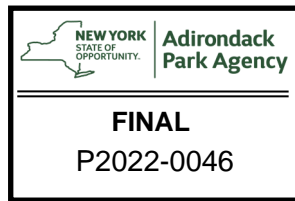


Appendix P – Alternative Stormwater Design

- Alternative Stormwater Management Design Re-Evaluation Memo -
 - NYSDEC Consultation Email -
 - Pre-Development Subcatchment Map -
 - Pre-Development HydroCAD Model -
 - Post-Development Subcatchment Map -
 - Post-Development HydroCAD Model -



**Appendix P – Alternative Stormwater Management Design
Re-Evaluation Memo**



July 12, 2022

BR Benson Mines Solar Project

Stormwater Management Design Re-evaluation

The current stormwater runoff analysis for this Project is based on Natural Resources Conservation Service (NRCS) Hydrologic Soil Group (HSG) classifications. These are summarized in the following table.

NRCS Soil Classifications:

| Symbol | Name | Slope | HSG |
|---------------|---|--------------|------------|
| 021 | Dawson-Fluvaquents-Loxley Complex, Frequently Flooded | - | A/D |
| 365 | Naumberg-Croghan Complex | - | A/D |
| 346C | Colton-Duxbury-Adams Complex | 3-15% | A |
| 634C | Bershire Loam, Very Bouldery | 3-15% | B |
| 741C | Potsdam-Tunbridge-Crary Complex, Very Bouldery | 3-15% | C |
| 807 | Udorthents, Mine Waste | - | C |
| 831D | Tunbridge-Lyman Complex, Very Rocky, Very Bouldery | 15-35% | B |

During the design process, infiltration testing was conducted at various areas across the site to determine soil infiltration rates where infiltration is proposed as a Water Quality treatment Stormwater Management Practice (SMP). The results of the testing demonstrated that the infiltration rate of soil type 807 – “Udorthents, Mine Waste” soil is significantly higher than would be expected from typical HSG C soil. The Applicant provided the infiltration testing results to the New York State Department of Environmental Conservation (NYSDEC) and requested permission to use HSG A for the mine waste soil type 807. This request was approved in an email received from NYSDEC dated June 27, 2022.

Both the pre- and post-development runoff models were re-evaluated using HSG A to determine the runoff curve number (CN) for the mine waste soil for all land cover types. The soil group for 741C – “Potsdam-Tunbridge-Crary Complex, Very Bouldery”, also an HSG C soil, was not changed. Preliminary results from the revised pre- and post-development models are summarized below. As expected, the use of HSG A and corresponding CN for the mine waste soil reduces the peak rate and volume of runoff at all Study Points effected by the change, as detailed in the table below.



| Study Point | Storm Event | Peak Rate of Runoff (cfs) | | | Runoff Volume (ac-ft) | | |
|-------------|-------------|---------------------------|-------|--------|-----------------------|-------|--------|
| | | Pre | Post | Change | Pre | Post | Change |
| SP1 | WQ | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| | 1-Year | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| | 10-Year | 0.00 | 0.56 | 0.56 | 0.000 | 0.110 | 0.110 |
| | 100-Year | 9.09 | 10.61 | 1.52 | 7.713 | 7.384 | -0.330 |
| SP2 | WQ | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| | 1-Year | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| | 10-Year | 0.01 | 0.01 | 0.00 | 0.001 | 0.001 | 0.000 |
| | 100-Year | 0.88 | 0.66 | -0.22 | 0.272 | 0.272 | 0.000 |
| SP3 | WQ | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| | 1-Year | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| | 10-Year | 0.03 | 0.02 | -0.01 | 0.014 | 0.007 | -0.007 |
| | 100-Year | 3.17 | 2.04 | -1.13 | 0.500 | 0.442 | -0.058 |
| SP4 | WQ | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| | 1-Year | 0.04 | 0.07 | 0.03 | 0.010 | 0.059 | 0.049 |
| | 10-Year | 2.53 | 3.36 | 0.83 | 1.040 | 1.146 | 0.106 |
| | 100-Year | 30.77 | 31.02 | 0.25 | 5.405 | 5.546 | 0.141 |
| SP5 | WQ | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| | 1-Year | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| | 10-Year | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| | 100-Year | 0.10 | 0.02 | -0.08 | 0.071 | 0.010 | -0.061 |
| SP6 | WQ | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| | 1-Year | 0.00 | 0.00 | 0.00 | 0.000 | 0.000 | 0.000 |
| | 10-Year | 0.11 | 0.08 | -0.03 | 0.083 | 0.059 | -0.024 |
| | 100-Year | 3.69 | 3.11 | -0.58 | 1.109 | 1.002 | -0.107 |

Conclusion

The current stormwater runoff analysis has not been revised. The HSG A curve number has not been used to model runoff from the “807 – Udorthents, Mine Waste” soil type. The design is still based on the curve number for the HSG C soil group, as provided by NRCS, which provides a more conservative design. However, the Contractor/Owner that ultimately builds the Project will have the option to revise the design based on the use of an HSG A soil group for the soil type 807 soils.

Appendix P – NYSDEC Consultation Email

Kniffen, Chelsey

From: Darougar, Tracy L (NYSERDA) <Tracy.Darougar@nyserda.ny.gov>
Sent: Tuesday, July 5, 2022 10:13 AM
To: Brown, Joshua S.
Cc: Bergquist, Erin; Lefebvre, Laura; Wagner, Shirley
Subject: [EXTERNAL] Fwd: NYSERDA Build-Ready Benson Mines Solar Project

This is an **EXTERNAL** email. Do not click links or open attachments unless you validate the sender and know the content is safe.

ALWAYS hover over the link to preview the actual URL/site and confirm its legitimacy.

Get [Outlook for iOS](#)

From: Boyer, Brian C (DEC) <brian.boyer@dec.ny.gov>
Sent: Monday, June 27, 2022 2:16 PM
To: Darougar, Tracy L (NYSERDA) <Tracy.Darougar@nyserda.ny.gov>
Cc: Wagner, Shirley <SJWagner@trccompanies.com>; Purzycki, Alicia J (APA) <Alicia.Purzycki@apa.ny.gov>; Gasper, David J (DEC) <david.gasper@dec.ny.gov>; Duffany, Matthew W (DEC) <matthew.duffany@dec.ny.gov>
Subject: NYSERDA Build-Ready Benson Mines Solar Project

Tracy,

The following (in blue) are comments on the two requested points of clarification following my 6/14 site visit to the NYSERDA Build-Ready Benson Mines Solar Project Site.

1. Whether the attached geotechnical investigation results and infiltration (percolation) test results, coupled with your field observations today, will allow us to apply a Hydrologic Soil Group (HSG) A classification to the site as opposed to the HSG C classification derived from the USDA NRCS Web Soil Survey. (Note that these attachments are included as an excerpt from the Draft SWPPP NYSERDA submitted to the APA in March of 2022 – we can send the full draft SWPPP if you'd like via Sharepoint).

The geotechnical investigation and infiltration tests provided within the January 2022 SWPPP are sufficient to allow the application of a HSG A classification to the project site.

2. Whether vegetative stabilization will be required throughout the entire mine tailings pile given the lack of top soil and lack of well-established vegetation (due to low-to-no nutrients in the soil and the soil's inability to retain moisture), the low probability of erosion, and the need to augment the soil at great cost (\$2.5m estimate) via many truck trips of top soil to then create a potential erosion issue and increase the maintenance cost of the solar array (increased vegetative management obligations).

Achieving Final Stabilization on a project site is a central tenet of the SPDES General Permit for Stormwater Discharges for Stormwater Discharges From Construction Activity, GP-0-20-001. Leaving a bare unstabilized surface presents the potential for erosion from both wind and precipitation that could impact nearby surface waters and/or wetlands. The Landscaping Plan included in the January 2022 SWPPP called for seeding the site with either of two pollinator seed mixes. If NYSERDA/TRC proposes to not vegetatively stabilize the entire project site as currently proposed in the January 2022 SWPPP then in order for the NYSDEC and other agencies

(APA) to provide appropriate feedback, please provide an alternative proposal that at minimum addresses the following:

- Potential for erosion from wind and precipitation
- Potential impacts to Water Quality and wetlands from erosion on site
- Demonstrate equivalency to the permit requirements
- Elimination of the existing berms through proposed site grading

Note that any changes made to the January 2022 SWPPP may require further review and approval by other agencies (APA) and have impacts on other aspects of the proposal that will require further review, such as an updated visual analysis.

Would NYSDERDA/TRC be able to develop an alternate proposal(s) to address the comments above by next week or should we postpone the planned call until a complete proposal can be developed?

Brian Boyer

Environmental Program Specialist, Division of Water

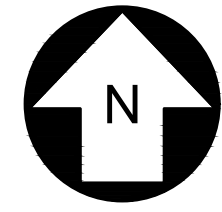
New York State Department of Environmental Conservation

317 Washington Street, Watertown, NY 13601

P: (315) 785-2513 | F: (315) 785-2422 | brian.boyer@dec.ny.gov

www.dec.ny.gov |  | 

Appendix P – Pre-Development Subcatchment Map



LANDS NOW OR FORMERLY OF
BENSON MINES, INC.
BOOK 951 OF DEEDS AT PAGE 1086

LANDS NOW OR FORMERLY OF
COUNTY OF ST. LAWRENCE
INSTRUMENT DOC. NO.
R-2016-0000944

LANDS NOW OR FORMERLY OF
BENSON MINES, INC.
BOOK 951 OF DEEDS AT PAGE 1086

LANDS NOW OR FORMERLY OF
ST. LAWRENCE COUNTY
BOOK 1106 OF DEEDS AT PAGE 762

LANDS NOW OR FORMERLY OF ST.
HUBERT ROMAN CATHOLIC CHURCH
BOOK 506 OF DEEDS AT PAGE 516

LANDS NOW OR FORMERLY OF
LEROY R. & BARBARA A. WILLARD
BOOK 1093 OF DEEDS AT PAGE 988

LANDS NOW OR FORMERLY OF
ANDREW P. LOVE AND
CYNTHIA R. LOVE
INSTRUMENT DOC.
NO. 2004-00023202

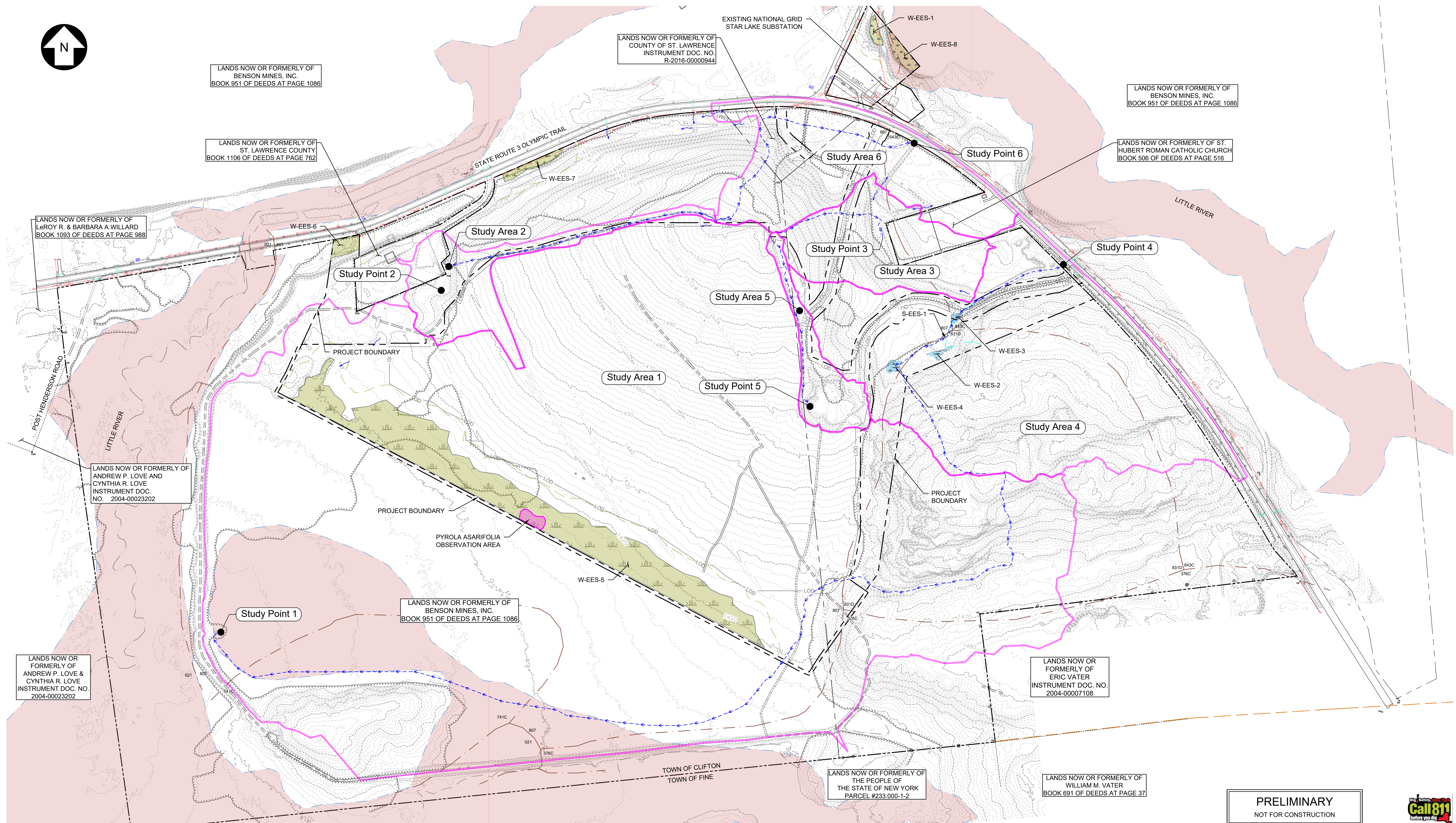
LANDS NOW OR
FORMERLY OF
ANDREW P. LOVE &
CYNTHIA R. LOVE
INSTRUMENT DOC. NO.
2004-00023202

LANDS NOW OR FORMERLY OF
BENSON MINES, INC.
BOOK 951 OF DEEDS AT PAGE 1086

LANDS NOW OR
FORMERLY OF
ERIC VATER
INSTRUMENT DOC. NO.
2004-00007108

LANDS NOW OR FORMERLY OF
THE PEOPLE OF THE
STATE OF NEW YORK
PARCEL #233.000-1-2

LANDS NOW OR FORMERLY OF
WILLIAM M. VATER
BOOK 691 OF DEEDS AT PAGE 37

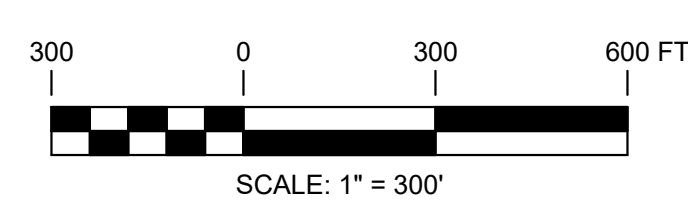


PRELIMINARY
NOT FOR CONSTRUCTION



LEGEND

- SUBCATCHMENT BOUNDARY
- SOIL GROUP BOUNDARY
- TO FLOW PATH
- LIMITS OF DISTURBANCE
- LOD
- EXISTING CULVERT
- EXISTING SURFACE FLOW DIRECTION
- APA WETLAND
- WETLAND
- FLOODPLAIN



UNDER NEW YORK STATE EDUCATION LAW ARTICLE 145 (ENGINEERING), SECTION 7209 (2), IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

| | | | | | | | | | | | |
|-----|-----------------------|--|-----|--------------------|-----|--|--|--|---|--|------|
| | | 10 MAXWELL DRIVE CLIFTON PARK, NY 12065 | | PROJECT NO: 444154 | | | BWH DESIGNED BWH DRAWN JWH CHECKED NAM APPROVED | | EXISTING HYDROLOGY PLAN BR BENSON MINES SOLAR PROJECT NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY CLIFTON, ST LAWRENCE COUNTY, NEW YORK | | REV. |
| REV | DESCRIPTION | DATE | DES | CHK | APP | | | | | | |
| - | - | - | - | - | - | | | | | | |
| - | - | - | - | - | - | | | | | | |
| - | - | - | - | - | - | | | | | | |
| A | ISSUED FOR PERMITTING | 1/2022 | NAM | NAM | NAM | | | | | | |

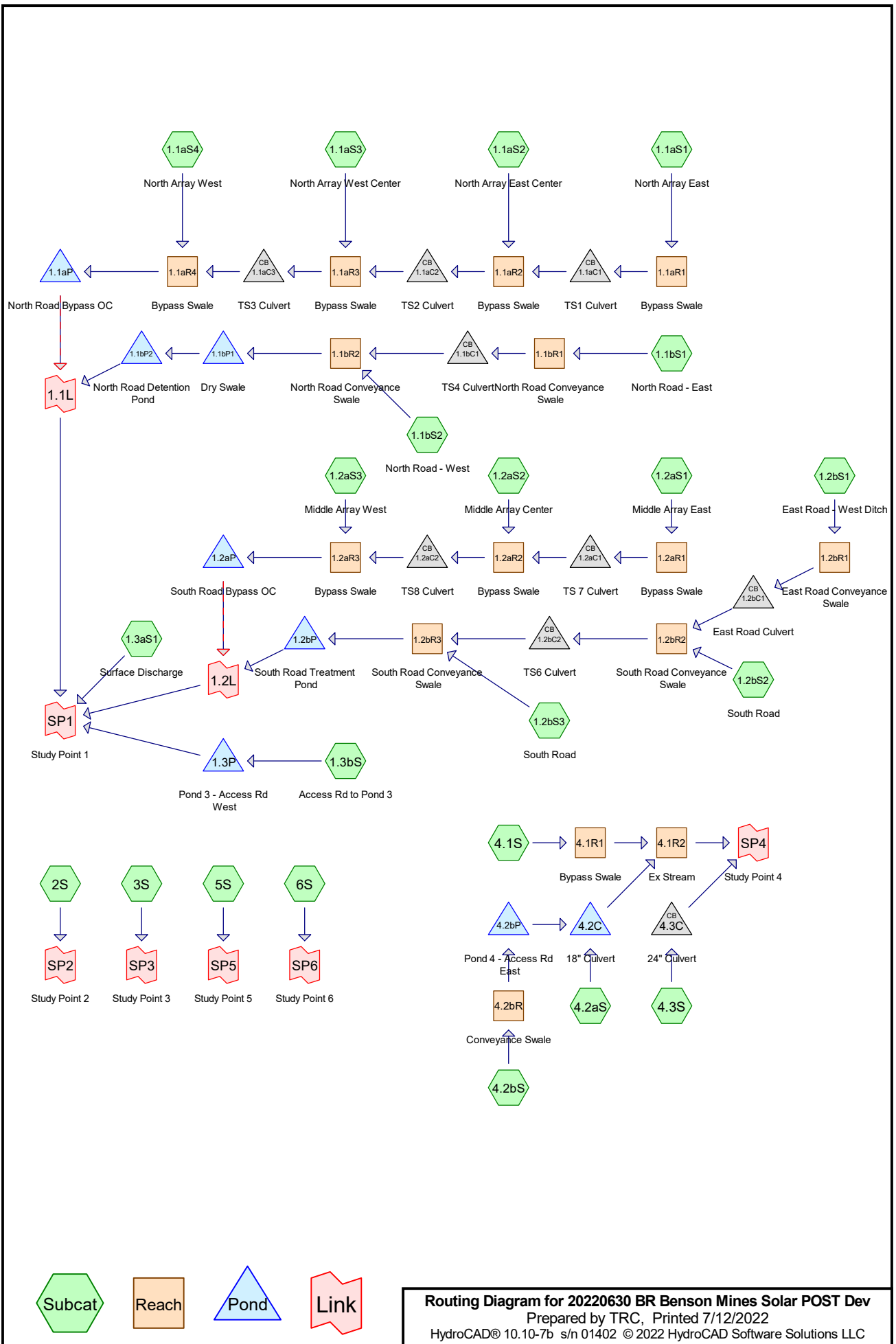
7/21
DATE
AS NOTED
SCALE



C-101

REV.
-

Appendix P – Pre-Development HydroCAD Model



20220630 BR Benson Mines Solar POST Dev

Prepared by TRC

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Page 2

Rainfall Events Listing (selected events)

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|--------|--------------|---------------|-------|---------|------------------|-----|----------------|-----|
| 1 | WQv | Type II 24-hr | | Default | 24.00 | 1 | 1.00 | 2 |
| 2 | 1-Yr Storm | Type II 24-hr | | Default | 24.00 | 1 | 1.98 | 2 |
| 3 | 10-Yr Storm | Type II 24-hr | | Default | 24.00 | 1 | 3.28 | 2 |
| 4 | 100-Yr Storm | Type II 24-hr | | Default | 24.00 | 1 | 5.43 | 2 |

Area Listing (all nodes)

| Area (acres) | CN | Description (subcatchment-numbers) |
|-----------------|-----------|---|
| 0.979 | 39 | >75% Grass cover, Good, HSG A (2S, 3S) |
| 4.721 | 61 | >75% Grass cover, Good, HSG B (3S, 4.1S, 6S) |
| 1.719 | 96 | Gravel surface (1.2bS2, 1.3aS1, 4.1S, 4.2aS) |
| 4.423 | 96 | Gravel surface, HSG A (1.1bS1, 1.1bS2, 1.2bS1, 1.2bS3, 1.3bS, 2S, 4.2bS, 6S) |
| 0.063 | 96 | Gravel surface, HSG A, Redev (1.3bS) |
| 232.790 | 30 | Meadow, non-grazed, HSG A (1.1aS1, 1.1aS2, 1.1aS3, 1.1aS4, 1.1bS1, 1.1bS2, 1.2aS1, 1.2aS2, 1.2aS3, 1.2bS1, 1.2bS2, 1.2bS3, 1.3aS1, 1.3bS, 2S, 3S, 4.1S, 4.2aS, 4.2bS, 5S, 6S) |
| 4.081 | 58 | Meadow, non-grazed, HSG B (1.3aS1, 4.1S, 4.2aS, 4.3S, 6S) |
| 25.274 | 71 | Meadow, non-grazed, HSG C (1.3aS1) |
| 3.158 | 98 | Paved Roads & Rooftops (3S, 4.1S, 4.3S, 6S) |
| 0.015 | 98 | Roofs (1.2bS2, 1.2bS3) |
| 0.014 | 98 | Roofs, HSG A (1.1bS1, 1.1bS2) |
| 81.857 | 30 | Woods, Good, HSG A (1.3aS1, 2S, 3S, 4.1S, 4.2aS, 5S, 6S) |
| 88.271 | 55 | Woods, Good, HSG B (1.3aS1, 3S, 4.1S, 4.2aS, 4.3S, 6S) |
| 13.623 | 70 | Woods, Good, HSG C (1.3aS1) |
| 460.988 | 40 | TOTAL AREA |

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Page 4

Soil Listing (all nodes)

| Area (acres) | Soil Group | Subcatchment Numbers |
|-----------------|---------------|--|
| 320.126 | HSG A | 1.1aS1, 1.1aS2, 1.1aS3, 1.1aS4, 1.1bS1, 1.1bS2, 1.2aS1, 1.2aS2, 1.2aS3, 1.2bS1, 1.2bS2, 1.2bS3, 1.3aS1, 1.3bS, 2S, 3S, 4.1S, 4.2aS, 4.2bS, 5S, 6S |
| 97.073 | HSG B | 1.3aS1, 3S, 4.1S, 4.2aS, 4.3S, 6S |
| 38.897 | HSG C | 1.3aS1 |
| 0.000 | HSG D | |
| 4.892 | Other | 1.2bS2, 1.2bS3, 1.3aS1, 3S, 4.1S, 4.2aS, 4.3S, 6S |
| 460.988 | | TOTAL AREA |

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Page 5

Ground Covers (all nodes)

| HSG-A (acres) | HSG-B (acres) | HSG-C (acres) | HSG-D (acres) | Other (acres) | Total (acres) | Ground Cover | Subcatchment Numbers |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------------|--|
| 0.979 | 4.721 | 0.000 | 0.000 | 0.000 | 5.700 | >75% Grass cover, Good | 2S, 3S, 4.1S, 6S |
| 4.486 | 0.000 | 0.000 | 0.000 | 1.719 | 6.205 | Gravel surface | 1.1bS1, 1.1bS2, 1.2bS1, 1.2bS2, 1.2bS3, 1.3aS1, 1.3bS, 2S, 4.1S, 4.2aS, 4.2bS, 6S |
| 232.790 | 4.081 | 25.274 | 0.000 | 0.000 | 262.145 | Meadow, non-grazed | 1.1aS1, 1.1aS2, 1.1aS3, 1.1aS4, 1.1bS1, 1.1bS2, 1.2aS1, 1.2aS2, 1.2aS3, 1.2bS1, 1.2bS2, 1.2bS3, 1.3aS1, 1.3bS, 2S, 3S, 4.1S, 4.2aS, 4.2bS, 4.3S, 5S, 6S |
| 0.000 | 0.000 | 0.000 | 0.000 | 3.158 | 3.158 | Paved Roads & Rooftops | 3S, 4.1S, 4.3S, 6S |
| 0.014 | 0.000 | 0.000 | 0.000 | 0.015 | 0.029 | Roofs | 1.1bS1, 1.1bS2, 1.2bS2, 1.2bS3 |
| 81.857 | 88.271 | 13.623 | 0.000 | 0.000 | 183.751 | Woods, Good | 1.3aS1, 2S, 3S, 4.1S, 4.2aS, 4.3S, 5S, 6S |
| 320.126 | 97.073 | 38.897 | 0.000 | 4.892 | 460.988 | TOTAL AREA | |

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Page 6

Pipe Listing (all nodes)

| Line# | Node Number | In-Invert (feet) | Out-Invert (feet) | Length (feet) | Slope (ft/ft) | n | Width (inches) | Diam/Height (inches) | Inside-Fill (inches) |
|-------|-------------|------------------|-------------------|---------------|---------------|-------|----------------|----------------------|----------------------|
| 1 | 1.1aC1 | 1,487.56 | 1,486.80 | 47.0 | 0.0162 | 0.012 | 36.3 | 22.5 | 0.0 |
| 2 | 1.1aC2 | 1,470.80 | 1,469.57 | 47.0 | 0.0262 | 0.012 | 48.0 | 24.0 | 0.0 |
| 3 | 1.1aC3 | 1,449.55 | 1,447.64 | 47.2 | 0.0405 | 0.012 | 60.0 | 24.0 | 0.0 |
| 4 | 1.1bC1 | 1,449.50 | 1,447.27 | 45.9 | 0.0486 | 0.012 | 0.0 | 18.0 | 0.0 |
| 5 | 1.2aC1 | 1,444.22 | 1,443.21 | 47.0 | 0.0215 | 0.012 | 36.0 | 24.0 | 0.0 |
| 6 | 1.2aC2 | 1,431.65 | 1,431.11 | 47.5 | 0.0114 | 0.012 | 60.0 | 24.0 | 0.0 |
| 7 | 1.2bC1 | 1,454.39 | 1,453.67 | 41.6 | 0.0173 | 0.012 | 0.0 | 15.0 | 0.0 |
| 8 | 1.2bC2 | 1,443.51 | 1,442.84 | 44.3 | 0.0151 | 0.012 | 0.0 | 18.0 | 0.0 |
| 9 | 4.2C | 1,431.83 | 1,431.18 | 44.0 | 0.0148 | 0.012 | 0.0 | 18.0 | 0.0 |
| 10 | 4.3C | 1,431.35 | 1,429.87 | 55.8 | 0.0265 | 0.012 | 0.0 | 24.0 | 0.0 |

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

| | |
|---|--|
| Subcatchment 1.1aS1: North Array East | Runoff Area=5.874 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=788' Tc=18.8 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS2: North Array East | Runoff Area=8.467 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=931' Tc=21.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS3: North Array West | Runoff Area=5.792 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,031' Tc=19.7 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS4: North Array West | Runoff Area=12.825 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,562' Tc=26.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1bS1: North Road - East | Runoff Area=1.333 ac 0.53% Impervious Runoff Depth=0.01" Tc=6.0 min CN=71 Runoff=0.00 cfs 0.001 af |
| Subcatchment 1.1bS2: North Road - West | Runoff Area=0.651 ac 1.08% Impervious Runoff Depth=0.00" Tc=6.0 min CN=68 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS1: Middle Array East | Runoff Area=7.876 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=865' Tc=19.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS2: Middle Array Center | Runoff Area=8.911 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=825' Tc=18.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS3: Middle Array West | Runoff Area=5.500 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=882' Tc=18.5 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2bS1: East Road - West | Runoff Area=0.727 ac 0.00% Impervious Runoff Depth=0.00" Tc=6.0 min CN=67 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2bS2: South Road | Runoff Area=0.854 ac 0.47% Impervious Runoff Depth=0.00" Flow Length=308' Tc=13.7 min CN=58 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2bS3: South Road | Runoff Area=0.815 ac 1.35% Impervious Runoff Depth=0.01" Tc=6.0 min CN=71 Runoff=0.00 cfs 0.001 af |
| Subcatchment 1.3aS1: Surface Discharge | Runoff Area=279.312 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=6,771' Tc=201.7 min CN=39 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.3bS: Access Rd to Pond 3 | Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.00" Tc=6.0 min CN=51 Runoff=0.00 cfs 0.000 af |
| Subcatchment 2S: | Runoff Area=11.056 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=2,342' Tc=36.0 min CN=39 Runoff=0.00 cfs 0.000 af |
| Subcatchment 3S: | Runoff Area=15.648 ac 0.56% Impervious Runoff Depth=0.00" Flow Length=886' Tc=12.7 min CN=40 Runoff=0.00 cfs 0.000 af |
| Subcatchment 4.1S: | Runoff Area=11.663 ac 2.80% Impervious Runoff Depth=0.00" Flow Length=845' Tc=15.8 min CN=45 Runoff=0.00 cfs 0.000 af |

| | |
|--|--|
| Subcatchment 4.2aS: | Runoff Area=27.117 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,640' Tc=38.9 min CN=51 Runoff=0.00 cfs 0.000 af |
| Subcatchment 4.2bS: | Runoff Area=0.470 ac 0.00% Impervious Runoff Depth=0.01" Tc=6.0 min CN=72 Runoff=0.00 cfs 0.000 af |
| Subcatchment 4.3S: | Runoff Area=25.466 ac 5.08% Impervious Runoff Depth=0.00" Flow Length=2,280' Tc=36.5 min CN=57 Runoff=0.00 cfs 0.000 af |
| Subcatchment 5S: | Runoff Area=4.970 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,180' Tc=17.5 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 6S: | Runoff Area=24.966 ac 5.81% Impervious Runoff Depth=0.00" Flow Length=1,961' Tc=60.1 min CN=43 Runoff=0.00 cfs 0.000 af |
| Reach 1.1aR1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=580.0' S=0.0108 '/' Capacity=56.37 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR2: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=557.4' S=0.0284 '/' Capacity=91.27 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR3: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=557.5' S=0.0352 '/' Capacity=101.68 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR4: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=580.5' S=0.0362 '/' Capacity=103.04 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1bR1: North Road Conveyance | Avg. Flow Depth=0.00' Max Vel=0.47 fps Inflow=0.00 cfs 0.001 af n=0.035 L=1,733.0' S=0.0240 '/' Capacity=111.65 cfs Outflow=0.00 cfs 0.001 af |
| Reach 1.1bR2: North Road Conveyance | Avg. Flow Depth=0.00' Max Vel=0.60 fps Inflow=0.00 cfs 0.001 af n=0.035 L=593.3' S=0.0380 '/' Capacity=140.36 cfs Outflow=0.00 cfs 0.001 af |
| Reach 1.2aR1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=524.2' S=0.0188 '/' Capacity=74.30 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2aR2: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=556.0' S=0.0204 '/' Capacity=77.47 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2aR3: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=249.0' S=0.0153 '/' Capacity=81.84 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2bR1: East Road Conveyance | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=731.4' S=0.0456 '/' Capacity=79.22 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2bR2: South Road Conveyance | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=604.5' S=0.0177 '/' Capacity=95.76 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2bR3: South Road Conveyance | Avg. Flow Depth=0.00' Max Vel=0.42 fps Inflow=0.00 cfs 0.001 af n=0.035 L=755.9' S=0.0187 '/' Capacity=98.64 cfs Outflow=0.00 cfs 0.001 af |
| Reach 4.1R1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=570.0' S=0.0303 '/' Capacity=54.88 cfs Outflow=0.00 cfs 0.000 af |
| Reach 4.1R2: Ex Stream | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=740.0' S=0.0099 '/' Capacity=588.81 cfs Outflow=0.00 cfs 0.000 af |

| | | | | |
|---|------------------------------|---------------------|------------------|--------------------|
| Reach 4.2bR: Conveyance Swale | Avg. Flow Depth=0.00' | Max Vel=0.53 fps | Inflow=0.00 cfs | 0.000 af |
| | n=0.035 | L=565.0' | S=0.0432 '/ | Capacity=77.09 cfs |
| | | | Outflow=0.00 cfs | 0.000 af |
| Pond 1.1aC1: TS1 Culvert | | Peak Elev=1,487.56' | Inflow=0.00 cfs | 0.000 af |
| | 36.3" x 22.5", R=18.8"/51.0" | Pipe Arch Culvert | n=0.012 | L=47.0' |
| | | | S=0.0162 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aC2: TS2 Culvert | | Peak Elev=1,470.80' | Inflow=0.00 cfs | 0.000 af |
| | 48.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0262 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aC3: TS3 Culvert | | Peak Elev=1,449.55' | Inflow=0.00 cfs | 0.000 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.2' |
| | | | S=0.0405 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aP: North Road Bypass OC | | Peak Elev=1,426.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1bC1: TS4 Culvert | | Peak Elev=1,449.51' | Inflow=0.00 cfs | 0.001 af |
| | 18.0" | Round Culvert | n=0.012 | L=45.9' |
| | | | S=0.0486 '/ | Outflow=0.00 cfs |
| | | | | 0.001 af |
| Pond 1.1bP1: Dry Swale | | Peak Elev=1,425.32' | Storage=17 cf | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.001 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.001 af |
| Pond 1.1bP2: North Road Detention Pond | | Peak Elev=1,421.50' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aC1: TS 7 Culvert | | Peak Elev=1,444.22' | Inflow=0.00 cfs | 0.000 af |
| | 36.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0215 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aC2: TS8 Culvert | | Peak Elev=1,431.65' | Inflow=0.00 cfs | 0.000 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.5' |
| | | | S=0.0114 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aP: South Road Bypass OC | | Peak Elev=1,424.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Secondary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2bC1: East Road Culvert | | Peak Elev=1,454.39' | Inflow=0.00 cfs | 0.000 af |
| | 15.0" | Round Culvert | n=0.012 | L=41.6' |
| | | | S=0.0173 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2bC2: TS6 Culvert | | Peak Elev=1,443.51' | Inflow=0.00 cfs | 0.000 af |
| | 18.0" | Round Culvert | n=0.012 | L=44.3' |
| | | | S=0.0151 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2bP: South Road Treatment Pond | | Peak Elev=1,424.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.001 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.001 af |
| Pond 1.3P: Pond 3 - Access Rd West | | Peak Elev=1,456.00' | Storage=0 cf | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 4.2bP: Pond 4 - Access Rd East | | Peak Elev=1,445.50' | Storage=0 cf | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 4.2C: 18" Culvert | | Peak Elev=1,431.50' | Storage=0 cf | Inflow=0.00 cfs |
| | 18.0" | Round Culvert | n=0.012 | L=44.0' |
| | | | S=0.0148 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 4.3C: 24" Culvert | | Peak Elev=1,431.35' | Inflow=0.00 cfs | 0.000 af |
| | | | | Outflow=0.00 cfs |
| | | | | 0.000 af |

| | |
|-------------------------|---|
| Link 1.1L: | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link 1.2L: | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP1: Study Point 1 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP2: Study Point 2 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP3: Study Point 3 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP4: Study Point 4 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP5: Study Point 5 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP6: Study Point 6 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |

Total Runoff Area = 460.988 ac Runoff Volume = 0.002 af Average Runoff Depth = 0.00"
99.31% Pervious = 457.801 ac 0.69% Impervious = 3.187 ac

Summary for Subcatchment 1.1aS1: North Array East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR1 : Bypass Swale

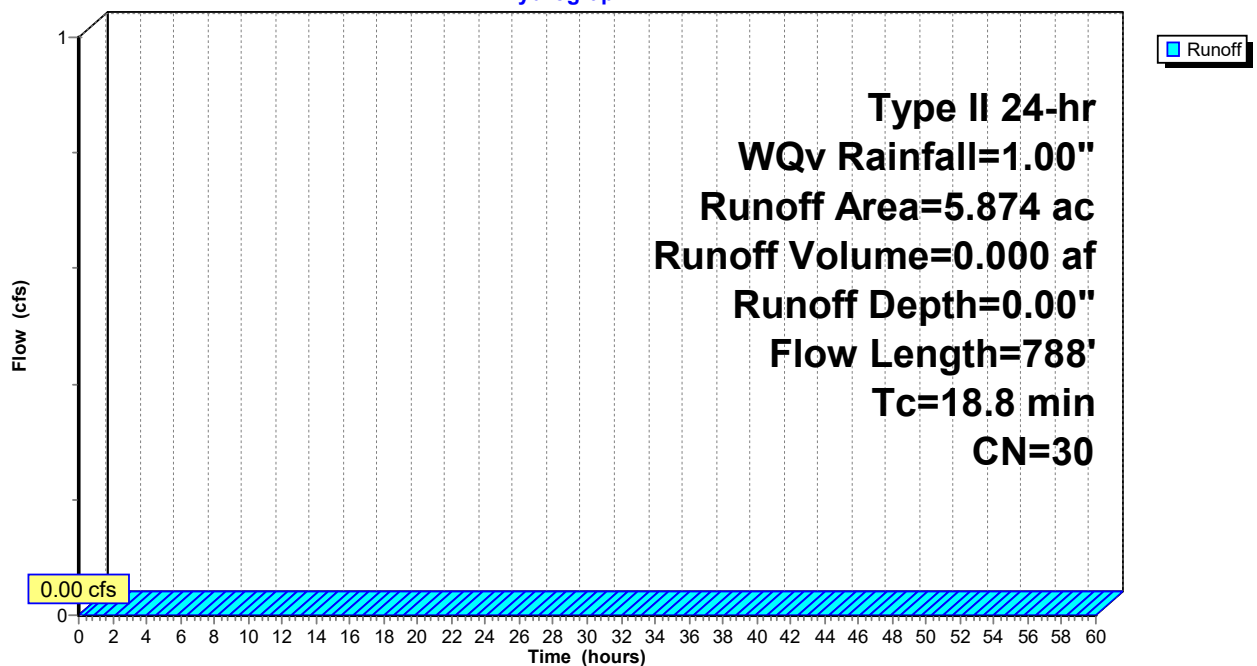
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.874 | 30 | Meadow, non-grazed, HSG A |
| 5.874 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.7 | 100 | 0.0499 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.1 | 688 | 0.0526 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.8 | 788 | Total | | | |

Subcatchment 1.1aS1: North Array East

Hydrograph



Summary for Subcatchment 1.1aS2: North Array East Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR2 : Bypass Swale

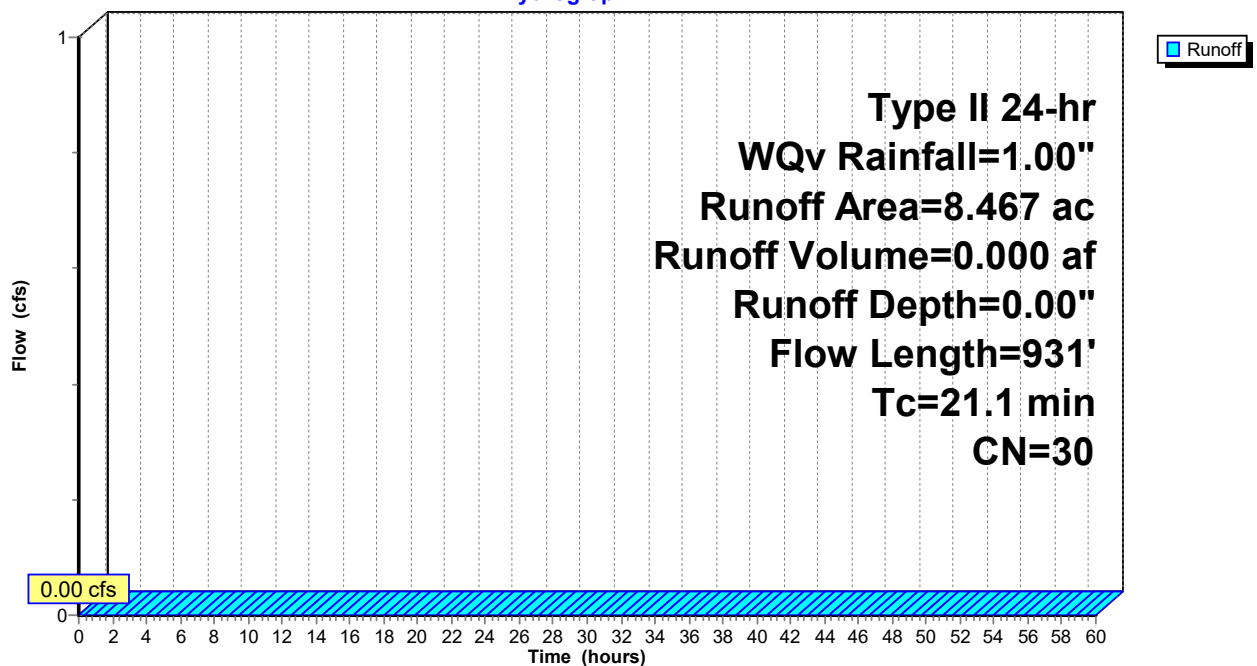
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.467 | 30 | Meadow, non-grazed, HSG A |
| 8.467 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.9 | 100 | 0.0476 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.2 | 831 | 0.0463 | 1.51 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 21.1 | 931 | Total | | | |

Subcatchment 1.1aS2: North Array East Center

Hydrograph



Summary for Subcatchment 1.1aS3: North Array West Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR3 : Bypass Swale

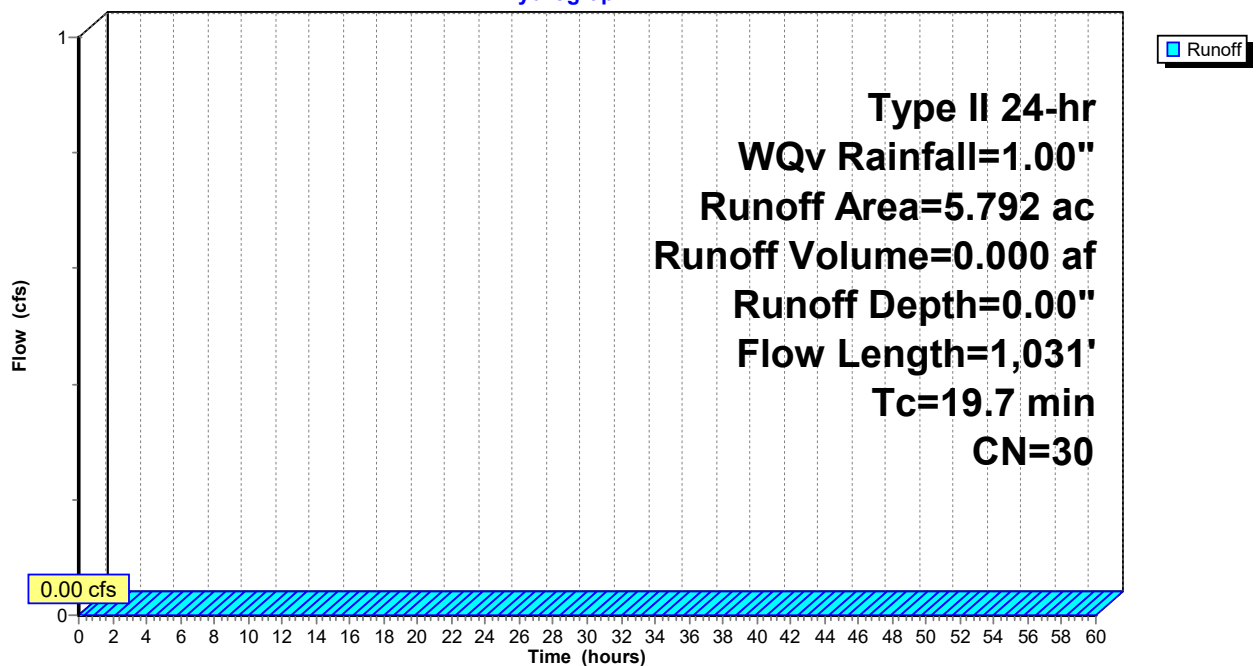
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.792 | 30 | Meadow, non-grazed, HSG A |
| 5.792 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0618 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.0 | 931 | 0.0601 | 1.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.7 | 1,031 | Total | | | |

Subcatchment 1.1aS3: North Array West Center

Hydrograph



Summary for Subcatchment 1.1aS4: North Array West

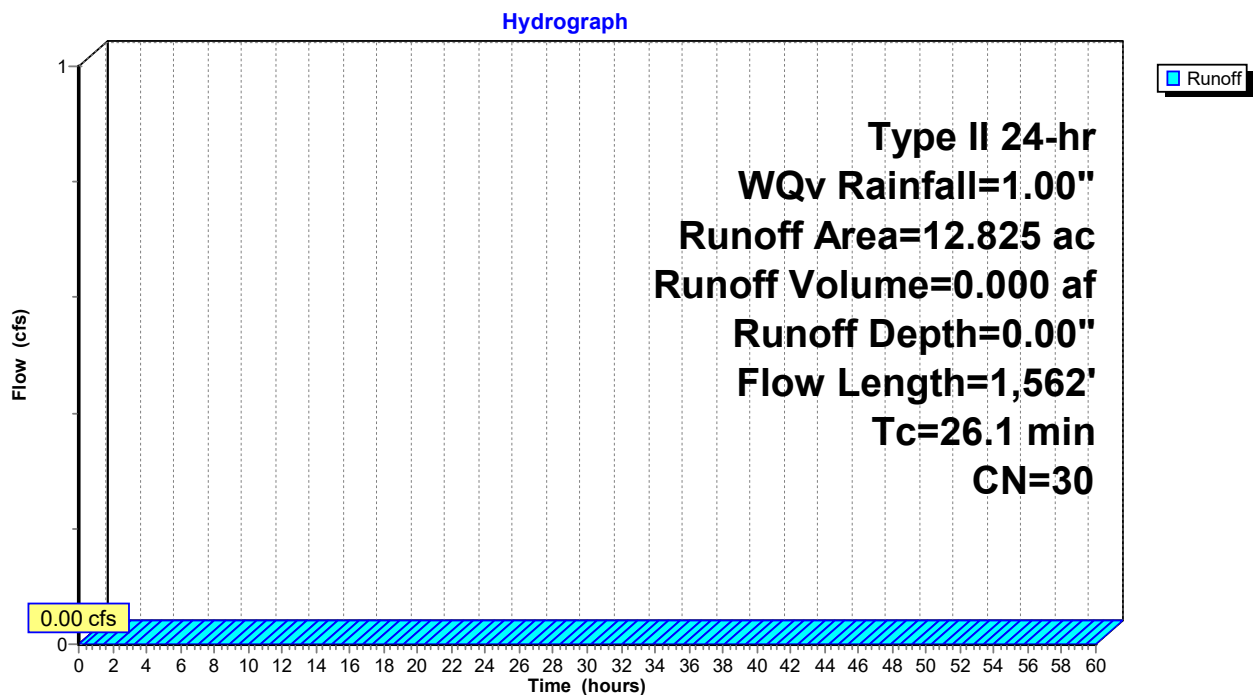
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR4 : Bypass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 12.825 | 30 | Meadow, non-grazed, HSG A |
| 12.825 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.1 | 100 | 0.0560 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 15.0 | 1,462 | 0.0540 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 26.1 | 1,562 | Total | | | |

Subcatchment 1.1aS4: North Array West



Summary for Subcatchment 1.1bS1: North Road - East

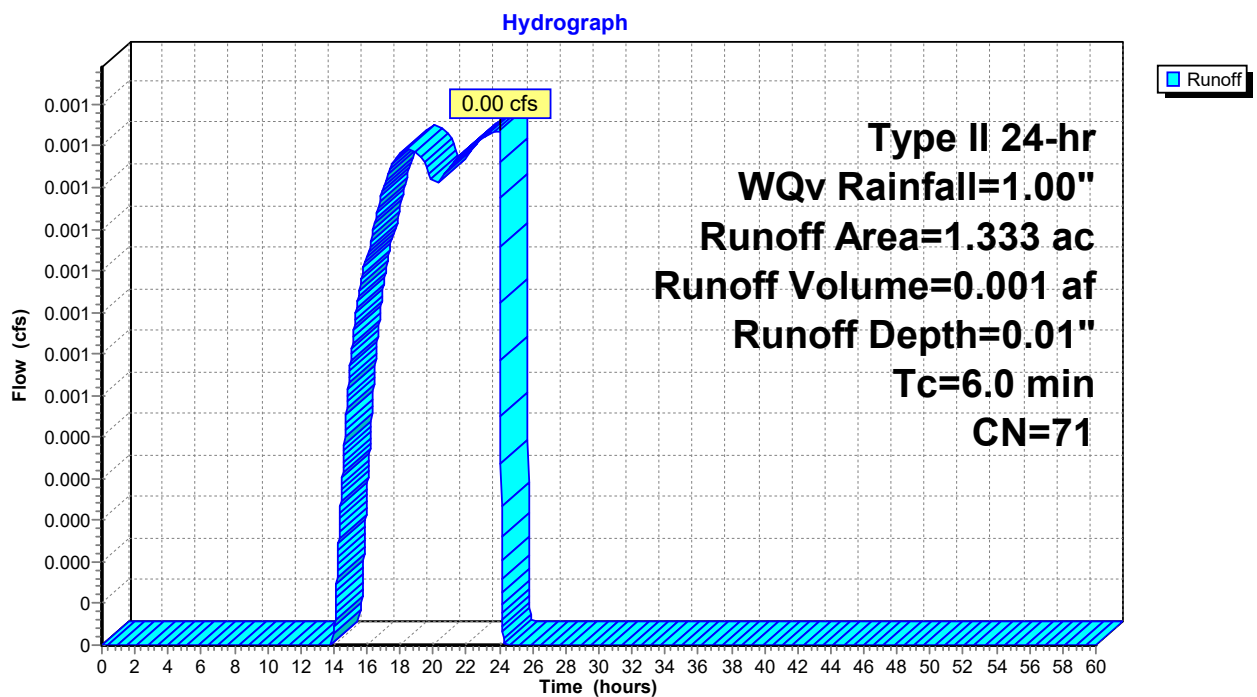
Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.001 af, Depth= 0.01"
 Routed to Reach 1.1bR1 : North Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.507 | 30 | Meadow, non-grazed, HSG A |
| 0.819 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 1.333 | 71 | Weighted Average |
| 1.326 | | 99.47% Pervious Area |
| 0.007 | | 0.53% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS1: North Road - East



Summary for Subcatchment 1.1bS2: North Road - West

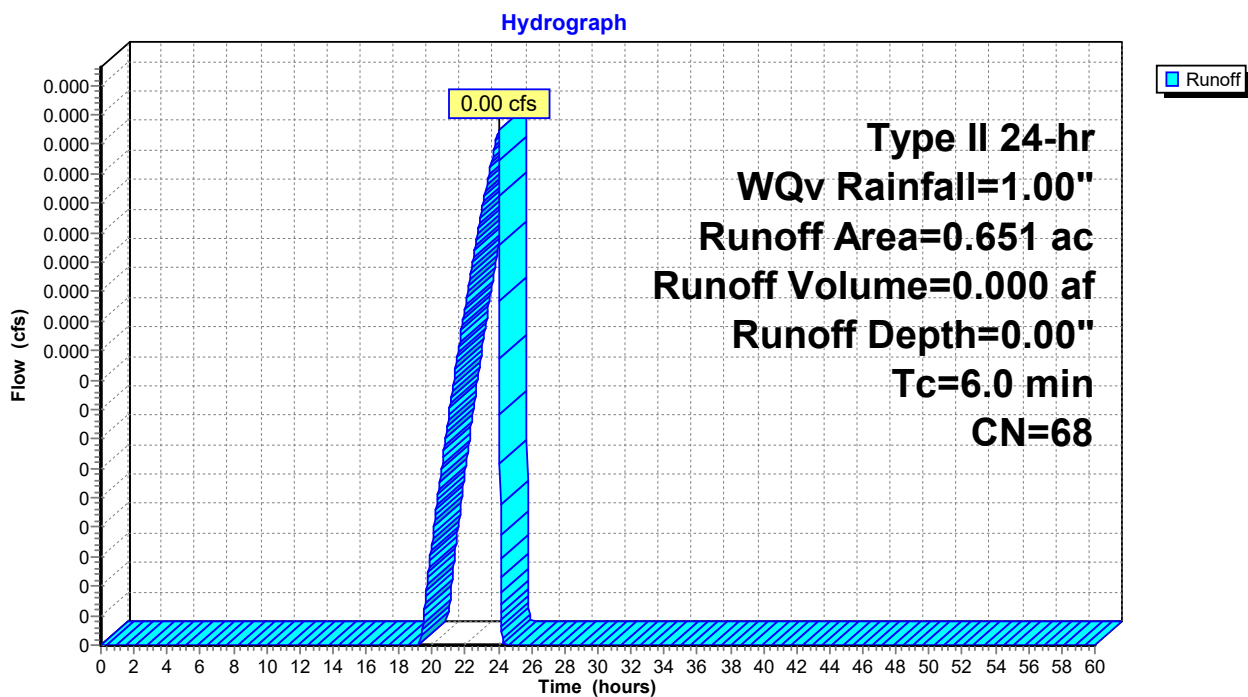
Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.279 | 30 | Meadow, non-grazed, HSG A |
| 0.365 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 0.651 | 68 | Weighted Average |
| 0.644 | | 98.92% Pervious Area |
| 0.007 | | 1.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS2: North Road - West



Summary for Subcatchment 1.2aS1: Middle Array East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR1 : Bypass Swale

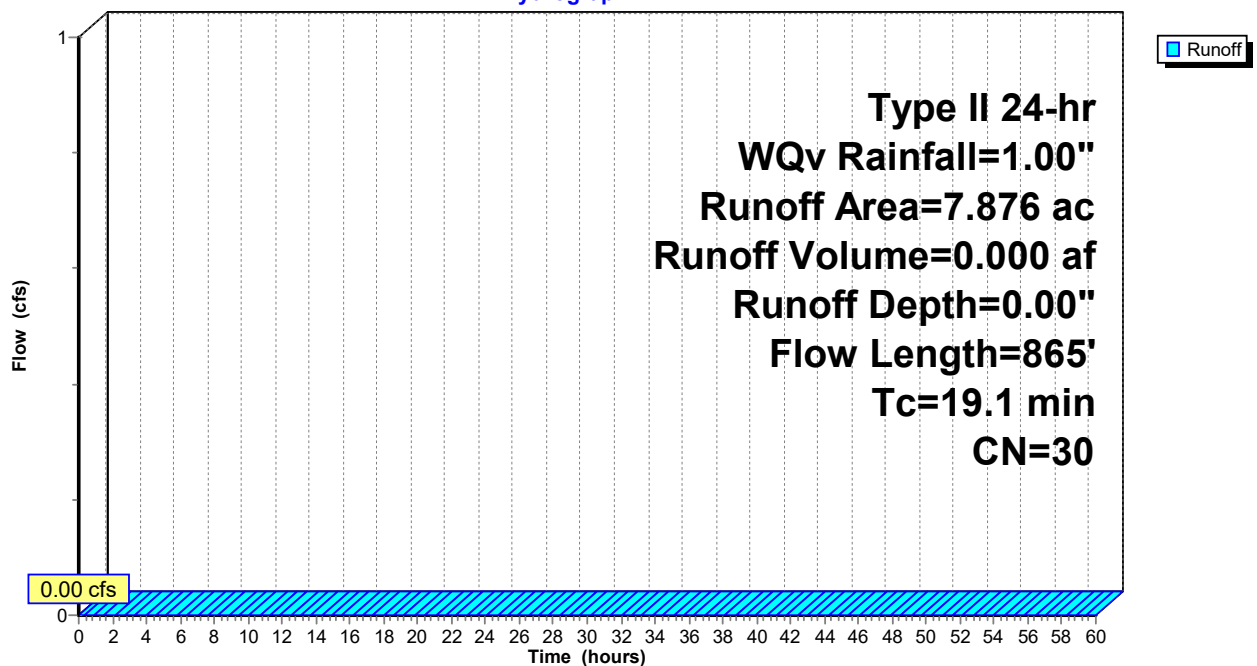
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 7.876 | 30 | Meadow, non-grazed, HSG A |
| 7.876 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.6 | 100 | 0.0628 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.5 | 765 | 0.0459 | 1.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.1 | 865 | Total | | | |

Subcatchment 1.2aS1: Middle Array East

Hydrograph



Summary for Subcatchment 1.2aS2: Middle Array Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR2 : Bypass Swale

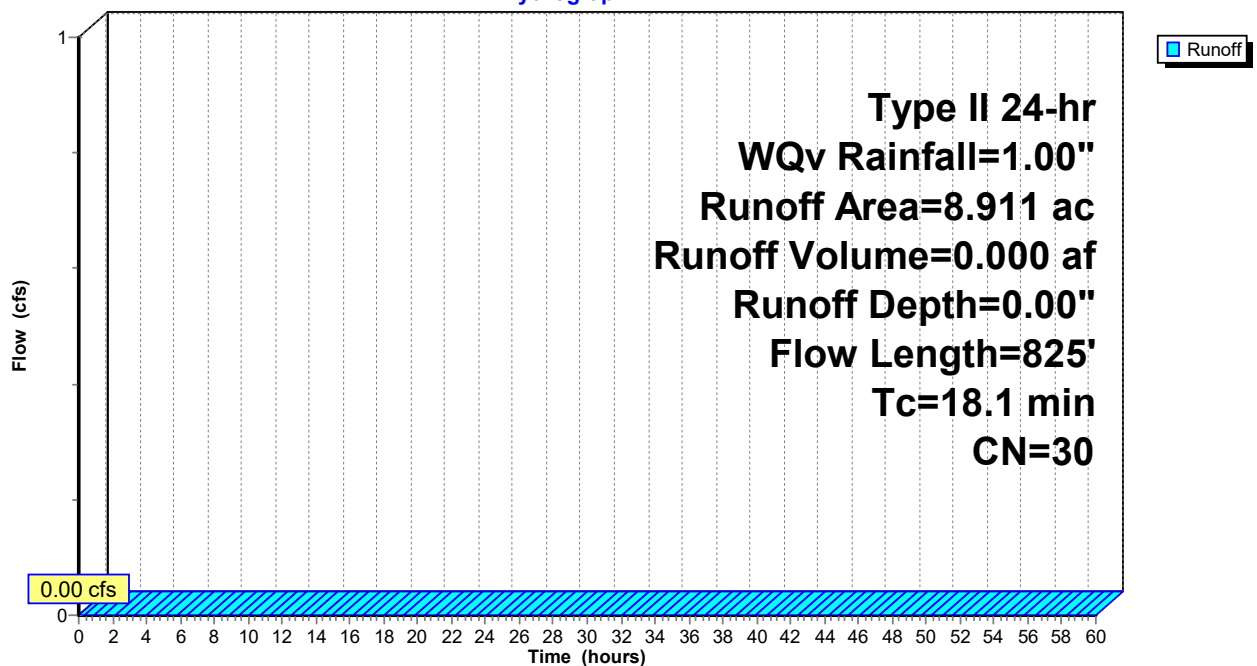
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.911 | 30 | Meadow, non-grazed, HSG A |
| 8.911 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.8 | 100 | 0.0607 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.3 | 725 | 0.0559 | 1.66 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 825 | Total | | | |

Subcatchment 1.2aS2: Middle Array Center

Hydrograph



Summary for Subcatchment 1.2aS3: Middle Array West

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR3 : Bypass Swale

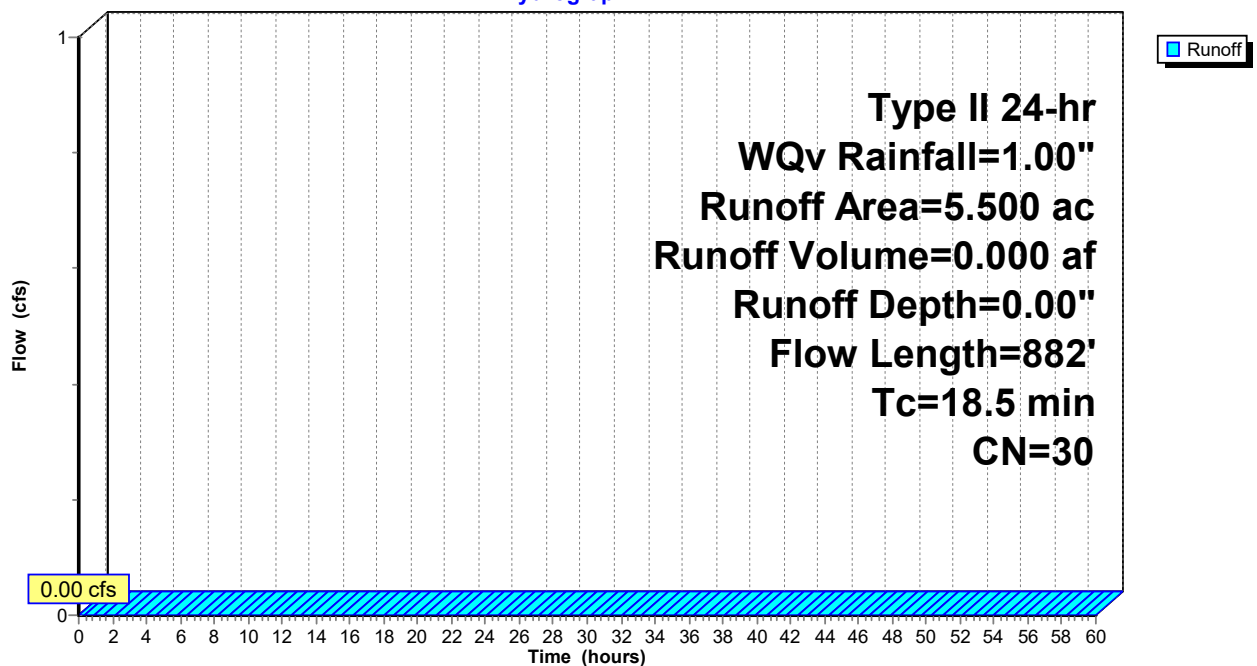
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.500 | 30 | Meadow, non-grazed, HSG A |
| 5.500 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.4 | 100 | 0.0660 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.1 | 782 | 0.0529 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.5 | 882 | Total | | | |

Subcatchment 1.2aS3: Middle Array West

Hydrograph



Summary for Subcatchment 1.2bS1: East Road - West Ditch

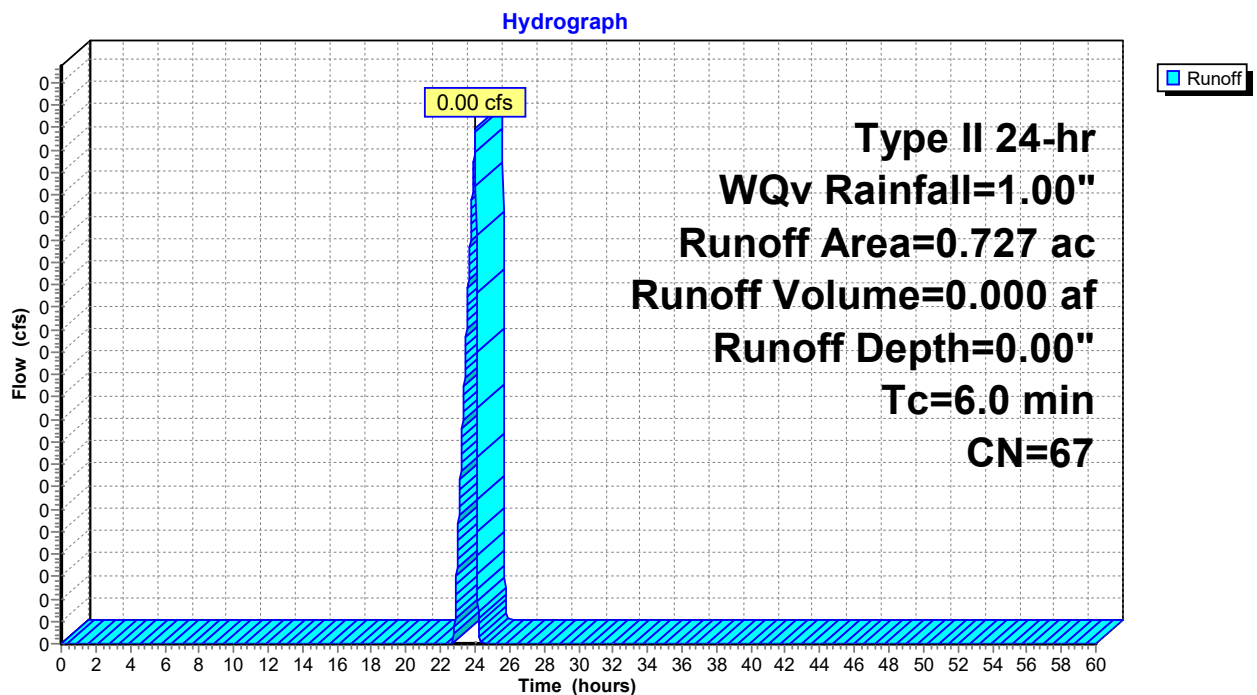
Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2bR1 : East Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.410 | 96 | Gravel surface, HSG A |
| 0.317 | 30 | Meadow, non-grazed, HSG A |
| 0.727 | 67 | Weighted Average |
| 0.727 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS1: East Road - West Ditch



Summary for Subcatchment 1.2bS2: South Road

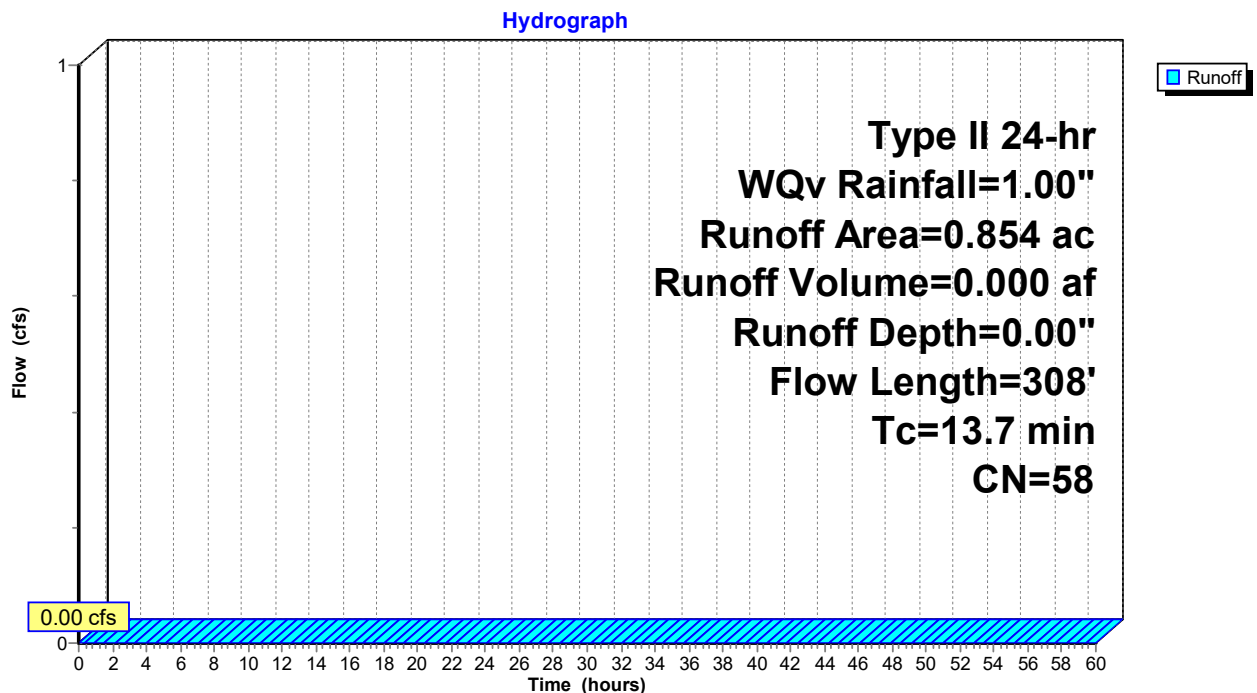
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.498 | 30 | Meadow, non-grazed, HSG A |
| * 0.352 | 96 | Gravel surface |
| * 0.004 | 98 | Roofs |
| 0.854 | 58 | Weighted Average |
| 0.850 | | 99.53% Pervious Area |
| 0.004 | | 0.47% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.0 | 35 | 0.0516 | 0.12 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 0.4 | 25 | 0.0310 | 1.06 | | Sheet Flow, Smooth surfaces n= 0.011 P2= 2.31" |
| 5.9 | 40 | 0.0429 | 0.11 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.4 | 208 | 0.0442 | 1.47 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 13.7 | 308 | Total | | | |

Subcatchment 1.2bS2: South Road



Summary for Subcatchment 1.2bS3: South Road

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.001 af, Depth= 0.01"
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

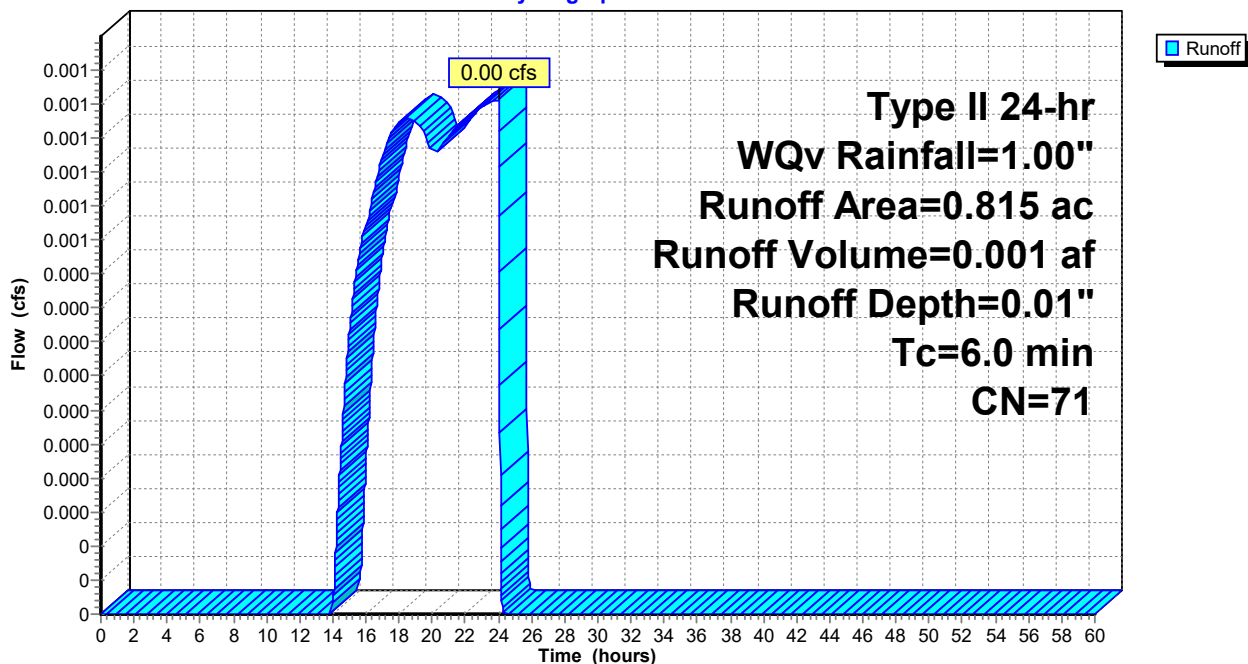
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.313 | 30 | Meadow, non-grazed, HSG A |
| 0.491 | 96 | Gravel surface, HSG A |
| * 0.011 | 98 | Roofs |
| 0.815 | 71 | Weighted Average |
| 0.804 | | 98.65% Pervious Area |
| 0.011 | | 1.35% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS3: South Road

Hydrograph



Summary for Subcatchment 1.3aS1: Surface Discharge

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP1 : Study Point 1

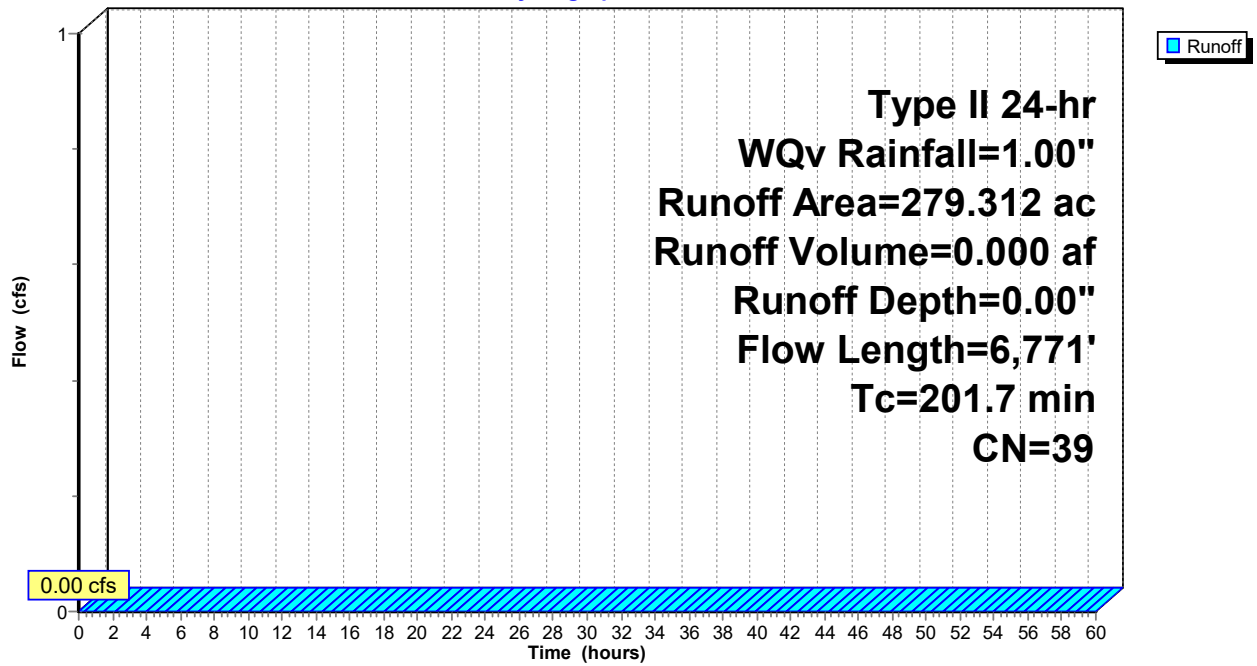
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.754 | 96 | Gravel surface |
| 144.649 | 30 | Meadow, non-grazed, HSG A |
| 0.566 | 58 | Meadow, non-grazed, HSG B |
| 25.274 | 71 | Meadow, non-grazed, HSG C |
| 61.692 | 30 | Woods, Good, HSG A |
| 32.754 | 55 | Woods, Good, HSG B |
| 13.623 | 70 | Woods, Good, HSG C |
| 279.312 | 39 | Weighted Average |
| 279.312 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 14.8 | 100 | 0.0764 | 0.11 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 4.7 | 581 | 0.1683 | 2.05 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 25.7 | 1,199 | 0.0241 | 0.78 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.8 | 189 | 0.0157 | 3.84 | 76.82 | Channel Flow, Rerouted Stream Area= 20.0 sf Perim= 32.6' r= 0.61' n= 0.035 Earth, dense weeds |
| 154.9 | 4,646 | 0.0051 | 0.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.8 | 56 | 0.0566 | 1.19 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 201.7 | 6,771 | Total | | | |

Subcatchment 1.3aS1: Surface Discharge

Hydrograph



Summary for Subcatchment 1.3bS: Access Rd to Pond 3

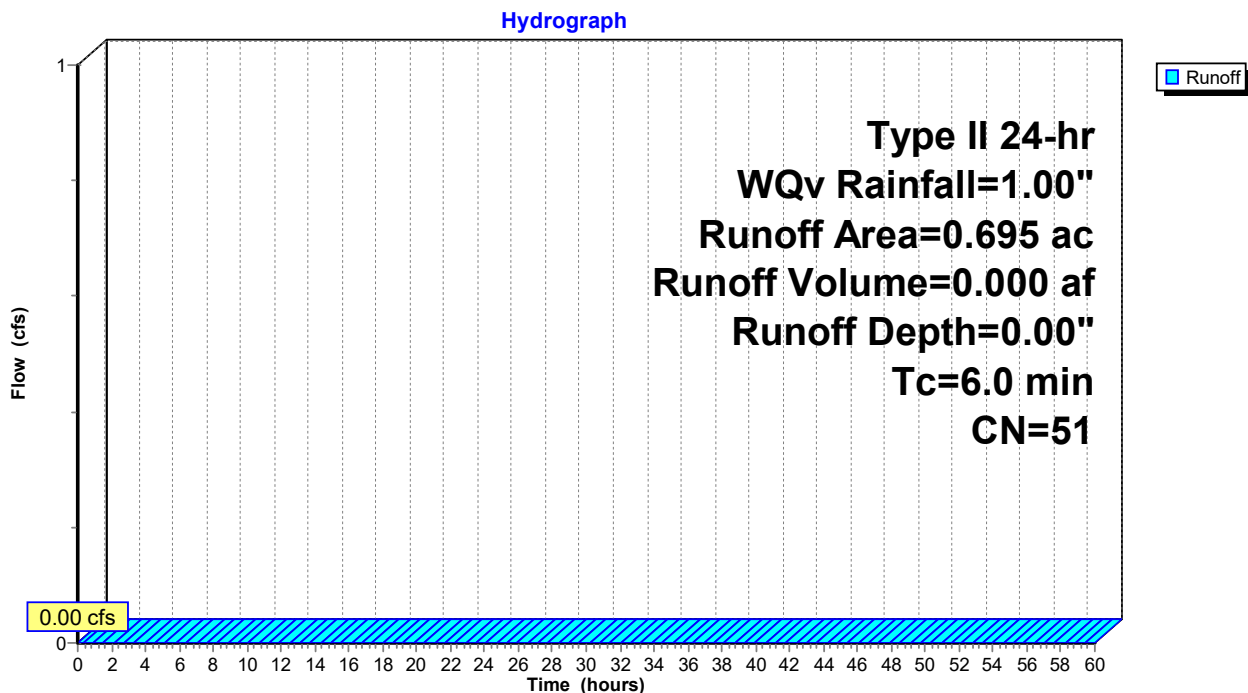
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond 1.3P : Pond 3 - Access Rd West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|------------------------------|
| 0.473 | 30 | Meadow, non-grazed, HSG A |
| * 0.063 | 96 | Gravel surface, HSG A, Redev |
| * 0.159 | 96 | Gravel surface, HSG A |
| 0.695 | 51 | Weighted Average |
| 0.695 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.3bS: Access Rd to Pond 3



Summary for Subcatchment 2S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP2 : Study Point 2

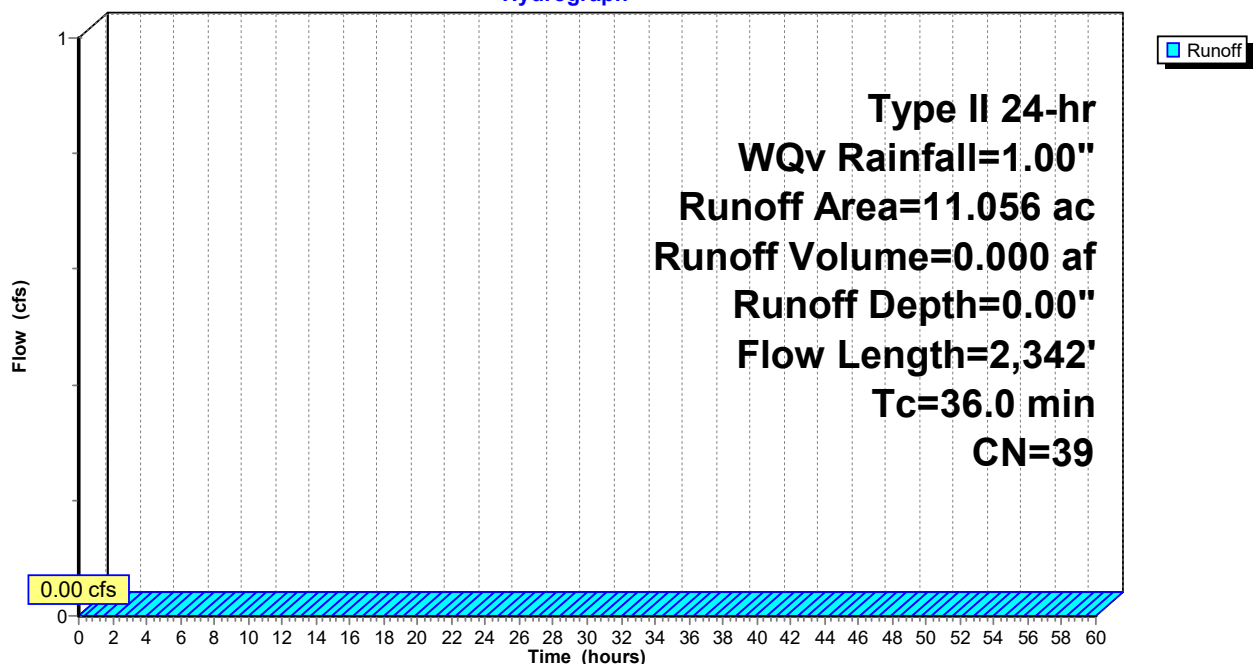
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.417 | 96 | Gravel surface, HSG A |
| 0.573 | 39 | >75% Grass cover, Good, HSG A |
| 6.530 | 30 | Meadow, non-grazed, HSG A |
| 2.536 | 30 | Woods, Good, HSG A |
| 11.056 | 39 | Weighted Average |
| 11.056 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0624 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.7 | 614 | 0.0535 | 3.72 | | Shallow Concentrated Flow, Unpaved Kv= 16.1 fps |
| 12.1 | 1,184 | 0.0543 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.9 | 115 | 0.0407 | 1.01 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.6 | 68 | 0.1443 | 1.90 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 8.0 | 261 | 0.0118 | 0.54 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 36.0 | 2,342 | Total | | | |

Subcatchment 2S:

Hydrograph



Summary for Subcatchment 3S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP3 : Study Point 3

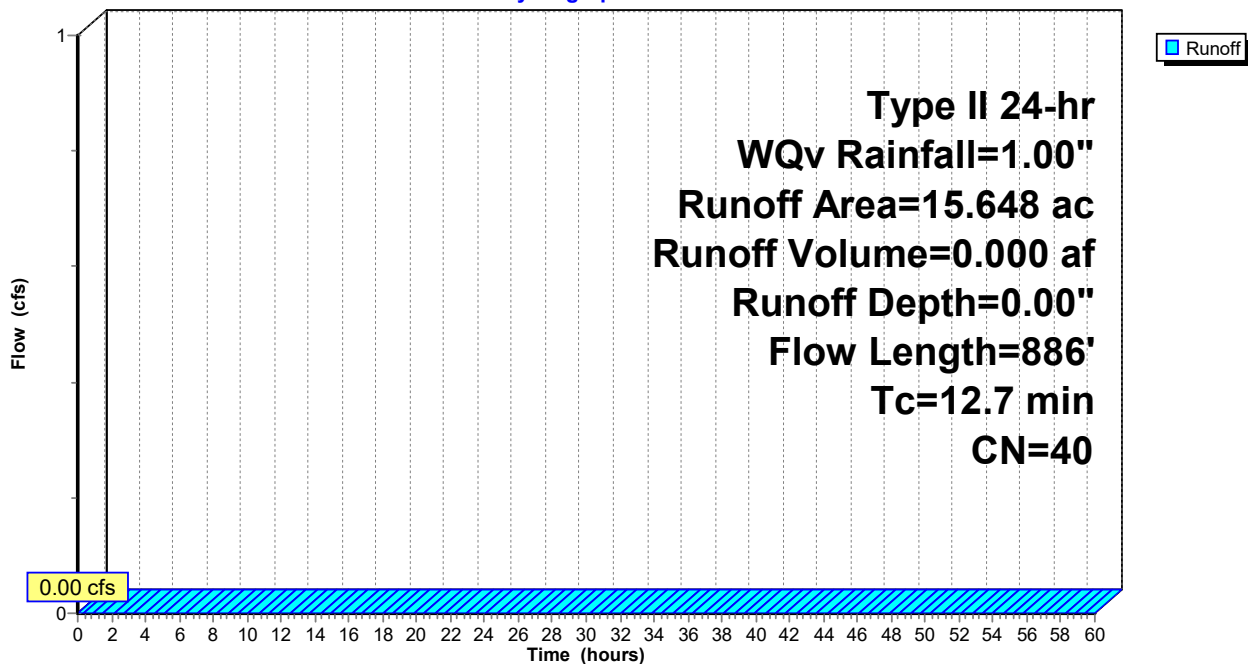
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.088 | 98 | Paved Roads & Rooftops |
| 0.406 | 39 | >75% Grass cover, Good, HSG A |
| 2.011 | 61 | >75% Grass cover, Good, HSG B |
| 5.525 | 30 | Meadow, non-grazed, HSG A |
| 4.276 | 30 | Woods, Good, HSG A |
| 3.342 | 55 | Woods, Good, HSG B |
| 15.648 | 40 | Weighted Average |
| 15.560 | | 99.44% Pervious Area |
| 0.088 | | 0.56% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.4 | 52 | 0.0937 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 3.7 | 625 | 0.1637 | 2.83 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.6 | 209 | 0.0384 | 0.98 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 12.7 | 886 | Total | | | |

Subcatchment 3S:

Hydrograph



Summary for Subcatchment 4.1S:

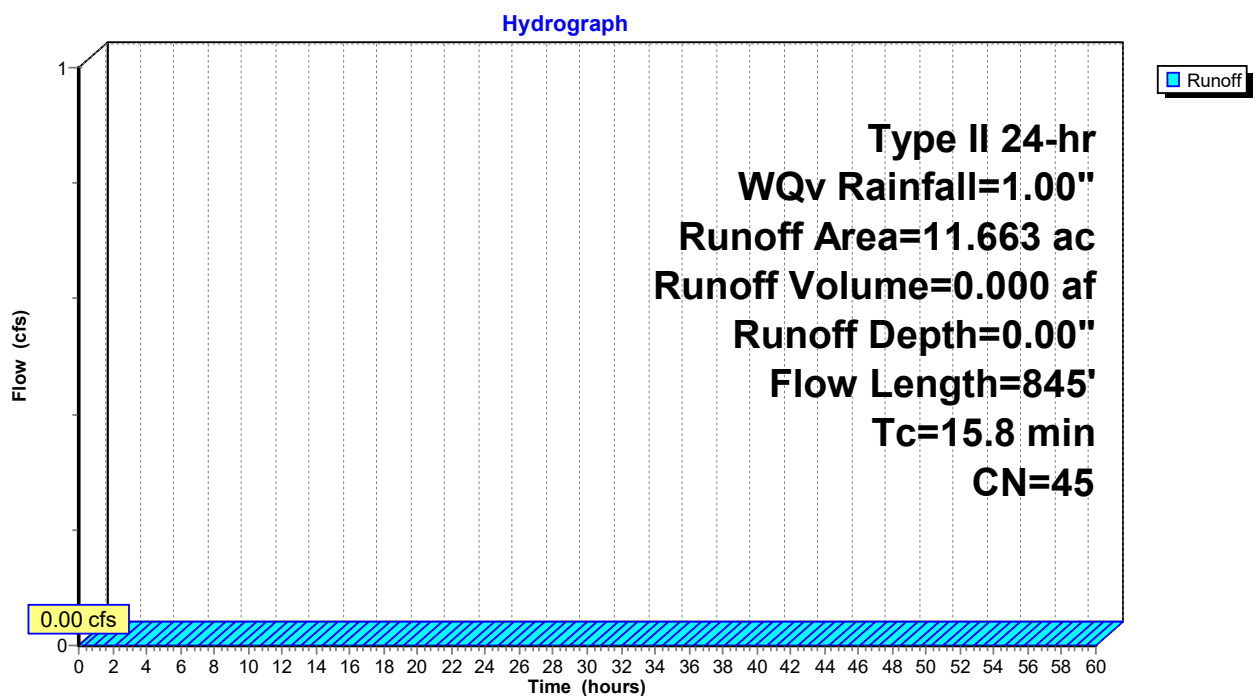
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 4.1R1 : Bypass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.327 | 98 | Paved Roads & Rooftops |
| * 0.375 | 96 | Gravel surface |
| 0.165 | 61 | >75% Grass cover, Good, HSG B |
| 2.544 | 30 | Meadow, non-grazed, HSG A |
| 0.560 | 58 | Meadow, non-grazed, HSG B |
| 3.605 | 30 | Woods, Good, HSG A |
| * 4.087 | 55 | Woods, Good, HSG B |
| 11.663 | 45 | Weighted Average |
| 11.336 | | 97.20% Pervious Area |
| 0.327 | | 2.80% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.5 | 100 | 0.0430 | 0.20 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 2.6 | 360 | 0.1077 | 2.30 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 4.7 | 385 | 0.0735 | 1.36 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 15.8 | 845 | Total | | | |

Subcatchment 4.1S:



Summary for Subcatchment 4.2aS:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond 4.2C : 18" Culvert

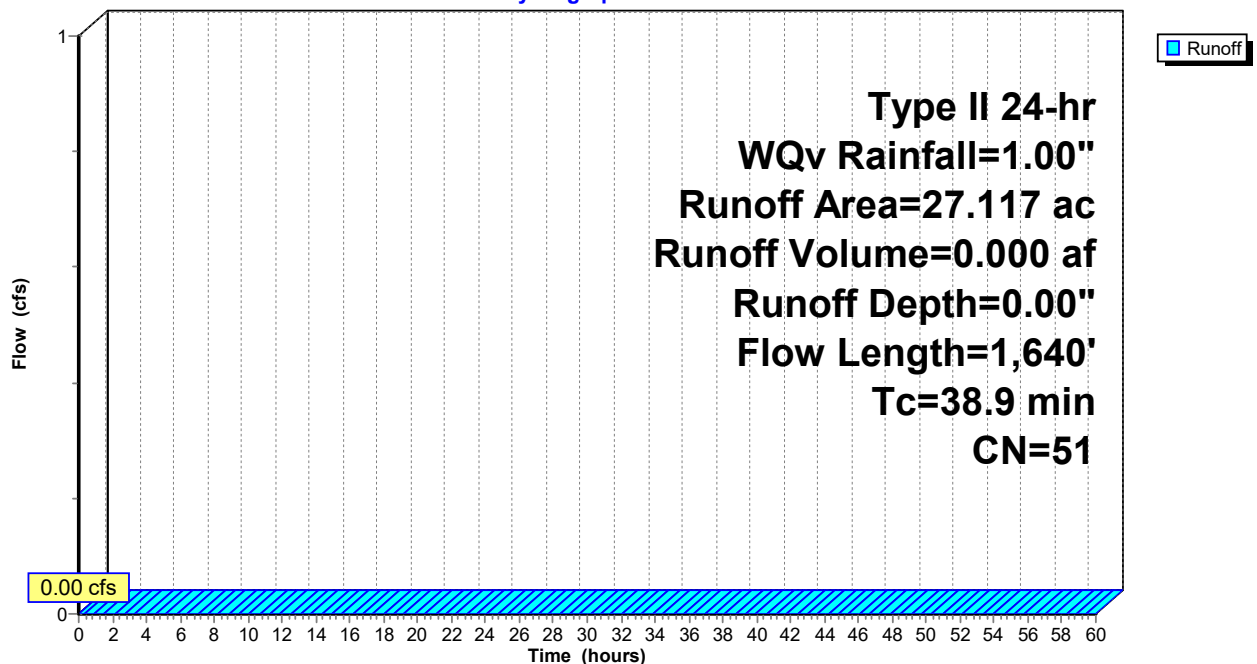
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.238 | 96 | Gravel surface |
| 4.086 | 30 | Meadow, non-grazed, HSG A |
| 0.384 | 58 | Meadow, non-grazed, HSG B |
| 0.977 | 30 | Woods, Good, HSG A |
| 21.432 | 55 | Woods, Good, HSG B |
| 27.117 | 51 | Weighted Average |
| 27.117 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 17.8 | 100 | 0.0480 | 0.09 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 8.0 | 878 | 0.1354 | 1.84 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 13.1 | 662 | 0.0144 | 0.84 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 38.9 | 1,640 | Total | | | |

Subcatchment 4.2aS:

Hydrograph



Summary for Subcatchment 4.2bS:

Runoff = 0.00 cfs @ 17.70 hrs, Volume= 0.000 af, Depth= 0.01"
 Routed to Reach 4.2bR : Conveyance Swale

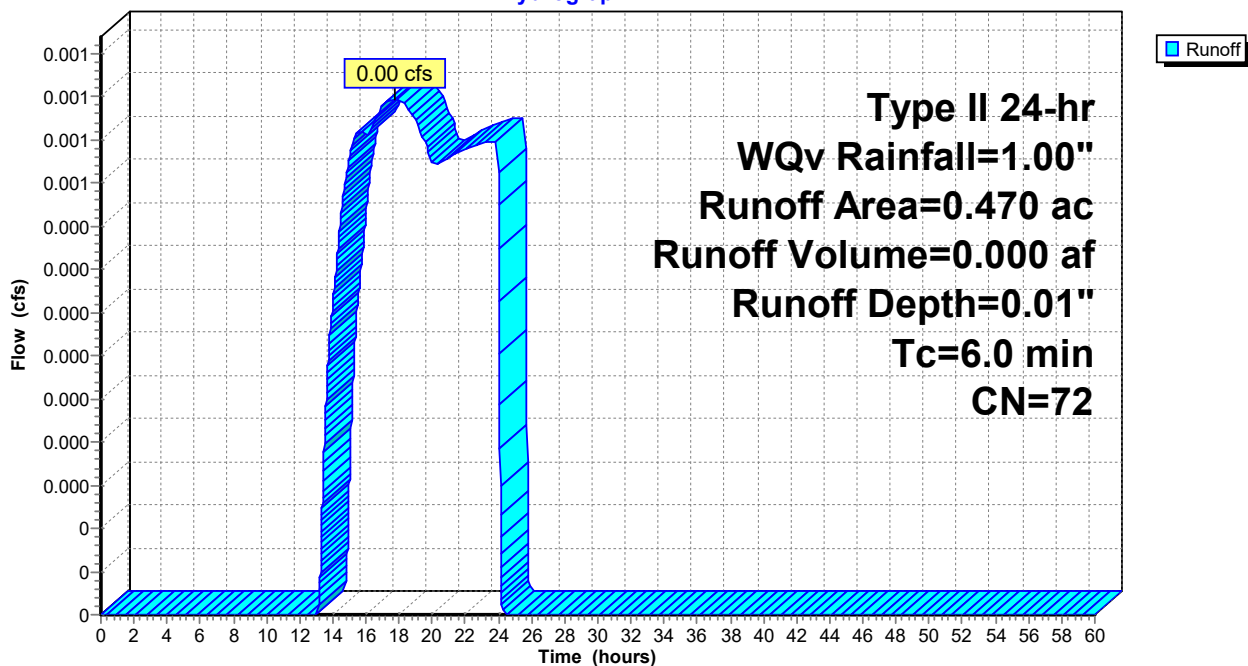
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.296 | 96 | Gravel surface, HSG A |
| 0.174 | 30 | Meadow, non-grazed, HSG A |
| 0.470 | 72 | Weighted Average |
| 0.470 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 4.2bS:

Hydrograph



Summary for Subcatchment 4.3S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond 4.3C : 24" Culvert

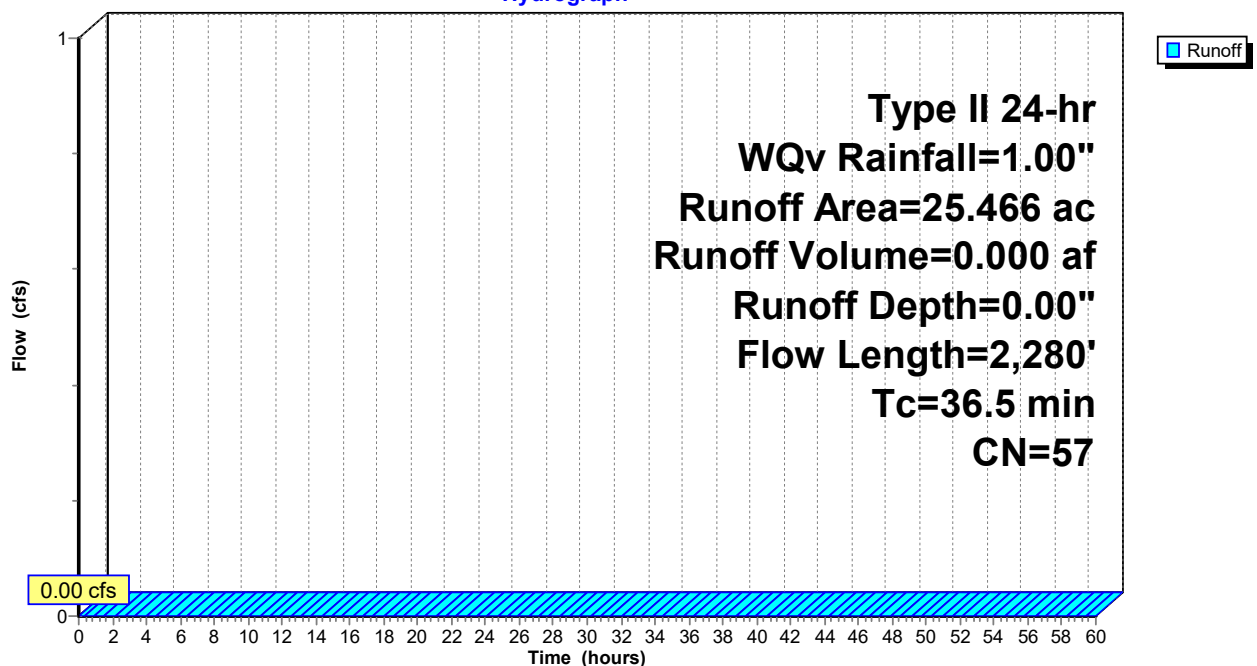
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 1.293 | 98 | Paved Roads & Rooftops |
| 1.783 | 58 | Meadow, non-grazed, HSG B |
| 22.390 | 55 | Woods, Good, HSG B |
| 25.466 | 57 | Weighted Average |
| 24.173 | | 94.92% Pervious Area |
| 1.293 | | 5.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 15.9 | 100 | 0.0634 | 0.10 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 17.8 | 1,368 | 0.0656 | 1.28 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.1 | 38 | 0.3960 | 4.40 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 2.7 | 774 | 0.0281 | 4.70 | 109.09 | Channel Flow, Area= 23.2 sf Perim= 43.2' r= 0.54' n= 0.035 |
| 36.5 | 2,280 | Total | | | |

Subcatchment 4.3S:

Hydrograph



Summary for Subcatchment 5S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP5 : Study Point 5

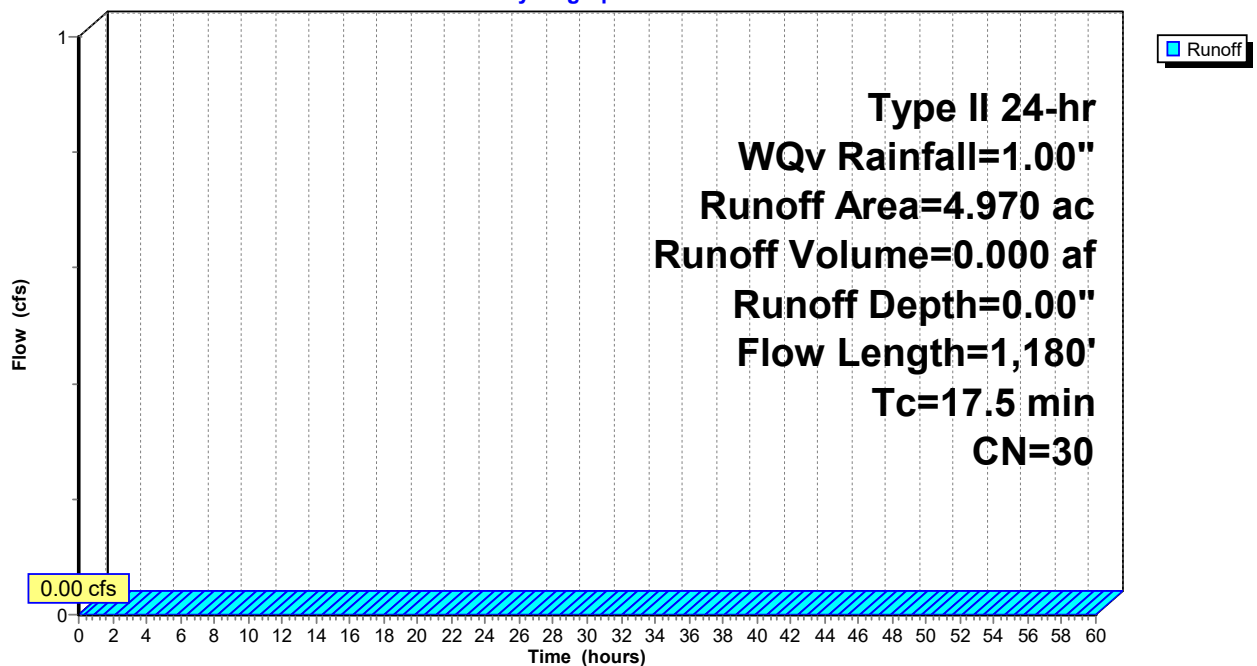
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 4.139 | 30 | Meadow, non-grazed, HSG A |
| 0.831 | 30 | Woods, Good, HSG A |
| 4.970 | 30 | Weighted Average |
| 4.970 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 7.1 | 100 | 0.0675 | 0.24 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 8.5 | 801 | 0.0508 | 1.58 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.3 | 217 | 0.1515 | 2.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.6 | 62 | 0.0697 | 1.85 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 17.5 | 1,180 | Total | | | |

Subcatchment 5S:

Hydrograph



Summary for Subcatchment 6S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP6 : Study Point 6

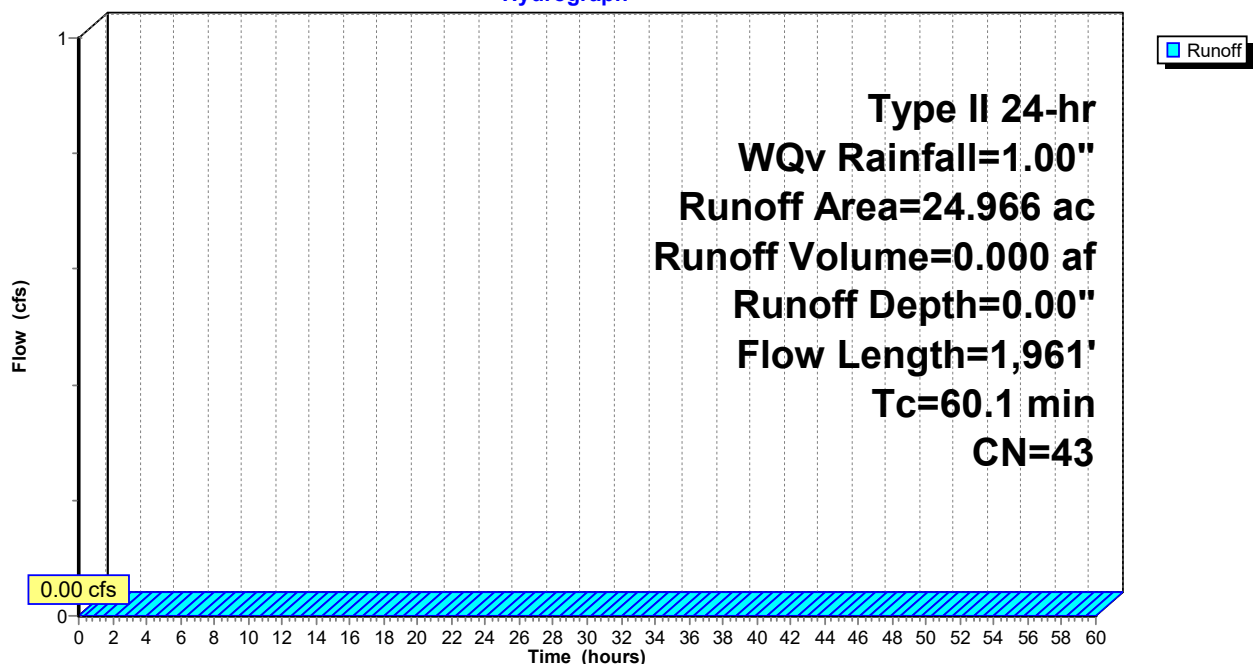
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 1.450 | 98 | Paved Roads & Rooftops |
| 0.466 | 96 | Gravel surface, HSG A |
| 2.545 | 61 | >75% Grass cover, Good, HSG B |
| 7.511 | 30 | Meadow, non-grazed, HSG A |
| 0.788 | 58 | Meadow, non-grazed, HSG B |
| 7.940 | 30 | Woods, Good, HSG A |
| 4.266 | 55 | Woods, Good, HSG B |
| 24.966 | 43 | Weighted Average |
| 23.516 | | 94.19% Pervious Area |
| 1.450 | | 5.81% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.1 | 100 | 0.0278 | 0.16 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 3.2 | 313 | 0.0528 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.9 | 486 | 0.1742 | 2.09 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 42.9 | 1,062 | 0.0068 | 0.41 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 60.1 | 1,961 | Total | | | |

Subcatchment 6S:

Hydrograph



Summary for Reach 1.1aR1: Bypass Swale

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC1 : TS1 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

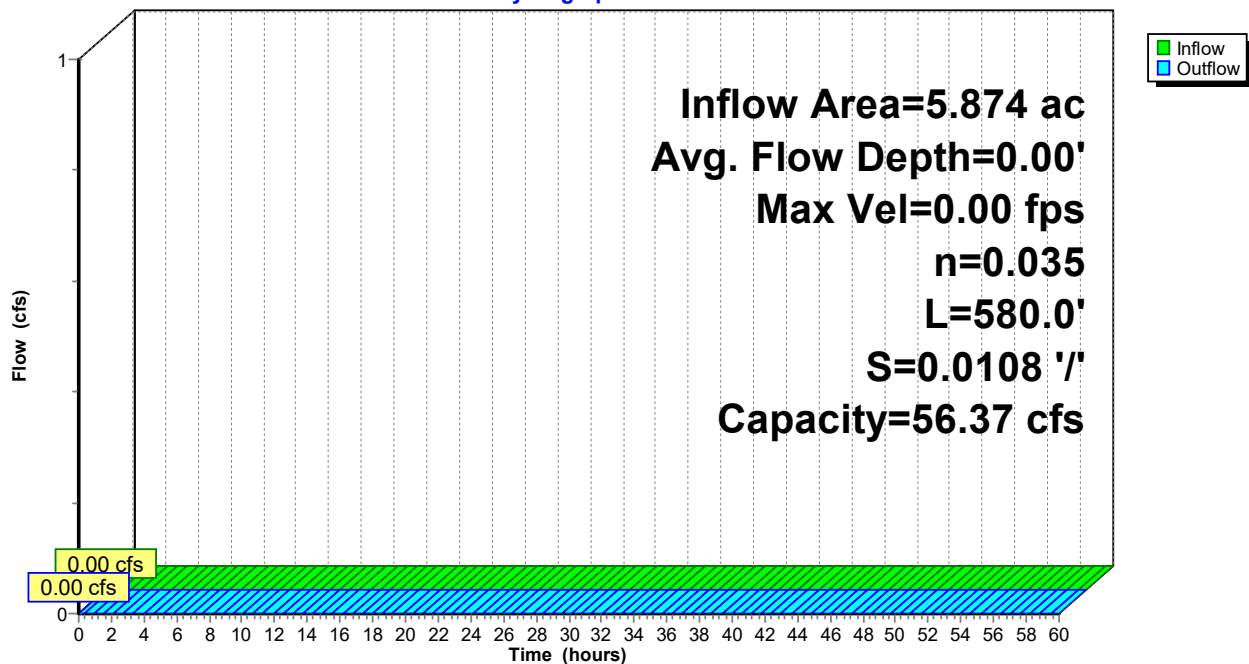
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 56.37 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 580.0' Slope= 0.0108 '/'
 Inlet Invert= 1,493.84', Outlet Invert= 1,487.56'



Reach 1.1aR1: Bypass Swale

Hydrograph



Summary for Reach 1.1aR2: Bypass Swale

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC2 : TS2 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

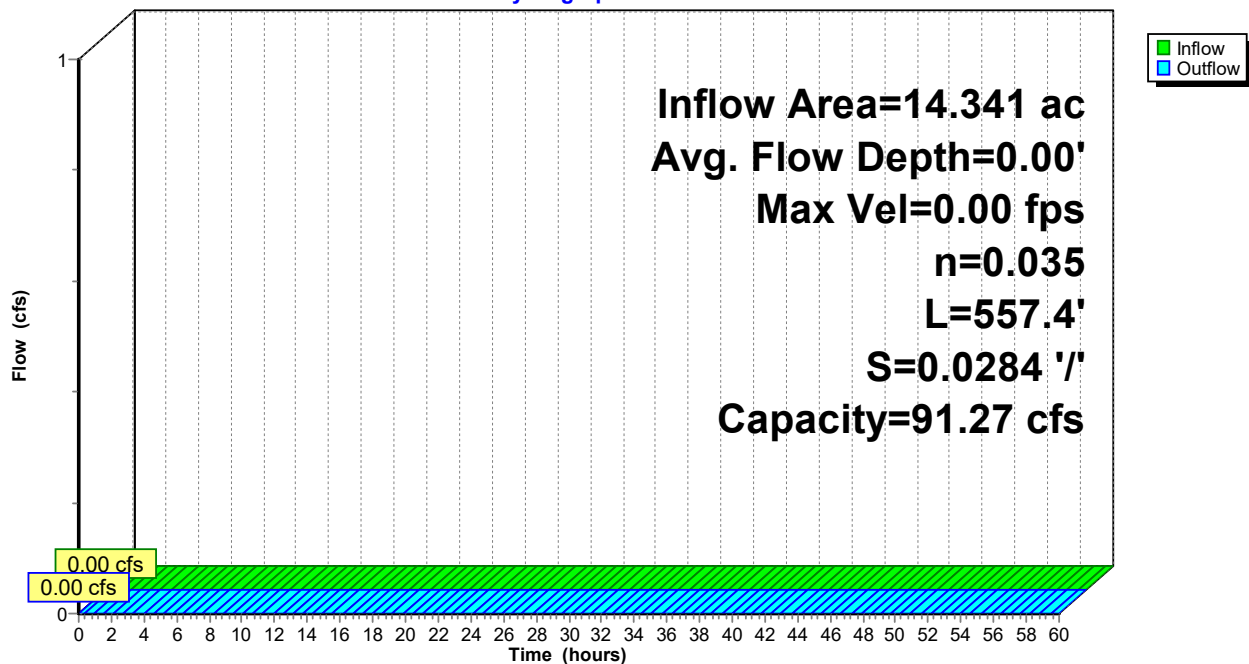
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 91.27 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.4' Slope= 0.0284 '/'
 Inlet Invert= 1,486.80', Outlet Invert= 1,470.98'



Reach 1.1aR2: Bypass Swale

Hydrograph



Summary for Reach 1.1aR3: Bypass Swale

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC3 : TS3 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

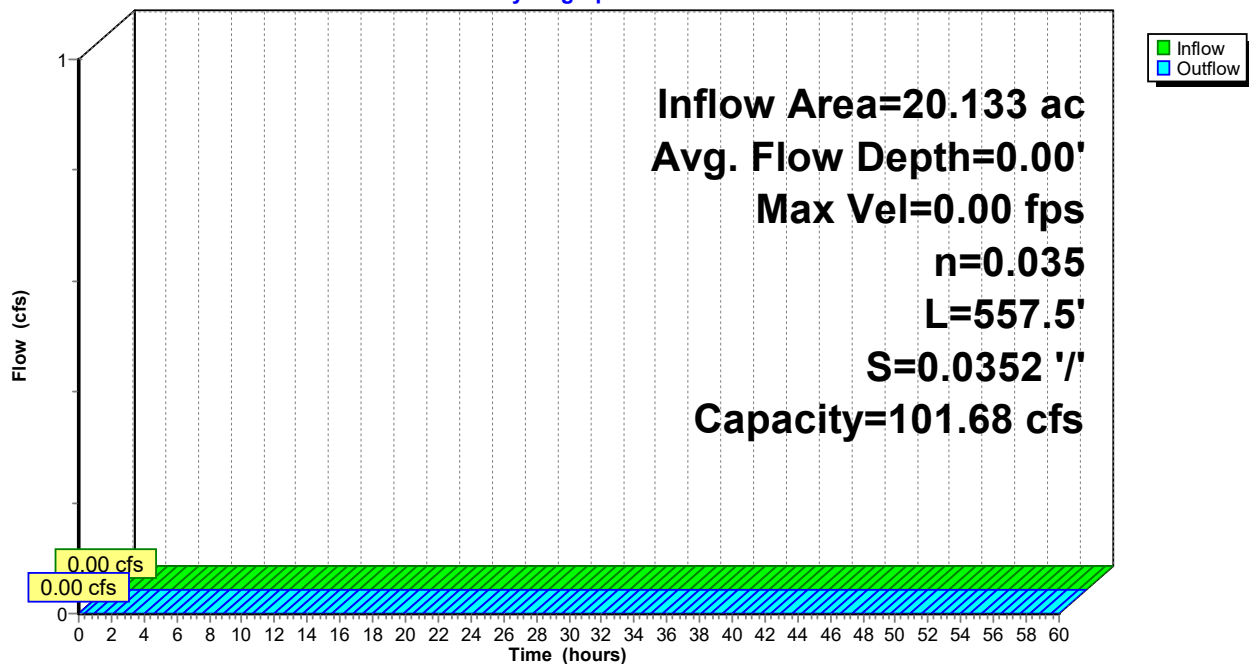
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 101.68 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.5' Slope= 0.0352 '/'
 Inlet Invert= 1,469.57', Outlet Invert= 1,449.93'



Reach 1.1aR3: Bypass Swale

Hydrograph



Summary for Reach 1.1aR4: Bypass Swale

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aP : North Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

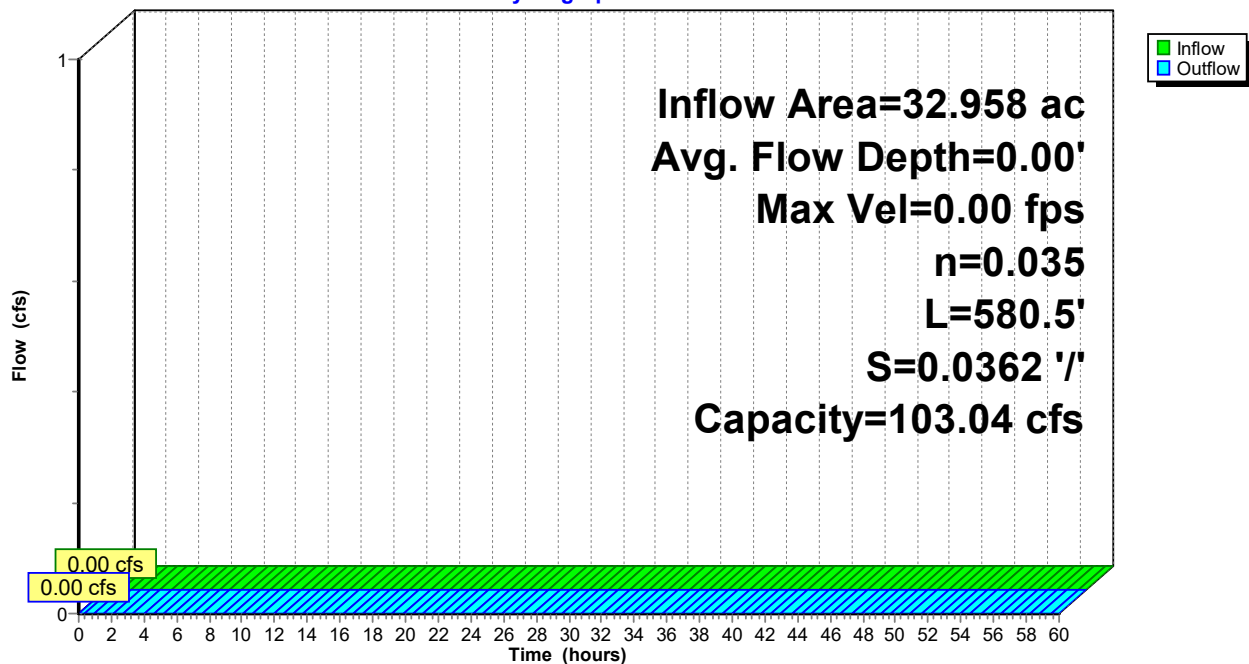
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 103.04 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 580.5' Slope= 0.0362 '/
 Inlet Invert= 1,447.64', Outlet Invert= 1,426.64'



Reach 1.1aR4: Bypass Swale

Hydrograph



Summary for Reach 1.1bR1: North Road Conveyance Swale

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 0.01" for WQv event
 Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af, Atten= 2%, Lag= 1.0 min
 Routed to Pond 1.1bC1 : TS4 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.47 fps, Min. Travel Time= 60.9 min
 Avg. Velocity = 0.47 fps, Avg. Travel Time= 60.9 min

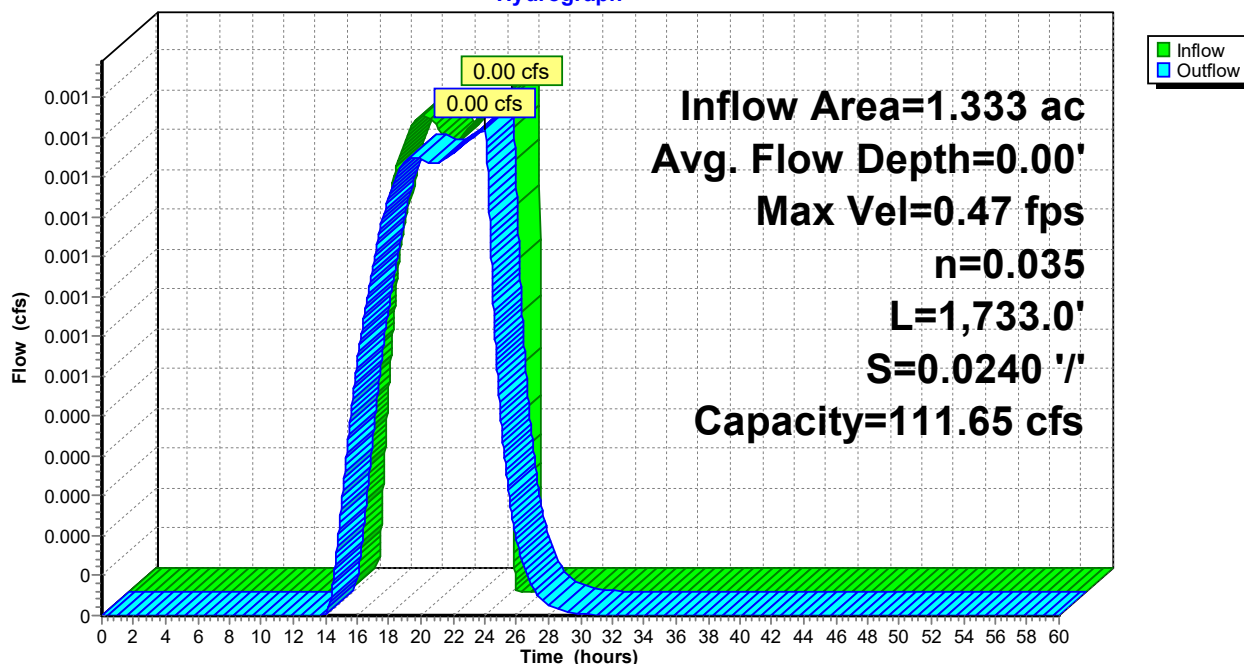
Peak Storage= 4 cf @ 24.03 hrs
 Average Depth at Peak Storage= 0.00', Surface Width= 2.01'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 111.65 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 1,733.0' Slope= 0.0240 '/'
 Inlet Invert= 1,491.12', Outlet Invert= 1,449.50'



Reach 1.1bR1: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.1bR2: North Road Conveyance Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.01" for WQv event
 Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 24.04 hrs, Volume= 0.001 af, Atten= 1%, Lag= 1.9 min
 Routed to Pond 1.1bP1 : Dry Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.60 fps, Min. Travel Time= 16.6 min
 Avg. Velocity = 0.60 fps, Avg. Travel Time= 16.6 min

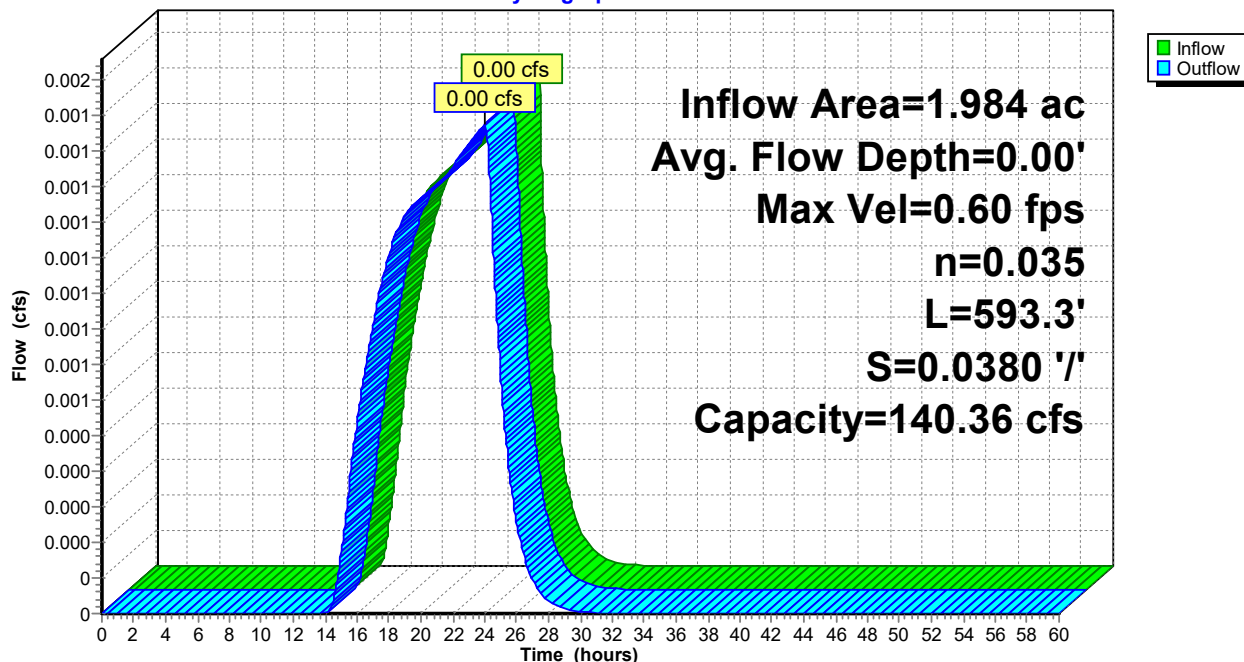
Peak Storage= 1 cf @ 24.04 hrs
 Average Depth at Peak Storage= 0.00', Surface Width= 2.01'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 140.36 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 593.3' Slope= 0.0380 ' / '
 Inlet Invert= 1,447.27', Outlet Invert= 1,424.75'



Reach 1.1bR2: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.2aR1: Bypass Swale

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aC1 : TS 7 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

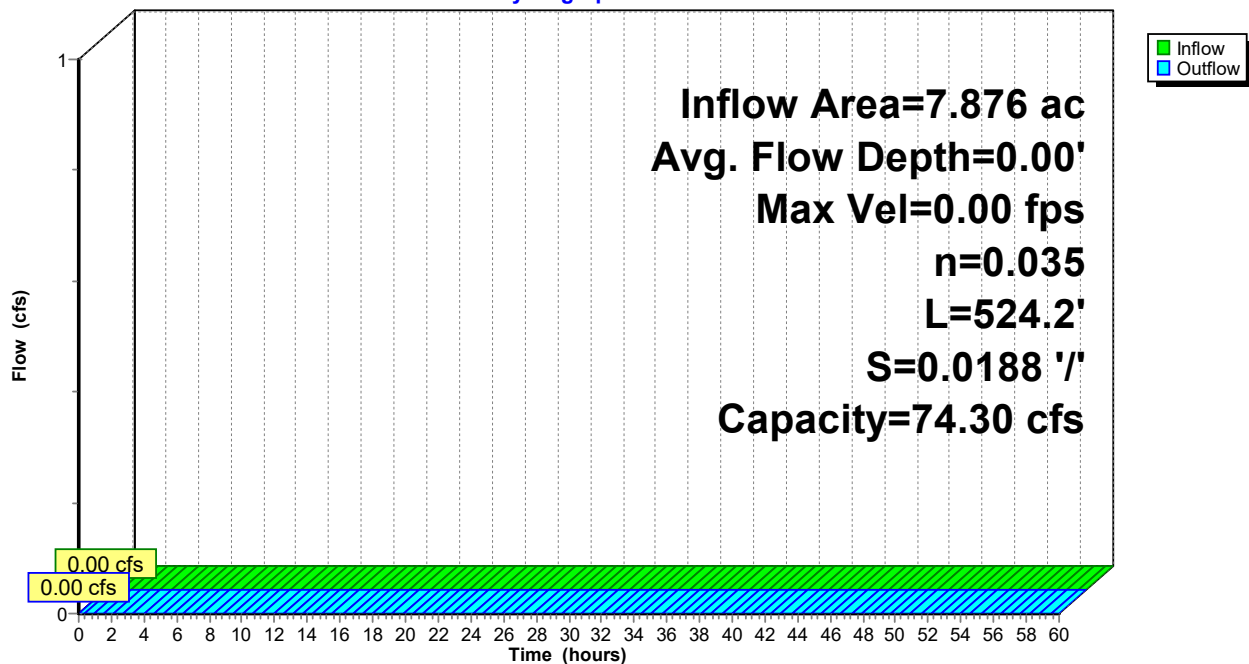
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 74.30 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 524.2' Slope= 0.0188 '/
 Inlet Invert= 1,454.08', Outlet Invert= 1,444.22'



Reach 1.2aR1: Bypass Swale

Hydrograph



Summary for Reach 1.2aR2: Bypass Swale

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aC2 : TS8 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

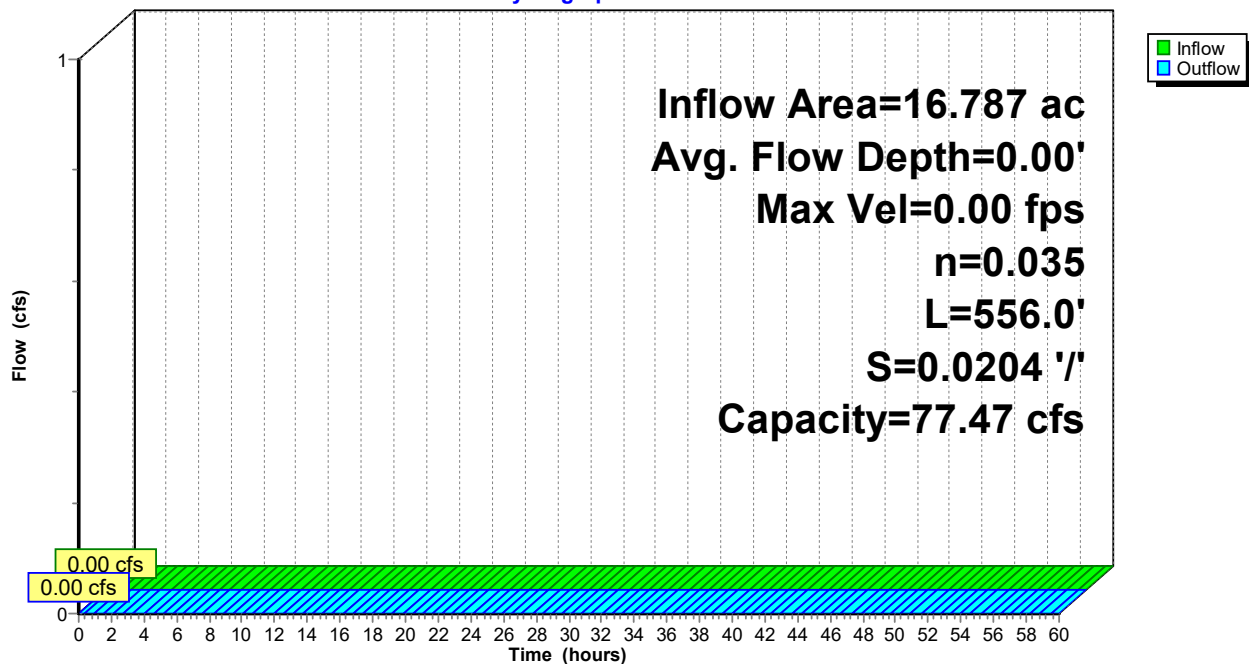
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 77.47 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 556.0' Slope= 0.0204 '/'
 Inlet Invert= 1,443.21', Outlet Invert= 1,431.84'



Reach 1.2aR2: Bypass Swale

Hydrograph



Summary for Reach 1.2aR3: Bypass Swale

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aP : South Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

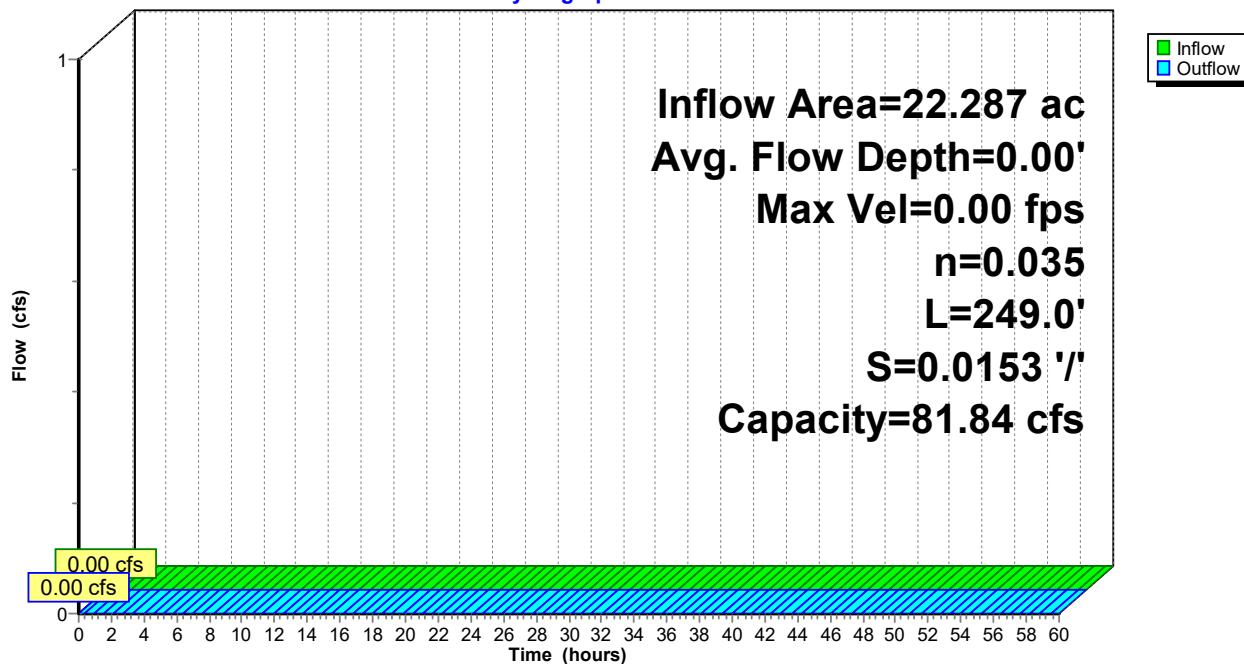
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 14.0 sf, Capacity= 81.84 cfs

3.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 11.00'
 Length= 249.0' Slope= 0.0153 '/
 Inlet Invert= 1,431.11', Outlet Invert= 1,427.29'



Reach 1.2aR3: Bypass Swale

Hydrograph



Summary for Reach 1.2bR1: East Road Conveyance Swale

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.06 hrs, Volume= 0.000 af, Atten= 25%, Lag= 2.9 min
 Routed to Pond 1.2bC1 : East Road Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

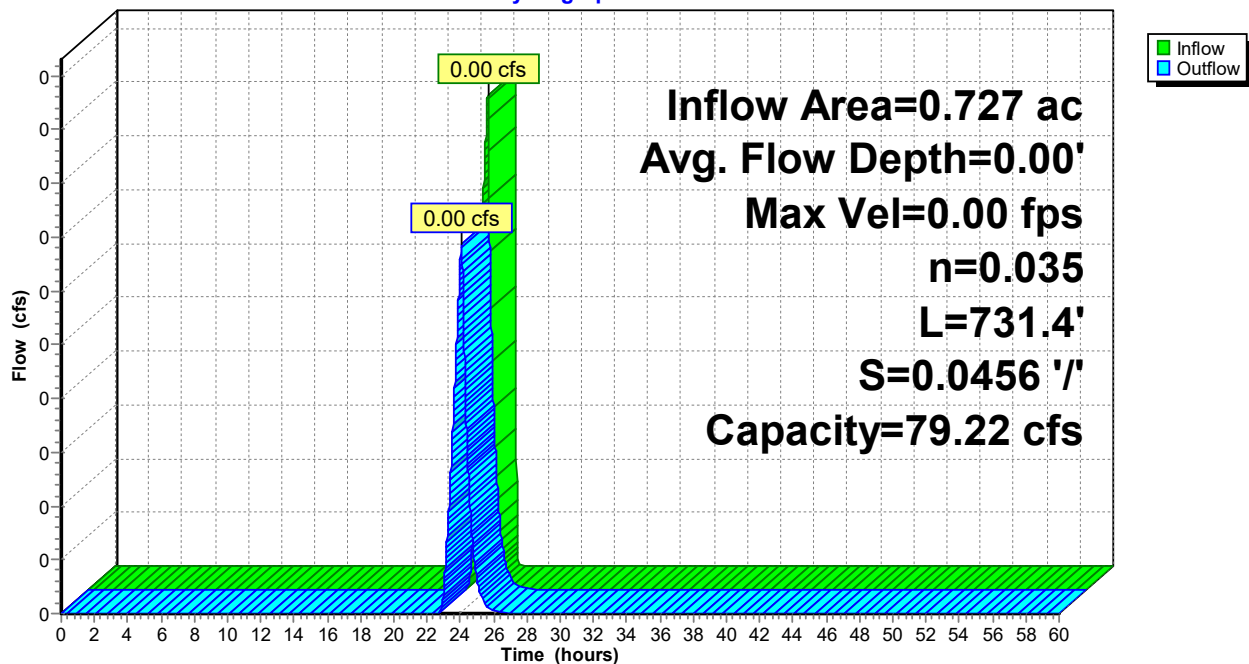
Peak Storage= 0 cf @ 24.06 hrs
 Average Depth at Peak Storage= 0.00', Surface Width= 2.00'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 79.22 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 11.00'
 Length= 731.4' Slope= 0.0456 '/'
 Inlet Invert= 1,489.53', Outlet Invert= 1,456.20'



Reach 1.2bR1: East Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR2: South Road Conveyance Swale

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 24.06 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.23 hrs, Volume= 0.000 af, Atten= 28%, Lag= 10.2 min
 Routed to Pond 1.2bC2 : TS6 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

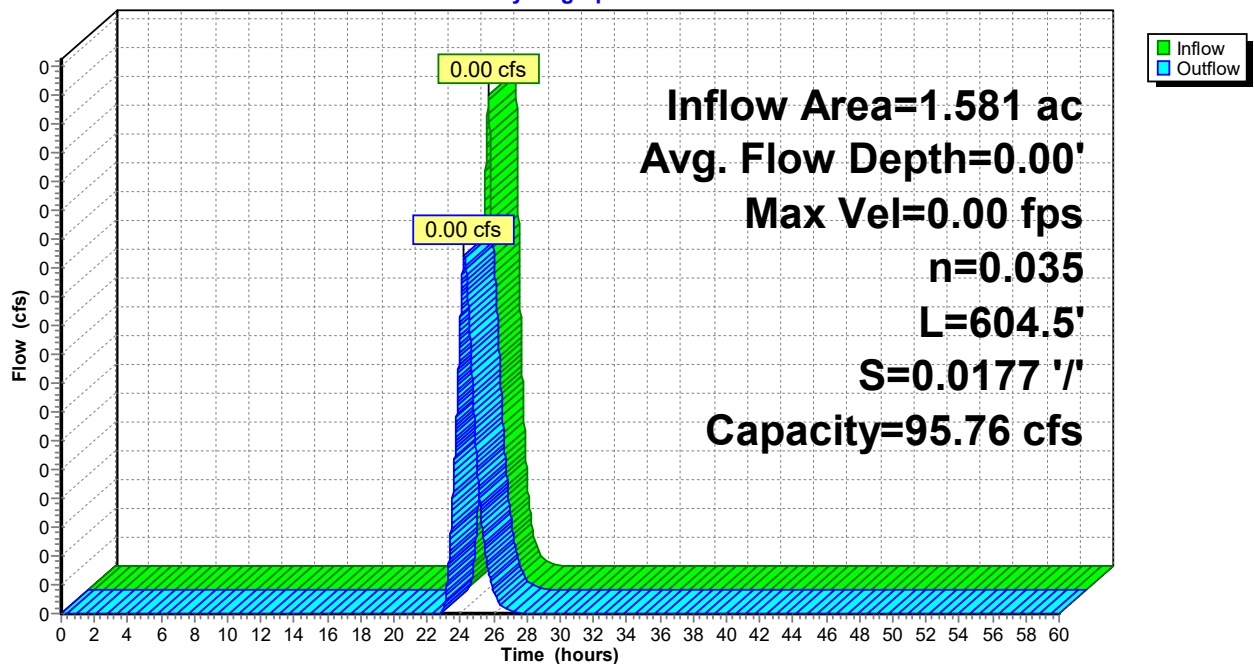
Peak Storage= 0 cf @ 24.23 hrs
 Average Depth at Peak Storage= 0.00', Surface Width= 2.00'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 95.76 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 604.5' Slope= 0.0177 '/'
 Inlet Invert= 1,454.47', Outlet Invert= 1,443.79'



Reach 1.2bR2: South Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR3: South Road Conveyance Swale

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af, Atten= 2%, Lag= 1.0 min
 Routed to Pond 1.2bP : South Road Treatment Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.42 fps, Min. Travel Time= 30.0 min
 Avg. Velocity = 0.42 fps, Avg. Travel Time= 30.0 min

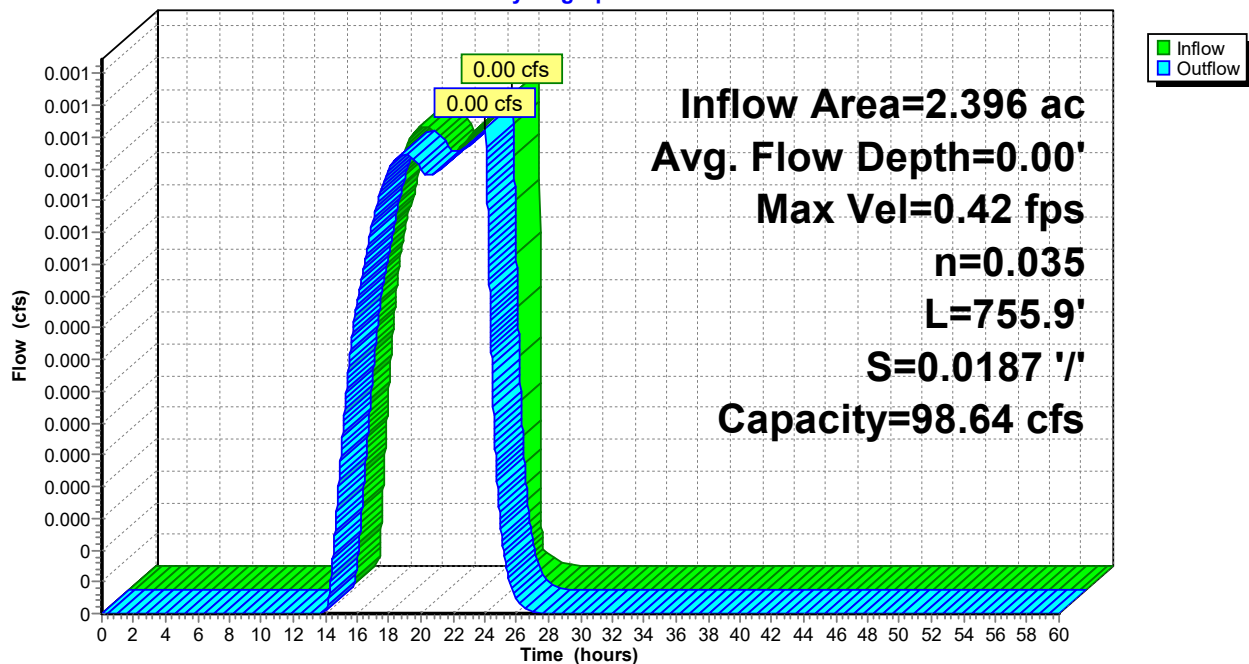
Peak Storage= 1 cf @ 24.03 hrs
 Average Depth at Peak Storage= 0.00', Surface Width= 2.01'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 98.64 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 755.9' Slope= 0.0187 '/'
 Inlet Invert= 1,442.84', Outlet Invert= 1,428.67'



Reach 1.2bR3: South Road Conveyance Swale

Hydrograph



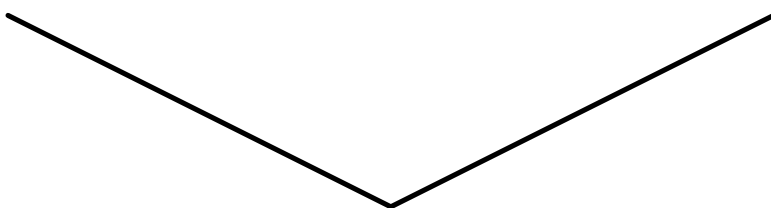
Summary for Reach 4.1R1: Bypass Swale

Inflow Area = 11.663 ac, 2.80% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

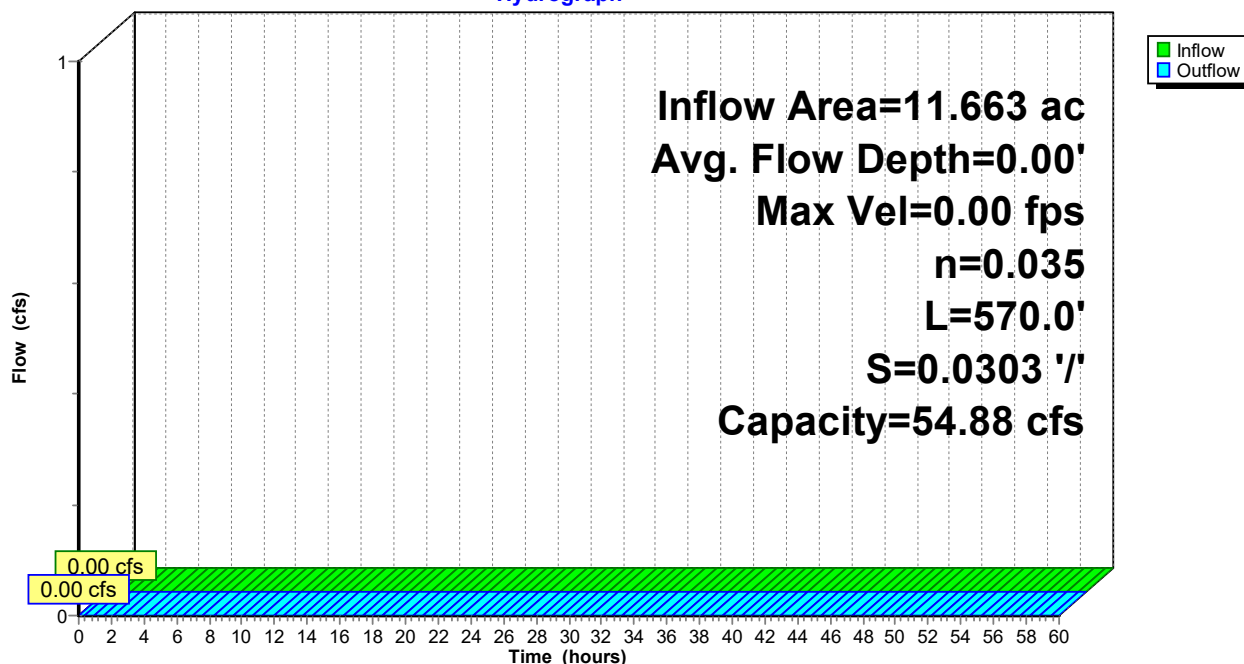
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 54.88 cfs

0.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 8.00'
 Length= 570.0' Slope= 0.0303 '/
 Inlet Invert= 1,448.24', Outlet Invert= 1,430.97'



Reach 4.1R1: Bypass Swale

Hydrograph



Summary for Reach 4.1R2: Ex Stream

Inflow Area = 39.250 ac, 0.83% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

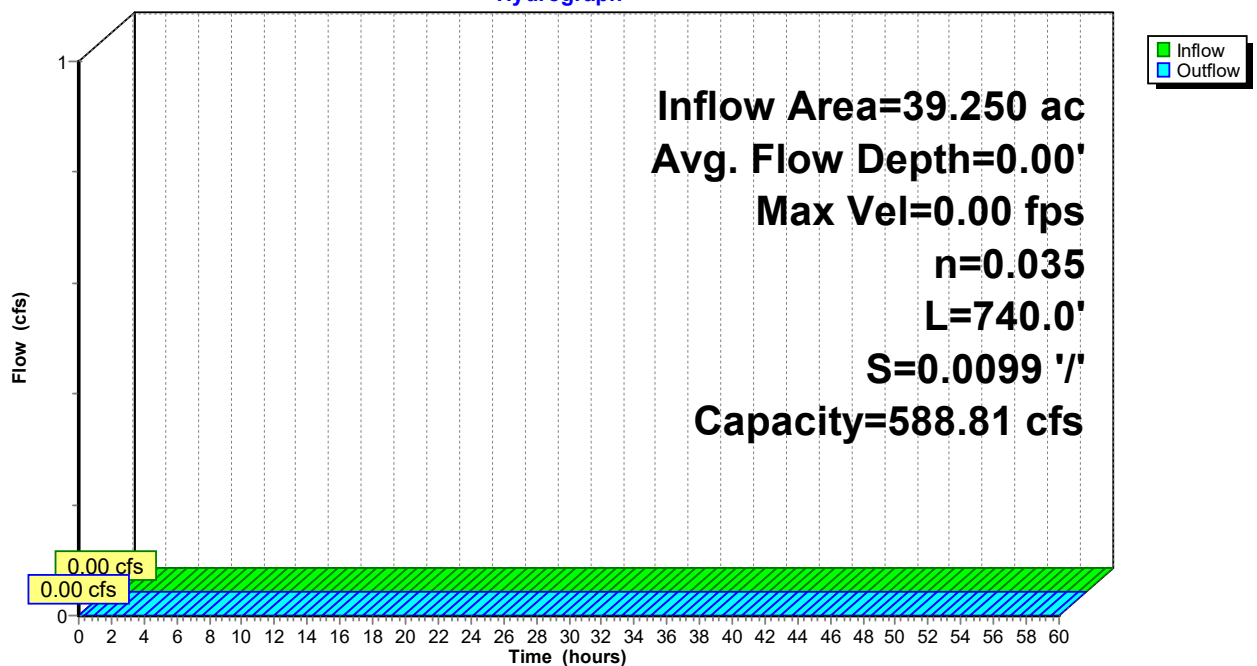
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 3.00' Flow Area= 84.0 sf, Capacity= 588.81 cfs

17.50' x 3.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 4.0 '/' Top Width= 38.50'
 Length= 740.0' Slope= 0.0099 '/'
 Inlet Invert= 1,430.98', Outlet Invert= 1,423.64'



Reach 4.1R2: Ex Stream

Hydrograph



Summary for Reach 4.2bR: Conveyance Swale

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 0.01" for WQv event
 Inflow = 0.00 cfs @ 17.70 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 18.02 hrs, Volume= 0.000 af, Atten= 0%, Lag= 19.4 min
 Routed to Pond 4.2bP : Pond 4 - Access Rd East

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.53 fps, Min. Travel Time= 17.8 min
 Avg. Velocity = 0.53 fps, Avg. Travel Time= 17.8 min

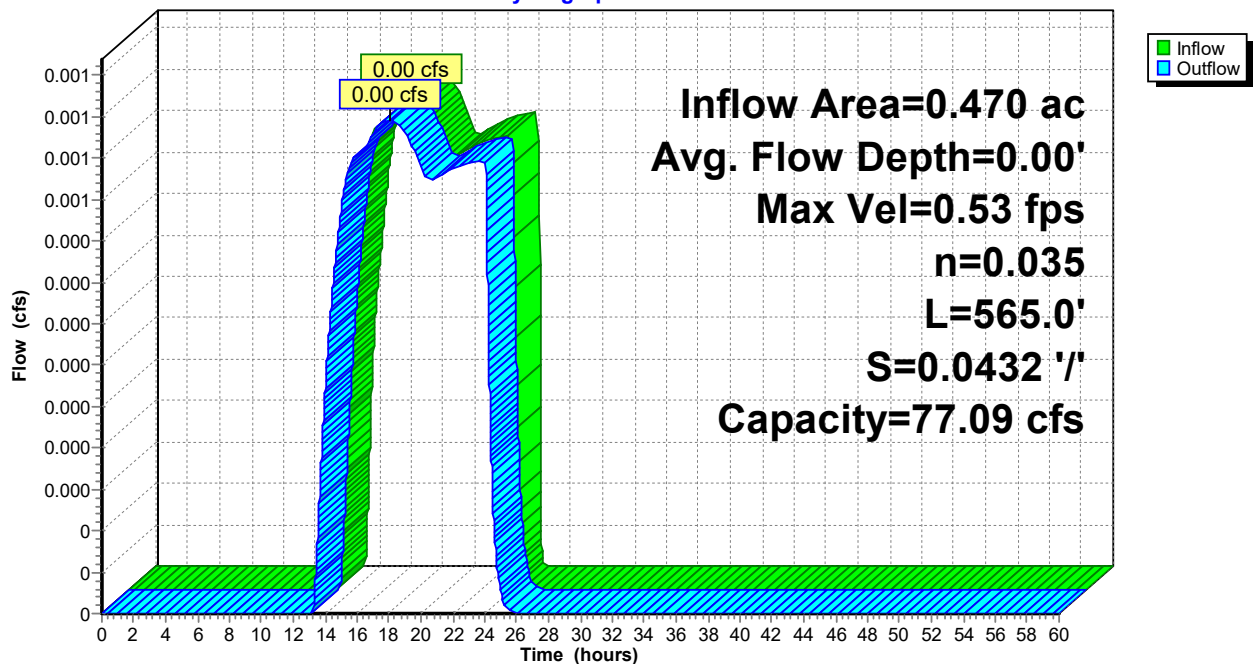
Peak Storage= 1 cf @ 18.02 hrs
 Average Depth at Peak Storage= 0.00' , Surface Width= 2.00'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 77.09 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 11.00'
 Length= 565.0' Slope= 0.0432 '/'
 Inlet Invert= 1,472.38', Outlet Invert= 1,448.00'



Reach 4.2bR: Conveyance Swale

Hydrograph



Summary for Pond 1.1aC1: TS1 Culvert

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR2 : Bypass Swale

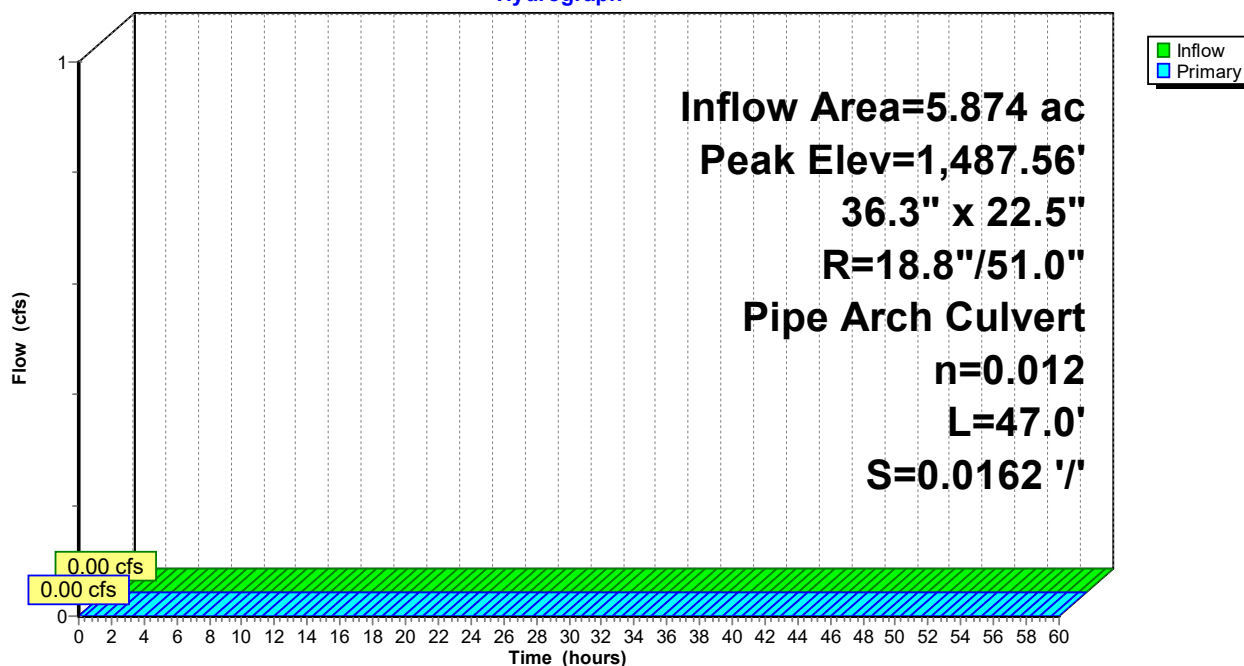
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,487.56' @ 0.00 hrs
 Flood Elev= 1,489.60'

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,487.56' | 36.3" W x 22.5" H, R=18.8"/51.0" Pipe Arch RCP_Arch 37x23 L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,487.56' / 1,486.80' S= 0.0162 '/' Cc= 0.900 n= 0.012, Flow Area= 4.43 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,487.56' (Free Discharge)
 ↑1=RCP_Arch 37x23 (Controls 0.00 cfs)

Pond 1.1aC1: TS1 Culvert

Hydrograph



Summary for Pond 1.1aC2: TS2 Culvert

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR3 : Bypass Swale

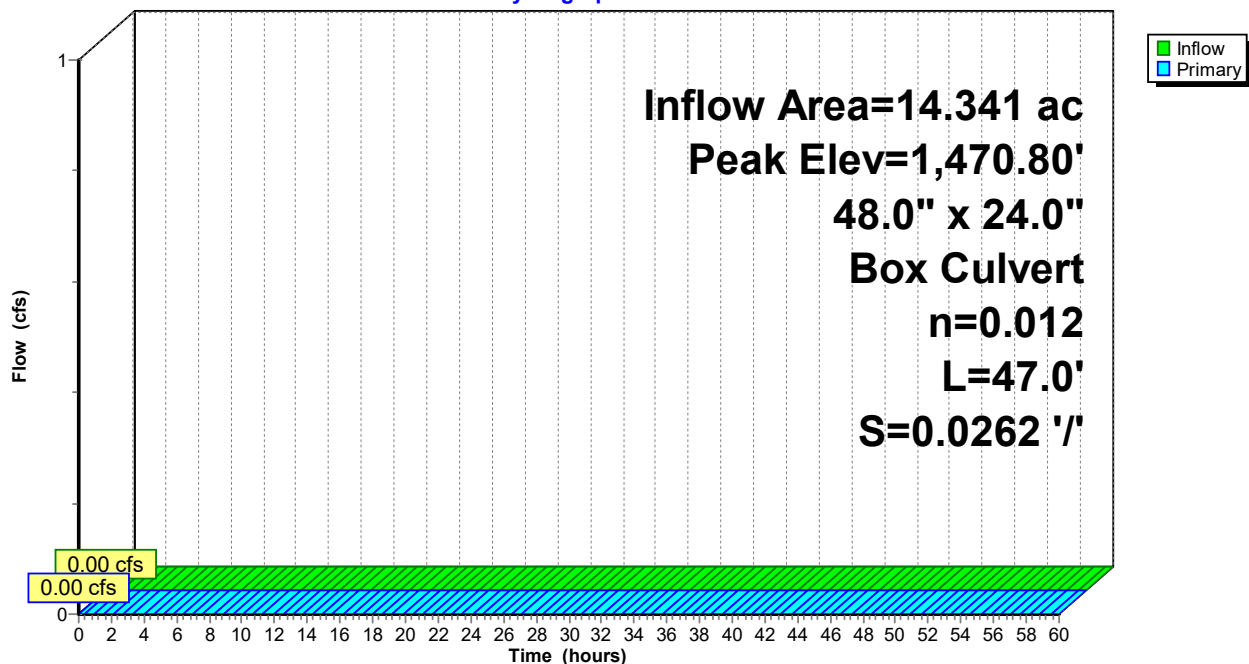
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,470.80' @ 0.00 hrs
 Flood Elev= 1,473.07'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,470.80' | 48.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,470.80' / 1,469.57' S= 0.0262 '/ Cc= 0.900 n= 0.012, Flow Area= 8.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,470.80' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.1aC2: TS2 Culvert

Hydrograph



Summary for Pond 1.1aC3: TS3 Culvert

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR4 : Bypass Swale

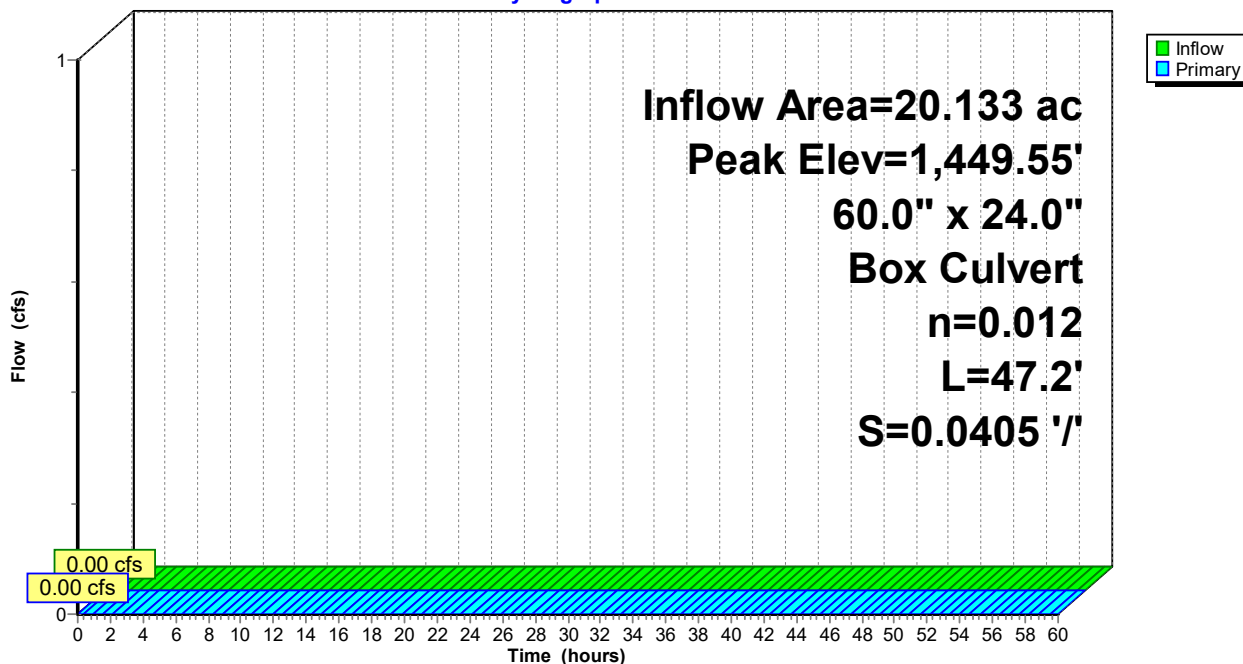
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.55' @ 0.00 hrs
 Flood Elev= 1,452.10'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,449.55' | 60.0" W x 24.0" H Box Culvert L= 47.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.55' / 1,447.64' S= 0.0405 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,449.55' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.1aC3: TS3 Culvert

Hydrograph



Summary for Pond 1.1aP: North Road Bypass OC

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.00' @ 0.00 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

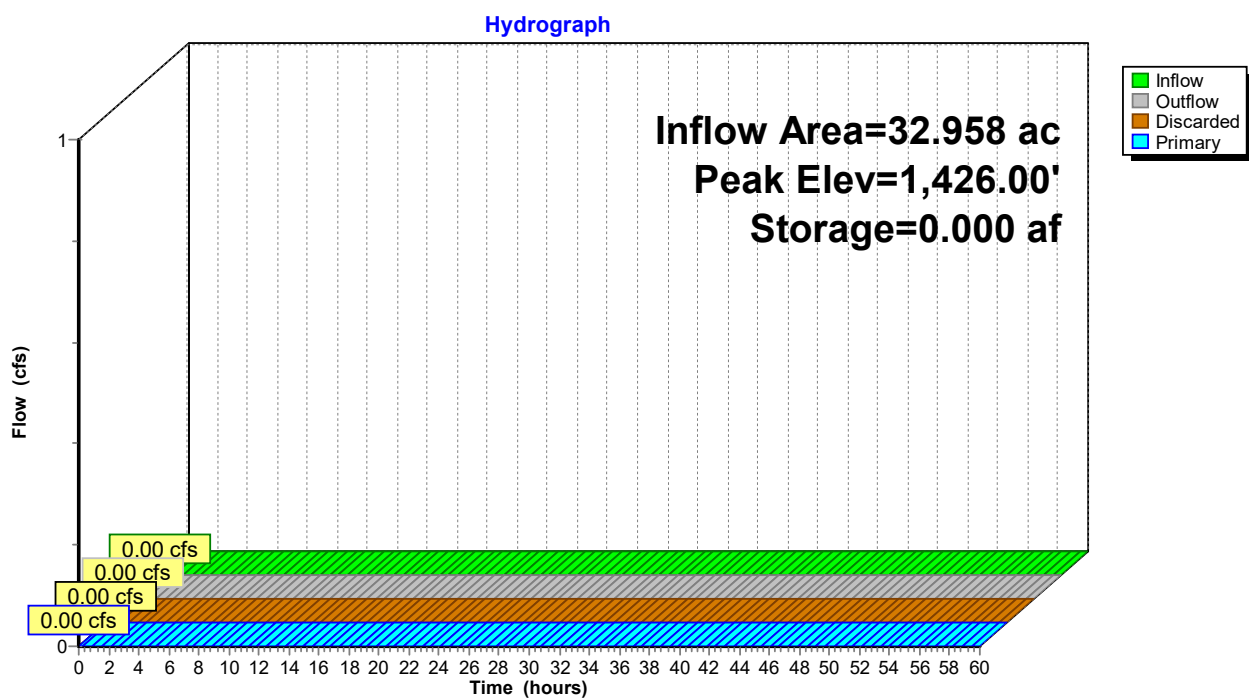
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,426.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,426.00' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,428.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,426.00' (Free Discharge)
 ↳1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,426.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.1aP: North Road Bypass OC



Summary for Pond 1.1bC1: TS4 Culvert

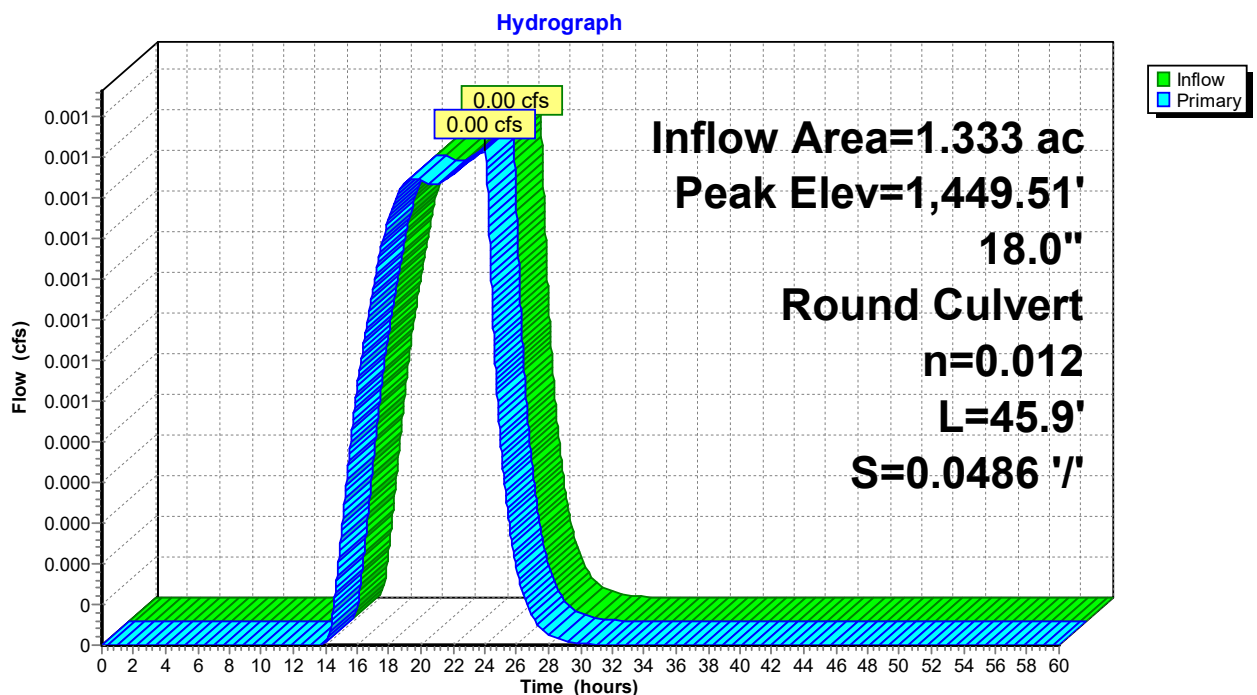
Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 0.01" for WQv event
 Inflow = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.51' @ 24.03 hrs
 Flood Elev= 1,451.20'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,449.50' | 18.0" Round Culvert L= 45.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.50' / 1,447.27' S= 0.0486 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=0.00 cfs @ 24.03 hrs HW=1,449.51' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 0.00 cfs @ 0.39 fps)

Pond 1.1bC1: TS4 Culvert



Summary for Pond 1.1bP1: Dry Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.01" for WQv event
 Inflow = 0.00 cfs @ 24.04 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 24.72 hrs, Volume= 0.001 af, Atten= 37%, Lag= 40.6 min
 Discarded = 0.00 cfs @ 24.72 hrs, Volume= 0.001 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 1.1bP2 : North Road Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,425.32' @ 24.72 hrs Surf.Area= 76 sf Storage= 17 cf

Plug-Flow detention time= 255.0 min calculated for 0.001 af (100% of inflow)
 Center-of-Mass det. time= 255.0 min (1,512.3 - 1,257.3)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,424.75' | 428 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,424.75 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,425.00 | 25 | 22.9 | 2 | 2 | 42 | |
| 1,426.00 | 273 | 98.0 | 127 | 129 | 767 | |
| 1,426.70 | 603 | 161.7 | 299 | 428 | 2,086 | |

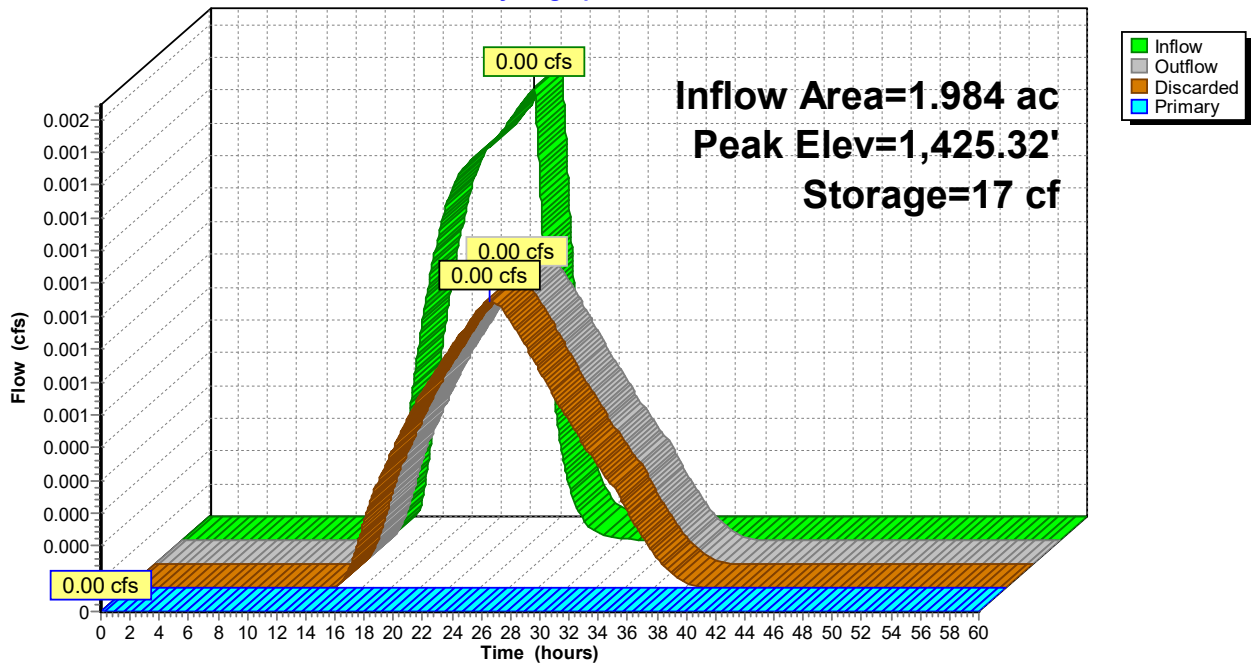
| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | |
|--------|-----------|-----------|--|--|--|--|--|--|--|--|--|--|--|--|
| #1 | Discarded | 1,424.75' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | |
| #2 | Primary | 1,425.69' | 2.0' long x 2.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 | | | | | | | | | | | |
| | | | Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32 | | | | | | | | | | | |

Discarded OutFlow Max=0.00 cfs @ 24.72 hrs HW=1,425.32' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.75' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.1bP1: Dry Swale

Hydrograph



Summary for Pond 1.1bP2: North Road Detention Pond

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,421.50' @ 0.00 hrs Surf.Area= 0.009 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

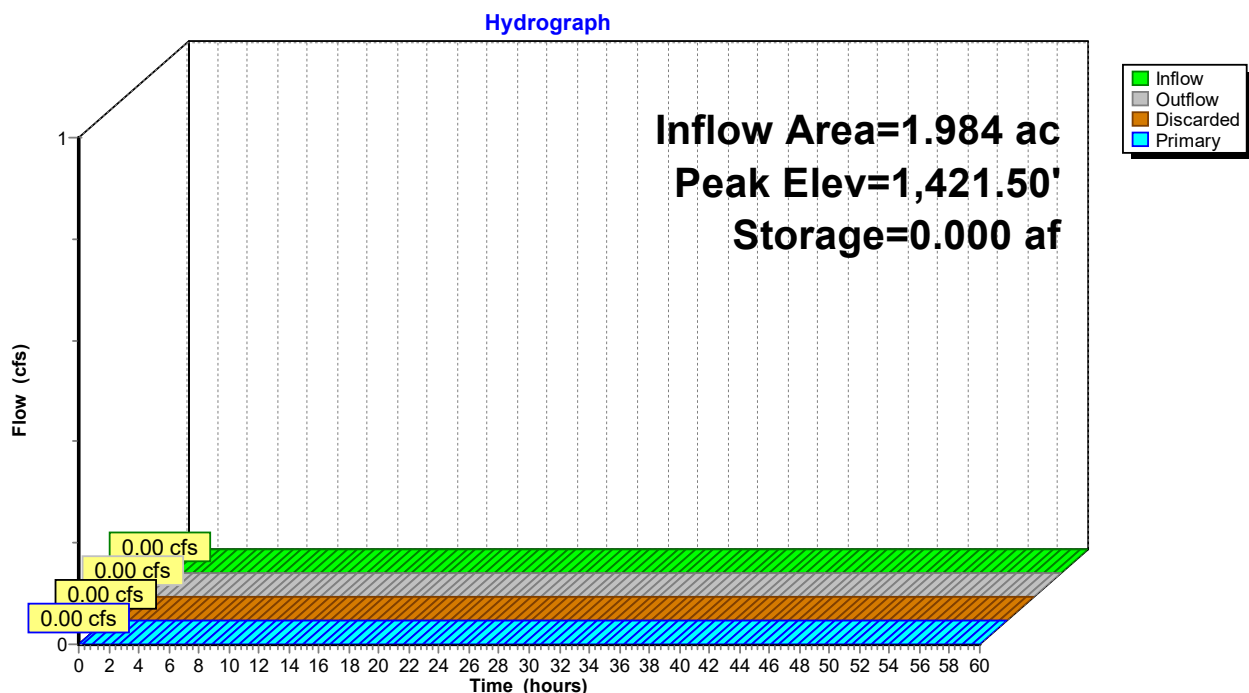
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,421.50' | 0.166 af | 10.00'W x 40.00'L x 5.00'H Prismaoid Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,421.50' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,424.00' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,421.50' (Free Discharge)
 ↳1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,421.50' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.1bP2: North Road Detention Pond



Summary for Pond 1.2aC1: TS 7 Culvert

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.2aR2 : Bypass Swale

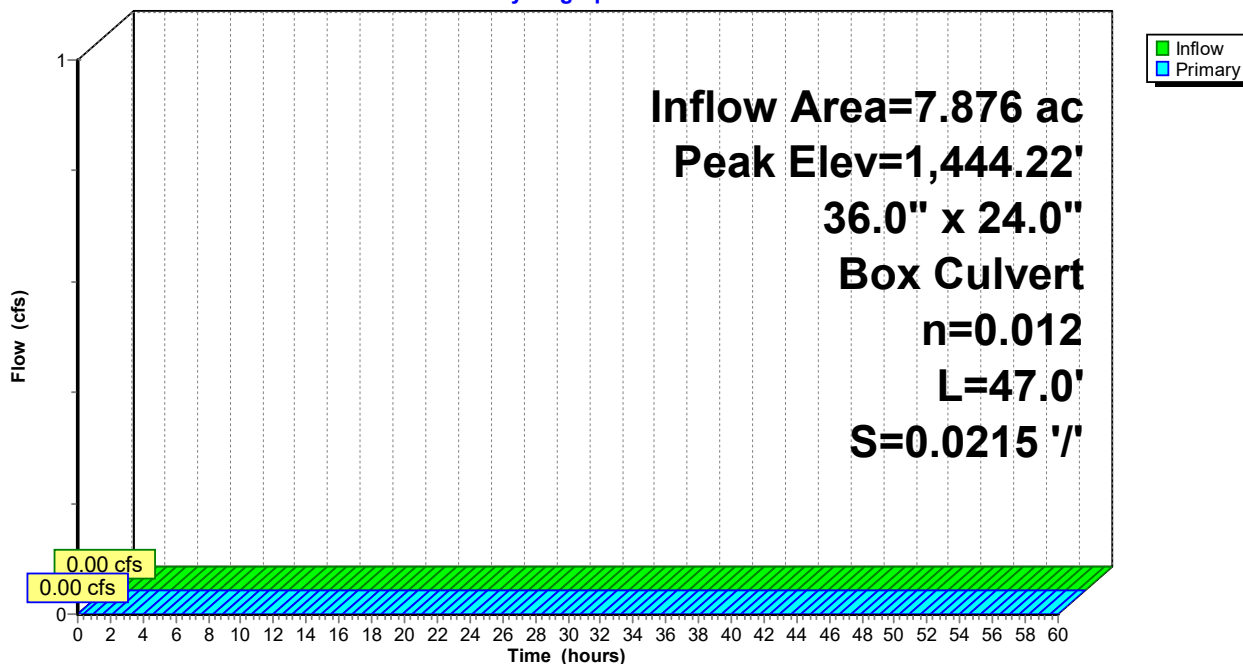
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,444.22' @ 0.00 hrs
 Flood Elev= 1,446.28'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,444.22' | 36.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,444.22' / 1,443.21' S= 0.0215 '/ Cc= 0.900 n= 0.012, Flow Area= 6.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,444.22' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.2aC1: TS 7 Culvert

Hydrograph



Summary for Pond 1.2aC2: TS8 Culvert

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.2aR3 : Bypass Swale

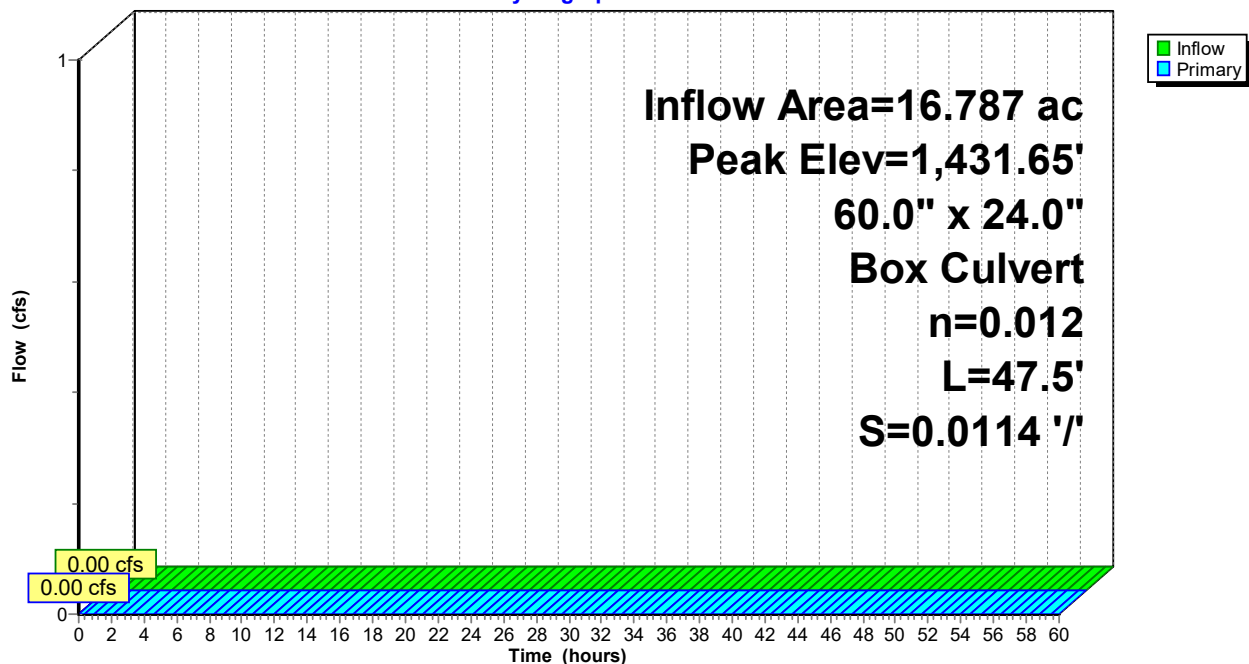
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.65' @ 0.00 hrs
 Flood Elev= 1,433.87'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,431.65' | 60.0" W x 24.0" H Box Culvert L= 47.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,431.65' / 1,431.11' S= 0.0114 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,431.65' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.2aC2: TS8 Culvert

Hydrograph



Summary for Pond 1.2aP: South Road Bypass OC

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.00' @ 0.00 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

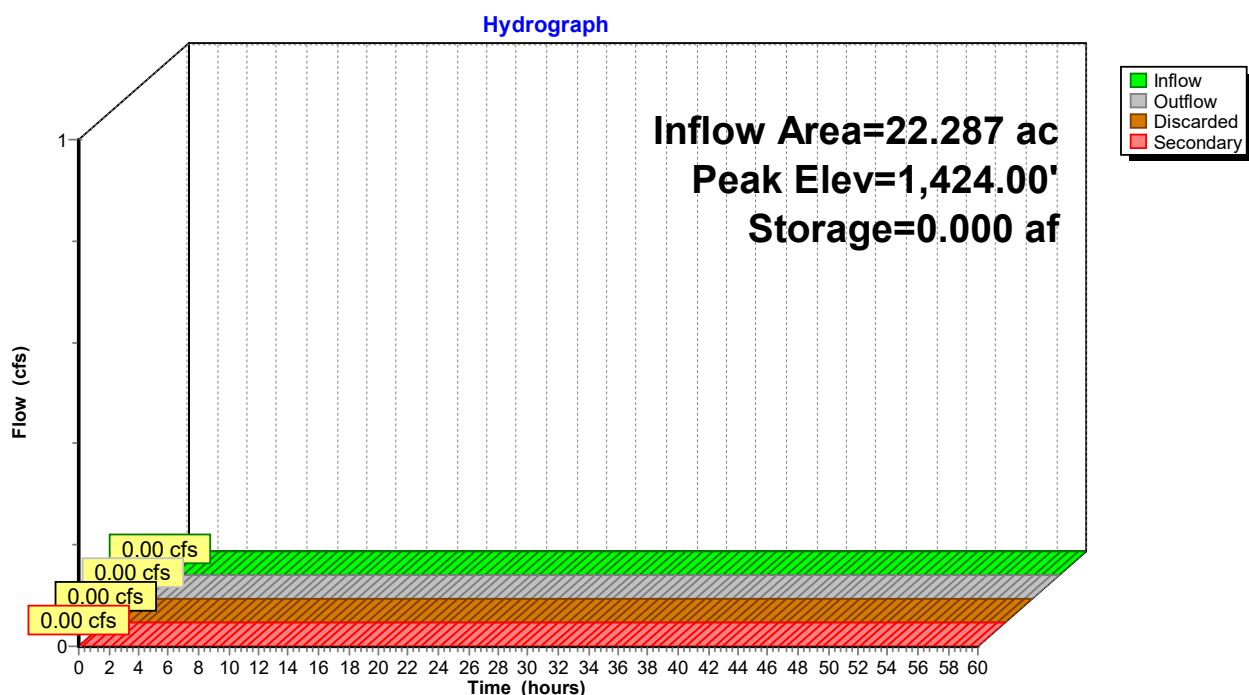
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area |
| #2 | Secondary | 1,426.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳1=Exfiltration (Passes 0.00 cfs of 0.06 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.2aP: South Road Bypass OC



Summary for Pond 1.2bC1: East Road Culvert

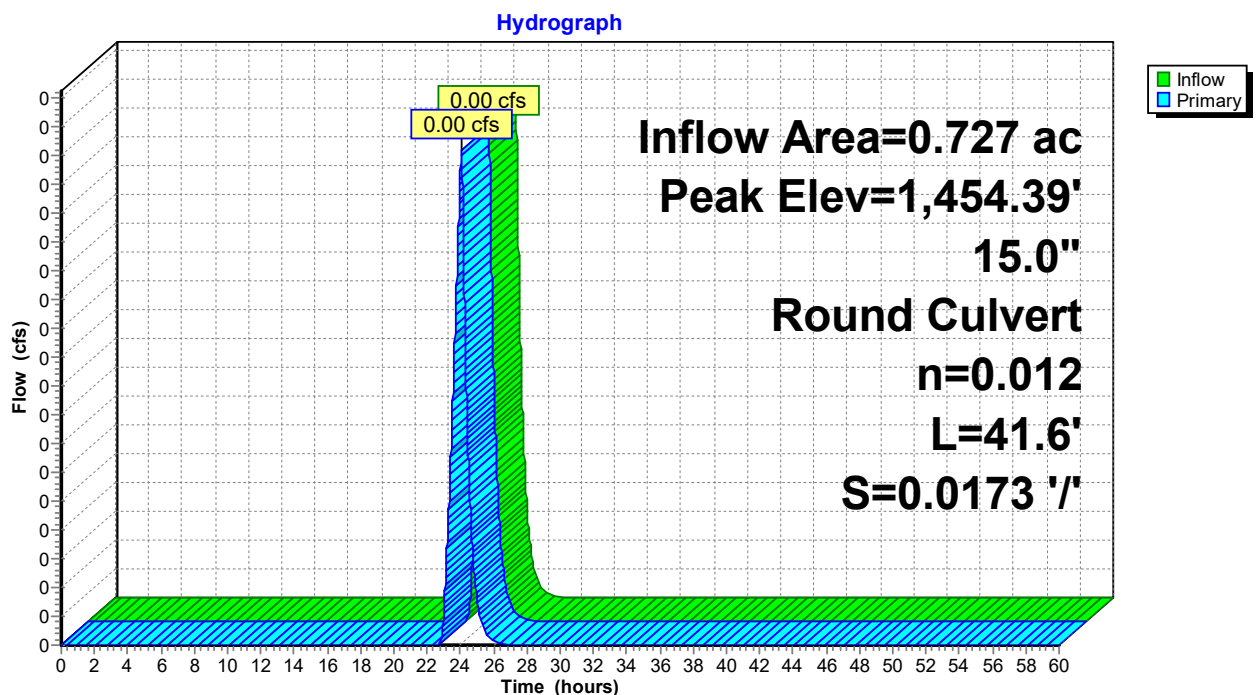
Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 24.06 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.06 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 24.06 hrs, Volume= 0.000 af
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,454.39' @ 24.06 hrs
 Flood Elev= 1,457.45'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,454.39' | 15.0" Round Culvert L= 41.6' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,454.39' / 1,453.67' S= 0.0173 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf |

Primary OutFlow Max=0.00 cfs @ 24.06 hrs HW=1,454.39' (Free Discharge)
 ↑ **1=Culvert** (Barrel Controls 0.00 cfs @ 0.04 fps)

Pond 1.2bC1: East Road Culvert



Summary for Pond 1.2bC2: TS6 Culvert

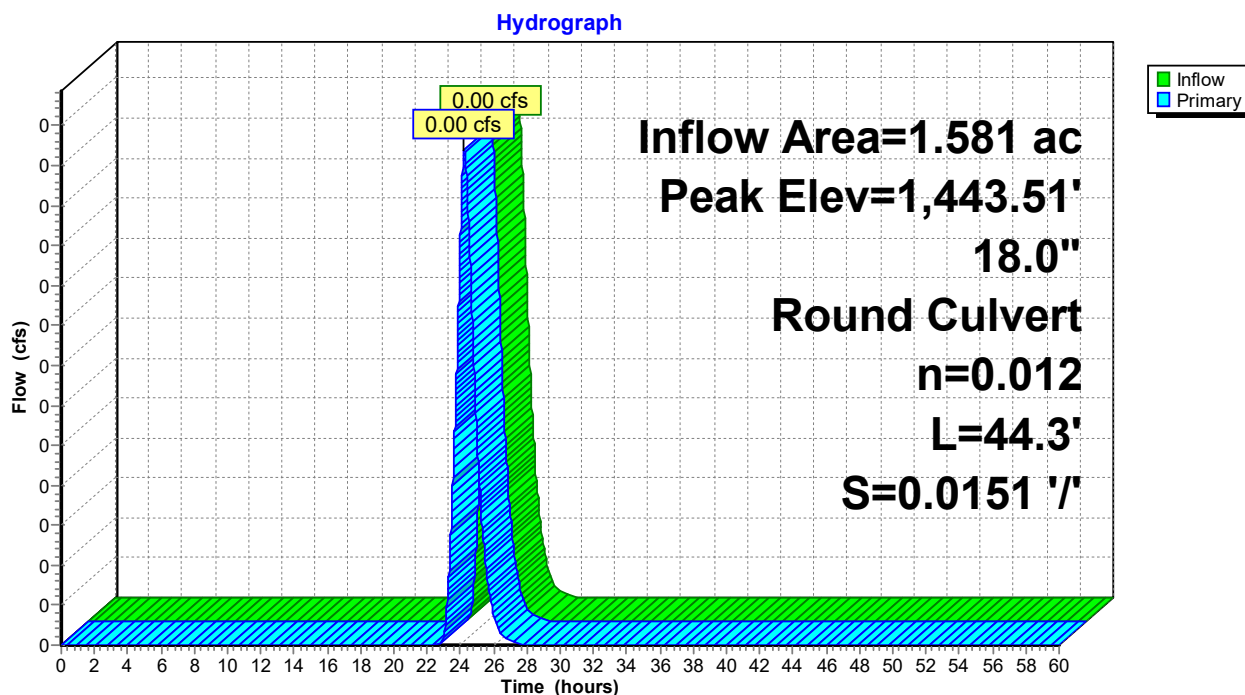
Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 24.23 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.23 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 24.23 hrs, Volume= 0.000 af
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,443.51' @ 24.23 hrs
 Flood Elev= 1,445.09'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,443.51' | 18.0" Round Culvert L= 44.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,443.51' / 1,442.84' S= 0.0151 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=0.00 cfs @ 24.23 hrs HW=1,443.51' (Free Discharge)
 ←**1=Culvert** (Barrel Controls 0.00 cfs @ 0.04 fps)

Pond 1.2bC2: TS6 Culvert



Summary for Pond 1.2bP: South Road Treatment Pond

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 24.05 hrs, Volume= 0.001 af, Atten= 0%, Lag= 1.1 min
 Discarded = 0.00 cfs @ 24.05 hrs, Volume= 0.001 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.00' @ 24.05 hrs Surf.Area= 0.009 ac Storage= 0.000 af

Plug-Flow detention time= 3.0 min calculated for 0.001 af (100% of inflow)
 Center-of-Mass det. time= 3.0 min (1,209.7 - 1,206.7)

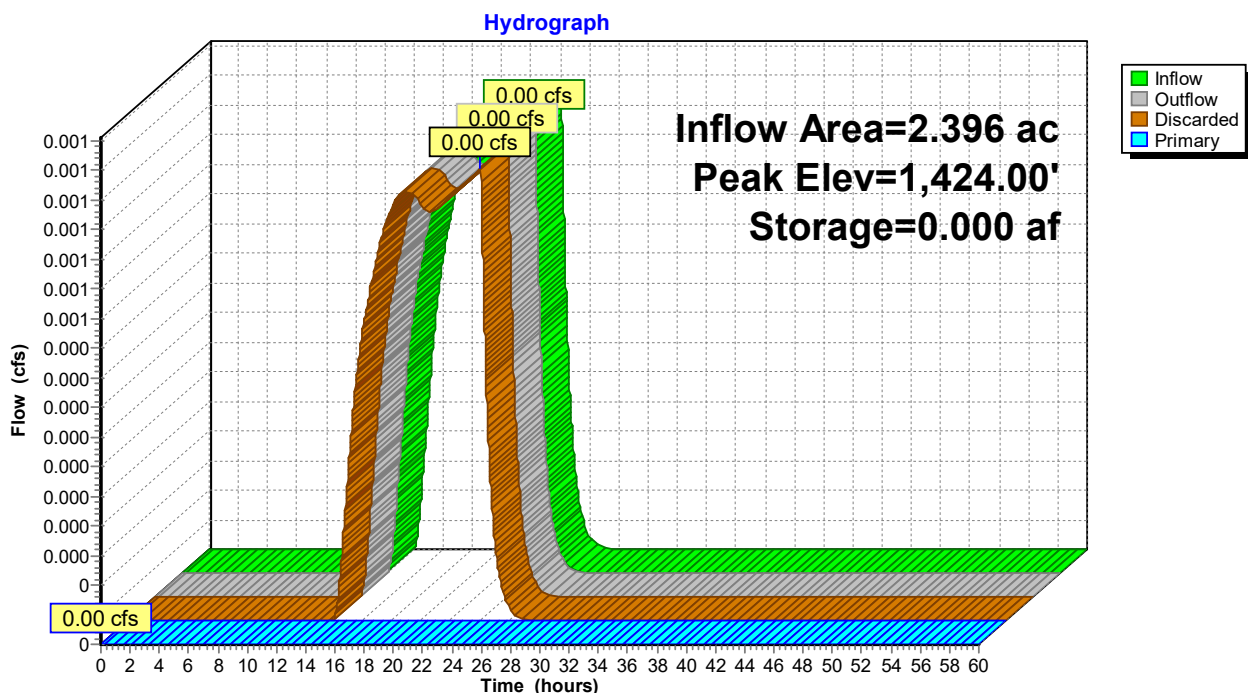
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.149 af | 20.00'W x 20.00'L x 5.00'H Prismaoid Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,426.05' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 24.05 hrs HW=1,424.00' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.2bP: South Road Treatment Pond



Summary for Pond 1.3P: Pond 3 - Access Rd West

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link SP1 : Study Point 1

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,456.00' @ 0.00 hrs Surf.Area= 784 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,456.00' | 8,743 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,456.00 | 784 | 123.0 | 0 | 0 | 784 | |
| 1,458.00 | 1,720 | 194.0 | 2,443 | 2,443 | 2,603 | |
| 1,459.00 | 2,884 | 279.0 | 2,277 | 4,721 | 5,811 | |
| 1,460.00 | 5,280 | 421.0 | 4,022 | 8,743 | 13,729 | |

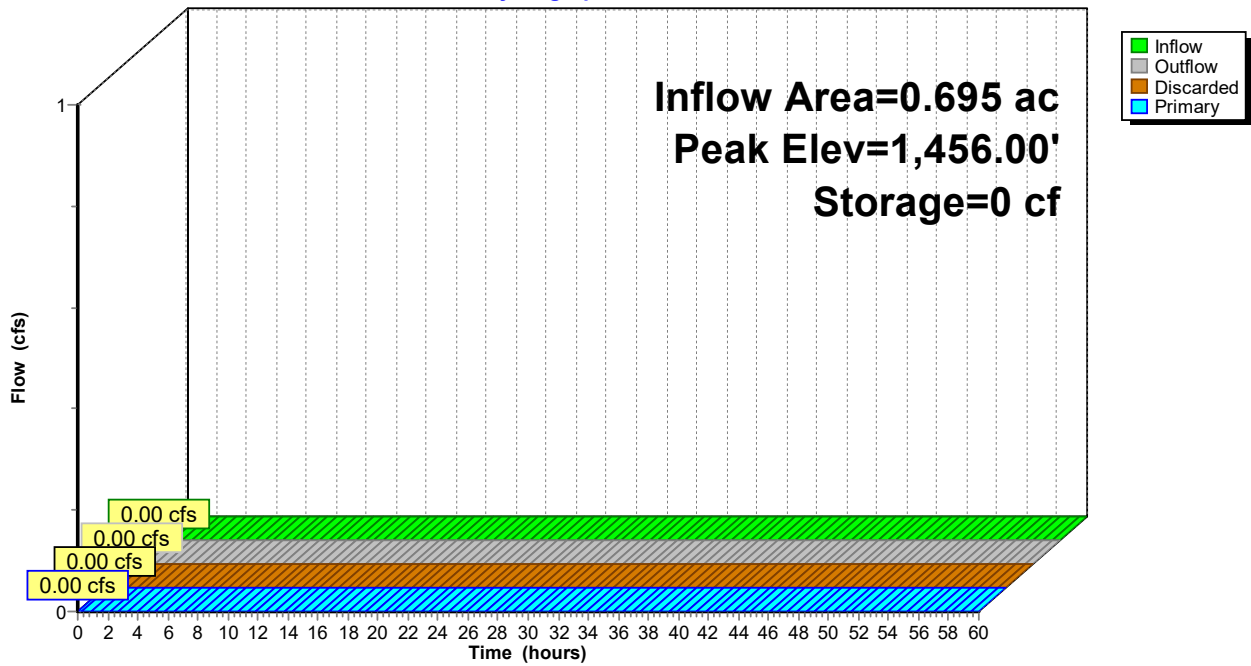
| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | | | | | | | | |
|--------|-----------|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| #1 | Discarded | 1,456.00' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | | | | | | | | |
| #2 | Primary | 1,459.99' | 20.0' long x 4.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | | | | | | | | |
| | | | Head (feet) | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 5.50 | |
| | | | Coef. (English) | 2.38 | 2.54 | 2.69 | 2.68 | 2.67 | 2.67 | 2.65 | 2.66 | 2.66 | 2.66 | 2.68 | 2.72 | 2.73 | 2.76 | 2.79 | 2.88 | 3.07 | 3.32 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,456.00' (Free Discharge)
 ↑1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,456.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.3P: Pond 3 - Access Rd West

Hydrograph



Summary for Pond 4.2bP: Pond 4 - Access Rd East

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 0.01" for WQv event
 Inflow = 0.00 cfs @ 18.02 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 18.09 hrs, Volume= 0.000 af, Atten= 0%, Lag= 3.7 min
 Discarded = 0.00 cfs @ 18.09 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 4.2C : 18" Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,445.50' @ 18.09 hrs Surf.Area= 200 sf Storage= 0 cf

Plug-Flow detention time= 4.1 min calculated for 0.000 af (100% of inflow)
 Center-of-Mass det. time= 4.1 min (1,156.5 - 1,152.4)

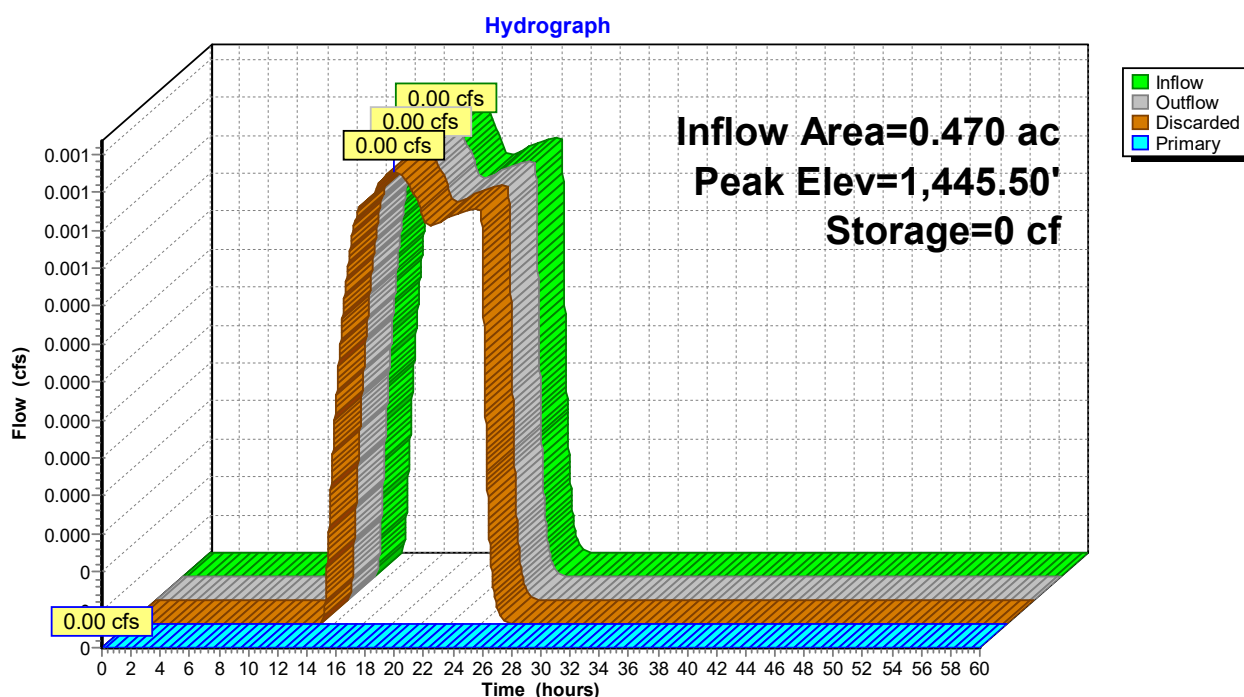
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|--|
| #1 | 1,445.50' | 2,317 cf | 10.00'W x 20.00'L x 3.50'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|---|
| #1 | Discarded | 1,445.50' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,448.25' | 10.0' long x 4.0' breadth Broad-Crested Rectangular Weir |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 |
| | | | 2.50 3.00 3.50 4.00 4.50 5.00 5.50 |
| | | | Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 |
| | | | 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32 |

Discarded OutFlow Max=0.00 cfs @ 18.09 hrs HW=1,445.50' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,445.50' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.2bP: Pond 4 - Access Rd East



Summary for Pond 4.2C: 18" Culvert

Inflow Area = 27.587 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.50' @ 0.00 hrs Storage= 0 cf
 Flood Elev= 1,434.64' Surf.Area= 27,666 sf Storage= 28,656 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

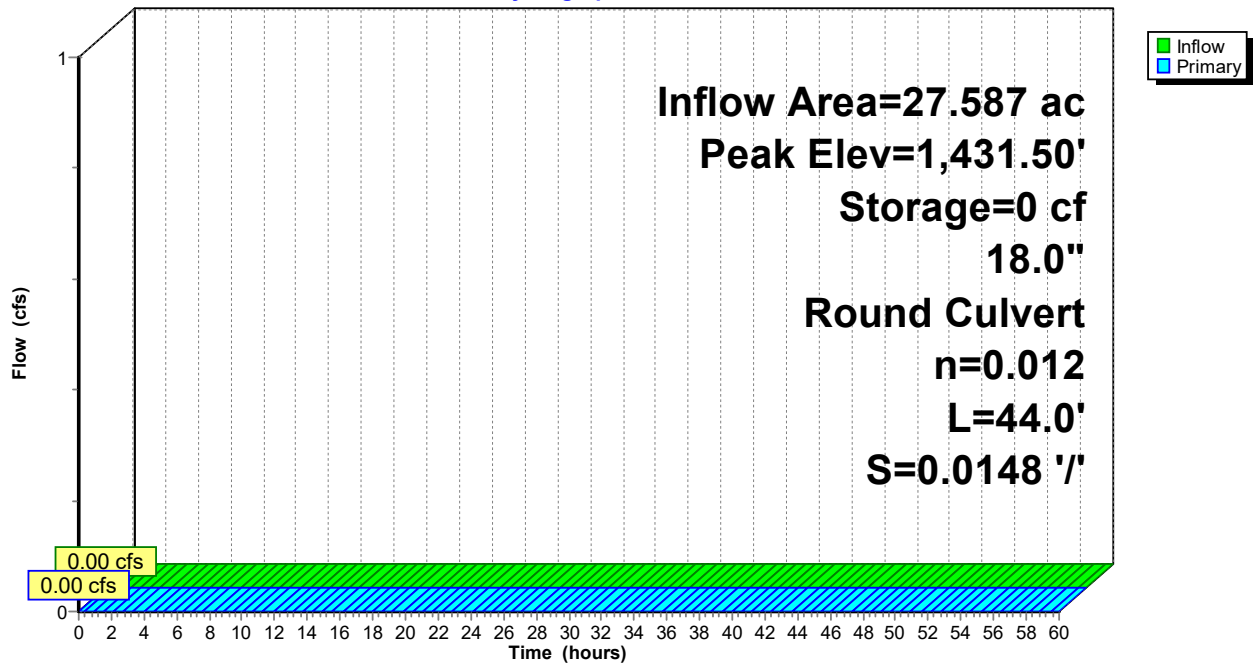
| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,431.50' | 39,033 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,431.50 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,432.00 | 1,190 | 146.0 | 198 | 198 | 1,697 | |
| 1,432.50 | 3,534 | 368.0 | 1,129 | 1,327 | 10,778 | |
| 1,433.00 | 5,795 | 497.0 | 2,309 | 3,637 | 19,660 | |
| 1,433.50 | 10,362 | 837.0 | 3,984 | 7,621 | 55,755 | |
| 1,434.00 | 16,931 | 975.0 | 6,756 | 14,377 | 75,659 | |
| 1,434.60 | 27,412 | 1,352.0 | 13,177 | 27,555 | 145,474 | |
| 1,435.00 | 30,000 | 1,500.0 | 11,479 | 39,033 | 179,068 | |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.83' | 18.0" Round Culvert L= 44.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.83' / 1,431.18' S= 0.0148 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,431.50' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 4.2C: 18" Culvert

Hydrograph



Summary for Pond 4.3C: 24" Culvert

Inflow Area = 25.466 ac, 5.08% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.35' @ 0.00 hrs
 Flood Elev= 1,434.65'

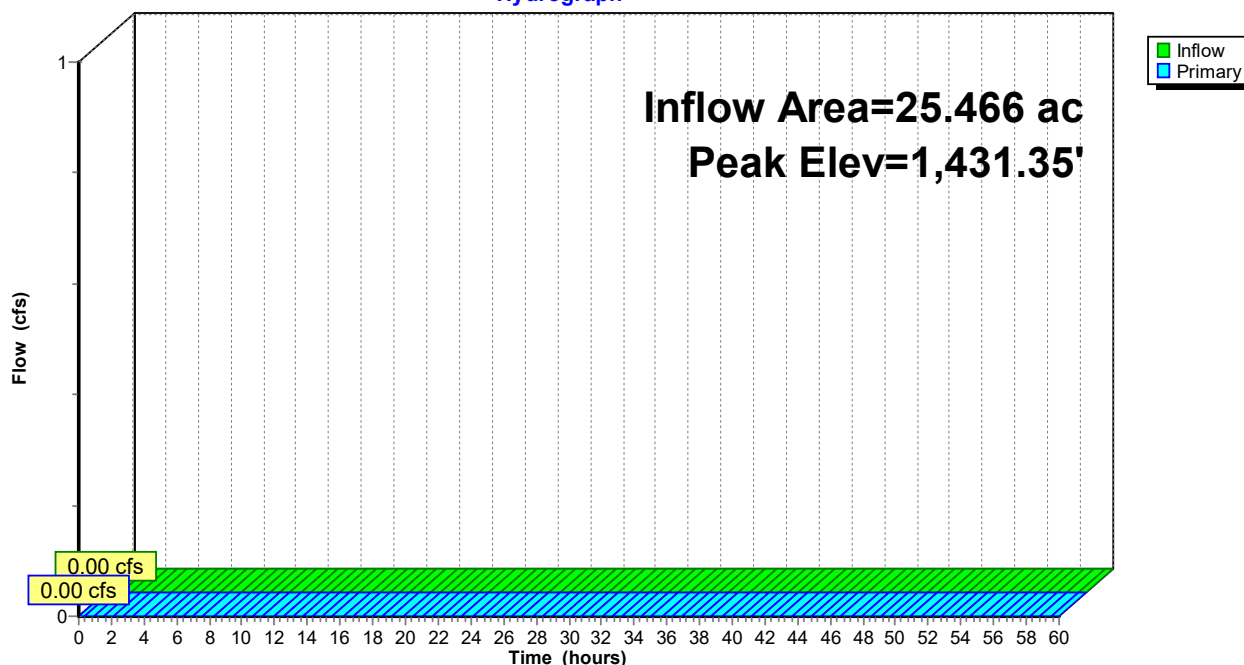
| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.35' | 24.0" Round Culvert L= 55.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.35' / 1,429.87' S= 0.0265 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf |
| #2 | Primary | 1,434.81' | 20.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,431.35' (Free Discharge)

- 1=Culvert (Controls 0.00 cfs)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.3C: 24" Culvert

Hydrograph

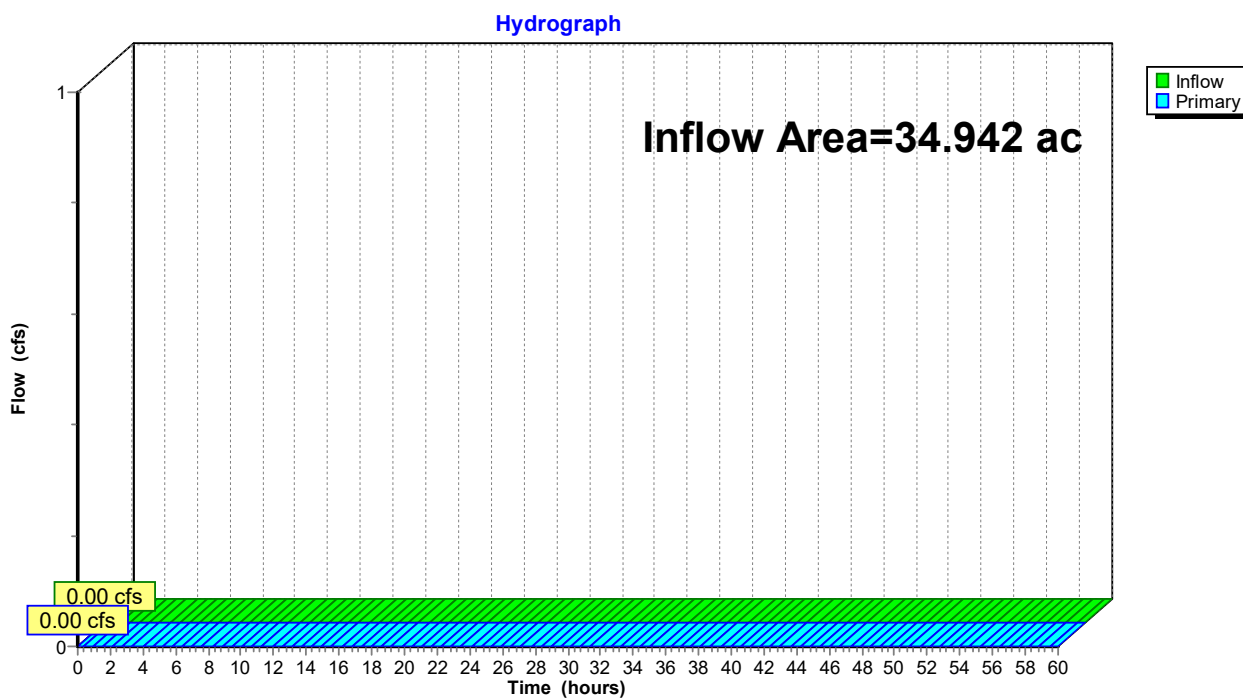


Summary for Link 1.1L:

Inflow Area = 34.942 ac, 0.04% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.1L:

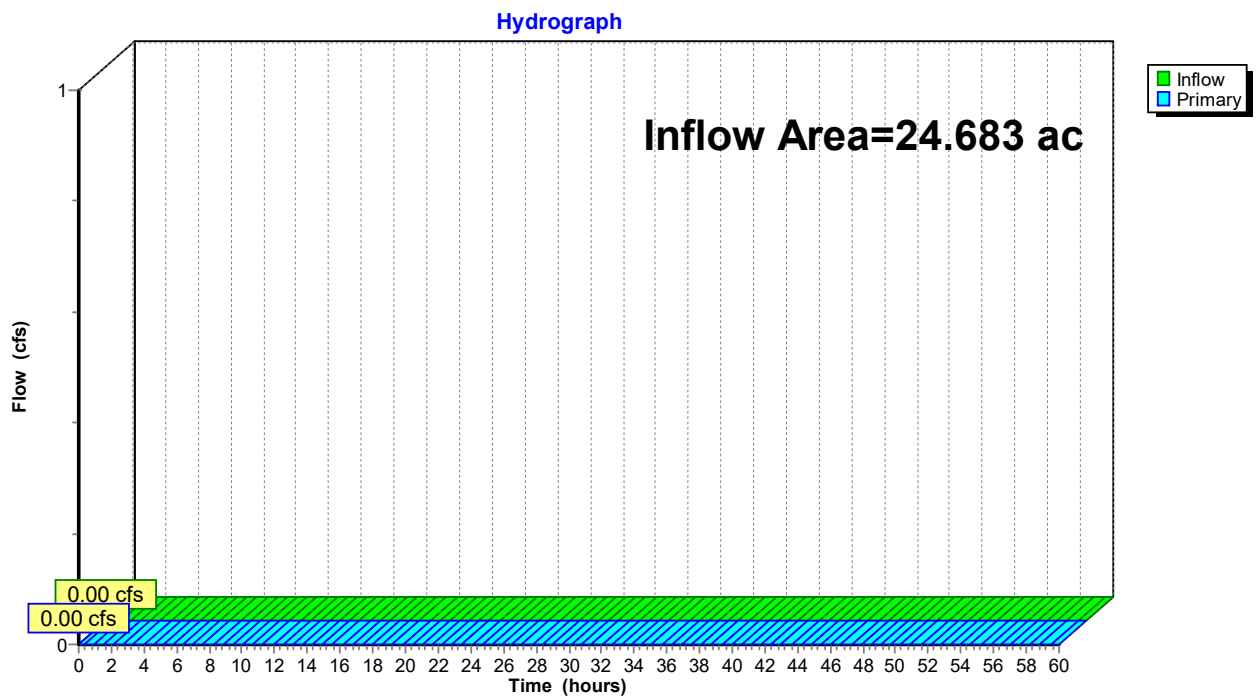


Summary for Link 1.2L:

Inflow Area = 24.683 ac, 0.06% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.2L:

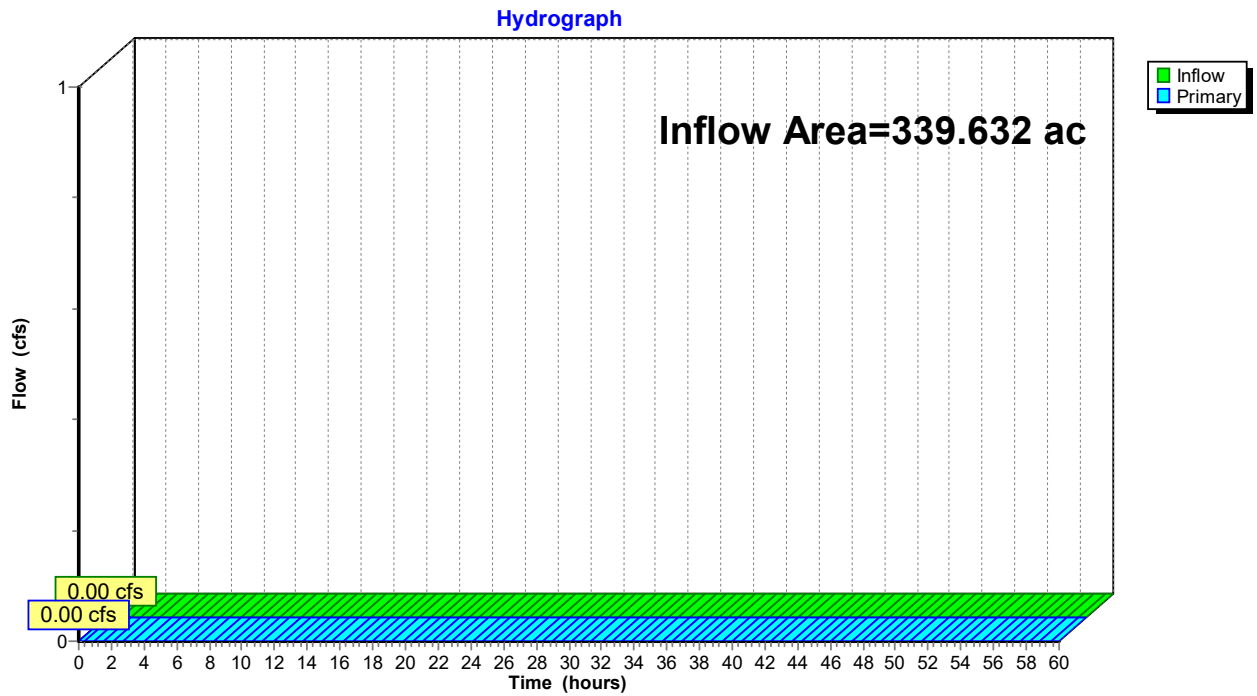


Summary for Link SP1: Study Point 1

Inflow Area = 339.632 ac, 0.01% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP1: Study Point 1

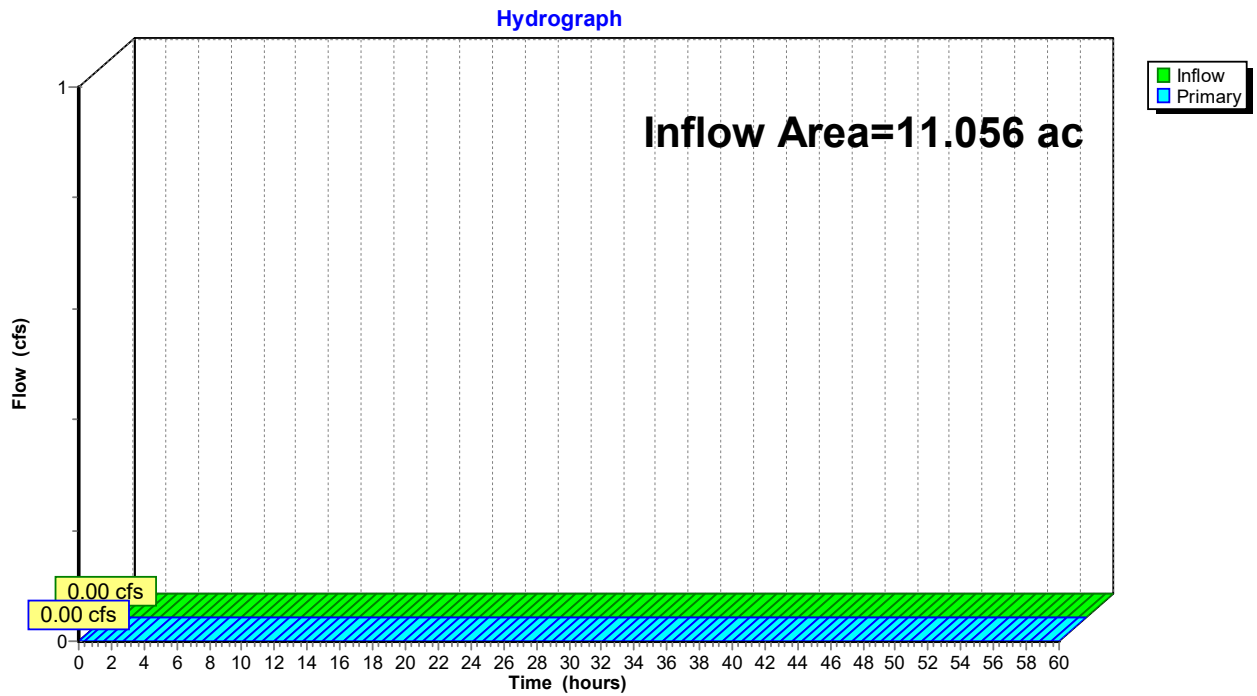


Summary for Link SP2: Study Point 2

Inflow Area = 11.056 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP2: Study Point 2

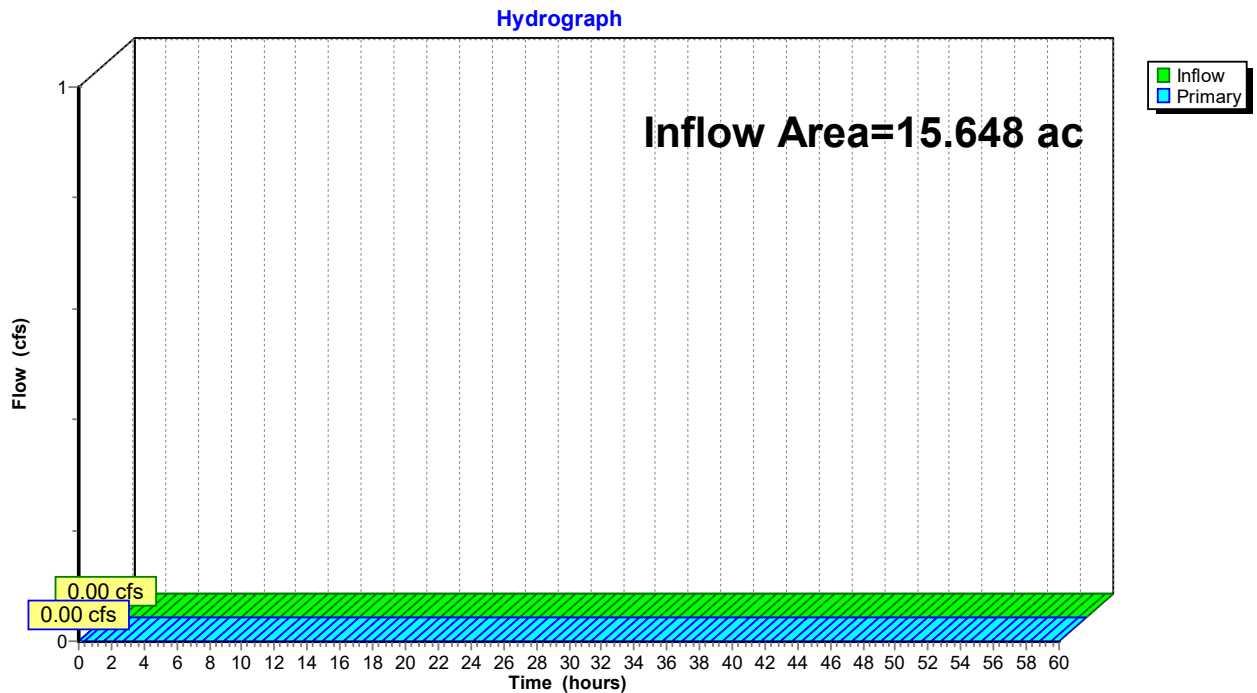


Summary for Link SP3: Study Point 3

Inflow Area = 15.648 ac, 0.56% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP3: Study Point 3

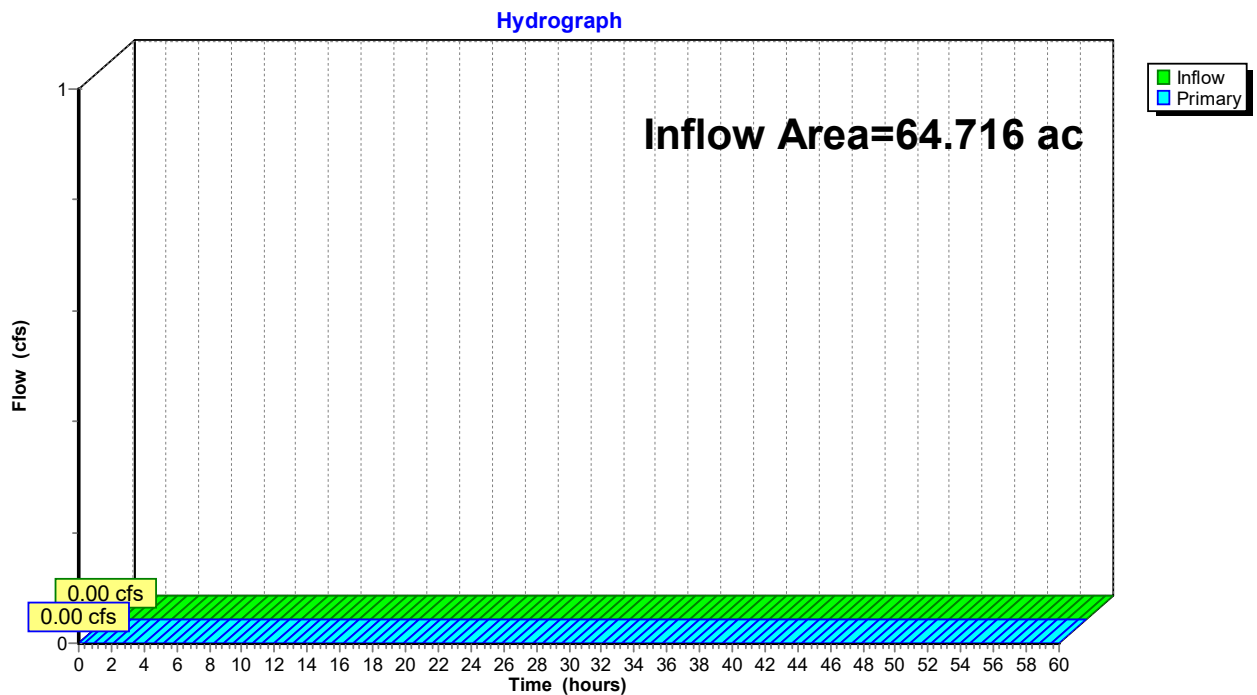


Summary for Link SP4: Study Point 4

Inflow Area = 64.716 ac, 2.50% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP4: Study Point 4

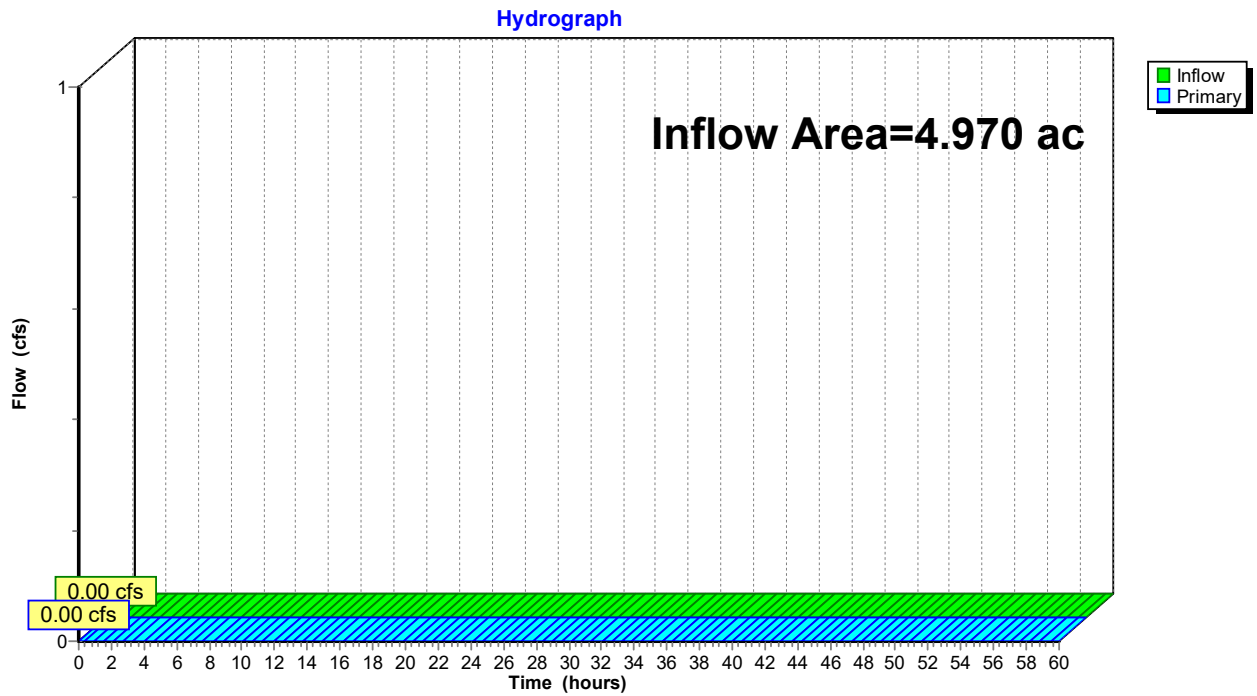


Summary for Link SP5: Study Point 5

Inflow Area = 4.970 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP5: Study Point 5

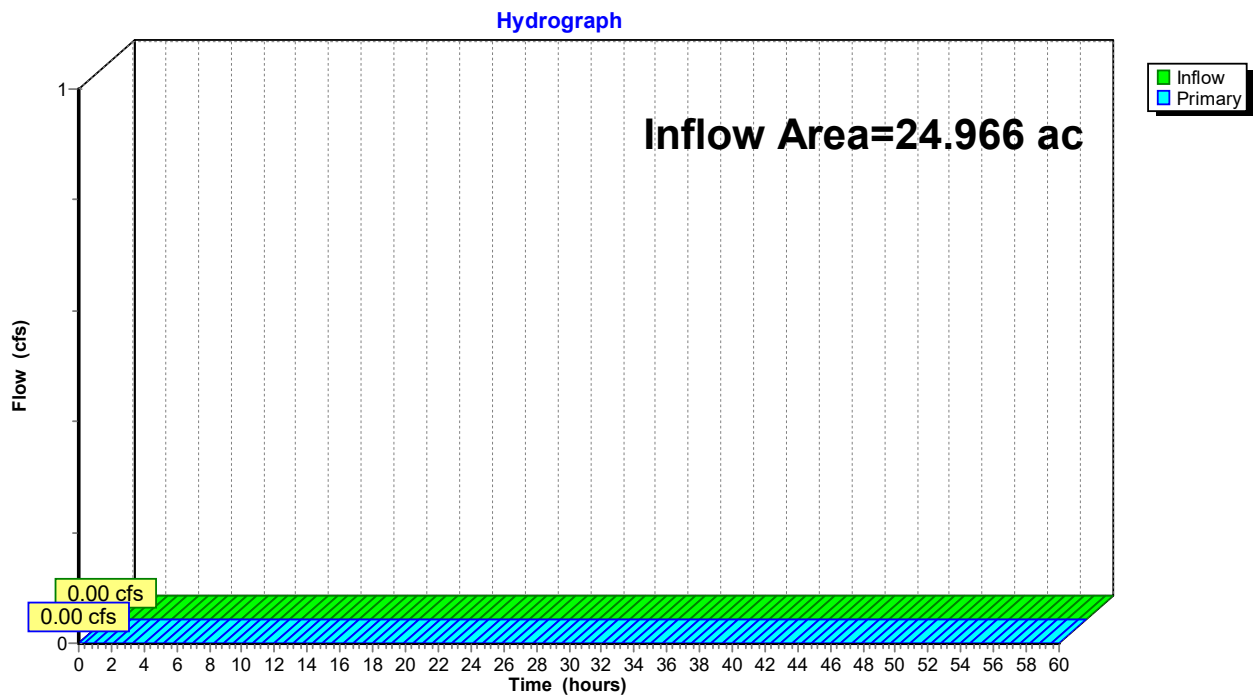


Summary for Link SP6: Study Point 6

Inflow Area = 24.966 ac, 5.81% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP6: Study Point 6



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

| | |
|---|--|
| Subcatchment 1.1aS1: North Array East | Runoff Area=5.874 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=788' Tc=18.8 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS2: North Array East | Runoff Area=8.467 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=931' Tc=21.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS3: North Array West | Runoff Area=5.792 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,031' Tc=19.7 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS4: North Array West | Runoff Area=12.825 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,562' Tc=26.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1bS1: North Road - East | Runoff Area=1.333 ac 0.53% Impervious Runoff Depth=0.26" Tc=6.0 min CN=71 Runoff=0.47 cfs 0.029 af |
| Subcatchment 1.1bS2: North Road - West | Runoff Area=0.651 ac 1.08% Impervious Runoff Depth=0.19" Tc=6.0 min CN=68 Runoff=0.13 cfs 0.010 af |
| Subcatchment 1.2aS1: Middle Array East | Runoff Area=7.876 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=865' Tc=19.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS2: Middle Array Center | Runoff Area=8.911 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=825' Tc=18.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS3: Middle Array West | Runoff Area=5.500 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=882' Tc=18.5 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2bS1: East Road - West | Runoff Area=0.727 ac 0.00% Impervious Runoff Depth=0.17" Tc=6.0 min CN=67 Runoff=0.12 cfs 0.010 af |
| Subcatchment 1.2bS2: South Road | Runoff Area=0.854 ac 0.47% Impervious Runoff Depth=0.04" Flow Length=308' Tc=13.7 min CN=58 Runoff=0.00 cfs 0.003 af |
| Subcatchment 1.2bS3: South Road | Runoff Area=0.815 ac 1.35% Impervious Runoff Depth=0.26" Tc=6.0 min CN=71 Runoff=0.29 cfs 0.018 af |
| Subcatchment 1.3aS1: Surface Discharge | Runoff Area=279.312 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=6,771' Tc=201.7 min CN=39 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.3bS: Access Rd to Pond 3 | Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.00" Tc=6.0 min CN=51 Runoff=0.00 cfs 0.000 af |
| Subcatchment 2S: | Runoff Area=11.056 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=2,342' Tc=36.0 min CN=39 Runoff=0.00 cfs 0.000 af |
| Subcatchment 3S: | Runoff Area=15.648 ac 0.56% Impervious Runoff Depth=0.00" Flow Length=886' Tc=12.7 min CN=40 Runoff=0.00 cfs 0.000 af |
| Subcatchment 4.1S: | Runoff Area=11.663 ac 2.80% Impervious Runoff Depth=0.00" Flow Length=845' Tc=15.8 min CN=45 Runoff=0.00 cfs 0.000 af |

| | |
|--|--|
| Subcatchment 4.2aS: | Runoff Area=27.117 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,640' Tc=38.9 min CN=51 Runoff=0.01 cfs 0.001 af |
| Subcatchment 4.2bS: | Runoff Area=0.470 ac 0.00% Impervious Runoff Depth=0.28" Tc=6.0 min CN=72 Runoff=0.19 cfs 0.011 af |
| Subcatchment 4.3S: | Runoff Area=25.466 ac 5.08% Impervious Runoff Depth=0.03" Flow Length=2,280' Tc=36.5 min CN=57 Runoff=0.07 cfs 0.059 af |
| Subcatchment 5S: | Runoff Area=4.970 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,180' Tc=17.5 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 6S: | Runoff Area=24.966 ac 5.81% Impervious Runoff Depth=0.00" Flow Length=1,961' Tc=60.1 min CN=43 Runoff=0.00 cfs 0.000 af |
| Reach 1.1aR1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=580.0' S=0.0108 '/' Capacity=56.37 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR2: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=557.4' S=0.0284 '/' Capacity=91.27 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR3: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=557.5' S=0.0352 '/' Capacity=101.68 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR4: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=580.5' S=0.0362 '/' Capacity=103.04 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1bR1: North Road Conveyance | Avg. Flow Depth=0.06' Max Vel=0.94 fps Inflow=0.47 cfs 0.029 af n=0.035 L=1,733.0' S=0.0240 '/' Capacity=111.65 cfs Outflow=0.12 cfs 0.029 af |
| Reach 1.1bR2: North Road Conveyance | Avg. Flow Depth=0.06' Max Vel=1.18 fps Inflow=0.20 cfs 0.039 af n=0.035 L=593.3' S=0.0380 '/' Capacity=140.36 cfs Outflow=0.15 cfs 0.039 af |
| Reach 1.2aR1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=524.2' S=0.0188 '/' Capacity=74.30 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2aR2: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=556.0' S=0.0204 '/' Capacity=77.47 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2aR3: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=249.0' S=0.0153 '/' Capacity=81.84 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2bR1: East Road Conveyance | Avg. Flow Depth=0.03' Max Vel=0.80 fps Inflow=0.12 cfs 0.010 af n=0.035 L=731.4' S=0.0456 '/' Capacity=79.22 cfs Outflow=0.04 cfs 0.010 af |
| Reach 1.2bR2: South Road Conveyance | Avg. Flow Depth=0.03' Max Vel=0.53 fps Inflow=0.04 cfs 0.013 af n=0.035 L=604.5' S=0.0177 '/' Capacity=95.76 cfs Outflow=0.03 cfs 0.013 af |
| Reach 1.2bR3: South Road Conveyance | Avg. Flow Depth=0.06' Max Vel=0.89 fps Inflow=0.29 cfs 0.030 af n=0.035 L=755.9' S=0.0187 '/' Capacity=98.64 cfs Outflow=0.13 cfs 0.030 af |
| Reach 4.1R1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=570.0' S=0.0303 '/' Capacity=54.88 cfs Outflow=0.00 cfs 0.000 af |
| Reach 4.1R2: Ex Stream | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=740.0' S=0.0099 '/' Capacity=588.81 cfs Outflow=0.00 cfs 0.000 af |

| | | | | |
|---|------------------------------|---------------------|------------------|--------------------|
| Reach 4.2bR: Conveyance Swale | Avg. Flow Depth=0.05' | Max Vel=1.13 fps | Inflow=0.19 cfs | 0.011 af |
| | n=0.035 | L=565.0' | S=0.0432 '/ | Capacity=77.09 cfs |
| | | | Outflow=0.12 cfs | 0.011 af |
| Pond 1.1aC1: TS1 Culvert | | Peak Elev=1,487.56' | Inflow=0.00 cfs | 0.000 af |
| | 36.3" x 22.5", R=18.8"/51.0" | Pipe Arch Culvert | n=0.012 | L=47.0' |
| | | | S=0.0162 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aC2: TS2 Culvert | | Peak Elev=1,470.80' | Inflow=0.00 cfs | 0.000 af |
| | 48.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0262 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aC3: TS3 Culvert | | Peak Elev=1,449.55' | Inflow=0.00 cfs | 0.000 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.2' |
| | | | S=0.0405 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aP: North Road Bypass OC | | Peak Elev=1,426.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1bC1: TS4 Culvert | | Peak Elev=1,449.65' | Inflow=0.12 cfs | 0.029 af |
| | 18.0" | Round Culvert | n=0.012 | L=45.9' |
| | | | S=0.0486 '/ | Outflow=0.12 cfs |
| | | | | 0.029 af |
| Pond 1.1bP1: Dry Swale | | Peak Elev=1,425.78' | Storage=78 cf | Inflow=0.15 cfs |
| | | Discarded=0.00 cfs | 0.004 af | Primary=0.15 cfs |
| | | | 0.035 af | Outflow=0.15 cfs |
| | | | | 0.039 af |
| Pond 1.1bP2: North Road Detention Pond | | Peak Elev=1,423.08' | Storage=0.024 af | Inflow=0.15 cfs |
| | | Discarded=0.01 cfs | 0.034 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.01 cfs |
| | | | | 0.034 af |
| Pond 1.2aC1: TS 7 Culvert | | Peak Elev=1,444.22' | Inflow=0.00 cfs | 0.000 af |
| | 36.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0215 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aC2: TS8 Culvert | | Peak Elev=1,431.65' | Inflow=0.00 cfs | 0.000 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.5' |
| | | | S=0.0114 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aP: South Road Bypass OC | | Peak Elev=1,424.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Secondary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2bC1: East Road Culvert | | Peak Elev=1,454.48' | Inflow=0.04 cfs | 0.010 af |
| | 15.0" | Round Culvert | n=0.012 | L=41.6' |
| | | | S=0.0173 '/ | Outflow=0.04 cfs |
| | | | | 0.010 af |
| Pond 1.2bC2: TS6 Culvert | | Peak Elev=1,443.58' | Inflow=0.03 cfs | 0.013 af |
| | 18.0" | Round Culvert | n=0.012 | L=44.3' |
| | | | S=0.0151 '/ | Outflow=0.03 cfs |
| | | | | 0.013 af |
| Pond 1.2bP: South Road Treatment Pond | | Peak Elev=1,424.05' | Storage=0.000 af | Inflow=0.13 cfs |
| | | Discarded=0.11 cfs | 0.030 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.11 cfs |
| | | | | 0.030 af |
| Pond 1.3P: Pond 3 - Access Rd West | | Peak Elev=1,456.00' | Storage=0 cf | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 4.2bP: Pond 4 - Access Rd East | | Peak Elev=1,445.81' | Storage=70 cf | Inflow=0.12 cfs |
| | | Discarded=0.04 cfs | 0.011 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.04 cfs |
| | | | | 0.011 af |
| Pond 4.2C: 18" Culvert | | Peak Elev=1,431.78' | Storage=35 cf | Inflow=0.01 cfs |
| | 18.0" | Round Culvert | n=0.012 | L=44.0' |
| | | | S=0.0148 '/ | Outflow=0.00 cfs |
| | | | | 0.001 af |
| Pond 4.3C: 24" Culvert | | Peak Elev=1,431.46' | Inflow=0.07 cfs | 0.059 af |
| | | | | Outflow=0.07 cfs |
| | | | | 0.059 af |

| | |
|--------------------------------|---|
| Link 1.1L: | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link 1.2L: | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP1: Study Point 1 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP2: Study Point 2 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP3: Study Point 3 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP4: Study Point 4 | Inflow=0.07 cfs 0.059 af Primary=0.07 cfs 0.059 af |
| Link SP5: Study Point 5 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP6: Study Point 6 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |

Total Runoff Area = 460.988 ac Runoff Volume = 0.140 af Average Runoff Depth = 0.00"
99.31% Pervious = 457.801 ac 0.69% Impervious = 3.187 ac

Summary for Subcatchment 1.1aS1: North Array East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR1 : Bypass Swale

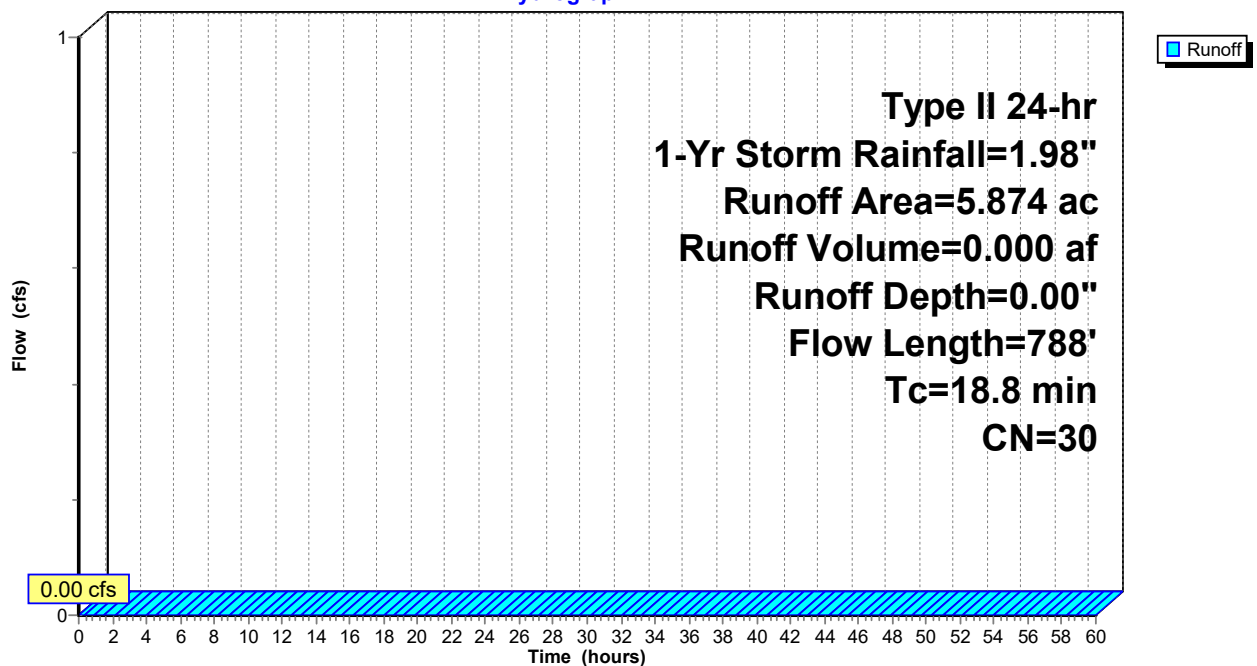
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.874 | 30 | Meadow, non-grazed, HSG A |
| 5.874 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.7 | 100 | 0.0499 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.1 | 688 | 0.0526 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.8 | 788 | Total | | | |

Subcatchment 1.1aS1: North Array East

Hydrograph



Summary for Subcatchment 1.1aS2: North Array East Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR2 : Bypass Swale

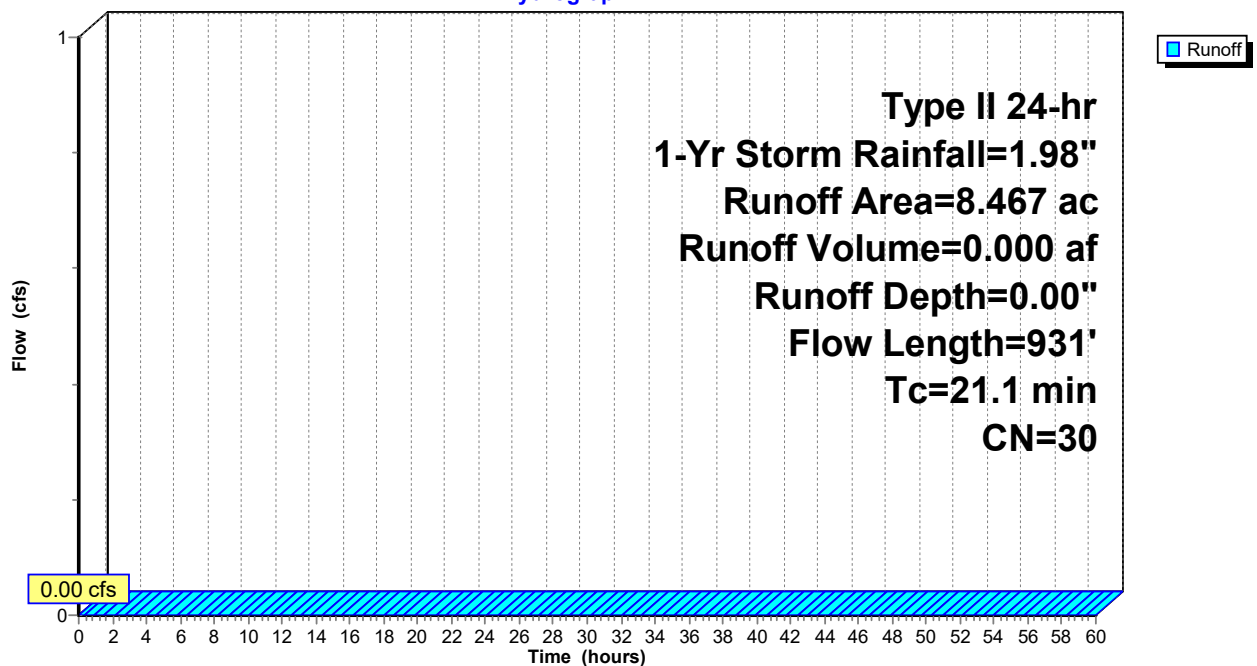
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.467 | 30 | Meadow, non-grazed, HSG A |
| 8.467 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.9 | 100 | 0.0476 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.2 | 831 | 0.0463 | 1.51 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 21.1 | 931 | Total | | | |

Subcatchment 1.1aS2: North Array East Center

Hydrograph



Summary for Subcatchment 1.1aS3: North Array West Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR3 : Bypass Swale

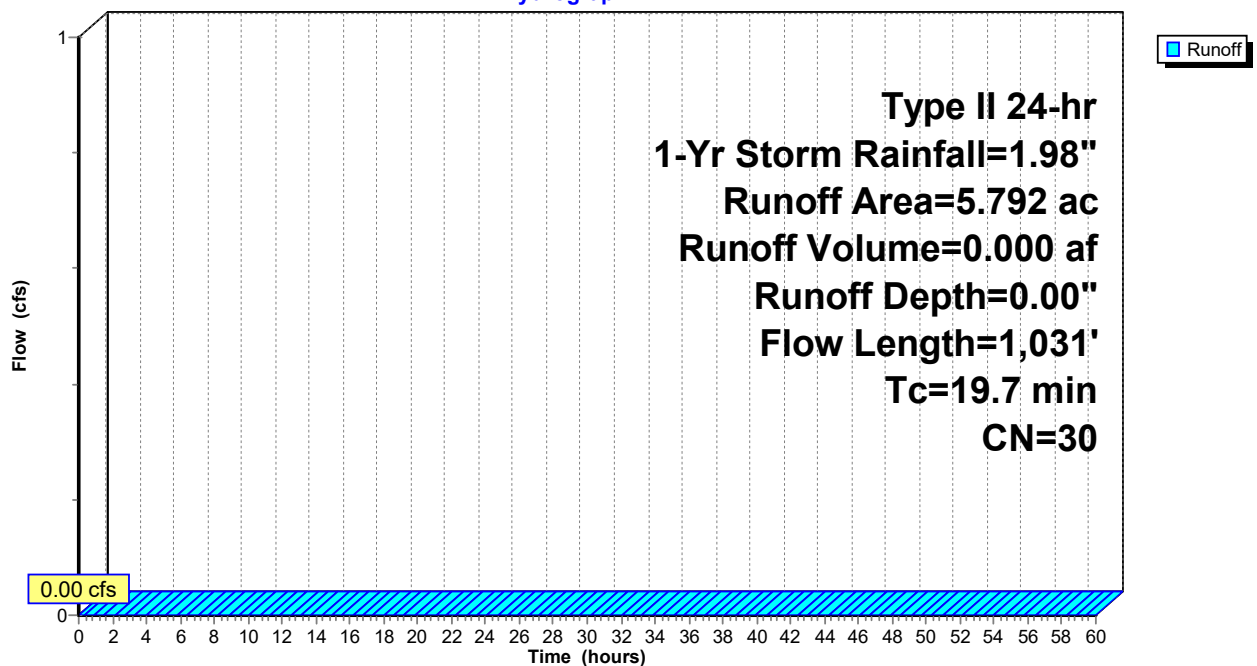
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.792 | 30 | Meadow, non-grazed, HSG A |
| 5.792 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0618 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.0 | 931 | 0.0601 | 1.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.7 | 1,031 | Total | | | |

Subcatchment 1.1aS3: North Array West Center

Hydrograph



Summary for Subcatchment 1.1aS4: North Array West

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR4 : Bypass Swale

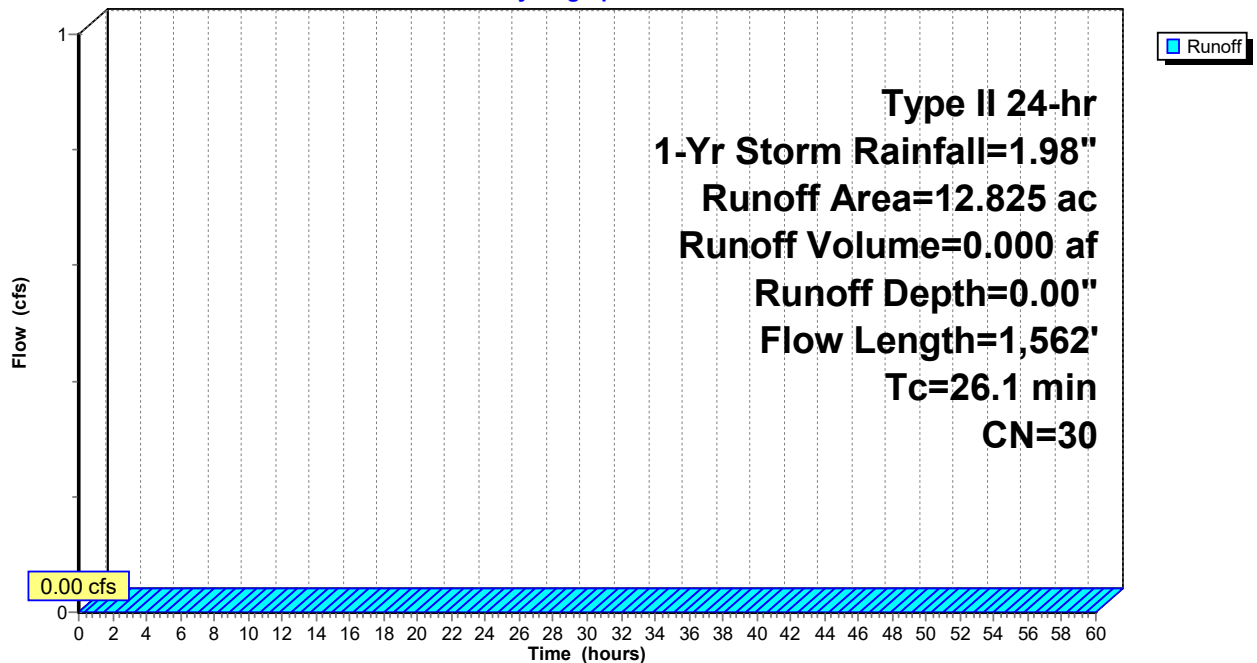
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 12.825 | 30 | Meadow, non-grazed, HSG A |
| 12.825 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 11.1 | 100 | 0.0560 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 15.0 | 1,462 | 0.0540 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 26.1 | 1,562 | Total | | | |

Subcatchment 1.1aS4: North Array West

Hydrograph



Summary for Subcatchment 1.1bS1: North Road - East

Runoff = 0.47 cfs @ 12.00 hrs, Volume= 0.029 af, Depth= 0.26"
 Routed to Reach 1.1bR1 : North Road Conveyance Swale

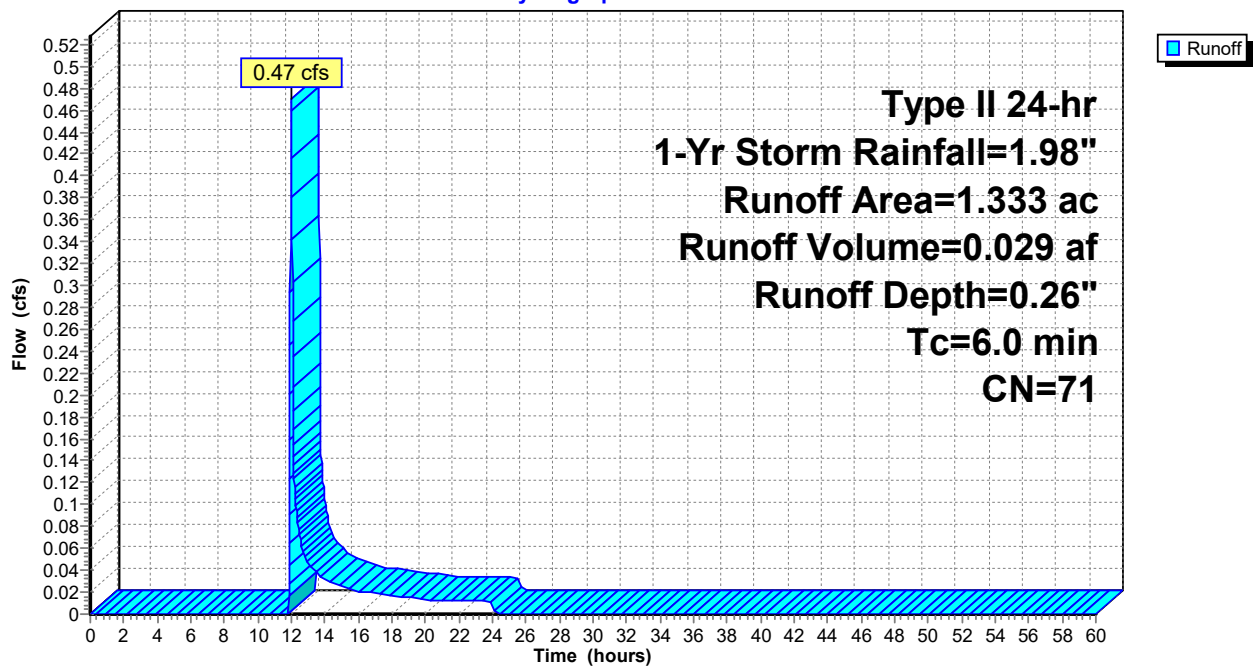
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.507 | 30 | Meadow, non-grazed, HSG A |
| 0.819 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 1.333 | 71 | Weighted Average |
| 1.326 | | 99.47% Pervious Area |
| 0.007 | | 0.53% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS1: North Road - East

Hydrograph



Summary for Subcatchment 1.1bS2: North Road - West

Runoff = 0.13 cfs @ 12.01 hrs, Volume= 0.010 af, Depth= 0.19"
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

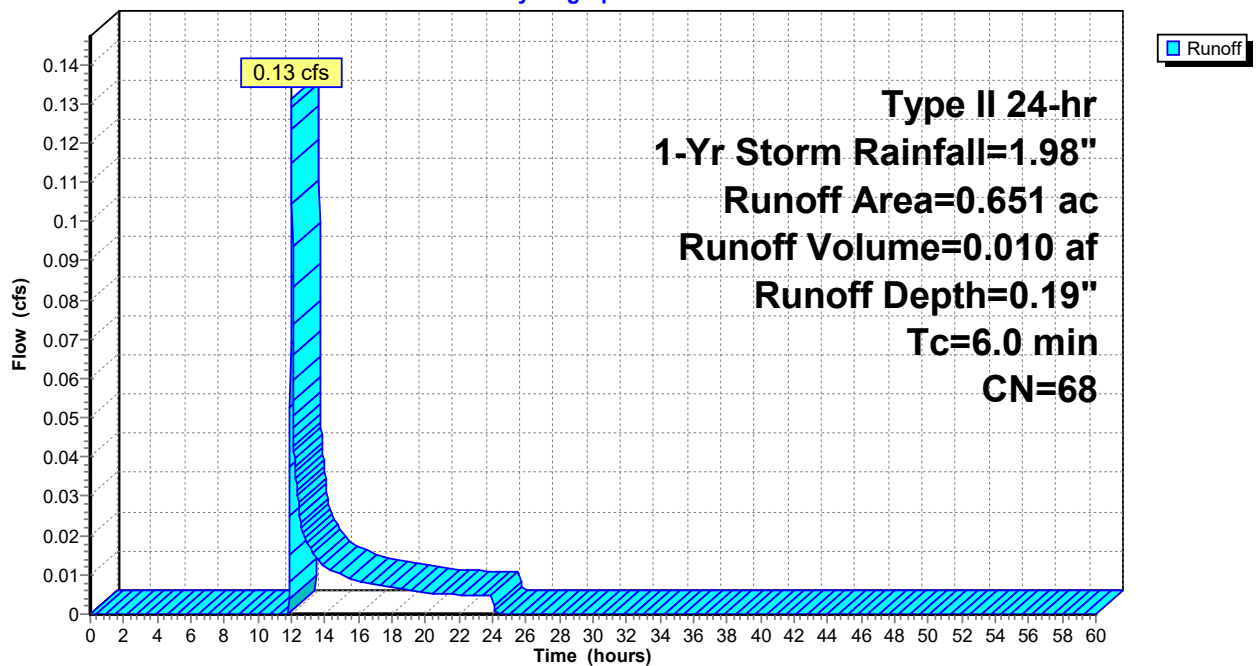
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.279 | 30 | Meadow, non-grazed, HSG A |
| 0.365 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 0.651 | 68 | Weighted Average |
| 0.644 | | 98.92% Pervious Area |
| 0.007 | | 1.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS2: North Road - West

Hydrograph



Summary for Subcatchment 1.2aS1: Middle Array East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR1 : Bypass Swale

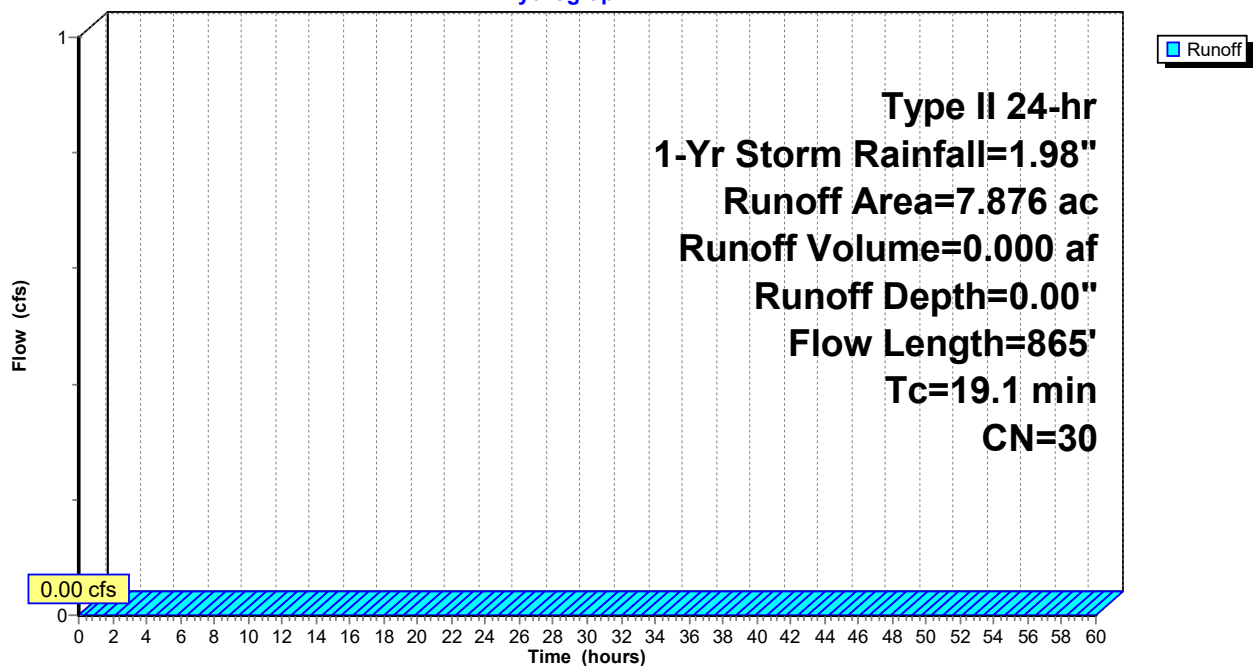
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 7.876 | 30 | Meadow, non-grazed, HSG A |
| 7.876 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.6 | 100 | 0.0628 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.5 | 765 | 0.0459 | 1.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.1 | 865 | Total | | | |

Subcatchment 1.2aS1: Middle Array East

Hydrograph



Summary for Subcatchment 1.2aS2: Middle Array Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR2 : Bypass Swale

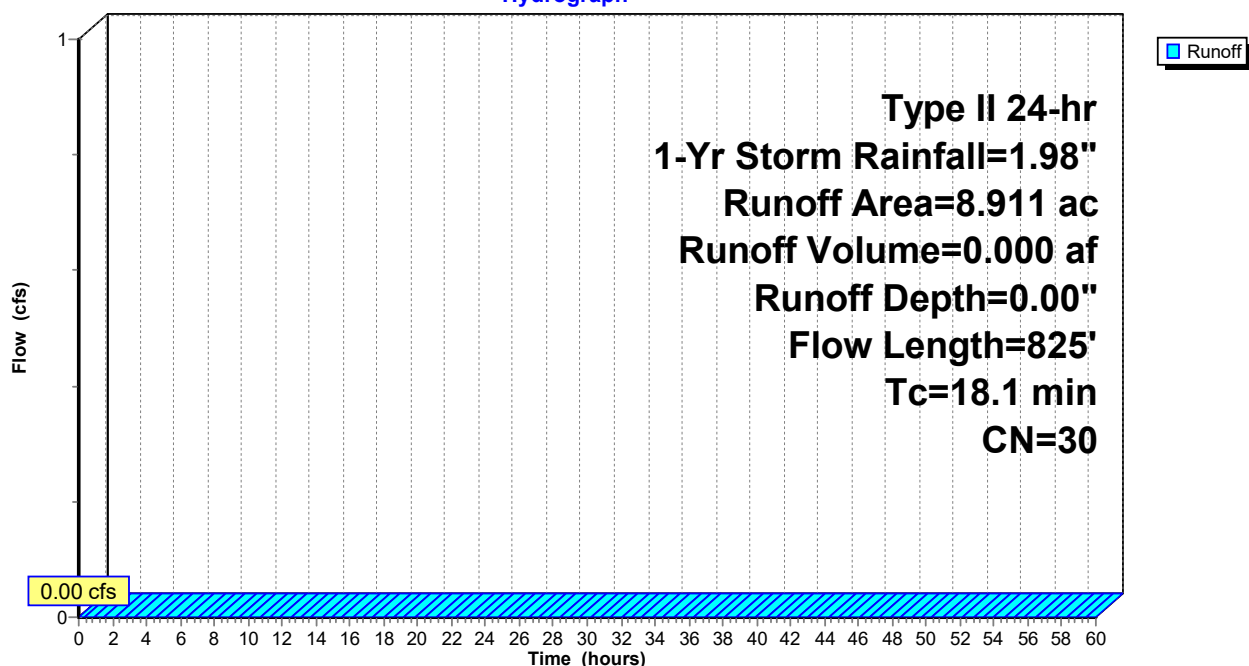
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.911 | 30 | Meadow, non-grazed, HSG A |
| 8.911 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.8 | 100 | 0.0607 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.3 | 725 | 0.0559 | 1.66 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 825 | Total | | | |

Subcatchment 1.2aS2: Middle Array Center

Hydrograph



Summary for Subcatchment 1.2aS3: Middle Array West

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR3 : Bypass Swale

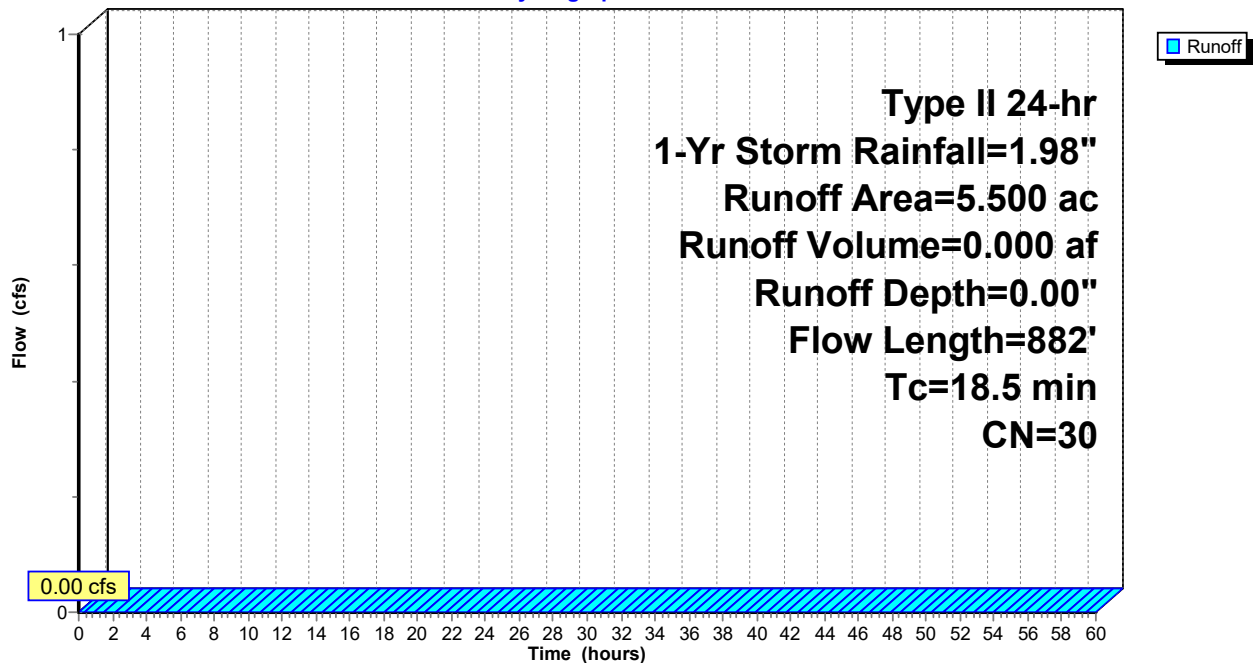
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.500 | 30 | Meadow, non-grazed, HSG A |
| 5.500 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.4 | 100 | 0.0660 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.1 | 782 | 0.0529 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.5 | 882 | Total | | | |

Subcatchment 1.2aS3: Middle Array West

Hydrograph



Summary for Subcatchment 1.2bS1: East Road - West Ditch

Runoff = 0.12 cfs @ 12.01 hrs, Volume= 0.010 af, Depth= 0.17"
 Routed to Reach 1.2bR1 : East Road Conveyance Swale

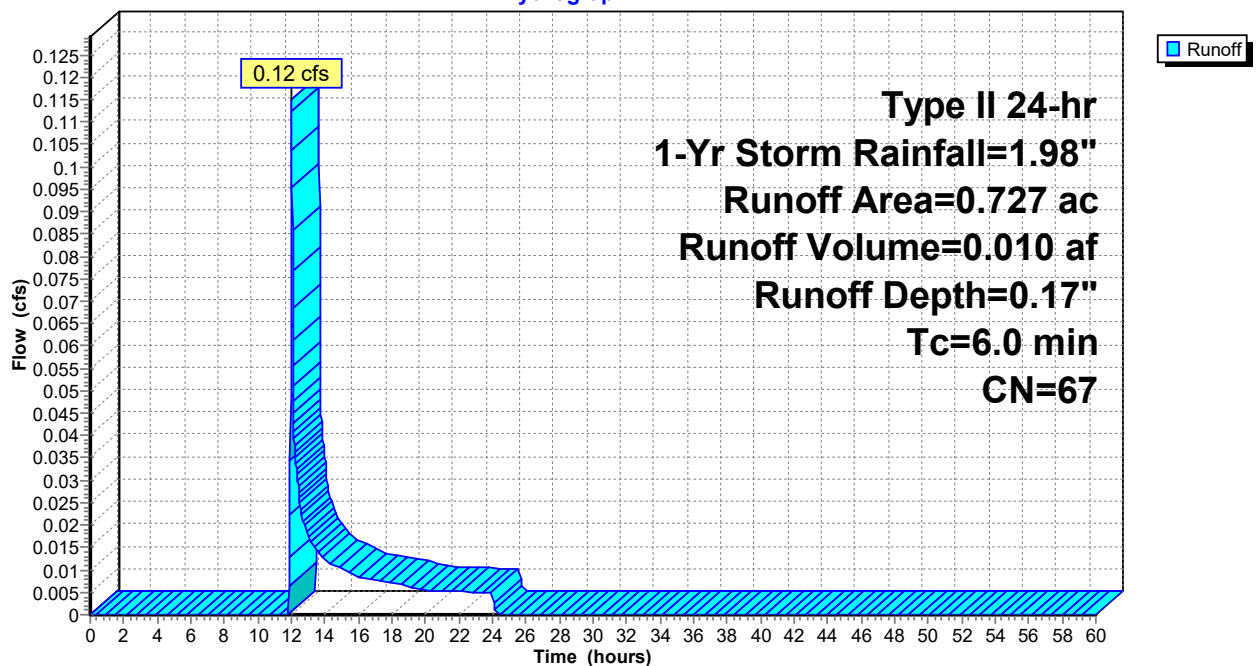
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.410 | 96 | Gravel surface, HSG A |
| 0.317 | 30 | Meadow, non-grazed, HSG A |
| 0.727 | 67 | Weighted Average |
| 0.727 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS1: East Road - West Ditch

Hydrograph



Summary for Subcatchment 1.2bS2: South Road

Runoff = 0.00 cfs @ 15.21 hrs, Volume= 0.003 af, Depth= 0.04"
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

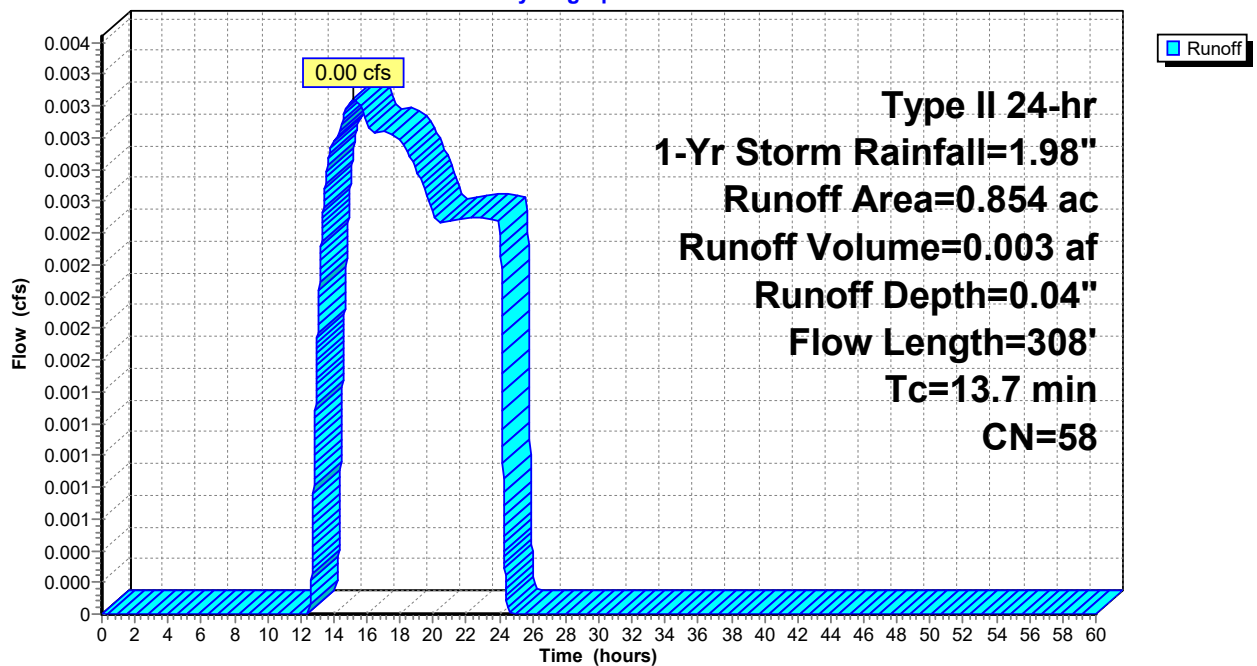
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.498 | 30 | Meadow, non-grazed, HSG A |
| * 0.352 | 96 | Gravel surface |
| * 0.004 | 98 | Roofs |
| 0.854 | 58 | Weighted Average |
| 0.850 | | 99.53% Pervious Area |
| 0.004 | | 0.47% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.0 | 35 | 0.0516 | 0.12 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 0.4 | 25 | 0.0310 | 1.06 | | Sheet Flow, Smooth surfaces n= 0.011 P2= 2.31" |
| 5.9 | 40 | 0.0429 | 0.11 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.4 | 208 | 0.0442 | 1.47 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 13.7 | 308 | Total | | | |

Subcatchment 1.2bS2: South Road

Hydrograph



Summary for Subcatchment 1.2bS3: South Road

Runoff = 0.29 cfs @ 12.00 hrs, Volume= 0.018 af, Depth= 0.26"
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

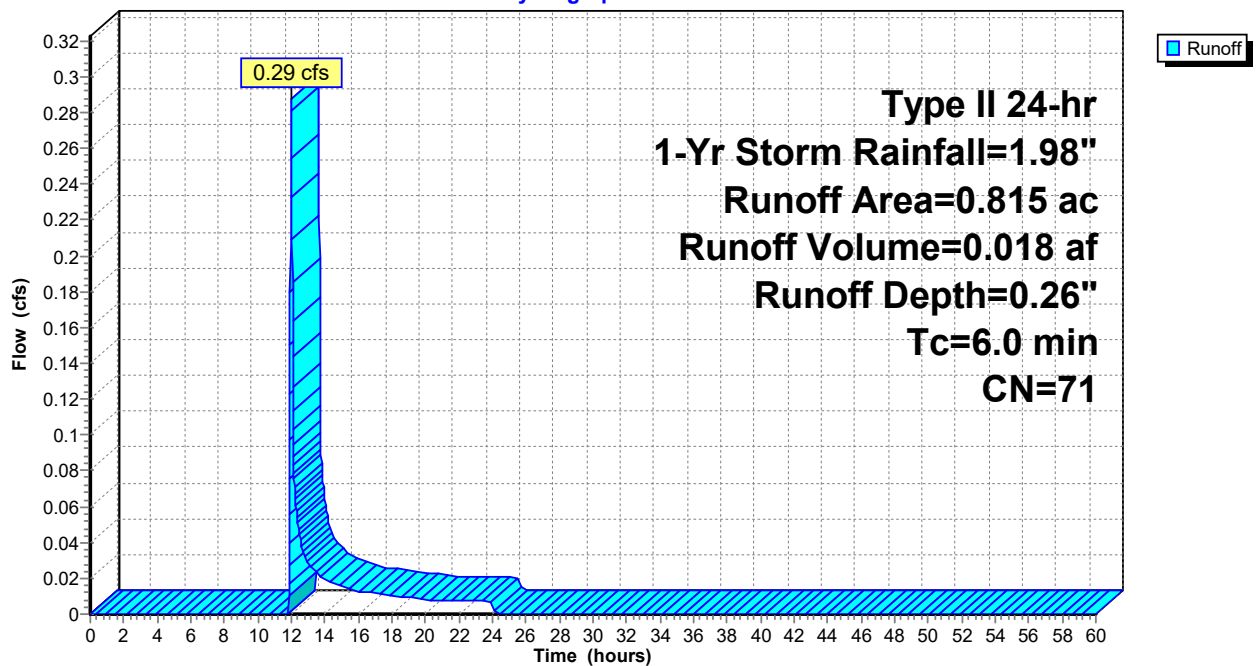
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.313 | 30 | Meadow, non-grazed, HSG A |
| 0.491 | 96 | Gravel surface, HSG A |
| * 0.011 | 98 | Roofs |
| 0.815 | 71 | Weighted Average |
| 0.804 | | 98.65% Pervious Area |
| 0.011 | | 1.35% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS3: South Road

Hydrograph



Summary for Subcatchment 1.3aS1: Surface Discharge

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP1 : Study Point 1

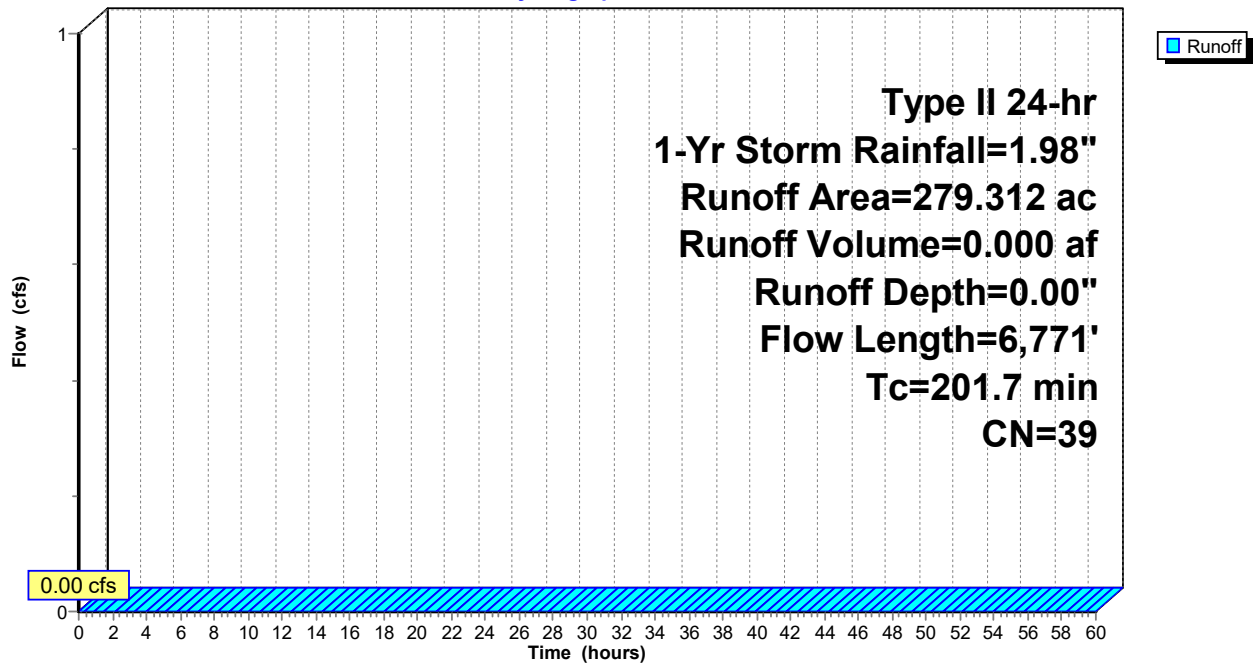
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.754 | 96 | Gravel surface |
| 144.649 | 30 | Meadow, non-grazed, HSG A |
| 0.566 | 58 | Meadow, non-grazed, HSG B |
| 25.274 | 71 | Meadow, non-grazed, HSG C |
| 61.692 | 30 | Woods, Good, HSG A |
| 32.754 | 55 | Woods, Good, HSG B |
| 13.623 | 70 | Woods, Good, HSG C |
| 279.312 | 39 | Weighted Average |
| 279.312 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 14.8 | 100 | 0.0764 | 0.11 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 4.7 | 581 | 0.1683 | 2.05 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 25.7 | 1,199 | 0.0241 | 0.78 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.8 | 189 | 0.0157 | 3.84 | 76.82 | Channel Flow, Rerouted Stream Area= 20.0 sf Perim= 32.6' r= 0.61' n= 0.035 Earth, dense weeds |
| 154.9 | 4,646 | 0.0051 | 0.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.8 | 56 | 0.0566 | 1.19 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 201.7 | 6,771 | Total | | | |

Subcatchment 1.3aS1: Surface Discharge

Hydrograph



Summary for Subcatchment 1.3bS: Access Rd to Pond 3

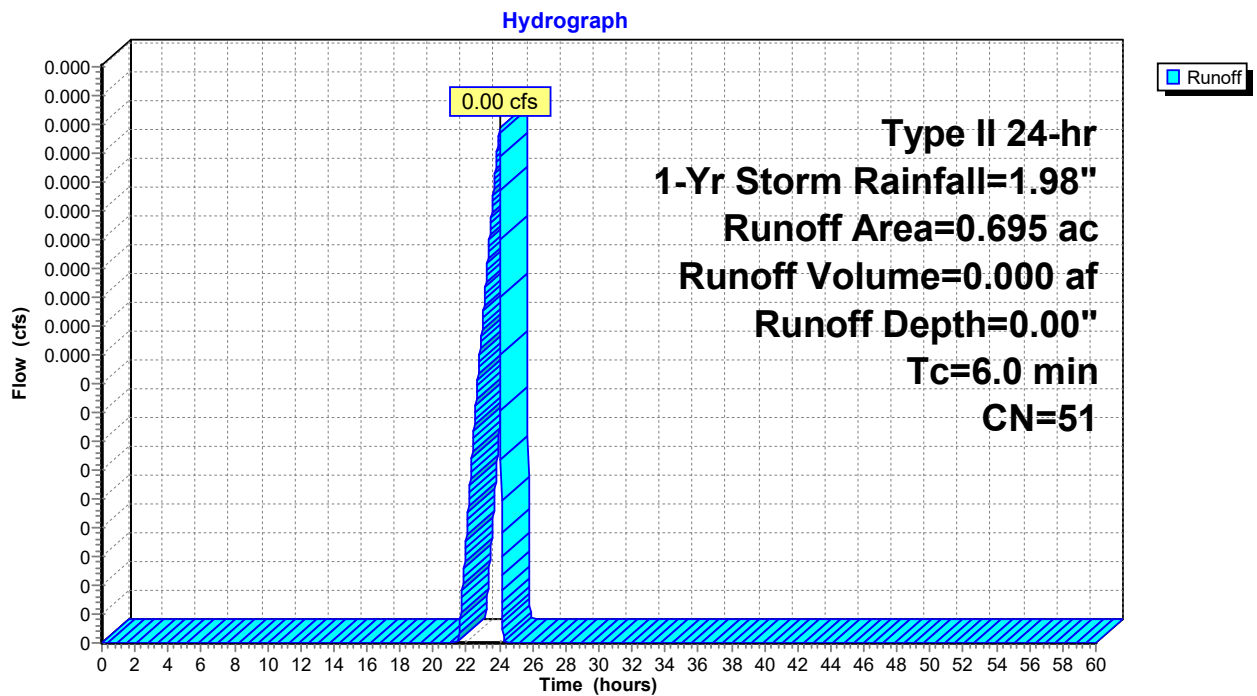
Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond 1.3P : Pond 3 - Access Rd West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|------------------------------|
| 0.473 | 30 | Meadow, non-grazed, HSG A |
| * 0.063 | 96 | Gravel surface, HSG A, Redev |
| * 0.159 | 96 | Gravel surface, HSG A |
| 0.695 | 51 | Weighted Average |
| 0.695 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.3bS: Access Rd to Pond 3



Summary for Subcatchment 2S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP2 : Study Point 2

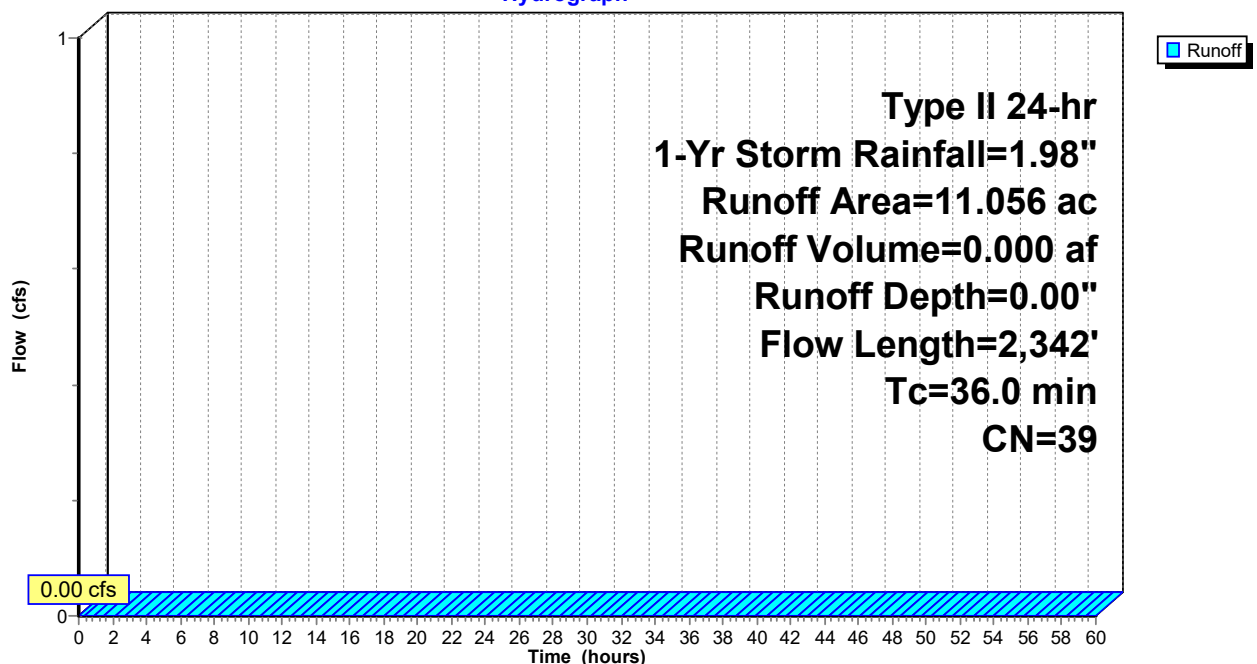
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.417 | 96 | Gravel surface, HSG A |
| 0.573 | 39 | >75% Grass cover, Good, HSG A |
| 6.530 | 30 | Meadow, non-grazed, HSG A |
| 2.536 | 30 | Woods, Good, HSG A |
| 11.056 | 39 | Weighted Average |
| 11.056 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0624 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.7 | 614 | 0.0535 | 3.72 | | Shallow Concentrated Flow, Unpaved Kv= 16.1 fps |
| 12.1 | 1,184 | 0.0543 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.9 | 115 | 0.0407 | 1.01 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.6 | 68 | 0.1443 | 1.90 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 8.0 | 261 | 0.0118 | 0.54 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 36.0 | 2,342 | Total | | | |

Subcatchment 2S:

Hydrograph



Summary for Subcatchment 3S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP3 : Study Point 3

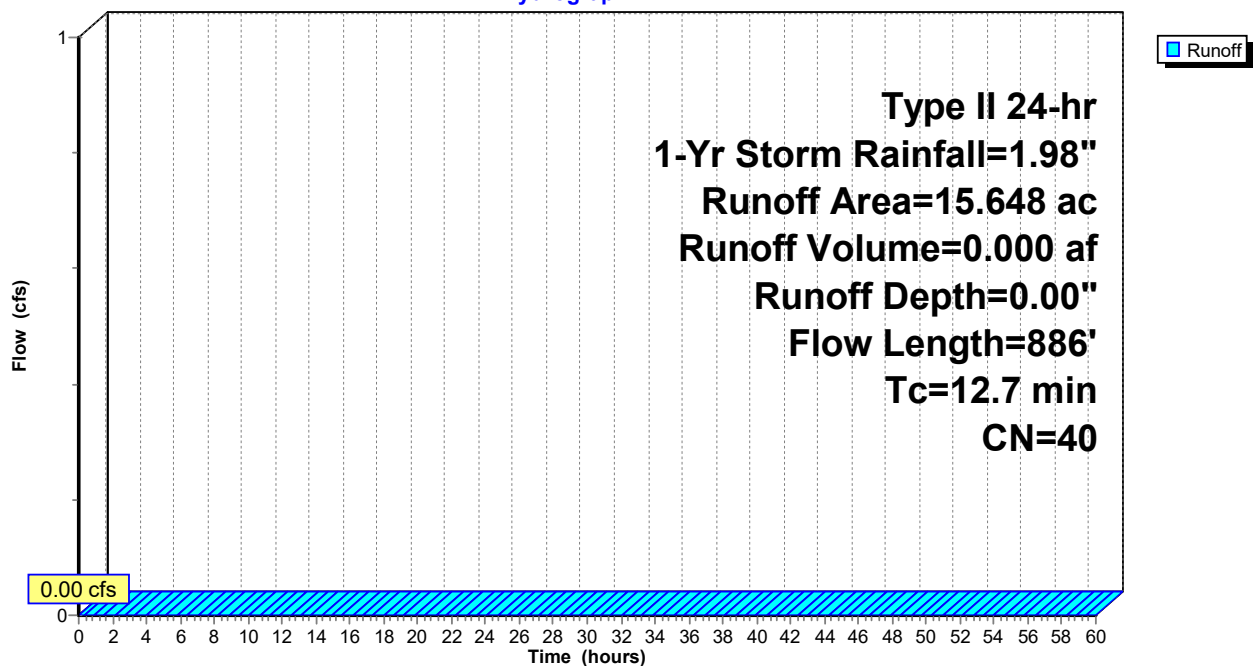
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.088 | 98 | Paved Roads & Rooftops |
| 0.406 | 39 | >75% Grass cover, Good, HSG A |
| 2.011 | 61 | >75% Grass cover, Good, HSG B |
| 5.525 | 30 | Meadow, non-grazed, HSG A |
| 4.276 | 30 | Woods, Good, HSG A |
| 3.342 | 55 | Woods, Good, HSG B |
| 15.648 | 40 | Weighted Average |
| 15.560 | | 99.44% Pervious Area |
| 0.088 | | 0.56% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.4 | 52 | 0.0937 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 3.7 | 625 | 0.1637 | 2.83 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.6 | 209 | 0.0384 | 0.98 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 12.7 | 886 | Total | | | |

Subcatchment 3S:

Hydrograph



Summary for Subcatchment 4.1S:

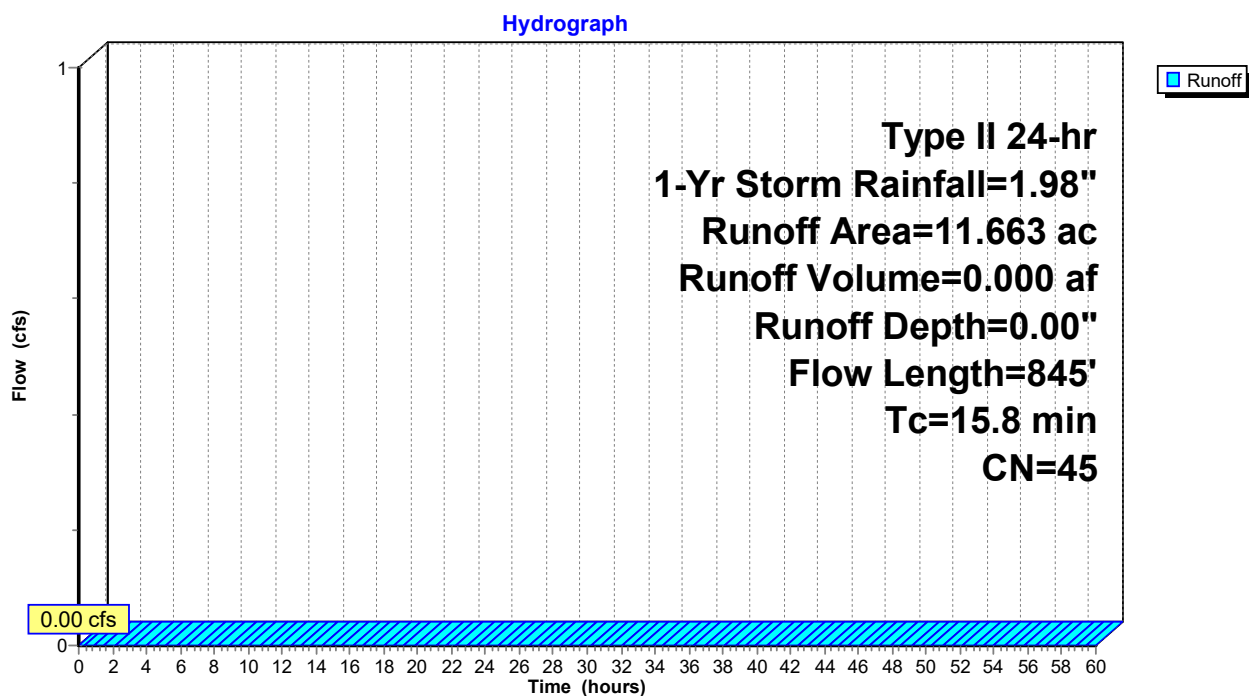
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 4.1R1 : Bypass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.327 | 98 | Paved Roads & Rooftops |
| * 0.375 | 96 | Gravel surface |
| 0.165 | 61 | >75% Grass cover, Good, HSG B |
| 2.544 | 30 | Meadow, non-grazed, HSG A |
| 0.560 | 58 | Meadow, non-grazed, HSG B |
| 3.605 | 30 | Woods, Good, HSG A |
| * 4.087 | 55 | Woods, Good, HSG B |
| 11.663 | 45 | Weighted Average |
| 11.336 | | 97.20% Pervious Area |
| 0.327 | | 2.80% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.5 | 100 | 0.0430 | 0.20 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 2.6 | 360 | 0.1077 | 2.30 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 4.7 | 385 | 0.0735 | 1.36 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 15.8 | 845 | Total | | | |

Subcatchment 4.1S:



Summary for Subcatchment 4.2aS:

Runoff = 0.01 cfs @ 24.16 hrs, Volume= 0.001 af, Depth= 0.00"
 Routed to Pond 4.2C : 18" Culvert

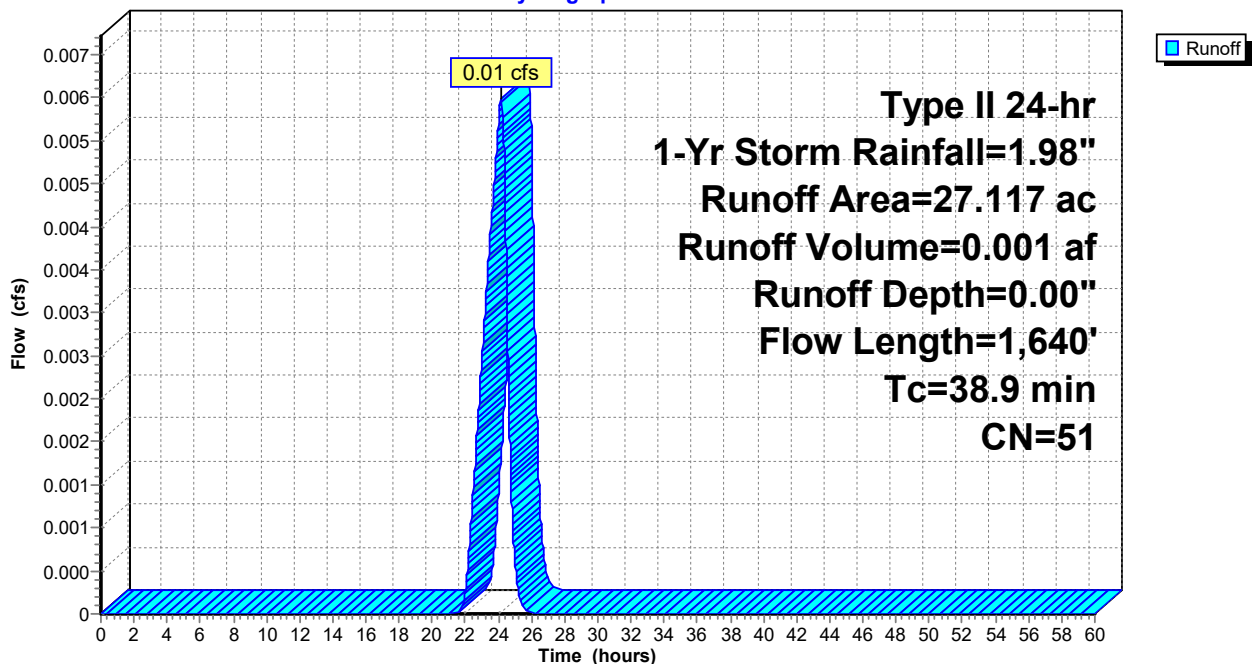
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.238 | 96 | Gravel surface |
| 4.086 | 30 | Meadow, non-grazed, HSG A |
| 0.384 | 58 | Meadow, non-grazed, HSG B |
| 0.977 | 30 | Woods, Good, HSG A |
| 21.432 | 55 | Woods, Good, HSG B |
| 27.117 | 51 | Weighted Average |
| 27.117 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 17.8 | 100 | 0.0480 | 0.09 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 8.0 | 878 | 0.1354 | 1.84 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 13.1 | 662 | 0.0144 | 0.84 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 38.9 | 1,640 | Total | | | |

Subcatchment 4.2aS:

Hydrograph



Summary for Subcatchment 4.2bS:

Runoff = 0.19 cfs @ 12.00 hrs, Volume= 0.011 af, Depth= 0.28"
 Routed to Reach 4.2bR : Conveyance Swale

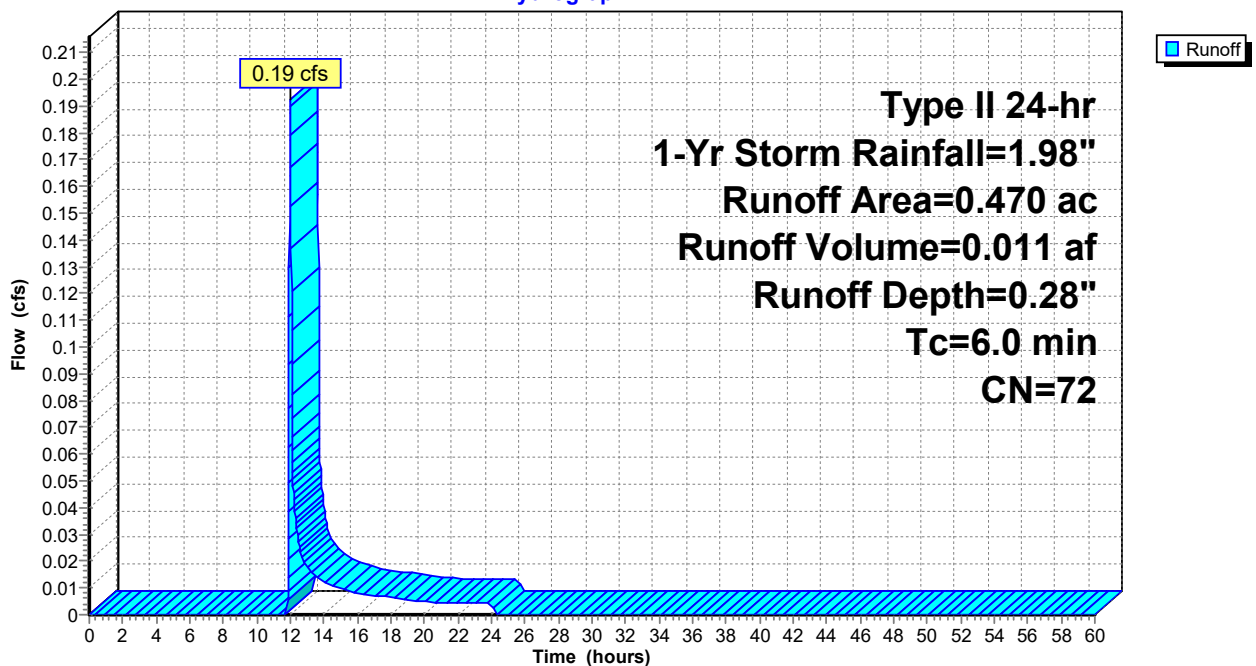
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.296 | 96 | Gravel surface, HSG A |
| 0.174 | 30 | Meadow, non-grazed, HSG A |
| 0.470 | 72 | Weighted Average |
| 0.470 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 4.2bS:

Hydrograph



Summary for Subcatchment 4.3S:

Runoff = 0.07 cfs @ 17.89 hrs, Volume= 0.059 af, Depth= 0.03"
 Routed to Pond 4.3C : 24" Culvert

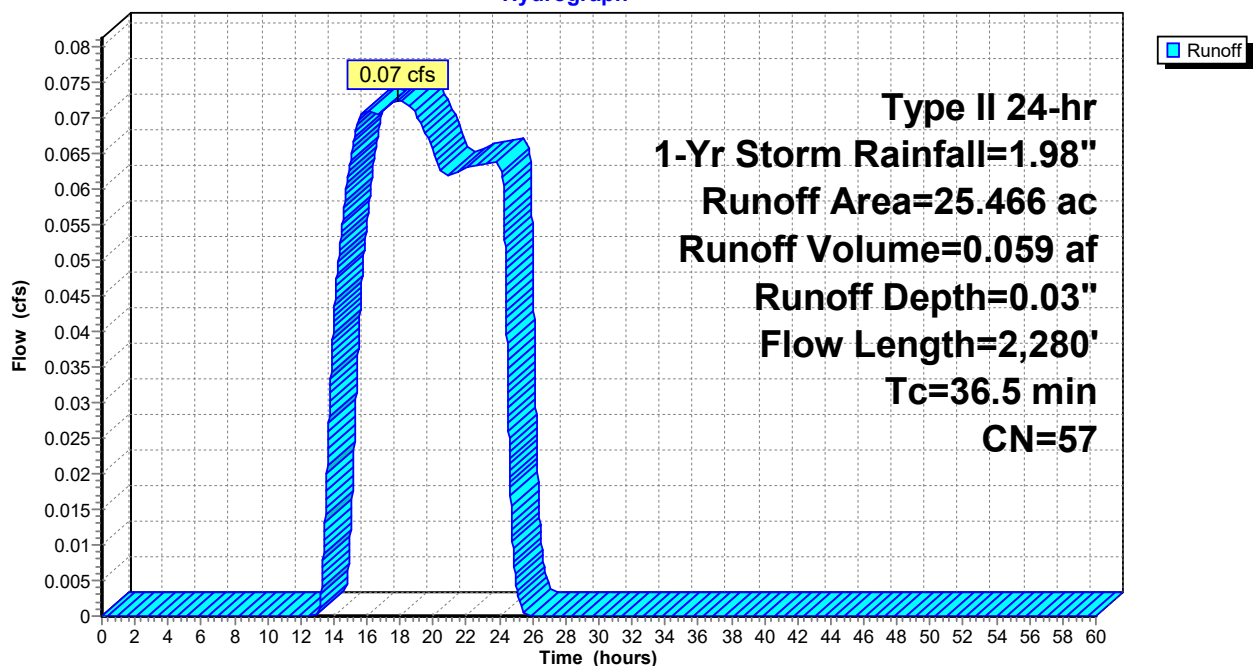
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 1.293 | 98 | Paved Roads & Rooftops |
| 1.783 | 58 | Meadow, non-grazed, HSG B |
| 22.390 | 55 | Woods, Good, HSG B |
| 25.466 | 57 | Weighted Average |
| 24.173 | | 94.92% Pervious Area |
| 1.293 | | 5.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 15.9 | 100 | 0.0634 | 0.10 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 17.8 | 1,368 | 0.0656 | 1.28 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.1 | 38 | 0.3960 | 4.40 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 2.7 | 774 | 0.0281 | 4.70 | 109.09 | Channel Flow, Area= 23.2 sf Perim= 43.2' r= 0.54' n= 0.035 |
| 36.5 | 2,280 | Total | | | |

Subcatchment 4.3S:

Hydrograph



Summary for Subcatchment 5S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP5 : Study Point 5

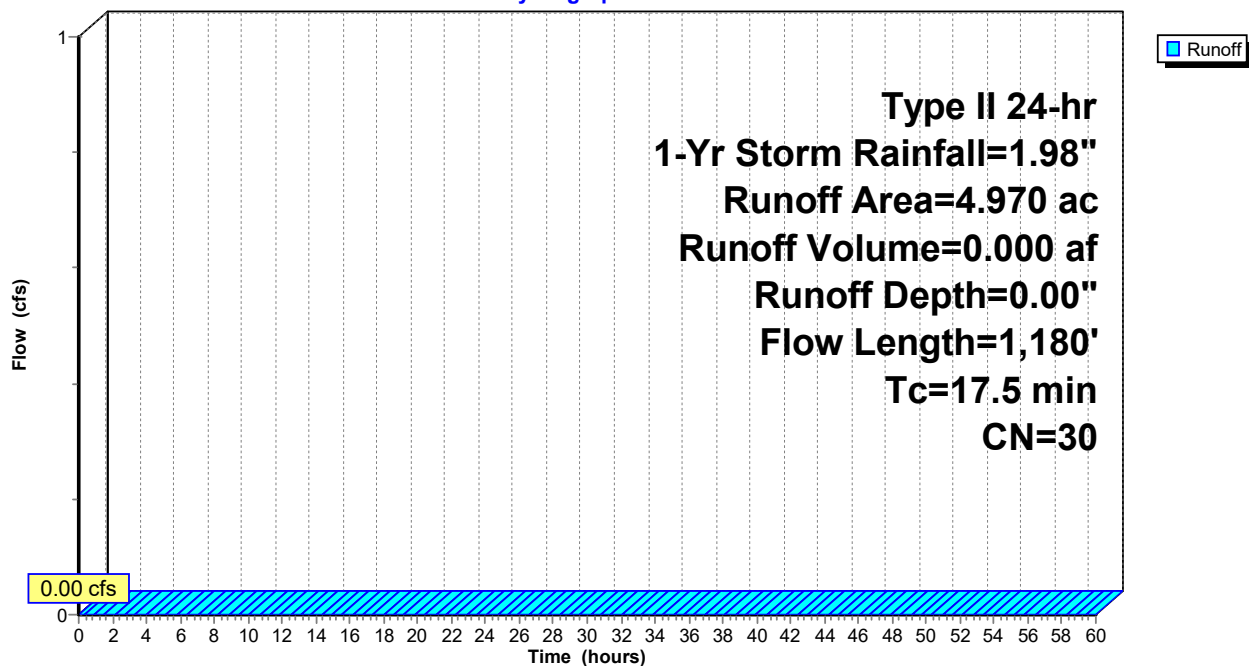
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 4.139 | 30 | Meadow, non-grazed, HSG A |
| 0.831 | 30 | Woods, Good, HSG A |
| 4.970 | 30 | Weighted Average |
| 4.970 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 7.1 | 100 | 0.0675 | 0.24 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 8.5 | 801 | 0.0508 | 1.58 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.3 | 217 | 0.1515 | 2.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.6 | 62 | 0.0697 | 1.85 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 17.5 | 1,180 | Total | | | |

Subcatchment 5S:

Hydrograph



Summary for Subcatchment 6S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP6 : Study Point 6

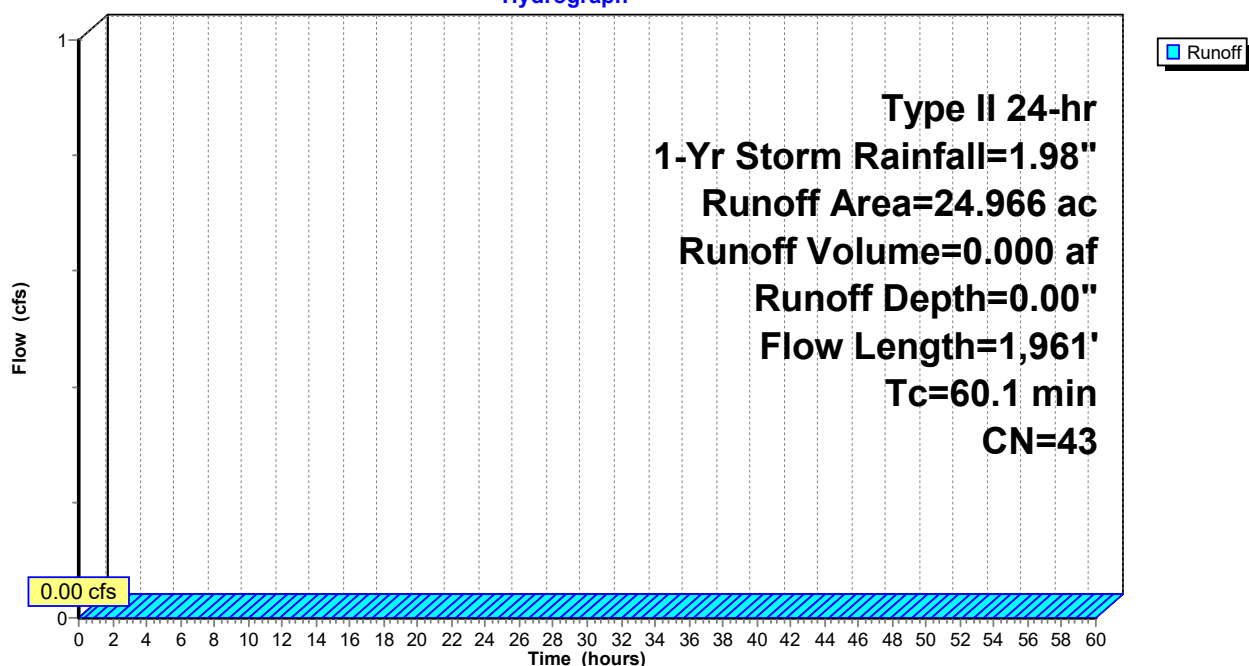
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 1.450 | 98 | Paved Roads & Rooftops |
| 0.466 | 96 | Gravel surface, HSG A |
| 2.545 | 61 | >75% Grass cover, Good, HSG B |
| 7.511 | 30 | Meadow, non-grazed, HSG A |
| 0.788 | 58 | Meadow, non-grazed, HSG B |
| 7.940 | 30 | Woods, Good, HSG A |
| 4.266 | 55 | Woods, Good, HSG B |
| 24.966 | 43 | Weighted Average |
| 23.516 | | 94.19% Pervious Area |
| 1.450 | | 5.81% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.1 | 100 | 0.0278 | 0.16 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 3.2 | 313 | 0.0528 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.9 | 486 | 0.1742 | 2.09 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 42.9 | 1,062 | 0.0068 | 0.41 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 60.1 | 1,961 | Total | | | |

Subcatchment 6S:

Hydrograph



Summary for Reach 1.1aR1: Bypass Swale

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC1 : TS1 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

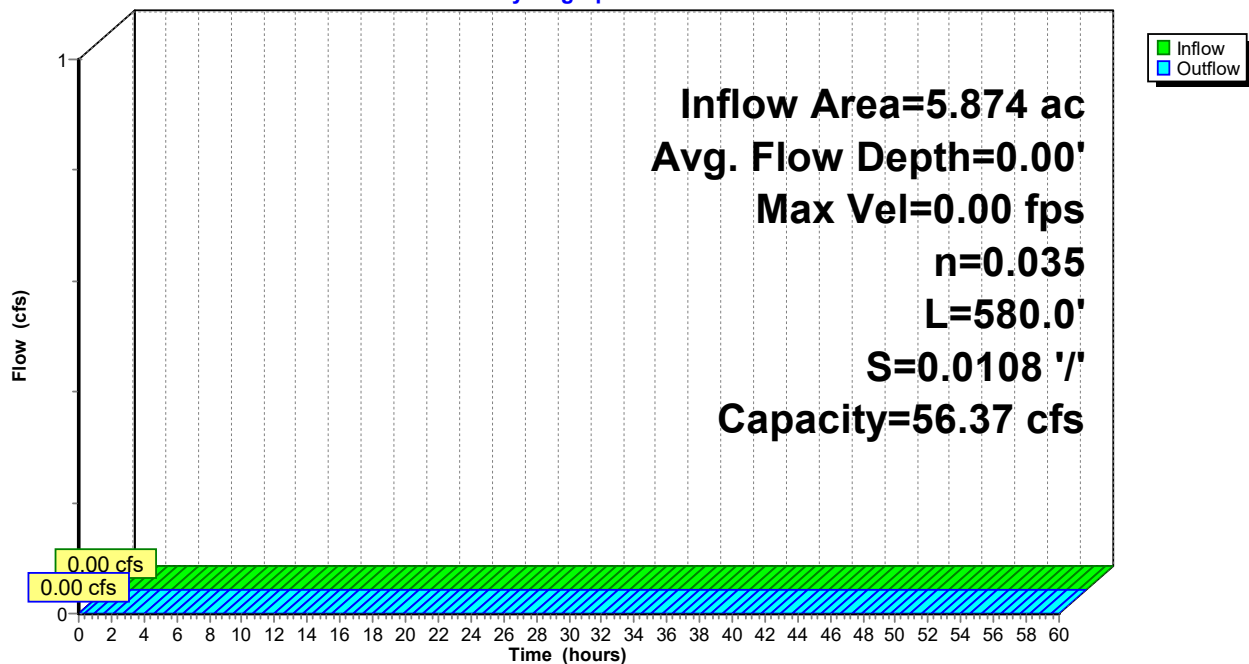
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 56.37 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 580.0' Slope= 0.0108 '/'
 Inlet Invert= 1,493.84', Outlet Invert= 1,487.56'



Reach 1.1aR1: Bypass Swale

Hydrograph



Summary for Reach 1.1aR2: Bypass Swale

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC2 : TS2 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

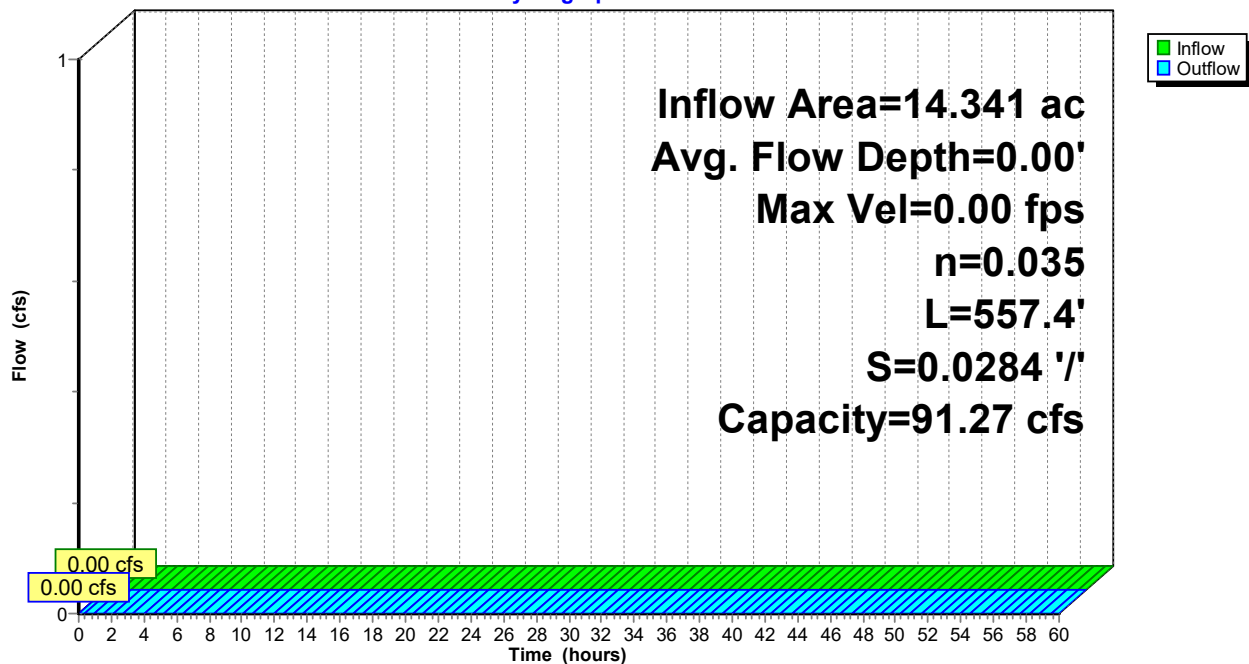
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 91.27 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.4' Slope= 0.0284 '/'
 Inlet Invert= 1,486.80', Outlet Invert= 1,470.98'



Reach 1.1aR2: Bypass Swale

Hydrograph



Summary for Reach 1.1aR3: Bypass Swale

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC3 : TS3 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

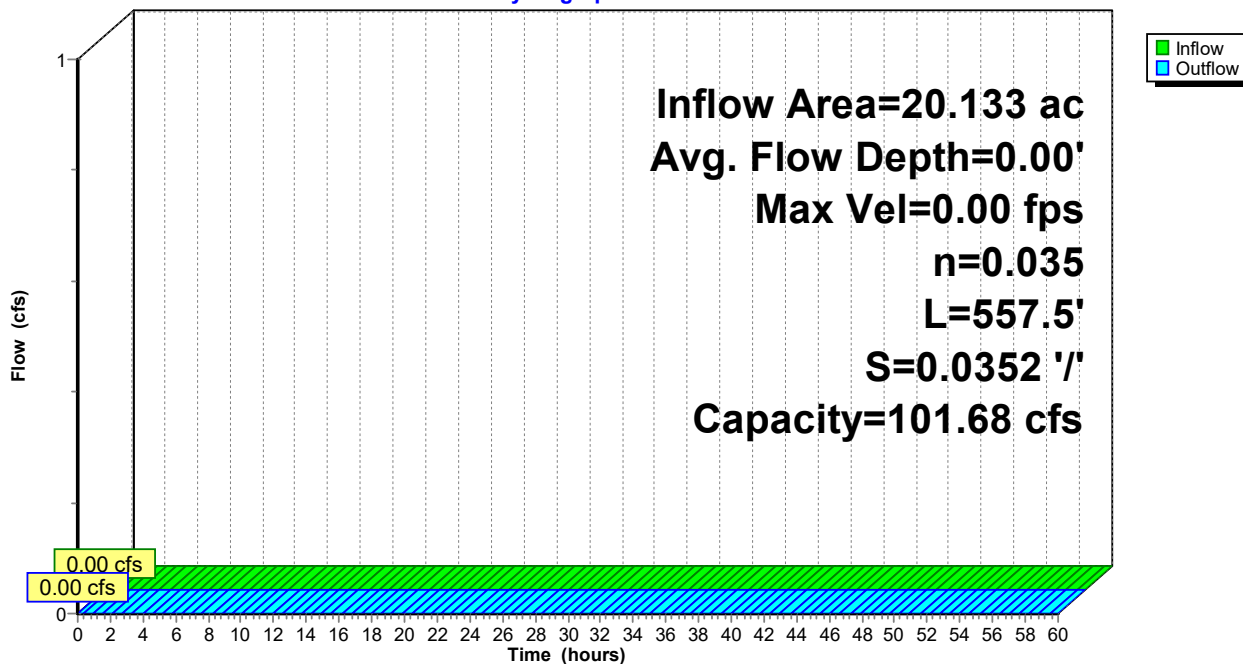
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 101.68 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.5' Slope= 0.0352 '/'
 Inlet Invert= 1,469.57', Outlet Invert= 1,449.93'



Reach 1.1aR3: Bypass Swale

Hydrograph



Summary for Reach 1.1aR4: Bypass Swale

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aP : North Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

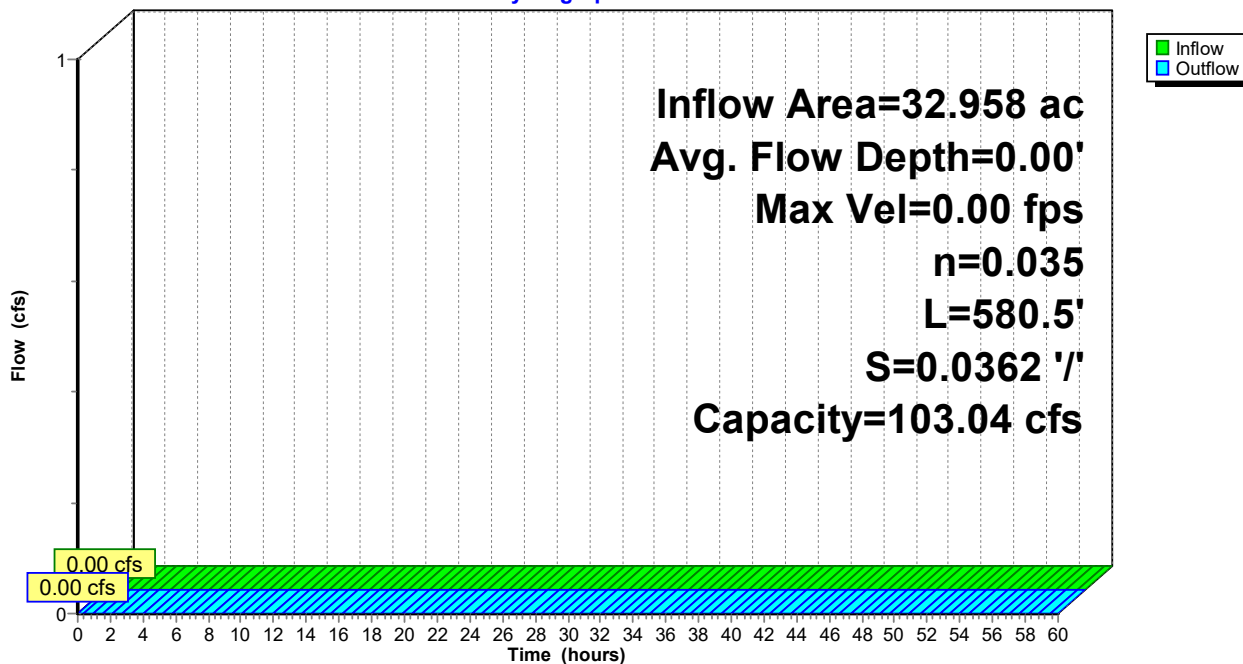
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 103.04 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 580.5' Slope= 0.0362 '/
 Inlet Invert= 1,447.64', Outlet Invert= 1,426.64'



Reach 1.1aR4: Bypass Swale

Hydrograph



Summary for Reach 1.1bR1: North Road Conveyance Swale

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 0.26" for 1-Yr Storm event
 Inflow = 0.47 cfs @ 12.00 hrs, Volume= 0.029 af
 Outflow = 0.12 cfs @ 12.17 hrs, Volume= 0.029 af, Atten= 75%, Lag= 10.3 min
 Routed to Pond 1.1bC1 : TS4 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.94 fps, Min. Travel Time= 30.8 min
 Avg. Velocity = 0.52 fps, Avg. Travel Time= 55.4 min

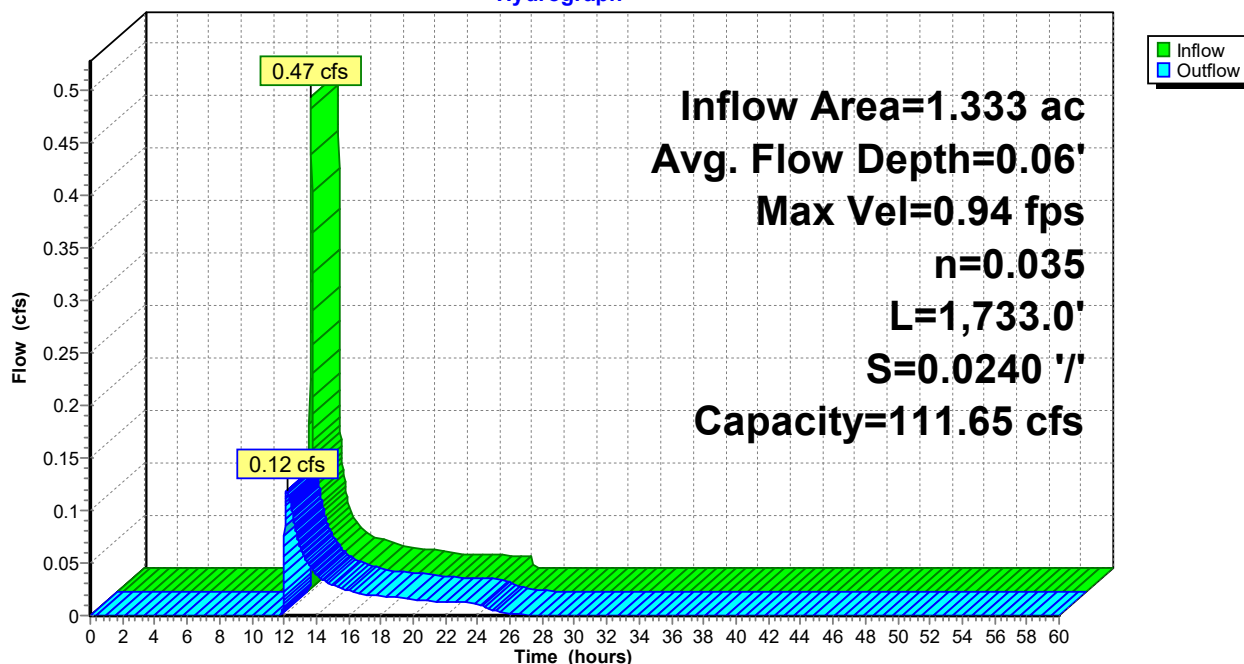
Peak Storage= 219 cf @ 12.17 hrs
 Average Depth at Peak Storage= 0.06' , Surface Width= 2.35'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 111.65 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 1,733.0' Slope= 0.0240 ' / '
 Inlet Invert= 1,491.12', Outlet Invert= 1,449.50'



Reach 1.1bR1: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.1bR2: North Road Conveyance Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.23" for 1-Yr Storm event
 Inflow = 0.20 cfs @ 12.04 hrs, Volume= 0.039 af
 Outflow = 0.15 cfs @ 12.26 hrs, Volume= 0.039 af, Atten= 25%, Lag= 13.6 min
 Routed to Pond 1.1bP1 : Dry Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.18 fps, Min. Travel Time= 8.4 min
 Avg. Velocity = 0.66 fps, Avg. Travel Time= 14.9 min

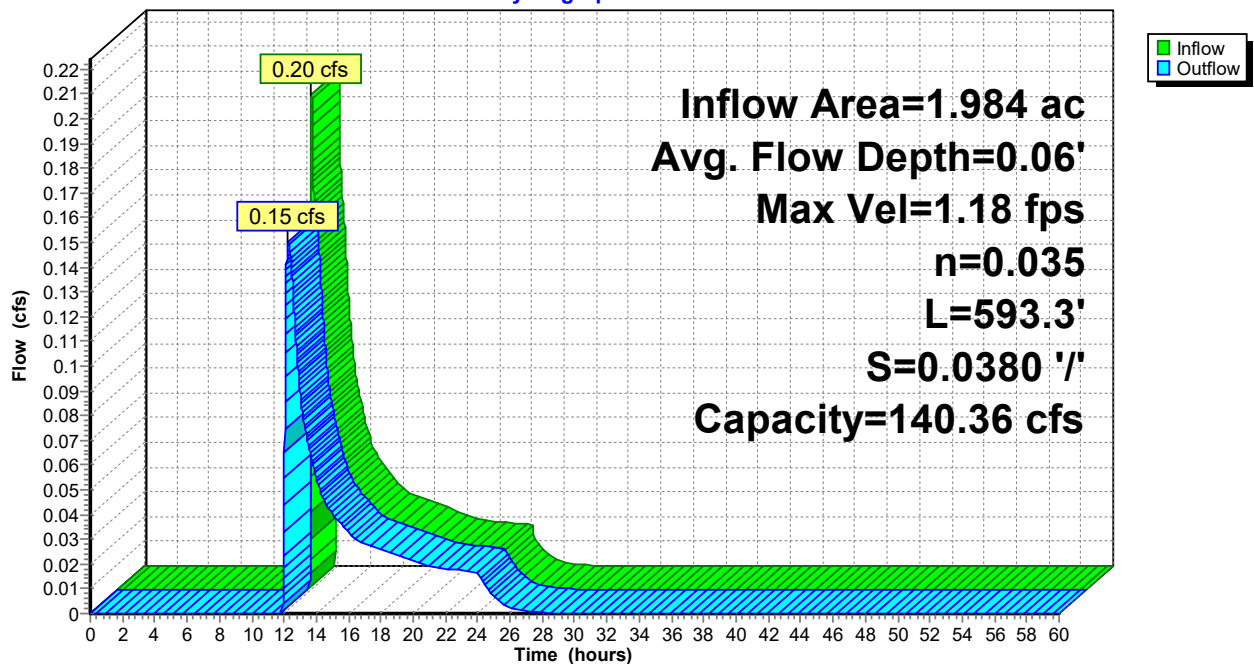
Peak Storage= 75 cf @ 12.26 hrs
 Average Depth at Peak Storage= 0.06' , Surface Width= 2.35'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 140.36 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 593.3' Slope= 0.0380 '/'
 Inlet Invert= 1,447.27', Outlet Invert= 1,424.75'



Reach 1.1bR2: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.2aR1: Bypass Swale

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aC1 : TS 7 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

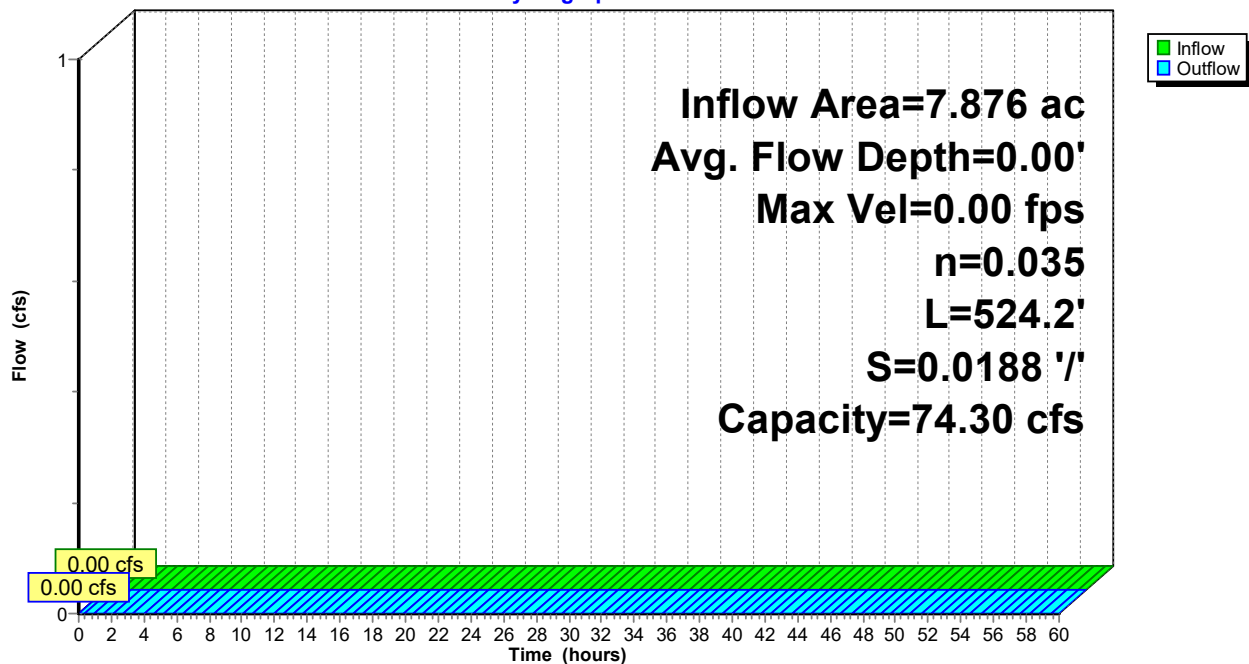
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 74.30 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 524.2' Slope= 0.0188 '/'
 Inlet Invert= 1,454.08', Outlet Invert= 1,444.22'



Reach 1.2aR1: Bypass Swale

Hydrograph



Summary for Reach 1.2aR2: Bypass Swale

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aC2 : TS8 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

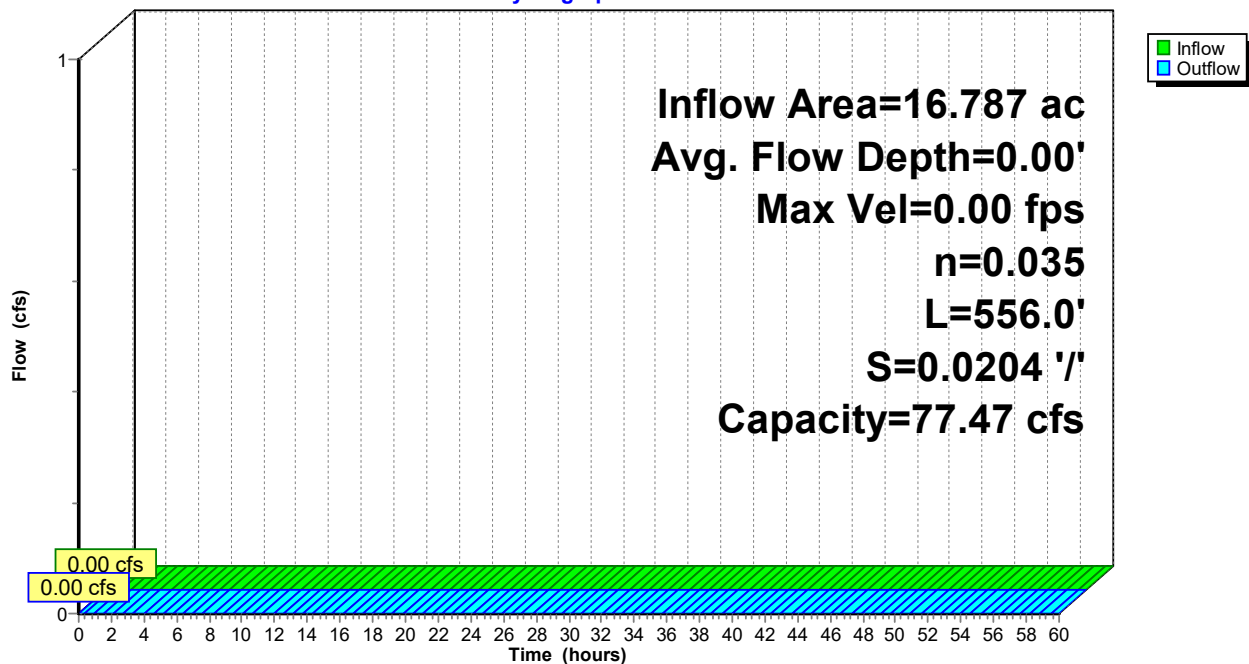
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 77.47 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 556.0' Slope= 0.0204 '/'
 Inlet Invert= 1,443.21', Outlet Invert= 1,431.84'



Reach 1.2aR2: Bypass Swale

Hydrograph



Summary for Reach 1.2aR3: Bypass Swale

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aP : South Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

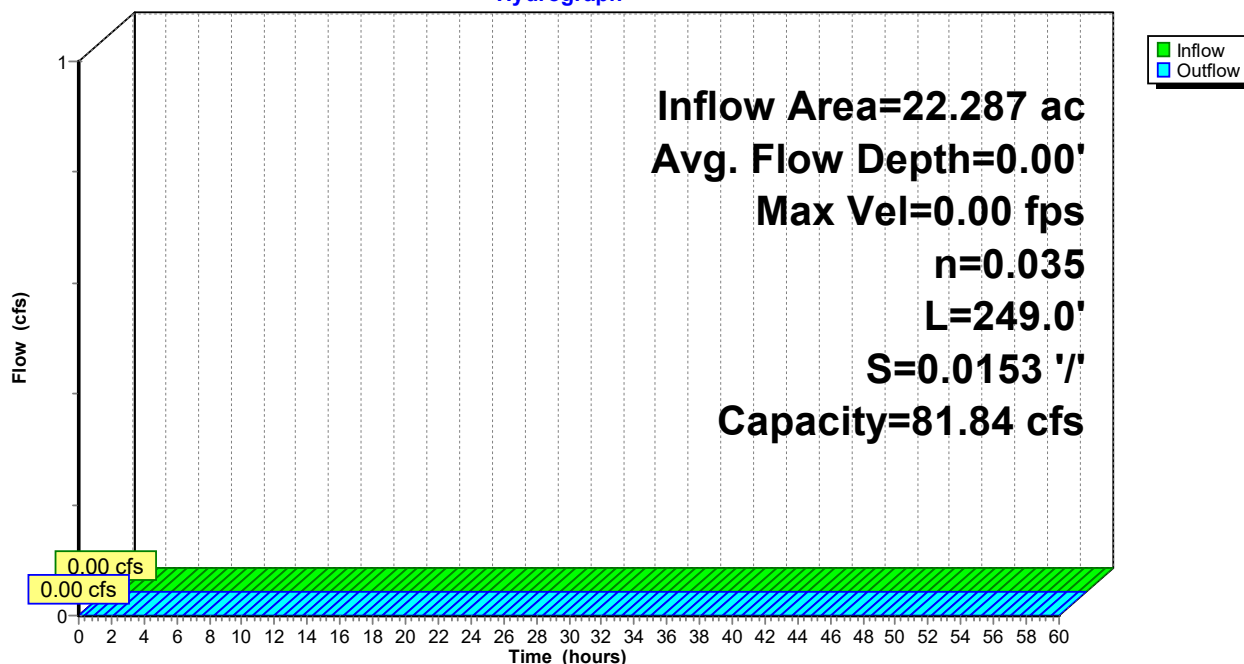
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 14.0 sf, Capacity= 81.84 cfs

3.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 11.00'
 Length= 249.0' Slope= 0.0153 '/
 Inlet Invert= 1,431.11', Outlet Invert= 1,427.29'



Reach 1.2aR3: Bypass Swale

Hydrograph



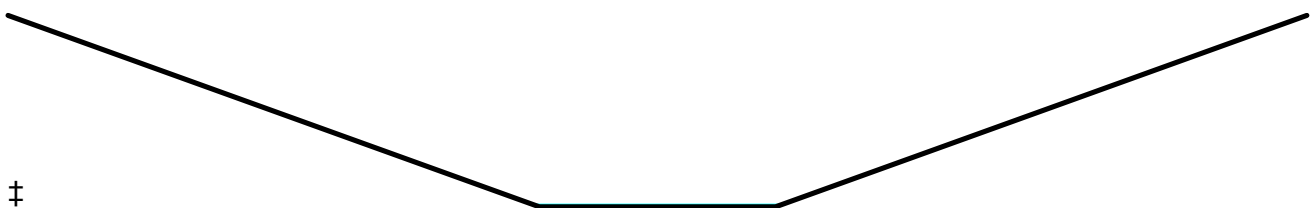
Summary for Reach 1.2bR1: East Road Conveyance Swale

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 0.17" for 1-Yr Storm event
 Inflow = 0.12 cfs @ 12.01 hrs, Volume= 0.010 af
 Outflow = 0.04 cfs @ 12.13 hrs, Volume= 0.010 af, Atten= 62%, Lag= 7.2 min
 Routed to Pond 1.2bC1 : East Road Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.80 fps, Min. Travel Time= 15.1 min
 Avg. Velocity = 0.55 fps, Avg. Travel Time= 22.0 min

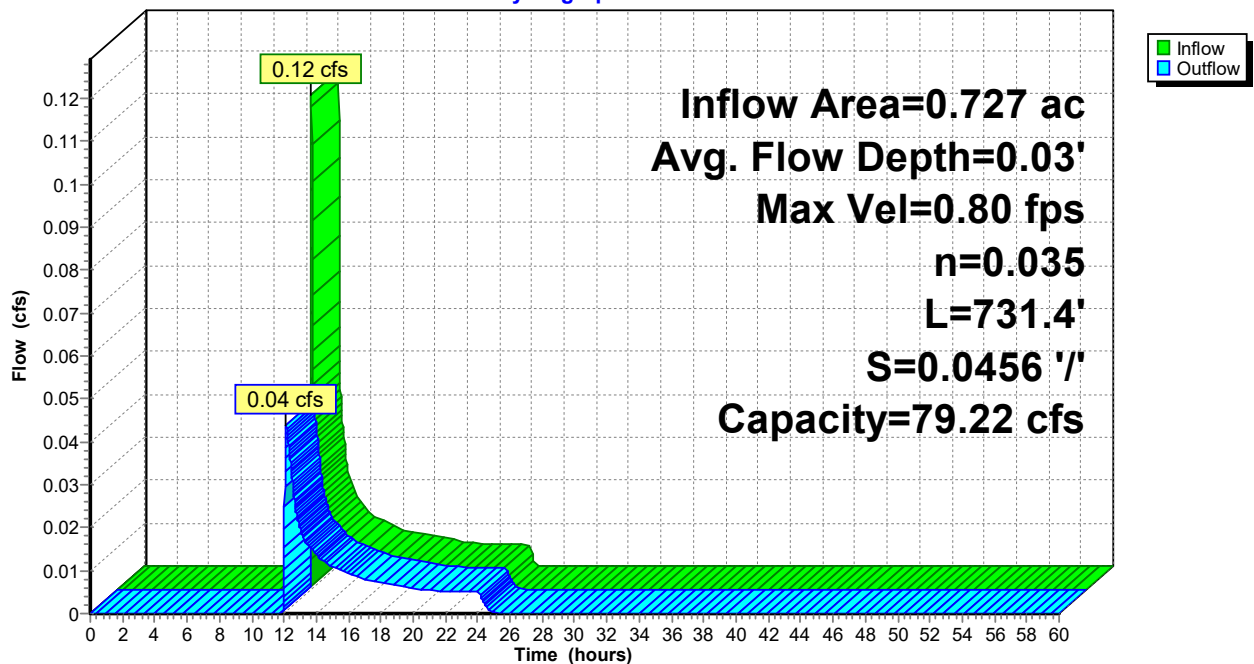
Peak Storage= 40 cf @ 12.13 hrs
 Average Depth at Peak Storage= 0.03', Surface Width= 2.16'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 79.22 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 11.00'
 Length= 731.4' Slope= 0.0456 '/'
 Inlet Invert= 1,489.53', Outlet Invert= 1,456.20'



Reach 1.2bR1: East Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR2: South Road Conveyance Swale

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 0.10" for 1-Yr Storm event
 Inflow = 0.04 cfs @ 12.13 hrs, Volume= 0.013 af
 Outflow = 0.03 cfs @ 12.52 hrs, Volume= 0.013 af, Atten= 30%, Lag= 23.3 min
 Routed to Pond 1.2bC2 : TS6 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.53 fps, Min. Travel Time= 18.9 min
 Avg. Velocity = 0.41 fps, Avg. Travel Time= 24.3 min

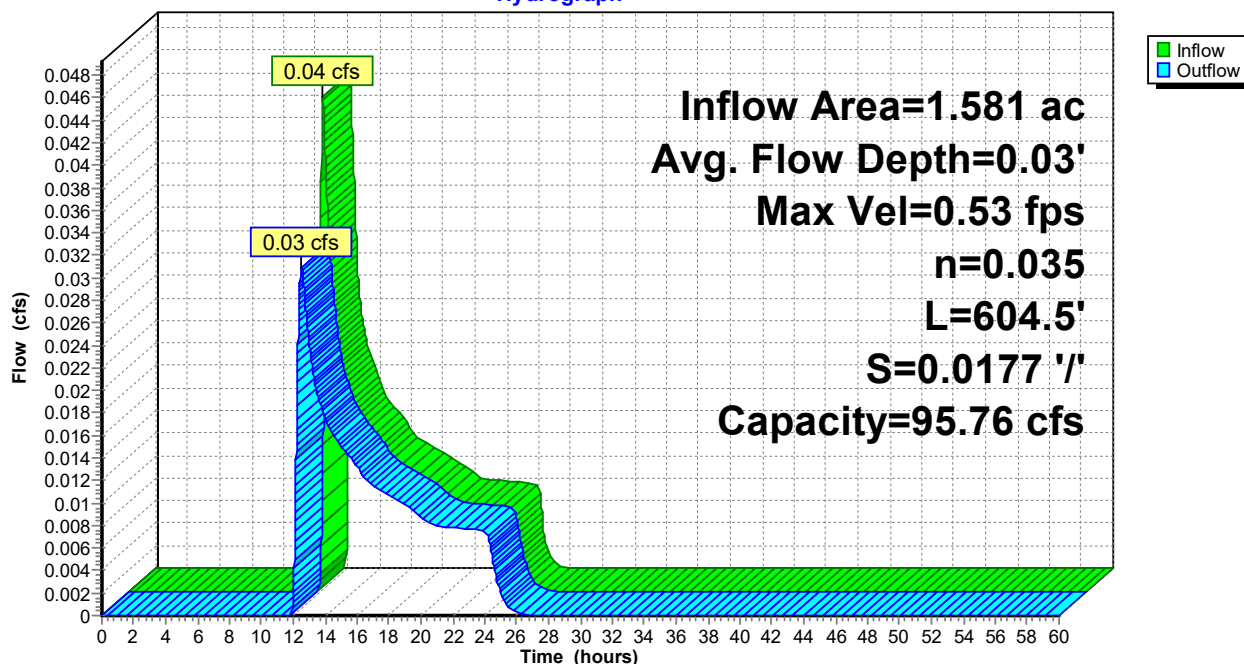
Peak Storage= 35 cf @ 12.52 hrs
 Average Depth at Peak Storage= 0.03' , Surface Width= 2.17'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 95.76 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 604.5' Slope= 0.0177 ' / '
 Inlet Invert= 1,454.47', Outlet Invert= 1,443.79'



Reach 1.2bR2: South Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR3: South Road Conveyance Swale

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 0.15" for 1-Yr Storm event
 Inflow = 0.29 cfs @ 12.00 hrs, Volume= 0.030 af
 Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.030 af, Atten= 56%, Lag= 5.8 min
 Routed to Pond 1.2bP : South Road Treatment Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.89 fps, Min. Travel Time= 14.2 min
 Avg. Velocity = 0.48 fps, Avg. Travel Time= 26.1 min

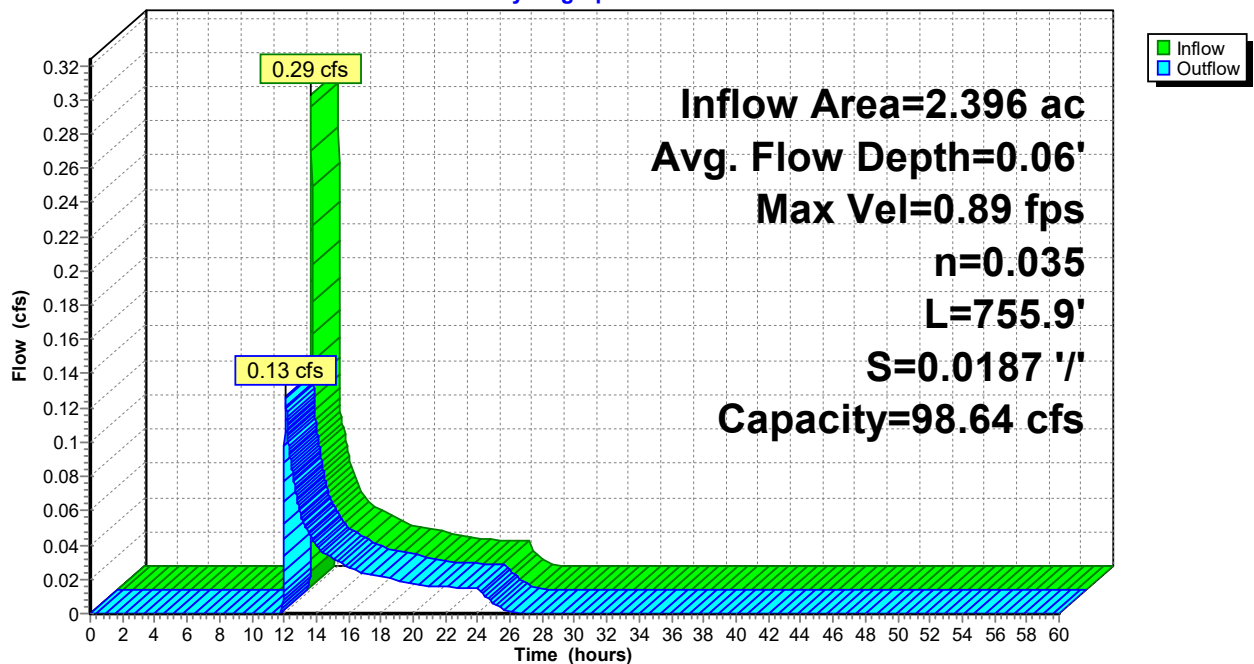
Peak Storage= 108 cf @ 12.10 hrs
 Average Depth at Peak Storage= 0.06' , Surface Width= 2.39'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 98.64 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 755.9' Slope= 0.0187 ' / '
 Inlet Invert= 1,442.84', Outlet Invert= 1,428.67'



Reach 1.2bR3: South Road Conveyance Swale

Hydrograph



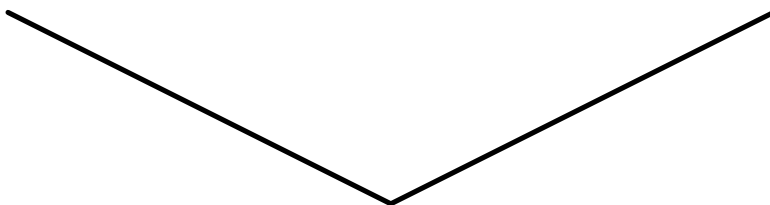
Summary for Reach 4.1R1: Bypass Swale

Inflow Area = 11.663 ac, 2.80% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

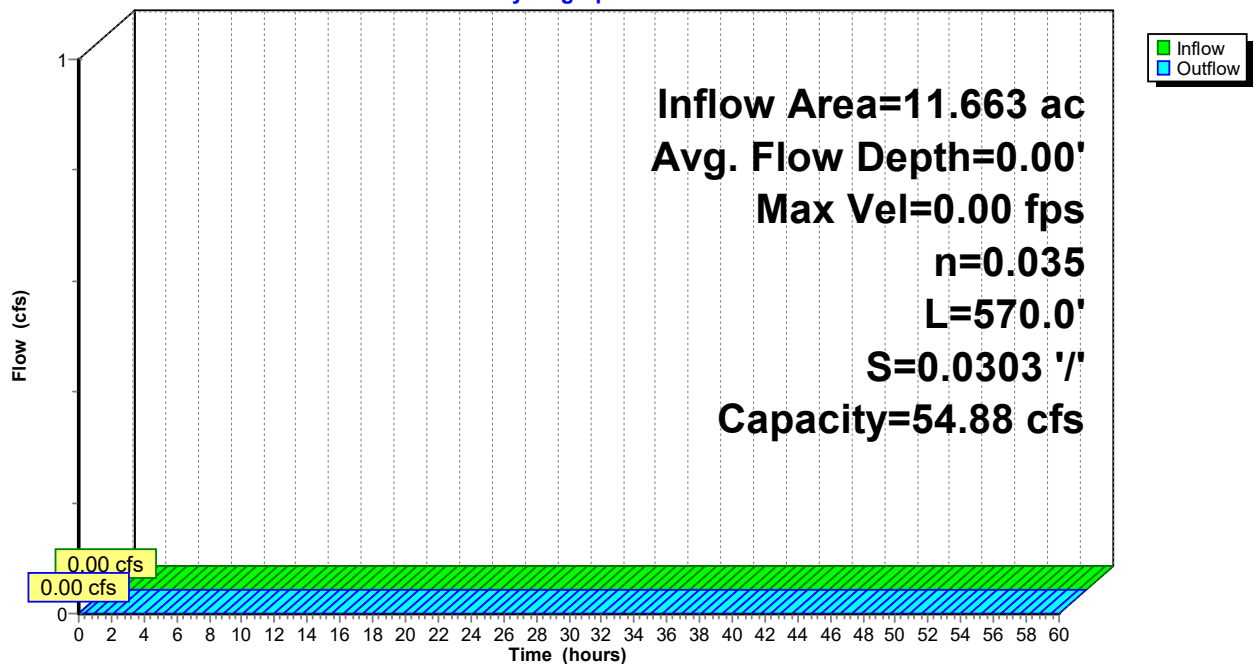
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 54.88 cfs

0.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 8.00'
 Length= 570.0' Slope= 0.0303 '/
 Inlet Invert= 1,448.24', Outlet Invert= 1,430.97'



Reach 4.1R1: Bypass Swale

Hydrograph



Summary for Reach 4.1R2: Ex Stream

Inflow Area = 39.250 ac, 0.83% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

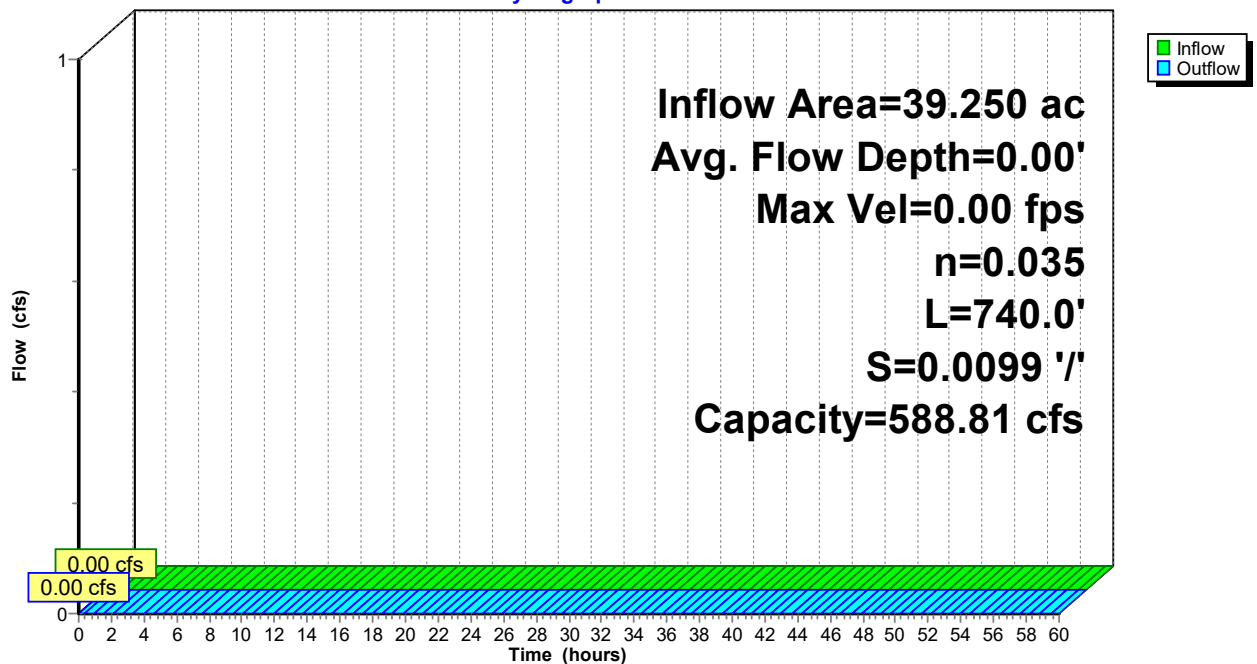
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 3.00' Flow Area= 84.0 sf, Capacity= 588.81 cfs

17.50' x 3.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 4.0 '/' Top Width= 38.50'
 Length= 740.0' Slope= 0.0099 '/'
 Inlet Invert= 1,430.98', Outlet Invert= 1,423.64'



Reach 4.1R2: Ex Stream

Hydrograph



Summary for Reach 4.2bR: Conveyance Swale

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 0.28" for 1-Yr Storm event
 Inflow = 0.19 cfs @ 12.00 hrs, Volume= 0.011 af
 Outflow = 0.12 cfs @ 12.06 hrs, Volume= 0.011 af, Atten= 39%, Lag= 4.1 min
 Routed to Pond 4.2bP : Pond 4 - Access Rd East

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.13 fps, Min. Travel Time= 8.4 min
 Avg. Velocity = 0.55 fps, Avg. Travel Time= 17.2 min

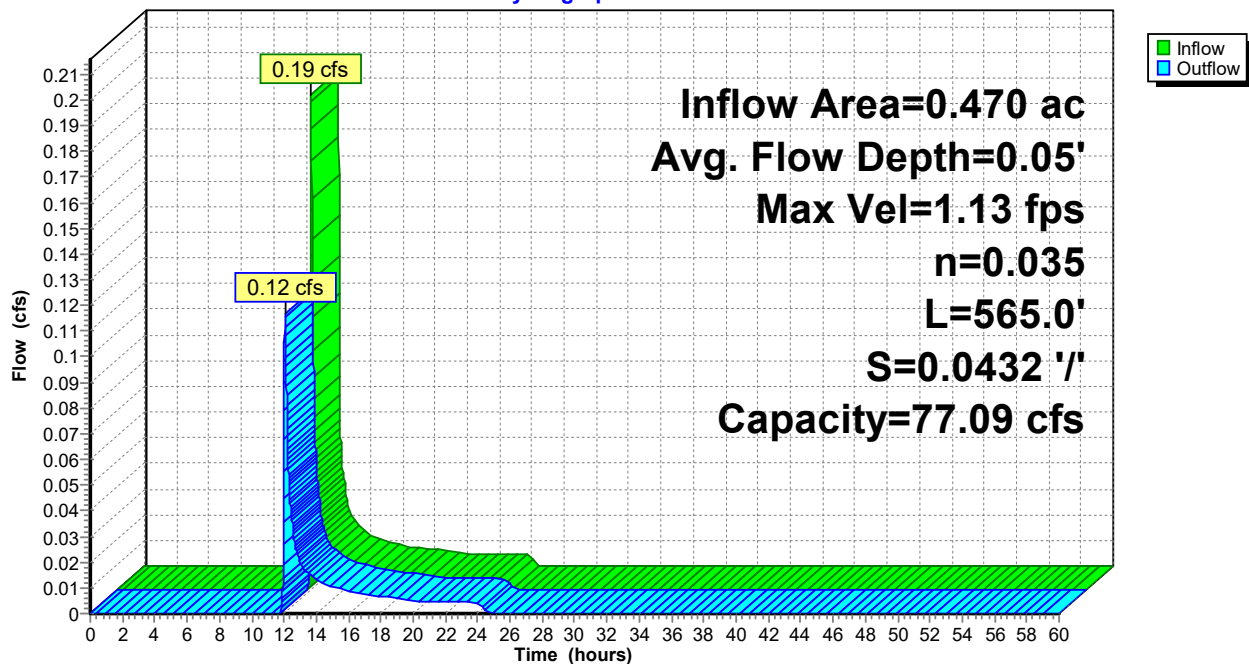
Peak Storage= 59 cf @ 12.06 hrs
 Average Depth at Peak Storage= 0.05', Surface Width= 2.29'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 77.09 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 11.00'
 Length= 565.0' Slope= 0.0432 '/'
 Inlet Invert= 1,472.38', Outlet Invert= 1,448.00'



Reach 4.2bR: Conveyance Swale

Hydrograph



Summary for Pond 1.1aC1: TS1 Culvert

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR2 : Bypass Swale

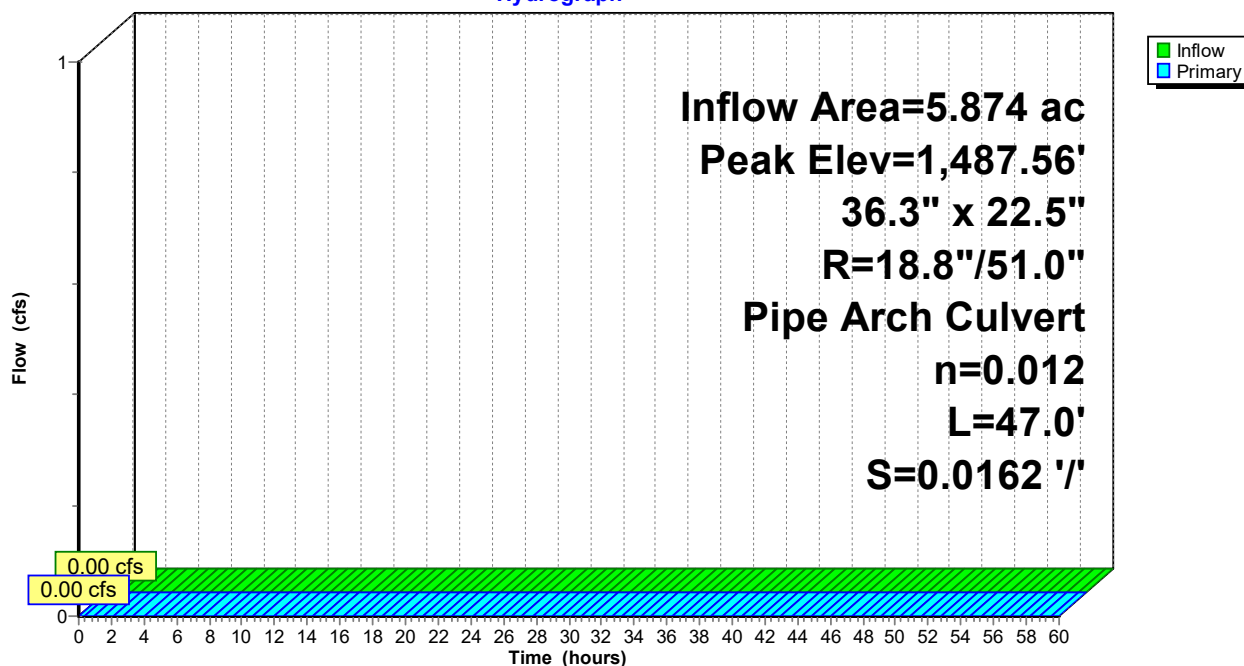
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,487.56' @ 0.00 hrs
 Flood Elev= 1,489.60'

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,487.56' | 36.3" W x 22.5" H, R=18.8"/51.0" Pipe Arch RCP_Arch 37x23 L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,487.56' / 1,486.80' S= 0.0162 '/' Cc= 0.900 n= 0.012, Flow Area= 4.43 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,487.56' (Free Discharge)
 ↑1=RCP_Arch 37x23 (Controls 0.00 cfs)

Pond 1.1aC1: TS1 Culvert

Hydrograph



Summary for Pond 1.1aC2: TS2 Culvert

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR3 : Bypass Swale

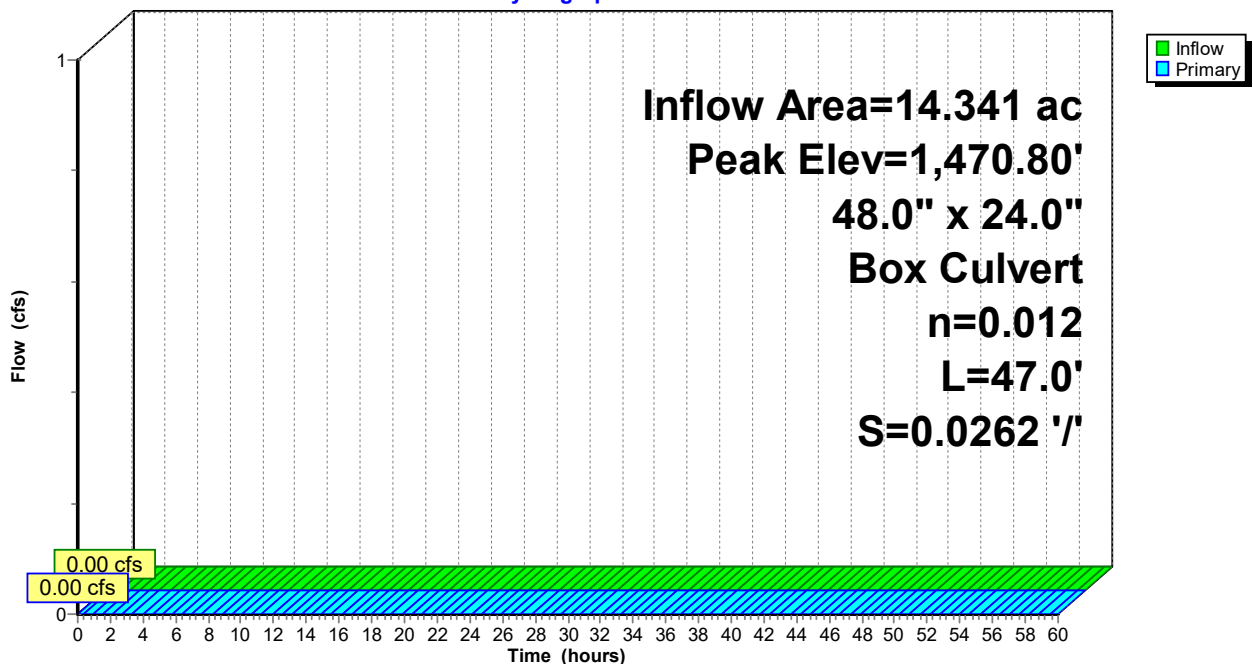
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,470.80' @ 0.00 hrs
 Flood Elev= 1,473.07'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,470.80' | 48.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,470.80' / 1,469.57' S= 0.0262 '/ Cc= 0.900 n= 0.012, Flow Area= 8.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,470.80' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.1aC2: TS2 Culvert

Hydrograph



Summary for Pond 1.1aC3: TS3 Culvert

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR4 : Bypass Swale

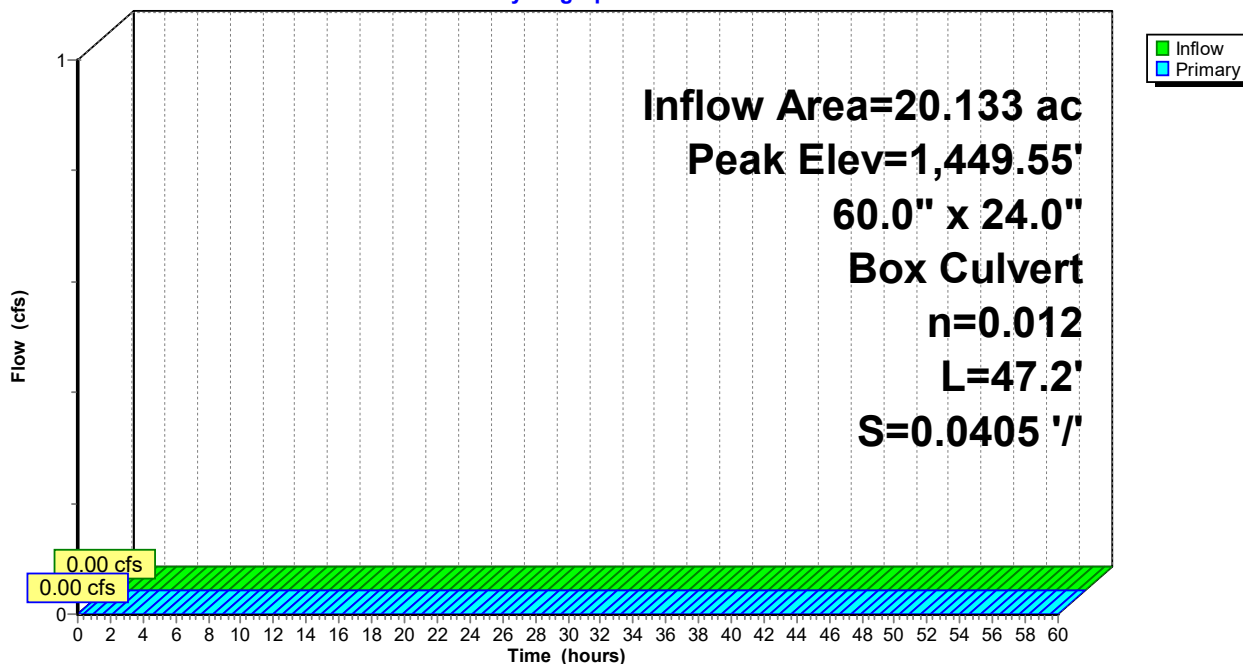
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.55' @ 0.00 hrs
 Flood Elev= 1,452.10'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,449.55' | 60.0" W x 24.0" H Box Culvert L= 47.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.55' / 1,447.64' S= 0.0405 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,449.55' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.1aC3: TS3 Culvert

Hydrograph



Summary for Pond 1.1aP: North Road Bypass OC

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.00' @ 0.00 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

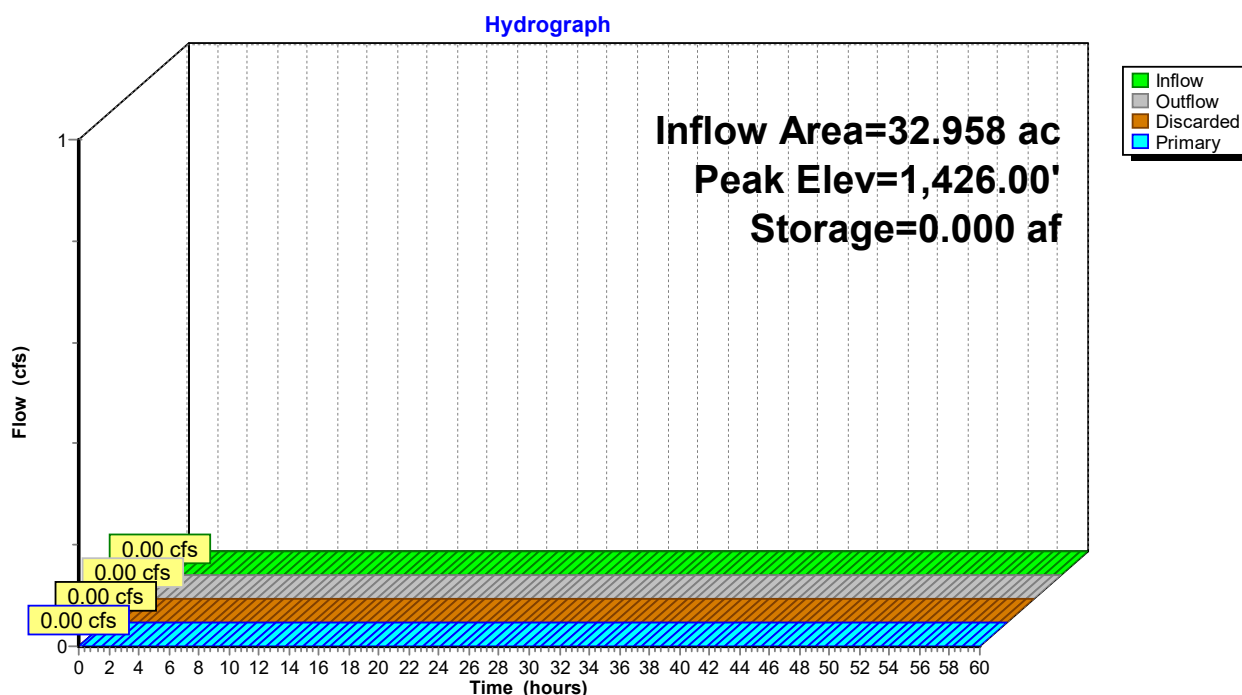
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,426.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,426.00' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,428.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,426.00' (Free Discharge)
 ↳1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,426.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.1aP: North Road Bypass OC



Summary for Pond 1.1bC1: TS4 Culvert

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 0.26" for 1-Yr Storm event
 Inflow = 0.12 cfs @ 12.17 hrs, Volume= 0.029 af
 Outflow = 0.12 cfs @ 12.17 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.12 cfs @ 12.17 hrs, Volume= 0.029 af
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

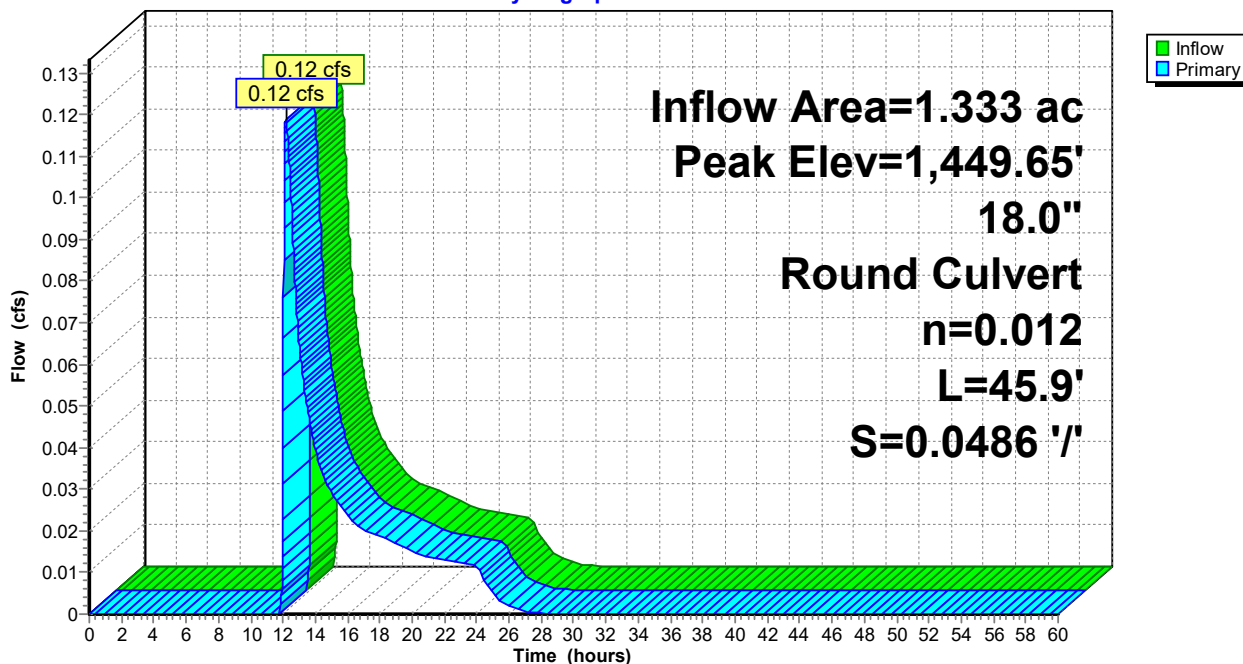
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.65' @ 12.17 hrs
 Flood Elev= 1,451.20'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,449.50' | 18.0" Round Culvert L= 45.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.50' / 1,447.27' S= 0.0486 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=0.12 cfs @ 12.17 hrs HW=1,449.65' (Free Discharge)
 ← **1=Culvert** (Inlet Controls 0.12 cfs @ 1.31 fps)

Pond 1.1bC1: TS4 Culvert

Hydrograph



Summary for Pond 1.1bP1: Dry Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.23" for 1-Yr Storm event
 Inflow = 0.15 cfs @ 12.26 hrs, Volume= 0.039 af
 Outflow = 0.15 cfs @ 12.31 hrs, Volume= 0.039 af, Atten= 1%, Lag= 2.8 min
 Discarded = 0.00 cfs @ 12.31 hrs, Volume= 0.004 af
 Primary = 0.15 cfs @ 12.31 hrs, Volume= 0.035 af
 Routed to Pond 1.1bP2 : North Road Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,425.78' @ 12.31 hrs Surf.Area= 197 sf Storage= 78 cf

Plug-Flow detention time= 49.3 min calculated for 0.039 af (100% of inflow)
 Center-of-Mass det. time= 49.5 min (1,022.2 - 972.7)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,424.75' | 428 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,424.75 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,425.00 | 25 | 22.9 | 2 | 2 | 42 | |
| 1,426.00 | 273 | 98.0 | 127 | 129 | 767 | |
| 1,426.70 | 603 | 161.7 | 299 | 428 | 2,086 | |

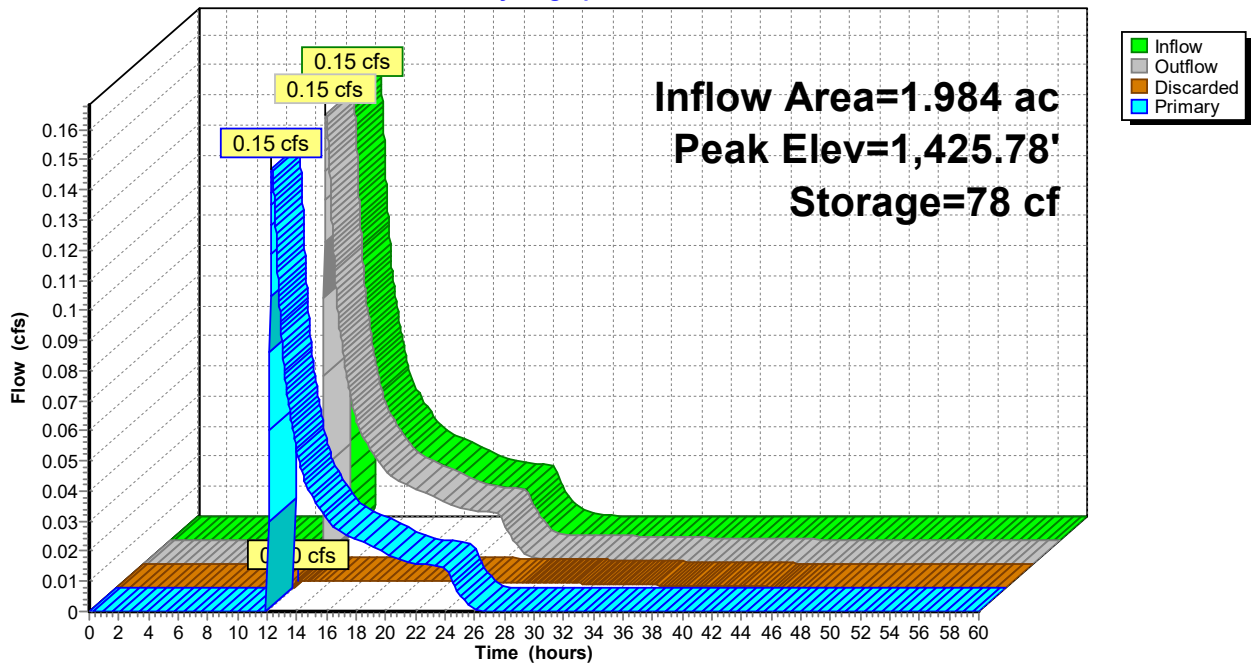
| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | |
|--------|-----------|-----------|--|--|--|--|--|--|--|--|--|--|--|--|
| #1 | Discarded | 1,424.75' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | |
| #2 | Primary | 1,425.69' | 2.0' long x 2.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 | | | | | | | | | | | |
| | | | Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32 | | | | | | | | | | | |

Discarded OutFlow Max=0.00 cfs @ 12.31 hrs HW=1,425.78' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.15 cfs @ 12.31 hrs HW=1,425.78' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.15 cfs @ 0.78 fps)

Pond 1.1bP1: Dry Swale

Hydrograph



Summary for Pond 1.1bP2: North Road Detention Pond

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.21" for 1-Yr Storm event
 Inflow = 0.15 cfs @ 12.31 hrs, Volume= 0.035 af
 Outflow = 0.01 cfs @ 24.37 hrs, Volume= 0.034 af, Atten= 92%, Lag= 723.7 min
 Discarded = 0.01 cfs @ 24.37 hrs, Volume= 0.034 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,423.08' @ 24.37 hrs Surf.Area= 0.022 ac Storage= 0.024 af

Plug-Flow detention time= 1,064.8 min calculated for 0.034 af (96% of inflow)
 Center-of-Mass det. time= 1,046.6 min (2,017.3 - 970.8)

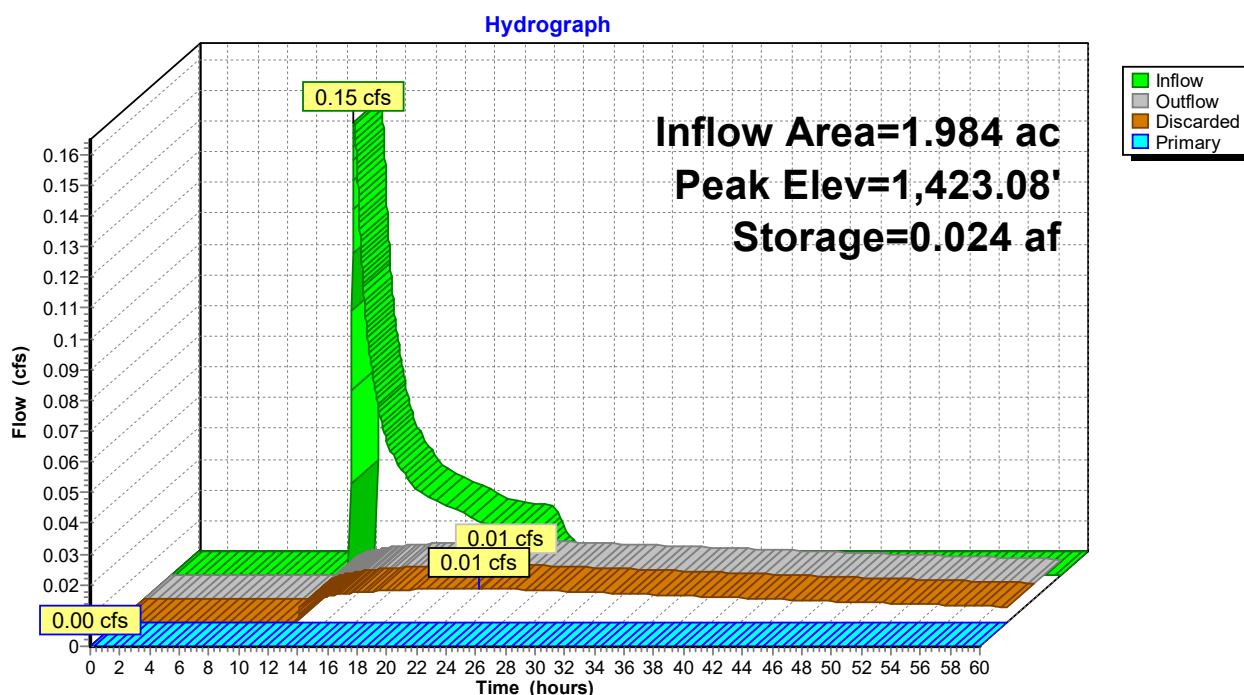
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,421.50' | 0.166 af | 10.00'W x 40.00'L x 5.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,421.50' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,424.00' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.01 cfs @ 24.37 hrs HW=1,423.08' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,421.50' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.1bP2: North Road Detention Pond



Summary for Pond 1.2aC1: TS 7 Culvert

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.2aR2 : Bypass Swale

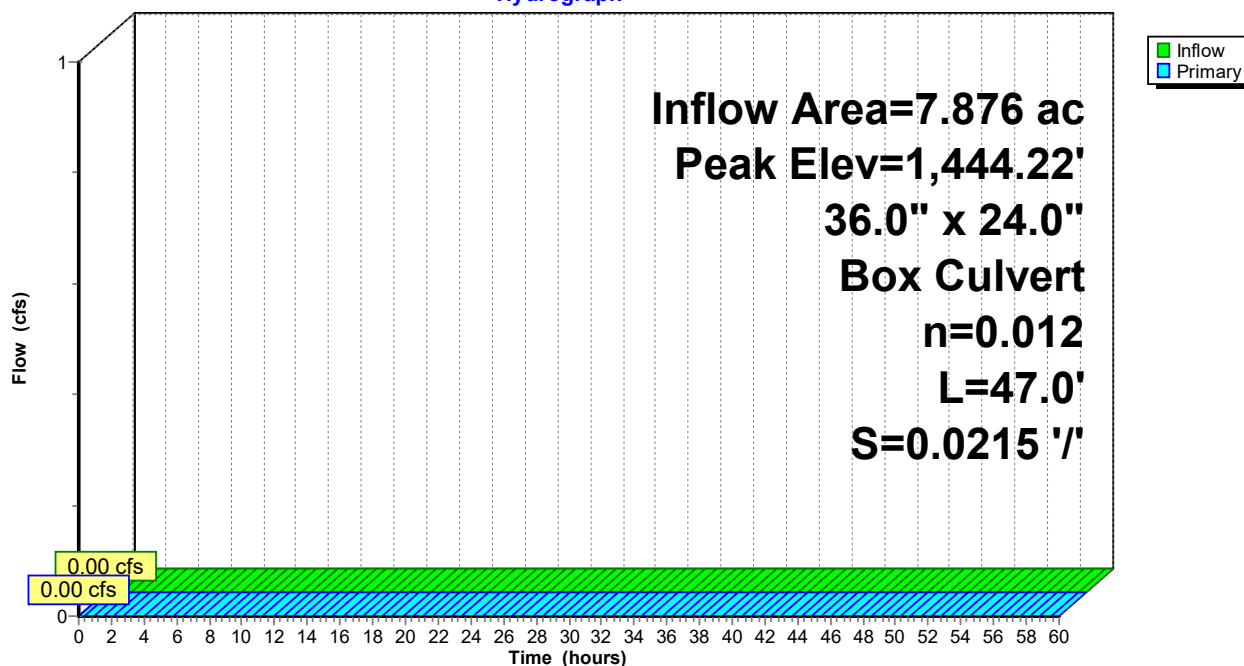
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,444.22' @ 0.00 hrs
 Flood Elev= 1,446.28'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,444.22' | 36.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,444.22' / 1,443.21' S= 0.0215 '/ Cc= 0.900 n= 0.012, Flow Area= 6.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,444.22' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.2aC1: TS 7 Culvert

Hydrograph



Summary for Pond 1.2aC2: TS8 Culvert

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.2aR3 : Bypass Swale

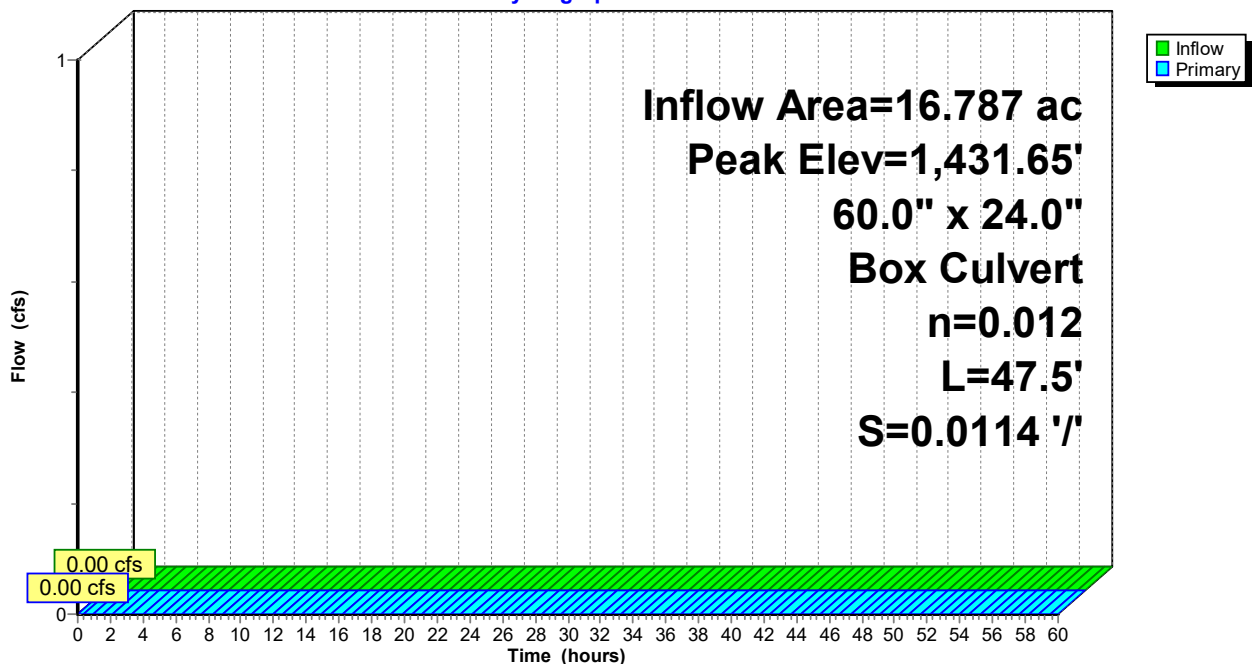
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.65' @ 0.00 hrs
 Flood Elev= 1,433.87'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,431.65' | 60.0" W x 24.0" H Box Culvert L= 47.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,431.65' / 1,431.11' S= 0.0114 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,431.65' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.2aC2: TS8 Culvert

Hydrograph



Summary for Pond 1.2aP: South Road Bypass OC

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.00' @ 0.00 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

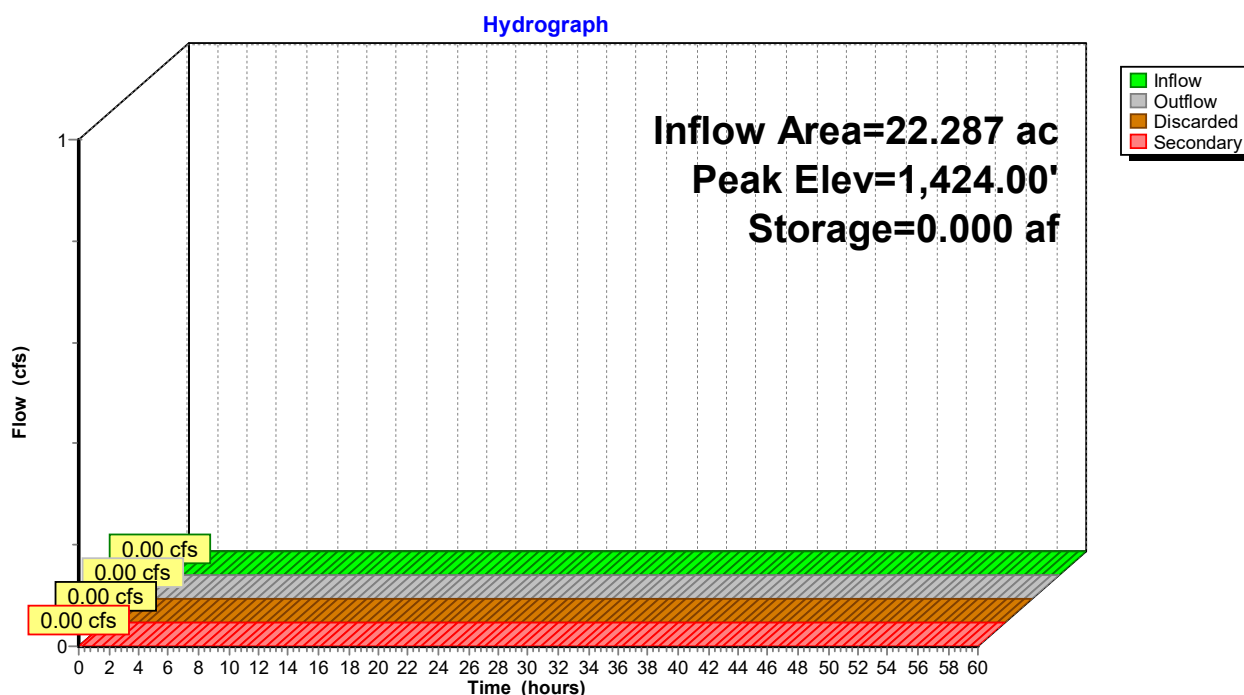
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area |
| #2 | Secondary | 1,426.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳1=Exfiltration (Passes 0.00 cfs of 0.06 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.2aP: South Road Bypass OC



Summary for Pond 1.2bC1: East Road Culvert

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 0.17" for 1-Yr Storm event
 Inflow = 0.04 cfs @ 12.13 hrs, Volume= 0.010 af
 Outflow = 0.04 cfs @ 12.13 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.04 cfs @ 12.13 hrs, Volume= 0.010 af
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

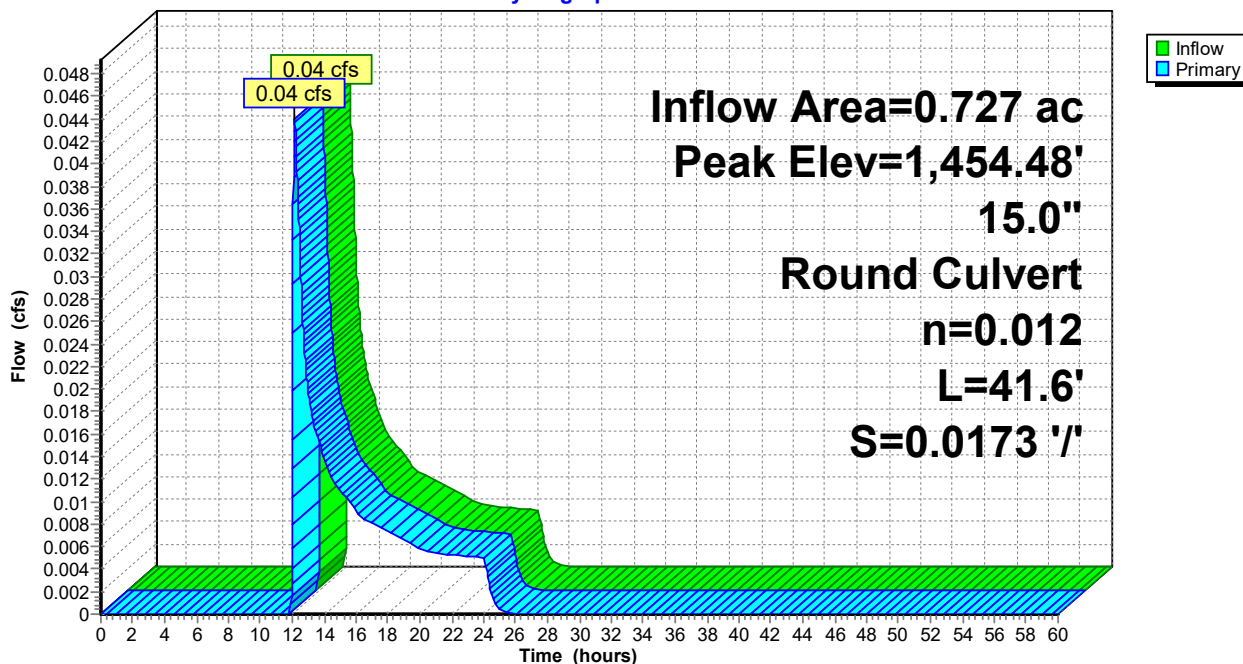
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,454.48' @ 12.13 hrs
 Flood Elev= 1,457.45'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,454.39' | 15.0" Round Culvert L= 41.6' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,454.39' / 1,453.67' S= 0.0173 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf |

Primary OutFlow Max=0.04 cfs @ 12.13 hrs HW=1,454.48' (Free Discharge)
 ← **1=Culvert** (Inlet Controls 0.04 cfs @ 1.04 fps)

Pond 1.2bC1: East Road Culvert

Hydrograph



Summary for Pond 1.2bC2: TS6 Culvert

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 0.10" for 1-Yr Storm event
 Inflow = 0.03 cfs @ 12.52 hrs, Volume= 0.013 af
 Outflow = 0.03 cfs @ 12.52 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.03 cfs @ 12.52 hrs, Volume= 0.013 af
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

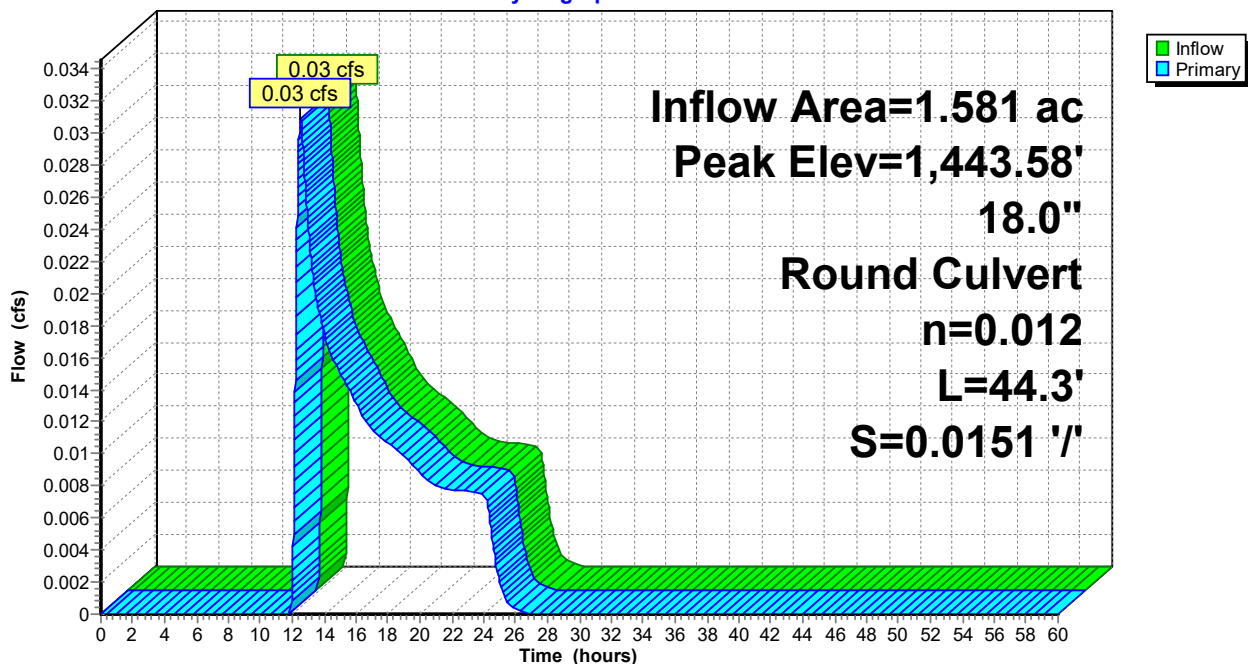
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,443.58' @ 12.52 hrs
 Flood Elev= 1,445.09'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,443.51' | 18.0" Round Culvert L= 44.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,443.51' / 1,442.84' S= 0.0151 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=0.03 cfs @ 12.52 hrs HW=1,443.58' (Free Discharge)
 ↑=Culvert (Inlet Controls 0.03 cfs @ 0.93 fps)

Pond 1.2bC2: TS6 Culvert

Hydrograph



Summary for Pond 1.2bP: South Road Treatment Pond

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 0.15" for 1-Yr Storm event
 Inflow = 0.13 cfs @ 12.10 hrs, Volume= 0.030 af
 Outflow = 0.11 cfs @ 12.17 hrs, Volume= 0.030 af, Atten= 9%, Lag= 4.6 min
 Discarded = 0.11 cfs @ 12.17 hrs, Volume= 0.030 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.05' @ 12.17 hrs Surf.Area= 0.009 ac Storage= 0.000 af

Plug-Flow detention time= 3.0 min calculated for 0.030 af (100% of inflow)
 Center-of-Mass det. time= 3.0 min (987.7 - 984.7)

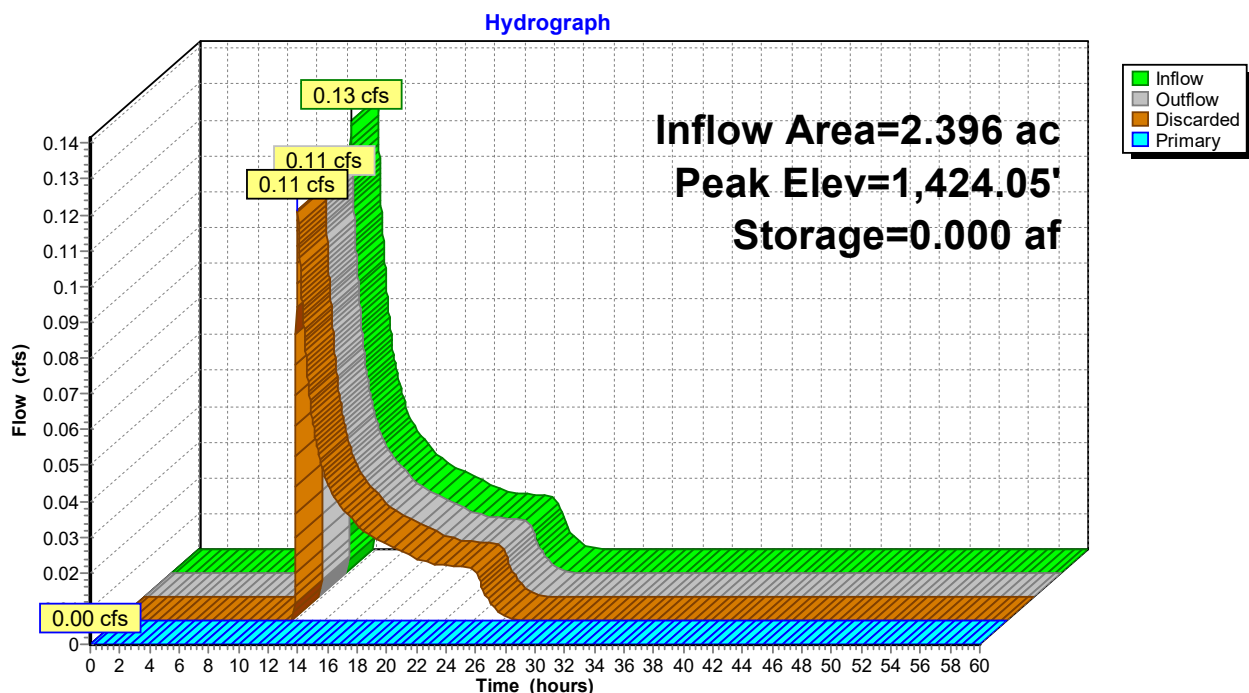
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.149 af | 20.00'W x 20.00'L x 5.00'H Prismaoid Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,426.05' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.11 cfs @ 12.17 hrs HW=1,424.05' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.2bP: South Road Treatment Pond



Summary for Pond 1.3P: Pond 3 - Access Rd West

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.03 hrs, Volume= 0.000 af, Atten= 2%, Lag= 1.1 min
 Discarded = 0.00 cfs @ 24.03 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link SP1 : Study Point 1

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,456.00' @ 24.03 hrs Surf.Area= 784 sf Storage= 0 cf

Plug-Flow detention time= 4.8 min calculated for 0.000 af (100% of inflow)
 Center-of-Mass det. time= 4.8 min (1,398.1 - 1,393.4)

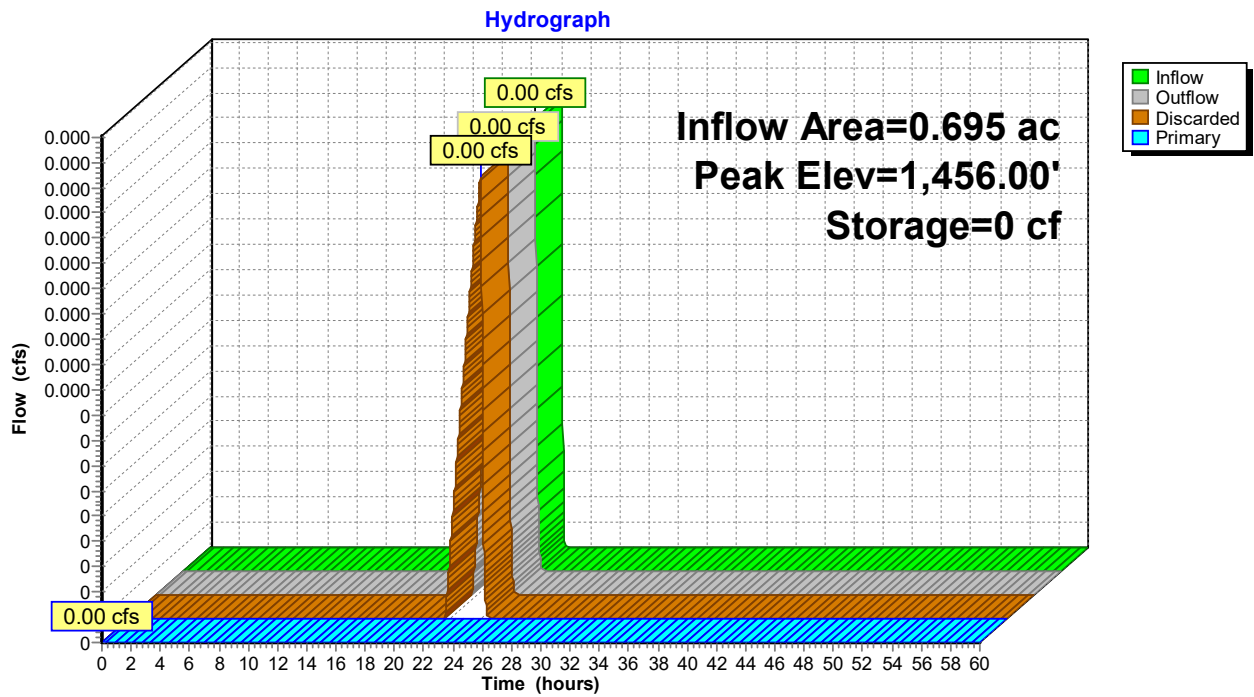
| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,456.00' | 8,743 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,456.00 | 784 | 123.0 | 0 | 0 | 784 | |
| 1,458.00 | 1,720 | 194.0 | 2,443 | 2,443 | 2,603 | |
| 1,459.00 | 2,884 | 279.0 | 2,277 | 4,721 | 5,811 | |
| 1,460.00 | 5,280 | 421.0 | 4,022 | 8,743 | 13,729 | |

| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | | | | | | | | |
|--------|-----------|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| #1 | Discarded | 1,456.00' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | | | | | | | | |
| #2 | Primary | 1,459.99' | 20.0' long x 4.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | | | | | | | | |
| | | | Head (feet) | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 5.50 | |
| | | | Coef. (English) | 2.38 | 2.54 | 2.69 | 2.68 | 2.67 | 2.67 | 2.65 | 2.66 | 2.66 | 2.66 | 2.68 | 2.72 | 2.73 | 2.76 | 2.79 | 2.88 | 3.07 | 3.32 |

Discarded OutFlow Max=0.00 cfs @ 24.03 hrs HW=1,456.00' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,456.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.3P: Pond 3 - Access Rd West



Summary for Pond 4.2bP: Pond 4 - Access Rd East

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 0.28" for 1-Yr Storm event
 Inflow = 0.12 cfs @ 12.06 hrs, Volume= 0.011 af
 Outflow = 0.04 cfs @ 12.50 hrs, Volume= 0.011 af, Atten= 69%, Lag= 26.2 min
 Discarded = 0.04 cfs @ 12.50 hrs, Volume= 0.011 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 4.2C : 18" Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,445.81' @ 12.50 hrs Surf.Area= 259 sf Storage= 70 cf

Plug-Flow detention time= 12.7 min calculated for 0.011 af (100% of inflow)
 Center-of-Mass det. time= 12.7 min (939.1 - 926.4)

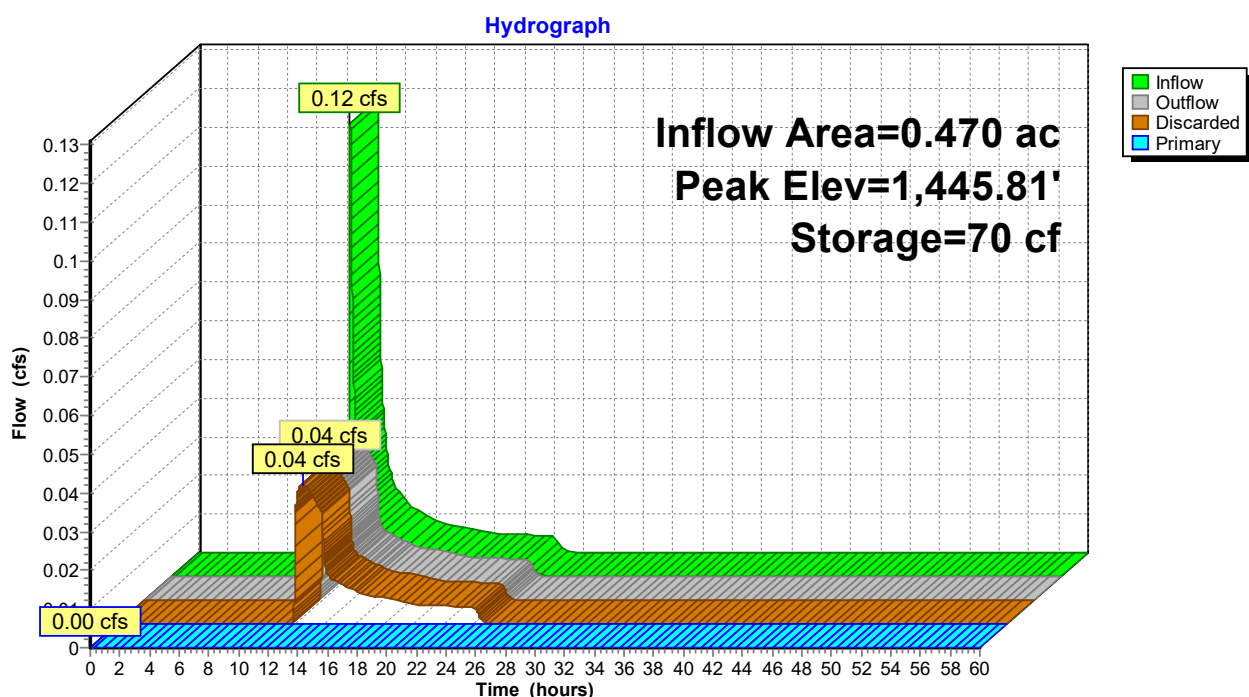
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,445.50' | 2,317 cf | 10.00'W x 20.00'L x 3.50'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|---|-----------|-----------|---|
| #1 | Discarded | 1,445.50' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,448.25' | 10.0' long x 4.0' breadth Broad-Crested Rectangular Weir |
| Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 | | | |
| 2.50 3.00 3.50 4.00 4.50 5.00 5.50 | | | |
| Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 | | | |
| 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32 | | | |

Discarded OutFlow Max=0.04 cfs @ 12.50 hrs HW=1,445.81' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,445.50' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.2bP: Pond 4 - Access Rd East



Summary for Pond 4.2C: 18" Culvert

Inflow Area = 27.587 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.01 cfs @ 24.16 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.78' @ 26.20 hrs Surf.Area= 373 sf Storage= 35 cf
 Flood Elev= 1,434.64' Surf.Area= 27,666 sf Storage= 28,656 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

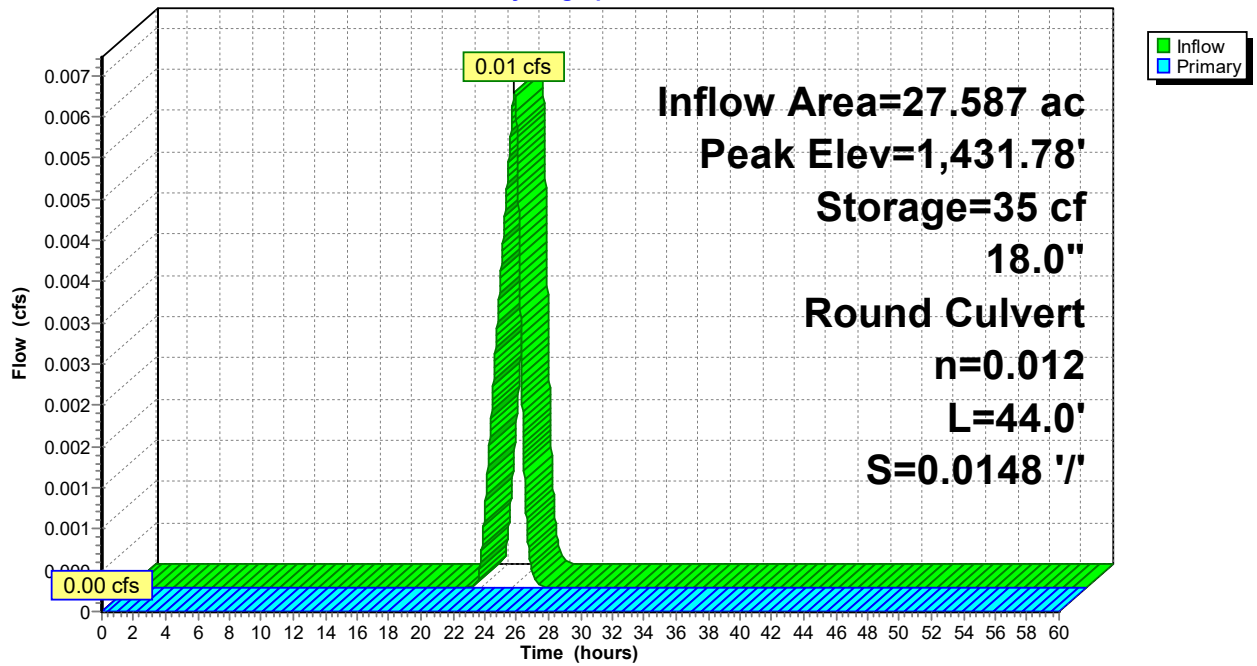
| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,431.50' | 39,033 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,431.50 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,432.00 | 1,190 | 146.0 | 198 | 198 | 1,697 | |
| 1,432.50 | 3,534 | 368.0 | 1,129 | 1,327 | 10,778 | |
| 1,433.00 | 5,795 | 497.0 | 2,309 | 3,637 | 19,660 | |
| 1,433.50 | 10,362 | 837.0 | 3,984 | 7,621 | 55,755 | |
| 1,434.00 | 16,931 | 975.0 | 6,756 | 14,377 | 75,659 | |
| 1,434.60 | 27,412 | 1,352.0 | 13,177 | 27,555 | 145,474 | |
| 1,435.00 | 30,000 | 1,500.0 | 11,479 | 39,033 | 179,068 | |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.83' | 18.0" Round Culvert L= 44.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.83' / 1,431.18' S= 0.0148 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,431.50' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 4.2C: 18" Culvert

Hydrograph



Summary for Pond 4.3C: 24" Culvert

Inflow Area = 25.466 ac, 5.08% Impervious, Inflow Depth = 0.03" for 1-Yr Storm event
 Inflow = 0.07 cfs @ 17.89 hrs, Volume= 0.059 af
 Outflow = 0.07 cfs @ 17.89 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.07 cfs @ 17.89 hrs, Volume= 0.059 af
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.46' @ 17.89 hrs
 Flood Elev= 1,434.65'

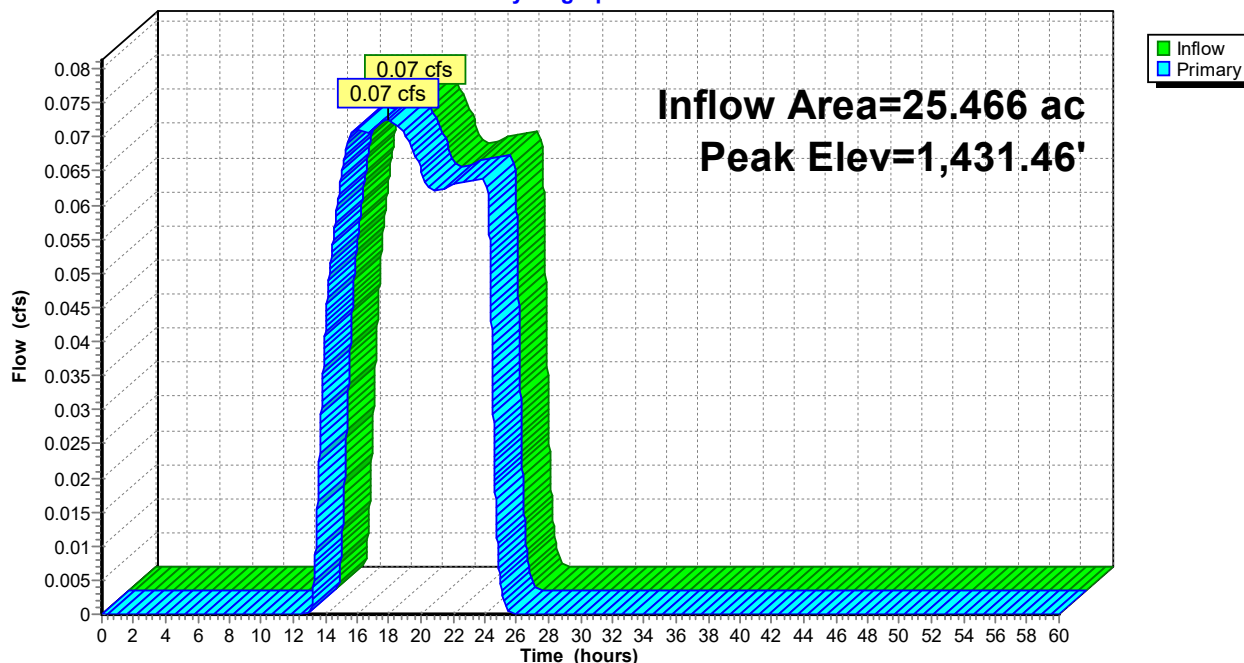
| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.35' | 24.0" Round Culvert L= 55.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.35' / 1,429.87' S= 0.0265 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf |
| #2 | Primary | 1,434.81' | 20.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |

Primary OutFlow Max=0.07 cfs @ 17.89 hrs HW=1,431.46' (Free Discharge)

- 1=Culvert (Inlet Controls 0.07 cfs @ 1.11 fps)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.3C: 24" Culvert

Hydrograph



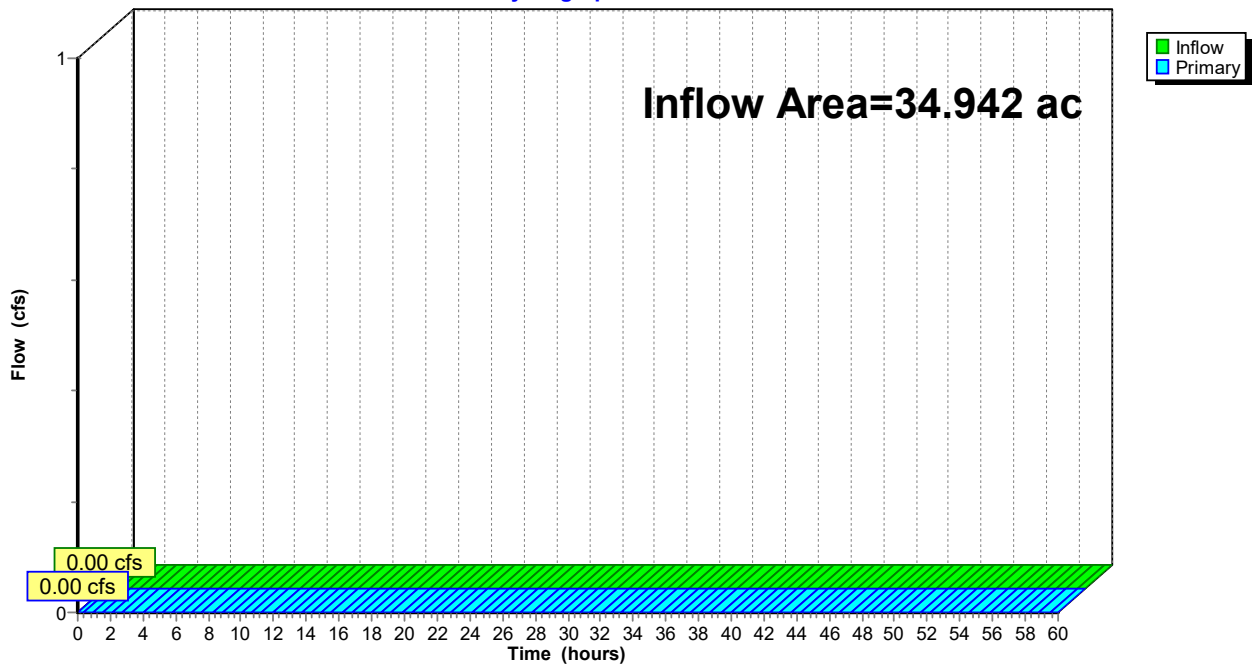
Summary for Link 1.1L:

Inflow Area = 34.942 ac, 0.04% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.1L:

Hydrograph



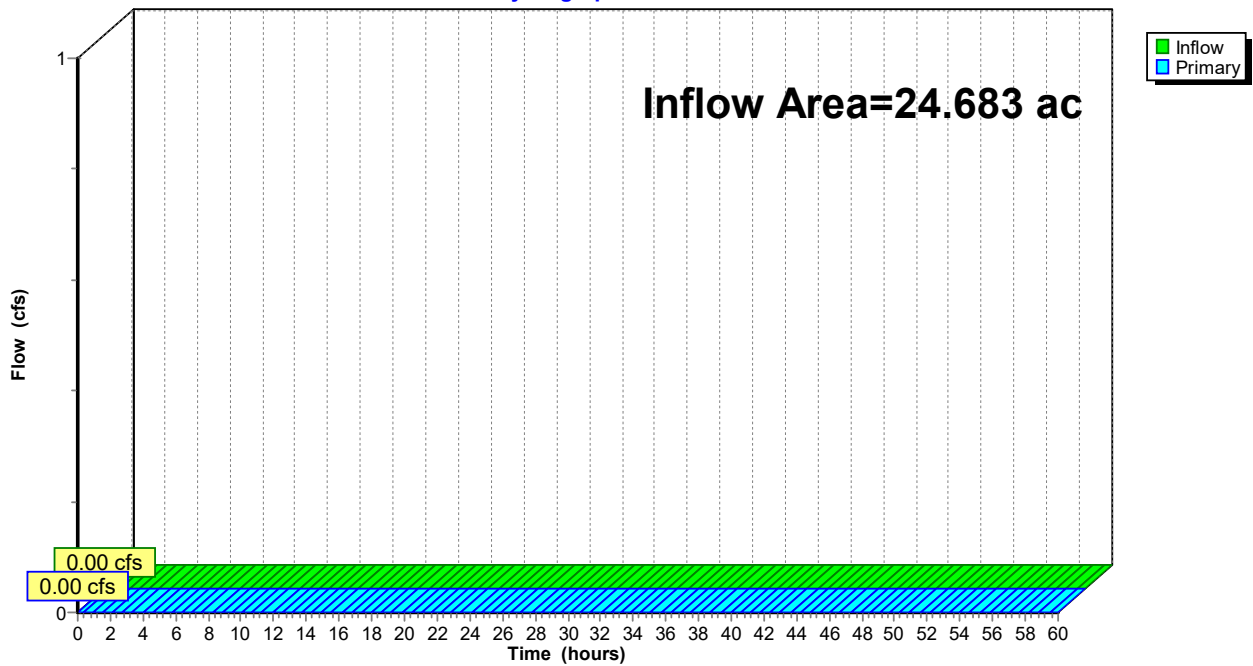
Summary for Link 1.2L:

Inflow Area = 24.683 ac, 0.06% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.2L:

Hydrograph

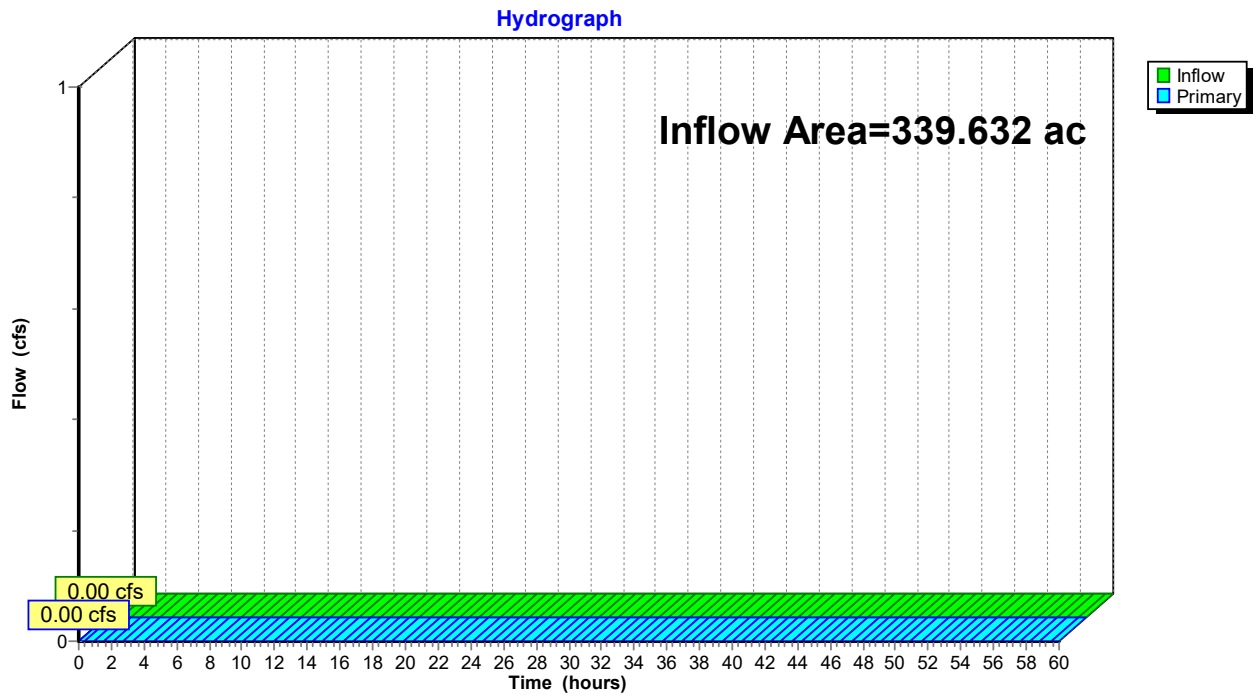


Summary for Link SP1: Study Point 1

Inflow Area = 339.632 ac, 0.01% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP1: Study Point 1

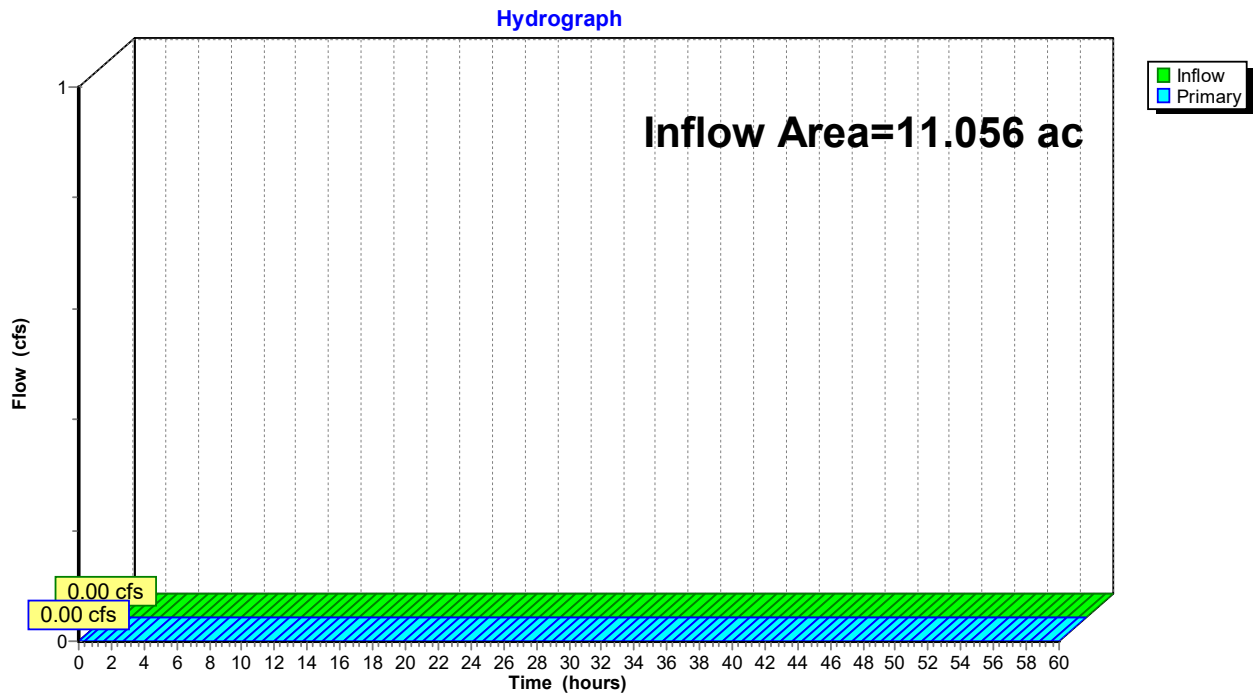


Summary for Link SP2: Study Point 2

Inflow Area = 11.056 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP2: Study Point 2

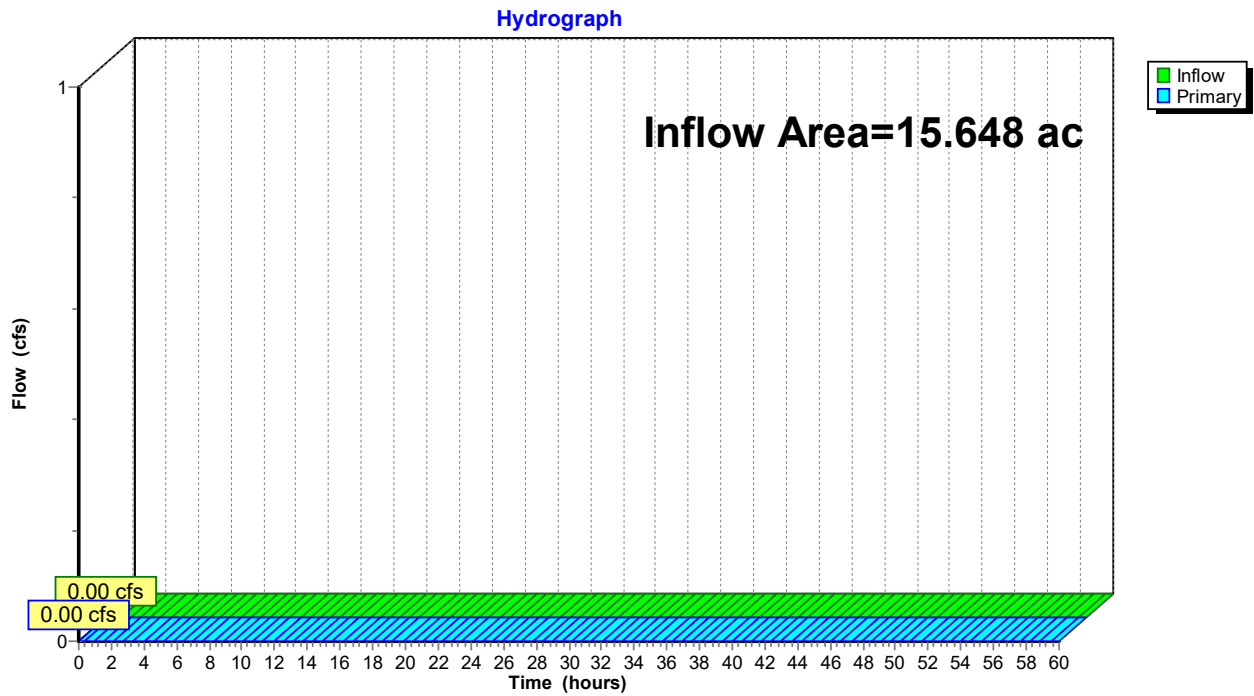


Summary for Link SP3: Study Point 3

Inflow Area = 15.648 ac, 0.56% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP3: Study Point 3



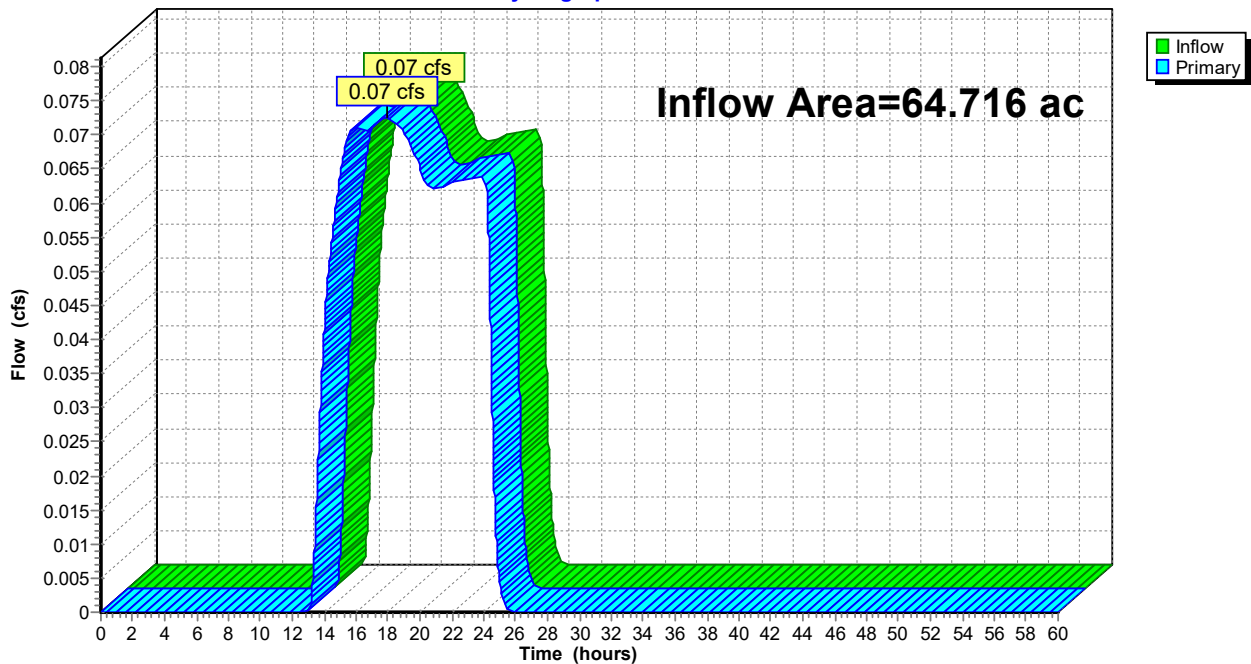
Summary for Link SP4: Study Point 4

Inflow Area = 64.716 ac, 2.50% Impervious, Inflow Depth = 0.01" for 1-Yr Storm event
Inflow = 0.07 cfs @ 17.89 hrs, Volume= 0.059 af
Primary = 0.07 cfs @ 17.89 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP4: Study Point 4

Hydrograph

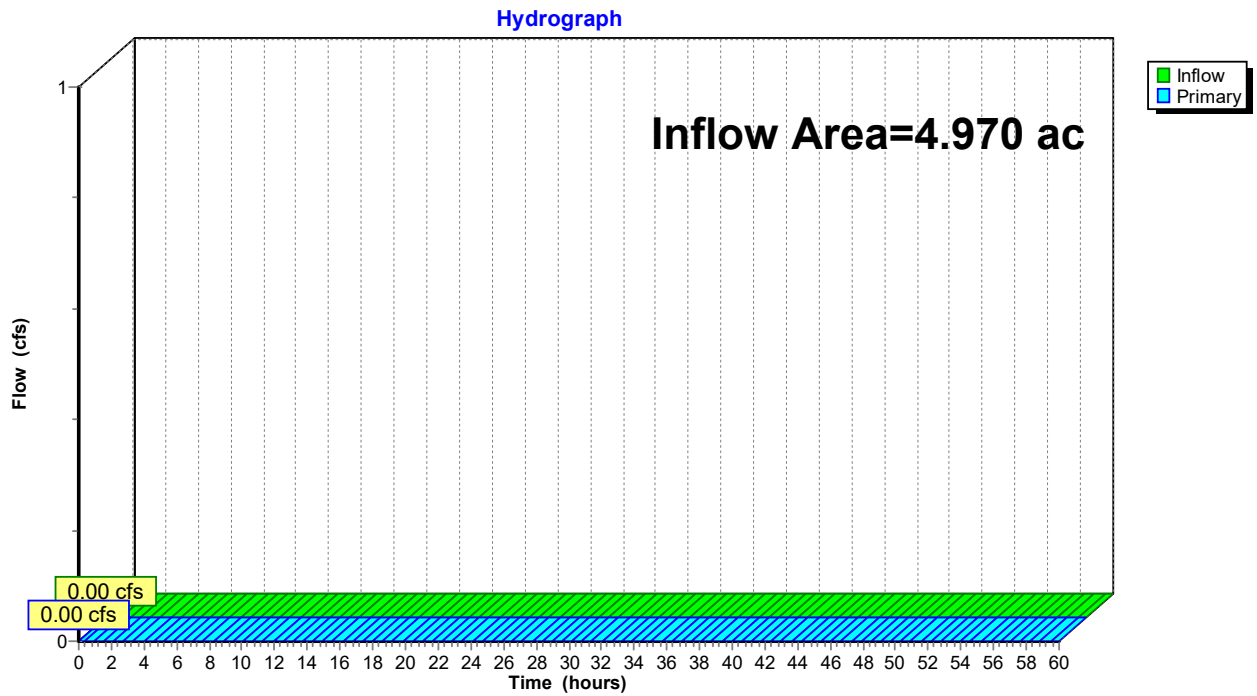


Summary for Link SP5: Study Point 5

Inflow Area = 4.970 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP5: Study Point 5

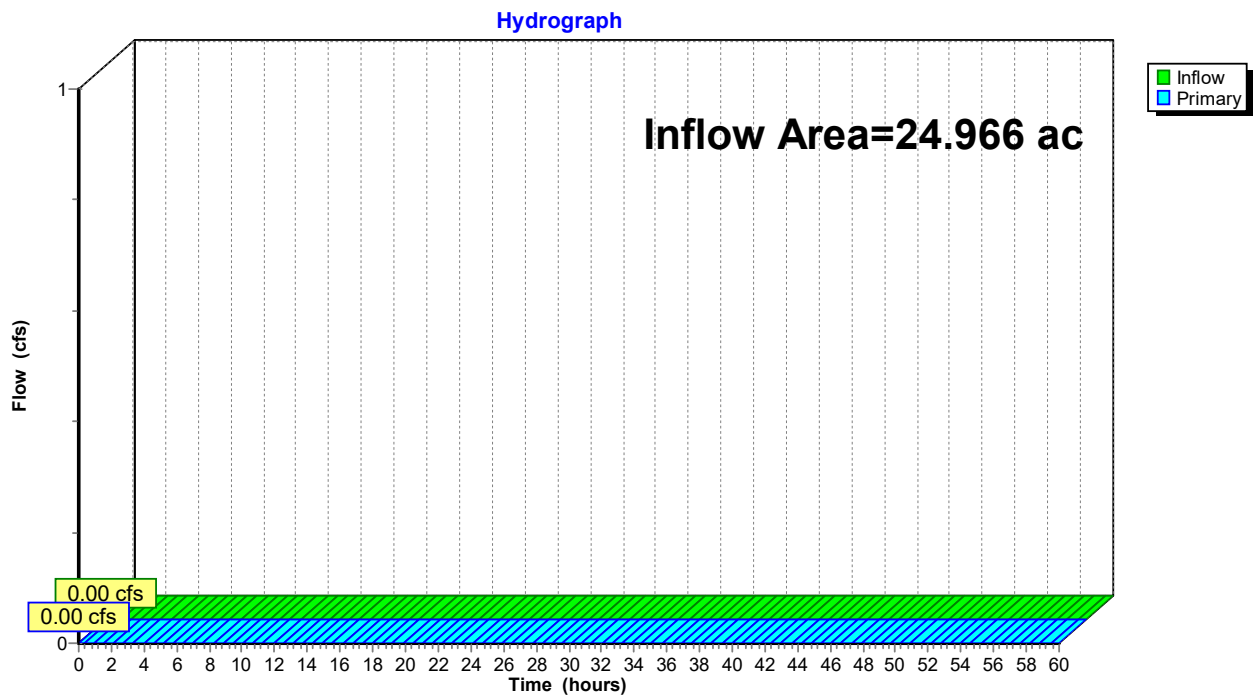


Summary for Link SP6: Study Point 6

Inflow Area = 24.966 ac, 5.81% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP6: Study Point 6



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

| | |
|---|--|
| Subcatchment 1.1aS1: North Array East | Runoff Area=5.874 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=788' Tc=18.8 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS2: North Array East | Runoff Area=8.467 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=931' Tc=21.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS3: North Array West | Runoff Area=5.792 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,031' Tc=19.7 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS4: North Array West | Runoff Area=12.825 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,562' Tc=26.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1bS1: North Road - East | Runoff Area=1.333 ac 0.53% Impervious Runoff Depth=0.93" Tc=6.0 min CN=71 Runoff=2.16 cfs 0.103 af |
| Subcatchment 1.1bS2: North Road - West | Runoff Area=0.651 ac 1.08% Impervious Runoff Depth=0.78" Tc=6.0 min CN=68 Runoff=0.86 cfs 0.042 af |
| Subcatchment 1.2aS1: Middle Array East | Runoff Area=7.876 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=865' Tc=19.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS2: Middle Array Center | Runoff Area=8.911 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=825' Tc=18.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS3: Middle Array West | Runoff Area=5.500 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=882' Tc=18.5 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2bS1: East Road - West | Runoff Area=0.727 ac 0.00% Impervious Runoff Depth=0.73" Tc=6.0 min CN=67 Runoff=0.89 cfs 0.044 af |
| Subcatchment 1.2bS2: South Road | Runoff Area=0.854 ac 0.47% Impervious Runoff Depth=0.37" Flow Length=308' Tc=13.7 min CN=58 Runoff=0.26 cfs 0.026 af |
| Subcatchment 1.2bS3: South Road | Runoff Area=0.815 ac 1.35% Impervious Runoff Depth=0.93" Tc=6.0 min CN=71 Runoff=1.32 cfs 0.063 af |
| Subcatchment 1.3aS1: Surface Discharge | Runoff Area=279.312 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=6,771' Tc=201.7 min CN=39 Runoff=0.11 cfs 0.034 af |
| Subcatchment 1.3bS: Access Rd to Pond 3 | Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.17" Tc=6.0 min CN=51 Runoff=0.04 cfs 0.010 af |
| Subcatchment 2S: | Runoff Area=11.056 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=2,342' Tc=36.0 min CN=39 Runoff=0.01 cfs 0.001 af |
| Subcatchment 3S: | Runoff Area=15.648 ac 0.56% Impervious Runoff Depth=0.01" Flow Length=886' Tc=12.7 min CN=40 Runoff=0.02 cfs 0.007 af |
| Subcatchment 4.1S: | Runoff Area=11.663 ac 2.80% Impervious Runoff Depth=0.05" Flow Length=845' Tc=15.8 min CN=45 Runoff=0.06 cfs 0.052 af |

| | |
|--|---|
| Subcatchment 4.2aS: | Runoff Area=27.117 ac 0.00% Impervious Runoff Depth=0.17" Flow Length=1,640' Tc=38.9 min CN=51 Runoff=0.85 cfs 0.380 af |
| Subcatchment 4.2bS: | Runoff Area=0.470 ac 0.00% Impervious Runoff Depth=0.98" Tc=6.0 min CN=72 Runoff=0.81 cfs 0.038 af |
| Subcatchment 4.3S: | Runoff Area=25.466 ac 5.08% Impervious Runoff Depth=0.34" Flow Length=2,280' Tc=36.5 min CN=57 Runoff=3.30 cfs 0.715 af |
| Subcatchment 5S: | Runoff Area=4.970 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,180' Tc=17.5 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 6S: | Runoff Area=24.966 ac 5.81% Impervious Runoff Depth=0.03" Flow Length=1,961' Tc=60.1 min CN=43 Runoff=0.08 cfs 0.059 af |
| Reach 1.1aR1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=580.0' S=0.0108 '/ Capacity=56.37 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR2: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=557.4' S=0.0284 '/ Capacity=91.27 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR3: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=557.5' S=0.0352 '/ Capacity=101.68 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR4: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=580.5' S=0.0362 '/ Capacity=103.04 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1bR1: North Road Conveyance | Avg. Flow Depth=0.21' Max Vel=2.01 fps Inflow=2.16 cfs 0.103 af n=0.035 L=1,733.0' S=0.0240 '/ Capacity=111.65 cfs Outflow=1.13 cfs 0.103 af |
| Reach 1.1bR2: North Road Conveyance | Avg. Flow Depth=0.23' Max Vel=2.62 fps Inflow=1.78 cfs 0.145 af n=0.035 L=593.3' S=0.0380 '/ Capacity=140.36 cfs Outflow=1.61 cfs 0.145 af |
| Reach 1.2aR1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=524.2' S=0.0188 '/ Capacity=74.30 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2aR2: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=556.0' S=0.0204 '/ Capacity=77.47 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2aR3: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=249.0' S=0.0153 '/ Capacity=81.84 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2bR1: East Road Conveyance | Avg. Flow Depth=0.13' Max Vel=2.13 fps Inflow=0.89 cfs 0.044 af n=0.035 L=731.4' S=0.0456 '/ Capacity=79.22 cfs Outflow=0.69 cfs 0.044 af |
| Reach 1.2bR2: South Road Conveyance | Avg. Flow Depth=0.18' Max Vel=1.55 fps Inflow=0.89 cfs 0.071 af n=0.035 L=604.5' S=0.0177 '/ Capacity=95.76 cfs Outflow=0.70 cfs 0.071 af |
| Reach 1.2bR3: South Road Conveyance | Avg. Flow Depth=0.24' Max Vel=1.89 fps Inflow=1.54 cfs 0.133 af n=0.035 L=755.9' S=0.0187 '/ Capacity=98.64 cfs Outflow=1.22 cfs 0.133 af |
| Reach 4.1R1: Bypass Swale | Avg. Flow Depth=0.16' Max Vel=1.27 fps Inflow=0.06 cfs 0.052 af n=0.035 L=570.0' S=0.0303 '/ Capacity=54.88 cfs Outflow=0.06 cfs 0.052 af |
| Reach 4.1R2: Ex Stream | Avg. Flow Depth=0.06' Max Vel=0.68 fps Inflow=0.82 cfs 0.431 af n=0.035 L=740.0' S=0.0099 '/ Capacity=588.81 cfs Outflow=0.77 cfs 0.431 af |

| | | | | |
|---|------------------------------|---------------------|------------------|--------------------|
| Reach 4.2bR: Conveyance Swale | Avg. Flow Depth=0.14' | Max Vel=2.09 fps | Inflow=0.81 cfs | 0.038 af |
| | n=0.035 | L=565.0' | S=0.0432 '/ | Capacity=77.09 cfs |
| | | | Outflow=0.69 cfs | 0.038 af |
| Pond 1.1aC1: TS1 Culvert | | Peak Elev=1,487.56' | Inflow=0.00 cfs | 0.000 af |
| | 36.3" x 22.5", R=18.8"/51.0" | Pipe Arch Culvert | n=0.012 | L=47.0' |
| | | | S=0.0162 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aC2: TS2 Culvert | | Peak Elev=1,470.80' | Inflow=0.00 cfs | 0.000 af |
| | 48.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0262 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aC3: TS3 Culvert | | Peak Elev=1,449.55' | Inflow=0.00 cfs | 0.000 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.2' |
| | | | S=0.0405 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aP: North Road Bypass OC | | Peak Elev=1,426.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1bC1: TS4 Culvert | | Peak Elev=1,449.98' | Inflow=1.13 cfs | 0.103 af |
| | 18.0" | Round Culvert | n=0.012 | L=45.9' |
| | | | S=0.0486 '/ | Outflow=1.13 cfs |
| | | | | 0.103 af |
| Pond 1.1bP1: Dry Swale | | Peak Elev=1,426.14' | Storage=171 cf | Inflow=1.61 cfs |
| | | Discarded=0.00 cfs | 0.004 af | Primary=1.58 cfs |
| | | | | 0.141 af |
| | | | | Outflow=1.59 cfs |
| | | | | 0.145 af |
| Pond 1.1bP2: North Road Detention Pond | | Peak Elev=1,424.04' | Storage=0.050 af | Inflow=1.58 cfs |
| | | Discarded=0.02 cfs | 0.052 af | Primary=0.45 cfs |
| | | | | 0.074 af |
| | | | | Outflow=0.46 cfs |
| | | | | 0.127 af |
| Pond 1.2aC1: TS 7 Culvert | | Peak Elev=1,444.22' | Inflow=0.00 cfs | 0.000 af |
| | 36.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0215 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aC2: TS8 Culvert | | Peak Elev=1,431.65' | Inflow=0.00 cfs | 0.000 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.5' |
| | | | S=0.0114 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aP: South Road Bypass OC | | Peak Elev=1,424.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Secondary=0.00 cfs |
| | | | | 0.000 af |
| | | | | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2bC1: East Road Culvert | | Peak Elev=1,454.78' | Inflow=0.69 cfs | 0.044 af |
| | 15.0" | Round Culvert | n=0.012 | L=41.6' |
| | | | S=0.0173 '/ | Outflow=0.69 cfs |
| | | | | 0.044 af |
| Pond 1.2bC2: TS6 Culvert | | Peak Elev=1,443.88' | Inflow=0.70 cfs | 0.071 af |
| | 18.0" | Round Culvert | n=0.012 | L=44.3' |
| | | | S=0.0151 '/ | Outflow=0.70 cfs |
| | | | | 0.071 af |
| Pond 1.2bP: South Road Treatment Pond | | Peak Elev=1,426.06' | Storage=0.033 af | Inflow=1.22 cfs |
| | | Discarded=0.29 cfs | 0.132 af | Primary=0.12 cfs |
| | | | | 0.002 af |
| | | | | Outflow=0.41 cfs |
| | | | | 0.133 af |
| Pond 1.3P: Pond 3 - Access Rd West | | Peak Elev=1,456.01' | Storage=8 cf | Inflow=0.04 cfs |
| | | Discarded=0.03 cfs | 0.010 af | Primary=0.00 cfs |
| | | | | 0.000 af |
| | | | | Outflow=0.03 cfs |
| | | | | 0.010 af |
| Pond 4.2bP: Pond 4 - Access Rd East | | Peak Elev=1,447.07' | Storage=581 cf | Inflow=0.69 cfs |
| | | Discarded=0.08 cfs | 0.038 af | Primary=0.00 cfs |
| | | | | 0.000 af |
| | | | | Outflow=0.08 cfs |
| | | | | 0.038 af |
| Pond 4.2C: 18" Culvert | | Peak Elev=1,432.23' | Storage=572 cf | Inflow=0.85 cfs |
| | 18.0" | Round Culvert | n=0.012 | L=44.0' |
| | | | S=0.0148 '/ | Outflow=0.81 cfs |
| | | | | 0.379 af |
| Pond 4.3C: 24" Culvert | | Peak Elev=1,432.12' | Inflow=3.30 cfs | 0.715 af |
| | | | | Outflow=3.30 cfs |
| | | | | 0.715 af |

| | |
|--------------------------------|---|
| Link 1.1L: | Inflow=0.45 cfs 0.074 af Primary=0.45 cfs 0.074 af |
| Link 1.2L: | Inflow=0.12 cfs 0.002 af Primary=0.12 cfs 0.002 af |
| Link SP1: Study Point 1 | Inflow=0.56 cfs 0.110 af Primary=0.56 cfs 0.110 af |
| Link SP2: Study Point 2 | Inflow=0.01 cfs 0.001 af Primary=0.01 cfs 0.001 af |
| Link SP3: Study Point 3 | Inflow=0.02 cfs 0.007 af Primary=0.02 cfs 0.007 af |
| Link SP4: Study Point 4 | Inflow=3.36 cfs 1.146 af Primary=3.36 cfs 1.146 af |
| Link SP5: Study Point 5 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP6: Study Point 6 | Inflow=0.08 cfs 0.059 af Primary=0.08 cfs 0.059 af |

Total Runoff Area = 460.988 ac Runoff Volume = 1.575 af Average Runoff Depth = 0.04"
99.31% Pervious = 457.801 ac 0.69% Impervious = 3.187 ac

Summary for Subcatchment 1.1aS1: North Array East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR1 : Bypass Swale

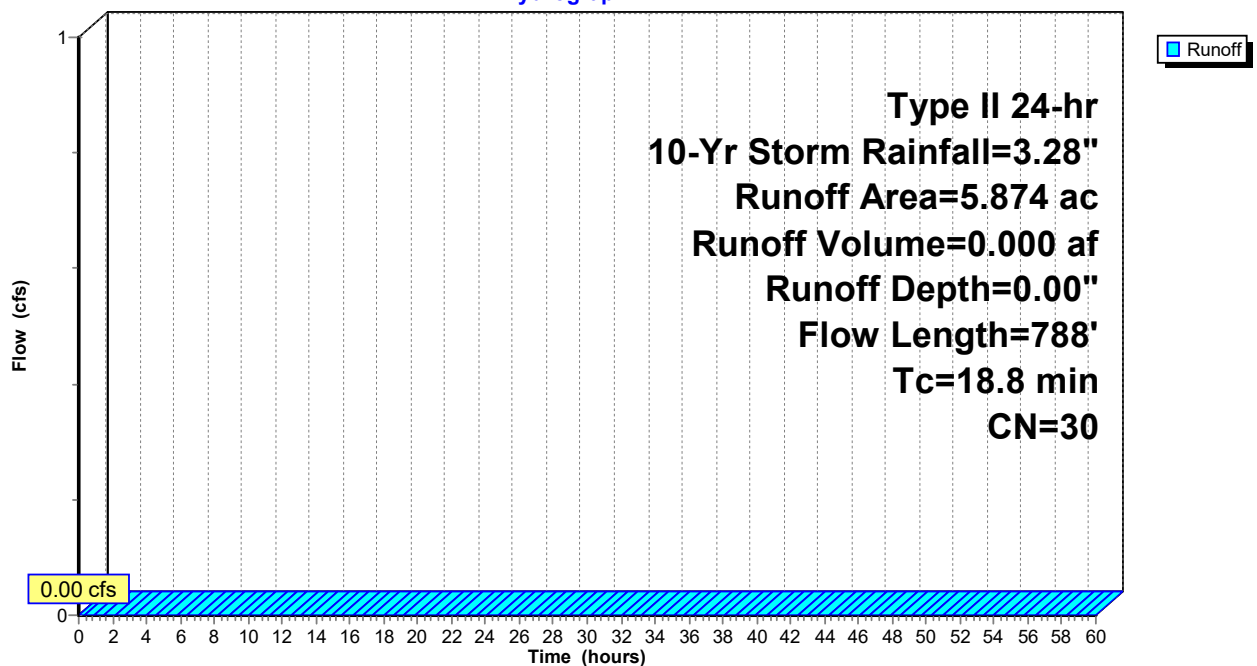
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.874 | 30 | Meadow, non-grazed, HSG A |
| 5.874 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.7 | 100 | 0.0499 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.1 | 688 | 0.0526 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.8 | 788 | Total | | | |

Subcatchment 1.1aS1: North Array East

Hydrograph



Summary for Subcatchment 1.1aS2: North Array East Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR2 : Bypass Swale

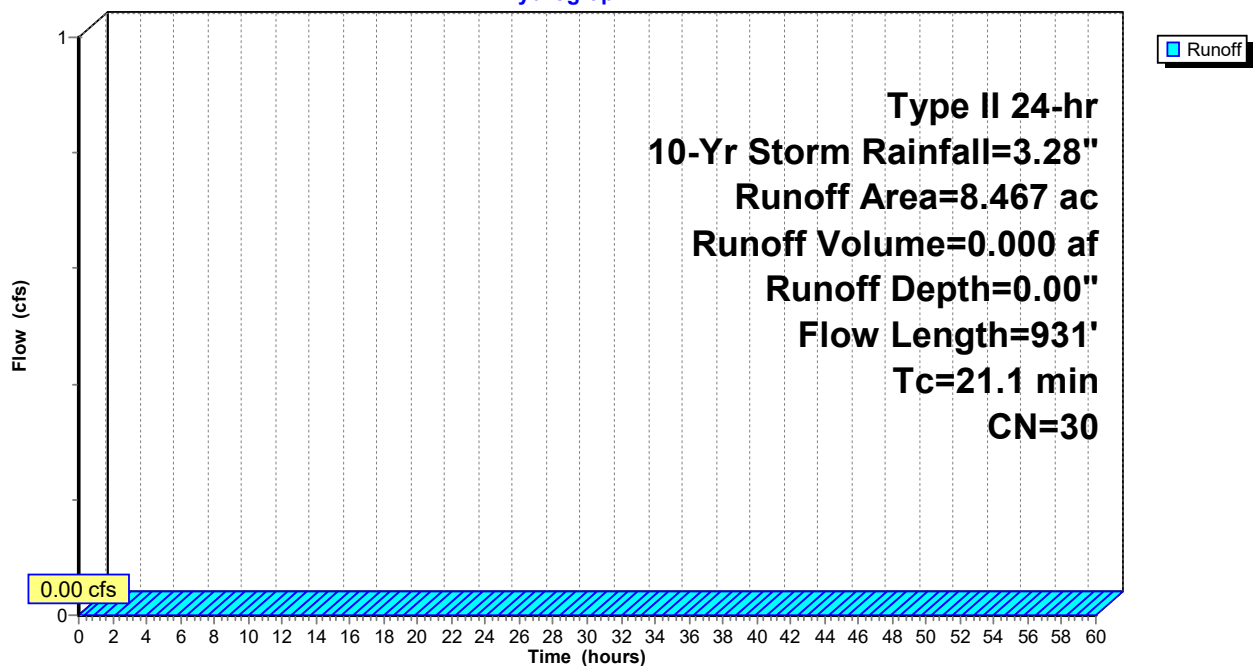
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.467 | 30 | Meadow, non-grazed, HSG A |
| 8.467 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.9 | 100 | 0.0476 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.2 | 831 | 0.0463 | 1.51 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 21.1 | 931 | Total | | | |

Subcatchment 1.1aS2: North Array East Center

Hydrograph



Summary for Subcatchment 1.1aS3: North Array West Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR3 : Bypass Swale

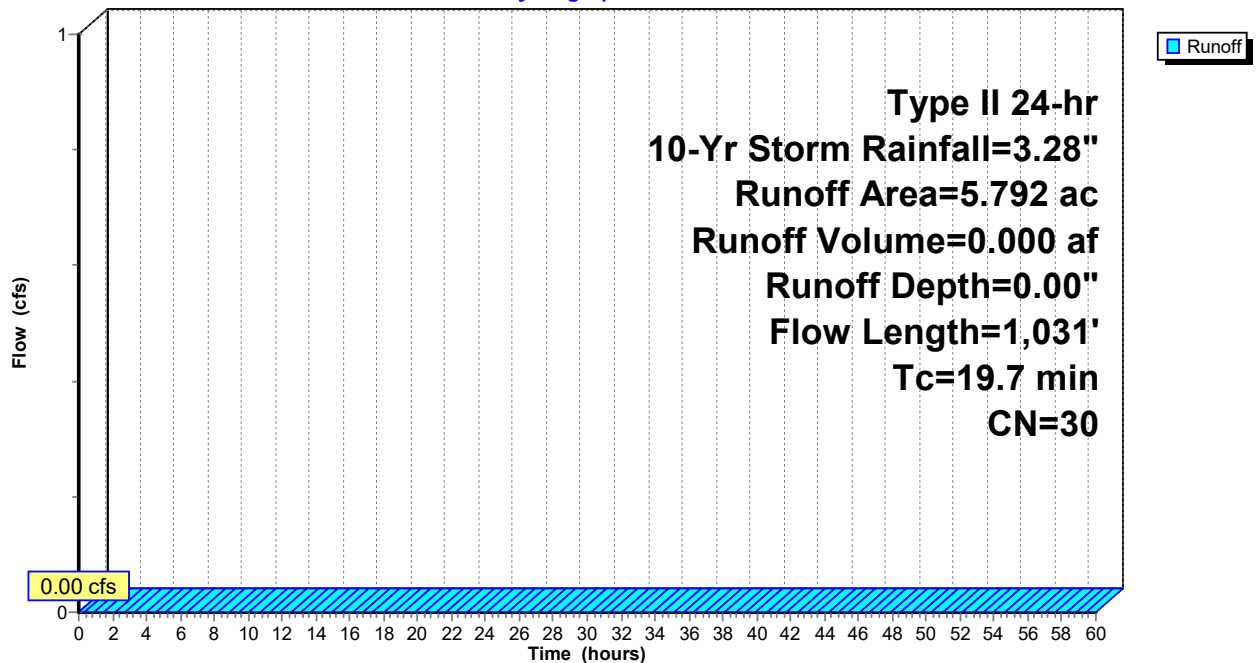
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.792 | 30 | Meadow, non-grazed, HSG A |
| 5.792 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0618 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.0 | 931 | 0.0601 | 1.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.7 | 1,031 | Total | | | |

Subcatchment 1.1aS3: North Array West Center

Hydrograph



Summary for Subcatchment 1.1aS4: North Array West

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR4 : Bypass Swale

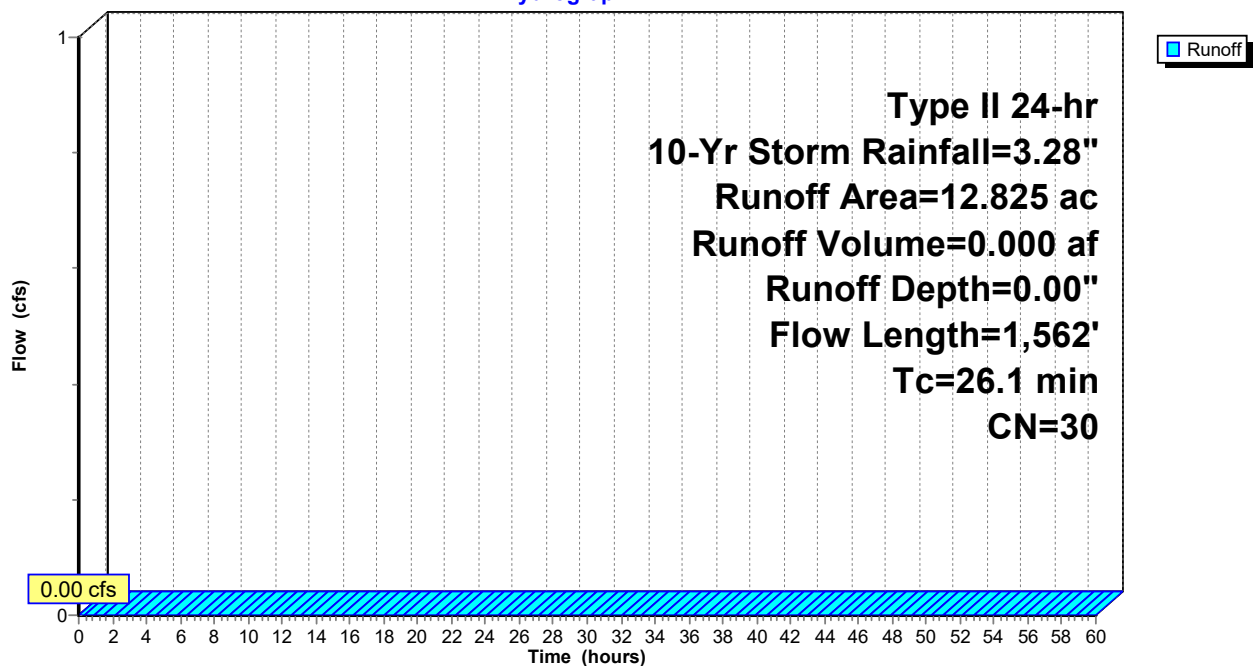
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 12.825 | 30 | Meadow, non-grazed, HSG A |
| 12.825 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.1 | 100 | 0.0560 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 15.0 | 1,462 | 0.0540 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 26.1 | 1,562 | Total | | | |

Subcatchment 1.1aS4: North Array West

Hydrograph



Summary for Subcatchment 1.1bS1: North Road - East

Runoff = 2.16 cfs @ 11.98 hrs, Volume= 0.103 af, Depth= 0.93"
 Routed to Reach 1.1bR1 : North Road Conveyance Swale

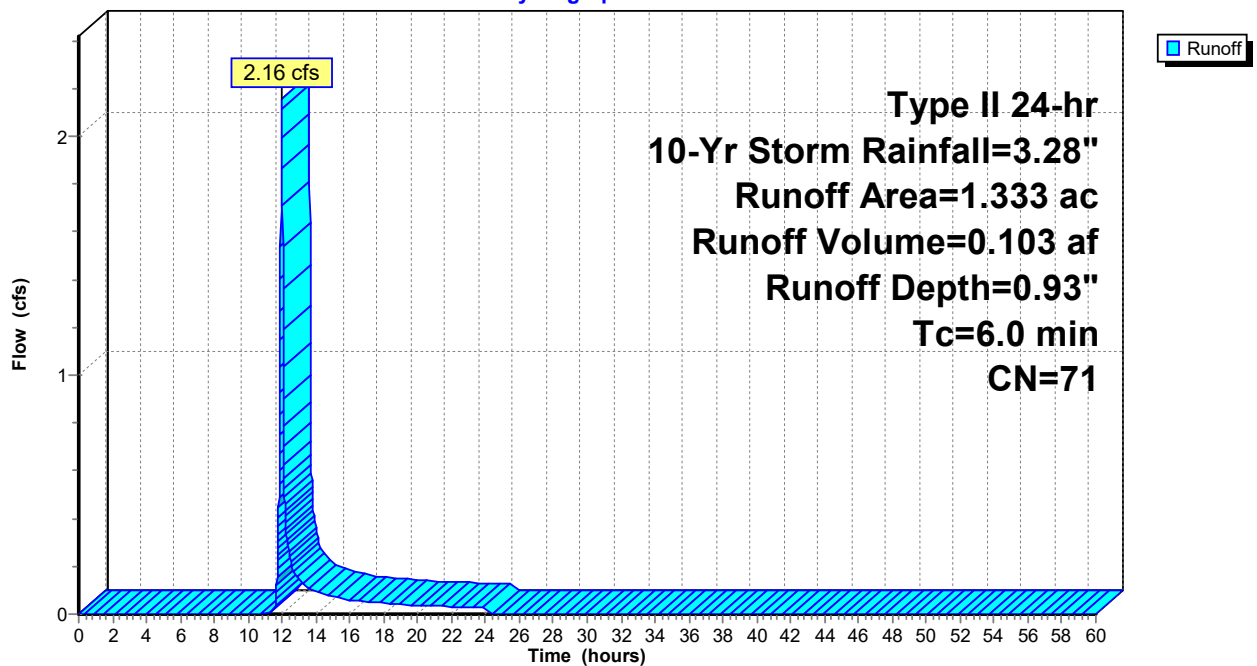
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.507 | 30 | Meadow, non-grazed, HSG A |
| 0.819 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 1.333 | 71 | Weighted Average |
| 1.326 | | 99.47% Pervious Area |
| 0.007 | | 0.53% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS1: North Road - East

Hydrograph



Summary for Subcatchment 1.1bS2: North Road - West

Runoff = 0.86 cfs @ 11.98 hrs, Volume= 0.042 af, Depth= 0.78"
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

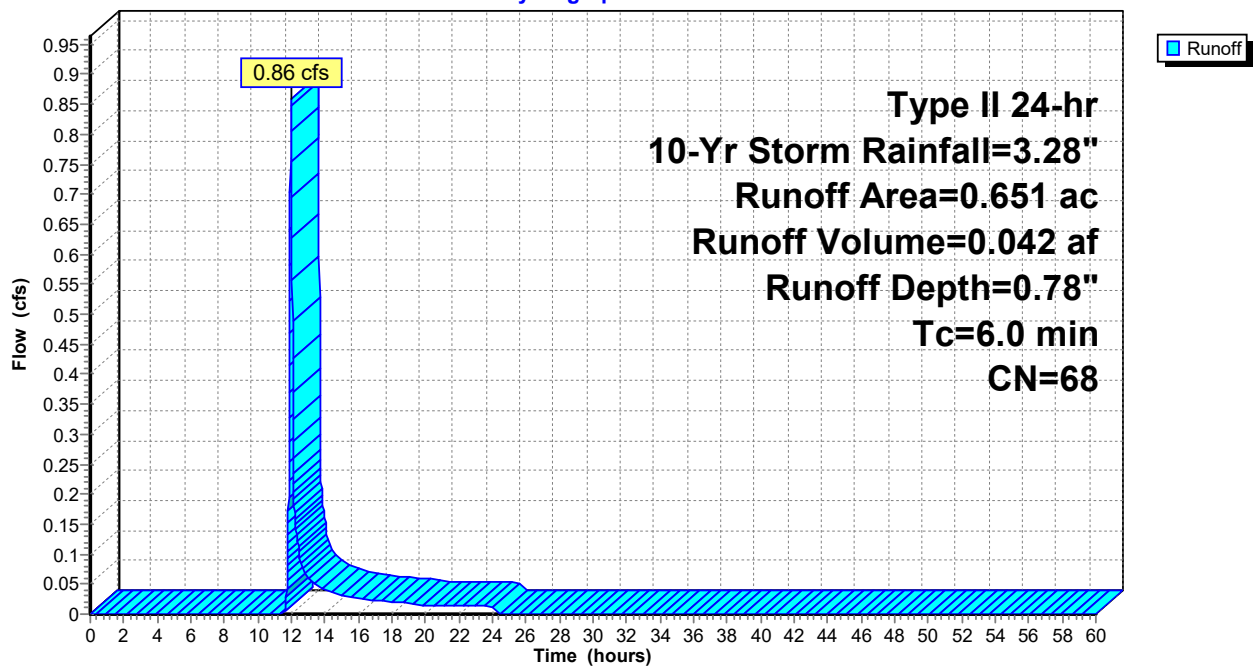
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.279 | 30 | Meadow, non-grazed, HSG A |
| 0.365 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 0.651 | 68 | Weighted Average |
| 0.644 | | 98.92% Pervious Area |
| 0.007 | | 1.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS2: North Road - West

Hydrograph



Summary for Subcatchment 1.2aS1: Middle Array East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR1 : Bypass Swale

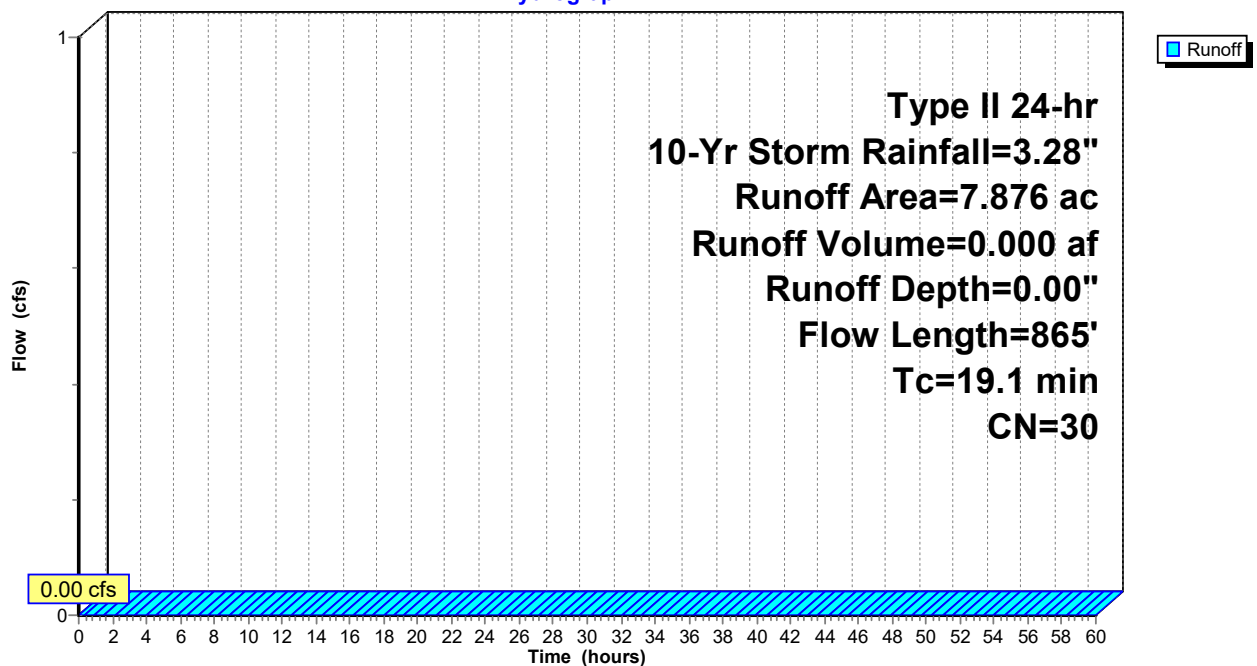
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 7.876 | 30 | Meadow, non-grazed, HSG A |
| 7.876 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.6 | 100 | 0.0628 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.5 | 765 | 0.0459 | 1.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.1 | 865 | Total | | | |

Subcatchment 1.2aS1: Middle Array East

Hydrograph



Summary for Subcatchment 1.2aS2: Middle Array Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR2 : Bypass Swale

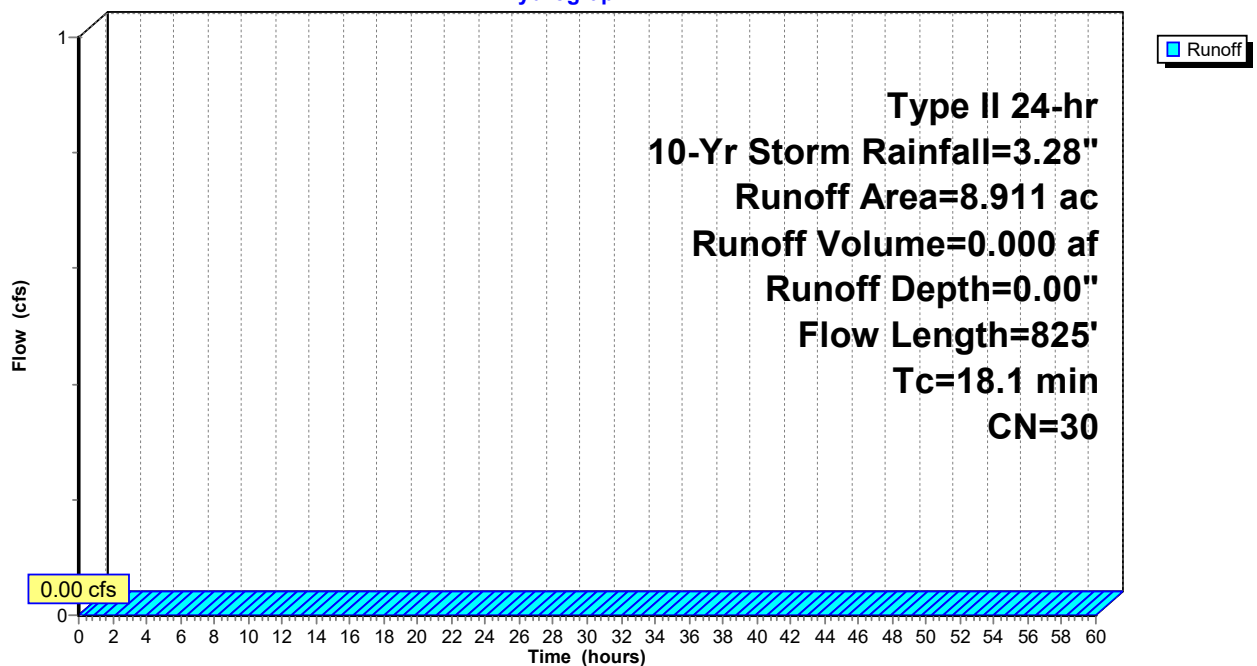
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.911 | 30 | Meadow, non-grazed, HSG A |
| 8.911 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.8 | 100 | 0.0607 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.3 | 725 | 0.0559 | 1.66 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 825 | Total | | | |

Subcatchment 1.2aS2: Middle Array Center

Hydrograph



Summary for Subcatchment 1.2aS3: Middle Array West

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR3 : Bypass Swale

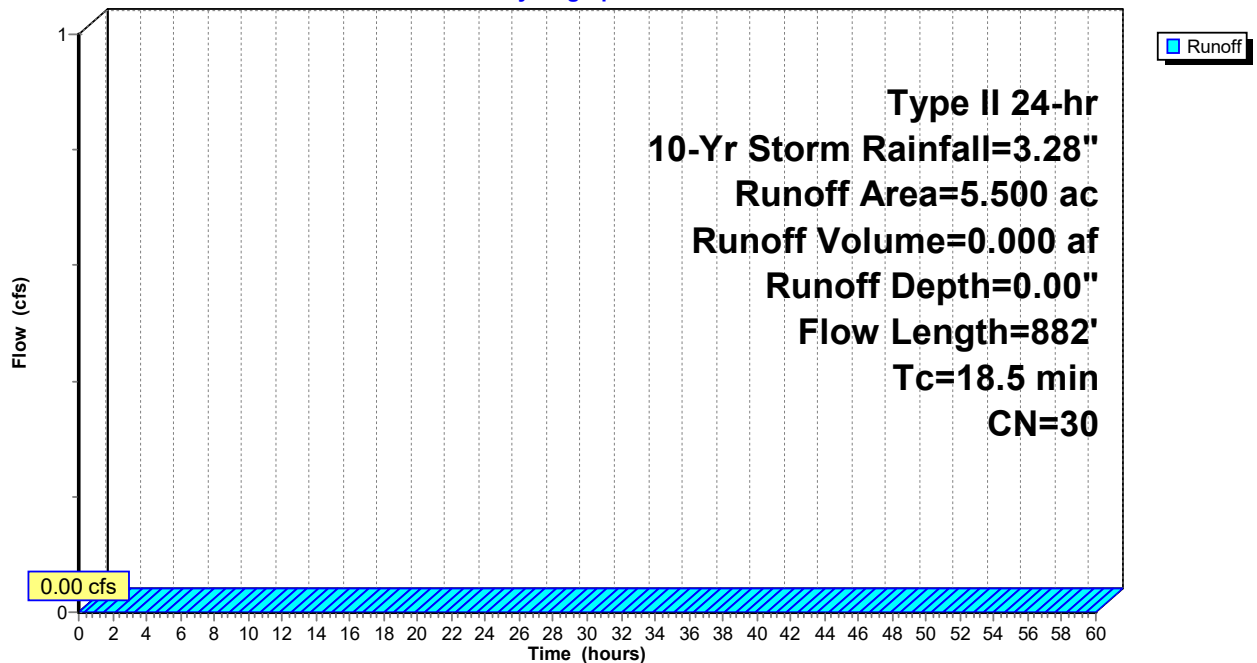
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.500 | 30 | Meadow, non-grazed, HSG A |
| 5.500 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.4 | 100 | 0.0660 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.1 | 782 | 0.0529 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.5 | 882 | Total | | | |

Subcatchment 1.2aS3: Middle Array West

Hydrograph



Summary for Subcatchment 1.2bS1: East Road - West Ditch

Runoff = 0.89 cfs @ 11.99 hrs, Volume= 0.044 af, Depth= 0.73"
 Routed to Reach 1.2bR1 : East Road Conveyance Swale

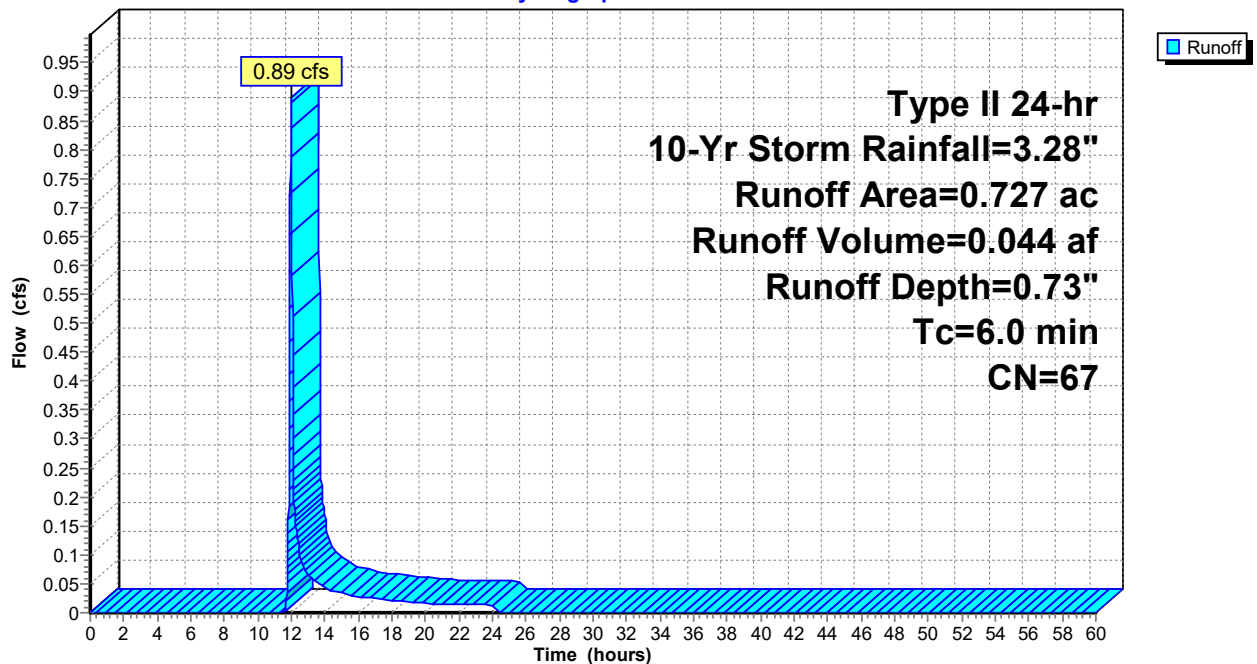
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.410 | 96 | Gravel surface, HSG A |
| 0.317 | 30 | Meadow, non-grazed, HSG A |
| 0.727 | 67 | Weighted Average |
| 0.727 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS1: East Road - West Ditch

Hydrograph



Summary for Subcatchment 1.2bS2: South Road

Runoff = 0.26 cfs @ 12.10 hrs, Volume= 0.026 af, Depth= 0.37"
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

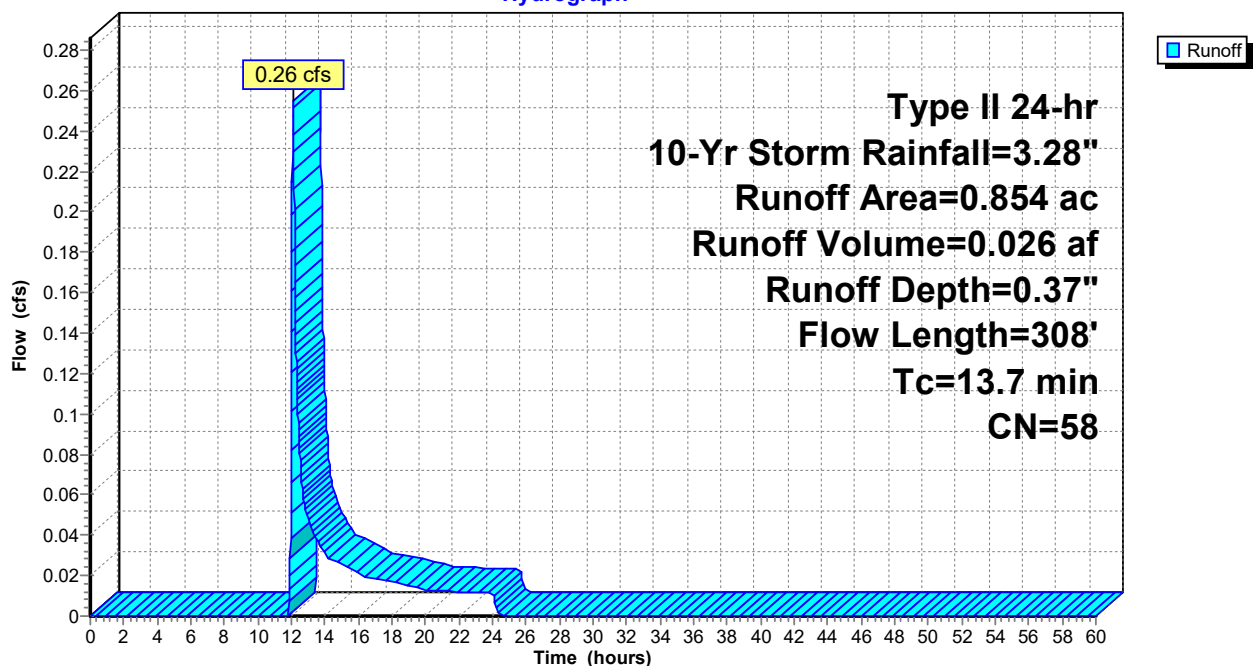
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.498 | 30 | Meadow, non-grazed, HSG A |
| * 0.352 | 96 | Gravel surface |
| * 0.004 | 98 | Roofs |
| 0.854 | 58 | Weighted Average |
| 0.850 | | 99.53% Pervious Area |
| 0.004 | | 0.47% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.0 | 35 | 0.0516 | 0.12 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 0.4 | 25 | 0.0310 | 1.06 | | Sheet Flow, Smooth surfaces n= 0.011 P2= 2.31" |
| 5.9 | 40 | 0.0429 | 0.11 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.4 | 208 | 0.0442 | 1.47 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 13.7 | 308 | Total | | | |

Subcatchment 1.2bS2: South Road

Hydrograph



Summary for Subcatchment 1.2bS3: South Road

Runoff = 1.32 cfs @ 11.98 hrs, Volume= 0.063 af, Depth= 0.93"
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

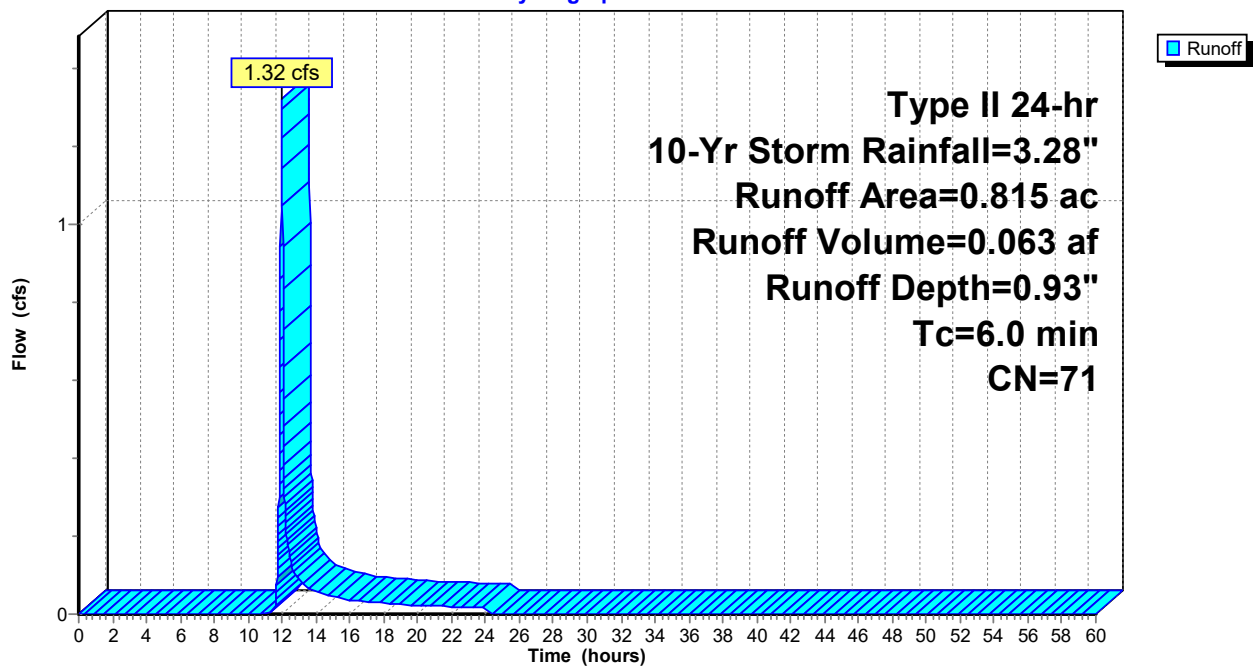
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.313 | 30 | Meadow, non-grazed, HSG A |
| 0.491 | 96 | Gravel surface, HSG A |
| * 0.011 | 98 | Roofs |
| 0.815 | 71 | Weighted Average |
| 0.804 | | 98.65% Pervious Area |
| 0.011 | | 1.35% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS3: South Road

Hydrograph



Summary for Subcatchment 1.3aS1: Surface Discharge

Runoff = 0.11 cfs @ 25.55 hrs, Volume= 0.034 af, Depth= 0.00"
 Routed to Link SP1 : Study Point 1

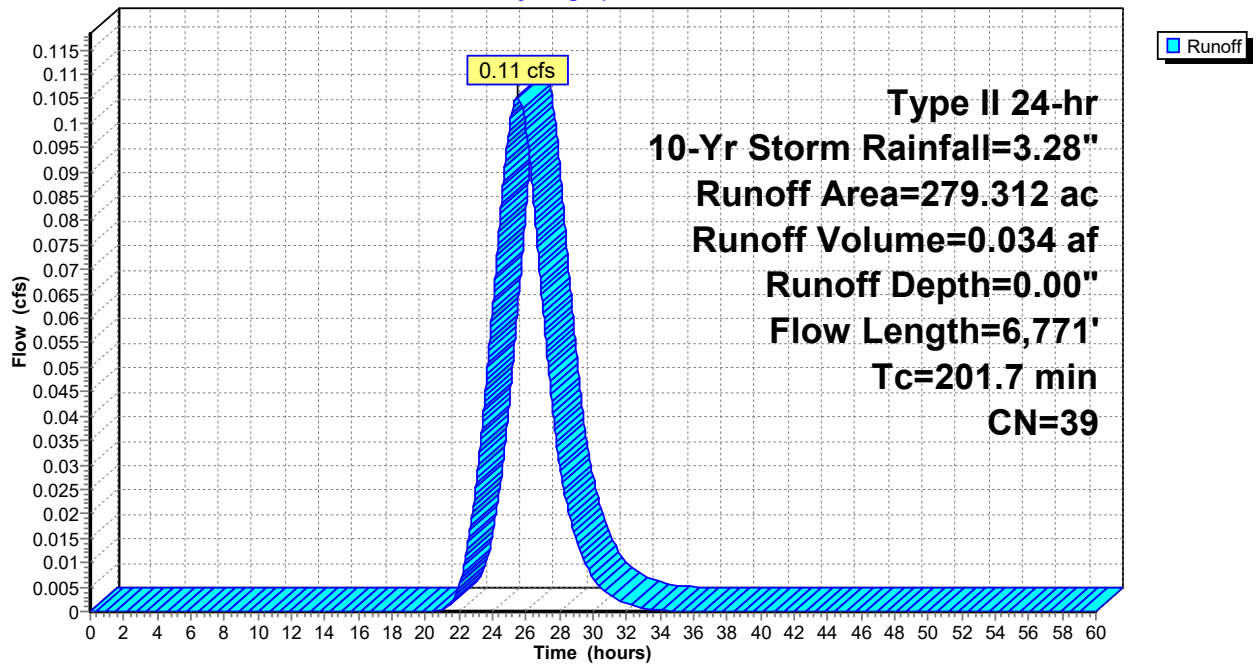
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.754 | 96 | Gravel surface |
| 144.649 | 30 | Meadow, non-grazed, HSG A |
| 0.566 | 58 | Meadow, non-grazed, HSG B |
| 25.274 | 71 | Meadow, non-grazed, HSG C |
| 61.692 | 30 | Woods, Good, HSG A |
| 32.754 | 55 | Woods, Good, HSG B |
| 13.623 | 70 | Woods, Good, HSG C |
| 279.312 | 39 | Weighted Average |
| 279.312 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 14.8 | 100 | 0.0764 | 0.11 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 4.7 | 581 | 0.1683 | 2.05 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 25.7 | 1,199 | 0.0241 | 0.78 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.8 | 189 | 0.0157 | 3.84 | 76.82 | Channel Flow, Rerouted Stream Area= 20.0 sf Perim= 32.6' r= 0.61' n= 0.035 Earth, dense weeds |
| 154.9 | 4,646 | 0.0051 | 0.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.8 | 56 | 0.0566 | 1.19 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 201.7 | 6,771 | Total | | | |

Subcatchment 1.3aS1: Surface Discharge

Hydrograph



Summary for Subcatchment 1.3bS: Access Rd to Pond 3

Runoff = 0.04 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 0.17"
 Routed to Pond 1.3P : Pond 3 - Access Rd West

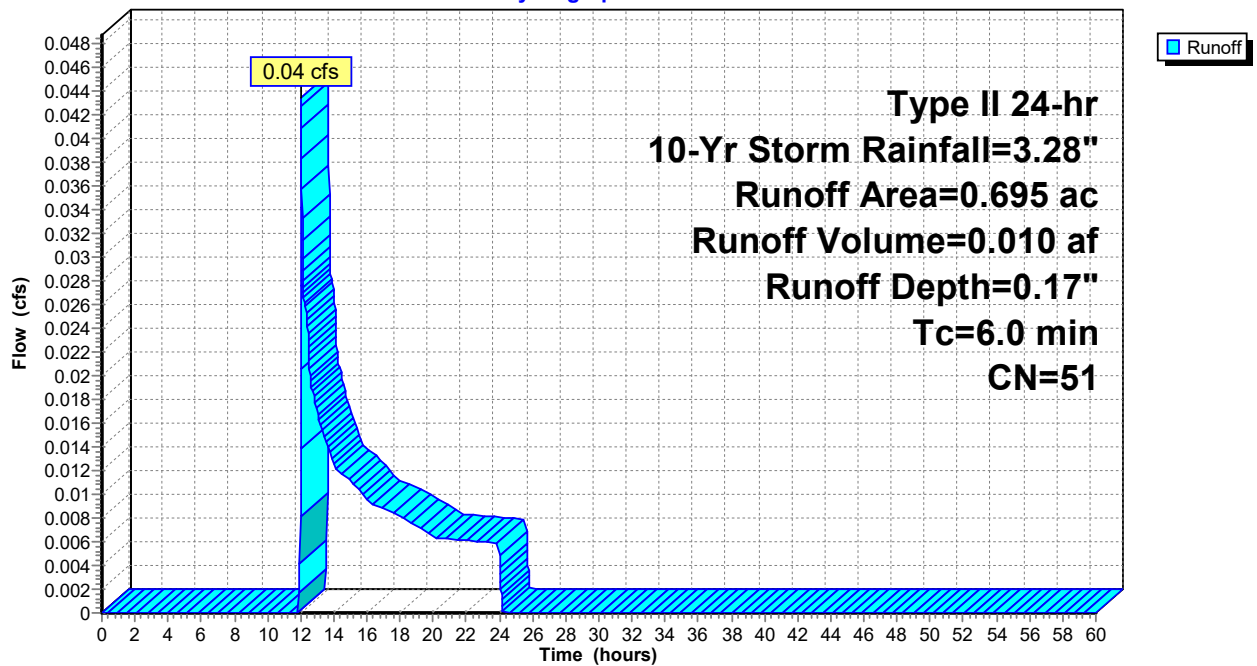
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|------------------------------|
| 0.473 | 30 | Meadow, non-grazed, HSG A |
| * 0.063 | 96 | Gravel surface, HSG A, Redev |
| * 0.159 | 96 | Gravel surface, HSG A |
| 0.695 | 51 | Weighted Average |
| 0.695 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.3bS: Access Rd to Pond 3

Hydrograph



Summary for Subcatchment 2S:

Runoff = 0.01 cfs @ 24.12 hrs, Volume= 0.001 af, Depth= 0.00"
 Routed to Link SP2 : Study Point 2

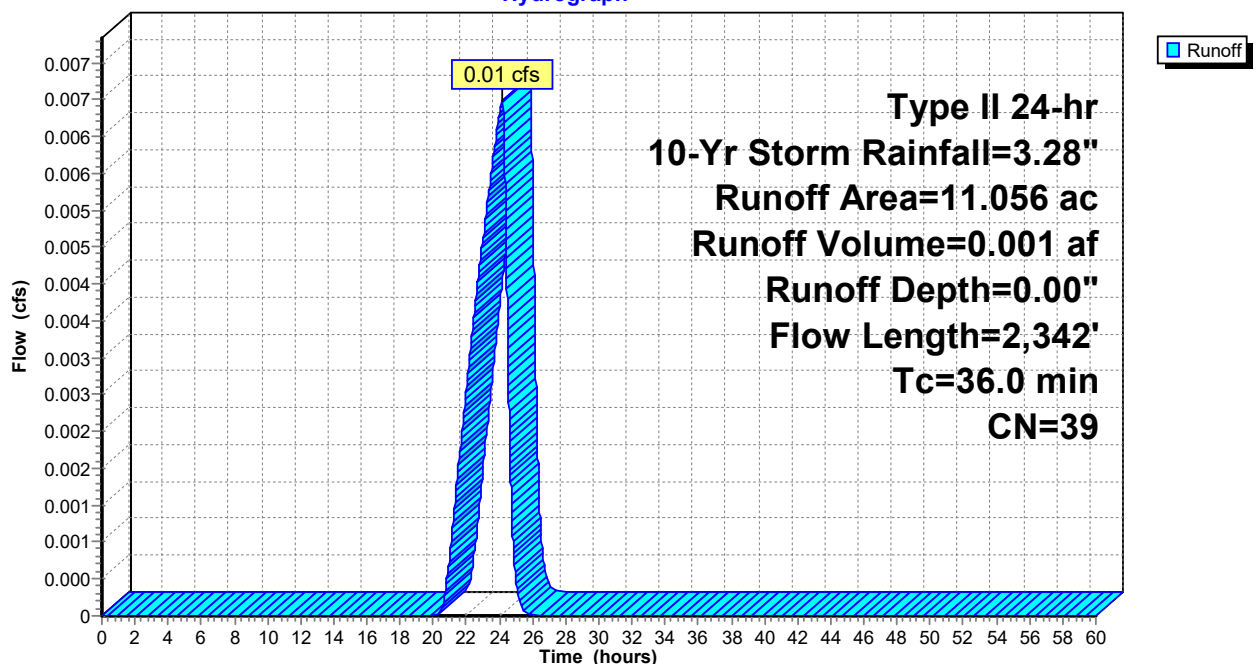
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.417 | 96 | Gravel surface, HSG A |
| 0.573 | 39 | >75% Grass cover, Good, HSG A |
| 6.530 | 30 | Meadow, non-grazed, HSG A |
| 2.536 | 30 | Woods, Good, HSG A |
| 11.056 | 39 | Weighted Average |
| 11.056 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0624 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.7 | 614 | 0.0535 | 3.72 | | Shallow Concentrated Flow, Unpaved Kv= 16.1 fps |
| 12.1 | 1,184 | 0.0543 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.9 | 115 | 0.0407 | 1.01 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.6 | 68 | 0.1443 | 1.90 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 8.0 | 261 | 0.0118 | 0.54 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 36.0 | 2,342 | Total | | | |

Subcatchment 2S:

Hydrograph



Summary for Subcatchment 3S:

Runoff = 0.02 cfs @ 24.01 hrs, Volume= 0.007 af, Depth= 0.01"
 Routed to Link SP3 : Study Point 3

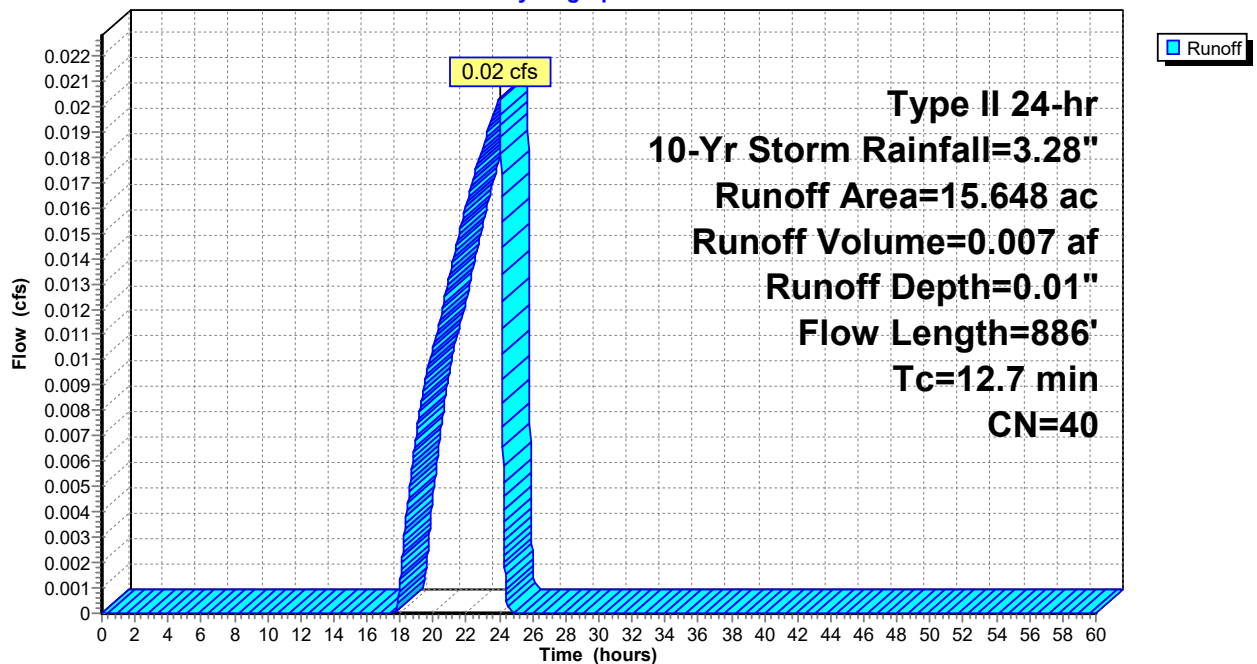
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.088 | 98 | Paved Roads & Rooftops |
| 0.406 | 39 | >75% Grass cover, Good, HSG A |
| 2.011 | 61 | >75% Grass cover, Good, HSG B |
| 5.525 | 30 | Meadow, non-grazed, HSG A |
| 4.276 | 30 | Woods, Good, HSG A |
| 3.342 | 55 | Woods, Good, HSG B |
| 15.648 | 40 | Weighted Average |
| 15.560 | | 99.44% Pervious Area |
| 0.088 | | 0.56% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.4 | 52 | 0.0937 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 3.7 | 625 | 0.1637 | 2.83 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.6 | 209 | 0.0384 | 0.98 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 12.7 | 886 | Total | | | |

Subcatchment 3S:

Hydrograph



Summary for Subcatchment 4.1S:

Runoff = 0.06 cfs @ 15.43 hrs, Volume= 0.052 af, Depth= 0.05"
 Routed to Reach 4.1R1 : Bypass Swale

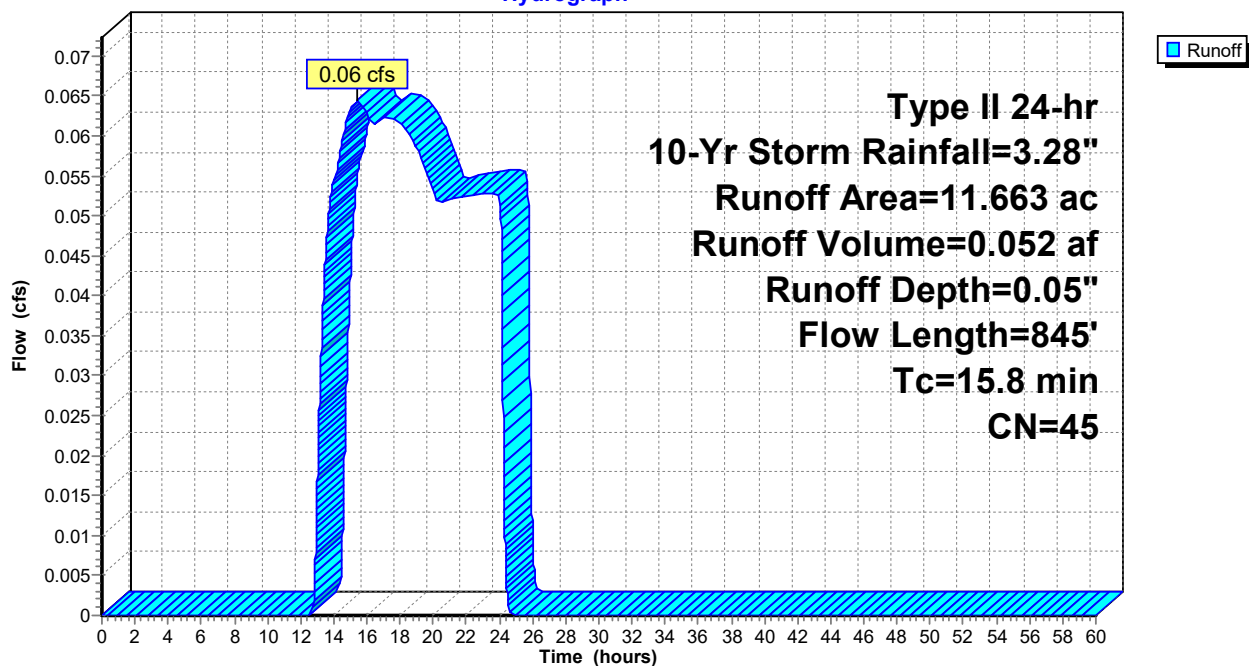
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.327 | 98 | Paved Roads & Rooftops |
| * 0.375 | 96 | Gravel surface |
| 0.165 | 61 | >75% Grass cover, Good, HSG B |
| 2.544 | 30 | Meadow, non-grazed, HSG A |
| 0.560 | 58 | Meadow, non-grazed, HSG B |
| 3.605 | 30 | Woods, Good, HSG A |
| * 4.087 | 55 | Woods, Good, HSG B |
| 11.663 | 45 | Weighted Average |
| 11.336 | | 97.20% Pervious Area |
| 0.327 | | 2.80% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.5 | 100 | 0.0430 | 0.20 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 2.6 | 360 | 0.1077 | 2.30 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 4.7 | 385 | 0.0735 | 1.36 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 15.8 | 845 | Total | | | |

Subcatchment 4.1S:

Hydrograph



Summary for Subcatchment 4.2aS:

Runoff = 0.85 cfs @ 12.75 hrs, Volume= 0.380 af, Depth= 0.17"
 Routed to Pond 4.2C : 18" Culvert

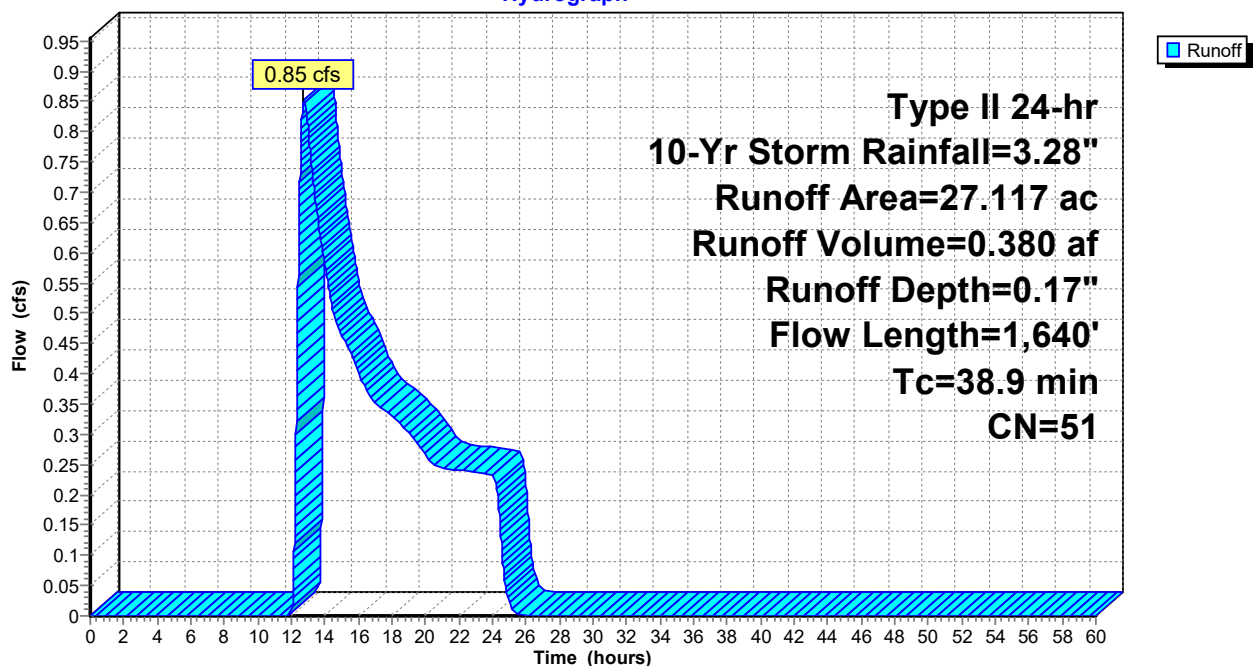
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.238 | 96 | Gravel surface |
| 4.086 | 30 | Meadow, non-grazed, HSG A |
| 0.384 | 58 | Meadow, non-grazed, HSG B |
| 0.977 | 30 | Woods, Good, HSG A |
| 21.432 | 55 | Woods, Good, HSG B |
| 27.117 | 51 | Weighted Average |
| 27.117 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 17.8 | 100 | 0.0480 | 0.09 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 8.0 | 878 | 0.1354 | 1.84 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 13.1 | 662 | 0.0144 | 0.84 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 38.9 | 1,640 | Total | | | |

Subcatchment 4.2aS:

Hydrograph



Summary for Subcatchment 4.2bS:

Runoff = 0.81 cfs @ 11.98 hrs, Volume= 0.038 af, Depth= 0.98"
 Routed to Reach 4.2bR : Conveyance Swale

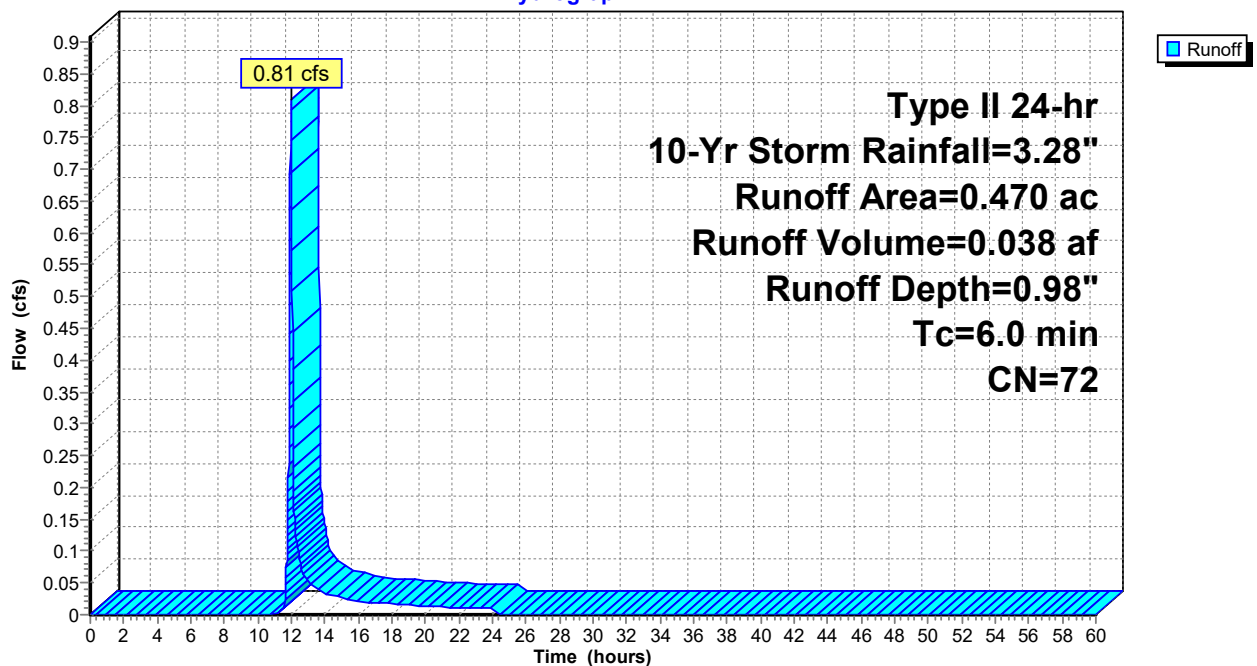
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.296 | 96 | Gravel surface, HSG A |
| 0.174 | 30 | Meadow, non-grazed, HSG A |
| 0.470 | 72 | Weighted Average |
| 0.470 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 4.2bS:

Hydrograph



Summary for Subcatchment 4.3S:

Runoff = 3.30 cfs @ 12.45 hrs, Volume= 0.715 af, Depth= 0.34"
 Routed to Pond 4.3C : 24" Culvert

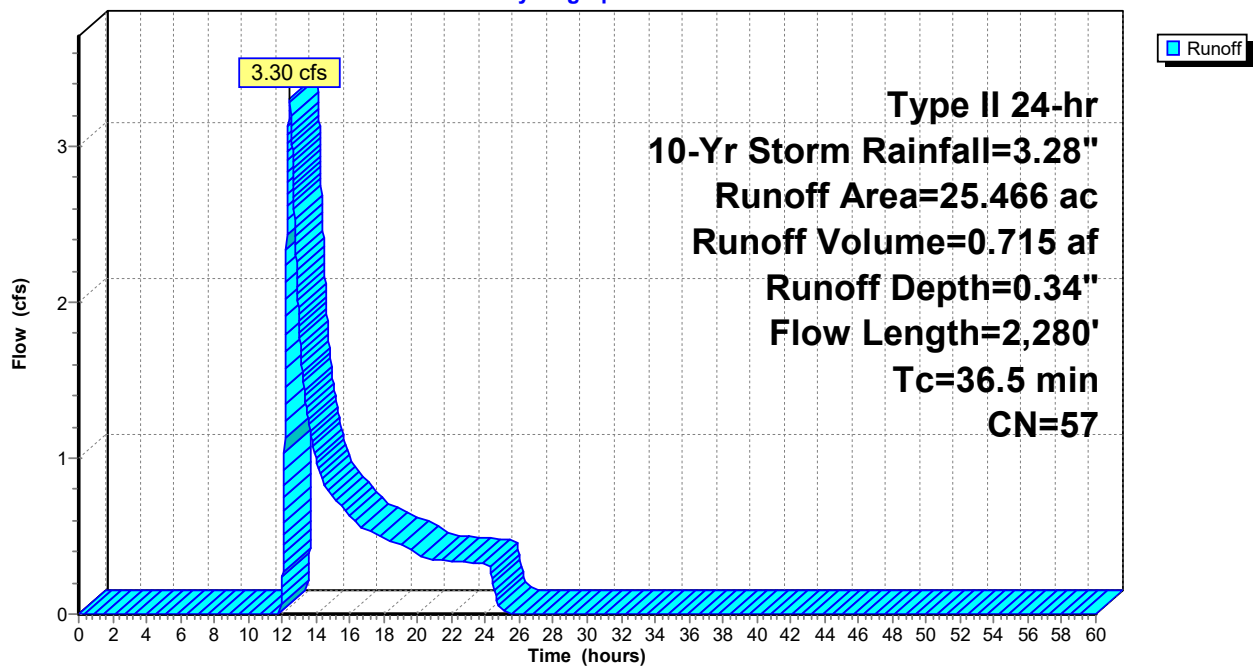
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 1.293 | 98 | Paved Roads & Rooftops |
| 1.783 | 58 | Meadow, non-grazed, HSG B |
| 22.390 | 55 | Woods, Good, HSG B |
| 25.466 | 57 | Weighted Average |
| 24.173 | | 94.92% Pervious Area |
| 1.293 | | 5.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 15.9 | 100 | 0.0634 | 0.10 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 17.8 | 1,368 | 0.0656 | 1.28 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.1 | 38 | 0.3960 | 4.40 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 2.7 | 774 | 0.0281 | 4.70 | 109.09 | Channel Flow, Area= 23.2 sf Perim= 43.2' r= 0.54' n= 0.035 |
| 36.5 | 2,280 | Total | | | |

Subcatchment 4.3S:

Hydrograph



Summary for Subcatchment 5S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP5 : Study Point 5

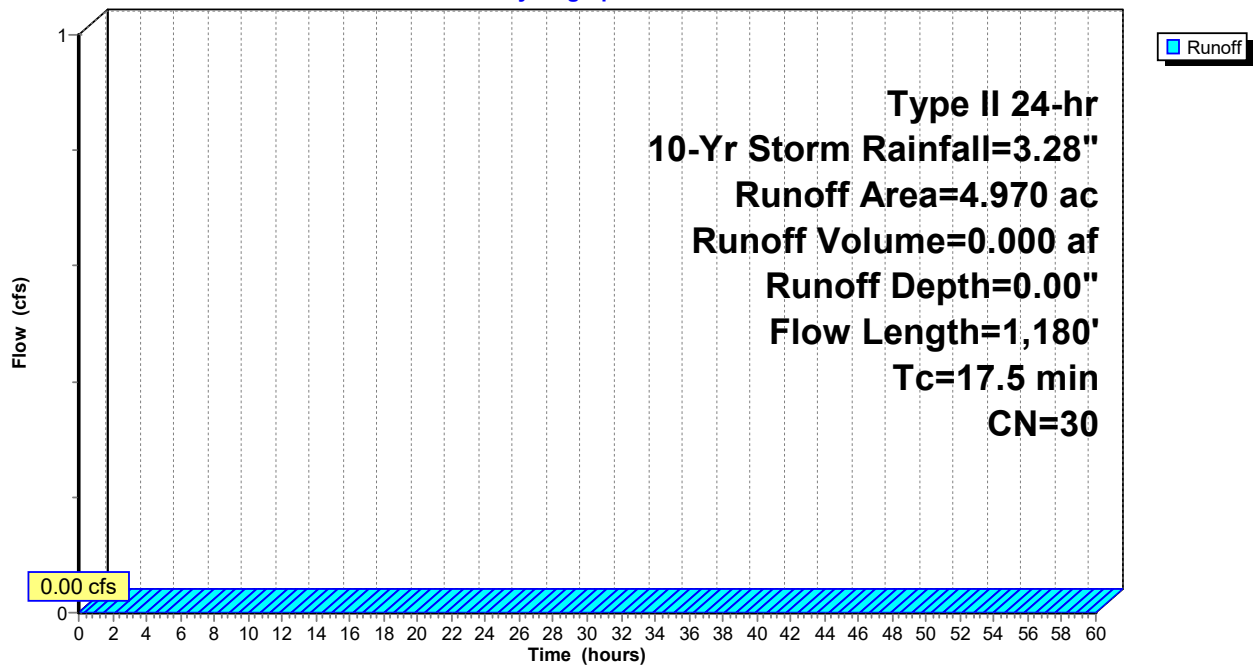
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 4.139 | 30 | Meadow, non-grazed, HSG A |
| 0.831 | 30 | Woods, Good, HSG A |
| 4.970 | 30 | Weighted Average |
| 4.970 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 7.1 | 100 | 0.0675 | 0.24 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 8.5 | 801 | 0.0508 | 1.58 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.3 | 217 | 0.1515 | 2.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.6 | 62 | 0.0697 | 1.85 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 17.5 | 1,180 | Total | | | |

Subcatchment 5S:

Hydrograph



Summary for Subcatchment 6S:

Runoff = 0.08 cfs @ 24.10 hrs, Volume= 0.059 af, Depth= 0.03"
 Routed to Link SP6 : Study Point 6

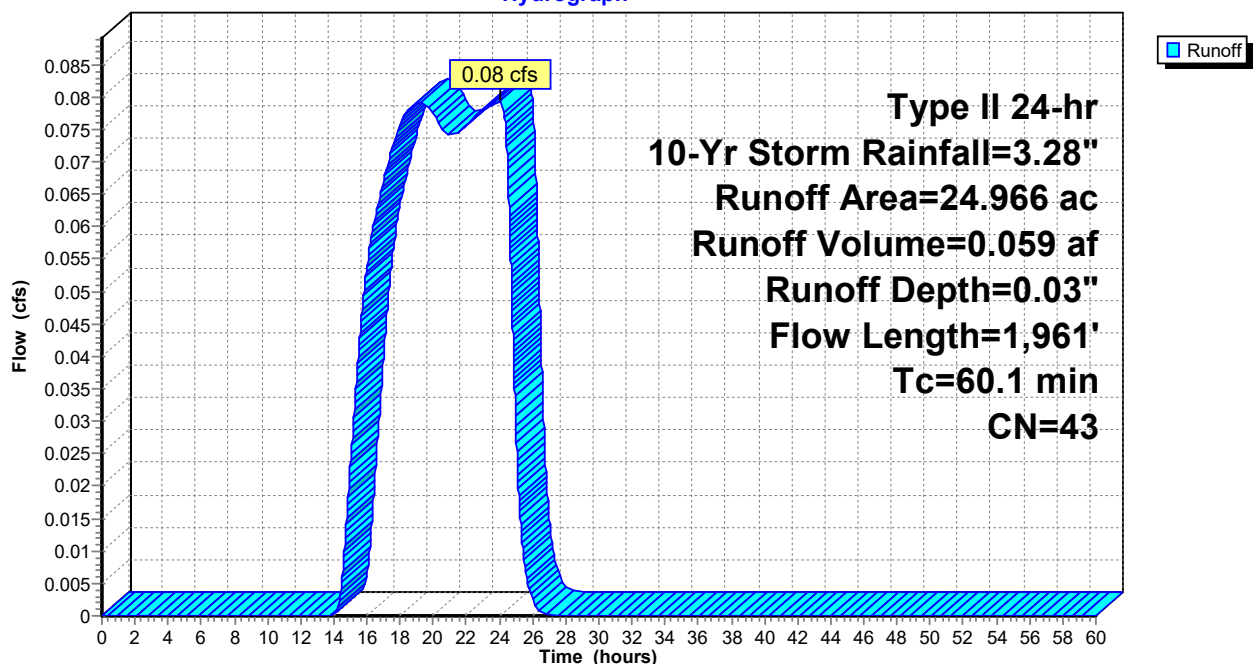
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 1.450 | 98 | Paved Roads & Rooftops |
| 0.466 | 96 | Gravel surface, HSG A |
| 2.545 | 61 | >75% Grass cover, Good, HSG B |
| 7.511 | 30 | Meadow, non-grazed, HSG A |
| 0.788 | 58 | Meadow, non-grazed, HSG B |
| 7.940 | 30 | Woods, Good, HSG A |
| 4.266 | 55 | Woods, Good, HSG B |
| 24.966 | 43 | Weighted Average |
| 23.516 | | 94.19% Pervious Area |
| 1.450 | | 5.81% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.1 | 100 | 0.0278 | 0.16 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 3.2 | 313 | 0.0528 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.9 | 486 | 0.1742 | 2.09 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 42.9 | 1,062 | 0.0068 | 0.41 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 60.1 | 1,961 | Total | | | |

Subcatchment 6S:

Hydrograph



Summary for Reach 1.1aR1: Bypass Swale

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC1 : TS1 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

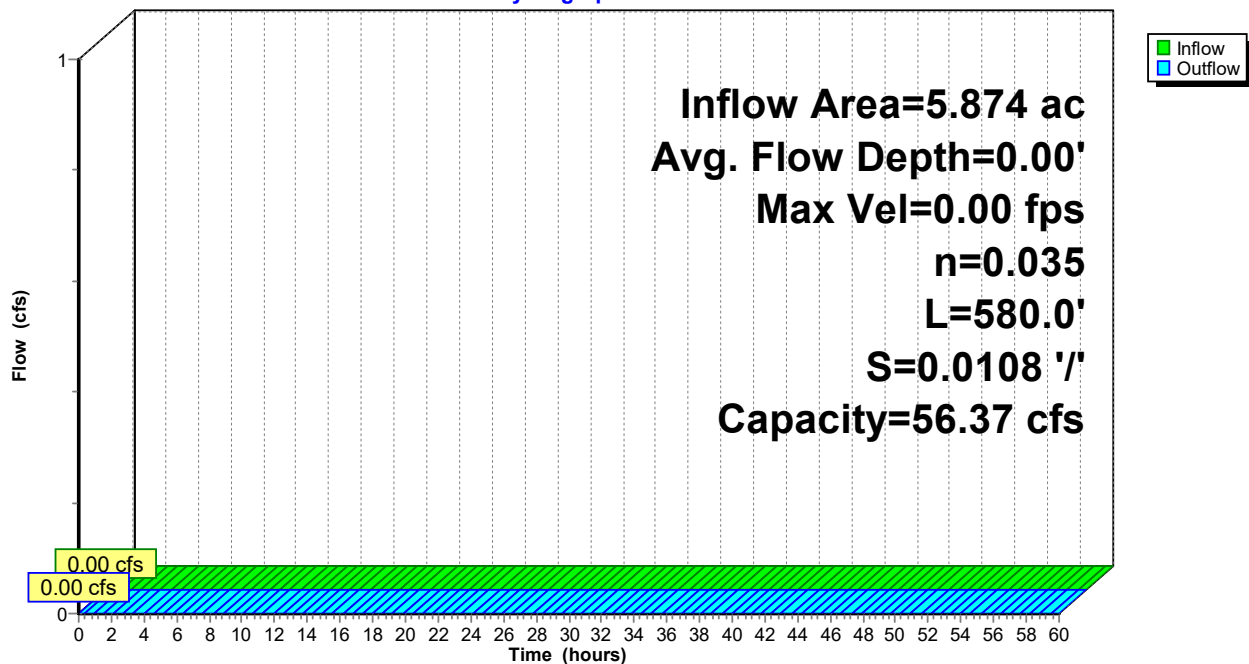
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 56.37 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 580.0' Slope= 0.0108 '/'
 Inlet Invert= 1,493.84', Outlet Invert= 1,487.56'



Reach 1.1aR1: Bypass Swale

Hydrograph



Summary for Reach 1.1aR2: Bypass Swale

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC2 : TS2 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

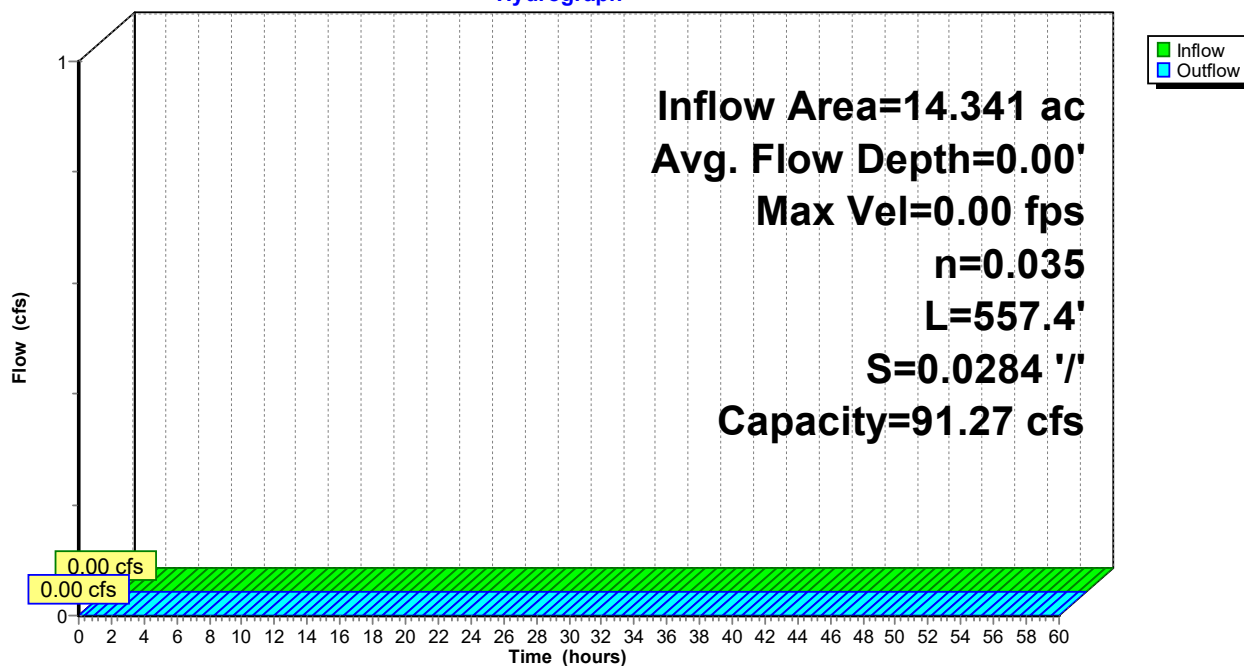
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 91.27 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.4' Slope= 0.0284 '/'
 Inlet Invert= 1,486.80', Outlet Invert= 1,470.98'



Reach 1.1aR2: Bypass Swale

Hydrograph



Summary for Reach 1.1aR3: Bypass Swale

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC3 : TS3 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

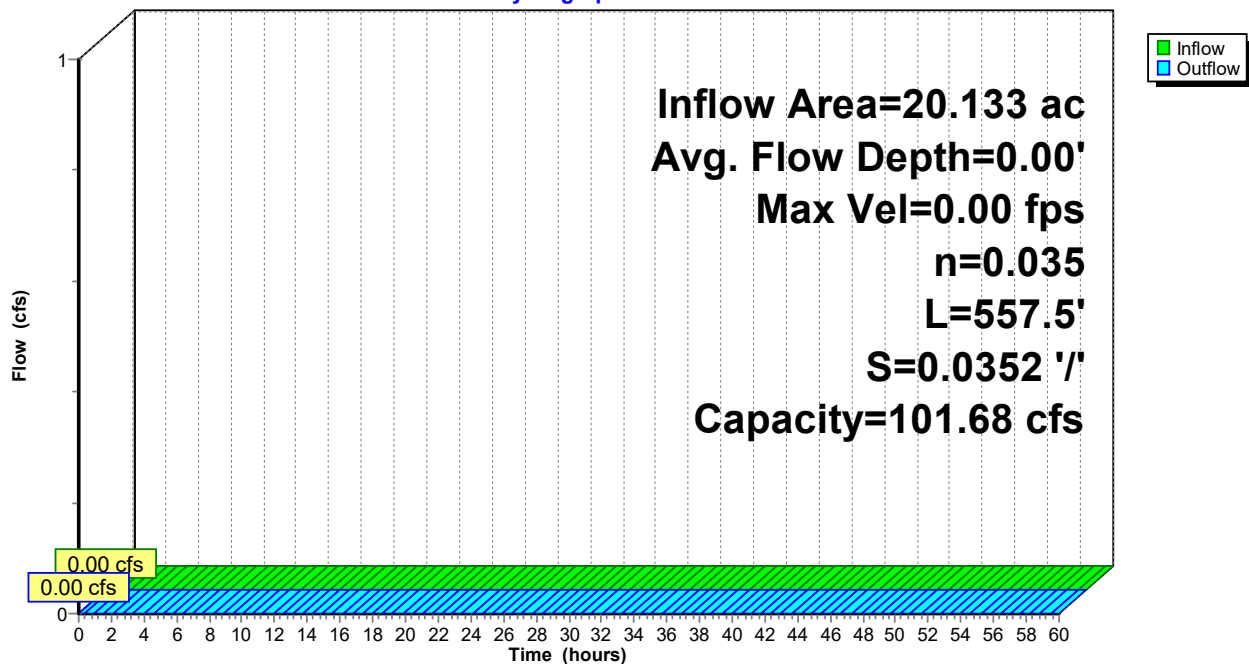
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 101.68 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.5' Slope= 0.0352 '/'
 Inlet Invert= 1,469.57', Outlet Invert= 1,449.93'



Reach 1.1aR3: Bypass Swale

Hydrograph



Summary for Reach 1.1aR4: Bypass Swale

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aP : North Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

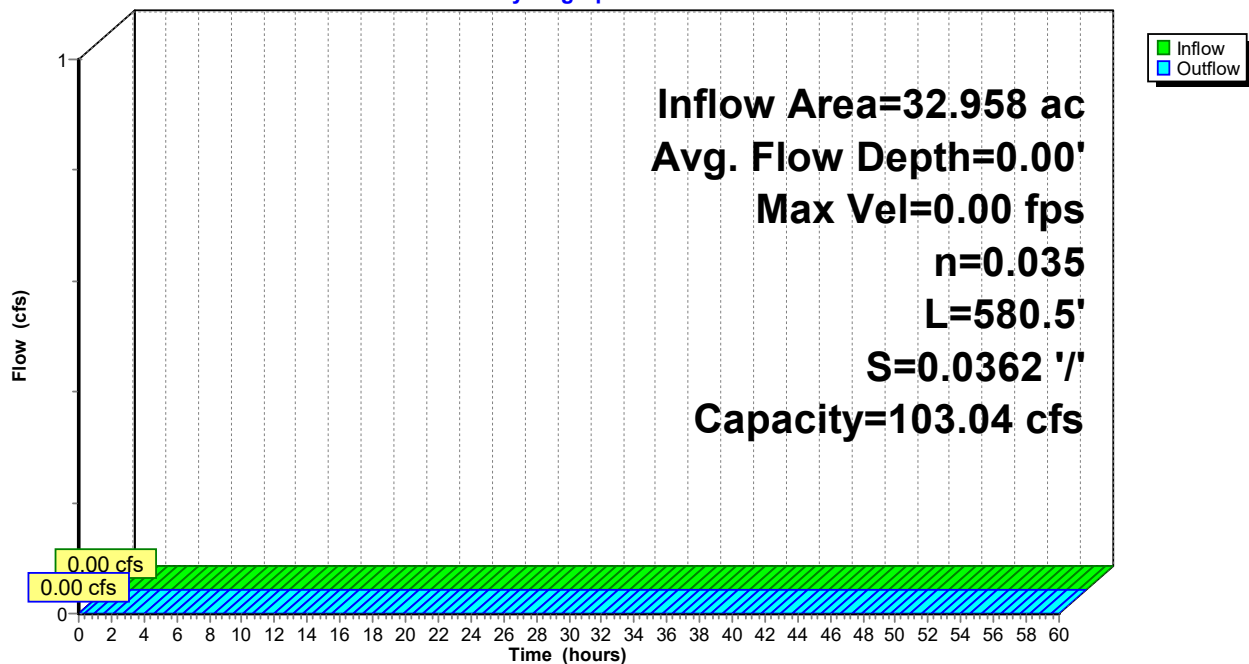
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 103.04 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 580.5' Slope= 0.0362 '/
 Inlet Invert= 1,447.64', Outlet Invert= 1,426.64'



Reach 1.1aR4: Bypass Swale

Hydrograph



Summary for Reach 1.1bR1: North Road Conveyance Swale

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 0.93" for 10-Yr Storm event
 Inflow = 2.16 cfs @ 11.98 hrs, Volume= 0.103 af
 Outflow = 1.13 cfs @ 12.06 hrs, Volume= 0.103 af, Atten= 48%, Lag= 4.9 min
 Routed to Pond 1.1bC1 : TS4 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.01 fps, Min. Travel Time= 14.4 min
 Avg. Velocity = 0.67 fps, Avg. Travel Time= 42.9 min

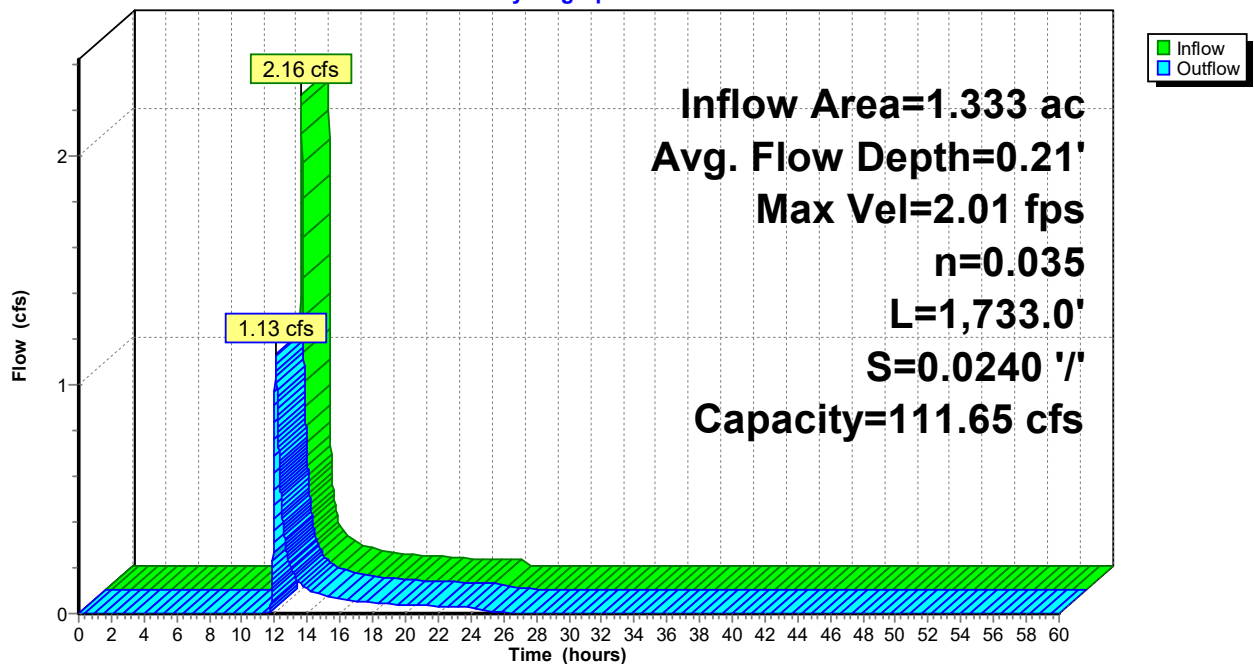
Peak Storage= 977 cf @ 12.06 hrs
 Average Depth at Peak Storage= 0.21', Surface Width= 3.28'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 111.65 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 1,733.0' Slope= 0.0240 '/'
 Inlet Invert= 1,491.12', Outlet Invert= 1,449.50'



Reach 1.1bR1: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.1bR2: North Road Conveyance Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.88" for 10-Yr Storm event
 Inflow = 1.78 cfs @ 12.02 hrs, Volume= 0.145 af
 Outflow = 1.61 cfs @ 12.06 hrs, Volume= 0.145 af, Atten= 10%, Lag= 2.7 min
 Routed to Pond 1.1bP1 : Dry Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.62 fps, Min. Travel Time= 3.8 min
 Avg. Velocity = 0.87 fps, Avg. Travel Time= 11.3 min

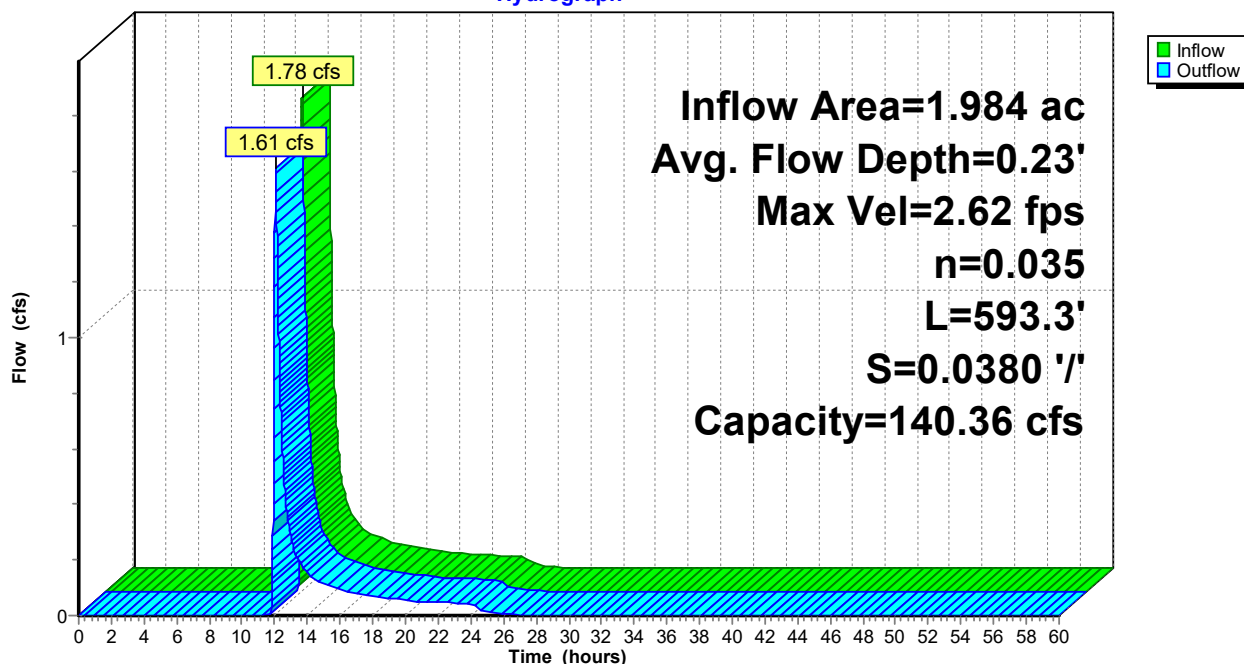
Peak Storage= 364 cf @ 12.06 hrs
 Average Depth at Peak Storage= 0.23', Surface Width= 3.37'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 140.36 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 593.3' Slope= 0.0380 '/'
 Inlet Invert= 1,447.27', Outlet Invert= 1,424.75'



Reach 1.1bR2: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.2aR1: Bypass Swale

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aC1 : TS 7 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

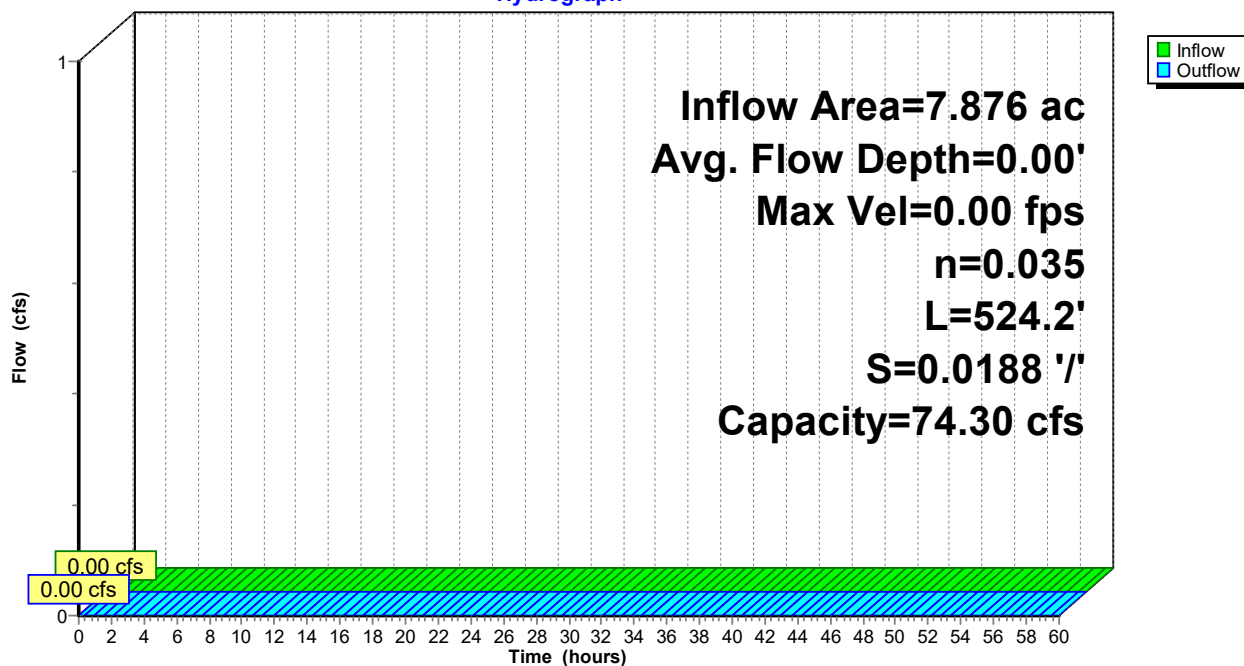
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 74.30 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 524.2' Slope= 0.0188 '/'
 Inlet Invert= 1,454.08', Outlet Invert= 1,444.22'



Reach 1.2aR1: Bypass Swale

Hydrograph



Summary for Reach 1.2aR2: Bypass Swale

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aC2 : TS8 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

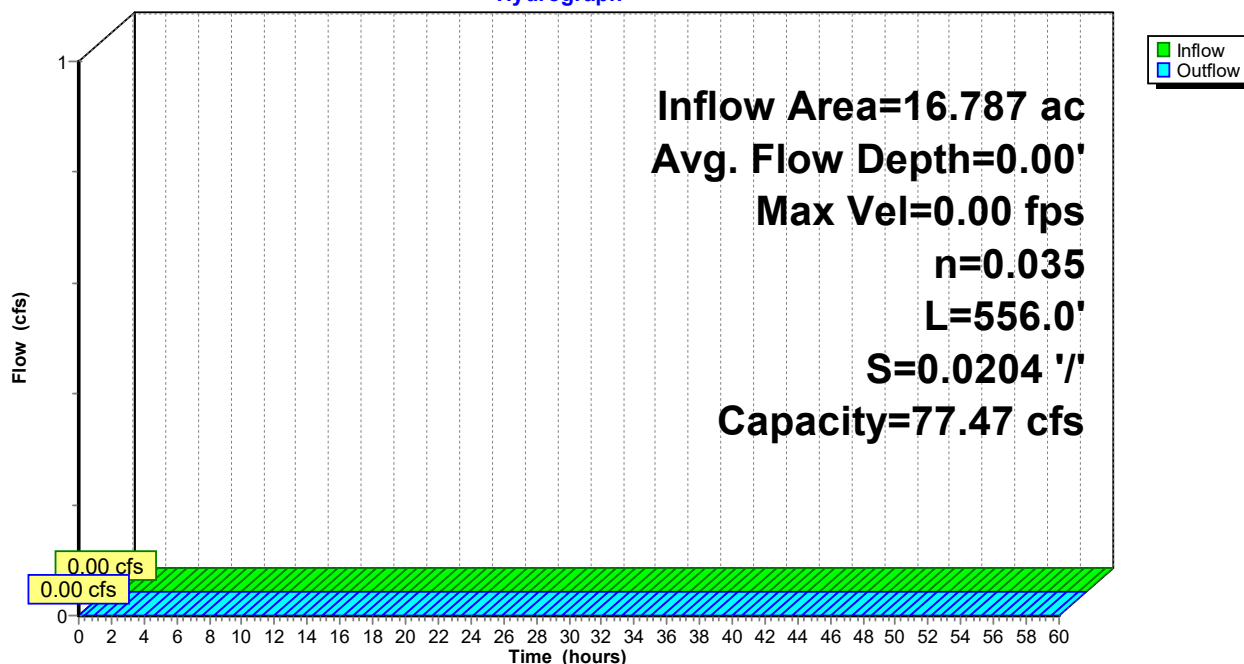
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 77.47 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 556.0' Slope= 0.0204 '/'
 Inlet Invert= 1,443.21', Outlet Invert= 1,431.84'



Reach 1.2aR2: Bypass Swale

Hydrograph



Summary for Reach 1.2aR3: Bypass Swale

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aP : South Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

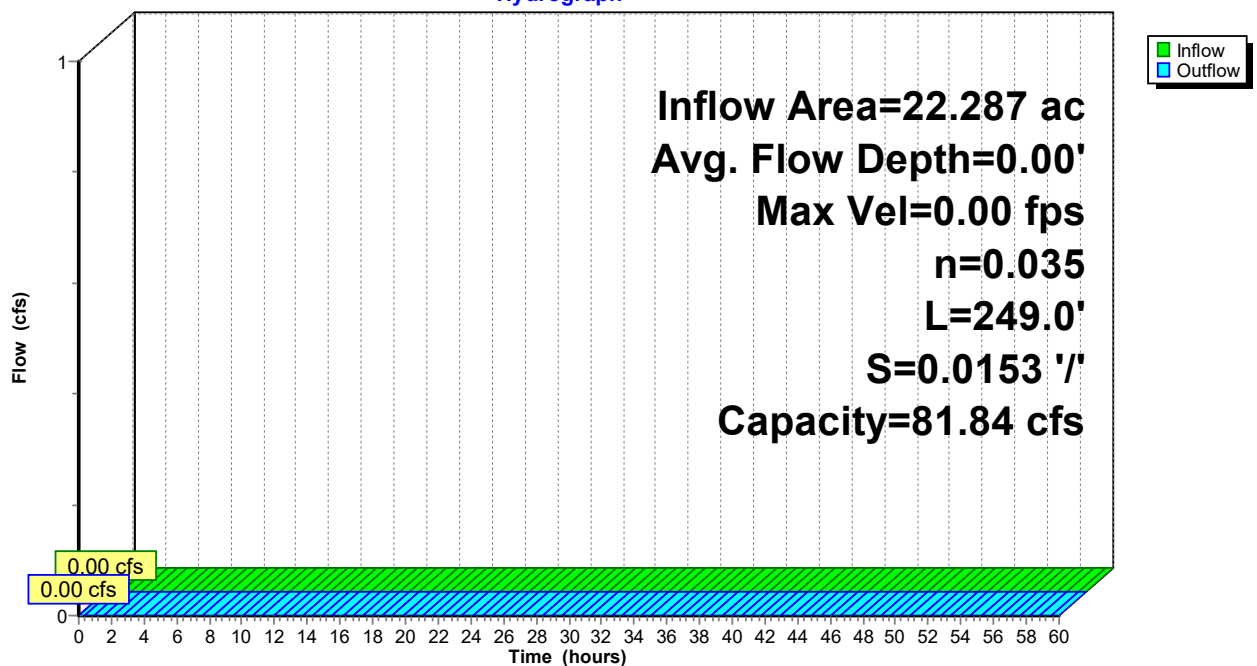
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 14.0 sf, Capacity= 81.84 cfs

3.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 11.00'
 Length= 249.0' Slope= 0.0153 '/
 Inlet Invert= 1,431.11', Outlet Invert= 1,427.29'



Reach 1.2aR3: Bypass Swale

Hydrograph



Summary for Reach 1.2bR1: East Road Conveyance Swale

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 0.73" for 10-Yr Storm event
 Inflow = 0.89 cfs @ 11.99 hrs, Volume= 0.044 af
 Outflow = 0.69 cfs @ 12.04 hrs, Volume= 0.044 af, Atten= 23%, Lag= 3.0 min
 Routed to Pond 1.2bC1 : East Road Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.13 fps, Min. Travel Time= 5.7 min
 Avg. Velocity = 0.68 fps, Avg. Travel Time= 18.0 min

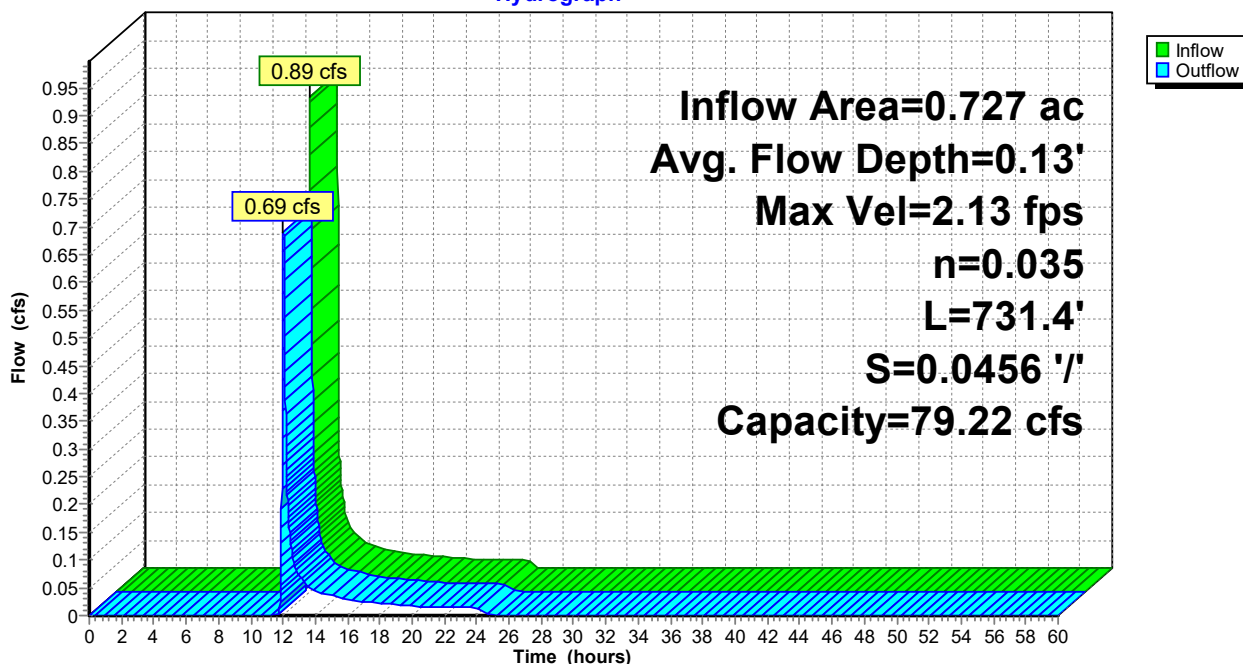
Peak Storage= 237 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.13' , Surface Width= 2.81'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 79.22 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 11.00'
 Length= 731.4' Slope= 0.0456 '/'
 Inlet Invert= 1,489.53', Outlet Invert= 1,456.20'



Reach 1.2bR1: East Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR2: South Road Conveyance Swale

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 0.54" for 10-Yr Storm event
 Inflow = 0.89 cfs @ 12.05 hrs, Volume= 0.071 af
 Outflow = 0.70 cfs @ 12.13 hrs, Volume= 0.071 af, Atten= 22%, Lag= 4.6 min
 Routed to Pond 1.2bC2 : TS6 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.55 fps, Min. Travel Time= 6.5 min
 Avg. Velocity = 0.59 fps, Avg. Travel Time= 17.1 min

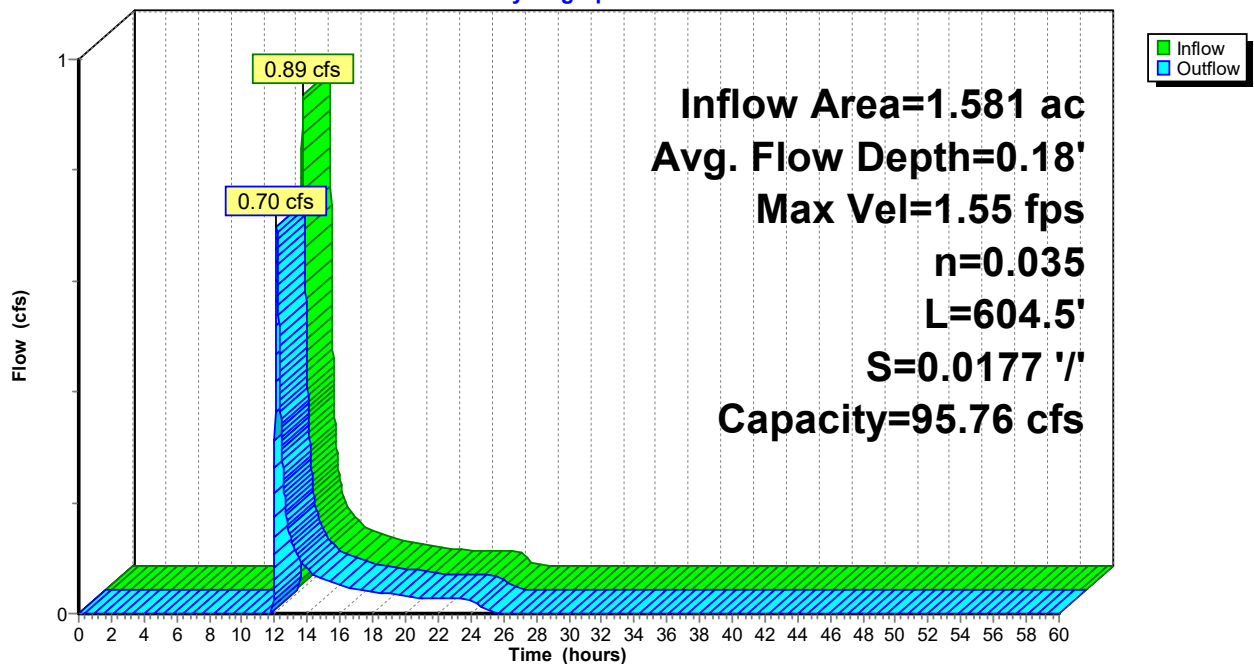
Peak Storage= 272 cf @ 12.13 hrs
 Average Depth at Peak Storage= 0.18' , Surface Width= 3.06'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 95.76 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 604.5' Slope= 0.0177 ' / '
 Inlet Invert= 1,454.47', Outlet Invert= 1,443.79'



Reach 1.2bR2: South Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR3: South Road Conveyance Swale

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 0.67" for 10-Yr Storm event
 Inflow = 1.54 cfs @ 12.00 hrs, Volume= 0.133 af
 Outflow = 1.22 cfs @ 12.07 hrs, Volume= 0.133 af, Atten= 21%, Lag= 4.3 min
 Routed to Pond 1.2bP : South Road Treatment Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.89 fps, Min. Travel Time= 6.7 min
 Avg. Velocity = 0.70 fps, Avg. Travel Time= 18.1 min

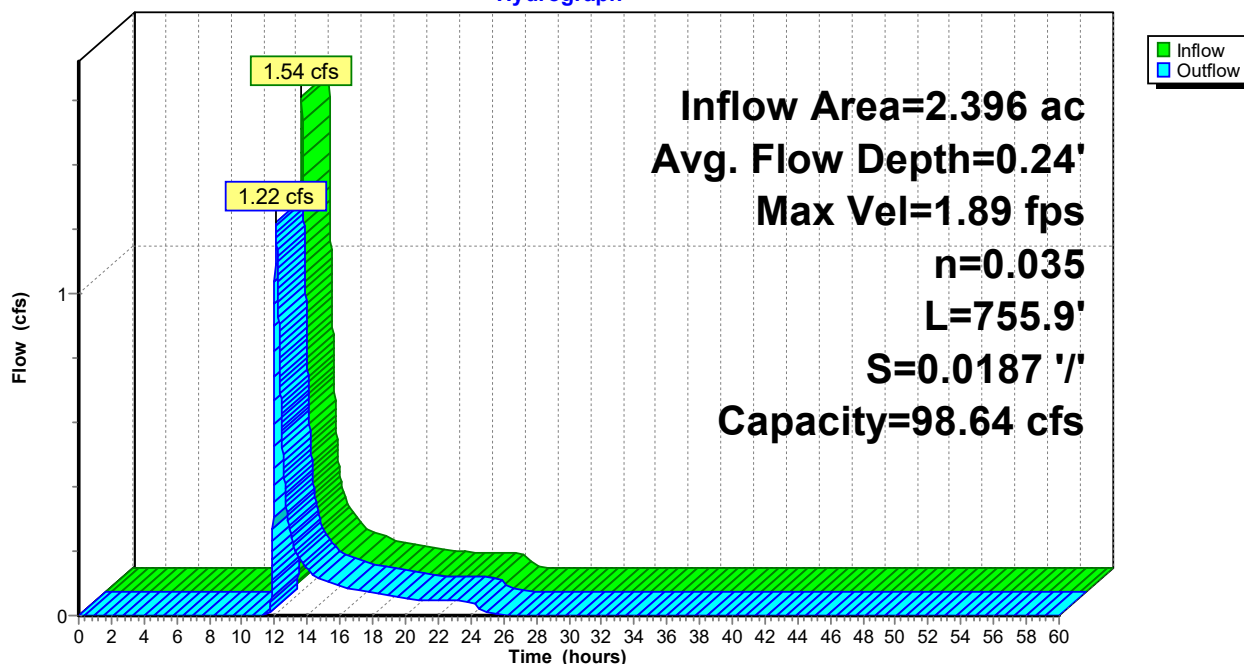
Peak Storage= 490 cf @ 12.07 hrs
 Average Depth at Peak Storage= 0.24' , Surface Width= 3.43'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 98.64 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 755.9' Slope= 0.0187 '/'
 Inlet Invert= 1,442.84', Outlet Invert= 1,428.67'



Reach 1.2bR3: South Road Conveyance Swale

Hydrograph



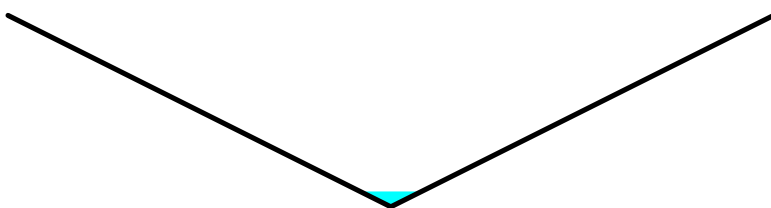
Summary for Reach 4.1R1: Bypass Swale

Inflow Area = 11.663 ac, 2.80% Impervious, Inflow Depth = 0.05" for 10-Yr Storm event
 Inflow = 0.06 cfs @ 15.43 hrs, Volume= 0.052 af
 Outflow = 0.06 cfs @ 15.51 hrs, Volume= 0.052 af, Atten= 0%, Lag= 4.8 min
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.27 fps, Min. Travel Time= 7.5 min
 Avg. Velocity = 1.09 fps, Avg. Travel Time= 8.7 min

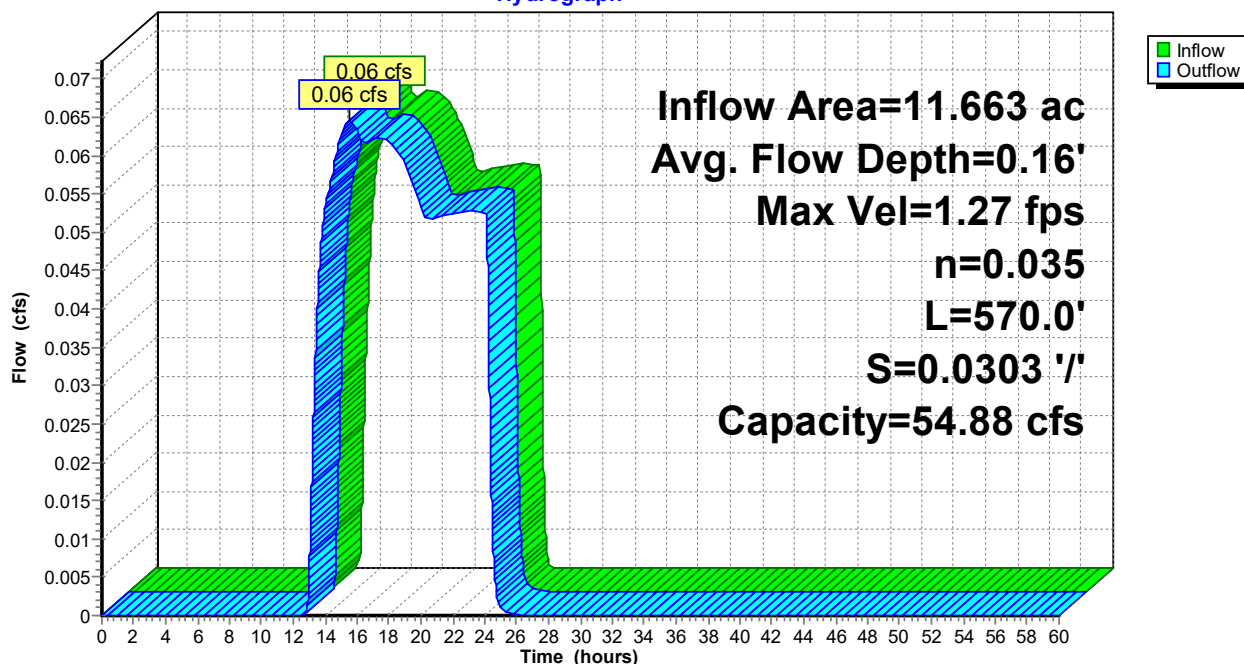
Peak Storage= 29 cf @ 15.51 hrs
 Average Depth at Peak Storage= 0.16' , Surface Width= 0.64'
 Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 54.88 cfs

0.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/' Top Width= 8.00'
 Length= 570.0' Slope= 0.0303 '/'
 Inlet Invert= 1,448.24', Outlet Invert= 1,430.97'



Reach 4.1R1: Bypass Swale

Hydrograph



Summary for Reach 4.1R2: Ex Stream

Inflow Area = 39.250 ac, 0.83% Impervious, Inflow Depth = 0.13" for 10-Yr Storm event
 Inflow = 0.82 cfs @ 13.01 hrs, Volume= 0.431 af
 Outflow = 0.77 cfs @ 13.36 hrs, Volume= 0.431 af, Atten= 5%, Lag= 21.0 min
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.68 fps, Min. Travel Time= 18.1 min
 Avg. Velocity = 0.48 fps, Avg. Travel Time= 25.5 min

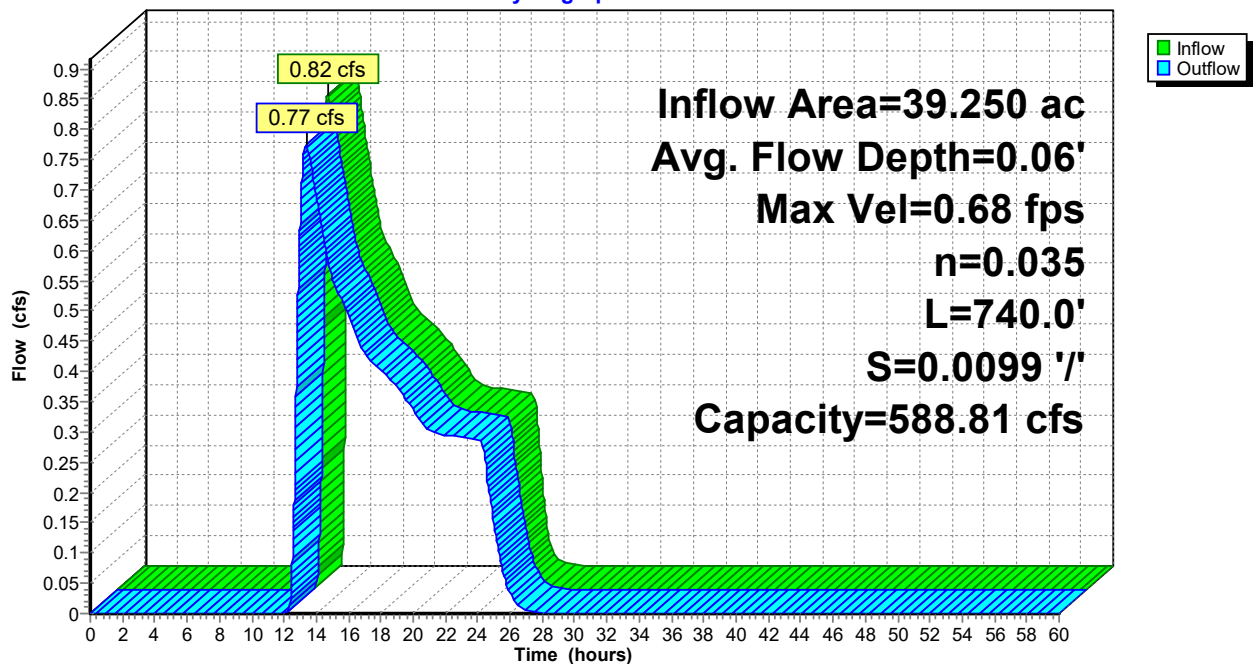
Peak Storage= 842 cf @ 13.36 hrs
 Average Depth at Peak Storage= 0.06' , Surface Width= 17.95'
 Bank-Full Depth= 3.00' Flow Area= 84.0 sf, Capacity= 588.81 cfs

17.50' x 3.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 4.0 ' / ' Top Width= 38.50'
 Length= 740.0' Slope= 0.0099 ' / '
 Inlet Invert= 1,430.98', Outlet Invert= 1,423.64'



Reach 4.1R2: Ex Stream

Hydrograph



Summary for Reach 4.2bR: Conveyance Swale

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 0.98" for 10-Yr Storm event
 Inflow = 0.81 cfs @ 11.98 hrs, Volume= 0.038 af
 Outflow = 0.69 cfs @ 12.02 hrs, Volume= 0.038 af, Atten= 15%, Lag= 2.4 min
 Routed to Pond 4.2bP : Pond 4 - Access Rd East

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.09 fps, Min. Travel Time= 4.5 min
 Avg. Velocity = 0.63 fps, Avg. Travel Time= 14.8 min

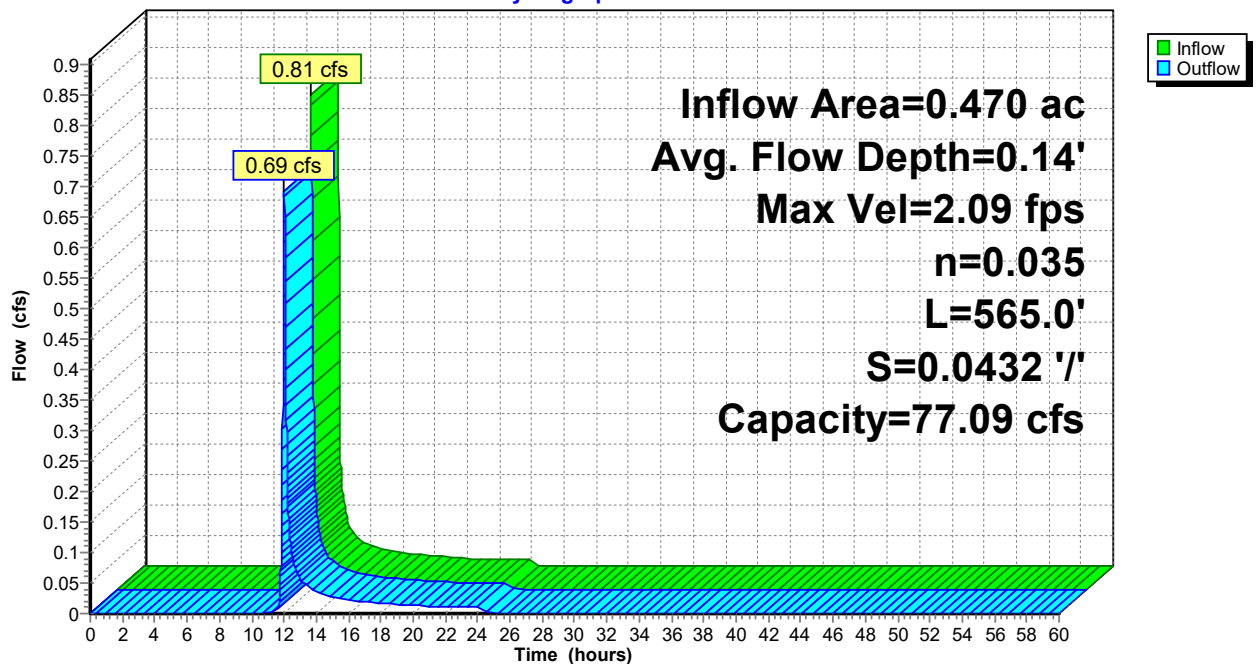
Peak Storage= 187 cf @ 12.02 hrs
 Average Depth at Peak Storage= 0.14' , Surface Width= 2.82'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 77.09 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 11.00'
 Length= 565.0' Slope= 0.0432 ' / '
 Inlet Invert= 1,472.38', Outlet Invert= 1,448.00'



Reach 4.2bR: Conveyance Swale

Hydrograph



Summary for Pond 1.1aC1: TS1 Culvert

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR2 : Bypass Swale

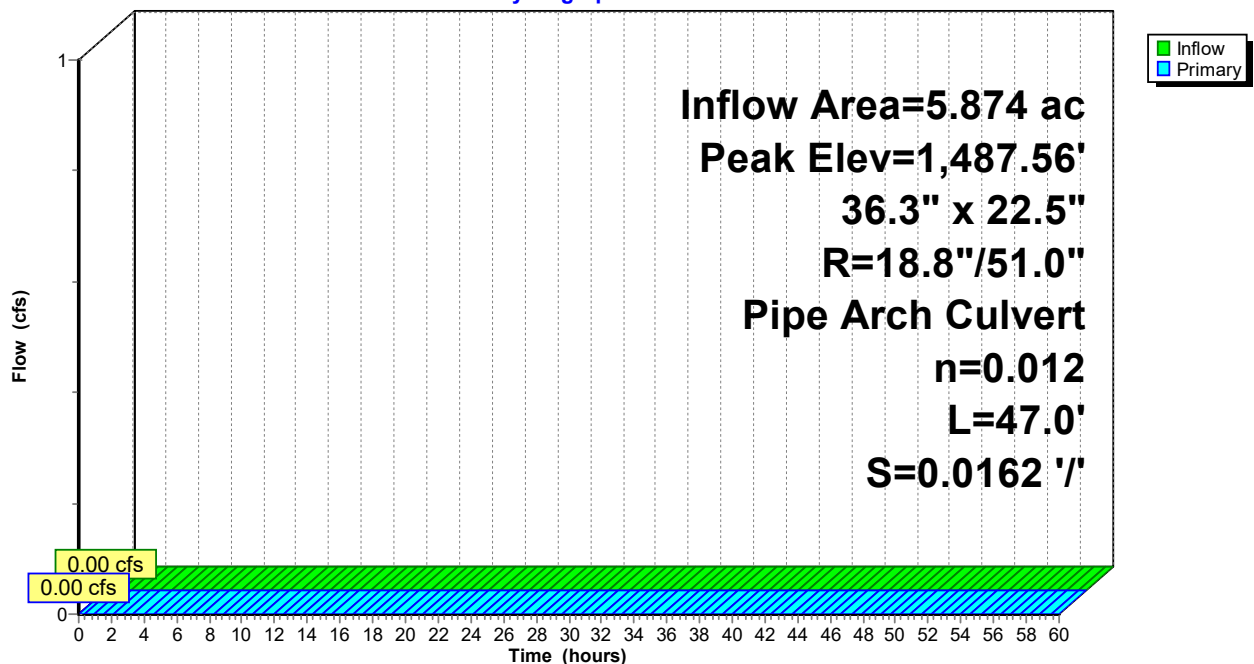
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,487.56' @ 0.00 hrs
 Flood Elev= 1,489.60'

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,487.56' | 36.3" W x 22.5" H, R=18.8"/51.0" Pipe Arch RCP_Arch 37x23 L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,487.56' / 1,486.80' S= 0.0162 '/' Cc= 0.900 n= 0.012, Flow Area= 4.43 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,487.56' (Free Discharge)
 ↑1=RCP_Arch 37x23 (Controls 0.00 cfs)

Pond 1.1aC1: TS1 Culvert

Hydrograph



Summary for Pond 1.1aC2: TS2 Culvert

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR3 : Bypass Swale

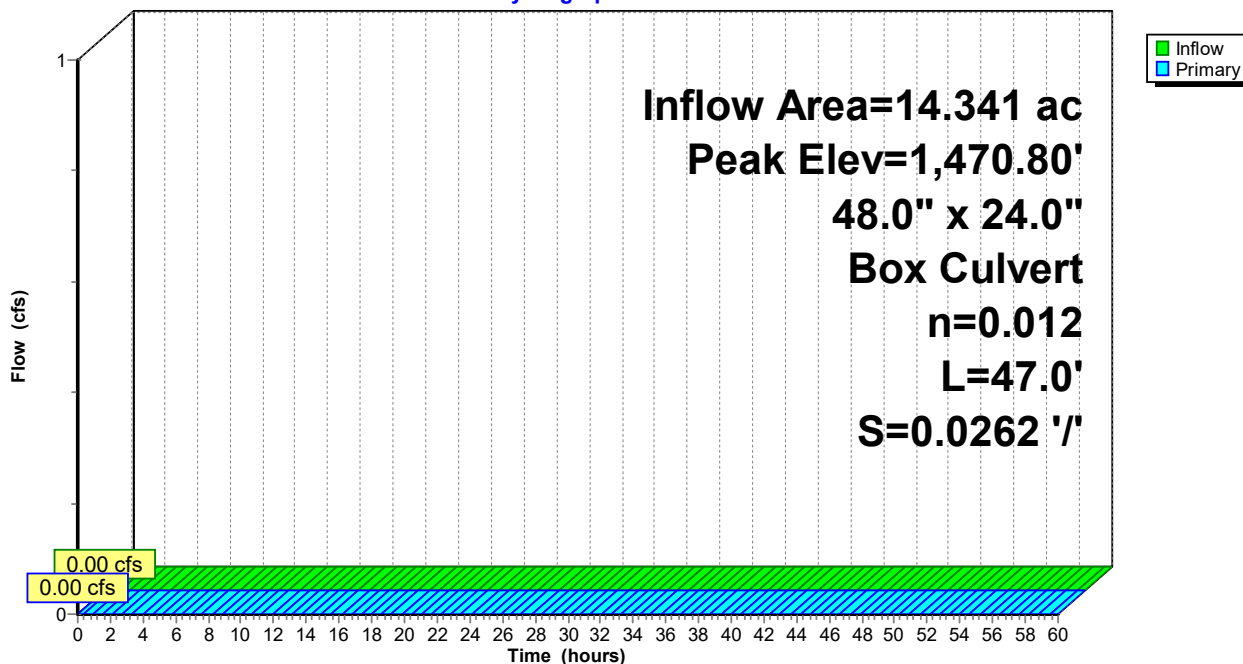
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,470.80' @ 0.00 hrs
 Flood Elev= 1,473.07'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,470.80' | 48.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,470.80' / 1,469.57' S= 0.0262 '/ Cc= 0.900 n= 0.012, Flow Area= 8.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,470.80' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.1aC2: TS2 Culvert

Hydrograph



Summary for Pond 1.1aC3: TS3 Culvert

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR4 : Bypass Swale

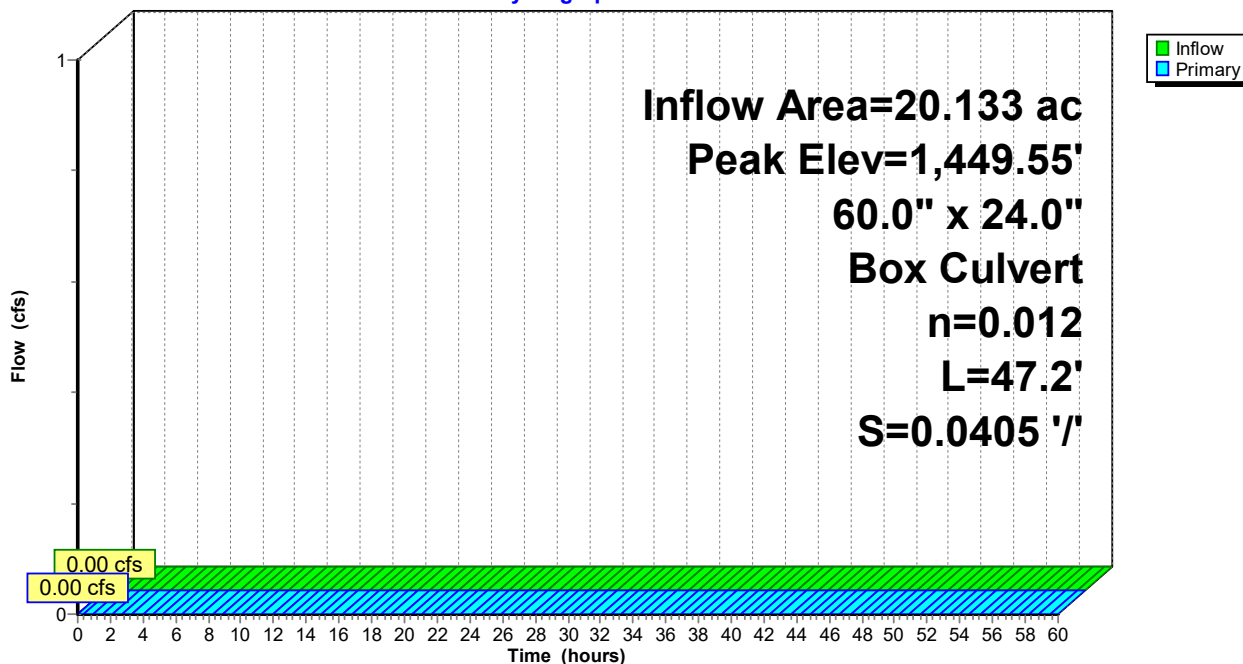
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.55' @ 0.00 hrs
 Flood Elev= 1,452.10'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,449.55' | 60.0" W x 24.0" H Box Culvert L= 47.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.55' / 1,447.64' S= 0.0405 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,449.55' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.1aC3: TS3 Culvert

Hydrograph



Summary for Pond 1.1aP: North Road Bypass OC

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.00' @ 0.00 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

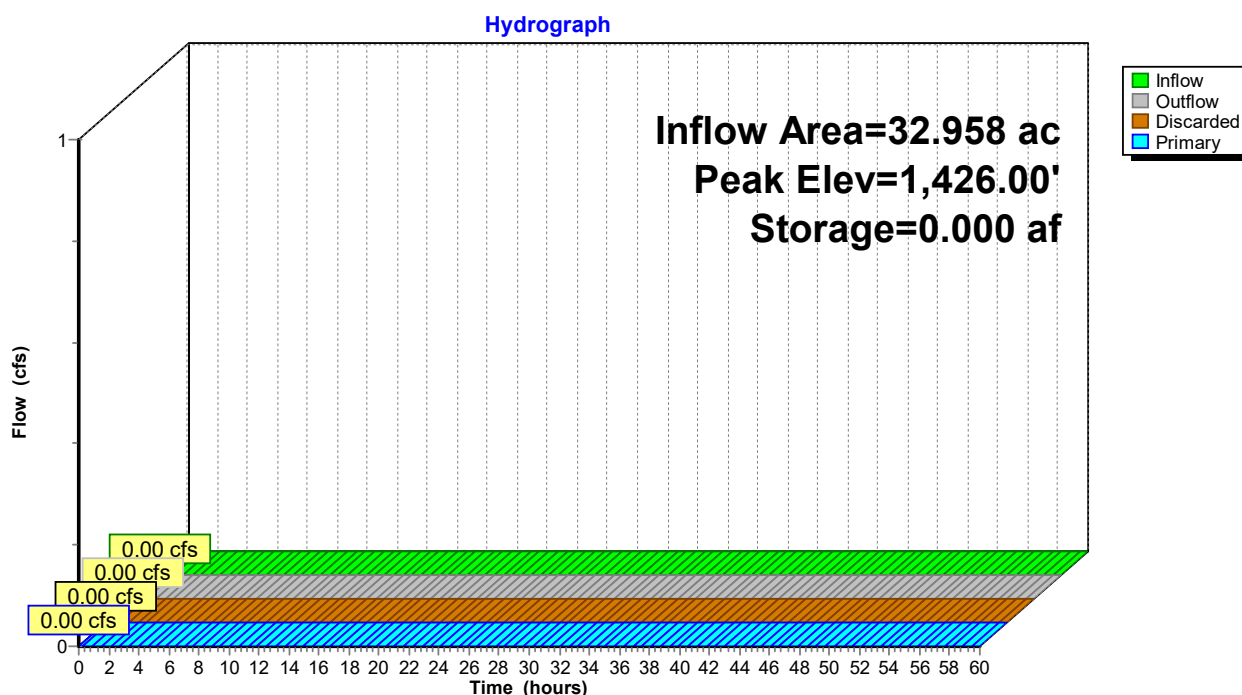
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,426.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,426.00' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,428.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,426.00' (Free Discharge)
 ↳1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,426.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.1aP: North Road Bypass OC



Summary for Pond 1.1bC1: TS4 Culvert

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 0.93" for 10-Yr Storm event
 Inflow = 1.13 cfs @ 12.06 hrs, Volume= 0.103 af
 Outflow = 1.13 cfs @ 12.06 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.13 cfs @ 12.06 hrs, Volume= 0.103 af
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

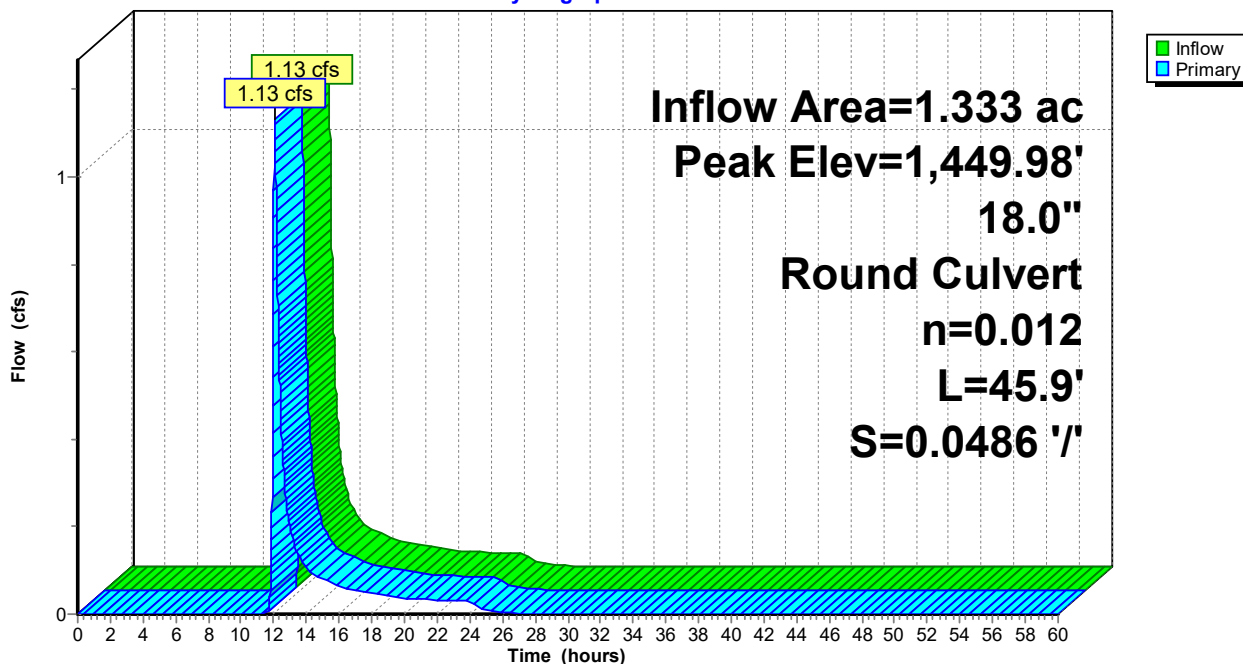
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.98' @ 12.06 hrs
 Flood Elev= 1,451.20'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,449.50' | 18.0" Round Culvert L= 45.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.50' / 1,447.27' S= 0.0486 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=1.13 cfs @ 12.06 hrs HW=1,449.98' (Free Discharge)
 ←1=Culvert (Inlet Controls 1.13 cfs @ 2.35 fps)

Pond 1.1bC1: TS4 Culvert

Hydrograph



Summary for Pond 1.1bP1: Dry Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.88" for 10-Yr Storm event
 Inflow = 1.61 cfs @ 12.06 hrs, Volume= 0.145 af
 Outflow = 1.59 cfs @ 12.08 hrs, Volume= 0.145 af, Atten= 1%, Lag= 1.1 min
 Discarded = 0.00 cfs @ 12.08 hrs, Volume= 0.004 af
 Primary = 1.58 cfs @ 12.08 hrs, Volume= 0.141 af
 Routed to Pond 1.1bP2 : North Road Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.14' @ 12.08 hrs Surf.Area= 329 sf Storage= 171 cf

Plug-Flow detention time= 14.8 min calculated for 0.145 af (100% of inflow)
 Center-of-Mass det. time= 14.9 min (914.0 - 899.1)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,424.75' | 428 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,424.75 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,425.00 | 25 | 22.9 | 2 | 2 | 42 | |
| 1,426.00 | 273 | 98.0 | 127 | 129 | 767 | |
| 1,426.70 | 603 | 161.7 | 299 | 428 | 2,086 | |

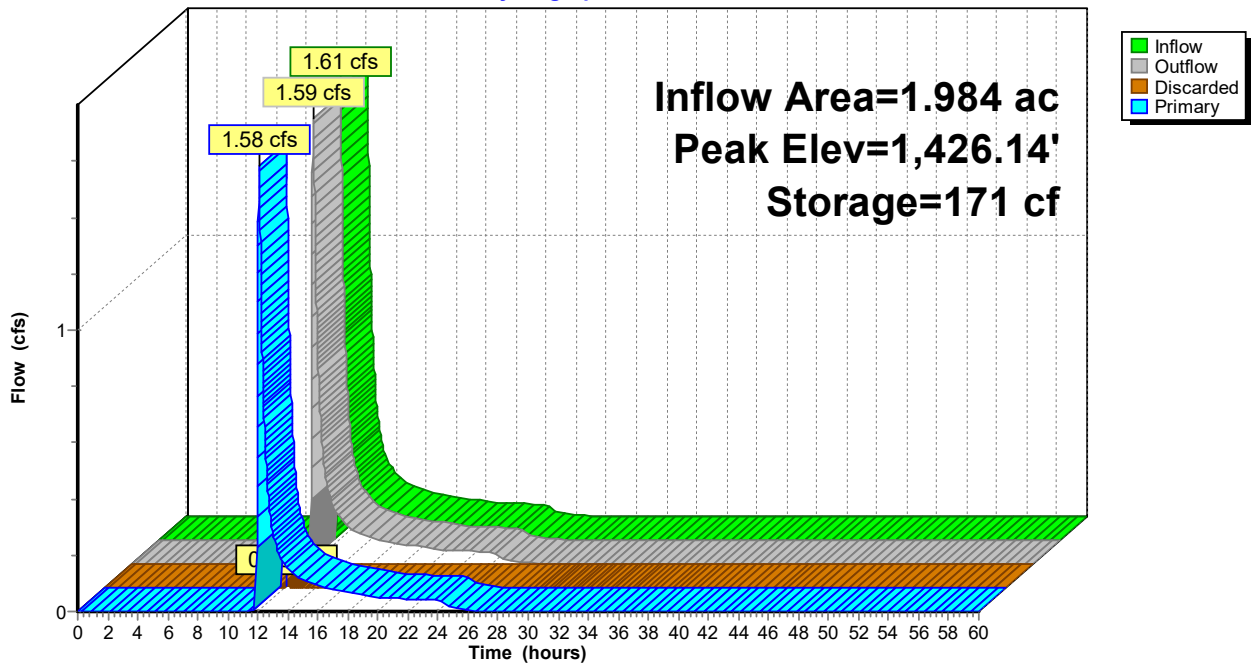
| Device | Routing | Invert | Outlet Devices | | | | | | | | | |
|--------|-----------|-----------|---|--|--|--|--|--|--|--|--|--|
| #1 | Discarded | 1,424.75' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | |
| #2 | Primary | 1,425.69' | 2.0' long x 2.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 | | | | | | | | | |
| | | | 2.50 3.00 3.50 | | | | | | | | | |
| | | | Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 | | | | | | | | | |
| | | | 2.85 3.07 3.20 3.32 | | | | | | | | | |

Discarded OutFlow Max=0.00 cfs @ 12.08 hrs HW=1,426.14' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=1.58 cfs @ 12.08 hrs HW=1,426.14' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 1.58 cfs @ 1.75 fps)

Pond 1.1bP1: Dry Swale

Hydrograph



Summary for Pond 1.1bP2: North Road Detention Pond

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.85" for 10-Yr Storm event
 Inflow = 1.58 cfs @ 12.08 hrs, Volume= 0.141 af
 Outflow = 0.46 cfs @ 12.62 hrs, Volume= 0.127 af, Atten= 71%, Lag= 32.3 min
 Discarded = 0.02 cfs @ 12.62 hrs, Volume= 0.052 af
 Primary = 0.45 cfs @ 12.62 hrs, Volume= 0.074 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.04' @ 12.62 hrs Surf.Area= 0.032 ac Storage= 0.050 af

Plug-Flow detention time= 547.6 min calculated for 0.127 af (90% of inflow)
 Center-of-Mass det. time= 495.3 min (1,392.5 - 897.2)

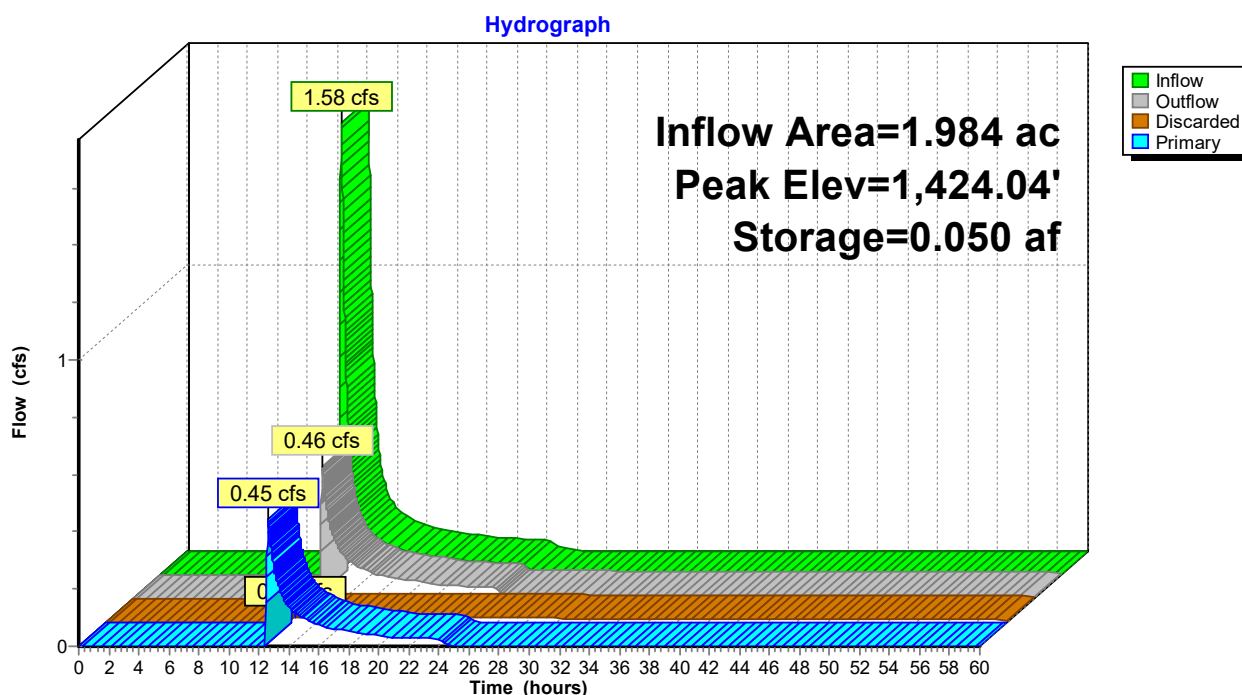
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,421.50' | 0.166 af | 10.00'W x 40.00'L x 5.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,421.50' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,424.00' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.02 cfs @ 12.62 hrs HW=1,424.04' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.40 cfs @ 12.62 hrs HW=1,424.04' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 0.40 cfs @ 0.50 fps)

Pond 1.1bP2: North Road Detention Pond



Summary for Pond 1.2aC1: TS 7 Culvert

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.2aR2 : Bypass Swale

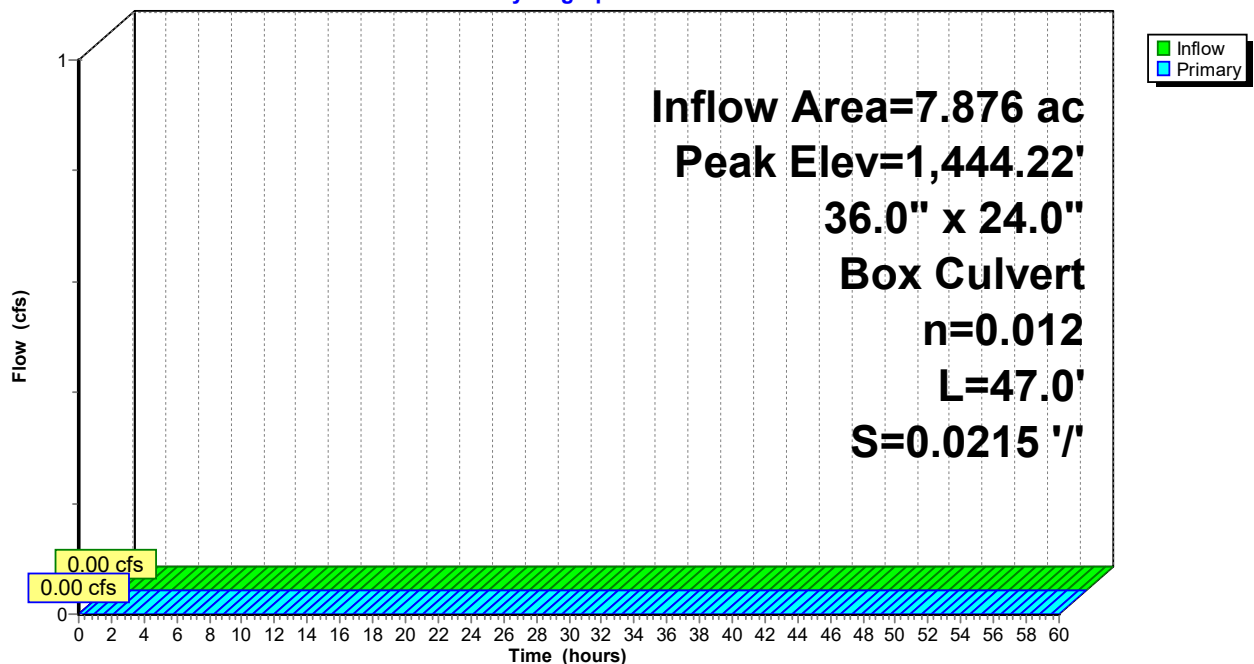
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,444.22' @ 0.00 hrs
 Flood Elev= 1,446.28'

| Device #1 | Routing | Invert | Outlet Devices |
|-----------|---------|-----------|--|
| | Primary | 1,444.22' | 36.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,444.22' / 1,443.21' S= 0.0215 '/ Cc= 0.900 n= 0.012, Flow Area= 6.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,444.22' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.2aC1: TS 7 Culvert

Hydrograph



Summary for Pond 1.2aC2: TS8 Culvert

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.2aR3 : Bypass Swale

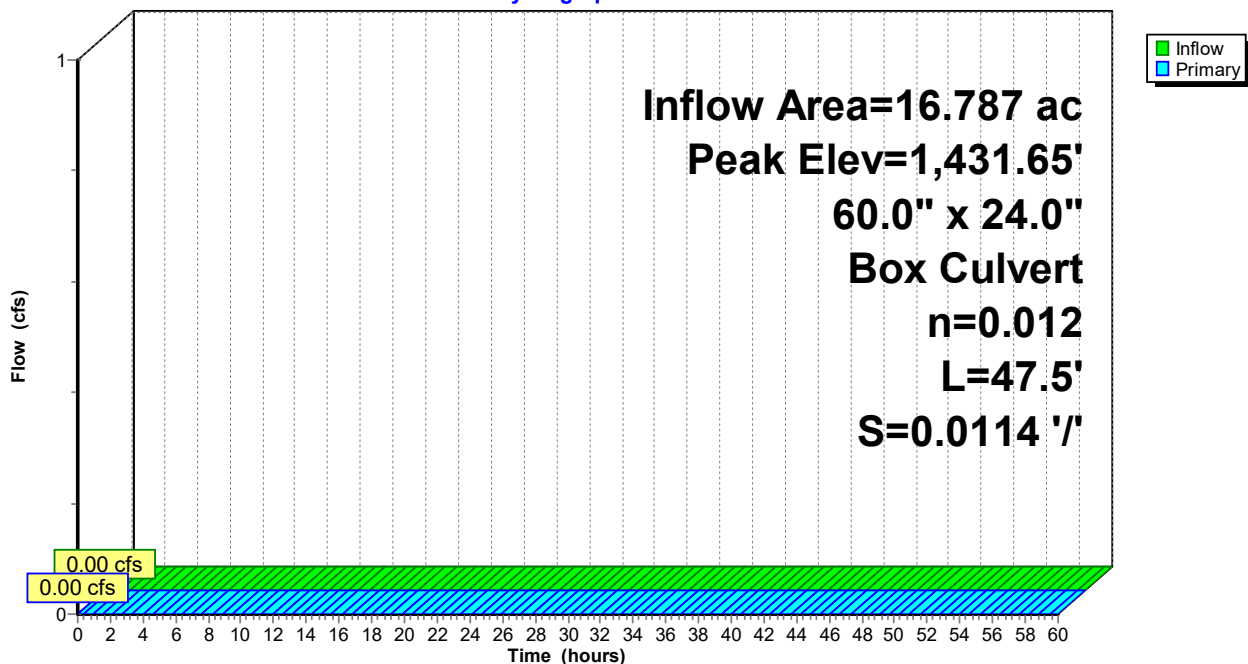
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.65' @ 0.00 hrs
 Flood Elev= 1,433.87'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,431.65' | 60.0" W x 24.0" H Box Culvert L= 47.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,431.65' / 1,431.11' S= 0.0114 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,431.65' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.2aC2: TS8 Culvert

Hydrograph



Summary for Pond 1.2aP: South Road Bypass OC

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.00' @ 0.00 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

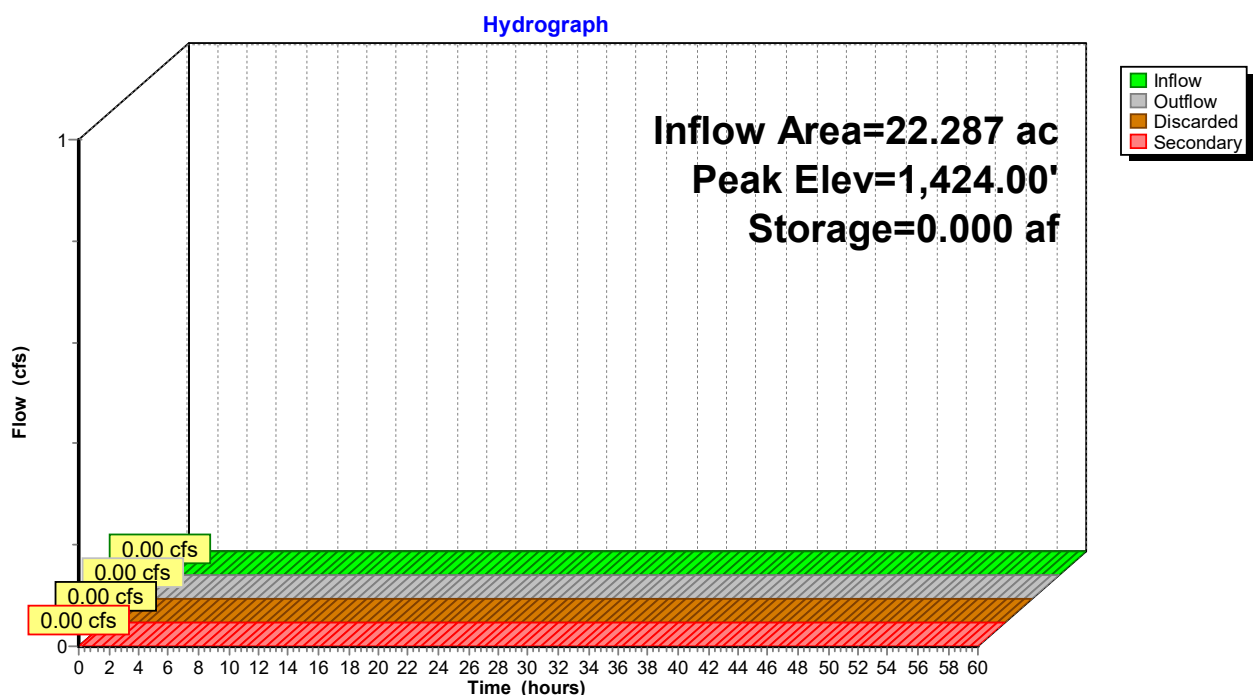
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area |
| #2 | Secondary | 1,426.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 |
| | | | Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳1=Exfiltration (Passes 0.00 cfs of 0.06 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.2aP: South Road Bypass OC



Summary for Pond 1.2bC1: East Road Culvert

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 0.73" for 10-Yr Storm event
 Inflow = 0.69 cfs @ 12.04 hrs, Volume= 0.044 af
 Outflow = 0.69 cfs @ 12.04 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.69 cfs @ 12.04 hrs, Volume= 0.044 af
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

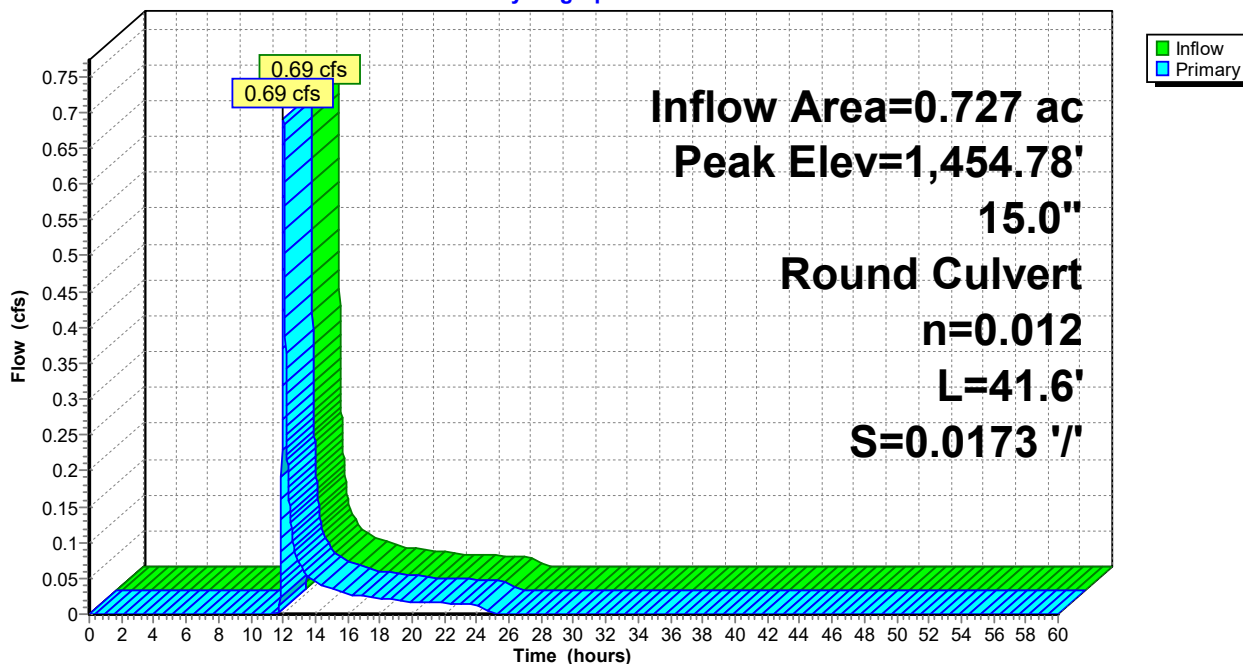
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,454.78' @ 12.04 hrs
 Flood Elev= 1,457.45'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,454.39' | 15.0" Round Culvert L= 41.6' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,454.39' / 1,453.67' S= 0.0173 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf |

Primary OutFlow Max=0.69 cfs @ 12.04 hrs HW=1,454.78' (Free Discharge)
 ←1=Culvert (Inlet Controls 0.69 cfs @ 2.12 fps)

Pond 1.2bC1: East Road Culvert

Hydrograph



Summary for Pond 1.2bC2: TS6 Culvert

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 0.54" for 10-Yr Storm event
 Inflow = 0.70 cfs @ 12.13 hrs, Volume= 0.071 af
 Outflow = 0.70 cfs @ 12.13 hrs, Volume= 0.071 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.70 cfs @ 12.13 hrs, Volume= 0.071 af
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

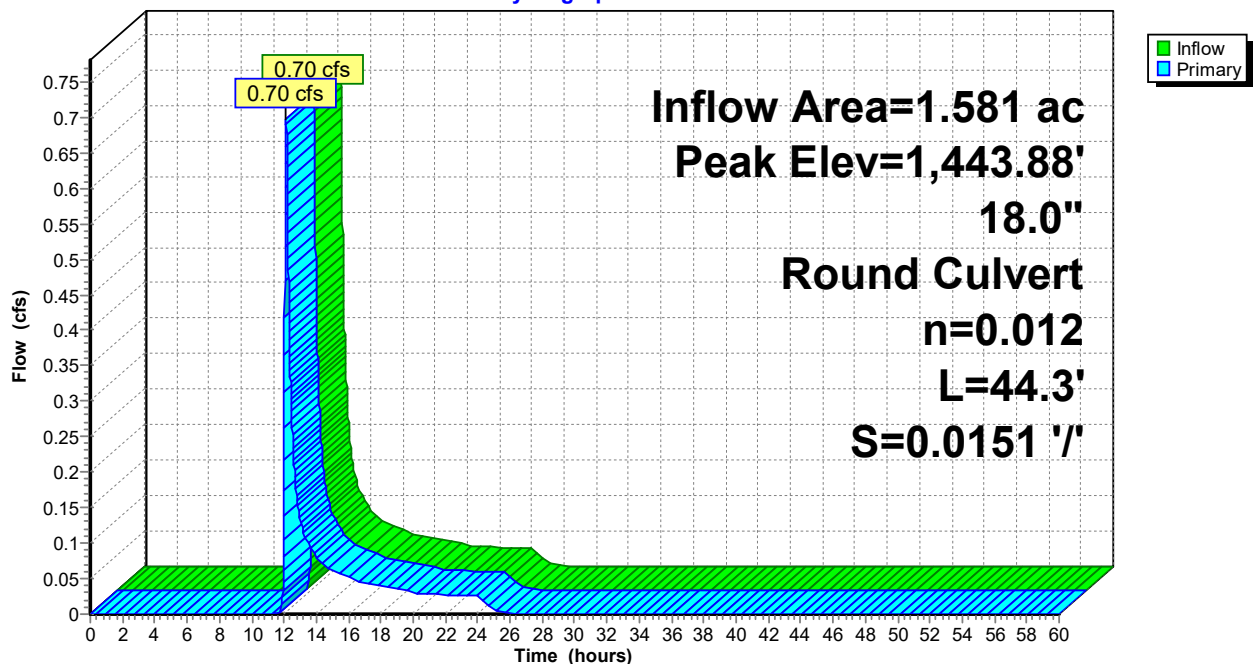
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,443.88' @ 12.13 hrs
 Flood Elev= 1,445.09'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,443.51' | 18.0" Round Culvert L= 44.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,443.51' / 1,442.84' S= 0.0151 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=0.70 cfs @ 12.13 hrs HW=1,443.88' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 0.70 cfs @ 2.07 fps)

Pond 1.2bC2: TS6 Culvert

Hydrograph



Summary for Pond 1.2bP: South Road Treatment Pond

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 0.67" for 10-Yr Storm event
 Inflow = 1.22 cfs @ 12.07 hrs, Volume= 0.133 af
 Outflow = 0.41 cfs @ 12.61 hrs, Volume= 0.133 af, Atten= 67%, Lag= 32.1 min
 Discarded = 0.29 cfs @ 12.61 hrs, Volume= 0.132 af
 Primary = 0.12 cfs @ 12.61 hrs, Volume= 0.002 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.06' @ 12.61 hrs Surf.Area= 0.024 ac Storage= 0.033 af

Plug-Flow detention time= 44.3 min calculated for 0.133 af (100% of inflow)
 Center-of-Mass det. time= 44.3 min (954.4 - 910.1)

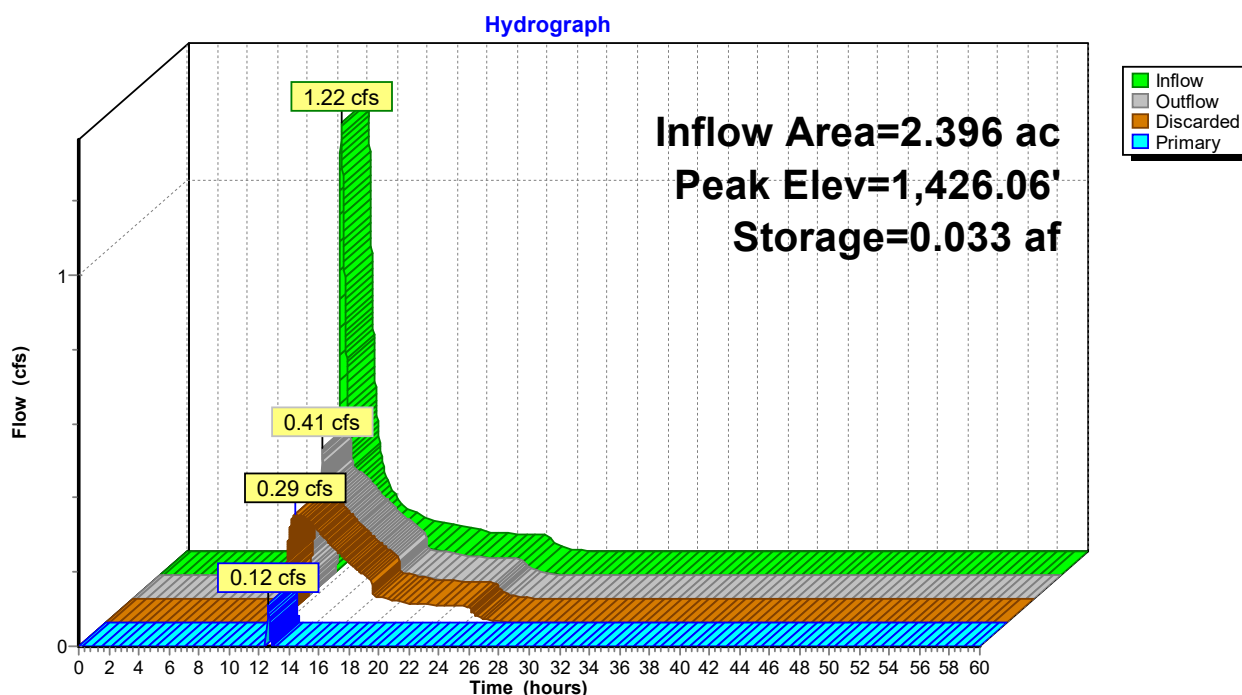
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.149 af | 20.00'W x 20.00'L x 5.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,426.05' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.29 cfs @ 12.61 hrs HW=1,426.06' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.29 cfs)

Primary OutFlow Max=0.05 cfs @ 12.61 hrs HW=1,426.06' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 0.05 cfs @ 0.25 fps)

Pond 1.2bP: South Road Treatment Pond



Summary for Pond 1.3P: Pond 3 - Access Rd West

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.17" for 10-Yr Storm event
 Inflow = 0.04 cfs @ 12.04 hrs, Volume= 0.010 af
 Outflow = 0.03 cfs @ 12.12 hrs, Volume= 0.010 af, Atten= 33%, Lag= 4.7 min
 Discarded = 0.03 cfs @ 12.12 hrs, Volume= 0.010 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link SP1 : Study Point 1

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,456.01' @ 12.12 hrs Surf.Area= 788 sf Storage= 8 cf

Plug-Flow detention time= 4.8 min calculated for 0.010 af (100% of inflow)
 Center-of-Mass det. time= 4.8 min (997.7 - 992.9)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,456.00' | 8,743 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,456.00 | 784 | 123.0 | 0 | 0 | 784 | |
| 1,458.00 | 1,720 | 194.0 | 2,443 | 2,443 | 2,603 | |
| 1,459.00 | 2,884 | 279.0 | 2,277 | 4,721 | 5,811 | |
| 1,460.00 | 5,280 | 421.0 | 4,022 | 8,743 | 13,729 | |

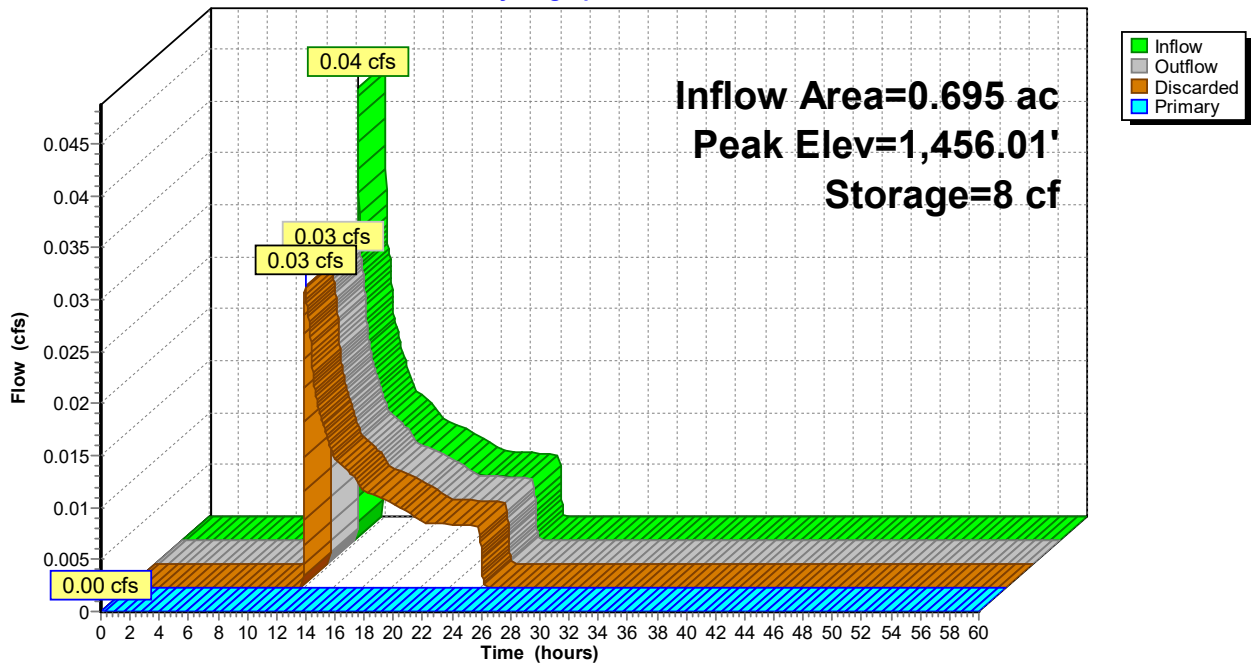
| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | | | | | | | | |
|--------|-----------|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| #1 | Discarded | 1,456.00' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | | | | | | | | |
| #2 | Primary | 1,459.99' | 20.0' long x 4.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | | | | | | | | |
| | | | Head (feet) | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 5.50 | |
| | | | Coef. (English) | 2.38 | 2.54 | 2.69 | 2.68 | 2.67 | 2.67 | 2.65 | 2.66 | 2.66 | 2.66 | 2.68 | 2.72 | 2.73 | 2.76 | 2.79 | 2.88 | 3.07 | 3.32 |

Discarded OutFlow Max=0.11 cfs @ 12.12 hrs HW=1,456.01' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,456.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.3P: Pond 3 - Access Rd West

Hydrograph



Summary for Pond 4.2bP: Pond 4 - Access Rd East

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 0.98" for 10-Yr Storm event
 Inflow = 0.69 cfs @ 12.02 hrs, Volume= 0.038 af
 Outflow = 0.08 cfs @ 12.64 hrs, Volume= 0.038 af, Atten= 89%, Lag= 37.2 min
 Discarded = 0.08 cfs @ 12.64 hrs, Volume= 0.038 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 4.2C : 18" Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,447.07' @ 12.64 hrs Surf.Area= 571 sf Storage= 581 cf

Plug-Flow detention time= 73.6 min calculated for 0.038 af (100% of inflow)
 Center-of-Mass det. time= 73.5 min (948.1 - 874.6)

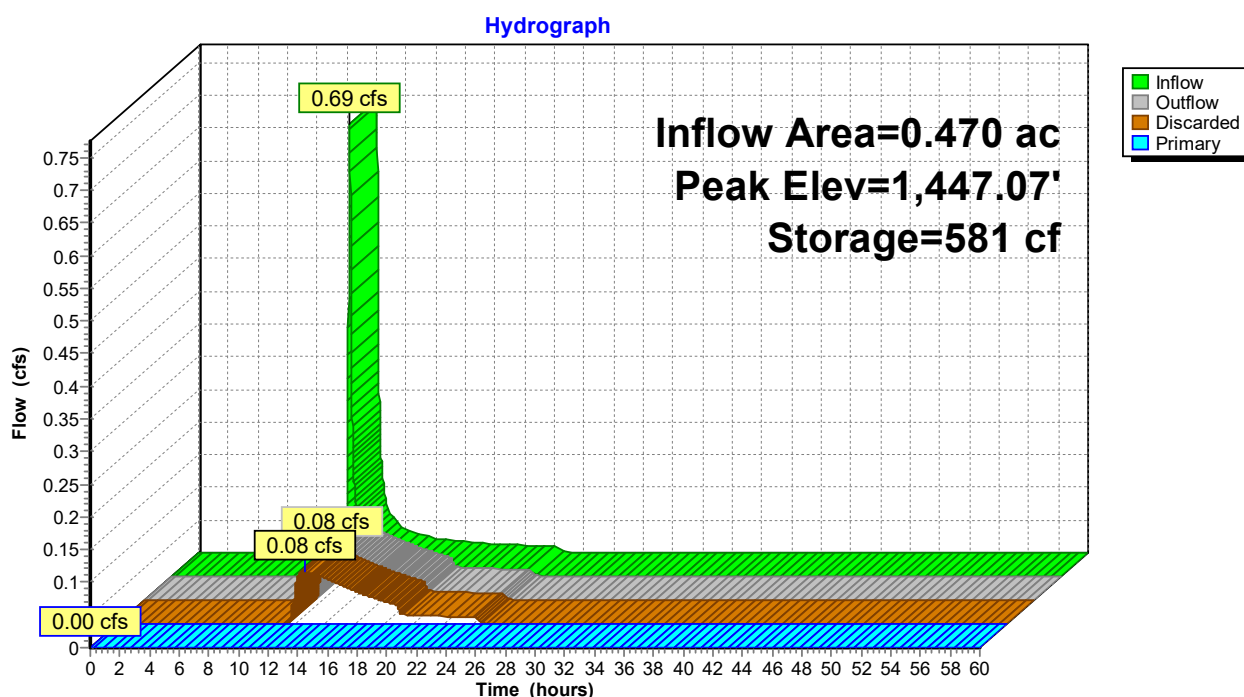
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|--|
| #1 | 1,445.50' | 2,317 cf | 10.00'W x 20.00'L x 3.50'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|---|-----------|-----------|--|
| #1 | Discarded | 1,445.50' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,448.25' | 10.0' long x 4.0' breadth Broad-Crested Rectangular Weir |
| Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 | | | |
| 2.50 3.00 3.50 4.00 4.50 5.00 5.50 | | | |
| Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 | | | |
| 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32 | | | |

Discarded OutFlow Max=0.08 cfs @ 12.64 hrs HW=1,447.07' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,445.50' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.2bP: Pond 4 - Access Rd East



Summary for Pond 4.2C: 18" Culvert

Inflow Area = 27.587 ac, 0.00% Impervious, Inflow Depth = 0.17" for 10-Yr Storm event
 Inflow = 0.85 cfs @ 12.75 hrs, Volume= 0.380 af
 Outflow = 0.81 cfs @ 12.97 hrs, Volume= 0.379 af, Atten= 5%, Lag= 13.4 min
 Primary = 0.81 cfs @ 12.97 hrs, Volume= 0.379 af
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,432.23' @ 12.97 hrs Surf.Area= 2,110 sf Storage= 572 cf
 Flood Elev= 1,434.64' Surf.Area= 27,666 sf Storage= 28,656 cf

Plug-Flow detention time= 14.9 min calculated for 0.379 af (100% of inflow)
 Center-of-Mass det. time= 13.3 min (1,036.8 - 1,023.5)

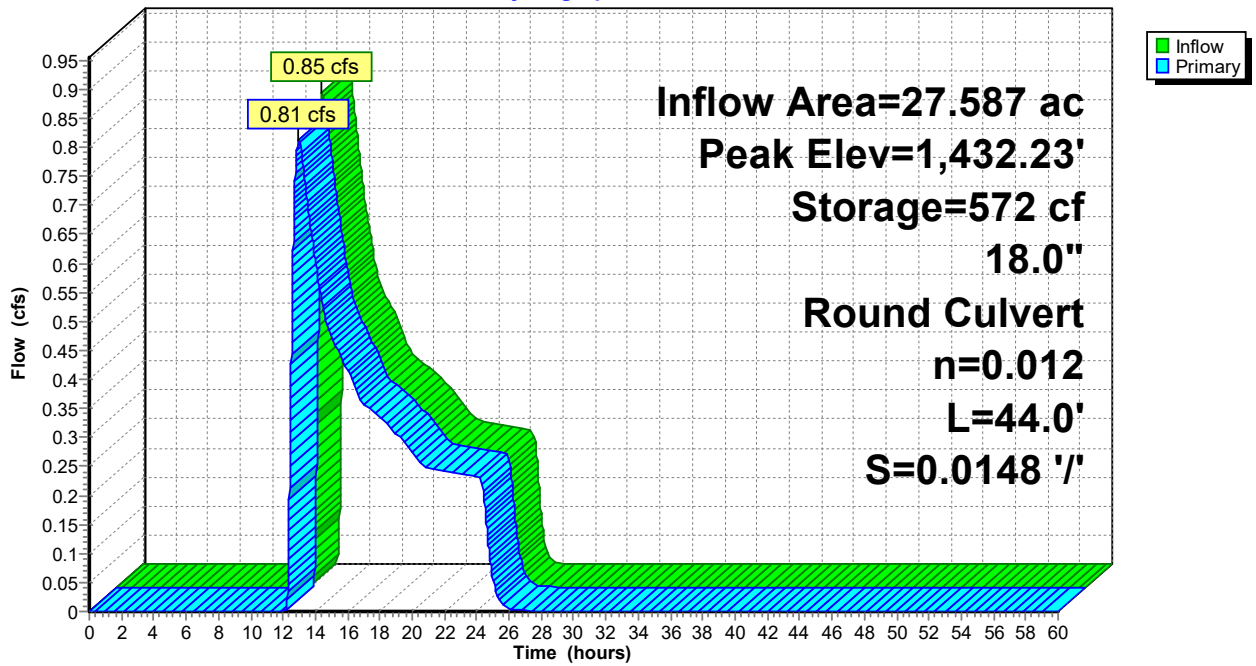
| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,431.50' | 39,033 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,431.50 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,432.00 | 1,190 | 146.0 | 198 | 198 | 1,697 | |
| 1,432.50 | 3,534 | 368.0 | 1,129 | 1,327 | 10,778 | |
| 1,433.00 | 5,795 | 497.0 | 2,309 | 3,637 | 19,660 | |
| 1,433.50 | 10,362 | 837.0 | 3,984 | 7,621 | 55,755 | |
| 1,434.00 | 16,931 | 975.0 | 6,756 | 14,377 | 75,659 | |
| 1,434.60 | 27,412 | 1,352.0 | 13,177 | 27,555 | 145,474 | |
| 1,435.00 | 30,000 | 1,500.0 | 11,479 | 39,033 | 179,068 | |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.83' | 18.0" Round Culvert L= 44.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.83' / 1,431.18' S= 0.0148 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf |

Primary OutFlow Max=0.81 cfs @ 12.97 hrs HW=1,432.23' (Free Discharge)
 ↑1=Culvert (Inlet Controls 0.81 cfs @ 2.15 fps)

Pond 4.2C: 18" Culvert

Hydrograph



Summary for Pond 4.3C: 24" Culvert

Inflow Area = 25.466 ac, 5.08% Impervious, Inflow Depth = 0.34" for 10-Yr Storm event
 Inflow = 3.30 cfs @ 12.45 hrs, Volume= 0.715 af
 Outflow = 3.30 cfs @ 12.45 hrs, Volume= 0.715 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.30 cfs @ 12.45 hrs, Volume= 0.715 af
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,432.12' @ 12.45 hrs
 Flood Elev= 1,434.65'

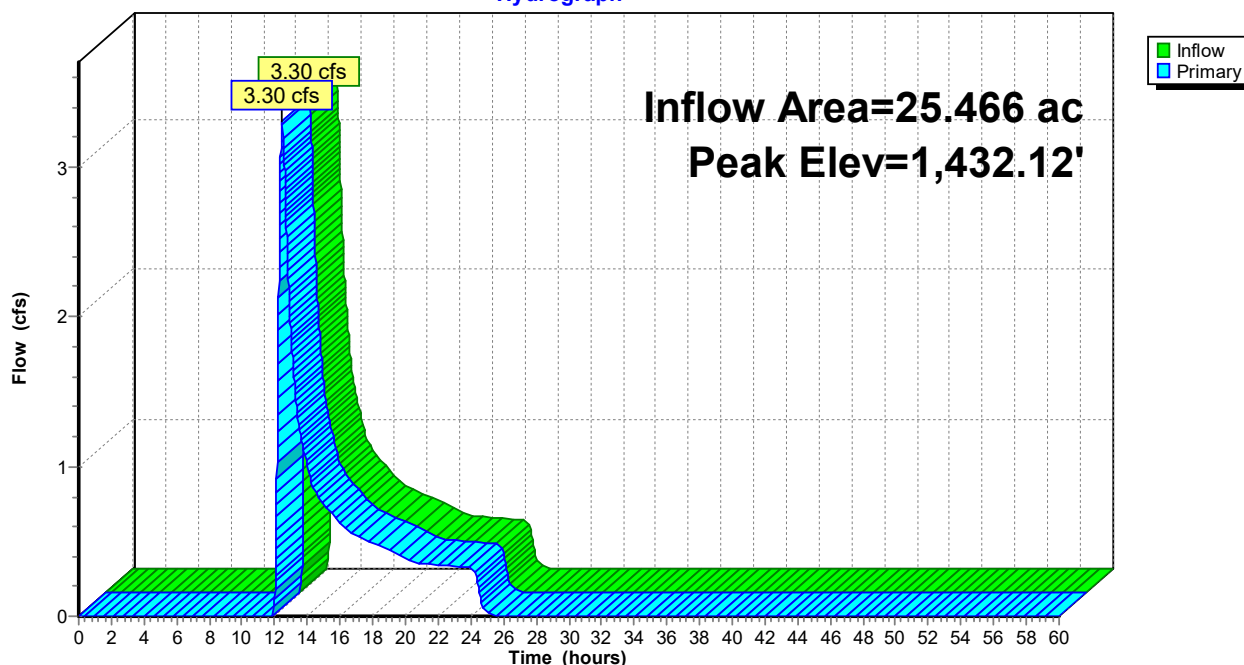
| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.35' | 24.0" Round Culvert L= 55.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.35' / 1,429.87' S= 0.0265 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf |
| #2 | Primary | 1,434.81' | 20.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |

Primary OutFlow Max=3.30 cfs @ 12.45 hrs HW=1,432.12' (Free Discharge)

- 1=Culvert (Inlet Controls 3.30 cfs @ 2.98 fps)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.3C: 24" Culvert

Hydrograph



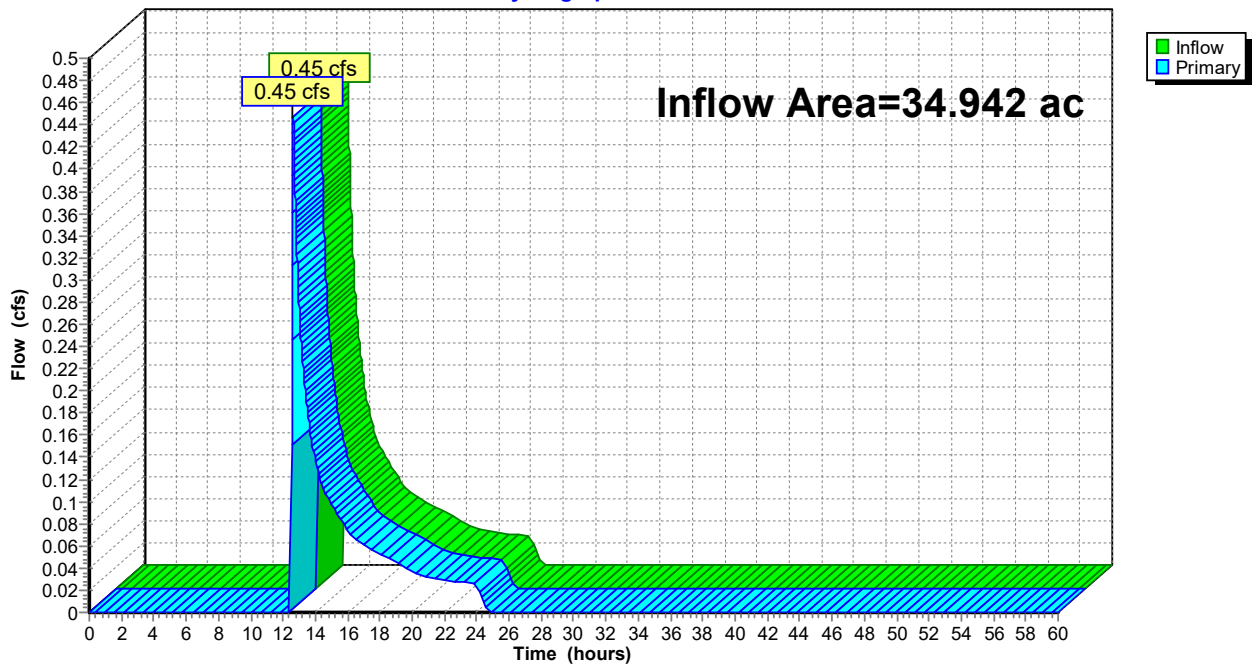
Summary for Link 1.1L:

Inflow Area = 34.942 ac, 0.04% Impervious, Inflow Depth = 0.03" for 10-Yr Storm event
Inflow = 0.45 cfs @ 12.62 hrs, Volume= 0.074 af
Primary = 0.45 cfs @ 12.62 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.1L:

Hydrograph



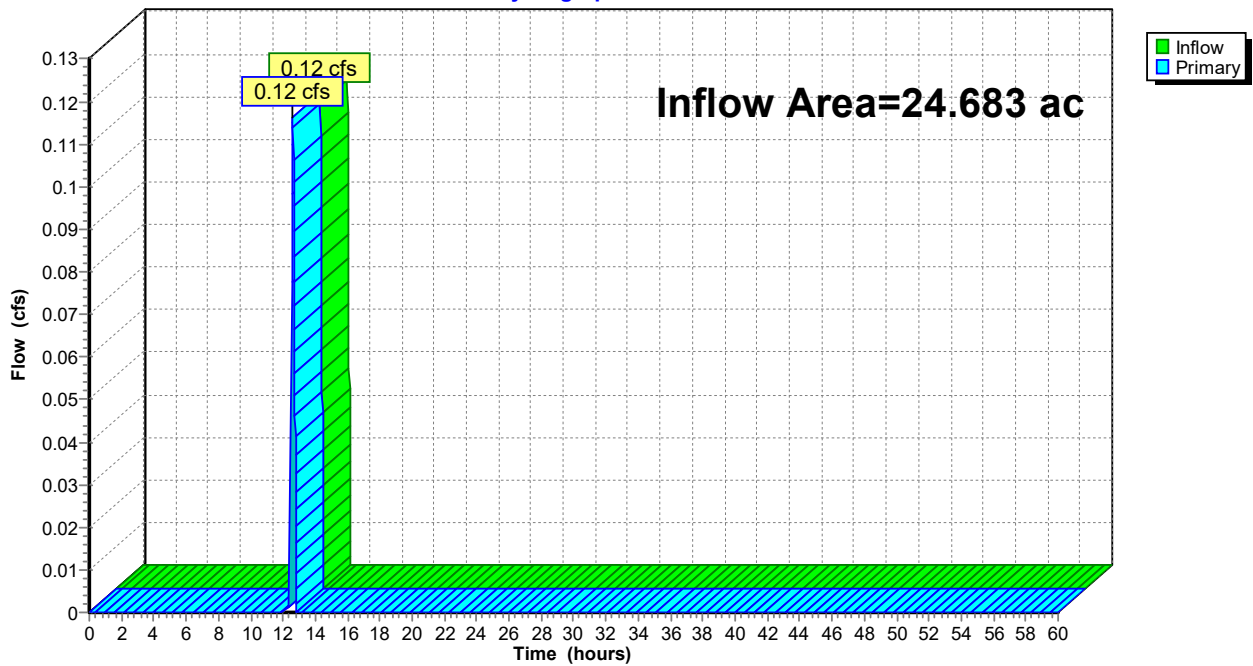
Summary for Link 1.2L:

Inflow Area = 24.683 ac, 0.06% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
Inflow = 0.12 cfs @ 12.61 hrs, Volume= 0.002 af
Primary = 0.12 cfs @ 12.61 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.2L:

Hydrograph



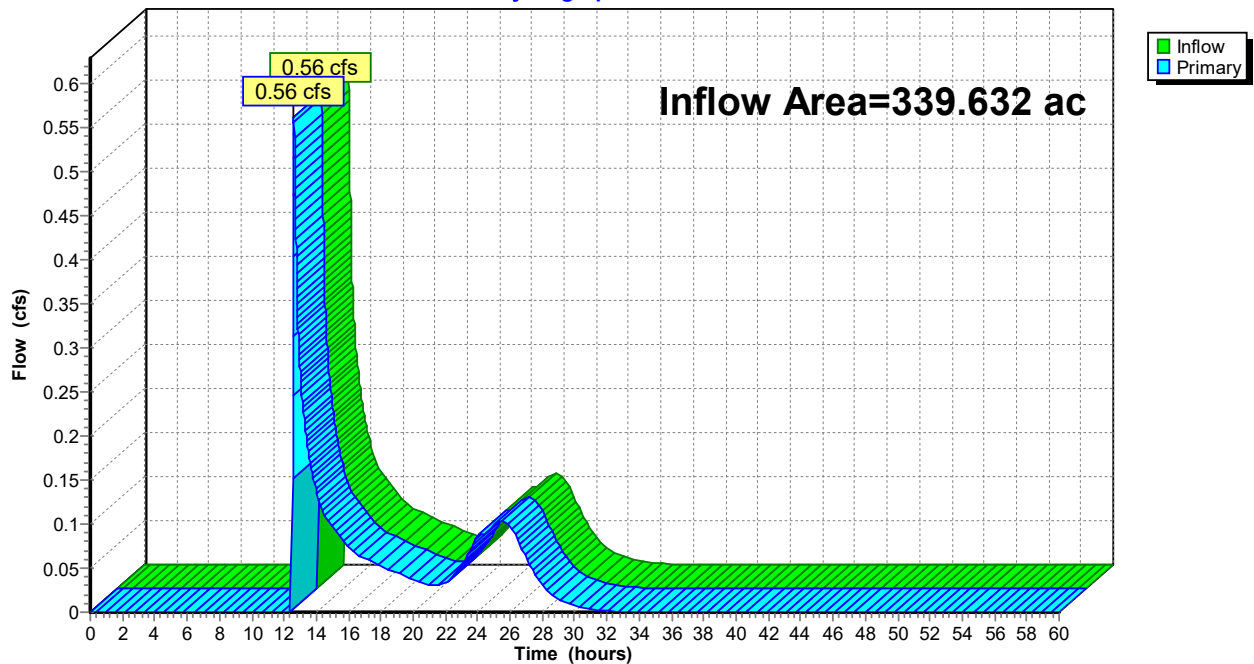
Summary for Link SP1: Study Point 1

Inflow Area = 339.632 ac, 0.01% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
Inflow = 0.56 cfs @ 12.61 hrs, Volume= 0.110 af
Primary = 0.56 cfs @ 12.61 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP1: Study Point 1

Hydrograph

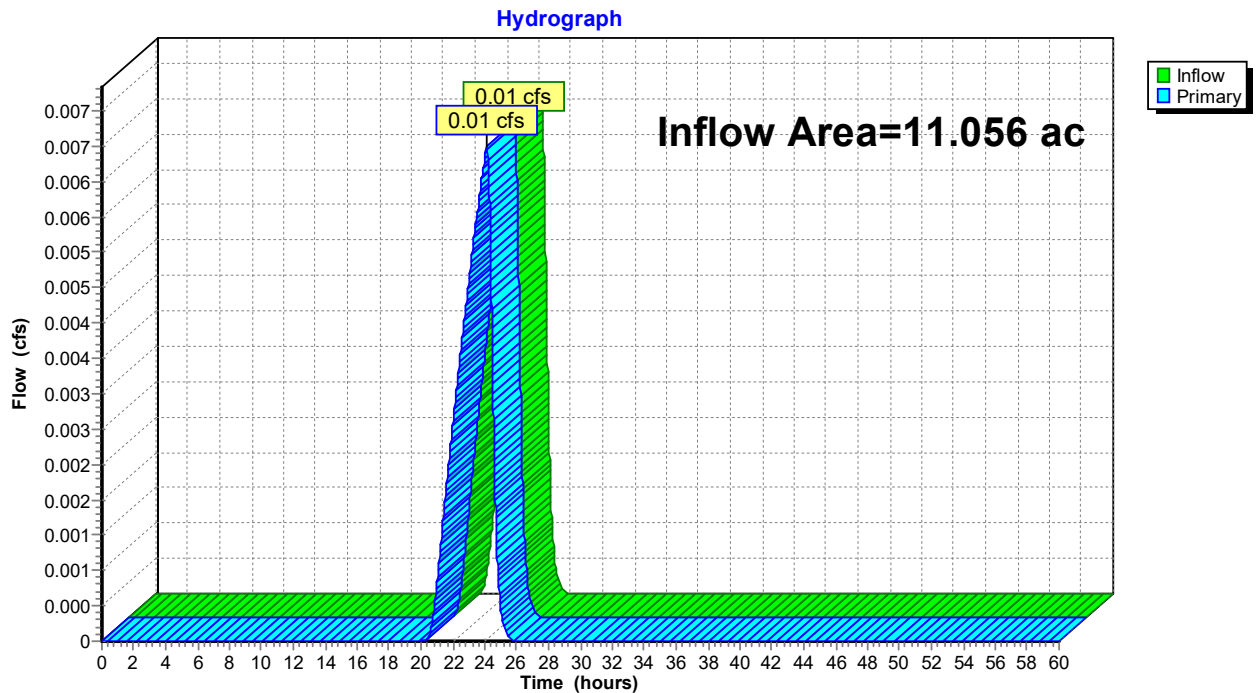


Summary for Link SP2: Study Point 2

Inflow Area = 11.056 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
Inflow = 0.01 cfs @ 24.12 hrs, Volume= 0.001 af
Primary = 0.01 cfs @ 24.12 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP2: Study Point 2



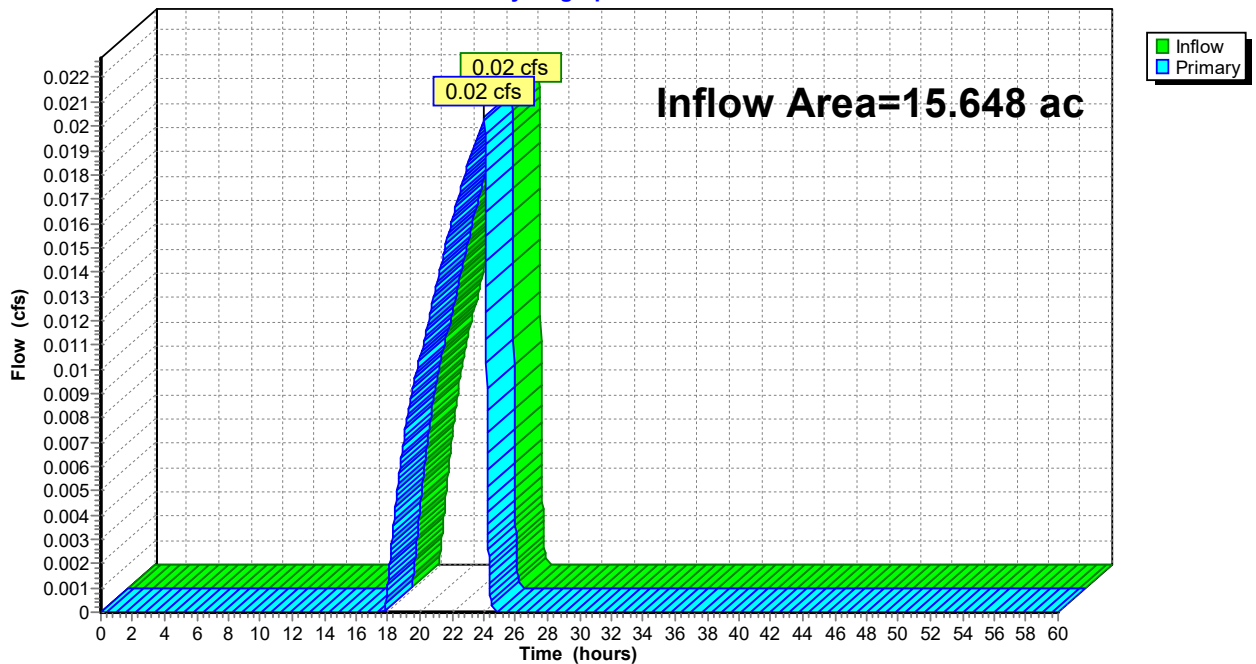
Summary for Link SP3: Study Point 3

Inflow Area = 15.648 ac, 0.56% Impervious, Inflow Depth = 0.01" for 10-Yr Storm event
Inflow = 0.02 cfs @ 24.01 hrs, Volume= 0.007 af
Primary = 0.02 cfs @ 24.01 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP3: Study Point 3

Hydrograph



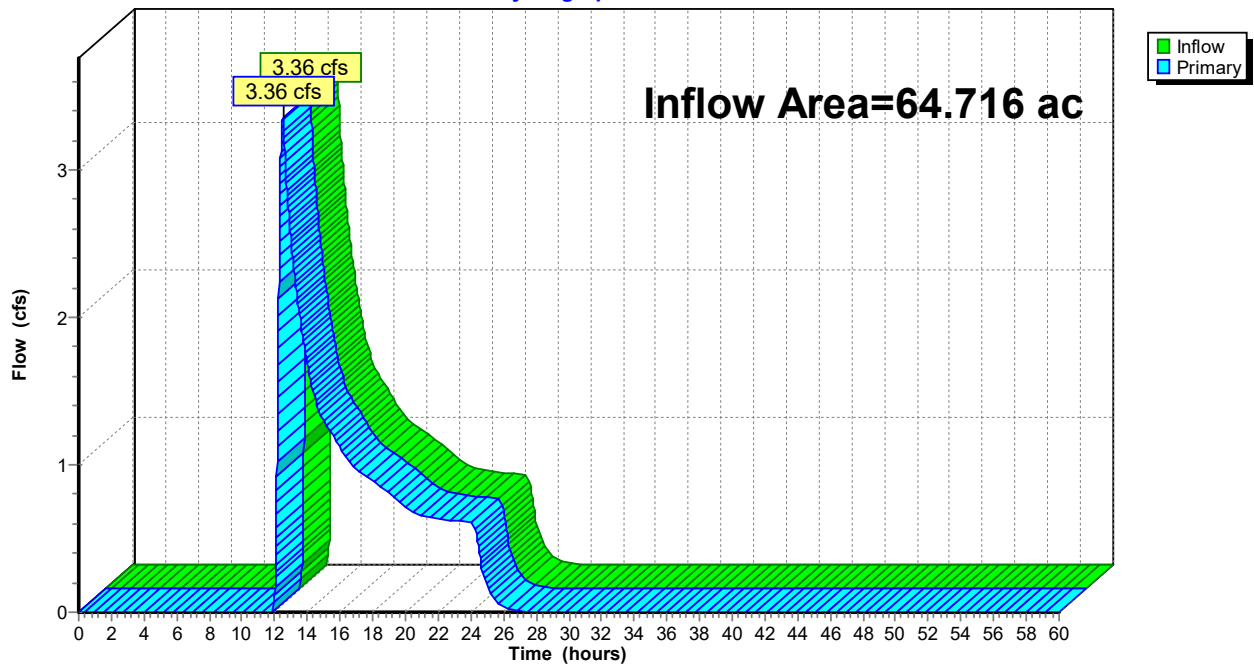
Summary for Link SP4: Study Point 4

Inflow Area = 64.716 ac, 2.50% Impervious, Inflow Depth = 0.21" for 10-Yr Storm event
Inflow = 3.36 cfs @ 12.49 hrs, Volume= 1.146 af
Primary = 3.36 cfs @ 12.49 hrs, Volume= 1.146 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP4: Study Point 4

Hydrograph

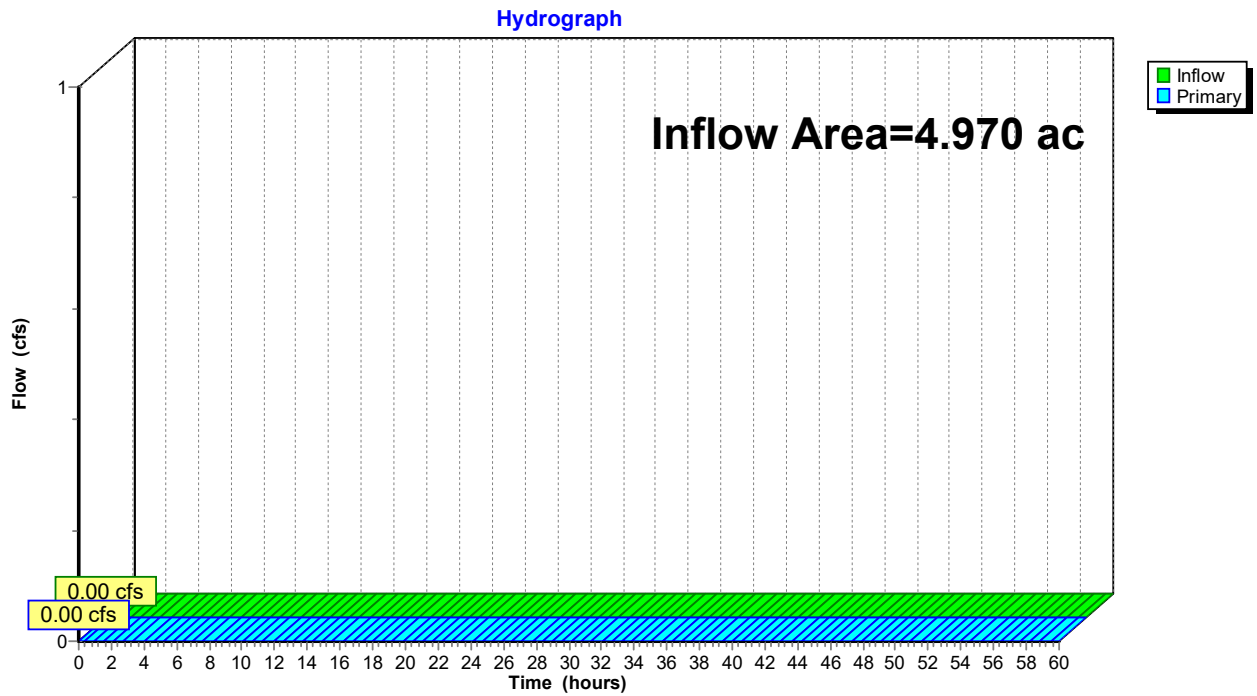


Summary for Link SP5: Study Point 5

Inflow Area = 4.970 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP5: Study Point 5



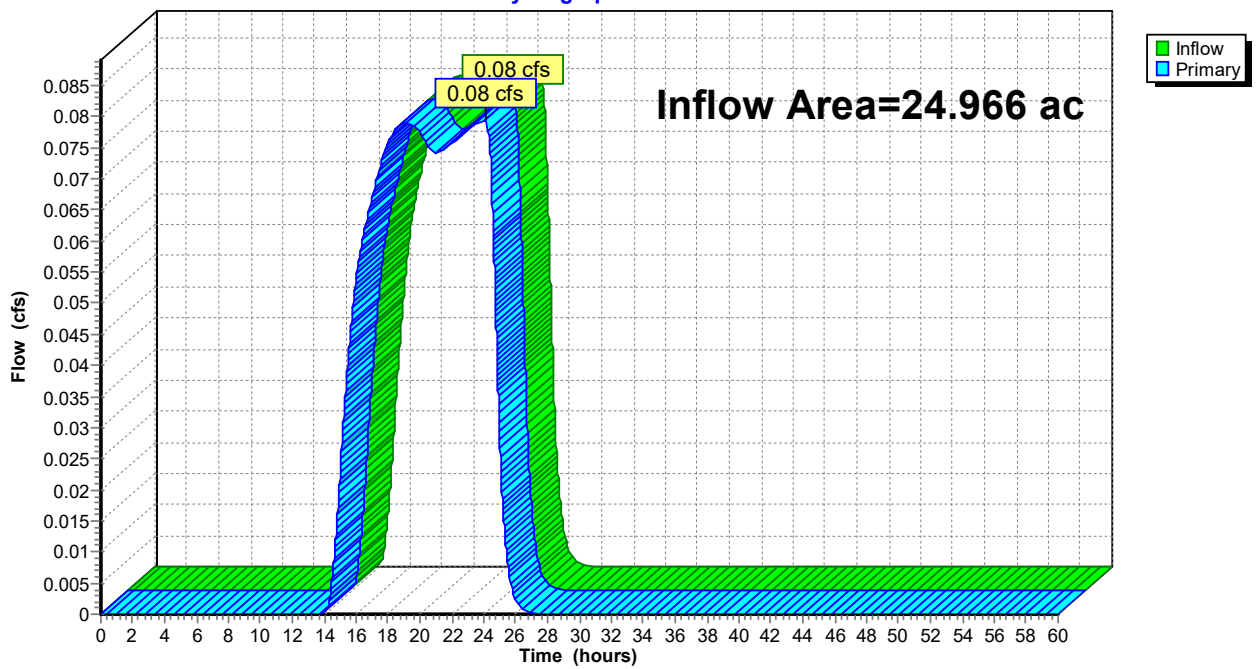
Summary for Link SP6: Study Point 6

Inflow Area = 24.966 ac, 5.81% Impervious, Inflow Depth = 0.03" for 10-Yr Storm event
Inflow = 0.08 cfs @ 24.10 hrs, Volume= 0.059 af
Primary = 0.08 cfs @ 24.10 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP6: Study Point 6

Hydrograph



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

| | |
|---|--|
| Subcatchment 1.1aS1: North Array East | Runoff Area=5.874 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=788' Tc=18.8 min CN=30 Runoff=0.02 cfs 0.012 af |
| Subcatchment 1.1aS2: North Array East | Runoff Area=8.467 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=931' Tc=21.1 min CN=30 Runoff=0.03 cfs 0.017 af |
| Subcatchment 1.1aS3: North Array West | Runoff Area=5.792 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=1,031' Tc=19.7 min CN=30 Runoff=0.02 cfs 0.012 af |
| Subcatchment 1.1aS4: North Array West | Runoff Area=12.825 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=1,562' Tc=26.1 min CN=30 Runoff=0.05 cfs 0.026 af |
| Subcatchment 1.1bS1: North Road - East | Runoff Area=1.333 ac 0.53% Impervious Runoff Depth=2.45" Tc=6.0 min CN=71 Runoff=5.85 cfs 0.272 af |
| Subcatchment 1.1bS2: North Road - West | Runoff Area=0.651 ac 1.08% Impervious Runoff Depth=2.19" Tc=6.0 min CN=68 Runoff=2.56 cfs 0.119 af |
| Subcatchment 1.2aS1: Middle Array East | Runoff Area=7.876 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=865' Tc=19.1 min CN=30 Runoff=0.03 cfs 0.016 af |
| Subcatchment 1.2aS2: Middle Array Center | Runoff Area=8.911 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=825' Tc=18.1 min CN=30 Runoff=0.03 cfs 0.018 af |
| Subcatchment 1.2aS3: Middle Array West | Runoff Area=5.500 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=882' Tc=18.5 min CN=30 Runoff=0.02 cfs 0.011 af |
| Subcatchment 1.2bS1: East Road - West | Runoff Area=0.727 ac 0.00% Impervious Runoff Depth=2.11" Tc=6.0 min CN=67 Runoff=2.75 cfs 0.128 af |
| Subcatchment 1.2bS2: South Road | Runoff Area=0.854 ac 0.47% Impervious Runoff Depth=1.41" Flow Length=308' Tc=13.7 min CN=58 Runoff=1.51 cfs 0.101 af |
| Subcatchment 1.2bS3: South Road | Runoff Area=0.815 ac 1.35% Impervious Runoff Depth=2.45" Tc=6.0 min CN=71 Runoff=3.57 cfs 0.166 af |
| Subcatchment 1.3aS1: Surface Discharge | Runoff Area=279.312 ac 0.00% Impervious Runoff Depth=0.30" Flow Length=6,771' Tc=201.7 min CN=39 Runoff=9.14 cfs 6.873 af |
| Subcatchment 1.3bS: Access Rd to Pond 3 | Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.94" Tc=6.0 min CN=51 Runoff=1.02 cfs 0.054 af |
| Subcatchment 2S: | Runoff Area=11.056 ac 0.00% Impervious Runoff Depth=0.30" Flow Length=2,342' Tc=36.0 min CN=39 Runoff=0.66 cfs 0.272 af |
| Subcatchment 3S: | Runoff Area=15.648 ac 0.56% Impervious Runoff Depth=0.34" Flow Length=886' Tc=12.7 min CN=40 Runoff=2.04 cfs 0.442 af |
| Subcatchment 4.1S: | Runoff Area=11.663 ac 2.80% Impervious Runoff Depth=0.59" Flow Length=845' Tc=15.8 min CN=45 Runoff=4.82 cfs 0.570 af |

| | |
|--|--|
| Subcatchment 4.2aS: | Runoff Area=27.117 ac 0.00% Impervious Runoff Depth=0.94" Flow Length=1,640' Tc=38.9 min CN=51 Runoff=13.31 cfs 2.121 af |
| Subcatchment 4.2bS: | Runoff Area=0.470 ac 0.00% Impervious Runoff Depth=2.53" Tc=6.0 min CN=72 Runoff=2.13 cfs 0.099 af |
| Subcatchment 4.3S: | Runoff Area=25.466 ac 5.08% Impervious Runoff Depth=1.34" Flow Length=2,280' Tc=36.5 min CN=57 Runoff=22.16 cfs 2.846 af |
| Subcatchment 5S: | Runoff Area=4.970 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=1,180' Tc=17.5 min CN=30 Runoff=0.02 cfs 0.010 af |
| Subcatchment 6S: | Runoff Area=24.966 ac 5.81% Impervious Runoff Depth=0.48" Flow Length=1,961' Tc=60.1 min CN=43 Runoff=3.11 cfs 1.002 af |
| Reach 1.1aR1: Bypass Swale | Avg. Flow Depth=0.03' Max Vel=0.41 fps Inflow=0.02 cfs 0.012 af n=0.035 L=580.0' S=0.0108 '/' Capacity=56.37 cfs Outflow=0.02 cfs 0.012 af |
| Reach 1.1aR2: Bypass Swale | Avg. Flow Depth=0.03' Max Vel=0.76 fps Inflow=0.05 cfs 0.029 af n=0.035 L=557.4' S=0.0284 '/' Capacity=91.27 cfs Outflow=0.05 cfs 0.029 af |
| Reach 1.1aR3: Bypass Swale | Avg. Flow Depth=0.04' Max Vel=0.90 fps Inflow=0.07 cfs 0.041 af n=0.035 L=557.5' S=0.0352 '/' Capacity=101.68 cfs Outflow=0.07 cfs 0.041 af |
| Reach 1.1aR4: Bypass Swale | Avg. Flow Depth=0.05' Max Vel=1.10 fps Inflow=0.12 cfs 0.066 af n=0.035 L=580.5' S=0.0362 '/' Capacity=103.04 cfs Outflow=0.12 cfs 0.066 af |
| Reach 1.1bR1: North Road Conveyance | Avg. Flow Depth=0.42' Max Vel=2.90 fps Inflow=5.85 cfs 0.272 af n=0.035 L=1,733.0' S=0.0240 '/' Capacity=111.65 cfs Outflow=3.95 cfs 0.272 af |
| Reach 1.1bR2: North Road Conveyance | Avg. Flow Depth=0.45' Max Vel=3.81 fps Inflow=6.08 cfs 0.391 af n=0.035 L=593.3' S=0.0380 '/' Capacity=140.36 cfs Outflow=5.77 cfs 0.391 af |
| Reach 1.2aR1: Bypass Swale | Avg. Flow Depth=0.03' Max Vel=0.54 fps Inflow=0.03 cfs 0.016 af n=0.035 L=524.2' S=0.0188 '/' Capacity=74.30 cfs Outflow=0.03 cfs 0.016 af |
| Reach 1.2aR2: Bypass Swale | Avg. Flow Depth=0.04' Max Vel=0.71 fps Inflow=0.06 cfs 0.034 af n=0.035 L=556.0' S=0.0204 '/' Capacity=77.47 cfs Outflow=0.06 cfs 0.034 af |
| Reach 1.2aR3: Bypass Swale | Avg. Flow Depth=0.04' Max Vel=0.63 fps Inflow=0.08 cfs 0.045 af n=0.035 L=249.0' S=0.0153 '/' Capacity=81.84 cfs Outflow=0.08 cfs 0.045 af |
| Reach 1.2bR1: East Road Conveyance | Avg. Flow Depth=0.27' Max Vel=3.17 fps Inflow=2.75 cfs 0.128 af n=0.035 L=731.4' S=0.0456 '/' Capacity=79.22 cfs Outflow=2.43 cfs 0.128 af |
| Reach 1.2bR2: South Road Conveyance | Avg. Flow Depth=0.42' Max Vel=2.49 fps Inflow=3.77 cfs 0.228 af n=0.035 L=604.5' S=0.0177 '/' Capacity=95.76 cfs Outflow=3.39 cfs 0.228 af |
| Reach 1.2bR3: South Road Conveyance | Avg. Flow Depth=0.52' Max Vel=2.88 fps Inflow=5.95 cfs 0.394 af n=0.035 L=755.9' S=0.0187 '/' Capacity=98.64 cfs Outflow=5.31 cfs 0.394 af |
| Reach 4.1R1: Bypass Swale | Avg. Flow Depth=0.79' Max Vel=3.69 fps Inflow=4.82 cfs 0.570 af n=0.035 L=570.0' S=0.0303 '/' Capacity=54.88 cfs Outflow=4.59 cfs 0.570 af |
| Reach 4.1R2: Ex Stream | Avg. Flow Depth=0.31' Max Vel=1.85 fps Inflow=10.59 cfs 2.700 af n=0.035 L=740.0' S=0.0099 '/' Capacity=588.81 cfs Outflow=10.53 cfs 2.700 af |

| | | | | |
|---|------------------------------|---------------------|-------------------|--------------------|
| Reach 4.2bR: Conveyance Swale | Avg. Flow Depth=0.25' | Max Vel=2.91 fps | Inflow=2.13 cfs | 0.099 af |
| | n=0.035 | L=565.0' | S=0.0432 '/ | Capacity=77.09 cfs |
| | | | Outflow=1.95 cfs | 0.099 af |
| Pond 1.1aC1: TS1 Culvert | | Peak Elev=1,487.60' | Inflow=0.02 cfs | 0.012 af |
| | 36.3" x 22.5", R=18.8"/51.0" | Pipe Arch Culvert | n=0.012 | L=47.0' |
| | | | S=0.0162 '/ | Outflow=0.02 cfs |
| | | | | 0.012 af |
| Pond 1.1aC2: TS2 Culvert | | Peak Elev=1,470.83' | Inflow=0.05 cfs | 0.029 af |
| | 48.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0262 '/ | Outflow=0.05 cfs |
| | | | | 0.029 af |
| Pond 1.1aC3: TS3 Culvert | | Peak Elev=1,449.58' | Inflow=0.07 cfs | 0.041 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.2' |
| | | | S=0.0405 '/ | Outflow=0.07 cfs |
| | | | | 0.041 af |
| Pond 1.1aP: North Road Bypass OC | | Peak Elev=1,428.53' | Storage=0.029 af | Inflow=0.12 cfs |
| | | Discarded=0.01 cfs | 0.028 af | Primary=0.11 cfs |
| | | | 0.031 af | Outflow=0.12 cfs |
| | | | | 0.059 af |
| Pond 1.1bC1: TS4 Culvert | | Peak Elev=1,450.46' | Inflow=3.95 cfs | 0.272 af |
| | 18.0" | Round Culvert | n=0.012 | L=45.9' |
| | | | S=0.0486 '/ | Outflow=3.95 cfs |
| | | | | 0.272 af |
| Pond 1.1bP1: Dry Swale | | Peak Elev=1,426.74' | Storage=428 cf | Inflow=5.77 cfs |
| | | Discarded=0.01 cfs | 0.005 af | Primary=5.77 cfs |
| | | | 0.386 af | Outflow=5.77 cfs |
| | | | | 0.391 af |
| Pond 1.1bP2: North Road Detention Pond | | Peak Elev=1,424.23' | Storage=0.056 af | Inflow=5.77 cfs |
| | | Discarded=0.02 cfs | 0.053 af | Primary=5.63 cfs |
| | | | 0.318 af | Outflow=5.65 cfs |
| | | | | 0.372 af |
| Pond 1.2aC1: TS 7 Culvert | | Peak Elev=1,444.24' | Inflow=0.03 cfs | 0.016 af |
| | 36.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0215 '/ | Outflow=0.03 cfs |
| | | | | 0.016 af |
| Pond 1.2aC2: TS8 Culvert | | Peak Elev=1,431.67' | Inflow=0.06 cfs | 0.034 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.5' |
| | | | S=0.0114 '/ | Outflow=0.06 cfs |
| | | | | 0.034 af |
| Pond 1.2aP: South Road Bypass OC | | Peak Elev=1,424.42' | Storage=0.002 af | Inflow=0.08 cfs |
| | | Discarded=0.08 cfs | 0.045 af | Secondary=0.00 cfs |
| | | | 0.000 af | Outflow=0.08 cfs |
| | | | | 0.045 af |
| Pond 1.2bC1: East Road Culvert | | Peak Elev=1,455.17' | Inflow=2.43 cfs | 0.128 af |
| | 15.0" | Round Culvert | n=0.012 | L=41.6' |
| | | | S=0.0173 '/ | Outflow=2.43 cfs |
| | | | | 0.128 af |
| Pond 1.2bC2: TS6 Culvert | | Peak Elev=1,444.38' | Inflow=3.39 cfs | 0.228 af |
| | 18.0" | Round Culvert | n=0.012 | L=44.3' |
| | | | S=0.0151 '/ | Outflow=3.39 cfs |
| | | | | 0.228 af |
| Pond 1.2bP: South Road Treatment Pond | | Peak Elev=1,426.26' | Storage=0.038 af | Inflow=5.31 cfs |
| | | Discarded=0.31 cfs | 0.232 af | Primary=4.98 cfs |
| | | | 0.162 af | Outflow=5.30 cfs |
| | | | | 0.394 af |
| Pond 1.3P: Pond 3 - Access Rd West | | Peak Elev=1,456.62' | Storage=566 cf | Inflow=1.02 cfs |
| | | Discarded=0.14 cfs | 0.054 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.14 cfs |
| | | | | 0.054 af |
| Pond 4.2bP: Pond 4 - Access Rd East | | Peak Elev=1,448.33' | Storage=1,559 cf | Inflow=1.95 cfs |
| | | Discarded=0.14 cfs | 0.089 af | Primary=0.55 cfs |
| | | | 0.011 af | Outflow=0.69 cfs |
| | | | | 0.099 af |
| Pond 4.2C: 18" Culvert | | Peak Elev=1,433.72' | Storage=10,213 cf | Inflow=13.46 cfs |
| | 18.0" | Round Culvert | n=0.012 | L=44.0' |
| | | | S=0.0148 '/ | Outflow=9.09 cfs |
| | | | | 2.131 af |
| Pond 4.3C: 24" Culvert | | Peak Elev=1,434.50' | Inflow=22.16 cfs | 2.846 af |
| | | | | Outflow=22.16 cfs |
| | | | | 2.846 af |

| | |
|--------------------------------|---|
| Link 1.1L: | Inflow=5.63 cfs 0.349 af Primary=5.63 cfs 0.349 af |
| Link 1.2L: | Inflow=4.98 cfs 0.162 af Primary=4.98 cfs 0.162 af |
| Link SP1: Study Point 1 | Inflow=10.61 cfs 7.384 af Primary=10.61 cfs 7.384 af |
| Link SP2: Study Point 2 | Inflow=0.66 cfs 0.272 af Primary=0.66 cfs 0.272 af |
| Link SP3: Study Point 3 | Inflow=2.04 cfs 0.442 af Primary=2.04 cfs 0.442 af |
| Link SP4: Study Point 4 | Inflow=31.02 cfs 5.546 af Primary=31.02 cfs 5.546 af |
| Link SP5: Study Point 5 | Inflow=0.02 cfs 0.010 af Primary=0.02 cfs 0.010 af |
| Link SP6: Study Point 6 | Inflow=3.11 cfs 1.002 af Primary=3.11 cfs 1.002 af |

Total Runoff Area = 460.988 ac Runoff Volume = 15.185 af Average Runoff Depth = 0.40"
99.31% Pervious = 457.801 ac 0.69% Impervious = 3.187 ac

Summary for Subcatchment 1.1aS1: North Array East

Runoff = 0.02 cfs @ 24.00 hrs, Volume= 0.012 af, Depth= 0.02"
 Routed to Reach 1.1aR1 : Bypass Swale

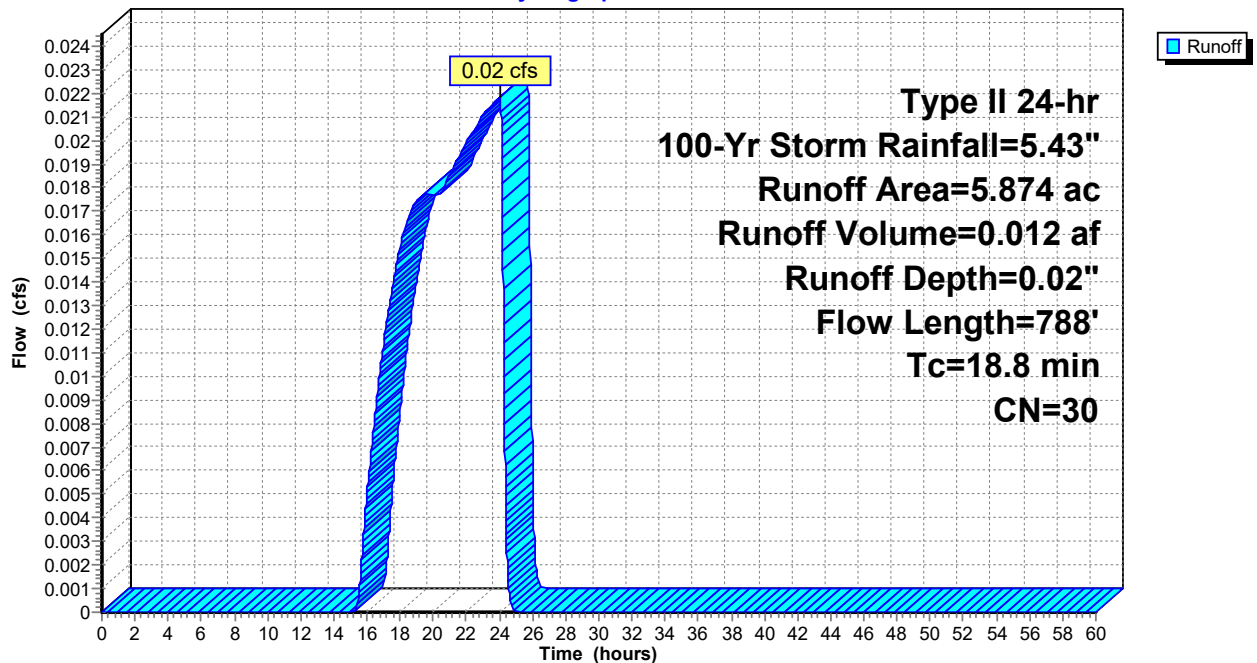
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.874 | 30 | Meadow, non-grazed, HSG A |
| 5.874 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 11.7 | 100 | 0.0499 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.1 | 688 | 0.0526 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.8 | 788 | Total | | | |

Subcatchment 1.1aS1: North Array East

Hydrograph



Summary for Subcatchment 1.1aS2: North Array East Center

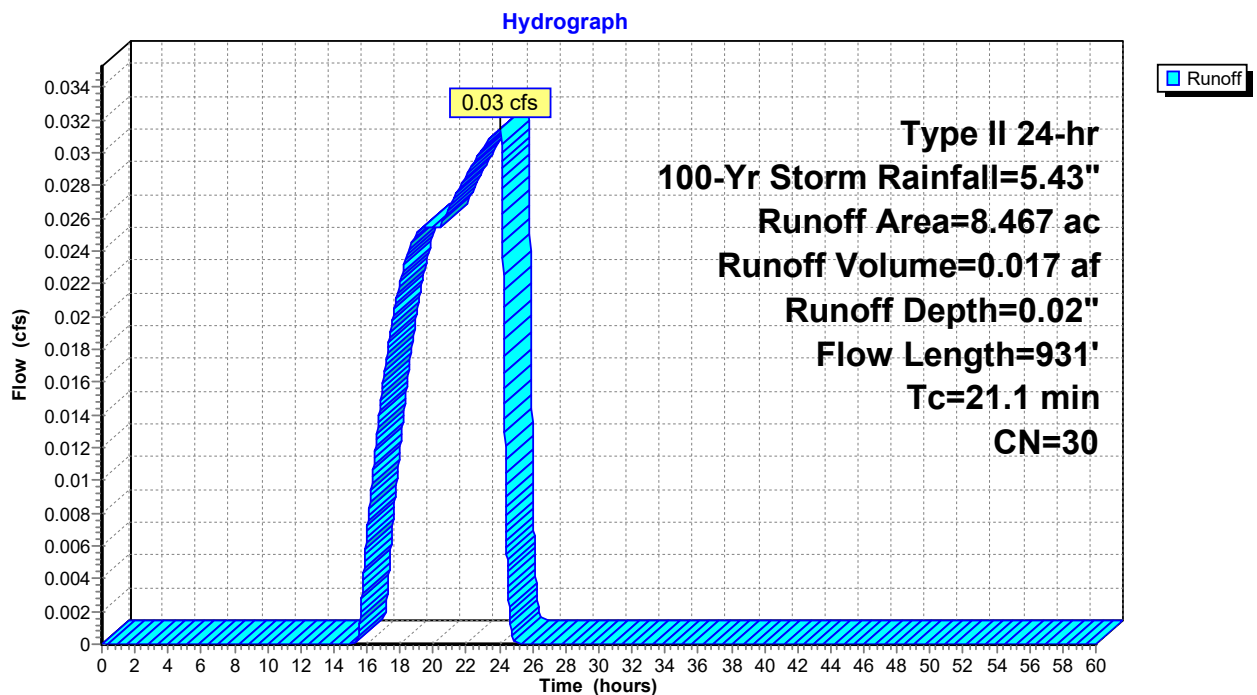
Runoff = 0.03 cfs @ 24.03 hrs, Volume= 0.017 af, Depth= 0.02"
 Routed to Reach 1.1aR2 : Bypass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.467 | 30 | Meadow, non-grazed, HSG A |
| 8.467 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.9 | 100 | 0.0476 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.2 | 831 | 0.0463 | 1.51 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 21.1 | 931 | Total | | | |

Subcatchment 1.1aS2: North Array East Center



Summary for Subcatchment 1.1aS3: North Array West Center

Runoff = 0.02 cfs @ 24.01 hrs, Volume= 0.012 af, Depth= 0.02"
 Routed to Reach 1.1aR3 : Bypass Swale

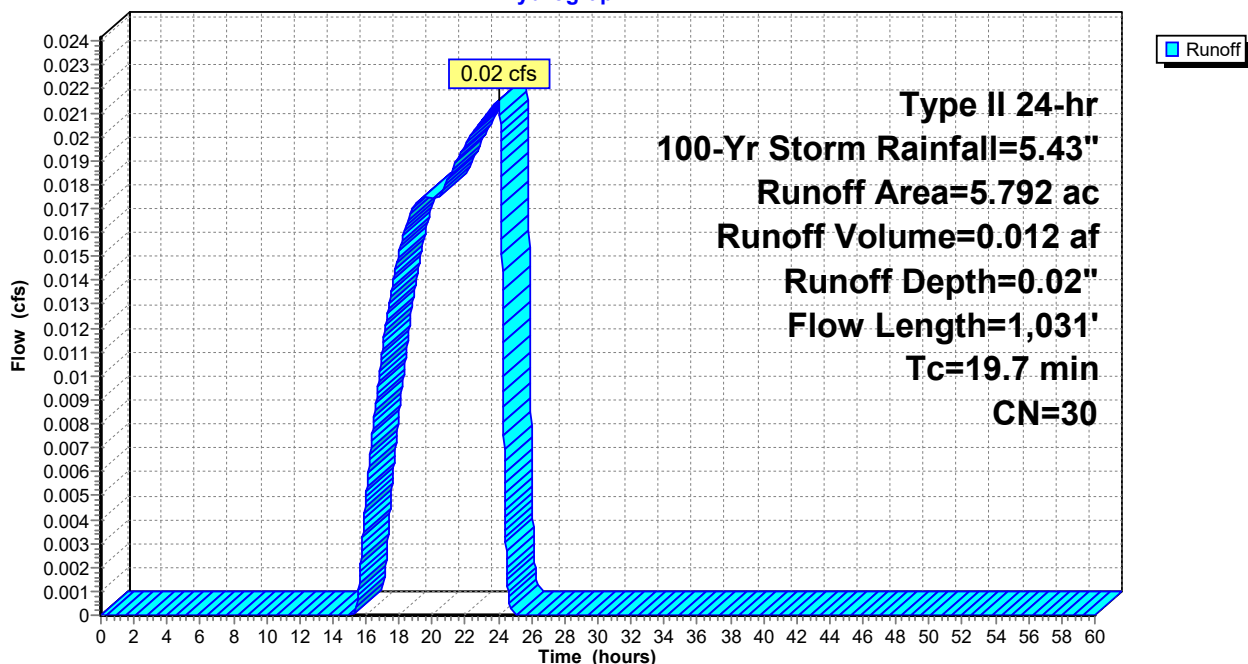
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.792 | 30 | Meadow, non-grazed, HSG A |
| 5.792 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.7 | 100 | 0.0618 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.0 | 931 | 0.0601 | 1.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.7 | 1,031 | Total | | | |

Subcatchment 1.1aS3: North Array West Center

Hydrograph



Summary for Subcatchment 1.1aS4: North Array West

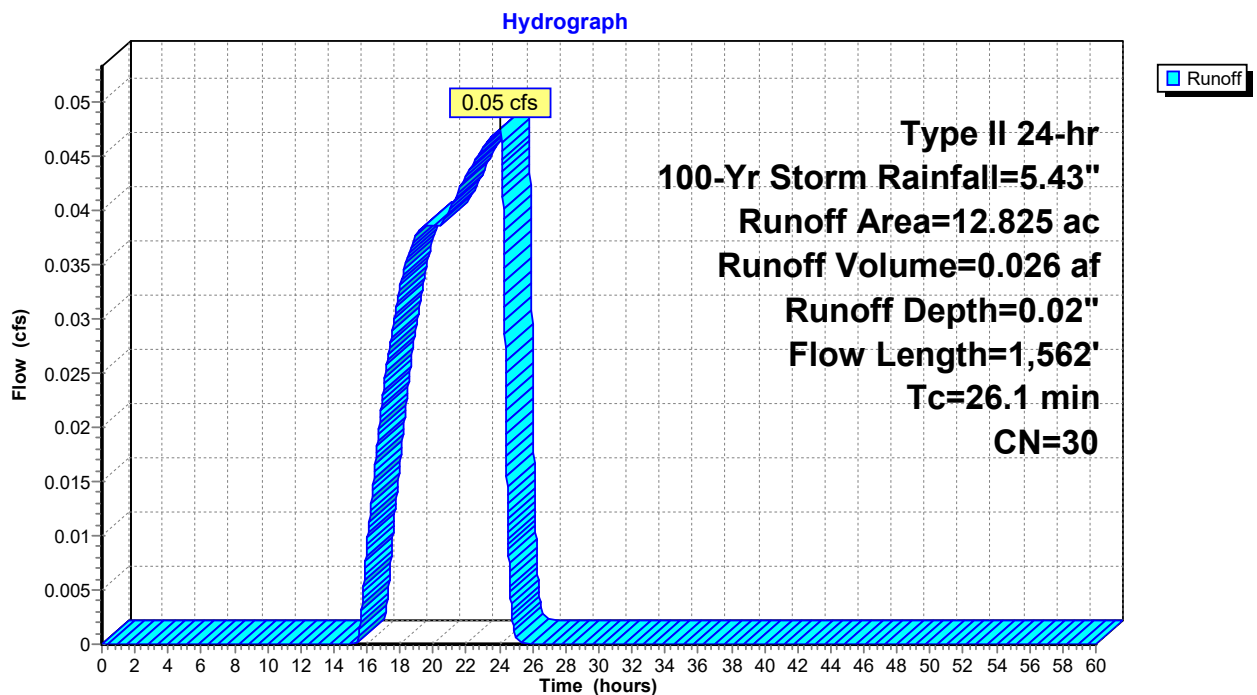
Runoff = 0.05 cfs @ 24.04 hrs, Volume= 0.026 af, Depth= 0.02"
 Routed to Reach 1.1aR4 : Bypass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 12.825 | 30 | Meadow, non-grazed, HSG A |
| 12.825 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 11.1 | 100 | 0.0560 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 15.0 | 1,462 | 0.0540 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 26.1 | 1,562 | Total | | | |

Subcatchment 1.1aS4: North Array West



Summary for Subcatchment 1.1bS1: North Road - East

Runoff = 5.85 cfs @ 11.98 hrs, Volume= 0.272 af, Depth= 2.45"
 Routed to Reach 1.1bR1 : North Road Conveyance Swale

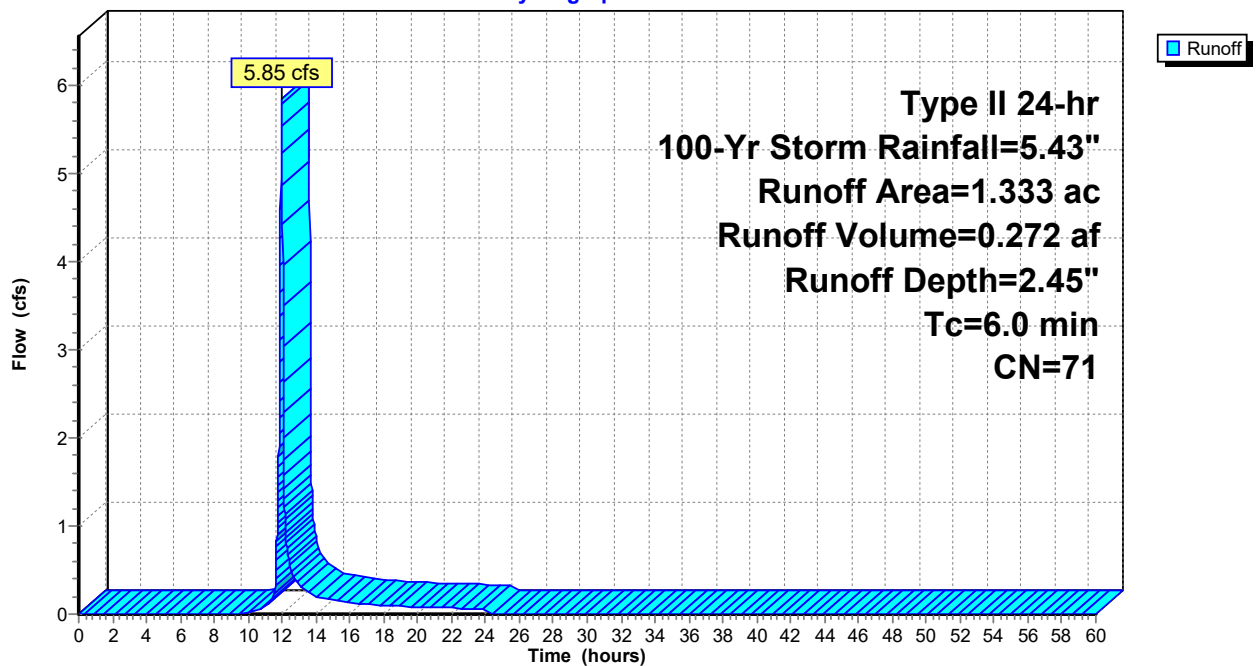
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.507 | 30 | Meadow, non-grazed, HSG A |
| 0.819 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 1.333 | 71 | Weighted Average |
| 1.326 | | 99.47% Pervious Area |
| 0.007 | | 0.53% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS1: North Road - East

Hydrograph



Summary for Subcatchment 1.1bS2: North Road - West

Runoff = 2.56 cfs @ 11.98 hrs, Volume= 0.119 af, Depth= 2.19"
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

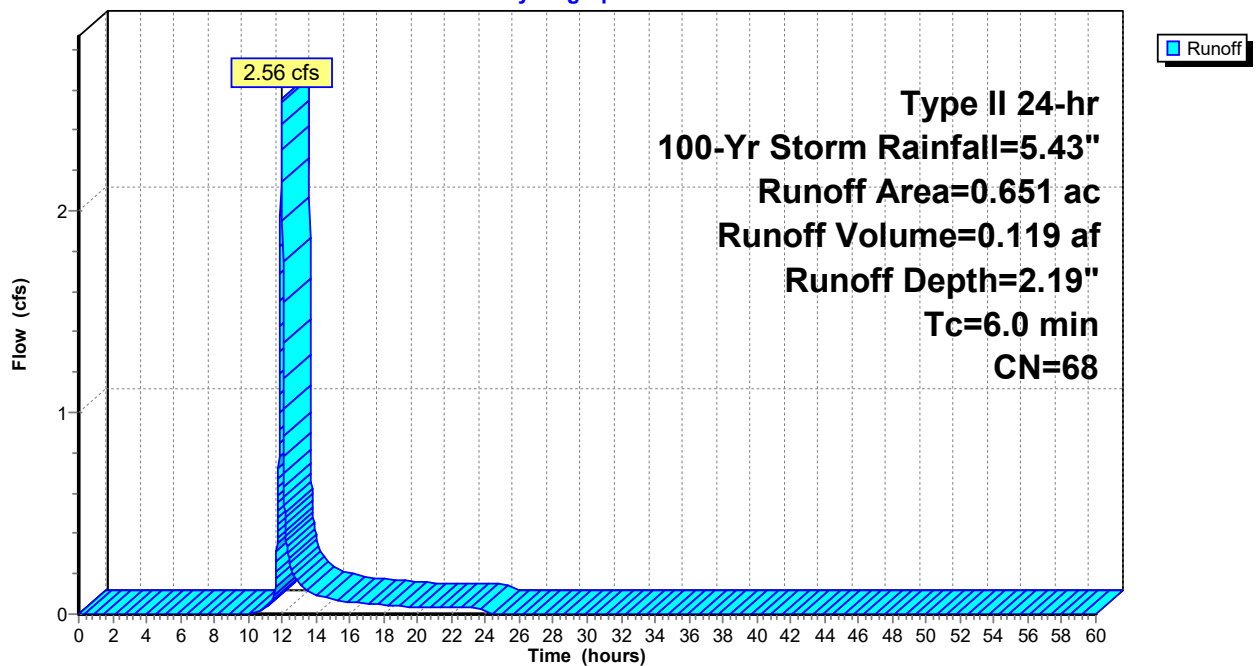
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.279 | 30 | Meadow, non-grazed, HSG A |
| 0.365 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 0.651 | 68 | Weighted Average |
| 0.644 | | 98.92% Pervious Area |
| 0.007 | | 1.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS2: North Road - West

Hydrograph



Summary for Subcatchment 1.2aS1: Middle Array East

Runoff = 0.03 cfs @ 24.00 hrs, Volume= 0.016 af, Depth= 0.02"
 Routed to Reach 1.2aR1 : Bypass Swale

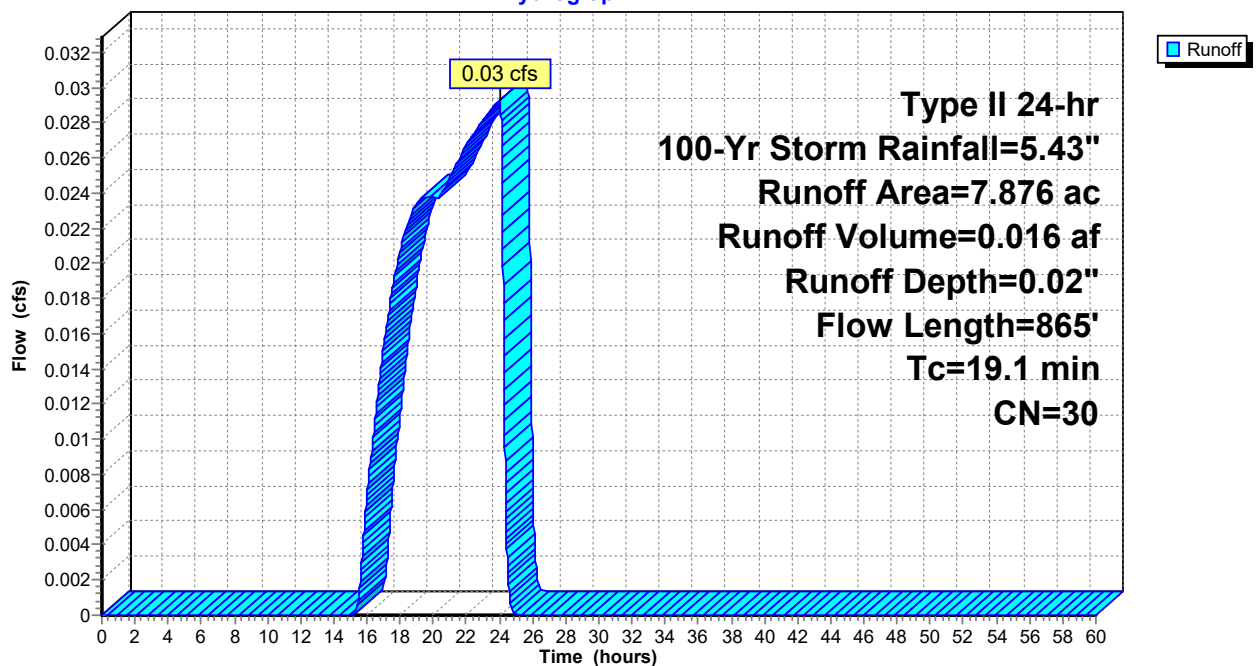
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 7.876 | 30 | Meadow, non-grazed, HSG A |
| 7.876 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.6 | 100 | 0.0628 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.5 | 765 | 0.0459 | 1.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.1 | 865 | Total | | | |

Subcatchment 1.2aS1: Middle Array East

Hydrograph



Summary for Subcatchment 1.2aS2: Middle Array Center

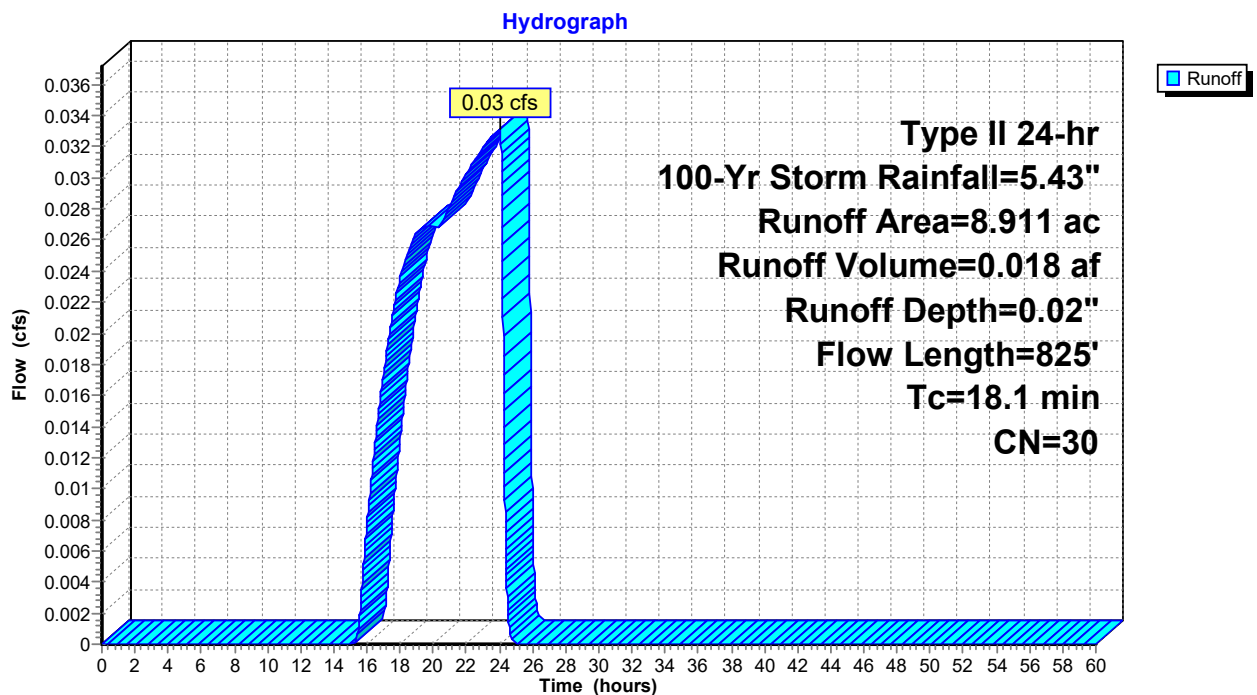
Runoff = 0.03 cfs @ 24.03 hrs, Volume= 0.018 af, Depth= 0.02"
 Routed to Reach 1.2aR2 : Bypass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.911 | 30 | Meadow, non-grazed, HSG A |
| 8.911 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.8 | 100 | 0.0607 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.3 | 725 | 0.0559 | 1.66 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 825 | Total | | | |

Subcatchment 1.2aS2: Middle Array Center



Summary for Subcatchment 1.2aS3: Middle Array West

Runoff = 0.02 cfs @ 24.03 hrs, Volume= 0.011 af, Depth= 0.02"
 Routed to Reach 1.2aR3 : Bypass Swale

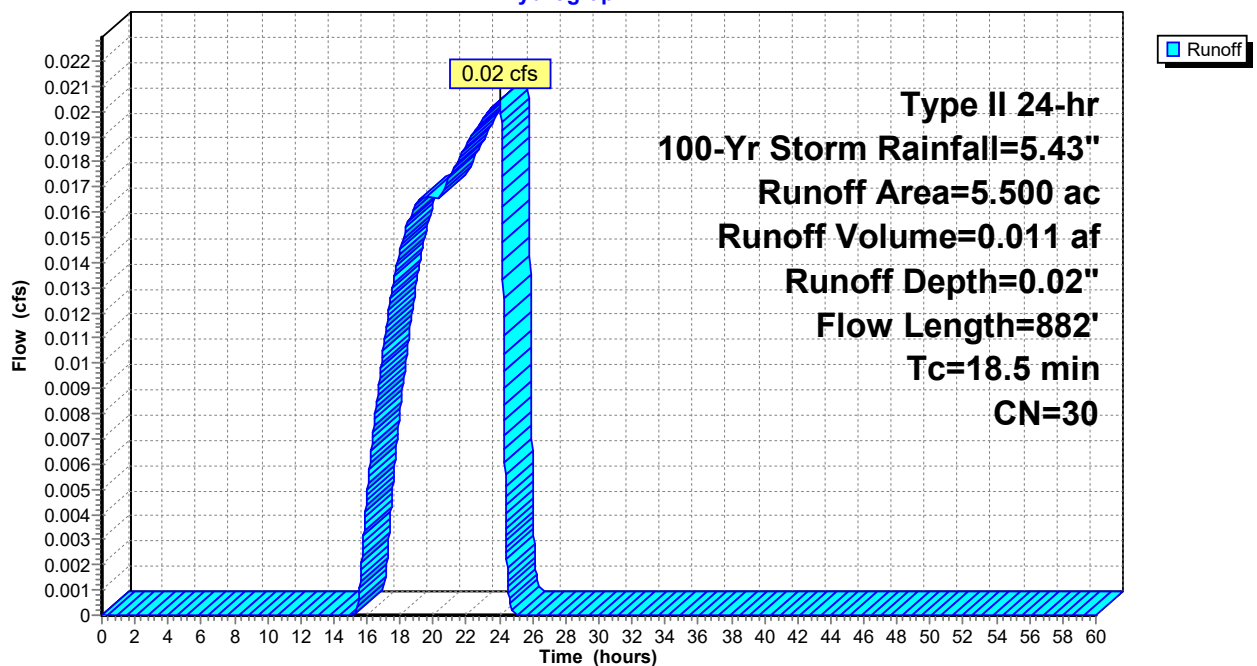
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.500 | 30 | Meadow, non-grazed, HSG A |
| 5.500 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.4 | 100 | 0.0660 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.1 | 782 | 0.0529 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.5 | 882 | Total | | | |

Subcatchment 1.2aS3: Middle Array West

Hydrograph



Summary for Subcatchment 1.2bS1: East Road - West Ditch

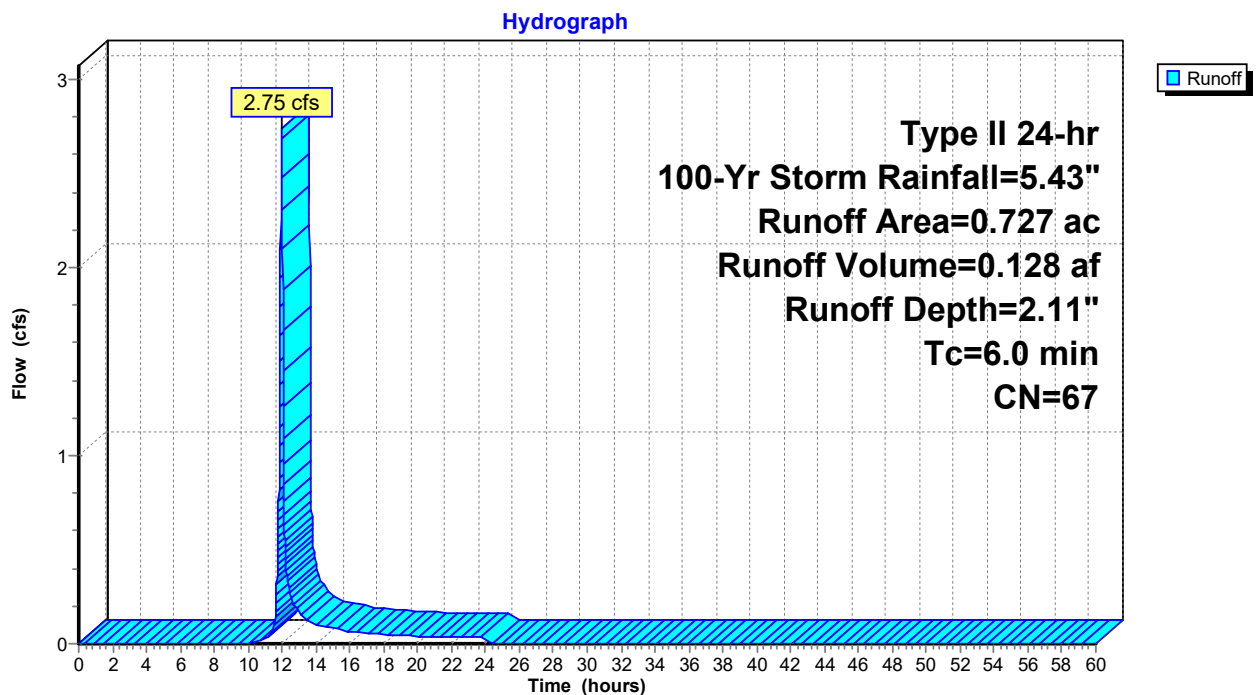
Runoff = 2.75 cfs @ 11.98 hrs, Volume= 0.128 af, Depth= 2.11"
 Routed to Reach 1.2bR1 : East Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.410 | 96 | Gravel surface, HSG A |
| 0.317 | 30 | Meadow, non-grazed, HSG A |
| 0.727 | 67 | Weighted Average |
| 0.727 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS1: East Road - West Ditch



Summary for Subcatchment 1.2bS2: South Road

Runoff = 1.51 cfs @ 12.07 hrs, Volume= 0.101 af, Depth= 1.41"
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

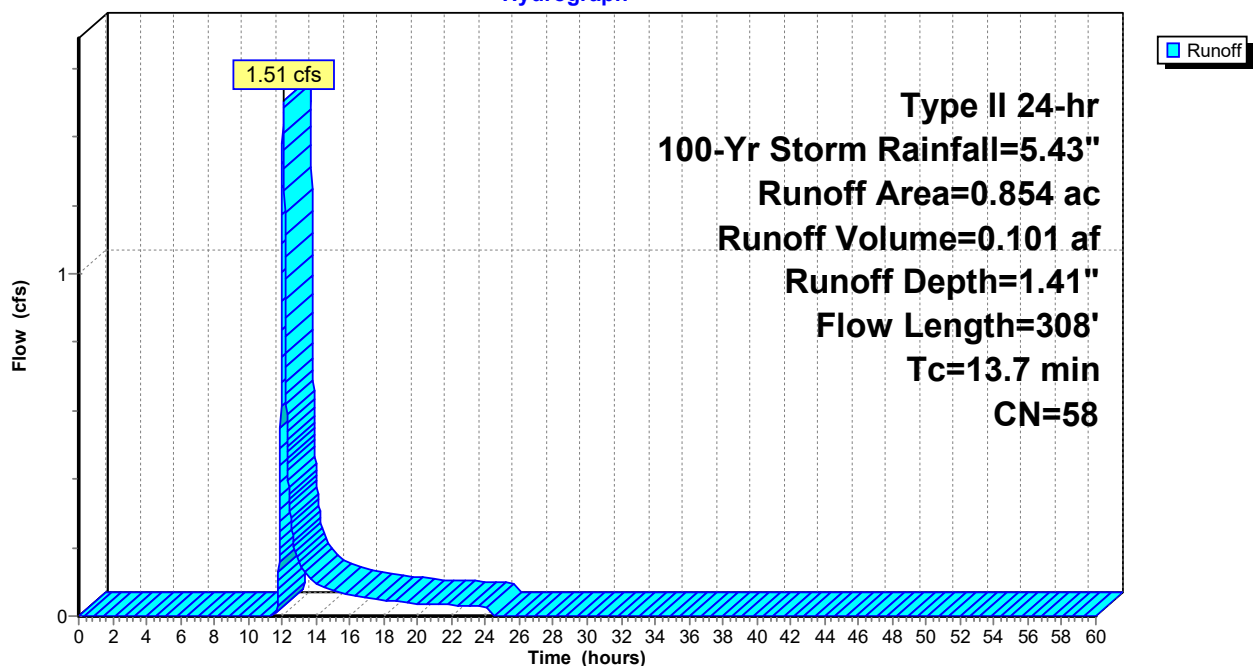
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.498 | 30 | Meadow, non-grazed, HSG A |
| * 0.352 | 96 | Gravel surface |
| * 0.004 | 98 | Roofs |
| 0.854 | 58 | Weighted Average |
| 0.850 | | 99.53% Pervious Area |
| 0.004 | | 0.47% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.0 | 35 | 0.0516 | 0.12 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 0.4 | 25 | 0.0310 | 1.06 | | Sheet Flow, Smooth surfaces n= 0.011 P2= 2.31" |
| 5.9 | 40 | 0.0429 | 0.11 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.4 | 208 | 0.0442 | 1.47 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 13.7 | 308 | Total | | | |

Subcatchment 1.2bS2: South Road

Hydrograph



Summary for Subcatchment 1.2bS3: South Road

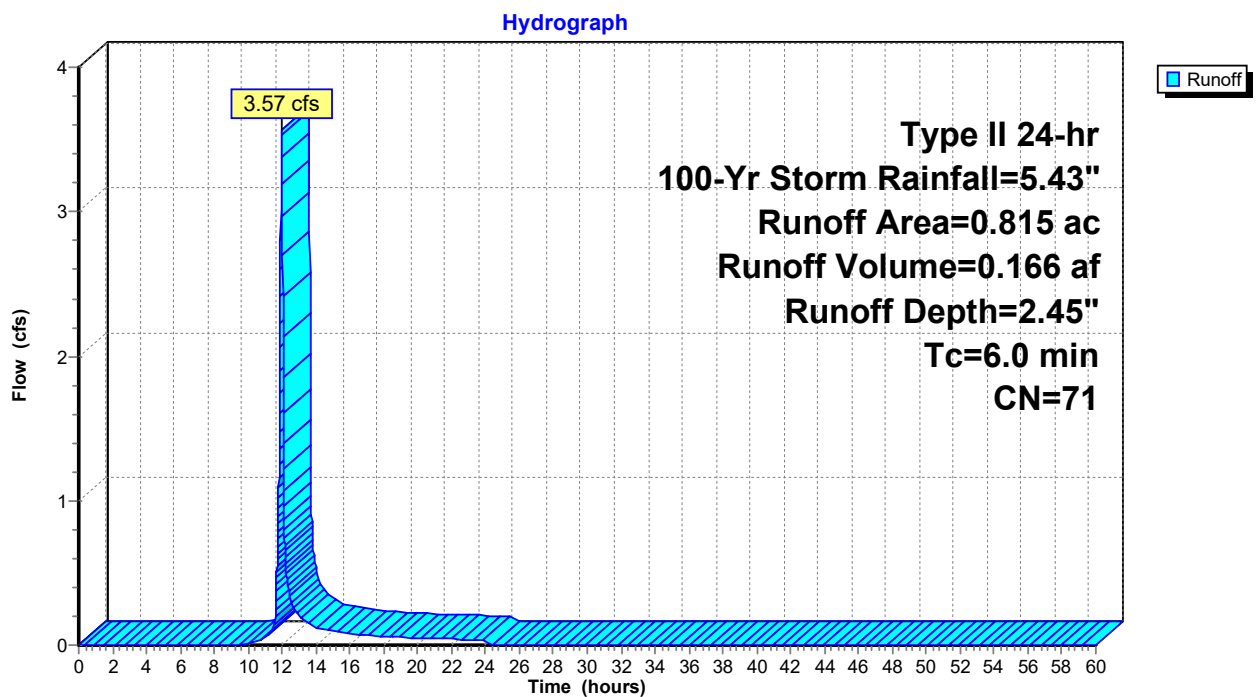
Runoff = 3.57 cfs @ 11.98 hrs, Volume= 0.166 af, Depth= 2.45"
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.313 | 30 | Meadow, non-grazed, HSG A |
| 0.491 | 96 | Gravel surface, HSG A |
| * 0.011 | 98 | Roofs |
| 0.815 | 71 | Weighted Average |
| 0.804 | | 98.65% Pervious Area |
| 0.011 | | 1.35% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS3: South Road



Summary for Subcatchment 1.3aS1: Surface Discharge

Runoff = 9.14 cfs @ 15.91 hrs, Volume= 6.873 af, Depth= 0.30"
 Routed to Link SP1 : Study Point 1

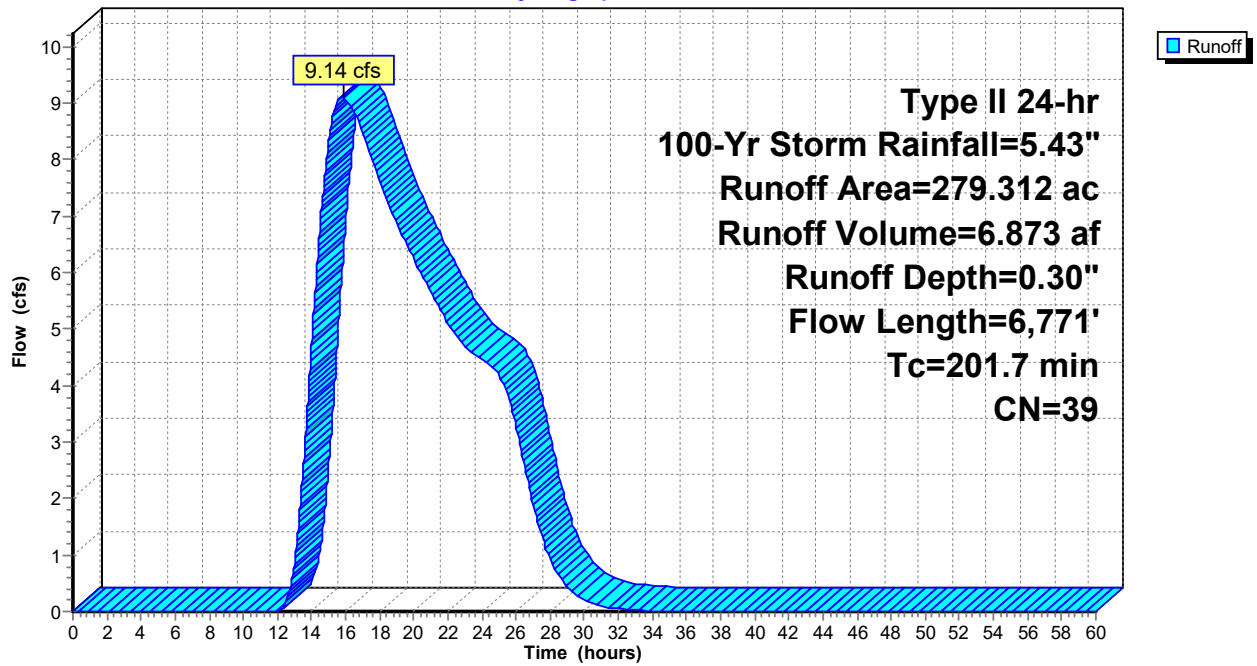
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.754 | 96 | Gravel surface |
| 144.649 | 30 | Meadow, non-grazed, HSG A |
| 0.566 | 58 | Meadow, non-grazed, HSG B |
| 25.274 | 71 | Meadow, non-grazed, HSG C |
| 61.692 | 30 | Woods, Good, HSG A |
| 32.754 | 55 | Woods, Good, HSG B |
| 13.623 | 70 | Woods, Good, HSG C |
| 279.312 | 39 | Weighted Average |
| 279.312 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 14.8 | 100 | 0.0764 | 0.11 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 4.7 | 581 | 0.1683 | 2.05 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 25.7 | 1,199 | 0.0241 | 0.78 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.8 | 189 | 0.0157 | 3.84 | 76.82 | Channel Flow, Rerouted Stream Area= 20.0 sf Perim= 32.6' r= 0.61' n= 0.035 Earth, dense weeds |
| 154.9 | 4,646 | 0.0051 | 0.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.8 | 56 | 0.0566 | 1.19 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 201.7 | 6,771 | Total | | | |

Subcatchment 1.3aS1: Surface Discharge

Hydrograph



Summary for Subcatchment 1.3bS: Access Rd to Pond 3

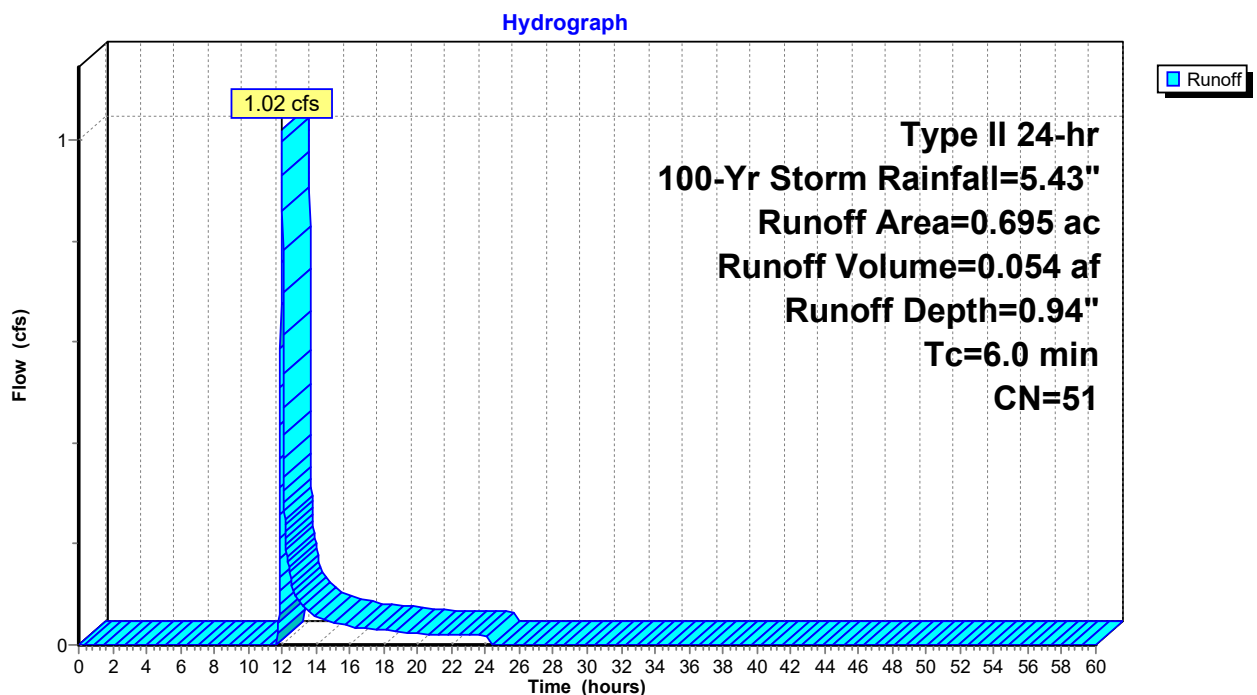
Runoff = 1.02 cfs @ 11.99 hrs, Volume= 0.054 af, Depth= 0.94"
 Routed to Pond 1.3P : Pond 3 - Access Rd West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|------------------------------|
| 0.473 | 30 | Meadow, non-grazed, HSG A |
| * 0.063 | 96 | Gravel surface, HSG A, Redev |
| * 0.159 | 96 | Gravel surface, HSG A |
| 0.695 | 51 | Weighted Average |
| 0.695 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.3bS: Access Rd to Pond 3



Summary for Subcatchment 2S:

Runoff = 0.66 cfs @ 12.61 hrs, Volume= 0.272 af, Depth= 0.30"
 Routed to Link SP2 : Study Point 2

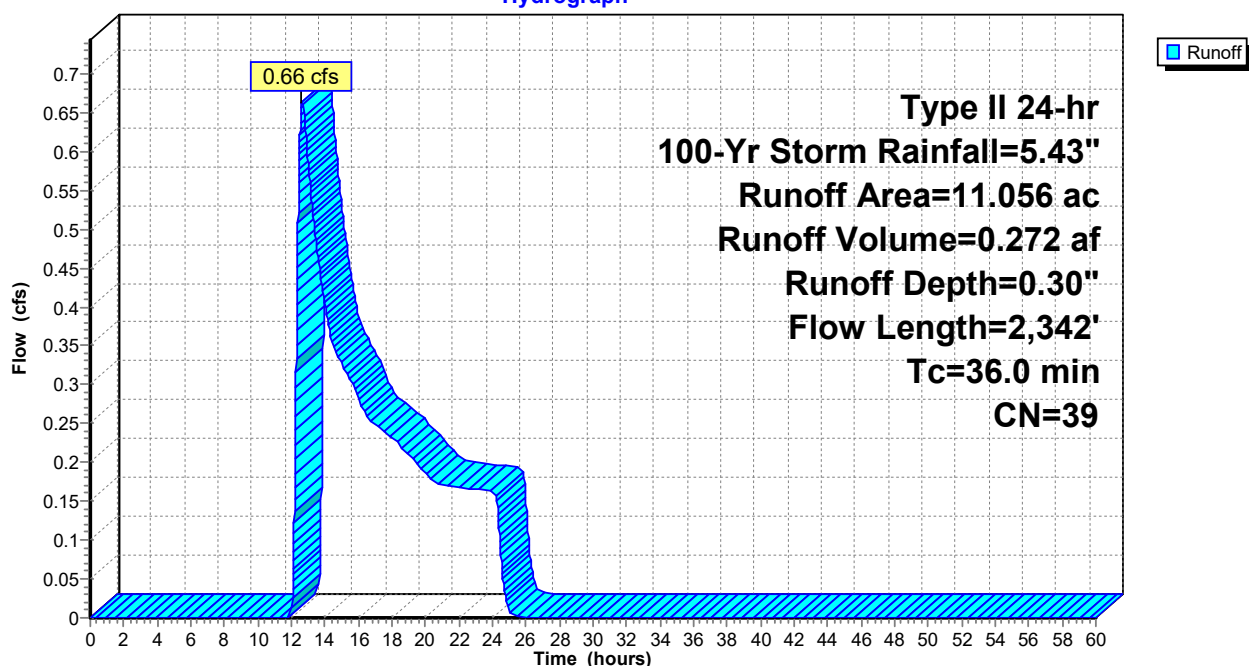
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.417 | 96 | Gravel surface, HSG A |
| 0.573 | 39 | >75% Grass cover, Good, HSG A |
| 6.530 | 30 | Meadow, non-grazed, HSG A |
| 2.536 | 30 | Woods, Good, HSG A |
| 11.056 | 39 | Weighted Average |
| 11.056 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0624 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.7 | 614 | 0.0535 | 3.72 | | Shallow Concentrated Flow, Unpaved Kv= 16.1 fps |
| 12.1 | 1,184 | 0.0543 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.9 | 115 | 0.0407 | 1.01 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.6 | 68 | 0.1443 | 1.90 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 8.0 | 261 | 0.0118 | 0.54 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 36.0 | 2,342 | Total | | | |

Subcatchment 2S:

Hydrograph



Summary for Subcatchment 3S:

Runoff = 2.04 cfs @ 12.13 hrs, Volume= 0.442 af, Depth= 0.34"
 Routed to Link SP3 : Study Point 3

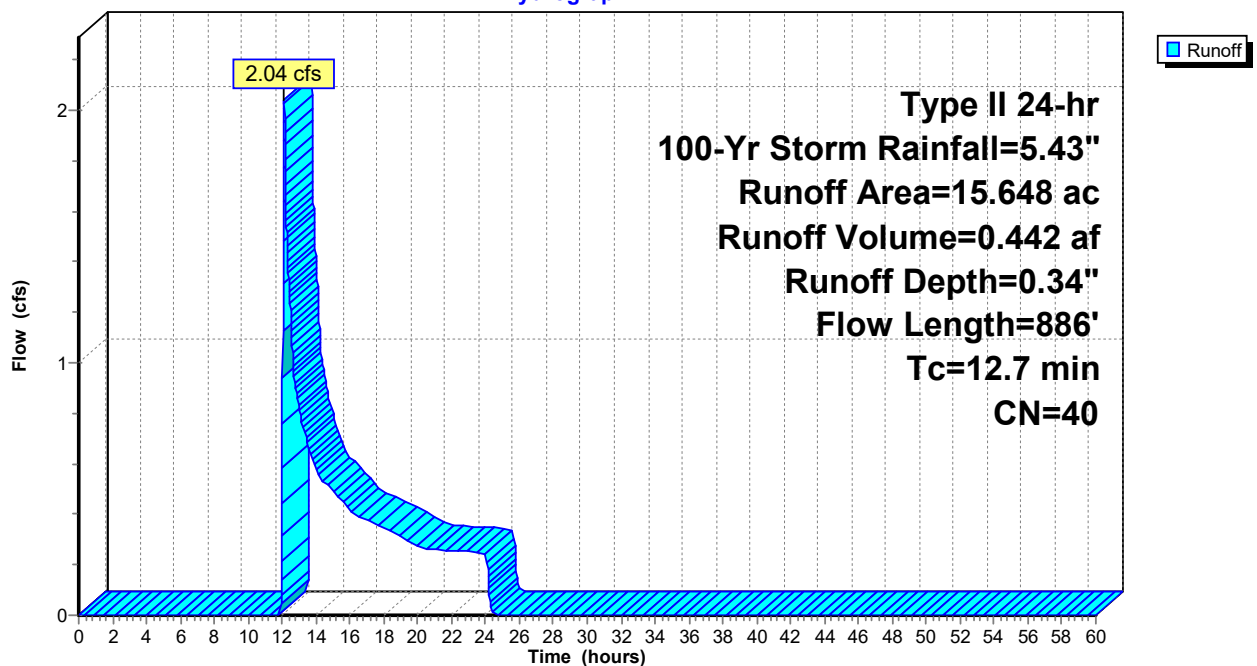
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.088 | 98 | Paved Roads & Rooftops |
| 0.406 | 39 | >75% Grass cover, Good, HSG A |
| 2.011 | 61 | >75% Grass cover, Good, HSG B |
| 5.525 | 30 | Meadow, non-grazed, HSG A |
| 4.276 | 30 | Woods, Good, HSG A |
| 3.342 | 55 | Woods, Good, HSG B |
| 15.648 | 40 | Weighted Average |
| 15.560 | | 99.44% Pervious Area |
| 0.088 | | 0.56% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.4 | 52 | 0.0937 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 3.7 | 625 | 0.1637 | 2.83 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.6 | 209 | 0.0384 | 0.98 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 12.7 | 886 | Total | | | |

Subcatchment 3S:

Hydrograph



Summary for Subcatchment 4.1S:

Runoff = 4.82 cfs @ 12.13 hrs, Volume= 0.570 af, Depth= 0.59"
 Routed to Reach 4.1R1 : Bypass Swale

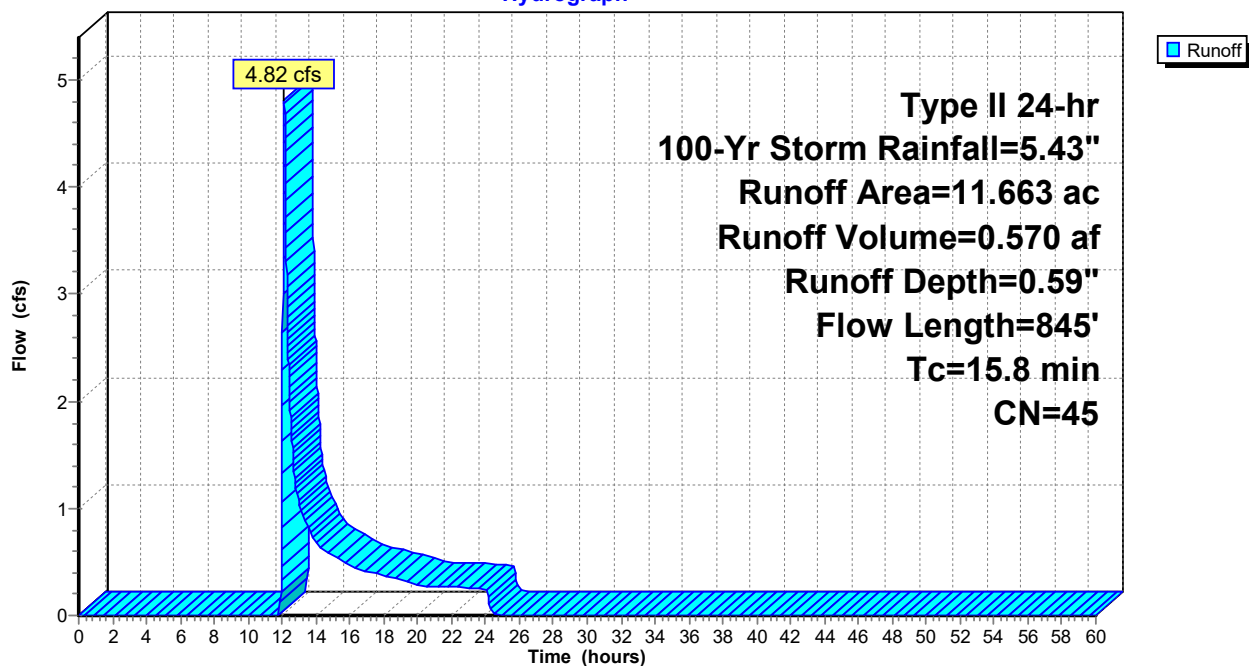
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.327 | 98 | Paved Roads & Rooftops |
| * 0.375 | 96 | Gravel surface |
| 0.165 | 61 | >75% Grass cover, Good, HSG B |
| 2.544 | 30 | Meadow, non-grazed, HSG A |
| 0.560 | 58 | Meadow, non-grazed, HSG B |
| 3.605 | 30 | Woods, Good, HSG A |
| * 4.087 | 55 | Woods, Good, HSG B |
| 11.663 | 45 | Weighted Average |
| 11.336 | | 97.20% Pervious Area |
| 0.327 | | 2.80% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.5 | 100 | 0.0430 | 0.20 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 2.6 | 360 | 0.1077 | 2.30 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 4.7 | 385 | 0.0735 | 1.36 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 15.8 | 845 | Total | | | |

Subcatchment 4.1S:

Hydrograph



Summary for Subcatchment 4.2aS:

Runoff = 13.31 cfs @ 12.41 hrs, Volume= 2.121 af, Depth= 0.94"
 Routed to Pond 4.2C : 18" Culvert

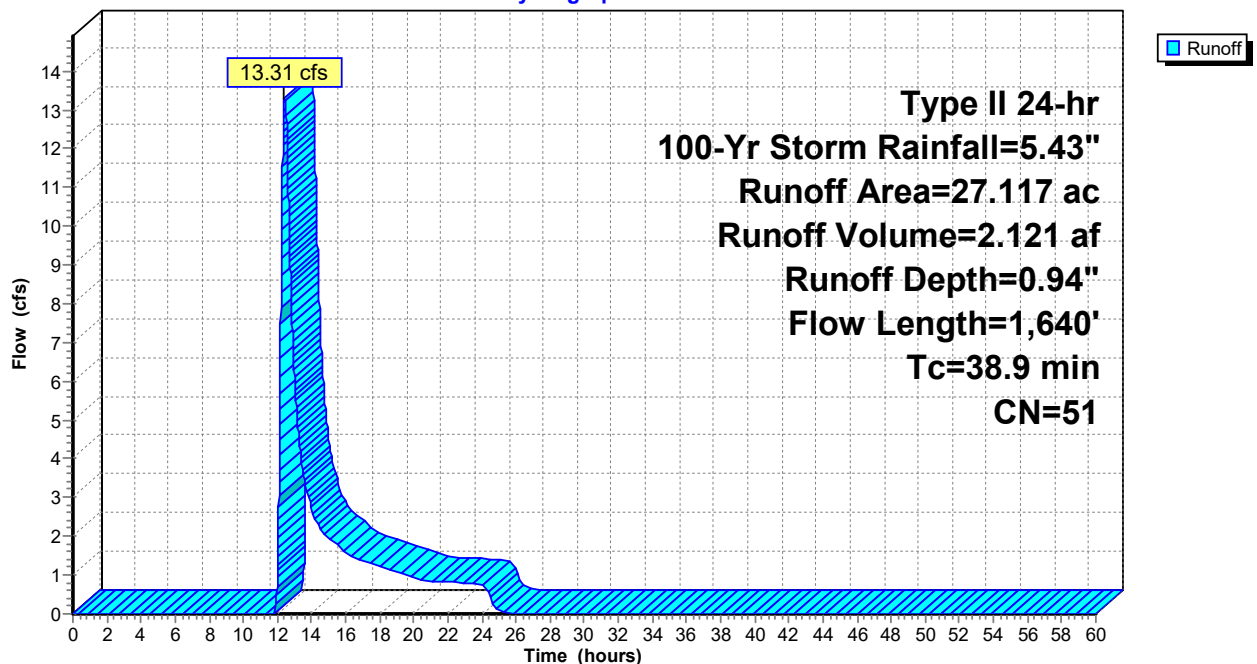
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.238 | 96 | Gravel surface |
| 4.086 | 30 | Meadow, non-grazed, HSG A |
| 0.384 | 58 | Meadow, non-grazed, HSG B |
| 0.977 | 30 | Woods, Good, HSG A |
| 21.432 | 55 | Woods, Good, HSG B |
| 27.117 | 51 | Weighted Average |
| 27.117 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 17.8 | 100 | 0.0480 | 0.09 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 8.0 | 878 | 0.1354 | 1.84 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 13.1 | 662 | 0.0144 | 0.84 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 38.9 | 1,640 | Total | | | |

Subcatchment 4.2aS:

Hydrograph



Summary for Subcatchment 4.2bS:

Runoff = 2.13 cfs @ 11.98 hrs, Volume= 0.099 af, Depth= 2.53"
 Routed to Reach 4.2bR : Conveyance Swale

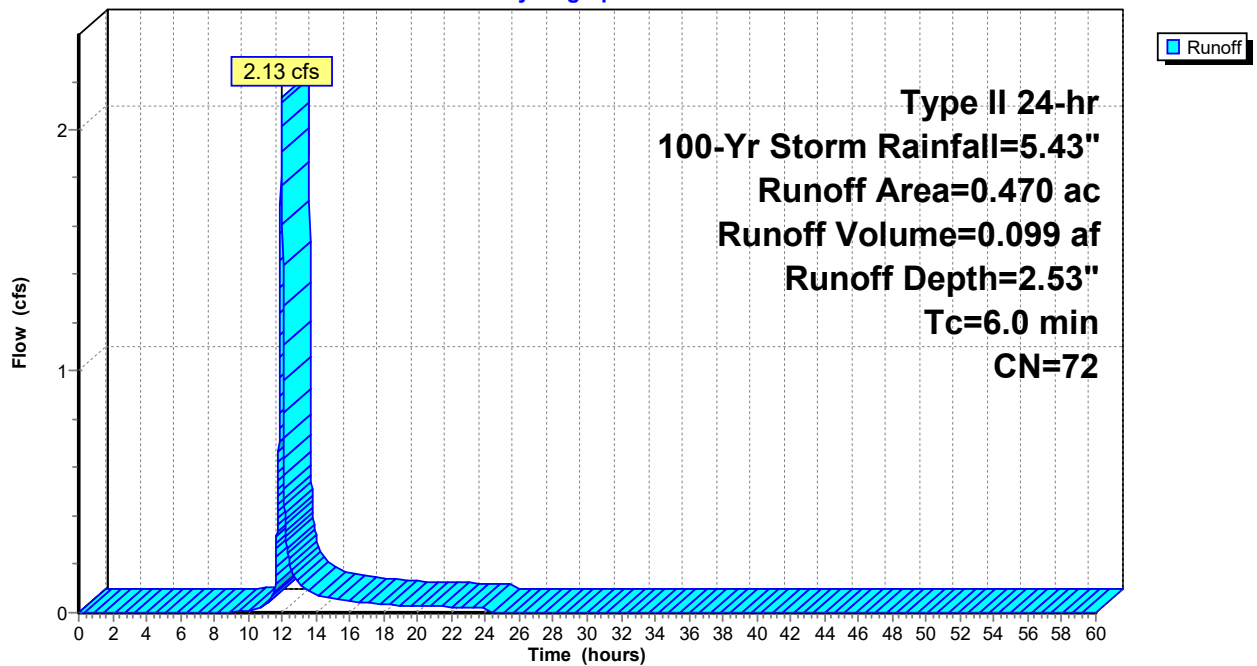
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.296 | 96 | Gravel surface, HSG A |
| 0.174 | 30 | Meadow, non-grazed, HSG A |
| 0.470 | 72 | Weighted Average |
| 0.470 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 4.2bS:

Hydrograph



Summary for Subcatchment 4.3S:

Runoff = 22.16 cfs @ 12.37 hrs, Volume= 2.846 af, Depth= 1.34"
 Routed to Pond 4.3C : 24" Culvert

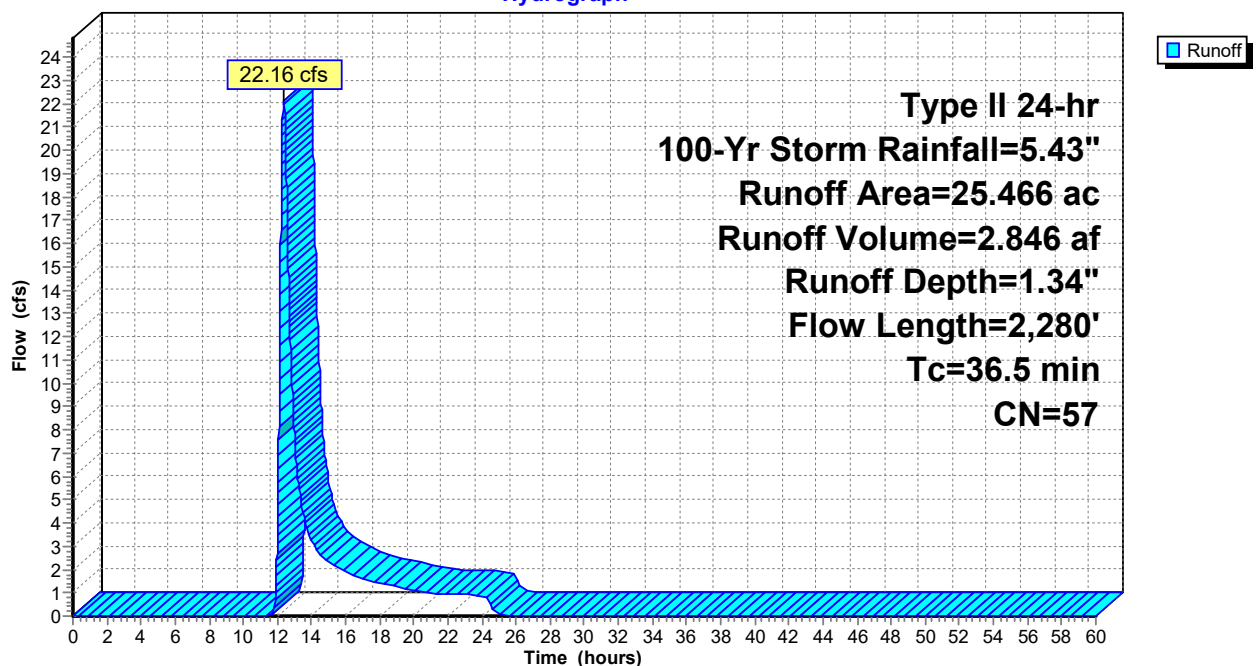
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 1.293 | 98 | Paved Roads & Rooftops |
| 1.783 | 58 | Meadow, non-grazed, HSG B |
| 22.390 | 55 | Woods, Good, HSG B |
| 25.466 | 57 | Weighted Average |
| 24.173 | | 94.92% Pervious Area |
| 1.293 | | 5.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 15.9 | 100 | 0.0634 | 0.10 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 17.8 | 1,368 | 0.0656 | 1.28 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.1 | 38 | 0.3960 | 4.40 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 2.7 | 774 | 0.0281 | 4.70 | 109.09 | Channel Flow, Area= 23.2 sf Perim= 43.2' r= 0.54' n= 0.035 |
| 36.5 | 2,280 | Total | | | |

Subcatchment 4.3S:

Hydrograph



Summary for Subcatchment 5S:

Runoff = 0.02 cfs @ 24.02 hrs, Volume= 0.010 af, Depth= 0.02"
 Routed to Link SP5 : Study Point 5

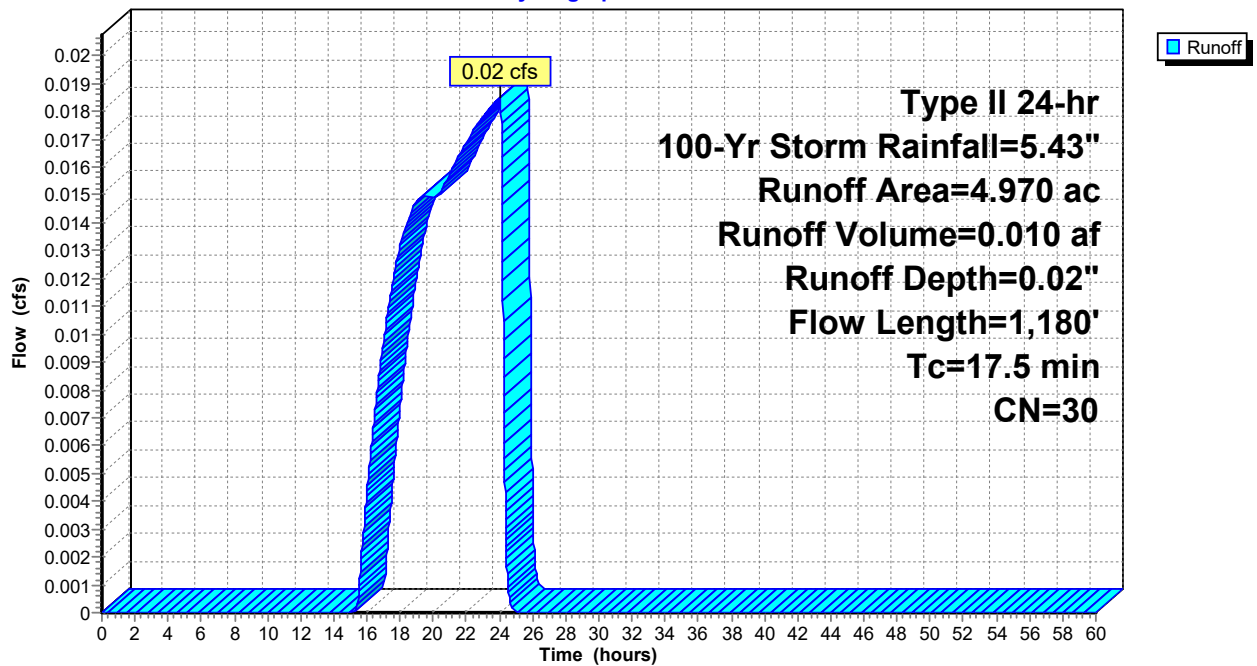
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 4.139 | 30 | Meadow, non-grazed, HSG A |
| 0.831 | 30 | Woods, Good, HSG A |
| 4.970 | 30 | Weighted Average |
| 4.970 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 7.1 | 100 | 0.0675 | 0.24 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 8.5 | 801 | 0.0508 | 1.58 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.3 | 217 | 0.1515 | 2.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.6 | 62 | 0.0697 | 1.85 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 17.5 | 1,180 | Total | | | |

Subcatchment 5S:

Hydrograph



Summary for Subcatchment 6S:

Runoff = 3.11 cfs @ 12.89 hrs, Volume= 1.002 af, Depth= 0.48"
 Routed to Link SP6 : Study Point 6

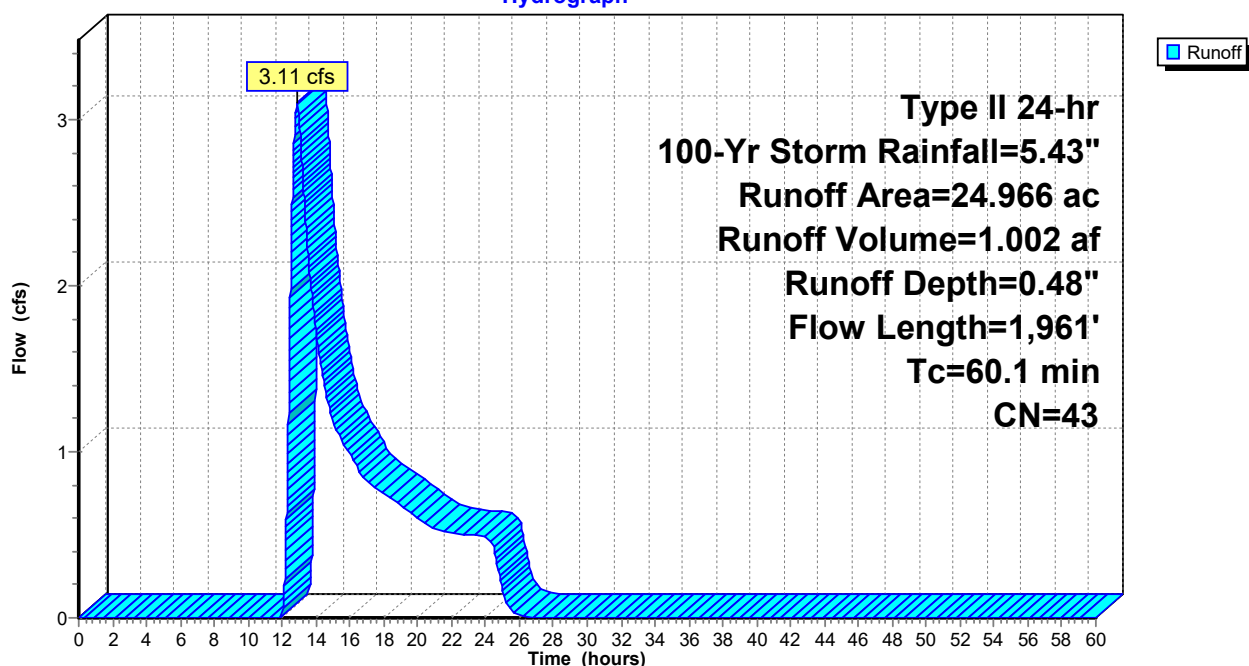
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 1.450 | 98 | Paved Roads & Rooftops |
| 0.466 | 96 | Gravel surface, HSG A |
| 2.545 | 61 | >75% Grass cover, Good, HSG B |
| 7.511 | 30 | Meadow, non-grazed, HSG A |
| 0.788 | 58 | Meadow, non-grazed, HSG B |
| 7.940 | 30 | Woods, Good, HSG A |
| 4.266 | 55 | Woods, Good, HSG B |
| 24.966 | 43 | Weighted Average |
| 23.516 | | 94.19% Pervious Area |
| 1.450 | | 5.81% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.1 | 100 | 0.0278 | 0.16 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 3.2 | 313 | 0.0528 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.9 | 486 | 0.1742 | 2.09 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 42.9 | 1,062 | 0.0068 | 0.41 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 60.1 | 1,961 | Total | | | |

Subcatchment 6S:

Hydrograph



Summary for Reach 1.1aR1: Bypass Swale

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.02 cfs @ 24.00 hrs, Volume= 0.012 af
 Outflow = 0.02 cfs @ 24.06 hrs, Volume= 0.012 af, Atten= 1%, Lag= 3.5 min
 Routed to Pond 1.1aC1 : TS1 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.41 fps, Min. Travel Time= 23.9 min
 Avg. Velocity = 0.35 fps, Avg. Travel Time= 27.5 min

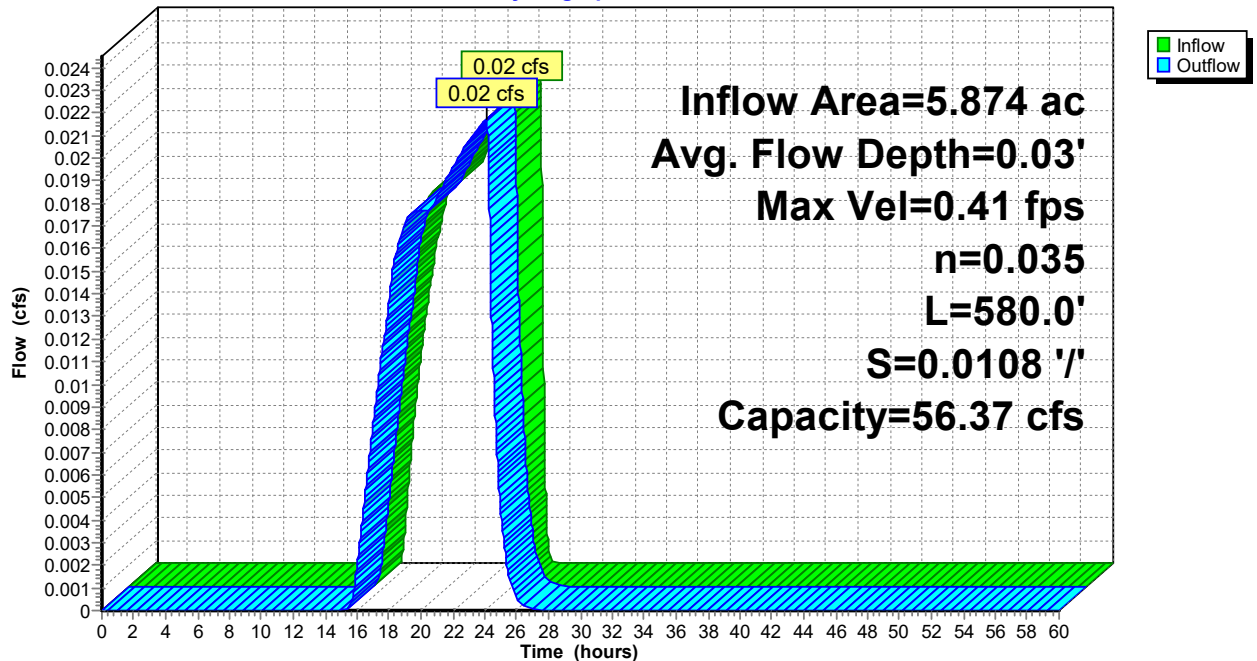
Peak Storage= 31 cf @ 24.06 hrs
 Average Depth at Peak Storage= 0.03' , Surface Width= 2.10'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 56.37 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 580.0' Slope= 0.0108 '/
 Inlet Invert= 1,493.84', Outlet Invert= 1,487.56'



Reach 1.1aR1: Bypass Swale

Hydrograph



Summary for Reach 1.1aR2: Bypass Swale

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.05 cfs @ 24.03 hrs, Volume= 0.029 af
 Outflow = 0.05 cfs @ 24.08 hrs, Volume= 0.029 af, Atten= 0%, Lag= 2.7 min
 Routed to Pond 1.1aC2 : TS2 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.76 fps, Min. Travel Time= 12.3 min
 Avg. Velocity = 0.63 fps, Avg. Travel Time= 14.7 min

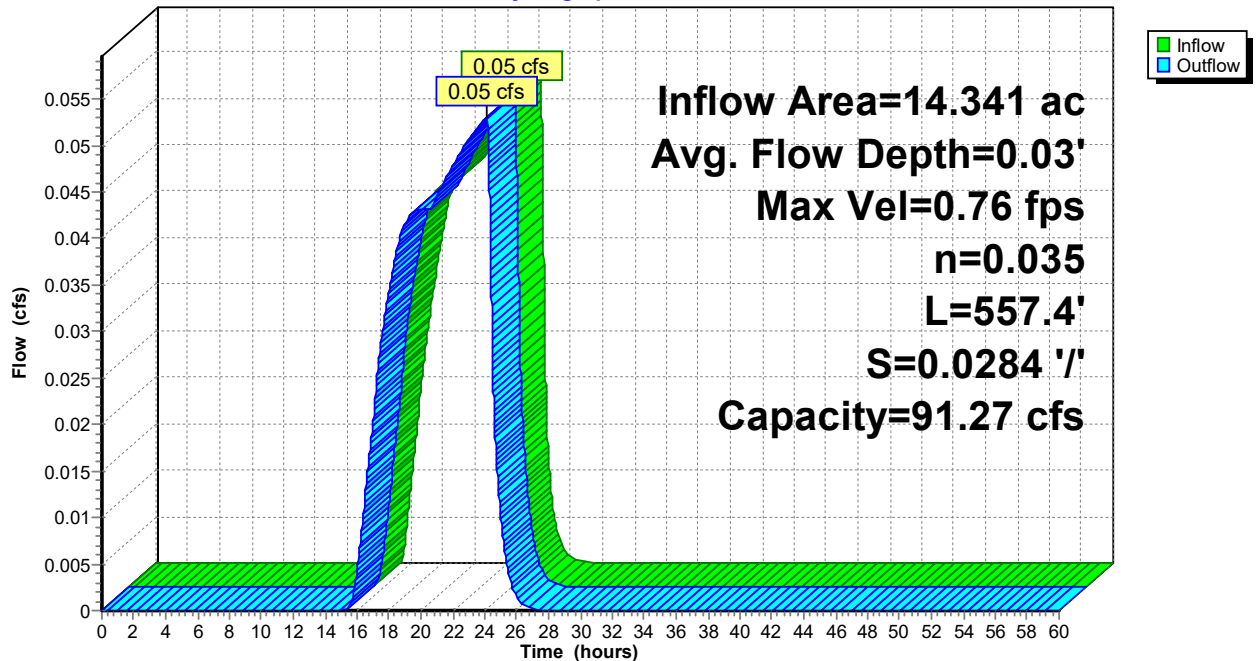
Peak Storage= 39 cf @ 24.08 hrs
 Average Depth at Peak Storage= 0.03' , Surface Width= 2.13'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 91.27 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.4' Slope= 0.0284 '/'
 Inlet Invert= 1,486.80', Outlet Invert= 1,470.98'



Reach 1.1aR2: Bypass Swale

Hydrograph



Summary for Reach 1.1aR3: Bypass Swale

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.07 cfs @ 24.05 hrs, Volume= 0.041 af
 Outflow = 0.07 cfs @ 24.08 hrs, Volume= 0.041 af, Atten= 0%, Lag= 2.2 min
 Routed to Pond 1.1aC3 : TS3 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.90 fps, Min. Travel Time= 10.3 min
 Avg. Velocity = 0.74 fps, Avg. Travel Time= 12.6 min

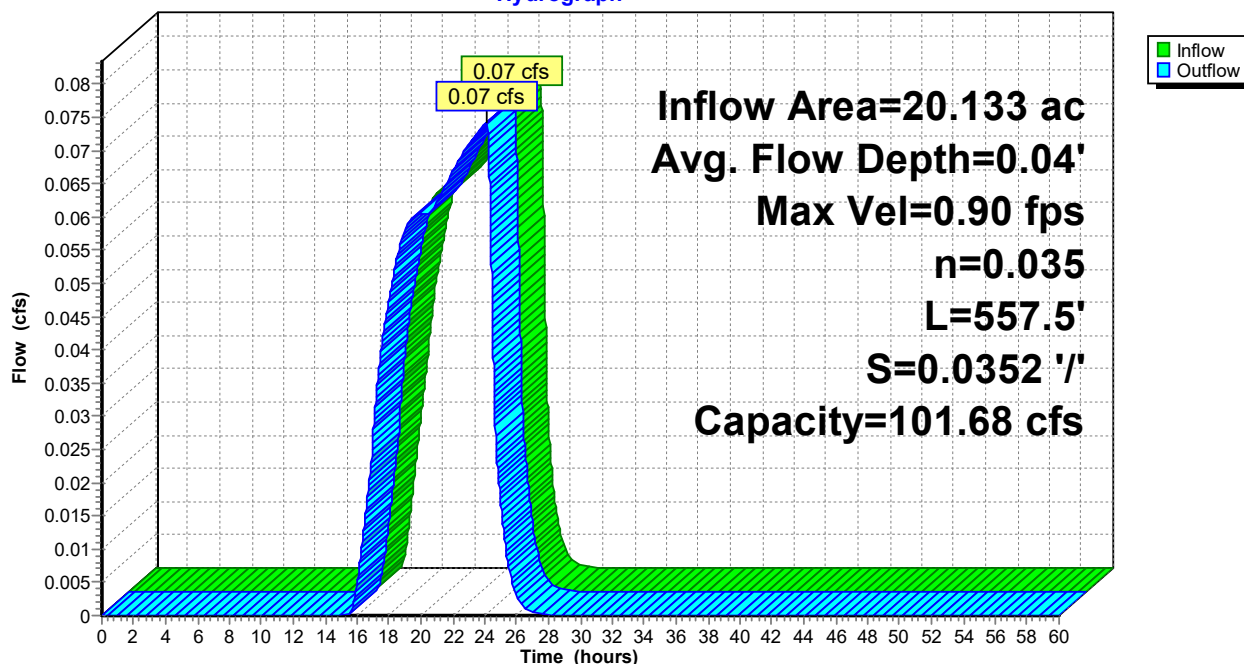
Peak Storage= 46 cf @ 24.08 hrs
 Average Depth at Peak Storage= 0.04' , Surface Width= 2.16'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 101.68 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 557.5' Slope= 0.0352 '/
 Inlet Invert= 1,469.57', Outlet Invert= 1,449.93'



Reach 1.1aR3: Bypass Swale

Hydrograph



Summary for Reach 1.1aR4: Bypass Swale

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.12 cfs @ 24.04 hrs, Volume= 0.066 af
 Outflow = 0.12 cfs @ 24.09 hrs, Volume= 0.066 af, Atten= 0%, Lag= 3.1 min
 Routed to Pond 1.1aP : North Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.10 fps, Min. Travel Time= 8.8 min
 Avg. Velocity = 0.85 fps, Avg. Travel Time= 11.4 min

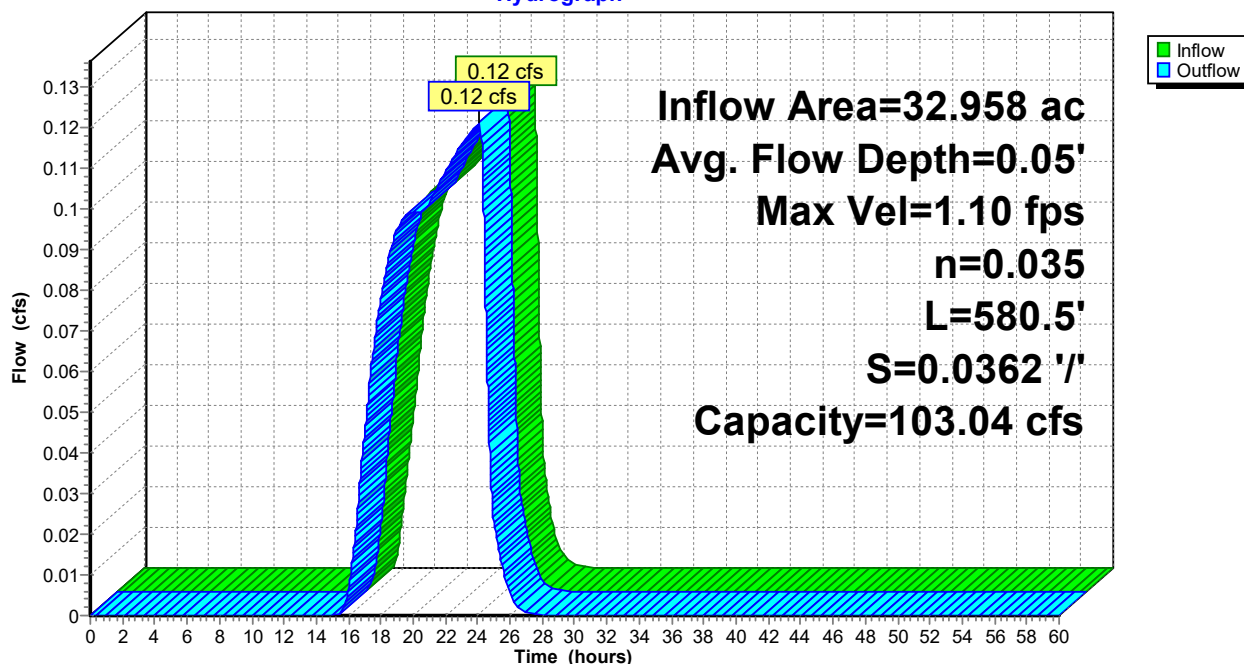
Peak Storage= 64 cf @ 24.09 hrs
 Average Depth at Peak Storage= 0.05', Surface Width= 2.21'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 103.04 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 580.5' Slope= 0.0362 '/'
 Inlet Invert= 1,447.64', Outlet Invert= 1,426.64'



Reach 1.1aR4: Bypass Swale

Hydrograph



Summary for Reach 1.1bR1: North Road Conveyance Swale

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 2.45" for 100-Yr Storm event
 Inflow = 5.85 cfs @ 11.98 hrs, Volume= 0.272 af
 Outflow = 3.95 cfs @ 12.04 hrs, Volume= 0.272 af, Atten= 32%, Lag= 3.9 min
 Routed to Pond 1.1bC1 : TS4 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.90 fps, Min. Travel Time= 9.9 min
 Avg. Velocity = 0.82 fps, Avg. Travel Time= 35.4 min

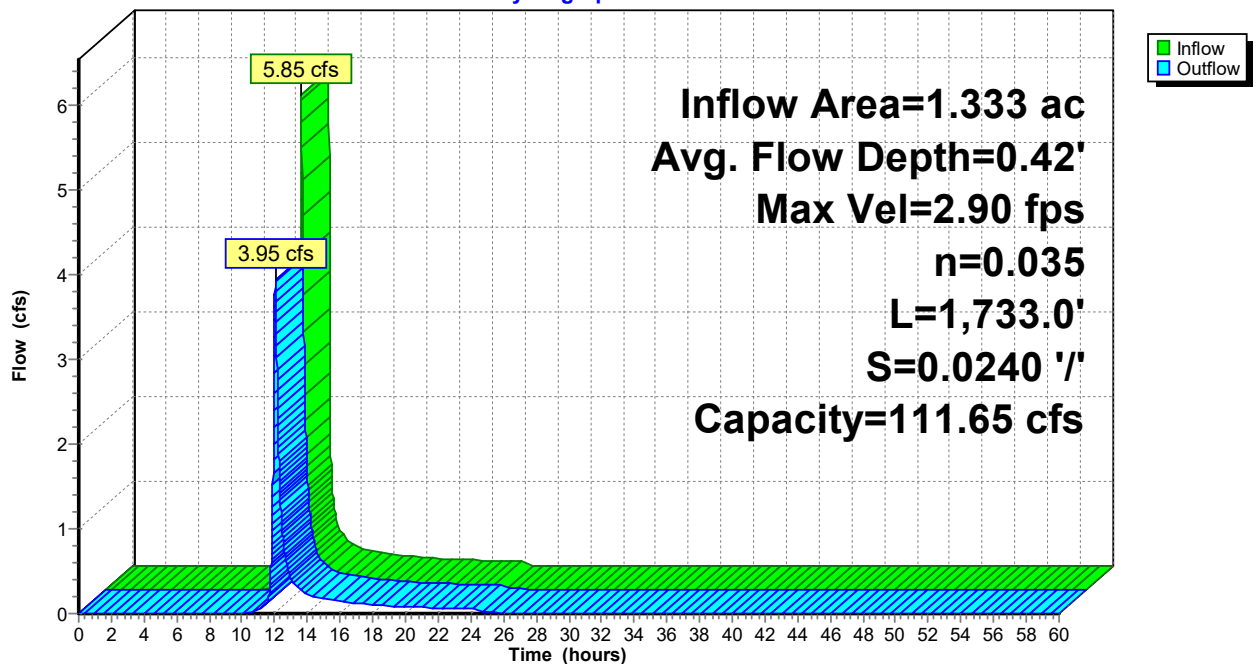
Peak Storage= 2,359 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.42', Surface Width= 4.51'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 111.65 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 1,733.0' Slope= 0.0240 '/'
 Inlet Invert= 1,491.12', Outlet Invert= 1,449.50'



Reach 1.1bR1: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.1bR2: North Road Conveyance Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 2.36" for 100-Yr Storm event
 Inflow = 6.08 cfs @ 12.01 hrs, Volume= 0.391 af
 Outflow = 5.77 cfs @ 12.04 hrs, Volume= 0.391 af, Atten= 5%, Lag= 1.8 min
 Routed to Pond 1.1bP1 : Dry Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.81 fps, Min. Travel Time= 2.6 min
 Avg. Velocity = 1.07 fps, Avg. Travel Time= 9.3 min

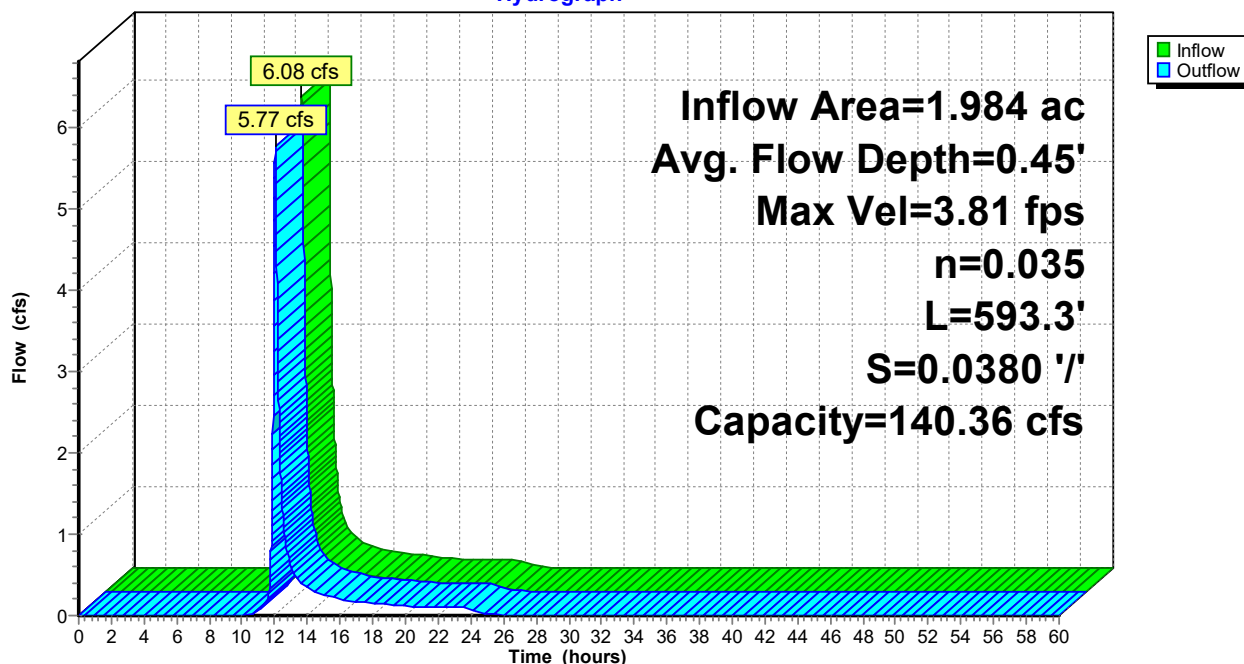
Peak Storage= 900 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.45', Surface Width= 4.71'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 140.36 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 593.3' Slope= 0.0380 ' / '
 Inlet Invert= 1,447.27', Outlet Invert= 1,424.75'



Reach 1.1bR2: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.2aR1: Bypass Swale

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.03 cfs @ 24.00 hrs, Volume= 0.016 af
 Outflow = 0.03 cfs @ 24.06 hrs, Volume= 0.016 af, Atten= 0%, Lag= 3.1 min
 Routed to Pond 1.2aC1 : TS 7 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.54 fps, Min. Travel Time= 16.2 min
 Avg. Velocity = 0.47 fps, Avg. Travel Time= 18.6 min

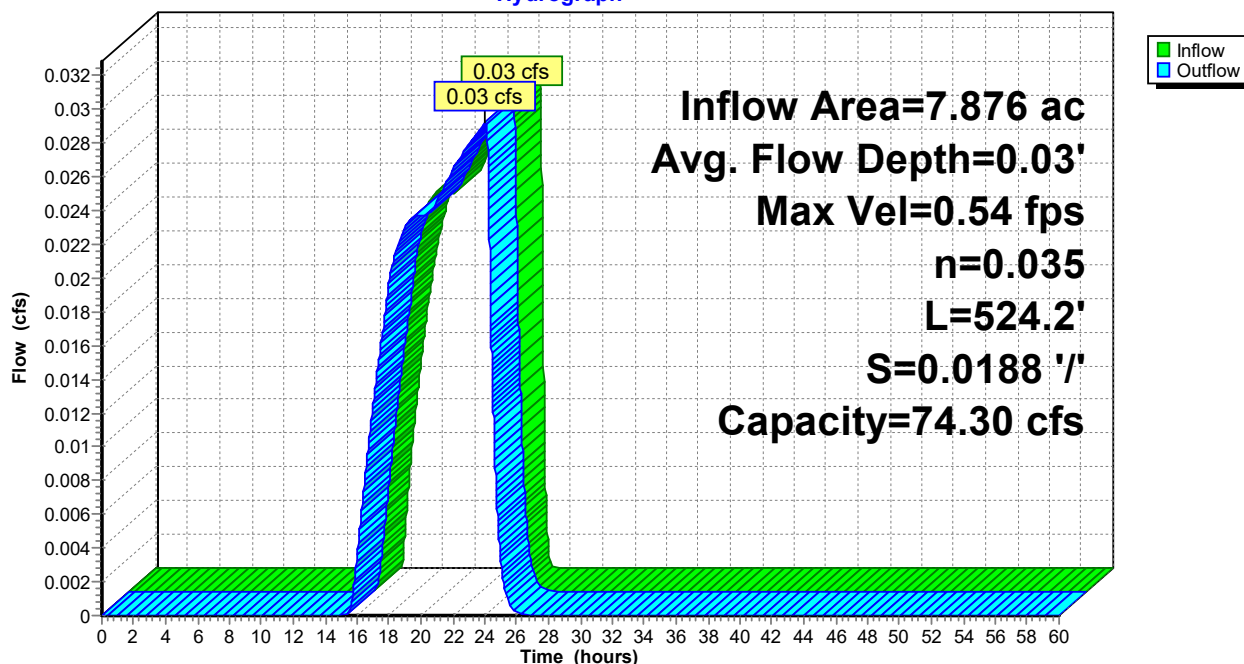
Peak Storage= 28 cf @ 24.06 hrs
 Average Depth at Peak Storage= 0.03', Surface Width= 2.11'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 74.30 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 524.2' Slope= 0.0188 '/
 Inlet Invert= 1,454.08', Outlet Invert= 1,444.22'



Reach 1.2aR1: Bypass Swale

Hydrograph



Summary for Reach 1.2aR2: Bypass Swale

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.06 cfs @ 24.03 hrs, Volume= 0.034 af
 Outflow = 0.06 cfs @ 24.06 hrs, Volume= 0.034 af, Atten= 0%, Lag= 1.9 min
 Routed to Pond 1.2aC2 : TS8 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.71 fps, Min. Travel Time= 13.0 min
 Avg. Velocity = 0.58 fps, Avg. Travel Time= 15.9 min

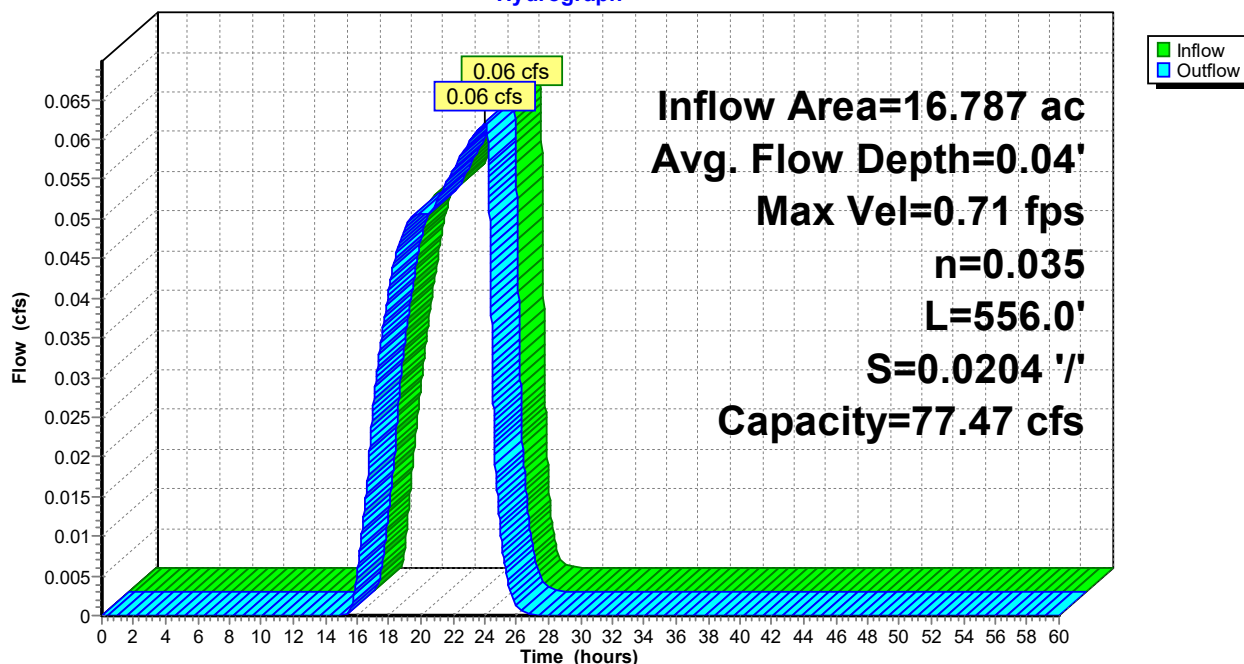
Peak Storage= 48 cf @ 24.06 hrs
 Average Depth at Peak Storage= 0.04' , Surface Width= 2.17'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 77.47 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 556.0' Slope= 0.0204 '/'
 Inlet Invert= 1,443.21', Outlet Invert= 1,431.84'



Reach 1.2aR2: Bypass Swale

Hydrograph



Summary for Reach 1.2aR3: Bypass Swale

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.08 cfs @ 24.03 hrs, Volume= 0.045 af
 Outflow = 0.08 cfs @ 24.07 hrs, Volume= 0.045 af, Atten= 0%, Lag= 2.0 min
 Routed to Pond 1.2aP : South Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.63 fps, Min. Travel Time= 6.6 min
 Avg. Velocity = 0.51 fps, Avg. Travel Time= 8.2 min

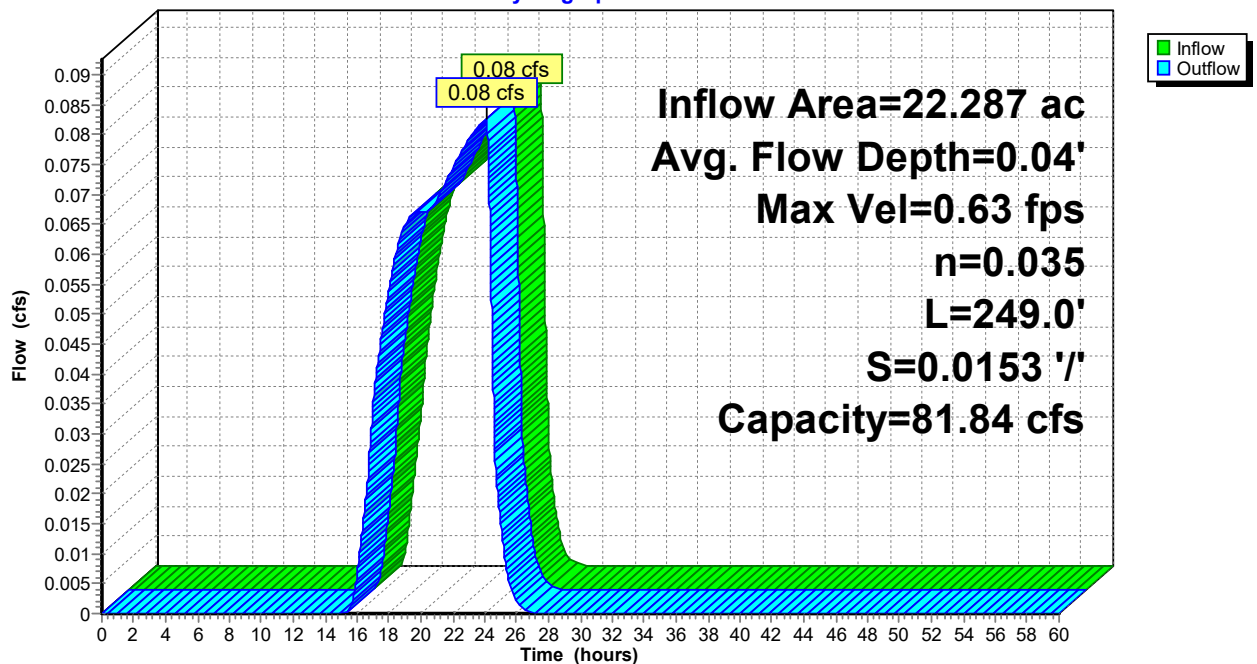
Peak Storage= 33 cf @ 24.07 hrs
 Average Depth at Peak Storage= 0.04' , Surface Width= 3.17'
 Bank-Full Depth= 2.00' Flow Area= 14.0 sf, Capacity= 81.84 cfs

3.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/' Top Width= 11.00'
 Length= 249.0' Slope= 0.0153 '/'
 Inlet Invert= 1,431.11', Outlet Invert= 1,427.29'



Reach 1.2aR3: Bypass Swale

Hydrograph



Summary for Reach 1.2bR1: East Road Conveyance Swale

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 2.11" for 100-Yr Storm event
 Inflow = 2.75 cfs @ 11.98 hrs, Volume= 0.128 af
 Outflow = 2.43 cfs @ 12.01 hrs, Volume= 0.128 af, Atten= 11%, Lag= 2.1 min
 Routed to Pond 1.2bC1 : East Road Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.17 fps, Min. Travel Time= 3.9 min
 Avg. Velocity = 0.89 fps, Avg. Travel Time= 13.7 min

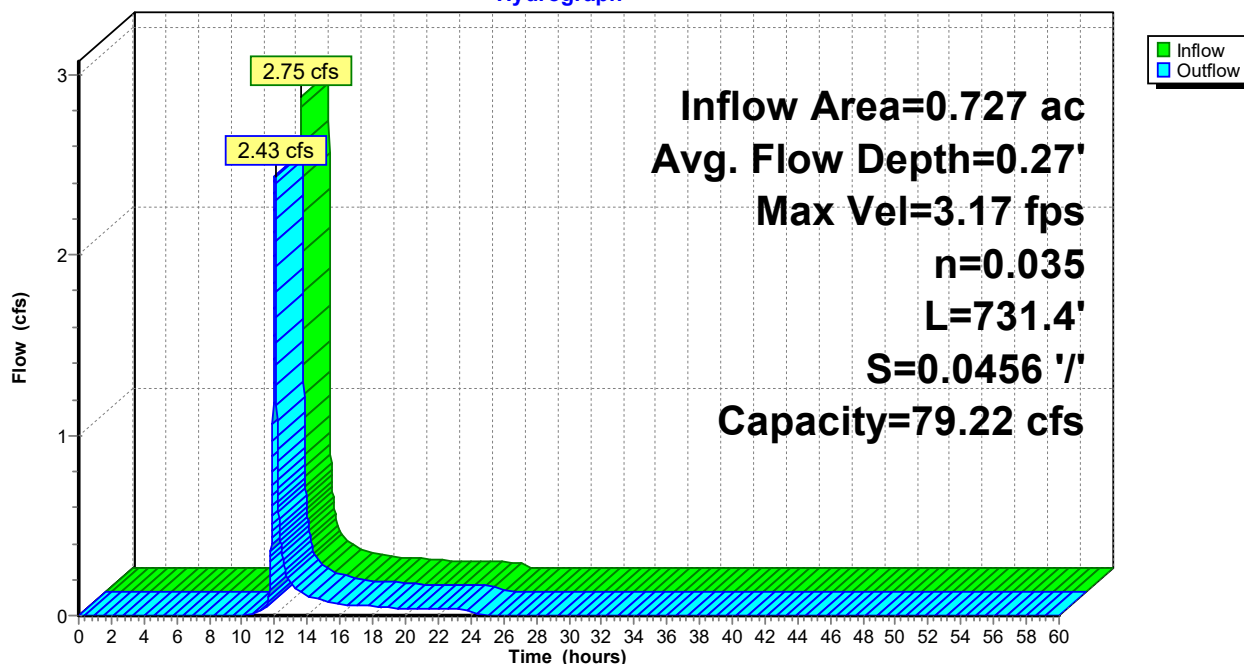
Peak Storage= 562 cf @ 12.01 hrs
 Average Depth at Peak Storage= 0.27', Surface Width= 3.64'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 79.22 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 11.00'
 Length= 731.4' Slope= 0.0456 '/'
 Inlet Invert= 1,489.53', Outlet Invert= 1,456.20'



Reach 1.2bR1: East Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR2: South Road Conveyance Swale

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 1.73" for 100-Yr Storm event
 Inflow = 3.77 cfs @ 12.03 hrs, Volume= 0.228 af
 Outflow = 3.39 cfs @ 12.07 hrs, Volume= 0.228 af, Atten= 10%, Lag= 2.7 min
 Routed to Pond 1.2bC2 : TS6 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.49 fps, Min. Travel Time= 4.0 min
 Avg. Velocity = 0.77 fps, Avg. Travel Time= 13.0 min

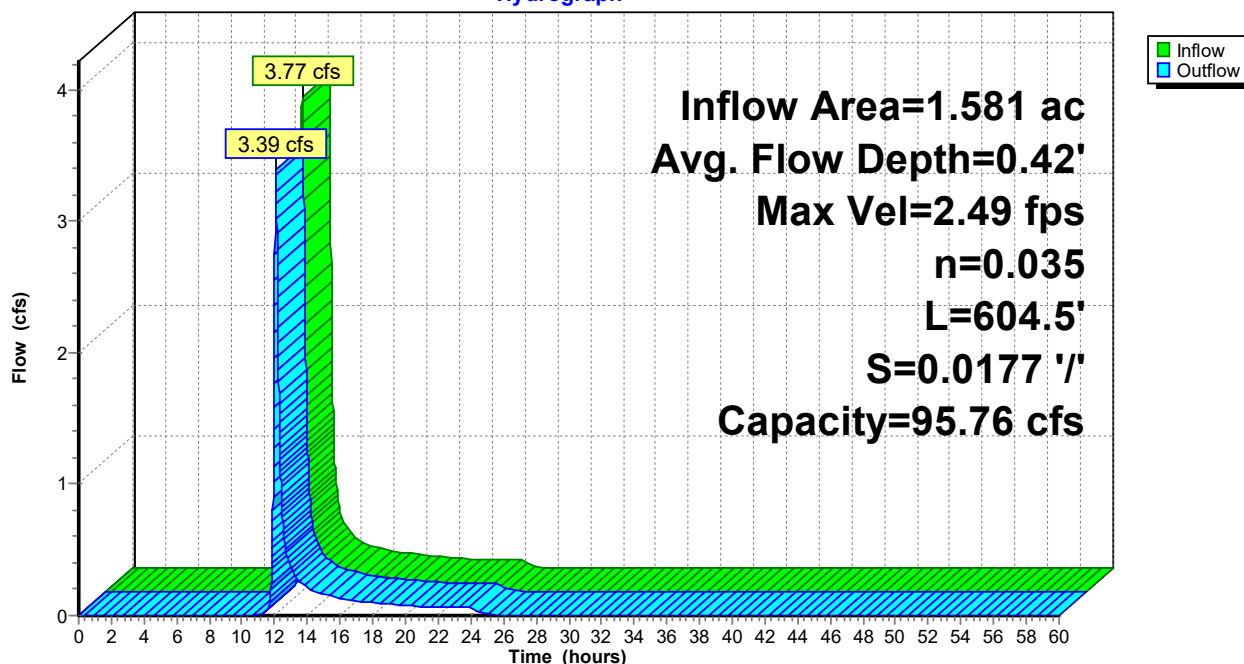
Peak Storage= 822 cf @ 12.07 hrs
 Average Depth at Peak Storage= 0.42', Surface Width= 4.51'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 95.76 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 604.5' Slope= 0.0177 ' / '
 Inlet Invert= 1,454.47', Outlet Invert= 1,443.79'



Reach 1.2bR2: South Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR3: South Road Conveyance Swale

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 1.98" for 100-Yr Storm event
 Inflow = 5.95 cfs @ 12.01 hrs, Volume= 0.394 af
 Outflow = 5.31 cfs @ 12.06 hrs, Volume= 0.394 af, Atten= 11%, Lag= 3.0 min
 Routed to Pond 1.2bP : South Road Treatment Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.88 fps, Min. Travel Time= 4.4 min
 Avg. Velocity = 0.88 fps, Avg. Travel Time= 14.3 min

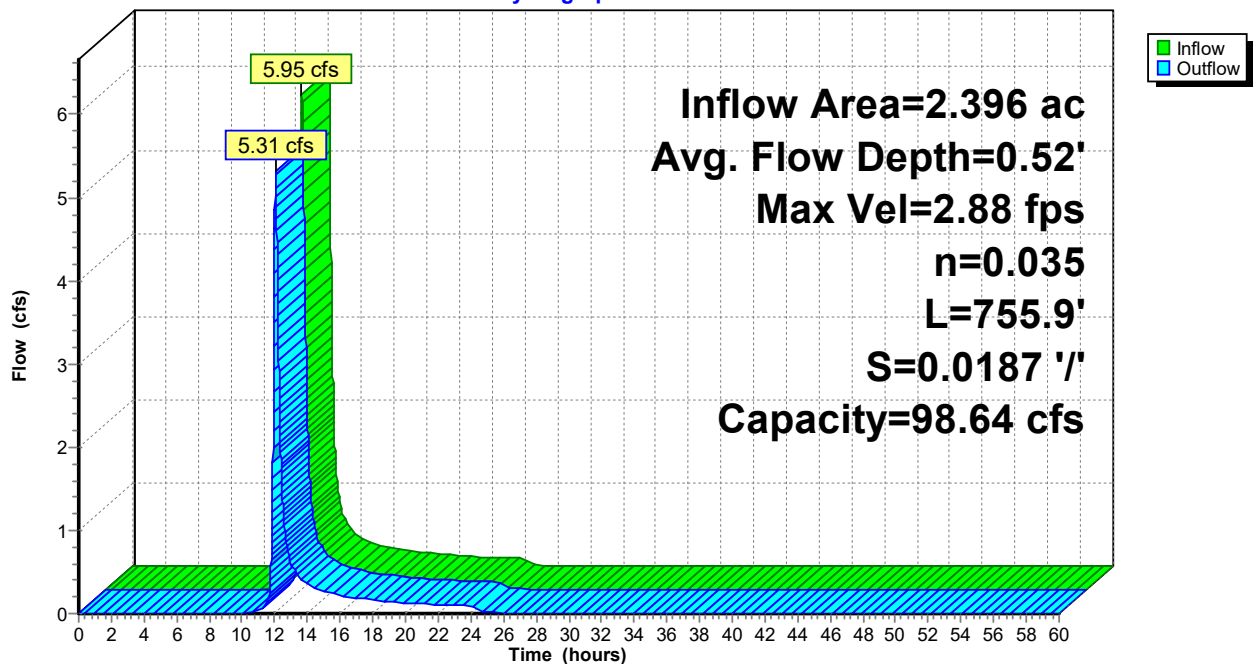
Peak Storage= 1,393 cf @ 12.06 hrs
 Average Depth at Peak Storage= 0.52', Surface Width= 5.11'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 98.64 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 755.9' Slope= 0.0187 '/'
 Inlet Invert= 1,442.84', Outlet Invert= 1,428.67'



Reach 1.2bR3: South Road Conveyance Swale

Hydrograph



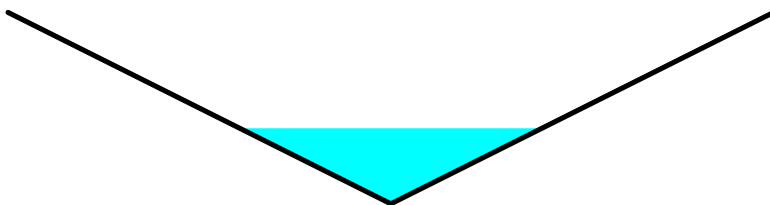
Summary for Reach 4.1R1: Bypass Swale

Inflow Area = 11.663 ac, 2.80% Impervious, Inflow Depth = 0.59" for 100-Yr Storm event
 Inflow = 4.82 cfs @ 12.13 hrs, Volume= 0.570 af
 Outflow = 4.59 cfs @ 12.17 hrs, Volume= 0.570 af, Atten= 5%, Lag= 2.3 min
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.69 fps, Min. Travel Time= 2.6 min
 Avg. Velocity = 1.82 fps, Avg. Travel Time= 5.2 min

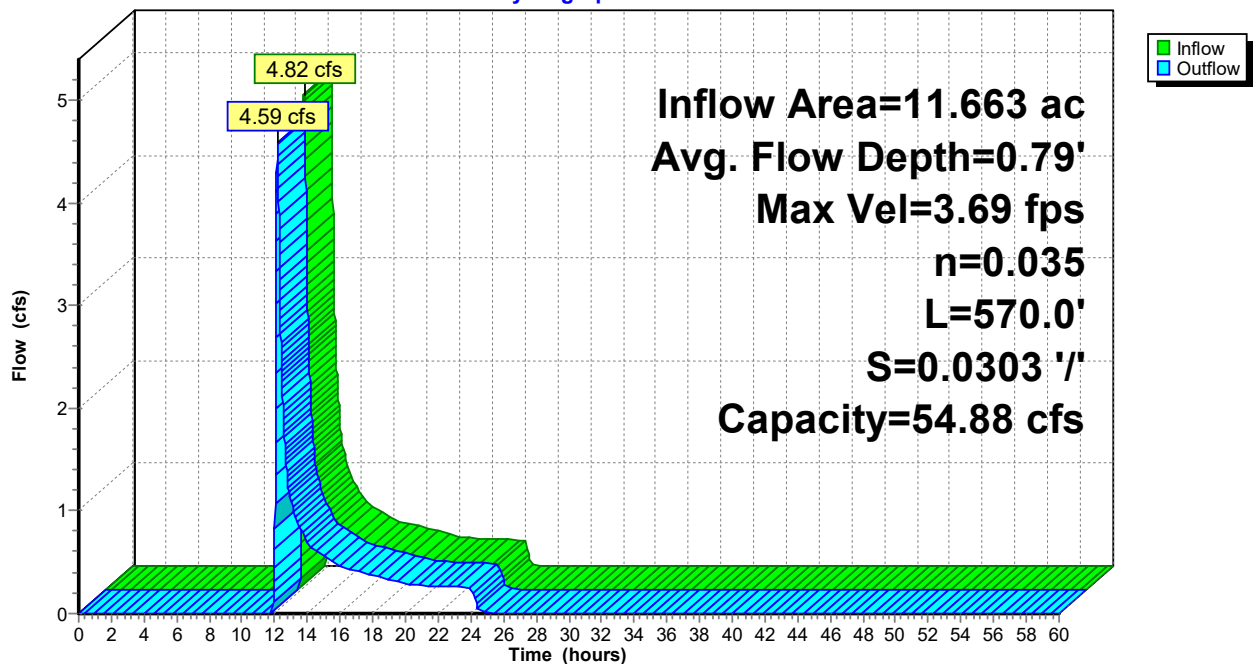
Peak Storage= 709 cf @ 12.17 hrs
 Average Depth at Peak Storage= 0.79' , Surface Width= 3.16'
 Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 54.88 cfs

0.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 ' / ' Top Width= 8.00'
 Length= 570.0' Slope= 0.0303 ' / '
 Inlet Invert= 1,448.24', Outlet Invert= 1,430.97'



Reach 4.1R1: Bypass Swale

Hydrograph



Summary for Reach 4.1R2: Ex Stream

Inflow Area = 39.250 ac, 0.83% Impervious, Inflow Depth = 0.83" for 100-Yr Storm event
 Inflow = 10.59 cfs @ 12.62 hrs, Volume= 2.700 af
 Outflow = 10.53 cfs @ 12.70 hrs, Volume= 2.700 af, Atten= 1%, Lag= 4.9 min
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.85 fps, Min. Travel Time= 6.7 min
 Avg. Velocity = 0.76 fps, Avg. Travel Time= 16.2 min

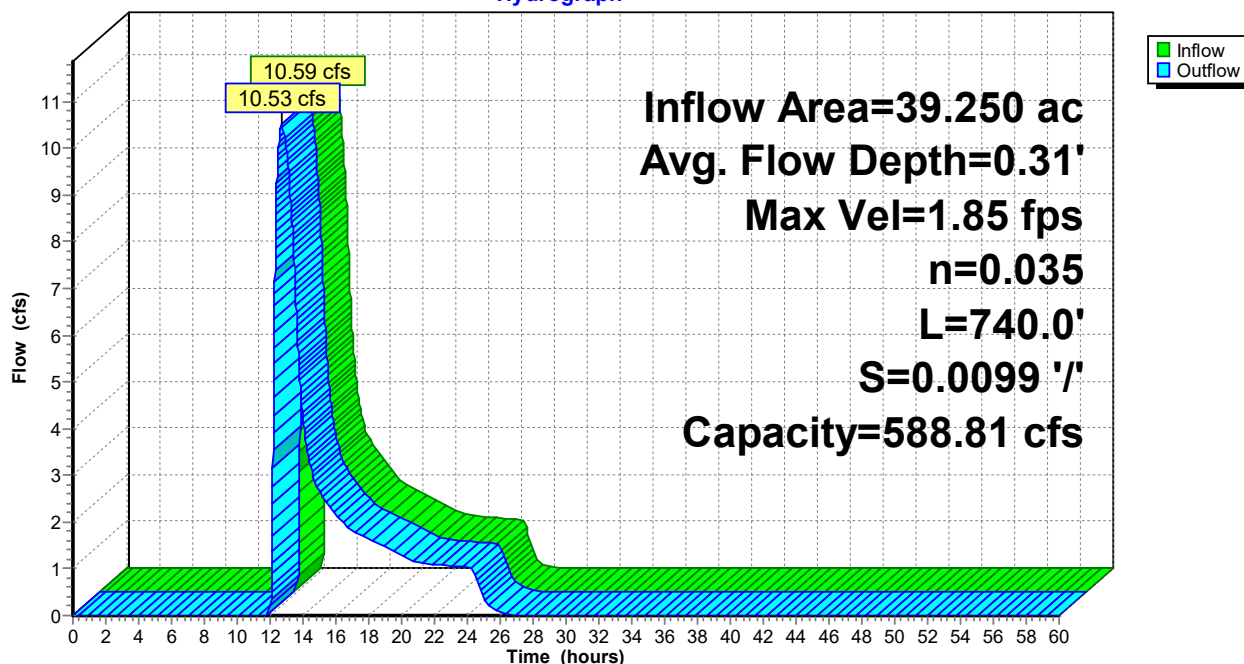
Peak Storage= 4,215 cf @ 12.70 hrs
 Average Depth at Peak Storage= 0.31', Surface Width= 19.65'
 Bank-Full Depth= 3.00' Flow Area= 84.0 sf, Capacity= 588.81 cfs

17.50' x 3.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 4.0 '/' Top Width= 38.50'
 Length= 740.0' Slope= 0.0099 '/'
 Inlet Invert= 1,430.98', Outlet Invert= 1,423.64'



Reach 4.1R2: Ex Stream

Hydrograph



Summary for Reach 4.2bR: Conveyance Swale

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 2.53" for 100-Yr Storm event
 Inflow = 2.13 cfs @ 11.98 hrs, Volume= 0.099 af
 Outflow = 1.95 cfs @ 12.01 hrs, Volume= 0.099 af, Atten= 8%, Lag= 1.8 min
 Routed to Pond 4.2bP : Pond 4 - Access Rd East

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.91 fps, Min. Travel Time= 3.2 min
 Avg. Velocity = 0.79 fps, Avg. Travel Time= 11.9 min

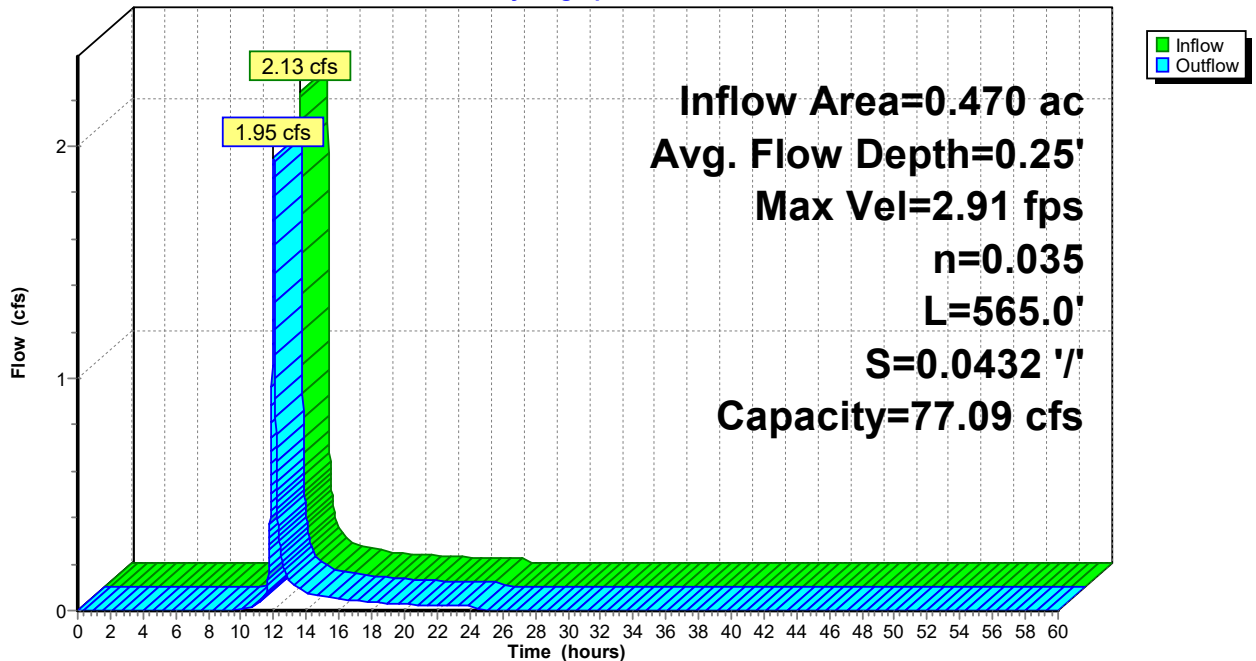
Peak Storage= 380 cf @ 12.01 hrs
 Average Depth at Peak Storage= 0.25', Surface Width= 3.47'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 77.09 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 11.00'
 Length= 565.0' Slope= 0.0432 '/'
 Inlet Invert= 1,472.38', Outlet Invert= 1,448.00'



Reach 4.2bR: Conveyance Swale

Hydrograph



Summary for Pond 1.1aC1: TS1 Culvert

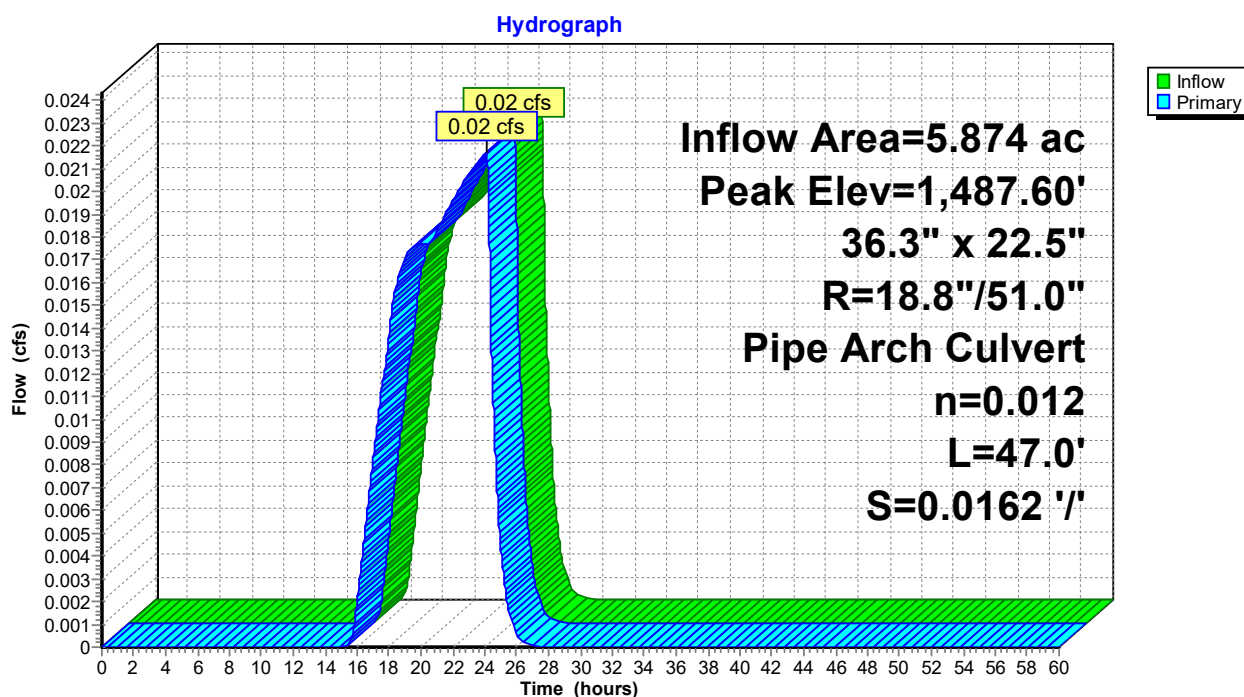
Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.02 cfs @ 24.06 hrs, Volume= 0.012 af
 Outflow = 0.02 cfs @ 24.06 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.02 cfs @ 24.06 hrs, Volume= 0.012 af
 Routed to Reach 1.1aR2 : Bypass Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,487.60' @ 24.06 hrs
 Flood Elev= 1,489.60'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,487.56' | 36.3" W x 22.5" H, R=18.8"/51.0" Pipe Arch RCP_Arch 37x23 L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,487.56' / 1,486.80' S= 0.0162 '/ Cc= 0.900 n= 0.012, Flow Area= 4.43 sf |

Primary OutFlow Max=0.02 cfs @ 24.06 hrs HW=1,487.60' (Free Discharge)
 ↳ RCP_Arch 37x23 (Inlet Controls 0.02 cfs @ 0.61 fps)

Pond 1.1aC1: TS1 Culvert



Summary for Pond 1.1aC2: TS2 Culvert

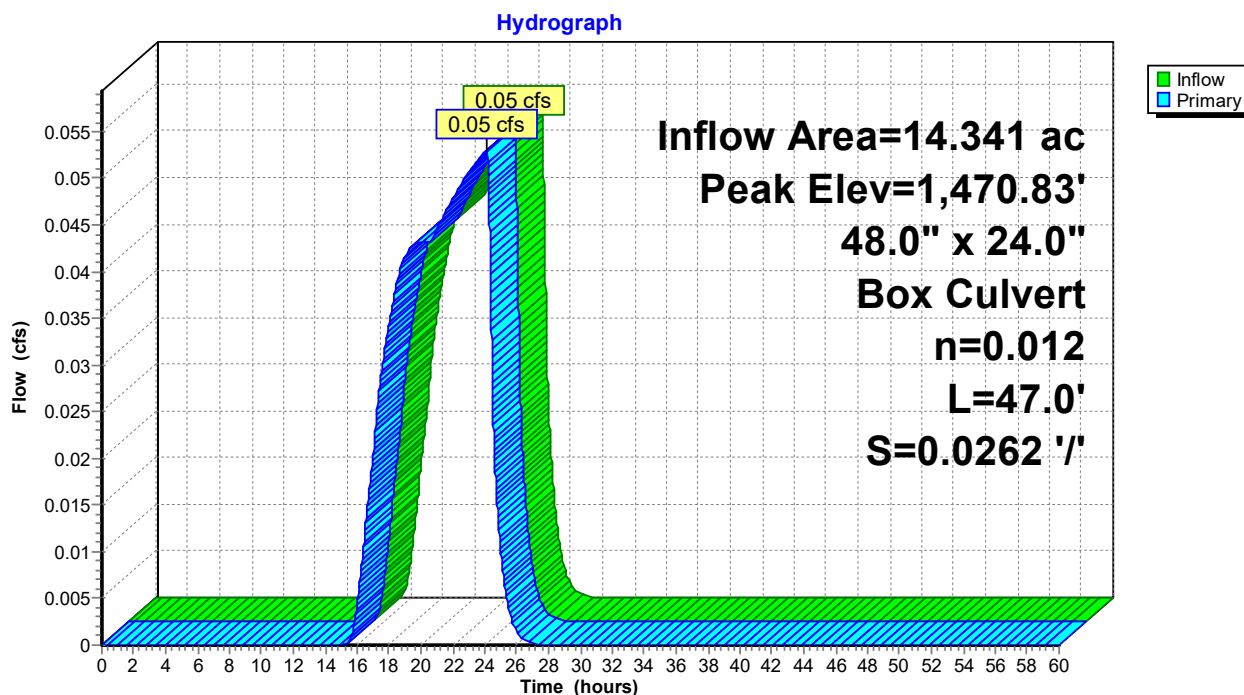
Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.05 cfs @ 24.08 hrs, Volume= 0.029 af
 Outflow = 0.05 cfs @ 24.08 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.05 cfs @ 24.08 hrs, Volume= 0.029 af
 Routed to Reach 1.1aR3 : Bypass Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,470.83' @ 24.08 hrs
 Flood Elev= 1,473.07'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,470.80' | 48.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,470.80' / 1,469.57' S= 0.0262 '/' Cc= 0.900 n= 0.012, Flow Area= 8.00 sf |

Primary OutFlow Max=0.05 cfs @ 24.08 hrs HW=1,470.83' (Free Discharge)
 ↑=Culvert (Inlet Controls 0.05 cfs @ 0.51 fps)

Pond 1.1aC2: TS2 Culvert



Summary for Pond 1.1aC3: TS3 Culvert

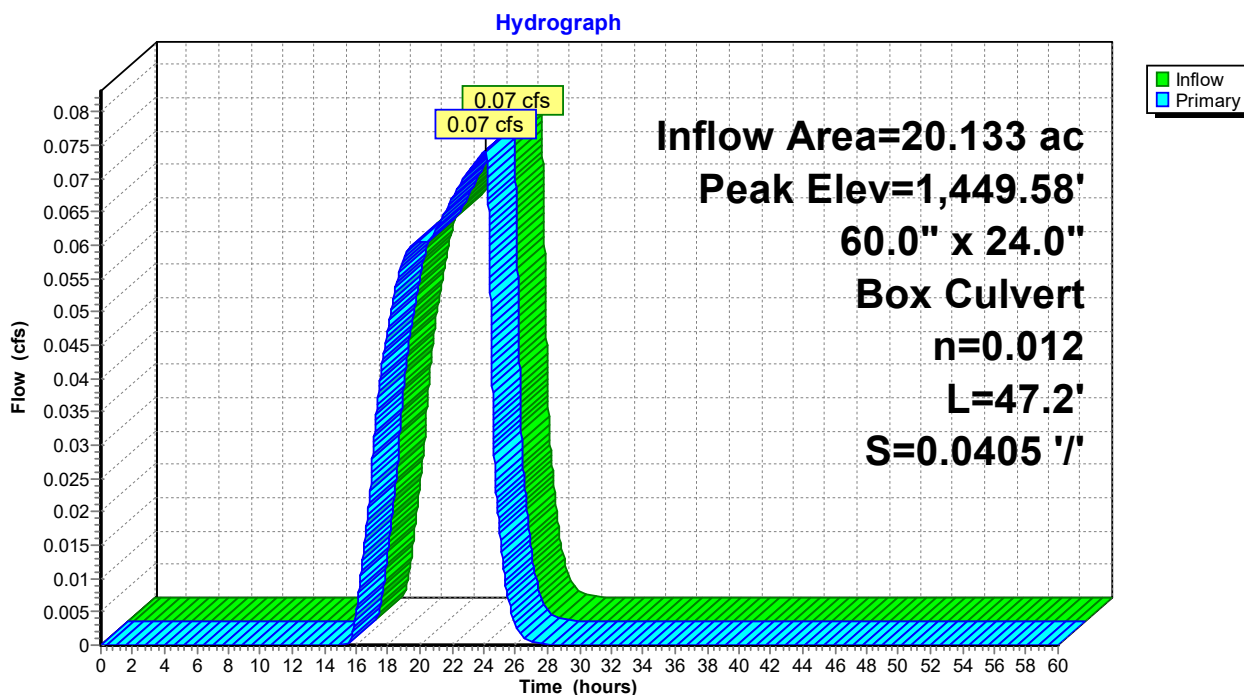
Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.07 cfs @ 24.08 hrs, Volume= 0.041 af
 Outflow = 0.07 cfs @ 24.08 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.07 cfs @ 24.08 hrs, Volume= 0.041 af
 Routed to Reach 1.1aR4 : Bypass Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.58' @ 24.08 hrs
 Flood Elev= 1,452.10'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,449.55' | 60.0" W x 24.0" H Box Culvert L= 47.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.55' / 1,447.64' S= 0.0405 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.07 cfs @ 24.08 hrs HW=1,449.58' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 0.07 cfs @ 0.53 fps)

Pond 1.1aC3: TS3 Culvert



Summary for Pond 1.1aP: North Road Bypass OC

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.12 cfs @ 24.09 hrs, Volume= 0.066 af
 Outflow = 0.12 cfs @ 24.12 hrs, Volume= 0.059 af, Atten= 0%, Lag= 1.3 min
 Discarded = 0.01 cfs @ 24.12 hrs, Volume= 0.028 af
 Primary = 0.11 cfs @ 24.12 hrs, Volume= 0.031 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,428.53' @ 24.12 hrs Surf.Area= 0.020 ac Storage= 0.029 af

Plug-Flow detention time= 520.4 min calculated for 0.059 af (88% of inflow)
 Center-of-Mass det. time= 493.0 min (1,761.0 - 1,268.0)

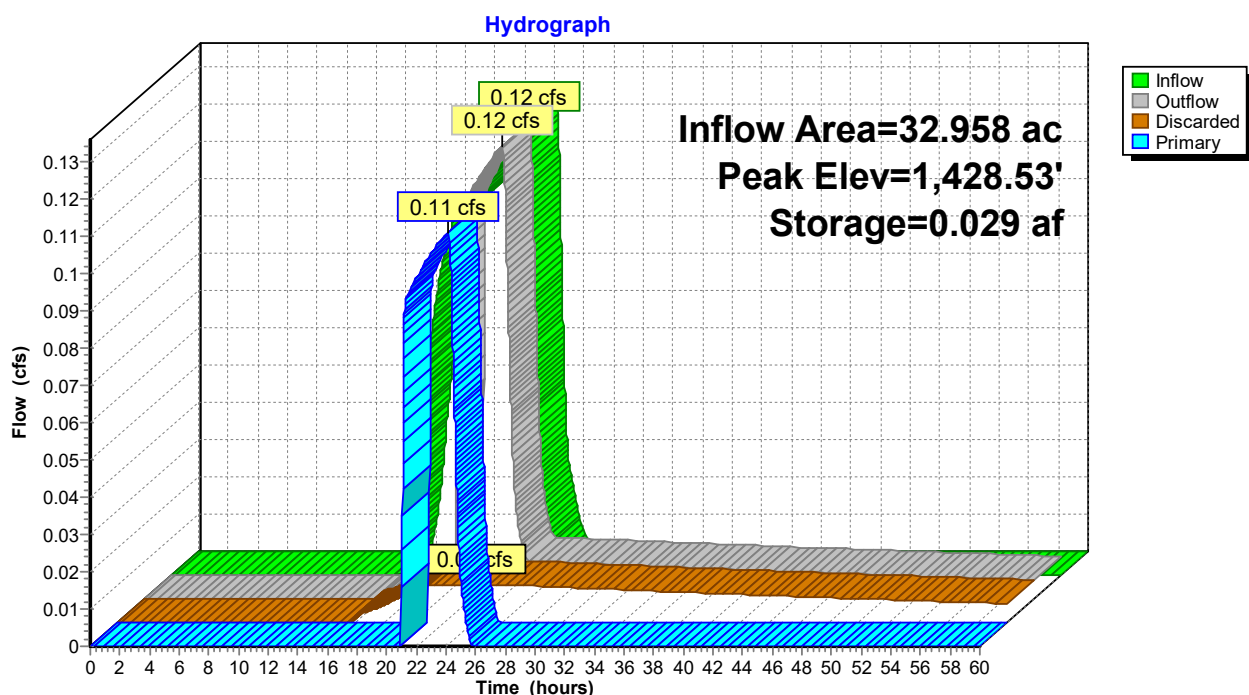
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,426.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,426.00' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,428.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.01 cfs @ 24.12 hrs HW=1,428.53' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.10 cfs @ 24.12 hrs HW=1,428.53' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 0.10 cfs @ 0.40 fps)

Pond 1.1aP: North Road Bypass OC



Summary for Pond 1.1bC1: TS4 Culvert

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 2.45" for 100-Yr Storm event
 Inflow = 3.95 cfs @ 12.04 hrs, Volume= 0.272 af
 Outflow = 3.95 cfs @ 12.04 hrs, Volume= 0.272 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.95 cfs @ 12.04 hrs, Volume= 0.272 af
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

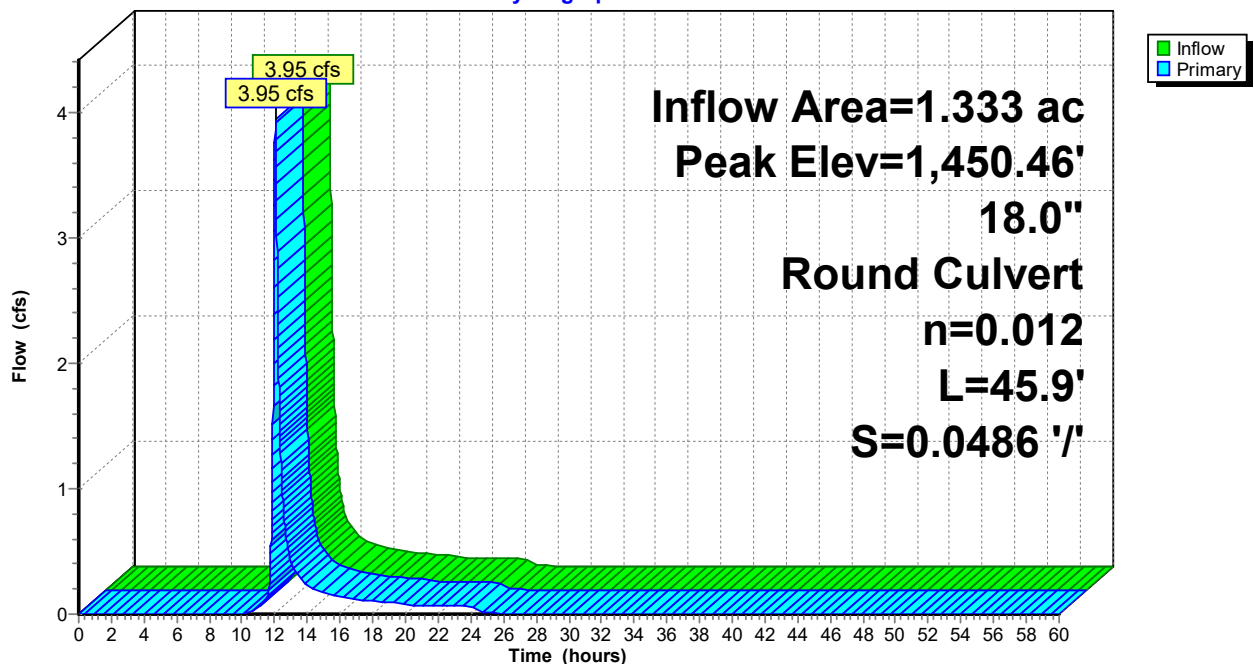
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,450.46' @ 12.04 hrs
 Flood Elev= 1,451.20'

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|--|
| #1 | Primary | 1,449.50' | 18.0" Round Culvert L= 45.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.50' / 1,447.27' S= 0.0486 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=3.95 cfs @ 12.04 hrs HW=1,450.46' (Free Discharge)
 ←1=Culvert (Inlet Controls 3.95 cfs @ 3.33 fps)

Pond 1.1bC1: TS4 Culvert

Hydrograph



Summary for Pond 1.1bP1: Dry Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 2.36" for 100-Yr Storm event
 Inflow = 5.77 cfs @ 12.04 hrs, Volume= 0.391 af
 Outflow = 5.77 cfs @ 12.04 hrs, Volume= 0.391 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 12.03 hrs, Volume= 0.005 af
 Primary = 5.77 cfs @ 12.04 hrs, Volume= 0.386 af
 Routed to Pond 1.1bP2 : North Road Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.74' @ 12.04 hrs Surf.Area= 603 sf Storage= 428 cf

Plug-Flow detention time= 6.5 min calculated for 0.391 af (100% of inflow)
 Center-of-Mass det. time= 6.7 min (866.5 - 859.8)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,424.75' | 428 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,424.75 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,425.00 | 25 | 22.9 | 2 | 2 | 42 | |
| 1,426.00 | 273 | 98.0 | 127 | 129 | 767 | |
| 1,426.70 | 603 | 161.7 | 299 | 428 | 2,086 | |

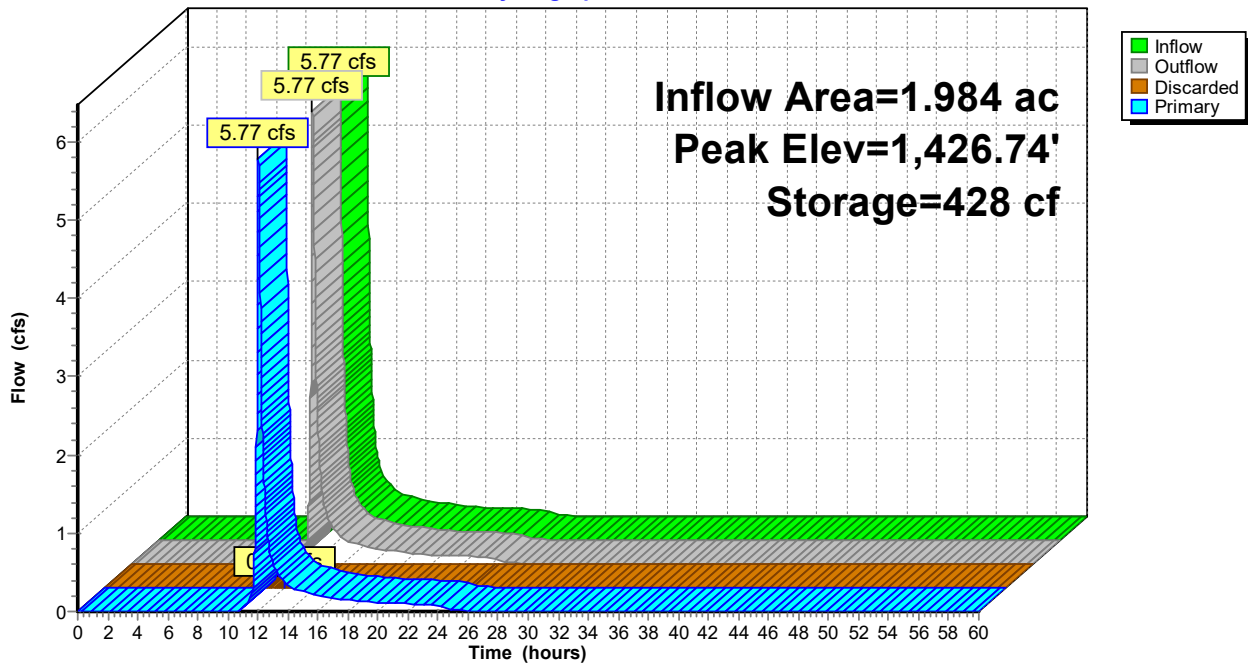
| Device | Routing | Invert | Outlet Devices | | | | | | | | | | |
|--------|-----------|-----------|--|--|--|--|--|--|--|--|--|--|--|
| #1 | Discarded | 1,424.75' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | |
| #2 | Primary | 1,425.69' | 2.0' long x 2.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 | | | | | | | | | | |
| | | | Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32 | | | | | | | | | | |

Discarded OutFlow Max=0.01 cfs @ 12.03 hrs HW=1,426.74' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=5.76 cfs @ 12.04 hrs HW=1,426.74' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 5.76 cfs @ 2.74 fps)

Pond 1.1bP1: Dry Swale

Hydrograph



Summary for Pond 1.1bP2: North Road Detention Pond

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 2.33" for 100-Yr Storm event
 Inflow = 5.77 cfs @ 12.04 hrs, Volume= 0.386 af
 Outflow = 5.65 cfs @ 12.06 hrs, Volume= 0.372 af, Atten= 2%, Lag= 1.3 min
 Discarded = 0.02 cfs @ 12.06 hrs, Volume= 0.053 af
 Primary = 5.63 cfs @ 12.06 hrs, Volume= 0.318 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.23' @ 12.06 hrs Surf.Area= 0.034 ac Storage= 0.056 af

Plug-Flow detention time= 193.0 min calculated for 0.371 af (96% of inflow)
 Center-of-Mass det. time= 171.5 min (1,031.2 - 859.7)

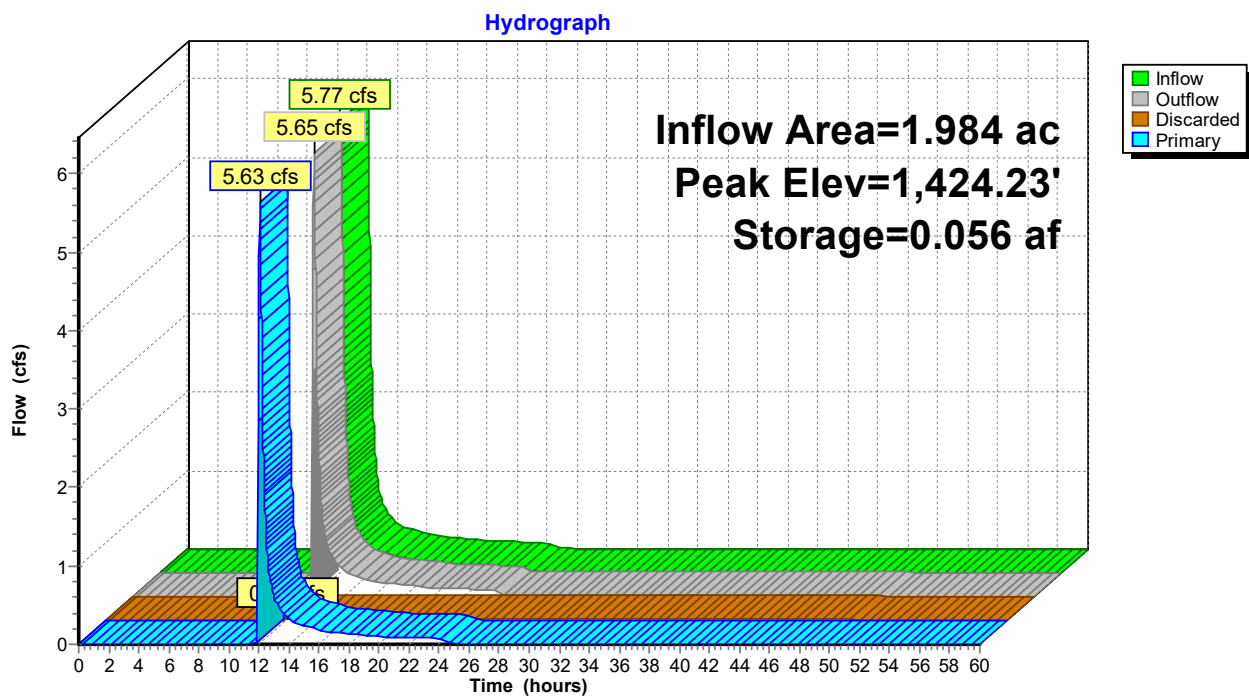
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,421.50' | 0.166 af | 10.00'W x 40.00'L x 5.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,421.50' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,424.00' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.02 cfs @ 12.06 hrs HW=1,424.23' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=5.60 cfs @ 12.06 hrs HW=1,424.23' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 5.60 cfs @ 1.21 fps)

Pond 1.1bP2: North Road Detention Pond



Summary for Pond 1.2aC1: TS 7 Culvert

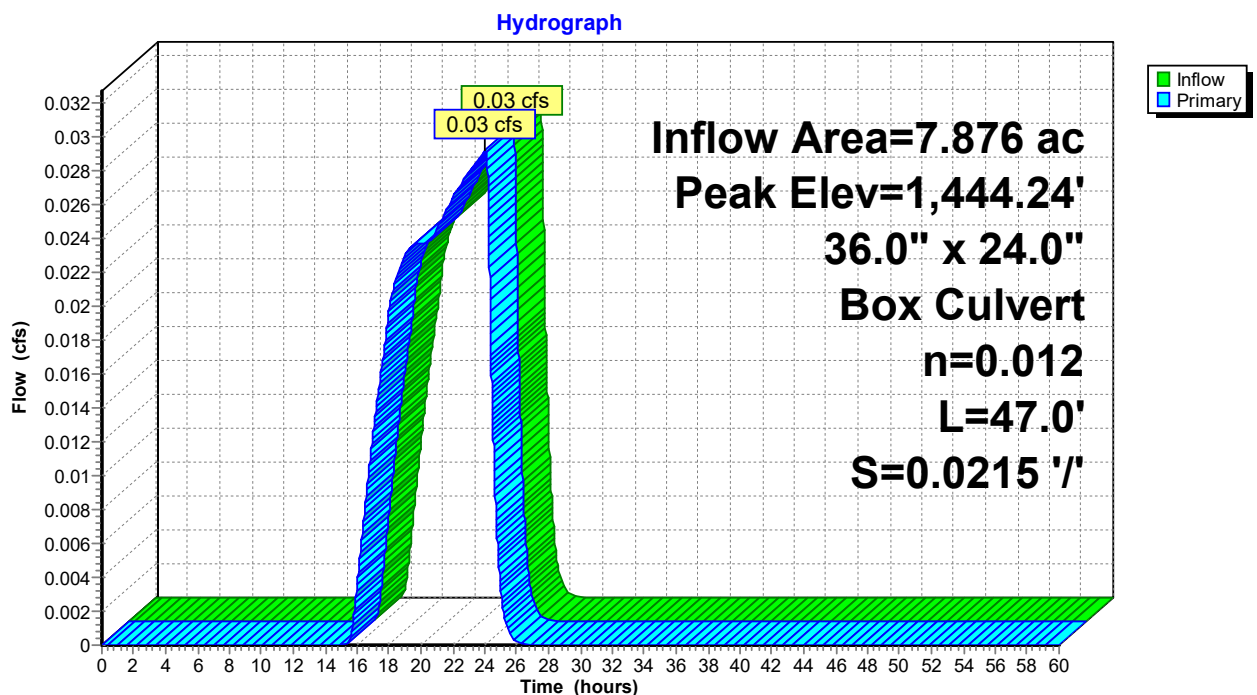
Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.03 cfs @ 24.06 hrs, Volume= 0.016 af
 Outflow = 0.03 cfs @ 24.06 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.03 cfs @ 24.06 hrs, Volume= 0.016 af
 Routed to Reach 1.2aR2 : Bypass Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,444.24' @ 24.06 hrs
 Flood Elev= 1,446.28'

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|--|
| #1 | Primary | 1,444.22' | 36.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,444.22' / 1,443.21' S= 0.0215 '/ Cc= 0.900 n= 0.012, Flow Area= 6.00 sf |

Primary OutFlow Max=0.03 cfs @ 24.06 hrs HW=1,444.24' (Free Discharge)
 ↑=Culvert (Inlet Controls 0.03 cfs @ 0.46 fps)

Pond 1.2aC1: TS 7 Culvert



Summary for Pond 1.2aC2: TS8 Culvert

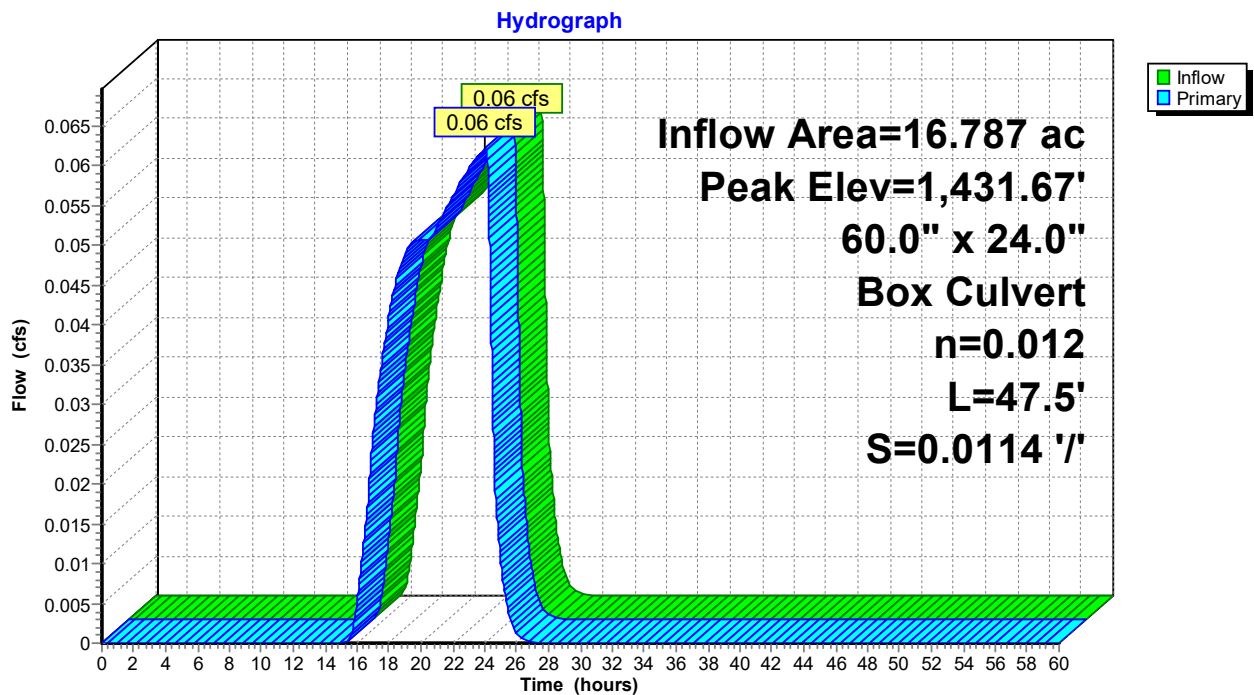
Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.06 cfs @ 24.06 hrs, Volume= 0.034 af
 Outflow = 0.06 cfs @ 24.06 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.06 cfs @ 24.06 hrs, Volume= 0.034 af
 Routed to Reach 1.2aR3 : Bypass Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.67' @ 24.06 hrs
 Flood Elev= 1,433.87'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,431.65' | 60.0" W x 24.0" H Box Culvert L= 47.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,431.65' / 1,431.11' S= 0.0114 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.06 cfs @ 24.06 hrs HW=1,431.67' (Free Discharge)
 ←1=Culvert (Inlet Controls 0.06 cfs @ 0.50 fps)

Pond 1.2aC2: TS8 Culvert



Summary for Pond 1.2aP: South Road Bypass OC

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.08 cfs @ 24.07 hrs, Volume= 0.045 af
 Outflow = 0.08 cfs @ 24.20 hrs, Volume= 0.045 af, Atten= 5%, Lag= 8.4 min
 Discarded = 0.08 cfs @ 24.20 hrs, Volume= 0.045 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.42' @ 24.20 hrs Surf.Area= 0.006 ac Storage= 0.002 af

Plug-Flow detention time= 11.1 min calculated for 0.045 af (100% of inflow)
 Center-of-Mass det. time= 11.1 min (1,272.7 - 1,261.5)

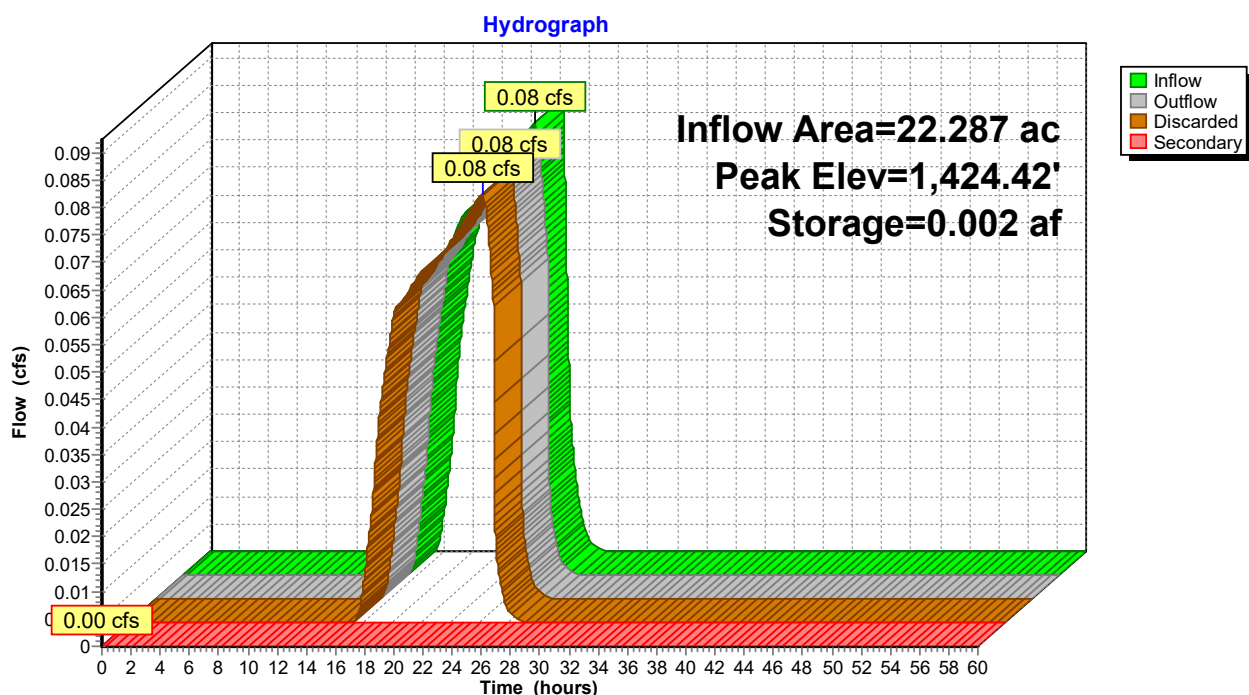
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area |
| #2 | Secondary | 1,426.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.08 cfs @ 24.20 hrs HW=1,424.42' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.08 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.2aP: South Road Bypass OC



Summary for Pond 1.2bC1: East Road Culvert

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 2.11" for 100-Yr Storm event
 Inflow = 2.43 cfs @ 12.01 hrs, Volume= 0.128 af
 Outflow = 2.43 cfs @ 12.01 hrs, Volume= 0.128 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.43 cfs @ 12.01 hrs, Volume= 0.128 af
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

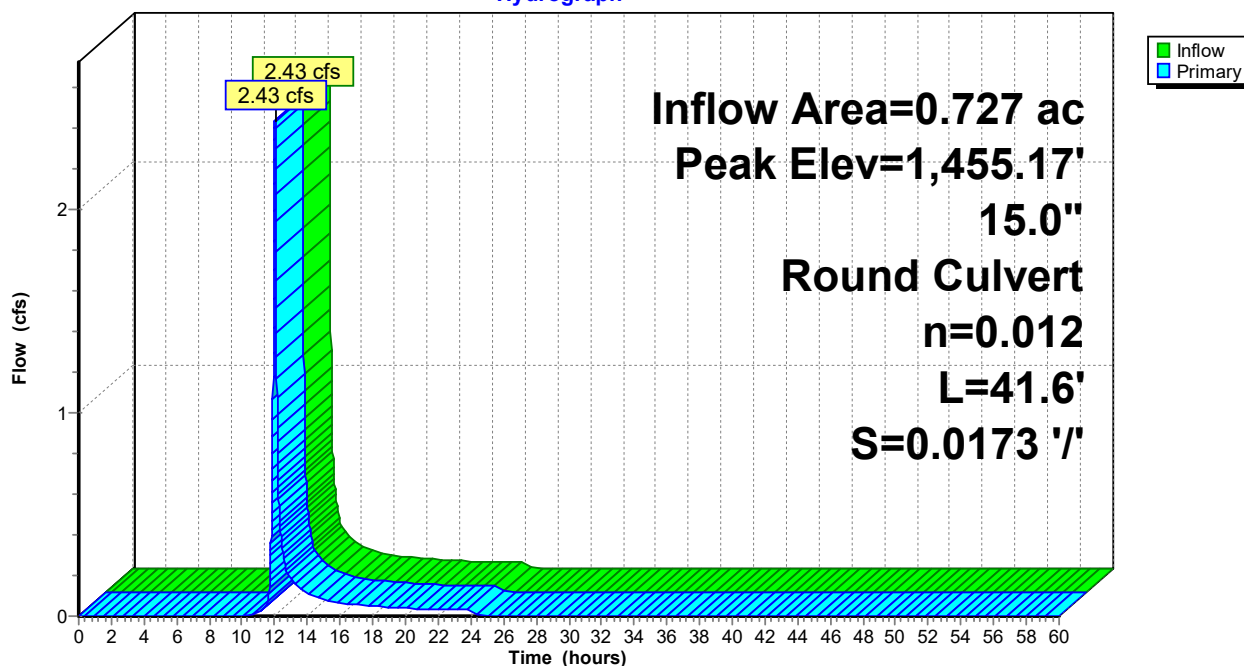
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,455.17' @ 12.01 hrs
 Flood Elev= 1,457.45'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,454.39' | 15.0" Round Culvert L= 41.6' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,454.39' / 1,453.67' S= 0.0173 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf |

Primary OutFlow Max=2.43 cfs @ 12.01 hrs HW=1,455.17' (Free Discharge)
 ←1=Culvert (Inlet Controls 2.43 cfs @ 3.01 fps)

Pond 1.2bC1: East Road Culvert

Hydrograph



Summary for Pond 1.2bC2: TS6 Culvert

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 1.73" for 100-Yr Storm event
 Inflow = 3.39 cfs @ 12.07 hrs, Volume= 0.228 af
 Outflow = 3.39 cfs @ 12.07 hrs, Volume= 0.228 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.39 cfs @ 12.07 hrs, Volume= 0.228 af
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

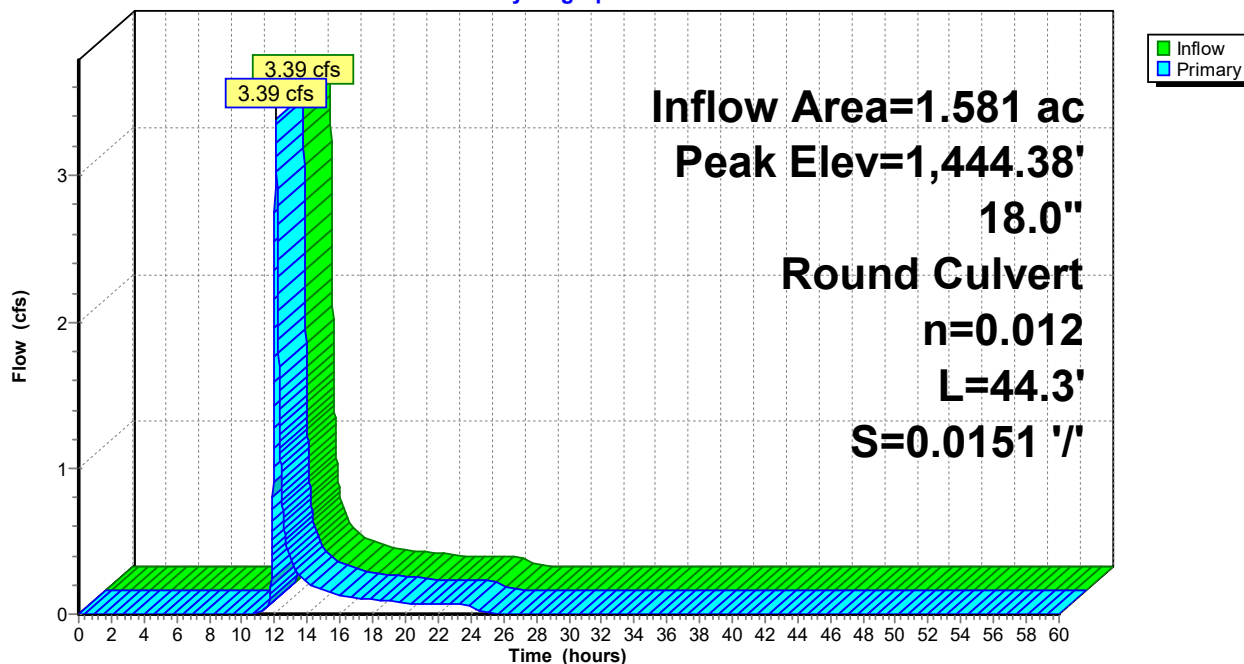
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,444.38' @ 12.07 hrs
 Flood Elev= 1,445.09'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,443.51' | 18.0" Round Culvert L= 44.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,443.51' / 1,442.84' S= 0.0151 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=3.38 cfs @ 12.07 hrs HW=1,444.38' (Free Discharge)
 ↳ **1=Culvert** (Inlet Controls 3.38 cfs @ 3.18 fps)

Pond 1.2bC2: TS6 Culvert

Hydrograph



Summary for Pond 1.2bP: South Road Treatment Pond

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 1.98" for 100-Yr Storm event
 Inflow = 5.31 cfs @ 12.06 hrs, Volume= 0.394 af
 Outflow = 5.30 cfs @ 12.06 hrs, Volume= 0.394 af, Atten= 0%, Lag= 0.6 min
 Discarded = 0.31 cfs @ 12.06 hrs, Volume= 0.232 af
 Primary = 4.98 cfs @ 12.06 hrs, Volume= 0.162 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.26' @ 12.06 hrs Surf.Area= 0.026 ac Storage= 0.038 af

Plug-Flow detention time= 34.9 min calculated for 0.394 af (100% of inflow)
 Center-of-Mass det. time= 34.9 min (902.9 - 868.1)

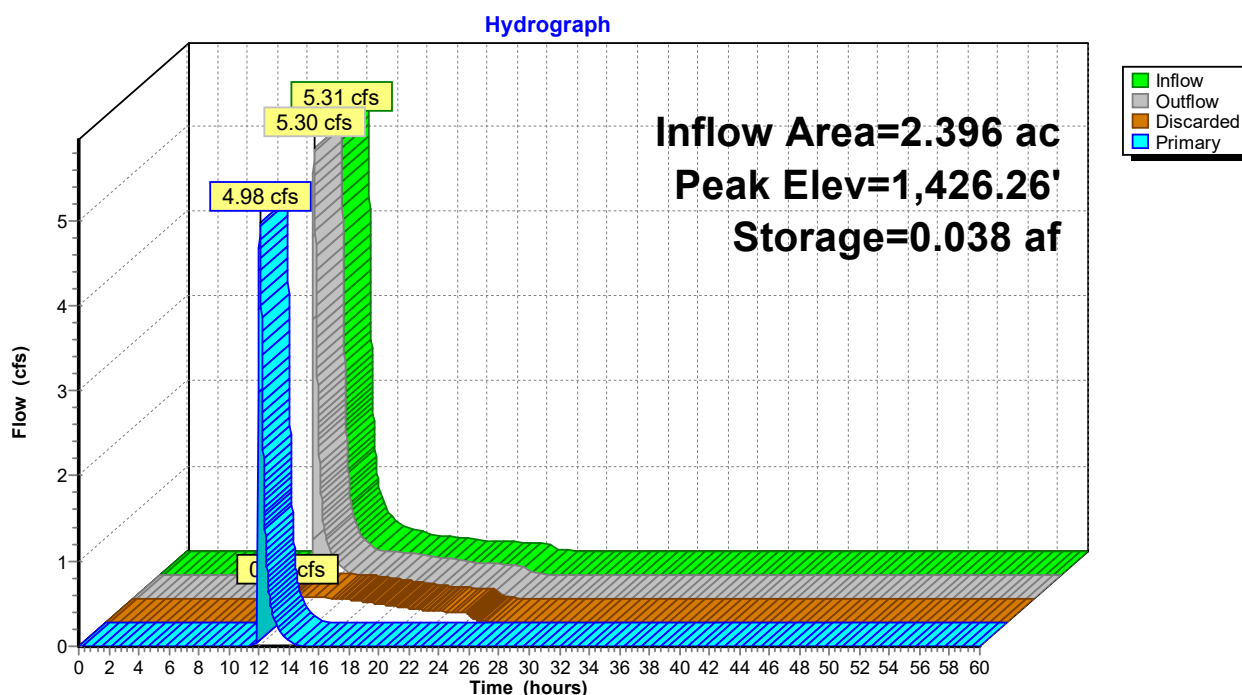
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.149 af | 20.00'W x 20.00'L x 5.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,426.05' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.31 cfs @ 12.06 hrs HW=1,426.26' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.31 cfs)

Primary OutFlow Max=4.95 cfs @ 12.06 hrs HW=1,426.26' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 4.95 cfs @ 1.16 fps)

Pond 1.2bP: South Road Treatment Pond



Summary for Pond 1.3P: Pond 3 - Access Rd West

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.94" for 100-Yr Storm event
 Inflow = 1.02 cfs @ 11.99 hrs, Volume= 0.054 af
 Outflow = 0.14 cfs @ 12.44 hrs, Volume= 0.054 af, Atten= 86%, Lag= 27.2 min
 Discarded = 0.14 cfs @ 12.44 hrs, Volume= 0.054 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link SP1 : Study Point 1

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,456.62' @ 12.44 hrs Surf.Area= 1,037 sf Storage= 566 cf

Plug-Flow detention time= 28.7 min calculated for 0.054 af (100% of inflow)
 Center-of-Mass det. time= 28.7 min (927.0 - 898.4)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,456.00' | 8,743 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,456.00 | 784 | 123.0 | 0 | 0 | 784 | |
| 1,458.00 | 1,720 | 194.0 | 2,443 | 2,443 | 2,603 | |
| 1,459.00 | 2,884 | 279.0 | 2,277 | 4,721 | 5,811 | |
| 1,460.00 | 5,280 | 421.0 | 4,022 | 8,743 | 13,729 | |

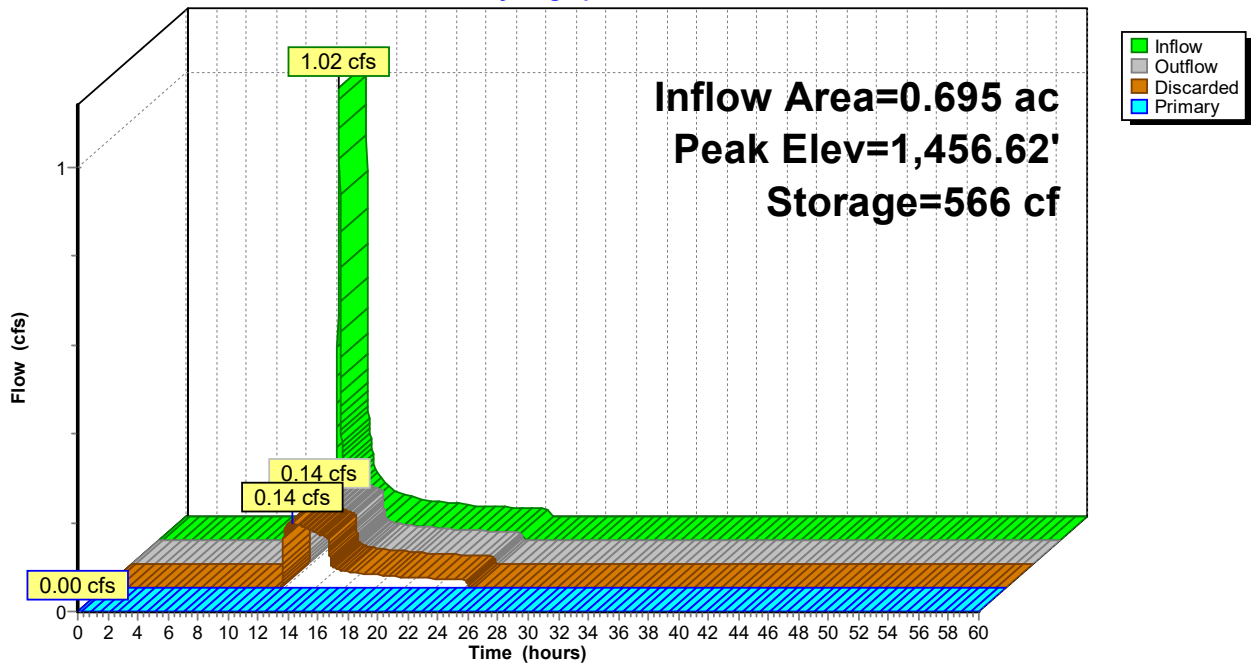
| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | | | | | | | | |
|--------|-----------|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| #1 | Discarded | 1,456.00' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | | | | | | | | |
| #2 | Primary | 1,459.99' | 20.0' long x 4.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | | | | | | | | |
| | | | Head (feet) | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 5.50 | |
| | | | Coef. (English) | 2.38 | 2.54 | 2.69 | 2.68 | 2.67 | 2.67 | 2.65 | 2.66 | 2.66 | 2.66 | 2.68 | 2.72 | 2.73 | 2.76 | 2.79 | 2.88 | 3.07 | 3.32 |

Discarded OutFlow Max=0.14 cfs @ 12.44 hrs HW=1,456.62' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,456.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.3P: Pond 3 - Access Rd West

Hydrograph



Summary for Pond 4.2bP: Pond 4 - Access Rd East

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 2.53" for 100-Yr Storm event
 Inflow = 1.95 cfs @ 12.01 hrs, Volume= 0.099 af
 Outflow = 0.69 cfs @ 12.15 hrs, Volume= 0.099 af, Atten= 65%, Lag= 8.9 min
 Discarded = 0.14 cfs @ 12.15 hrs, Volume= 0.089 af
 Primary = 0.55 cfs @ 12.15 hrs, Volume= 0.011 af
 Routed to Pond 4.2C : 18" Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,448.33' @ 12.15 hrs Surf.Area= 998 sf Storage= 1,559 cf

Plug-Flow detention time= 117.3 min calculated for 0.099 af (100% of inflow)
 Center-of-Mass det. time= 117.3 min (960.2 - 842.9)

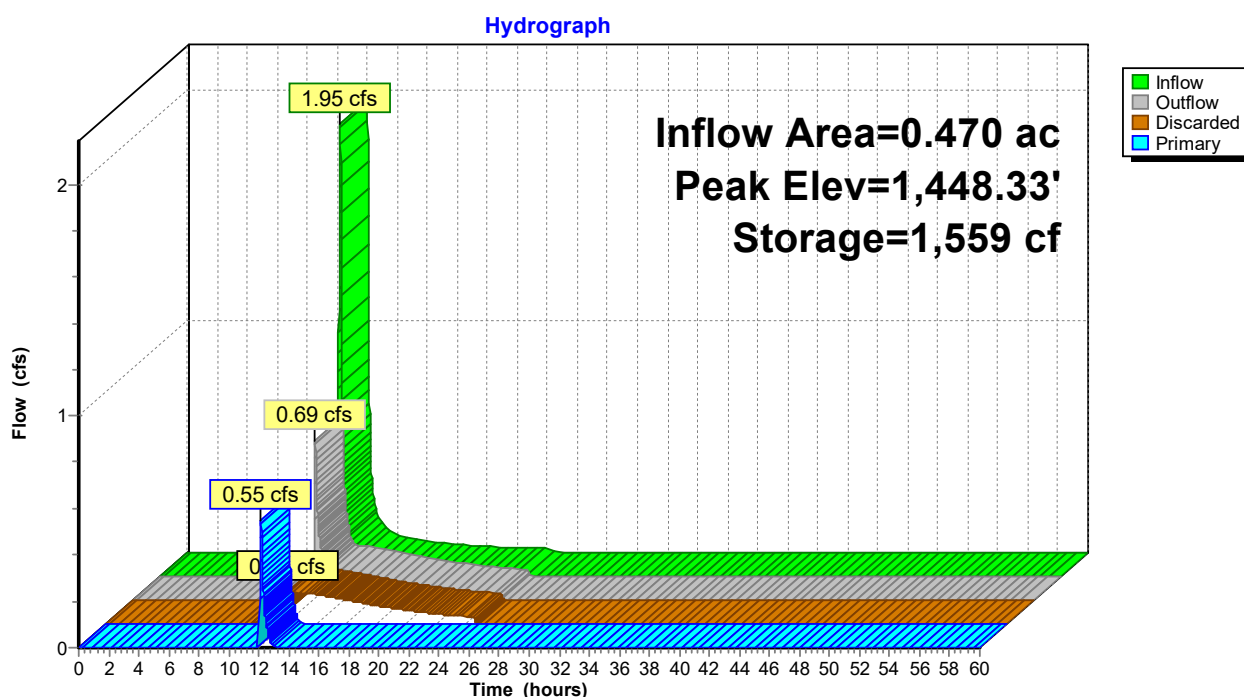
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|--|
| #1 | 1,445.50' | 2,317 cf | 10.00'W x 20.00'L x 3.50'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|---|
| #1 | Discarded | 1,445.50' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,448.25' | 10.0' long x 4.0' breadth Broad-Crested Rectangular Weir |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 |
| | | | 2.50 3.00 3.50 4.00 4.50 5.00 5.50 |
| | | | Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 |
| | | | 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32 |

Discarded OutFlow Max=0.14 cfs @ 12.15 hrs HW=1,448.33' (Free Discharge)
 1=Exfiltration (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.54 cfs @ 12.15 hrs HW=1,448.33' (Free Discharge)
 2=Broad-Crested Rectangular Weir (Weir Controls 0.54 cfs @ 0.67 fps)

Pond 4.2bP: Pond 4 - Access Rd East



Summary for Pond 4.2C: 18" Culvert

Inflow Area = 27.587 ac, 0.00% Impervious, Inflow Depth = 0.93" for 100-Yr Storm event
 Inflow = 13.46 cfs @ 12.41 hrs, Volume= 2.131 af
 Outflow = 9.09 cfs @ 12.74 hrs, Volume= 2.130 af, Atten= 32%, Lag= 19.7 min
 Primary = 9.09 cfs @ 12.74 hrs, Volume= 2.130 af
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,433.72' @ 12.74 hrs Surf.Area= 13,077 sf Storage= 10,213 cf
 Flood Elev= 1,434.64' Surf.Area= 27,666 sf Storage= 28,656 cf

Plug-Flow detention time= 13.0 min calculated for 2.130 af (100% of inflow)
 Center-of-Mass det. time= 12.5 min (940.4 - 927.9)

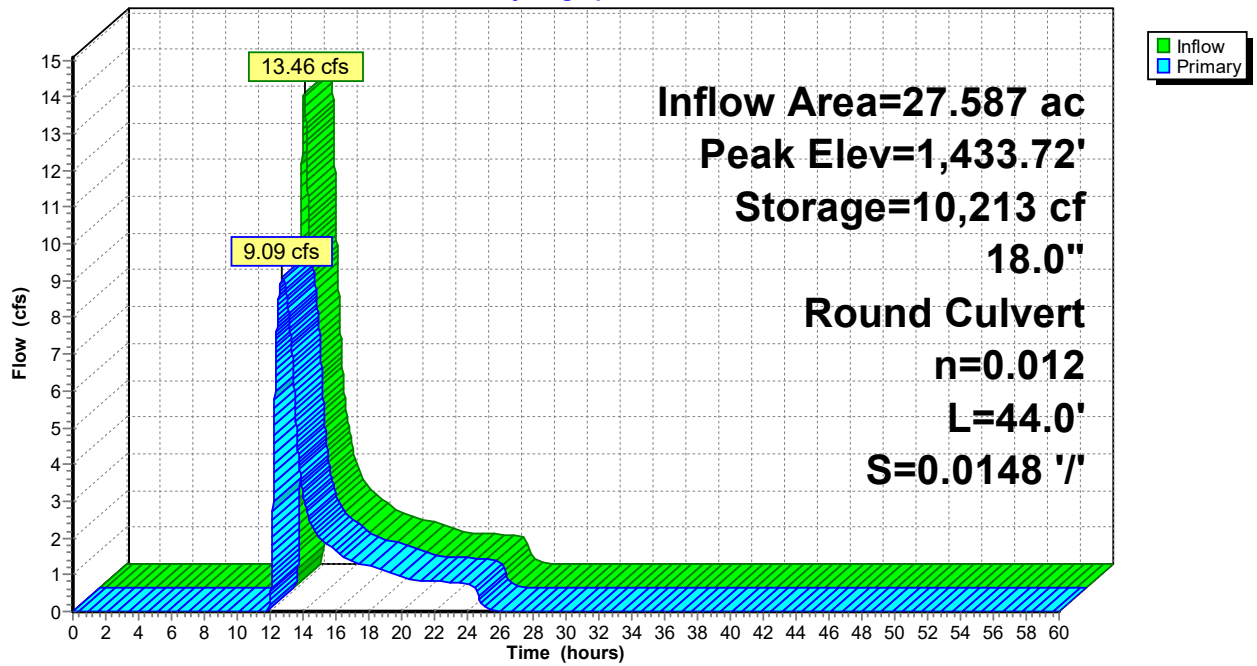
| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,431.50' | 39,033 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,431.50 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,432.00 | 1,190 | 146.0 | 198 | 198 | 1,697 | |
| 1,432.50 | 3,534 | 368.0 | 1,129 | 1,327 | 10,778 | |
| 1,433.00 | 5,795 | 497.0 | 2,309 | 3,637 | 19,660 | |
| 1,433.50 | 10,362 | 837.0 | 3,984 | 7,621 | 55,755 | |
| 1,434.00 | 16,931 | 975.0 | 6,756 | 14,377 | 75,659 | |
| 1,434.60 | 27,412 | 1,352.0 | 13,177 | 27,555 | 145,474 | |
| 1,435.00 | 30,000 | 1,500.0 | 11,479 | 39,033 | 179,068 | |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.83' | 18.0" Round Culvert L= 44.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.83' / 1,431.18' S= 0.0148 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf |

Primary OutFlow Max=9.09 cfs @ 12.74 hrs HW=1,433.72' (Free Discharge)
 ↑1=Culvert (Inlet Controls 9.09 cfs @ 5.14 fps)

Pond 4.2C: 18" Culvert

Hydrograph



Summary for Pond 4.3C: 24" Culvert

Inflow Area = 25.466 ac, 5.08% Impervious, Inflow Depth = 1.34" for 100-Yr Storm event
 Inflow = 22.16 cfs @ 12.37 hrs, Volume= 2.846 af
 Outflow = 22.16 cfs @ 12.37 hrs, Volume= 2.846 af, Atten= 0%, Lag= 0.0 min
 Primary = 22.16 cfs @ 12.37 hrs, Volume= 2.846 af
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,434.50' @ 12.37 hrs
 Flood Elev= 1,434.65'

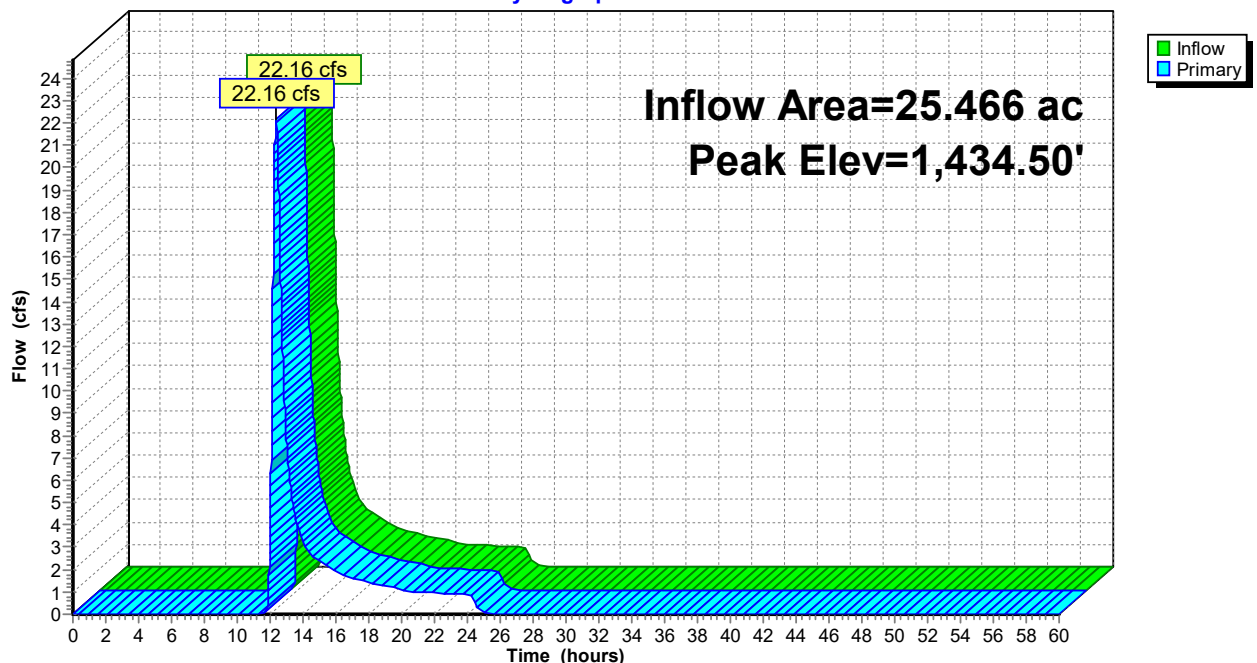
| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.35' | 24.0" Round Culvert L= 55.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.35' / 1,429.87' S= 0.0265 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf |
| #2 | Primary | 1,434.81' | 20.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |

Primary OutFlow Max=22.15 cfs @ 12.37 hrs HW=1,434.49' (Free Discharge)

- 1=Culvert (Inlet Controls 22.15 cfs @ 7.05 fps)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.3C: 24" Culvert

Hydrograph



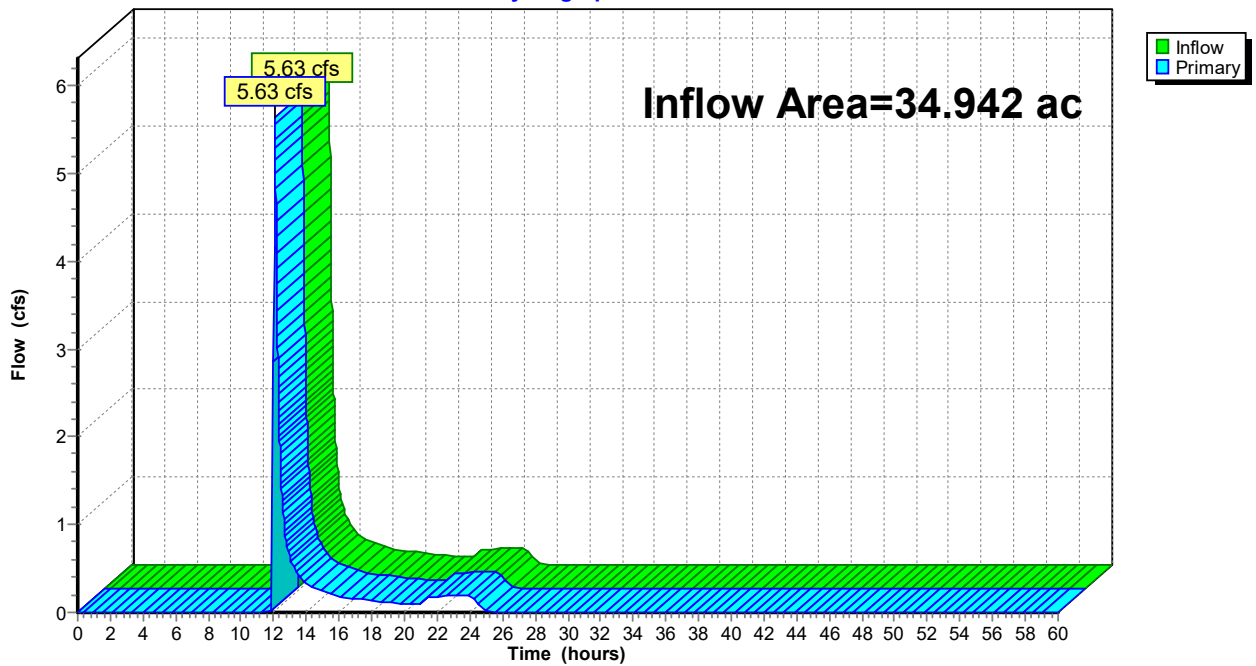
Summary for Link 1.1L:

Inflow Area = 34.942 ac, 0.04% Impervious, Inflow Depth = 0.12" for 100-Yr Storm event
Inflow = 5.63 cfs @ 12.06 hrs, Volume= 0.349 af
Primary = 5.63 cfs @ 12.06 hrs, Volume= 0.349 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.1L:

Hydrograph



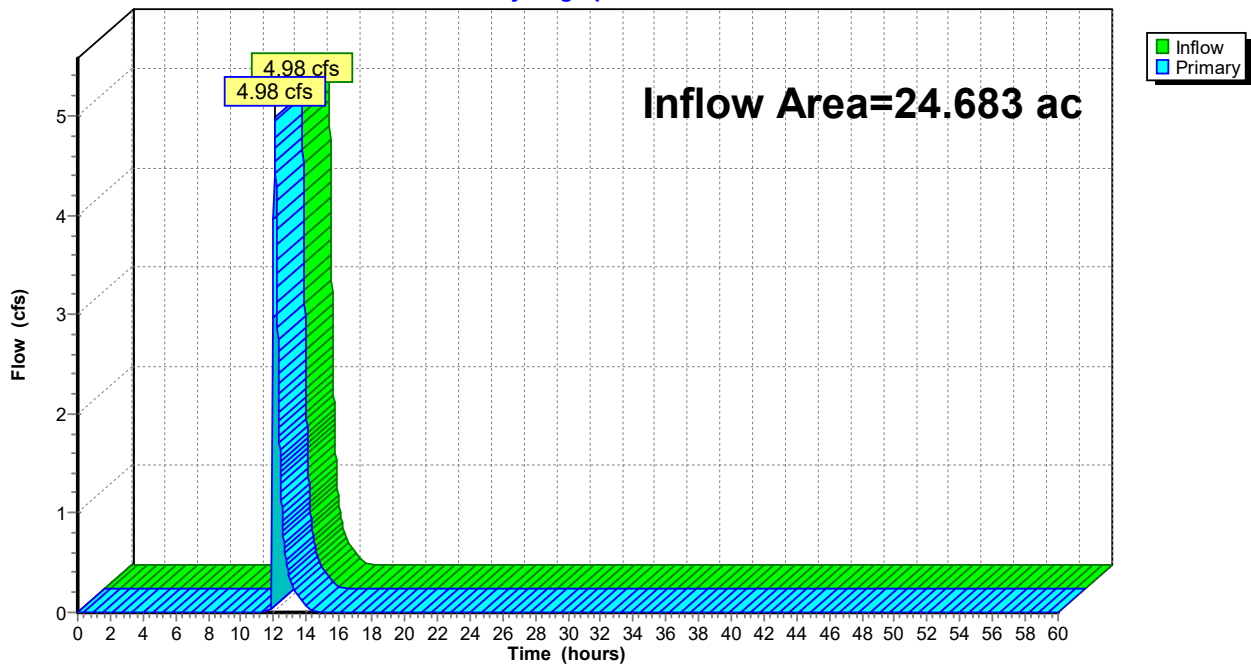
Summary for Link 1.2L:

Inflow Area = 24.683 ac, 0.06% Impervious, Inflow Depth = 0.08" for 100-Yr Storm event
Inflow = 4.98 cfs @ 12.06 hrs, Volume= 0.162 af
Primary = 4.98 cfs @ 12.06 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.2L:

Hydrograph



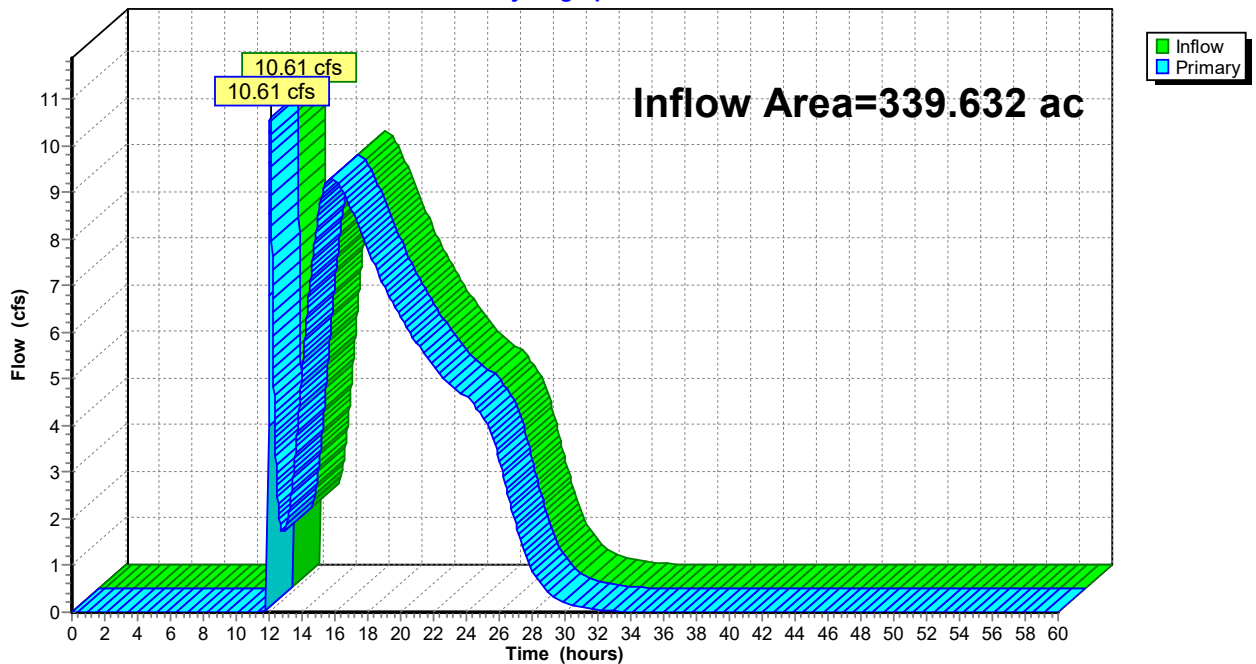
Summary for Link SP1: Study Point 1

Inflow Area = 339.632 ac, 0.01% Impervious, Inflow Depth = 0.26" for 100-Yr Storm event
Inflow = 10.61 cfs @ 12.06 hrs, Volume= 7.384 af
Primary = 10.61 cfs @ 12.06 hrs, Volume= 7.384 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP1: Study Point 1

Hydrograph



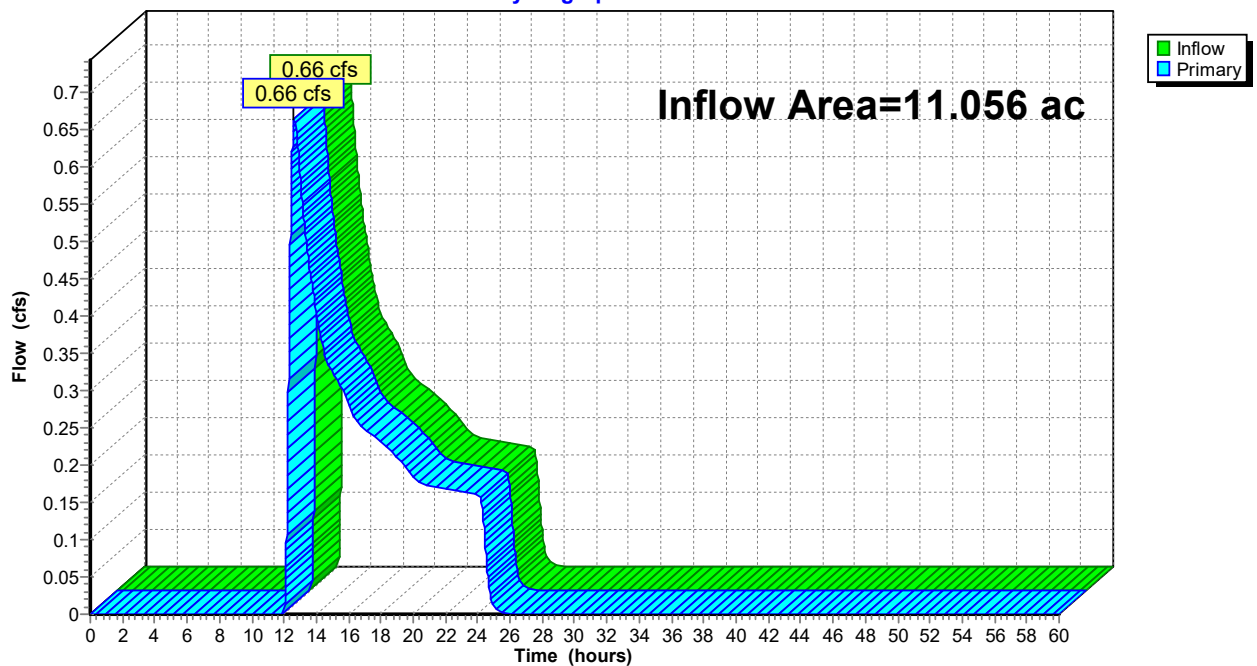
Summary for Link SP2: Study Point 2

Inflow Area = 11.056 ac, 0.00% Impervious, Inflow Depth = 0.30" for 100-Yr Storm event
Inflow = 0.66 cfs @ 12.61 hrs, Volume= 0.272 af
Primary = 0.66 cfs @ 12.61 hrs, Volume= 0.272 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP2: Study Point 2

Hydrograph



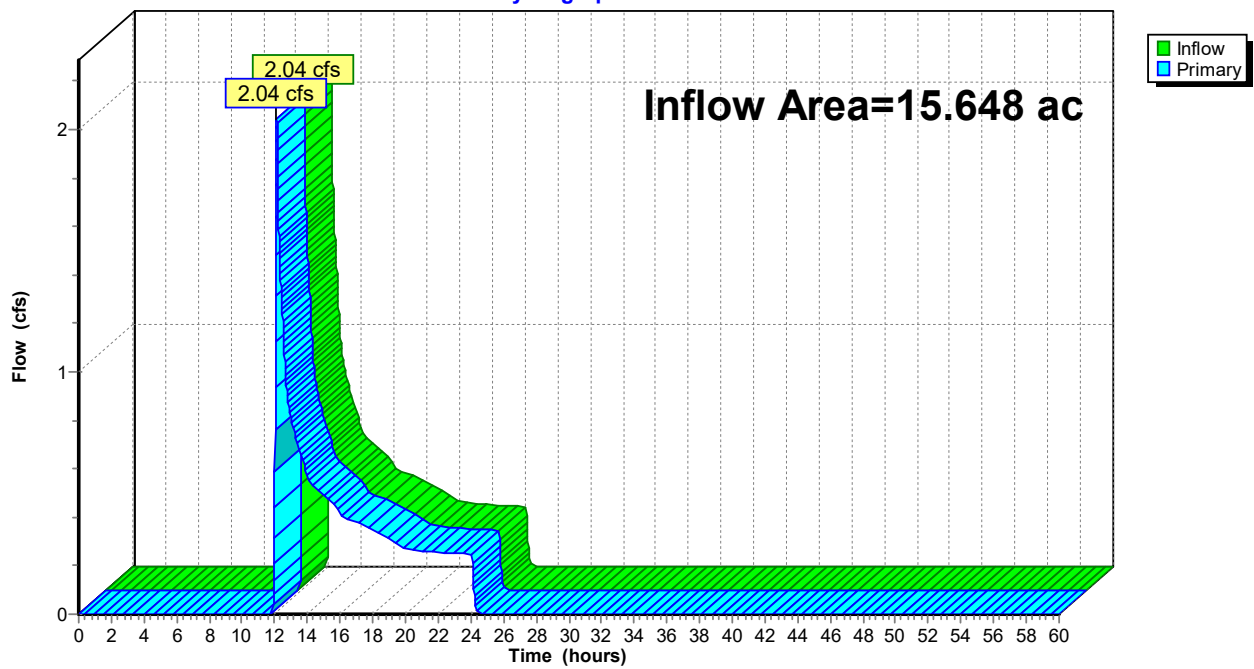
Summary for Link SP3: Study Point 3

Inflow Area = 15.648 ac, 0.56% Impervious, Inflow Depth = 0.34" for 100-Yr Storm event
Inflow = 2.04 cfs @ 12.13 hrs, Volume= 0.442 af
Primary = 2.04 cfs @ 12.13 hrs, Volume= 0.442 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP3: Study Point 3

Hydrograph



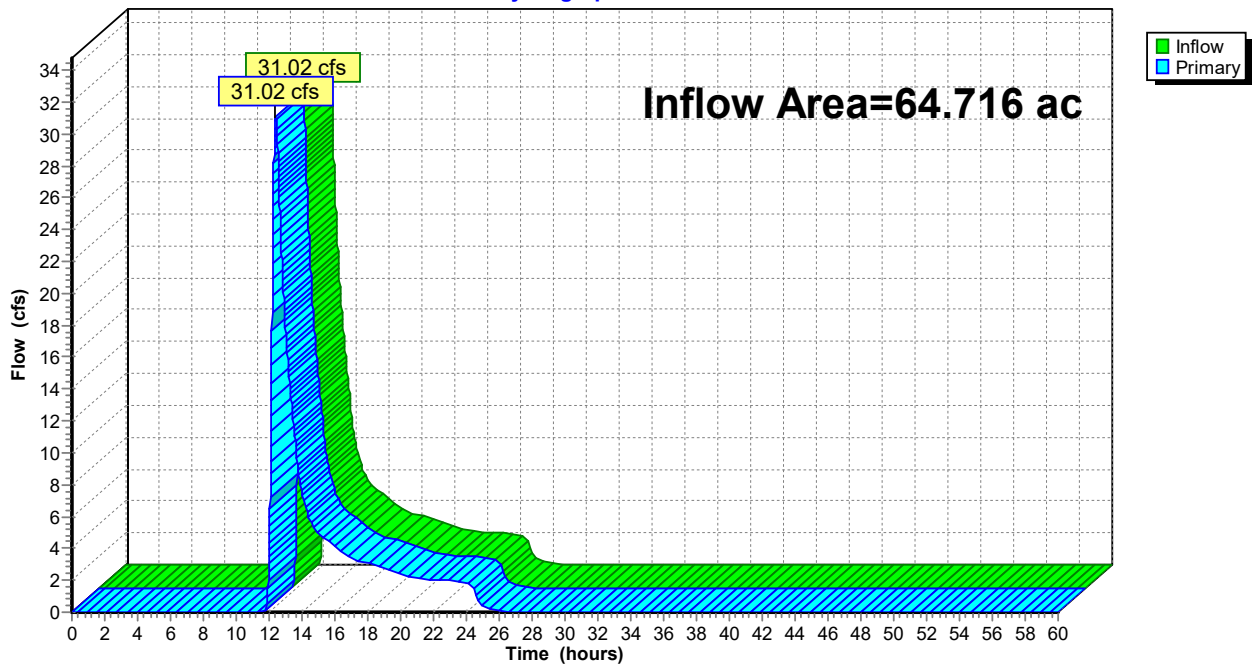
Summary for Link SP4: Study Point 4

Inflow Area = 64.716 ac, 2.50% Impervious, Inflow Depth = 1.03" for 100-Yr Storm event
Inflow = 31.02 cfs @ 12.41 hrs, Volume= 5.546 af
Primary = 31.02 cfs @ 12.41 hrs, Volume= 5.546 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP4: Study Point 4

Hydrograph



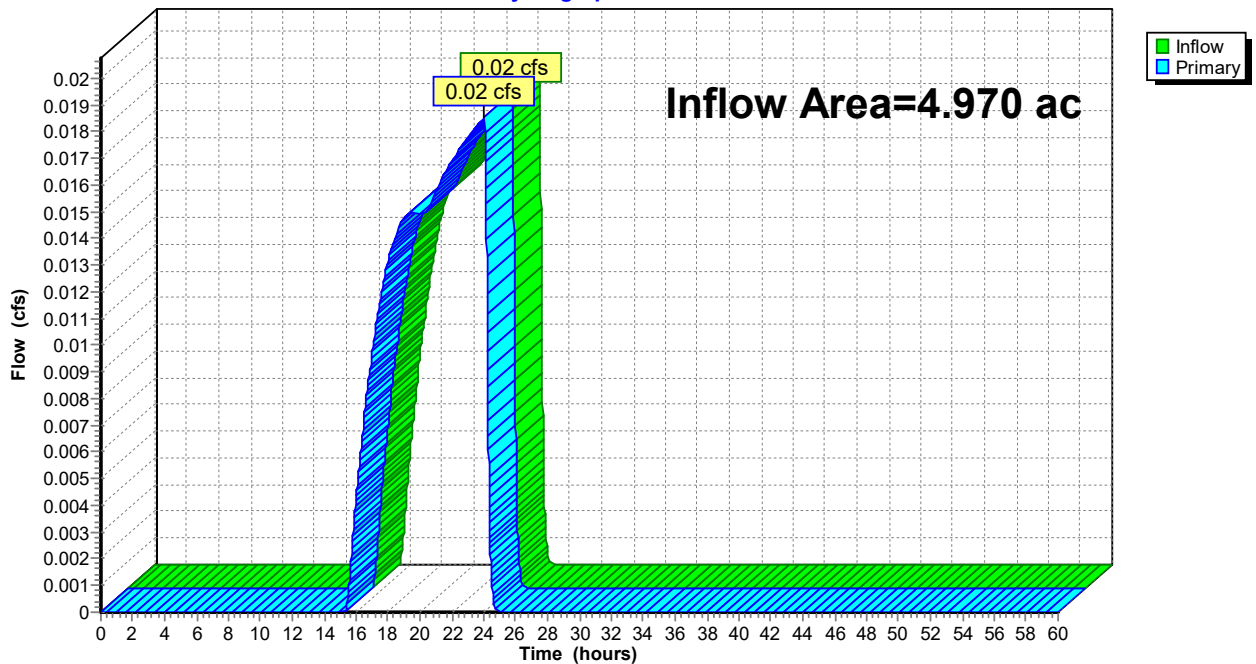
Summary for Link SP5: Study Point 5

Inflow Area = 4.970 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
Inflow = 0.02 cfs @ 24.02 hrs, Volume= 0.010 af
Primary = 0.02 cfs @ 24.02 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP5: Study Point 5

Hydrograph



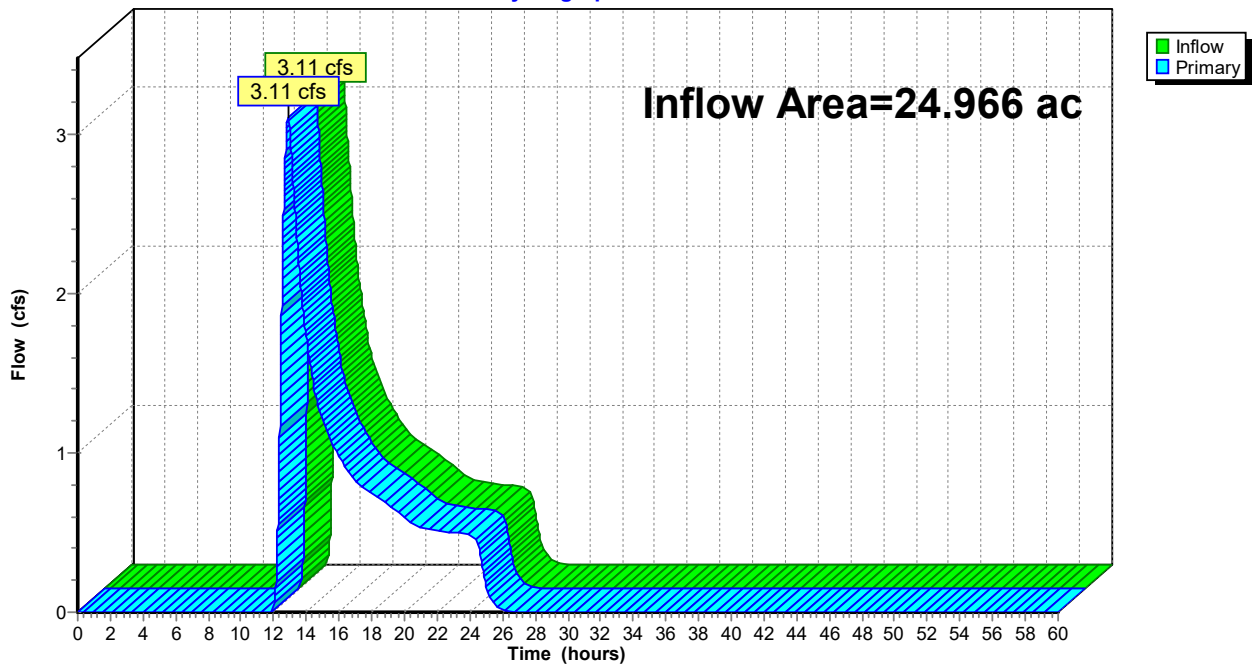
Summary for Link SP6: Study Point 6

Inflow Area = 24.966 ac, 5.81% Impervious, Inflow Depth = 0.48" for 100-Yr Storm event
Inflow = 3.11 cfs @ 12.89 hrs, Volume= 1.002 af
Primary = 3.11 cfs @ 12.89 hrs, Volume= 1.002 af, Atten= 0%, Lag= 0.0 min

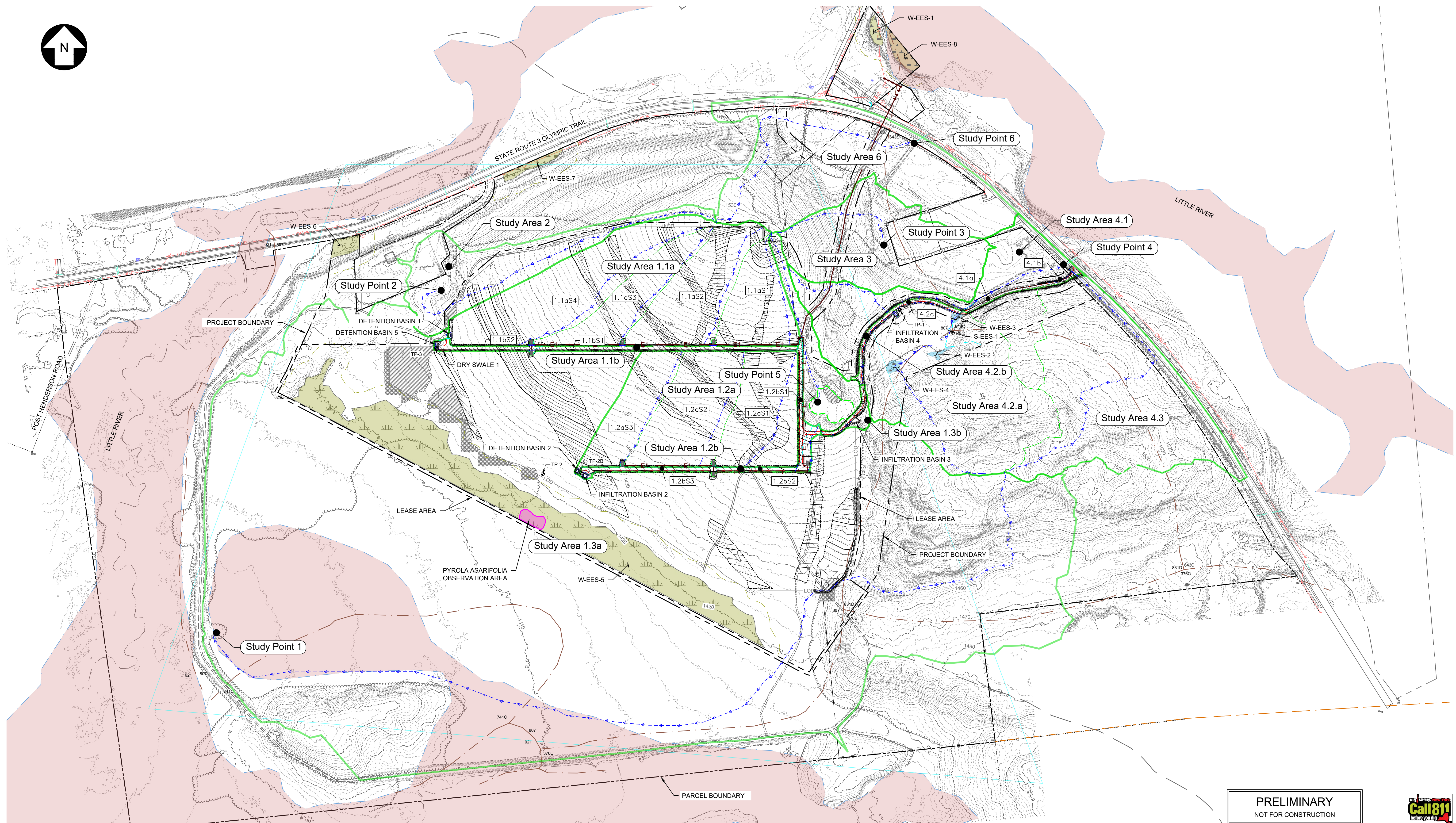
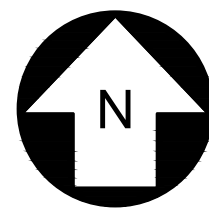
Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP6: Study Point 6

Hydrograph



Appendix P – Post-Development Subcatchment Map

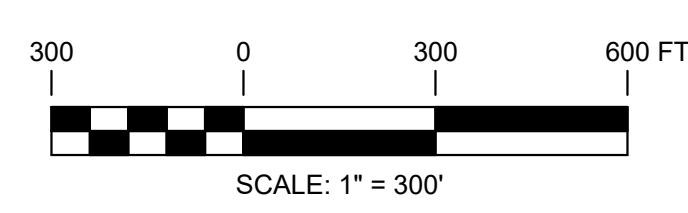


PRELIMINARY
NOT FOR CONSTRUCTION



LEGEND

| | | | |
|--|--------------------------|--|-------------|
| | SUBCATCHMENT BOUNDARY | | APA WETLAND |
| | SUBCATCHMENT SUBANALYSIS | | WETLAND |
| | SOIL GROUP BOUNDARY | | FLOODPLAIN |
| | Tc FLOW PATH | | |
| | LIMITS OF DISTURBANCE | | |
| | EXISTING CULVERT | | |
| | SURFACE FLOW DIRECTION | | |
| | INFILTRATION TEST PITS | | |



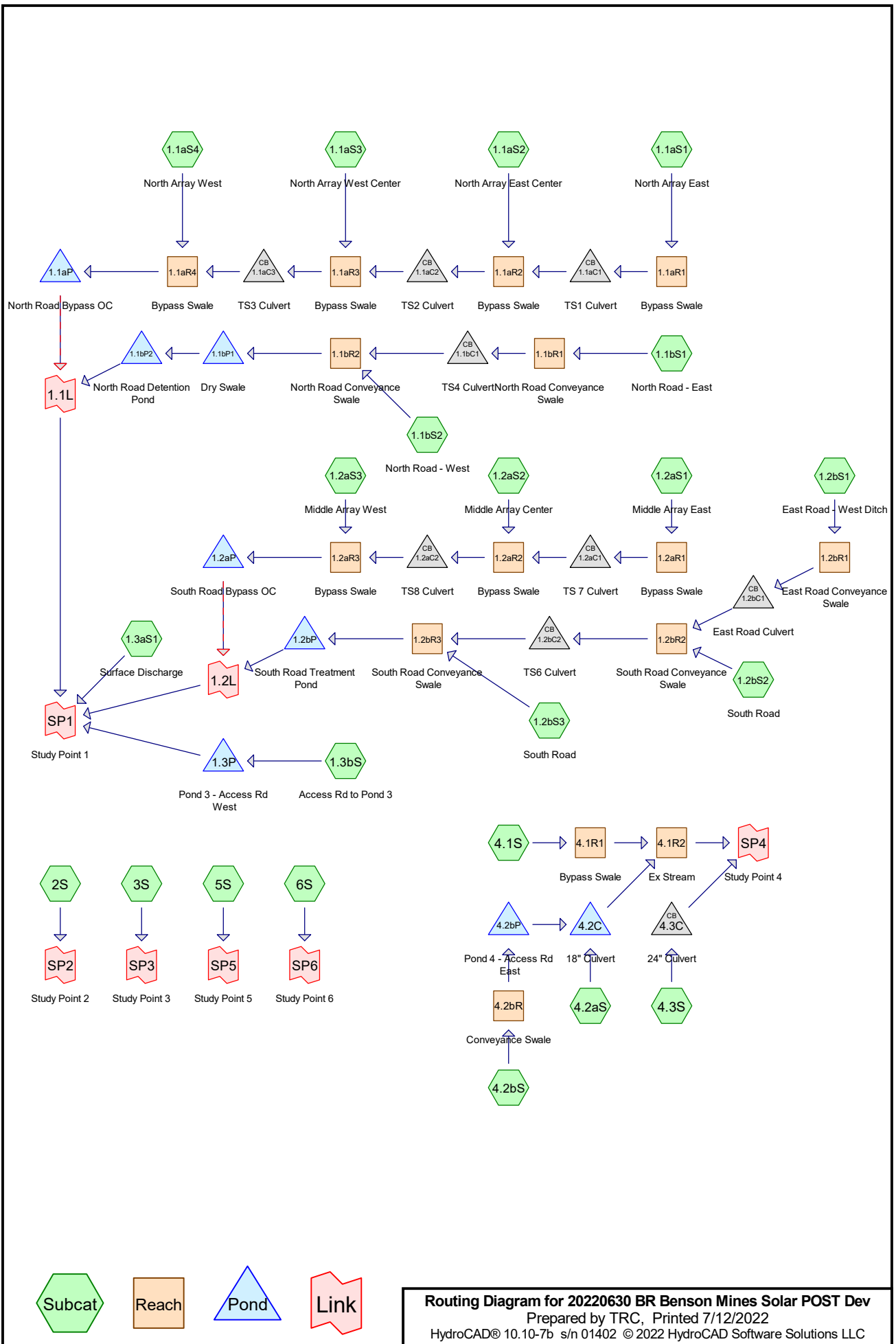
UNDER NEW YORK STATE EDUCATION LAW ARTICLE 145 (ENGINEERING), SECTION 7209 (2), IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

| | | 10 MAXWELL DRIVE CLIFTON PARK, NY 12065 | | PROJECT NO: 444154 | | |
|-----|-----------------------|--|-----|--------------------|-----|--|
| REV | DESCRIPTION | DATE | DES | CHK | APP | |
| - | - | - | - | - | - | |
| - | - | - | - | - | - | |
| - | - | - | - | - | - | |
| A | ISSUED FOR PERMITTING | 1/2022 | NAM | NAM | NAM | |

| | |
|-----------------|--|
| BWH DESIGNED | |
| BWH DRAWN | |
| JWH CHECKED | |
| NAM APPROVED | |

| | | | |
|-----------------------------------|--|---|-----------|
| PROPOSED HYDROLOGY PLAN | | BR BENSON MINES SOLAR PROJECT NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY CLIFTON, ST LAWRENCE COUNTY, NEW YORK | |
| 7/21 DATE AS NOTED SCALE | | C-102 | REV. - |

Appendix P – Post-Development HydroCAD Model



Rainfall Events Listing (selected events)

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|--------|--------------|---------------|-------|---------|------------------|-----|----------------|-----|
| 1 | WQv | Type II 24-hr | | Default | 24.00 | 1 | 1.00 | 2 |
| 2 | 1-Yr Storm | Type II 24-hr | | Default | 24.00 | 1 | 1.98 | 2 |
| 3 | 10-Yr Storm | Type II 24-hr | | Default | 24.00 | 1 | 3.28 | 2 |
| 4 | 100-Yr Storm | Type II 24-hr | | Default | 24.00 | 1 | 5.43 | 2 |

Area Listing (all nodes)

| Area (acres) | CN | Description (subcatchment-numbers) |
|-----------------|-----------|---|
| 0.979 | 39 | >75% Grass cover, Good, HSG A (2S, 3S) |
| 4.721 | 61 | >75% Grass cover, Good, HSG B (3S, 4.1S, 6S) |
| 1.719 | 96 | Gravel surface (1.2bS2, 1.3aS1, 4.1S, 4.2aS) |
| 4.423 | 96 | Gravel surface, HSG A (1.1bS1, 1.1bS2, 1.2bS1, 1.2bS3, 1.3bS, 2S, 4.2bS, 6S) |
| 0.063 | 96 | Gravel surface, HSG A, Redev (1.3bS) |
| 232.790 | 30 | Meadow, non-grazed, HSG A (1.1aS1, 1.1aS2, 1.1aS3, 1.1aS4, 1.1bS1, 1.1bS2, 1.2aS1, 1.2aS2, 1.2aS3, 1.2bS1, 1.2bS2, 1.2bS3, 1.3aS1, 1.3bS, 2S, 3S, 4.1S, 4.2aS, 4.2bS, 5S, 6S) |
| 4.081 | 58 | Meadow, non-grazed, HSG B (1.3aS1, 4.1S, 4.2aS, 4.3S, 6S) |
| 25.274 | 71 | Meadow, non-grazed, HSG C (1.3aS1) |
| 3.158 | 98 | Paved Roads & Rooftops (3S, 4.1S, 4.3S, 6S) |
| 0.015 | 98 | Roofs (1.2bS2, 1.2bS3) |
| 0.014 | 98 | Roofs, HSG A (1.1bS1, 1.1bS2) |
| 81.857 | 30 | Woods, Good, HSG A (1.3aS1, 2S, 3S, 4.1S, 4.2aS, 5S, 6S) |
| 88.271 | 55 | Woods, Good, HSG B (1.3aS1, 3S, 4.1S, 4.2aS, 4.3S, 6S) |
| 13.623 | 70 | Woods, Good, HSG C (1.3aS1) |
| 460.988 | 40 | TOTAL AREA |

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Soil Listing (all nodes)

| Area (acres) | Soil Group | Subcatchment Numbers |
|-----------------|---------------|--|
| 320.126 | HSG A | 1.1aS1, 1.1aS2, 1.1aS3, 1.1aS4, 1.1bS1, 1.1bS2, 1.2aS1, 1.2aS2, 1.2aS3, 1.2bS1, 1.2bS2, 1.2bS3, 1.3aS1, 1.3bS, 2S, 3S, 4.1S, 4.2aS, 4.2bS, 5S, 6S |
| 97.073 | HSG B | 1.3aS1, 3S, 4.1S, 4.2aS, 4.3S, 6S |
| 38.897 | HSG C | 1.3aS1 |
| 0.000 | HSG D | |
| 4.892 | Other | 1.2bS2, 1.2bS3, 1.3aS1, 3S, 4.1S, 4.2aS, 4.3S, 6S |
| 460.988 | | TOTAL AREA |

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Ground Covers (all nodes)

| HSG-A (acres) | HSG-B (acres) | HSG-C (acres) | HSG-D (acres) | Other (acres) | Total (acres) | Ground Cover | Subcatchment Numbers |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------------|--|
| 0.979 | 4.721 | 0.000 | 0.000 | 0.000 | 5.700 | >75% Grass cover, Good | 2S, 3S, 4.1S, 6S |
| 4.486 | 0.000 | 0.000 | 0.000 | 1.719 | 6.205 | Gravel surface | 1.1bS1, 1.1bS2, 1.2bS1, 1.2bS2, 1.2bS3, 1.3aS1, 1.3bS, 2S, 4.1S, 4.2aS, 4.2bS, 6S |
| 232.790 | 4.081 | 25.274 | 0.000 | 0.000 | 262.145 | Meadow, non-grazed | 1.1aS1, 1.1aS2, 1.1aS3, 1.1aS4, 1.1bS1, 1.1bS2, 1.2aS1, 1.2aS2, 1.2aS3, 1.2bS1, 1.2bS2, 1.2bS3, 1.3aS1, 1.3bS, 2S, 3S, 4.1S, 4.2aS, 4.2bS, 4.3S, 5S, 6S |
| 0.000 | 0.000 | 0.000 | 0.000 | 3.158 | 3.158 | Paved Roads & Rooftops | 3S, 4.1S, 4.3S, 6S |
| 0.014 | 0.000 | 0.000 | 0.000 | 0.015 | 0.029 | Roofs | 1.1bS1, 1.1bS2, 1.2bS2, 1.2bS3 |
| 81.857 | 88.271 | 13.623 | 0.000 | 0.000 | 183.751 | Woods, Good | 1.3aS1, 2S, 3S, 4.1S, 4.2aS, 4.3S, 5S, 6S |
| 320.126 | 97.073 | 38.897 | 0.000 | 4.892 | 460.988 | TOTAL AREA | |

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Pipe Listing (all nodes)

| Line# | Node Number | In-Invert (feet) | Out-Invert (feet) | Length (feet) | Slope (ft/ft) | n | Width (inches) | Diam/Height (inches) | Inside-Fill (inches) |
|-------|-------------|------------------|-------------------|---------------|---------------|-------|----------------|----------------------|----------------------|
| 1 | 1.1aC1 | 1,487.56 | 1,486.80 | 47.0 | 0.0162 | 0.012 | 36.3 | 22.5 | 0.0 |
| 2 | 1.1aC2 | 1,470.80 | 1,469.57 | 47.0 | 0.0262 | 0.012 | 48.0 | 24.0 | 0.0 |
| 3 | 1.1aC3 | 1,449.55 | 1,447.64 | 47.2 | 0.0405 | 0.012 | 60.0 | 24.0 | 0.0 |
| 4 | 1.1bC1 | 1,449.50 | 1,447.27 | 45.9 | 0.0486 | 0.012 | 0.0 | 18.0 | 0.0 |
| 5 | 1.2aC1 | 1,444.22 | 1,443.21 | 47.0 | 0.0215 | 0.012 | 36.0 | 24.0 | 0.0 |
| 6 | 1.2aC2 | 1,431.65 | 1,431.11 | 47.5 | 0.0114 | 0.012 | 60.0 | 24.0 | 0.0 |
| 7 | 1.2bC1 | 1,454.39 | 1,453.67 | 41.6 | 0.0173 | 0.012 | 0.0 | 15.0 | 0.0 |
| 8 | 1.2bC2 | 1,443.51 | 1,442.84 | 44.3 | 0.0151 | 0.012 | 0.0 | 18.0 | 0.0 |
| 9 | 4.2C | 1,431.83 | 1,431.18 | 44.0 | 0.0148 | 0.012 | 0.0 | 18.0 | 0.0 |
| 10 | 4.3C | 1,431.35 | 1,429.87 | 55.8 | 0.0265 | 0.012 | 0.0 | 24.0 | 0.0 |

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

| | |
|---|--|
| Subcatchment 1.1aS1: North Array East | Runoff Area=5.874 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=788' Tc=18.8 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS2: North Array East | Runoff Area=8.467 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=931' Tc=21.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS3: North Array West | Runoff Area=5.792 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,031' Tc=19.7 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS4: North Array West | Runoff Area=12.825 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,562' Tc=26.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1bS1: North Road - East | Runoff Area=1.333 ac 0.53% Impervious Runoff Depth=0.01" Tc=6.0 min CN=71 Runoff=0.00 cfs 0.001 af |
| Subcatchment 1.1bS2: North Road - West | Runoff Area=0.651 ac 1.08% Impervious Runoff Depth=0.00" Tc=6.0 min CN=68 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS1: Middle Array East | Runoff Area=7.876 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=865' Tc=19.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS2: Middle Array Center | Runoff Area=8.911 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=825' Tc=18.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS3: Middle Array West | Runoff Area=5.500 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=882' Tc=18.5 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2bS1: East Road - West | Runoff Area=0.727 ac 0.00% Impervious Runoff Depth=0.00" Tc=6.0 min CN=67 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2bS2: South Road | Runoff Area=0.854 ac 0.47% Impervious Runoff Depth=0.00" Flow Length=308' Tc=13.7 min CN=58 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2bS3: South Road | Runoff Area=0.815 ac 1.35% Impervious Runoff Depth=0.01" Tc=6.0 min CN=71 Runoff=0.00 cfs 0.001 af |
| Subcatchment 1.3aS1: Surface Discharge | Runoff Area=279.312 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=6,771' Tc=201.7 min CN=39 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.3bS: Access Rd to Pond 3 | Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.00" Tc=6.0 min CN=51 Runoff=0.00 cfs 0.000 af |
| Subcatchment 2S: | Runoff Area=11.056 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=2,342' Tc=36.0 min CN=39 Runoff=0.00 cfs 0.000 af |
| Subcatchment 3S: | Runoff Area=15.648 ac 0.56% Impervious Runoff Depth=0.00" Flow Length=886' Tc=12.7 min CN=40 Runoff=0.00 cfs 0.000 af |
| Subcatchment 4.1S: | Runoff Area=11.663 ac 2.80% Impervious Runoff Depth=0.00" Flow Length=845' Tc=15.8 min CN=45 Runoff=0.00 cfs 0.000 af |

| | |
|--|--|
| Subcatchment 4.2aS: | Runoff Area=27.117 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,640' Tc=38.9 min CN=51 Runoff=0.00 cfs 0.000 af |
| Subcatchment 4.2bS: | Runoff Area=0.470 ac 0.00% Impervious Runoff Depth=0.01" Tc=6.0 min CN=72 Runoff=0.00 cfs 0.000 af |
| Subcatchment 4.3S: | Runoff Area=25.466 ac 5.08% Impervious Runoff Depth=0.00" Flow Length=2,280' Tc=36.5 min CN=57 Runoff=0.00 cfs 0.000 af |
| Subcatchment 5S: | Runoff Area=4.970 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,180' Tc=17.5 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 6S: | Runoff Area=24.966 ac 5.81% Impervious Runoff Depth=0.00" Flow Length=1,961' Tc=60.1 min CN=43 Runoff=0.00 cfs 0.000 af |
| Reach 1.1aR1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=580.0' S=0.0108 '/' Capacity=56.37 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR2: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=557.4' S=0.0284 '/' Capacity=91.27 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR3: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=557.5' S=0.0352 '/' Capacity=101.68 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR4: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=580.5' S=0.0362 '/' Capacity=103.04 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1bR1: North Road Conveyance | Avg. Flow Depth=0.00' Max Vel=0.47 fps Inflow=0.00 cfs 0.001 af n=0.035 L=1,733.0' S=0.0240 '/' Capacity=111.65 cfs Outflow=0.00 cfs 0.001 af |
| Reach 1.1bR2: North Road Conveyance | Avg. Flow Depth=0.00' Max Vel=0.60 fps Inflow=0.00 cfs 0.001 af n=0.035 L=593.3' S=0.0380 '/' Capacity=140.36 cfs Outflow=0.00 cfs 0.001 af |
| Reach 1.2aR1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=524.2' S=0.0188 '/' Capacity=74.30 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2aR2: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=556.0' S=0.0204 '/' Capacity=77.47 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2aR3: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=249.0' S=0.0153 '/' Capacity=81.84 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2bR1: East Road Conveyance | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=731.4' S=0.0456 '/' Capacity=79.22 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2bR2: South Road Conveyance | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=604.5' S=0.0177 '/' Capacity=95.76 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2bR3: South Road Conveyance | Avg. Flow Depth=0.00' Max Vel=0.42 fps Inflow=0.00 cfs 0.001 af n=0.035 L=755.9' S=0.0187 '/' Capacity=98.64 cfs Outflow=0.00 cfs 0.001 af |
| Reach 4.1R1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=570.0' S=0.0303 '/' Capacity=54.88 cfs Outflow=0.00 cfs 0.000 af |
| Reach 4.1R2: Ex Stream | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=740.0' S=0.0099 '/' Capacity=588.81 cfs Outflow=0.00 cfs 0.000 af |

| | | | | |
|---|------------------------------|---------------------|------------------|--------------------|
| Reach 4.2bR: Conveyance Swale | Avg. Flow Depth=0.00' | Max Vel=0.53 fps | Inflow=0.00 cfs | 0.000 af |
| | n=0.035 | L=565.0' | S=0.0432 '/ | Capacity=77.09 cfs |
| | | | Outflow=0.00 cfs | 0.000 af |
| Pond 1.1aC1: TS1 Culvert | | Peak Elev=1,487.56' | Inflow=0.00 cfs | 0.000 af |
| | 36.3" x 22.5", R=18.8"/51.0" | Pipe Arch Culvert | n=0.012 | L=47.0' |
| | | | S=0.0162 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aC2: TS2 Culvert | | Peak Elev=1,470.80' | Inflow=0.00 cfs | 0.000 af |
| | 48.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0262 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aC3: TS3 Culvert | | Peak Elev=1,449.55' | Inflow=0.00 cfs | 0.000 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.2' |
| | | | S=0.0405 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aP: North Road Bypass OC | | Peak Elev=1,426.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1bC1: TS4 Culvert | | Peak Elev=1,449.51' | Inflow=0.00 cfs | 0.001 af |
| | 18.0" | Round Culvert | n=0.012 | L=45.9' |
| | | | S=0.0486 '/ | Outflow=0.00 cfs |
| | | | | 0.001 af |
| Pond 1.1bP1: Dry Swale | | Peak Elev=1,425.32' | Storage=17 cf | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.001 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.001 af |
| Pond 1.1bP2: North Road Detention Pond | | Peak Elev=1,421.50' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aC1: TS 7 Culvert | | Peak Elev=1,444.22' | Inflow=0.00 cfs | 0.000 af |
| | 36.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0215 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aC2: TS8 Culvert | | Peak Elev=1,431.65' | Inflow=0.00 cfs | 0.000 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.5' |
| | | | S=0.0114 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aP: South Road Bypass OC | | Peak Elev=1,424.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Secondary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2bC1: East Road Culvert | | Peak Elev=1,454.39' | Inflow=0.00 cfs | 0.000 af |
| | 15.0" | Round Culvert | n=0.012 | L=41.6' |
| | | | S=0.0173 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2bC2: TS6 Culvert | | Peak Elev=1,443.51' | Inflow=0.00 cfs | 0.000 af |
| | 18.0" | Round Culvert | n=0.012 | L=44.3' |
| | | | S=0.0151 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2bP: South Road Treatment Pond | | Peak Elev=1,424.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.001 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.001 af |
| Pond 1.3P: Pond 3 - Access Rd West | | Peak Elev=1,456.00' | Storage=0 cf | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 4.2bP: Pond 4 - Access Rd East | | Peak Elev=1,445.50' | Storage=0 cf | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 4.2C: 18" Culvert | | Peak Elev=1,431.50' | Storage=0 cf | Inflow=0.00 cfs |
| | 18.0" | Round Culvert | n=0.012 | L=44.0' |
| | | | S=0.0148 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 4.3C: 24" Culvert | | Peak Elev=1,431.35' | Inflow=0.00 cfs | 0.000 af |
| | | | | Outflow=0.00 cfs |
| | | | | 0.000 af |

| | |
|-------------------------|---|
| Link 1.1L: | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link 1.2L: | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP1: Study Point 1 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP2: Study Point 2 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP3: Study Point 3 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP4: Study Point 4 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP5: Study Point 5 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP6: Study Point 6 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |

Total Runoff Area = 460.988 ac Runoff Volume = 0.002 af Average Runoff Depth = 0.00"
99.31% Pervious = 457.801 ac 0.69% Impervious = 3.187 ac

Summary for Subcatchment 1.1aS1: North Array East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR1 : Bypass Swale

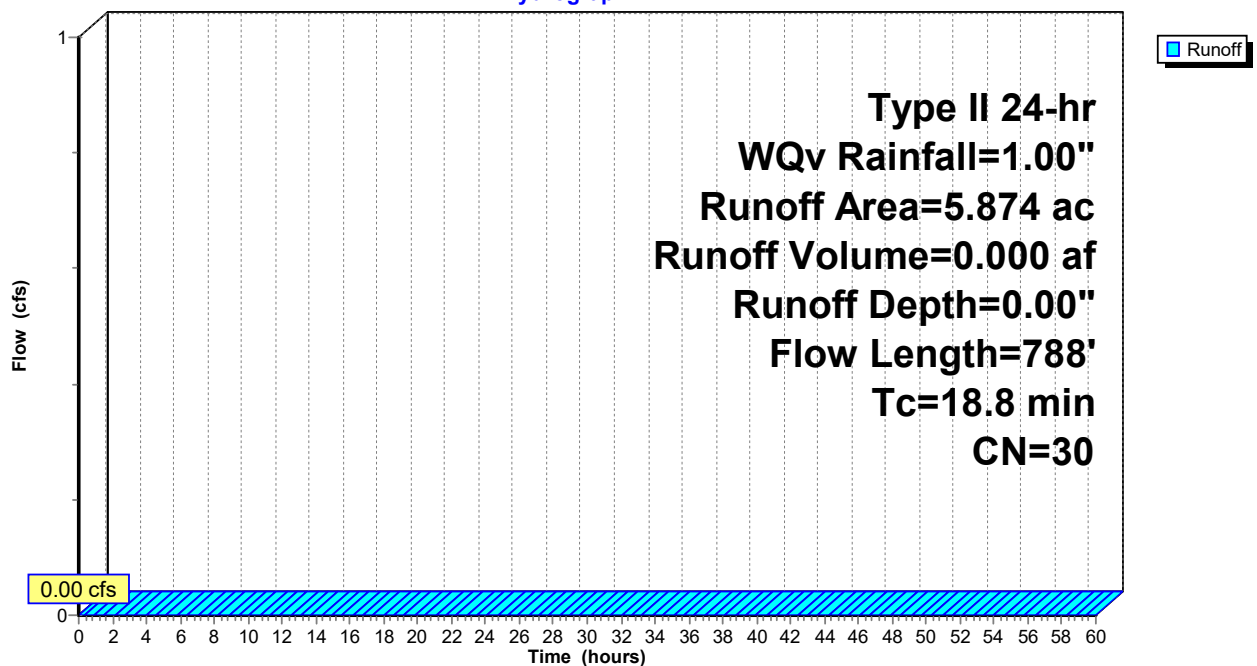
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.874 | 30 | Meadow, non-grazed, HSG A |
| 5.874 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.7 | 100 | 0.0499 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.1 | 688 | 0.0526 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.8 | 788 | Total | | | |

Subcatchment 1.1aS1: North Array East

Hydrograph



Summary for Subcatchment 1.1aS2: North Array East Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR2 : Bypass Swale

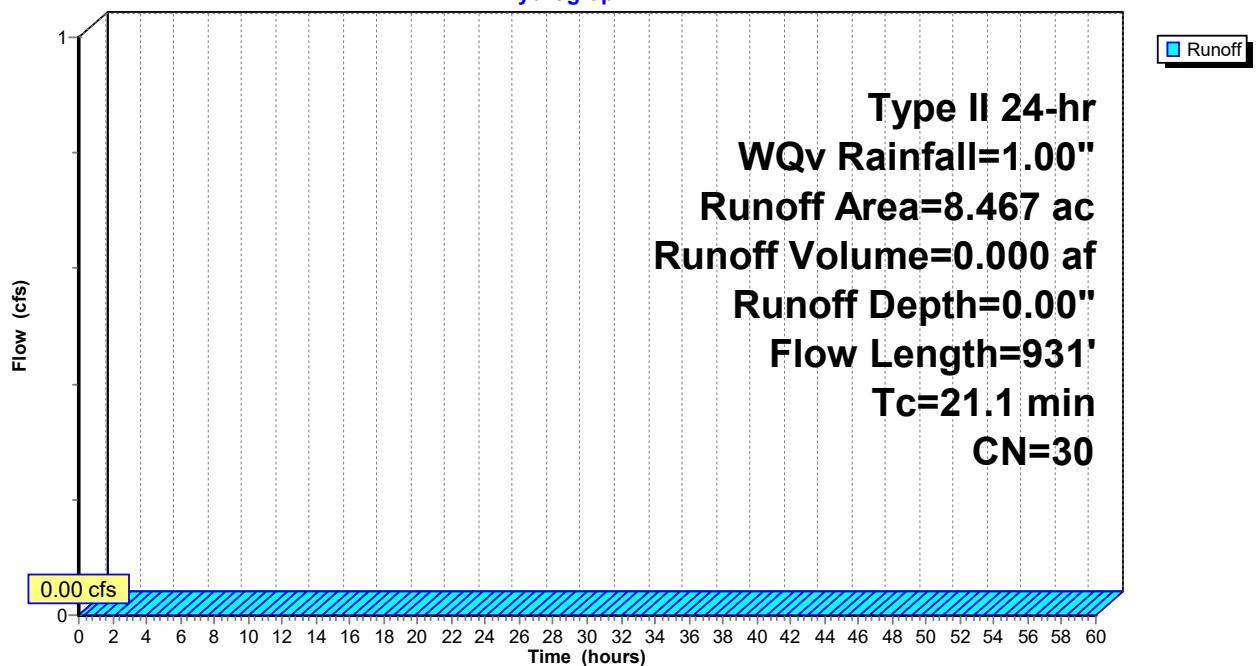
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.467 | 30 | Meadow, non-grazed, HSG A |
| 8.467 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 11.9 | 100 | 0.0476 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.2 | 831 | 0.0463 | 1.51 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 21.1 | 931 | Total | | | |

Subcatchment 1.1aS2: North Array East Center

Hydrograph



Summary for Subcatchment 1.1aS3: North Array West Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR3 : Bypass Swale

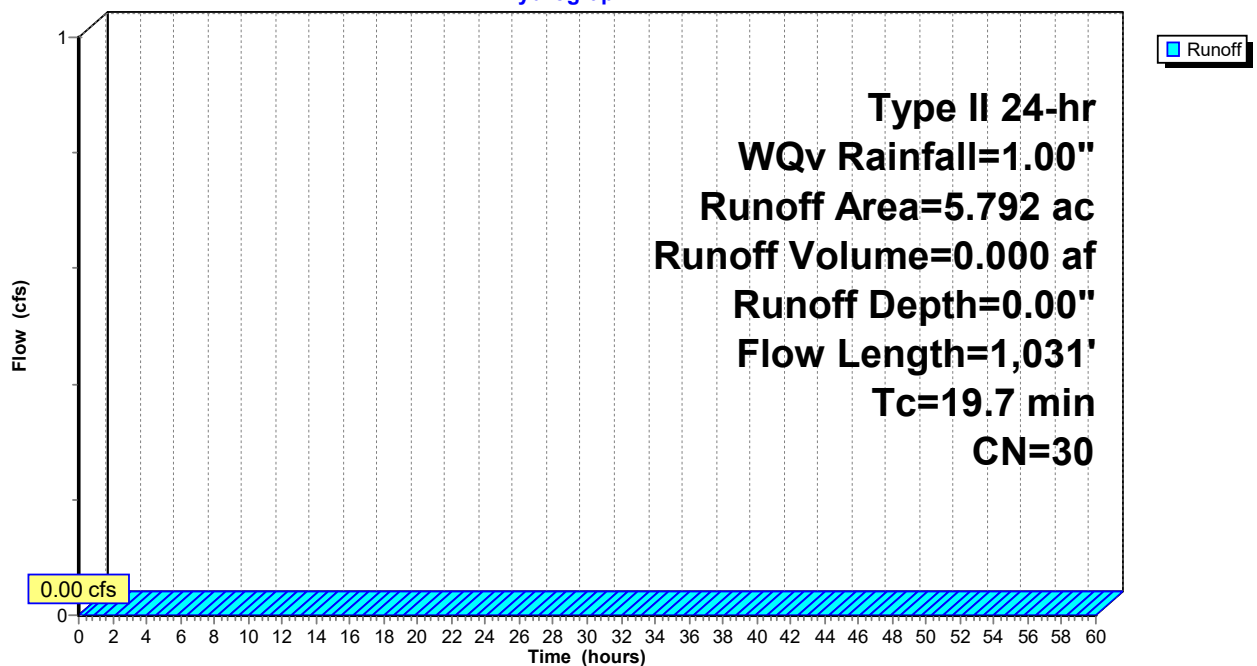
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.792 | 30 | Meadow, non-grazed, HSG A |
| 5.792 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0618 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.0 | 931 | 0.0601 | 1.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.7 | 1,031 | Total | | | |

Subcatchment 1.1aS3: North Array West Center

Hydrograph



Summary for Subcatchment 1.1aS4: North Array West

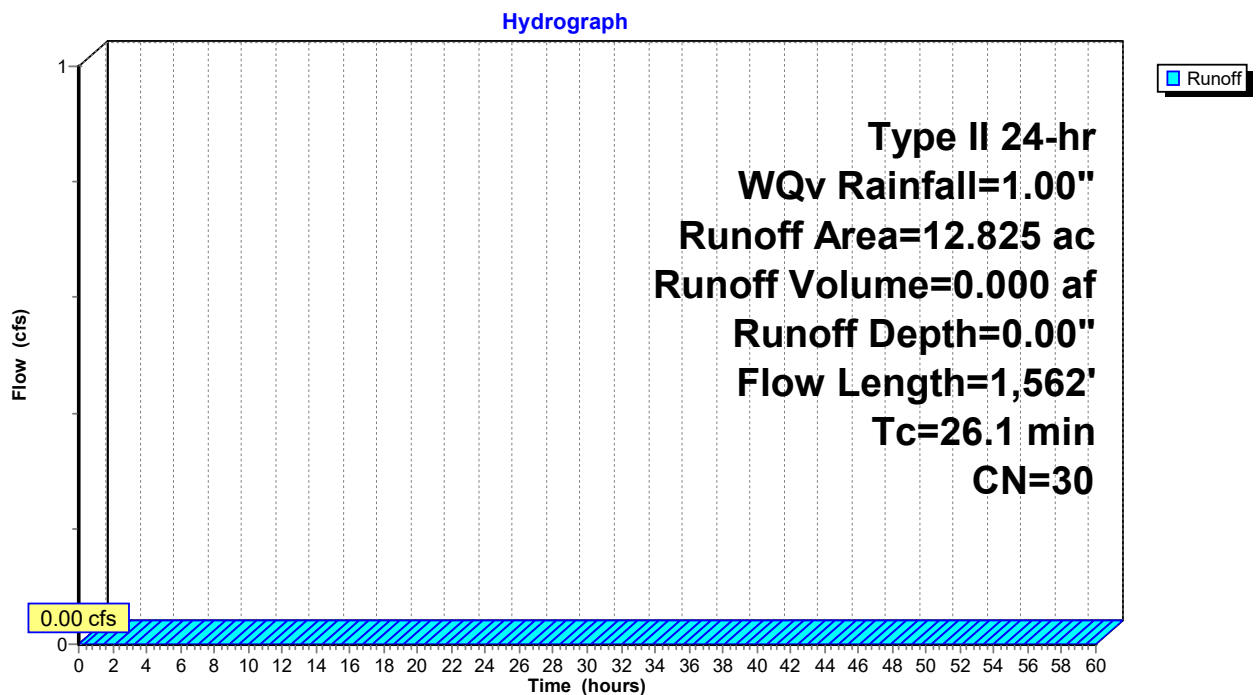
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR4 : Bypass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 12.825 | 30 | Meadow, non-grazed, HSG A |
| 12.825 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 11.1 | 100 | 0.0560 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 15.0 | 1,462 | 0.0540 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 26.1 | 1,562 | Total | | | |

Subcatchment 1.1aS4: North Array West



Summary for Subcatchment 1.1bS1: North Road - East

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.001 af, Depth= 0.01"
 Routed to Reach 1.1bR1 : North Road Conveyance Swale

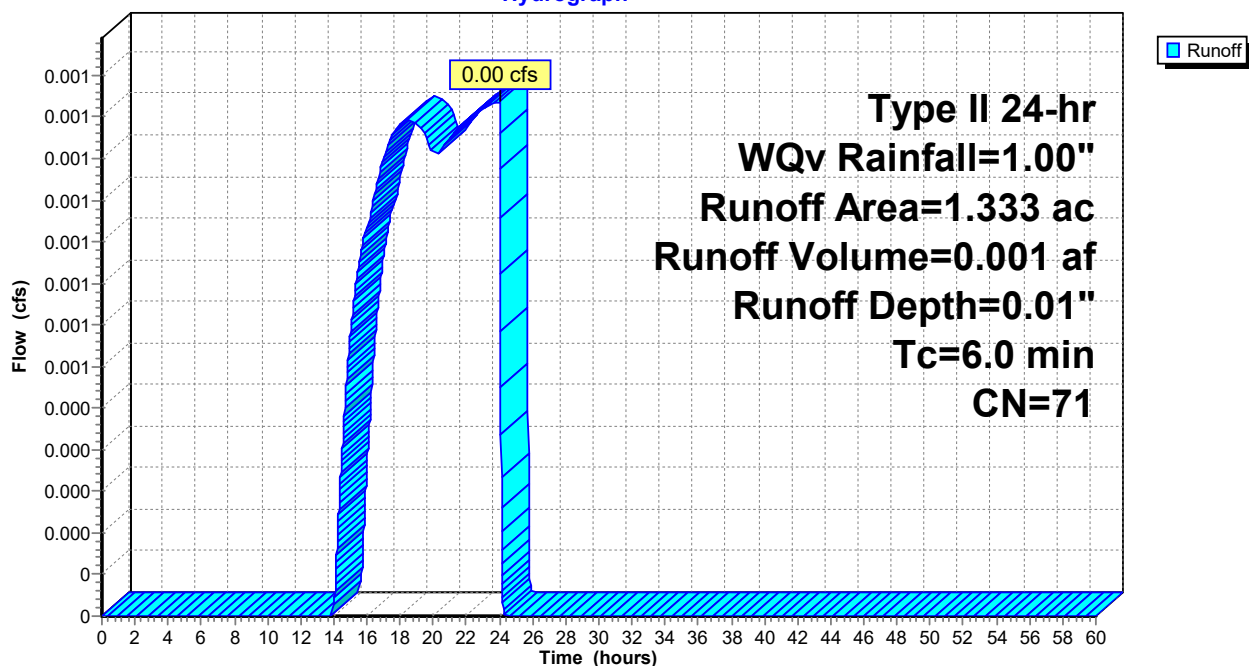
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.507 | 30 | Meadow, non-grazed, HSG A |
| 0.819 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 1.333 | 71 | Weighted Average |
| 1.326 | | 99.47% Pervious Area |
| 0.007 | | 0.53% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS1: North Road - East

Hydrograph



Summary for Subcatchment 1.1bS2: North Road - West

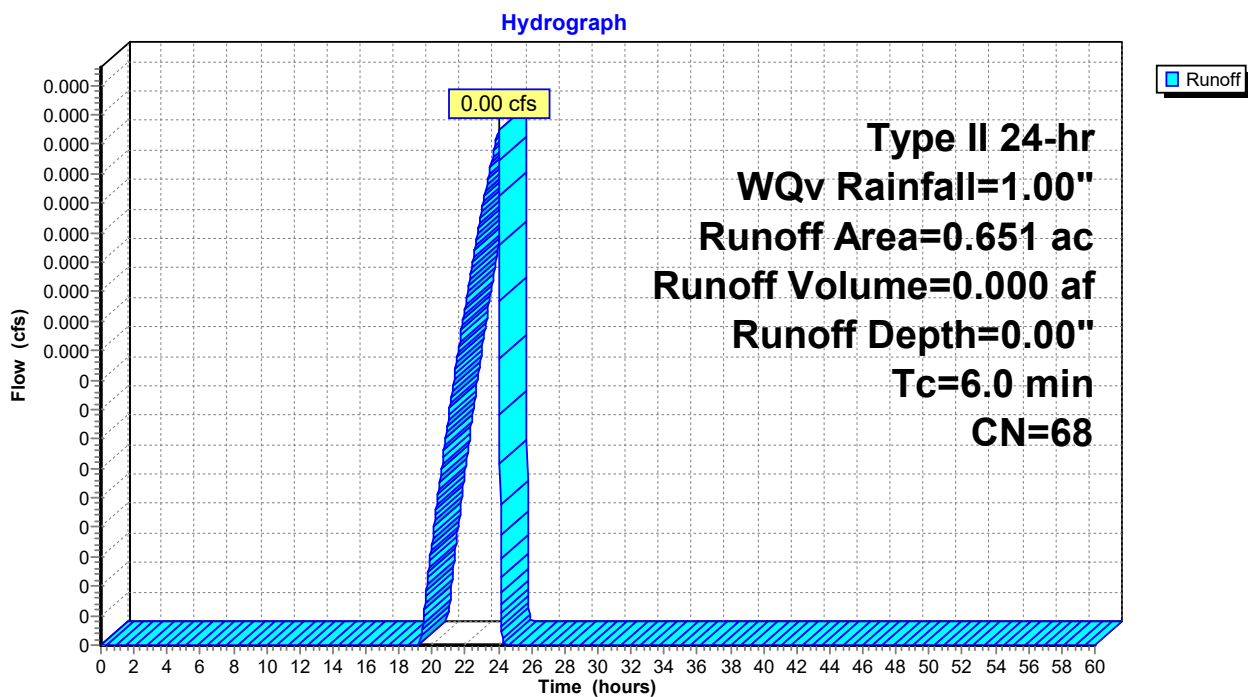
Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.279 | 30 | Meadow, non-grazed, HSG A |
| 0.365 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 0.651 | 68 | Weighted Average |
| 0.644 | | 98.92% Pervious Area |
| 0.007 | | 1.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS2: North Road - West



Summary for Subcatchment 1.2aS1: Middle Array East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR1 : Bypass Swale

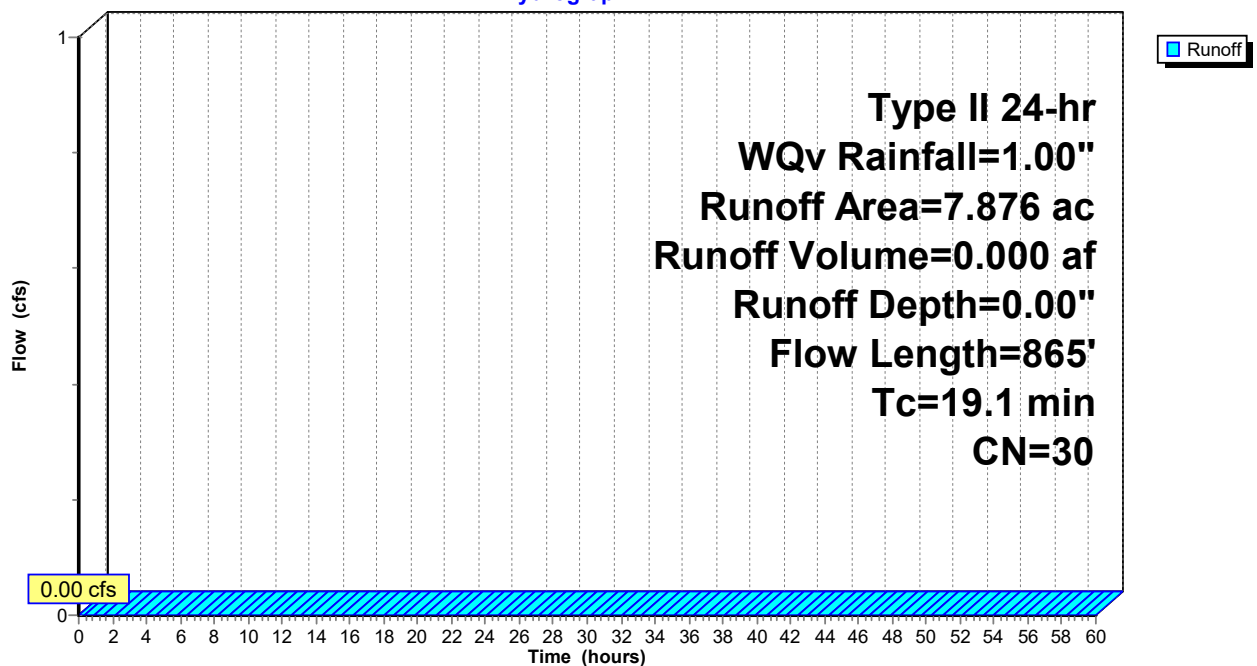
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 7.876 | 30 | Meadow, non-grazed, HSG A |
| 7.876 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.6 | 100 | 0.0628 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.5 | 765 | 0.0459 | 1.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.1 | 865 | Total | | | |

Subcatchment 1.2aS1: Middle Array East

Hydrograph



Summary for Subcatchment 1.2aS2: Middle Array Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR2 : Bypass Swale

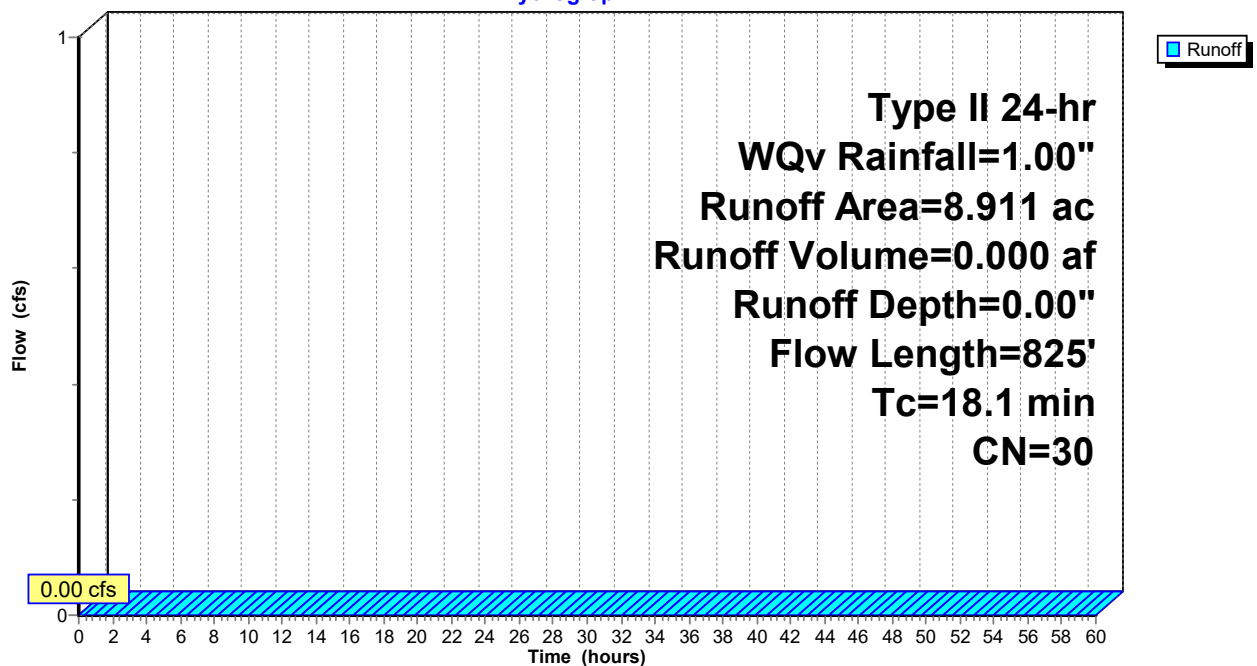
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.911 | 30 | Meadow, non-grazed, HSG A |
| 8.911 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.8 | 100 | 0.0607 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.3 | 725 | 0.0559 | 1.66 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 825 | Total | | | |

Subcatchment 1.2aS2: Middle Array Center

Hydrograph



Summary for Subcatchment 1.2aS3: Middle Array West

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR3 : Bypass Swale

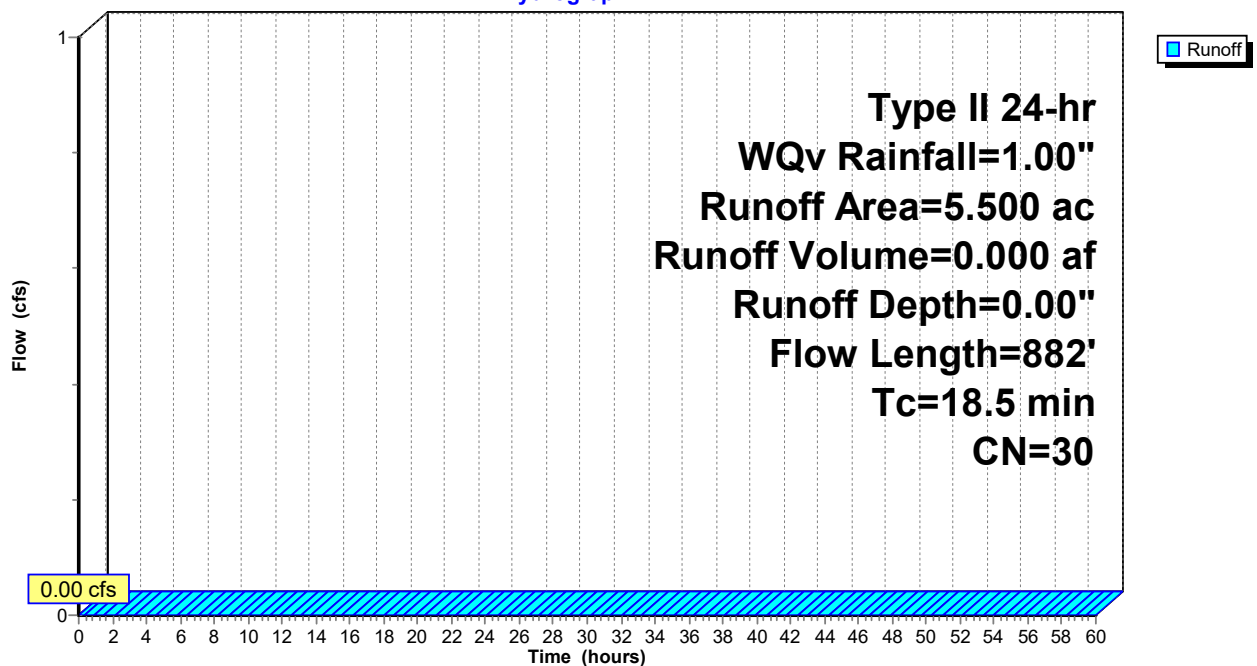
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.500 | 30 | Meadow, non-grazed, HSG A |
| 5.500 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.4 | 100 | 0.0660 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.1 | 782 | 0.0529 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.5 | 882 | Total | | | |

Subcatchment 1.2aS3: Middle Array West

Hydrograph



Summary for Subcatchment 1.2bS1: East Road - West Ditch

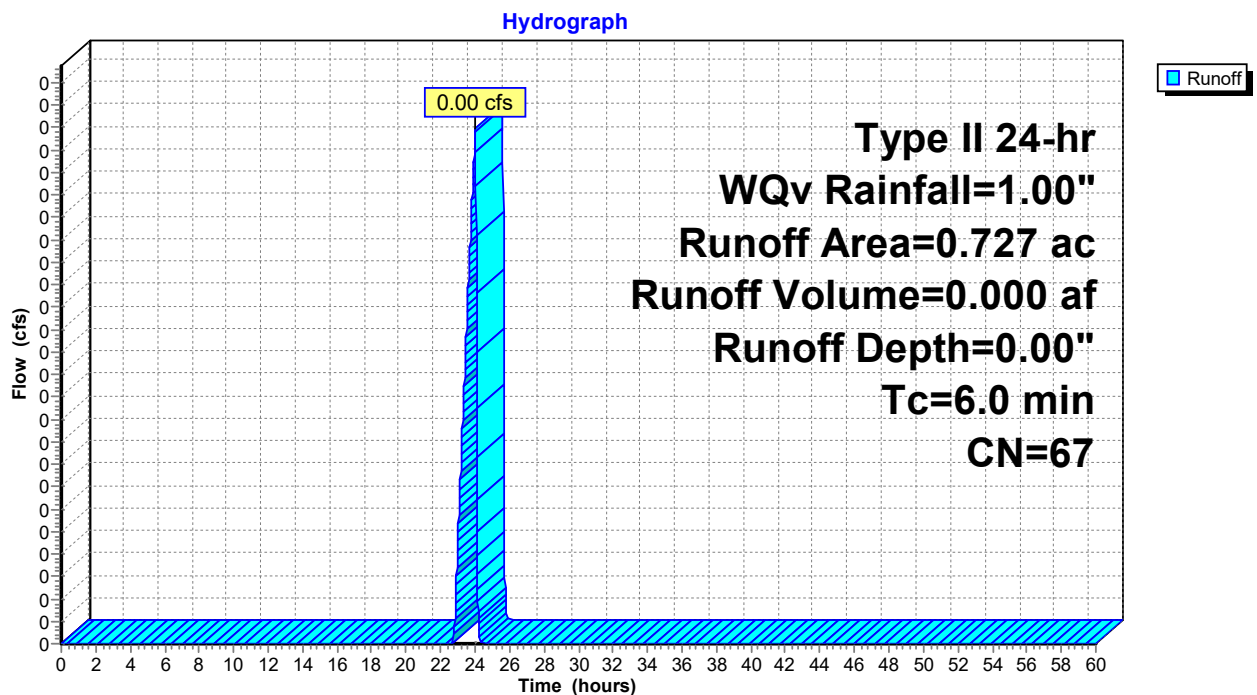
Runoff = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2bR1 : East Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.410 | 96 | Gravel surface, HSG A |
| 0.317 | 30 | Meadow, non-grazed, HSG A |
| 0.727 | 67 | Weighted Average |
| 0.727 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS1: East Road - West Ditch



Summary for Subcatchment 1.2bS2: South Road

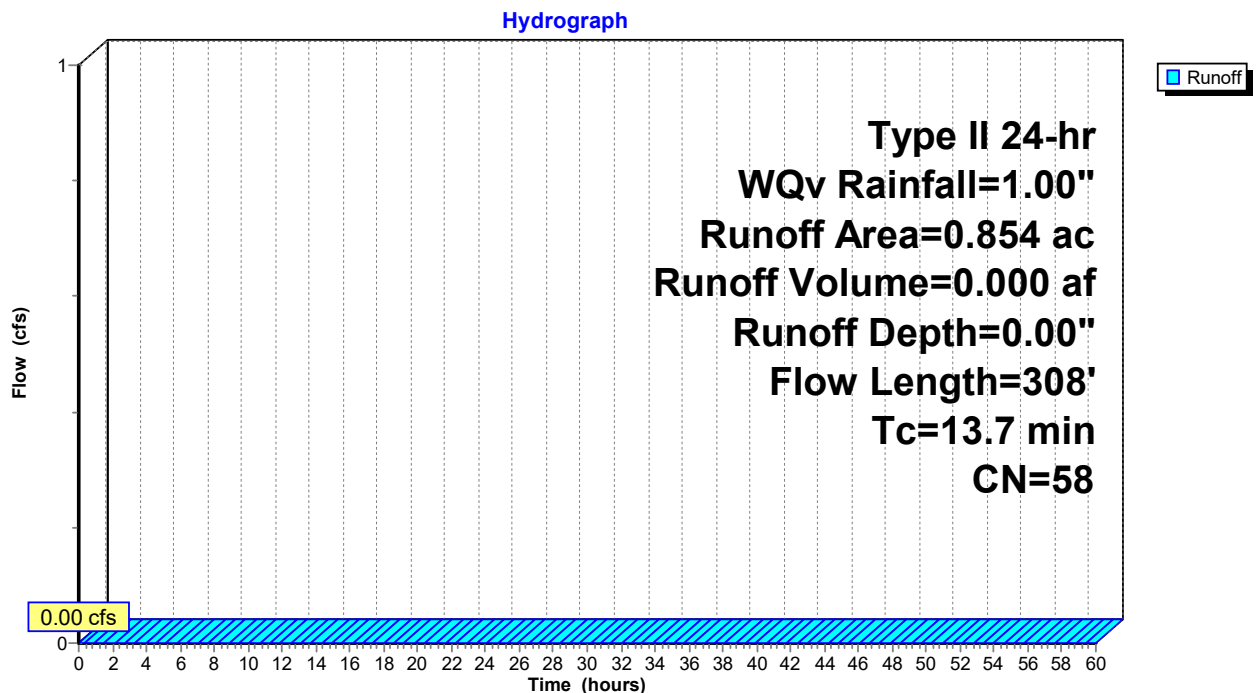
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.498 | 30 | Meadow, non-grazed, HSG A |
| * 0.352 | 96 | Gravel surface |
| * 0.004 | 98 | Roofs |
| 0.854 | 58 | Weighted Average |
| 0.850 | | 99.53% Pervious Area |
| 0.004 | | 0.47% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.0 | 35 | 0.0516 | 0.12 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 0.4 | 25 | 0.0310 | 1.06 | | Sheet Flow, Smooth surfaces n= 0.011 P2= 2.31" |
| 5.9 | 40 | 0.0429 | 0.11 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.4 | 208 | 0.0442 | 1.47 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 13.7 | 308 | Total | | | |

Subcatchment 1.2bS2: South Road



Summary for Subcatchment 1.2bS3: South Road

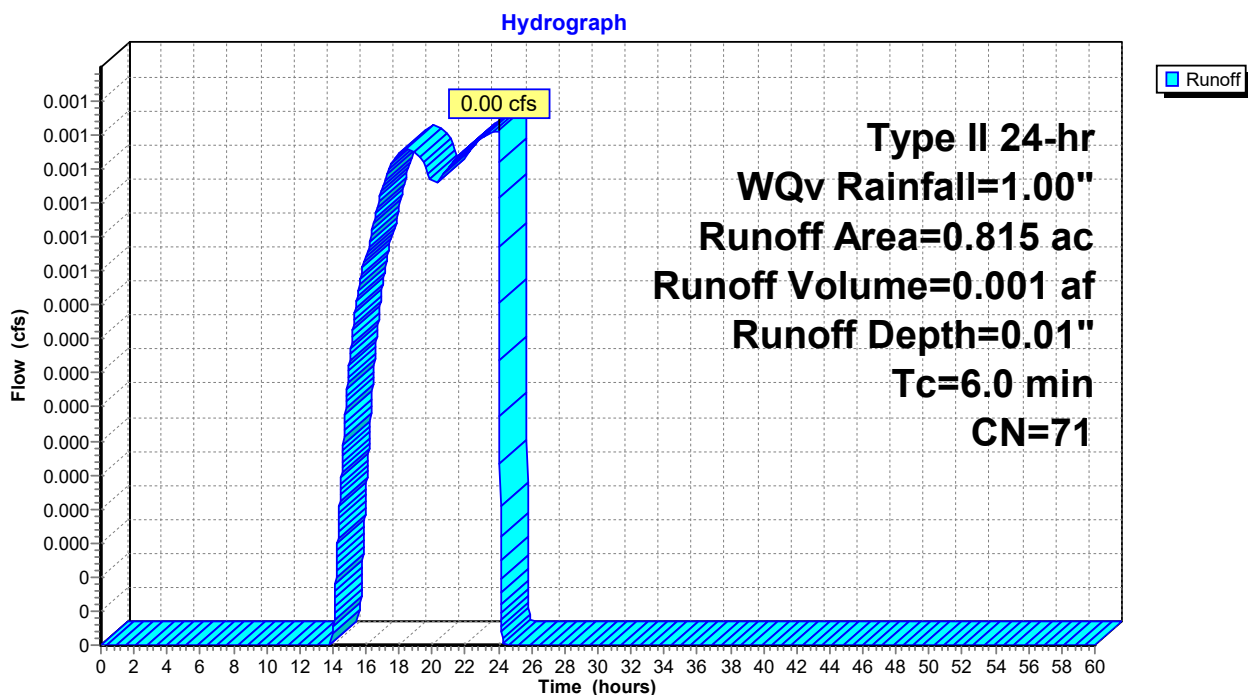
Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.001 af, Depth= 0.01"
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.313 | 30 | Meadow, non-grazed, HSG A |
| 0.491 | 96 | Gravel surface, HSG A |
| * 0.011 | 98 | Roofs |
| 0.815 | 71 | Weighted Average |
| 0.804 | | 98.65% Pervious Area |
| 0.011 | | 1.35% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS3: South Road



Summary for Subcatchment 1.3aS1: Surface Discharge

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP1 : Study Point 1

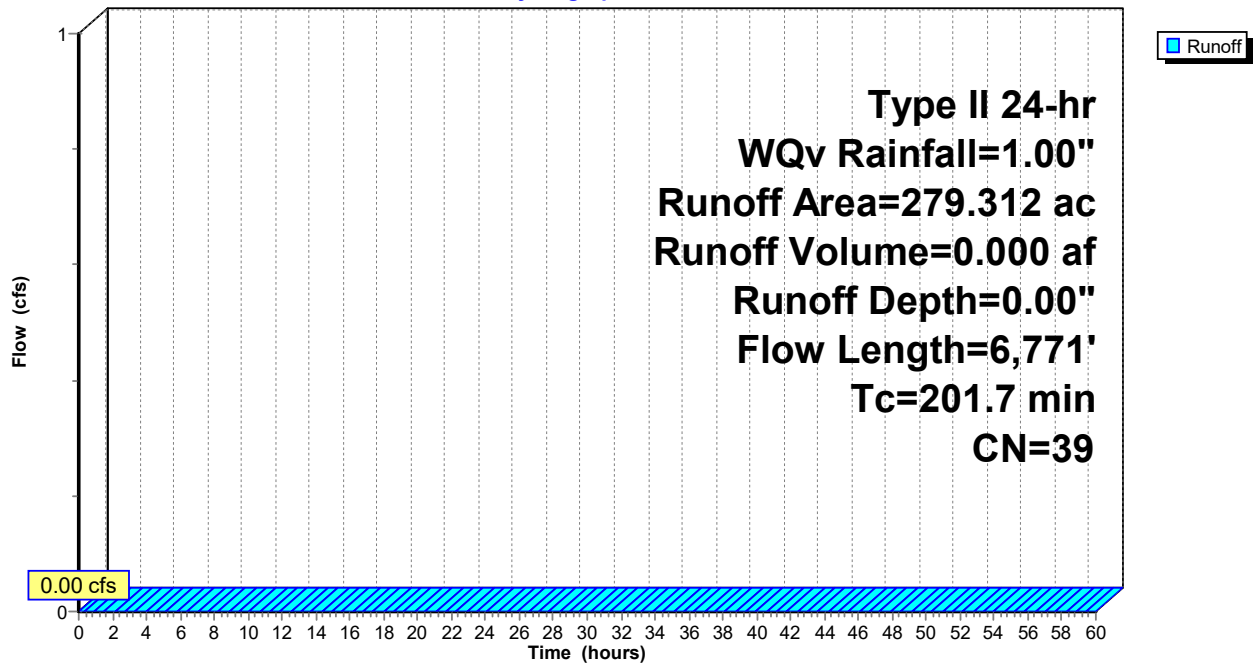
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.754 | 96 | Gravel surface |
| 144.649 | 30 | Meadow, non-grazed, HSG A |
| 0.566 | 58 | Meadow, non-grazed, HSG B |
| 25.274 | 71 | Meadow, non-grazed, HSG C |
| 61.692 | 30 | Woods, Good, HSG A |
| 32.754 | 55 | Woods, Good, HSG B |
| 13.623 | 70 | Woods, Good, HSG C |
| 279.312 | 39 | Weighted Average |
| 279.312 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 14.8 | 100 | 0.0764 | 0.11 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 4.7 | 581 | 0.1683 | 2.05 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 25.7 | 1,199 | 0.0241 | 0.78 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.8 | 189 | 0.0157 | 3.84 | 76.82 | Channel Flow, Rerouted Stream Area= 20.0 sf Perim= 32.6' r= 0.61' n= 0.035 Earth, dense weeds |
| 154.9 | 4,646 | 0.0051 | 0.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.8 | 56 | 0.0566 | 1.19 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 201.7 | 6,771 | Total | | | |

Subcatchment 1.3aS1: Surface Discharge

Hydrograph



Summary for Subcatchment 1.3bS: Access Rd to Pond 3

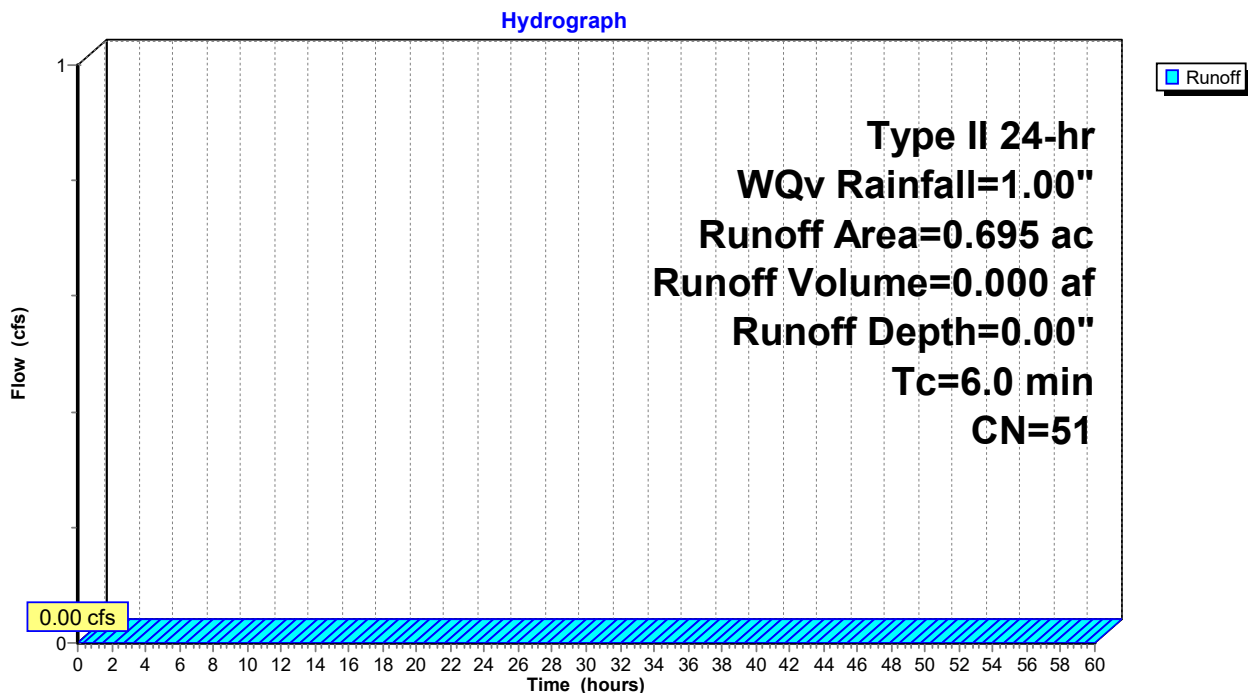
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond 1.3P : Pond 3 - Access Rd West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|------------------------------|
| 0.473 | 30 | Meadow, non-grazed, HSG A |
| * 0.063 | 96 | Gravel surface, HSG A, Redev |
| * 0.159 | 96 | Gravel surface, HSG A |
| 0.695 | 51 | Weighted Average |
| 0.695 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.3bS: Access Rd to Pond 3



Summary for Subcatchment 2S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP2 : Study Point 2

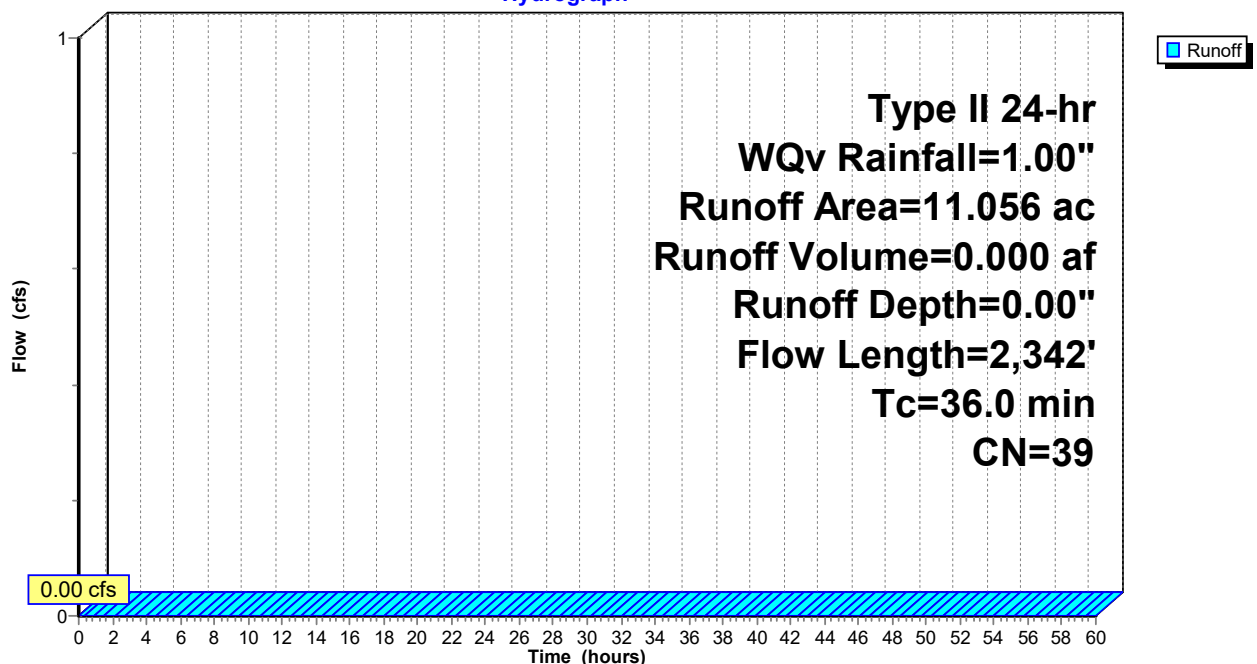
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.417 | 96 | Gravel surface, HSG A |
| 0.573 | 39 | >75% Grass cover, Good, HSG A |
| 6.530 | 30 | Meadow, non-grazed, HSG A |
| 2.536 | 30 | Woods, Good, HSG A |
| 11.056 | 39 | Weighted Average |
| 11.056 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0624 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.7 | 614 | 0.0535 | 3.72 | | Shallow Concentrated Flow, Unpaved Kv= 16.1 fps |
| 12.1 | 1,184 | 0.0543 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.9 | 115 | 0.0407 | 1.01 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.6 | 68 | 0.1443 | 1.90 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 8.0 | 261 | 0.0118 | 0.54 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 36.0 | 2,342 | Total | | | |

Subcatchment 2S:

Hydrograph



Summary for Subcatchment 3S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP3 : Study Point 3

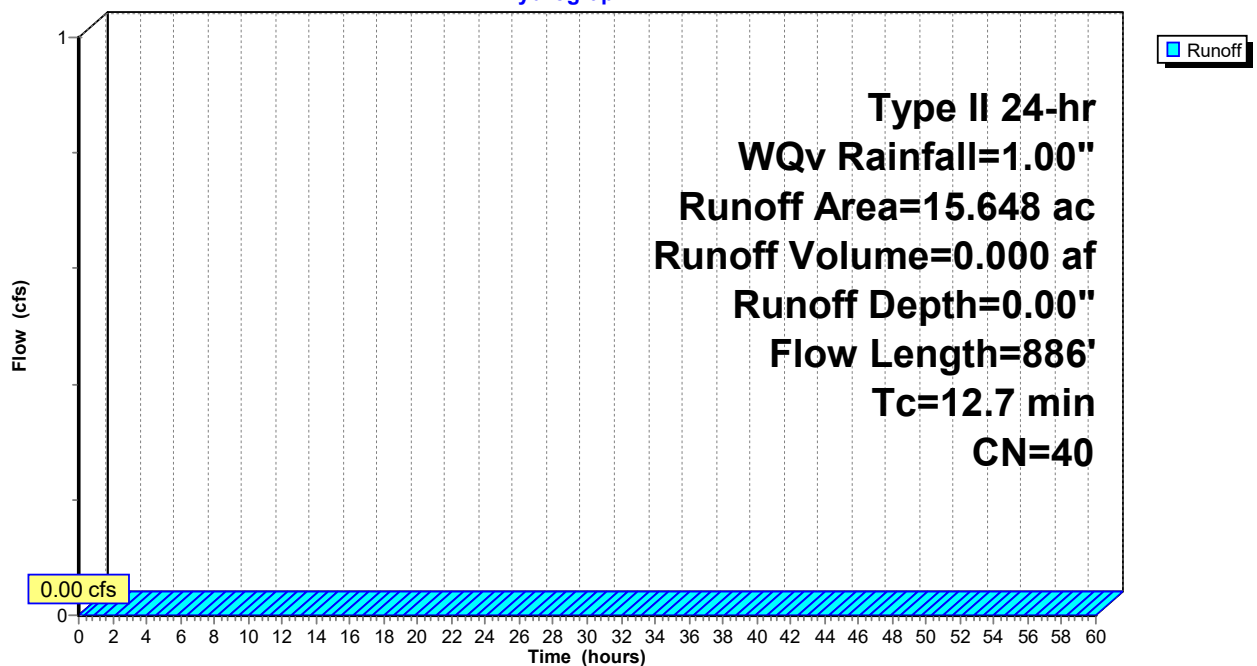
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.088 | 98 | Paved Roads & Rooftops |
| 0.406 | 39 | >75% Grass cover, Good, HSG A |
| 2.011 | 61 | >75% Grass cover, Good, HSG B |
| 5.525 | 30 | Meadow, non-grazed, HSG A |
| 4.276 | 30 | Woods, Good, HSG A |
| 3.342 | 55 | Woods, Good, HSG B |
| 15.648 | 40 | Weighted Average |
| 15.560 | | 99.44% Pervious Area |
| 0.088 | | 0.56% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.4 | 52 | 0.0937 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 3.7 | 625 | 0.1637 | 2.83 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.6 | 209 | 0.0384 | 0.98 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 12.7 | 886 | Total | | | |

Subcatchment 3S:

Hydrograph



Summary for Subcatchment 4.1S:

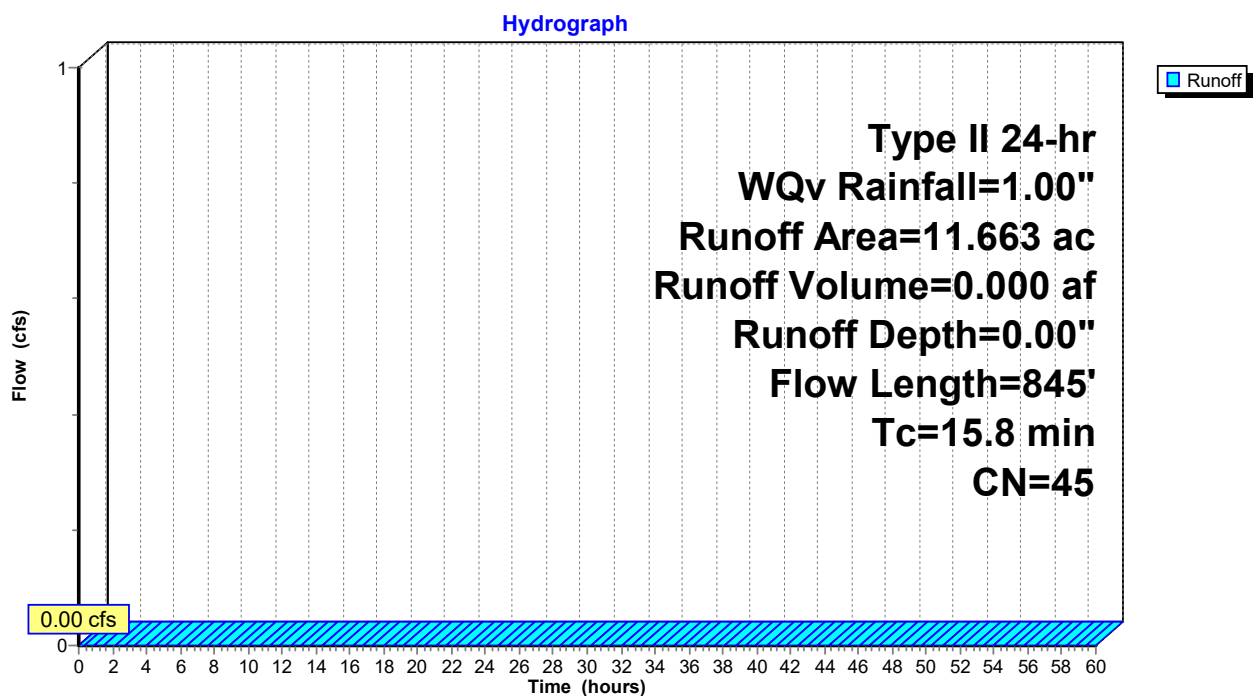
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 4.1R1 : Bypass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.327 | 98 | Paved Roads & Rooftops |
| * 0.375 | 96 | Gravel surface |
| 0.165 | 61 | >75% Grass cover, Good, HSG B |
| 2.544 | 30 | Meadow, non-grazed, HSG A |
| 0.560 | 58 | Meadow, non-grazed, HSG B |
| 3.605 | 30 | Woods, Good, HSG A |
| * 4.087 | 55 | Woods, Good, HSG B |
| 11.663 | 45 | Weighted Average |
| 11.336 | | 97.20% Pervious Area |
| 0.327 | | 2.80% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.5 | 100 | 0.0430 | 0.20 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 2.6 | 360 | 0.1077 | 2.30 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 4.7 | 385 | 0.0735 | 1.36 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 15.8 | 845 | Total | | | |

Subcatchment 4.1S:



Summary for Subcatchment 4.2aS:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond 4.2C : 18" Culvert

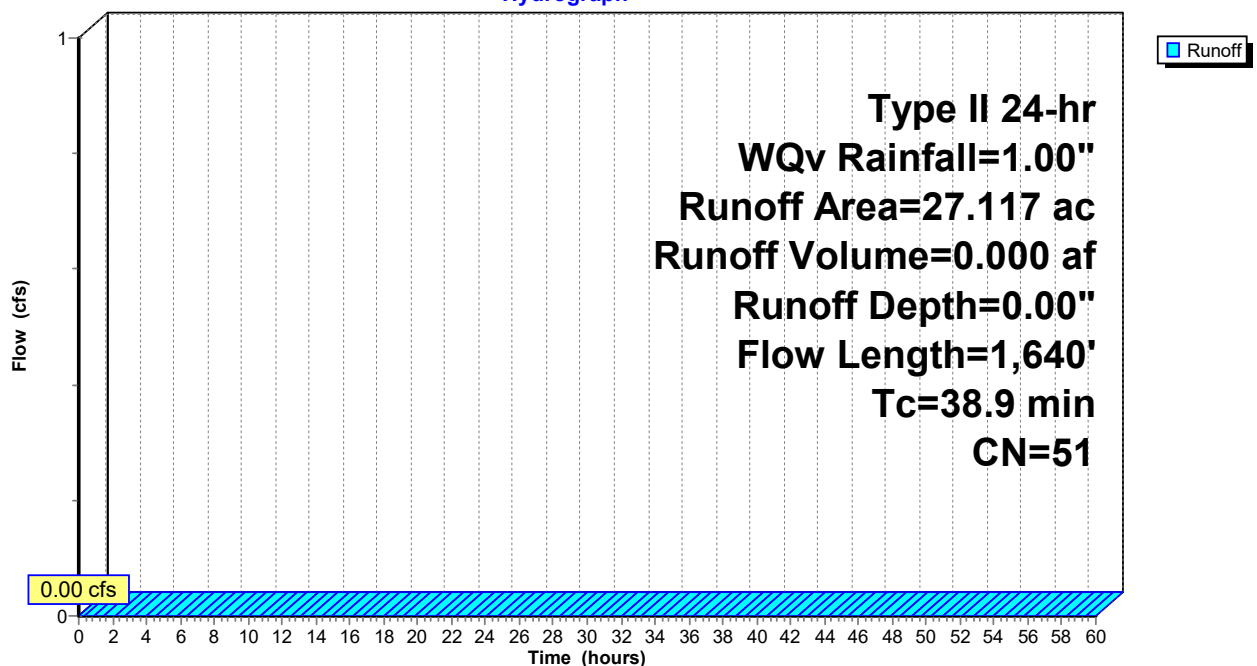
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.238 | 96 | Gravel surface |
| 4.086 | 30 | Meadow, non-grazed, HSG A |
| 0.384 | 58 | Meadow, non-grazed, HSG B |
| 0.977 | 30 | Woods, Good, HSG A |
| 21.432 | 55 | Woods, Good, HSG B |
| 27.117 | 51 | Weighted Average |
| 27.117 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 17.8 | 100 | 0.0480 | 0.09 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 8.0 | 878 | 0.1354 | 1.84 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 13.1 | 662 | 0.0144 | 0.84 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 38.9 | 1,640 | Total | | | |

Subcatchment 4.2aS:

Hydrograph



Summary for Subcatchment 4.2bS:

Runoff = 0.00 cfs @ 17.70 hrs, Volume= 0.000 af, Depth= 0.01"
 Routed to Reach 4.2bR : Conveyance Swale

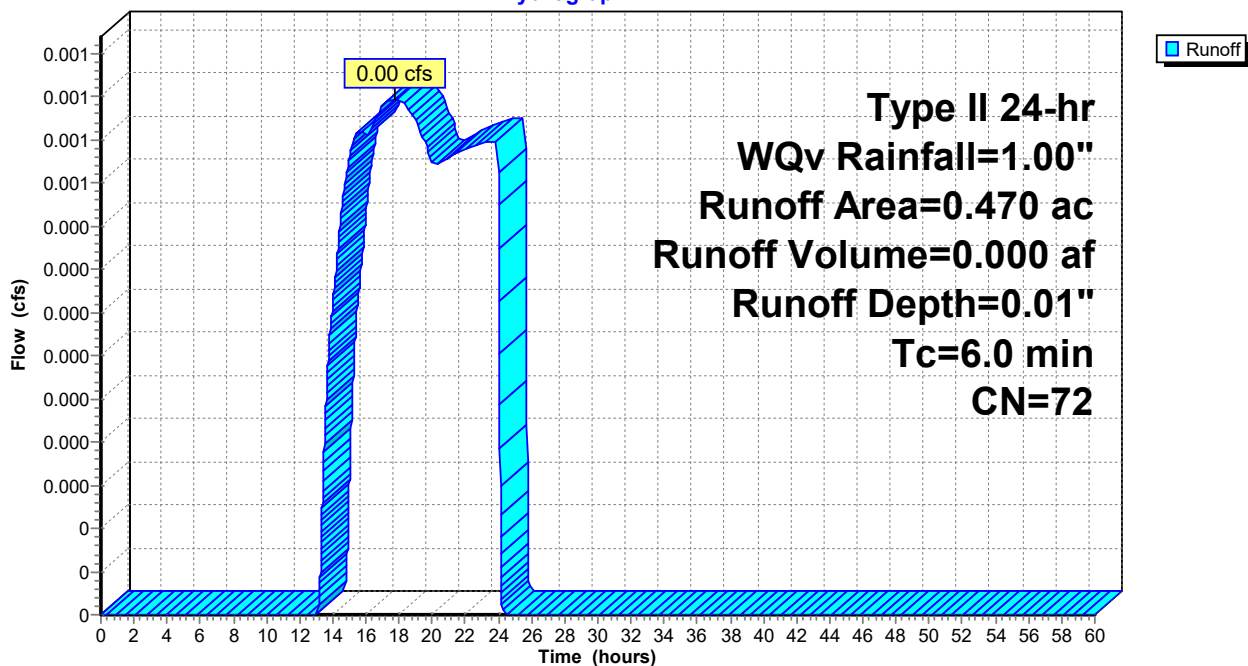
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.296 | 96 | Gravel surface, HSG A |
| 0.174 | 30 | Meadow, non-grazed, HSG A |
| 0.470 | 72 | Weighted Average |
| 0.470 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 4.2bS:

Hydrograph



Summary for Subcatchment 4.3S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond 4.3C : 24" Culvert

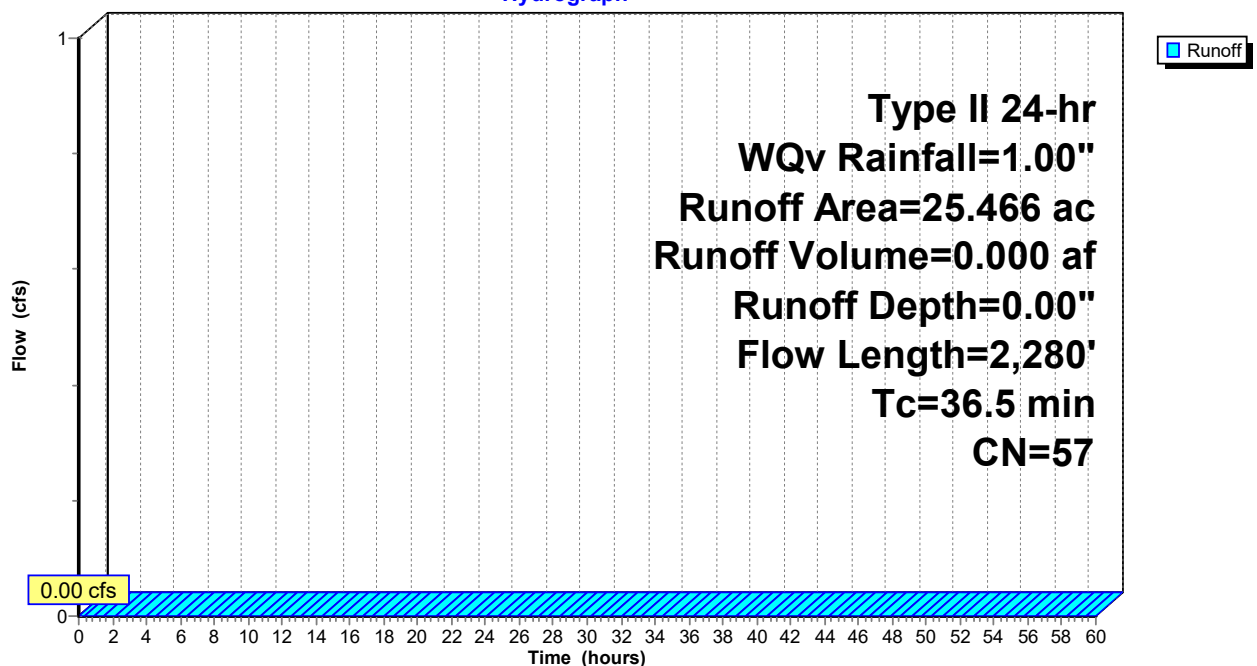
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 1.293 | 98 | Paved Roads & Rooftops |
| 1.783 | 58 | Meadow, non-grazed, HSG B |
| 22.390 | 55 | Woods, Good, HSG B |
| 25.466 | 57 | Weighted Average |
| 24.173 | | 94.92% Pervious Area |
| 1.293 | | 5.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 15.9 | 100 | 0.0634 | 0.10 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 17.8 | 1,368 | 0.0656 | 1.28 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.1 | 38 | 0.3960 | 4.40 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 2.7 | 774 | 0.0281 | 4.70 | 109.09 | Channel Flow, Area= 23.2 sf Perim= 43.2' r= 0.54' n= 0.035 |
| 36.5 | 2,280 | Total | | | |

Subcatchment 4.3S:

Hydrograph



Summary for Subcatchment 5S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP5 : Study Point 5

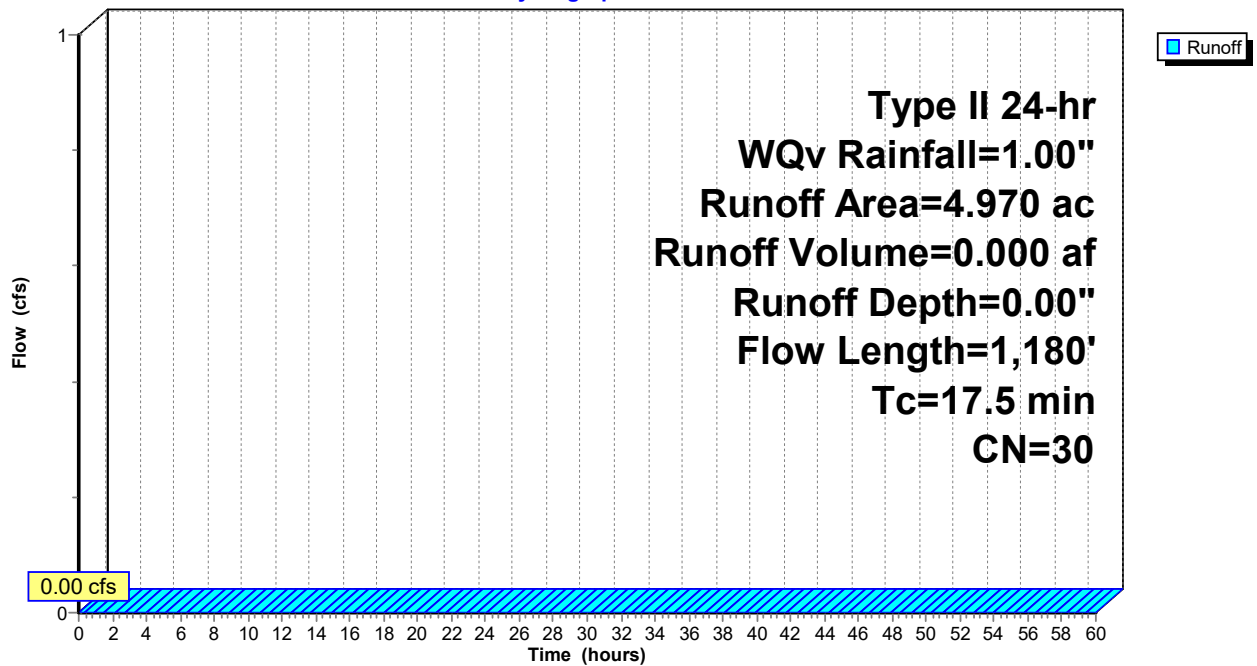
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 4.139 | 30 | Meadow, non-grazed, HSG A |
| 0.831 | 30 | Woods, Good, HSG A |
| 4.970 | 30 | Weighted Average |
| 4.970 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 7.1 | 100 | 0.0675 | 0.24 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 8.5 | 801 | 0.0508 | 1.58 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.3 | 217 | 0.1515 | 2.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.6 | 62 | 0.0697 | 1.85 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 17.5 | 1,180 | Total | | | |

Subcatchment 5S:

Hydrograph



Summary for Subcatchment 6S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP6 : Study Point 6

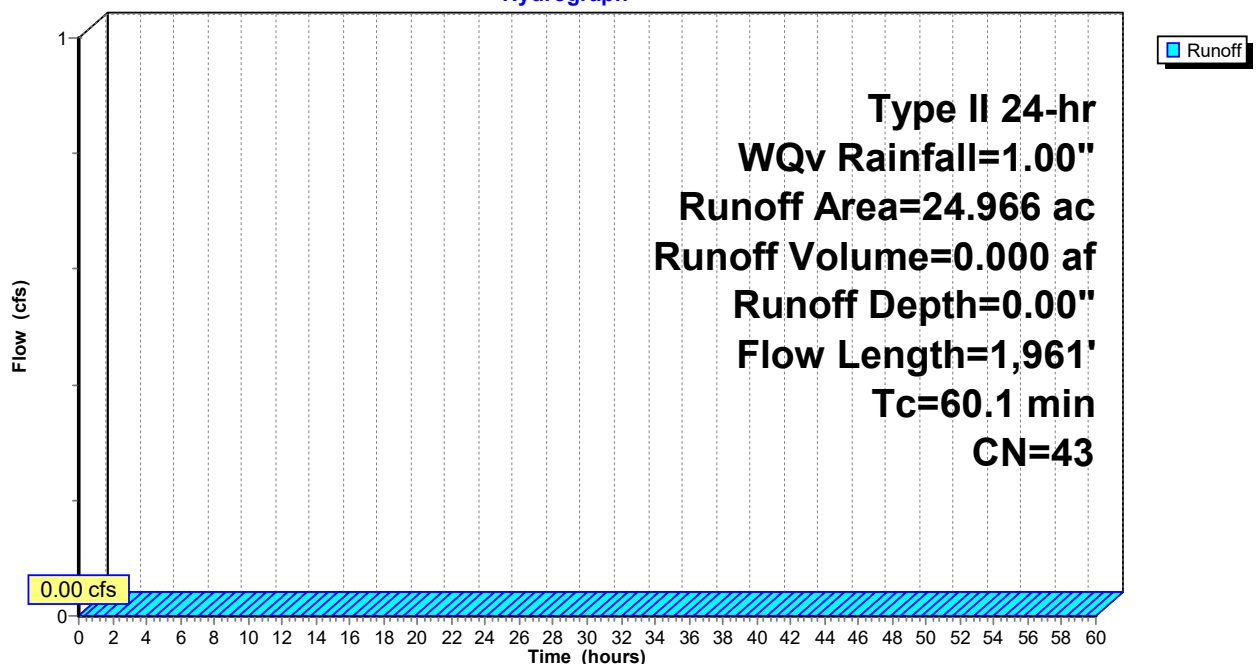
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr WQv Rainfall=1.00"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 1.450 | 98 | Paved Roads & Rooftops |
| 0.466 | 96 | Gravel surface, HSG A |
| 2.545 | 61 | >75% Grass cover, Good, HSG B |
| 7.511 | 30 | Meadow, non-grazed, HSG A |
| 0.788 | 58 | Meadow, non-grazed, HSG B |
| 7.940 | 30 | Woods, Good, HSG A |
| 4.266 | 55 | Woods, Good, HSG B |
| 24.966 | 43 | Weighted Average |
| 23.516 | | 94.19% Pervious Area |
| 1.450 | | 5.81% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.1 | 100 | 0.0278 | 0.16 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 3.2 | 313 | 0.0528 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.9 | 486 | 0.1742 | 2.09 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 42.9 | 1,062 | 0.0068 | 0.41 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 60.1 | 1,961 | Total | | | |

Subcatchment 6S:

Hydrograph



Summary for Reach 1.1aR1: Bypass Swale

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC1 : TS1 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

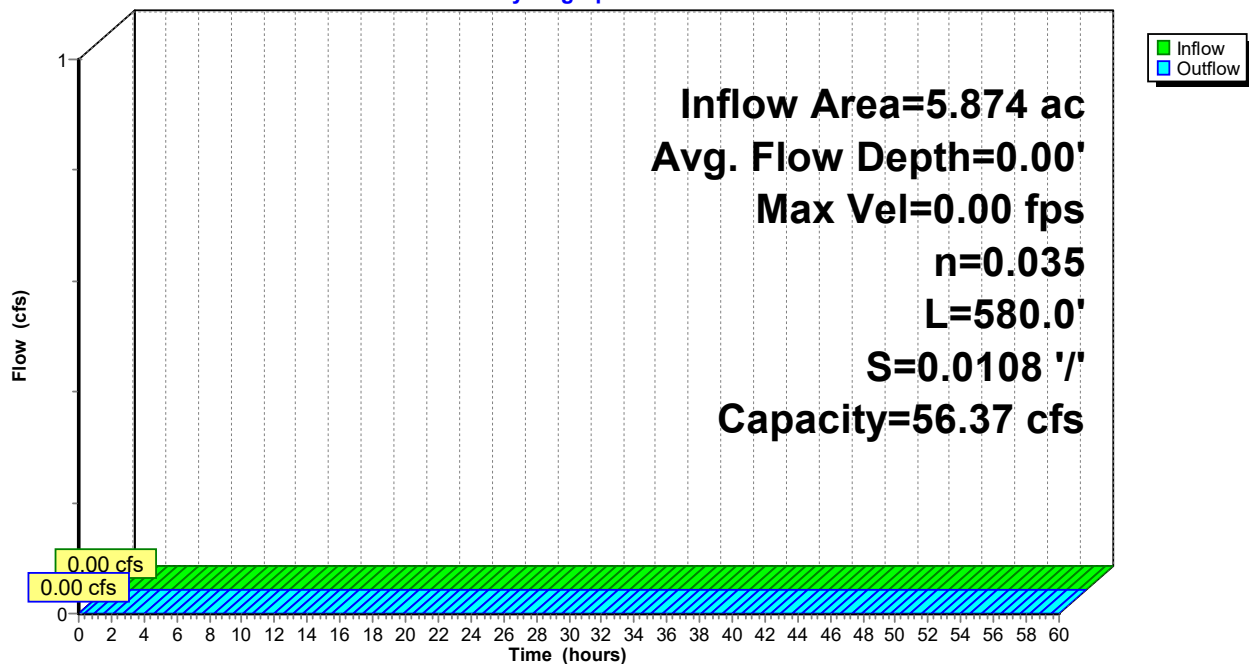
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 56.37 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 580.0' Slope= 0.0108 '/'
 Inlet Invert= 1,493.84', Outlet Invert= 1,487.56'



Reach 1.1aR1: Bypass Swale

Hydrograph



Summary for Reach 1.1aR2: Bypass Swale

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC2 : TS2 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

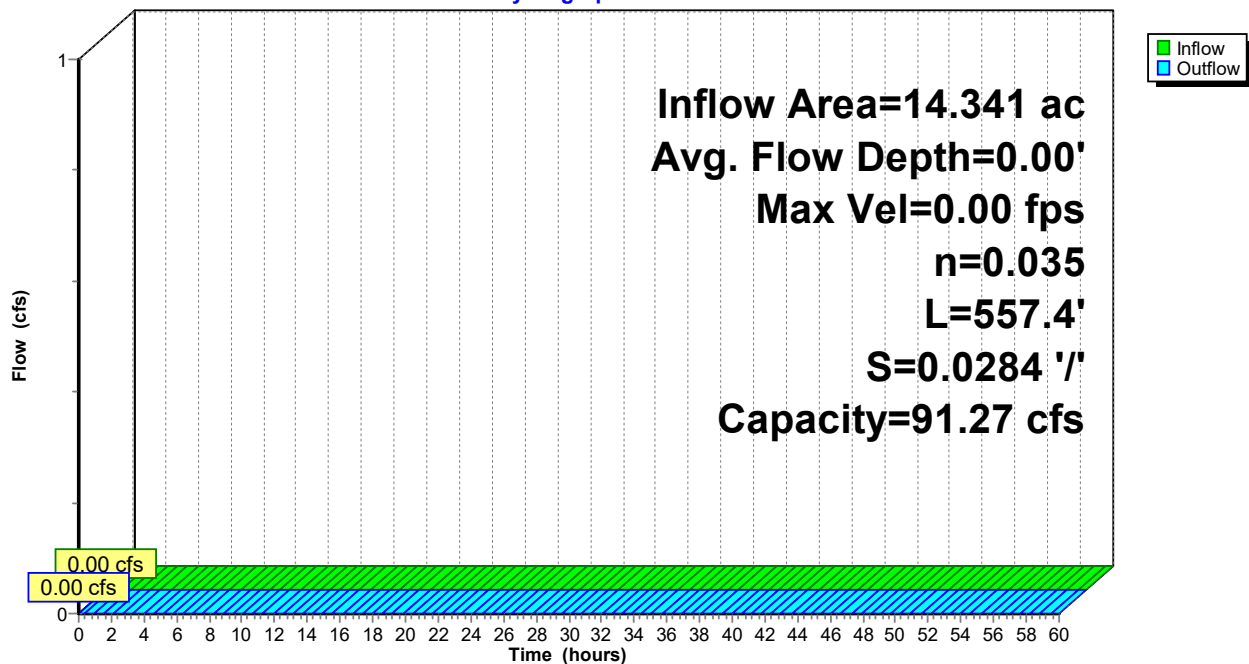
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 91.27 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.4' Slope= 0.0284 '/'
 Inlet Invert= 1,486.80', Outlet Invert= 1,470.98'



Reach 1.1aR2: Bypass Swale

Hydrograph



Summary for Reach 1.1aR3: Bypass Swale

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC3 : TS3 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

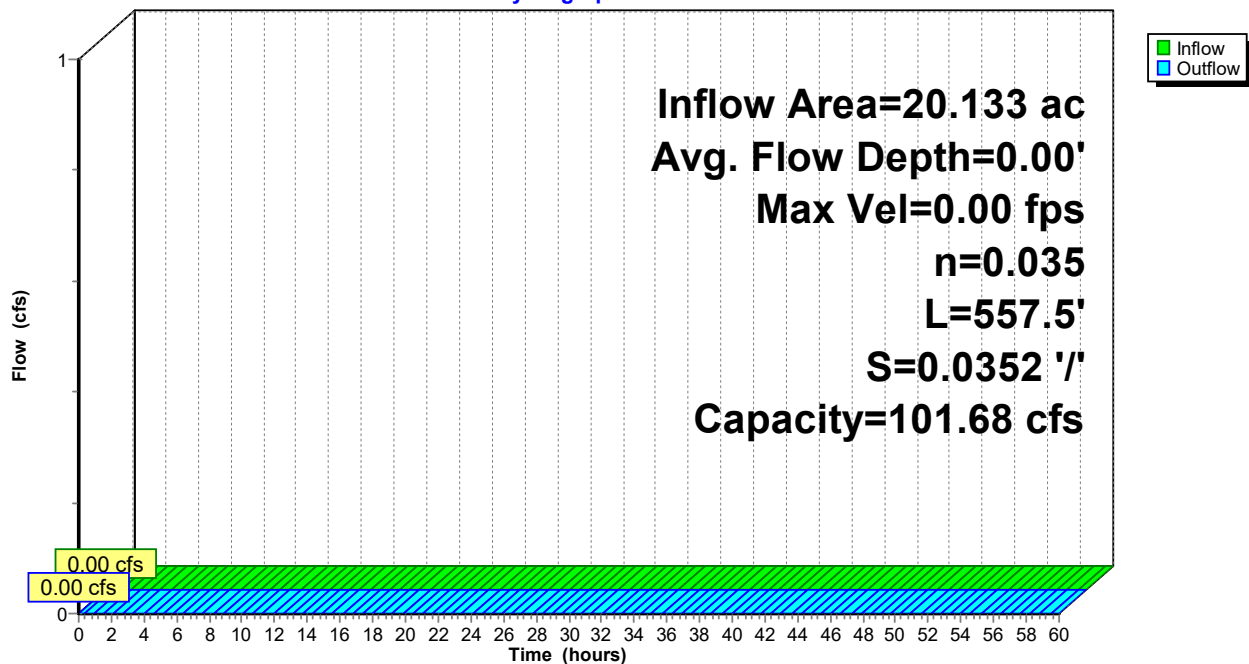
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 101.68 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.5' Slope= 0.0352 '/'
 Inlet Invert= 1,469.57', Outlet Invert= 1,449.93'



Reach 1.1aR3: Bypass Swale

Hydrograph



Summary for Reach 1.1aR4: Bypass Swale

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aP : North Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

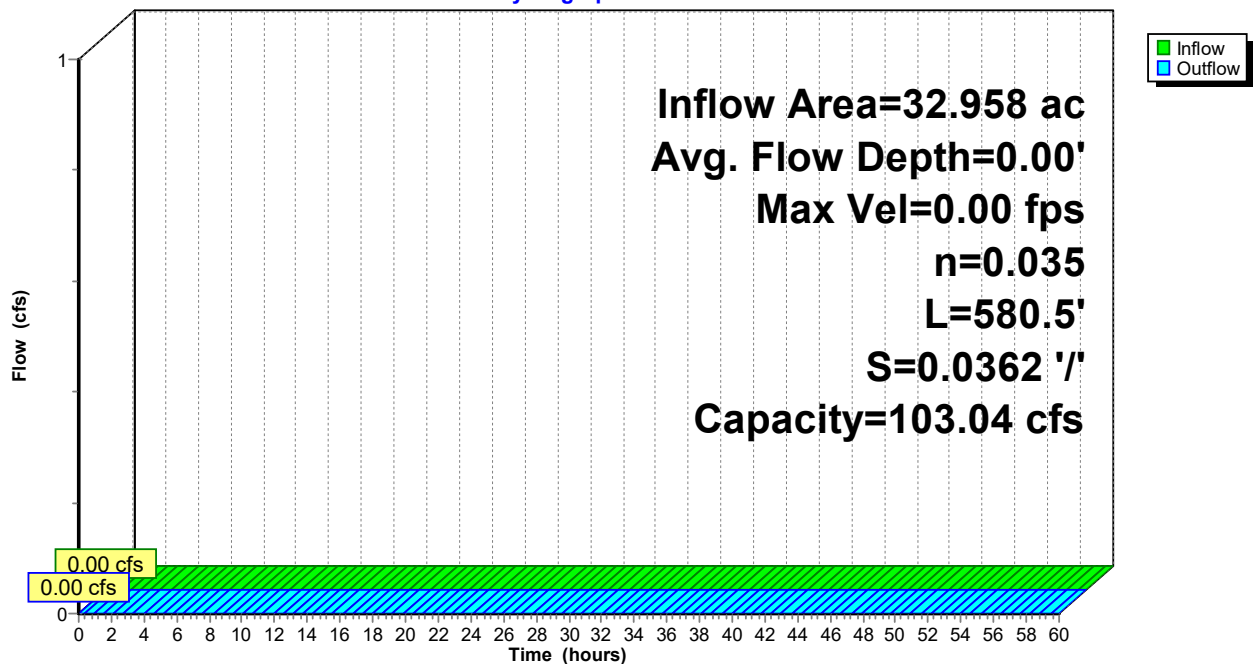
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 103.04 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 580.5' Slope= 0.0362 '/
 Inlet Invert= 1,447.64', Outlet Invert= 1,426.64'



Reach 1.1aR4: Bypass Swale

Hydrograph



Summary for Reach 1.1bR1: North Road Conveyance Swale

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 0.01" for WQv event
 Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af, Atten= 2%, Lag= 1.0 min
 Routed to Pond 1.1bC1 : TS4 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.47 fps, Min. Travel Time= 60.9 min
 Avg. Velocity = 0.47 fps, Avg. Travel Time= 60.9 min

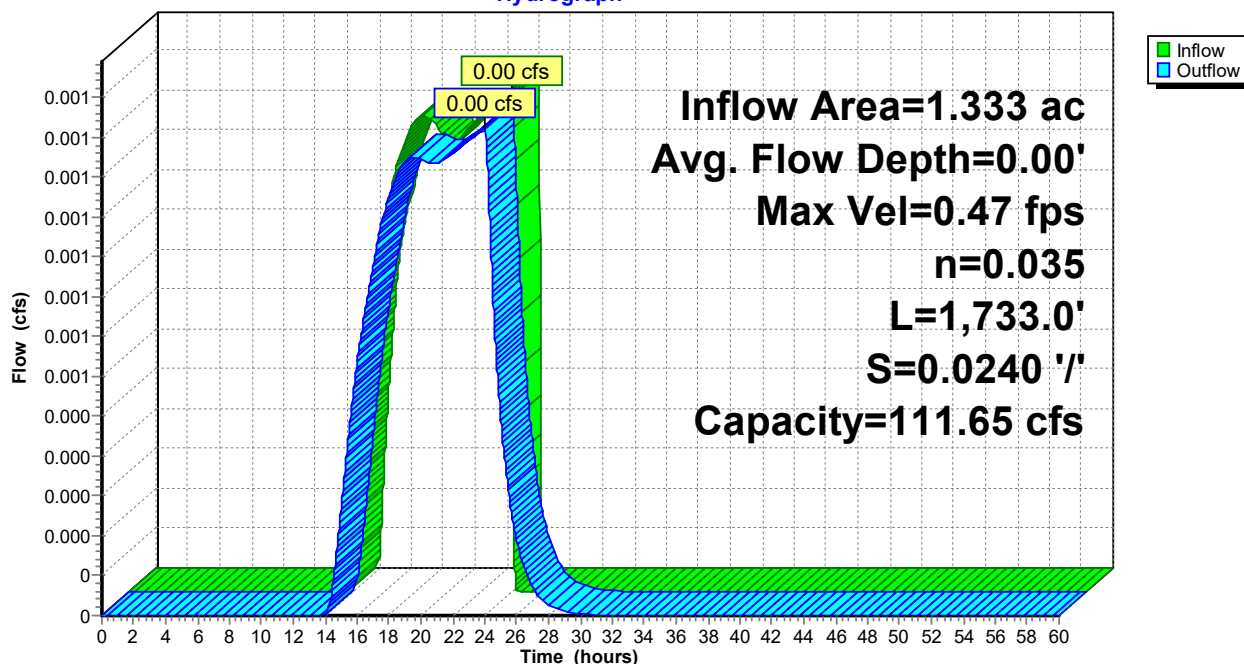
Peak Storage= 4 cf @ 24.03 hrs
 Average Depth at Peak Storage= 0.00', Surface Width= 2.01'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 111.65 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 1,733.0' Slope= 0.0240 '/'
 Inlet Invert= 1,491.12', Outlet Invert= 1,449.50'



Reach 1.1bR1: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.1bR2: North Road Conveyance Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.01" for WQv event
 Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 24.04 hrs, Volume= 0.001 af, Atten= 1%, Lag= 1.9 min
 Routed to Pond 1.1bP1 : Dry Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.60 fps, Min. Travel Time= 16.6 min
 Avg. Velocity = 0.60 fps, Avg. Travel Time= 16.6 min

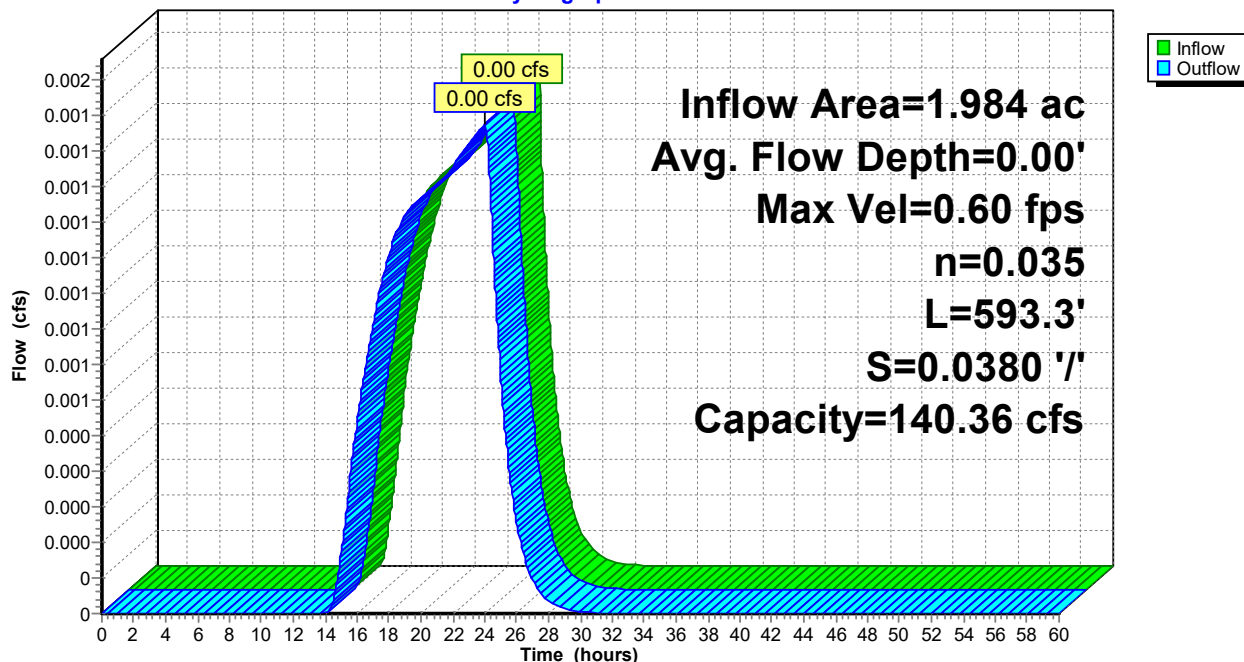
Peak Storage= 1 cf @ 24.04 hrs
 Average Depth at Peak Storage= 0.00', Surface Width= 2.01'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 140.36 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/ Top Width= 14.00'
 Length= 593.3' Slope= 0.0380 '/
 Inlet Invert= 1,447.27', Outlet Invert= 1,424.75'



Reach 1.1bR2: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.2aR1: Bypass Swale

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aC1 : TS 7 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

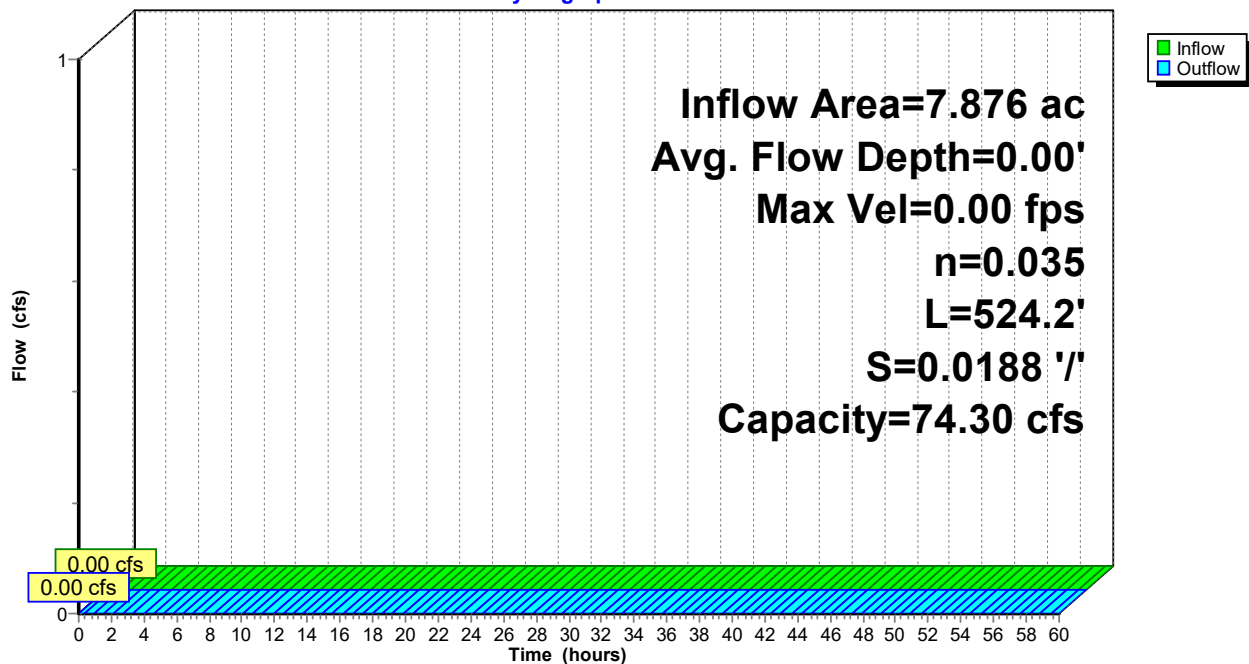
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 74.30 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 524.2' Slope= 0.0188 '/'
 Inlet Invert= 1,454.08', Outlet Invert= 1,444.22'



Reach 1.2aR1: Bypass Swale

Hydrograph



Summary for Reach 1.2aR2: Bypass Swale

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aC2 : TS8 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

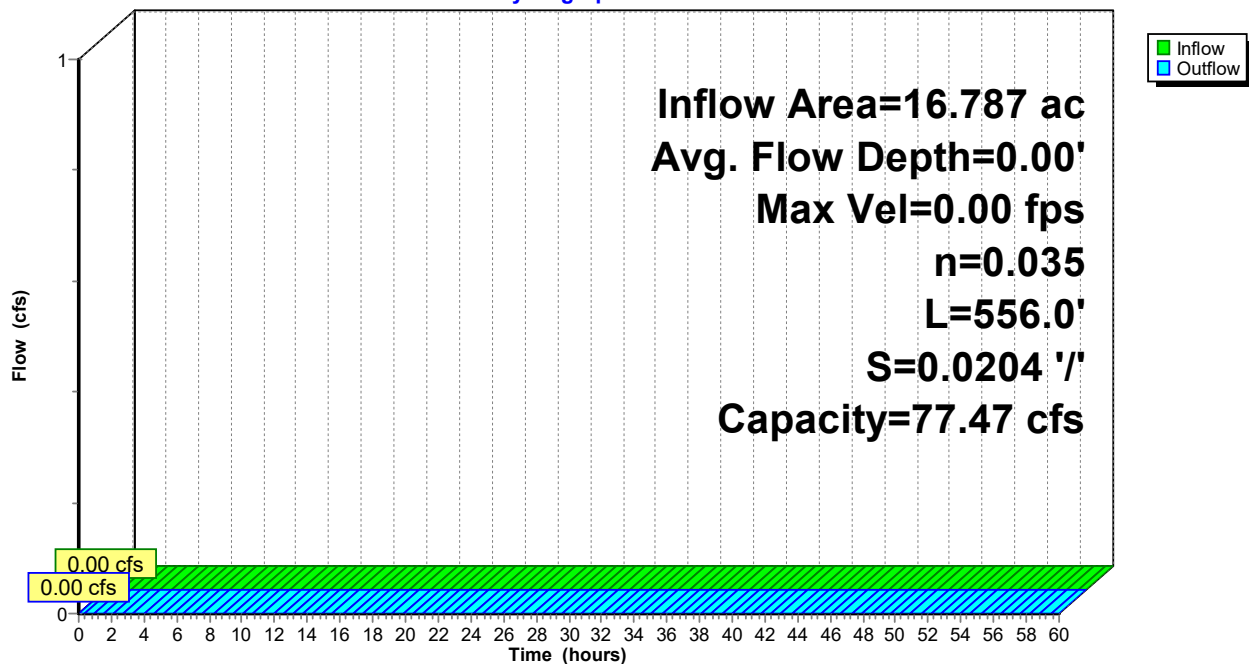
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 77.47 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 556.0' Slope= 0.0204 '/'
 Inlet Invert= 1,443.21', Outlet Invert= 1,431.84'



Reach 1.2aR2: Bypass Swale

Hydrograph



Summary for Reach 1.2aR3: Bypass Swale

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aP : South Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

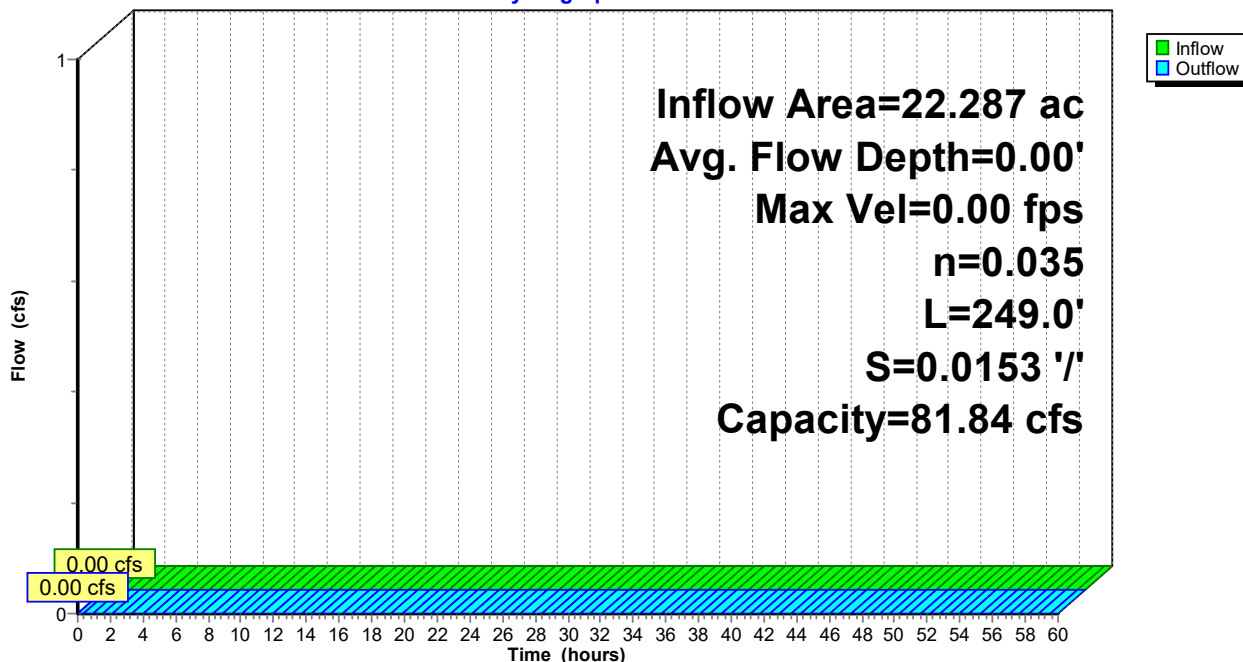
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 14.0 sf, Capacity= 81.84 cfs

3.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 11.00'
 Length= 249.0' Slope= 0.0153 '/
 Inlet Invert= 1,431.11', Outlet Invert= 1,427.29'



Reach 1.2aR3: Bypass Swale

Hydrograph



Summary for Reach 1.2bR1: East Road Conveyance Swale

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 24.02 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.06 hrs, Volume= 0.000 af, Atten= 25%, Lag= 2.9 min
 Routed to Pond 1.2bC1 : East Road Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

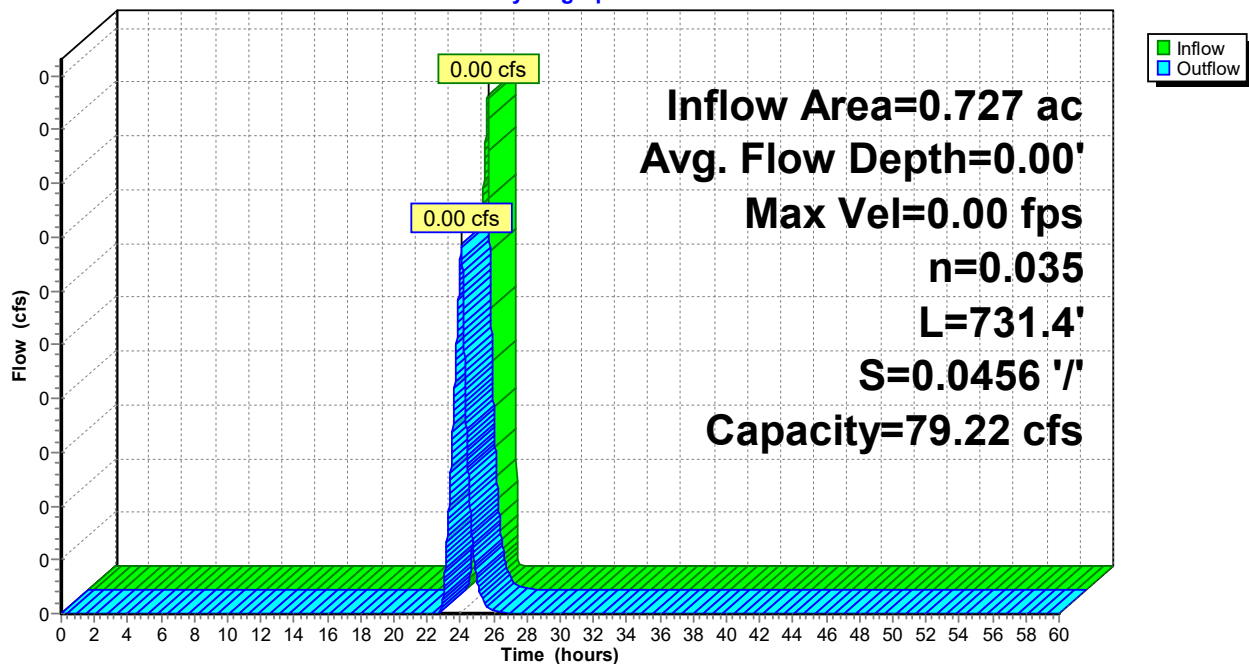
Peak Storage= 0 cf @ 24.06 hrs
 Average Depth at Peak Storage= 0.00', Surface Width= 2.00'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 79.22 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 11.00'
 Length= 731.4' Slope= 0.0456 '/'
 Inlet Invert= 1,489.53', Outlet Invert= 1,456.20'



Reach 1.2bR1: East Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR2: South Road Conveyance Swale

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 24.06 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.23 hrs, Volume= 0.000 af, Atten= 28%, Lag= 10.2 min
 Routed to Pond 1.2bC2 : TS6 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

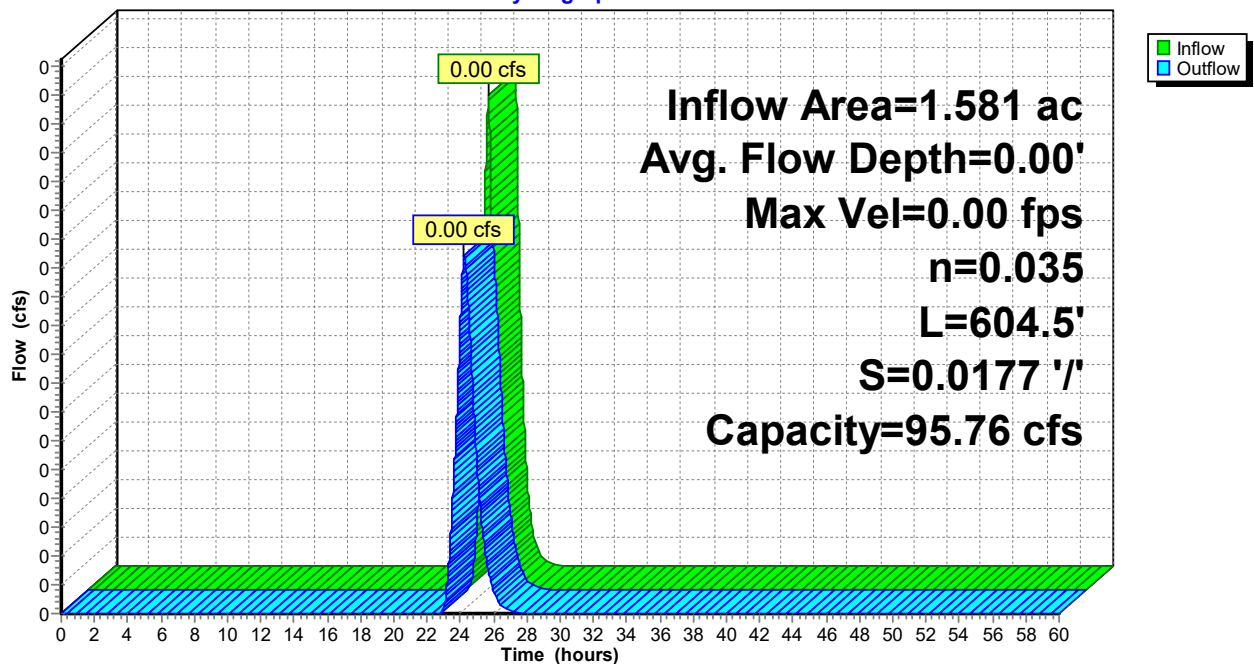
Peak Storage= 0 cf @ 24.23 hrs
 Average Depth at Peak Storage= 0.00', Surface Width= 2.00'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 95.76 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 604.5' Slope= 0.0177 ' / '
 Inlet Invert= 1,454.47', Outlet Invert= 1,443.79'



Reach 1.2bR2: South Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR3: South Road Conveyance Swale

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af, Atten= 2%, Lag= 1.0 min
 Routed to Pond 1.2bP : South Road Treatment Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.42 fps, Min. Travel Time= 30.0 min
 Avg. Velocity = 0.42 fps, Avg. Travel Time= 30.0 min

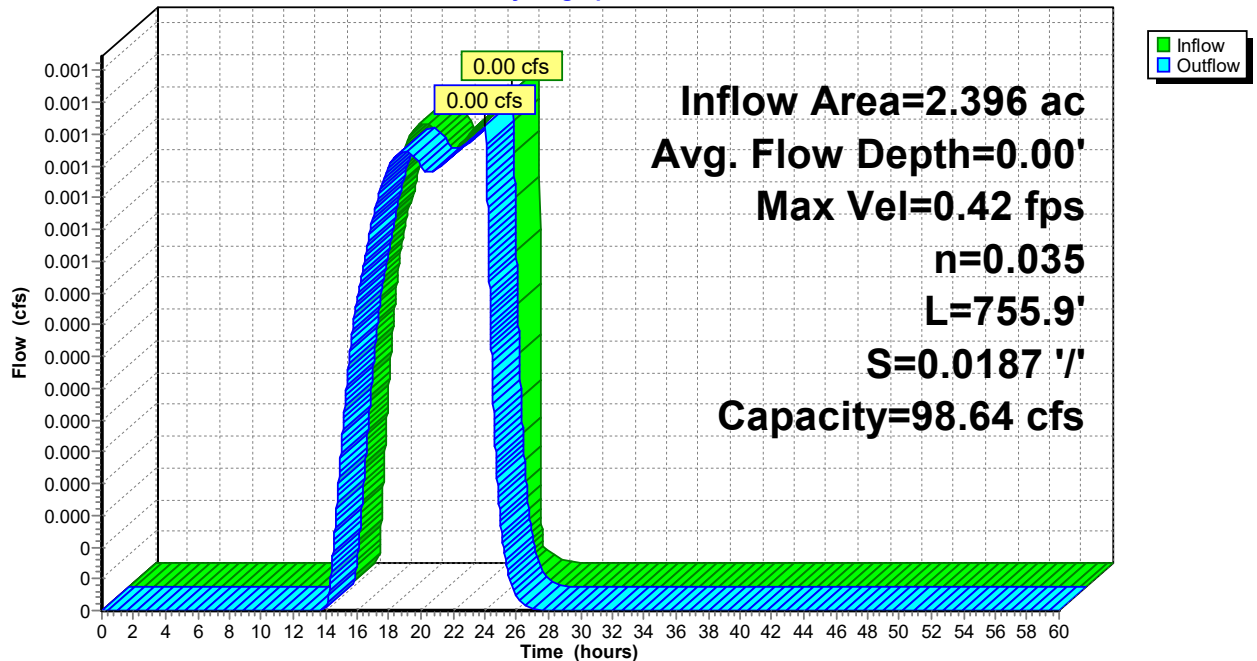
Peak Storage= 1 cf @ 24.03 hrs
 Average Depth at Peak Storage= 0.00', Surface Width= 2.01'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 98.64 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 755.9' Slope= 0.0187 '/'
 Inlet Invert= 1,442.84', Outlet Invert= 1,428.67'



Reach 1.2bR3: South Road Conveyance Swale

Hydrograph



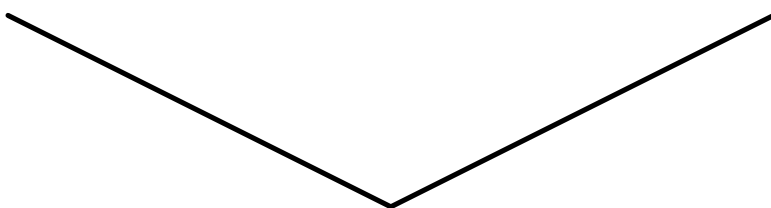
Summary for Reach 4.1R1: Bypass Swale

Inflow Area = 11.663 ac, 2.80% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

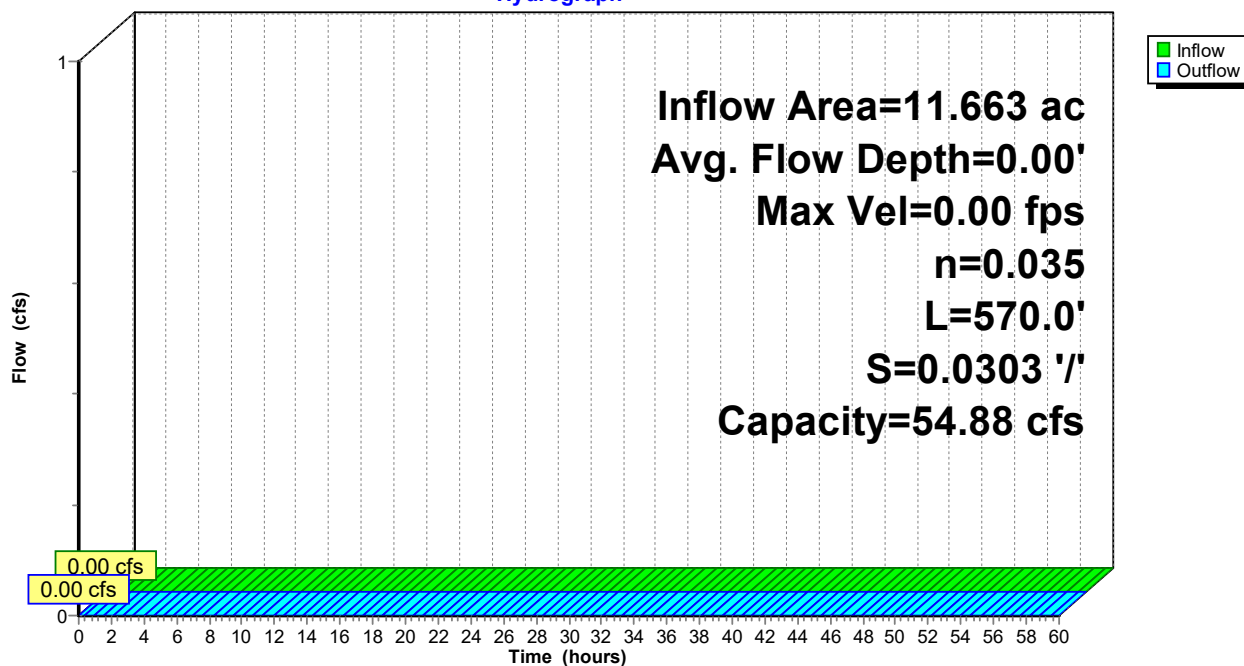
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 54.88 cfs

0.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 8.00'
 Length= 570.0' Slope= 0.0303 '/
 Inlet Invert= 1,448.24', Outlet Invert= 1,430.97'



Reach 4.1R1: Bypass Swale

Hydrograph



Summary for Reach 4.1R2: Ex Stream

Inflow Area = 39.250 ac, 0.83% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

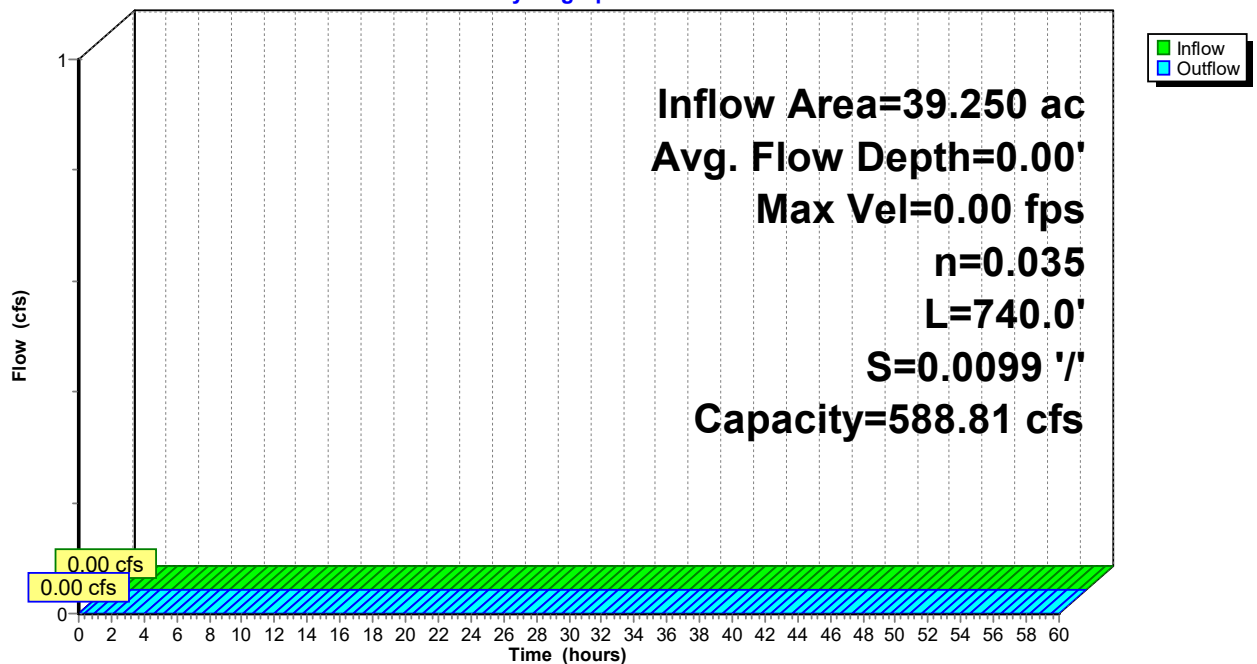
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 3.00' Flow Area= 84.0 sf, Capacity= 588.81 cfs

17.50' x 3.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 4.0 '/' Top Width= 38.50'
 Length= 740.0' Slope= 0.0099 '/'
 Inlet Invert= 1,430.98', Outlet Invert= 1,423.64'



Reach 4.1R2: Ex Stream

Hydrograph



Summary for Reach 4.2bR: Conveyance Swale

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 0.01" for WQv event
 Inflow = 0.00 cfs @ 17.70 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 18.02 hrs, Volume= 0.000 af, Atten= 0%, Lag= 19.4 min
 Routed to Pond 4.2bP : Pond 4 - Access Rd East

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.53 fps, Min. Travel Time= 17.8 min
 Avg. Velocity = 0.53 fps, Avg. Travel Time= 17.8 min

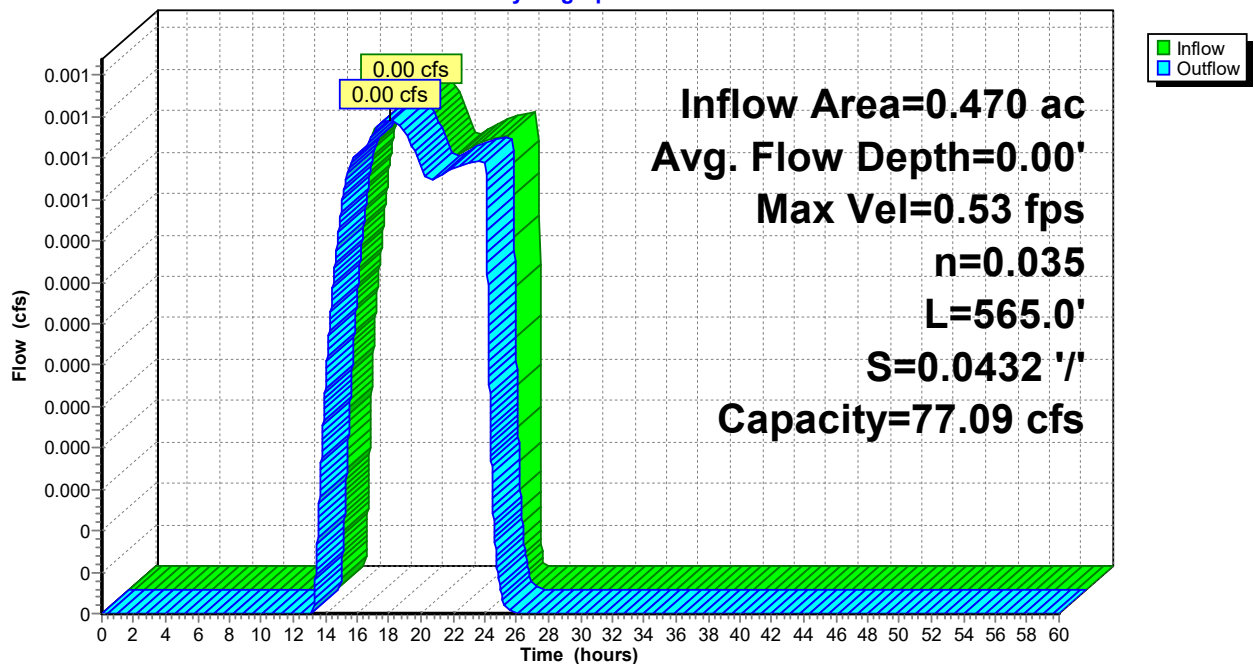
Peak Storage= 1 cf @ 18.02 hrs
 Average Depth at Peak Storage= 0.00', Surface Width= 2.00'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 77.09 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 11.00'
 Length= 565.0' Slope= 0.0432 '/'
 Inlet Invert= 1,472.38', Outlet Invert= 1,448.00'



Reach 4.2bR: Conveyance Swale

Hydrograph



Summary for Pond 1.1aC1: TS1 Culvert

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR2 : Bypass Swale

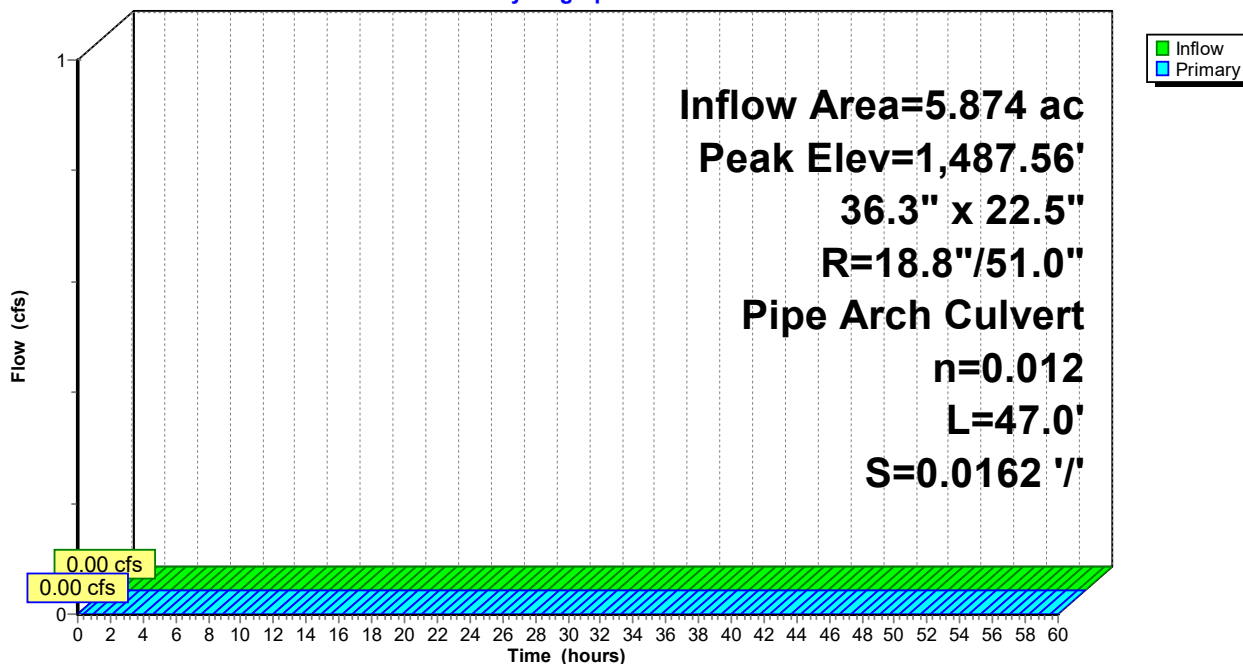
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,487.56' @ 0.00 hrs
 Flood Elev= 1,489.60'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,487.56' | 36.3" W x 22.5" H, R=18.8"/51.0" Pipe Arch RCP_Arch 37x23 L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,487.56' / 1,486.80' S= 0.0162 '/' Cc= 0.900 n= 0.012, Flow Area= 4.43 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,487.56' (Free Discharge)
 ↑1=RCP_Arch 37x23 (Controls 0.00 cfs)

Pond 1.1aC1: TS1 Culvert

Hydrograph



Summary for Pond 1.1aC2: TS2 Culvert

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR3 : Bypass Swale

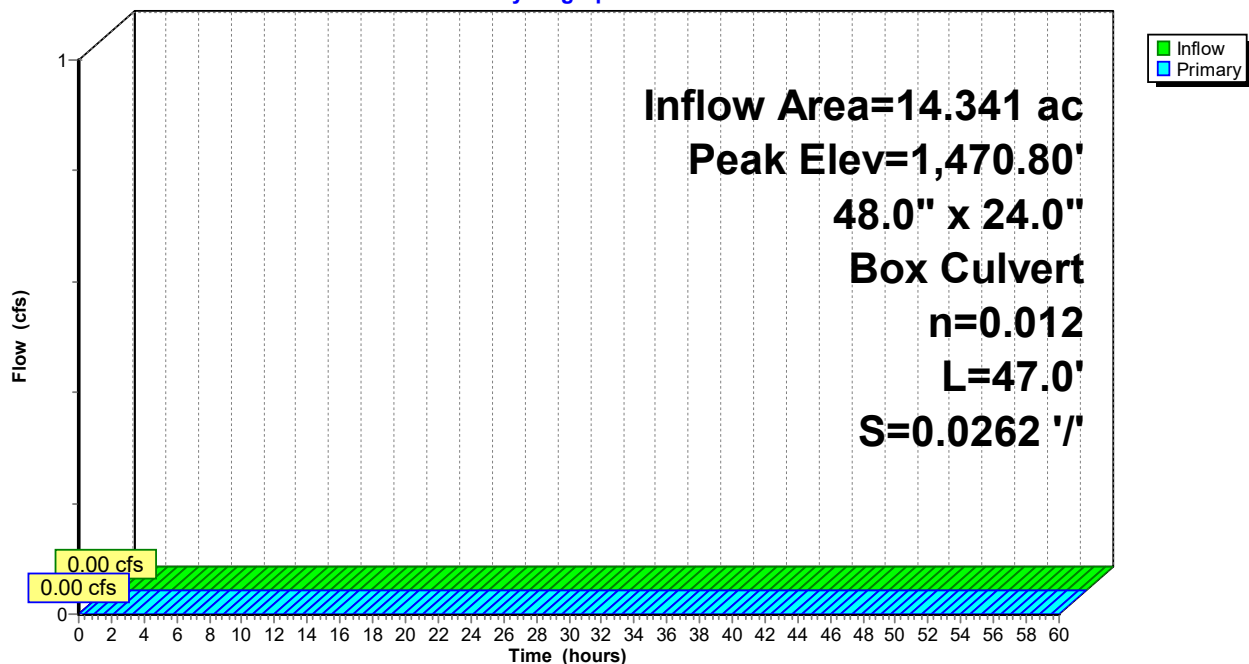
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,470.80' @ 0.00 hrs
 Flood Elev= 1,473.07'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,470.80' | 48.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,470.80' / 1,469.57' S= 0.0262 '/ Cc= 0.900 n= 0.012, Flow Area= 8.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,470.80' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.1aC2: TS2 Culvert

Hydrograph



Summary for Pond 1.1aC3: TS3 Culvert

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR4 : Bypass Swale

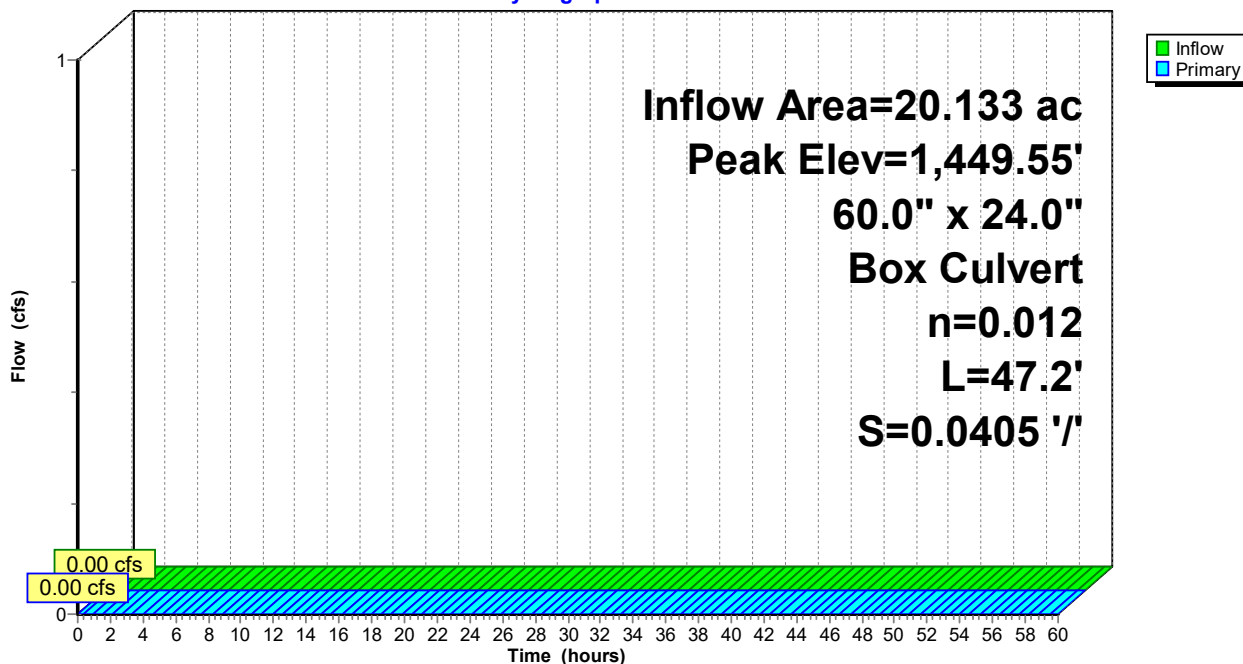
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.55' @ 0.00 hrs
 Flood Elev= 1,452.10'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,449.55' | 60.0" W x 24.0" H Box Culvert L= 47.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.55' / 1,447.64' S= 0.0405 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,449.55' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.1aC3: TS3 Culvert

Hydrograph



Summary for Pond 1.1aP: North Road Bypass OC

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.00' @ 0.00 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

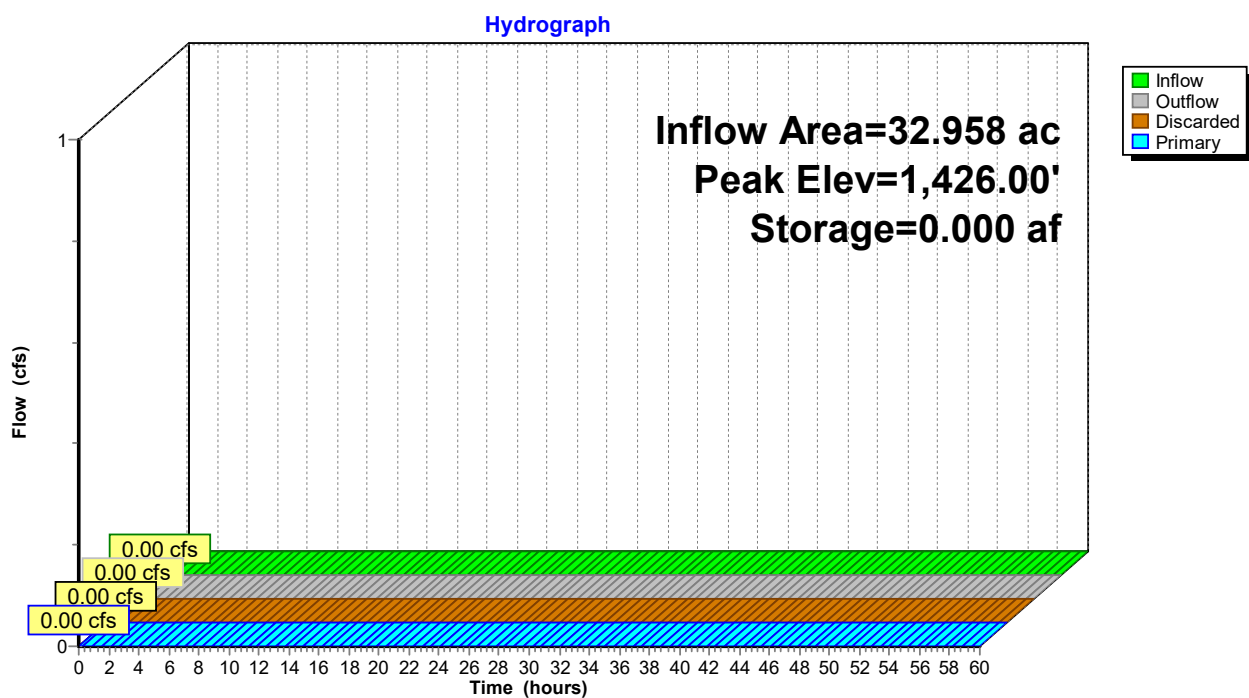
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,426.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,426.00' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,428.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,426.00' (Free Discharge)
 ↳1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,426.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.1aP: North Road Bypass OC



Summary for Pond 1.1bC1: TS4 Culvert

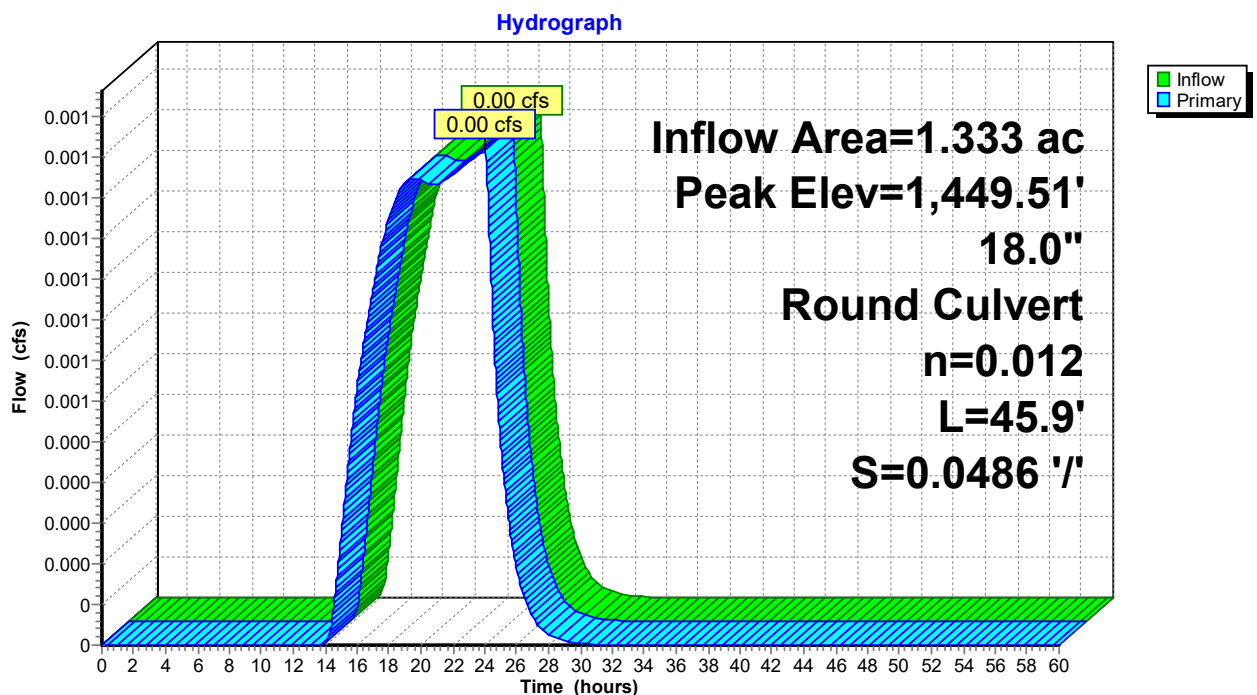
Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 0.01" for WQv event
 Inflow = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.51' @ 24.03 hrs
 Flood Elev= 1,451.20'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,449.50' | 18.0" Round Culvert L= 45.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.50' / 1,447.27' S= 0.0486 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=0.00 cfs @ 24.03 hrs HW=1,449.51' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 0.00 cfs @ 0.39 fps)

Pond 1.1bC1: TS4 Culvert



Summary for Pond 1.1bP1: Dry Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.01" for WQv event
 Inflow = 0.00 cfs @ 24.04 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 24.72 hrs, Volume= 0.001 af, Atten= 37%, Lag= 40.6 min
 Discarded = 0.00 cfs @ 24.72 hrs, Volume= 0.001 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 1.1bP2 : North Road Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,425.32' @ 24.72 hrs Surf.Area= 76 sf Storage= 17 cf

Plug-Flow detention time= 255.0 min calculated for 0.001 af (100% of inflow)
 Center-of-Mass det. time= 255.0 min (1,512.3 - 1,257.3)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,424.75' | 428 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,424.75 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,425.00 | 25 | 22.9 | 2 | 2 | 42 | |
| 1,426.00 | 273 | 98.0 | 127 | 129 | 767 | |
| 1,426.70 | 603 | 161.7 | 299 | 428 | 2,086 | |

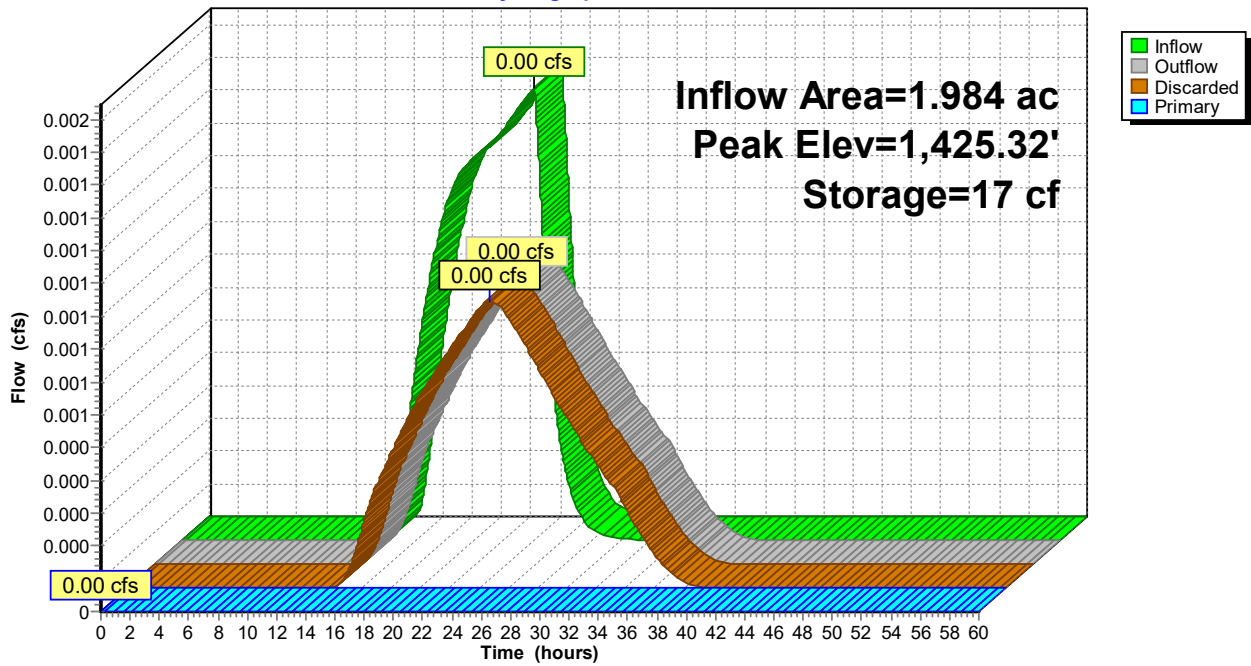
| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | |
|--------|-----------|-----------|--|--|--|--|--|--|--|--|--|--|--|--|
| #1 | Discarded | 1,424.75' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | |
| #2 | Primary | 1,425.69' | 2.0' long x 2.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 | | | | | | | | | | | |
| | | | Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32 | | | | | | | | | | | |

Discarded OutFlow Max=0.00 cfs @ 24.72 hrs HW=1,425.32' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.75' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.1bP1: Dry Swale

Hydrograph



Summary for Pond 1.1bP2: North Road Detention Pond

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,421.50' @ 0.00 hrs Surf.Area= 0.009 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

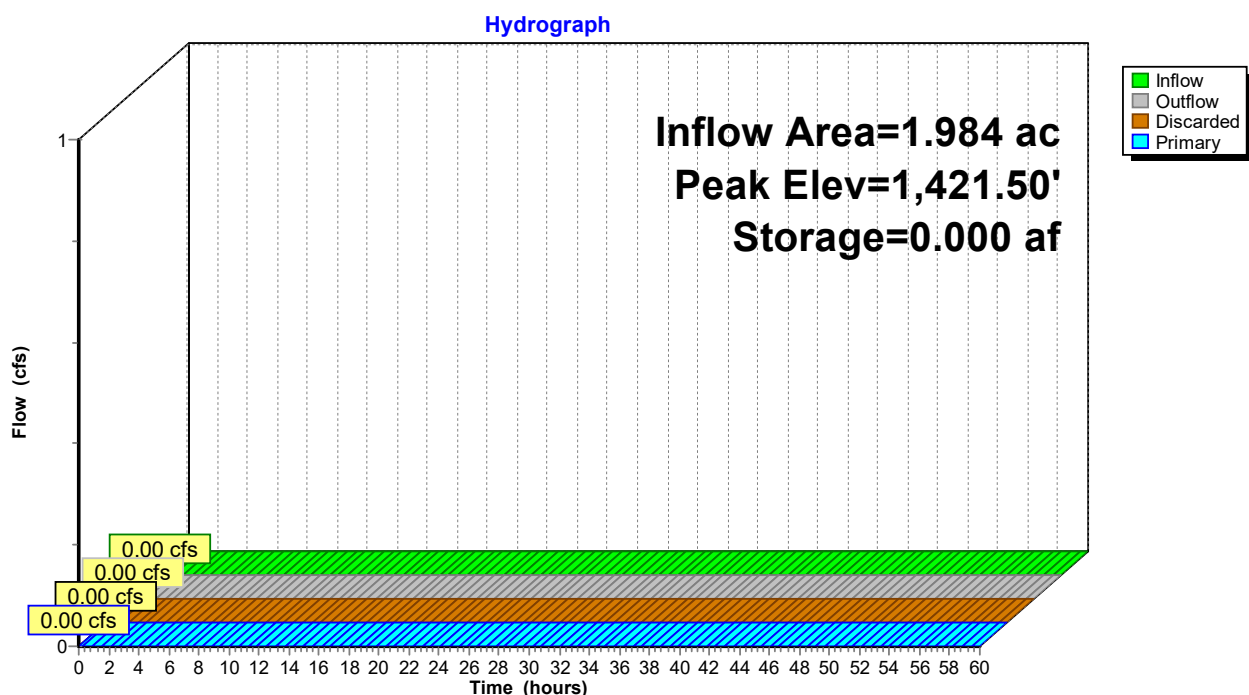
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,421.50' | 0.166 af | 10.00'W x 40.00'L x 5.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,421.50' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,424.00' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,421.50' (Free Discharge)
 ↳1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,421.50' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.1bP2: North Road Detention Pond



Summary for Pond 1.2aC1: TS 7 Culvert

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.2aR2 : Bypass Swale

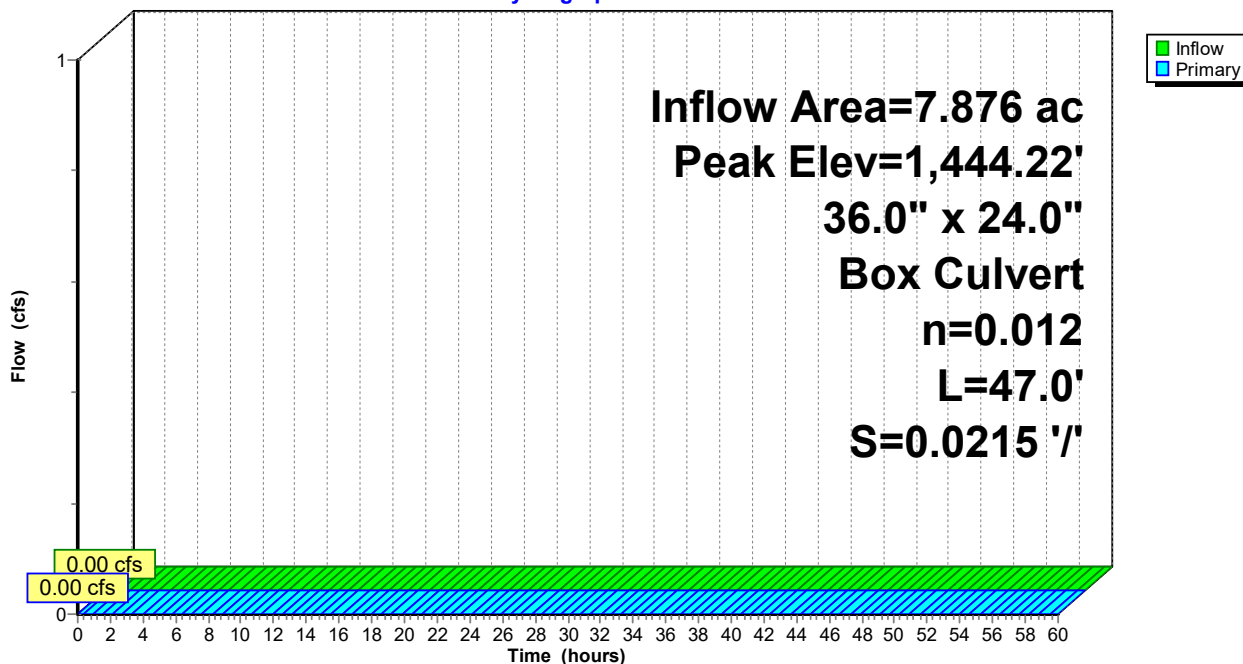
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,444.22' @ 0.00 hrs
 Flood Elev= 1,446.28'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,444.22' | 36.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,444.22' / 1,443.21' S= 0.0215 '/ Cc= 0.900 n= 0.012, Flow Area= 6.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,444.22' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.2aC1: TS 7 Culvert

Hydrograph



Summary for Pond 1.2aC2: TS8 Culvert

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.2aR3 : Bypass Swale

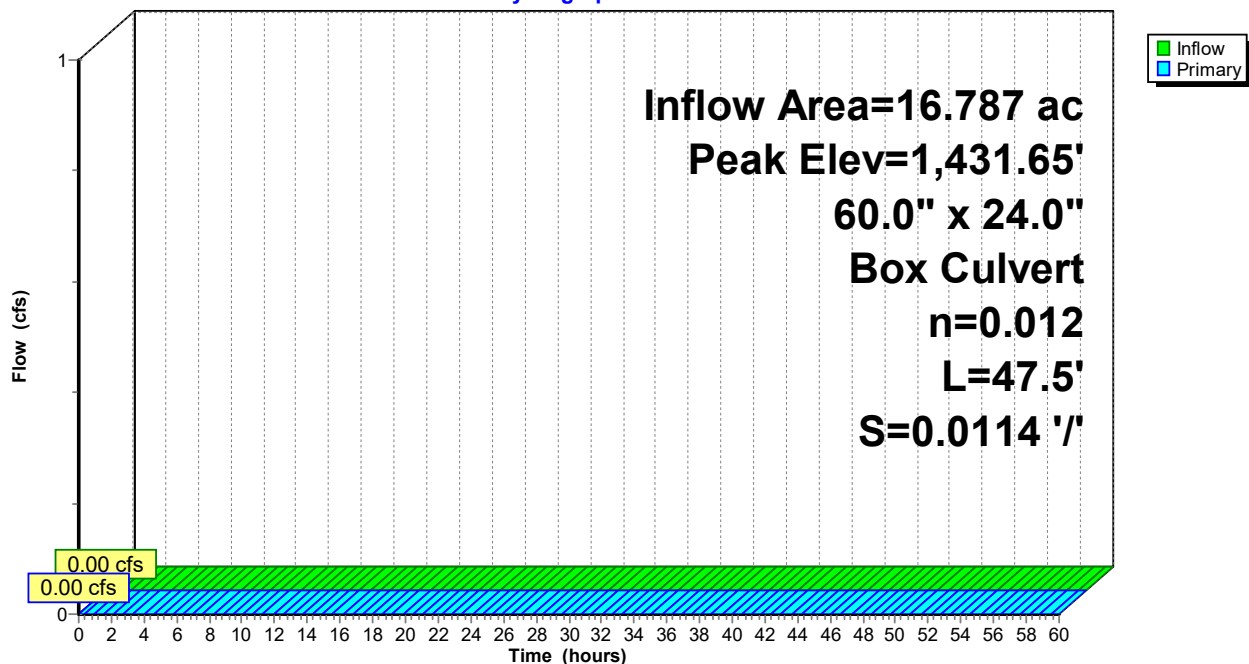
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.65' @ 0.00 hrs
 Flood Elev= 1,433.87'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,431.65' | 60.0" W x 24.0" H Box Culvert L= 47.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,431.65' / 1,431.11' S= 0.0114 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,431.65' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.2aC2: TS8 Culvert

Hydrograph



Summary for Pond 1.2aP: South Road Bypass OC

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.00' @ 0.00 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

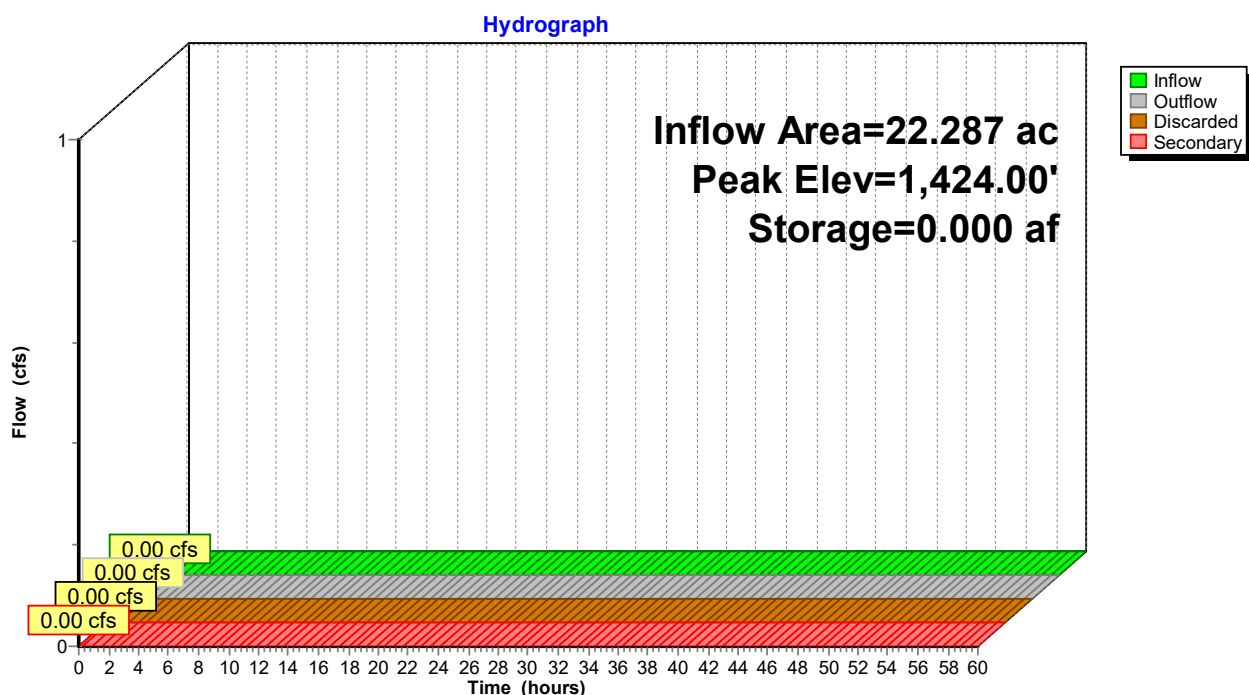
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area |
| #2 | Secondary | 1,426.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳1=Exfiltration (Passes 0.00 cfs of 0.06 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.2aP: South Road Bypass OC



Summary for Pond 1.2bC1: East Road Culvert

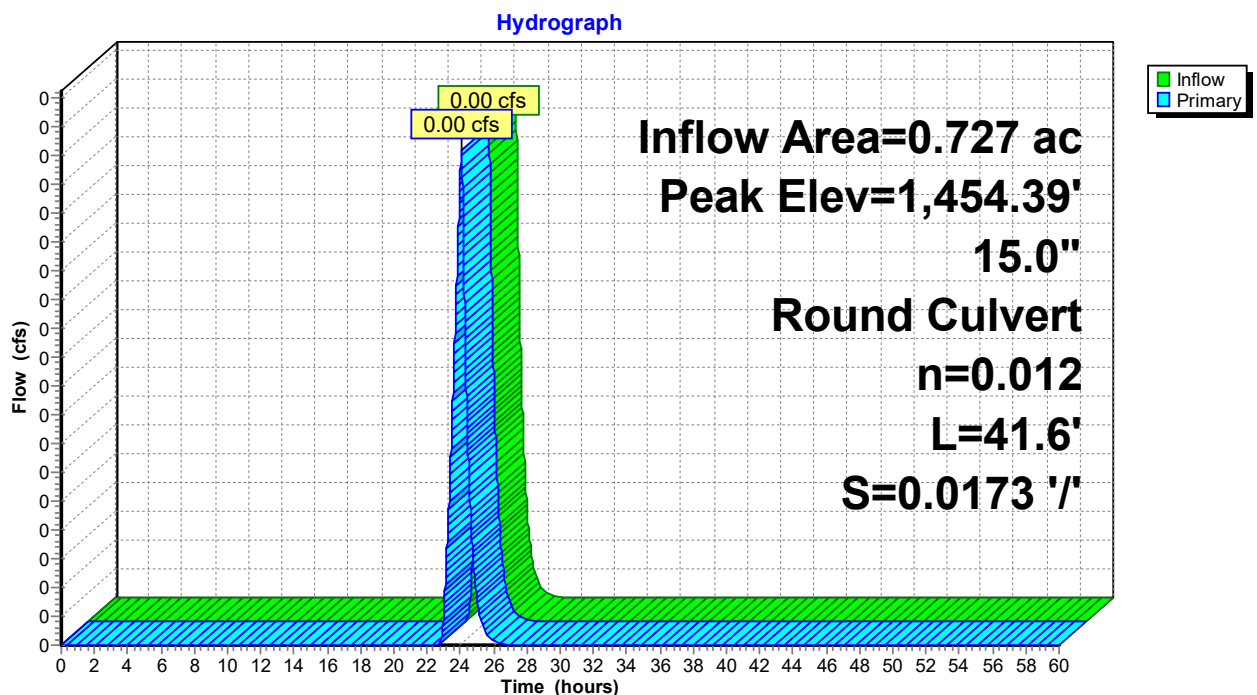
Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 24.06 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.06 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 24.06 hrs, Volume= 0.000 af
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,454.39' @ 24.06 hrs
 Flood Elev= 1,457.45'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,454.39' | 15.0" Round Culvert L= 41.6' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,454.39' / 1,453.67' S= 0.0173 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf |

Primary OutFlow Max=0.00 cfs @ 24.06 hrs HW=1,454.39' (Free Discharge)
 ↑ **1=Culvert** (Barrel Controls 0.00 cfs @ 0.04 fps)

Pond 1.2bC1: East Road Culvert



Summary for Pond 1.2bC2: TS6 Culvert

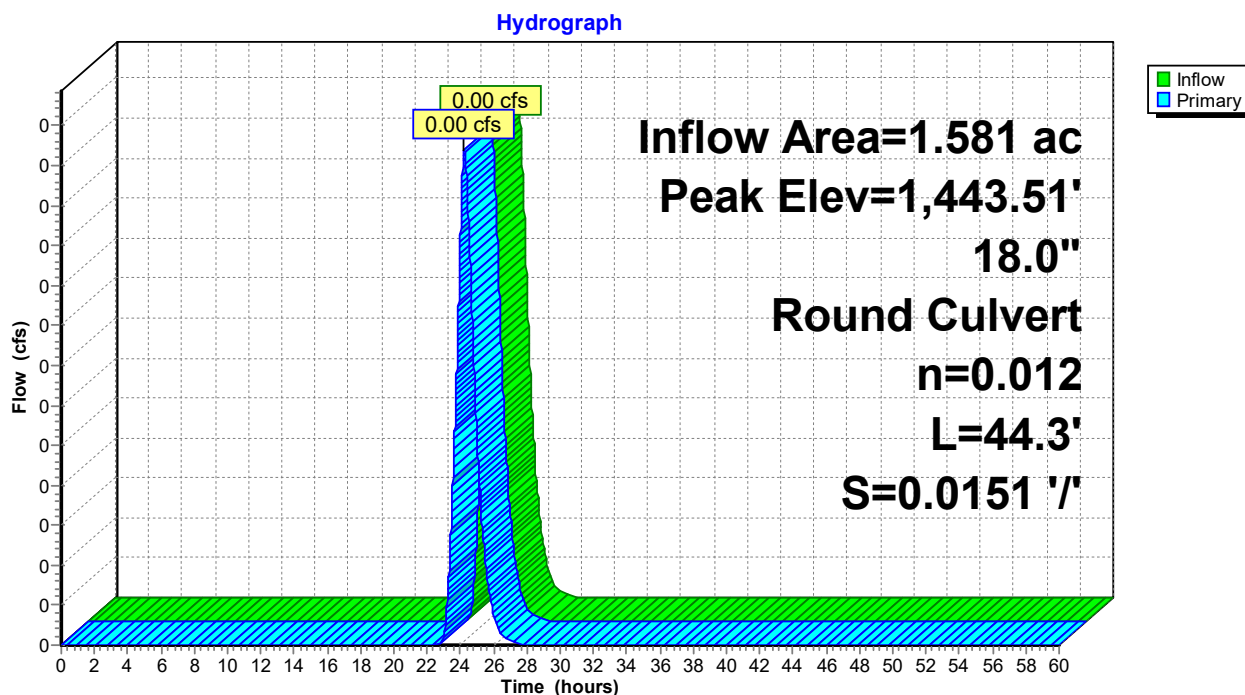
Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 24.23 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.23 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 24.23 hrs, Volume= 0.000 af
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,443.51' @ 24.23 hrs
 Flood Elev= 1,445.09'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,443.51' | 18.0" Round Culvert L= 44.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,443.51' / 1,442.84' S= 0.0151 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=0.00 cfs @ 24.23 hrs HW=1,443.51' (Free Discharge)
 ←**1=Culvert** (Barrel Controls 0.00 cfs @ 0.04 fps)

Pond 1.2bC2: TS6 Culvert



Summary for Pond 1.2bP: South Road Treatment Pond

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 24.05 hrs, Volume= 0.001 af, Atten= 0%, Lag= 1.1 min
 Discarded = 0.00 cfs @ 24.05 hrs, Volume= 0.001 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.00' @ 24.05 hrs Surf.Area= 0.009 ac Storage= 0.000 af

Plug-Flow detention time= 3.0 min calculated for 0.001 af (100% of inflow)
 Center-of-Mass det. time= 3.0 min (1,209.7 - 1,206.7)

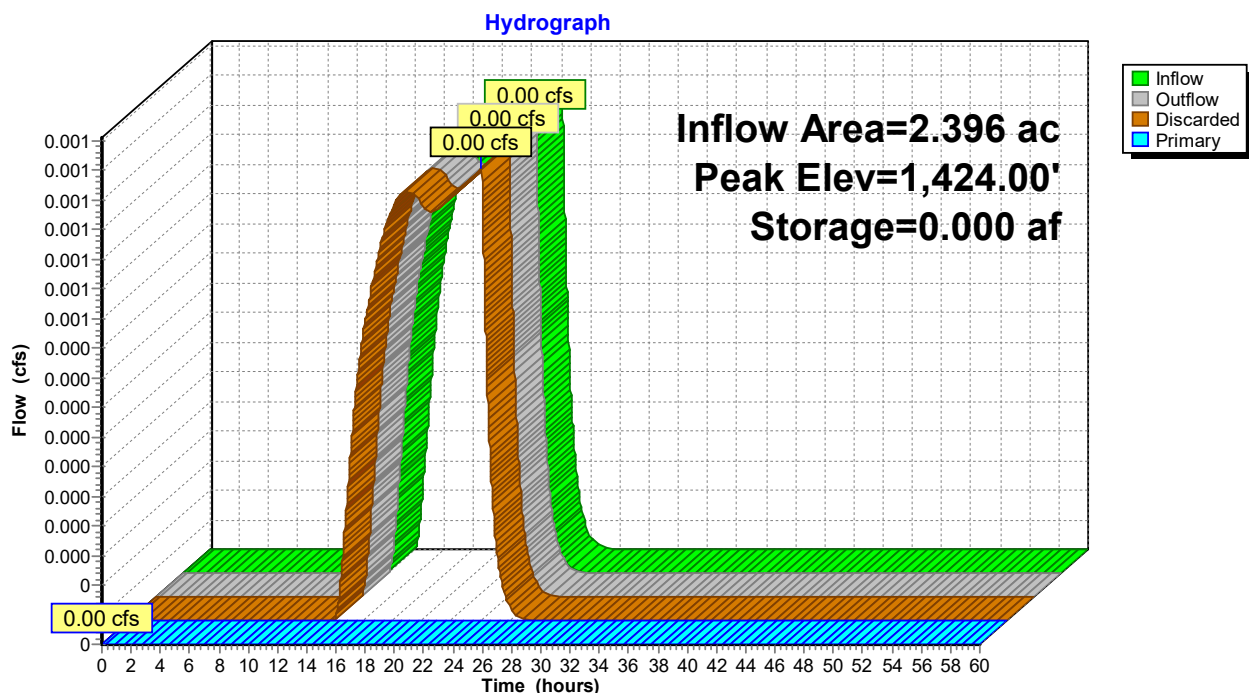
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.149 af | 20.00'W x 20.00'L x 5.00'H Prismaoid Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,426.05' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 24.05 hrs HW=1,424.00' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.2bP: South Road Treatment Pond



Summary for Pond 1.3P: Pond 3 - Access Rd West

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link SP1 : Study Point 1

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,456.00' @ 0.00 hrs Surf.Area= 784 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,456.00' | 8,743 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,456.00 | 784 | 123.0 | 0 | 0 | 784 | |
| 1,458.00 | 1,720 | 194.0 | 2,443 | 2,443 | 2,603 | |
| 1,459.00 | 2,884 | 279.0 | 2,277 | 4,721 | 5,811 | |
| 1,460.00 | 5,280 | 421.0 | 4,022 | 8,743 | 13,729 | |

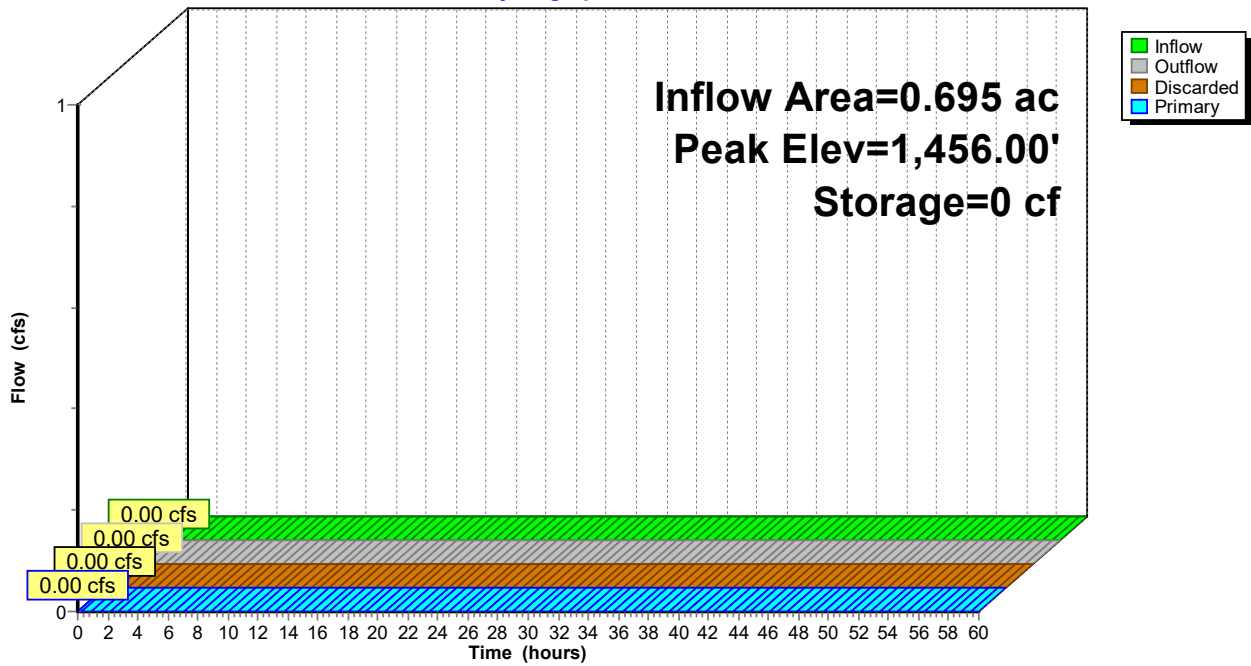
| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | | | | | | | | |
|--------|-----------|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| #1 | Discarded | 1,456.00' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | | | | | | | | |
| #2 | Primary | 1,459.99' | 20.0' long x 4.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | | | | | | | | |
| | | | Head (feet) | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 5.50 | |
| | | | Coef. (English) | 2.38 | 2.54 | 2.69 | 2.68 | 2.67 | 2.67 | 2.65 | 2.66 | 2.66 | 2.66 | 2.68 | 2.72 | 2.73 | 2.76 | 2.79 | 2.88 | 3.07 | 3.32 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,456.00' (Free Discharge)
 ↑1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,456.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.3P: Pond 3 - Access Rd West

Hydrograph



Summary for Pond 4.2bP: Pond 4 - Access Rd East

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 0.01" for WQv event
 Inflow = 0.00 cfs @ 18.02 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 18.09 hrs, Volume= 0.000 af, Atten= 0%, Lag= 3.7 min
 Discarded = 0.00 cfs @ 18.09 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 4.2C : 18" Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,445.50' @ 18.09 hrs Surf.Area= 200 sf Storage= 0 cf

Plug-Flow detention time= 4.1 min calculated for 0.000 af (100% of inflow)
 Center-of-Mass det. time= 4.1 min (1,156.5 - 1,152.4)

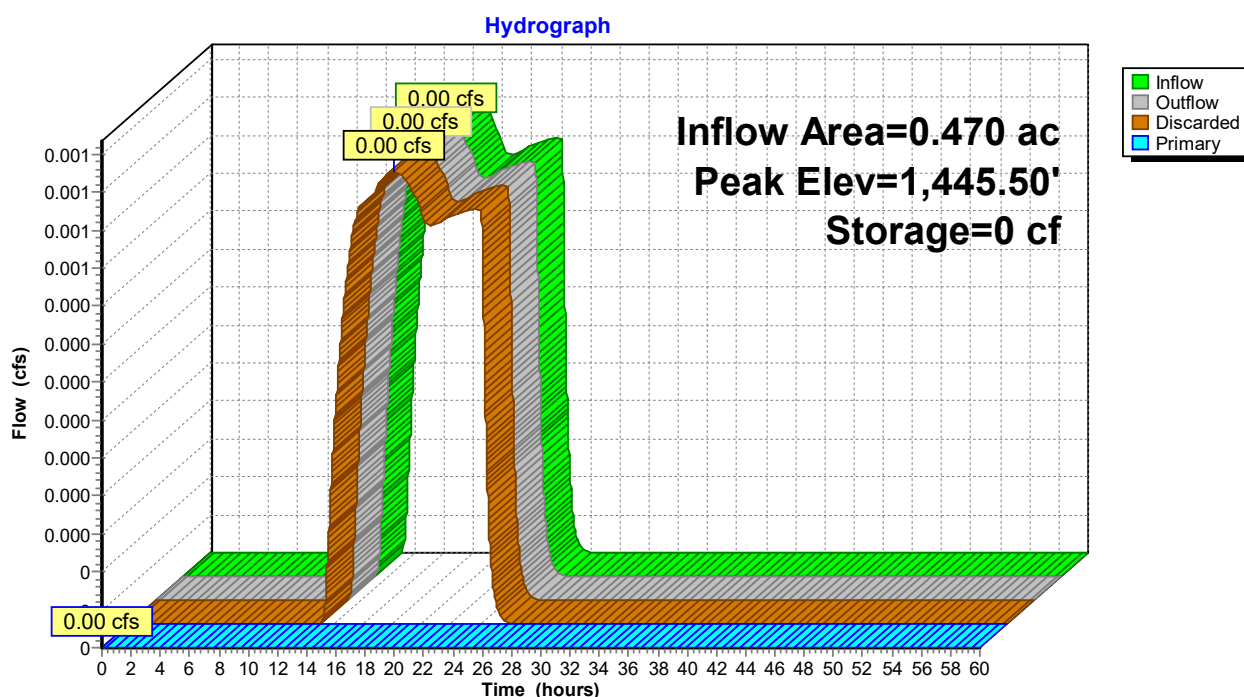
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|--|
| #1 | 1,445.50' | 2,317 cf | 10.00'W x 20.00'L x 3.50'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|---|-----------|-----------|--|
| #1 | Discarded | 1,445.50' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,448.25' | 10.0' long x 4.0' breadth Broad-Crested Rectangular Weir |
| Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 | | | |
| 2.50 3.00 3.50 4.00 4.50 5.00 5.50 | | | |
| Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 | | | |
| 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32 | | | |

Discarded OutFlow Max=0.00 cfs @ 18.09 hrs HW=1,445.50' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,445.50' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.2bP: Pond 4 - Access Rd East



Summary for Pond 4.2C: 18" Culvert

Inflow Area = 27.587 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.50' @ 0.00 hrs Storage= 0 cf
 Flood Elev= 1,434.64' Surf.Area= 27,666 sf Storage= 28,656 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

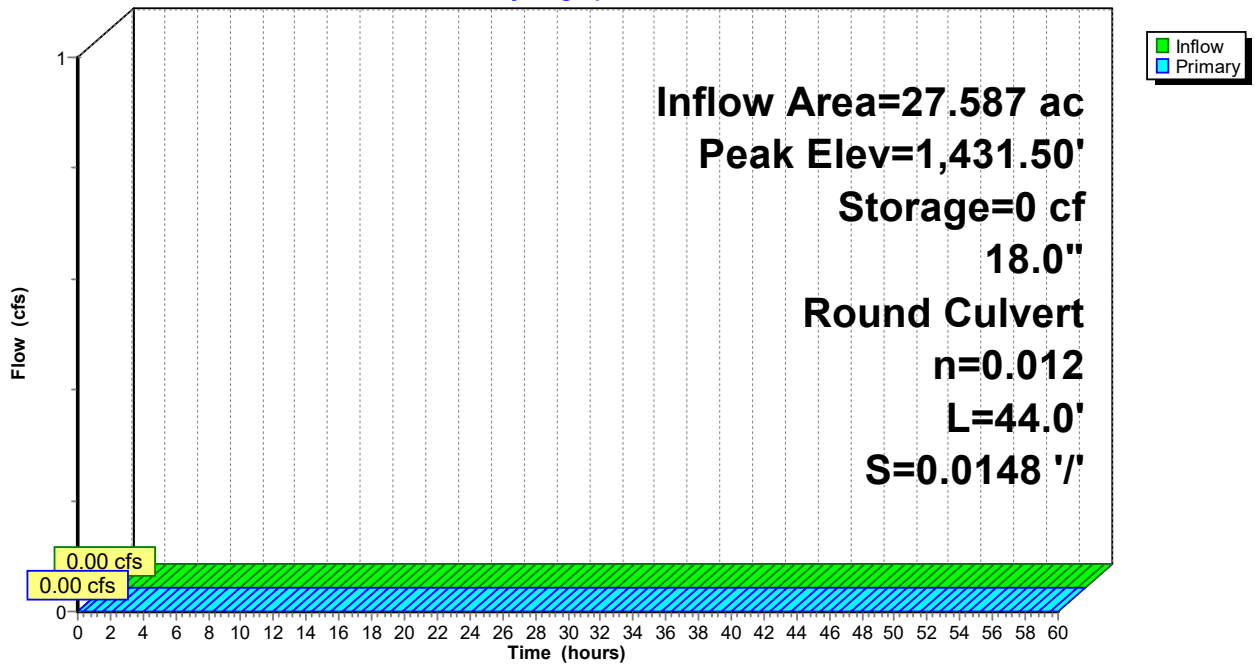
| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,431.50' | 39,033 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,431.50 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,432.00 | 1,190 | 146.0 | 198 | 198 | 1,697 | |
| 1,432.50 | 3,534 | 368.0 | 1,129 | 1,327 | 10,778 | |
| 1,433.00 | 5,795 | 497.0 | 2,309 | 3,637 | 19,660 | |
| 1,433.50 | 10,362 | 837.0 | 3,984 | 7,621 | 55,755 | |
| 1,434.00 | 16,931 | 975.0 | 6,756 | 14,377 | 75,659 | |
| 1,434.60 | 27,412 | 1,352.0 | 13,177 | 27,555 | 145,474 | |
| 1,435.00 | 30,000 | 1,500.0 | 11,479 | 39,033 | 179,068 | |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.83' | 18.0" Round Culvert L= 44.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.83' / 1,431.18' S= 0.0148 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,431.50' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 4.2C: 18" Culvert

Hydrograph



Summary for Pond 4.3C: 24" Culvert

Inflow Area = 25.466 ac, 5.08% Impervious, Inflow Depth = 0.00" for WQv event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.35' @ 0.00 hrs
 Flood Elev= 1,434.65'

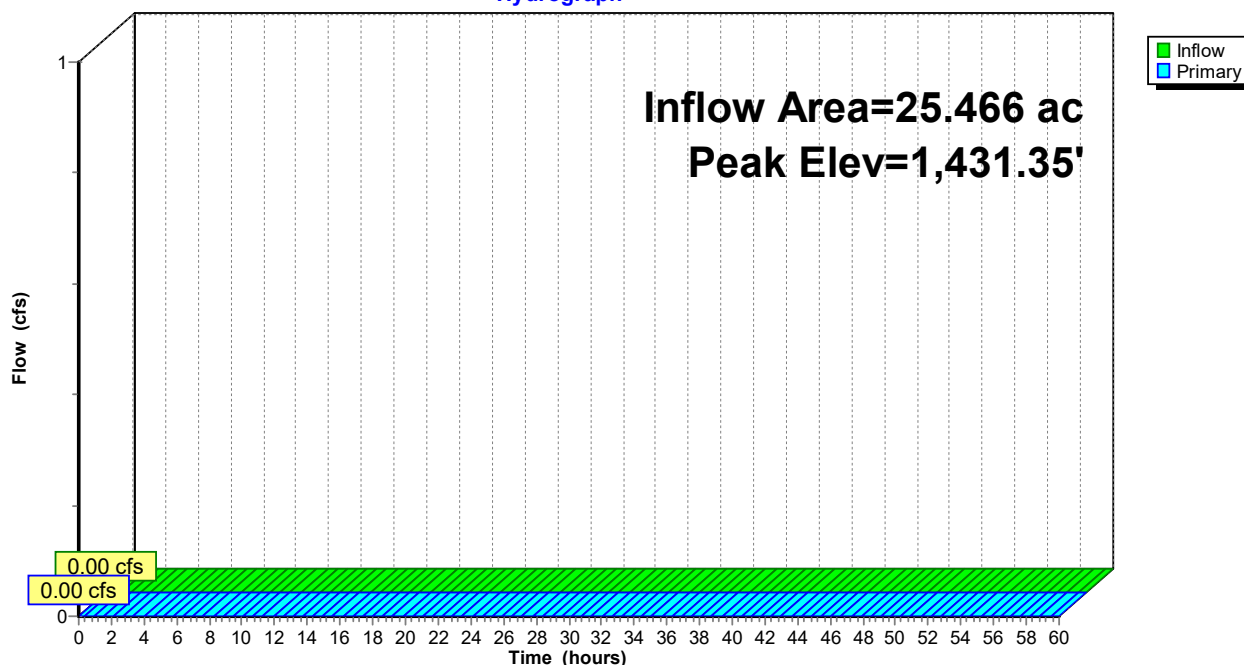
| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.35' | 24.0" Round Culvert L= 55.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.35' / 1,429.87' S= 0.0265 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf |
| #2 | Primary | 1,434.81' | 20.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,431.35' (Free Discharge)

- 1=Culvert (Controls 0.00 cfs)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.3C: 24" Culvert

Hydrograph



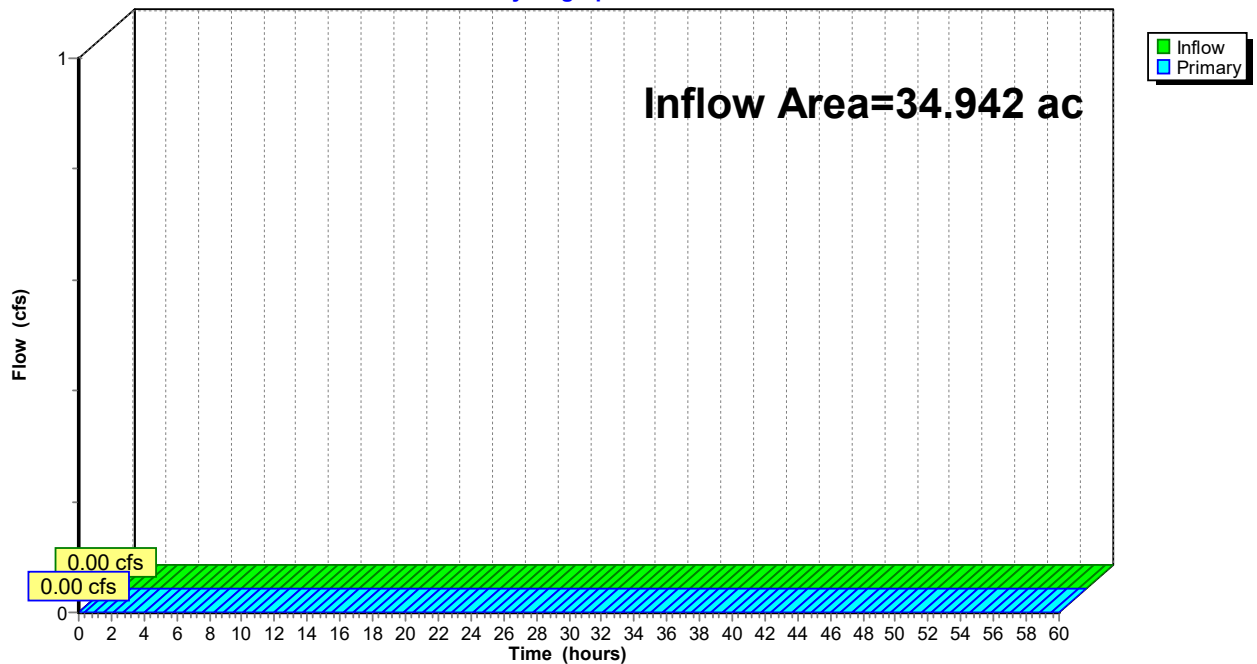
Summary for Link 1.1L:

Inflow Area = 34.942 ac, 0.04% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.1L:

Hydrograph

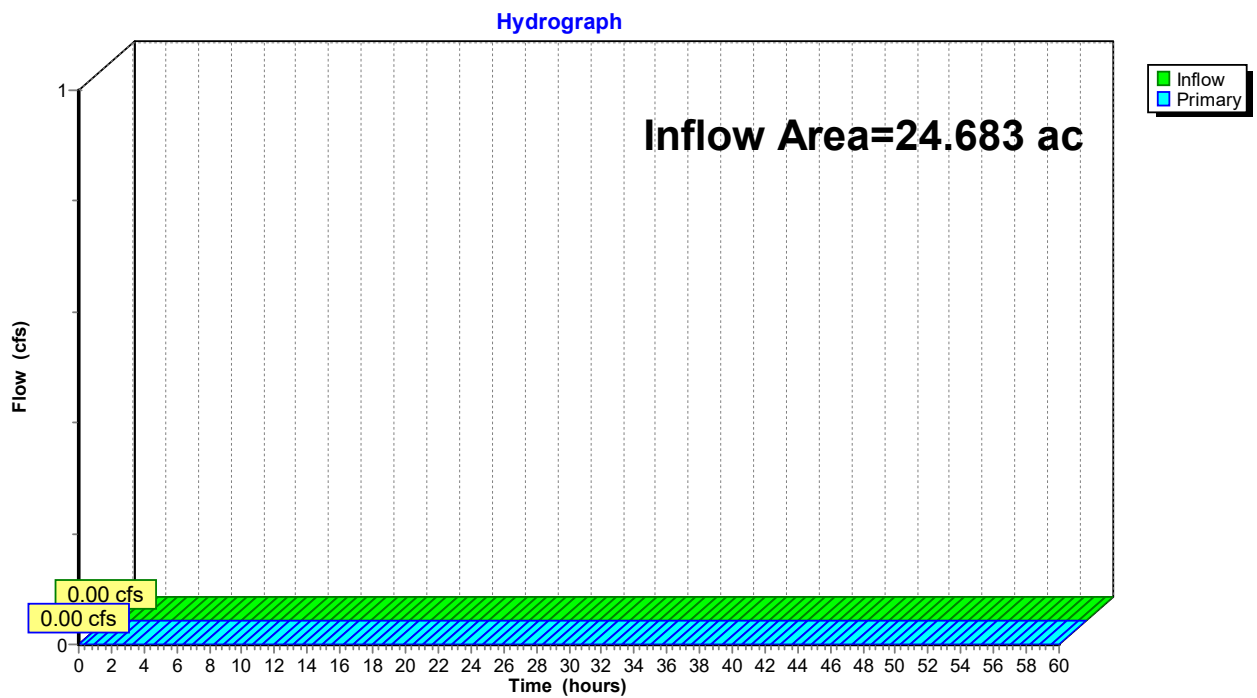


Summary for Link 1.2L:

Inflow Area = 24.683 ac, 0.06% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.2L:

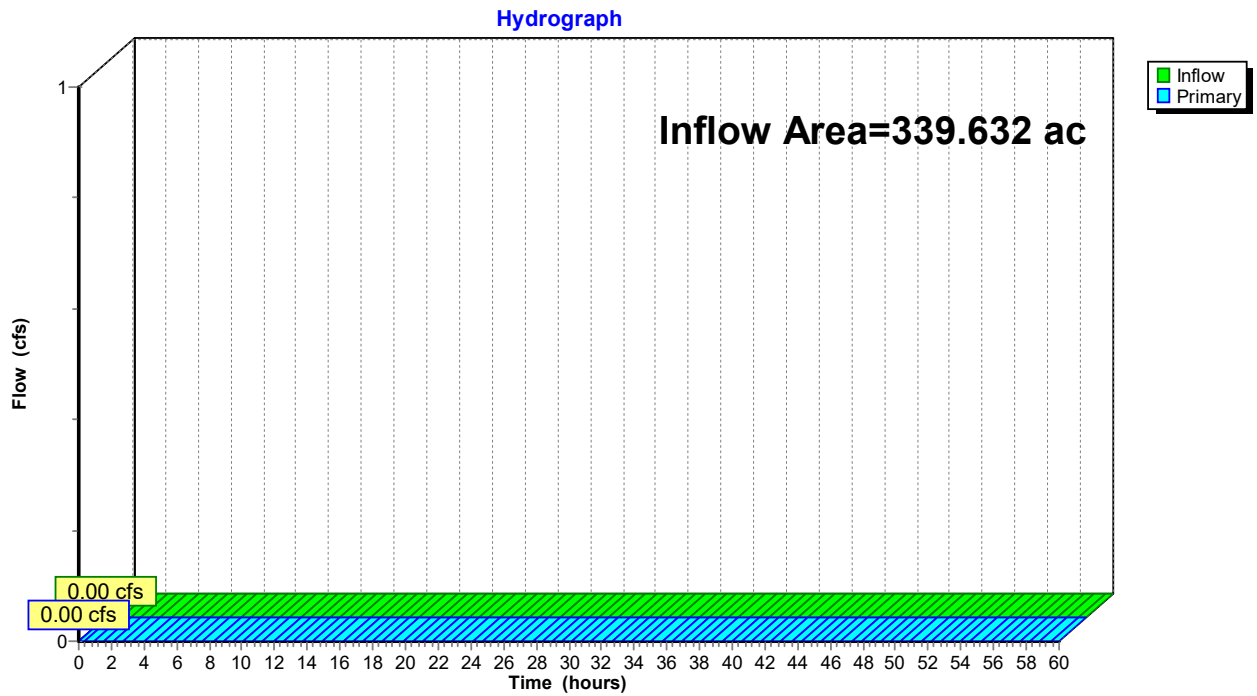


Summary for Link SP1: Study Point 1

Inflow Area = 339.632 ac, 0.01% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP1: Study Point 1

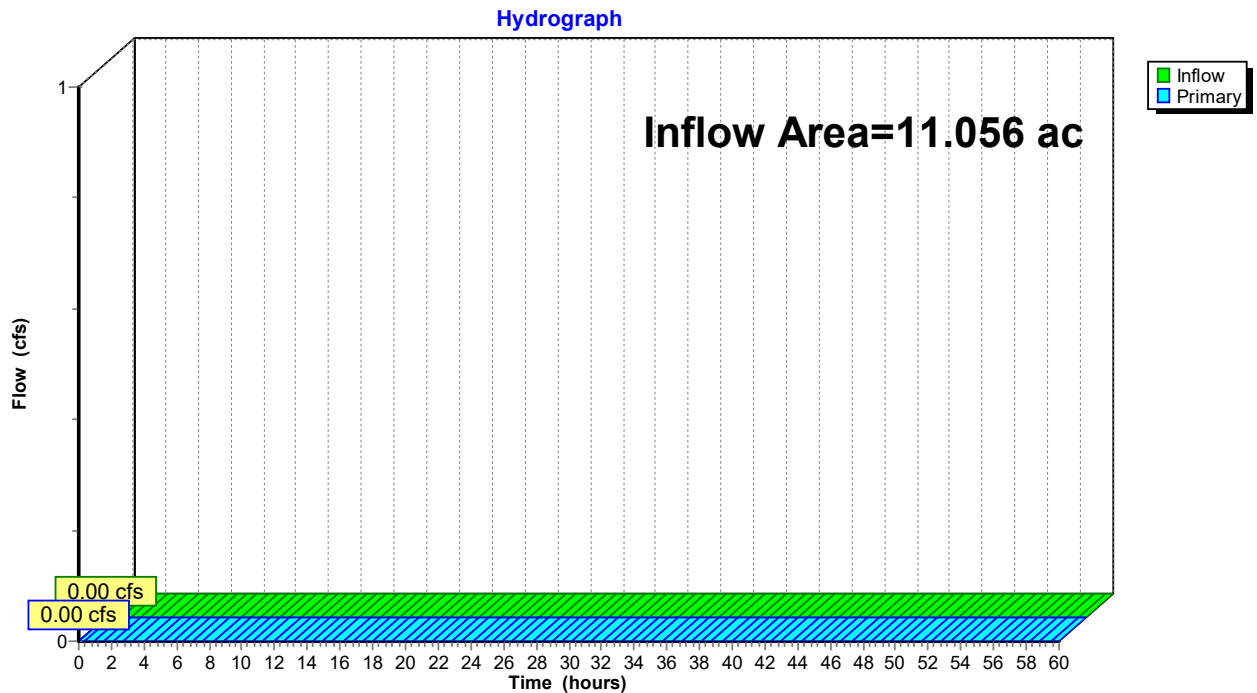


Summary for Link SP2: Study Point 2

Inflow Area = 11.056 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP2: Study Point 2

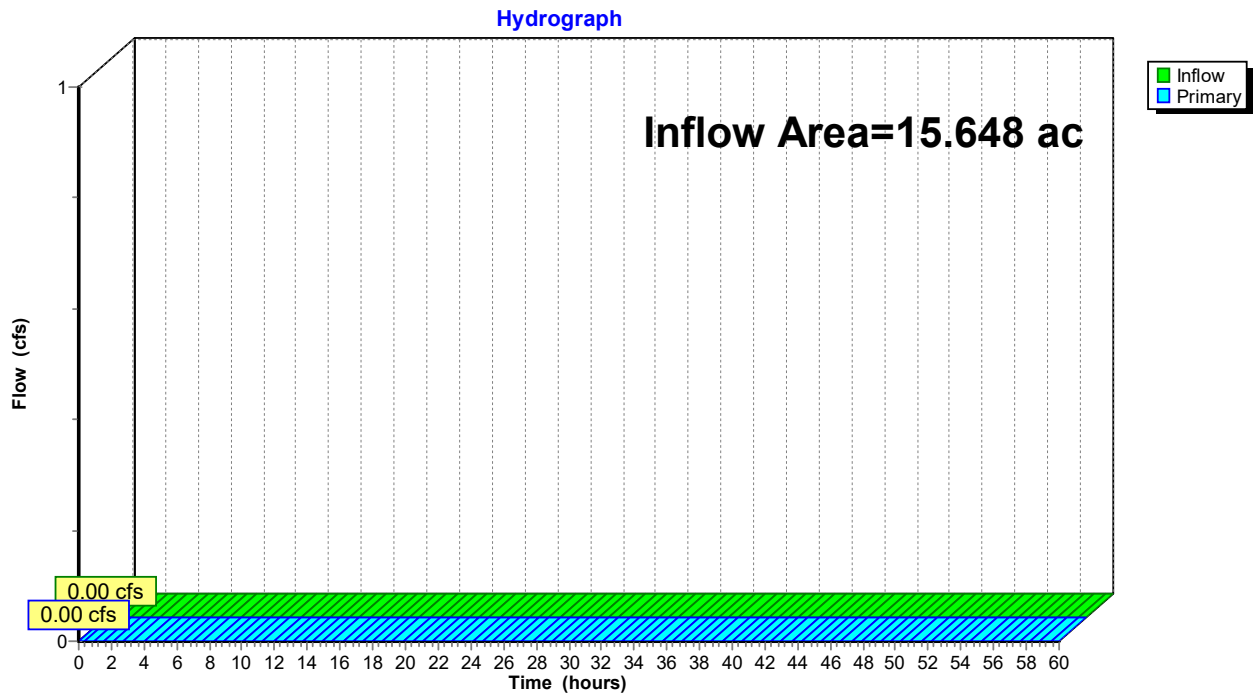


Summary for Link SP3: Study Point 3

Inflow Area = 15.648 ac, 0.56% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP3: Study Point 3

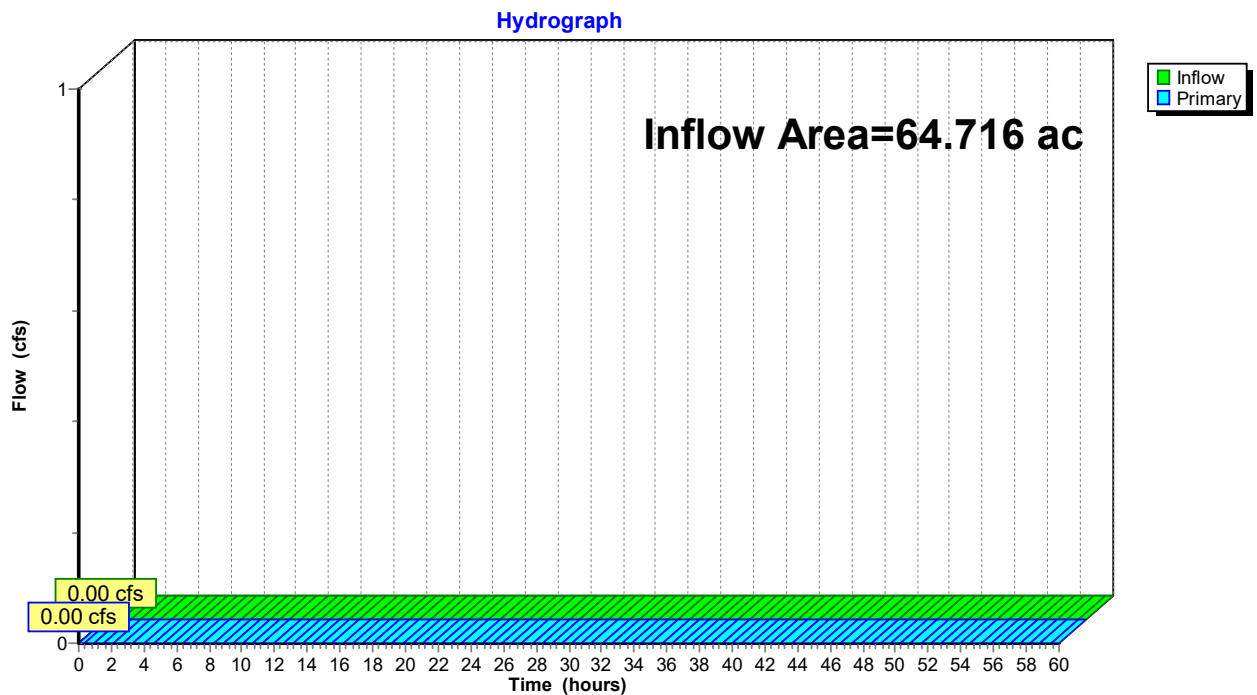


Summary for Link SP4: Study Point 4

Inflow Area = 64.716 ac, 2.50% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP4: Study Point 4

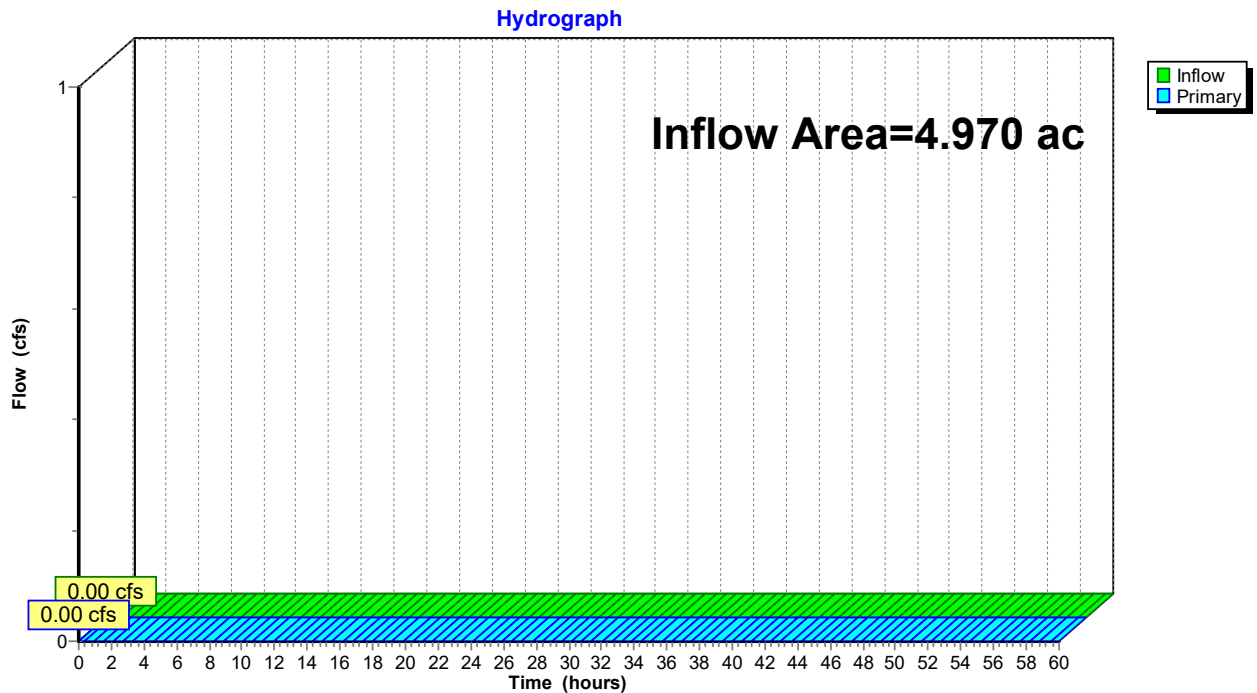


Summary for Link SP5: Study Point 5

Inflow Area = 4.970 ac, 0.00% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP5: Study Point 5

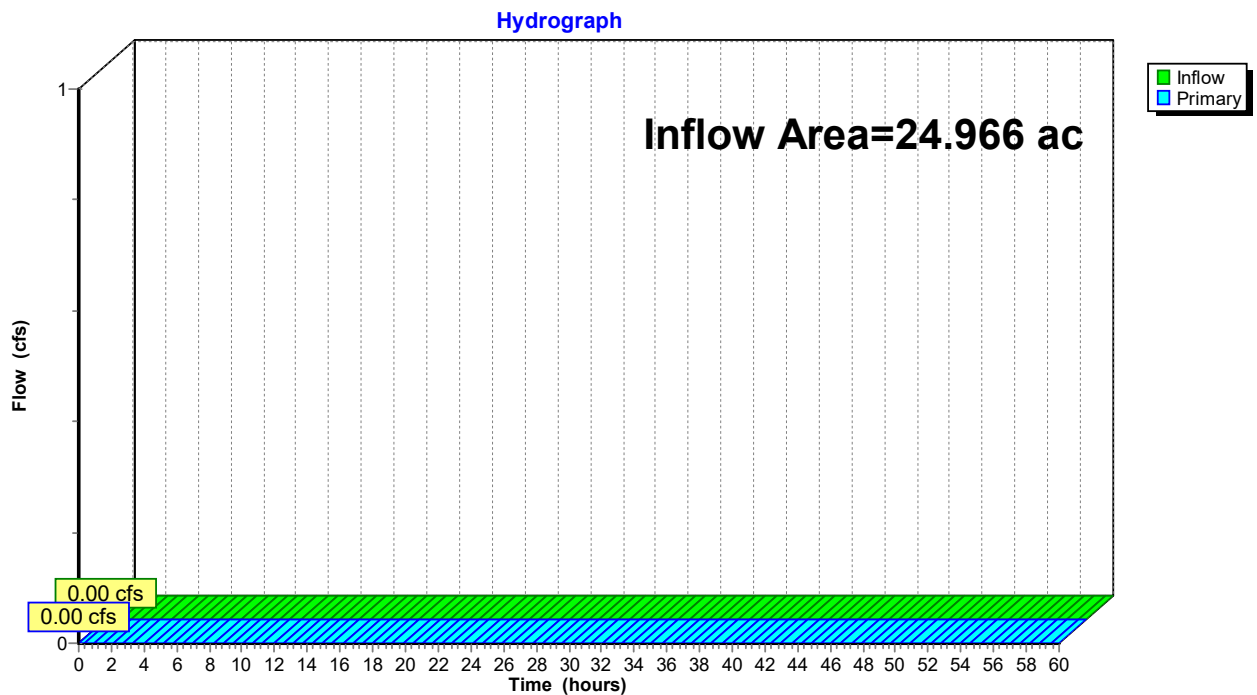


Summary for Link SP6: Study Point 6

Inflow Area = 24.966 ac, 5.81% Impervious, Inflow Depth = 0.00" for WQv event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP6: Study Point 6



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

| | |
|---|--|
| Subcatchment 1.1aS1: North Array East | Runoff Area=5.874 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=788' Tc=18.8 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS2: North Array East | Runoff Area=8.467 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=931' Tc=21.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS3: North Array West | Runoff Area=5.792 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,031' Tc=19.7 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS4: North Array West | Runoff Area=12.825 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,562' Tc=26.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1bS1: North Road - East | Runoff Area=1.333 ac 0.53% Impervious Runoff Depth=0.26" Tc=6.0 min CN=71 Runoff=0.47 cfs 0.029 af |
| Subcatchment 1.1bS2: North Road - West | Runoff Area=0.651 ac 1.08% Impervious Runoff Depth=0.19" Tc=6.0 min CN=68 Runoff=0.13 cfs 0.010 af |
| Subcatchment 1.2aS1: Middle Array East | Runoff Area=7.876 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=865' Tc=19.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS2: Middle Array Center | Runoff Area=8.911 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=825' Tc=18.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS3: Middle Array West | Runoff Area=5.500 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=882' Tc=18.5 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2bS1: East Road - West | Runoff Area=0.727 ac 0.00% Impervious Runoff Depth=0.17" Tc=6.0 min CN=67 Runoff=0.12 cfs 0.010 af |
| Subcatchment 1.2bS2: South Road | Runoff Area=0.854 ac 0.47% Impervious Runoff Depth=0.04" Flow Length=308' Tc=13.7 min CN=58 Runoff=0.00 cfs 0.003 af |
| Subcatchment 1.2bS3: South Road | Runoff Area=0.815 ac 1.35% Impervious Runoff Depth=0.26" Tc=6.0 min CN=71 Runoff=0.29 cfs 0.018 af |
| Subcatchment 1.3aS1: Surface Discharge | Runoff Area=279.312 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=6,771' Tc=201.7 min CN=39 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.3bS: Access Rd to Pond 3 | Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.00" Tc=6.0 min CN=51 Runoff=0.00 cfs 0.000 af |
| Subcatchment 2S: | Runoff Area=11.056 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=2,342' Tc=36.0 min CN=39 Runoff=0.00 cfs 0.000 af |
| Subcatchment 3S: | Runoff Area=15.648 ac 0.56% Impervious Runoff Depth=0.00" Flow Length=886' Tc=12.7 min CN=40 Runoff=0.00 cfs 0.000 af |
| Subcatchment 4.1S: | Runoff Area=11.663 ac 2.80% Impervious Runoff Depth=0.00" Flow Length=845' Tc=15.8 min CN=45 Runoff=0.00 cfs 0.000 af |

| | |
|--|--|
| Subcatchment 4.2aS: | Runoff Area=27.117 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,640' Tc=38.9 min CN=51 Runoff=0.01 cfs 0.001 af |
| Subcatchment 4.2bS: | Runoff Area=0.470 ac 0.00% Impervious Runoff Depth=0.28" Tc=6.0 min CN=72 Runoff=0.19 cfs 0.011 af |
| Subcatchment 4.3S: | Runoff Area=25.466 ac 5.08% Impervious Runoff Depth=0.03" Flow Length=2,280' Tc=36.5 min CN=57 Runoff=0.07 cfs 0.059 af |
| Subcatchment 5S: | Runoff Area=4.970 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,180' Tc=17.5 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 6S: | Runoff Area=24.966 ac 5.81% Impervious Runoff Depth=0.00" Flow Length=1,961' Tc=60.1 min CN=43 Runoff=0.00 cfs 0.000 af |
| Reach 1.1aR1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=580.0' S=0.0108 '/' Capacity=56.37 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR2: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=557.4' S=0.0284 '/' Capacity=91.27 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR3: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=557.5' S=0.0352 '/' Capacity=101.68 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR4: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=580.5' S=0.0362 '/' Capacity=103.04 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1bR1: North Road Conveyance | Avg. Flow Depth=0.06' Max Vel=0.94 fps Inflow=0.47 cfs 0.029 af n=0.035 L=1,733.0' S=0.0240 '/' Capacity=111.65 cfs Outflow=0.12 cfs 0.029 af |
| Reach 1.1bR2: North Road Conveyance | Avg. Flow Depth=0.06' Max Vel=1.18 fps Inflow=0.20 cfs 0.039 af n=0.035 L=593.3' S=0.0380 '/' Capacity=140.36 cfs Outflow=0.15 cfs 0.039 af |
| Reach 1.2aR1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=524.2' S=0.0188 '/' Capacity=74.30 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2aR2: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=556.0' S=0.0204 '/' Capacity=77.47 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2aR3: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=249.0' S=0.0153 '/' Capacity=81.84 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2bR1: East Road Conveyance | Avg. Flow Depth=0.03' Max Vel=0.80 fps Inflow=0.12 cfs 0.010 af n=0.035 L=731.4' S=0.0456 '/' Capacity=79.22 cfs Outflow=0.04 cfs 0.010 af |
| Reach 1.2bR2: South Road Conveyance | Avg. Flow Depth=0.03' Max Vel=0.53 fps Inflow=0.04 cfs 0.013 af n=0.035 L=604.5' S=0.0177 '/' Capacity=95.76 cfs Outflow=0.03 cfs 0.013 af |
| Reach 1.2bR3: South Road Conveyance | Avg. Flow Depth=0.06' Max Vel=0.89 fps Inflow=0.29 cfs 0.030 af n=0.035 L=755.9' S=0.0187 '/' Capacity=98.64 cfs Outflow=0.13 cfs 0.030 af |
| Reach 4.1R1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=570.0' S=0.0303 '/' Capacity=54.88 cfs Outflow=0.00 cfs 0.000 af |
| Reach 4.1R2: Ex Stream | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=740.0' S=0.0099 '/' Capacity=588.81 cfs Outflow=0.00 cfs 0.000 af |

| | | | | |
|---|------------------------------|---------------------|------------------|--------------------|
| Reach 4.2bR: Conveyance Swale | Avg. Flow Depth=0.05' | Max Vel=1.13 fps | Inflow=0.19 cfs | 0.011 af |
| | n=0.035 | L=565.0' | S=0.0432 '/ | Capacity=77.09 cfs |
| | | | Outflow=0.12 cfs | 0.011 af |
| Pond 1.1aC1: TS1 Culvert | | Peak Elev=1,487.56' | Inflow=0.00 cfs | 0.000 af |
| | 36.3" x 22.5", R=18.8"/51.0" | Pipe Arch Culvert | n=0.012 | L=47.0' |
| | | | S=0.0162 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aC2: TS2 Culvert | | Peak Elev=1,470.80' | Inflow=0.00 cfs | 0.000 af |
| | 48.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0262 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aC3: TS3 Culvert | | Peak Elev=1,449.55' | Inflow=0.00 cfs | 0.000 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.2' |
| | | | S=0.0405 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aP: North Road Bypass OC | | Peak Elev=1,426.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1bC1: TS4 Culvert | | Peak Elev=1,449.65' | Inflow=0.12 cfs | 0.029 af |
| | 18.0" | Round Culvert | n=0.012 | L=45.9' |
| | | | S=0.0486 '/ | Outflow=0.12 cfs |
| | | | | 0.029 af |
| Pond 1.1bP1: Dry Swale | | Peak Elev=1,425.78' | Storage=78 cf | Inflow=0.15 cfs |
| | | Discarded=0.00 cfs | 0.004 af | Primary=0.15 cfs |
| | | | 0.035 af | Outflow=0.15 cfs |
| | | | | 0.039 af |
| Pond 1.1bP2: North Road Detention Pond | | Peak Elev=1,423.08' | Storage=0.024 af | Inflow=0.15 cfs |
| | | Discarded=0.01 cfs | 0.034 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.01 cfs |
| | | | | 0.034 af |
| Pond 1.2aC1: TS 7 Culvert | | Peak Elev=1,444.22' | Inflow=0.00 cfs | 0.000 af |
| | 36.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0215 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aC2: TS8 Culvert | | Peak Elev=1,431.65' | Inflow=0.00 cfs | 0.000 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.5' |
| | | | S=0.0114 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aP: South Road Bypass OC | | Peak Elev=1,424.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Secondary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2bC1: East Road Culvert | | Peak Elev=1,454.48' | Inflow=0.04 cfs | 0.010 af |
| | 15.0" | Round Culvert | n=0.012 | L=41.6' |
| | | | S=0.0173 '/ | Outflow=0.04 cfs |
| | | | | 0.010 af |
| Pond 1.2bC2: TS6 Culvert | | Peak Elev=1,443.58' | Inflow=0.03 cfs | 0.013 af |
| | 18.0" | Round Culvert | n=0.012 | L=44.3' |
| | | | S=0.0151 '/ | Outflow=0.03 cfs |
| | | | | 0.013 af |
| Pond 1.2bP: South Road Treatment Pond | | Peak Elev=1,424.05' | Storage=0.000 af | Inflow=0.13 cfs |
| | | Discarded=0.11 cfs | 0.030 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.11 cfs |
| | | | | 0.030 af |
| Pond 1.3P: Pond 3 - Access Rd West | | Peak Elev=1,456.00' | Storage=0 cf | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 4.2bP: Pond 4 - Access Rd East | | Peak Elev=1,445.81' | Storage=70 cf | Inflow=0.12 cfs |
| | | Discarded=0.04 cfs | 0.011 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.04 cfs |
| | | | | 0.011 af |
| Pond 4.2C: 18" Culvert | | Peak Elev=1,431.78' | Storage=35 cf | Inflow=0.01 cfs |
| | 18.0" | Round Culvert | n=0.012 | L=44.0' |
| | | | S=0.0148 '/ | Outflow=0.00 cfs |
| | | | | 0.001 af |
| Pond 4.3C: 24" Culvert | | Peak Elev=1,431.46' | Inflow=0.07 cfs | 0.059 af |
| | | | | Outflow=0.07 cfs |
| | | | | 0.059 af |

| | |
|--------------------------------|---|
| Link 1.1L: | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link 1.2L: | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP1: Study Point 1 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP2: Study Point 2 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP3: Study Point 3 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP4: Study Point 4 | Inflow=0.07 cfs 0.059 af Primary=0.07 cfs 0.059 af |
| Link SP5: Study Point 5 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP6: Study Point 6 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |

Total Runoff Area = 460.988 ac Runoff Volume = 0.140 af Average Runoff Depth = 0.00"
99.31% Pervious = 457.801 ac 0.69% Impervious = 3.187 ac

Summary for Subcatchment 1.1aS1: North Array East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR1 : Bypass Swale

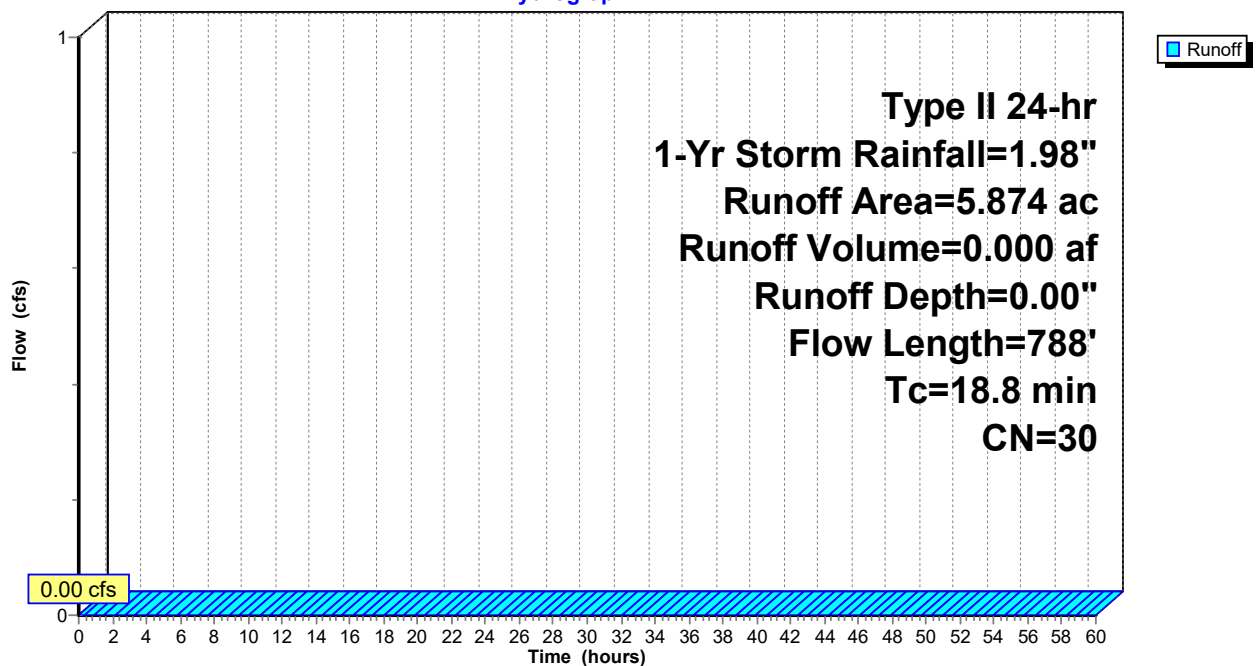
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.874 | 30 | Meadow, non-grazed, HSG A |
| 5.874 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.7 | 100 | 0.0499 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.1 | 688 | 0.0526 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.8 | 788 | Total | | | |

Subcatchment 1.1aS1: North Array East

Hydrograph



Summary for Subcatchment 1.1aS2: North Array East Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR2 : Bypass Swale

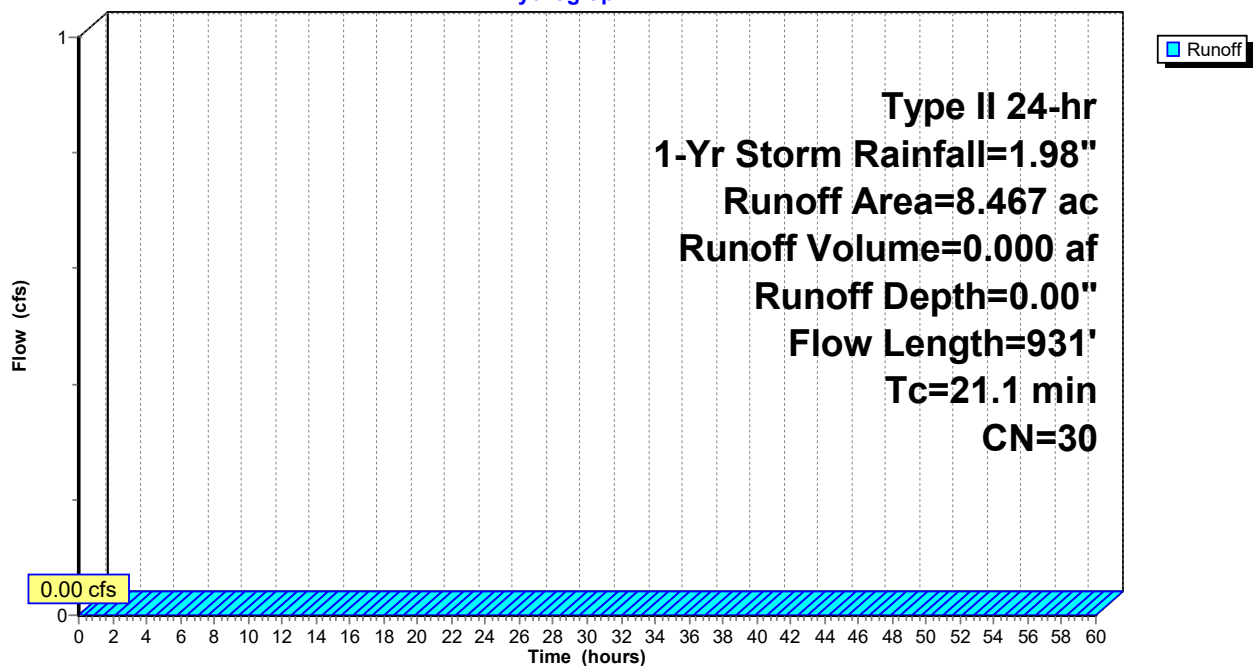
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.467 | 30 | Meadow, non-grazed, HSG A |
| 8.467 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.9 | 100 | 0.0476 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.2 | 831 | 0.0463 | 1.51 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 21.1 | 931 | Total | | | |

Subcatchment 1.1aS2: North Array East Center

Hydrograph



Summary for Subcatchment 1.1aS3: North Array West Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR3 : Bypass Swale

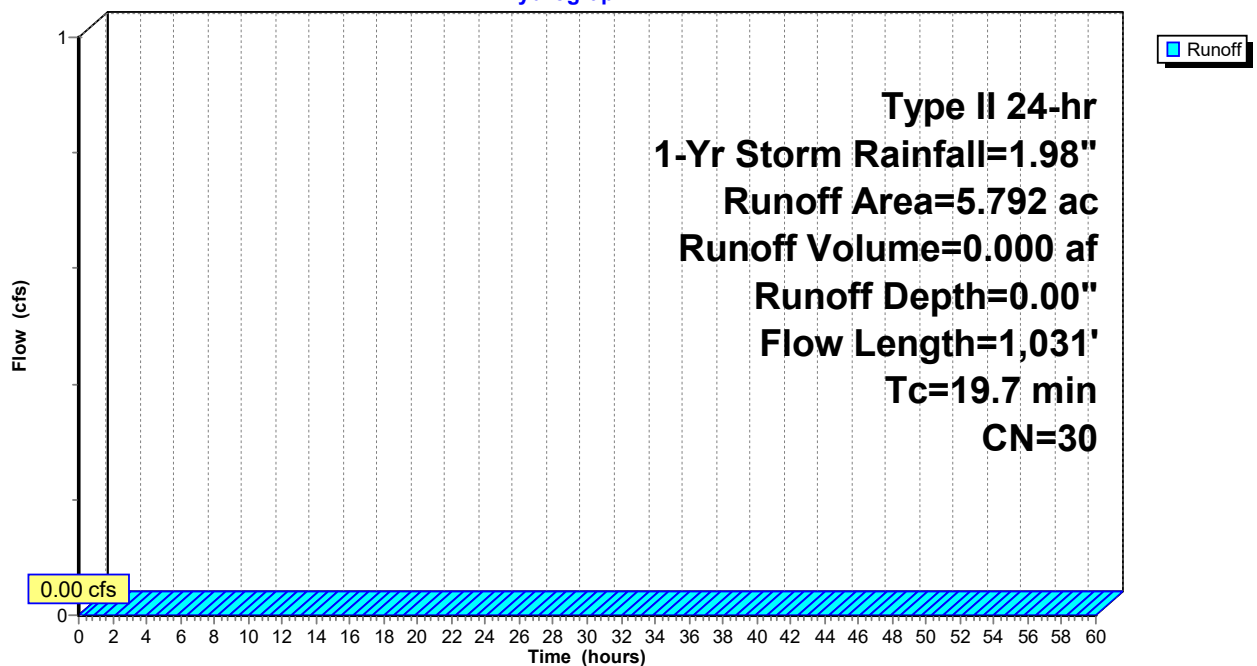
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.792 | 30 | Meadow, non-grazed, HSG A |
| 5.792 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0618 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.0 | 931 | 0.0601 | 1.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.7 | 1,031 | Total | | | |

Subcatchment 1.1aS3: North Array West Center

Hydrograph



Summary for Subcatchment 1.1aS4: North Array West

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR4 : Bypass Swale

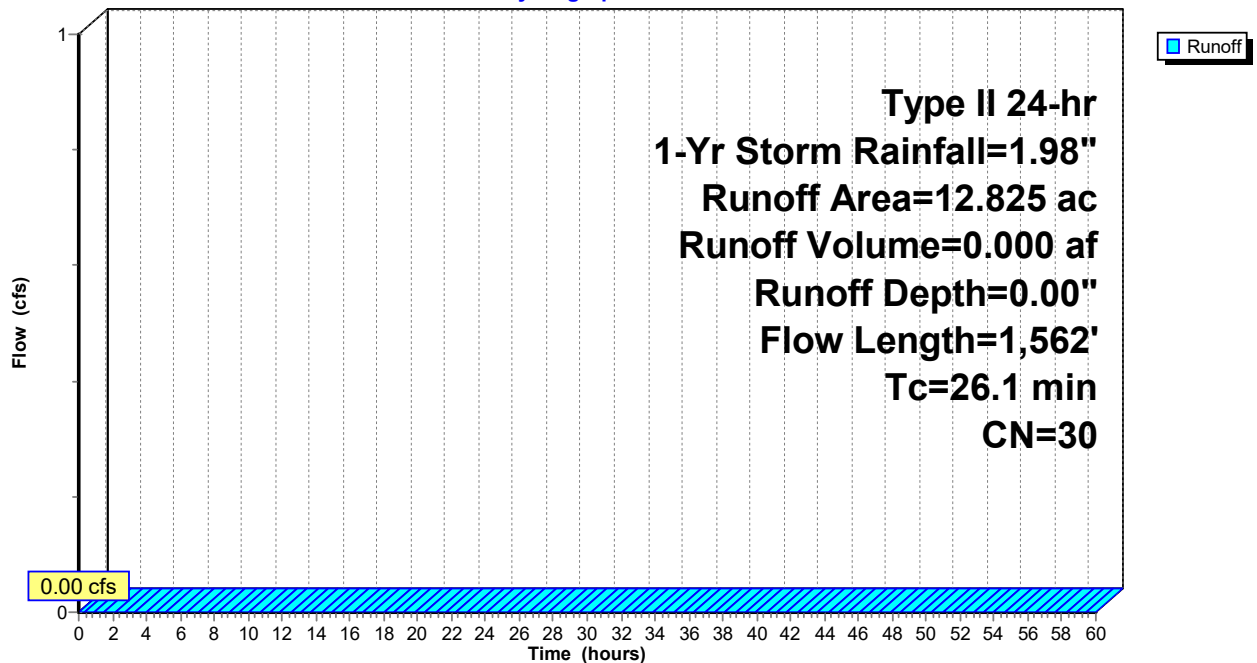
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 12.825 | 30 | Meadow, non-grazed, HSG A |
| 12.825 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.1 | 100 | 0.0560 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 15.0 | 1,462 | 0.0540 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 26.1 | 1,562 | Total | | | |

Subcatchment 1.1aS4: North Array West

Hydrograph



Summary for Subcatchment 1.1bS1: North Road - East

Runoff = 0.47 cfs @ 12.00 hrs, Volume= 0.029 af, Depth= 0.26"
 Routed to Reach 1.1bR1 : North Road Conveyance Swale

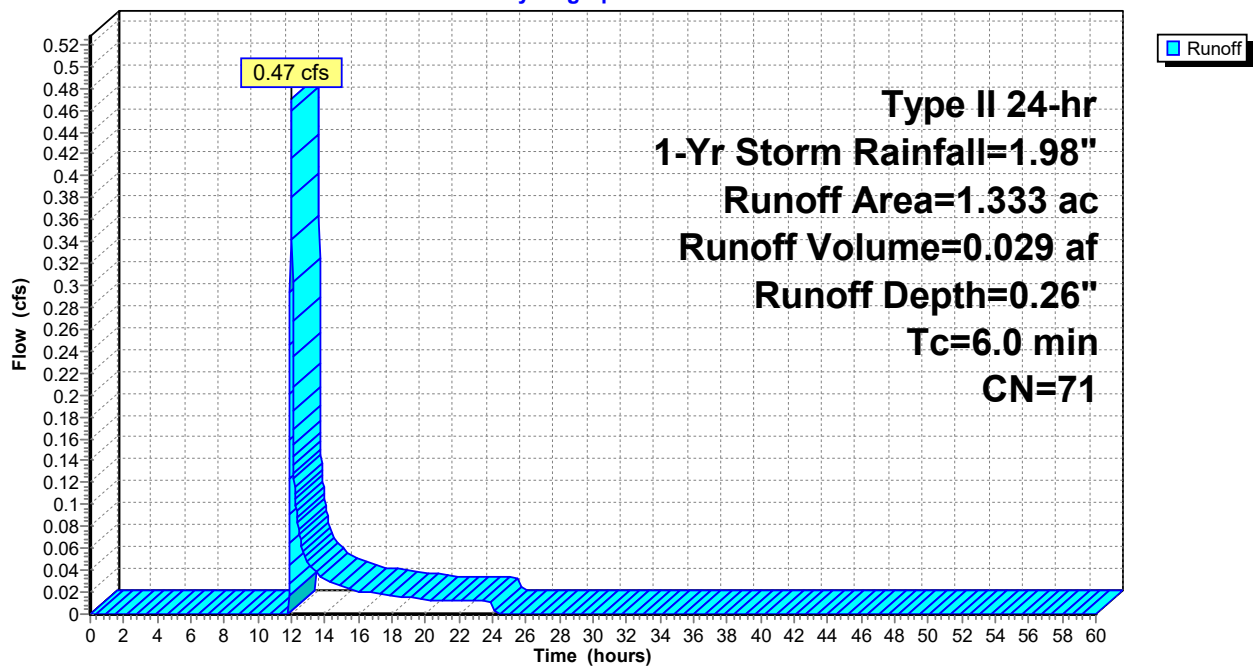
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.507 | 30 | Meadow, non-grazed, HSG A |
| 0.819 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 1.333 | 71 | Weighted Average |
| 1.326 | | 99.47% Pervious Area |
| 0.007 | | 0.53% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS1: North Road - East

Hydrograph



Summary for Subcatchment 1.1bS2: North Road - West

Runoff = 0.13 cfs @ 12.01 hrs, Volume= 0.010 af, Depth= 0.19"
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

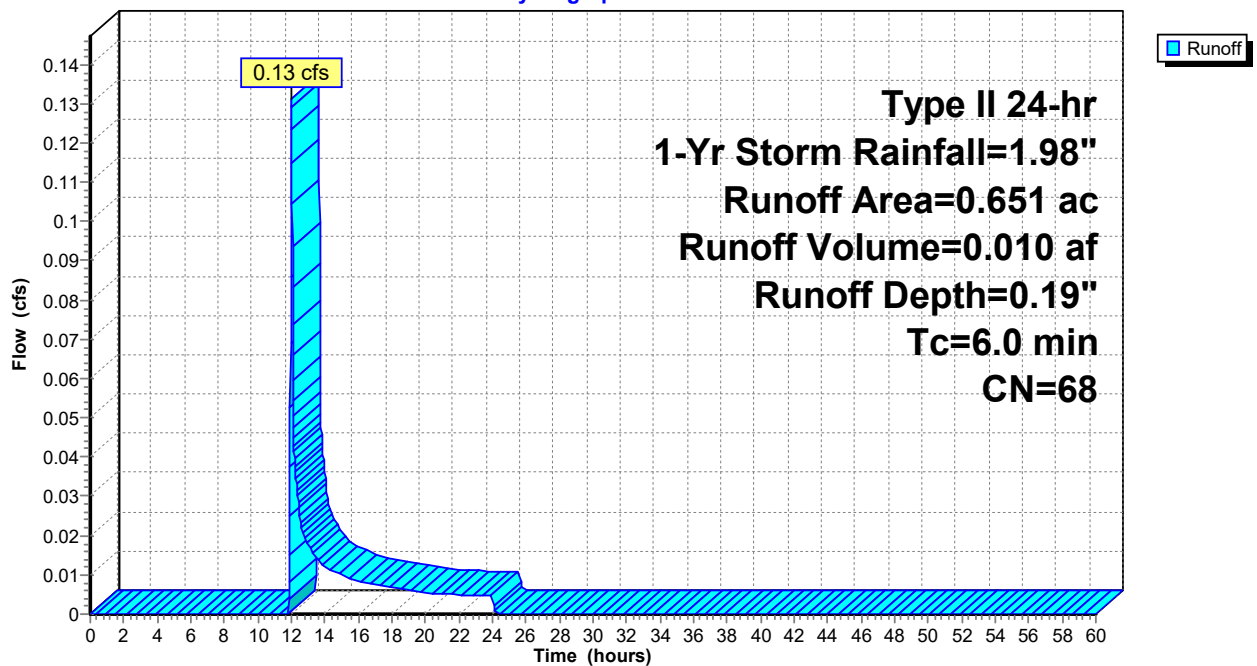
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.279 | 30 | Meadow, non-grazed, HSG A |
| 0.365 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 0.651 | 68 | Weighted Average |
| 0.644 | | 98.92% Pervious Area |
| 0.007 | | 1.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS2: North Road - West

Hydrograph



Summary for Subcatchment 1.2aS1: Middle Array East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR1 : Bypass Swale

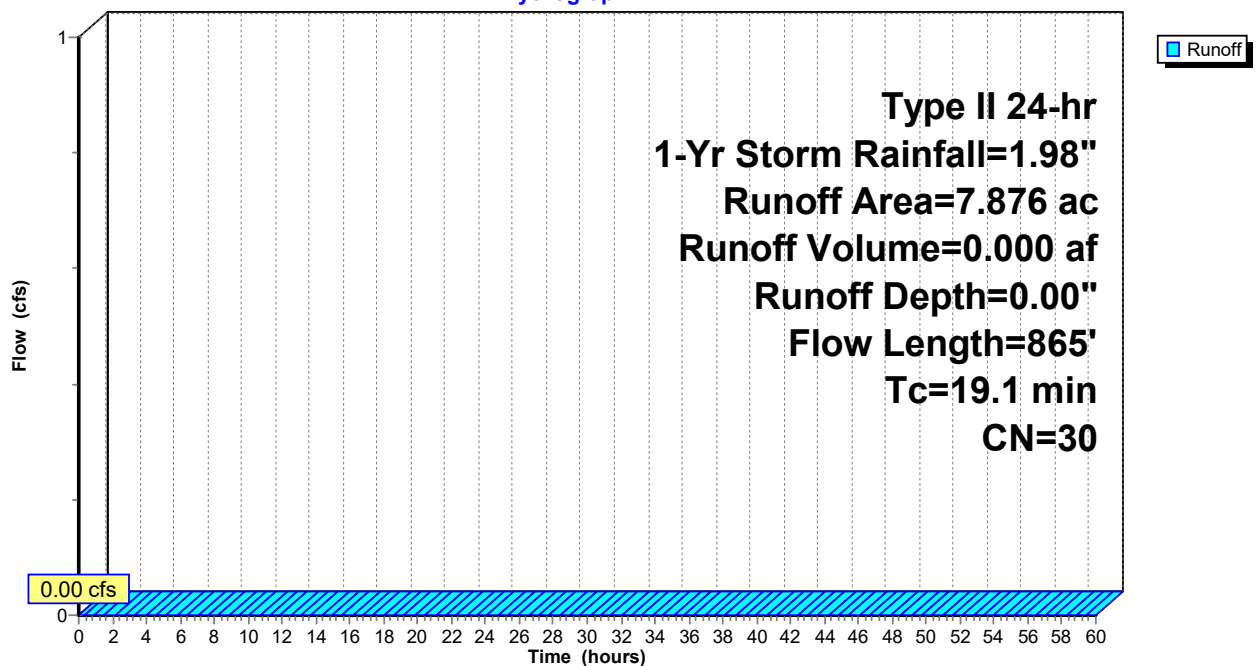
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 7.876 | 30 | Meadow, non-grazed, HSG A |
| 7.876 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.6 | 100 | 0.0628 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.5 | 765 | 0.0459 | 1.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.1 | 865 | Total | | | |

Subcatchment 1.2aS1: Middle Array East

Hydrograph



Summary for Subcatchment 1.2aS2: Middle Array Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR2 : Bypass Swale

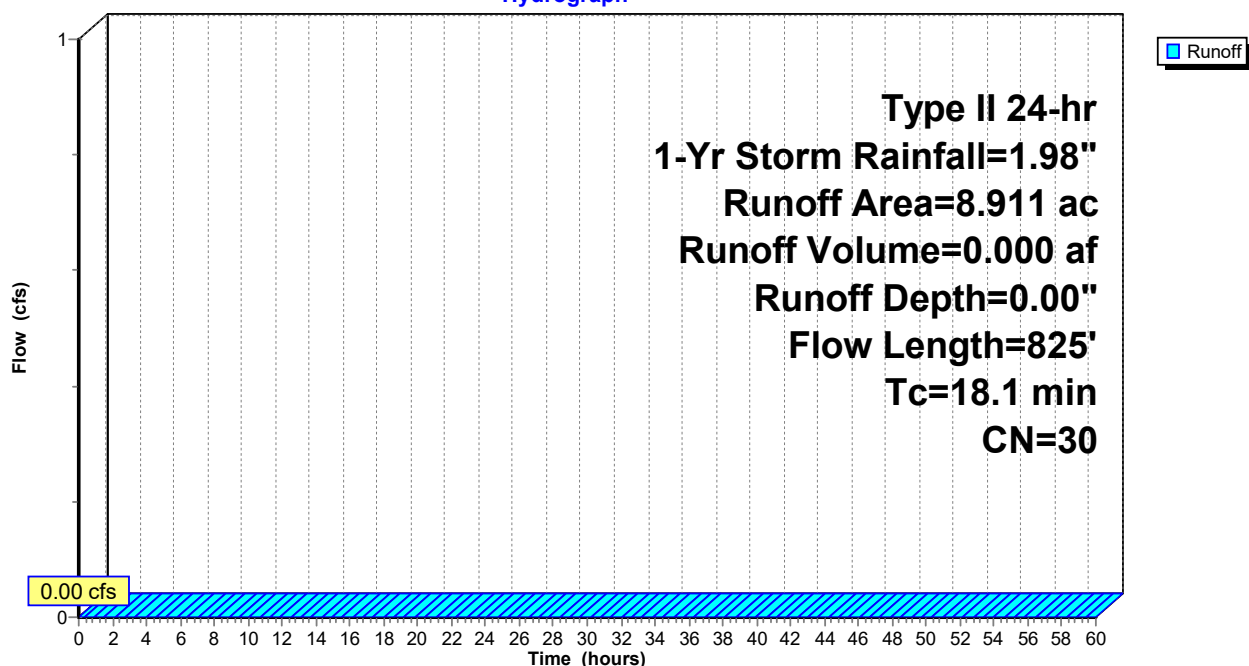
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.911 | 30 | Meadow, non-grazed, HSG A |
| 8.911 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.8 | 100 | 0.0607 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.3 | 725 | 0.0559 | 1.66 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 825 | Total | | | |

Subcatchment 1.2aS2: Middle Array Center

Hydrograph



Summary for Subcatchment 1.2aS3: Middle Array West

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR3 : Bypass Swale

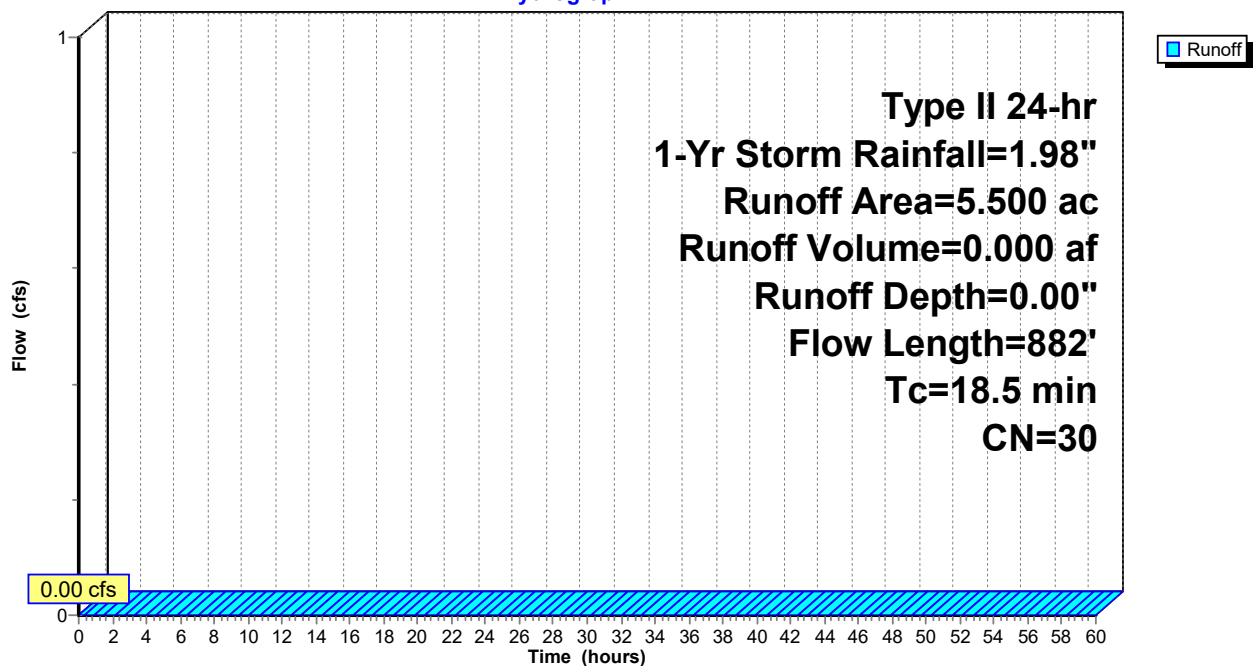
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.500 | 30 | Meadow, non-grazed, HSG A |
| 5.500 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.4 | 100 | 0.0660 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.1 | 782 | 0.0529 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.5 | 882 | Total | | | |

Subcatchment 1.2aS3: Middle Array West

Hydrograph



Summary for Subcatchment 1.2bS1: East Road - West Ditch

Runoff = 0.12 cfs @ 12.01 hrs, Volume= 0.010 af, Depth= 0.17"
 Routed to Reach 1.2bR1 : East Road Conveyance Swale

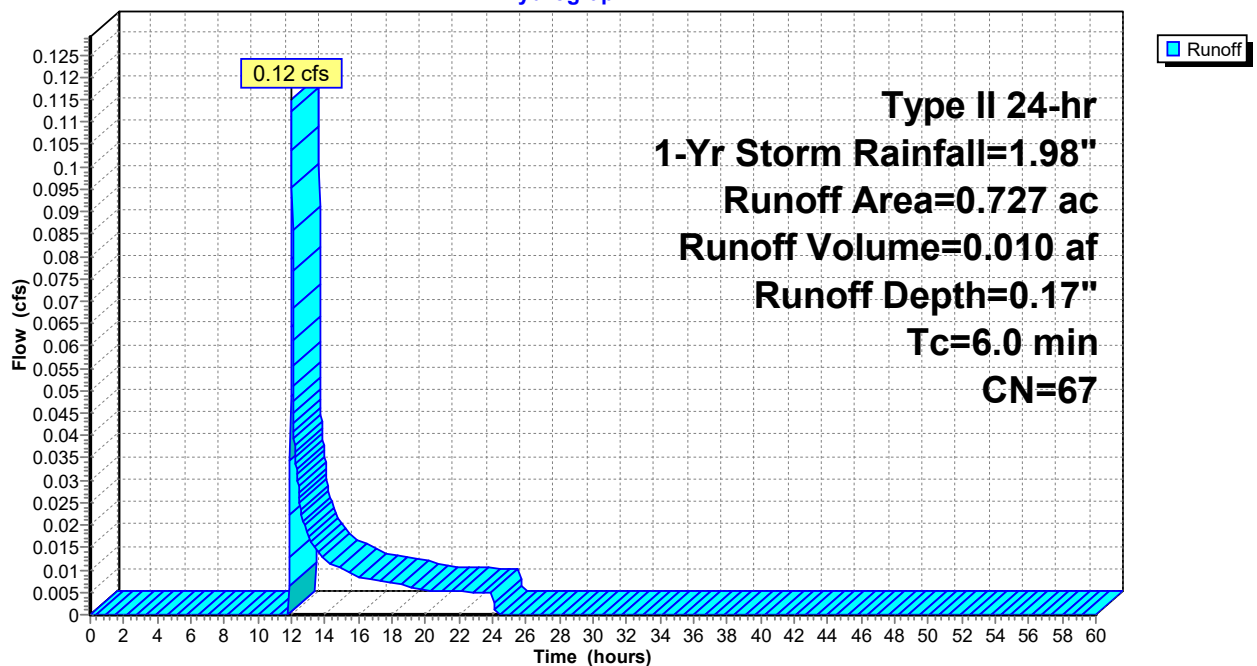
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.410 | 96 | Gravel surface, HSG A |
| 0.317 | 30 | Meadow, non-grazed, HSG A |
| 0.727 | 67 | Weighted Average |
| 0.727 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS1: East Road - West Ditch

Hydrograph



Summary for Subcatchment 1.2bS2: South Road

Runoff = 0.00 cfs @ 15.21 hrs, Volume= 0.003 af, Depth= 0.04"
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

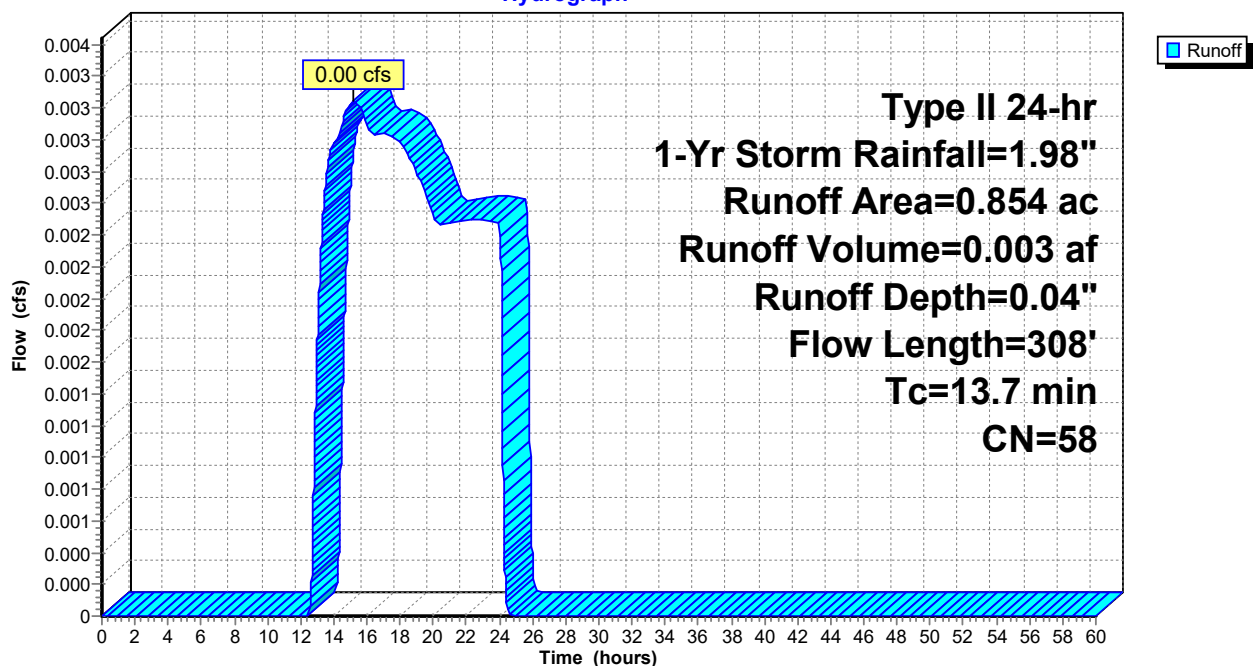
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.498 | 30 | Meadow, non-grazed, HSG A |
| * 0.352 | 96 | Gravel surface |
| * 0.004 | 98 | Roofs |
| 0.854 | 58 | Weighted Average |
| 0.850 | | 99.53% Pervious Area |
| 0.004 | | 0.47% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.0 | 35 | 0.0516 | 0.12 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 0.4 | 25 | 0.0310 | 1.06 | | Sheet Flow, Smooth surfaces n= 0.011 P2= 2.31" |
| 5.9 | 40 | 0.0429 | 0.11 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.4 | 208 | 0.0442 | 1.47 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 13.7 | 308 | Total | | | |

Subcatchment 1.2bS2: South Road

Hydrograph



Summary for Subcatchment 1.2bS3: South Road

Runoff = 0.29 cfs @ 12.00 hrs, Volume= 0.018 af, Depth= 0.26"
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

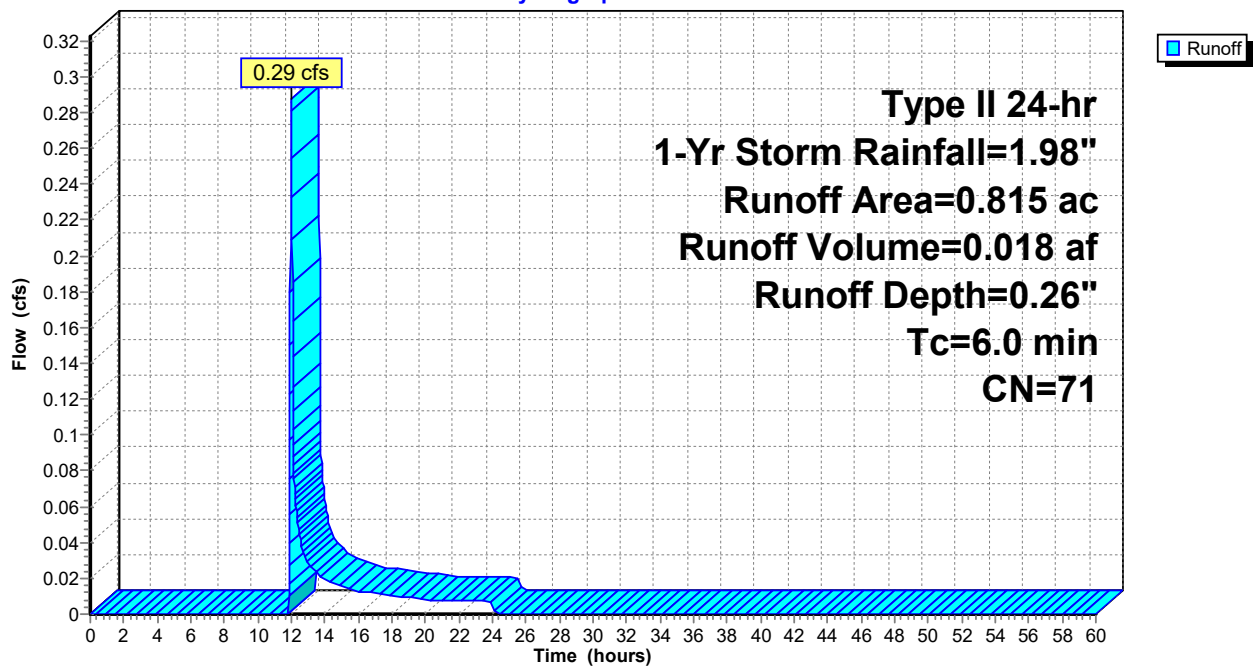
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.313 | 30 | Meadow, non-grazed, HSG A |
| 0.491 | 96 | Gravel surface, HSG A |
| * 0.011 | 98 | Roofs |
| 0.815 | 71 | Weighted Average |
| 0.804 | | 98.65% Pervious Area |
| 0.011 | | 1.35% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS3: South Road

Hydrograph



Summary for Subcatchment 1.3aS1: Surface Discharge

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP1 : Study Point 1

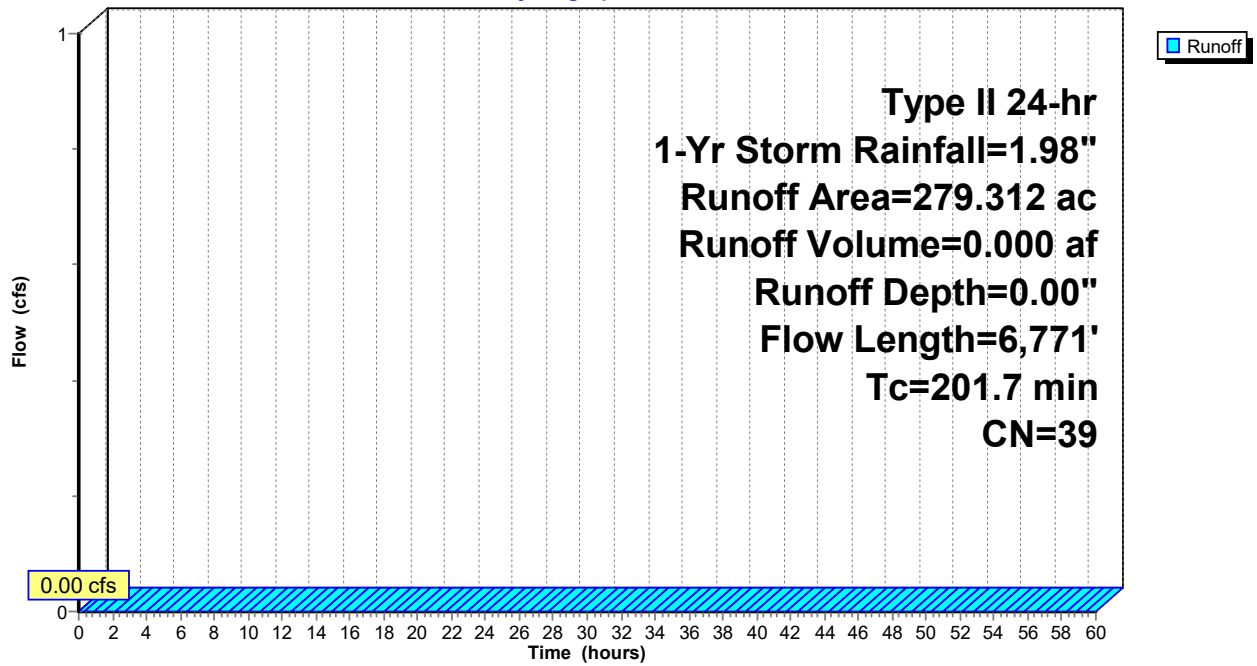
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.754 | 96 | Gravel surface |
| 144.649 | 30 | Meadow, non-grazed, HSG A |
| 0.566 | 58 | Meadow, non-grazed, HSG B |
| 25.274 | 71 | Meadow, non-grazed, HSG C |
| 61.692 | 30 | Woods, Good, HSG A |
| 32.754 | 55 | Woods, Good, HSG B |
| 13.623 | 70 | Woods, Good, HSG C |
| 279.312 | 39 | Weighted Average |
| 279.312 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 14.8 | 100 | 0.0764 | 0.11 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 4.7 | 581 | 0.1683 | 2.05 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 25.7 | 1,199 | 0.0241 | 0.78 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.8 | 189 | 0.0157 | 3.84 | 76.82 | Channel Flow, Rerouted Stream Area= 20.0 sf Perim= 32.6' r= 0.61' n= 0.035 Earth, dense weeds |
| 154.9 | 4,646 | 0.0051 | 0.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.8 | 56 | 0.0566 | 1.19 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 201.7 | 6,771 | Total | | | |

Subcatchment 1.3aS1: Surface Discharge

Hydrograph



Summary for Subcatchment 1.3bS: Access Rd to Pond 3

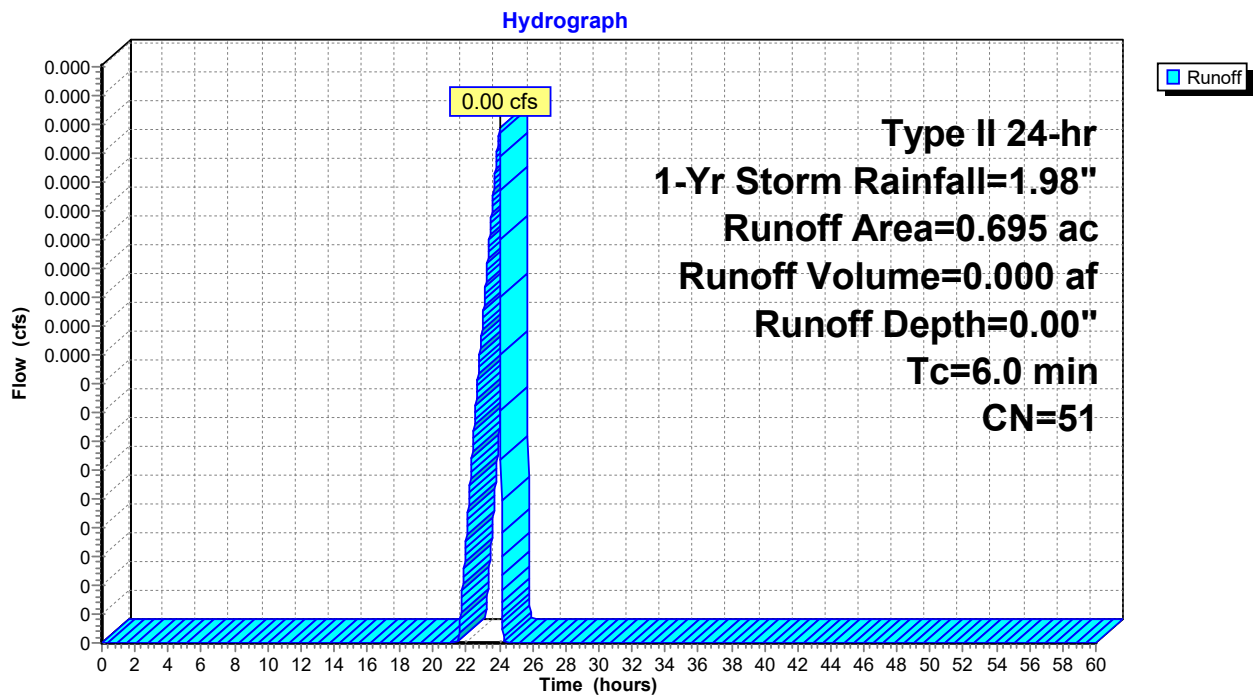
Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond 1.3P : Pond 3 - Access Rd West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|------------------------------|
| 0.473 | 30 | Meadow, non-grazed, HSG A |
| * 0.063 | 96 | Gravel surface, HSG A, Redev |
| * 0.159 | 96 | Gravel surface, HSG A |
| 0.695 | 51 | Weighted Average |
| 0.695 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.3bS: Access Rd to Pond 3



Summary for Subcatchment 2S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP2 : Study Point 2

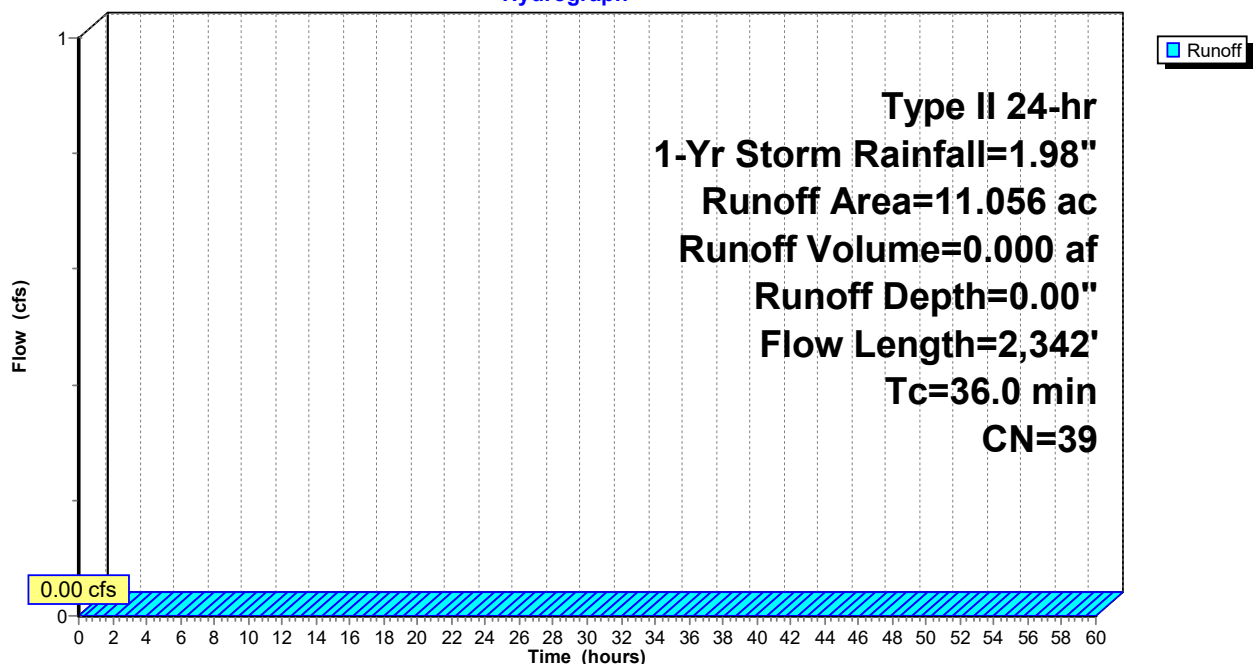
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.417 | 96 | Gravel surface, HSG A |
| 0.573 | 39 | >75% Grass cover, Good, HSG A |
| 6.530 | 30 | Meadow, non-grazed, HSG A |
| 2.536 | 30 | Woods, Good, HSG A |
| 11.056 | 39 | Weighted Average |
| 11.056 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0624 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.7 | 614 | 0.0535 | 3.72 | | Shallow Concentrated Flow, Unpaved Kv= 16.1 fps |
| 12.1 | 1,184 | 0.0543 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.9 | 115 | 0.0407 | 1.01 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.6 | 68 | 0.1443 | 1.90 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 8.0 | 261 | 0.0118 | 0.54 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 36.0 | 2,342 | Total | | | |

Subcatchment 2S:

Hydrograph



Summary for Subcatchment 3S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP3 : Study Point 3

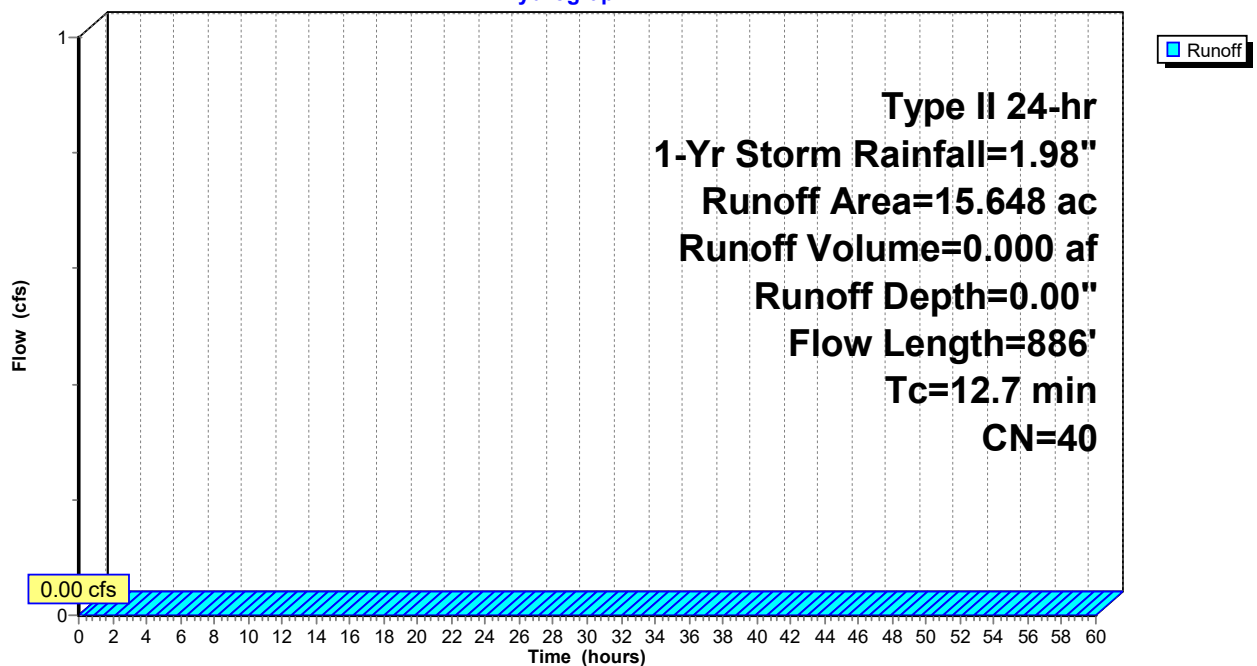
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.088 | 98 | Paved Roads & Rooftops |
| 0.406 | 39 | >75% Grass cover, Good, HSG A |
| 2.011 | 61 | >75% Grass cover, Good, HSG B |
| 5.525 | 30 | Meadow, non-grazed, HSG A |
| 4.276 | 30 | Woods, Good, HSG A |
| 3.342 | 55 | Woods, Good, HSG B |
| 15.648 | 40 | Weighted Average |
| 15.560 | | 99.44% Pervious Area |
| 0.088 | | 0.56% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 5.4 | 52 | 0.0937 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 3.7 | 625 | 0.1637 | 2.83 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.6 | 209 | 0.0384 | 0.98 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 12.7 | 886 | Total | | | |

Subcatchment 3S:

Hydrograph



Summary for Subcatchment 4.1S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 4.1R1 : Bypass Swale

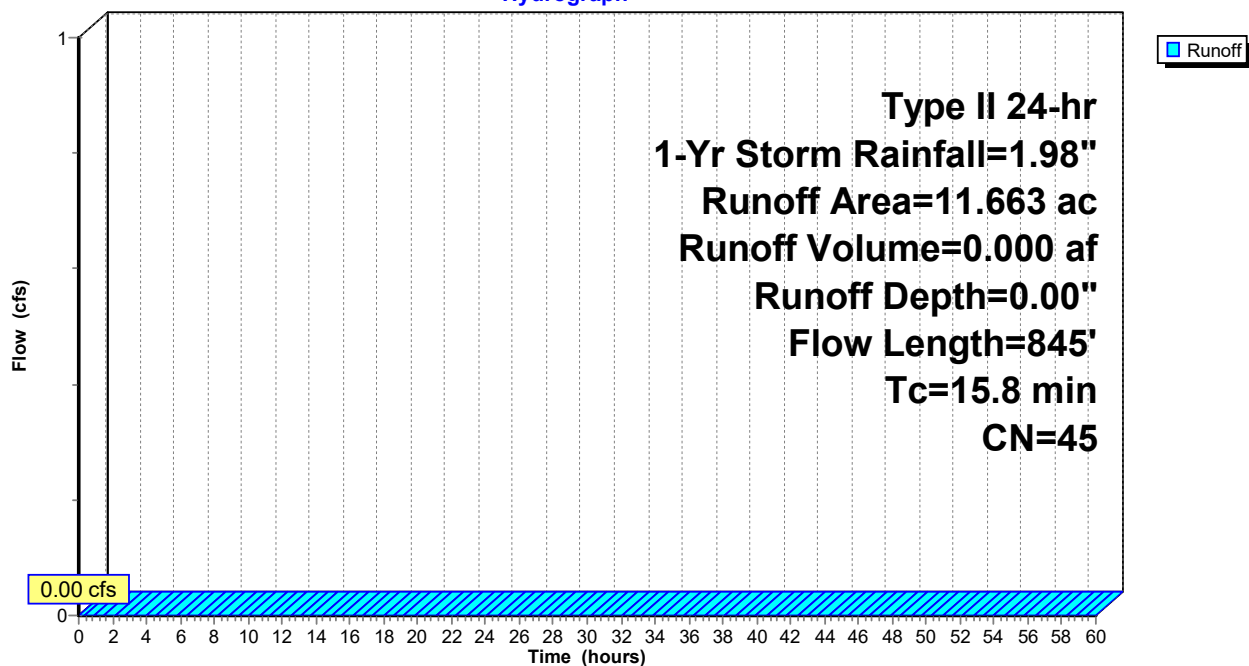
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.327 | 98 | Paved Roads & Rooftops |
| * 0.375 | 96 | Gravel surface |
| 0.165 | 61 | >75% Grass cover, Good, HSG B |
| 2.544 | 30 | Meadow, non-grazed, HSG A |
| 0.560 | 58 | Meadow, non-grazed, HSG B |
| 3.605 | 30 | Woods, Good, HSG A |
| * 4.087 | 55 | Woods, Good, HSG B |
| 11.663 | 45 | Weighted Average |
| 11.336 | | 97.20% Pervious Area |
| 0.327 | | 2.80% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.5 | 100 | 0.0430 | 0.20 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 2.6 | 360 | 0.1077 | 2.30 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 4.7 | 385 | 0.0735 | 1.36 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 15.8 | 845 | Total | | | |

Subcatchment 4.1S:

Hydrograph



Summary for Subcatchment 4.2aS:

Runoff = 0.01 cfs @ 24.16 hrs, Volume= 0.001 af, Depth= 0.00"
 Routed to Pond 4.2C : 18" Culvert

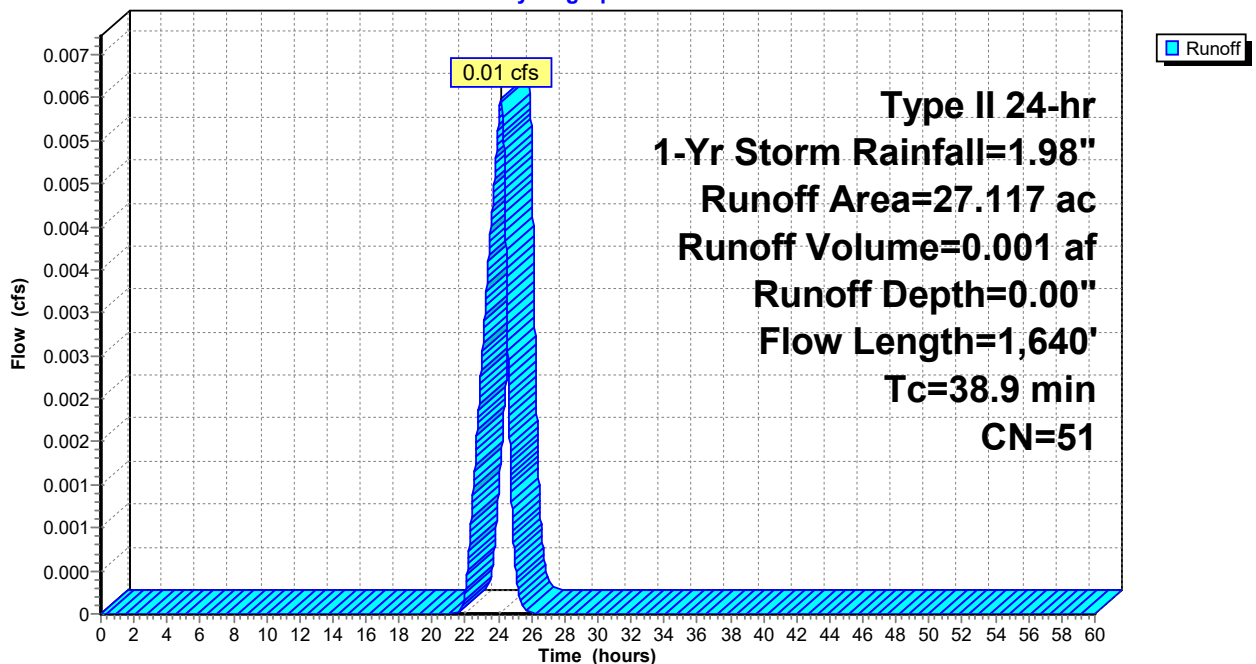
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.238 | 96 | Gravel surface |
| 4.086 | 30 | Meadow, non-grazed, HSG A |
| 0.384 | 58 | Meadow, non-grazed, HSG B |
| 0.977 | 30 | Woods, Good, HSG A |
| 21.432 | 55 | Woods, Good, HSG B |
| 27.117 | 51 | Weighted Average |
| 27.117 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 17.8 | 100 | 0.0480 | 0.09 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 8.0 | 878 | 0.1354 | 1.84 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 13.1 | 662 | 0.0144 | 0.84 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 38.9 | 1,640 | Total | | | |

Subcatchment 4.2aS:

Hydrograph



Summary for Subcatchment 4.2bS:

Runoff = 0.19 cfs @ 12.00 hrs, Volume= 0.011 af, Depth= 0.28"
 Routed to Reach 4.2bR : Conveyance Swale

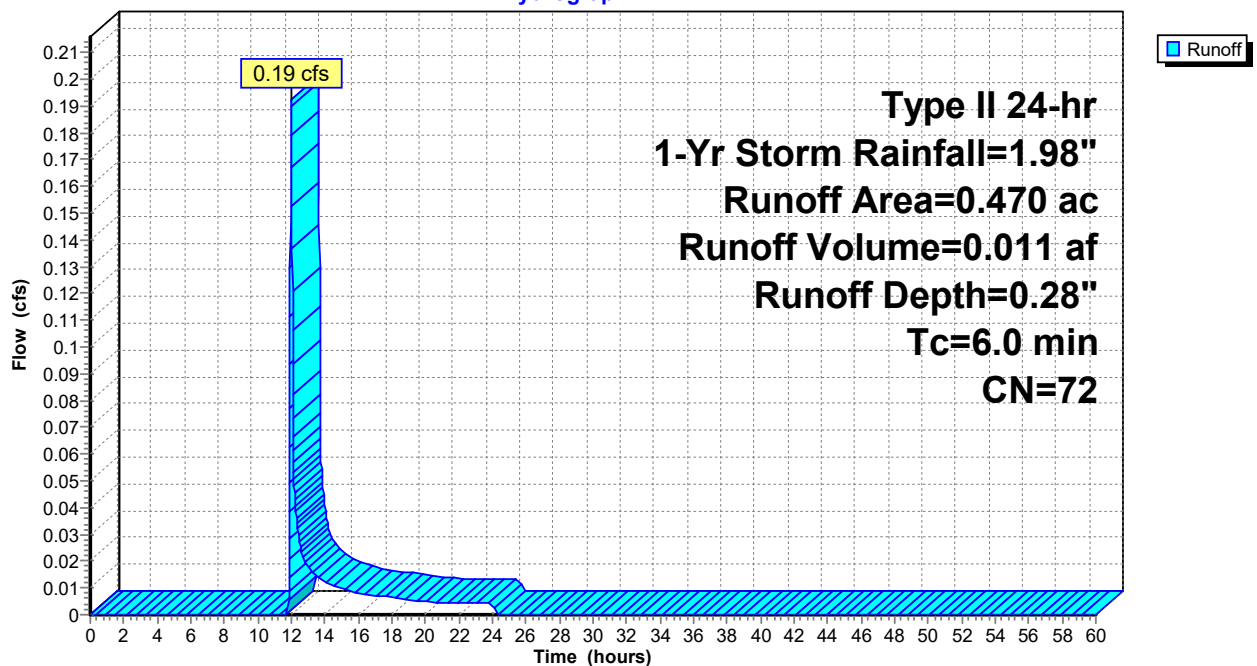
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.296 | 96 | Gravel surface, HSG A |
| 0.174 | 30 | Meadow, non-grazed, HSG A |
| 0.470 | 72 | Weighted Average |
| 0.470 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 4.2bS:

Hydrograph



Summary for Subcatchment 4.3S:

Runoff = 0.07 cfs @ 17.89 hrs, Volume= 0.059 af, Depth= 0.03"
 Routed to Pond 4.3C : 24" Culvert

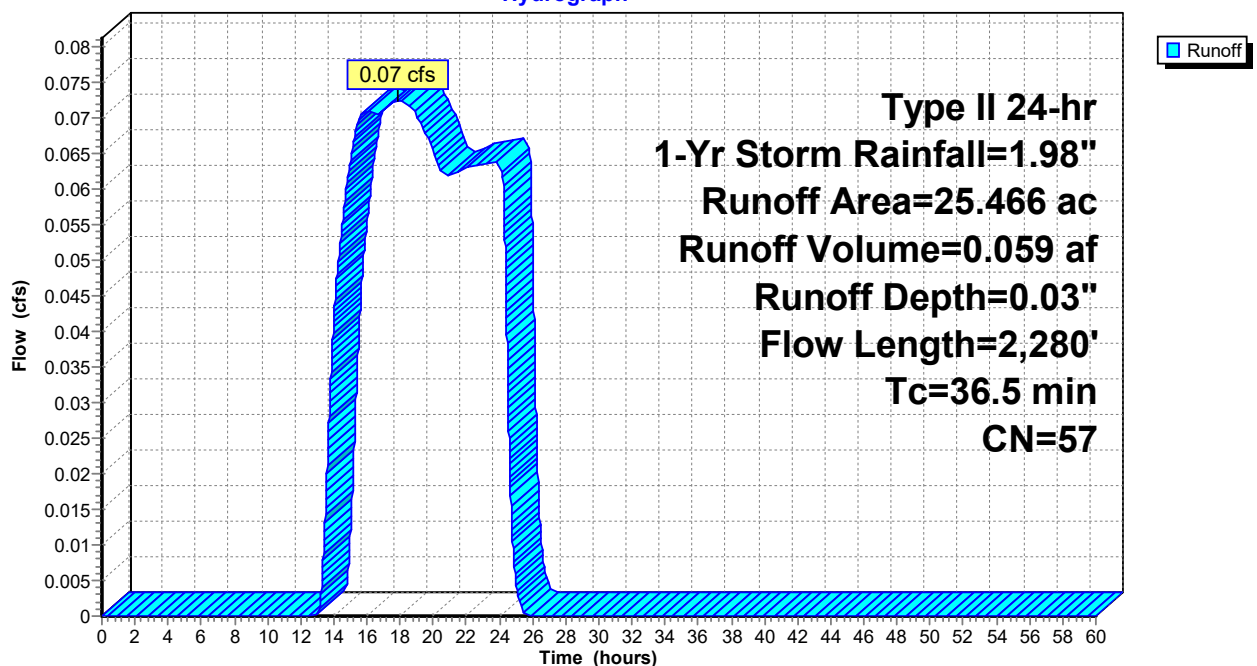
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 1.293 | 98 | Paved Roads & Rooftops |
| 1.783 | 58 | Meadow, non-grazed, HSG B |
| 22.390 | 55 | Woods, Good, HSG B |
| 25.466 | 57 | Weighted Average |
| 24.173 | | 94.92% Pervious Area |
| 1.293 | | 5.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 15.9 | 100 | 0.0634 | 0.10 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 17.8 | 1,368 | 0.0656 | 1.28 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.1 | 38 | 0.3960 | 4.40 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 2.7 | 774 | 0.0281 | 4.70 | 109.09 | Channel Flow, Area= 23.2 sf Perim= 43.2' r= 0.54' n= 0.035 |
| 36.5 | 2,280 | Total | | | |

Subcatchment 4.3S:

Hydrograph



Summary for Subcatchment 5S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP5 : Study Point 5

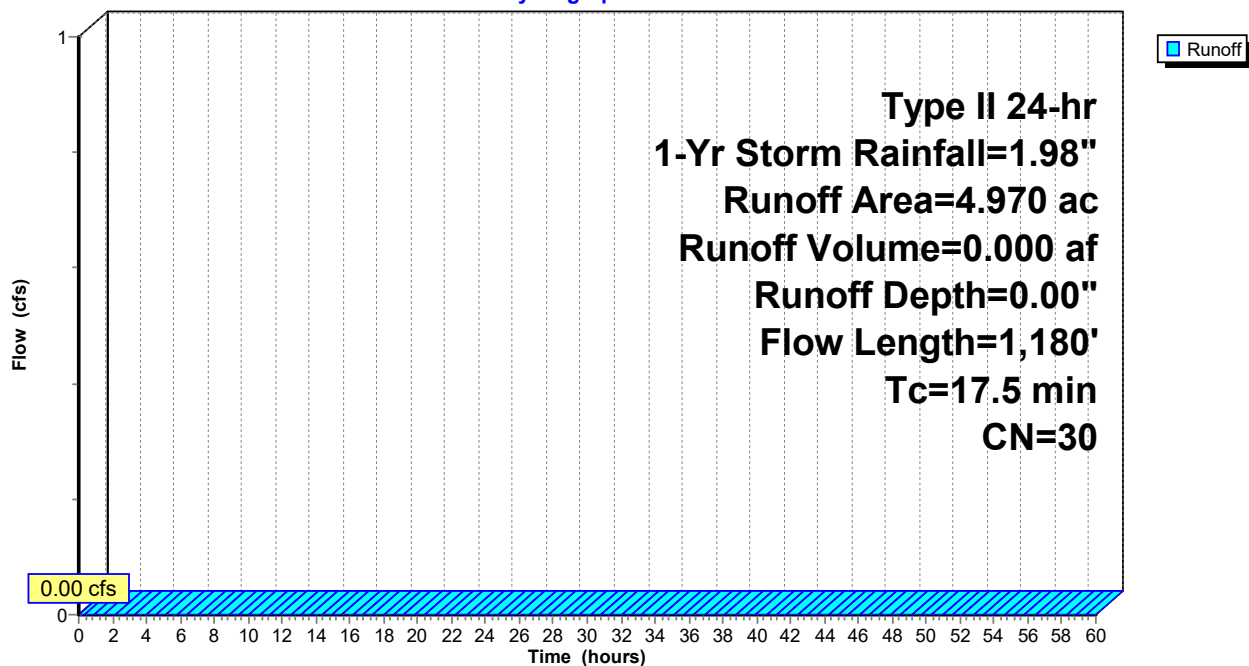
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 4.139 | 30 | Meadow, non-grazed, HSG A |
| 0.831 | 30 | Woods, Good, HSG A |
| 4.970 | 30 | Weighted Average |
| 4.970 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 7.1 | 100 | 0.0675 | 0.24 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 8.5 | 801 | 0.0508 | 1.58 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.3 | 217 | 0.1515 | 2.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.6 | 62 | 0.0697 | 1.85 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 17.5 | 1,180 | Total | | | |

Subcatchment 5S:

Hydrograph



Summary for Subcatchment 6S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP6 : Study Point 6

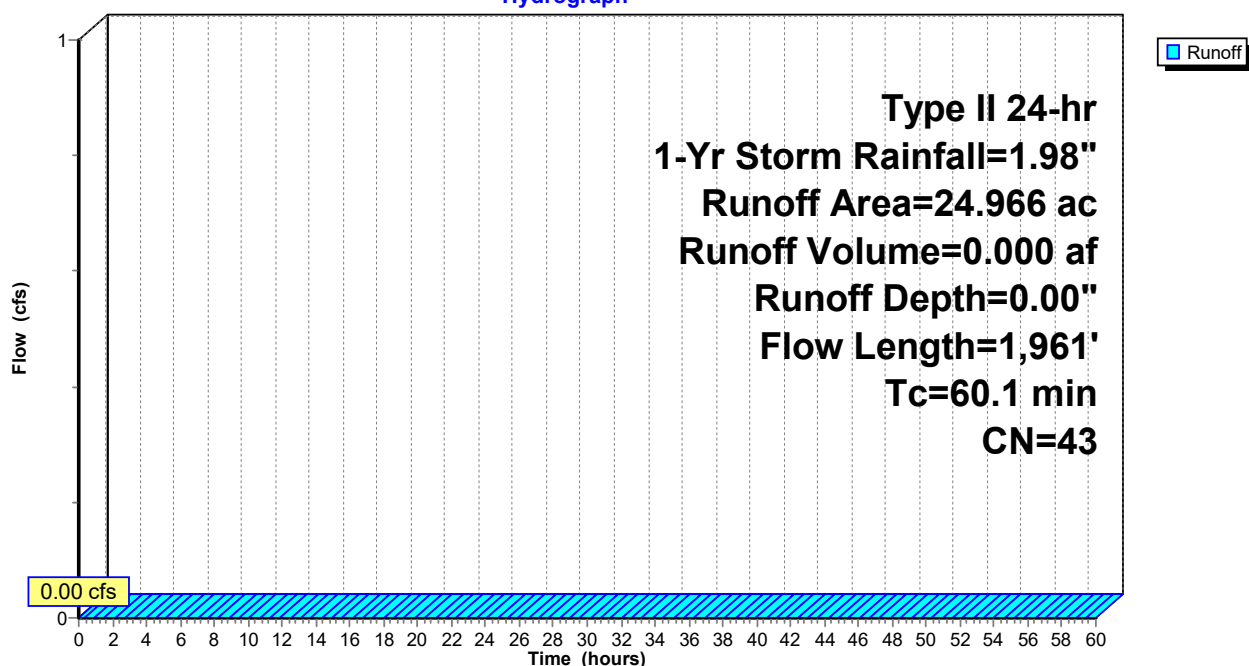
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 1-Yr Storm Rainfall=1.98"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 1.450 | 98 | Paved Roads & Rooftops |
| 0.466 | 96 | Gravel surface, HSG A |
| 2.545 | 61 | >75% Grass cover, Good, HSG B |
| 7.511 | 30 | Meadow, non-grazed, HSG A |
| 0.788 | 58 | Meadow, non-grazed, HSG B |
| 7.940 | 30 | Woods, Good, HSG A |
| 4.266 | 55 | Woods, Good, HSG B |
| 24.966 | 43 | Weighted Average |
| 23.516 | | 94.19% Pervious Area |
| 1.450 | | 5.81% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.1 | 100 | 0.0278 | 0.16 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 3.2 | 313 | 0.0528 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.9 | 486 | 0.1742 | 2.09 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 42.9 | 1,062 | 0.0068 | 0.41 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 60.1 | 1,961 | Total | | | |

Subcatchment 6S:

Hydrograph



Summary for Reach 1.1aR1: Bypass Swale

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC1 : TS1 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

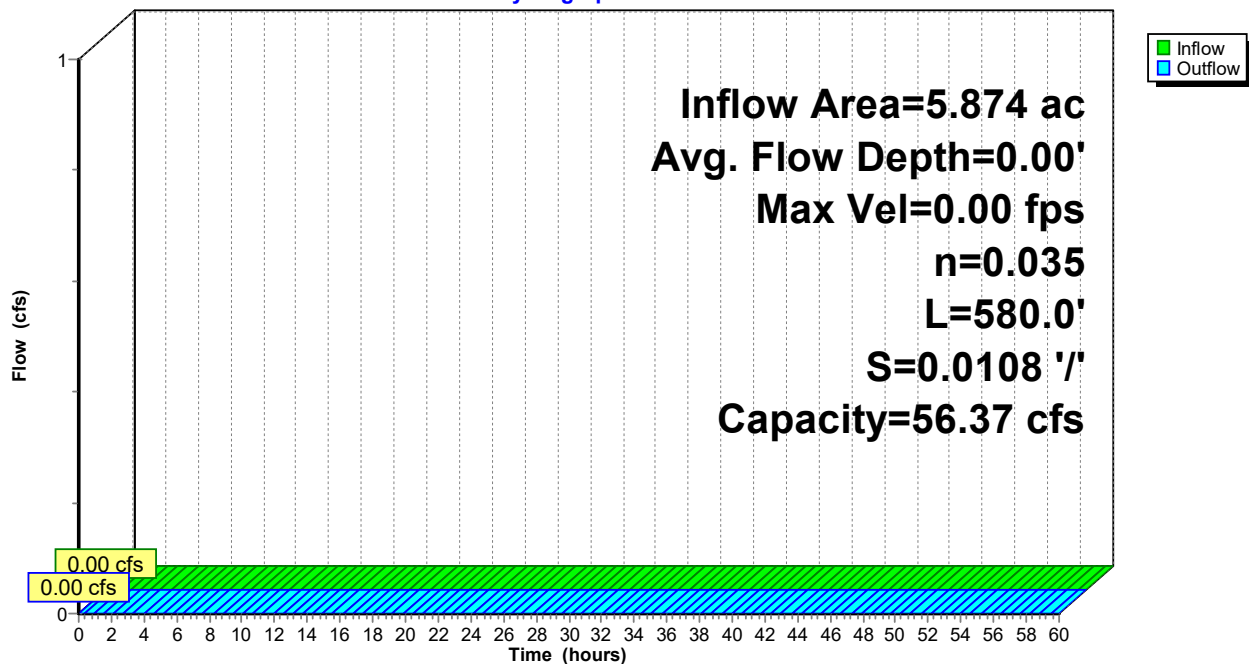
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 56.37 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 580.0' Slope= 0.0108 '/'
 Inlet Invert= 1,493.84', Outlet Invert= 1,487.56'



Reach 1.1aR1: Bypass Swale

Hydrograph



Summary for Reach 1.1aR2: Bypass Swale

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC2 : TS2 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

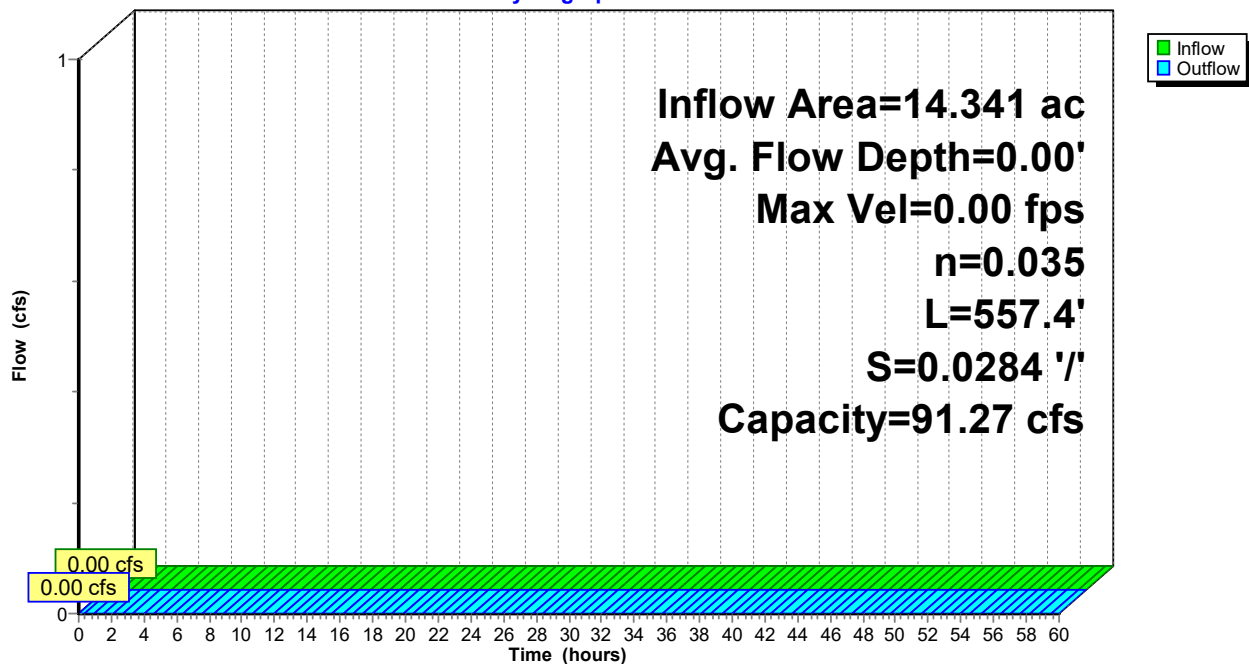
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 91.27 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.4' Slope= 0.0284 '/'
 Inlet Invert= 1,486.80', Outlet Invert= 1,470.98'



Reach 1.1aR2: Bypass Swale

Hydrograph



Summary for Reach 1.1aR3: Bypass Swale

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC3 : TS3 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

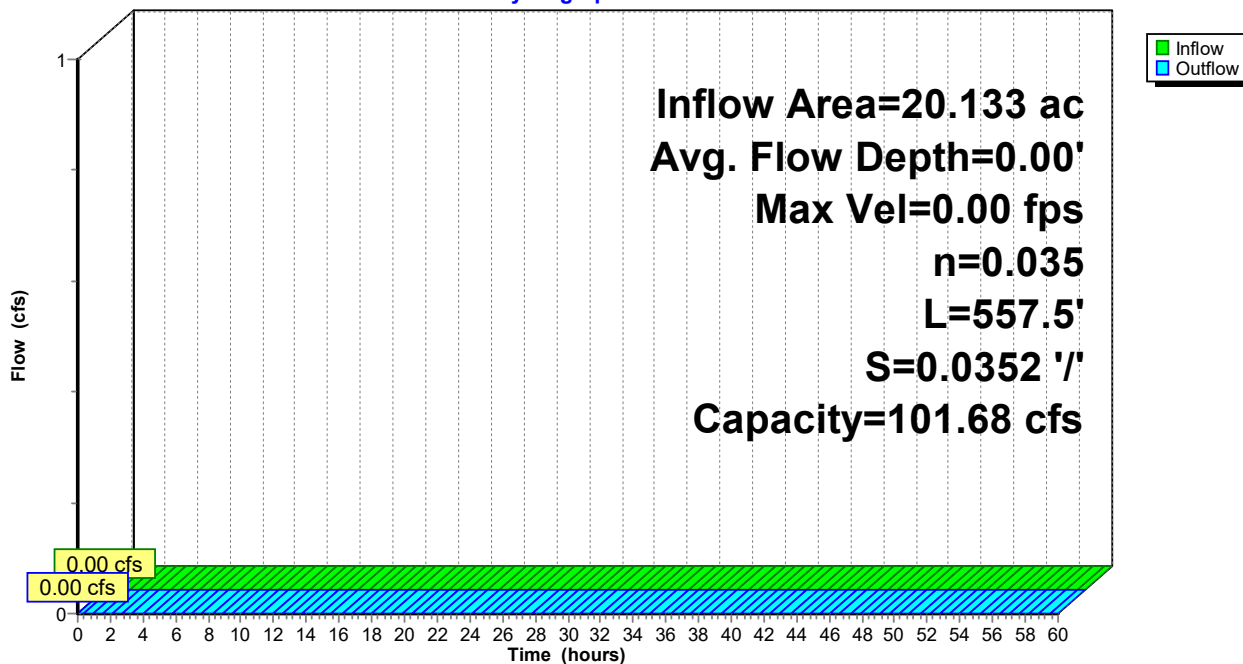
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 101.68 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.5' Slope= 0.0352 '/'
 Inlet Invert= 1,469.57', Outlet Invert= 1,449.93'



Reach 1.1aR3: Bypass Swale

Hydrograph



Summary for Reach 1.1aR4: Bypass Swale

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aP : North Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

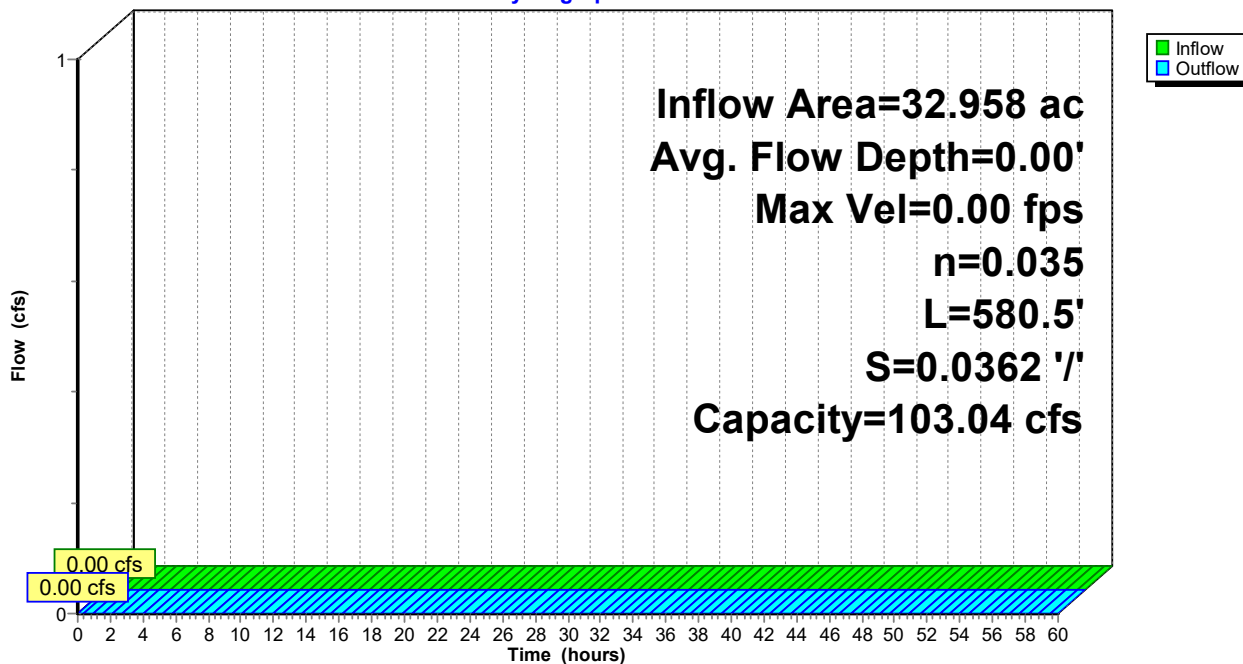
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 103.04 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 580.5' Slope= 0.0362 '/
 Inlet Invert= 1,447.64', Outlet Invert= 1,426.64'



Reach 1.1aR4: Bypass Swale

Hydrograph



Summary for Reach 1.1bR1: North Road Conveyance Swale

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 0.26" for 1-Yr Storm event
 Inflow = 0.47 cfs @ 12.00 hrs, Volume= 0.029 af
 Outflow = 0.12 cfs @ 12.17 hrs, Volume= 0.029 af, Atten= 75%, Lag= 10.3 min
 Routed to Pond 1.1bC1 : TS4 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.94 fps, Min. Travel Time= 30.8 min
 Avg. Velocity = 0.52 fps, Avg. Travel Time= 55.4 min

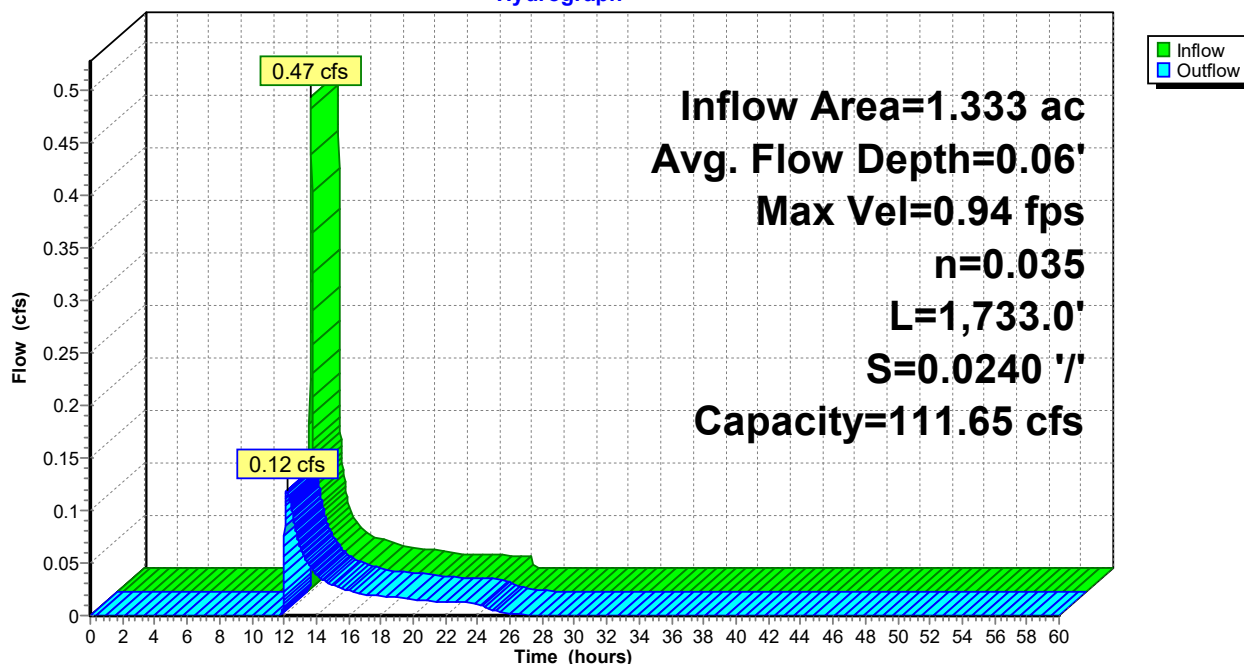
Peak Storage= 219 cf @ 12.17 hrs
 Average Depth at Peak Storage= 0.06' , Surface Width= 2.35'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 111.65 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 1,733.0' Slope= 0.0240 ' / '
 Inlet Invert= 1,491.12', Outlet Invert= 1,449.50'



Reach 1.1bR1: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.1bR2: North Road Conveyance Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.23" for 1-Yr Storm event
 Inflow = 0.20 cfs @ 12.04 hrs, Volume= 0.039 af
 Outflow = 0.15 cfs @ 12.26 hrs, Volume= 0.039 af, Atten= 25%, Lag= 13.6 min
 Routed to Pond 1.1bP1 : Dry Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.18 fps, Min. Travel Time= 8.4 min
 Avg. Velocity = 0.66 fps, Avg. Travel Time= 14.9 min

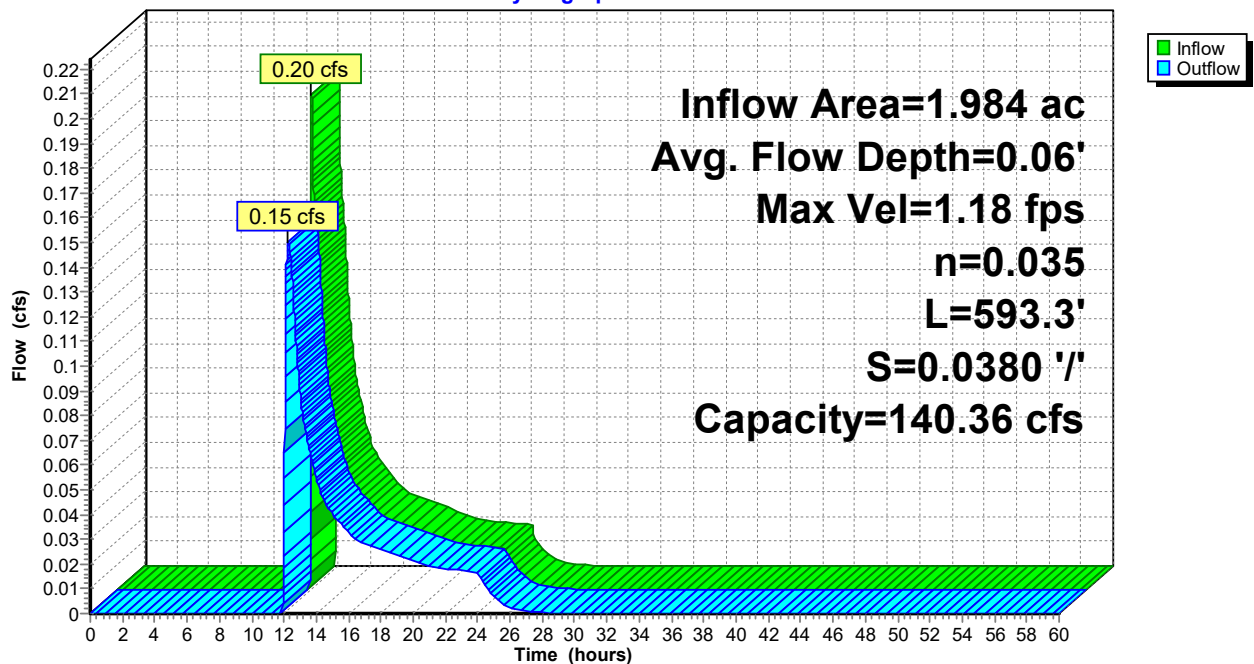
Peak Storage= 75 cf @ 12.26 hrs
 Average Depth at Peak Storage= 0.06' , Surface Width= 2.35'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 140.36 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/ Top Width= 14.00'
 Length= 593.3' Slope= 0.0380 '/
 Inlet Invert= 1,447.27', Outlet Invert= 1,424.75'



Reach 1.1bR2: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.2aR1: Bypass Swale

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aC1 : TS 7 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

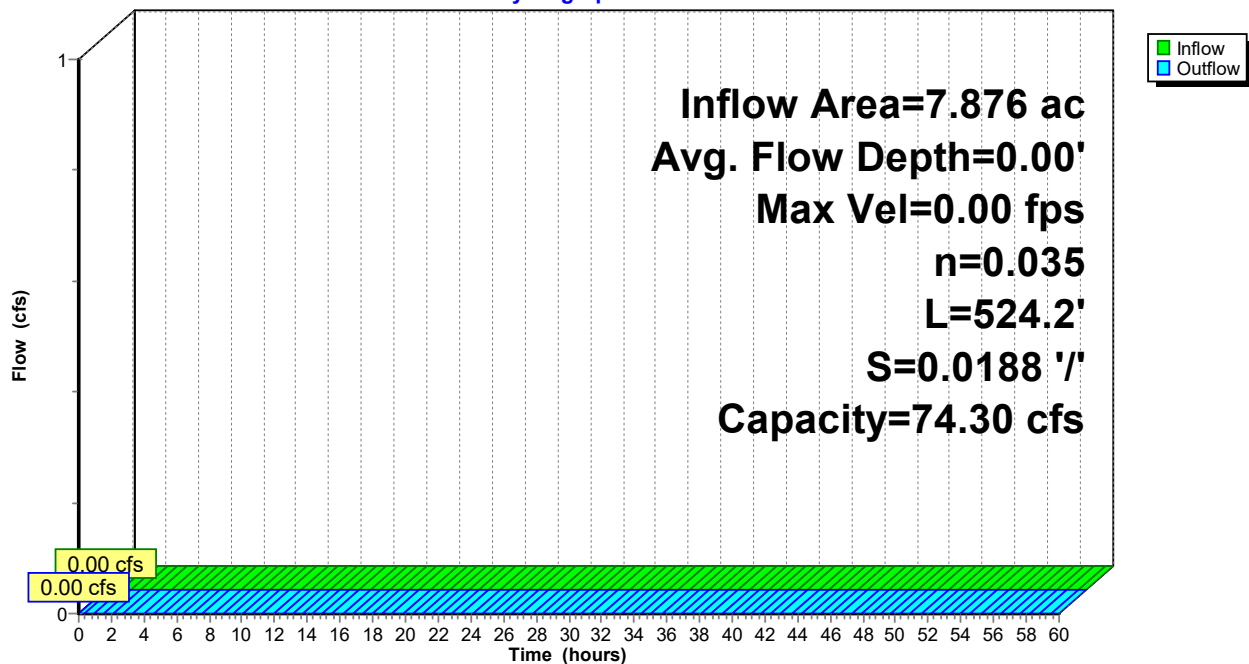
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 74.30 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 524.2' Slope= 0.0188 '/'
 Inlet Invert= 1,454.08', Outlet Invert= 1,444.22'



Reach 1.2aR1: Bypass Swale

Hydrograph



Summary for Reach 1.2aR2: Bypass Swale

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aC2 : TS8 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

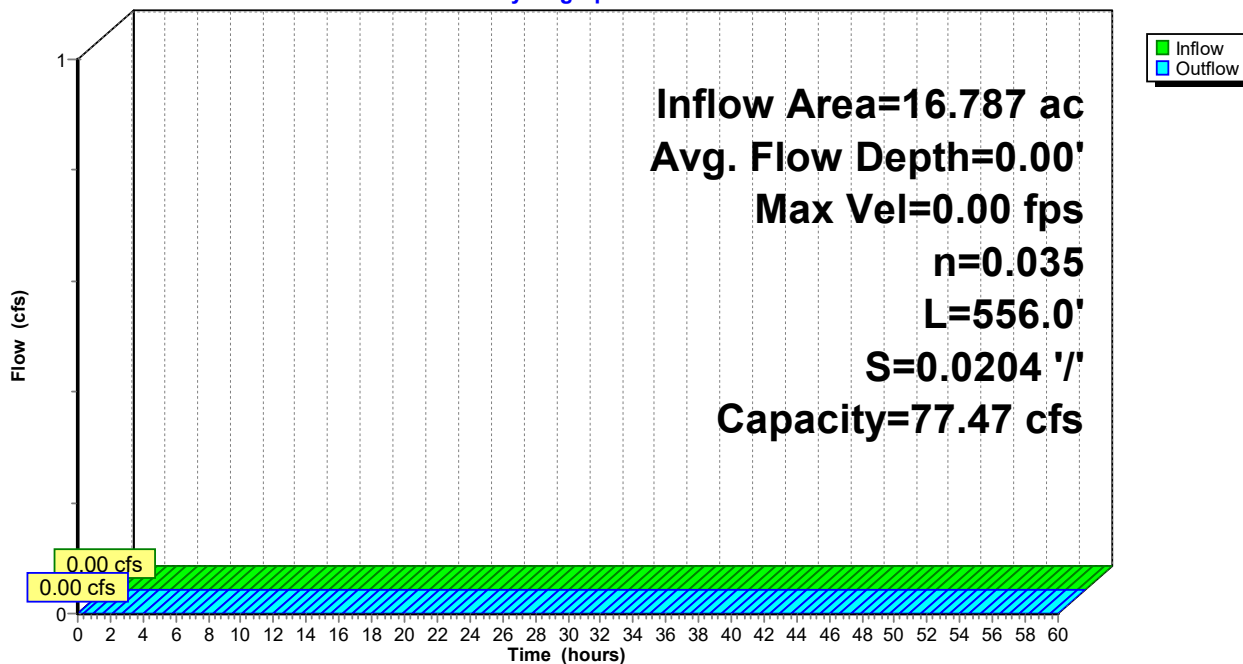
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 77.47 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 556.0' Slope= 0.0204 '/'
 Inlet Invert= 1,443.21', Outlet Invert= 1,431.84'



Reach 1.2aR2: Bypass Swale

Hydrograph



Summary for Reach 1.2aR3: Bypass Swale

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aP : South Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

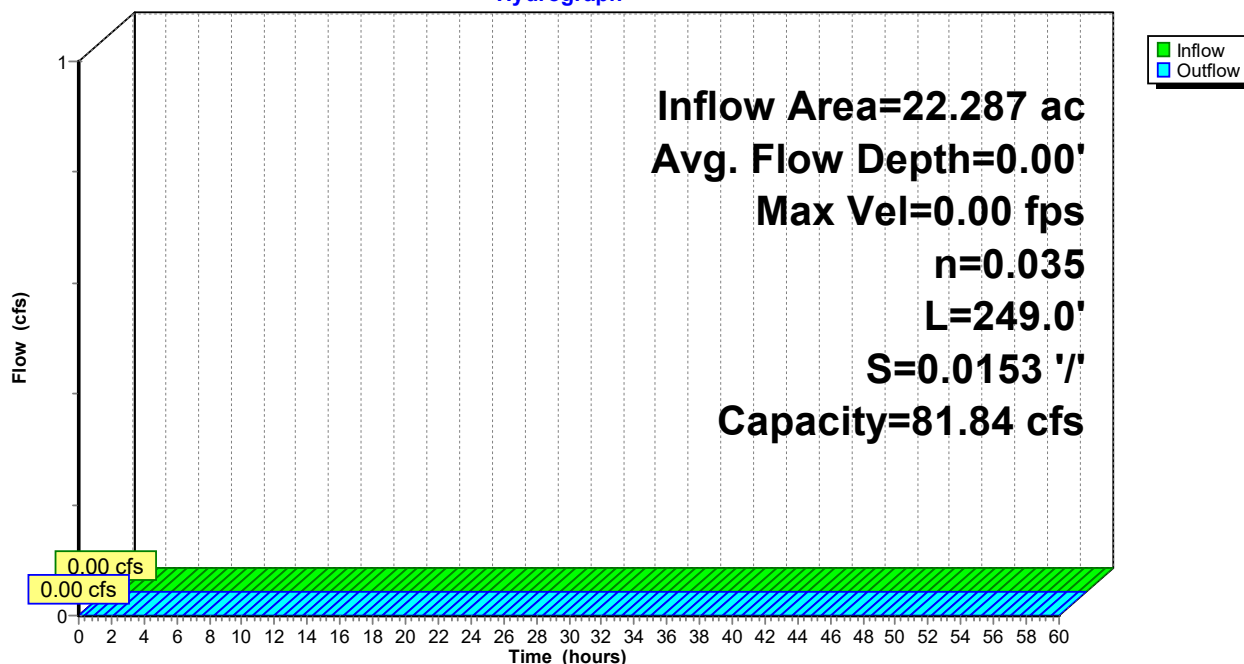
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 14.0 sf, Capacity= 81.84 cfs

3.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 11.00'
 Length= 249.0' Slope= 0.0153 '/
 Inlet Invert= 1,431.11', Outlet Invert= 1,427.29'



Reach 1.2aR3: Bypass Swale

Hydrograph



Summary for Reach 1.2bR1: East Road Conveyance Swale

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 0.17" for 1-Yr Storm event
 Inflow = 0.12 cfs @ 12.01 hrs, Volume= 0.010 af
 Outflow = 0.04 cfs @ 12.13 hrs, Volume= 0.010 af, Atten= 62%, Lag= 7.2 min
 Routed to Pond 1.2bC1 : East Road Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.80 fps, Min. Travel Time= 15.1 min
 Avg. Velocity = 0.55 fps, Avg. Travel Time= 22.0 min

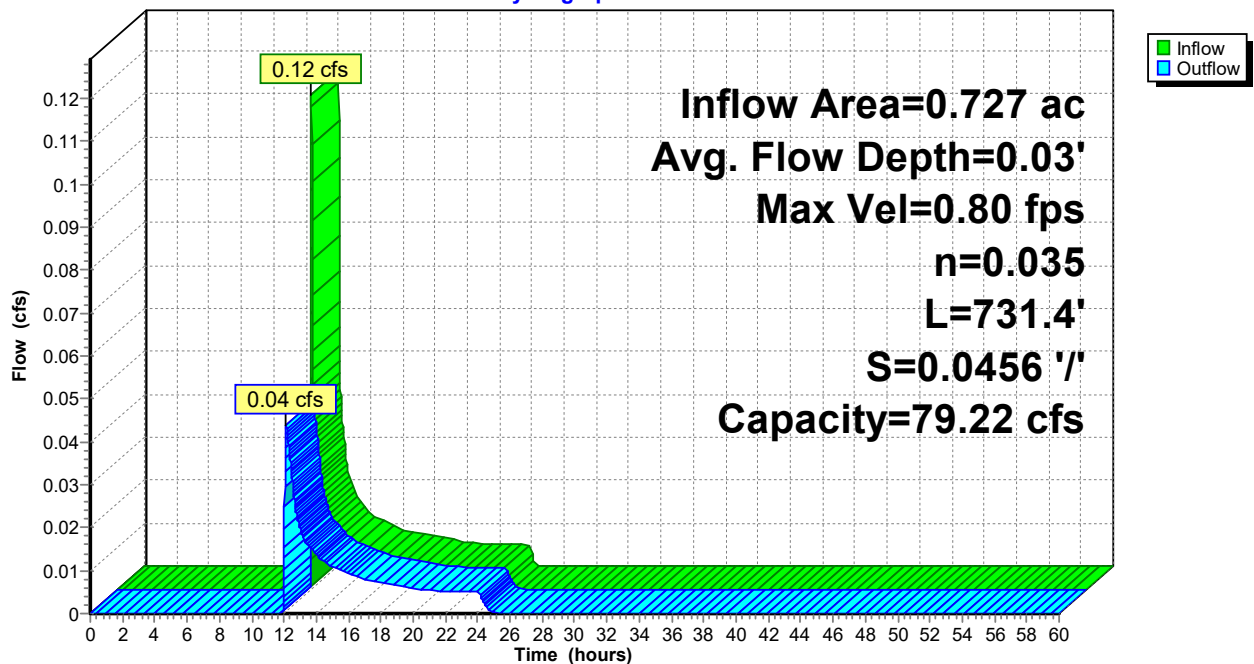
Peak Storage= 40 cf @ 12.13 hrs
 Average Depth at Peak Storage= 0.03' , Surface Width= 2.16'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 79.22 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/ Top Width= 11.00'
 Length= 731.4' Slope= 0.0456 '/
 Inlet Invert= 1,489.53', Outlet Invert= 1,456.20'



Reach 1.2bR1: East Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR2: South Road Conveyance Swale

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 0.10" for 1-Yr Storm event
 Inflow = 0.04 cfs @ 12.13 hrs, Volume= 0.013 af
 Outflow = 0.03 cfs @ 12.52 hrs, Volume= 0.013 af, Atten= 30%, Lag= 23.3 min
 Routed to Pond 1.2bC2 : TS6 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.53 fps, Min. Travel Time= 18.9 min
 Avg. Velocity = 0.41 fps, Avg. Travel Time= 24.3 min

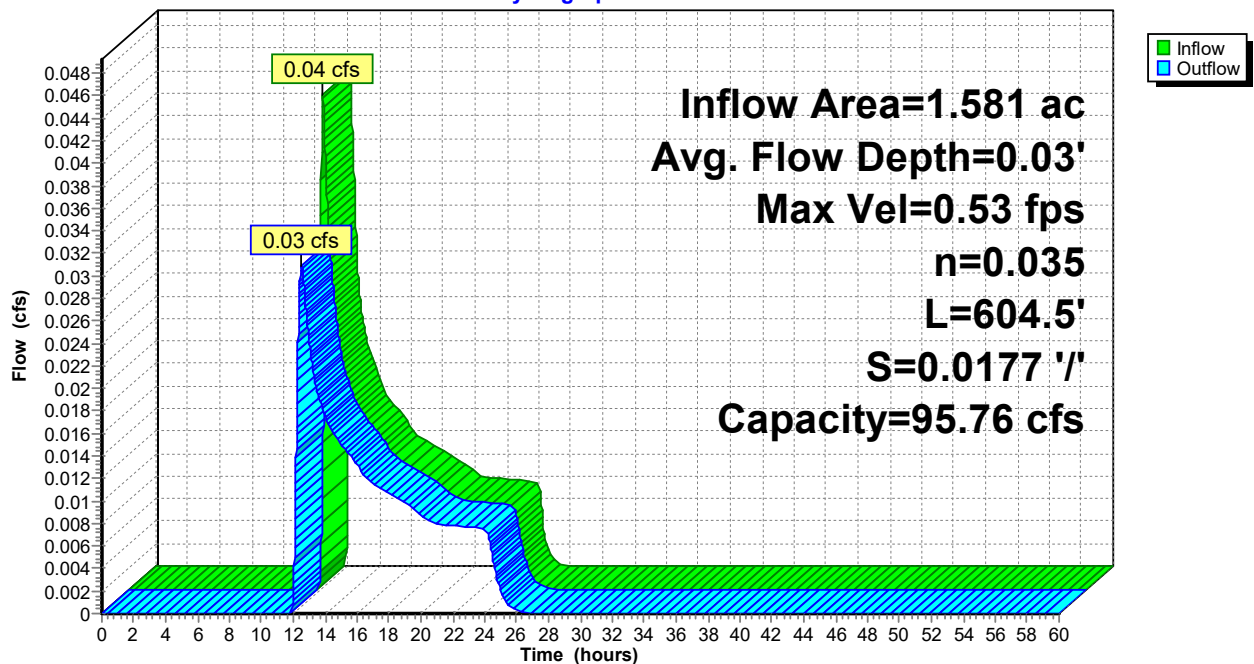
Peak Storage= 35 cf @ 12.52 hrs
 Average Depth at Peak Storage= 0.03', Surface Width= 2.17'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 95.76 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' Top Width= 14.00'
 Length= 604.5' Slope= 0.0177 ' / '
 Inlet Invert= 1,454.47', Outlet Invert= 1,443.79'



Reach 1.2bR2: South Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR3: South Road Conveyance Swale

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 0.15" for 1-Yr Storm event
 Inflow = 0.29 cfs @ 12.00 hrs, Volume= 0.030 af
 Outflow = 0.13 cfs @ 12.10 hrs, Volume= 0.030 af, Atten= 56%, Lag= 5.8 min
 Routed to Pond 1.2bP : South Road Treatment Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.89 fps, Min. Travel Time= 14.2 min
 Avg. Velocity = 0.48 fps, Avg. Travel Time= 26.1 min

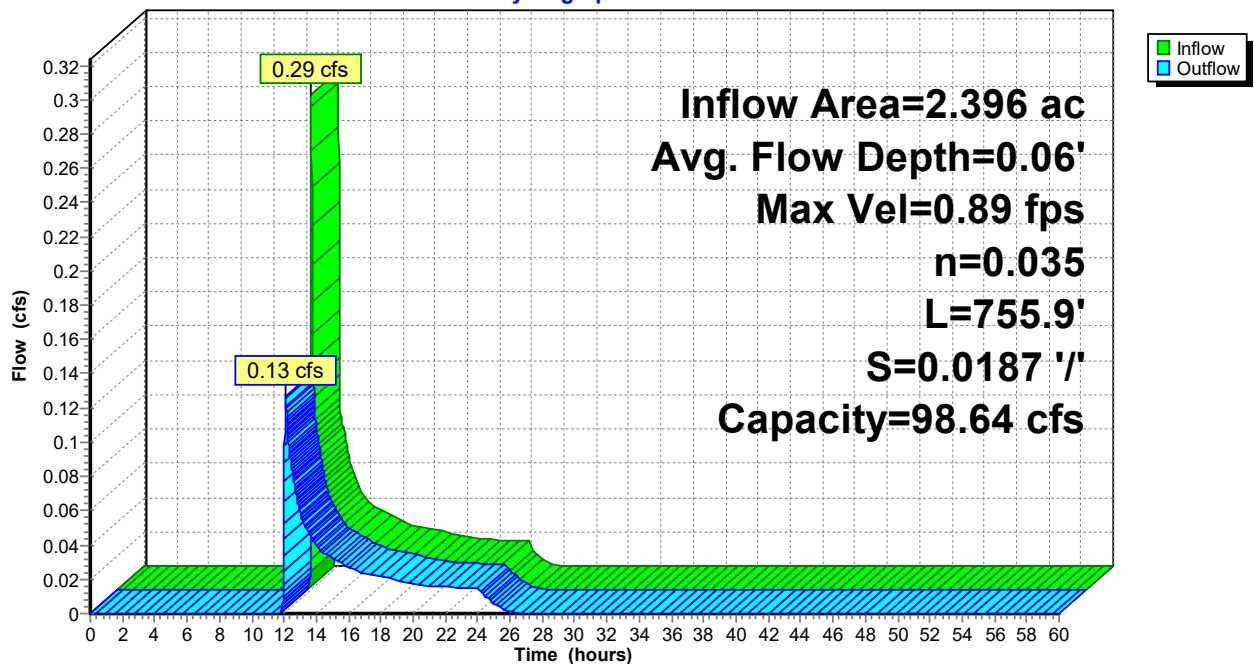
Peak Storage= 108 cf @ 12.10 hrs
 Average Depth at Peak Storage= 0.06' , Surface Width= 2.39'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 98.64 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 755.9' Slope= 0.0187 ' / '
 Inlet Invert= 1,442.84', Outlet Invert= 1,428.67'



Reach 1.2bR3: South Road Conveyance Swale

Hydrograph



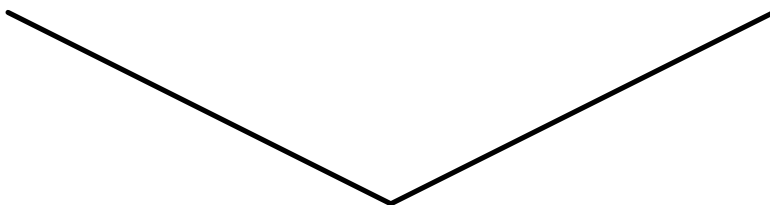
Summary for Reach 4.1R1: Bypass Swale

Inflow Area = 11.663 ac, 2.80% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

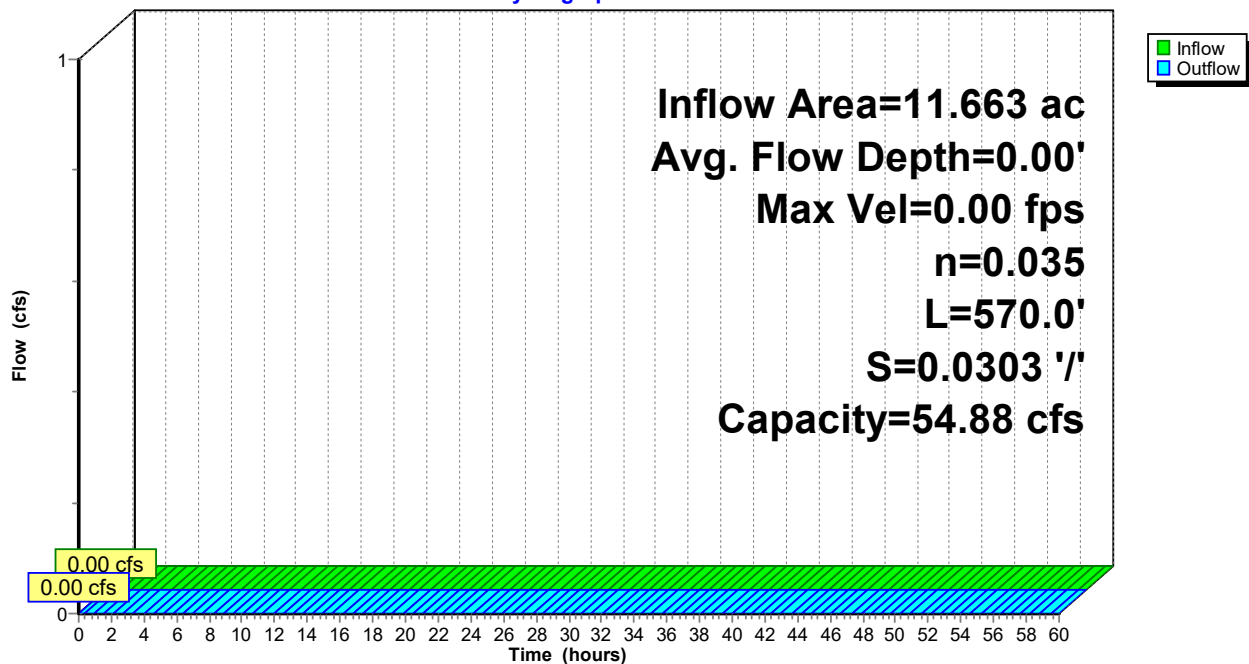
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 54.88 cfs

0.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 8.00'
 Length= 570.0' Slope= 0.0303 '/
 Inlet Invert= 1,448.24', Outlet Invert= 1,430.97'



Reach 4.1R1: Bypass Swale

Hydrograph



Summary for Reach 4.1R2: Ex Stream

Inflow Area = 39.250 ac, 0.83% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

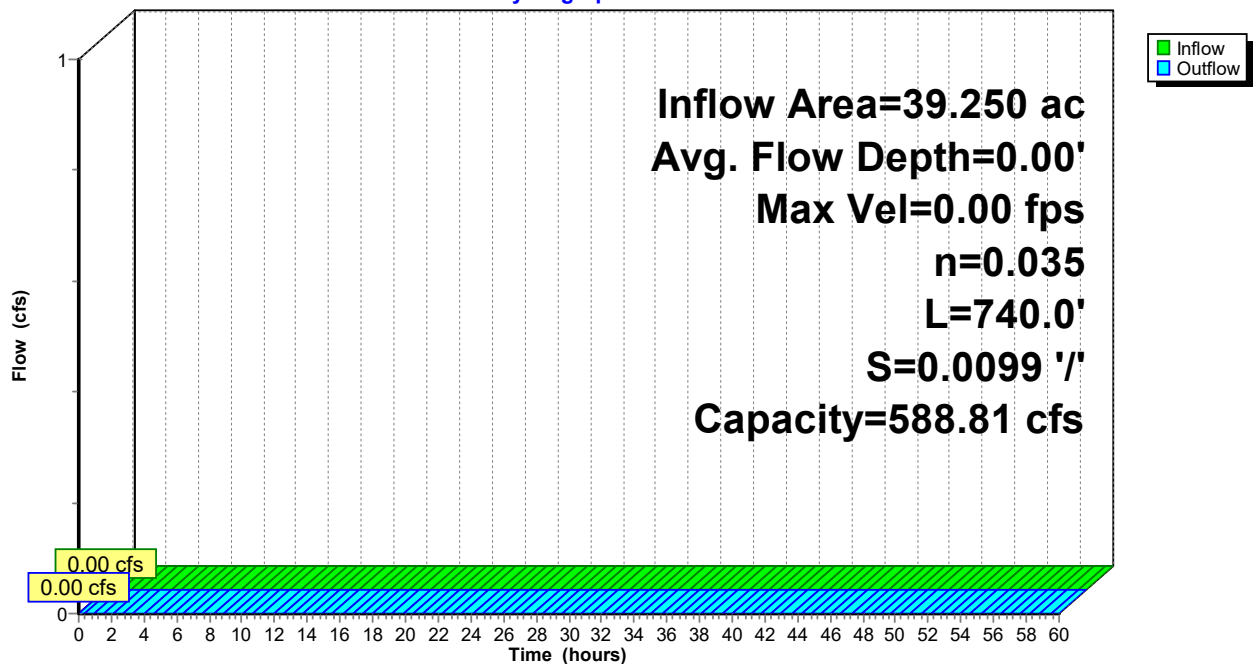
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 3.00' Flow Area= 84.0 sf, Capacity= 588.81 cfs

17.50' x 3.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 4.0 '/' Top Width= 38.50'
 Length= 740.0' Slope= 0.0099 '/'
 Inlet Invert= 1,430.98', Outlet Invert= 1,423.64'



Reach 4.1R2: Ex Stream

Hydrograph



Summary for Reach 4.2bR: Conveyance Swale

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 0.28" for 1-Yr Storm event
 Inflow = 0.19 cfs @ 12.00 hrs, Volume= 0.011 af
 Outflow = 0.12 cfs @ 12.06 hrs, Volume= 0.011 af, Atten= 39%, Lag= 4.1 min
 Routed to Pond 4.2bP : Pond 4 - Access Rd East

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.13 fps, Min. Travel Time= 8.4 min
 Avg. Velocity = 0.55 fps, Avg. Travel Time= 17.2 min

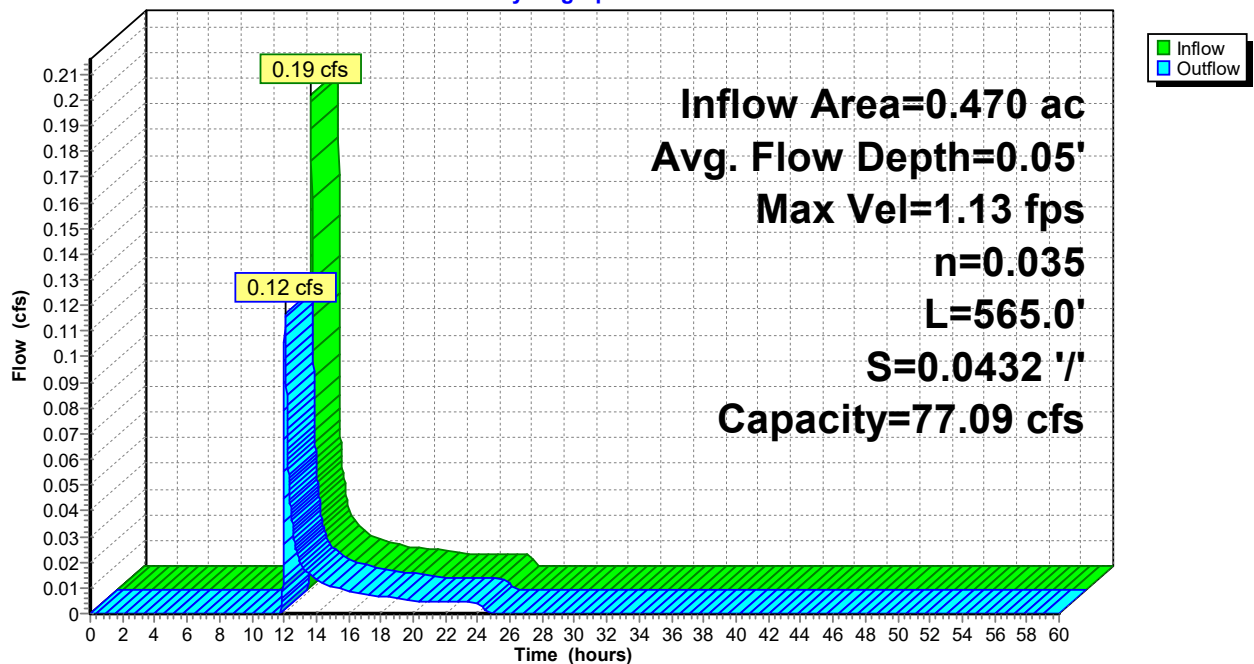
Peak Storage= 59 cf @ 12.06 hrs
 Average Depth at Peak Storage= 0.05', Surface Width= 2.29'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 77.09 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 11.00'
 Length= 565.0' Slope= 0.0432 '/'
 Inlet Invert= 1,472.38', Outlet Invert= 1,448.00'



Reach 4.2bR: Conveyance Swale

Hydrograph



Summary for Pond 1.1aC1: TS1 Culvert

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR2 : Bypass Swale

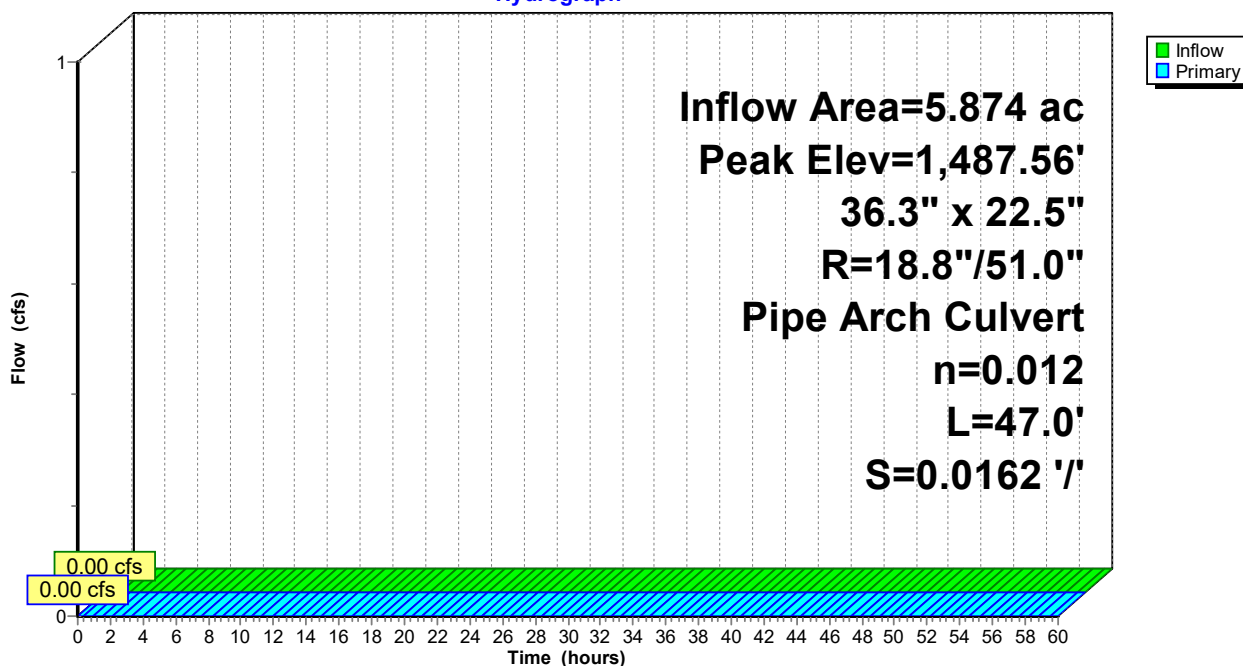
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,487.56' @ 0.00 hrs
 Flood Elev= 1,489.60'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,487.56' | 36.3" W x 22.5" H, R=18.8"/51.0" Pipe Arch RCP_Arch 37x23 L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,487.56' / 1,486.80' S= 0.0162 '/' Cc= 0.900 n= 0.012, Flow Area= 4.43 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,487.56' (Free Discharge)
 ↑1=RCP_Arch 37x23 (Controls 0.00 cfs)

Pond 1.1aC1: TS1 Culvert

Hydrograph



Summary for Pond 1.1aC2: TS2 Culvert

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR3 : Bypass Swale

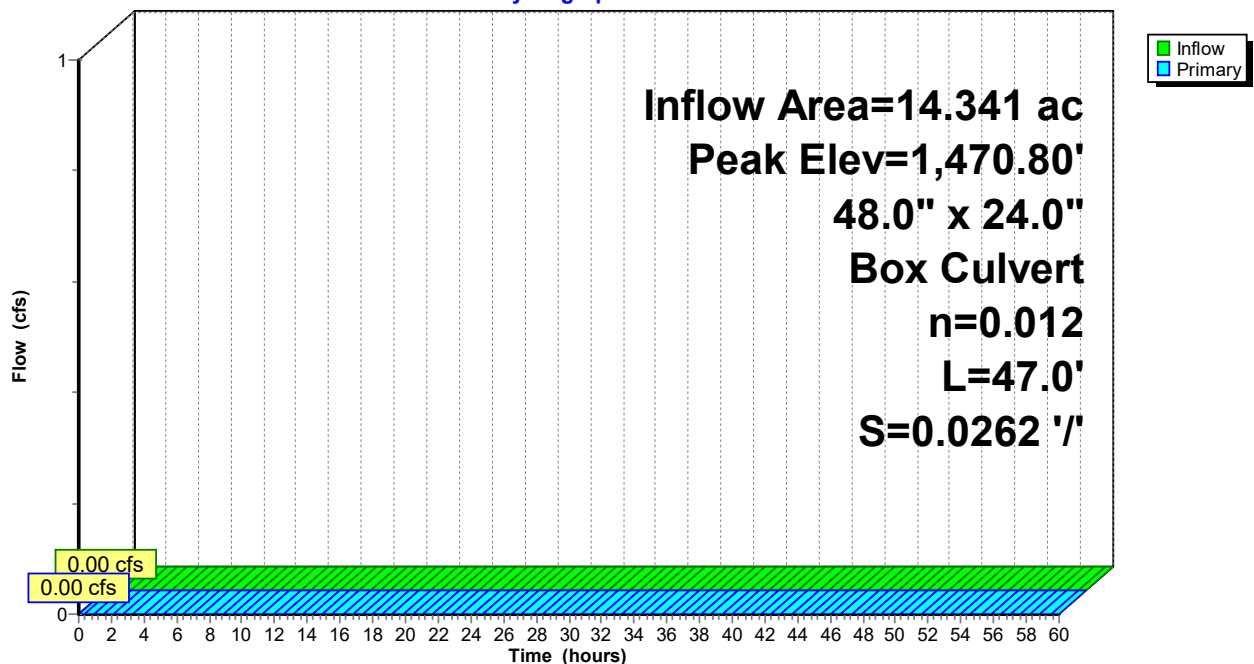
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,470.80' @ 0.00 hrs
 Flood Elev= 1,473.07'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,470.80' | 48.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,470.80' / 1,469.57' S= 0.0262 '/ Cc= 0.900 n= 0.012, Flow Area= 8.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,470.80' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.1aC2: TS2 Culvert

Hydrograph



Summary for Pond 1.1aC3: TS3 Culvert

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR4 : Bypass Swale

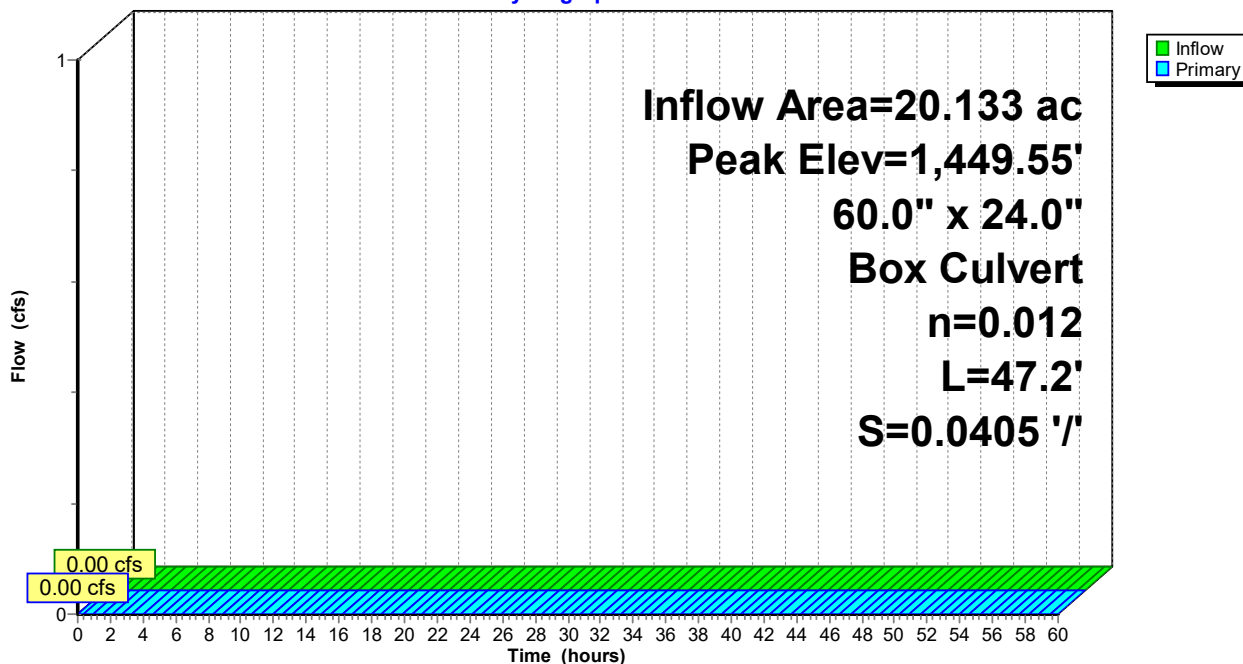
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.55' @ 0.00 hrs
 Flood Elev= 1,452.10'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,449.55' | 60.0" W x 24.0" H Box Culvert L= 47.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.55' / 1,447.64' S= 0.0405 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,449.55' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.1aC3: TS3 Culvert

Hydrograph



Summary for Pond 1.1aP: North Road Bypass OC

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.00' @ 0.00 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

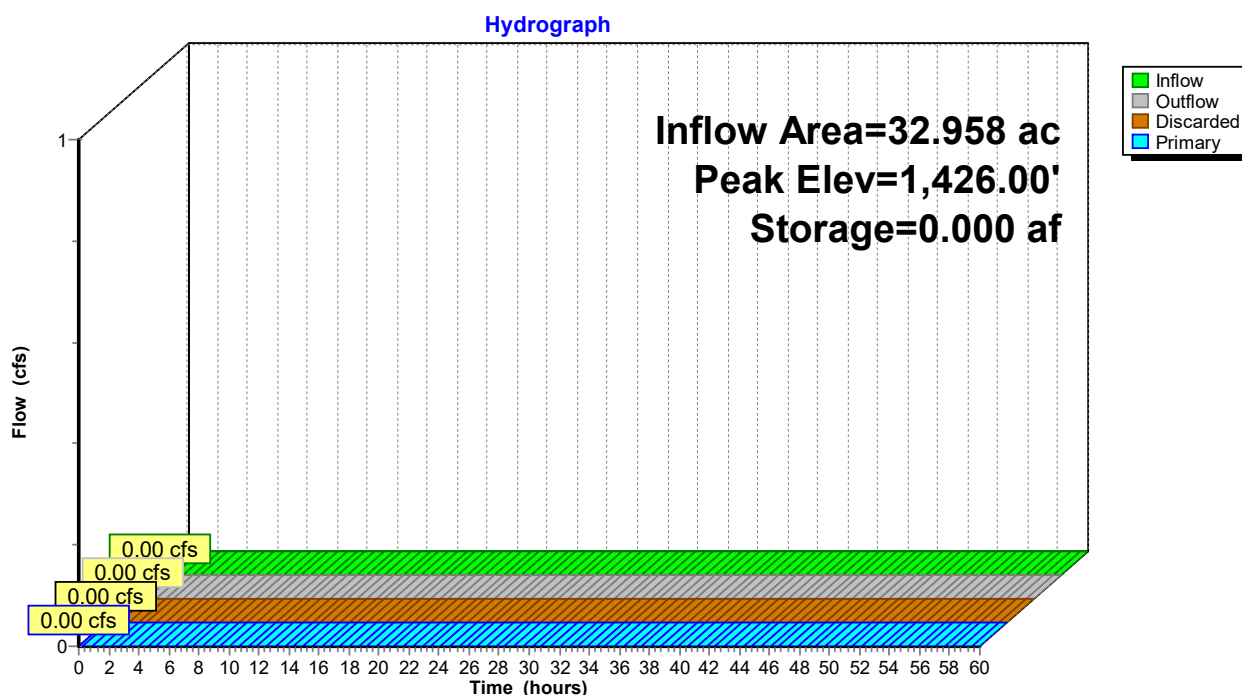
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,426.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,426.00' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,428.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,426.00' (Free Discharge)
 ↳1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,426.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.1aP: North Road Bypass OC



Summary for Pond 1.1bC1: TS4 Culvert

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 0.26" for 1-Yr Storm event
 Inflow = 0.12 cfs @ 12.17 hrs, Volume= 0.029 af
 Outflow = 0.12 cfs @ 12.17 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.12 cfs @ 12.17 hrs, Volume= 0.029 af
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

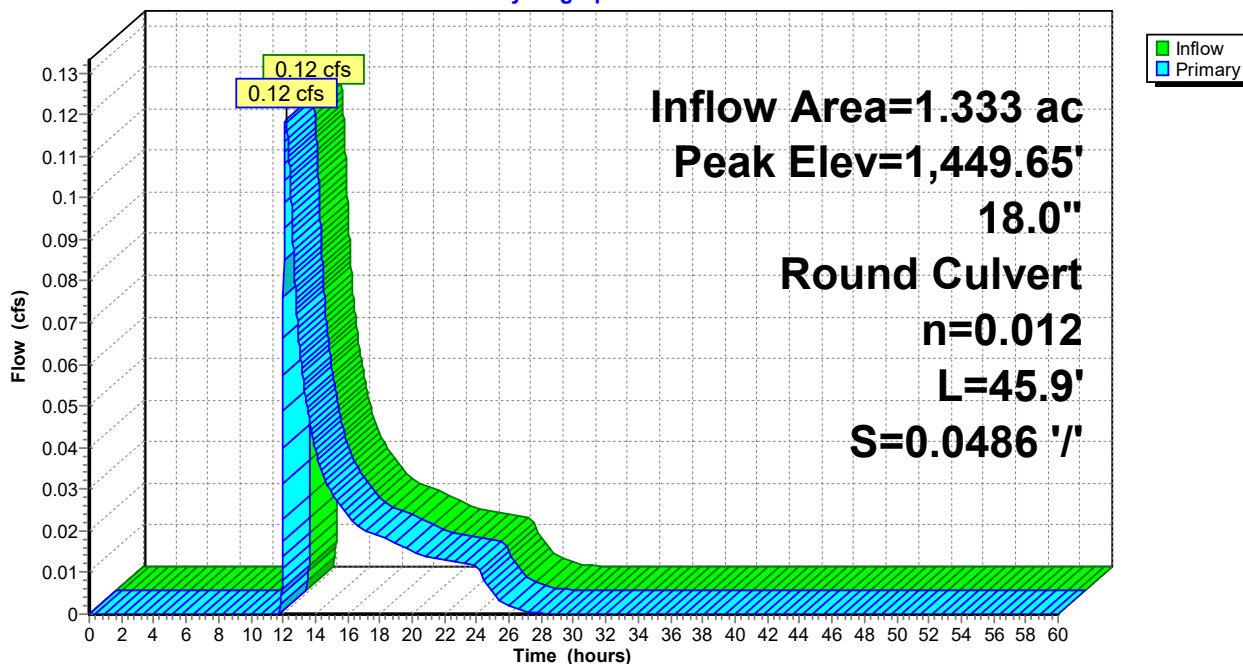
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.65' @ 12.17 hrs
 Flood Elev= 1,451.20'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,449.50' | 18.0" Round Culvert L= 45.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.50' / 1,447.27' S= 0.0486 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=0.12 cfs @ 12.17 hrs HW=1,449.65' (Free Discharge)
 ↑=Culvert (Inlet Controls 0.12 cfs @ 1.31 fps)

Pond 1.1bC1: TS4 Culvert

Hydrograph



Summary for Pond 1.1bP1: Dry Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.23" for 1-Yr Storm event
 Inflow = 0.15 cfs @ 12.26 hrs, Volume= 0.039 af
 Outflow = 0.15 cfs @ 12.31 hrs, Volume= 0.039 af, Atten= 1%, Lag= 2.8 min
 Discarded = 0.00 cfs @ 12.31 hrs, Volume= 0.004 af
 Primary = 0.15 cfs @ 12.31 hrs, Volume= 0.035 af
 Routed to Pond 1.1bP2 : North Road Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,425.78' @ 12.31 hrs Surf.Area= 197 sf Storage= 78 cf

Plug-Flow detention time= 49.3 min calculated for 0.039 af (100% of inflow)
 Center-of-Mass det. time= 49.5 min (1,022.2 - 972.7)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,424.75' | 428 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,424.75 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,425.00 | 25 | 22.9 | 2 | 2 | 42 | |
| 1,426.00 | 273 | 98.0 | 127 | 129 | 767 | |
| 1,426.70 | 603 | 161.7 | 299 | 428 | 2,086 | |

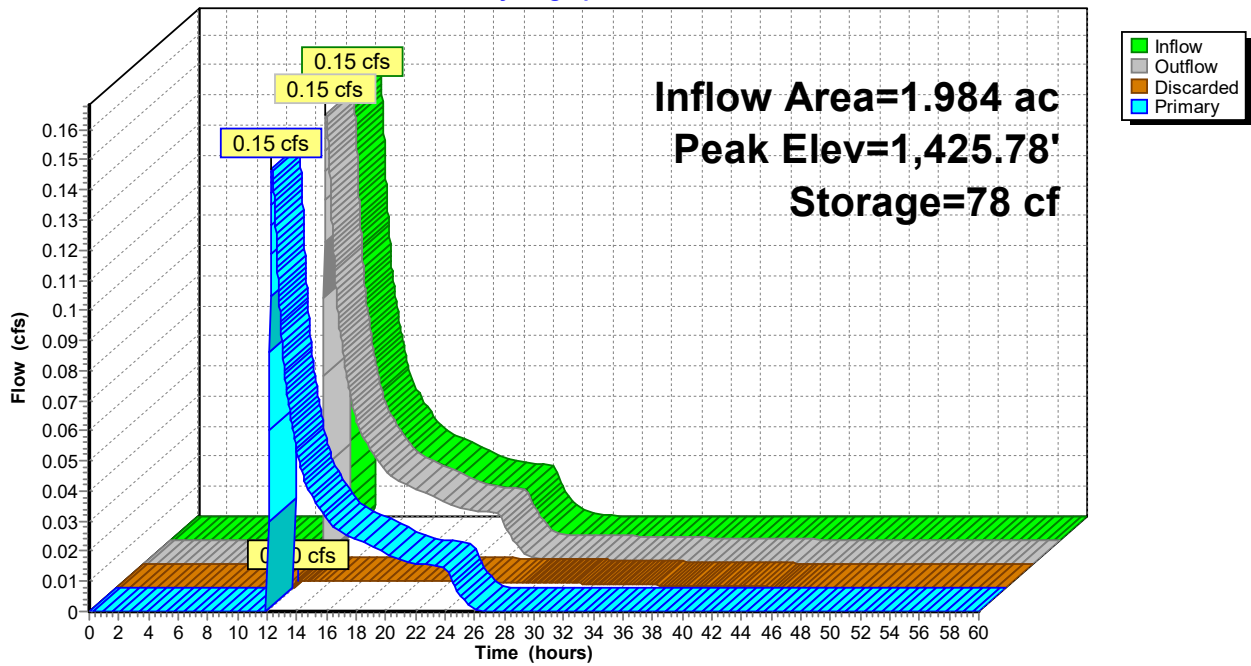
| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | |
|--------|-----------|-----------|--|--|--|--|--|--|--|--|--|--|--|--|
| #1 | Discarded | 1,424.75' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | |
| #2 | Primary | 1,425.69' | 2.0' long x 2.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 | | | | | | | | | | | |
| | | | Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32 | | | | | | | | | | | |

Discarded OutFlow Max=0.00 cfs @ 12.31 hrs HW=1,425.78' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.15 cfs @ 12.31 hrs HW=1,425.78' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 0.15 cfs @ 0.78 fps)

Pond 1.1bP1: Dry Swale

Hydrograph



Summary for Pond 1.1bP2: North Road Detention Pond

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.21" for 1-Yr Storm event
 Inflow = 0.15 cfs @ 12.31 hrs, Volume= 0.035 af
 Outflow = 0.01 cfs @ 24.37 hrs, Volume= 0.034 af, Atten= 92%, Lag= 723.7 min
 Discarded = 0.01 cfs @ 24.37 hrs, Volume= 0.034 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,423.08' @ 24.37 hrs Surf.Area= 0.022 ac Storage= 0.024 af

Plug-Flow detention time= 1,064.8 min calculated for 0.034 af (96% of inflow)
 Center-of-Mass det. time= 1,046.6 min (2,017.3 - 970.8)

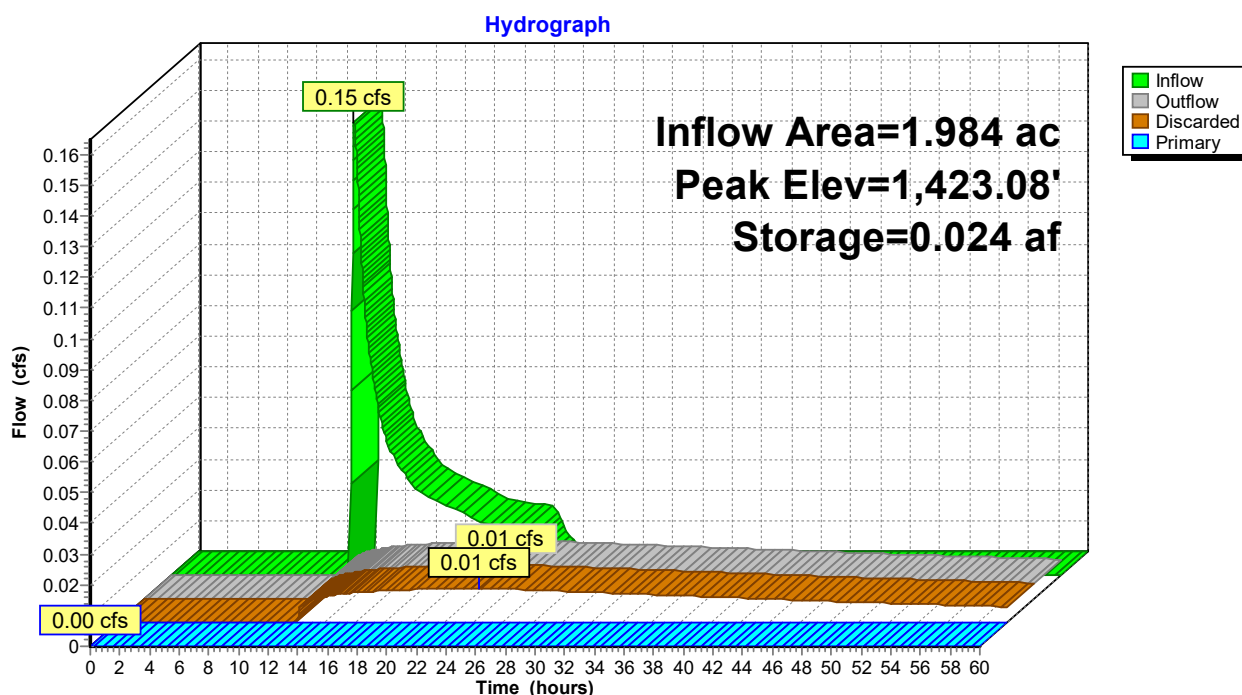
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,421.50' | 0.166 af | 10.00'W x 40.00'L x 5.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,421.50' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,424.00' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.01 cfs @ 24.37 hrs HW=1,423.08' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,421.50' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.1bP2: North Road Detention Pond



Summary for Pond 1.2aC1: TS 7 Culvert

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.2aR2 : Bypass Swale

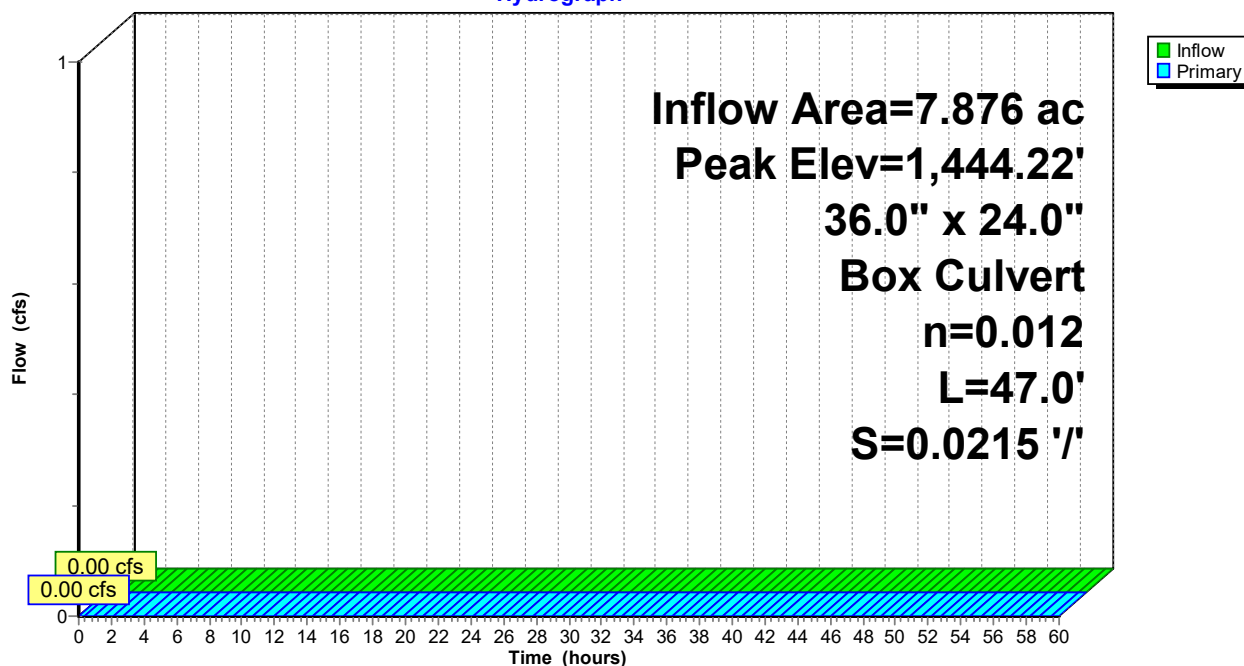
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,444.22' @ 0.00 hrs
 Flood Elev= 1,446.28'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,444.22' | 36.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,444.22' / 1,443.21' S= 0.0215 '/ Cc= 0.900 n= 0.012, Flow Area= 6.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,444.22' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.2aC1: TS 7 Culvert

Hydrograph



Summary for Pond 1.2aC2: TS8 Culvert

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.2aR3 : Bypass Swale

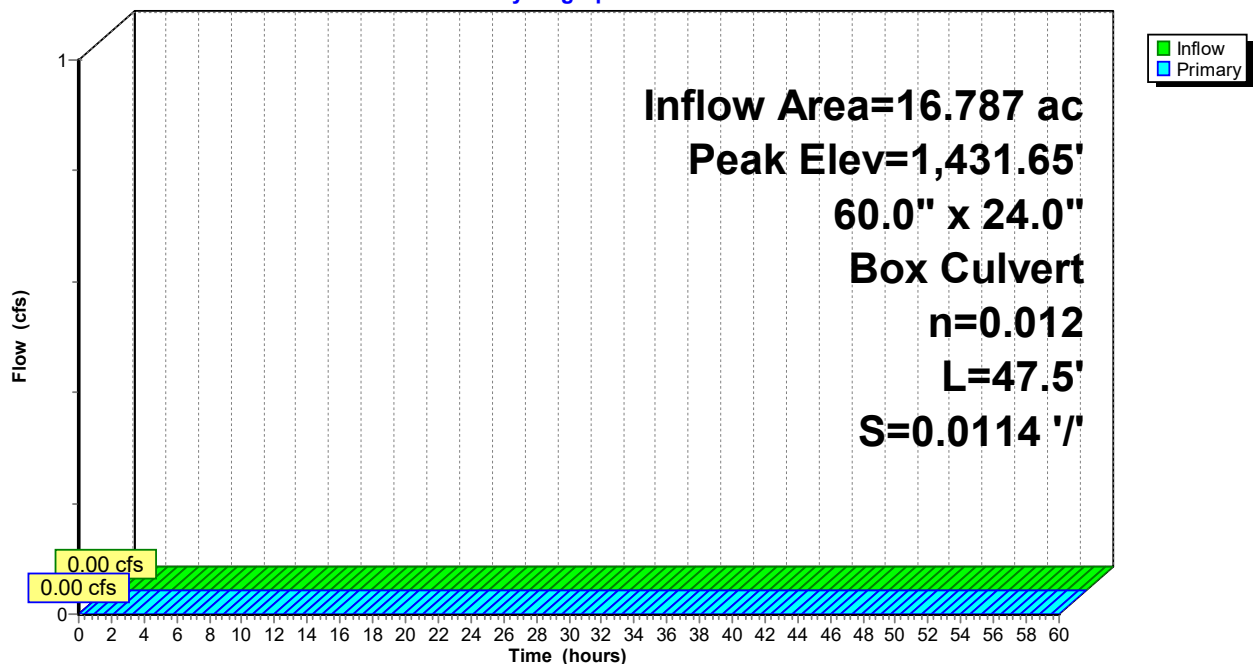
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.65' @ 0.00 hrs
 Flood Elev= 1,433.87'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,431.65' | 60.0" W x 24.0" H Box Culvert L= 47.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,431.65' / 1,431.11' S= 0.0114 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,431.65' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.2aC2: TS8 Culvert

Hydrograph



Summary for Pond 1.2aP: South Road Bypass OC

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.00' @ 0.00 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

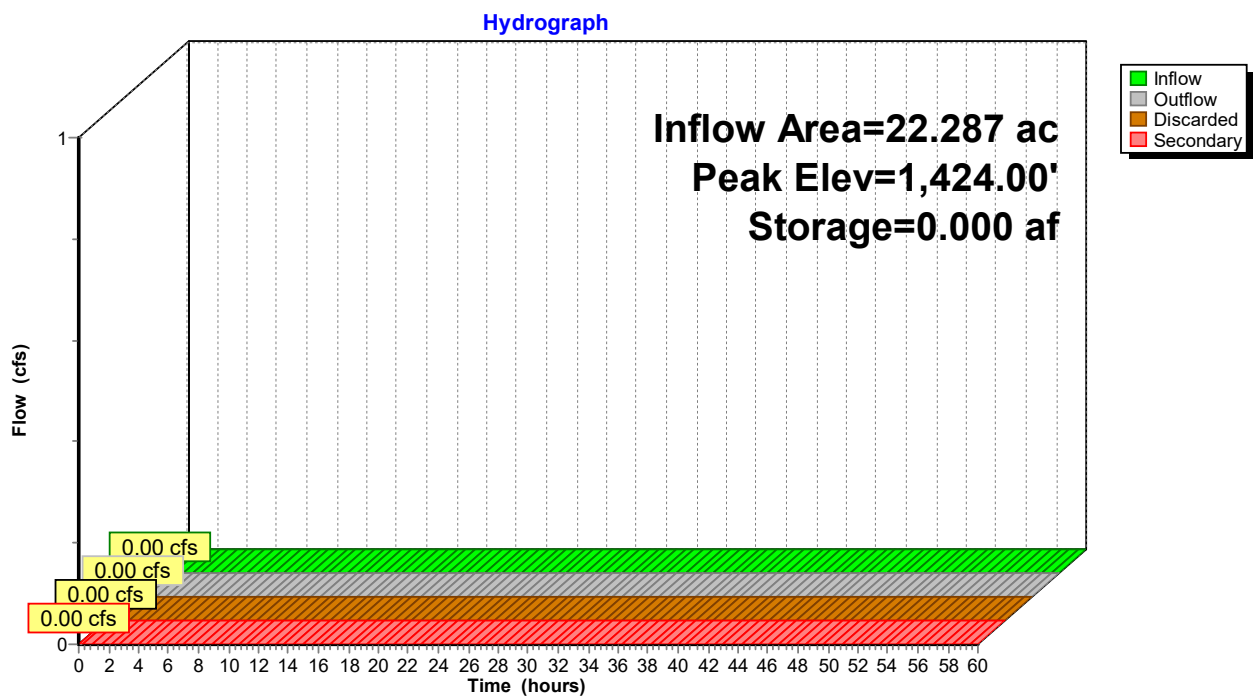
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area |
| #2 | Secondary | 1,426.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 |
| | | | Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳1=Exfiltration (Passes 0.00 cfs of 0.06 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.2aP: South Road Bypass OC



Summary for Pond 1.2bC1: East Road Culvert

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 0.17" for 1-Yr Storm event
 Inflow = 0.04 cfs @ 12.13 hrs, Volume= 0.010 af
 Outflow = 0.04 cfs @ 12.13 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.04 cfs @ 12.13 hrs, Volume= 0.010 af
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

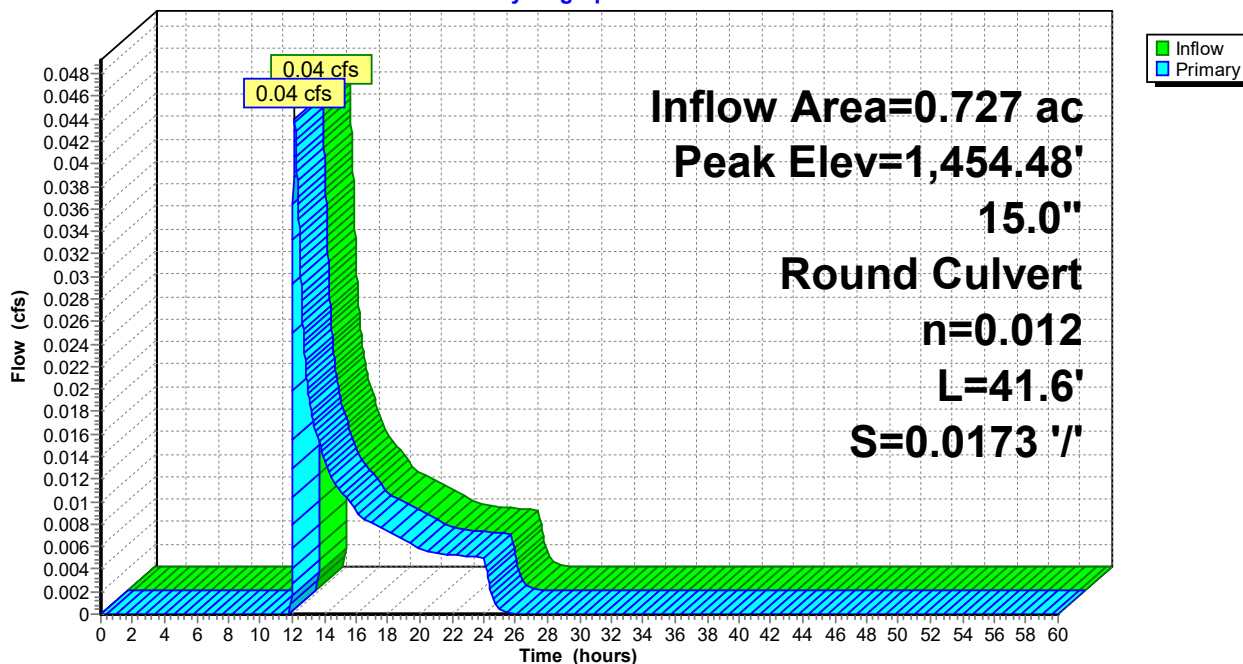
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,454.48' @ 12.13 hrs
 Flood Elev= 1,457.45'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,454.39' | 15.0" Round Culvert L= 41.6' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,454.39' / 1,453.67' S= 0.0173 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf |

Primary OutFlow Max=0.04 cfs @ 12.13 hrs HW=1,454.48' (Free Discharge)
 ← **1=Culvert** (Inlet Controls 0.04 cfs @ 1.04 fps)

Pond 1.2bC1: East Road Culvert

Hydrograph



Summary for Pond 1.2bC2: TS6 Culvert

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 0.10" for 1-Yr Storm event
 Inflow = 0.03 cfs @ 12.52 hrs, Volume= 0.013 af
 Outflow = 0.03 cfs @ 12.52 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.03 cfs @ 12.52 hrs, Volume= 0.013 af
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

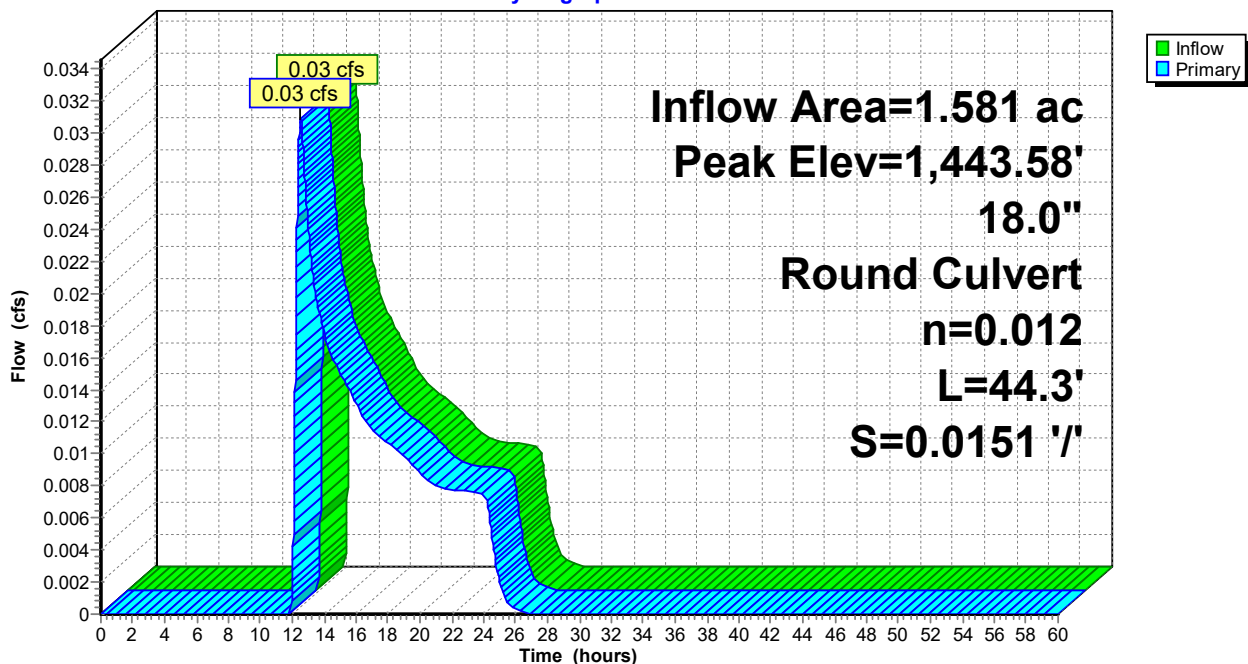
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,443.58' @ 12.52 hrs
 Flood Elev= 1,445.09'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,443.51' | 18.0" Round Culvert L= 44.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,443.51' / 1,442.84' S= 0.0151 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=0.03 cfs @ 12.52 hrs HW=1,443.58' (Free Discharge)
 ↳=Culvert (Inlet Controls 0.03 cfs @ 0.93 fps)

Pond 1.2bC2: TS6 Culvert

Hydrograph



Summary for Pond 1.2bP: South Road Treatment Pond

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 0.15" for 1-Yr Storm event
 Inflow = 0.13 cfs @ 12.10 hrs, Volume= 0.030 af
 Outflow = 0.11 cfs @ 12.17 hrs, Volume= 0.030 af, Atten= 9%, Lag= 4.6 min
 Discarded = 0.11 cfs @ 12.17 hrs, Volume= 0.030 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.05' @ 12.17 hrs Surf.Area= 0.009 ac Storage= 0.000 af

Plug-Flow detention time= 3.0 min calculated for 0.030 af (100% of inflow)
 Center-of-Mass det. time= 3.0 min (987.7 - 984.7)

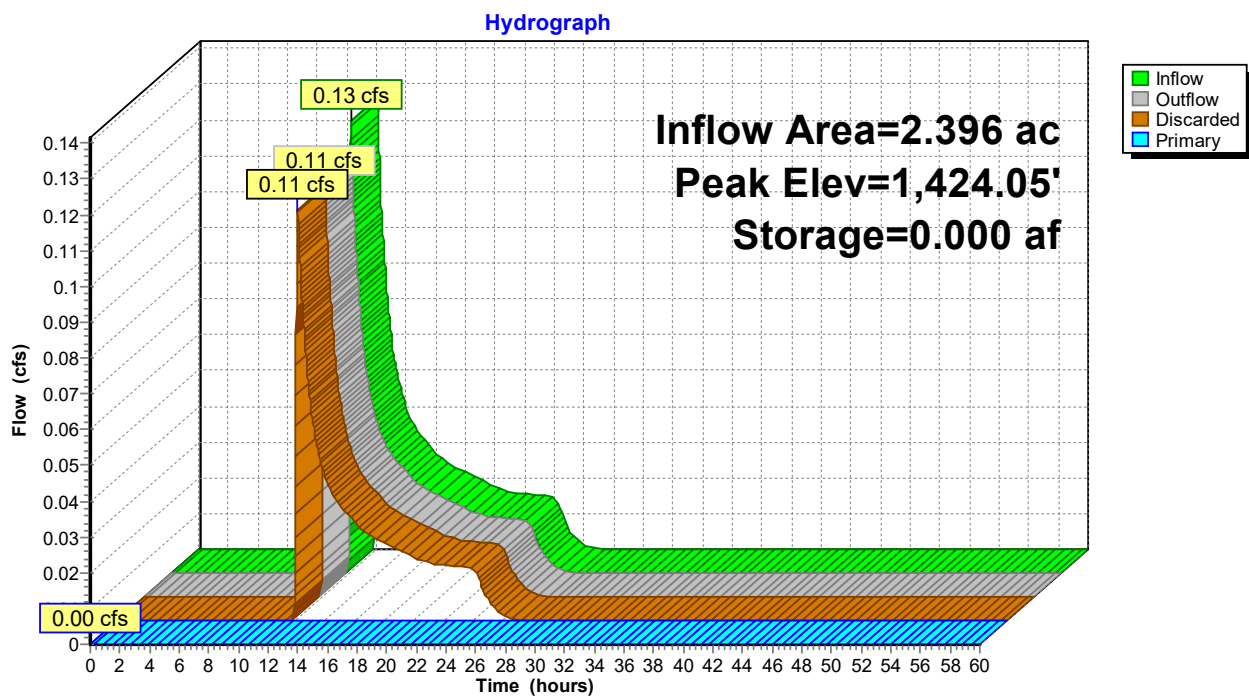
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.149 af | 20.00'W x 20.00'L x 5.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,426.05' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.11 cfs @ 12.17 hrs HW=1,424.05' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.2bP: South Road Treatment Pond



Summary for Pond 1.3P: Pond 3 - Access Rd West

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 24.03 hrs, Volume= 0.000 af, Atten= 2%, Lag= 1.1 min
 Discarded = 0.00 cfs @ 24.03 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link SP1 : Study Point 1

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,456.00' @ 24.03 hrs Surf.Area= 784 sf Storage= 0 cf

Plug-Flow detention time= 4.8 min calculated for 0.000 af (100% of inflow)
 Center-of-Mass det. time= 4.8 min (1,398.1 - 1,393.4)

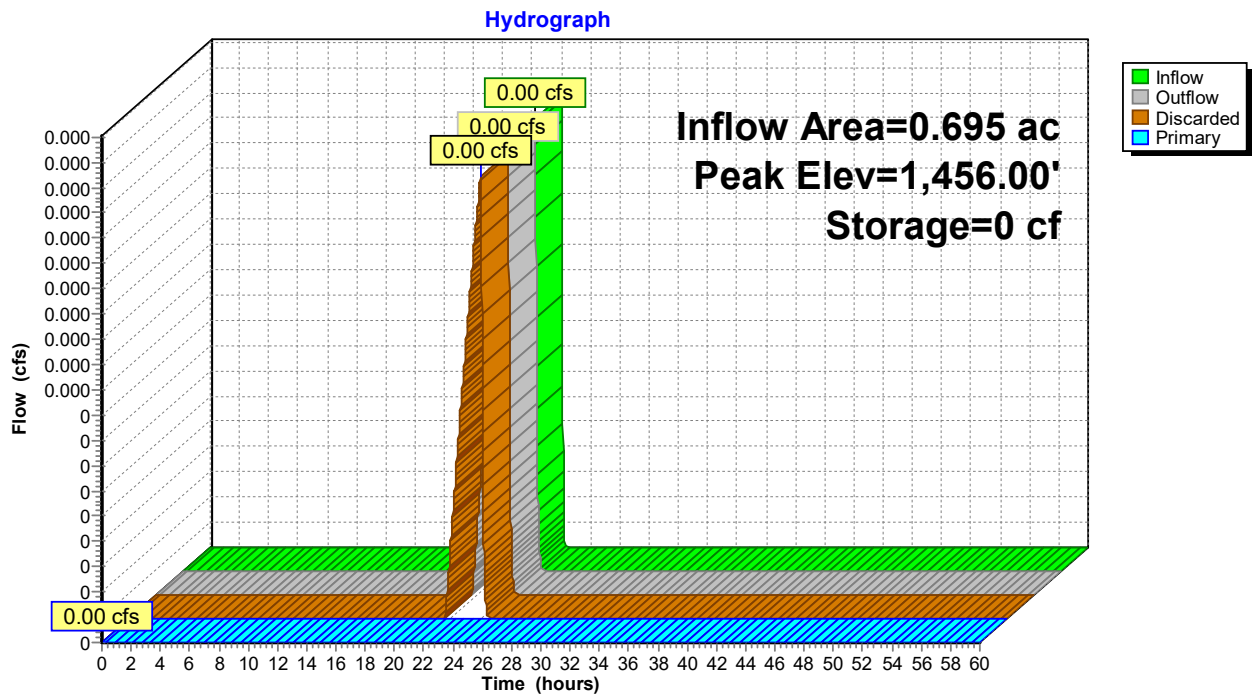
| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,456.00' | 8,743 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,456.00 | 784 | 123.0 | 0 | 0 | 784 | |
| 1,458.00 | 1,720 | 194.0 | 2,443 | 2,443 | 2,603 | |
| 1,459.00 | 2,884 | 279.0 | 2,277 | 4,721 | 5,811 | |
| 1,460.00 | 5,280 | 421.0 | 4,022 | 8,743 | 13,729 | |

| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | | | | | | | | |
|--------|-----------|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| #1 | Discarded | 1,456.00' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | | | | | | | | |
| #2 | Primary | 1,459.99' | 20.0' long x 4.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | | | | | | | | |
| | | | Head (feet) | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 5.50 | |
| | | | Coef. (English) | 2.38 | 2.54 | 2.69 | 2.68 | 2.67 | 2.67 | 2.65 | 2.66 | 2.66 | 2.66 | 2.68 | 2.72 | 2.73 | 2.76 | 2.79 | 2.88 | 3.07 | 3.32 |

Discarded OutFlow Max=0.00 cfs @ 24.03 hrs HW=1,456.00' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,456.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.3P: Pond 3 - Access Rd West



Summary for Pond 4.2bP: Pond 4 - Access Rd East

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 0.28" for 1-Yr Storm event
 Inflow = 0.12 cfs @ 12.06 hrs, Volume= 0.011 af
 Outflow = 0.04 cfs @ 12.50 hrs, Volume= 0.011 af, Atten= 69%, Lag= 26.2 min
 Discarded = 0.04 cfs @ 12.50 hrs, Volume= 0.011 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 4.2C : 18" Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,445.81' @ 12.50 hrs Surf.Area= 259 sf Storage= 70 cf

Plug-Flow detention time= 12.7 min calculated for 0.011 af (100% of inflow)
 Center-of-Mass det. time= 12.7 min (939.1 - 926.4)

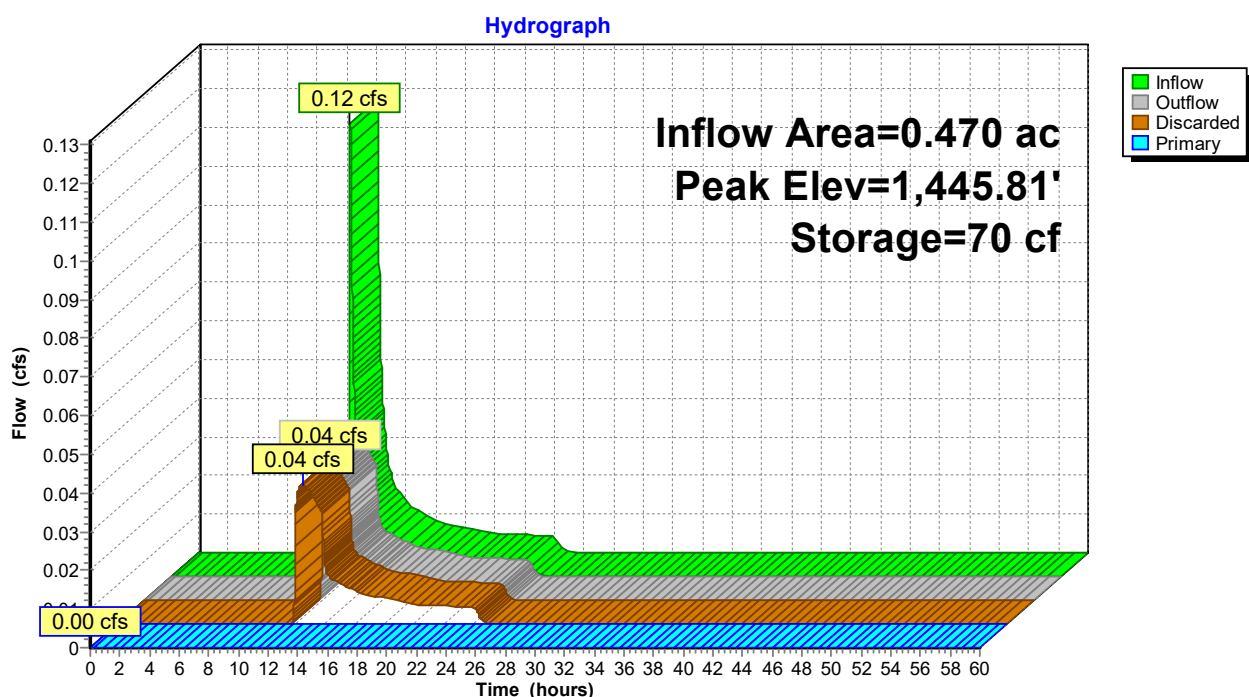
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,445.50' | 2,317 cf | 10.00'W x 20.00'L x 3.50'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|---|-----------|-----------|---|
| #1 | Discarded | 1,445.50' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,448.25' | 10.0' long x 4.0' breadth Broad-Crested Rectangular Weir |
| Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 | | | |
| 2.50 3.00 3.50 4.00 4.50 5.00 5.50 | | | |
| Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 | | | |
| 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32 | | | |

Discarded OutFlow Max=0.04 cfs @ 12.50 hrs HW=1,445.81' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,445.50' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.2bP: Pond 4 - Access Rd East



Summary for Pond 4.2C: 18" Culvert

Inflow Area = 27.587 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
 Inflow = 0.01 cfs @ 24.16 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.78' @ 26.20 hrs Surf.Area= 373 sf Storage= 35 cf
 Flood Elev= 1,434.64' Surf.Area= 27,666 sf Storage= 28,656 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

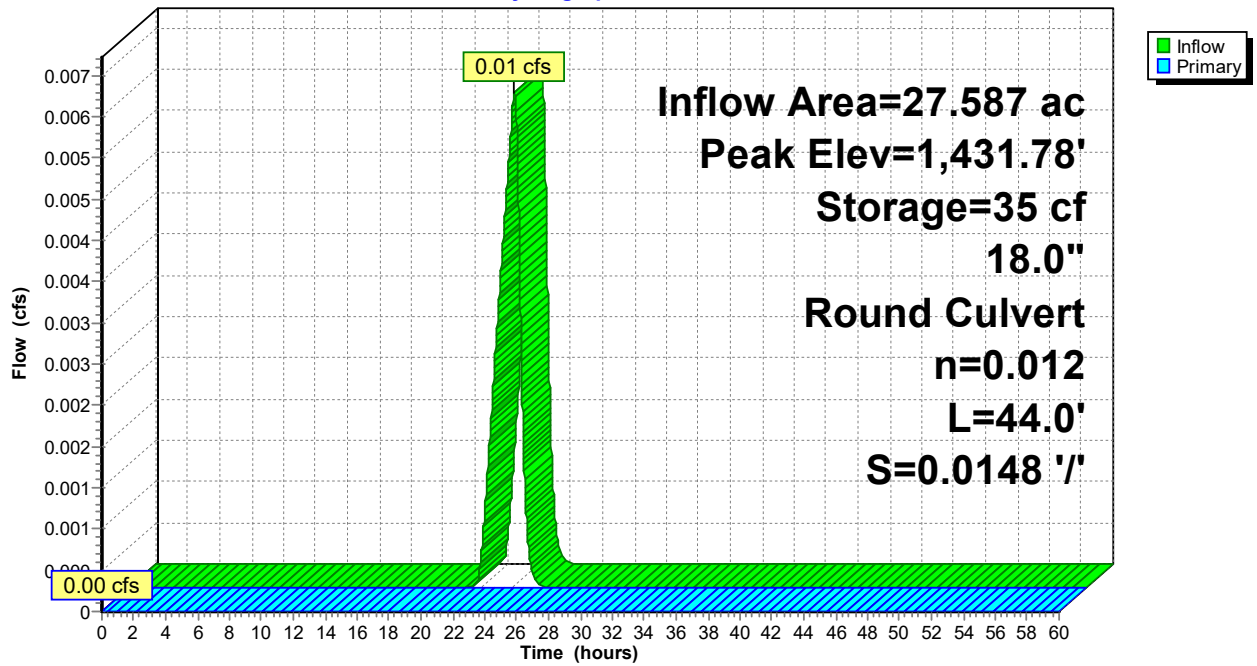
| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,431.50' | 39,033 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,431.50 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,432.00 | 1,190 | 146.0 | 198 | 198 | 1,697 | |
| 1,432.50 | 3,534 | 368.0 | 1,129 | 1,327 | 10,778 | |
| 1,433.00 | 5,795 | 497.0 | 2,309 | 3,637 | 19,660 | |
| 1,433.50 | 10,362 | 837.0 | 3,984 | 7,621 | 55,755 | |
| 1,434.00 | 16,931 | 975.0 | 6,756 | 14,377 | 75,659 | |
| 1,434.60 | 27,412 | 1,352.0 | 13,177 | 27,555 | 145,474 | |
| 1,435.00 | 30,000 | 1,500.0 | 11,479 | 39,033 | 179,068 | |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.83' | 18.0" Round Culvert L= 44.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.83' / 1,431.18' S= 0.0148 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,431.50' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 4.2C: 18" Culvert

Hydrograph



Summary for Pond 4.3C: 24" Culvert

Inflow Area = 25.466 ac, 5.08% Impervious, Inflow Depth = 0.03" for 1-Yr Storm event
 Inflow = 0.07 cfs @ 17.89 hrs, Volume= 0.059 af
 Outflow = 0.07 cfs @ 17.89 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.07 cfs @ 17.89 hrs, Volume= 0.059 af
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.46' @ 17.89 hrs
 Flood Elev= 1,434.65'

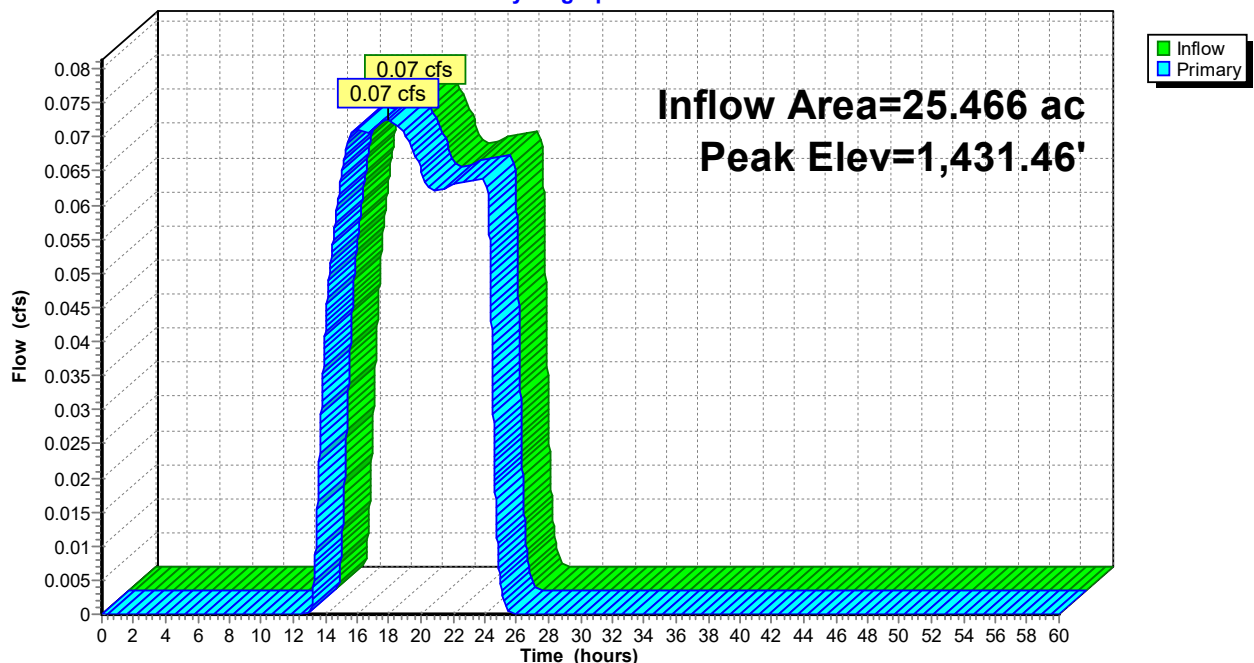
| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.35' | 24.0" Round Culvert L= 55.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.35' / 1,429.87' S= 0.0265 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf |
| #2 | Primary | 1,434.81' | 20.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |

Primary OutFlow Max=0.07 cfs @ 17.89 hrs HW=1,431.46' (Free Discharge)

- 1=Culvert (Inlet Controls 0.07 cfs @ 1.11 fps)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.3C: 24" Culvert

Hydrograph



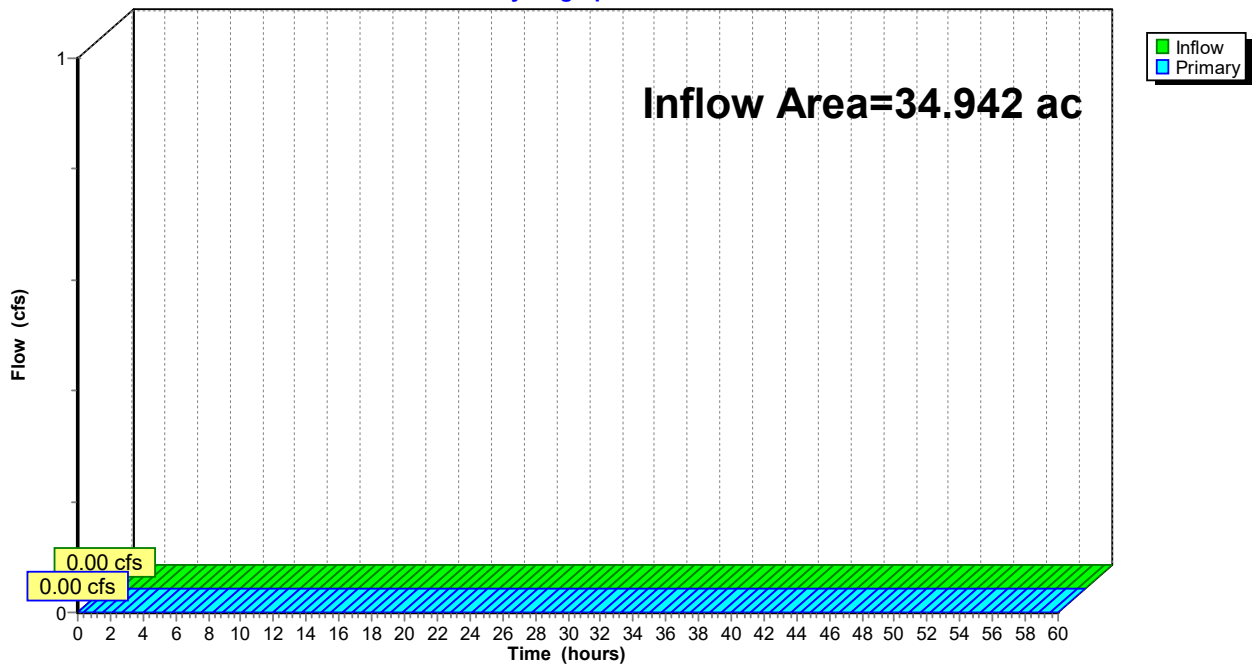
Summary for Link 1.1L:

Inflow Area = 34.942 ac, 0.04% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.1L:

Hydrograph



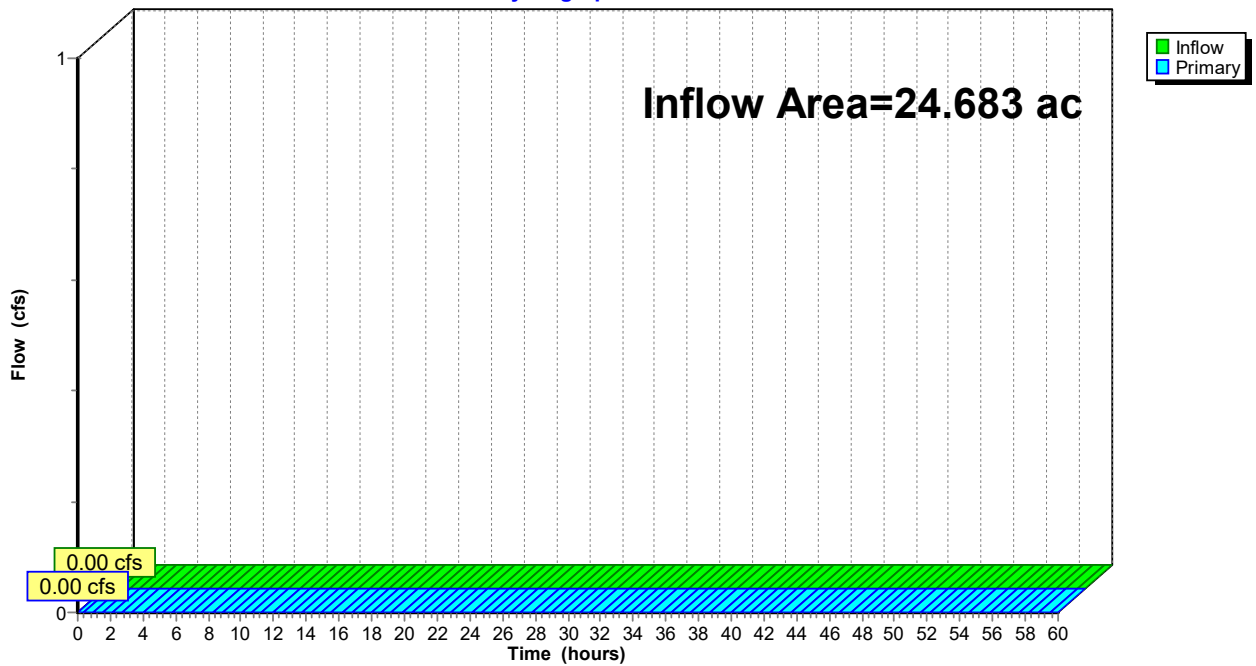
Summary for Link 1.2L:

Inflow Area = 24.683 ac, 0.06% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.2L:

Hydrograph

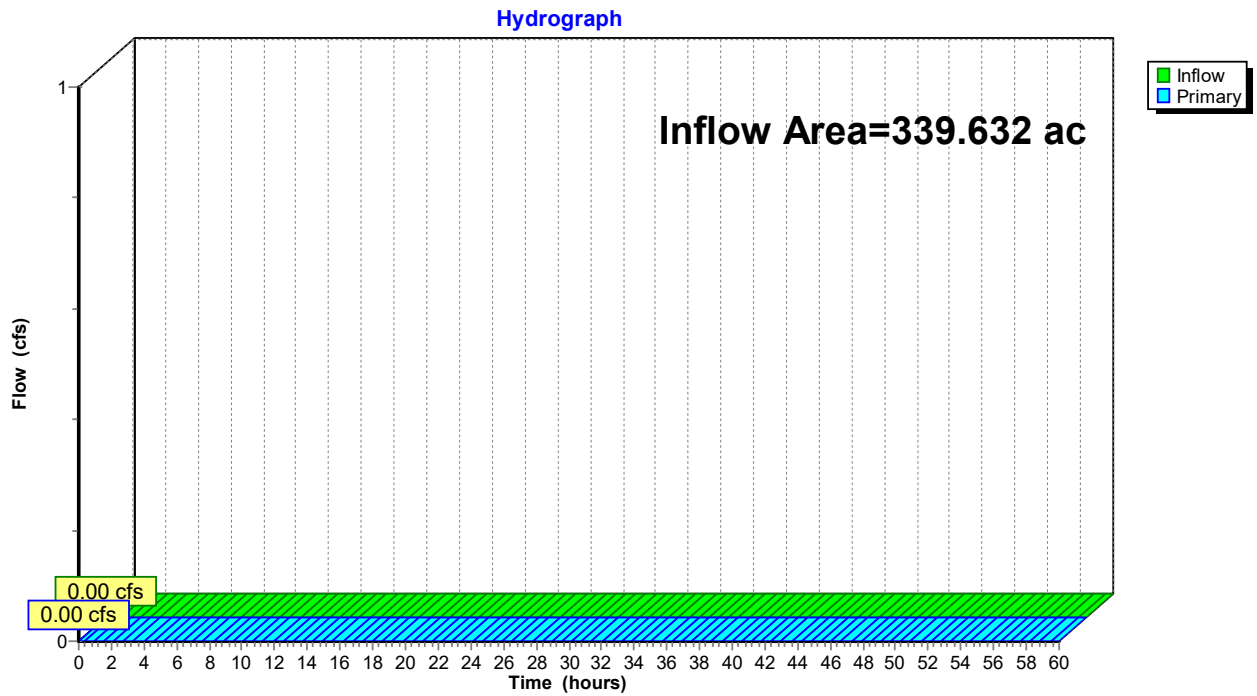


Summary for Link SP1: Study Point 1

Inflow Area = 339.632 ac, 0.01% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP1: Study Point 1

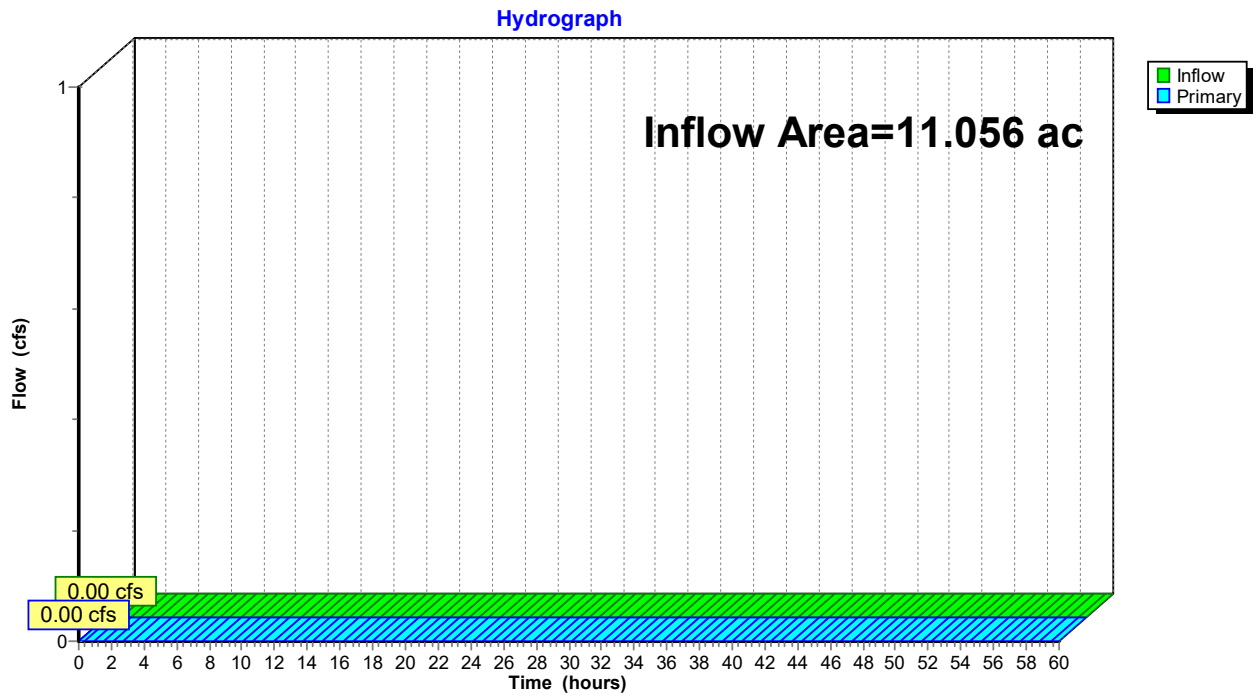


Summary for Link SP2: Study Point 2

Inflow Area = 11.056 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP2: Study Point 2

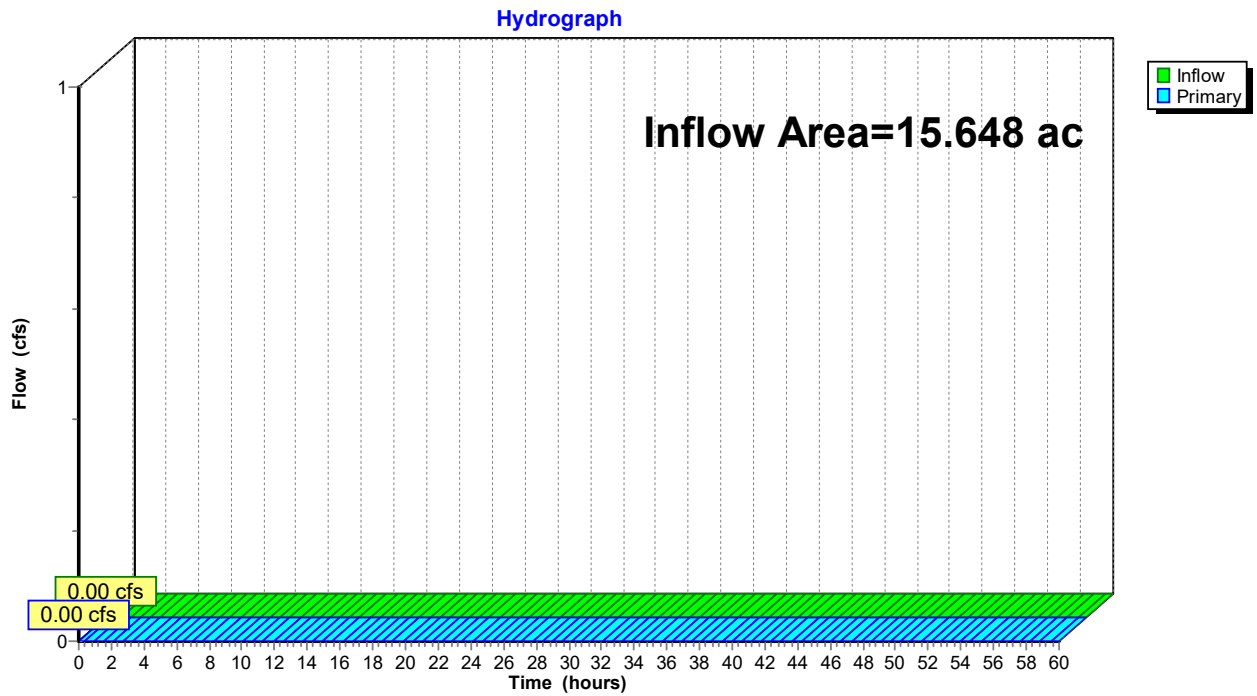


Summary for Link SP3: Study Point 3

Inflow Area = 15.648 ac, 0.56% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP3: Study Point 3



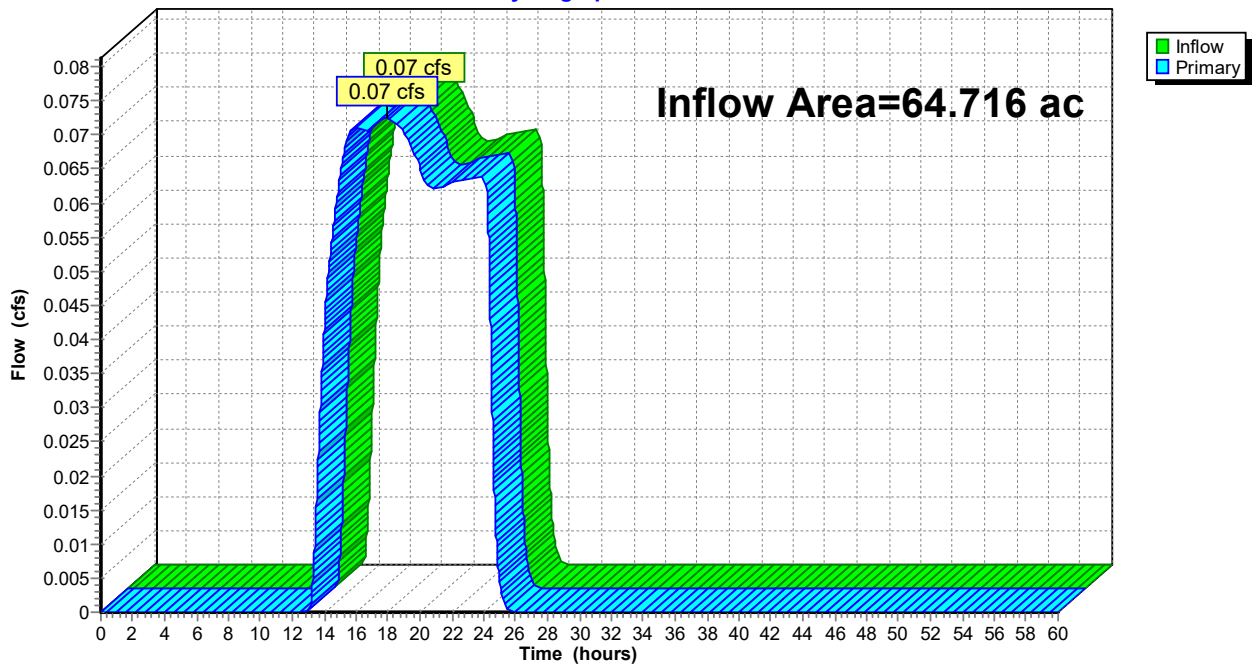
Summary for Link SP4: Study Point 4

Inflow Area = 64.716 ac, 2.50% Impervious, Inflow Depth = 0.01" for 1-Yr Storm event
Inflow = 0.07 cfs @ 17.89 hrs, Volume= 0.059 af
Primary = 0.07 cfs @ 17.89 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP4: Study Point 4

Hydrograph

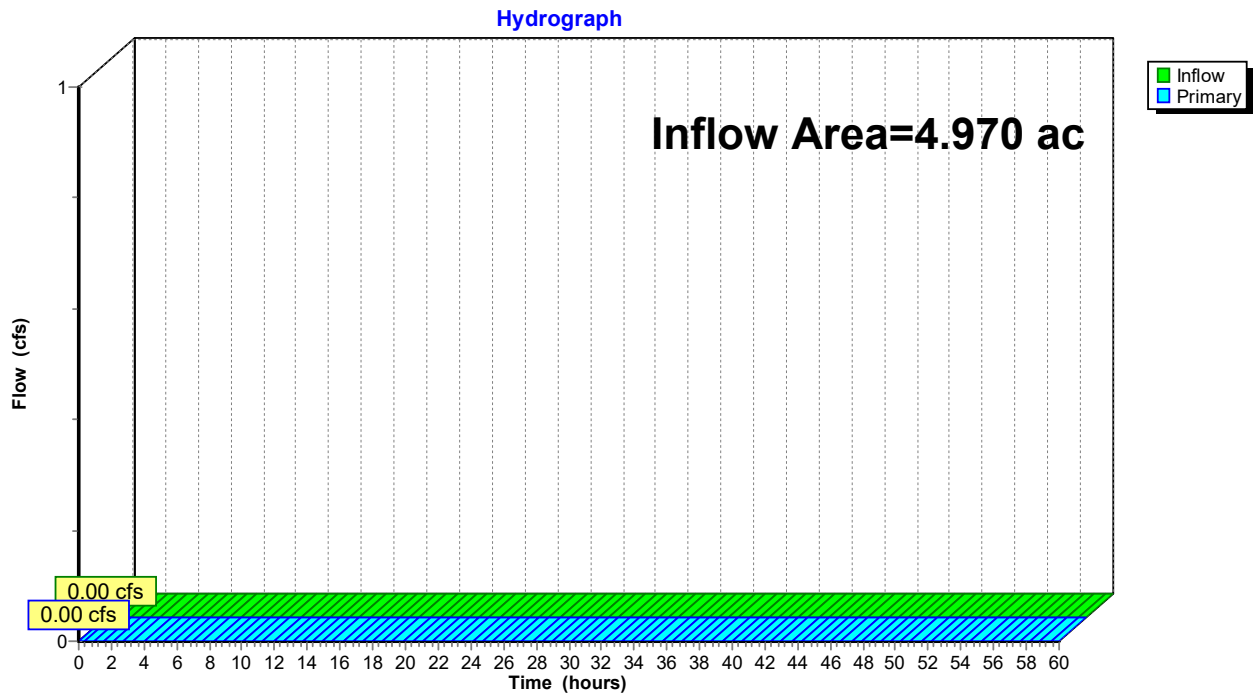


Summary for Link SP5: Study Point 5

Inflow Area = 4.970 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP5: Study Point 5

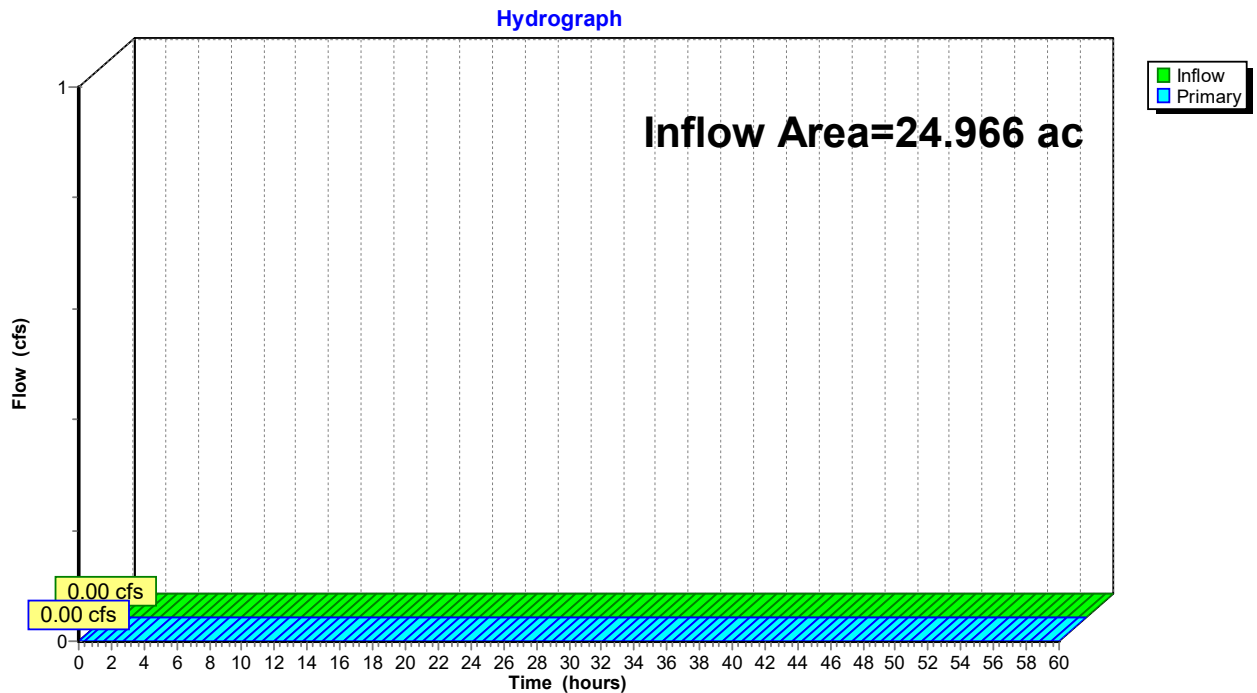


Summary for Link SP6: Study Point 6

Inflow Area = 24.966 ac, 5.81% Impervious, Inflow Depth = 0.00" for 1-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP6: Study Point 6



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

| | |
|---|--|
| Subcatchment 1.1aS1: North Array East | Runoff Area=5.874 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=788' Tc=18.8 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS2: North Array East | Runoff Area=8.467 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=931' Tc=21.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS3: North Array West | Runoff Area=5.792 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,031' Tc=19.7 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1aS4: North Array West | Runoff Area=12.825 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,562' Tc=26.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.1bS1: North Road - East | Runoff Area=1.333 ac 0.53% Impervious Runoff Depth=0.93" Tc=6.0 min CN=71 Runoff=2.16 cfs 0.103 af |
| Subcatchment 1.1bS2: North Road - West | Runoff Area=0.651 ac 1.08% Impervious Runoff Depth=0.78" Tc=6.0 min CN=68 Runoff=0.86 cfs 0.042 af |
| Subcatchment 1.2aS1: Middle Array East | Runoff Area=7.876 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=865' Tc=19.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS2: Middle Array Center | Runoff Area=8.911 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=825' Tc=18.1 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2aS3: Middle Array West | Runoff Area=5.500 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=882' Tc=18.5 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 1.2bS1: East Road - West | Runoff Area=0.727 ac 0.00% Impervious Runoff Depth=0.73" Tc=6.0 min CN=67 Runoff=0.89 cfs 0.044 af |
| Subcatchment 1.2bS2: South Road | Runoff Area=0.854 ac 0.47% Impervious Runoff Depth=0.37" Flow Length=308' Tc=13.7 min CN=58 Runoff=0.26 cfs 0.026 af |
| Subcatchment 1.2bS3: South Road | Runoff Area=0.815 ac 1.35% Impervious Runoff Depth=0.93" Tc=6.0 min CN=71 Runoff=1.32 cfs 0.063 af |
| Subcatchment 1.3aS1: Surface Discharge | Runoff Area=279.312 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=6,771' Tc=201.7 min CN=39 Runoff=0.11 cfs 0.034 af |
| Subcatchment 1.3bS: Access Rd to Pond 3 | Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.17" Tc=6.0 min CN=51 Runoff=0.04 cfs 0.010 af |
| Subcatchment 2S: | Runoff Area=11.056 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=2,342' Tc=36.0 min CN=39 Runoff=0.01 cfs 0.001 af |
| Subcatchment 3S: | Runoff Area=15.648 ac 0.56% Impervious Runoff Depth=0.01" Flow Length=886' Tc=12.7 min CN=40 Runoff=0.02 cfs 0.007 af |
| Subcatchment 4.1S: | Runoff Area=11.663 ac 2.80% Impervious Runoff Depth=0.05" Flow Length=845' Tc=15.8 min CN=45 Runoff=0.06 cfs 0.052 af |

| | |
|--|---|
| Subcatchment 4.2aS: | Runoff Area=27.117 ac 0.00% Impervious Runoff Depth=0.17" Flow Length=1,640' Tc=38.9 min CN=51 Runoff=0.85 cfs 0.380 af |
| Subcatchment 4.2bS: | Runoff Area=0.470 ac 0.00% Impervious Runoff Depth=0.98" Tc=6.0 min CN=72 Runoff=0.81 cfs 0.038 af |
| Subcatchment 4.3S: | Runoff Area=25.466 ac 5.08% Impervious Runoff Depth=0.34" Flow Length=2,280' Tc=36.5 min CN=57 Runoff=3.30 cfs 0.715 af |
| Subcatchment 5S: | Runoff Area=4.970 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,180' Tc=17.5 min CN=30 Runoff=0.00 cfs 0.000 af |
| Subcatchment 6S: | Runoff Area=24.966 ac 5.81% Impervious Runoff Depth=0.03" Flow Length=1,961' Tc=60.1 min CN=43 Runoff=0.08 cfs 0.059 af |
| Reach 1.1aR1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=580.0' S=0.0108 '/ Capacity=56.37 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR2: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=557.4' S=0.0284 '/ Capacity=91.27 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR3: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=557.5' S=0.0352 '/ Capacity=101.68 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1aR4: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=580.5' S=0.0362 '/ Capacity=103.04 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.1bR1: North Road Conveyance | Avg. Flow Depth=0.21' Max Vel=2.01 fps Inflow=2.16 cfs 0.103 af n=0.035 L=1,733.0' S=0.0240 '/ Capacity=111.65 cfs Outflow=1.13 cfs 0.103 af |
| Reach 1.1bR2: North Road Conveyance | Avg. Flow Depth=0.23' Max Vel=2.62 fps Inflow=1.78 cfs 0.145 af n=0.035 L=593.3' S=0.0380 '/ Capacity=140.36 cfs Outflow=1.61 cfs 0.145 af |
| Reach 1.2aR1: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=524.2' S=0.0188 '/ Capacity=74.30 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2aR2: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=556.0' S=0.0204 '/ Capacity=77.47 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2aR3: Bypass Swale | Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af n=0.035 L=249.0' S=0.0153 '/ Capacity=81.84 cfs Outflow=0.00 cfs 0.000 af |
| Reach 1.2bR1: East Road Conveyance | Avg. Flow Depth=0.13' Max Vel=2.13 fps Inflow=0.89 cfs 0.044 af n=0.035 L=731.4' S=0.0456 '/ Capacity=79.22 cfs Outflow=0.69 cfs 0.044 af |
| Reach 1.2bR2: South Road Conveyance | Avg. Flow Depth=0.18' Max Vel=1.55 fps Inflow=0.89 cfs 0.071 af n=0.035 L=604.5' S=0.0177 '/ Capacity=95.76 cfs Outflow=0.70 cfs 0.071 af |
| Reach 1.2bR3: South Road Conveyance | Avg. Flow Depth=0.24' Max Vel=1.89 fps Inflow=1.54 cfs 0.133 af n=0.035 L=755.9' S=0.0187 '/ Capacity=98.64 cfs Outflow=1.22 cfs 0.133 af |
| Reach 4.1R1: Bypass Swale | Avg. Flow Depth=0.16' Max Vel=1.27 fps Inflow=0.06 cfs 0.052 af n=0.035 L=570.0' S=0.0303 '/ Capacity=54.88 cfs Outflow=0.06 cfs 0.052 af |
| Reach 4.1R2: Ex Stream | Avg. Flow Depth=0.06' Max Vel=0.68 fps Inflow=0.82 cfs 0.431 af n=0.035 L=740.0' S=0.0099 '/ Capacity=588.81 cfs Outflow=0.77 cfs 0.431 af |

| | | | | |
|---|------------------------------|---------------------|------------------|--------------------|
| Reach 4.2bR: Conveyance Swale | Avg. Flow Depth=0.14' | Max Vel=2.09 fps | Inflow=0.81 cfs | 0.038 af |
| | n=0.035 | L=565.0' | S=0.0432 '/ | Capacity=77.09 cfs |
| | | | Outflow=0.69 cfs | 0.038 af |
| Pond 1.1aC1: TS1 Culvert | | Peak Elev=1,487.56' | Inflow=0.00 cfs | 0.000 af |
| | 36.3" x 22.5", R=18.8"/51.0" | Pipe Arch Culvert | n=0.012 | L=47.0' |
| | | | S=0.0162 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aC2: TS2 Culvert | | Peak Elev=1,470.80' | Inflow=0.00 cfs | 0.000 af |
| | 48.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0262 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aC3: TS3 Culvert | | Peak Elev=1,449.55' | Inflow=0.00 cfs | 0.000 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.2' |
| | | | S=0.0405 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1aP: North Road Bypass OC | | Peak Elev=1,426.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.1bC1: TS4 Culvert | | Peak Elev=1,449.98' | Inflow=1.13 cfs | 0.103 af |
| | 18.0" | Round Culvert | n=0.012 | L=45.9' |
| | | | S=0.0486 '/ | Outflow=1.13 cfs |
| | | | | 0.103 af |
| Pond 1.1bP1: Dry Swale | | Peak Elev=1,426.14' | Storage=171 cf | Inflow=1.61 cfs |
| | | Discarded=0.00 cfs | 0.004 af | Primary=1.58 cfs |
| | | | | 0.141 af |
| | | | | Outflow=1.59 cfs |
| | | | | 0.145 af |
| Pond 1.1bP2: North Road Detention Pond | | Peak Elev=1,424.04' | Storage=0.050 af | Inflow=1.58 cfs |
| | | Discarded=0.02 cfs | 0.052 af | Primary=0.45 cfs |
| | | | | 0.074 af |
| | | | | Outflow=0.46 cfs |
| | | | | 0.127 af |
| Pond 1.2aC1: TS 7 Culvert | | Peak Elev=1,444.22' | Inflow=0.00 cfs | 0.000 af |
| | 36.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0215 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aC2: TS8 Culvert | | Peak Elev=1,431.65' | Inflow=0.00 cfs | 0.000 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.5' |
| | | | S=0.0114 '/ | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2aP: South Road Bypass OC | | Peak Elev=1,424.00' | Storage=0.000 af | Inflow=0.00 cfs |
| | | Discarded=0.00 cfs | 0.000 af | Secondary=0.00 cfs |
| | | | | 0.000 af |
| | | | | Outflow=0.00 cfs |
| | | | | 0.000 af |
| Pond 1.2bC1: East Road Culvert | | Peak Elev=1,454.78' | Inflow=0.69 cfs | 0.044 af |
| | 15.0" | Round Culvert | n=0.012 | L=41.6' |
| | | | S=0.0173 '/ | Outflow=0.69 cfs |
| | | | | 0.044 af |
| Pond 1.2bC2: TS6 Culvert | | Peak Elev=1,443.88' | Inflow=0.70 cfs | 0.071 af |
| | 18.0" | Round Culvert | n=0.012 | L=44.3' |
| | | | S=0.0151 '/ | Outflow=0.70 cfs |
| | | | | 0.071 af |
| Pond 1.2bP: South Road Treatment Pond | | Peak Elev=1,426.06' | Storage=0.033 af | Inflow=1.22 cfs |
| | | Discarded=0.29 cfs | 0.132 af | Primary=0.12 cfs |
| | | | | 0.002 af |
| | | | | Outflow=0.41 cfs |
| | | | | 0.133 af |
| Pond 1.3P: Pond 3 - Access Rd West | | Peak Elev=1,456.01' | Storage=8 cf | Inflow=0.04 cfs |
| | | Discarded=0.03 cfs | 0.010 af | Primary=0.00 cfs |
| | | | | 0.000 af |
| | | | | Outflow=0.03 cfs |
| | | | | 0.010 af |
| Pond 4.2bP: Pond 4 - Access Rd East | | Peak Elev=1,447.07' | Storage=581 cf | Inflow=0.69 cfs |
| | | Discarded=0.08 cfs | 0.038 af | Primary=0.00 cfs |
| | | | | 0.000 af |
| | | | | Outflow=0.08 cfs |
| | | | | 0.038 af |
| Pond 4.2C: 18" Culvert | | Peak Elev=1,432.23' | Storage=572 cf | Inflow=0.85 cfs |
| | 18.0" | Round Culvert | n=0.012 | L=44.0' |
| | | | S=0.0148 '/ | Outflow=0.81 cfs |
| | | | | 0.379 af |
| Pond 4.3C: 24" Culvert | | Peak Elev=1,432.12' | Inflow=3.30 cfs | 0.715 af |
| | | | | Outflow=3.30 cfs |
| | | | | 0.715 af |

| | |
|--------------------------------|---|
| Link 1.1L: | Inflow=0.45 cfs 0.074 af Primary=0.45 cfs 0.074 af |
| Link 1.2L: | Inflow=0.12 cfs 0.002 af Primary=0.12 cfs 0.002 af |
| Link SP1: Study Point 1 | Inflow=0.56 cfs 0.110 af Primary=0.56 cfs 0.110 af |
| Link SP2: Study Point 2 | Inflow=0.01 cfs 0.001 af Primary=0.01 cfs 0.001 af |
| Link SP3: Study Point 3 | Inflow=0.02 cfs 0.007 af Primary=0.02 cfs 0.007 af |
| Link SP4: Study Point 4 | Inflow=3.36 cfs 1.146 af Primary=3.36 cfs 1.146 af |
| Link SP5: Study Point 5 | Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af |
| Link SP6: Study Point 6 | Inflow=0.08 cfs 0.059 af Primary=0.08 cfs 0.059 af |

Total Runoff Area = 460.988 ac Runoff Volume = 1.575 af Average Runoff Depth = 0.04"
99.31% Pervious = 457.801 ac 0.69% Impervious = 3.187 ac

Summary for Subcatchment 1.1aS1: North Array East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR1 : Bypass Swale

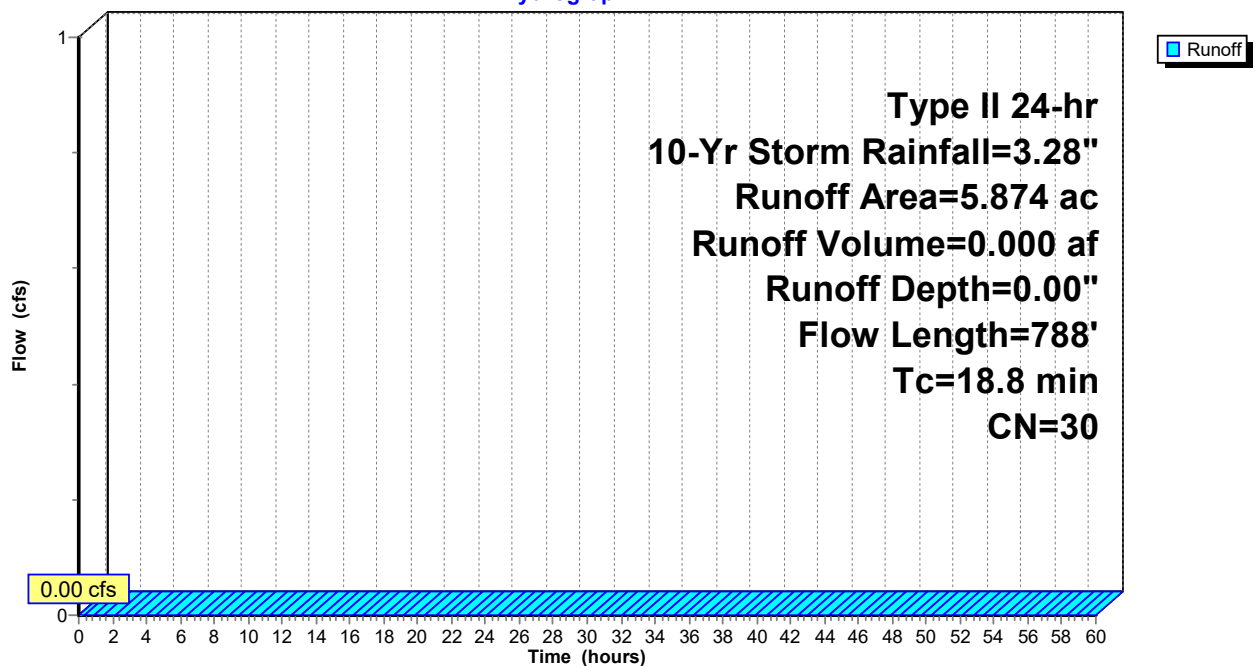
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.874 | 30 | Meadow, non-grazed, HSG A |
| 5.874 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.7 | 100 | 0.0499 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.1 | 688 | 0.0526 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.8 | 788 | Total | | | |

Subcatchment 1.1aS1: North Array East

Hydrograph



Summary for Subcatchment 1.1aS2: North Array East Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR2 : Bypass Swale

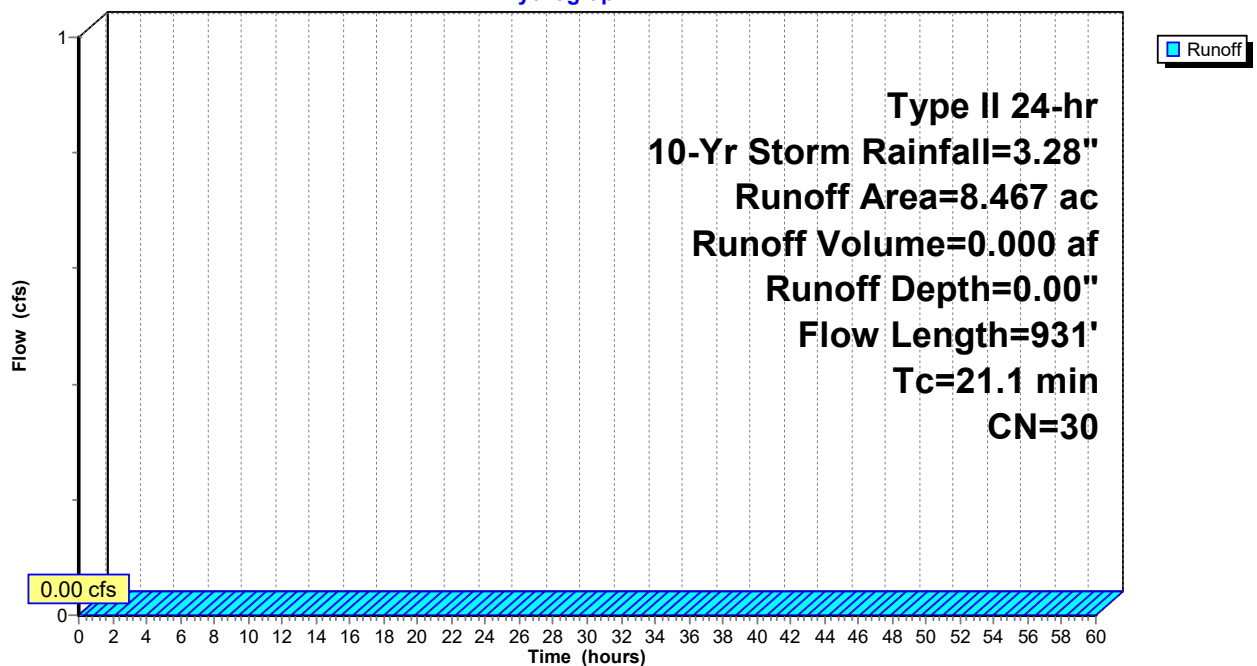
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.467 | 30 | Meadow, non-grazed, HSG A |
| 8.467 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.9 | 100 | 0.0476 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.2 | 831 | 0.0463 | 1.51 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 21.1 | 931 | Total | | | |

Subcatchment 1.1aS2: North Array East Center

Hydrograph



Summary for Subcatchment 1.1aS3: North Array West Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR3 : Bypass Swale

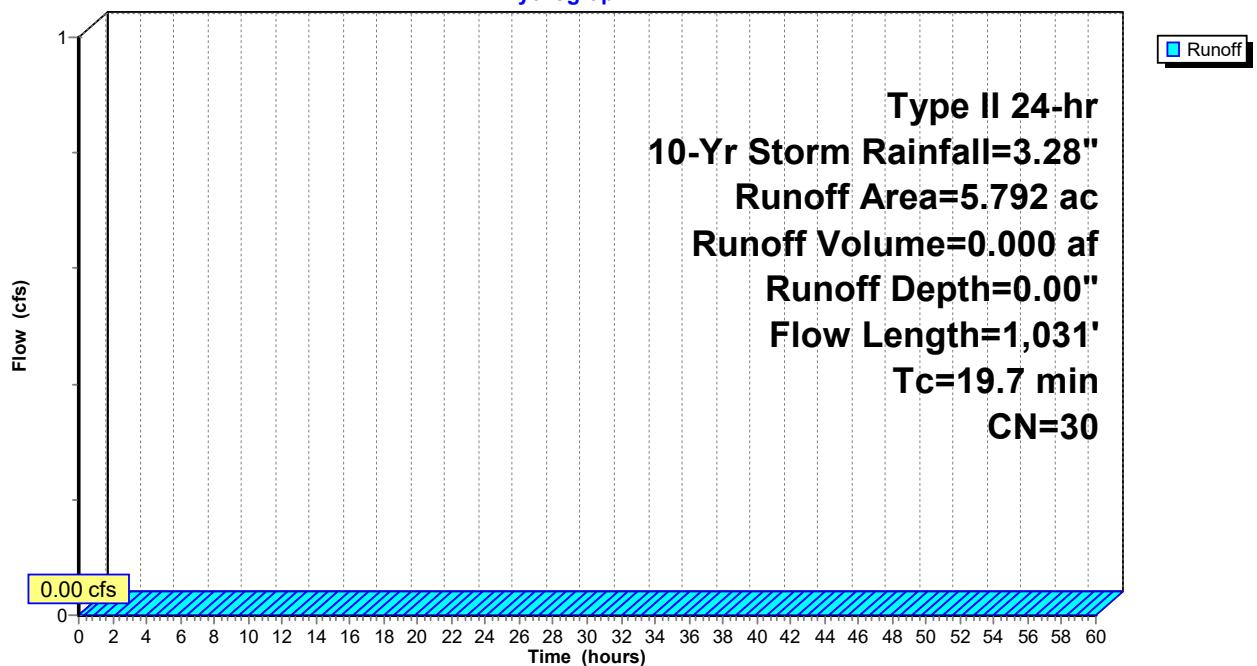
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.792 | 30 | Meadow, non-grazed, HSG A |
| 5.792 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0618 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.0 | 931 | 0.0601 | 1.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.7 | 1,031 | Total | | | |

Subcatchment 1.1aS3: North Array West Center

Hydrograph



Summary for Subcatchment 1.1aS4: North Array West

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.1aR4 : Bypass Swale

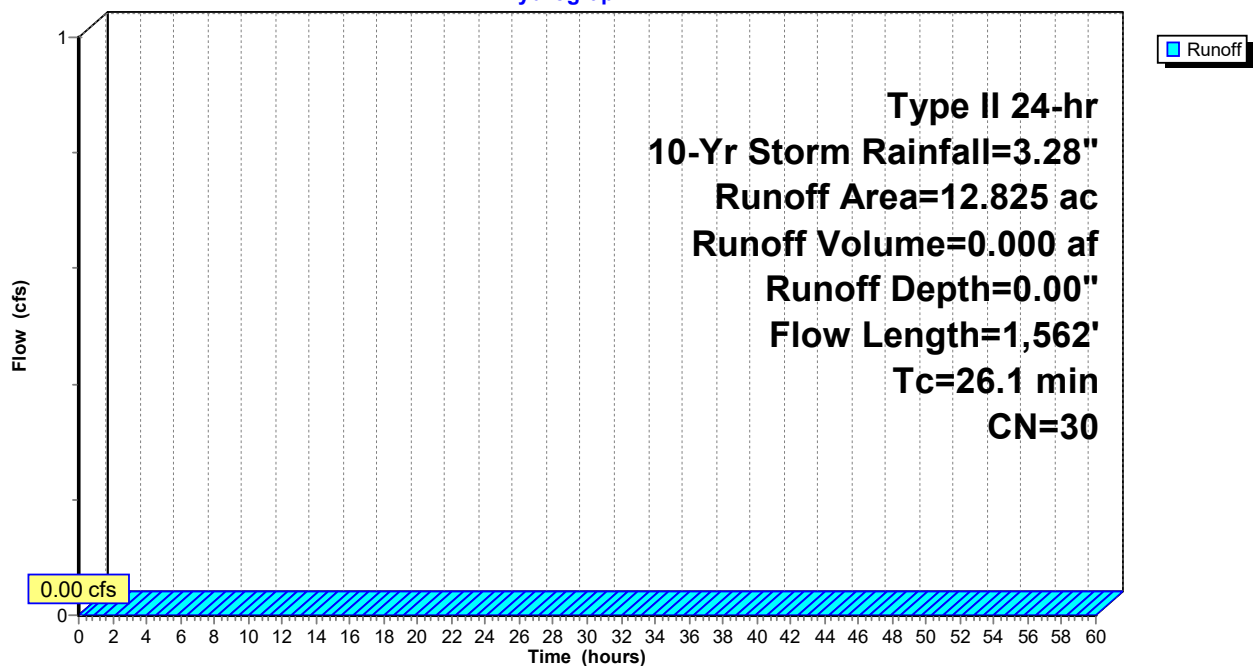
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 12.825 | 30 | Meadow, non-grazed, HSG A |
| 12.825 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.1 | 100 | 0.0560 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 15.0 | 1,462 | 0.0540 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 26.1 | 1,562 | Total | | | |

Subcatchment 1.1aS4: North Array West

Hydrograph



Summary for Subcatchment 1.1bS1: North Road - East

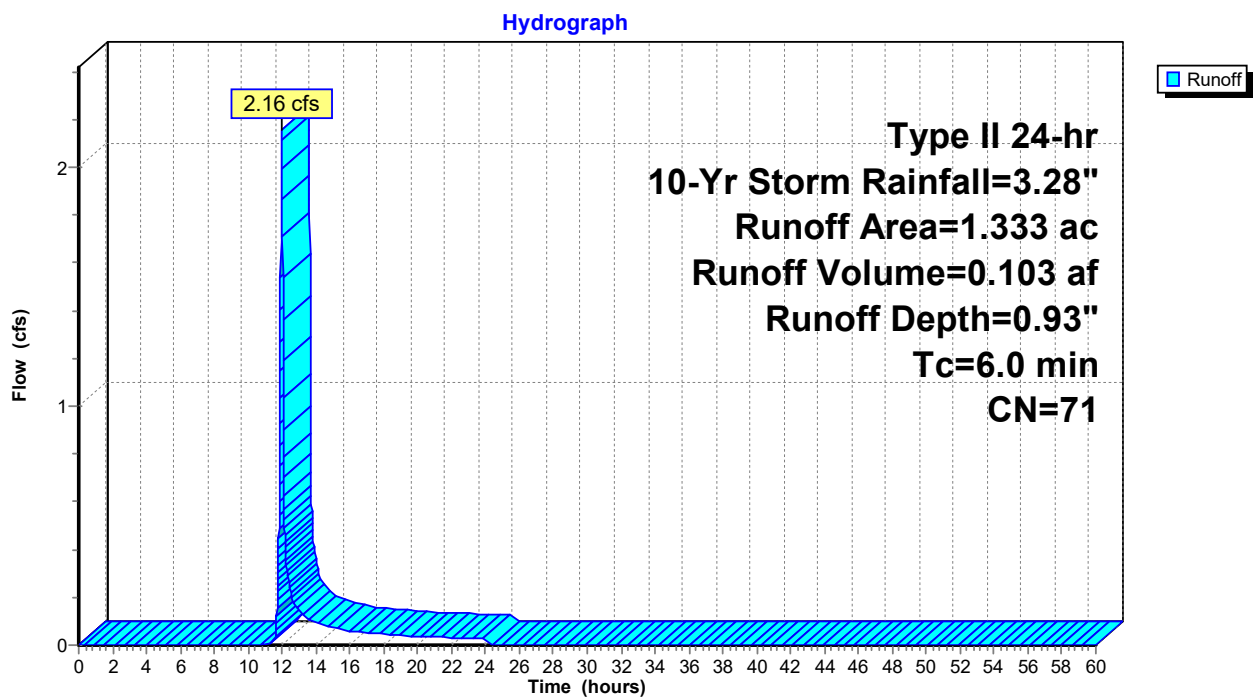
Runoff = 2.16 cfs @ 11.98 hrs, Volume= 0.103 af, Depth= 0.93"
 Routed to Reach 1.1bR1 : North Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.507 | 30 | Meadow, non-grazed, HSG A |
| 0.819 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 1.333 | 71 | Weighted Average |
| 1.326 | | 99.47% Pervious Area |
| 0.007 | | 0.53% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS1: North Road - East



Summary for Subcatchment 1.1bS2: North Road - West

Runoff = 0.86 cfs @ 11.98 hrs, Volume= 0.042 af, Depth= 0.78"
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

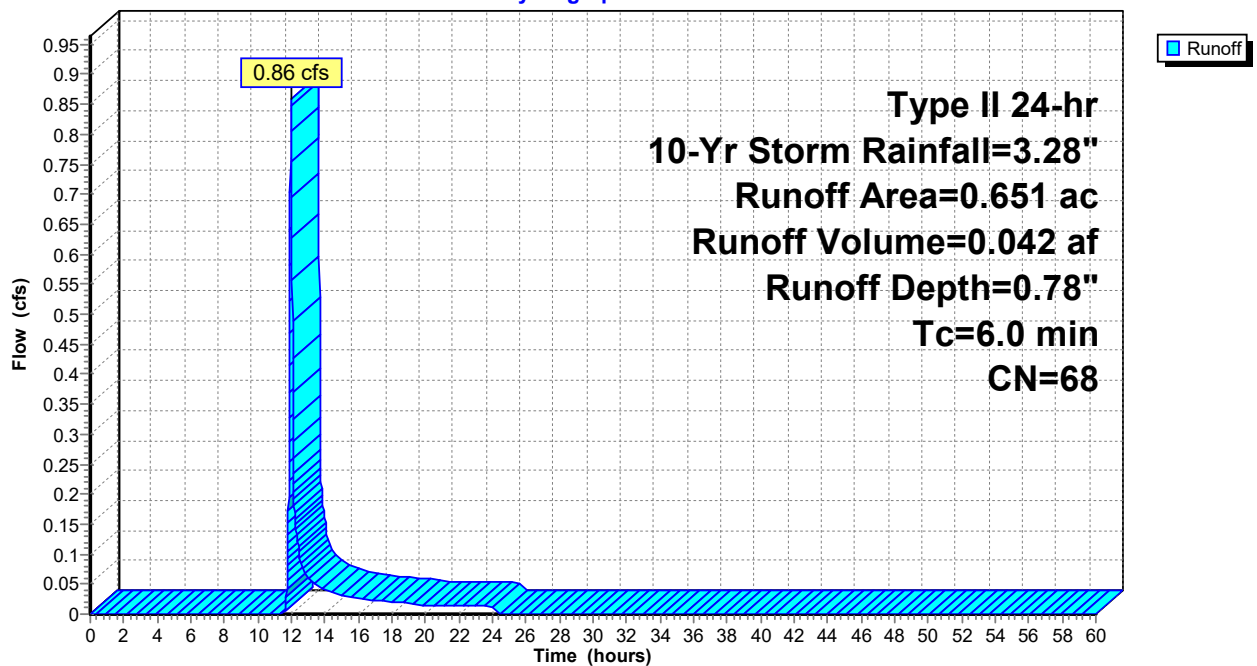
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.279 | 30 | Meadow, non-grazed, HSG A |
| 0.365 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 0.651 | 68 | Weighted Average |
| 0.644 | | 98.92% Pervious Area |
| 0.007 | | 1.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS2: North Road - West

Hydrograph



Summary for Subcatchment 1.2aS1: Middle Array East

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR1 : Bypass Swale

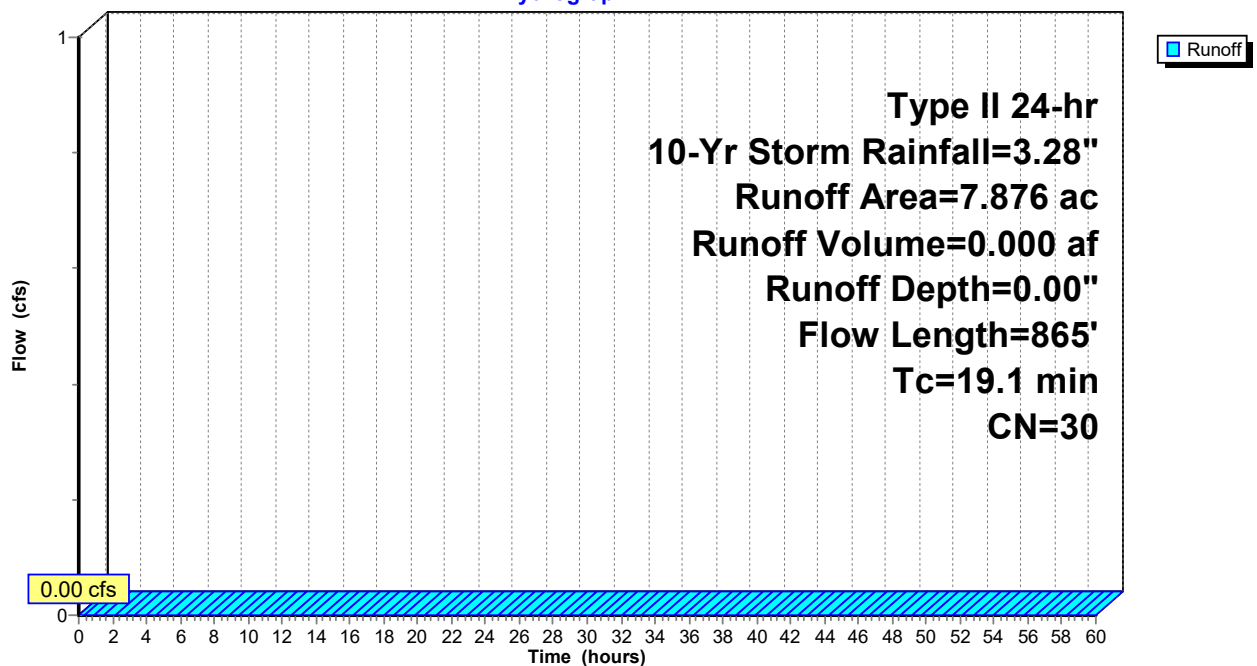
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 7.876 | 30 | Meadow, non-grazed, HSG A |
| 7.876 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.6 | 100 | 0.0628 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.5 | 765 | 0.0459 | 1.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.1 | 865 | Total | | | |

Subcatchment 1.2aS1: Middle Array East

Hydrograph



Summary for Subcatchment 1.2aS2: Middle Array Center

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR2 : Bypass Swale

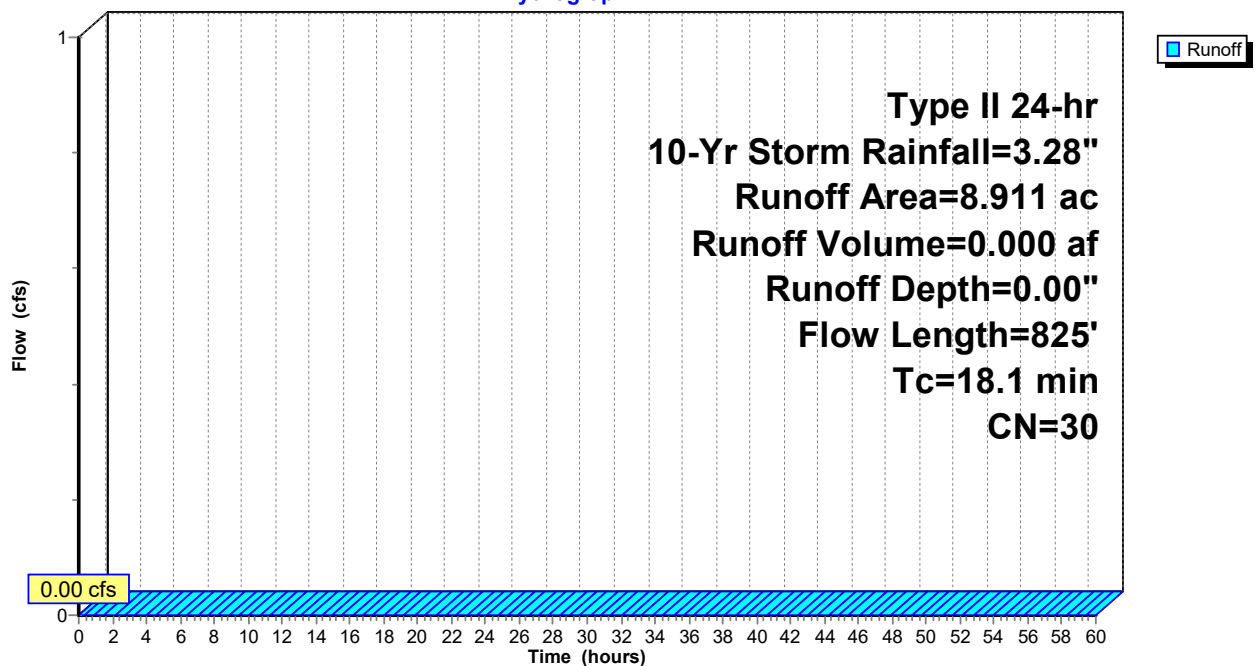
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.911 | 30 | Meadow, non-grazed, HSG A |
| 8.911 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.8 | 100 | 0.0607 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.3 | 725 | 0.0559 | 1.66 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 825 | Total | | | |

Subcatchment 1.2aS2: Middle Array Center

Hydrograph



Summary for Subcatchment 1.2aS3: Middle Array West

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 1.2aR3 : Bypass Swale

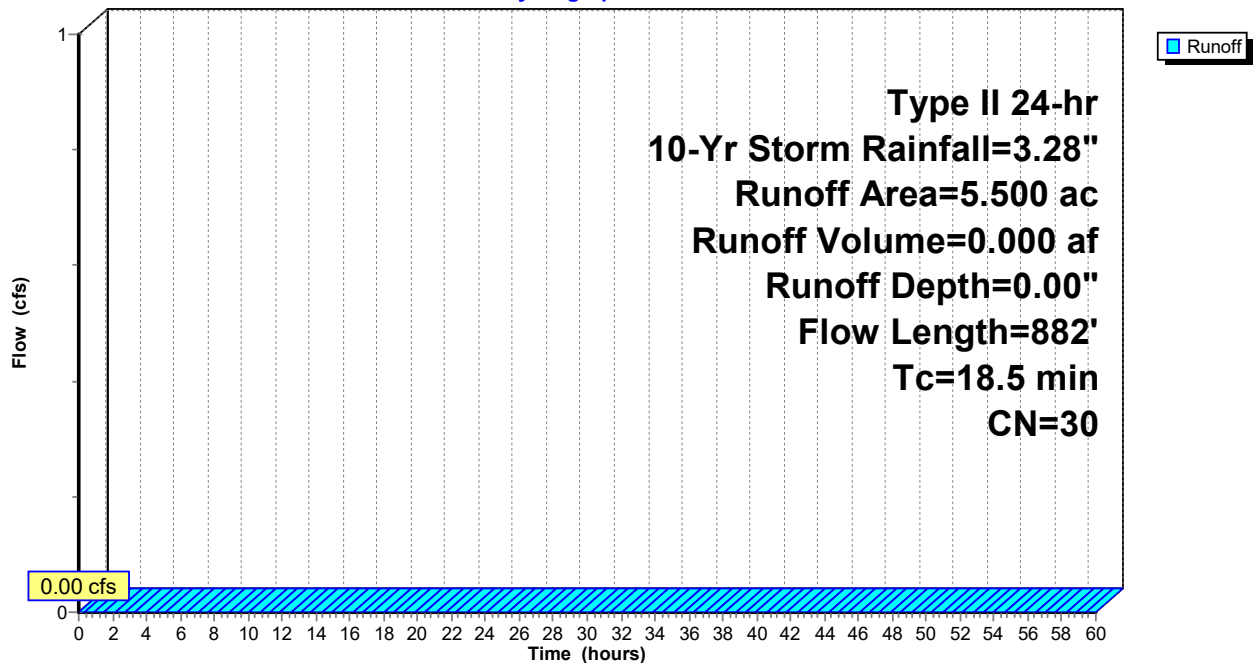
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.500 | 30 | Meadow, non-grazed, HSG A |
| 5.500 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.4 | 100 | 0.0660 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.1 | 782 | 0.0529 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.5 | 882 | Total | | | |

Subcatchment 1.2aS3: Middle Array West

Hydrograph



Summary for Subcatchment 1.2bS1: East Road - West Ditch

Runoff = 0.89 cfs @ 11.99 hrs, Volume= 0.044 af, Depth= 0.73"
 Routed to Reach 1.2bR1 : East Road Conveyance Swale

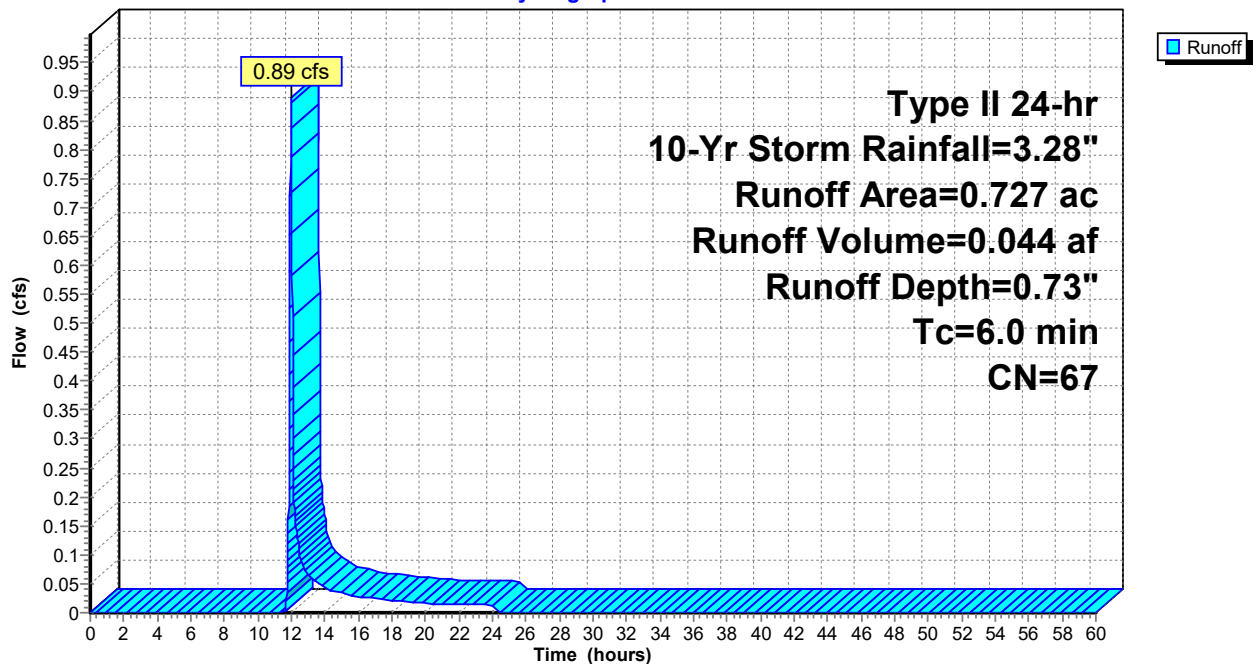
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.410 | 96 | Gravel surface, HSG A |
| 0.317 | 30 | Meadow, non-grazed, HSG A |
| 0.727 | 67 | Weighted Average |
| 0.727 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS1: East Road - West Ditch

Hydrograph



Summary for Subcatchment 1.2bS2: South Road

Runoff = 0.26 cfs @ 12.10 hrs, Volume= 0.026 af, Depth= 0.37"
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

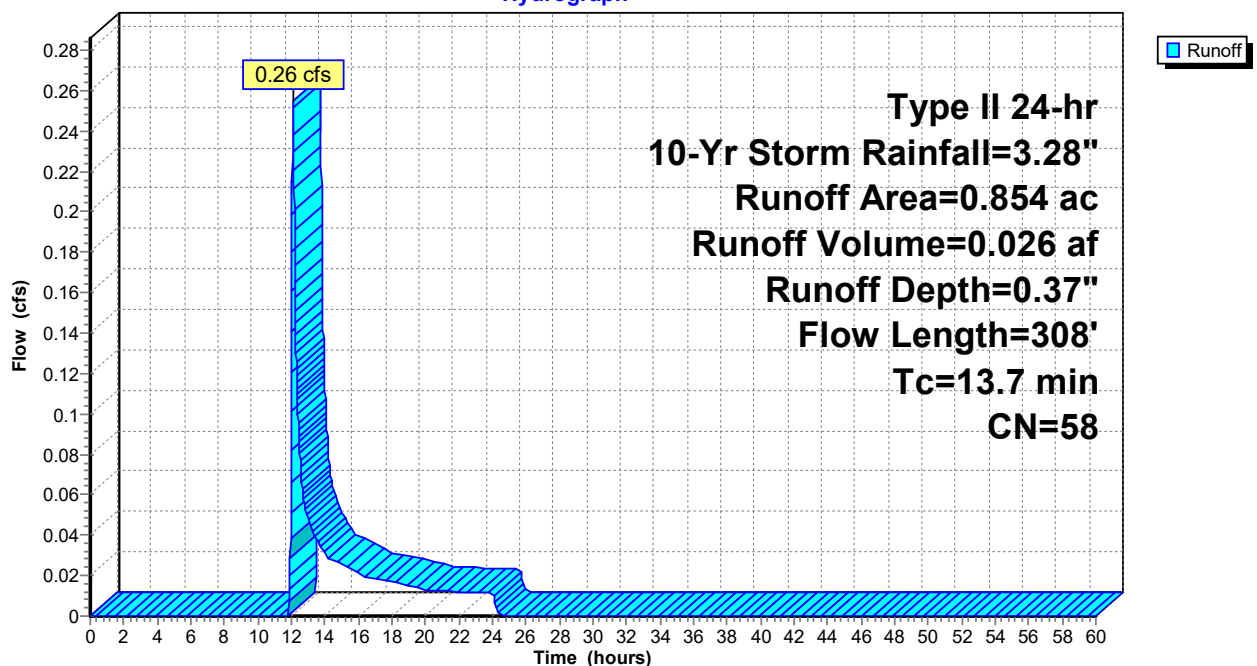
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.498 | 30 | Meadow, non-grazed, HSG A |
| * 0.352 | 96 | Gravel surface |
| * 0.004 | 98 | Roofs |
| 0.854 | 58 | Weighted Average |
| 0.850 | | 99.53% Pervious Area |
| 0.004 | | 0.47% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.0 | 35 | 0.0516 | 0.12 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 0.4 | 25 | 0.0310 | 1.06 | | Sheet Flow, Smooth surfaces n= 0.011 P2= 2.31" |
| 5.9 | 40 | 0.0429 | 0.11 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.4 | 208 | 0.0442 | 1.47 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 13.7 | 308 | Total | | | |

Subcatchment 1.2bS2: South Road

Hydrograph



Summary for Subcatchment 1.2bS3: South Road

Runoff = 1.32 cfs @ 11.98 hrs, Volume= 0.063 af, Depth= 0.93"
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

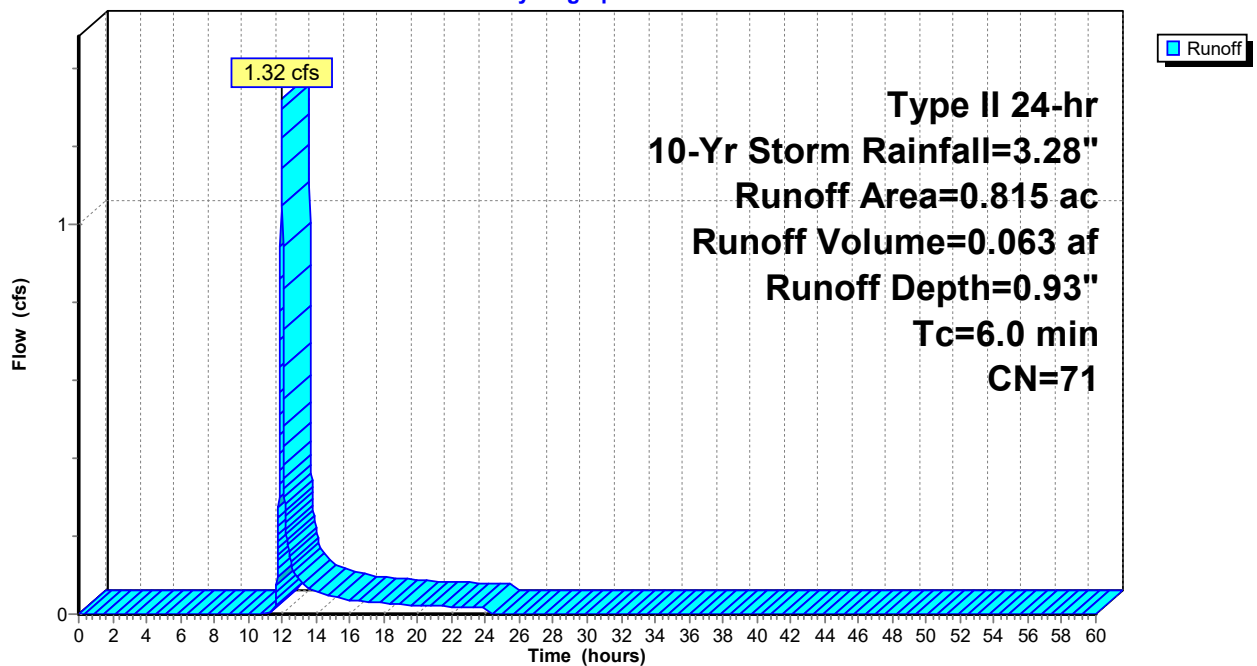
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.313 | 30 | Meadow, non-grazed, HSG A |
| 0.491 | 96 | Gravel surface, HSG A |
| * 0.011 | 98 | Roofs |
| 0.815 | 71 | Weighted Average |
| 0.804 | | 98.65% Pervious Area |
| 0.011 | | 1.35% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS3: South Road

Hydrograph



Summary for Subcatchment 1.3aS1: Surface Discharge

Runoff = 0.11 cfs @ 25.55 hrs, Volume= 0.034 af, Depth= 0.00"
 Routed to Link SP1 : Study Point 1

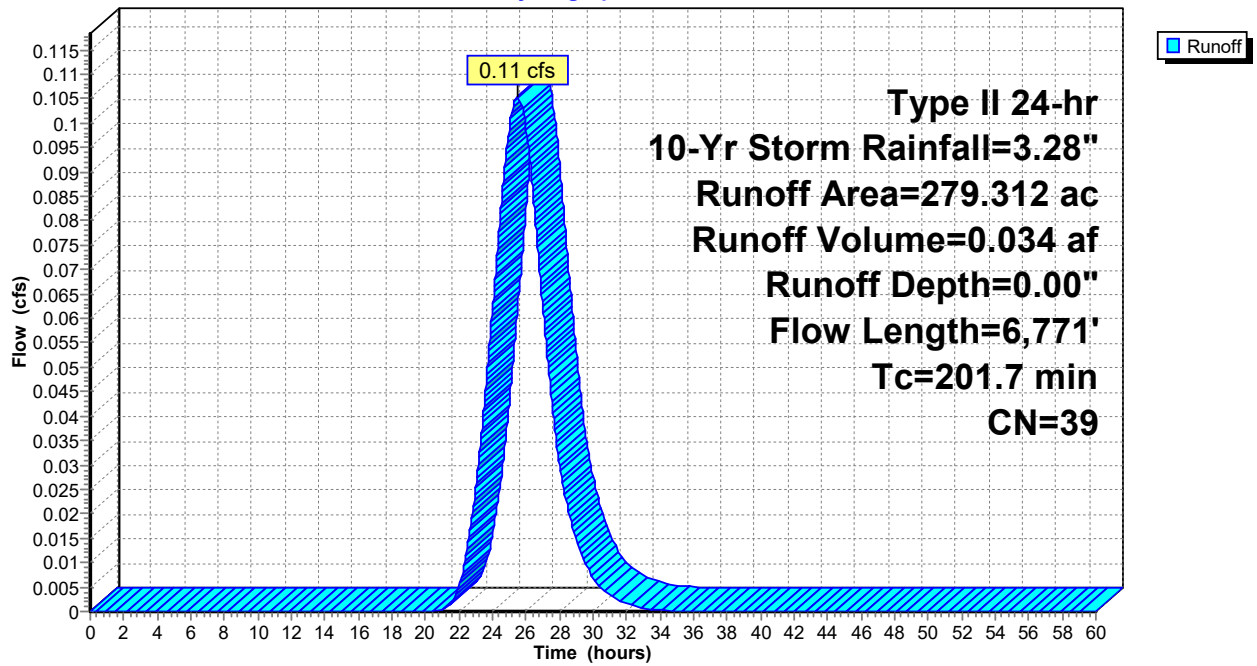
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.754 | 96 | Gravel surface |
| 144.649 | 30 | Meadow, non-grazed, HSG A |
| 0.566 | 58 | Meadow, non-grazed, HSG B |
| 25.274 | 71 | Meadow, non-grazed, HSG C |
| 61.692 | 30 | Woods, Good, HSG A |
| 32.754 | 55 | Woods, Good, HSG B |
| 13.623 | 70 | Woods, Good, HSG C |
| 279.312 | 39 | Weighted Average |
| 279.312 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 14.8 | 100 | 0.0764 | 0.11 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 4.7 | 581 | 0.1683 | 2.05 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 25.7 | 1,199 | 0.0241 | 0.78 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.8 | 189 | 0.0157 | 3.84 | 76.82 | Channel Flow, Rerouted Stream Area= 20.0 sf Perim= 32.6' r= 0.61' n= 0.035 Earth, dense weeds |
| 154.9 | 4,646 | 0.0051 | 0.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.8 | 56 | 0.0566 | 1.19 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 201.7 | 6,771 | Total | | | |

Subcatchment 1.3aS1: Surface Discharge

Hydrograph



Summary for Subcatchment 1.3bS: Access Rd to Pond 3

Runoff = 0.04 cfs @ 12.04 hrs, Volume= 0.010 af, Depth= 0.17"
 Routed to Pond 1.3P : Pond 3 - Access Rd West

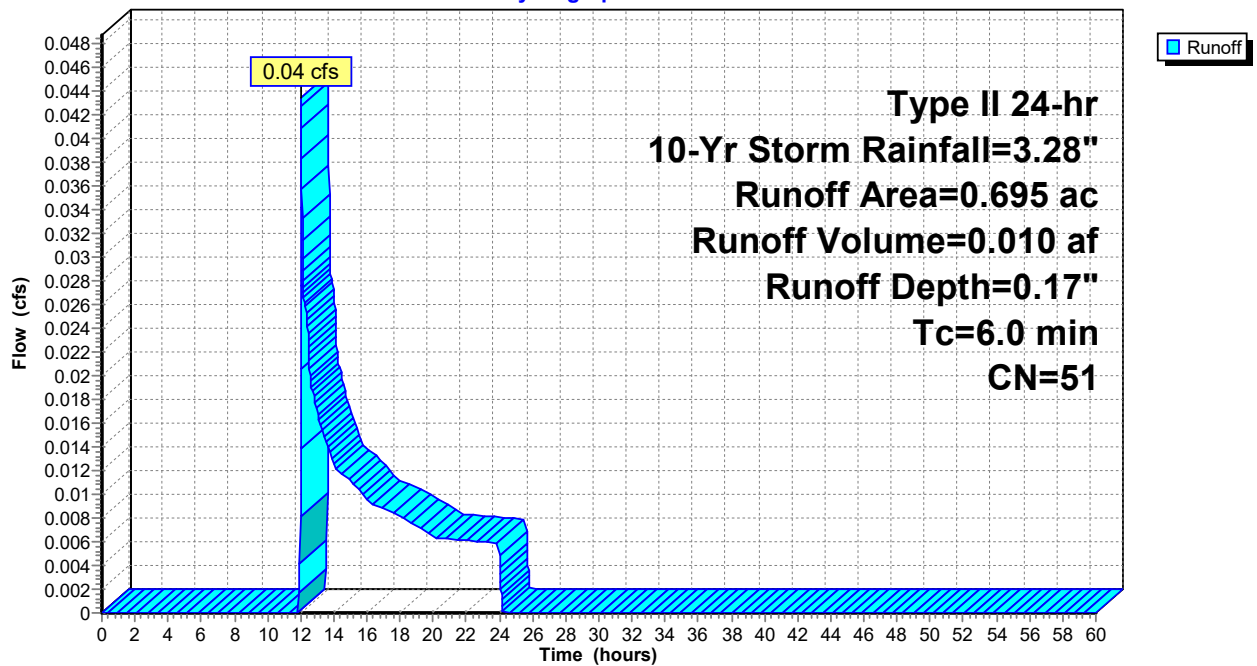
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|------------------------------|
| 0.473 | 30 | Meadow, non-grazed, HSG A |
| * 0.063 | 96 | Gravel surface, HSG A, Redev |
| * 0.159 | 96 | Gravel surface, HSG A |
| 0.695 | 51 | Weighted Average |
| 0.695 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.3bS: Access Rd to Pond 3

Hydrograph



Summary for Subcatchment 2S:

Runoff = 0.01 cfs @ 24.12 hrs, Volume= 0.001 af, Depth= 0.00"
 Routed to Link SP2 : Study Point 2

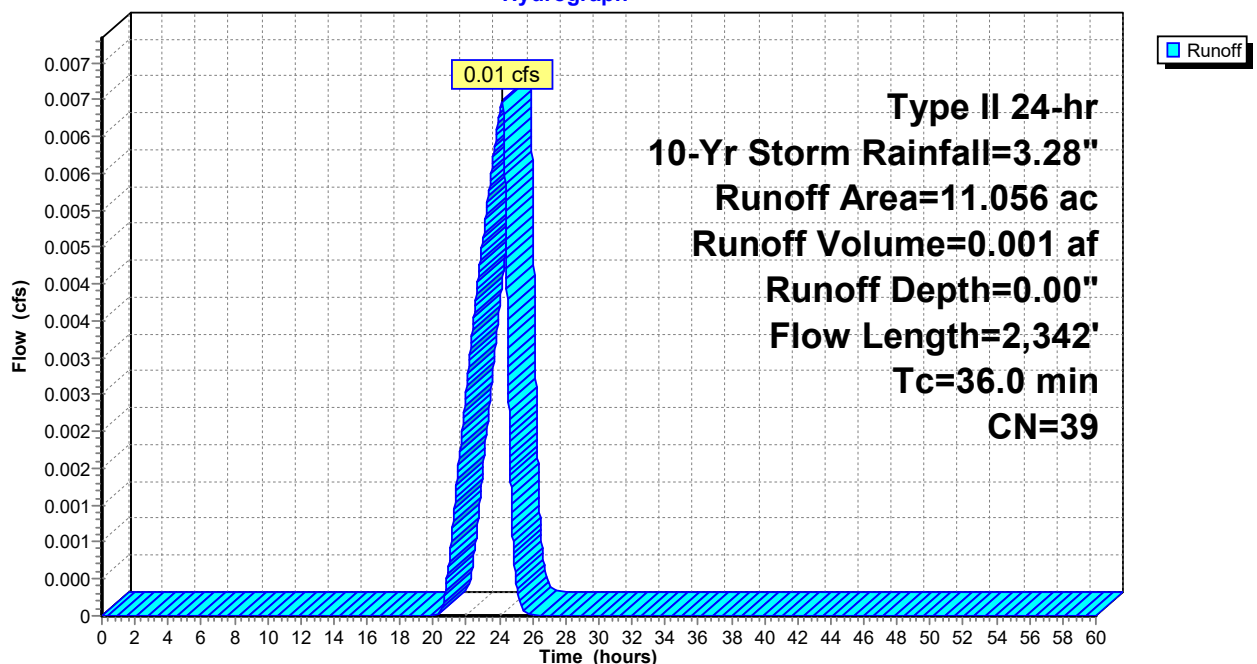
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.417 | 96 | Gravel surface, HSG A |
| 0.573 | 39 | >75% Grass cover, Good, HSG A |
| 6.530 | 30 | Meadow, non-grazed, HSG A |
| 2.536 | 30 | Woods, Good, HSG A |
| 11.056 | 39 | Weighted Average |
| 11.056 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0624 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.7 | 614 | 0.0535 | 3.72 | | Shallow Concentrated Flow, Unpaved Kv= 16.1 fps |
| 12.1 | 1,184 | 0.0543 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.9 | 115 | 0.0407 | 1.01 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.6 | 68 | 0.1443 | 1.90 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 8.0 | 261 | 0.0118 | 0.54 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 36.0 | 2,342 | Total | | | |

Subcatchment 2S:

Hydrograph



Summary for Subcatchment 3S:

Runoff = 0.02 cfs @ 24.01 hrs, Volume= 0.007 af, Depth= 0.01"
 Routed to Link SP3 : Study Point 3

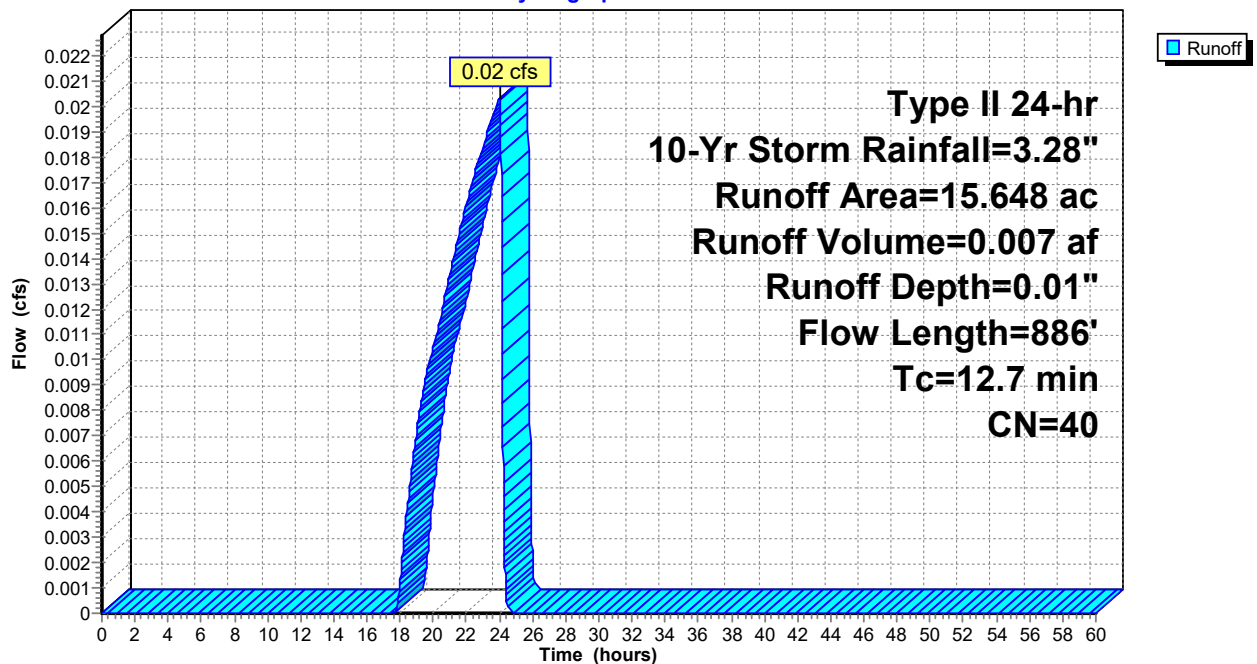
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.088 | 98 | Paved Roads & Rooftops |
| 0.406 | 39 | >75% Grass cover, Good, HSG A |
| 2.011 | 61 | >75% Grass cover, Good, HSG B |
| 5.525 | 30 | Meadow, non-grazed, HSG A |
| 4.276 | 30 | Woods, Good, HSG A |
| 3.342 | 55 | Woods, Good, HSG B |
| 15.648 | 40 | Weighted Average |
| 15.560 | | 99.44% Pervious Area |
| 0.088 | | 0.56% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.4 | 52 | 0.0937 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 3.7 | 625 | 0.1637 | 2.83 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.6 | 209 | 0.0384 | 0.98 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 12.7 | 886 | Total | | | |

Subcatchment 3S:

Hydrograph



Summary for Subcatchment 4.1S:

Runoff = 0.06 cfs @ 15.43 hrs, Volume= 0.052 af, Depth= 0.05"
 Routed to Reach 4.1R1 : Bypass Swale

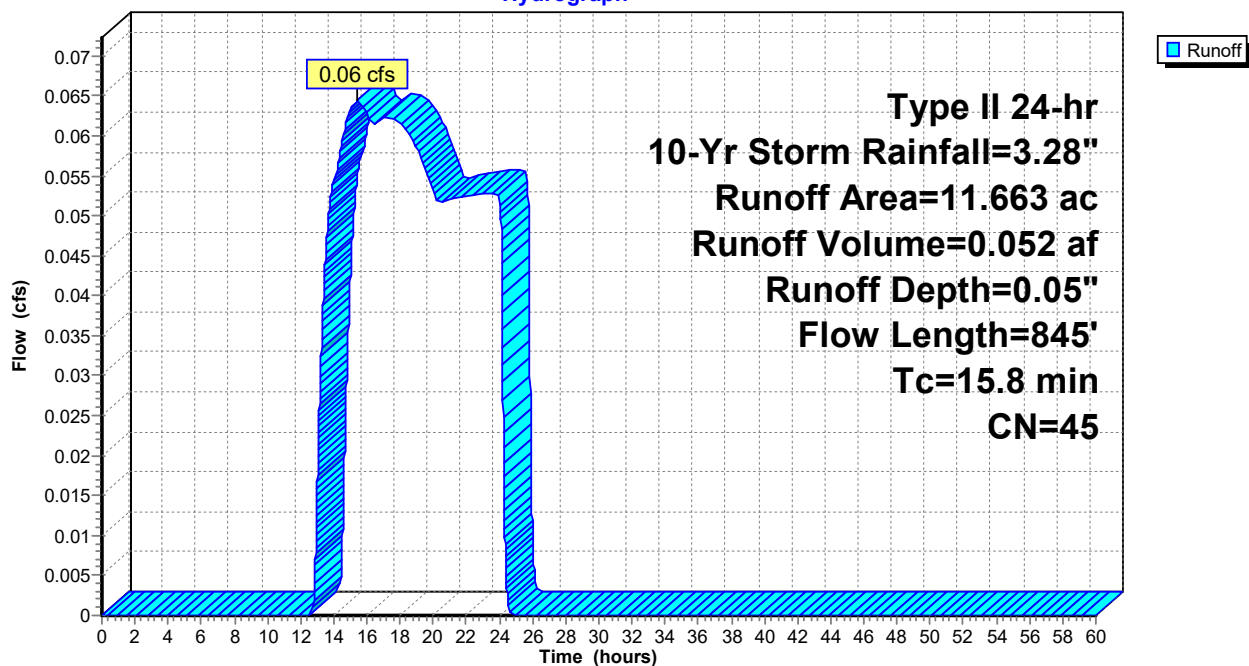
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.327 | 98 | Paved Roads & Rooftops |
| * 0.375 | 96 | Gravel surface |
| 0.165 | 61 | >75% Grass cover, Good, HSG B |
| 2.544 | 30 | Meadow, non-grazed, HSG A |
| 0.560 | 58 | Meadow, non-grazed, HSG B |
| 3.605 | 30 | Woods, Good, HSG A |
| * 4.087 | 55 | Woods, Good, HSG B |
| 11.663 | 45 | Weighted Average |
| 11.336 | | 97.20% Pervious Area |
| 0.327 | | 2.80% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.5 | 100 | 0.0430 | 0.20 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 2.6 | 360 | 0.1077 | 2.30 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 4.7 | 385 | 0.0735 | 1.36 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 15.8 | 845 | Total | | | |

Subcatchment 4.1S:

Hydrograph



Summary for Subcatchment 4.2aS:

Runoff = 0.85 cfs @ 12.75 hrs, Volume= 0.380 af, Depth= 0.17"
 Routed to Pond 4.2C : 18" Culvert

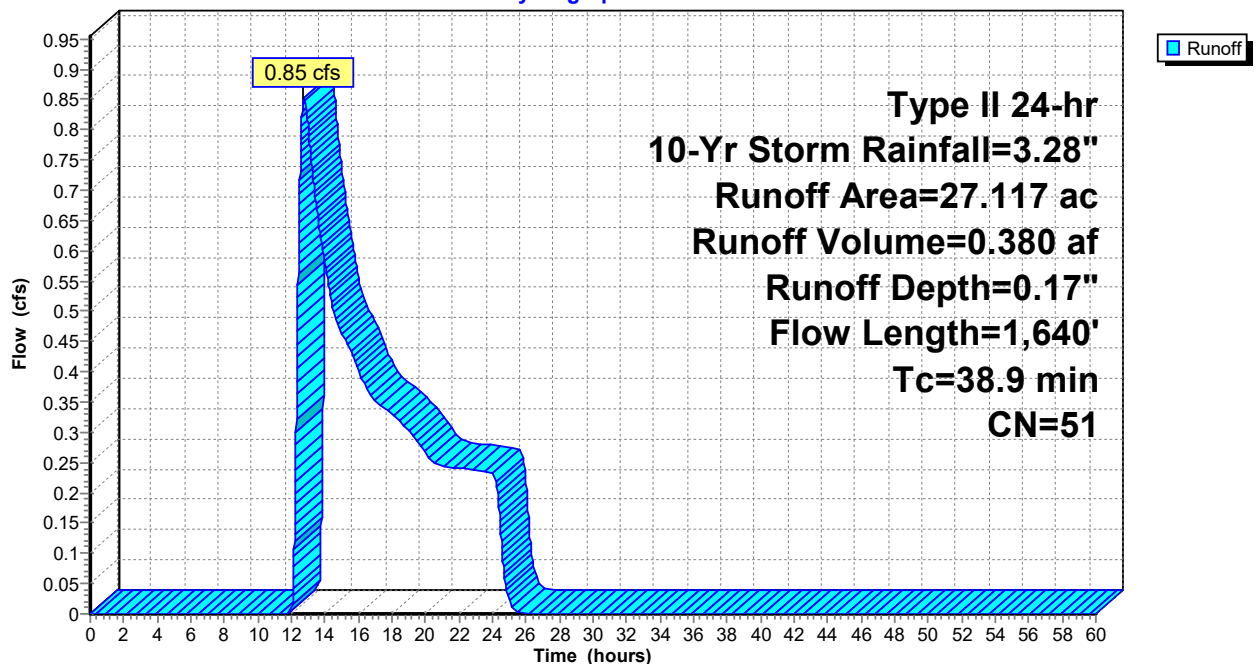
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.238 | 96 | Gravel surface |
| 4.086 | 30 | Meadow, non-grazed, HSG A |
| 0.384 | 58 | Meadow, non-grazed, HSG B |
| 0.977 | 30 | Woods, Good, HSG A |
| 21.432 | 55 | Woods, Good, HSG B |
| 27.117 | 51 | Weighted Average |
| 27.117 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 17.8 | 100 | 0.0480 | 0.09 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 8.0 | 878 | 0.1354 | 1.84 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 13.1 | 662 | 0.0144 | 0.84 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 38.9 | 1,640 | Total | | | |

Subcatchment 4.2aS:

Hydrograph



Summary for Subcatchment 4.2bS:

Runoff = 0.81 cfs @ 11.98 hrs, Volume= 0.038 af, Depth= 0.98"
 Routed to Reach 4.2bR : Conveyance Swale

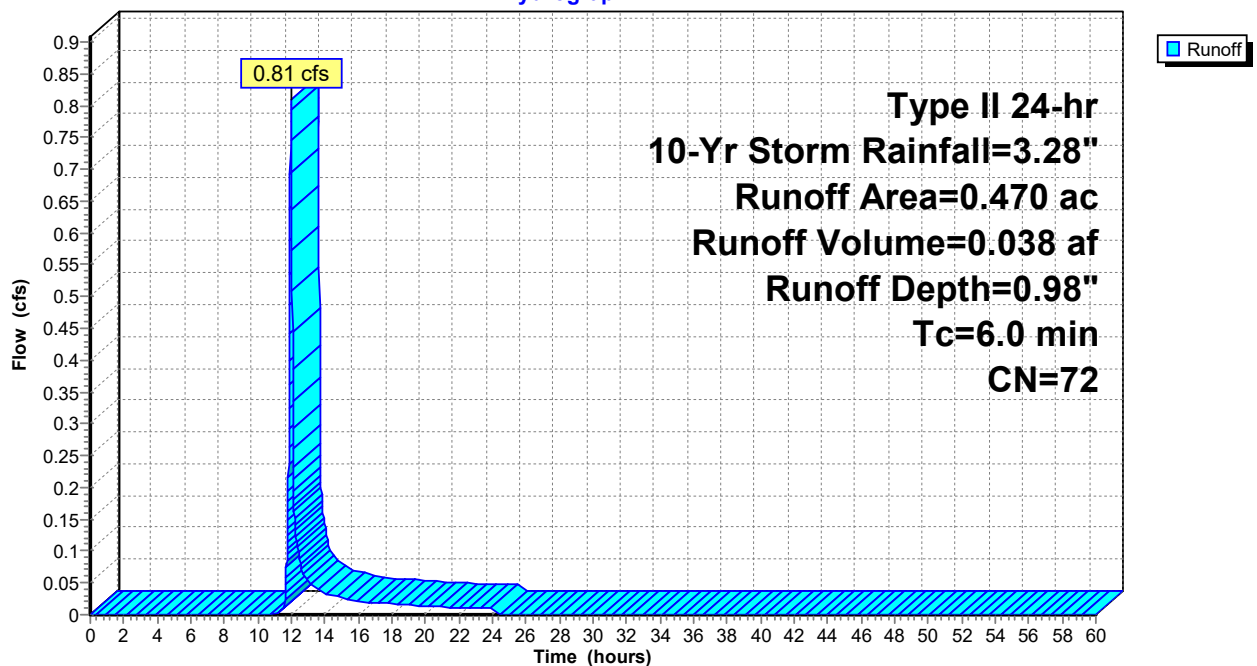
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.296 | 96 | Gravel surface, HSG A |
| 0.174 | 30 | Meadow, non-grazed, HSG A |
| 0.470 | 72 | Weighted Average |
| 0.470 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 4.2bS:

Hydrograph



Summary for Subcatchment 4.3S:

Runoff = 3.30 cfs @ 12.45 hrs, Volume= 0.715 af, Depth= 0.34"
 Routed to Pond 4.3C : 24" Culvert

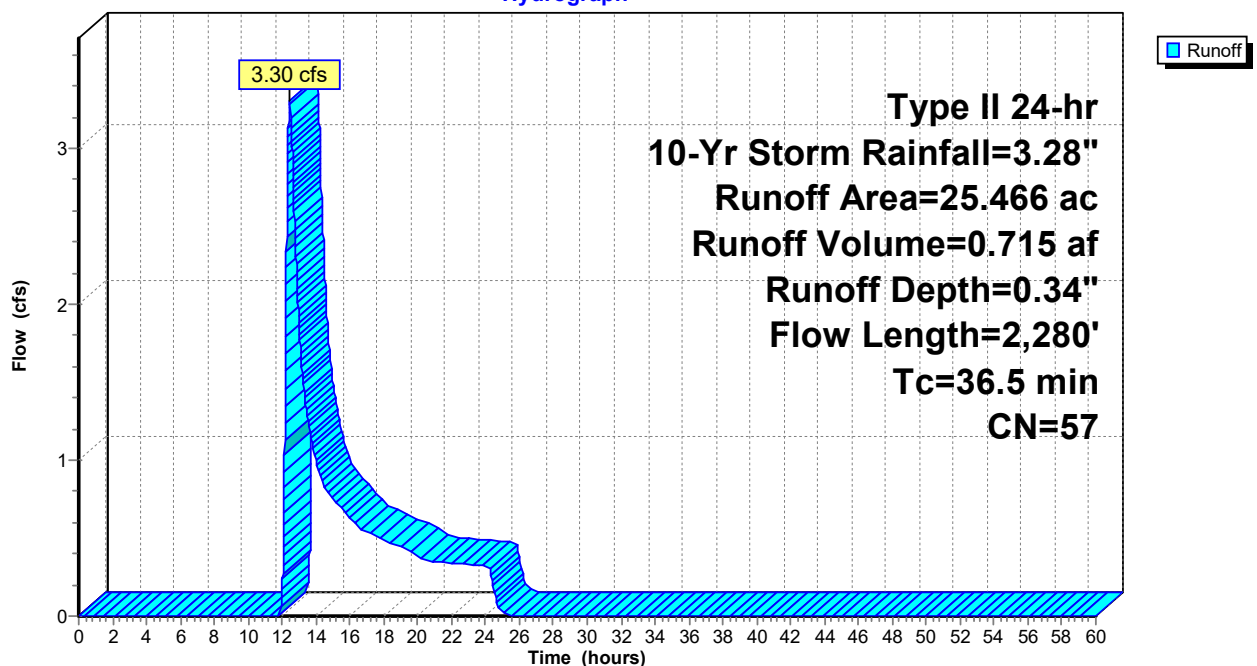
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 1.293 | 98 | Paved Roads & Rooftops |
| 1.783 | 58 | Meadow, non-grazed, HSG B |
| 22.390 | 55 | Woods, Good, HSG B |
| 25.466 | 57 | Weighted Average |
| 24.173 | | 94.92% Pervious Area |
| 1.293 | | 5.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 15.9 | 100 | 0.0634 | 0.10 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 17.8 | 1,368 | 0.0656 | 1.28 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.1 | 38 | 0.3960 | 4.40 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 2.7 | 774 | 0.0281 | 4.70 | 109.09 | Channel Flow, Area= 23.2 sf Perim= 43.2' r= 0.54' n= 0.035 |
| 36.5 | 2,280 | Total | | | |

Subcatchment 4.3S:

Hydrograph



Summary for Subcatchment 5S:

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link SP5 : Study Point 5

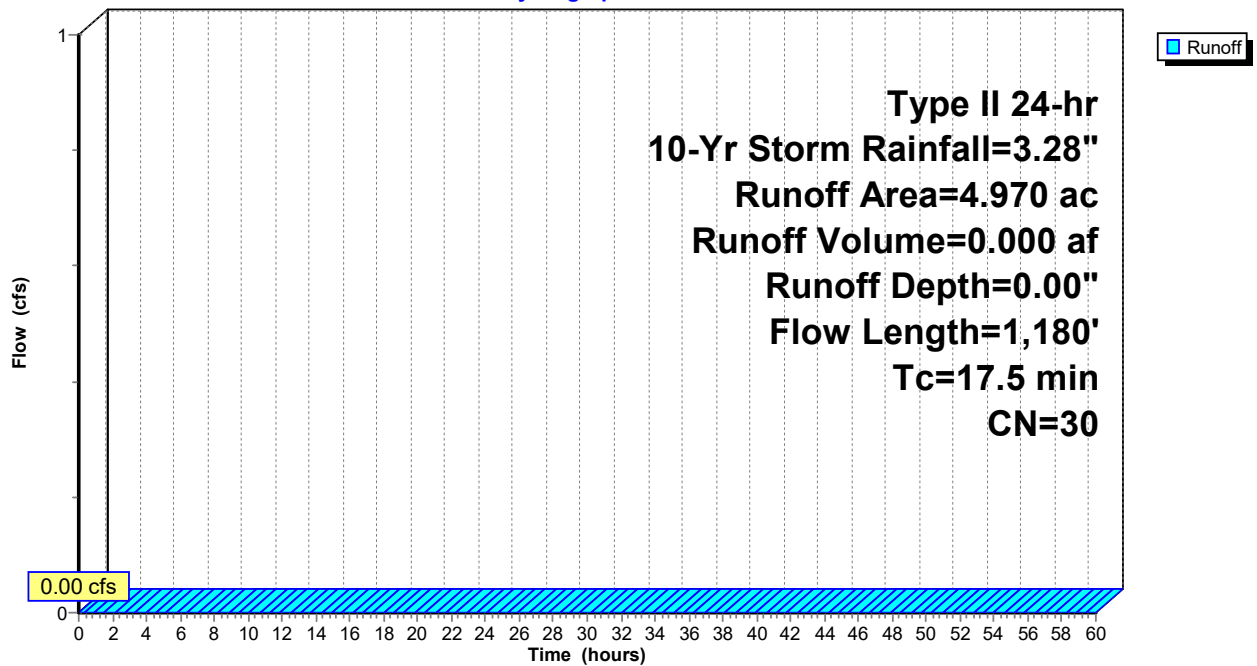
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 4.139 | 30 | Meadow, non-grazed, HSG A |
| 0.831 | 30 | Woods, Good, HSG A |
| 4.970 | 30 | Weighted Average |
| 4.970 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 7.1 | 100 | 0.0675 | 0.24 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 8.5 | 801 | 0.0508 | 1.58 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.3 | 217 | 0.1515 | 2.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.6 | 62 | 0.0697 | 1.85 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 17.5 | 1,180 | Total | | | |

Subcatchment 5S:

Hydrograph



Summary for Subcatchment 6S:

Runoff = 0.08 cfs @ 24.10 hrs, Volume= 0.059 af, Depth= 0.03"
 Routed to Link SP6 : Study Point 6

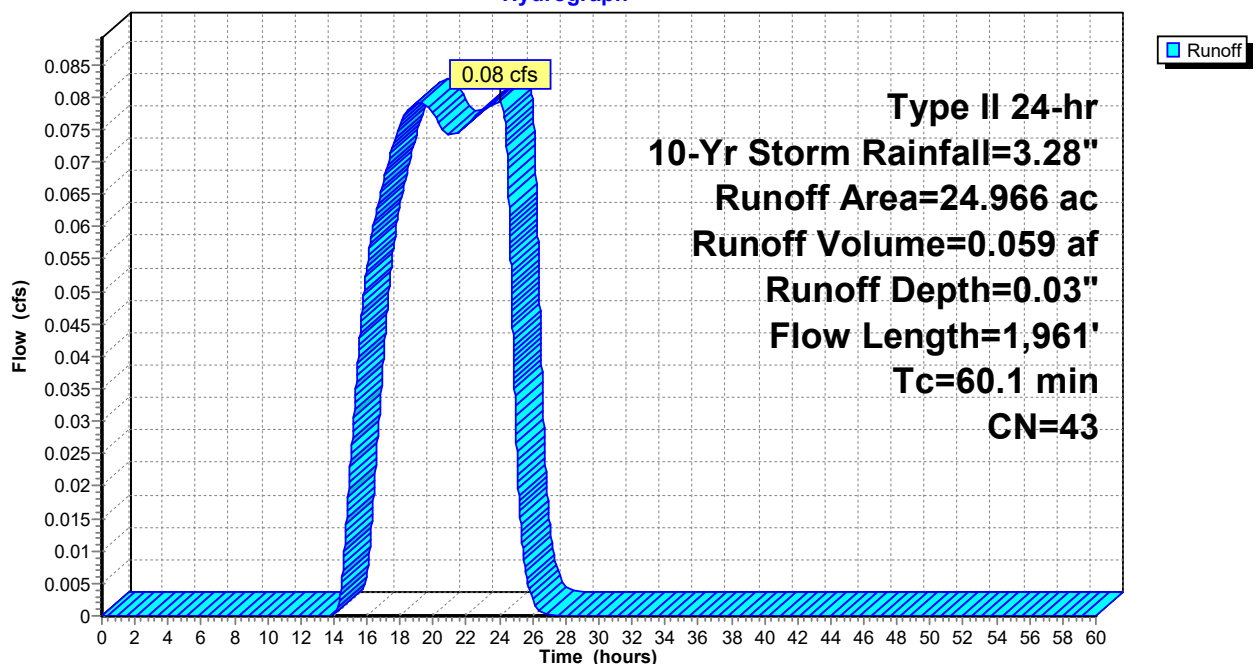
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 10-Yr Storm Rainfall=3.28"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 1.450 | 98 | Paved Roads & Rooftops |
| 0.466 | 96 | Gravel surface, HSG A |
| 2.545 | 61 | >75% Grass cover, Good, HSG B |
| 7.511 | 30 | Meadow, non-grazed, HSG A |
| 0.788 | 58 | Meadow, non-grazed, HSG B |
| 7.940 | 30 | Woods, Good, HSG A |
| 4.266 | 55 | Woods, Good, HSG B |
| 24.966 | 43 | Weighted Average |
| 23.516 | | 94.19% Pervious Area |
| 1.450 | | 5.81% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.1 | 100 | 0.0278 | 0.16 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 3.2 | 313 | 0.0528 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.9 | 486 | 0.1742 | 2.09 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 42.9 | 1,062 | 0.0068 | 0.41 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 60.1 | 1,961 | Total | | | |

Subcatchment 6S:

Hydrograph



Summary for Reach 1.1aR1: Bypass Swale

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC1 : TS1 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

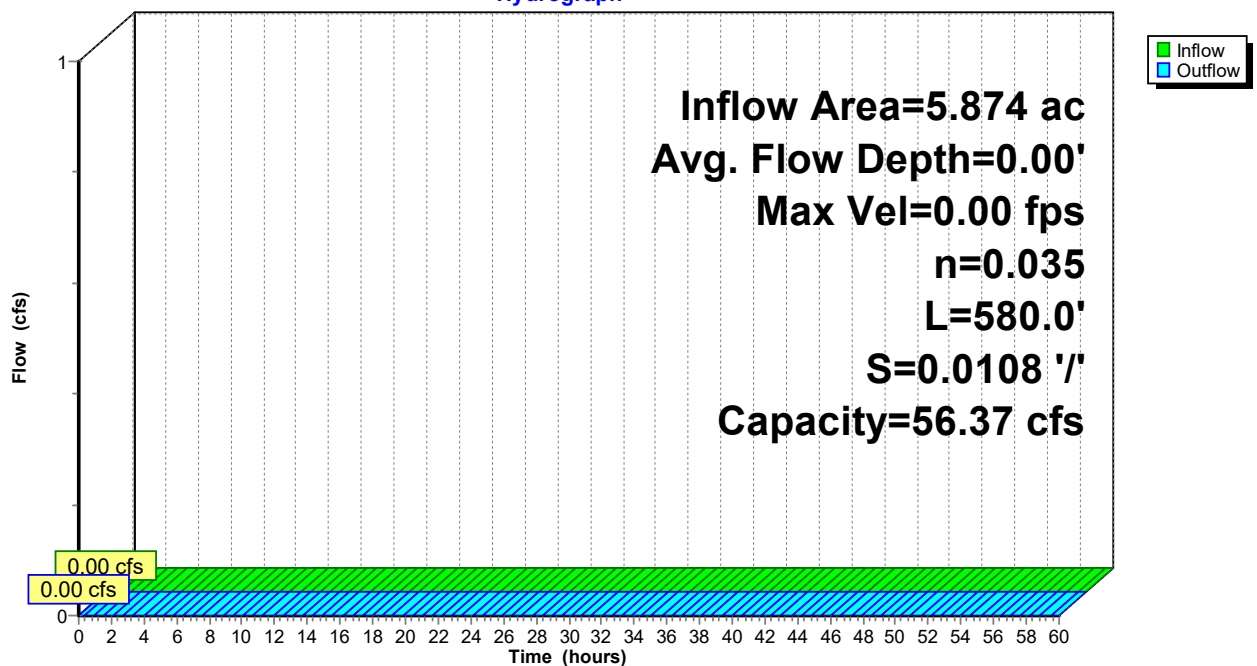
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 56.37 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 580.0' Slope= 0.0108 '/
 Inlet Invert= 1,493.84', Outlet Invert= 1,487.56'



Reach 1.1aR1: Bypass Swale

Hydrograph



Summary for Reach 1.1aR2: Bypass Swale

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC2 : TS2 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

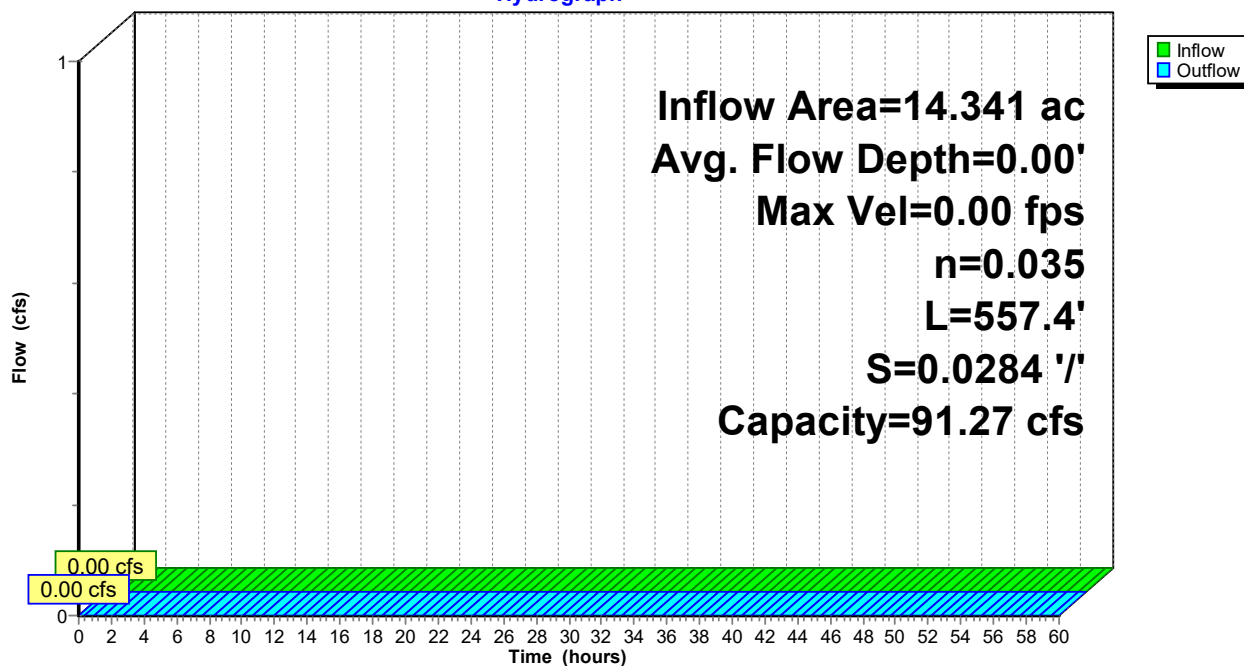
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 91.27 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.4' Slope= 0.0284 '/'
 Inlet Invert= 1,486.80', Outlet Invert= 1,470.98'



Reach 1.1aR2: Bypass Swale

Hydrograph



Summary for Reach 1.1aR3: Bypass Swale

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aC3 : TS3 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

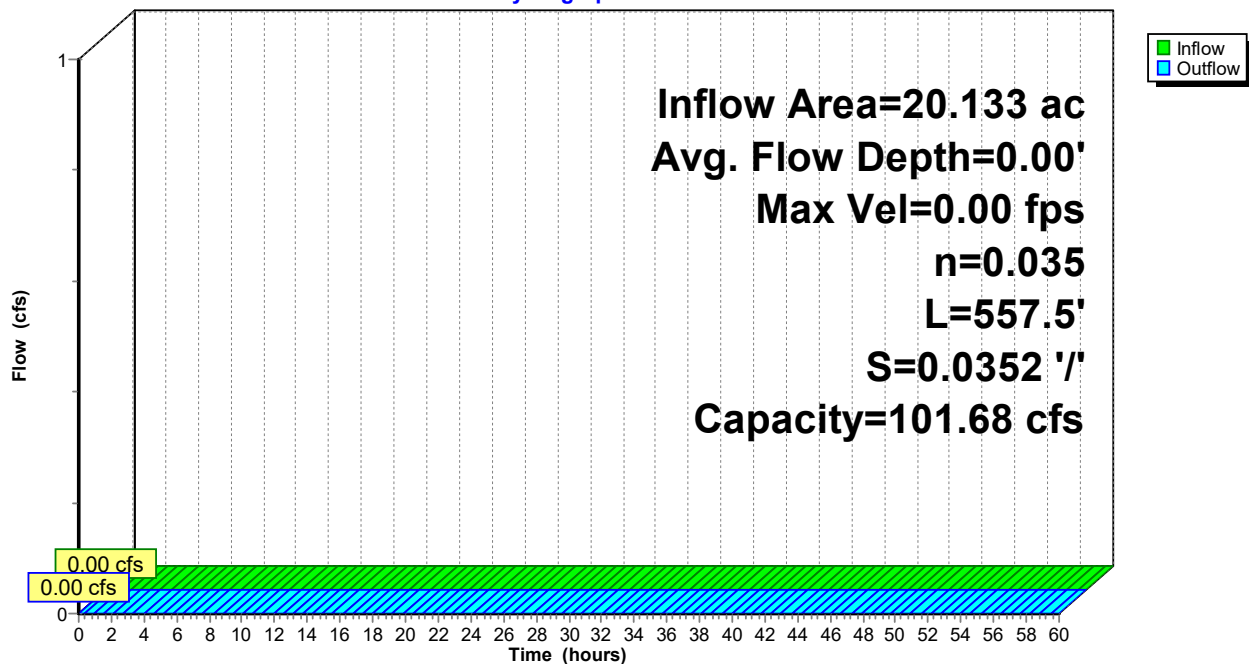
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 101.68 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 557.5' Slope= 0.0352 '/'
 Inlet Invert= 1,469.57', Outlet Invert= 1,449.93'



Reach 1.1aR3: Bypass Swale

Hydrograph



Summary for Reach 1.1aR4: Bypass Swale

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.1aP : North Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

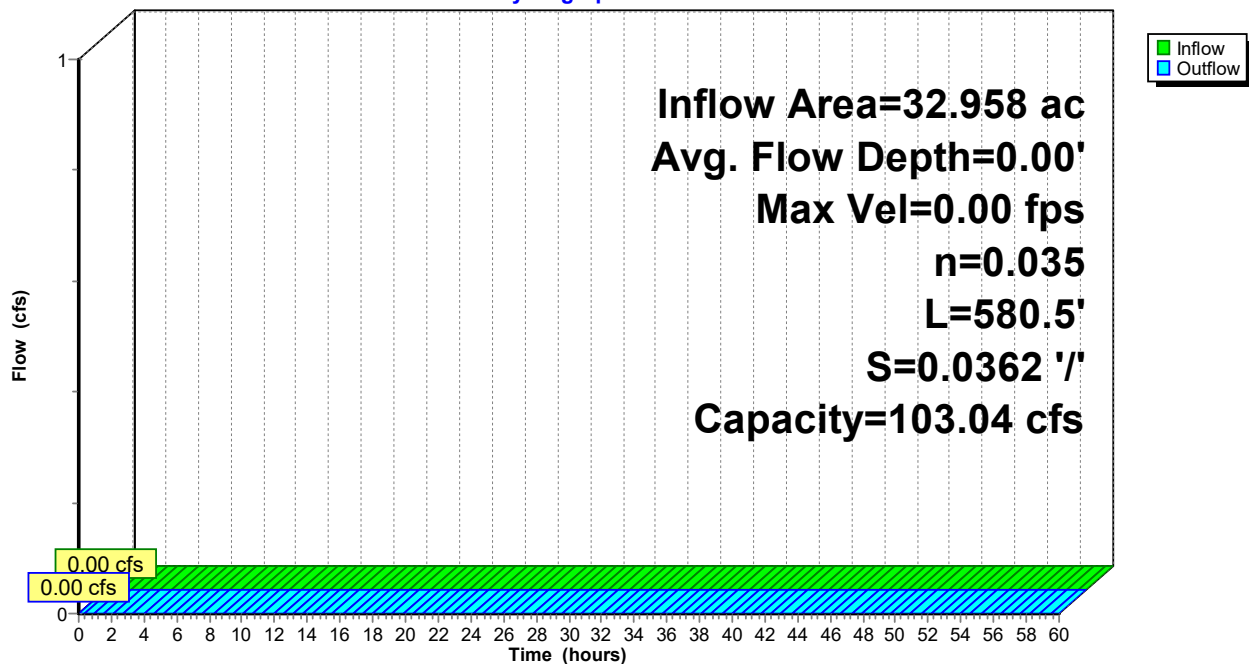
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 103.04 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 580.5' Slope= 0.0362 '/
 Inlet Invert= 1,447.64', Outlet Invert= 1,426.64'



Reach 1.1aR4: Bypass Swale

Hydrograph



Summary for Reach 1.1bR1: North Road Conveyance Swale

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 0.93" for 10-Yr Storm event
 Inflow = 2.16 cfs @ 11.98 hrs, Volume= 0.103 af
 Outflow = 1.13 cfs @ 12.06 hrs, Volume= 0.103 af, Atten= 48%, Lag= 4.9 min
 Routed to Pond 1.1bC1 : TS4 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.01 fps, Min. Travel Time= 14.4 min
 Avg. Velocity = 0.67 fps, Avg. Travel Time= 42.9 min

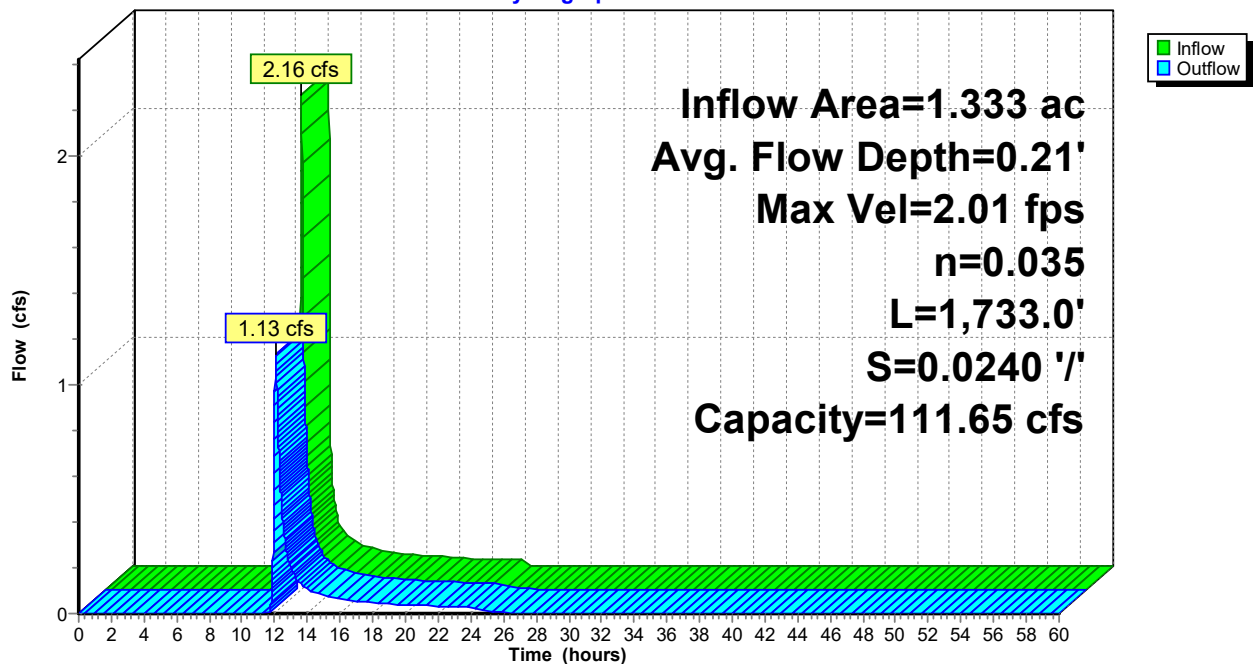
Peak Storage= 977 cf @ 12.06 hrs
 Average Depth at Peak Storage= 0.21', Surface Width= 3.28'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 111.65 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 1,733.0' Slope= 0.0240 ' / '
 Inlet Invert= 1,491.12', Outlet Invert= 1,449.50'



Reach 1.1bR1: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.1bR2: North Road Conveyance Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.88" for 10-Yr Storm event
 Inflow = 1.78 cfs @ 12.02 hrs, Volume= 0.145 af
 Outflow = 1.61 cfs @ 12.06 hrs, Volume= 0.145 af, Atten= 10%, Lag= 2.7 min
 Routed to Pond 1.1bP1 : Dry Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.62 fps, Min. Travel Time= 3.8 min
 Avg. Velocity = 0.87 fps, Avg. Travel Time= 11.3 min

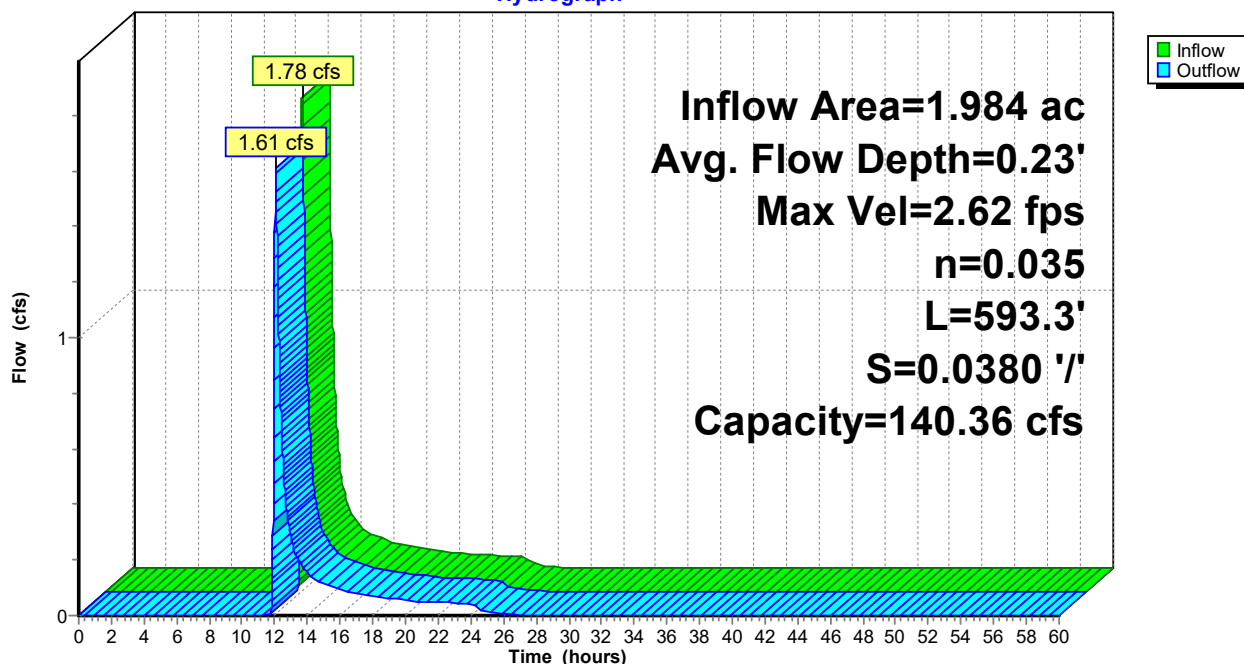
Peak Storage= 364 cf @ 12.06 hrs
 Average Depth at Peak Storage= 0.23', Surface Width= 3.37'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 140.36 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 593.3' Slope= 0.0380 '/'
 Inlet Invert= 1,447.27', Outlet Invert= 1,424.75'



Reach 1.1bR2: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.2aR1: Bypass Swale

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aC1 : TS 7 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

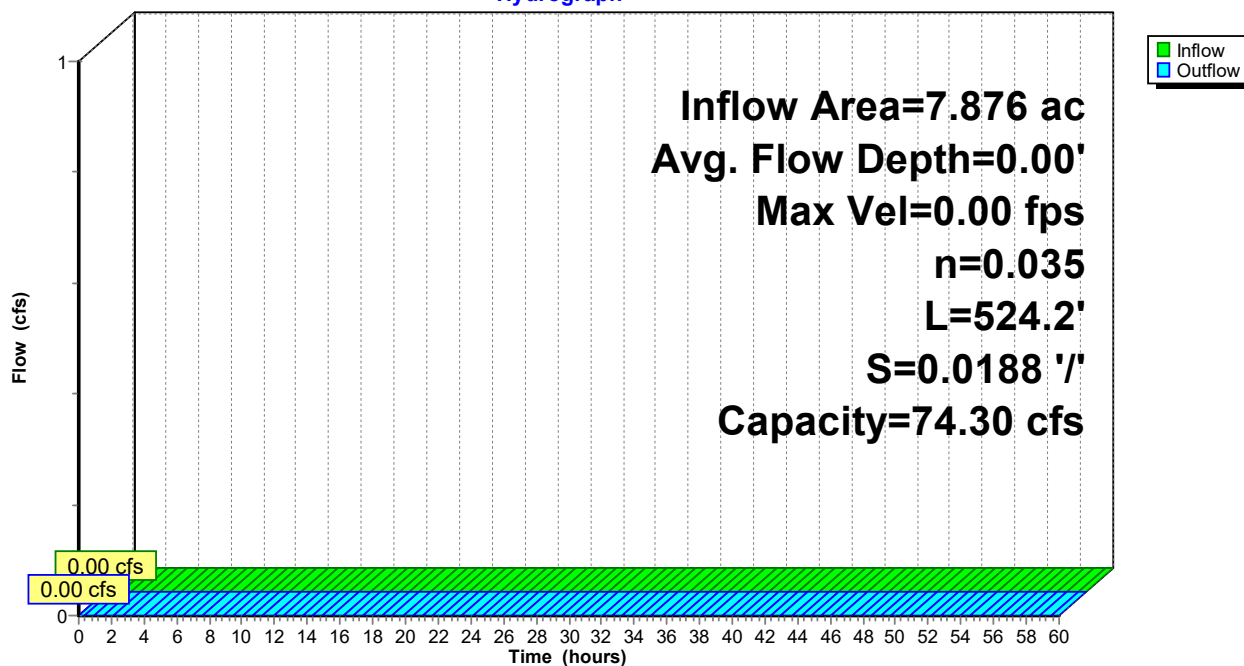
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 74.30 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 524.2' Slope= 0.0188 '/'
 Inlet Invert= 1,454.08', Outlet Invert= 1,444.22'



Reach 1.2aR1: Bypass Swale

Hydrograph



Summary for Reach 1.2aR2: Bypass Swale

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aC2 : TS8 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

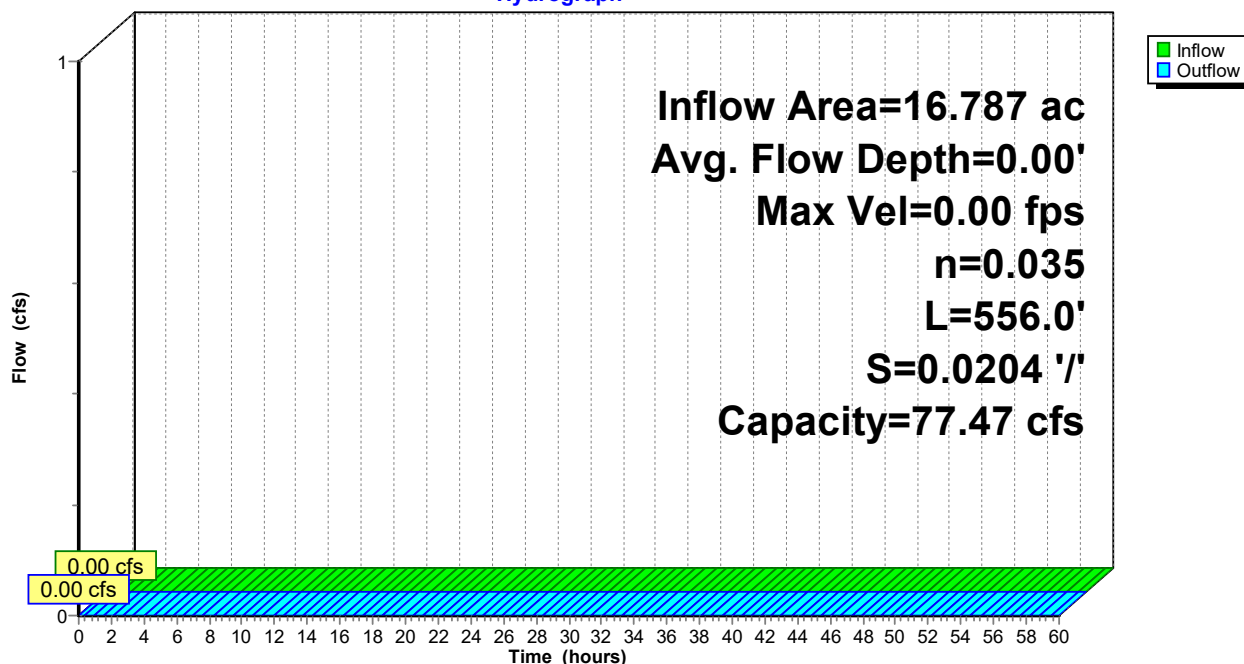
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 77.47 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/' Top Width= 10.00'
 Length= 556.0' Slope= 0.0204 '/'
 Inlet Invert= 1,443.21', Outlet Invert= 1,431.84'



Reach 1.2aR2: Bypass Swale

Hydrograph



Summary for Reach 1.2aR3: Bypass Swale

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Routed to Pond 1.2aP : South Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
 Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

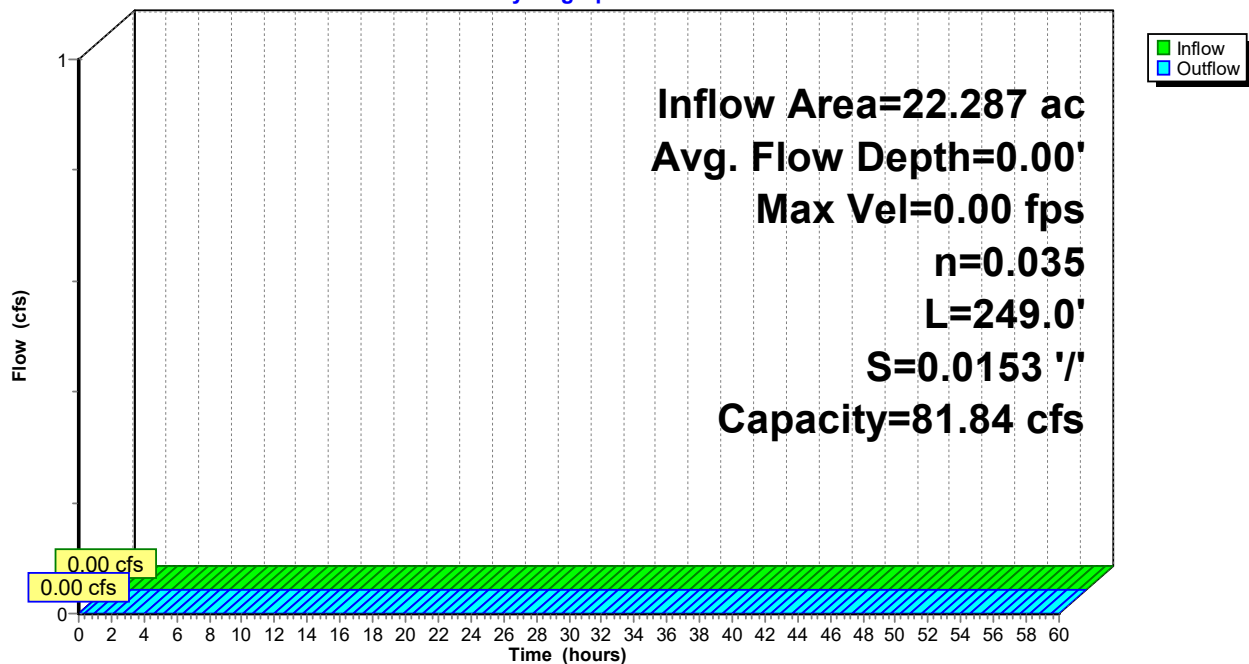
Peak Storage= 0 cf @ 0.00 hrs
 Average Depth at Peak Storage= 0.00'
 Bank-Full Depth= 2.00' Flow Area= 14.0 sf, Capacity= 81.84 cfs

3.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 11.00'
 Length= 249.0' Slope= 0.0153 '/
 Inlet Invert= 1,431.11', Outlet Invert= 1,427.29'



Reach 1.2aR3: Bypass Swale

Hydrograph



Summary for Reach 1.2bR1: East Road Conveyance Swale

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 0.73" for 10-Yr Storm event
 Inflow = 0.89 cfs @ 11.99 hrs, Volume= 0.044 af
 Outflow = 0.69 cfs @ 12.04 hrs, Volume= 0.044 af, Atten= 23%, Lag= 3.0 min
 Routed to Pond 1.2bC1 : East Road Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.13 fps, Min. Travel Time= 5.7 min
 Avg. Velocity = 0.68 fps, Avg. Travel Time= 18.0 min

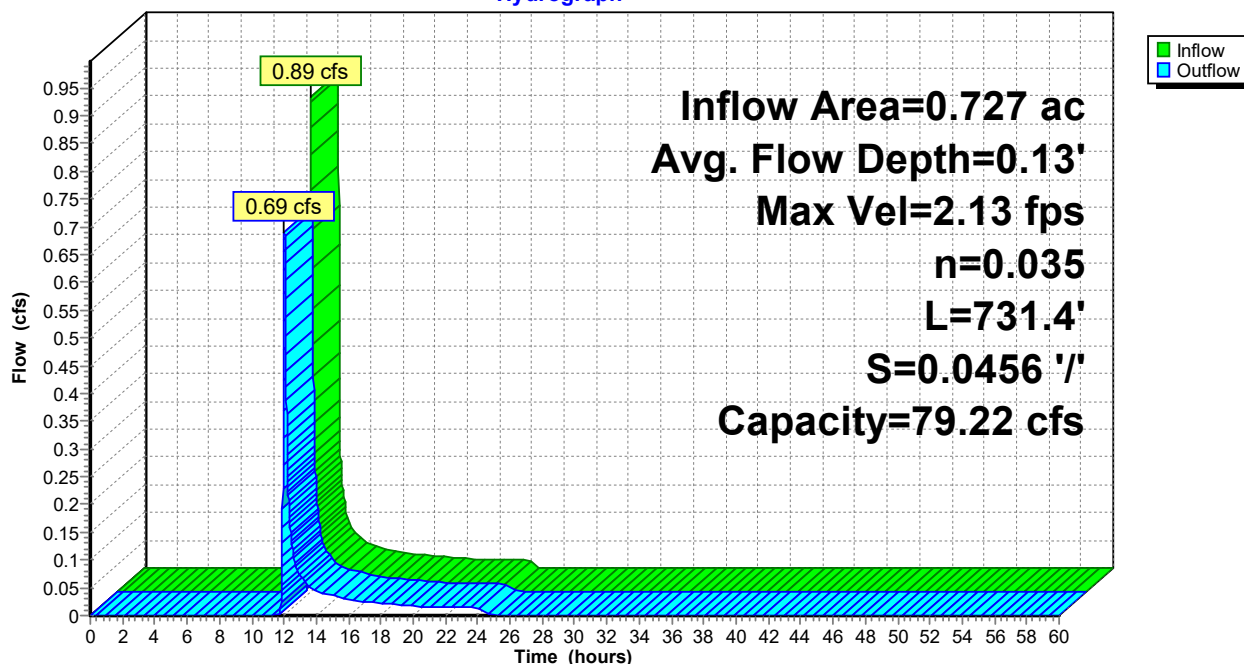
Peak Storage= 237 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.13' , Surface Width= 2.81'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 79.22 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/ Top Width= 11.00'
 Length= 731.4' Slope= 0.0456 '/
 Inlet Invert= 1,489.53', Outlet Invert= 1,456.20'



Reach 1.2bR1: East Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR2: South Road Conveyance Swale

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 0.54" for 10-Yr Storm event
 Inflow = 0.89 cfs @ 12.05 hrs, Volume= 0.071 af
 Outflow = 0.70 cfs @ 12.13 hrs, Volume= 0.071 af, Atten= 22%, Lag= 4.6 min
 Routed to Pond 1.2bC2 : TS6 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.55 fps, Min. Travel Time= 6.5 min
 Avg. Velocity = 0.59 fps, Avg. Travel Time= 17.1 min

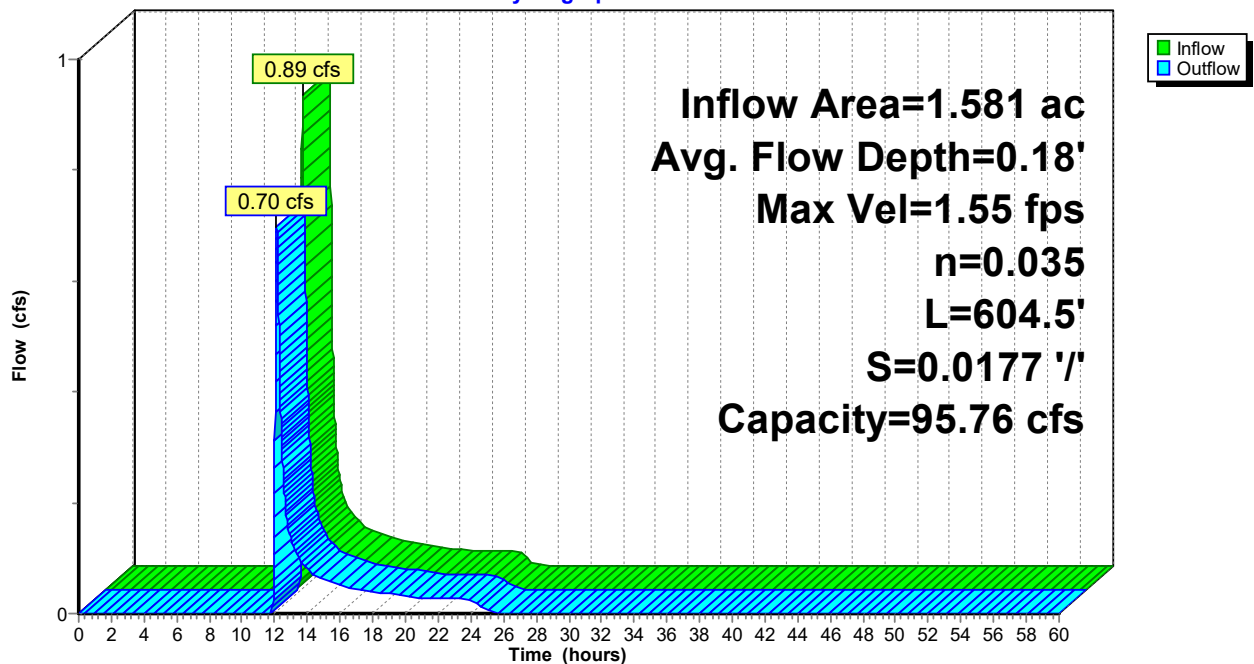
Peak Storage= 272 cf @ 12.13 hrs
 Average Depth at Peak Storage= 0.18' , Surface Width= 3.06'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 95.76 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 604.5' Slope= 0.0177 ' / '
 Inlet Invert= 1,454.47', Outlet Invert= 1,443.79'



Reach 1.2bR2: South Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR3: South Road Conveyance Swale

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 0.67" for 10-Yr Storm event
 Inflow = 1.54 cfs @ 12.00 hrs, Volume= 0.133 af
 Outflow = 1.22 cfs @ 12.07 hrs, Volume= 0.133 af, Atten= 21%, Lag= 4.3 min
 Routed to Pond 1.2bP : South Road Treatment Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.89 fps, Min. Travel Time= 6.7 min
 Avg. Velocity = 0.70 fps, Avg. Travel Time= 18.1 min

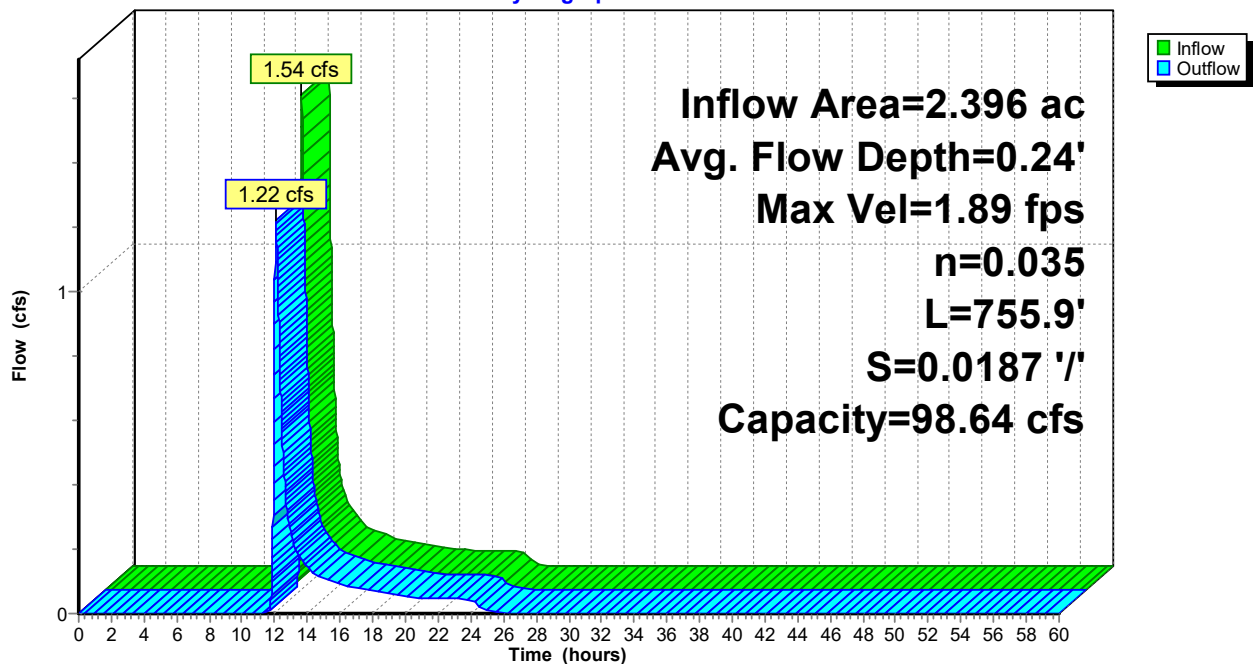
Peak Storage= 490 cf @ 12.07 hrs
 Average Depth at Peak Storage= 0.24' , Surface Width= 3.43'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 98.64 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 755.9' Slope= 0.0187 '/'
 Inlet Invert= 1,442.84', Outlet Invert= 1,428.67'



Reach 1.2bR3: South Road Conveyance Swale

Hydrograph



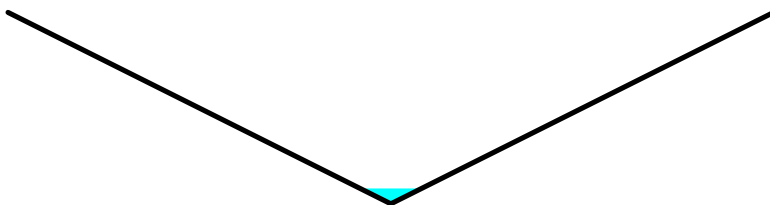
Summary for Reach 4.1R1: Bypass Swale

Inflow Area = 11.663 ac, 2.80% Impervious, Inflow Depth = 0.05" for 10-Yr Storm event
 Inflow = 0.06 cfs @ 15.43 hrs, Volume= 0.052 af
 Outflow = 0.06 cfs @ 15.51 hrs, Volume= 0.052 af, Atten= 0%, Lag= 4.8 min
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.27 fps, Min. Travel Time= 7.5 min
 Avg. Velocity = 1.09 fps, Avg. Travel Time= 8.7 min

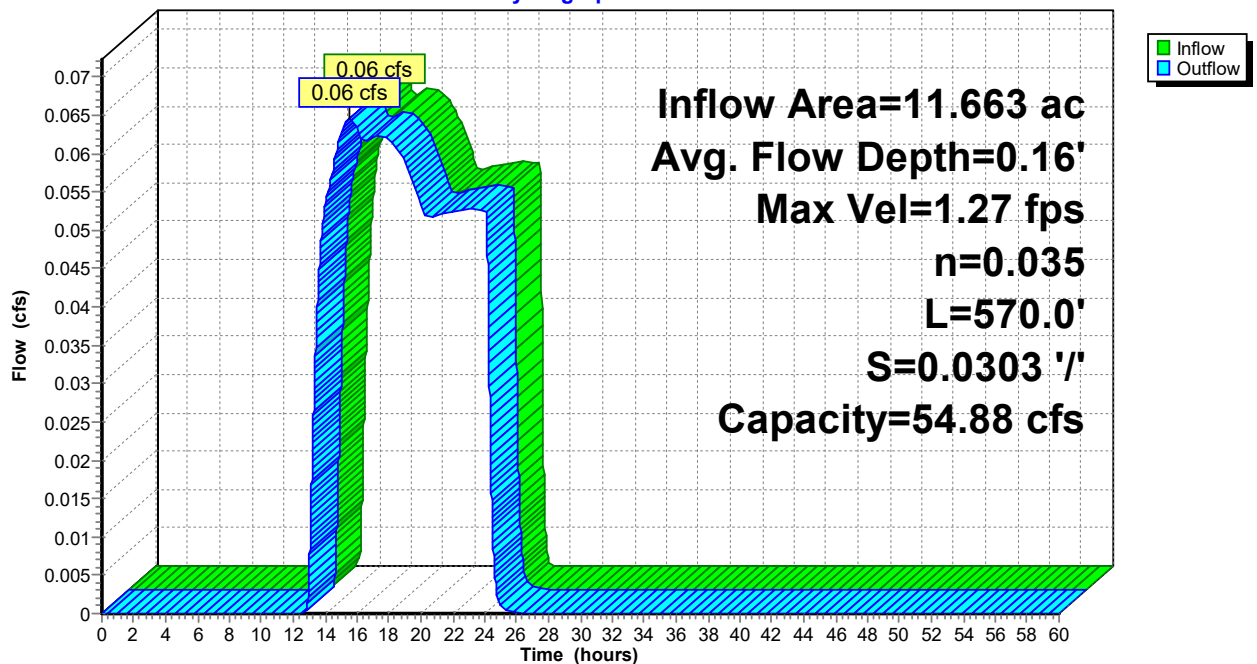
Peak Storage= 29 cf @ 15.51 hrs
 Average Depth at Peak Storage= 0.16' , Surface Width= 0.64'
 Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 54.88 cfs

0.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/' Top Width= 8.00'
 Length= 570.0' Slope= 0.0303 '/'
 Inlet Invert= 1,448.24', Outlet Invert= 1,430.97'



Reach 4.1R1: Bypass Swale

Hydrograph



Summary for Reach 4.1R2: Ex Stream

Inflow Area = 39.250 ac, 0.83% Impervious, Inflow Depth = 0.13" for 10-Yr Storm event
 Inflow = 0.82 cfs @ 13.01 hrs, Volume= 0.431 af
 Outflow = 0.77 cfs @ 13.36 hrs, Volume= 0.431 af, Atten= 5%, Lag= 21.0 min
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.68 fps, Min. Travel Time= 18.1 min
 Avg. Velocity = 0.48 fps, Avg. Travel Time= 25.5 min

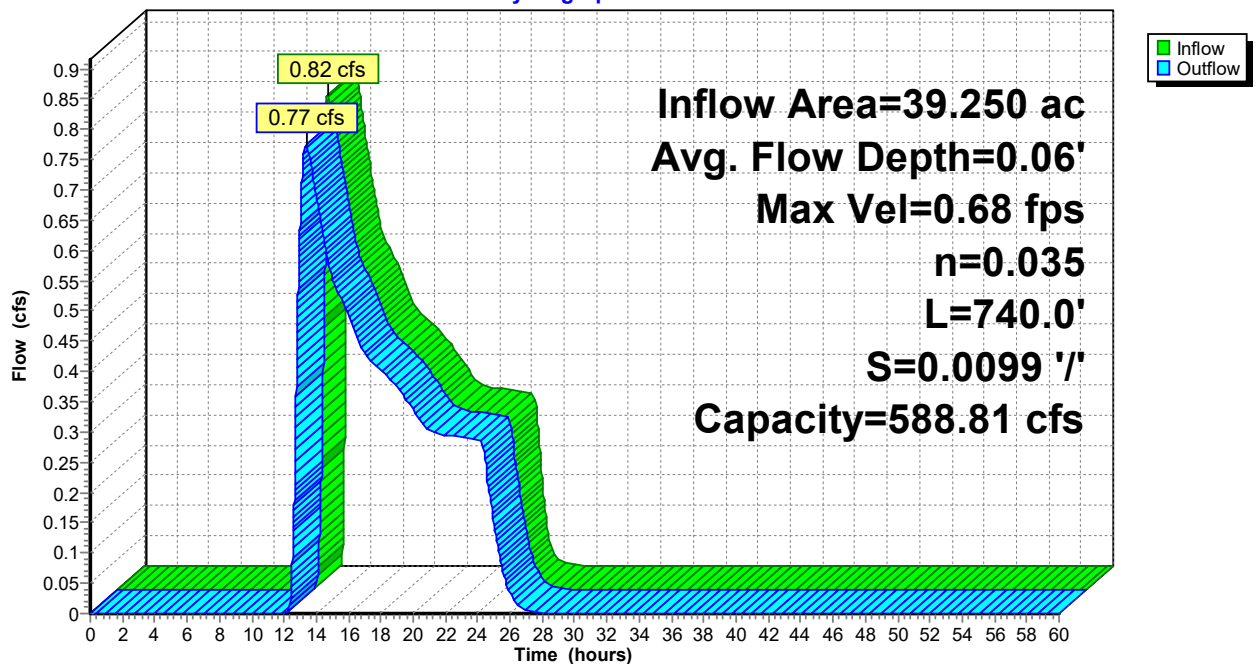
Peak Storage= 842 cf @ 13.36 hrs
 Average Depth at Peak Storage= 0.06' , Surface Width= 17.95'
 Bank-Full Depth= 3.00' Flow Area= 84.0 sf, Capacity= 588.81 cfs

17.50' x 3.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 4.0 ' / ' Top Width= 38.50'
 Length= 740.0' Slope= 0.0099 ' / '
 Inlet Invert= 1,430.98', Outlet Invert= 1,423.64'



Reach 4.1R2: Ex Stream

Hydrograph



Summary for Reach 4.2bR: Conveyance Swale

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 0.98" for 10-Yr Storm event
 Inflow = 0.81 cfs @ 11.98 hrs, Volume= 0.038 af
 Outflow = 0.69 cfs @ 12.02 hrs, Volume= 0.038 af, Atten= 15%, Lag= 2.4 min
 Routed to Pond 4.2bP : Pond 4 - Access Rd East

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.09 fps, Min. Travel Time= 4.5 min
 Avg. Velocity = 0.63 fps, Avg. Travel Time= 14.8 min

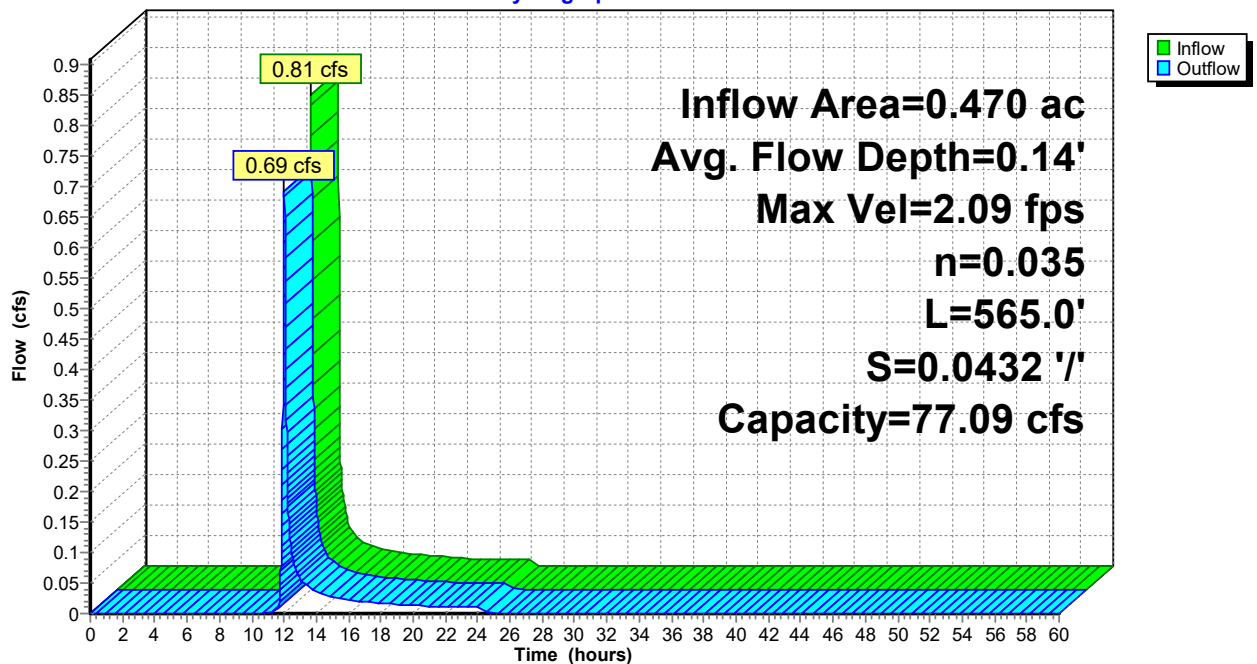
Peak Storage= 187 cf @ 12.02 hrs
 Average Depth at Peak Storage= 0.14' , Surface Width= 2.82'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 77.09 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 11.00'
 Length= 565.0' Slope= 0.0432 ' / '
 Inlet Invert= 1,472.38', Outlet Invert= 1,448.00'



Reach 4.2bR: Conveyance Swale

Hydrograph



Summary for Pond 1.1aC1: TS1 Culvert

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR2 : Bypass Swale

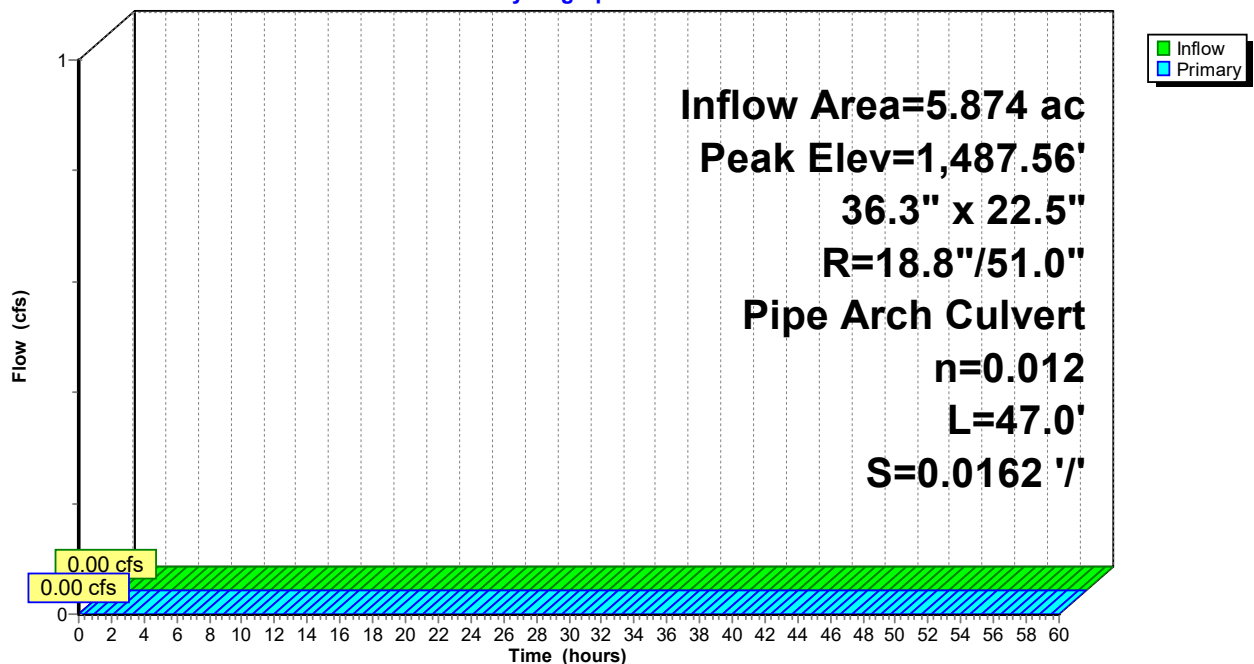
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,487.56' @ 0.00 hrs
 Flood Elev= 1,489.60'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,487.56' | 36.3" W x 22.5" H, R=18.8"/51.0" Pipe Arch RCP_Arch 37x23 L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,487.56' / 1,486.80' S= 0.0162 '/' Cc= 0.900 n= 0.012, Flow Area= 4.43 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,487.56' (Free Discharge)
 ↑1=RCP_Arch 37x23 (Controls 0.00 cfs)

Pond 1.1aC1: TS1 Culvert

Hydrograph



Summary for Pond 1.1aC2: TS2 Culvert

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR3 : Bypass Swale

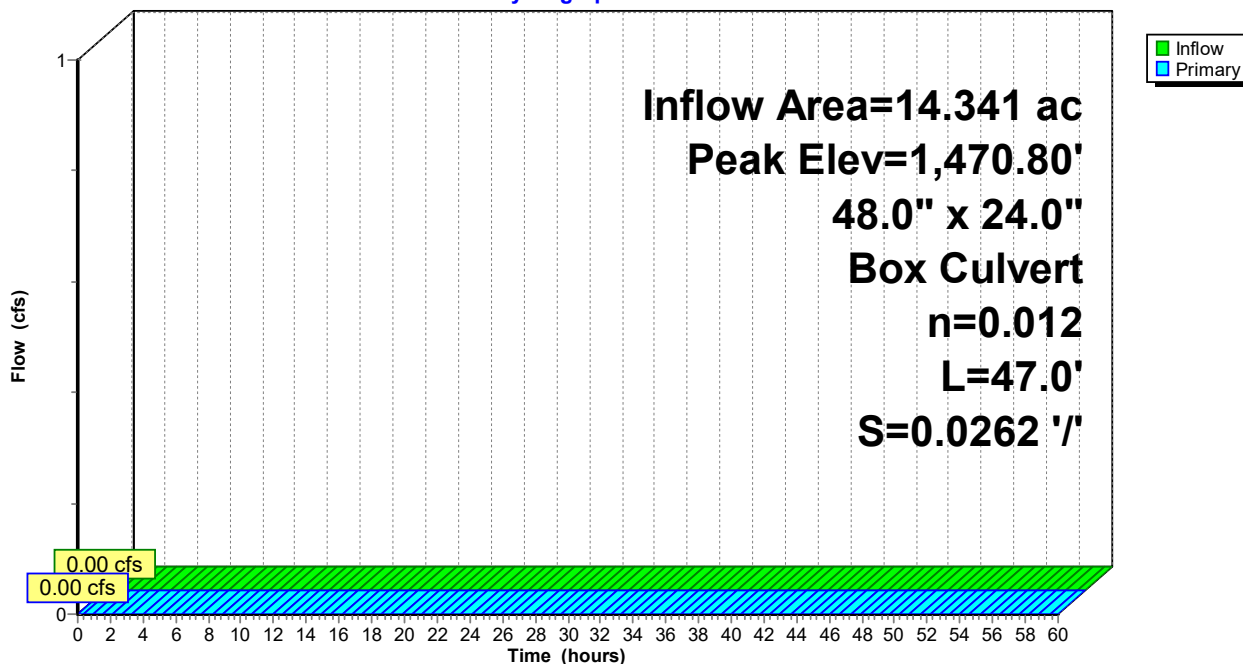
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,470.80' @ 0.00 hrs
 Flood Elev= 1,473.07'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,470.80' | 48.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,470.80' / 1,469.57' S= 0.0262 '/ Cc= 0.900 n= 0.012, Flow Area= 8.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,470.80' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.1aC2: TS2 Culvert

Hydrograph



Summary for Pond 1.1aC3: TS3 Culvert

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.1aR4 : Bypass Swale

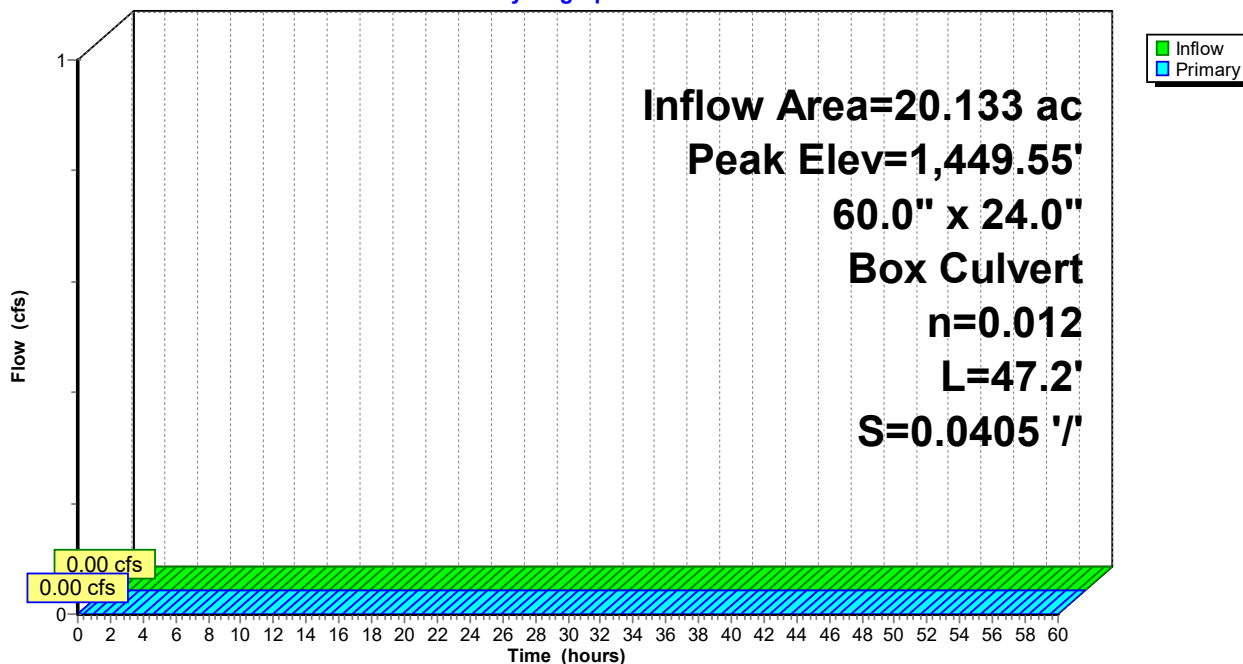
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.55' @ 0.00 hrs
 Flood Elev= 1,452.10'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,449.55' | 60.0" W x 24.0" H Box Culvert L= 47.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.55' / 1,447.64' S= 0.0405 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,449.55' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.1aC3: TS3 Culvert

Hydrograph



Summary for Pond 1.1aP: North Road Bypass OC

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.00' @ 0.00 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

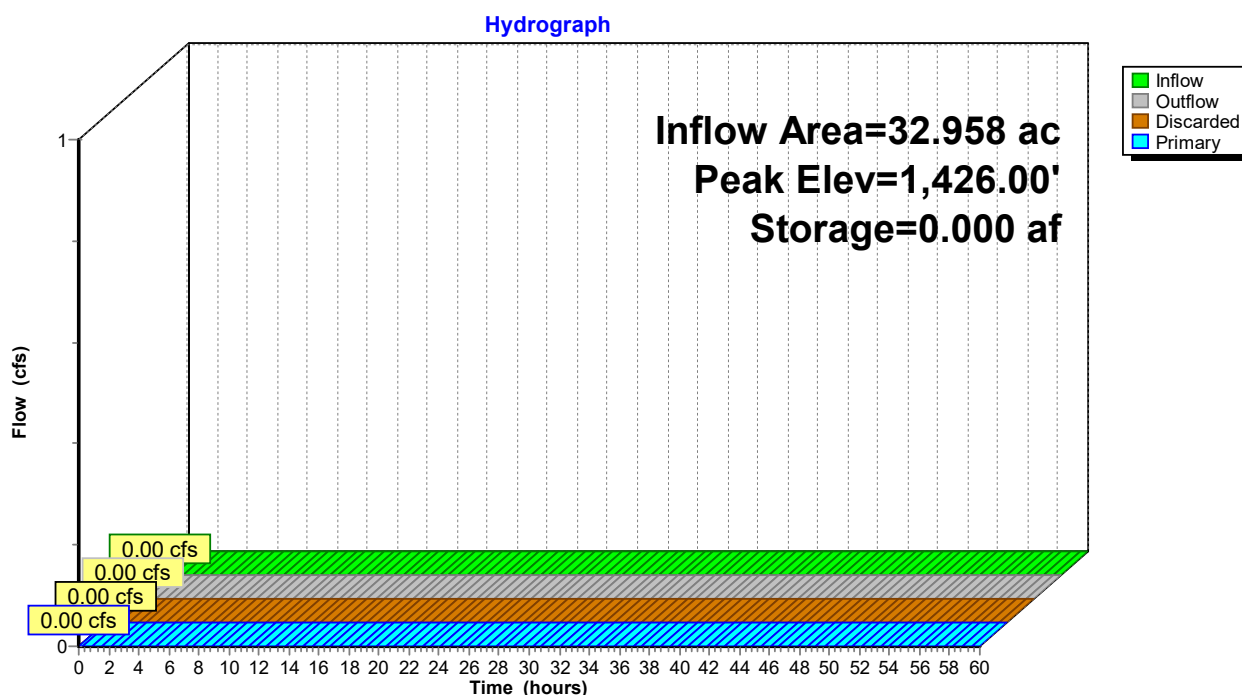
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,426.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,426.00' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,428.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,426.00' (Free Discharge)
 ↳1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,426.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.1aP: North Road Bypass OC



Summary for Pond 1.1bC1: TS4 Culvert

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 0.93" for 10-Yr Storm event
 Inflow = 1.13 cfs @ 12.06 hrs, Volume= 0.103 af
 Outflow = 1.13 cfs @ 12.06 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.13 cfs @ 12.06 hrs, Volume= 0.103 af
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

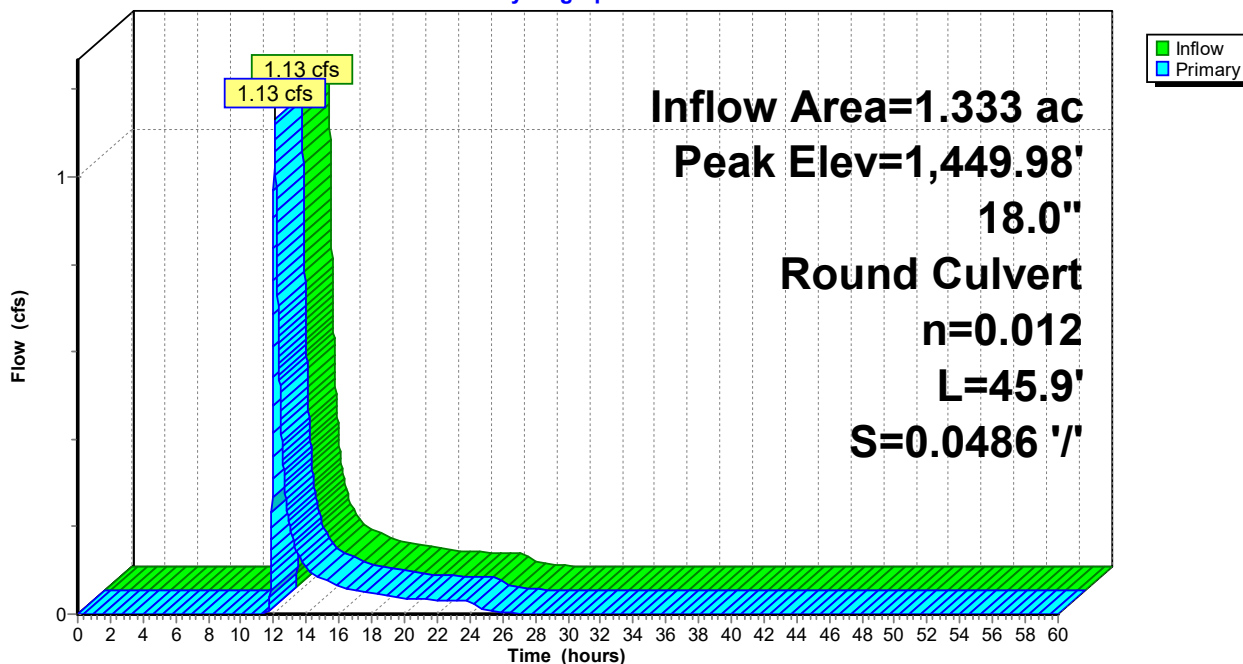
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.98' @ 12.06 hrs
 Flood Elev= 1,451.20'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,449.50' | 18.0" Round Culvert L= 45.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.50' / 1,447.27' S= 0.0486 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=1.13 cfs @ 12.06 hrs HW=1,449.98' (Free Discharge)
 ←1=Culvert (Inlet Controls 1.13 cfs @ 2.35 fps)

Pond 1.1bC1: TS4 Culvert

Hydrograph



Summary for Pond 1.1bP1: Dry Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.88" for 10-Yr Storm event
 Inflow = 1.61 cfs @ 12.06 hrs, Volume= 0.145 af
 Outflow = 1.59 cfs @ 12.08 hrs, Volume= 0.145 af, Atten= 1%, Lag= 1.1 min
 Discarded = 0.00 cfs @ 12.08 hrs, Volume= 0.004 af
 Primary = 1.58 cfs @ 12.08 hrs, Volume= 0.141 af
 Routed to Pond 1.1bP2 : North Road Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.14' @ 12.08 hrs Surf.Area= 329 sf Storage= 171 cf

Plug-Flow detention time= 14.8 min calculated for 0.145 af (100% of inflow)
 Center-of-Mass det. time= 14.9 min (914.0 - 899.1)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,424.75' | 428 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,424.75 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,425.00 | 25 | 22.9 | 2 | 2 | 42 | |
| 1,426.00 | 273 | 98.0 | 127 | 129 | 767 | |
| 1,426.70 | 603 | 161.7 | 299 | 428 | 2,086 | |

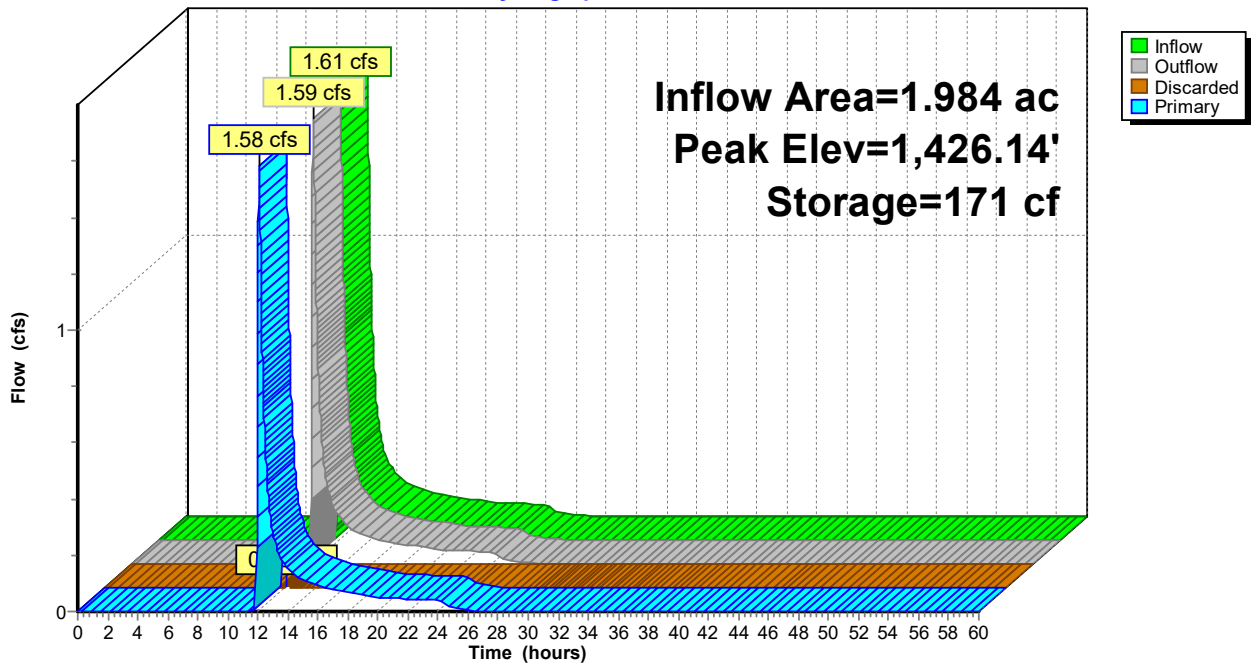
| Device | Routing | Invert | Outlet Devices | | | | | | | | | |
|--------|-----------|-----------|---|--|--|--|--|--|--|--|--|--|
| #1 | Discarded | 1,424.75' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | |
| #2 | Primary | 1,425.69' | 2.0' long x 2.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 | | | | | | | | | |
| | | | 2.50 3.00 3.50 | | | | | | | | | |
| | | | Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 | | | | | | | | | |
| | | | 2.85 3.07 3.20 3.32 | | | | | | | | | |

Discarded OutFlow Max=0.00 cfs @ 12.08 hrs HW=1,426.14' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=1.58 cfs @ 12.08 hrs HW=1,426.14' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 1.58 cfs @ 1.75 fps)

Pond 1.1bP1: Dry Swale

Hydrograph



Summary for Pond 1.1bP2: North Road Detention Pond

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 0.85" for 10-Yr Storm event
 Inflow = 1.58 cfs @ 12.08 hrs, Volume= 0.141 af
 Outflow = 0.46 cfs @ 12.62 hrs, Volume= 0.127 af, Atten= 71%, Lag= 32.3 min
 Discarded = 0.02 cfs @ 12.62 hrs, Volume= 0.052 af
 Primary = 0.45 cfs @ 12.62 hrs, Volume= 0.074 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.04' @ 12.62 hrs Surf.Area= 0.032 ac Storage= 0.050 af

Plug-Flow detention time= 547.6 min calculated for 0.127 af (90% of inflow)
 Center-of-Mass det. time= 495.3 min (1,392.5 - 897.2)

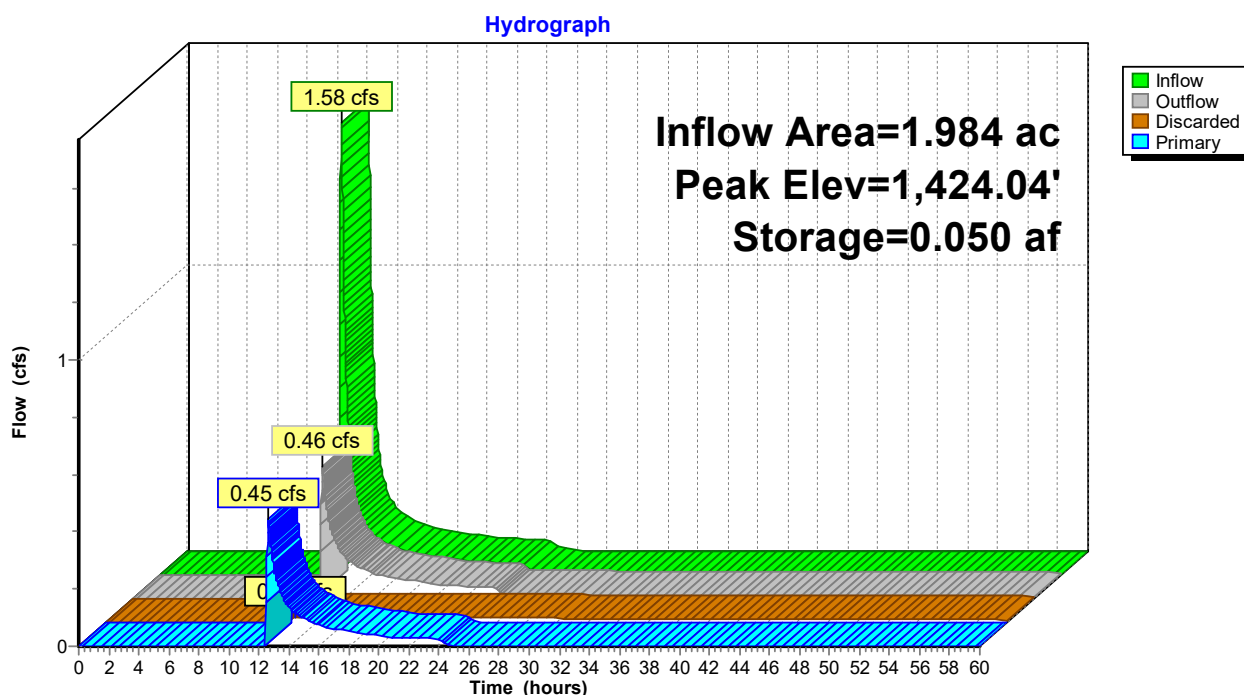
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,421.50' | 0.166 af | 10.00'W x 40.00'L x 5.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,421.50' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,424.00' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.02 cfs @ 12.62 hrs HW=1,424.04' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.40 cfs @ 12.62 hrs HW=1,424.04' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 0.40 cfs @ 0.50 fps)

Pond 1.1bP2: North Road Detention Pond



Summary for Pond 1.2aC1: TS 7 Culvert

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.2aR2 : Bypass Swale

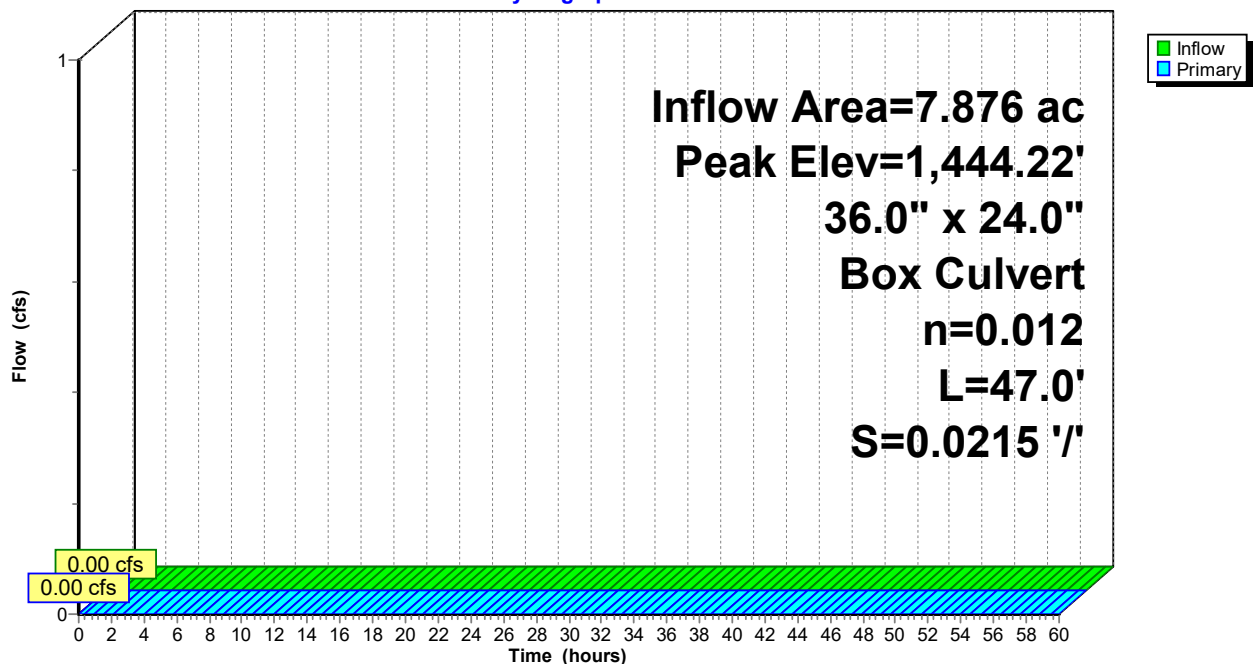
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,444.22' @ 0.00 hrs
 Flood Elev= 1,446.28'

| Device #1 | Routing | Invert | Outlet Devices |
|-----------|---------|-----------|--|
| | Primary | 1,444.22' | 36.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,444.22' / 1,443.21' S= 0.0215 '/ Cc= 0.900 n= 0.012, Flow Area= 6.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,444.22' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.2aC1: TS 7 Culvert

Hydrograph



Summary for Pond 1.2aC2: TS8 Culvert

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach 1.2aR3 : Bypass Swale

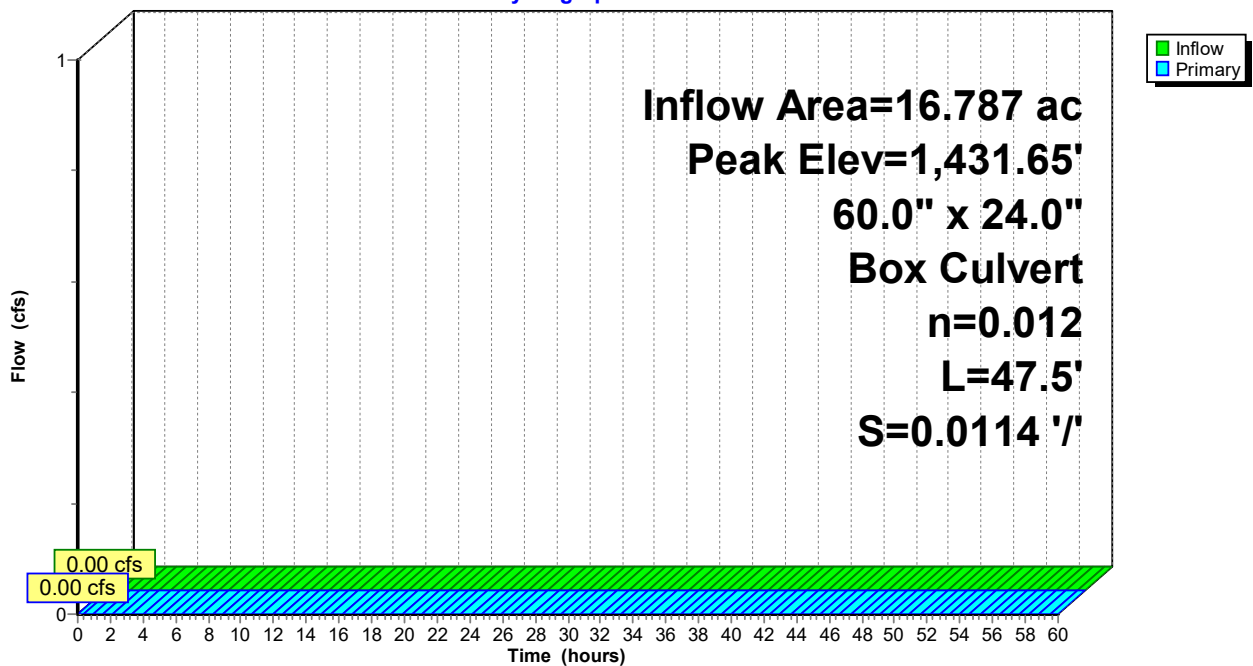
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.65' @ 0.00 hrs
 Flood Elev= 1,433.87'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,431.65' | 60.0" W x 24.0" H Box Culvert L= 47.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,431.65' / 1,431.11' S= 0.0114 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,431.65' (Free Discharge)
 ↑1=Culvert (Controls 0.00 cfs)

Pond 1.2aC2: TS8 Culvert

Hydrograph



Summary for Pond 1.2aP: South Road Bypass OC

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.00' @ 0.00 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no inflow)

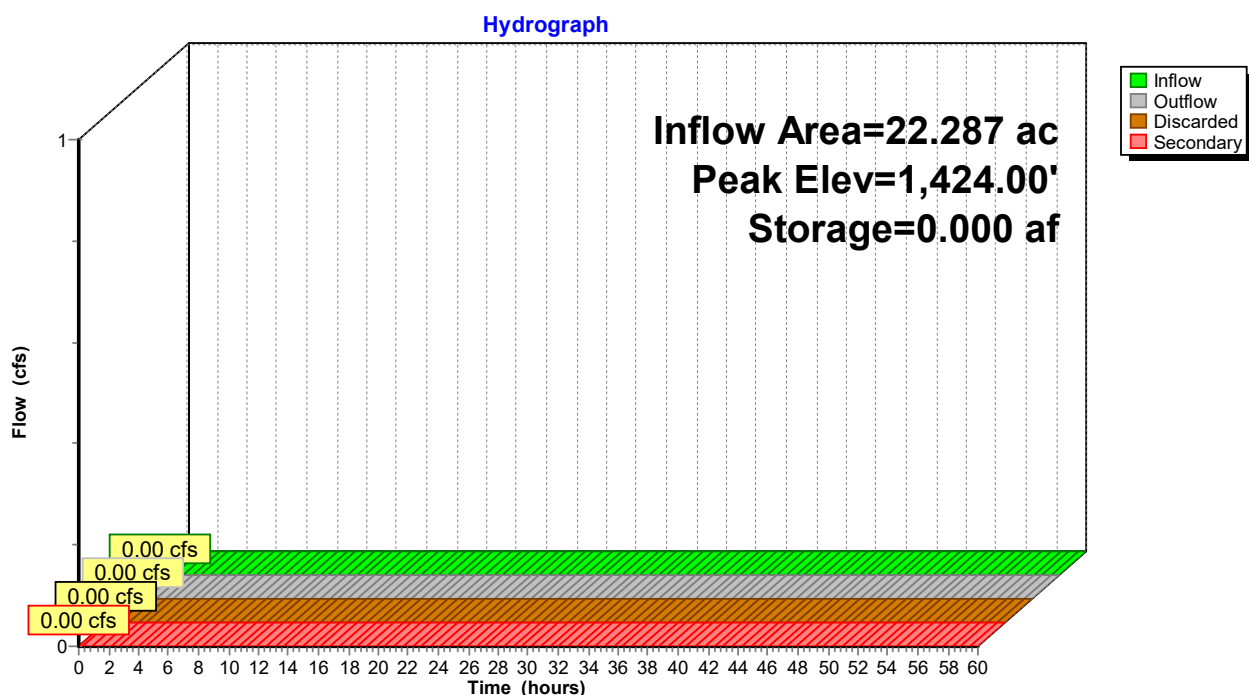
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area |
| #2 | Secondary | 1,426.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 |
| | | | Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳ **1=Exfiltration** (Passes 0.00 cfs of 0.06 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1.2aP: South Road Bypass OC



Summary for Pond 1.2bC1: East Road Culvert

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 0.73" for 10-Yr Storm event
 Inflow = 0.69 cfs @ 12.04 hrs, Volume= 0.044 af
 Outflow = 0.69 cfs @ 12.04 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.69 cfs @ 12.04 hrs, Volume= 0.044 af
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

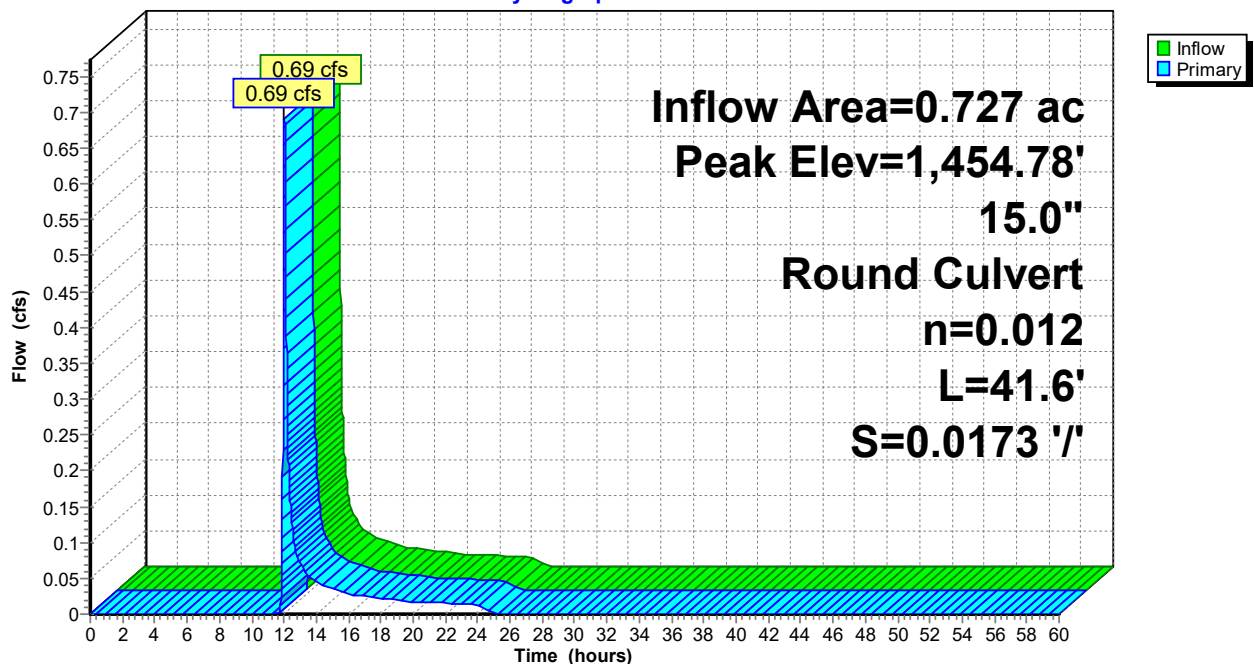
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,454.78' @ 12.04 hrs
 Flood Elev= 1,457.45'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,454.39' | 15.0" Round Culvert L= 41.6' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,454.39' / 1,453.67' S= 0.0173 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf |

Primary OutFlow Max=0.69 cfs @ 12.04 hrs HW=1,454.78' (Free Discharge)
 ←**1=Culvert** (Inlet Controls 0.69 cfs @ 2.12 fps)

Pond 1.2bC1: East Road Culvert

Hydrograph



Summary for Pond 1.2bC2: TS6 Culvert

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 0.54" for 10-Yr Storm event
 Inflow = 0.70 cfs @ 12.13 hrs, Volume= 0.071 af
 Outflow = 0.70 cfs @ 12.13 hrs, Volume= 0.071 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.70 cfs @ 12.13 hrs, Volume= 0.071 af
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

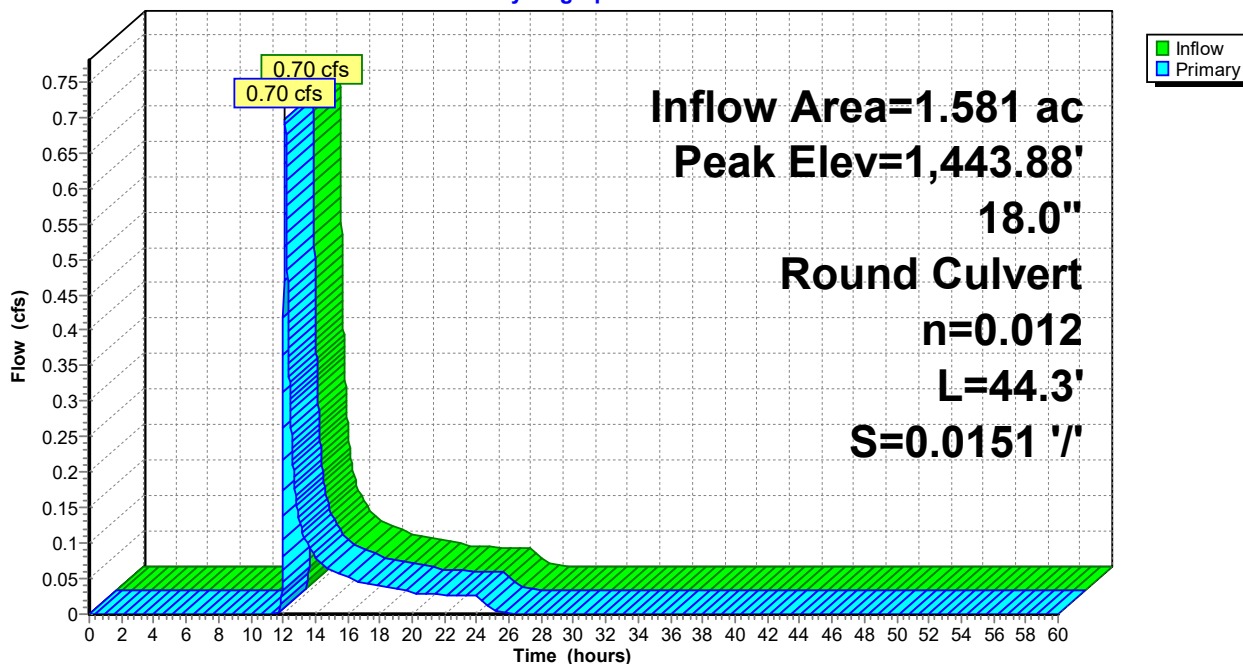
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,443.88' @ 12.13 hrs
 Flood Elev= 1,445.09'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,443.51' | 18.0" Round Culvert L= 44.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,443.51' / 1,442.84' S= 0.0151 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=0.70 cfs @ 12.13 hrs HW=1,443.88' (Free Discharge)
 ← **1=Culvert** (Inlet Controls 0.70 cfs @ 2.07 fps)

Pond 1.2bC2: TS6 Culvert

Hydrograph



Summary for Pond 1.2bP: South Road Treatment Pond

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 0.67" for 10-Yr Storm event
 Inflow = 1.22 cfs @ 12.07 hrs, Volume= 0.133 af
 Outflow = 0.41 cfs @ 12.61 hrs, Volume= 0.133 af, Atten= 67%, Lag= 32.1 min
 Discarded = 0.29 cfs @ 12.61 hrs, Volume= 0.132 af
 Primary = 0.12 cfs @ 12.61 hrs, Volume= 0.002 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.06' @ 12.61 hrs Surf.Area= 0.024 ac Storage= 0.033 af

Plug-Flow detention time= 44.3 min calculated for 0.133 af (100% of inflow)
 Center-of-Mass det. time= 44.3 min (954.4 - 910.1)

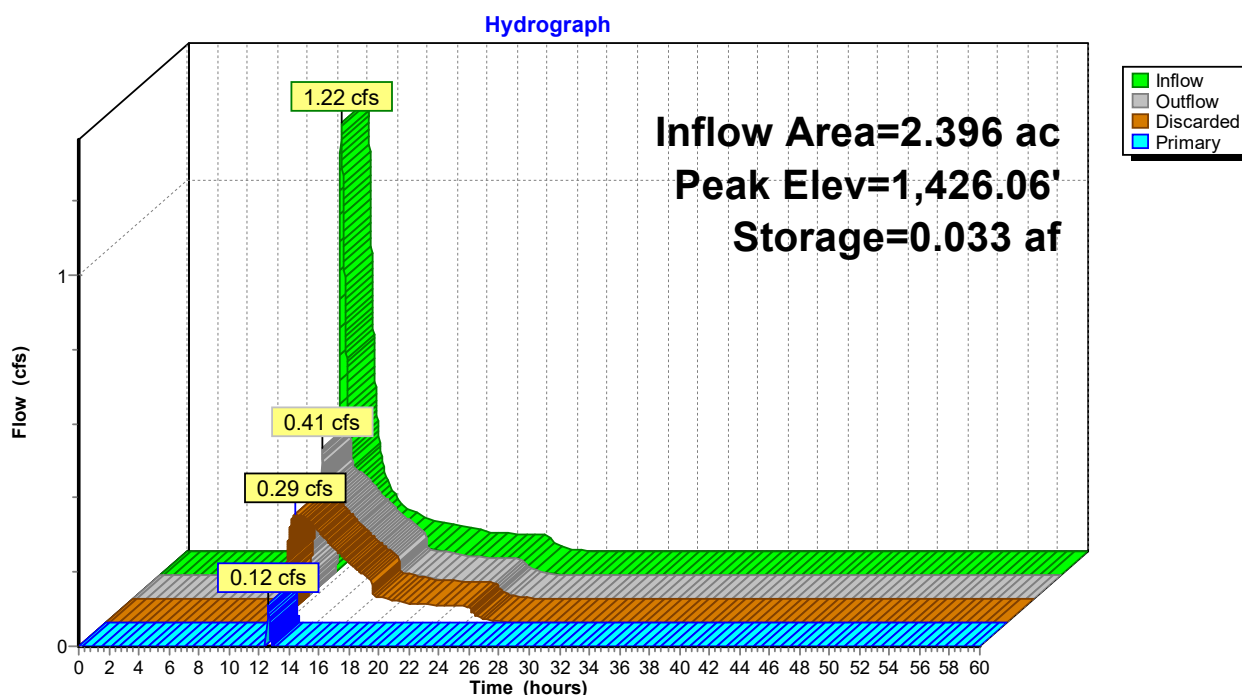
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.149 af | 20.00'W x 20.00'L x 5.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,426.05' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.29 cfs @ 12.61 hrs HW=1,426.06' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.29 cfs)

Primary OutFlow Max=0.05 cfs @ 12.61 hrs HW=1,426.06' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 0.05 cfs @ 0.25 fps)

Pond 1.2bP: South Road Treatment Pond



Summary for Pond 1.3P: Pond 3 - Access Rd West

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.17" for 10-Yr Storm event
 Inflow = 0.04 cfs @ 12.04 hrs, Volume= 0.010 af
 Outflow = 0.03 cfs @ 12.12 hrs, Volume= 0.010 af, Atten= 33%, Lag= 4.7 min
 Discarded = 0.03 cfs @ 12.12 hrs, Volume= 0.010 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link SP1 : Study Point 1

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,456.01' @ 12.12 hrs Surf.Area= 788 sf Storage= 8 cf

Plug-Flow detention time= 4.8 min calculated for 0.010 af (100% of inflow)
 Center-of-Mass det. time= 4.8 min (997.7 - 992.9)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,456.00' | 8,743 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,456.00 | 784 | 123.0 | 0 | 0 | 784 | |
| 1,458.00 | 1,720 | 194.0 | 2,443 | 2,443 | 2,603 | |
| 1,459.00 | 2,884 | 279.0 | 2,277 | 4,721 | 5,811 | |
| 1,460.00 | 5,280 | 421.0 | 4,022 | 8,743 | 13,729 | |

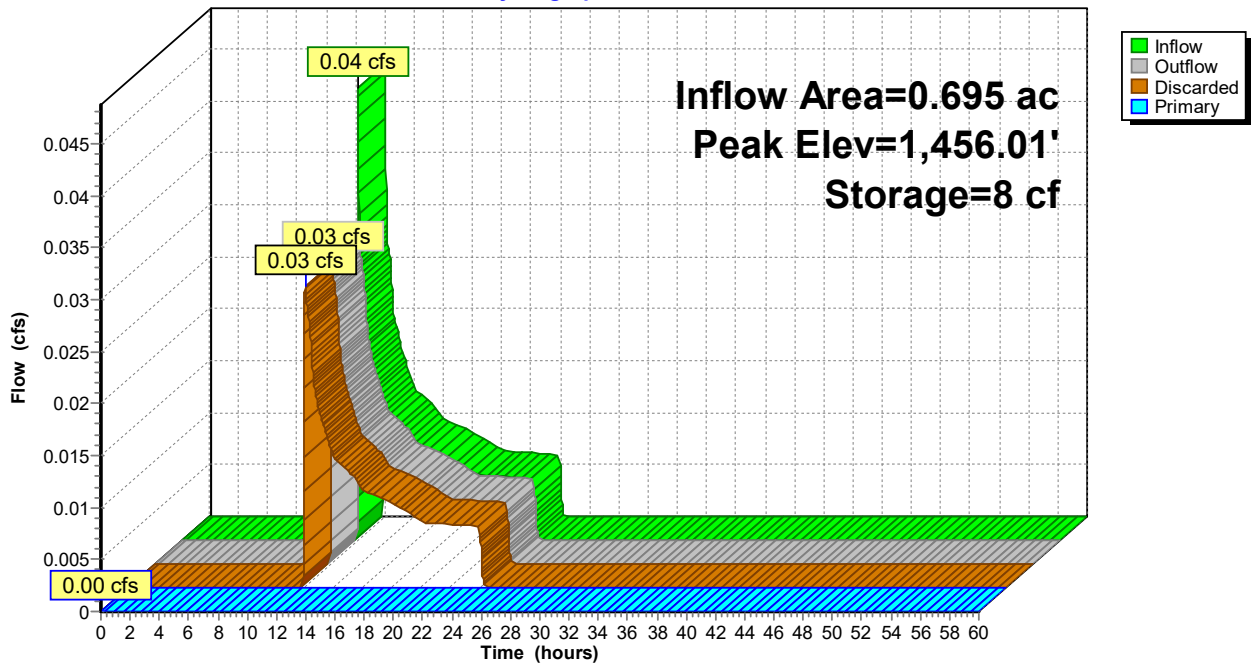
| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | | | | | | | | |
|--------|-----------|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| #1 | Discarded | 1,456.00' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | | | | | | | | |
| #2 | Primary | 1,459.99' | 20.0' long x 4.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | | | | | | | | |
| | | | Head (feet) | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 5.50 | |
| | | | Coef. (English) | 2.38 | 2.54 | 2.69 | 2.68 | 2.67 | 2.67 | 2.65 | 2.66 | 2.66 | 2.66 | 2.68 | 2.72 | 2.73 | 2.76 | 2.79 | 2.88 | 3.07 | 3.32 |

Discarded OutFlow Max=0.11 cfs @ 12.12 hrs HW=1,456.01' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,456.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.3P: Pond 3 - Access Rd West

Hydrograph



Summary for Pond 4.2bP: Pond 4 - Access Rd East

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 0.98" for 10-Yr Storm event
 Inflow = 0.69 cfs @ 12.02 hrs, Volume= 0.038 af
 Outflow = 0.08 cfs @ 12.64 hrs, Volume= 0.038 af, Atten= 89%, Lag= 37.2 min
 Discarded = 0.08 cfs @ 12.64 hrs, Volume= 0.038 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 4.2C : 18" Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,447.07' @ 12.64 hrs Surf.Area= 571 sf Storage= 581 cf

Plug-Flow detention time= 73.6 min calculated for 0.038 af (100% of inflow)
 Center-of-Mass det. time= 73.5 min (948.1 - 874.6)

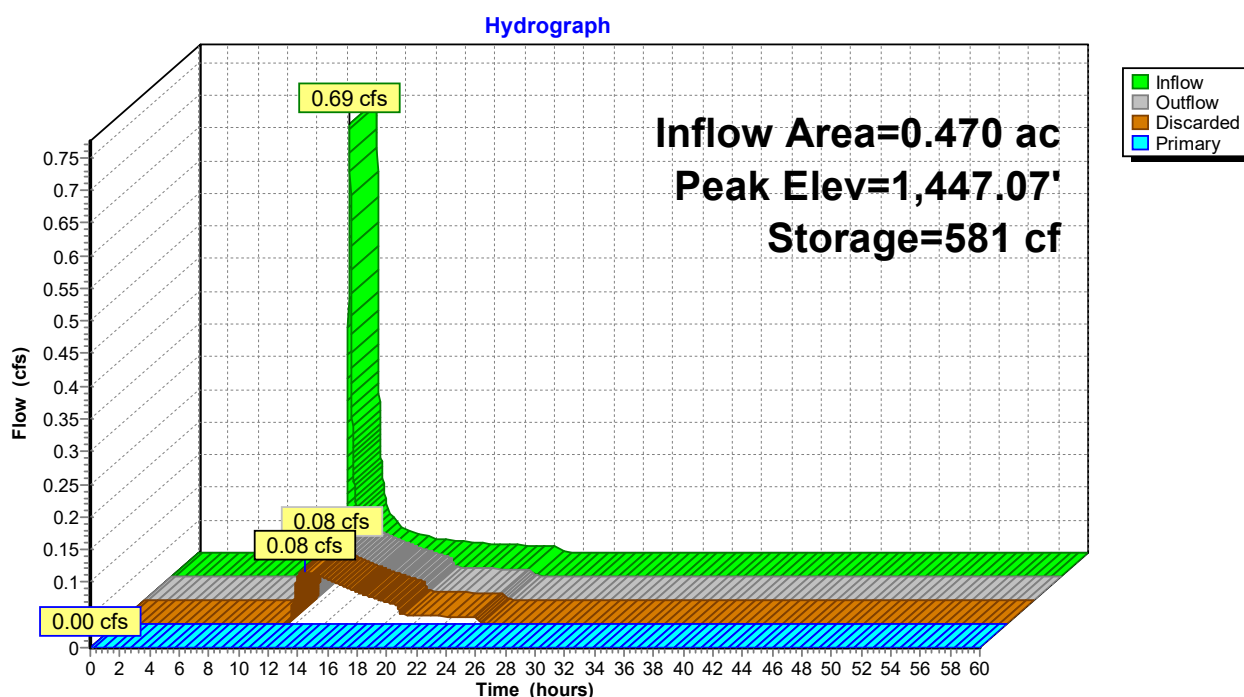
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|--|
| #1 | 1,445.50' | 2,317 cf | 10.00'W x 20.00'L x 3.50'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|---|-----------|-----------|--|
| #1 | Discarded | 1,445.50' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,448.25' | 10.0' long x 4.0' breadth Broad-Crested Rectangular Weir |
| Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 | | | |
| 2.50 3.00 3.50 4.00 4.50 5.00 5.50 | | | |
| Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 | | | |
| 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32 | | | |

Discarded OutFlow Max=0.08 cfs @ 12.64 hrs HW=1,447.07' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,445.50' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.2bP: Pond 4 - Access Rd East



Summary for Pond 4.2C: 18" Culvert

Inflow Area = 27.587 ac, 0.00% Impervious, Inflow Depth = 0.17" for 10-Yr Storm event
 Inflow = 0.85 cfs @ 12.75 hrs, Volume= 0.380 af
 Outflow = 0.81 cfs @ 12.97 hrs, Volume= 0.379 af, Atten= 5%, Lag= 13.4 min
 Primary = 0.81 cfs @ 12.97 hrs, Volume= 0.379 af
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,432.23' @ 12.97 hrs Surf.Area= 2,110 sf Storage= 572 cf
 Flood Elev= 1,434.64' Surf.Area= 27,666 sf Storage= 28,656 cf

Plug-Flow detention time= 14.9 min calculated for 0.379 af (100% of inflow)
 Center-of-Mass det. time= 13.3 min (1,036.8 - 1,023.5)

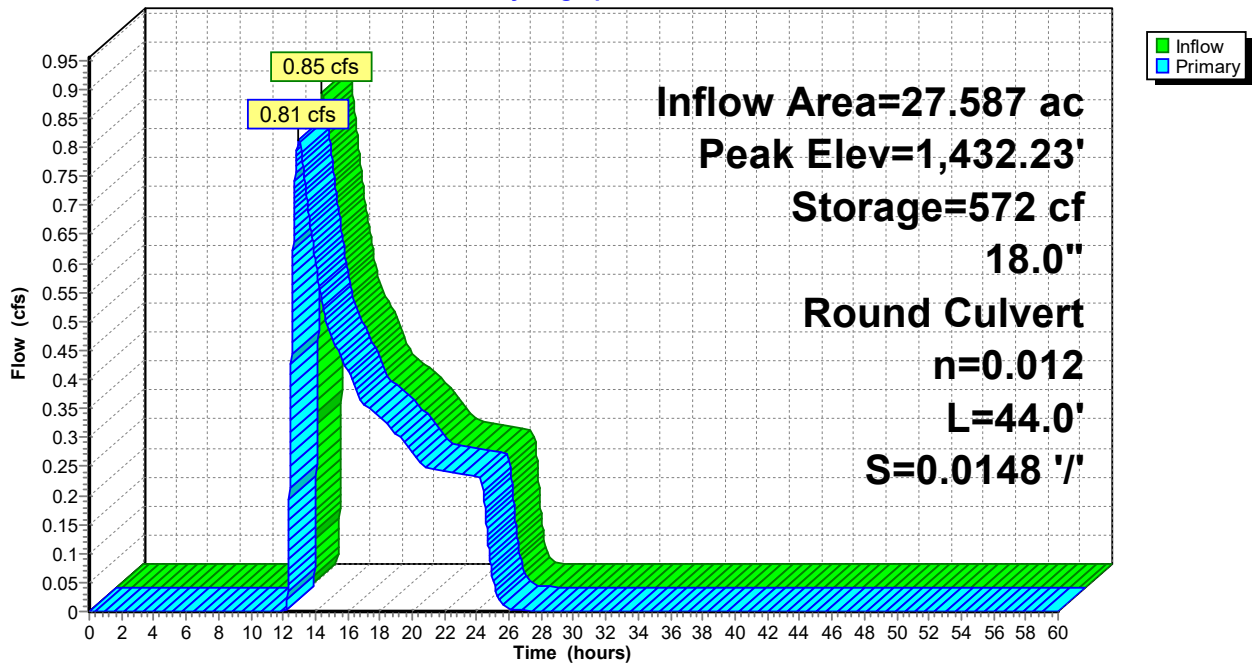
| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,431.50' | 39,033 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,431.50 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,432.00 | 1,190 | 146.0 | 198 | 198 | 1,697 | |
| 1,432.50 | 3,534 | 368.0 | 1,129 | 1,327 | 10,778 | |
| 1,433.00 | 5,795 | 497.0 | 2,309 | 3,637 | 19,660 | |
| 1,433.50 | 10,362 | 837.0 | 3,984 | 7,621 | 55,755 | |
| 1,434.00 | 16,931 | 975.0 | 6,756 | 14,377 | 75,659 | |
| 1,434.60 | 27,412 | 1,352.0 | 13,177 | 27,555 | 145,474 | |
| 1,435.00 | 30,000 | 1,500.0 | 11,479 | 39,033 | 179,068 | |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.83' | 18.0" Round Culvert L= 44.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.83' / 1,431.18' S= 0.0148 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf |

Primary OutFlow Max=0.81 cfs @ 12.97 hrs HW=1,432.23' (Free Discharge)
 ↑1=Culvert (Inlet Controls 0.81 cfs @ 2.15 fps)

Pond 4.2C: 18" Culvert

Hydrograph



Summary for Pond 4.3C: 24" Culvert

Inflow Area = 25.466 ac, 5.08% Impervious, Inflow Depth = 0.34" for 10-Yr Storm event
 Inflow = 3.30 cfs @ 12.45 hrs, Volume= 0.715 af
 Outflow = 3.30 cfs @ 12.45 hrs, Volume= 0.715 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.30 cfs @ 12.45 hrs, Volume= 0.715 af
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,432.12' @ 12.45 hrs
 Flood Elev= 1,434.65'

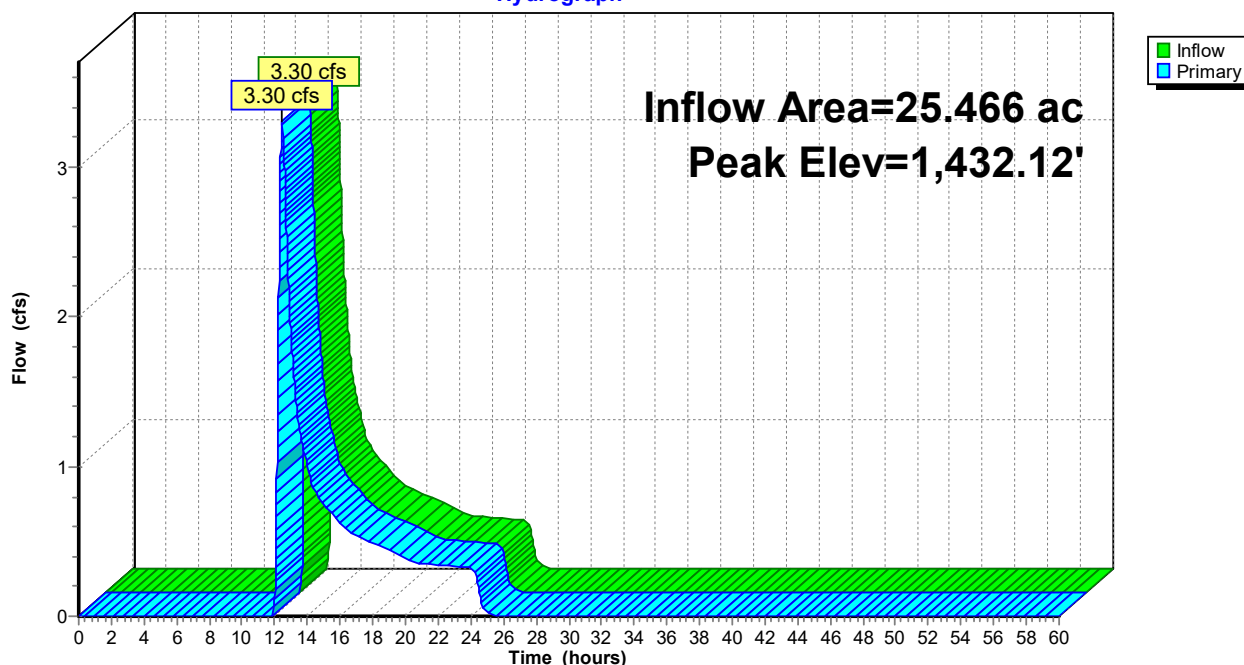
| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.35' | 24.0" Round Culvert L= 55.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.35' / 1,429.87' S= 0.0265 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf |
| #2 | Primary | 1,434.81' | 20.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |

Primary OutFlow Max=3.30 cfs @ 12.45 hrs HW=1,432.12' (Free Discharge)

- 1=Culvert (Inlet Controls 3.30 cfs @ 2.98 fps)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.3C: 24" Culvert

Hydrograph



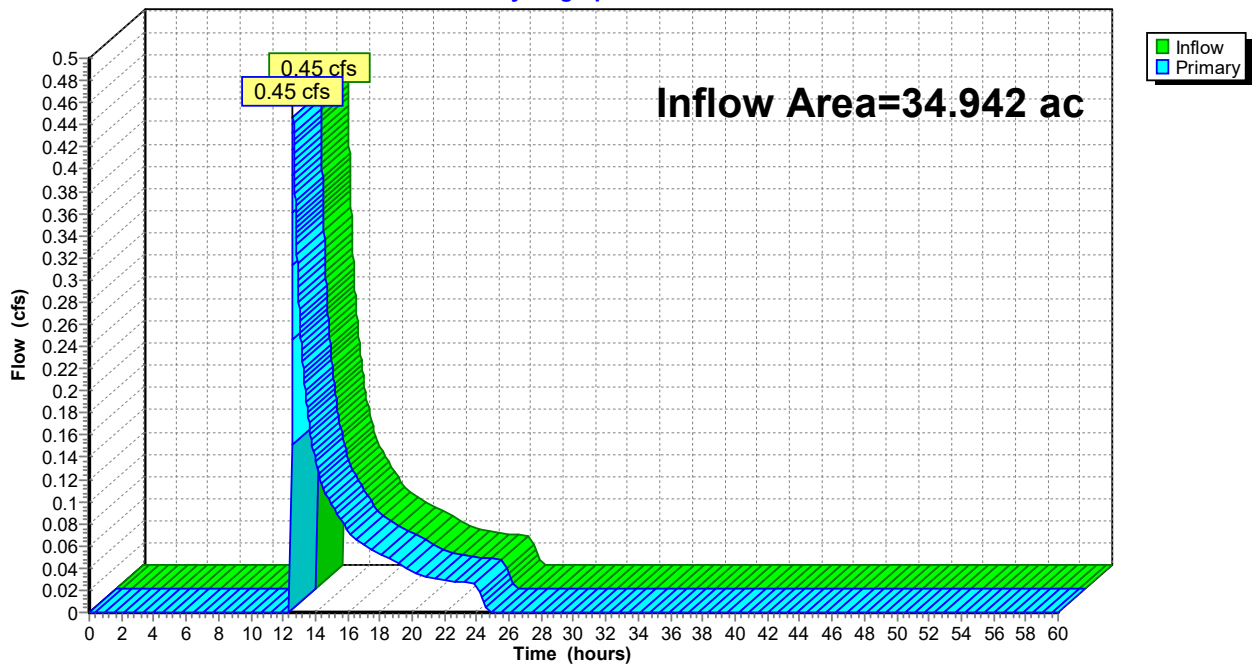
Summary for Link 1.1L:

Inflow Area = 34.942 ac, 0.04% Impervious, Inflow Depth = 0.03" for 10-Yr Storm event
Inflow = 0.45 cfs @ 12.62 hrs, Volume= 0.074 af
Primary = 0.45 cfs @ 12.62 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.1L:

Hydrograph



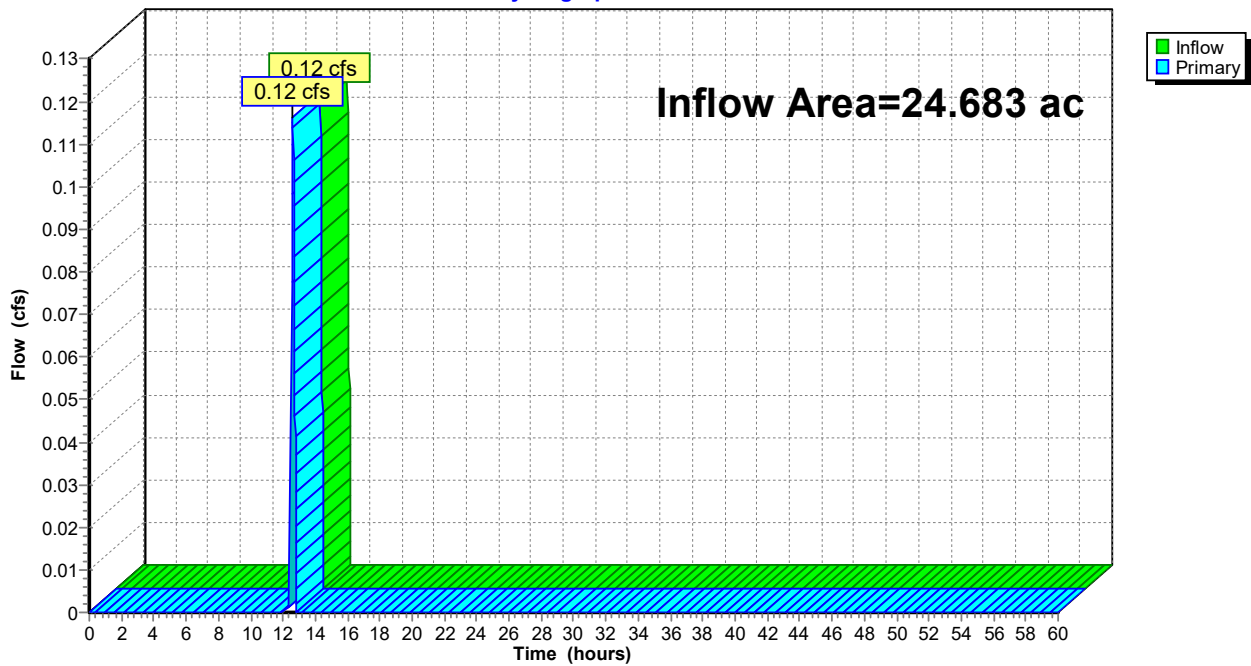
Summary for Link 1.2L:

Inflow Area = 24.683 ac, 0.06% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
Inflow = 0.12 cfs @ 12.61 hrs, Volume= 0.002 af
Primary = 0.12 cfs @ 12.61 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.2L:

Hydrograph



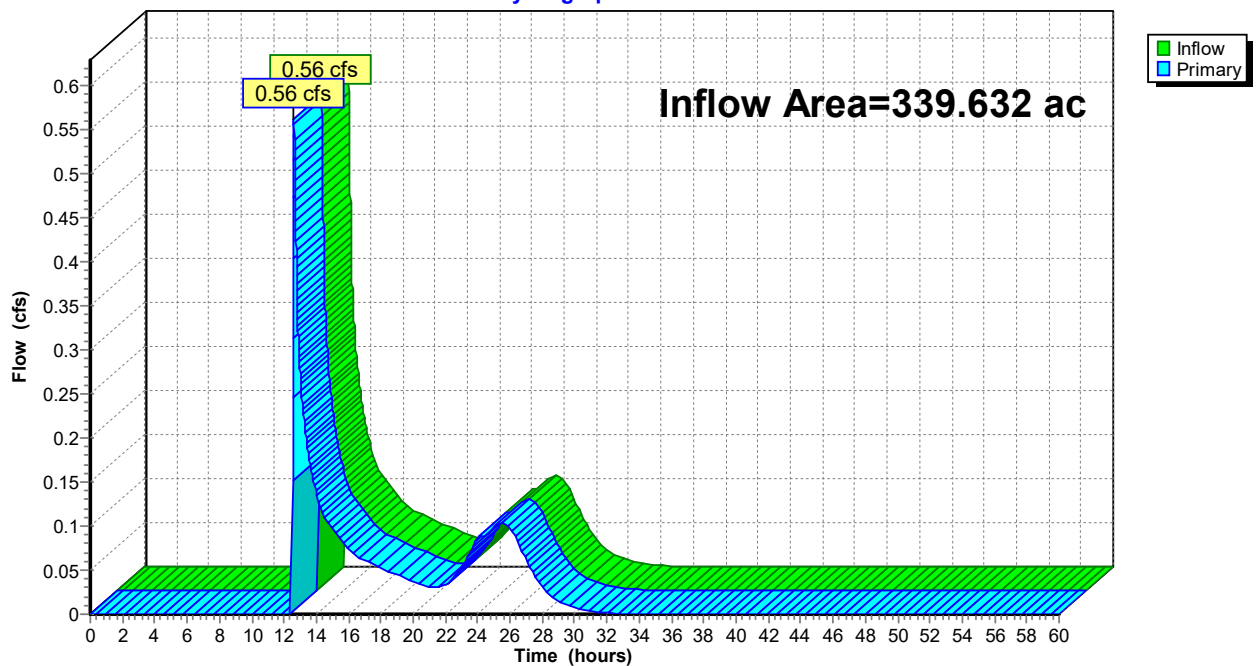
Summary for Link SP1: Study Point 1

Inflow Area = 339.632 ac, 0.01% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
Inflow = 0.56 cfs @ 12.61 hrs, Volume= 0.110 af
Primary = 0.56 cfs @ 12.61 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP1: Study Point 1

Hydrograph

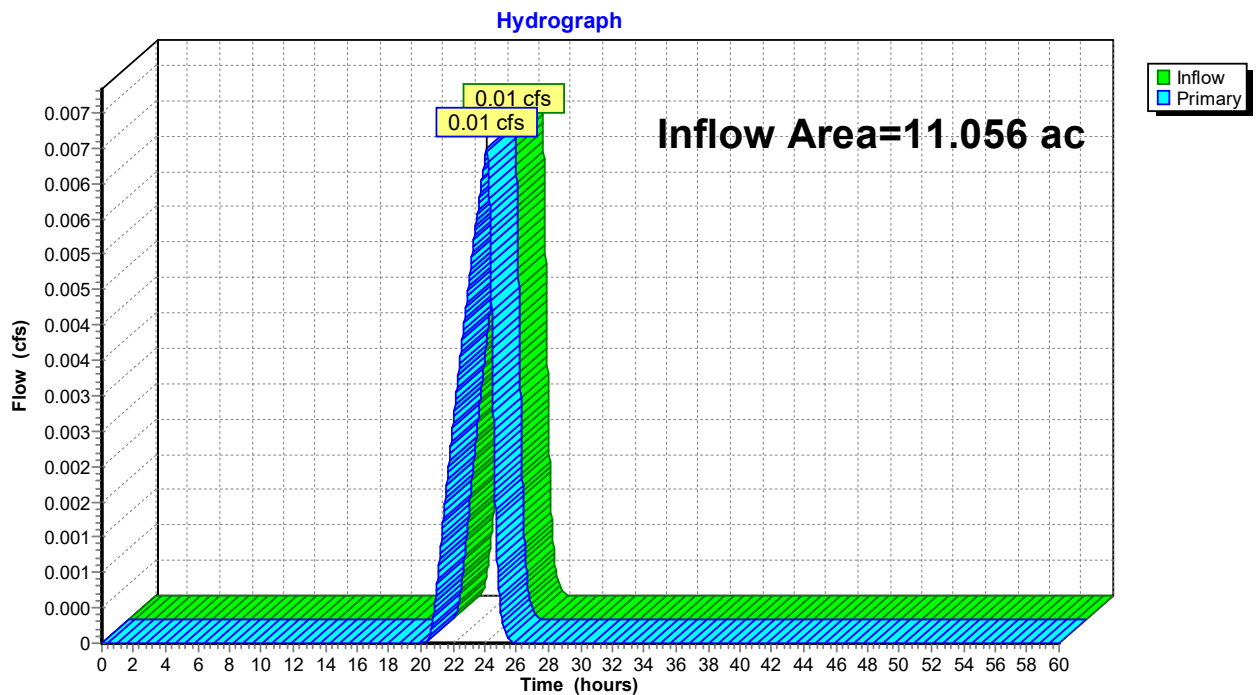


Summary for Link SP2: Study Point 2

Inflow Area = 11.056 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
Inflow = 0.01 cfs @ 24.12 hrs, Volume= 0.001 af
Primary = 0.01 cfs @ 24.12 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP2: Study Point 2



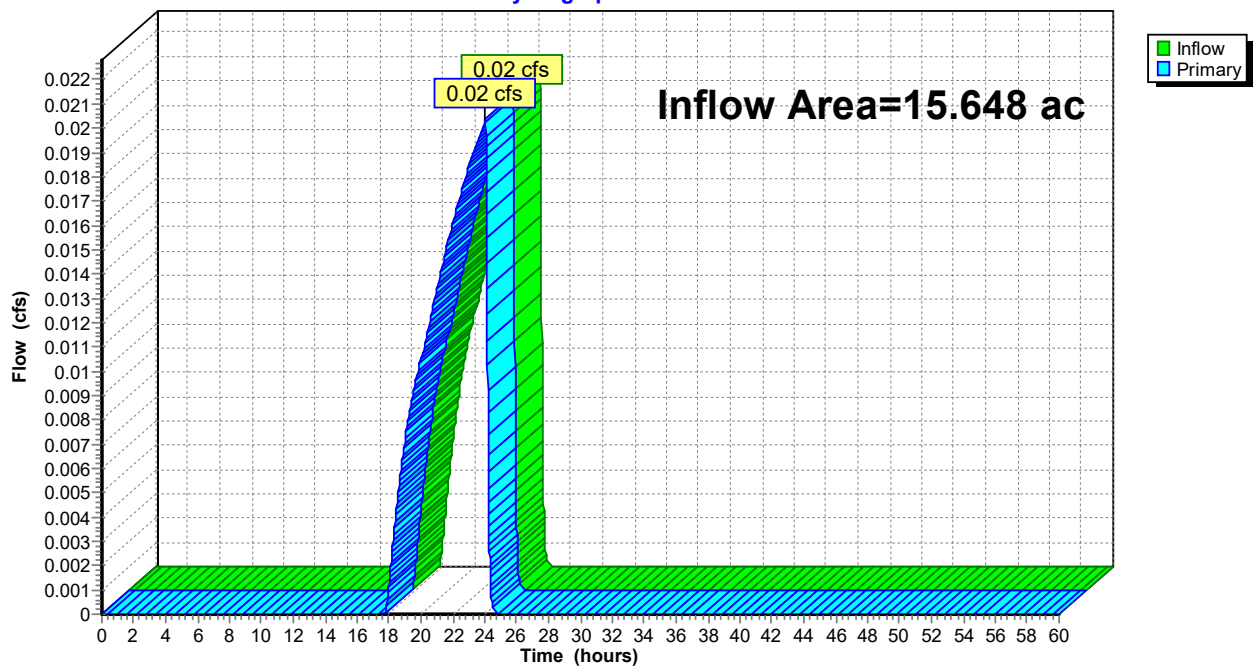
Summary for Link SP3: Study Point 3

Inflow Area = 15.648 ac, 0.56% Impervious, Inflow Depth = 0.01" for 10-Yr Storm event
Inflow = 0.02 cfs @ 24.01 hrs, Volume= 0.007 af
Primary = 0.02 cfs @ 24.01 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP3: Study Point 3

Hydrograph



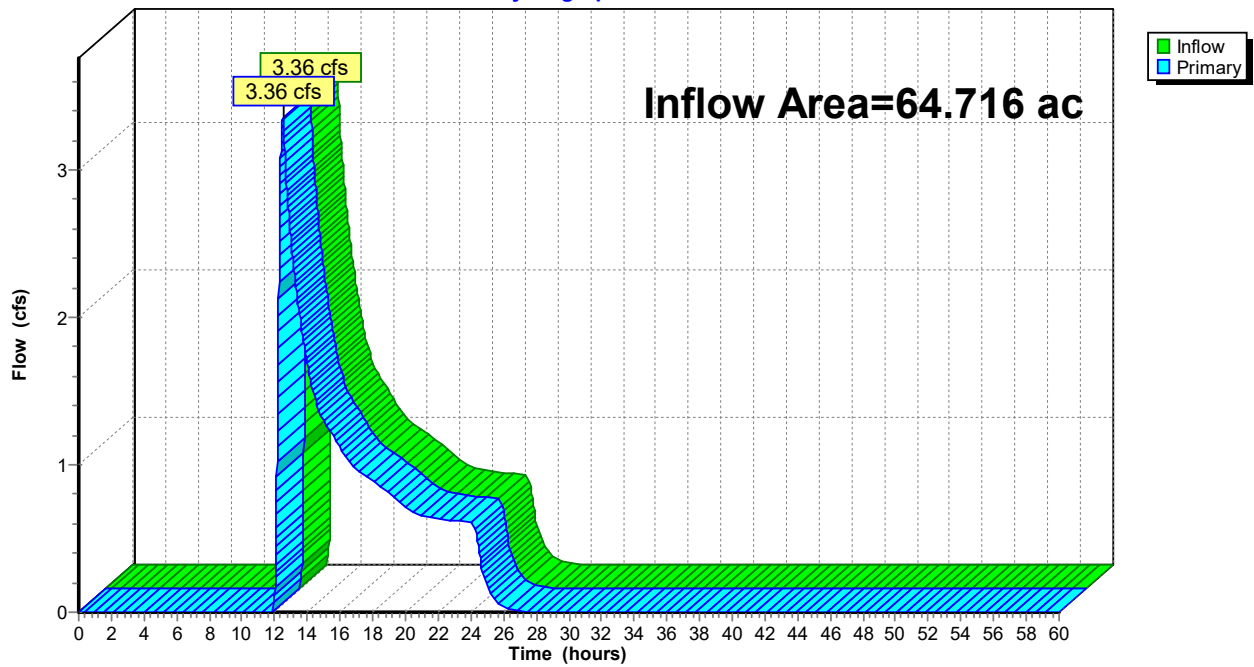
Summary for Link SP4: Study Point 4

Inflow Area = 64.716 ac, 2.50% Impervious, Inflow Depth = 0.21" for 10-Yr Storm event
Inflow = 3.36 cfs @ 12.49 hrs, Volume= 1.146 af
Primary = 3.36 cfs @ 12.49 hrs, Volume= 1.146 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP4: Study Point 4

Hydrograph

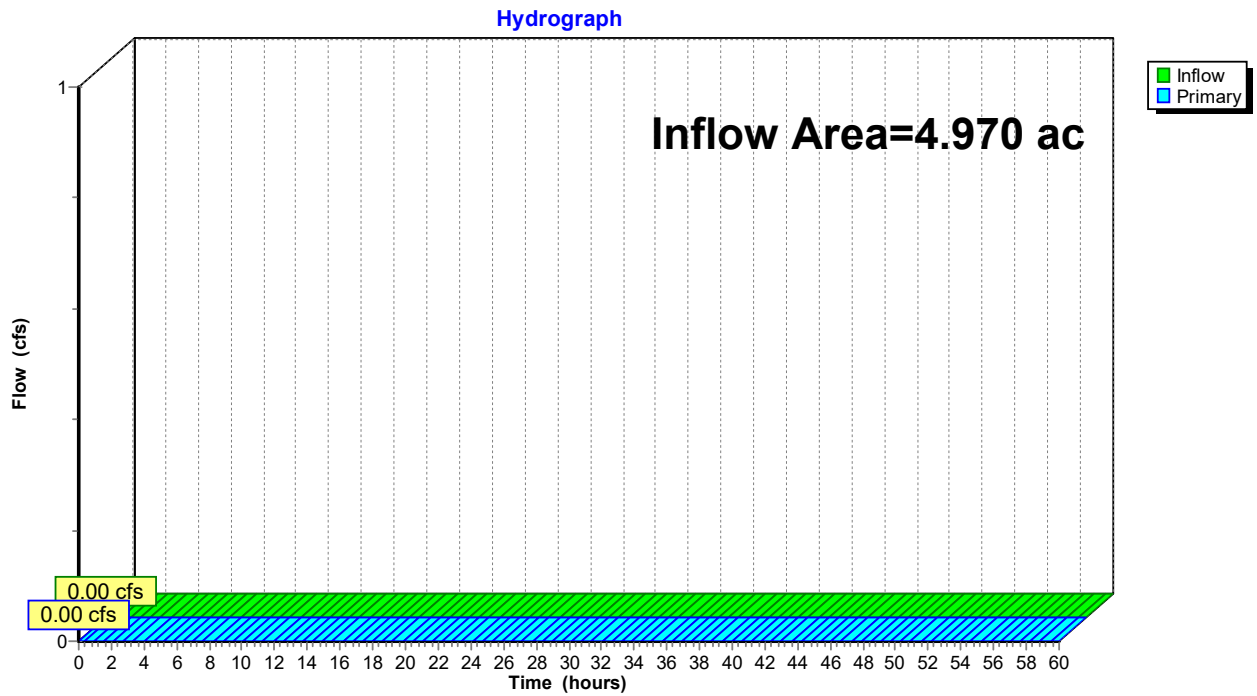


Summary for Link SP5: Study Point 5

Inflow Area = 4.970 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Yr Storm event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP5: Study Point 5



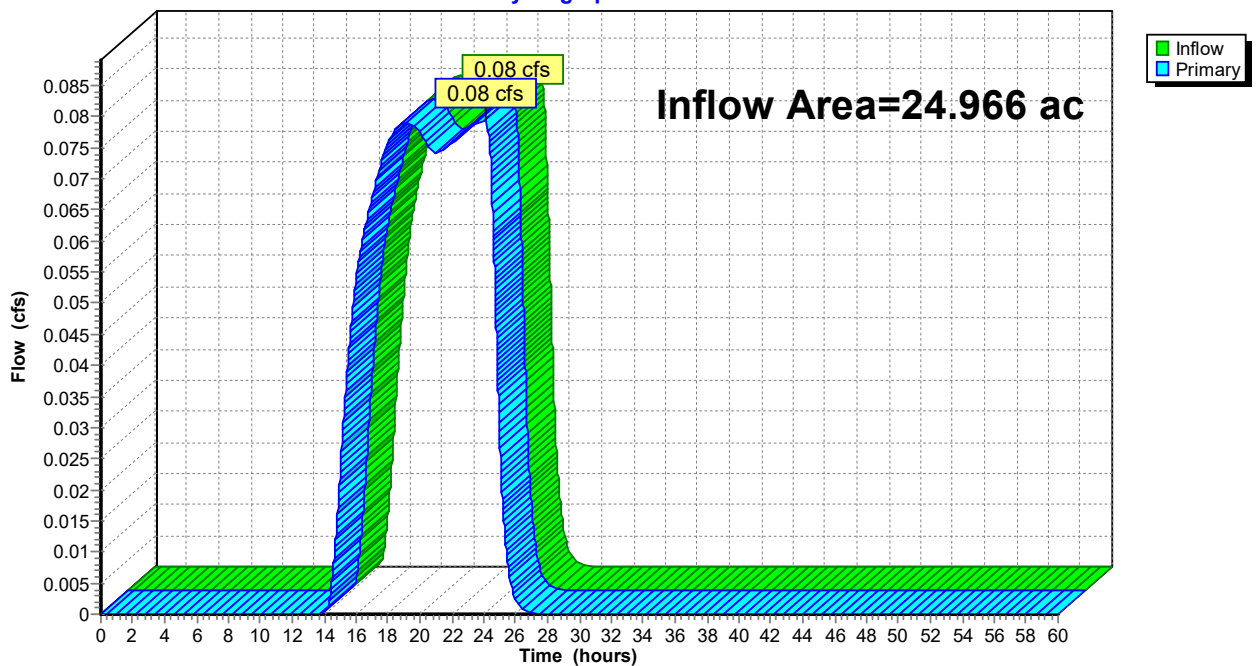
Summary for Link SP6: Study Point 6

Inflow Area = 24.966 ac, 5.81% Impervious, Inflow Depth = 0.03" for 10-Yr Storm event
Inflow = 0.08 cfs @ 24.10 hrs, Volume= 0.059 af
Primary = 0.08 cfs @ 24.10 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP6: Study Point 6

Hydrograph



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

| | |
|---|--|
| Subcatchment 1.1aS1: North Array East | Runoff Area=5.874 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=788' Tc=18.8 min CN=30 Runoff=0.02 cfs 0.012 af |
| Subcatchment 1.1aS2: North Array East | Runoff Area=8.467 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=931' Tc=21.1 min CN=30 Runoff=0.03 cfs 0.017 af |
| Subcatchment 1.1aS3: North Array West | Runoff Area=5.792 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=1,031' Tc=19.7 min CN=30 Runoff=0.02 cfs 0.012 af |
| Subcatchment 1.1aS4: North Array West | Runoff Area=12.825 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=1,562' Tc=26.1 min CN=30 Runoff=0.05 cfs 0.026 af |
| Subcatchment 1.1bS1: North Road - East | Runoff Area=1.333 ac 0.53% Impervious Runoff Depth=2.45" Tc=6.0 min CN=71 Runoff=5.85 cfs 0.272 af |
| Subcatchment 1.1bS2: North Road - West | Runoff Area=0.651 ac 1.08% Impervious Runoff Depth=2.19" Tc=6.0 min CN=68 Runoff=2.56 cfs 0.119 af |
| Subcatchment 1.2aS1: Middle Array East | Runoff Area=7.876 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=865' Tc=19.1 min CN=30 Runoff=0.03 cfs 0.016 af |
| Subcatchment 1.2aS2: Middle Array Center | Runoff Area=8.911 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=825' Tc=18.1 min CN=30 Runoff=0.03 cfs 0.018 af |
| Subcatchment 1.2aS3: Middle Array West | Runoff Area=5.500 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=882' Tc=18.5 min CN=30 Runoff=0.02 cfs 0.011 af |
| Subcatchment 1.2bS1: East Road - West | Runoff Area=0.727 ac 0.00% Impervious Runoff Depth=2.11" Tc=6.0 min CN=67 Runoff=2.75 cfs 0.128 af |
| Subcatchment 1.2bS2: South Road | Runoff Area=0.854 ac 0.47% Impervious Runoff Depth=1.41" Flow Length=308' Tc=13.7 min CN=58 Runoff=1.51 cfs 0.101 af |
| Subcatchment 1.2bS3: South Road | Runoff Area=0.815 ac 1.35% Impervious Runoff Depth=2.45" Tc=6.0 min CN=71 Runoff=3.57 cfs 0.166 af |
| Subcatchment 1.3aS1: Surface Discharge | Runoff Area=279.312 ac 0.00% Impervious Runoff Depth=0.30" Flow Length=6,771' Tc=201.7 min CN=39 Runoff=9.14 cfs 6.873 af |
| Subcatchment 1.3bS: Access Rd to Pond 3 | Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.94" Tc=6.0 min CN=51 Runoff=1.02 cfs 0.054 af |
| Subcatchment 2S: | Runoff Area=11.056 ac 0.00% Impervious Runoff Depth=0.30" Flow Length=2,342' Tc=36.0 min CN=39 Runoff=0.66 cfs 0.272 af |
| Subcatchment 3S: | Runoff Area=15.648 ac 0.56% Impervious Runoff Depth=0.34" Flow Length=886' Tc=12.7 min CN=40 Runoff=2.04 cfs 0.442 af |
| Subcatchment 4.1S: | Runoff Area=11.663 ac 2.80% Impervious Runoff Depth=0.59" Flow Length=845' Tc=15.8 min CN=45 Runoff=4.82 cfs 0.570 af |

| | |
|--|--|
| Subcatchment 4.2aS: | Runoff Area=27.117 ac 0.00% Impervious Runoff Depth=0.94" Flow Length=1,640' Tc=38.9 min CN=51 Runoff=13.31 cfs 2.121 af |
| Subcatchment 4.2bS: | Runoff Area=0.470 ac 0.00% Impervious Runoff Depth=2.53" Tc=6.0 min CN=72 Runoff=2.13 cfs 0.099 af |
| Subcatchment 4.3S: | Runoff Area=25.466 ac 5.08% Impervious Runoff Depth=1.34" Flow Length=2,280' Tc=36.5 min CN=57 Runoff=22.16 cfs 2.846 af |
| Subcatchment 5S: | Runoff Area=4.970 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=1,180' Tc=17.5 min CN=30 Runoff=0.02 cfs 0.010 af |
| Subcatchment 6S: | Runoff Area=24.966 ac 5.81% Impervious Runoff Depth=0.48" Flow Length=1,961' Tc=60.1 min CN=43 Runoff=3.11 cfs 1.002 af |
| Reach 1.1aR1: Bypass Swale | Avg. Flow Depth=0.03' Max Vel=0.41 fps Inflow=0.02 cfs 0.012 af n=0.035 L=580.0' S=0.0108 '/' Capacity=56.37 cfs Outflow=0.02 cfs 0.012 af |
| Reach 1.1aR2: Bypass Swale | Avg. Flow Depth=0.03' Max Vel=0.76 fps Inflow=0.05 cfs 0.029 af n=0.035 L=557.4' S=0.0284 '/' Capacity=91.27 cfs Outflow=0.05 cfs 0.029 af |
| Reach 1.1aR3: Bypass Swale | Avg. Flow Depth=0.04' Max Vel=0.90 fps Inflow=0.07 cfs 0.041 af n=0.035 L=557.5' S=0.0352 '/' Capacity=101.68 cfs Outflow=0.07 cfs 0.041 af |
| Reach 1.1aR4: Bypass Swale | Avg. Flow Depth=0.05' Max Vel=1.10 fps Inflow=0.12 cfs 0.066 af n=0.035 L=580.5' S=0.0362 '/' Capacity=103.04 cfs Outflow=0.12 cfs 0.066 af |
| Reach 1.1bR1: North Road Conveyance | Avg. Flow Depth=0.42' Max Vel=2.90 fps Inflow=5.85 cfs 0.272 af n=0.035 L=1,733.0' S=0.0240 '/' Capacity=111.65 cfs Outflow=3.95 cfs 0.272 af |
| Reach 1.1bR2: North Road Conveyance | Avg. Flow Depth=0.45' Max Vel=3.81 fps Inflow=6.08 cfs 0.391 af n=0.035 L=593.3' S=0.0380 '/' Capacity=140.36 cfs Outflow=5.77 cfs 0.391 af |
| Reach 1.2aR1: Bypass Swale | Avg. Flow Depth=0.03' Max Vel=0.54 fps Inflow=0.03 cfs 0.016 af n=0.035 L=524.2' S=0.0188 '/' Capacity=74.30 cfs Outflow=0.03 cfs 0.016 af |
| Reach 1.2aR2: Bypass Swale | Avg. Flow Depth=0.04' Max Vel=0.71 fps Inflow=0.06 cfs 0.034 af n=0.035 L=556.0' S=0.0204 '/' Capacity=77.47 cfs Outflow=0.06 cfs 0.034 af |
| Reach 1.2aR3: Bypass Swale | Avg. Flow Depth=0.04' Max Vel=0.63 fps Inflow=0.08 cfs 0.045 af n=0.035 L=249.0' S=0.0153 '/' Capacity=81.84 cfs Outflow=0.08 cfs 0.045 af |
| Reach 1.2bR1: East Road Conveyance | Avg. Flow Depth=0.27' Max Vel=3.17 fps Inflow=2.75 cfs 0.128 af n=0.035 L=731.4' S=0.0456 '/' Capacity=79.22 cfs Outflow=2.43 cfs 0.128 af |
| Reach 1.2bR2: South Road Conveyance | Avg. Flow Depth=0.42' Max Vel=2.49 fps Inflow=3.77 cfs 0.228 af n=0.035 L=604.5' S=0.0177 '/' Capacity=95.76 cfs Outflow=3.39 cfs 0.228 af |
| Reach 1.2bR3: South Road Conveyance | Avg. Flow Depth=0.52' Max Vel=2.88 fps Inflow=5.95 cfs 0.394 af n=0.035 L=755.9' S=0.0187 '/' Capacity=98.64 cfs Outflow=5.31 cfs 0.394 af |
| Reach 4.1R1: Bypass Swale | Avg. Flow Depth=0.79' Max Vel=3.69 fps Inflow=4.82 cfs 0.570 af n=0.035 L=570.0' S=0.0303 '/' Capacity=54.88 cfs Outflow=4.59 cfs 0.570 af |
| Reach 4.1R2: Ex Stream | Avg. Flow Depth=0.31' Max Vel=1.85 fps Inflow=10.59 cfs 2.700 af n=0.035 L=740.0' S=0.0099 '/' Capacity=588.81 cfs Outflow=10.53 cfs 2.700 af |

| | | | | |
|---|------------------------------|---------------------|-------------------|--------------------|
| Reach 4.2bR: Conveyance Swale | Avg. Flow Depth=0.25' | Max Vel=2.91 fps | Inflow=2.13 cfs | 0.099 af |
| | n=0.035 | L=565.0' | S=0.0432 '/ | Capacity=77.09 cfs |
| | | | Outflow=1.95 cfs | 0.099 af |
| Pond 1.1aC1: TS1 Culvert | | Peak Elev=1,487.60' | Inflow=0.02 cfs | 0.012 af |
| | 36.3" x 22.5", R=18.8"/51.0" | Pipe Arch Culvert | n=0.012 | L=47.0' |
| | | | S=0.0162 '/ | Outflow=0.02 cfs |
| | | | | 0.012 af |
| Pond 1.1aC2: TS2 Culvert | | Peak Elev=1,470.83' | Inflow=0.05 cfs | 0.029 af |
| | 48.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0262 '/ | Outflow=0.05 cfs |
| | | | | 0.029 af |
| Pond 1.1aC3: TS3 Culvert | | Peak Elev=1,449.58' | Inflow=0.07 cfs | 0.041 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.2' |
| | | | S=0.0405 '/ | Outflow=0.07 cfs |
| | | | | 0.041 af |
| Pond 1.1aP: North Road Bypass OC | | Peak Elev=1,428.53' | Storage=0.029 af | Inflow=0.12 cfs |
| | | Discarded=0.01 cfs | 0.028 af | Primary=0.11 cfs |
| | | | 0.031 af | Outflow=0.12 cfs |
| | | | | 0.059 af |
| Pond 1.1bC1: TS4 Culvert | | Peak Elev=1,450.46' | Inflow=3.95 cfs | 0.272 af |
| | 18.0" | Round Culvert | n=0.012 | L=45.9' |
| | | | S=0.0486 '/ | Outflow=3.95 cfs |
| | | | | 0.272 af |
| Pond 1.1bP1: Dry Swale | | Peak Elev=1,426.74' | Storage=428 cf | Inflow=5.77 cfs |
| | | Discarded=0.01 cfs | 0.005 af | Primary=5.77 cfs |
| | | | 0.386 af | Outflow=5.77 cfs |
| | | | | 0.391 af |
| Pond 1.1bP2: North Road Detention Pond | | Peak Elev=1,424.23' | Storage=0.056 af | Inflow=5.77 cfs |
| | | Discarded=0.02 cfs | 0.053 af | Primary=5.63 cfs |
| | | | 0.318 af | Outflow=5.65 cfs |
| | | | | 0.372 af |
| Pond 1.2aC1: TS 7 Culvert | | Peak Elev=1,444.24' | Inflow=0.03 cfs | 0.016 af |
| | 36.0" x 24.0" | Box Culvert | n=0.012 | L=47.0' |
| | | | S=0.0215 '/ | Outflow=0.03 cfs |
| | | | | 0.016 af |
| Pond 1.2aC2: TS8 Culvert | | Peak Elev=1,431.67' | Inflow=0.06 cfs | 0.034 af |
| | 60.0" x 24.0" | Box Culvert | n=0.012 | L=47.5' |
| | | | S=0.0114 '/ | Outflow=0.06 cfs |
| | | | | 0.034 af |
| Pond 1.2aP: South Road Bypass OC | | Peak Elev=1,424.42' | Storage=0.002 af | Inflow=0.08 cfs |
| | | Discarded=0.08 cfs | 0.045 af | Secondary=0.00 cfs |
| | | | 0.000 af | Outflow=0.08 cfs |
| | | | | 0.045 af |
| Pond 1.2bC1: East Road Culvert | | Peak Elev=1,455.17' | Inflow=2.43 cfs | 0.128 af |
| | 15.0" | Round Culvert | n=0.012 | L=41.6' |
| | | | S=0.0173 '/ | Outflow=2.43 cfs |
| | | | | 0.128 af |
| Pond 1.2bC2: TS6 Culvert | | Peak Elev=1,444.38' | Inflow=3.39 cfs | 0.228 af |
| | 18.0" | Round Culvert | n=0.012 | L=44.3' |
| | | | S=0.0151 '/ | Outflow=3.39 cfs |
| | | | | 0.228 af |
| Pond 1.2bP: South Road Treatment Pond | | Peak Elev=1,426.26' | Storage=0.038 af | Inflow=5.31 cfs |
| | | Discarded=0.31 cfs | 0.232 af | Primary=4.98 cfs |
| | | | 0.162 af | Outflow=5.30 cfs |
| | | | | 0.394 af |
| Pond 1.3P: Pond 3 - Access Rd West | | Peak Elev=1,456.62' | Storage=566 cf | Inflow=1.02 cfs |
| | | Discarded=0.14 cfs | 0.054 af | Primary=0.00 cfs |
| | | | 0.000 af | Outflow=0.14 cfs |
| | | | | 0.054 af |
| Pond 4.2bP: Pond 4 - Access Rd East | | Peak Elev=1,448.33' | Storage=1,559 cf | Inflow=1.95 cfs |
| | | Discarded=0.14 cfs | 0.089 af | Primary=0.55 cfs |
| | | | 0.011 af | Outflow=0.69 cfs |
| | | | | 0.099 af |
| Pond 4.2C: 18" Culvert | | Peak Elev=1,433.72' | Storage=10,213 cf | Inflow=13.46 cfs |
| | 18.0" | Round Culvert | n=0.012 | L=44.0' |
| | | | S=0.0148 '/ | Outflow=9.09 cfs |
| | | | | 2.131 af |
| Pond 4.3C: 24" Culvert | | Peak Elev=1,434.50' | Inflow=22.16 cfs | 2.846 af |
| | | | | Outflow=22.16 cfs |
| | | | | 2.846 af |

| | |
|--------------------------------|---|
| Link 1.1L: | Inflow=5.63 cfs 0.349 af Primary=5.63 cfs 0.349 af |
| Link 1.2L: | Inflow=4.98 cfs 0.162 af Primary=4.98 cfs 0.162 af |
| Link SP1: Study Point 1 | Inflow=10.61 cfs 7.384 af Primary=10.61 cfs 7.384 af |
| Link SP2: Study Point 2 | Inflow=0.66 cfs 0.272 af Primary=0.66 cfs 0.272 af |
| Link SP3: Study Point 3 | Inflow=2.04 cfs 0.442 af Primary=2.04 cfs 0.442 af |
| Link SP4: Study Point 4 | Inflow=31.02 cfs 5.546 af Primary=31.02 cfs 5.546 af |
| Link SP5: Study Point 5 | Inflow=0.02 cfs 0.010 af Primary=0.02 cfs 0.010 af |
| Link SP6: Study Point 6 | Inflow=3.11 cfs 1.002 af Primary=3.11 cfs 1.002 af |

Total Runoff Area = 460.988 ac Runoff Volume = 15.185 af Average Runoff Depth = 0.40"
99.31% Pervious = 457.801 ac 0.69% Impervious = 3.187 ac

Summary for Subcatchment 1.1aS1: North Array East

Runoff = 0.02 cfs @ 24.00 hrs, Volume= 0.012 af, Depth= 0.02"
 Routed to Reach 1.1aR1 : Bypass Swale

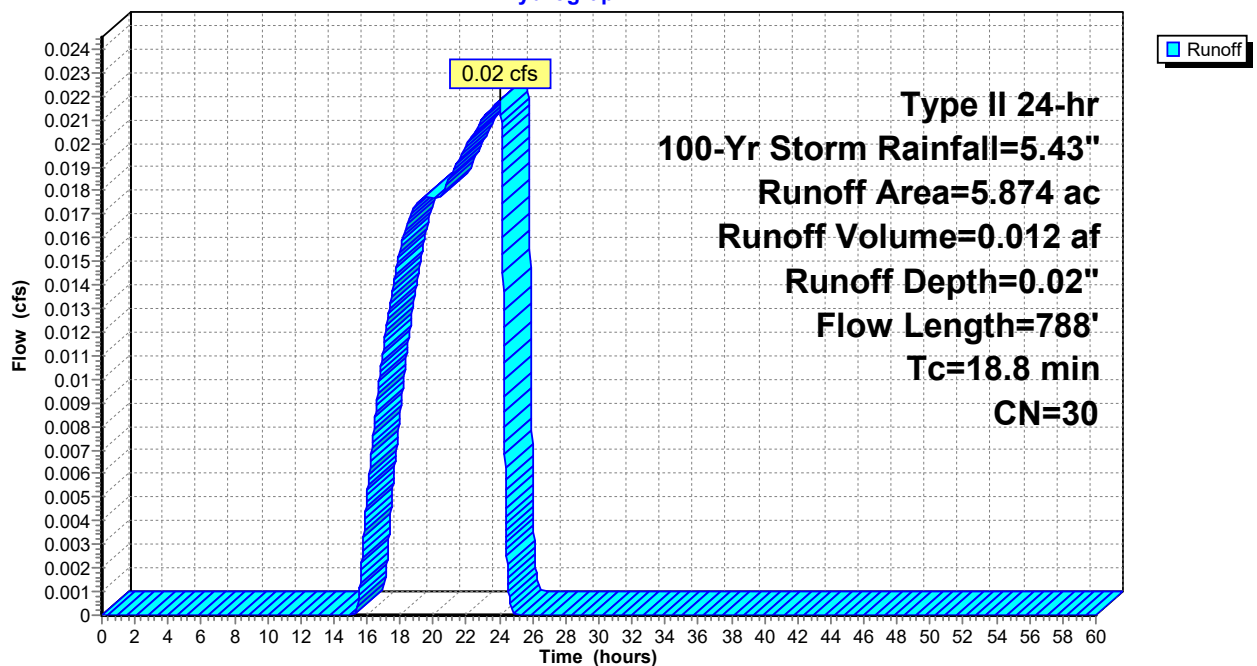
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.874 | 30 | Meadow, non-grazed, HSG A |
| 5.874 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 11.7 | 100 | 0.0499 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.1 | 688 | 0.0526 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.8 | 788 | Total | | | |

Subcatchment 1.1aS1: North Array East

Hydrograph



Summary for Subcatchment 1.1aS2: North Array East Center

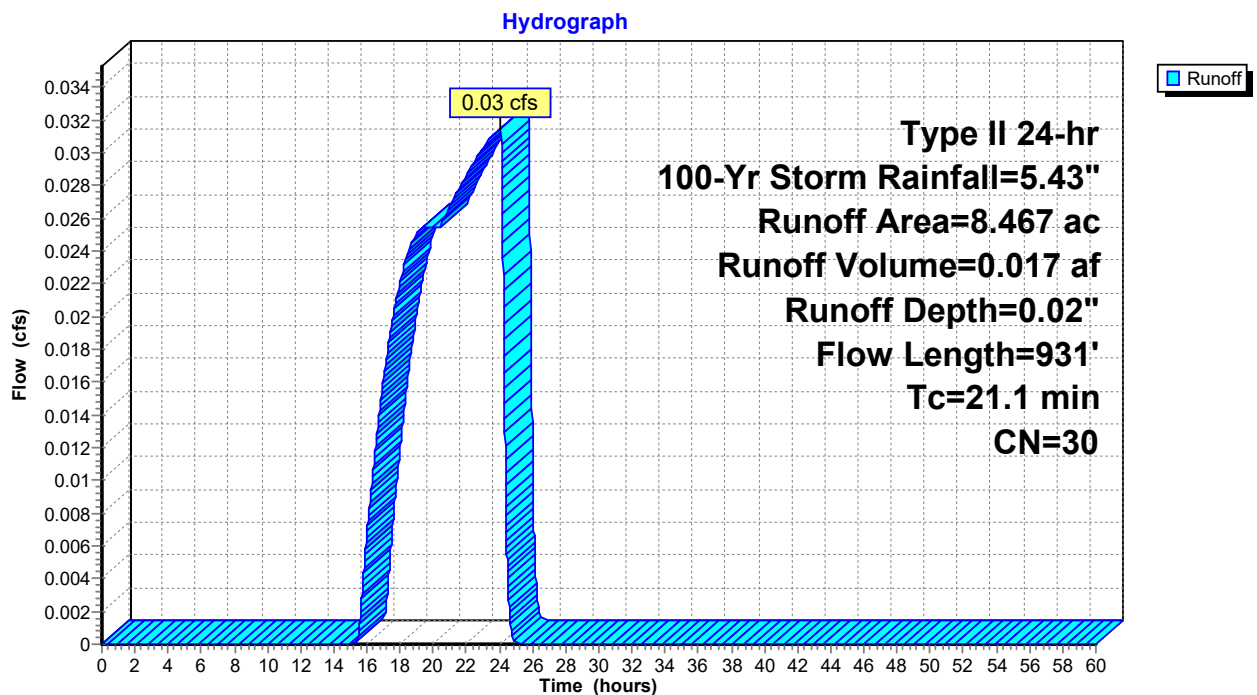
Runoff = 0.03 cfs @ 24.03 hrs, Volume= 0.017 af, Depth= 0.02"
 Routed to Reach 1.1aR2 : Bypass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.467 | 30 | Meadow, non-grazed, HSG A |
| 8.467 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 11.9 | 100 | 0.0476 | 0.14 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.2 | 831 | 0.0463 | 1.51 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 21.1 | 931 | Total | | | |

Subcatchment 1.1aS2: North Array East Center



Summary for Subcatchment 1.1aS3: North Array West Center

Runoff = 0.02 cfs @ 24.01 hrs, Volume= 0.012 af, Depth= 0.02"
 Routed to Reach 1.1aR3 : Bypass Swale

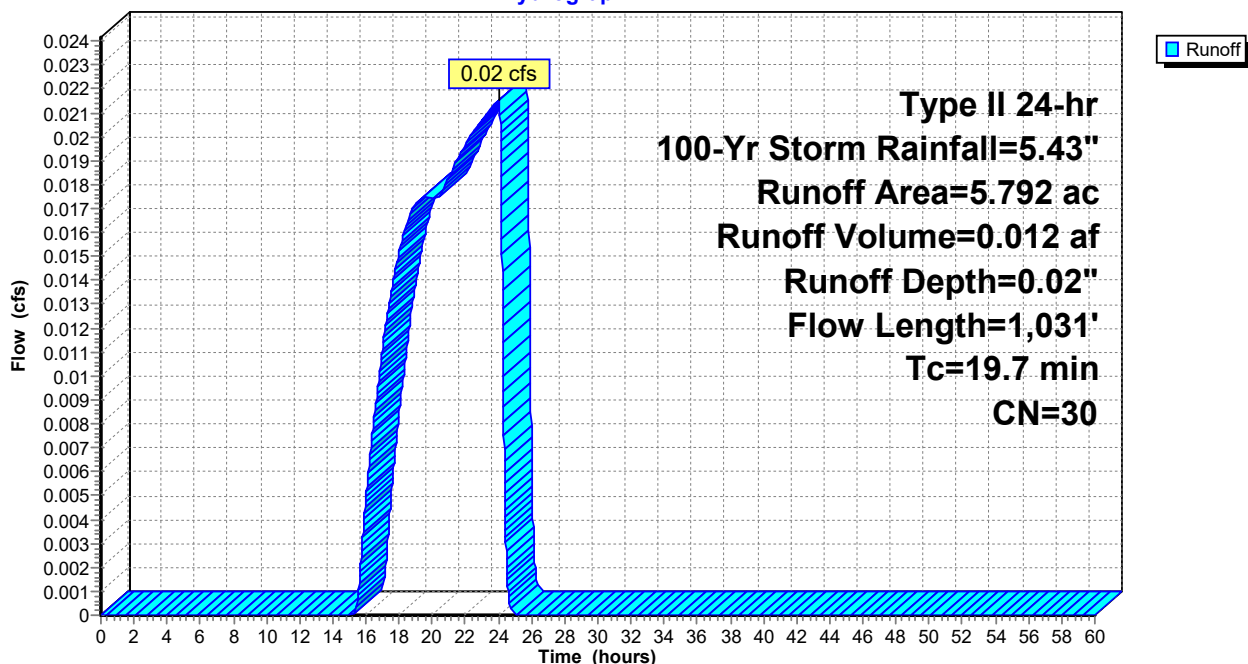
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.792 | 30 | Meadow, non-grazed, HSG A |
| 5.792 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.7 | 100 | 0.0618 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 9.0 | 931 | 0.0601 | 1.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.7 | 1,031 | Total | | | |

Subcatchment 1.1aS3: North Array West Center

Hydrograph



Summary for Subcatchment 1.1aS4: North Array West

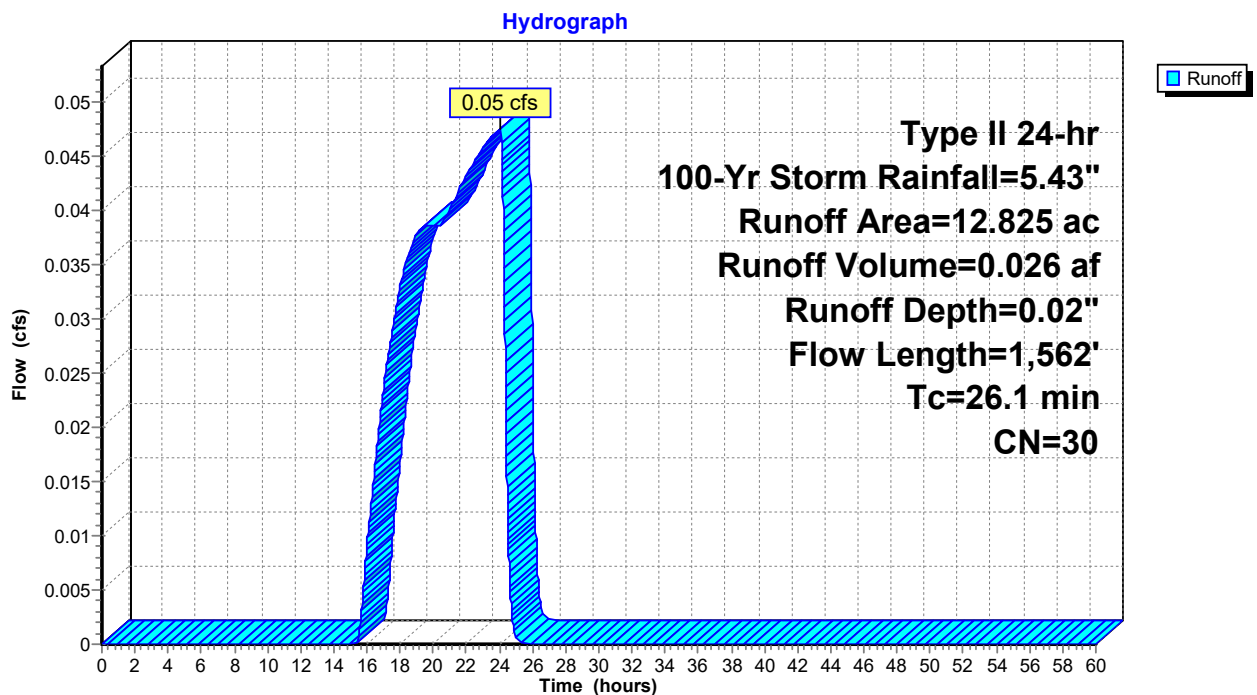
Runoff = 0.05 cfs @ 24.04 hrs, Volume= 0.026 af, Depth= 0.02"
 Routed to Reach 1.1aR4 : Bypass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 12.825 | 30 | Meadow, non-grazed, HSG A |
| 12.825 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 11.1 | 100 | 0.0560 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 15.0 | 1,462 | 0.0540 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 26.1 | 1,562 | Total | | | |

Subcatchment 1.1aS4: North Array West



Summary for Subcatchment 1.1bS1: North Road - East

Runoff = 5.85 cfs @ 11.98 hrs, Volume= 0.272 af, Depth= 2.45"
 Routed to Reach 1.1bR1 : North Road Conveyance Swale

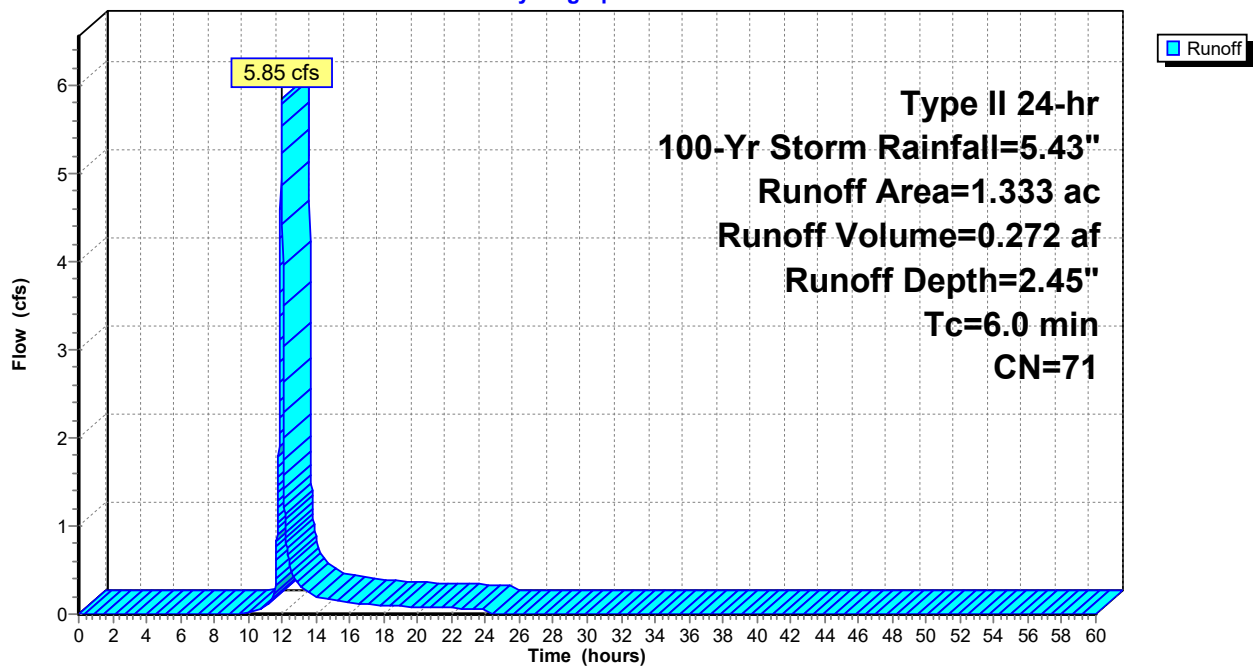
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.507 | 30 | Meadow, non-grazed, HSG A |
| 0.819 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 1.333 | 71 | Weighted Average |
| 1.326 | | 99.47% Pervious Area |
| 0.007 | | 0.53% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS1: North Road - East

Hydrograph



Summary for Subcatchment 1.1bS2: North Road - West

Runoff = 2.56 cfs @ 11.98 hrs, Volume= 0.119 af, Depth= 2.19"
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

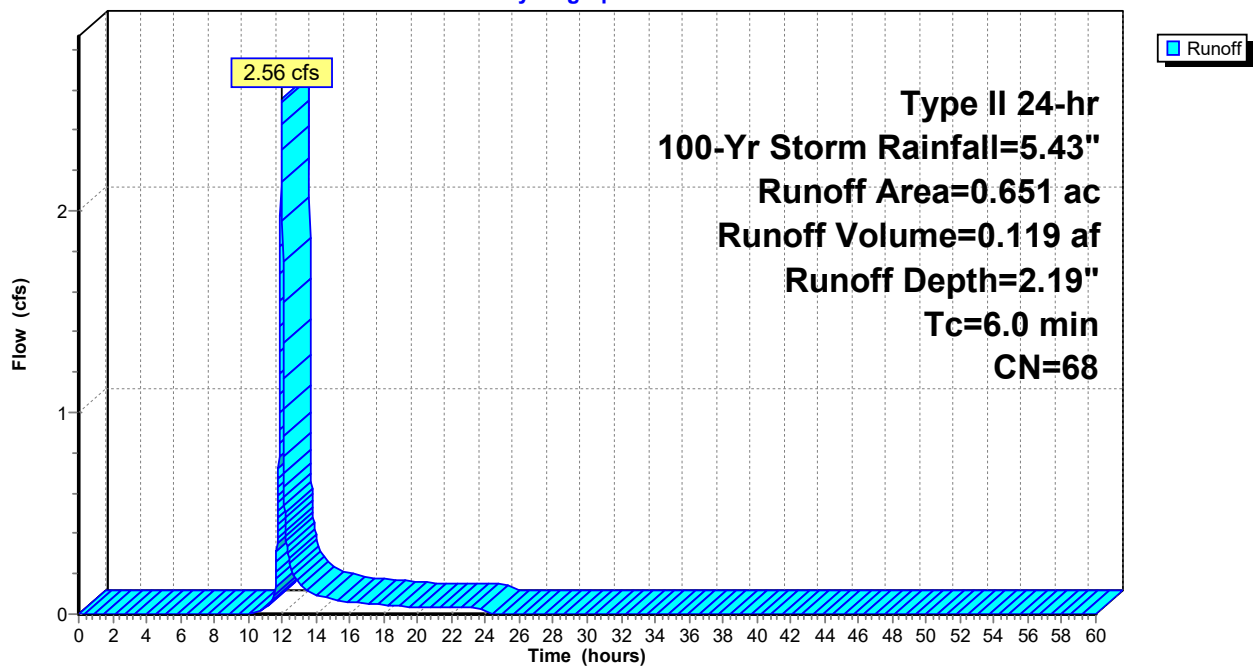
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.279 | 30 | Meadow, non-grazed, HSG A |
| 0.365 | 96 | Gravel surface, HSG A |
| 0.007 | 98 | Roofs, HSG A |
| 0.651 | 68 | Weighted Average |
| 0.644 | | 98.92% Pervious Area |
| 0.007 | | 1.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.1bS2: North Road - West

Hydrograph



Summary for Subcatchment 1.2aS1: Middle Array East

Runoff = 0.03 cfs @ 24.00 hrs, Volume= 0.016 af, Depth= 0.02"
 Routed to Reach 1.2aR1 : Bypass Swale

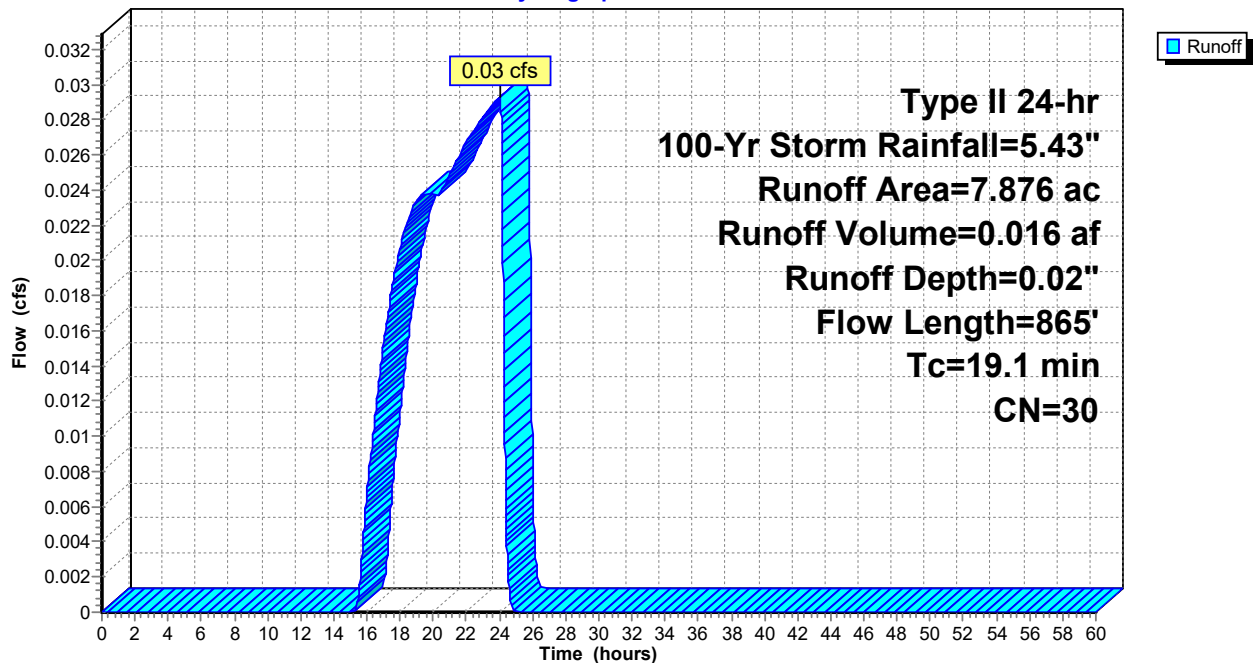
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 7.876 | 30 | Meadow, non-grazed, HSG A |
| 7.876 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.6 | 100 | 0.0628 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.5 | 765 | 0.0459 | 1.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 19.1 | 865 | Total | | | |

Subcatchment 1.2aS1: Middle Array East

Hydrograph



Summary for Subcatchment 1.2aS2: Middle Array Center

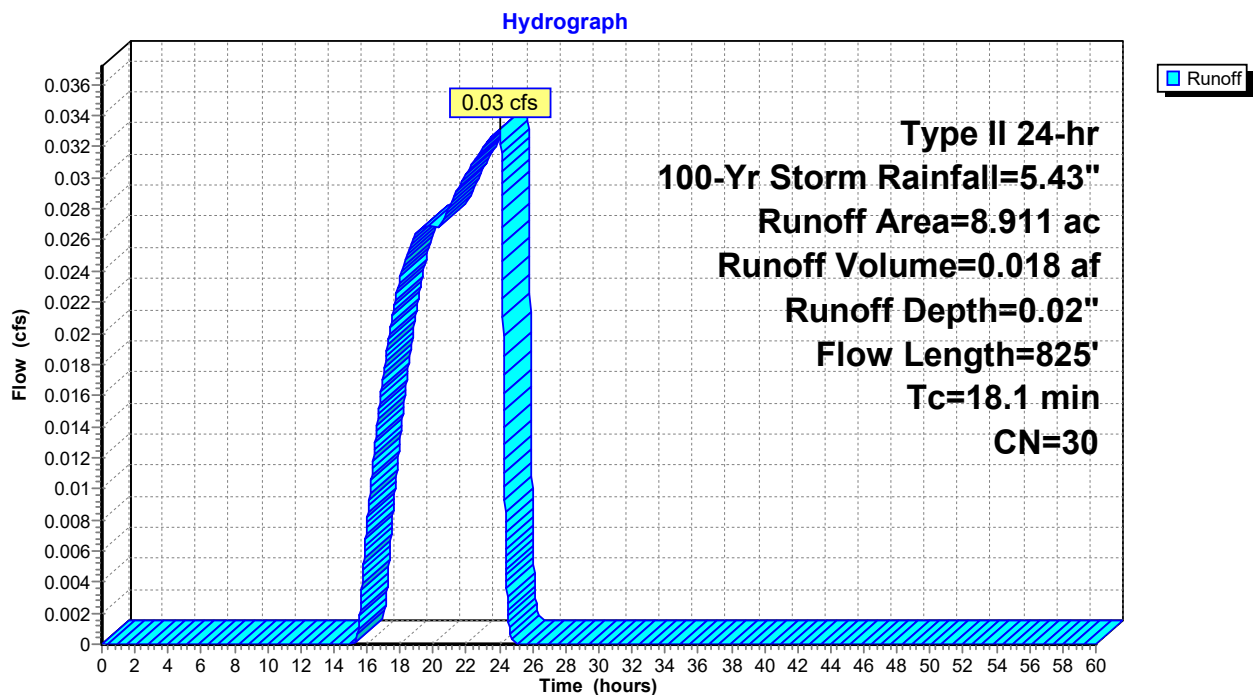
Runoff = 0.03 cfs @ 24.03 hrs, Volume= 0.018 af, Depth= 0.02"
 Routed to Reach 1.2aR2 : Bypass Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 8.911 | 30 | Meadow, non-grazed, HSG A |
| 8.911 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.8 | 100 | 0.0607 | 0.15 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 7.3 | 725 | 0.0559 | 1.66 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.1 | 825 | Total | | | |

Subcatchment 1.2aS2: Middle Array Center



Summary for Subcatchment 1.2aS3: Middle Array West

Runoff = 0.02 cfs @ 24.03 hrs, Volume= 0.011 af, Depth= 0.02"
 Routed to Reach 1.2aR3 : Bypass Swale

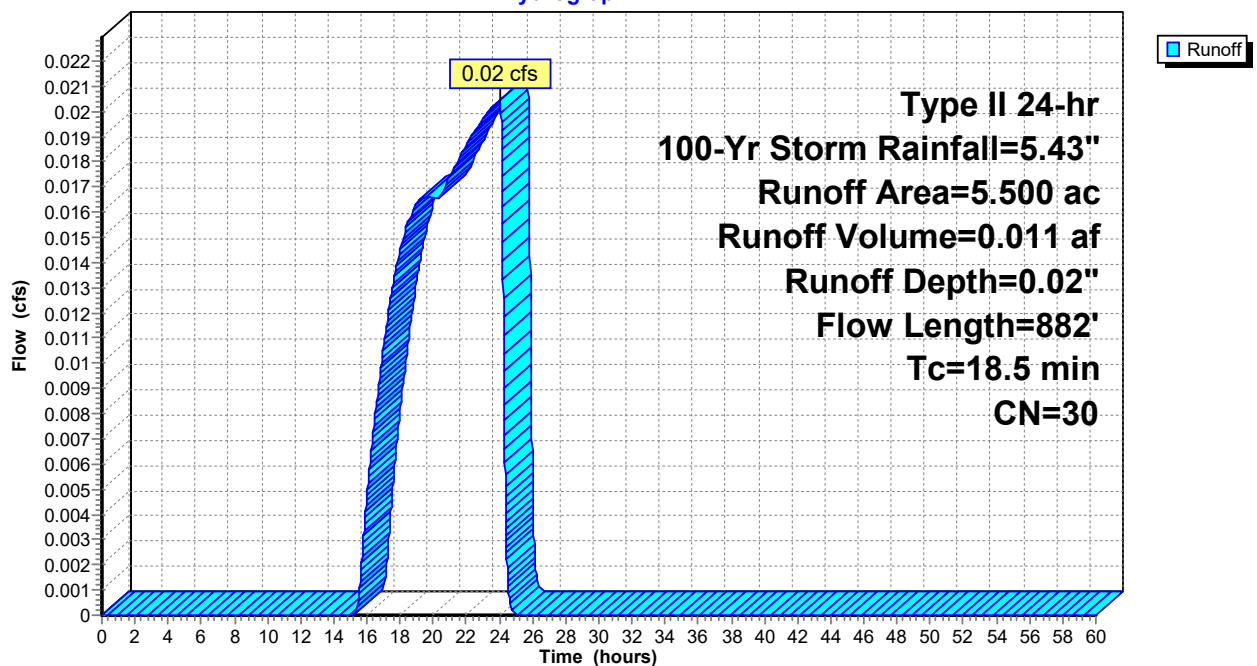
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 5.500 | 30 | Meadow, non-grazed, HSG A |
| 5.500 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---|
| 10.4 | 100 | 0.0660 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 8.1 | 782 | 0.0529 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 18.5 | 882 | Total | | | |

Subcatchment 1.2aS3: Middle Array West

Hydrograph



Summary for Subcatchment 1.2bS1: East Road - West Ditch

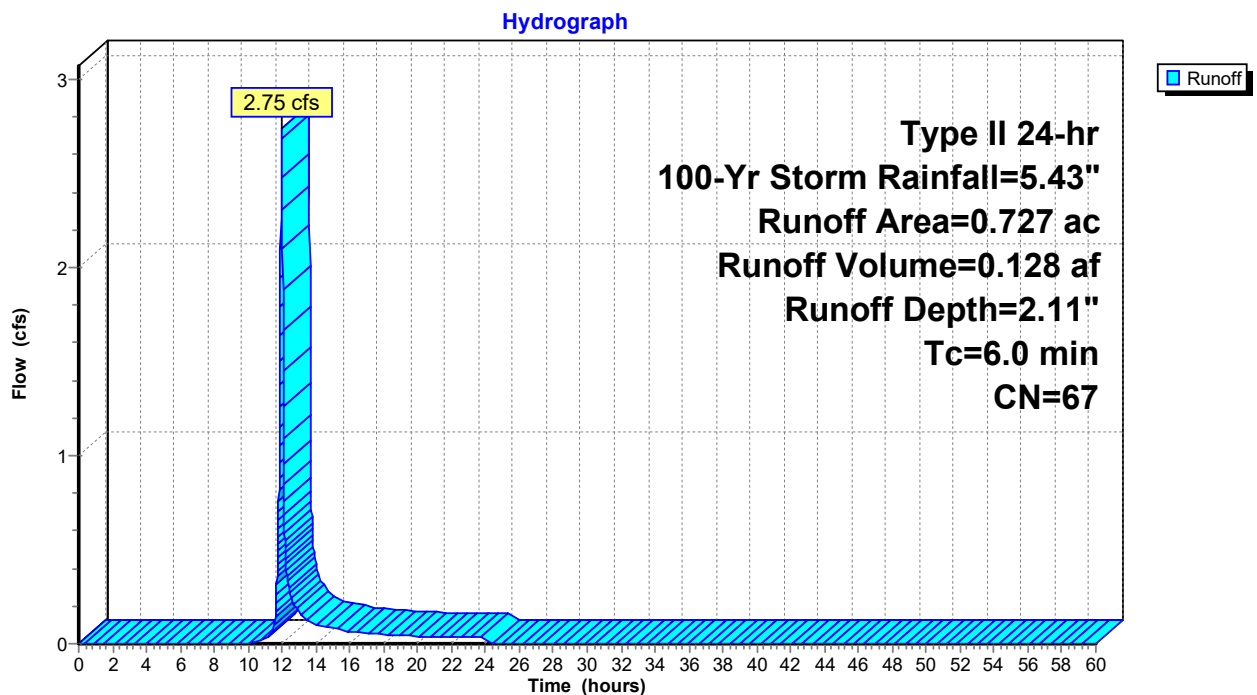
Runoff = 2.75 cfs @ 11.98 hrs, Volume= 0.128 af, Depth= 2.11"
 Routed to Reach 1.2bR1 : East Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.410 | 96 | Gravel surface, HSG A |
| 0.317 | 30 | Meadow, non-grazed, HSG A |
| 0.727 | 67 | Weighted Average |
| 0.727 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS1: East Road - West Ditch



Summary for Subcatchment 1.2bS2: South Road

Runoff = 1.51 cfs @ 12.07 hrs, Volume= 0.101 af, Depth= 1.41"
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

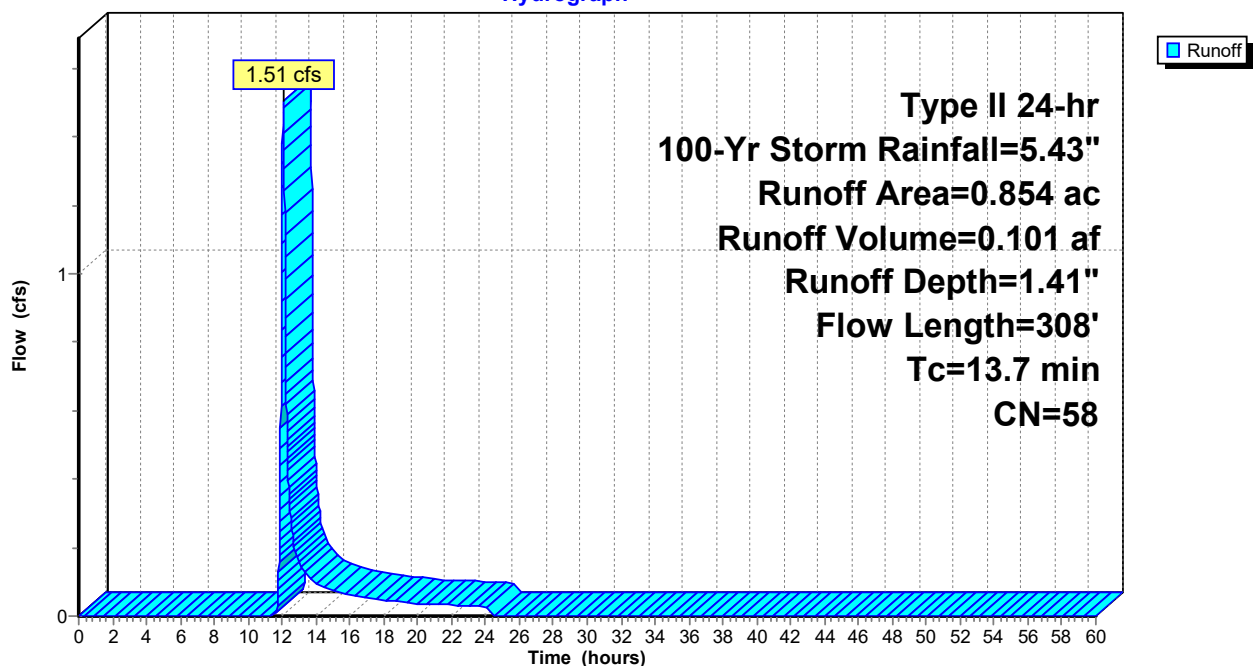
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.498 | 30 | Meadow, non-grazed, HSG A |
| * 0.352 | 96 | Gravel surface |
| * 0.004 | 98 | Roofs |
| 0.854 | 58 | Weighted Average |
| 0.850 | | 99.53% Pervious Area |
| 0.004 | | 0.47% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.0 | 35 | 0.0516 | 0.12 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 0.4 | 25 | 0.0310 | 1.06 | | Sheet Flow, Smooth surfaces n= 0.011 P2= 2.31" |
| 5.9 | 40 | 0.0429 | 0.11 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.4 | 208 | 0.0442 | 1.47 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 13.7 | 308 | Total | | | |

Subcatchment 1.2bS2: South Road

Hydrograph



Summary for Subcatchment 1.2bS3: South Road

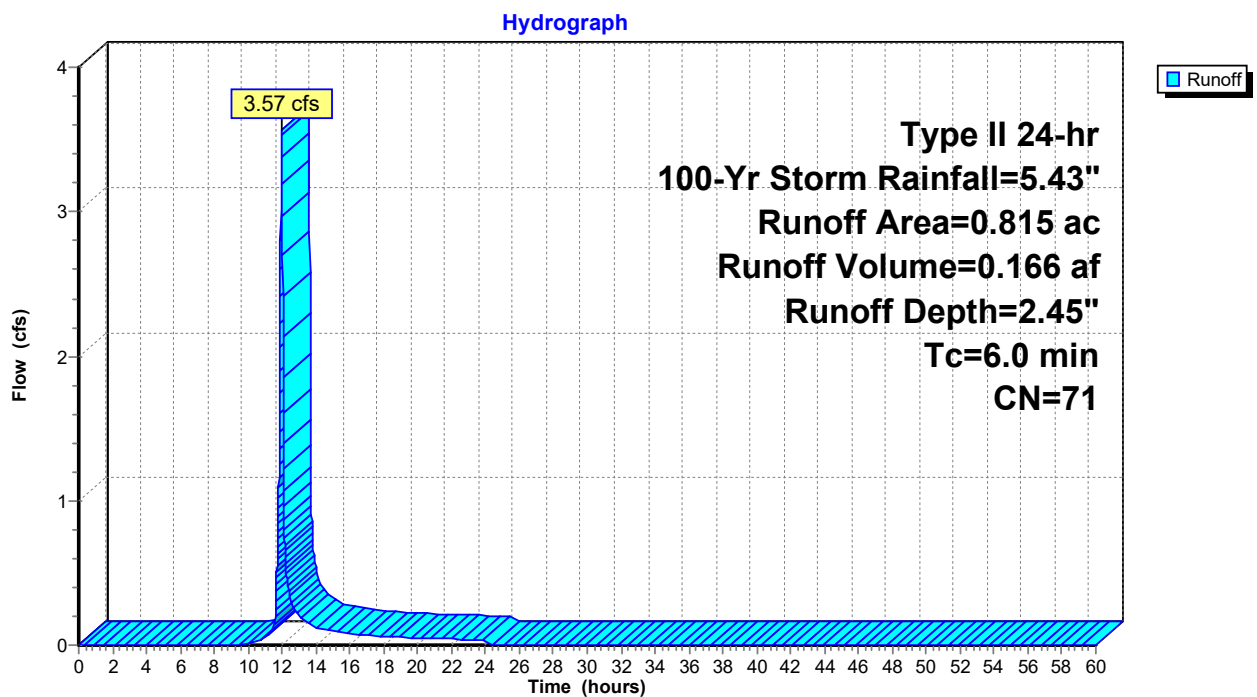
Runoff = 3.57 cfs @ 11.98 hrs, Volume= 0.166 af, Depth= 2.45"
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.313 | 30 | Meadow, non-grazed, HSG A |
| 0.491 | 96 | Gravel surface, HSG A |
| * 0.011 | 98 | Roofs |
| 0.815 | 71 | Weighted Average |
| 0.804 | | 98.65% Pervious Area |
| 0.011 | | 1.35% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.2bS3: South Road



Summary for Subcatchment 1.3aS1: Surface Discharge

Runoff = 9.14 cfs @ 15.91 hrs, Volume= 6.873 af, Depth= 0.30"
 Routed to Link SP1 : Study Point 1

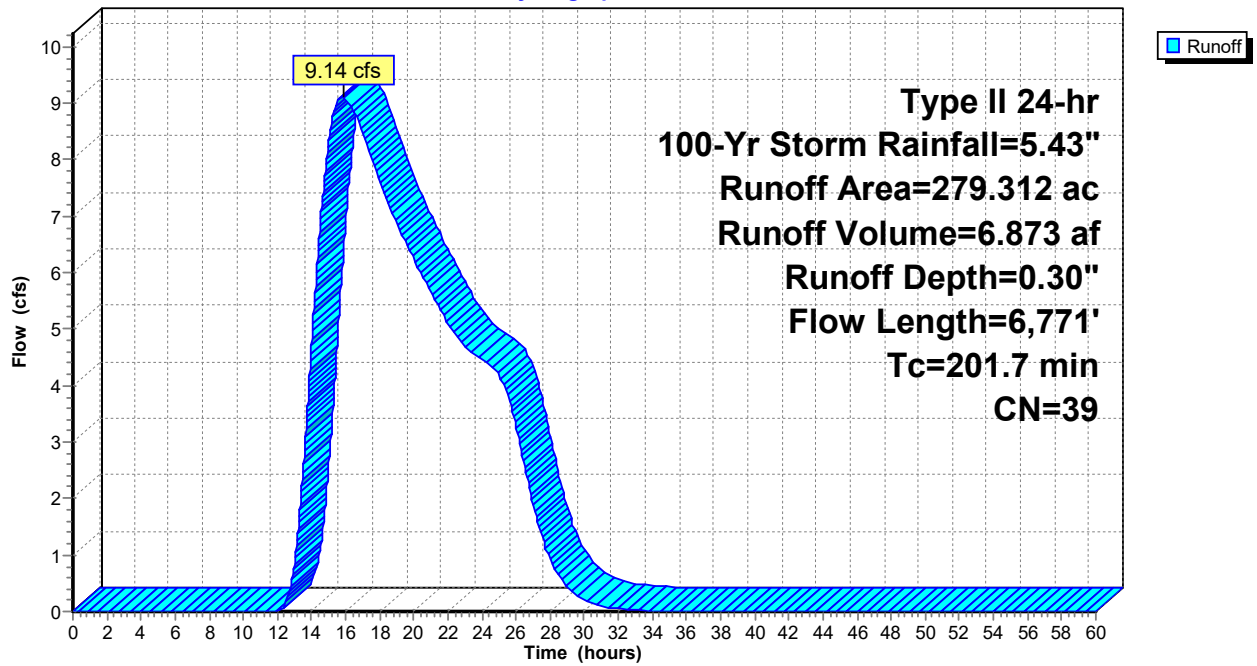
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.754 | 96 | Gravel surface |
| 144.649 | 30 | Meadow, non-grazed, HSG A |
| 0.566 | 58 | Meadow, non-grazed, HSG B |
| 25.274 | 71 | Meadow, non-grazed, HSG C |
| 61.692 | 30 | Woods, Good, HSG A |
| 32.754 | 55 | Woods, Good, HSG B |
| 13.623 | 70 | Woods, Good, HSG C |
| 279.312 | 39 | Weighted Average |
| 279.312 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 14.8 | 100 | 0.0764 | 0.11 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 4.7 | 581 | 0.1683 | 2.05 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 25.7 | 1,199 | 0.0241 | 0.78 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.8 | 189 | 0.0157 | 3.84 | 76.82 | Channel Flow, Rerouted Stream Area= 20.0 sf Perim= 32.6' r= 0.61' n= 0.035 Earth, dense weeds |
| 154.9 | 4,646 | 0.0051 | 0.50 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.8 | 56 | 0.0566 | 1.19 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 201.7 | 6,771 | Total | | | |

Subcatchment 1.3aS1: Surface Discharge

Hydrograph



Summary for Subcatchment 1.3bS: Access Rd to Pond 3

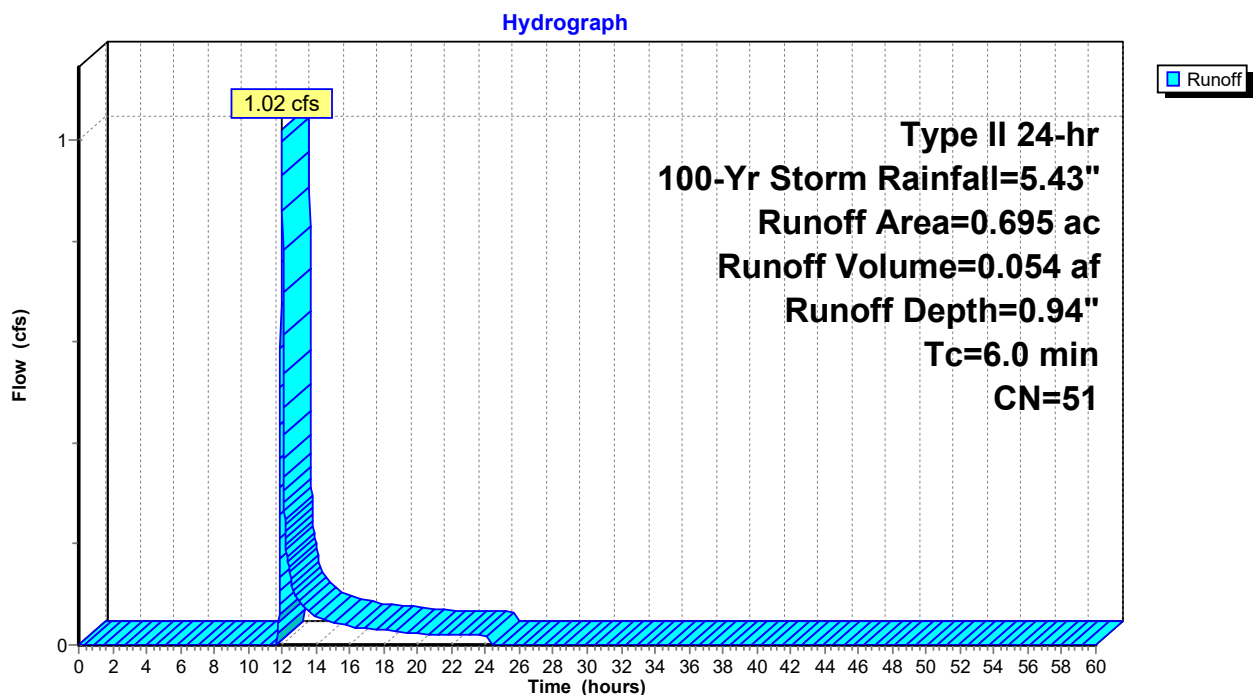
Runoff = 1.02 cfs @ 11.99 hrs, Volume= 0.054 af, Depth= 0.94"
 Routed to Pond 1.3P : Pond 3 - Access Rd West

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|------------------------------|
| 0.473 | 30 | Meadow, non-grazed, HSG A |
| * 0.063 | 96 | Gravel surface, HSG A, Redev |
| * 0.159 | 96 | Gravel surface, HSG A |
| 0.695 | 51 | Weighted Average |
| 0.695 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 1.3bS: Access Rd to Pond 3



Summary for Subcatchment 2S:

Runoff = 0.66 cfs @ 12.61 hrs, Volume= 0.272 af, Depth= 0.30"
 Routed to Link SP2 : Study Point 2

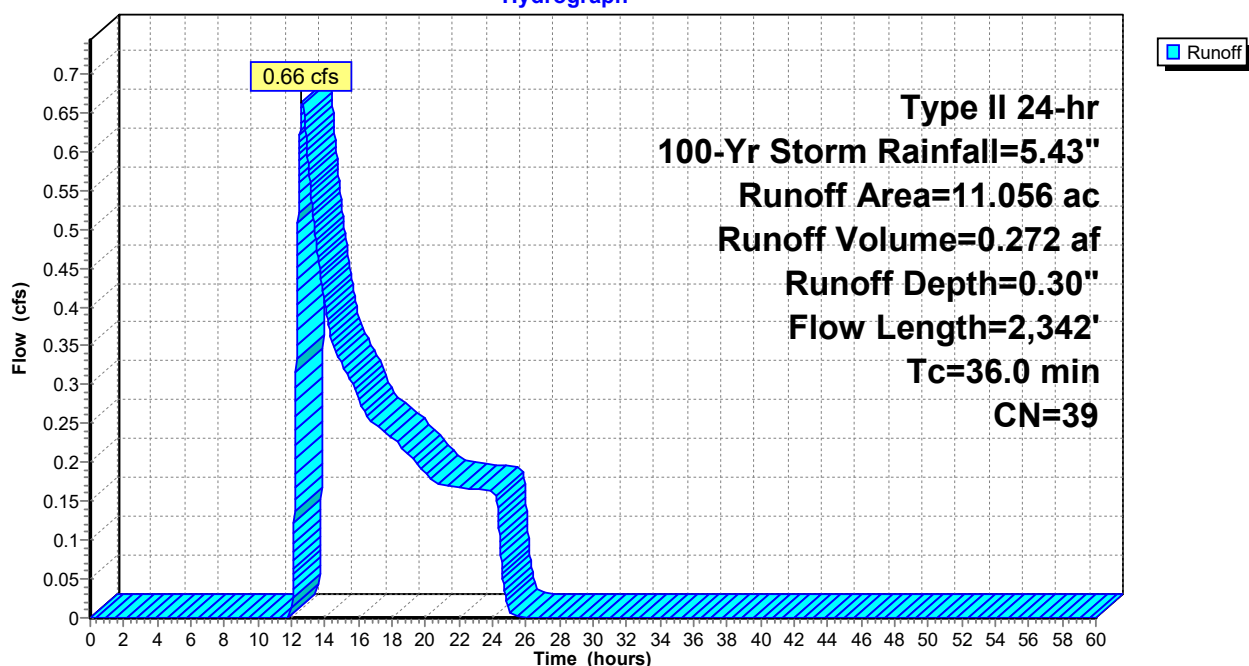
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| 1.417 | 96 | Gravel surface, HSG A |
| 0.573 | 39 | >75% Grass cover, Good, HSG A |
| 6.530 | 30 | Meadow, non-grazed, HSG A |
| 2.536 | 30 | Woods, Good, HSG A |
| 11.056 | 39 | Weighted Average |
| 11.056 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.7 | 100 | 0.0624 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 2.7 | 614 | 0.0535 | 3.72 | | Shallow Concentrated Flow, Unpaved Kv= 16.1 fps |
| 12.1 | 1,184 | 0.0543 | 1.63 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.9 | 115 | 0.0407 | 1.01 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.6 | 68 | 0.1443 | 1.90 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 8.0 | 261 | 0.0118 | 0.54 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 36.0 | 2,342 | Total | | | |

Subcatchment 2S:

Hydrograph



Summary for Subcatchment 3S:

Runoff = 2.04 cfs @ 12.13 hrs, Volume= 0.442 af, Depth= 0.34"
 Routed to Link SP3 : Study Point 3

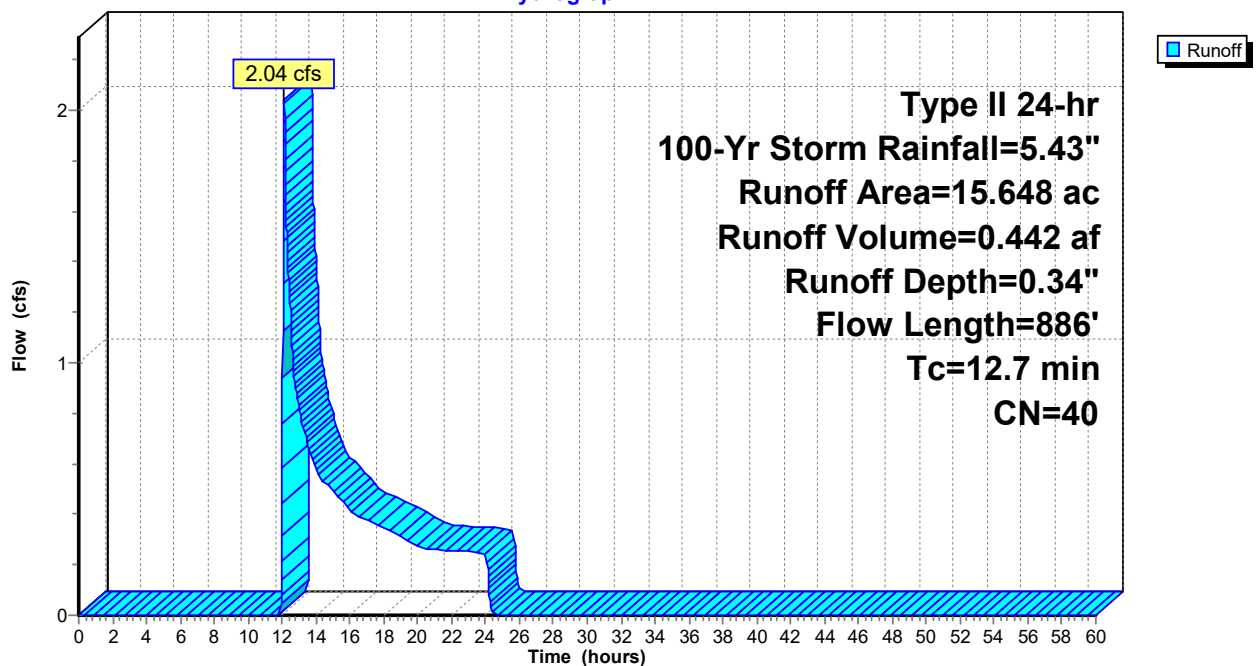
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.088 | 98 | Paved Roads & Rooftops |
| 0.406 | 39 | >75% Grass cover, Good, HSG A |
| 2.011 | 61 | >75% Grass cover, Good, HSG B |
| 5.525 | 30 | Meadow, non-grazed, HSG A |
| 4.276 | 30 | Woods, Good, HSG A |
| 3.342 | 55 | Woods, Good, HSG B |
| 15.648 | 40 | Weighted Average |
| 15.560 | | 99.44% Pervious Area |
| 0.088 | | 0.56% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 5.4 | 52 | 0.0937 | 0.16 | | Sheet Flow, Grass: Dense n= 0.240 P2= 2.31" |
| 3.7 | 625 | 0.1637 | 2.83 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.6 | 209 | 0.0384 | 0.98 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 12.7 | 886 | Total | | | |

Subcatchment 3S:

Hydrograph



Summary for Subcatchment 4.1S:

Runoff = 4.82 cfs @ 12.13 hrs, Volume= 0.570 af, Depth= 0.59"
 Routed to Reach 4.1R1 : Bypass Swale

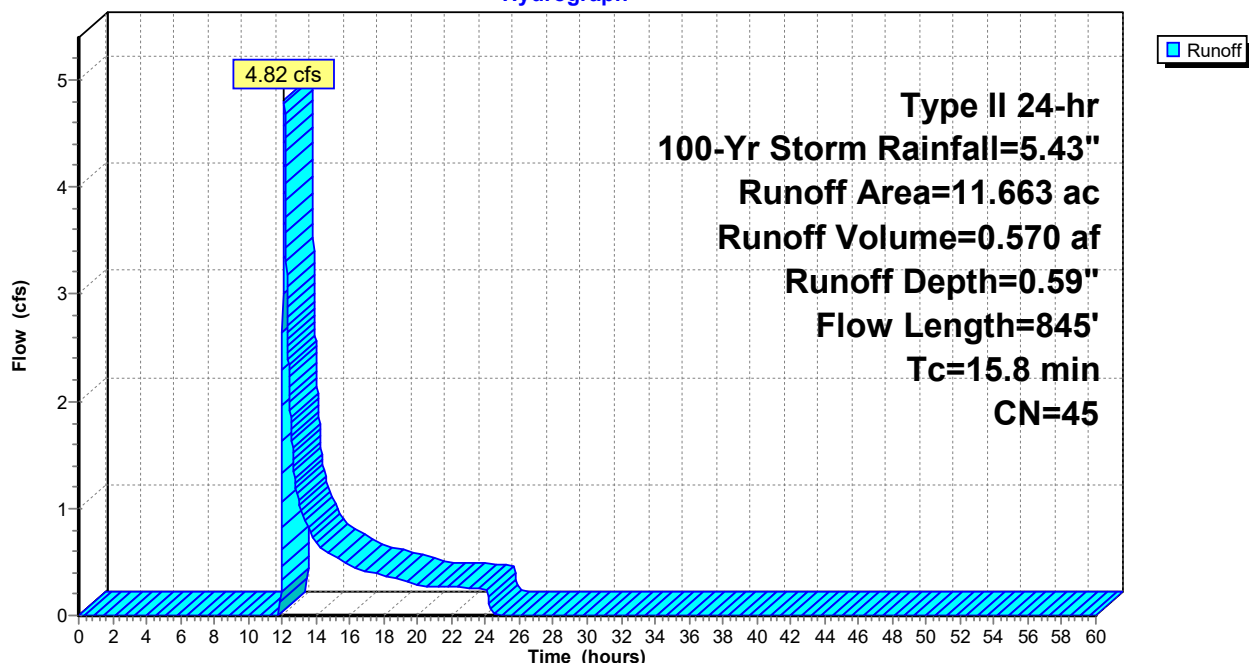
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 0.327 | 98 | Paved Roads & Rooftops |
| * 0.375 | 96 | Gravel surface |
| 0.165 | 61 | >75% Grass cover, Good, HSG B |
| 2.544 | 30 | Meadow, non-grazed, HSG A |
| 0.560 | 58 | Meadow, non-grazed, HSG B |
| 3.605 | 30 | Woods, Good, HSG A |
| * 4.087 | 55 | Woods, Good, HSG B |
| 11.663 | 45 | Weighted Average |
| 11.336 | | 97.20% Pervious Area |
| 0.327 | | 2.80% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 8.5 | 100 | 0.0430 | 0.20 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 2.6 | 360 | 0.1077 | 2.30 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 4.7 | 385 | 0.0735 | 1.36 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 15.8 | 845 | Total | | | |

Subcatchment 4.1S:

Hydrograph



Summary for Subcatchment 4.2aS:

Runoff = 13.31 cfs @ 12.41 hrs, Volume= 2.121 af, Depth= 0.94"
 Routed to Pond 4.2C : 18" Culvert

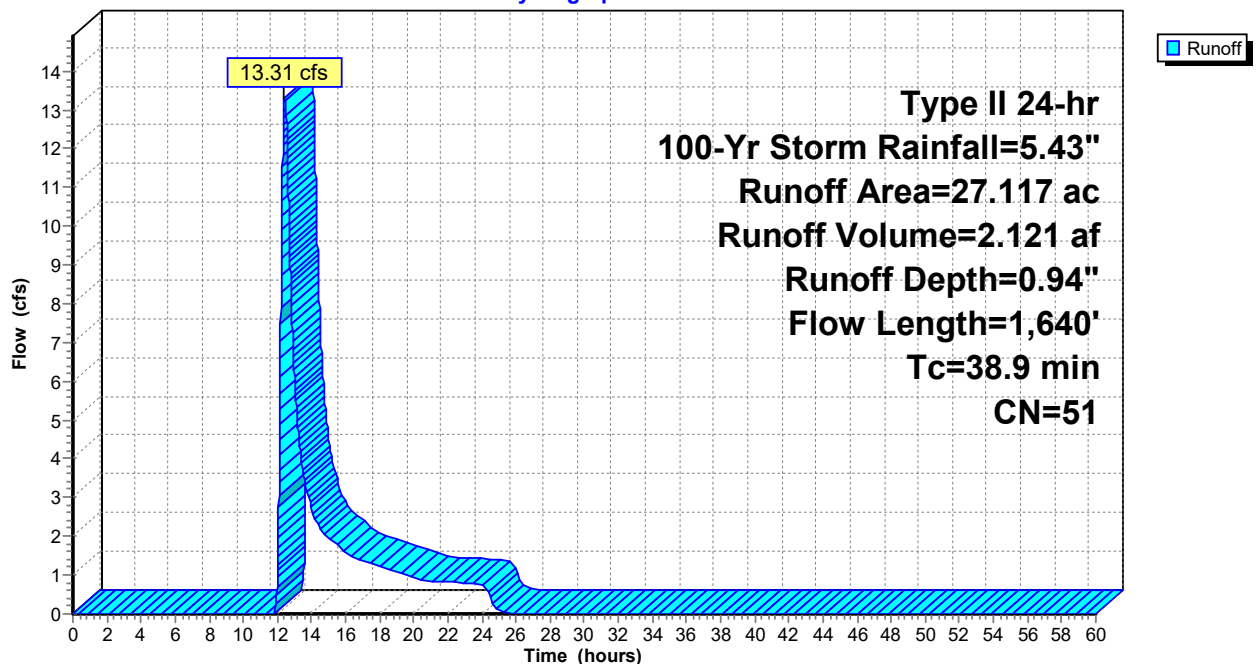
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 0.238 | 96 | Gravel surface |
| 4.086 | 30 | Meadow, non-grazed, HSG A |
| 0.384 | 58 | Meadow, non-grazed, HSG B |
| 0.977 | 30 | Woods, Good, HSG A |
| 21.432 | 55 | Woods, Good, HSG B |
| 27.117 | 51 | Weighted Average |
| 27.117 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 17.8 | 100 | 0.0480 | 0.09 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 8.0 | 878 | 0.1354 | 1.84 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 13.1 | 662 | 0.0144 | 0.84 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 38.9 | 1,640 | Total | | | |

Subcatchment 4.2aS:

Hydrograph



Summary for Subcatchment 4.2bS:

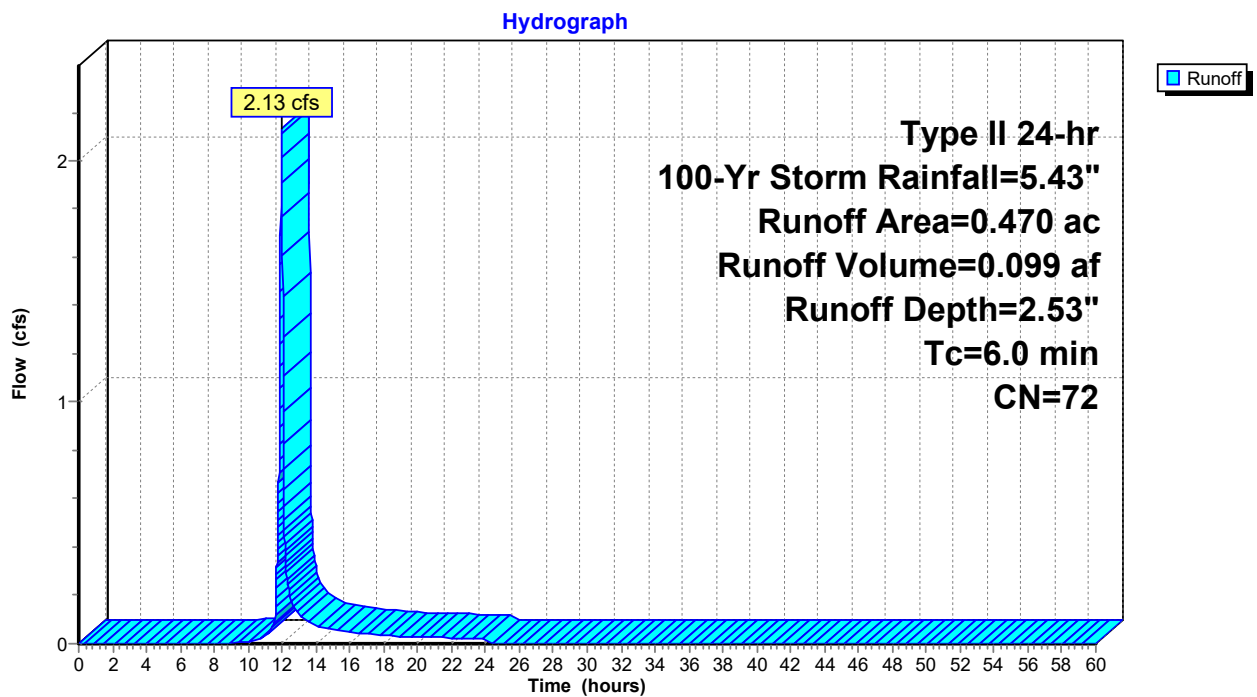
Runoff = 2.13 cfs @ 11.98 hrs, Volume= 0.099 af, Depth= 2.53"
 Routed to Reach 4.2bR : Conveyance Swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 0.296 | 96 | Gravel surface, HSG A |
| 0.174 | 30 | Meadow, non-grazed, HSG A |
| 0.470 | 72 | Weighted Average |
| 0.470 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|---------------|
| 6.0 | | | | | Direct Entry, |

Subcatchment 4.2bS:



Summary for Subcatchment 4.3S:

Runoff = 22.16 cfs @ 12.37 hrs, Volume= 2.846 af, Depth= 1.34"
 Routed to Pond 4.3C : 24" Culvert

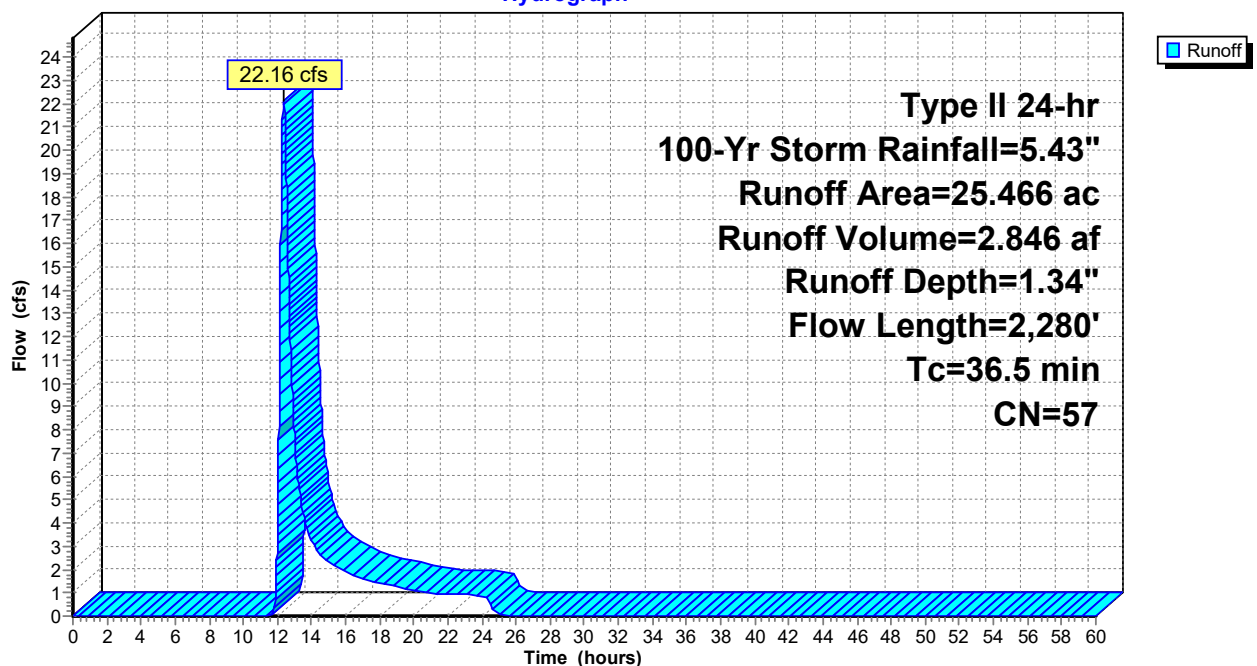
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| * 1.293 | 98 | Paved Roads & Rooftops |
| 1.783 | 58 | Meadow, non-grazed, HSG B |
| 22.390 | 55 | Woods, Good, HSG B |
| 25.466 | 57 | Weighted Average |
| 24.173 | | 94.92% Pervious Area |
| 1.293 | | 5.08% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 15.9 | 100 | 0.0634 | 0.10 | | Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.31" |
| 17.8 | 1,368 | 0.0656 | 1.28 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 0.1 | 38 | 0.3960 | 4.40 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 2.7 | 774 | 0.0281 | 4.70 | 109.09 | Channel Flow, Area= 23.2 sf Perim= 43.2' r= 0.54' n= 0.035 |
| 36.5 | 2,280 | Total | | | |

Subcatchment 4.3S:

Hydrograph



Summary for Subcatchment 5S:

Runoff = 0.02 cfs @ 24.02 hrs, Volume= 0.010 af, Depth= 0.02"
 Routed to Link SP5 : Study Point 5

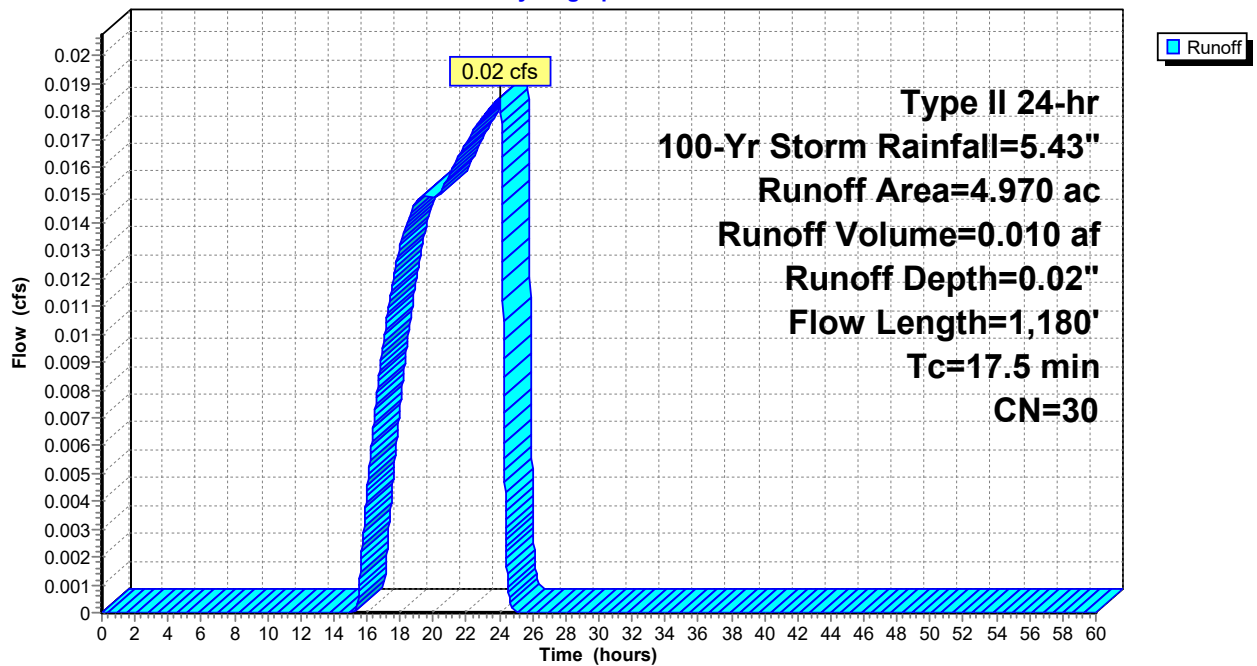
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|---------------------------|
| 4.139 | 30 | Meadow, non-grazed, HSG A |
| 0.831 | 30 | Woods, Good, HSG A |
| 4.970 | 30 | Weighted Average |
| 4.970 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 7.1 | 100 | 0.0675 | 0.24 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 8.5 | 801 | 0.0508 | 1.58 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 1.3 | 217 | 0.1515 | 2.72 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 0.6 | 62 | 0.0697 | 1.85 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 17.5 | 1,180 | Total | | | |

Subcatchment 5S:

Hydrograph



Summary for Subcatchment 6S:

Runoff = 3.11 cfs @ 12.89 hrs, Volume= 1.002 af, Depth= 0.48"
 Routed to Link SP6 : Study Point 6

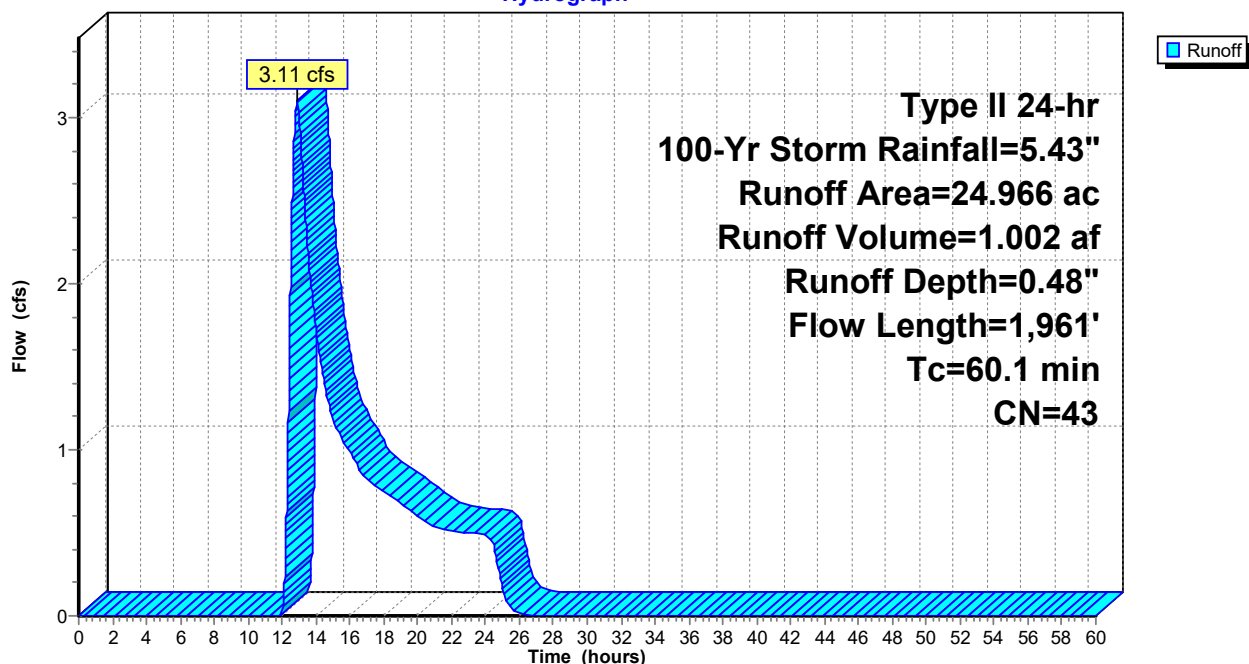
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Type II 24-hr 100-Yr Storm Rainfall=5.43"

| Area (ac) | CN | Description |
|-----------|----|-------------------------------|
| * 1.450 | 98 | Paved Roads & Rooftops |
| 0.466 | 96 | Gravel surface, HSG A |
| 2.545 | 61 | >75% Grass cover, Good, HSG B |
| 7.511 | 30 | Meadow, non-grazed, HSG A |
| 0.788 | 58 | Meadow, non-grazed, HSG B |
| 7.940 | 30 | Woods, Good, HSG A |
| 4.266 | 55 | Woods, Good, HSG B |
| 24.966 | 43 | Weighted Average |
| 23.516 | | 94.19% Pervious Area |
| 1.450 | | 5.81% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|----------|---------------|---------------|-------------------|----------------|--|
| 10.1 | 100 | 0.0278 | 0.16 | | Sheet Flow, Grass: Short n= 0.150 P2= 2.31" |
| 3.2 | 313 | 0.0528 | 1.61 | | Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps |
| 3.9 | 486 | 0.1742 | 2.09 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 42.9 | 1,062 | 0.0068 | 0.41 | | Shallow Concentrated Flow, Woodland Kv= 5.0 fps |
| 60.1 | 1,961 | Total | | | |

Subcatchment 6S:

Hydrograph



Summary for Reach 1.1aR1: Bypass Swale

Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.02 cfs @ 24.00 hrs, Volume= 0.012 af
 Outflow = 0.02 cfs @ 24.06 hrs, Volume= 0.012 af, Atten= 1%, Lag= 3.5 min
 Routed to Pond 1.1aC1 : TS1 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.41 fps, Min. Travel Time= 23.9 min
 Avg. Velocity = 0.35 fps, Avg. Travel Time= 27.5 min

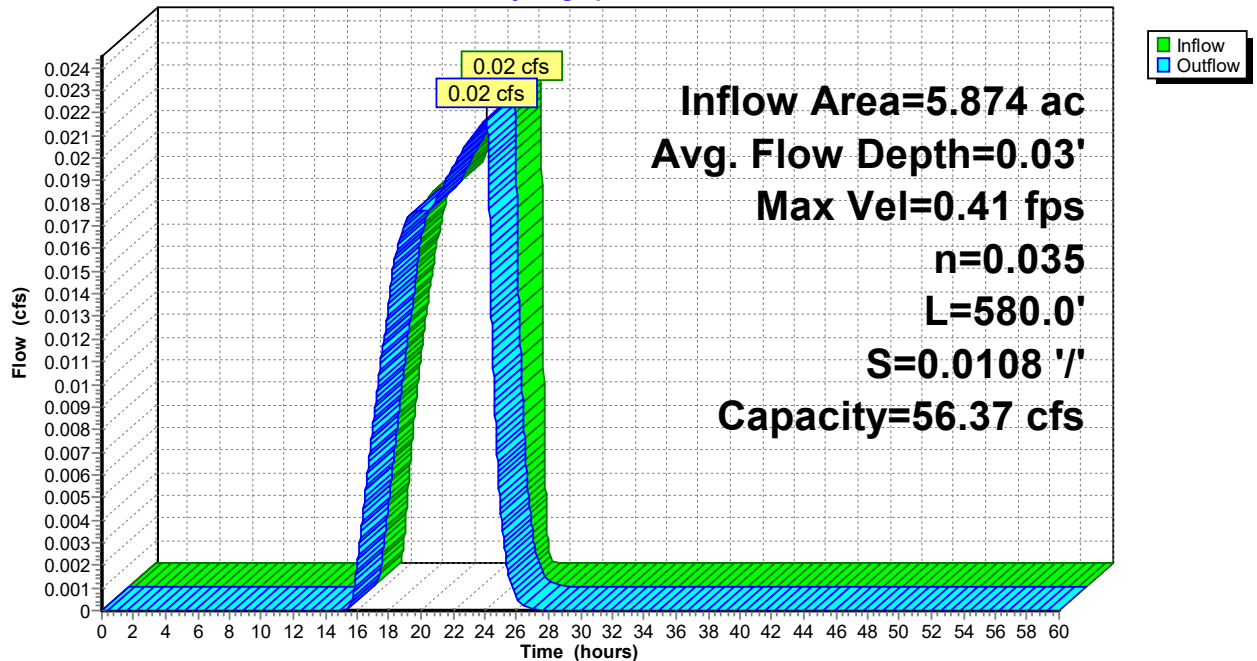
Peak Storage= 31 cf @ 24.06 hrs
 Average Depth at Peak Storage= 0.03' , Surface Width= 2.10'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 56.37 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 580.0' Slope= 0.0108 '/
 Inlet Invert= 1,493.84', Outlet Invert= 1,487.56'



Reach 1.1aR1: Bypass Swale

Hydrograph



Summary for Reach 1.1aR2: Bypass Swale

Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.05 cfs @ 24.03 hrs, Volume= 0.029 af
 Outflow = 0.05 cfs @ 24.08 hrs, Volume= 0.029 af, Atten= 0%, Lag= 2.7 min
 Routed to Pond 1.1aC2 : TS2 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.76 fps, Min. Travel Time= 12.3 min
 Avg. Velocity = 0.63 fps, Avg. Travel Time= 14.7 min

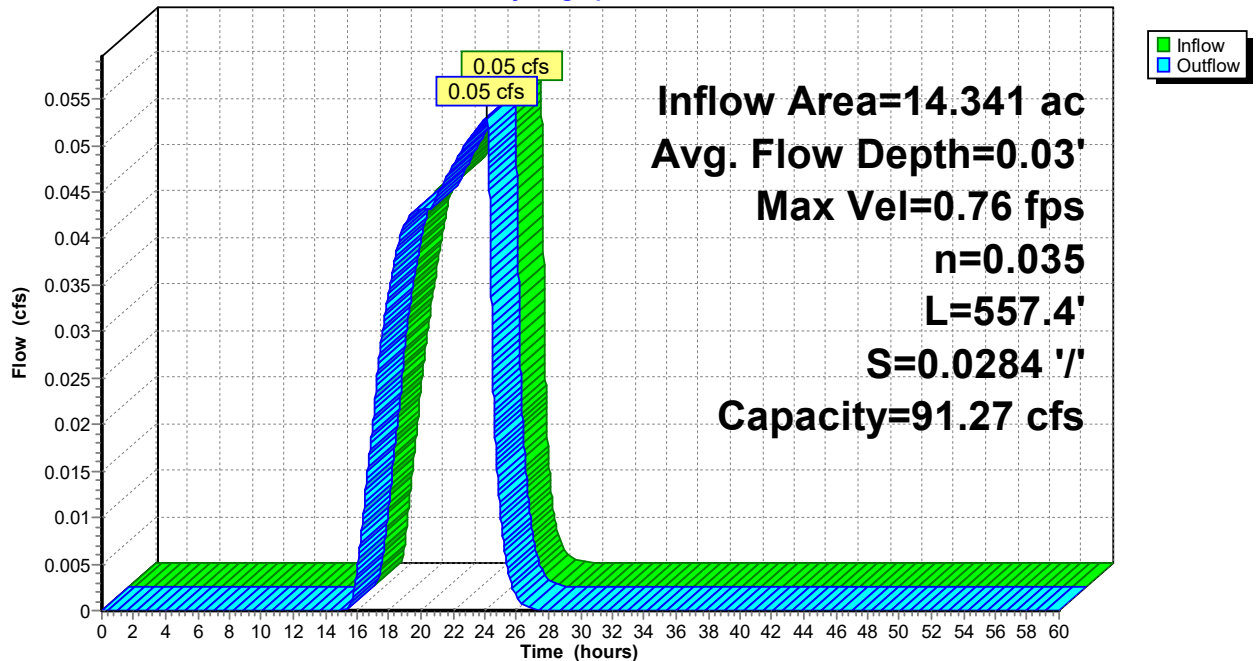
Peak Storage= 39 cf @ 24.08 hrs
 Average Depth at Peak Storage= 0.03' , Surface Width= 2.13'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 91.27 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 557.4' Slope= 0.0284 '/
 Inlet Invert= 1,486.80', Outlet Invert= 1,470.98'



Reach 1.1aR2: Bypass Swale

Hydrograph



Summary for Reach 1.1aR3: Bypass Swale

Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.07 cfs @ 24.05 hrs, Volume= 0.041 af
 Outflow = 0.07 cfs @ 24.08 hrs, Volume= 0.041 af, Atten= 0%, Lag= 2.2 min
 Routed to Pond 1.1aC3 : TS3 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.90 fps, Min. Travel Time= 10.3 min
 Avg. Velocity = 0.74 fps, Avg. Travel Time= 12.6 min

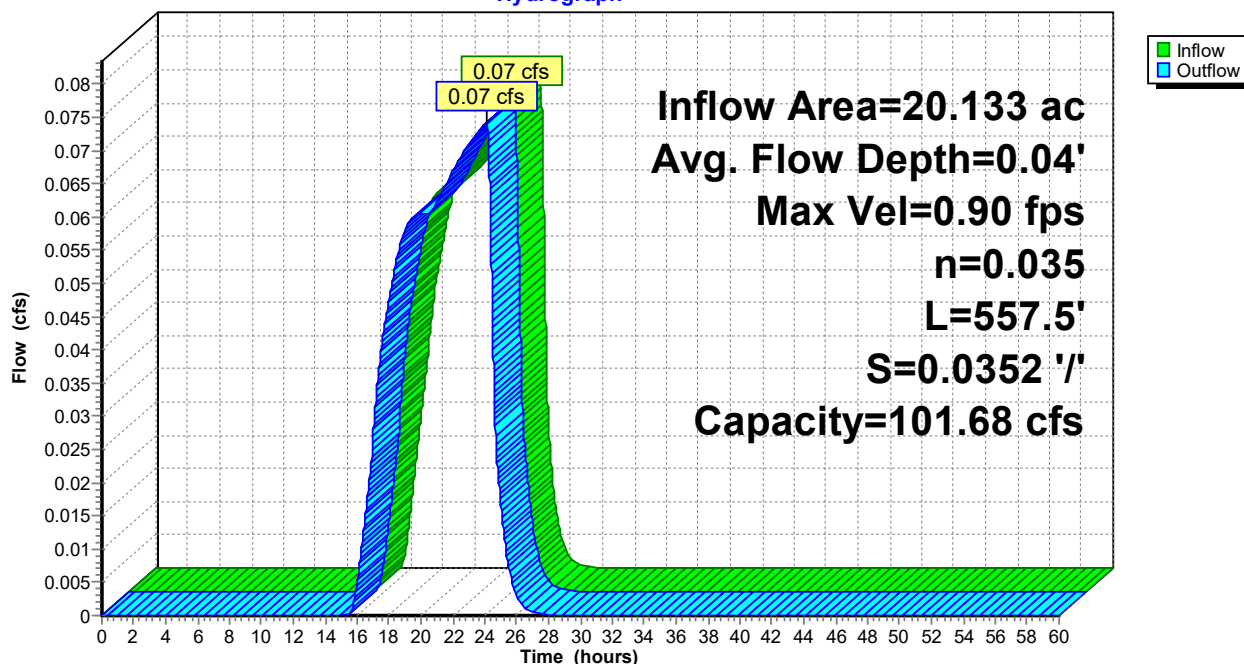
Peak Storage= 46 cf @ 24.08 hrs
 Average Depth at Peak Storage= 0.04' , Surface Width= 2.16'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 101.68 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 ' / ' Top Width= 10.00'
 Length= 557.5' Slope= 0.0352 ' / '
 Inlet Invert= 1,469.57', Outlet Invert= 1,449.93'



Reach 1.1aR3: Bypass Swale

Hydrograph



Summary for Reach 1.1aR4: Bypass Swale

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.12 cfs @ 24.04 hrs, Volume= 0.066 af
 Outflow = 0.12 cfs @ 24.09 hrs, Volume= 0.066 af, Atten= 0%, Lag= 3.1 min
 Routed to Pond 1.1aP : North Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.10 fps, Min. Travel Time= 8.8 min
 Avg. Velocity = 0.85 fps, Avg. Travel Time= 11.4 min

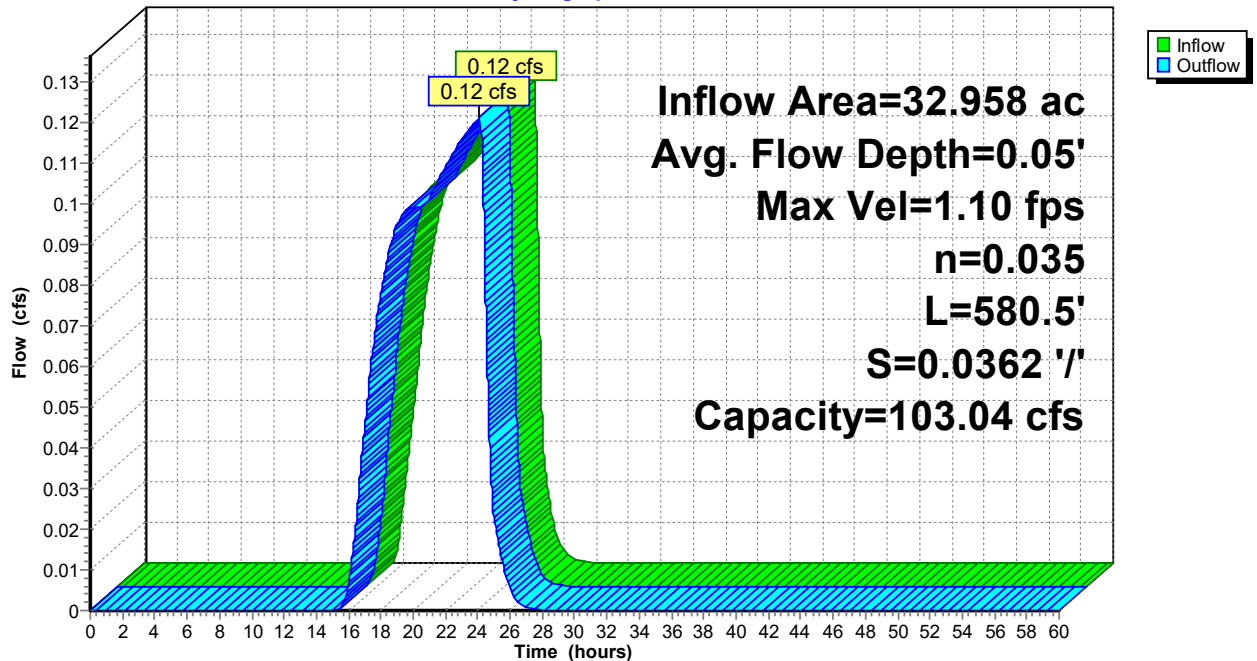
Peak Storage= 64 cf @ 24.09 hrs
 Average Depth at Peak Storage= 0.05', Surface Width= 2.21'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 103.04 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 580.5' Slope= 0.0362 '/
 Inlet Invert= 1,447.64', Outlet Invert= 1,426.64'



Reach 1.1aR4: Bypass Swale

Hydrograph



Summary for Reach 1.1bR1: North Road Conveyance Swale

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 2.45" for 100-Yr Storm event
 Inflow = 5.85 cfs @ 11.98 hrs, Volume= 0.272 af
 Outflow = 3.95 cfs @ 12.04 hrs, Volume= 0.272 af, Atten= 32%, Lag= 3.9 min
 Routed to Pond 1.1bC1 : TS4 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.90 fps, Min. Travel Time= 9.9 min
 Avg. Velocity = 0.82 fps, Avg. Travel Time= 35.4 min

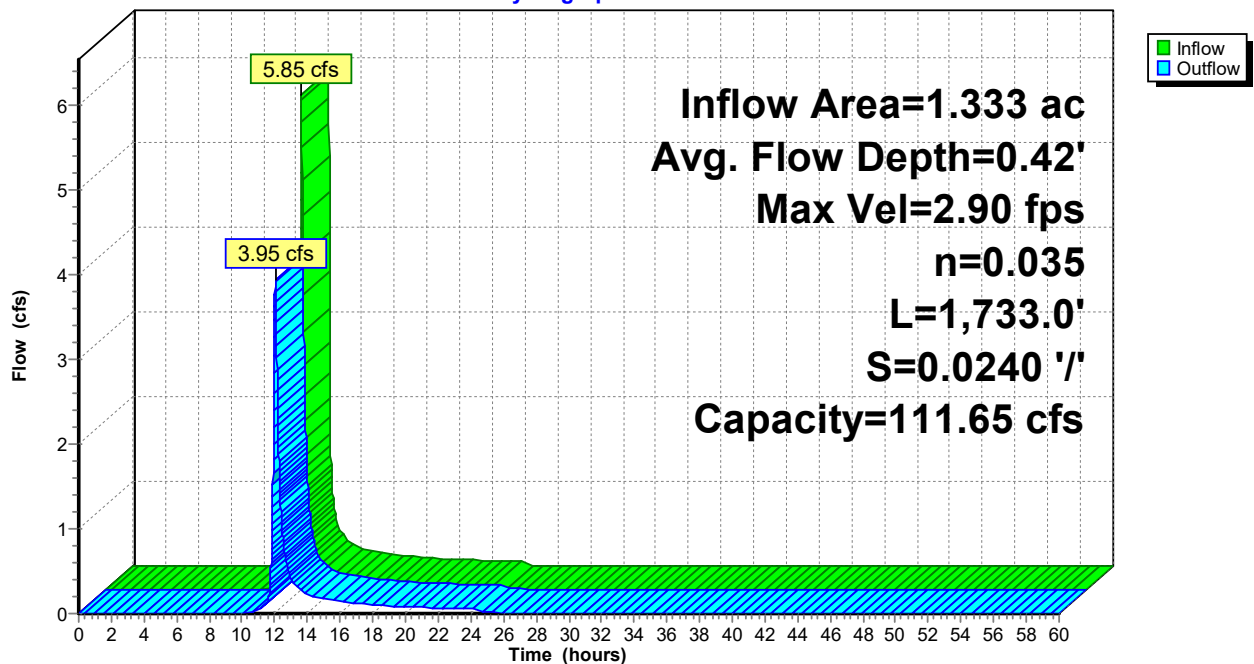
Peak Storage= 2,359 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.42', Surface Width= 4.51'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 111.65 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 1,733.0' Slope= 0.0240 ' / '
 Inlet Invert= 1,491.12', Outlet Invert= 1,449.50'



Reach 1.1bR1: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.1bR2: North Road Conveyance Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 2.36" for 100-Yr Storm event
 Inflow = 6.08 cfs @ 12.01 hrs, Volume= 0.391 af
 Outflow = 5.77 cfs @ 12.04 hrs, Volume= 0.391 af, Atten= 5%, Lag= 1.8 min
 Routed to Pond 1.1bP1 : Dry Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.81 fps, Min. Travel Time= 2.6 min
 Avg. Velocity = 1.07 fps, Avg. Travel Time= 9.3 min

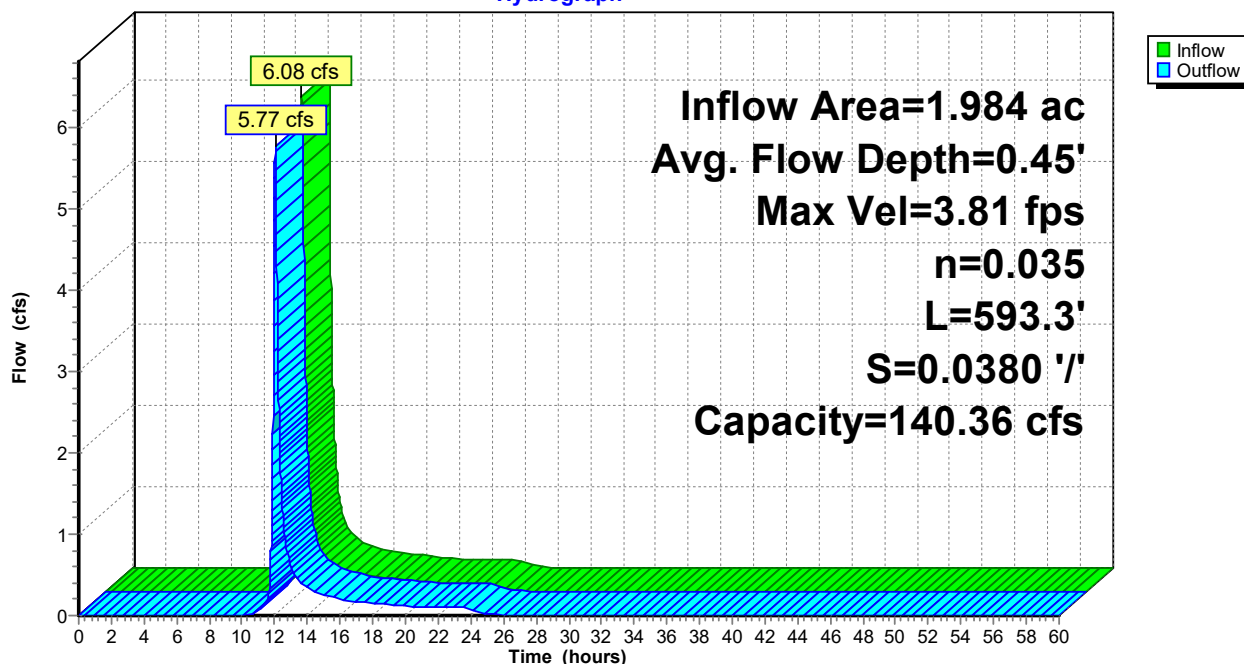
Peak Storage= 900 cf @ 12.04 hrs
 Average Depth at Peak Storage= 0.45', Surface Width= 4.71'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 140.36 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 593.3' Slope= 0.0380 '/'
 Inlet Invert= 1,447.27', Outlet Invert= 1,424.75'



Reach 1.1bR2: North Road Conveyance Swale

Hydrograph



Summary for Reach 1.2aR1: Bypass Swale

Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.03 cfs @ 24.00 hrs, Volume= 0.016 af
 Outflow = 0.03 cfs @ 24.06 hrs, Volume= 0.016 af, Atten= 0%, Lag= 3.1 min
 Routed to Pond 1.2aC1 : TS 7 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.54 fps, Min. Travel Time= 16.2 min
 Avg. Velocity = 0.47 fps, Avg. Travel Time= 18.6 min

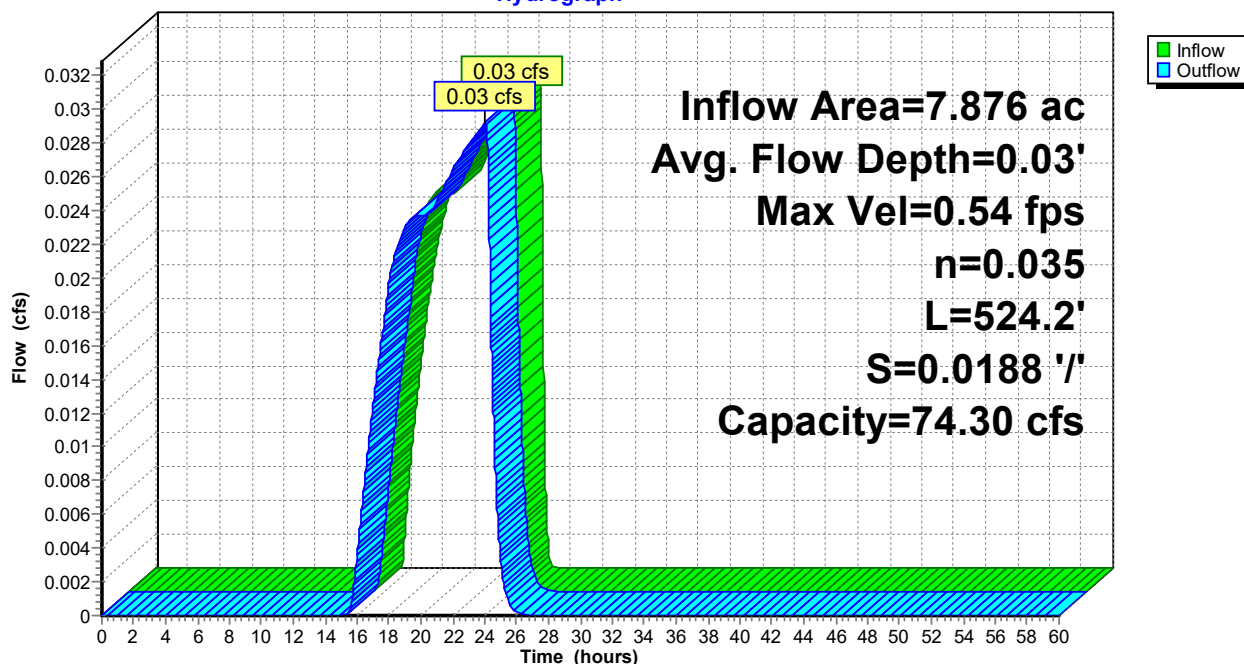
Peak Storage= 28 cf @ 24.06 hrs
 Average Depth at Peak Storage= 0.03', Surface Width= 2.11'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 74.30 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 524.2' Slope= 0.0188 '/
 Inlet Invert= 1,454.08', Outlet Invert= 1,444.22'



Reach 1.2aR1: Bypass Swale

Hydrograph



Summary for Reach 1.2aR2: Bypass Swale

Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.06 cfs @ 24.03 hrs, Volume= 0.034 af
 Outflow = 0.06 cfs @ 24.06 hrs, Volume= 0.034 af, Atten= 0%, Lag= 1.9 min
 Routed to Pond 1.2aC2 : TS8 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.71 fps, Min. Travel Time= 13.0 min
 Avg. Velocity = 0.58 fps, Avg. Travel Time= 15.9 min

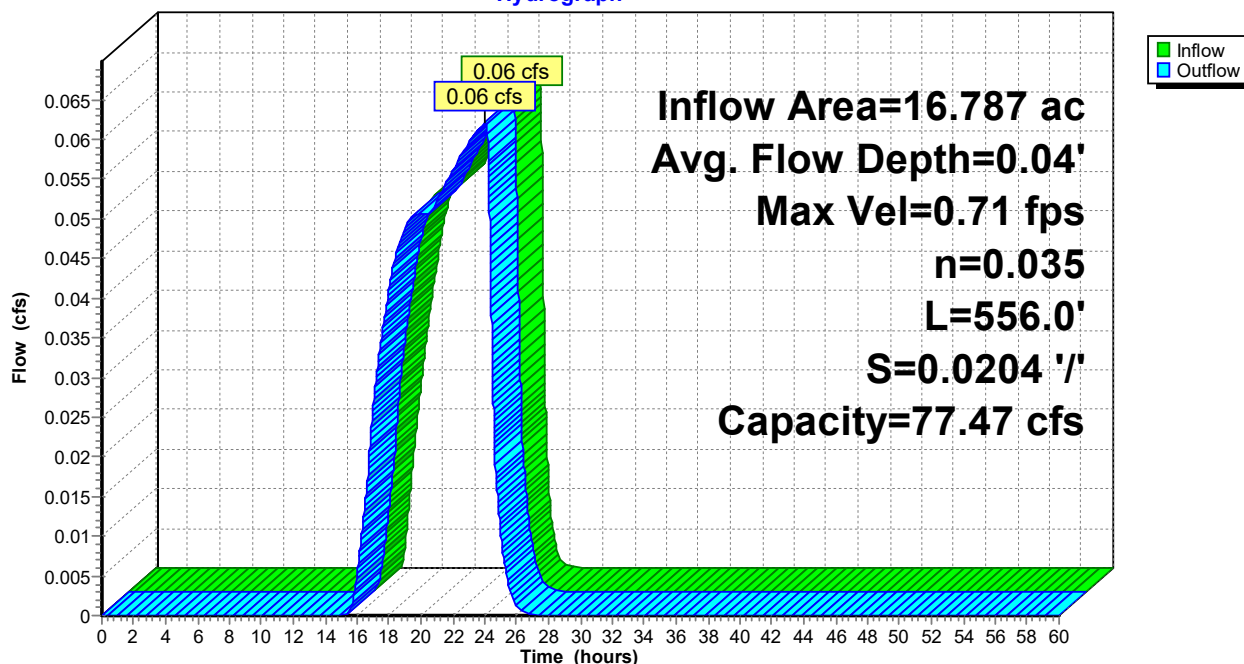
Peak Storage= 48 cf @ 24.06 hrs
 Average Depth at Peak Storage= 0.04' , Surface Width= 2.17'
 Bank-Full Depth= 2.00' Flow Area= 12.0 sf, Capacity= 77.47 cfs

2.00' x 2.00' deep channel, n= 0.035 Earth, dense weeds
 Side Slope Z-value= 2.0 '/ Top Width= 10.00'
 Length= 556.0' Slope= 0.0204 '/
 Inlet Invert= 1,443.21', Outlet Invert= 1,431.84'



Reach 1.2aR2: Bypass Swale

Hydrograph



Summary for Reach 1.2aR3: Bypass Swale

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.08 cfs @ 24.03 hrs, Volume= 0.045 af
 Outflow = 0.08 cfs @ 24.07 hrs, Volume= 0.045 af, Atten= 0%, Lag= 2.0 min
 Routed to Pond 1.2aP : South Road Bypass OC

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 0.63 fps, Min. Travel Time= 6.6 min
 Avg. Velocity = 0.51 fps, Avg. Travel Time= 8.2 min

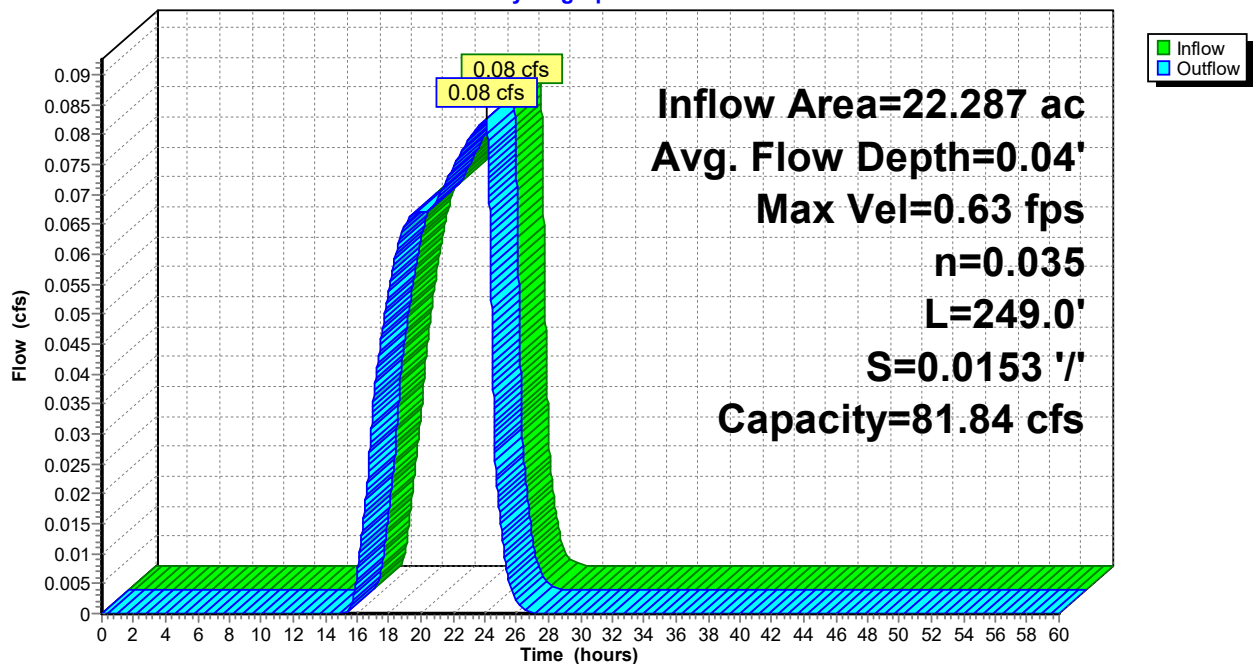
Peak Storage= 33 cf @ 24.07 hrs
 Average Depth at Peak Storage= 0.04' , Surface Width= 3.17'
 Bank-Full Depth= 2.00' Flow Area= 14.0 sf, Capacity= 81.84 cfs

3.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 ' / ' Top Width= 11.00'
 Length= 249.0' Slope= 0.0153 ' / '
 Inlet Invert= 1,431.11', Outlet Invert= 1,427.29'



Reach 1.2aR3: Bypass Swale

Hydrograph



Summary for Reach 1.2bR1: East Road Conveyance Swale

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 2.11" for 100-Yr Storm event
 Inflow = 2.75 cfs @ 11.98 hrs, Volume= 0.128 af
 Outflow = 2.43 cfs @ 12.01 hrs, Volume= 0.128 af, Atten= 11%, Lag= 2.1 min
 Routed to Pond 1.2bC1 : East Road Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.17 fps, Min. Travel Time= 3.9 min
 Avg. Velocity = 0.89 fps, Avg. Travel Time= 13.7 min

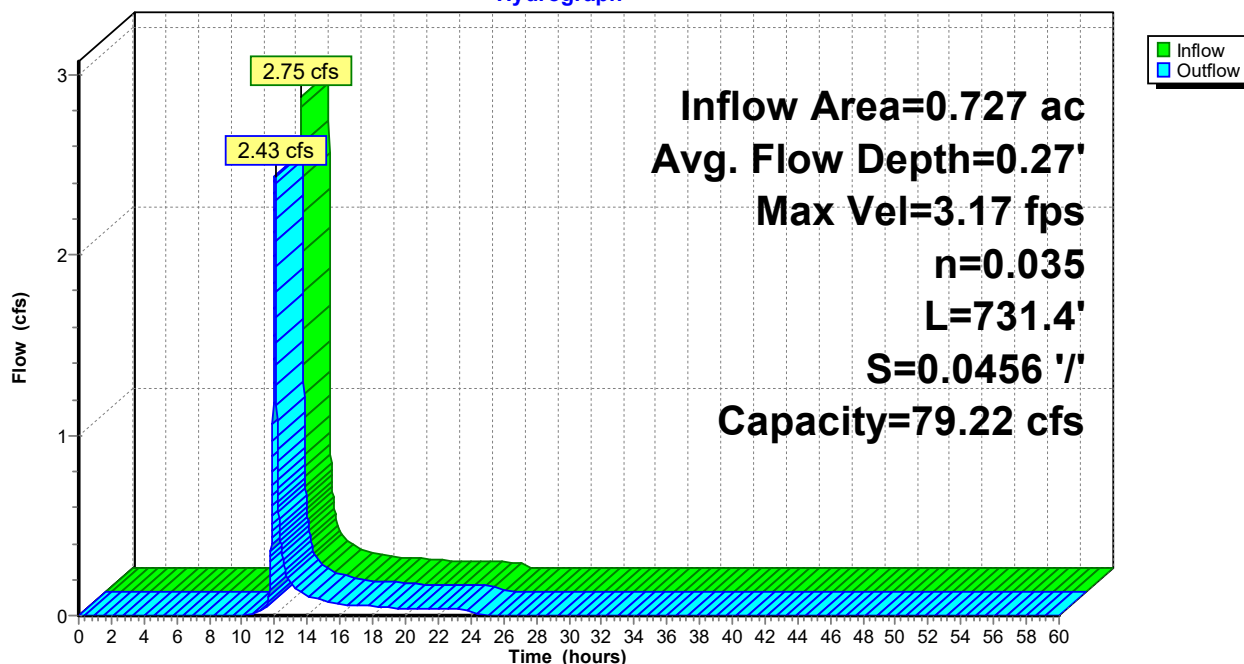
Peak Storage= 562 cf @ 12.01 hrs
 Average Depth at Peak Storage= 0.27', Surface Width= 3.64'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 79.22 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 11.00'
 Length= 731.4' Slope= 0.0456 '/'
 Inlet Invert= 1,489.53', Outlet Invert= 1,456.20'



Reach 1.2bR1: East Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR2: South Road Conveyance Swale

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 1.73" for 100-Yr Storm event
 Inflow = 3.77 cfs @ 12.03 hrs, Volume= 0.228 af
 Outflow = 3.39 cfs @ 12.07 hrs, Volume= 0.228 af, Atten= 10%, Lag= 2.7 min
 Routed to Pond 1.2bC2 : TS6 Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.49 fps, Min. Travel Time= 4.0 min
 Avg. Velocity = 0.77 fps, Avg. Travel Time= 13.0 min

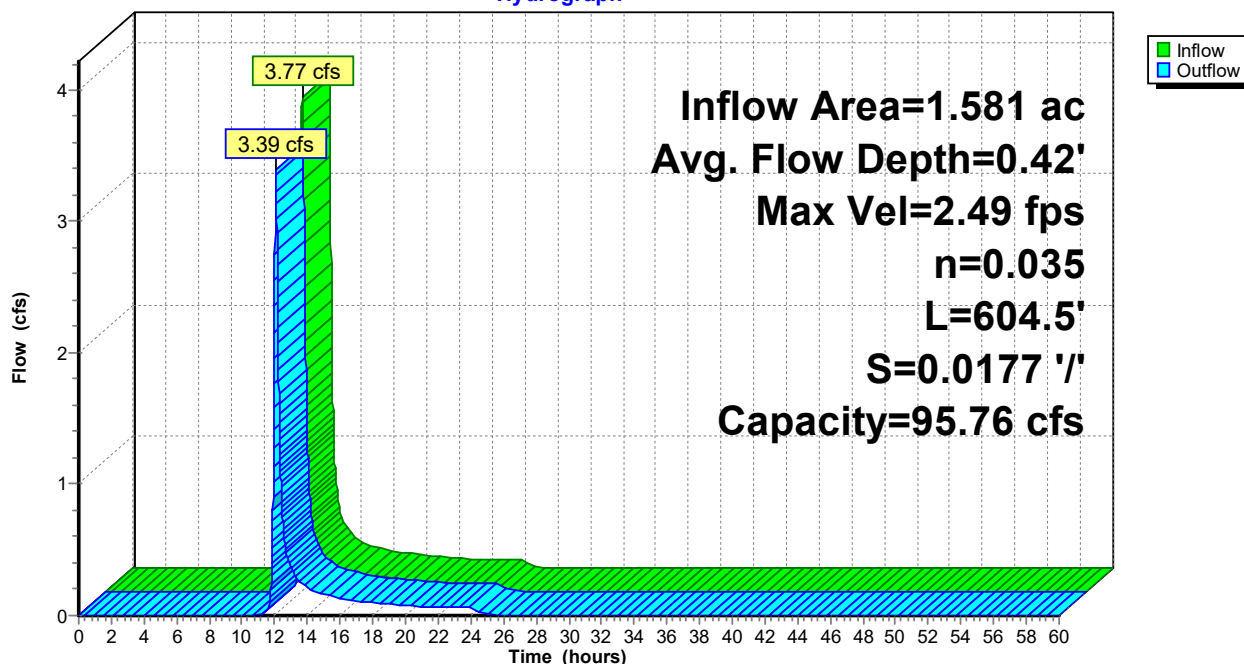
Peak Storage= 822 cf @ 12.07 hrs
 Average Depth at Peak Storage= 0.42', Surface Width= 4.51'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 95.76 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 ' / ' Top Width= 14.00'
 Length= 604.5' Slope= 0.0177 ' / '
 Inlet Invert= 1,454.47', Outlet Invert= 1,443.79'



Reach 1.2bR2: South Road Conveyance Swale

Hydrograph



Summary for Reach 1.2bR3: South Road Conveyance Swale

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 1.98" for 100-Yr Storm event
 Inflow = 5.95 cfs @ 12.01 hrs, Volume= 0.394 af
 Outflow = 5.31 cfs @ 12.06 hrs, Volume= 0.394 af, Atten= 11%, Lag= 3.0 min
 Routed to Pond 1.2bP : South Road Treatment Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.88 fps, Min. Travel Time= 4.4 min
 Avg. Velocity = 0.88 fps, Avg. Travel Time= 14.3 min

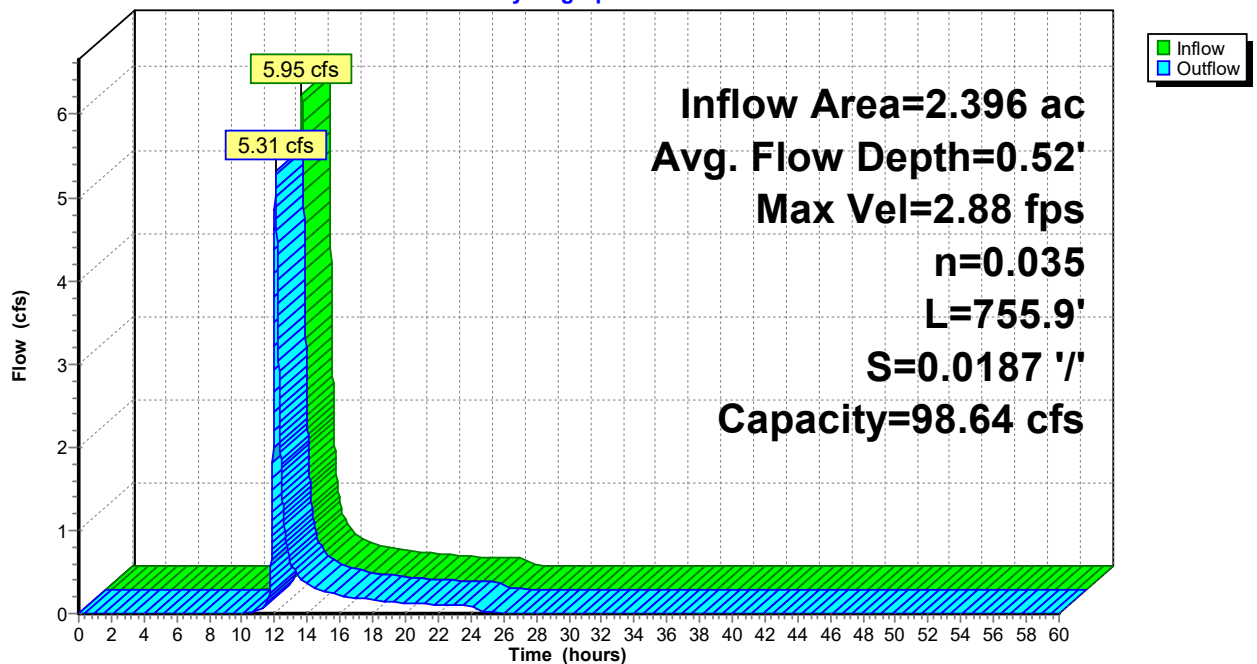
Peak Storage= 1,393 cf @ 12.06 hrs
 Average Depth at Peak Storage= 0.52', Surface Width= 5.11'
 Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 98.64 cfs

2.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 14.00'
 Length= 755.9' Slope= 0.0187 '/'
 Inlet Invert= 1,442.84', Outlet Invert= 1,428.67'



Reach 1.2bR3: South Road Conveyance Swale

Hydrograph



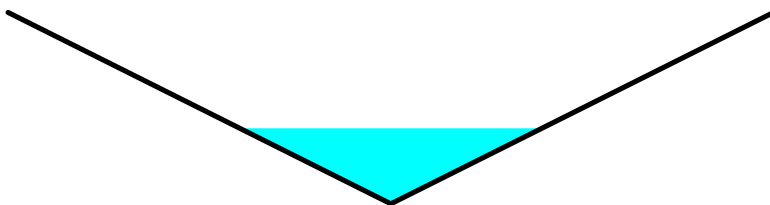
Summary for Reach 4.1R1: Bypass Swale

Inflow Area = 11.663 ac, 2.80% Impervious, Inflow Depth = 0.59" for 100-Yr Storm event
 Inflow = 4.82 cfs @ 12.13 hrs, Volume= 0.570 af
 Outflow = 4.59 cfs @ 12.17 hrs, Volume= 0.570 af, Atten= 5%, Lag= 2.3 min
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 3.69 fps, Min. Travel Time= 2.6 min
 Avg. Velocity = 1.82 fps, Avg. Travel Time= 5.2 min

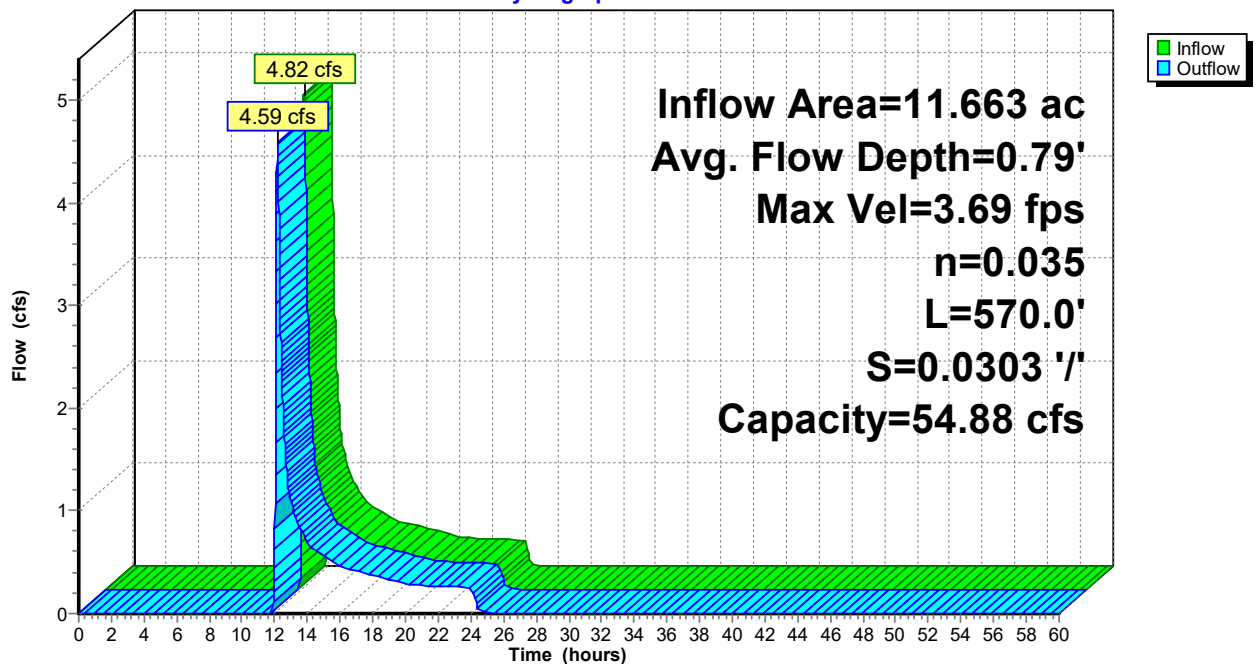
Peak Storage= 709 cf @ 12.17 hrs
 Average Depth at Peak Storage= 0.79' , Surface Width= 3.16'
 Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 54.88 cfs

0.00' x 2.00' deep channel, n= 0.035
 Side Slope Z-value= 2.0 '/ Top Width= 8.00'
 Length= 570.0' Slope= 0.0303 '/
 Inlet Invert= 1,448.24', Outlet Invert= 1,430.97'



Reach 4.1R1: Bypass Swale

Hydrograph



Summary for Reach 4.1R2: Ex Stream

Inflow Area = 39.250 ac, 0.83% Impervious, Inflow Depth = 0.83" for 100-Yr Storm event
 Inflow = 10.59 cfs @ 12.62 hrs, Volume= 2.700 af
 Outflow = 10.53 cfs @ 12.70 hrs, Volume= 2.700 af, Atten= 1%, Lag= 4.9 min
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 1.85 fps, Min. Travel Time= 6.7 min
 Avg. Velocity = 0.76 fps, Avg. Travel Time= 16.2 min

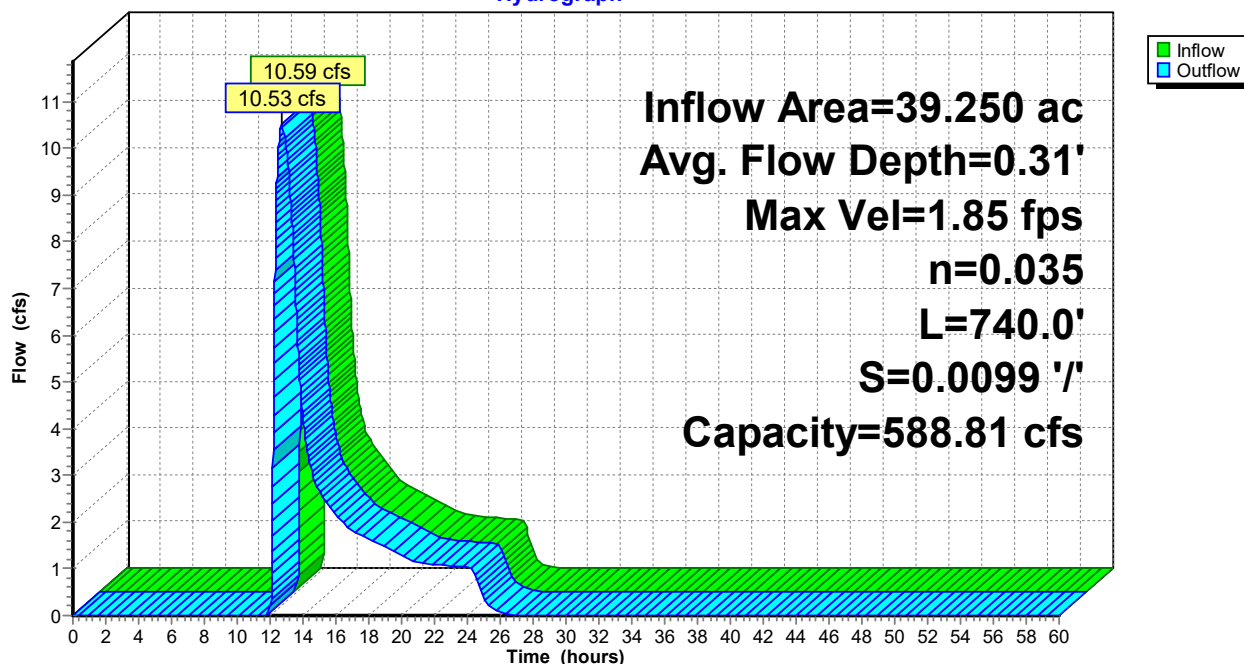
Peak Storage= 4,215 cf @ 12.70 hrs
 Average Depth at Peak Storage= 0.31', Surface Width= 19.65'
 Bank-Full Depth= 3.00' Flow Area= 84.0 sf, Capacity= 588.81 cfs

17.50' x 3.00' deep channel, n= 0.035
 Side Slope Z-value= 3.0 4.0 '/' Top Width= 38.50'
 Length= 740.0' Slope= 0.0099 '/'
 Inlet Invert= 1,430.98', Outlet Invert= 1,423.64'



Reach 4.1R2: Ex Stream

Hydrograph



Summary for Reach 4.2bR: Conveyance Swale

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 2.53" for 100-Yr Storm event
 Inflow = 2.13 cfs @ 11.98 hrs, Volume= 0.099 af
 Outflow = 1.95 cfs @ 12.01 hrs, Volume= 0.099 af, Atten= 8%, Lag= 1.8 min
 Routed to Pond 4.2bP : Pond 4 - Access Rd East

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Max. Velocity= 2.91 fps, Min. Travel Time= 3.2 min
 Avg. Velocity = 0.79 fps, Avg. Travel Time= 11.9 min

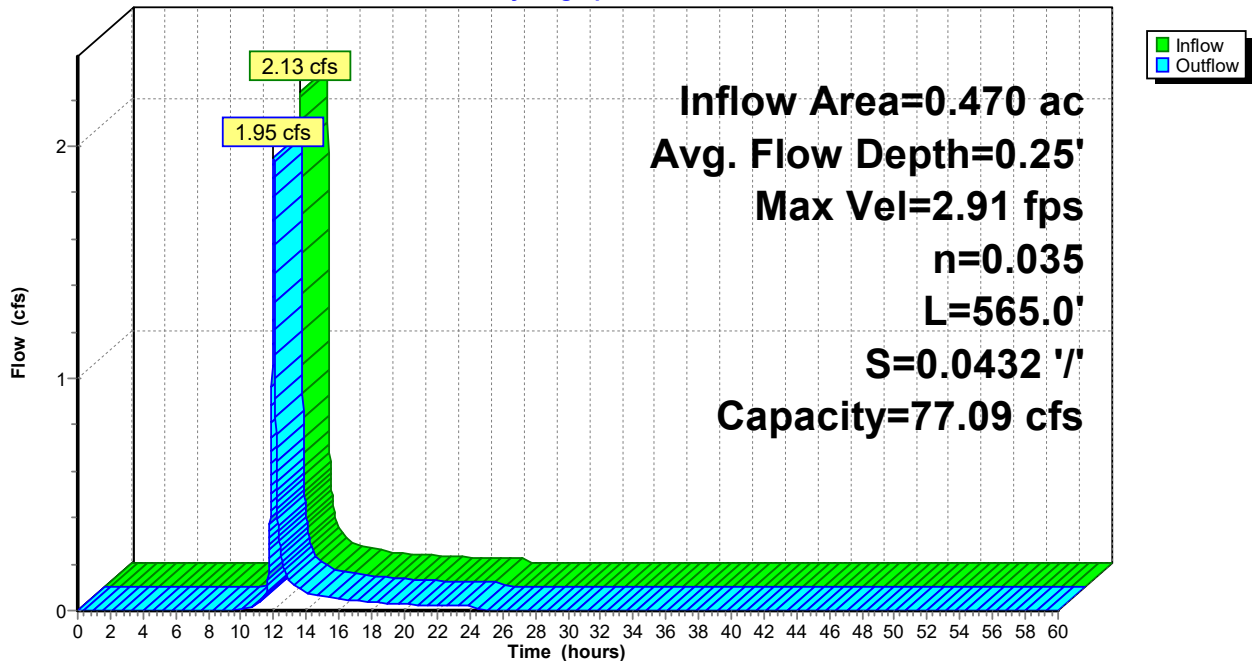
Peak Storage= 380 cf @ 12.01 hrs
 Average Depth at Peak Storage= 0.25' , Surface Width= 3.47'
 Bank-Full Depth= 1.50' Flow Area= 9.8 sf, Capacity= 77.09 cfs

2.00' x 1.50' deep channel, n= 0.035
 Side Slope Z-value= 3.0 '/' Top Width= 11.00'
 Length= 565.0' Slope= 0.0432 '/'
 Inlet Invert= 1,472.38', Outlet Invert= 1,448.00'



Reach 4.2bR: Conveyance Swale

Hydrograph



Summary for Pond 1.1aC1: TS1 Culvert

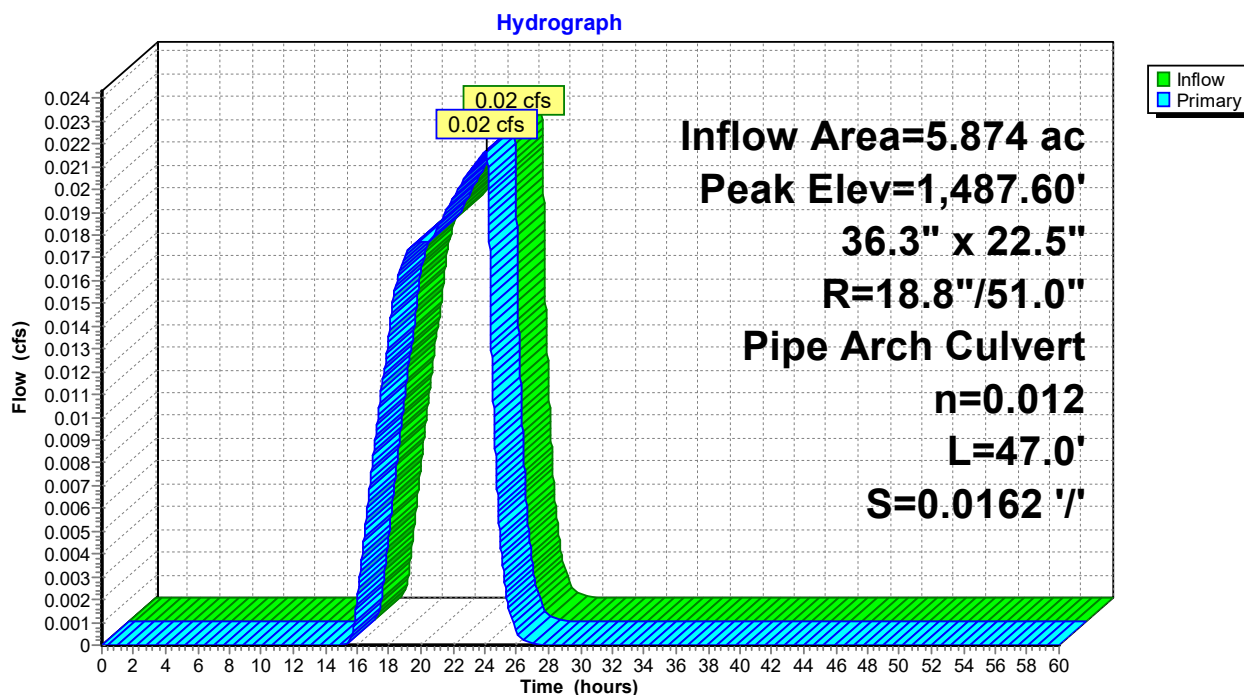
Inflow Area = 5.874 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.02 cfs @ 24.06 hrs, Volume= 0.012 af
 Outflow = 0.02 cfs @ 24.06 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.02 cfs @ 24.06 hrs, Volume= 0.012 af
 Routed to Reach 1.1aR2 : Bypass Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,487.60' @ 24.06 hrs
 Flood Elev= 1,489.60'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,487.56' | 36.3" W x 22.5" H, R=18.8"/51.0" Pipe Arch RCP_Arch 37x23 L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,487.56' / 1,486.80' S= 0.0162 '/ Cc= 0.900 n= 0.012, Flow Area= 4.43 sf |

Primary OutFlow Max=0.02 cfs @ 24.06 hrs HW=1,487.60' (Free Discharge)
 ↳ RCP_Arch 37x23 (Inlet Controls 0.02 cfs @ 0.61 fps)

Pond 1.1aC1: TS1 Culvert



Summary for Pond 1.1aC2: TS2 Culvert

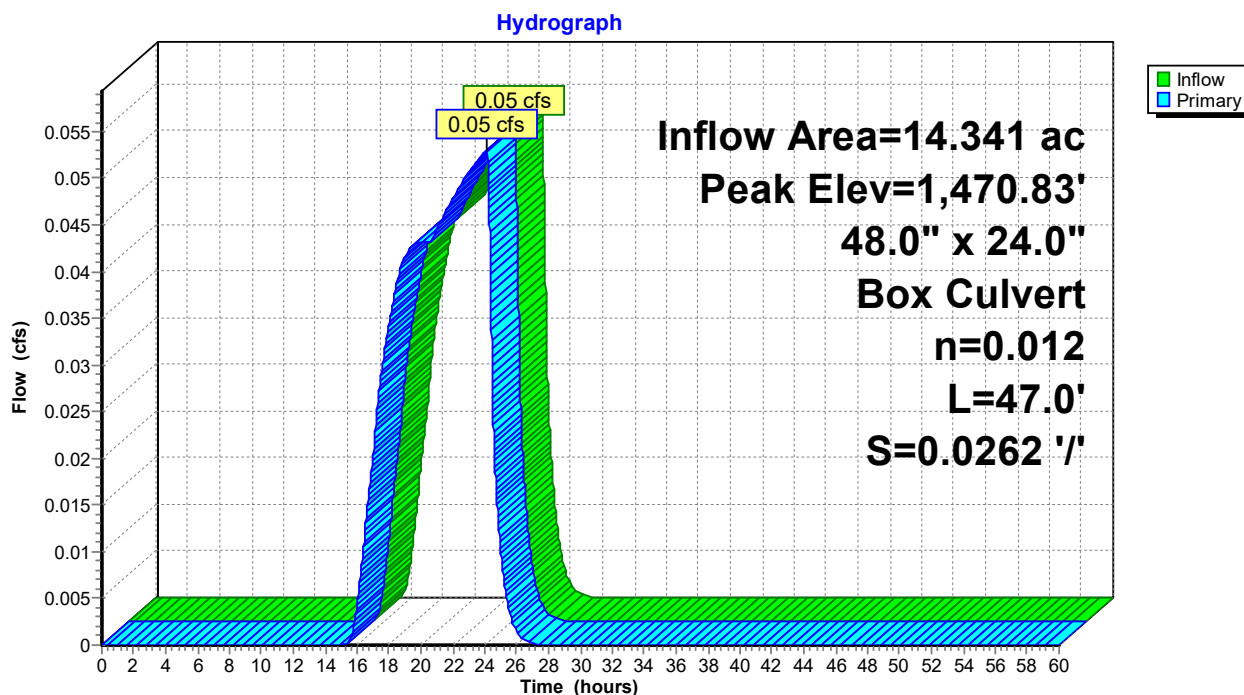
Inflow Area = 14.341 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.05 cfs @ 24.08 hrs, Volume= 0.029 af
 Outflow = 0.05 cfs @ 24.08 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.05 cfs @ 24.08 hrs, Volume= 0.029 af
 Routed to Reach 1.1aR3 : Bypass Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,470.83' @ 24.08 hrs
 Flood Elev= 1,473.07'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,470.80' | 48.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,470.80' / 1,469.57' S= 0.0262 '/ Cc= 0.900 n= 0.012, Flow Area= 8.00 sf |

Primary OutFlow Max=0.05 cfs @ 24.08 hrs HW=1,470.83' (Free Discharge)
 ↑=Culvert (Inlet Controls 0.05 cfs @ 0.51 fps)

Pond 1.1aC2: TS2 Culvert



Summary for Pond 1.1aC3: TS3 Culvert

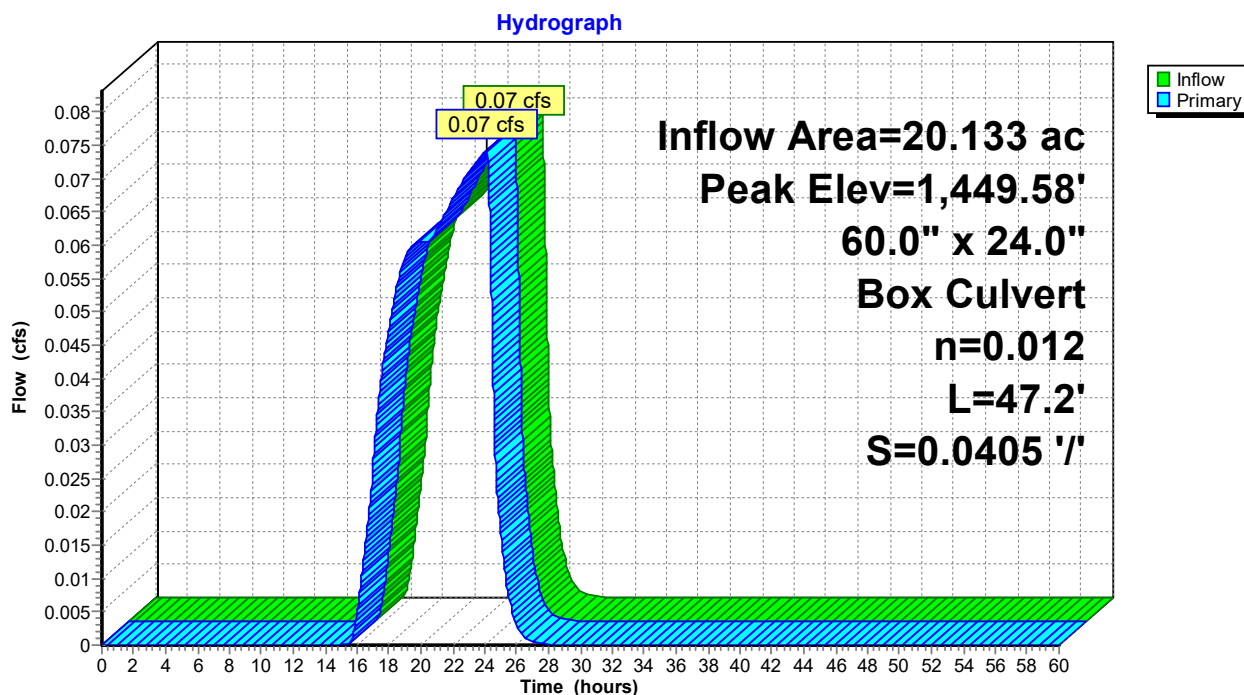
Inflow Area = 20.133 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.07 cfs @ 24.08 hrs, Volume= 0.041 af
 Outflow = 0.07 cfs @ 24.08 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.07 cfs @ 24.08 hrs, Volume= 0.041 af
 Routed to Reach 1.1aR4 : Bypass Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,449.58' @ 24.08 hrs
 Flood Elev= 1,452.10'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,449.55' | 60.0" W x 24.0" H Box Culvert L= 47.2' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.55' / 1,447.64' S= 0.0405 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.07 cfs @ 24.08 hrs HW=1,449.58' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 0.07 cfs @ 0.53 fps)

Pond 1.1aC3: TS3 Culvert



Summary for Pond 1.1aP: North Road Bypass OC

Inflow Area = 32.958 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.12 cfs @ 24.09 hrs, Volume= 0.066 af
 Outflow = 0.12 cfs @ 24.12 hrs, Volume= 0.059 af, Atten= 0%, Lag= 1.3 min
 Discarded = 0.01 cfs @ 24.12 hrs, Volume= 0.028 af
 Primary = 0.11 cfs @ 24.12 hrs, Volume= 0.031 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,428.53' @ 24.12 hrs Surf.Area= 0.020 ac Storage= 0.029 af

Plug-Flow detention time= 520.4 min calculated for 0.059 af (88% of inflow)
 Center-of-Mass det. time= 493.0 min (1,761.0 - 1,268.0)

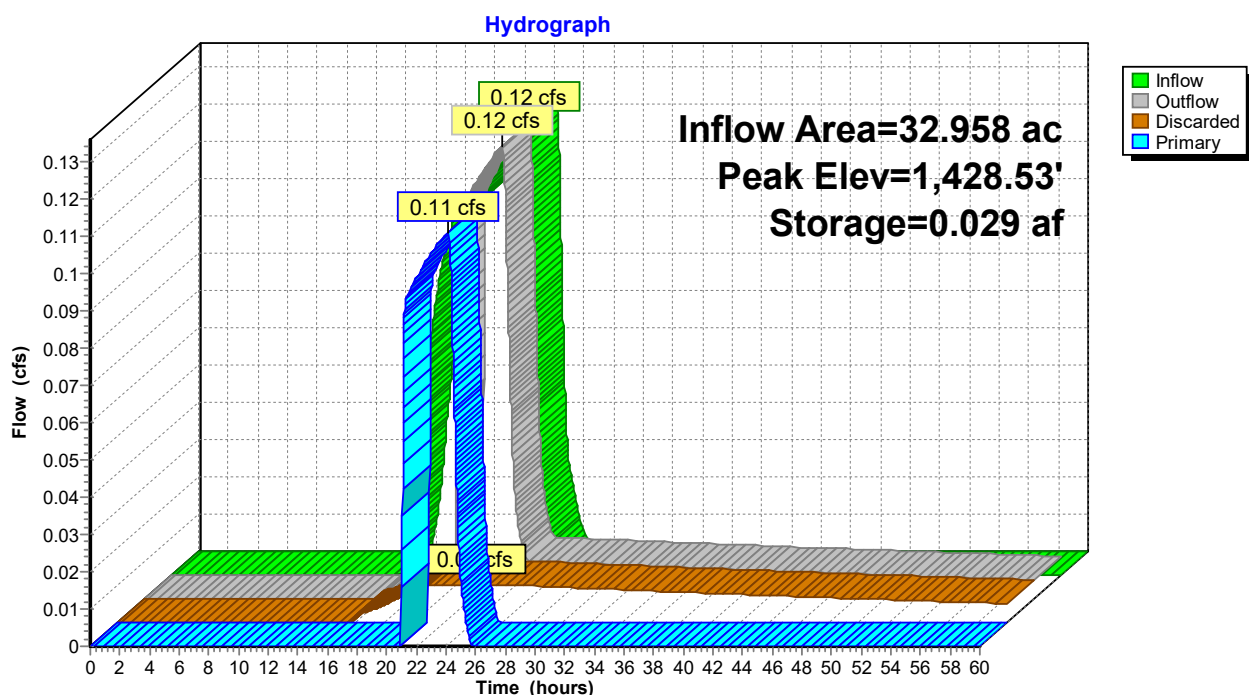
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,426.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,426.00' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,428.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.01 cfs @ 24.12 hrs HW=1,428.53' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.10 cfs @ 24.12 hrs HW=1,428.53' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 0.10 cfs @ 0.40 fps)

Pond 1.1aP: North Road Bypass OC



Summary for Pond 1.1bC1: TS4 Culvert

Inflow Area = 1.333 ac, 0.53% Impervious, Inflow Depth = 2.45" for 100-Yr Storm event
 Inflow = 3.95 cfs @ 12.04 hrs, Volume= 0.272 af
 Outflow = 3.95 cfs @ 12.04 hrs, Volume= 0.272 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.95 cfs @ 12.04 hrs, Volume= 0.272 af
 Routed to Reach 1.1bR2 : North Road Conveyance Swale

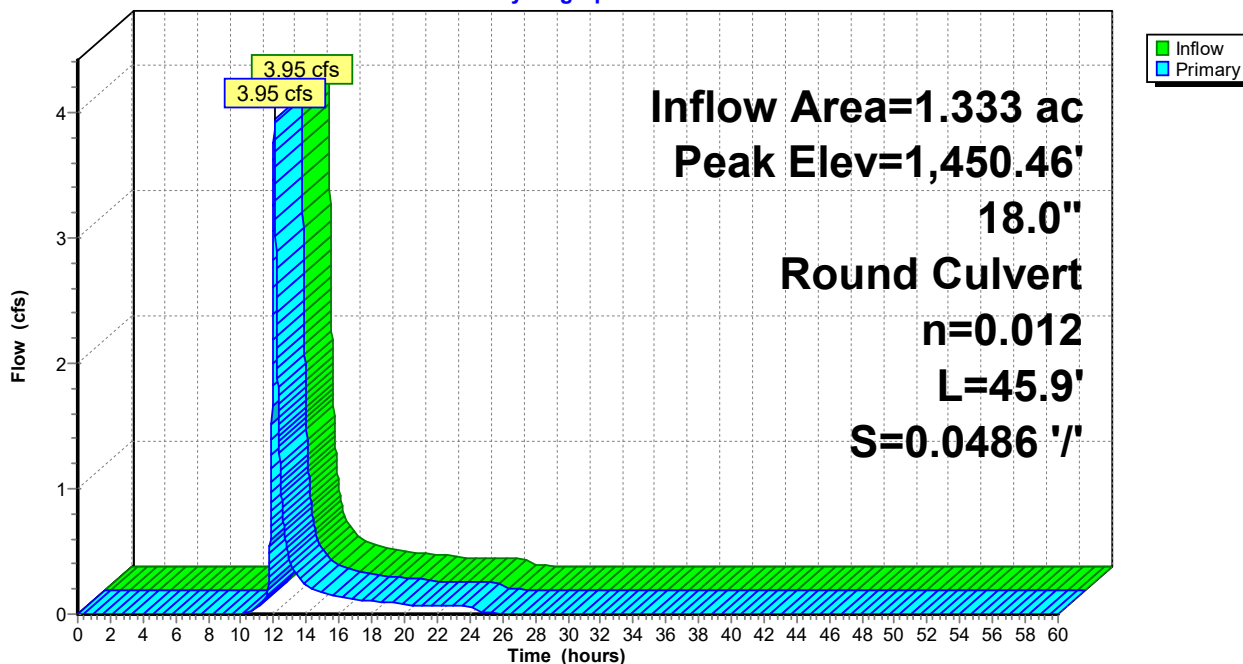
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,450.46' @ 12.04 hrs
 Flood Elev= 1,451.20'

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|--|
| #1 | Primary | 1,449.50' | 18.0" Round Culvert L= 45.9' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,449.50' / 1,447.27' S= 0.0486 '/ Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=3.95 cfs @ 12.04 hrs HW=1,450.46' (Free Discharge)
 ←1=Culvert (Inlet Controls 3.95 cfs @ 3.33 fps)

Pond 1.1bC1: TS4 Culvert

Hydrograph



Summary for Pond 1.1bP1: Dry Swale

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 2.36" for 100-Yr Storm event
 Inflow = 5.77 cfs @ 12.04 hrs, Volume= 0.391 af
 Outflow = 5.77 cfs @ 12.04 hrs, Volume= 0.391 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 12.03 hrs, Volume= 0.005 af
 Primary = 5.77 cfs @ 12.04 hrs, Volume= 0.386 af
 Routed to Pond 1.1bP2 : North Road Detention Pond

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.74' @ 12.04 hrs Surf.Area= 603 sf Storage= 428 cf

Plug-Flow detention time= 6.5 min calculated for 0.391 af (100% of inflow)
 Center-of-Mass det. time= 6.7 min (866.5 - 859.8)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,424.75' | 428 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,424.75 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,425.00 | 25 | 22.9 | 2 | 2 | 42 | |
| 1,426.00 | 273 | 98.0 | 127 | 129 | 767 | |
| 1,426.70 | 603 | 161.7 | 299 | 428 | 2,086 | |

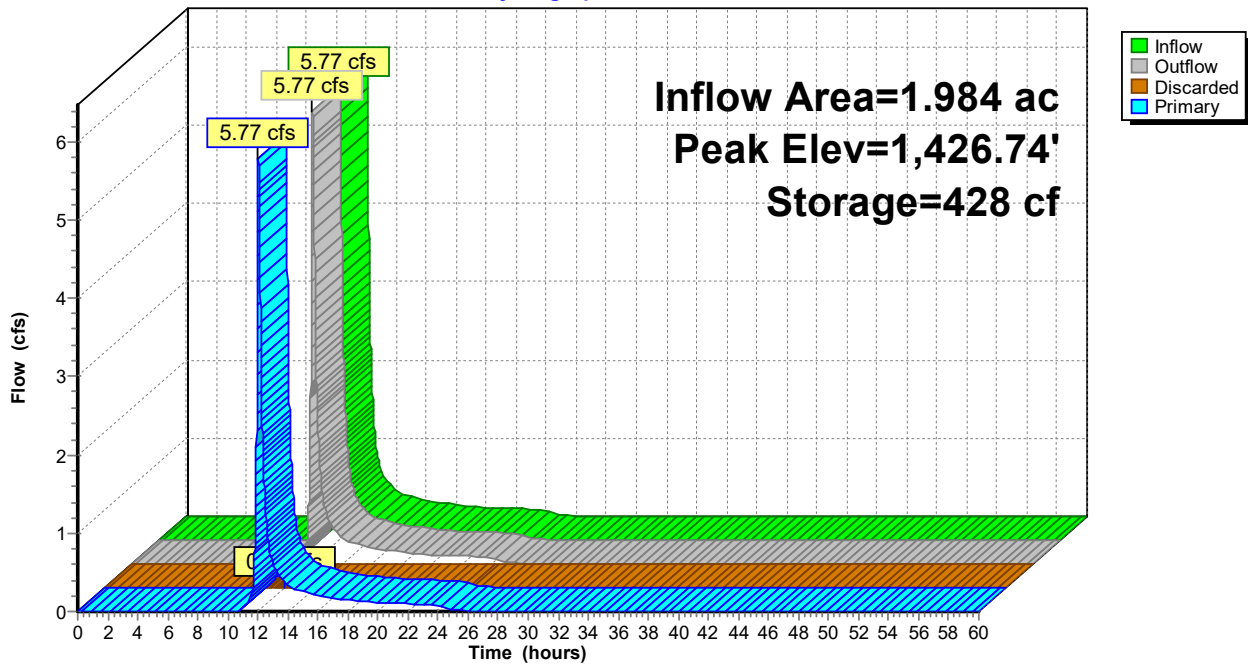
| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | |
|--------|-----------|-----------|--|--|--|--|--|--|--|--|--|--|--|--|
| #1 | Discarded | 1,424.75' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | |
| #2 | Primary | 1,425.69' | 2.0' long x 2.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | |
| | | | Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 | | | | | | | | | | | |
| | | | Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32 | | | | | | | | | | | |

Discarded OutFlow Max=0.01 cfs @ 12.03 hrs HW=1,426.74' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=5.76 cfs @ 12.04 hrs HW=1,426.74' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 5.76 cfs @ 2.74 fps)

Pond 1.1bP1: Dry Swale

Hydrograph



Summary for Pond 1.1bP2: North Road Detention Pond

Inflow Area = 1.984 ac, 0.71% Impervious, Inflow Depth = 2.33" for 100-Yr Storm event
 Inflow = 5.77 cfs @ 12.04 hrs, Volume= 0.386 af
 Outflow = 5.65 cfs @ 12.06 hrs, Volume= 0.372 af, Atten= 2%, Lag= 1.3 min
 Discarded = 0.02 cfs @ 12.06 hrs, Volume= 0.053 af
 Primary = 5.63 cfs @ 12.06 hrs, Volume= 0.318 af
 Routed to Link 1.1L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.23' @ 12.06 hrs Surf.Area= 0.034 ac Storage= 0.056 af

Plug-Flow detention time= 193.0 min calculated for 0.371 af (96% of inflow)
 Center-of-Mass det. time= 171.5 min (1,031.2 - 859.7)

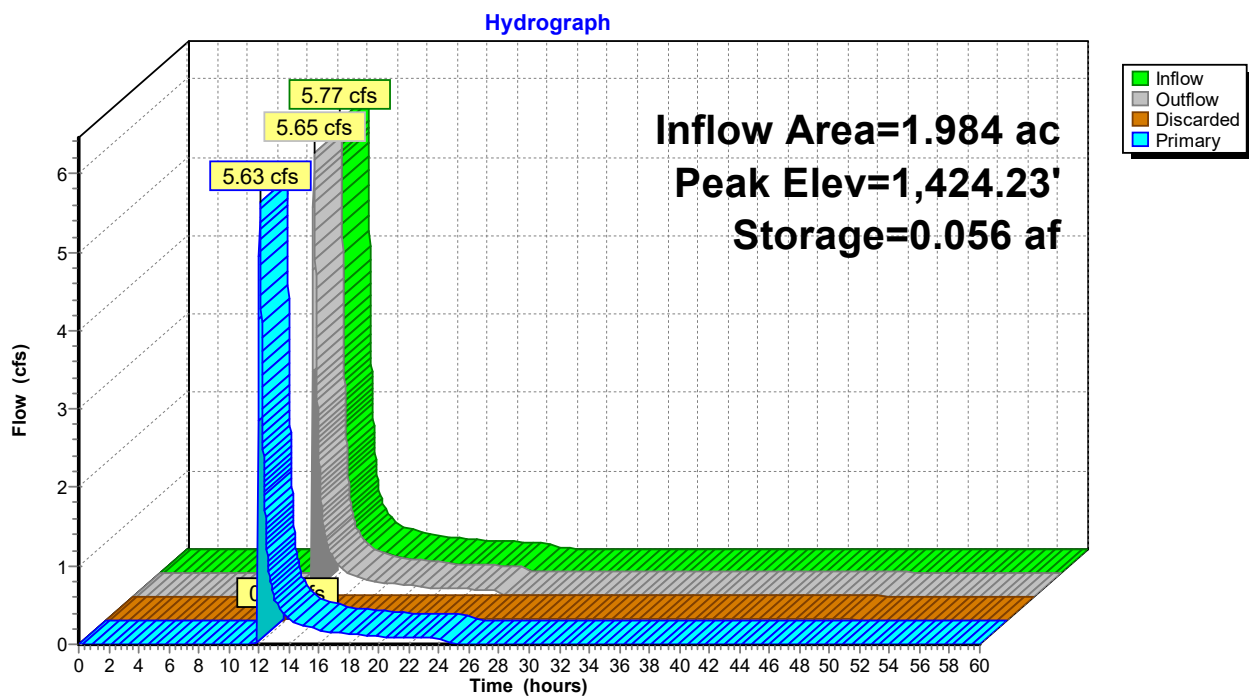
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,421.50' | 0.166 af | 10.00'W x 40.00'L x 5.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,421.50' | 0.500 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,424.00' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.02 cfs @ 12.06 hrs HW=1,424.23' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=5.60 cfs @ 12.06 hrs HW=1,424.23' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 5.60 cfs @ 1.21 fps)

Pond 1.1bP2: North Road Detention Pond



Summary for Pond 1.2aC1: TS 7 Culvert

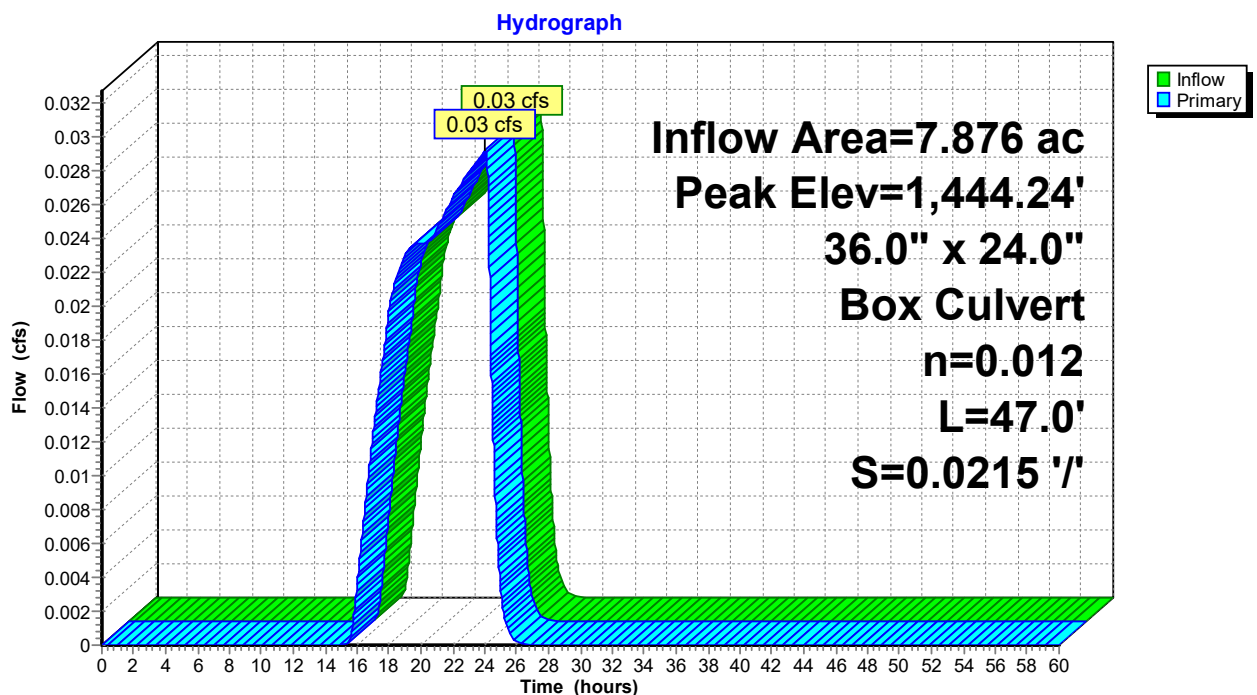
Inflow Area = 7.876 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.03 cfs @ 24.06 hrs, Volume= 0.016 af
 Outflow = 0.03 cfs @ 24.06 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.03 cfs @ 24.06 hrs, Volume= 0.016 af
 Routed to Reach 1.2aR2 : Bypass Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,444.24' @ 24.06 hrs
 Flood Elev= 1,446.28'

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|--|
| #1 | Primary | 1,444.22' | 36.0" W x 24.0" H Box Culvert L= 47.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,444.22' / 1,443.21' S= 0.0215 '/ Cc= 0.900 n= 0.012, Flow Area= 6.00 sf |

Primary OutFlow Max=0.03 cfs @ 24.06 hrs HW=1,444.24' (Free Discharge)
 ↑ **1=Culvert** (Inlet Controls 0.03 cfs @ 0.46 fps)

Pond 1.2aC1: TS 7 Culvert



Summary for Pond 1.2aC2: TS8 Culvert

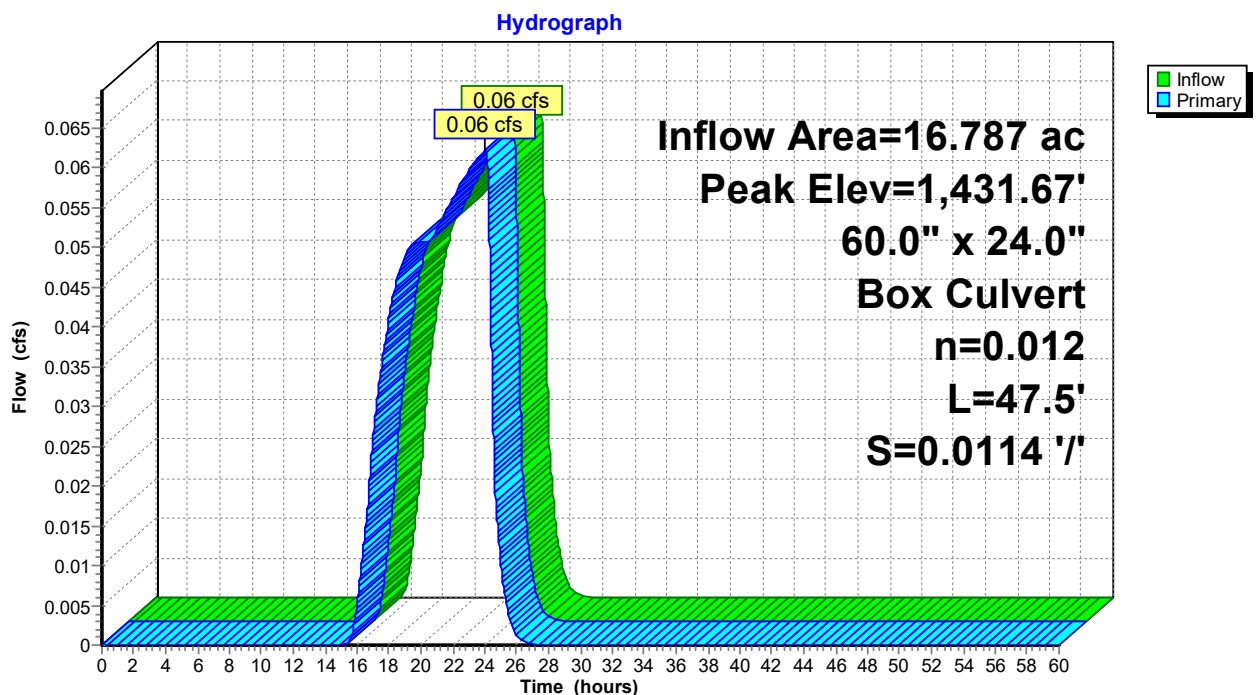
Inflow Area = 16.787 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.06 cfs @ 24.06 hrs, Volume= 0.034 af
 Outflow = 0.06 cfs @ 24.06 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.06 cfs @ 24.06 hrs, Volume= 0.034 af
 Routed to Reach 1.2aR3 : Bypass Swale

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,431.67' @ 24.06 hrs
 Flood Elev= 1,433.87'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,431.65' | 60.0" W x 24.0" H Box Culvert L= 47.5' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,431.65' / 1,431.11' S= 0.0114 '/ Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 10.00 sf |

Primary OutFlow Max=0.06 cfs @ 24.06 hrs HW=1,431.67' (Free Discharge)
 ↑=Culvert (Inlet Controls 0.06 cfs @ 0.50 fps)

Pond 1.2aC2: TS8 Culvert



Summary for Pond 1.2aP: South Road Bypass OC

Inflow Area = 22.287 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
 Inflow = 0.08 cfs @ 24.07 hrs, Volume= 0.045 af
 Outflow = 0.08 cfs @ 24.20 hrs, Volume= 0.045 af, Atten= 5%, Lag= 8.4 min
 Discarded = 0.08 cfs @ 24.20 hrs, Volume= 0.045 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,424.42' @ 24.20 hrs Surf.Area= 0.006 ac Storage= 0.002 af

Plug-Flow detention time= 11.1 min calculated for 0.045 af (100% of inflow)
 Center-of-Mass det. time= 11.1 min (1,272.7 - 1,261.5)

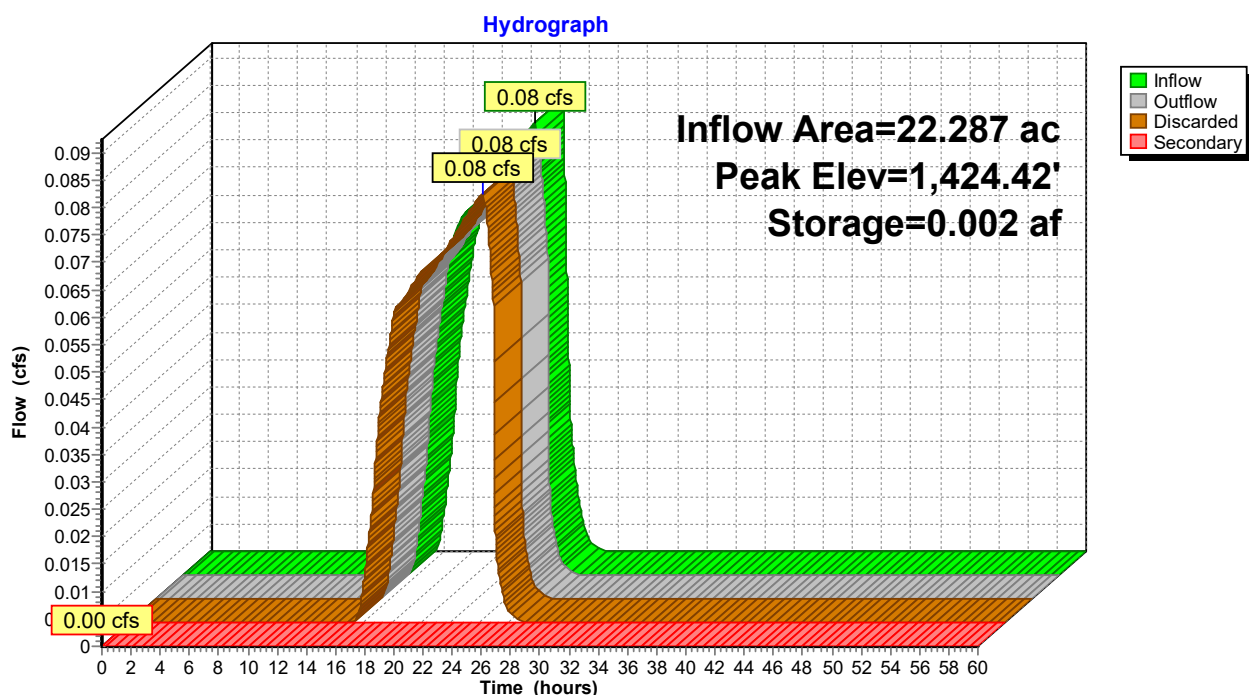
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.069 af | 10.00'W x 20.00'L x 4.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area |
| #2 | Secondary | 1,426.50' | 10.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.08 cfs @ 24.20 hrs HW=1,424.42' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.08 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,424.00' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.2aP: South Road Bypass OC



Summary for Pond 1.2bC1: East Road Culvert

Inflow Area = 0.727 ac, 0.00% Impervious, Inflow Depth = 2.11" for 100-Yr Storm event
 Inflow = 2.43 cfs @ 12.01 hrs, Volume= 0.128 af
 Outflow = 2.43 cfs @ 12.01 hrs, Volume= 0.128 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.43 cfs @ 12.01 hrs, Volume= 0.128 af
 Routed to Reach 1.2bR2 : South Road Conveyance Swale

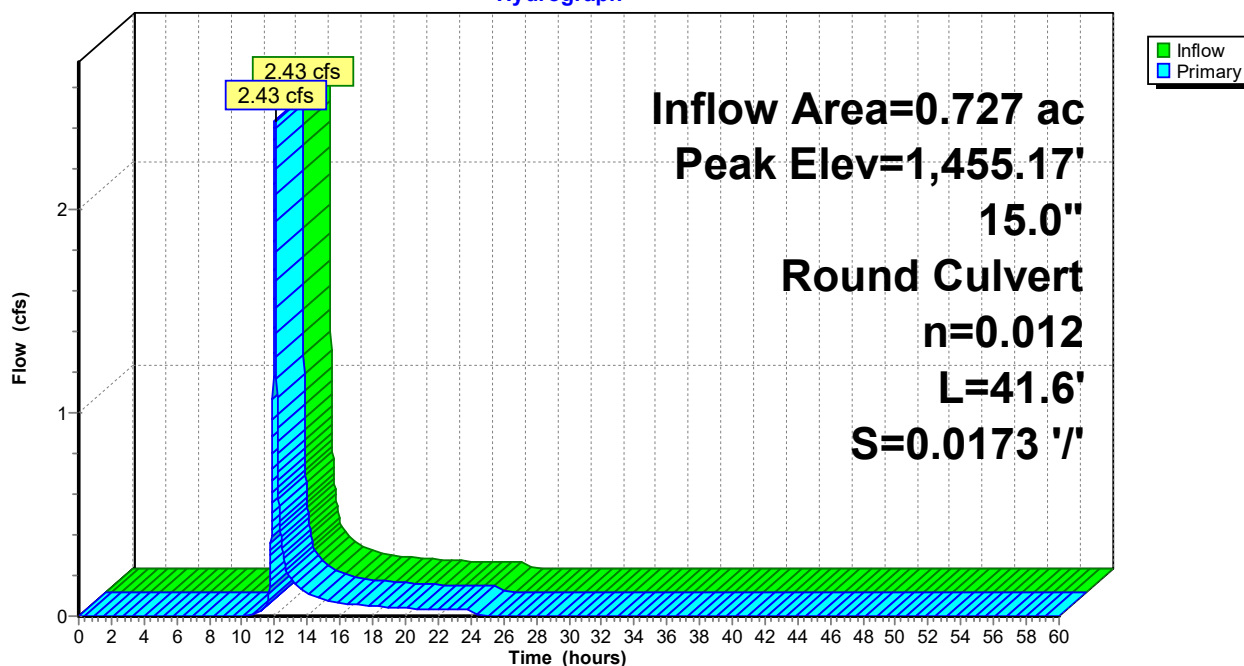
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,455.17' @ 12.01 hrs
 Flood Elev= 1,457.45'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|--|
| #1 | Primary | 1,454.39' | 15.0" Round Culvert L= 41.6' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,454.39' / 1,453.67' S= 0.0173 '/ Cc= 0.900 n= 0.012, Flow Area= 1.23 sf |

Primary OutFlow Max=2.43 cfs @ 12.01 hrs HW=1,455.17' (Free Discharge)
 ↑=Culvert (Inlet Controls 2.43 cfs @ 3.01 fps)

Pond 1.2bC1: East Road Culvert

Hydrograph



Summary for Pond 1.2bC2: TS6 Culvert

Inflow Area = 1.581 ac, 0.25% Impervious, Inflow Depth = 1.73" for 100-Yr Storm event
 Inflow = 3.39 cfs @ 12.07 hrs, Volume= 0.228 af
 Outflow = 3.39 cfs @ 12.07 hrs, Volume= 0.228 af, Atten= 0%, Lag= 0.0 min
 Primary = 3.39 cfs @ 12.07 hrs, Volume= 0.228 af
 Routed to Reach 1.2bR3 : South Road Conveyance Swale

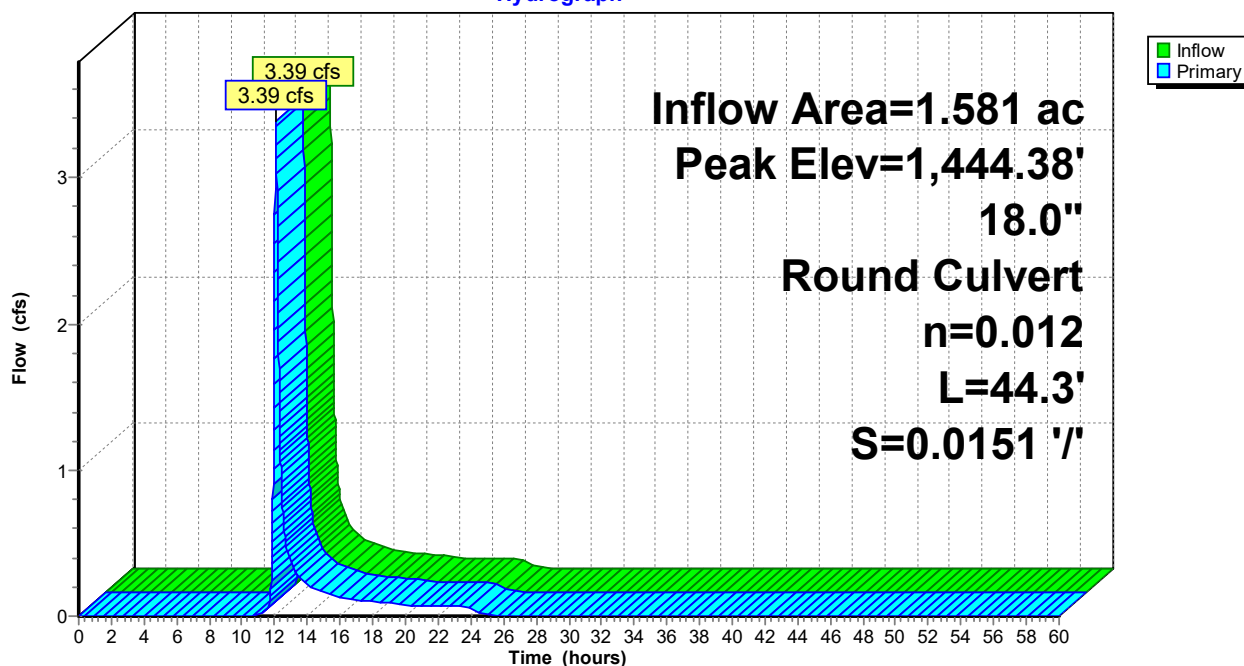
Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,444.38' @ 12.07 hrs
 Flood Elev= 1,445.09'

| Device # | Routing | Invert | Outlet Devices |
|----------|---------|-----------|---|
| #1 | Primary | 1,443.51' | 18.0" Round Culvert L= 44.3' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,443.51' / 1,442.84' S= 0.0151 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf |

Primary OutFlow Max=3.38 cfs @ 12.07 hrs HW=1,444.38' (Free Discharge)
 ↑=Culvert (Inlet Controls 3.38 cfs @ 3.18 fps)

Pond 1.2bC2: TS6 Culvert

Hydrograph



Summary for Pond 1.2bP: South Road Treatment Pond

Inflow Area = 2.396 ac, 0.63% Impervious, Inflow Depth = 1.98" for 100-Yr Storm event
 Inflow = 5.31 cfs @ 12.06 hrs, Volume= 0.394 af
 Outflow = 5.30 cfs @ 12.06 hrs, Volume= 0.394 af, Atten= 0%, Lag= 0.6 min
 Discarded = 0.31 cfs @ 12.06 hrs, Volume= 0.232 af
 Primary = 4.98 cfs @ 12.06 hrs, Volume= 0.162 af
 Routed to Link 1.2L :

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,426.26' @ 12.06 hrs Surf.Area= 0.026 ac Storage= 0.038 af

Plug-Flow detention time= 34.9 min calculated for 0.394 af (100% of inflow)
 Center-of-Mass det. time= 34.9 min (902.9 - 868.1)

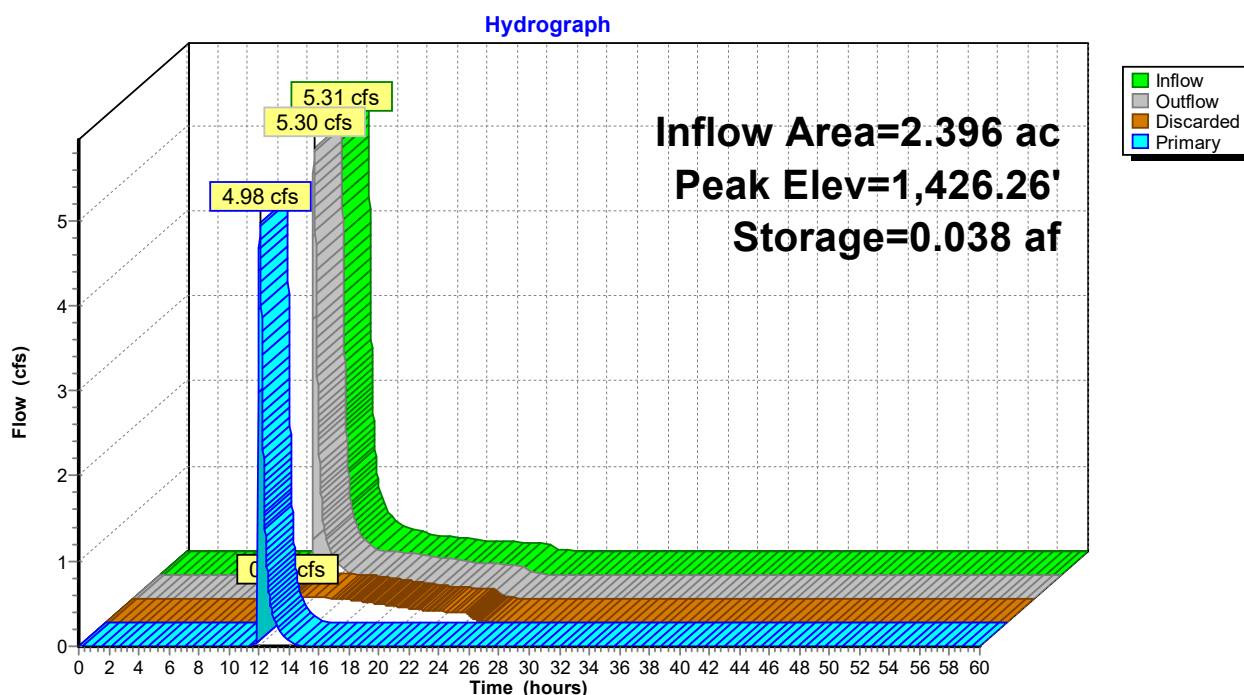
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,424.00' | 0.149 af | 20.00'W x 20.00'L x 5.00'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|--------|-----------|-----------|--|
| #1 | Discarded | 1,424.00' | 12.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,426.05' | 20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |

Discarded OutFlow Max=0.31 cfs @ 12.06 hrs HW=1,426.26' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.31 cfs)

Primary OutFlow Max=4.95 cfs @ 12.06 hrs HW=1,426.26' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 4.95 cfs @ 1.16 fps)

Pond 1.2bP: South Road Treatment Pond



Summary for Pond 1.3P: Pond 3 - Access Rd West

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.94" for 100-Yr Storm event
 Inflow = 1.02 cfs @ 11.99 hrs, Volume= 0.054 af
 Outflow = 0.14 cfs @ 12.44 hrs, Volume= 0.054 af, Atten= 86%, Lag= 27.2 min
 Discarded = 0.14 cfs @ 12.44 hrs, Volume= 0.054 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link SP1 : Study Point 1

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,456.62' @ 12.44 hrs Surf.Area= 1,037 sf Storage= 566 cf

Plug-Flow detention time= 28.7 min calculated for 0.054 af (100% of inflow)
 Center-of-Mass det. time= 28.7 min (927.0 - 898.4)

| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,456.00' | 8,743 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,456.00 | 784 | 123.0 | 0 | 0 | 784 | |
| 1,458.00 | 1,720 | 194.0 | 2,443 | 2,443 | 2,603 | |
| 1,459.00 | 2,884 | 279.0 | 2,277 | 4,721 | 5,811 | |
| 1,460.00 | 5,280 | 421.0 | 4,022 | 8,743 | 13,729 | |

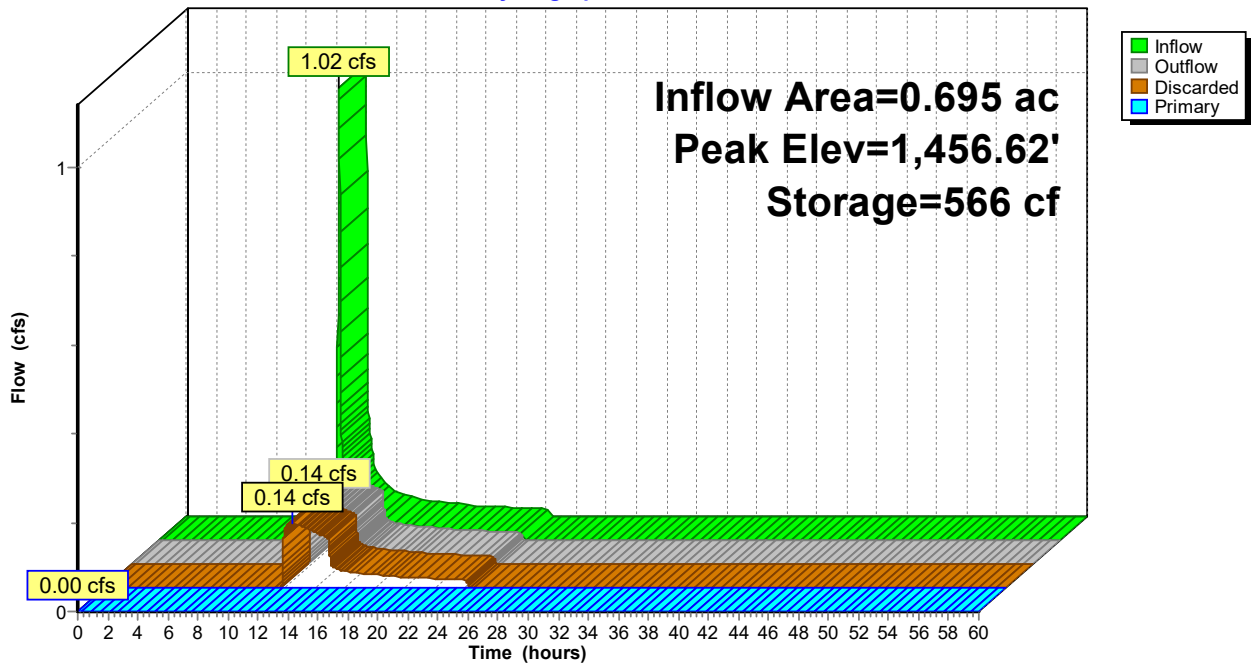
| Device | Routing | Invert | Outlet Devices | | | | | | | | | | | | | | | | | | |
|--------|-----------|-----------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| #1 | Discarded | 1,456.00' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' | | | | | | | | | | | | | | | | | | |
| #2 | Primary | 1,459.99' | 20.0' long x 4.0' breadth Broad-Crested Rectangular Weir | | | | | | | | | | | | | | | | | | |
| | | | Head (feet) | 0.20 | 0.40 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.50 | 3.00 | 3.50 | 4.00 | 4.50 | 5.00 | 5.50 | |
| | | | Coef. (English) | 2.38 | 2.54 | 2.69 | 2.68 | 2.67 | 2.67 | 2.65 | 2.66 | 2.66 | 2.66 | 2.68 | 2.72 | 2.73 | 2.76 | 2.79 | 2.88 | 3.07 | 3.32 |

Discarded OutFlow Max=0.14 cfs @ 12.44 hrs HW=1,456.62' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,456.00' (Free Discharge)
 ↑2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1.3P: Pond 3 - Access Rd West

Hydrograph



Summary for Pond 4.2bP: Pond 4 - Access Rd East

Inflow Area = 0.470 ac, 0.00% Impervious, Inflow Depth = 2.53" for 100-Yr Storm event
 Inflow = 1.95 cfs @ 12.01 hrs, Volume= 0.099 af
 Outflow = 0.69 cfs @ 12.15 hrs, Volume= 0.099 af, Atten= 65%, Lag= 8.9 min
 Discarded = 0.14 cfs @ 12.15 hrs, Volume= 0.089 af
 Primary = 0.55 cfs @ 12.15 hrs, Volume= 0.011 af
 Routed to Pond 4.2C : 18" Culvert

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,448.33' @ 12.15 hrs Surf.Area= 998 sf Storage= 1,559 cf

Plug-Flow detention time= 117.3 min calculated for 0.099 af (100% of inflow)
 Center-of-Mass det. time= 117.3 min (960.2 - 842.9)

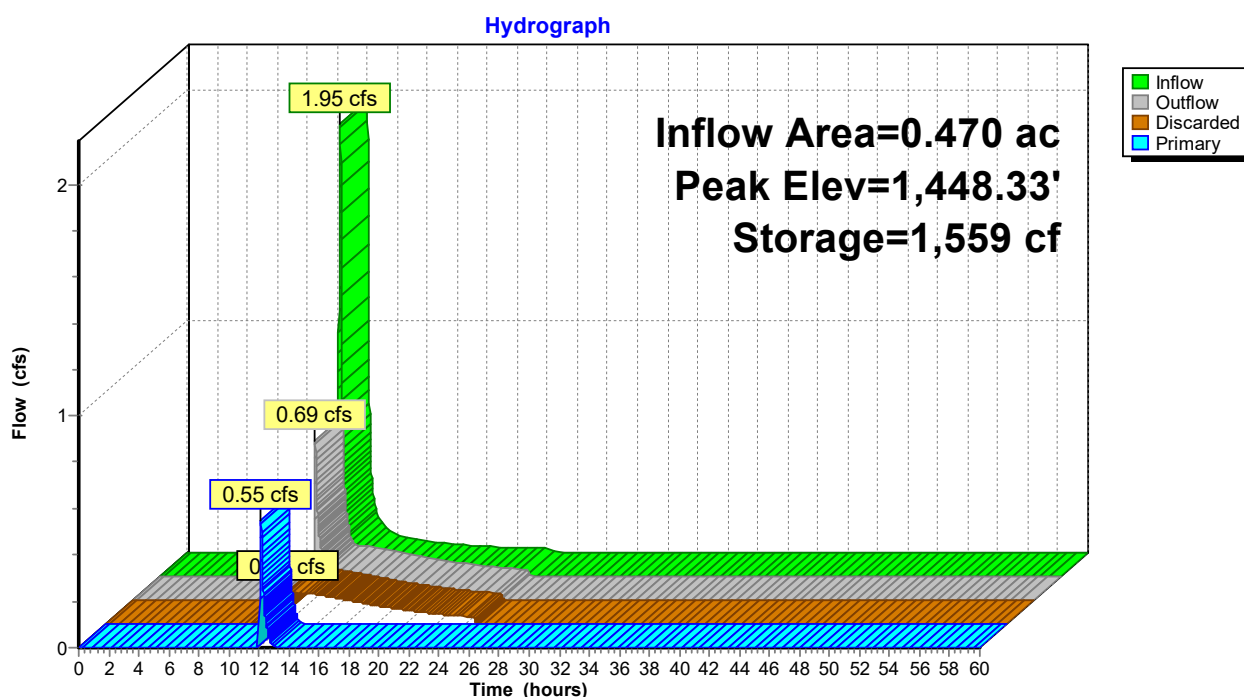
| Volume | Invert | Avail.Storage | Storage Description |
|--------|-----------|---------------|---|
| #1 | 1,445.50' | 2,317 cf | 10.00'W x 20.00'L x 3.50'H Prismatic Z=3.0 |

| Device | Routing | Invert | Outlet Devices |
|---|-----------|-----------|---|
| #1 | Discarded | 1,445.50' | 6.000 in/hr Exfiltration over Surface area Phase-In= 0.01' |
| #2 | Primary | 1,448.25' | 10.0' long x 4.0' breadth Broad-Crested Rectangular Weir |
| Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 | | | |
| 2.50 3.00 3.50 4.00 4.50 5.00 5.50 | | | |
| Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 | | | |
| 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32 | | | |

Discarded OutFlow Max=0.14 cfs @ 12.15 hrs HW=1,448.33' (Free Discharge)
 ↳1=Exfiltration (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.54 cfs @ 12.15 hrs HW=1,448.33' (Free Discharge)
 ↳2=Broad-Crested Rectangular Weir (Weir Controls 0.54 cfs @ 0.67 fps)

Pond 4.2bP: Pond 4 - Access Rd East



Summary for Pond 4.2C: 18" Culvert

Inflow Area = 27.587 ac, 0.00% Impervious, Inflow Depth = 0.93" for 100-Yr Storm event
 Inflow = 13.46 cfs @ 12.41 hrs, Volume= 2.131 af
 Outflow = 9.09 cfs @ 12.74 hrs, Volume= 2.130 af, Atten= 32%, Lag= 19.7 min
 Primary = 9.09 cfs @ 12.74 hrs, Volume= 2.130 af
 Routed to Reach 4.1R2 : Ex Stream

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,433.72' @ 12.74 hrs Surf.Area= 13,077 sf Storage= 10,213 cf
 Flood Elev= 1,434.64' Surf.Area= 27,666 sf Storage= 28,656 cf

Plug-Flow detention time= 13.0 min calculated for 2.130 af (100% of inflow)
 Center-of-Mass det. time= 12.5 min (940.4 - 927.9)

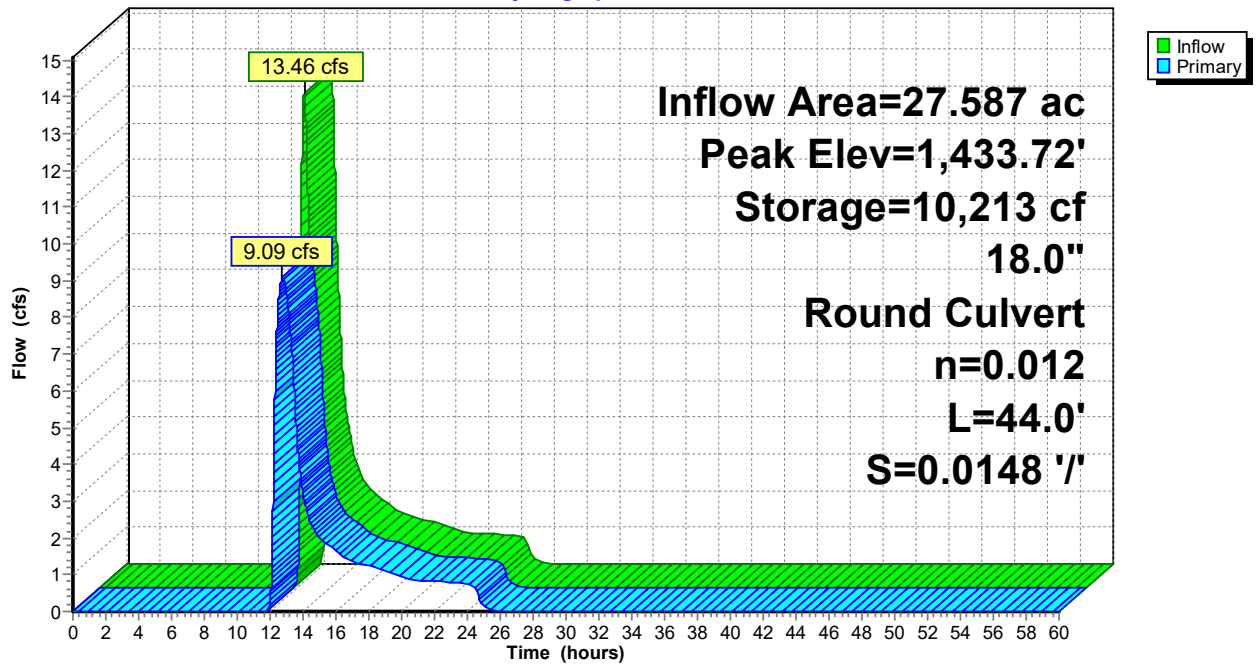
| Volume | Invert | Avail.Storage | Storage Description | | | |
|------------------|-------------------|---------------|--|------------------------|------------------|--|
| #1 | 1,431.50' | 39,033 cf | Custom Stage Data (Irregular) Listed below (Recalc) | | | |
| Elevation (feet) | Surf.Area (sq-ft) | Perim. (feet) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) | Wet.Area (sq-ft) | |
| 1,431.50 | 0 | 0.0 | 0 | 0 | 0 | |
| 1,432.00 | 1,190 | 146.0 | 198 | 198 | 1,697 | |
| 1,432.50 | 3,534 | 368.0 | 1,129 | 1,327 | 10,778 | |
| 1,433.00 | 5,795 | 497.0 | 2,309 | 3,637 | 19,660 | |
| 1,433.50 | 10,362 | 837.0 | 3,984 | 7,621 | 55,755 | |
| 1,434.00 | 16,931 | 975.0 | 6,756 | 14,377 | 75,659 | |
| 1,434.60 | 27,412 | 1,352.0 | 13,177 | 27,555 | 145,474 | |
| 1,435.00 | 30,000 | 1,500.0 | 11,479 | 39,033 | 179,068 | |

| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.83' | 18.0" Round Culvert L= 44.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.83' / 1,431.18' S= 0.0148 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.77 sf |

Primary OutFlow Max=9.09 cfs @ 12.74 hrs HW=1,433.72' (Free Discharge)
 ↑1=Culvert (Inlet Controls 9.09 cfs @ 5.14 fps)

Pond 4.2C: 18" Culvert

Hydrograph



Summary for Pond 4.3C: 24" Culvert

Inflow Area = 25.466 ac, 5.08% Impervious, Inflow Depth = 1.34" for 100-Yr Storm event
 Inflow = 22.16 cfs @ 12.37 hrs, Volume= 2.846 af
 Outflow = 22.16 cfs @ 12.37 hrs, Volume= 2.846 af, Atten= 0%, Lag= 0.0 min
 Primary = 22.16 cfs @ 12.37 hrs, Volume= 2.846 af
 Routed to Link SP4 : Study Point 4

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,434.50' @ 12.37 hrs
 Flood Elev= 1,434.65'

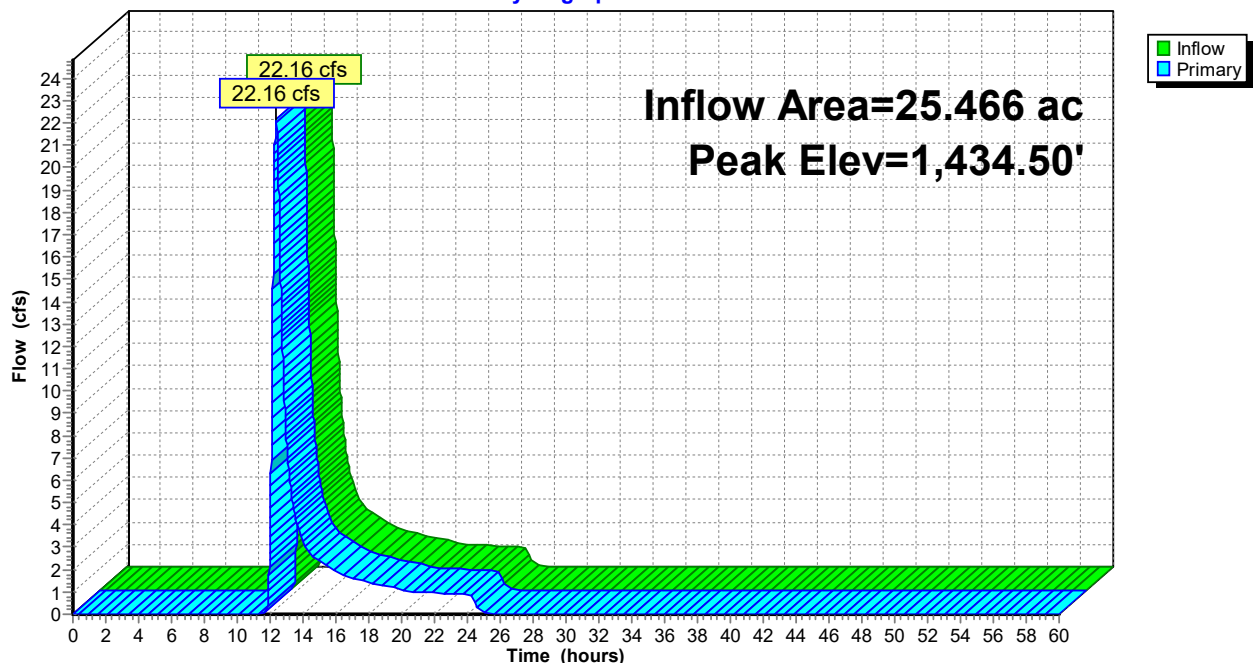
| Device | Routing | Invert | Outlet Devices |
|--------|---------|-----------|---|
| #1 | Primary | 1,431.35' | 24.0" Round Culvert L= 55.8' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,431.35' / 1,429.87' S= 0.0265 '/' Cc= 0.900 n= 0.012, Flow Area= 3.14 sf |
| #2 | Primary | 1,434.81' | 20.0' long x 30.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63 |

Primary OutFlow Max=22.15 cfs @ 12.37 hrs HW=1,434.49' (Free Discharge)

- 1=Culvert (Inlet Controls 22.15 cfs @ 7.05 fps)
- 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4.3C: 24" Culvert

Hydrograph



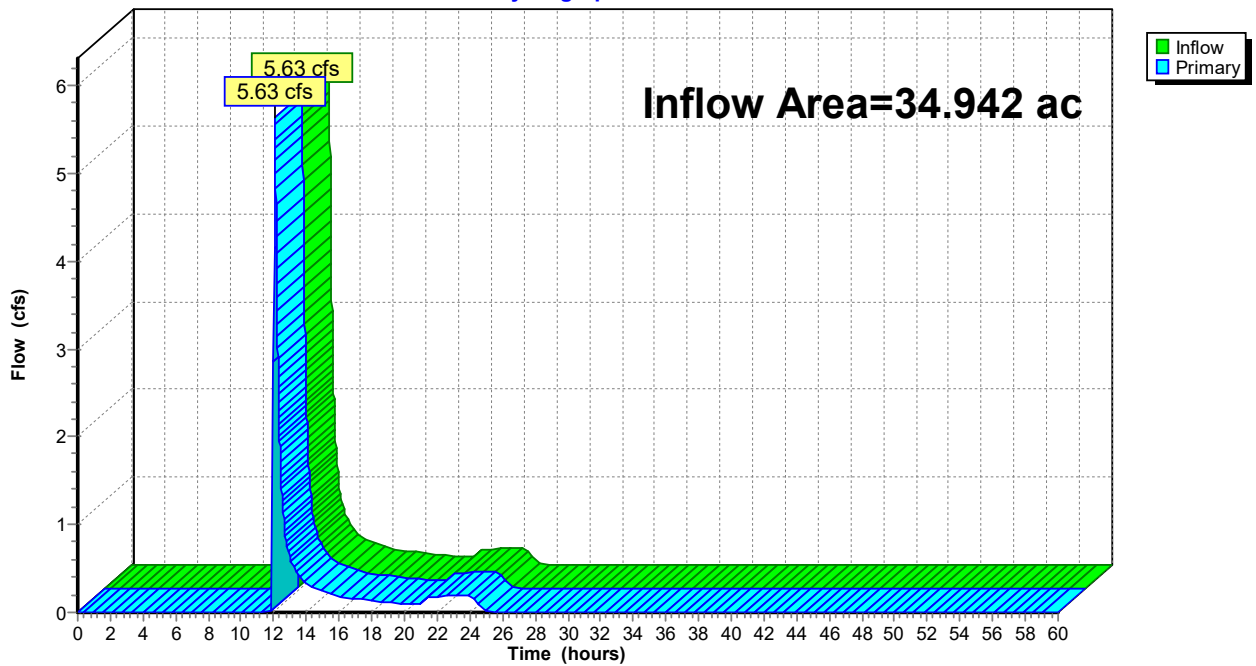
Summary for Link 1.1L:

Inflow Area = 34.942 ac, 0.04% Impervious, Inflow Depth = 0.12" for 100-Yr Storm event
Inflow = 5.63 cfs @ 12.06 hrs, Volume= 0.349 af
Primary = 5.63 cfs @ 12.06 hrs, Volume= 0.349 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.1L:

Hydrograph



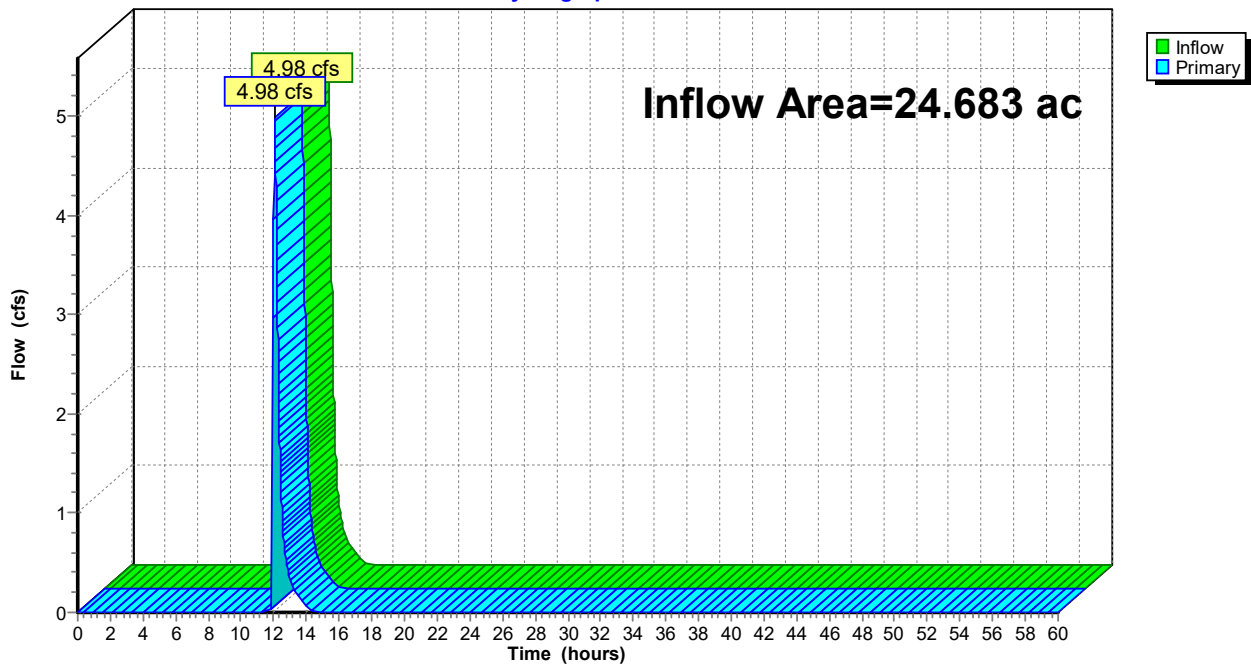
Summary for Link 1.2L:

Inflow Area = 24.683 ac, 0.06% Impervious, Inflow Depth = 0.08" for 100-Yr Storm event
Inflow = 4.98 cfs @ 12.06 hrs, Volume= 0.162 af
Primary = 4.98 cfs @ 12.06 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min
Routed to Link SP1 : Study Point 1

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link 1.2L:

Hydrograph



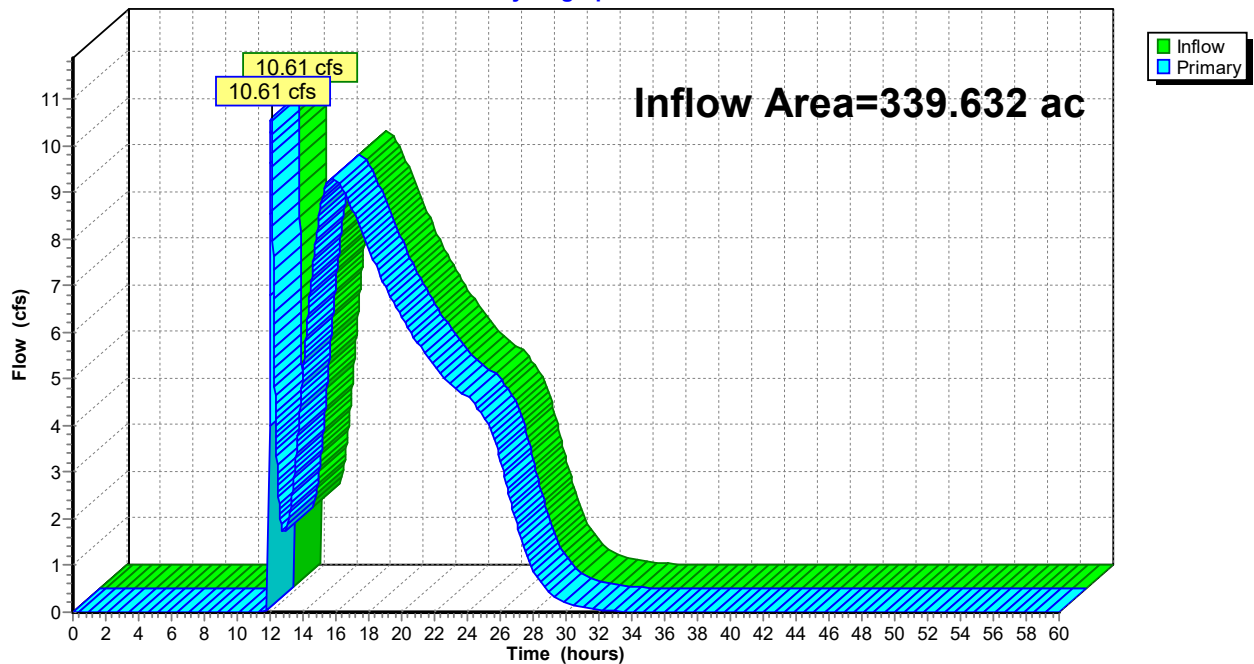
Summary for Link SP1: Study Point 1

Inflow Area = 339.632 ac, 0.01% Impervious, Inflow Depth = 0.26" for 100-Yr Storm event
Inflow = 10.61 cfs @ 12.06 hrs, Volume= 7.384 af
Primary = 10.61 cfs @ 12.06 hrs, Volume= 7.384 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP1: Study Point 1

Hydrograph



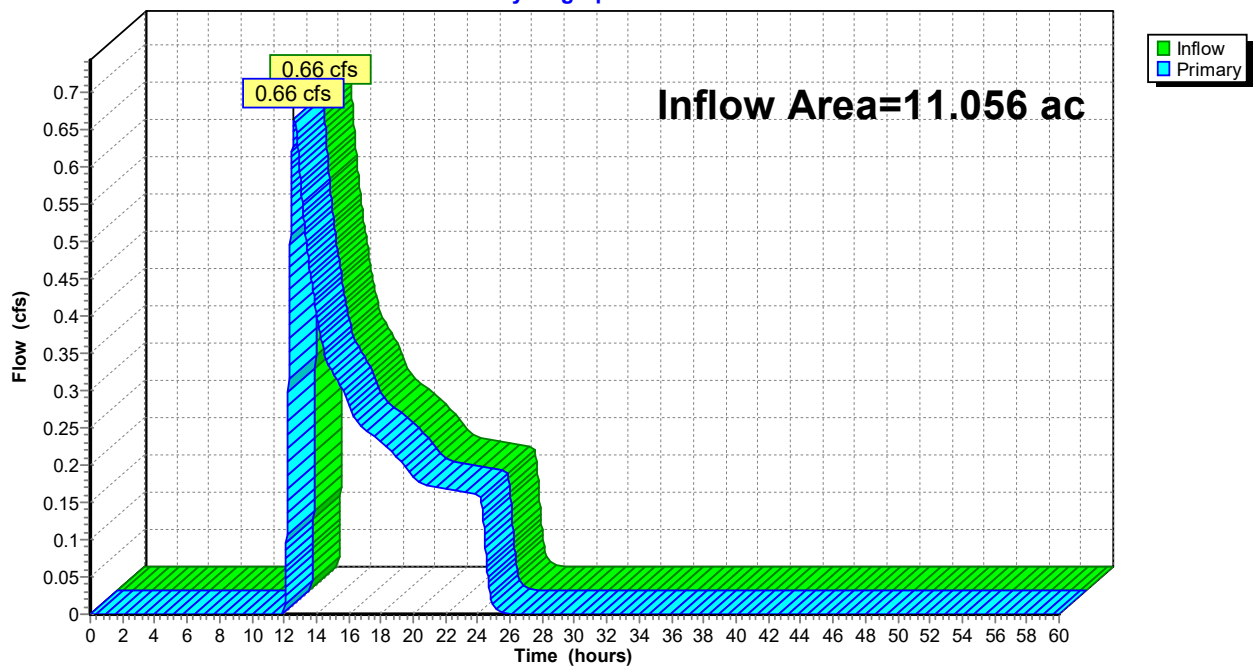
Summary for Link SP2: Study Point 2

Inflow Area = 11.056 ac, 0.00% Impervious, Inflow Depth = 0.30" for 100-Yr Storm event
Inflow = 0.66 cfs @ 12.61 hrs, Volume= 0.272 af
Primary = 0.66 cfs @ 12.61 hrs, Volume= 0.272 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP2: Study Point 2

Hydrograph



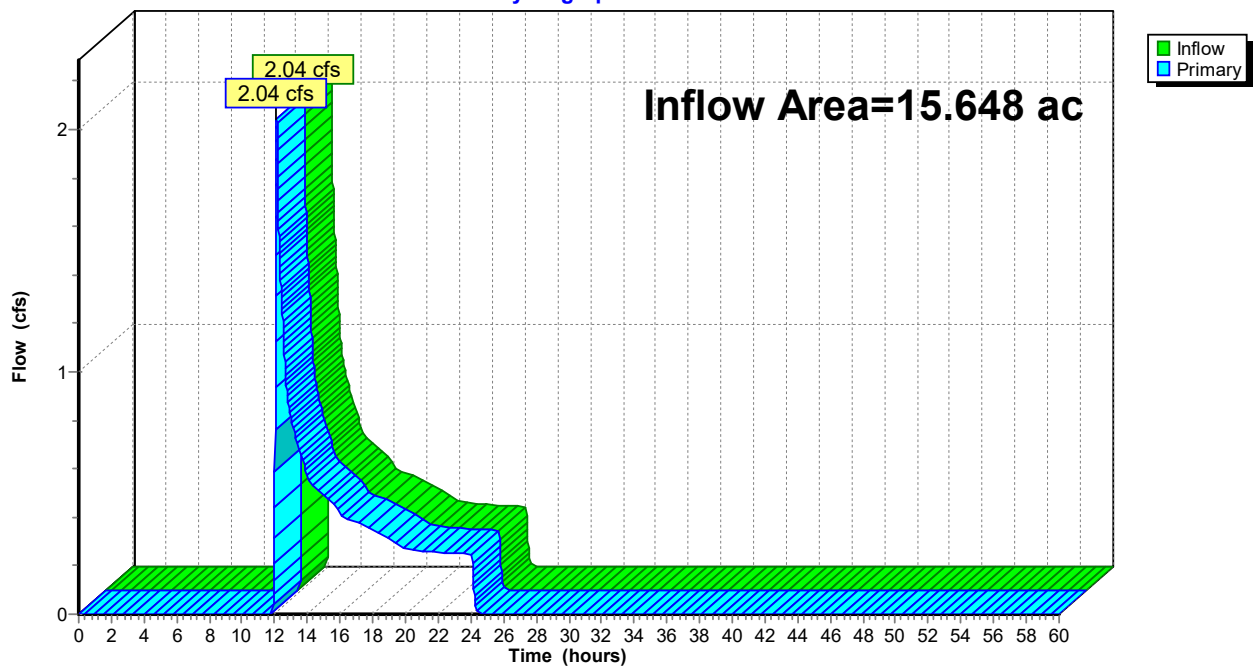
Summary for Link SP3: Study Point 3

Inflow Area = 15.648 ac, 0.56% Impervious, Inflow Depth = 0.34" for 100-Yr Storm event
Inflow = 2.04 cfs @ 12.13 hrs, Volume= 0.442 af
Primary = 2.04 cfs @ 12.13 hrs, Volume= 0.442 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP3: Study Point 3

Hydrograph



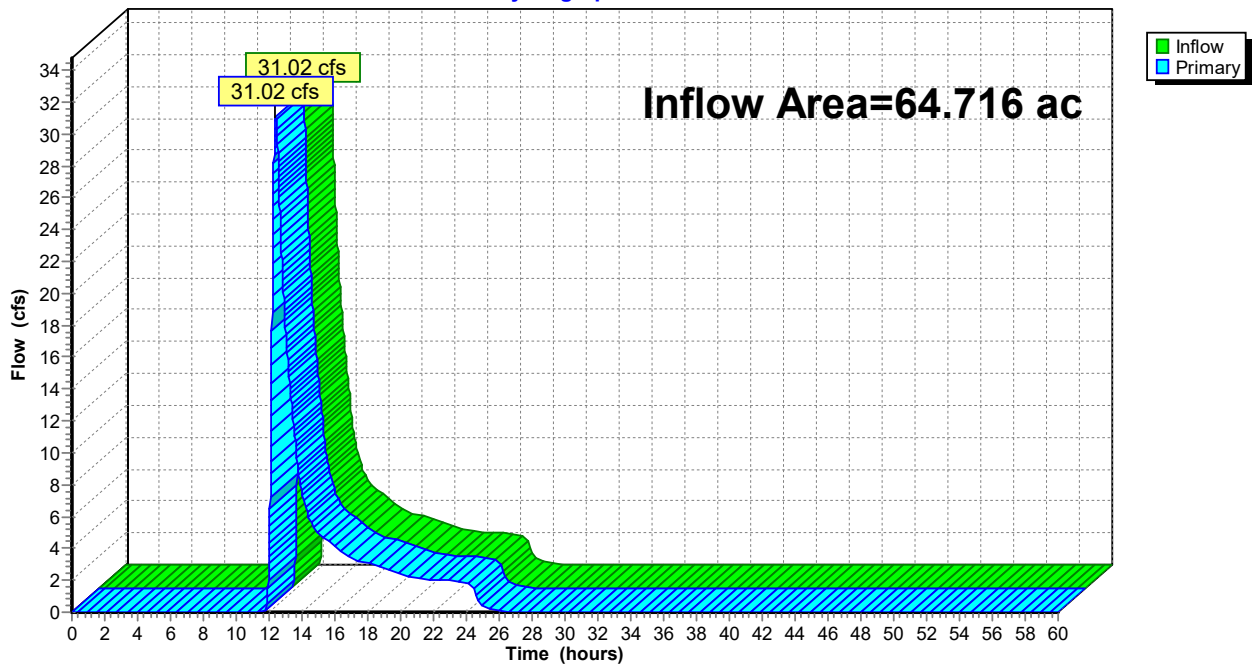
Summary for Link SP4: Study Point 4

Inflow Area = 64.716 ac, 2.50% Impervious, Inflow Depth = 1.03" for 100-Yr Storm event
Inflow = 31.02 cfs @ 12.41 hrs, Volume= 5.546 af
Primary = 31.02 cfs @ 12.41 hrs, Volume= 5.546 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP4: Study Point 4

Hydrograph



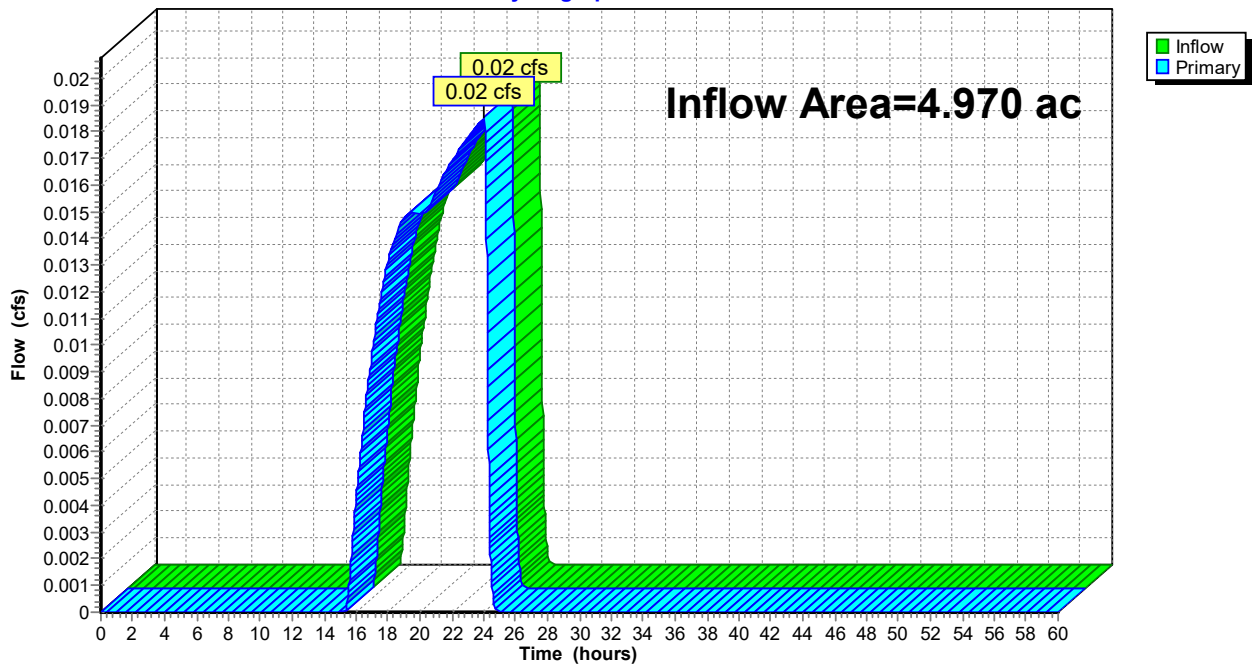
Summary for Link SP5: Study Point 5

Inflow Area = 4.970 ac, 0.00% Impervious, Inflow Depth = 0.02" for 100-Yr Storm event
Inflow = 0.02 cfs @ 24.02 hrs, Volume= 0.010 af
Primary = 0.02 cfs @ 24.02 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP5: Study Point 5

Hydrograph



Summary for Link SP6: Study Point 6

Inflow Area = 24.966 ac, 5.81% Impervious, Inflow Depth = 0.48" for 100-Yr Storm event
Inflow = 3.11 cfs @ 12.89 hrs, Volume= 1.002 af
Primary = 3.11 cfs @ 12.89 hrs, Volume= 1.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Link SP6: Study Point 6

Hydrograph

