBLIN CENTER DR.
P.N. 273-009118
3.456 AC.
BSC-SCN

CHELSEA R.P. LTD.
VILLAGE PKWY.
P.N. 273-009121
LN. 201801170411462
2.372 AC. (BEED)
BSC-SCN

EXISTING DETENTION BASIN

DVC 6561-6815
ASSOCIATES LLC
DUBLIN CENTER DR.
P.N. 273-009152
2.868 AC.
BSC-SCN

meyers+associates
ARCHITECTURE

ADVANCED
CIVIL DESIGN

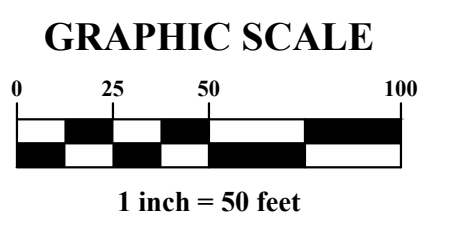
781 Science Blvd, Suite 100
Columbus, Ohio 43230
PH 614.428.7750
fax 614.428.7755

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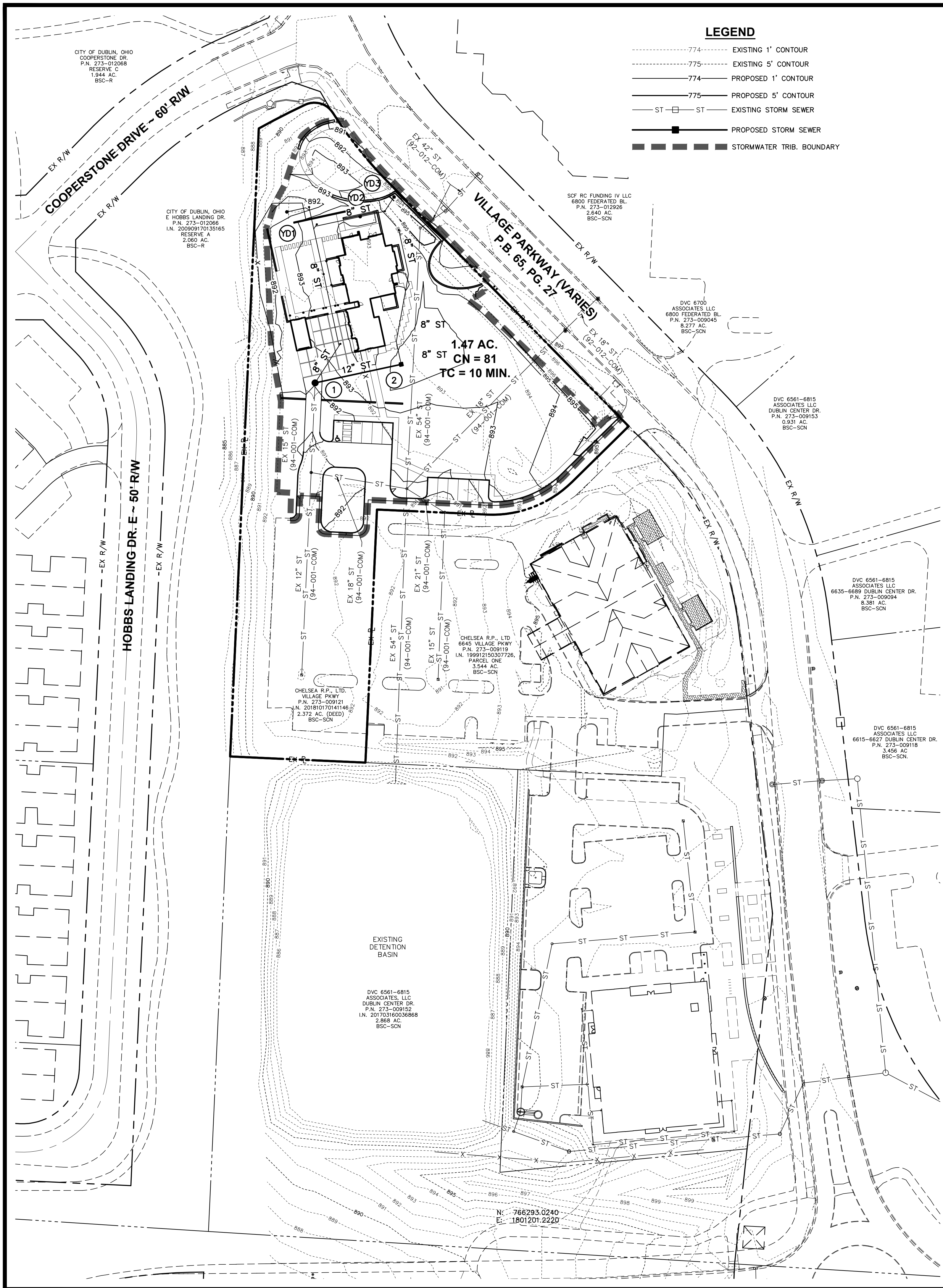
| DESCRIPTION | DATE |
|-----------------|-----------|
| PERMIT DRAWINGS | 2/29/2024 |
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PRE-DEVELOPED TRIBUTARY MAP
Penzone Live-Work
6671 Village Parkway, Dublin, Ohio 43017

MEYERS+ASSOCIATES PROJECT NUMBER:
10
SHEET NUMBER
1



Z:\14-0047-76\DWG\production\drawings\1 SITE CONSTRUCTION\0047-76 SCP_Post-Developed.dwg 1 POST-DEVELOPED TRIBUTARY MAP May 02, 2024 - 8:25:04am Fowler



LEGEND

- 774--- EXISTING 1' CONTOUR
- 775--- EXISTING 5' CONTOUR
- 774--- PROPOSED 1' CONTOUR
- 775--- PROPOSED 5' CONTOUR
- ST- EXISTING STORM SEWER
- ST- PROPOSED STORM SEWER
- STORMWATER TRIB. BOUNDARY

meyers+associates
ARCHITECTURE
www.meyersarchitects.com

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CIVIL DESIGN

781 Science Blvd., Suite 100
Gahanna, Ohio 43230
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fax 614.428.7755

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| DESCRIPTION | DATE |
|-----------------|-----------|
| PERMIT DRAWINGS | 2/29/2024 |
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SHEET TITLE
POST-DEVELOPED TRIBUTARY MAP

PROJECT TITLE
Penzone Live-Work

6671 Village Parkway, Dublin, Ohio 43017

SEAL

MEYERS+ASSOCIATES PROJECT NUMBER:

10

SHEET NUMBER

1

