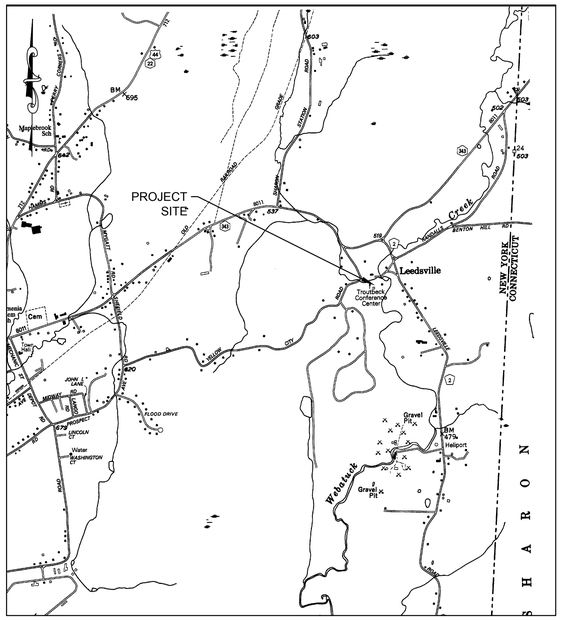
TROUTBECK

ADAPTIVE REUSE PLAN

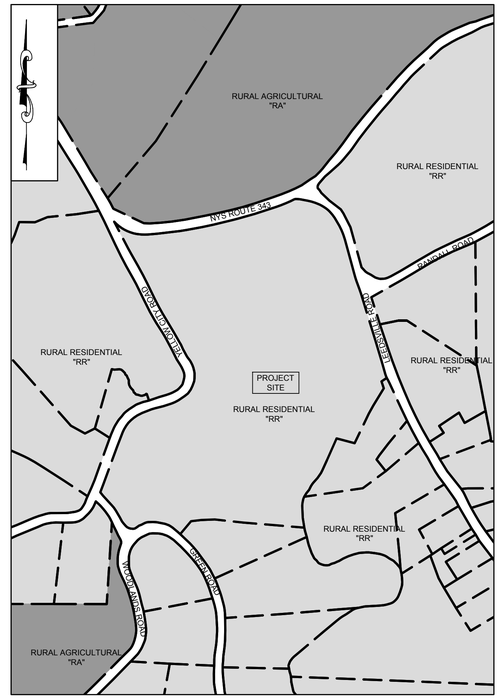
TOWN OF AMENIA
DUTCHESS COUNTY, NY

VICINITY PLAN



SCALE: 1" = 2000'

AREA PLAN



SCALE: 1" = 400'

- RURAL AGRICULTURAL
- RURAL RESIDENTIAL

DRAWING LIST

RELATED SITE DESIGN DOCUMENTS ATTACHED HERETO:

- TROUTBECK - PHASE 1 SITE PLAN SET, SHEETS 0-6+, DATED 8/29/2022, REVISED 10/10/2022

PLANS PREPARED FOR:

TROUTBECK HOLDINGS LP.
515 LEEDSVILLE RD.
AMENIA, NY 12501

PARCEL INFORMATION

ZONING DISTRICT: "RR" RURAL RESIDENTIAL
LOT SIZE: 43.5 ACRES
TAX GRID No.: 132000-7267-00-227675
PROPERTY ADDRESS: 515 LEEDSVILLE ROAD AMENIA, NY 12501
PROPERTY OWNER: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501
APPLICANT: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501

ADJACENT PROPERTY OWNERS

TAX GRID NO. : 132000-7267-00-285867
PROPERTY OWNER: BARBARA C. MEILI
ZONING DISTRICT: "RA" - 'RURAL AGRICULTURAL'

TAX GRID NO. : 132000-7267-00-340790
PROPERTY OWNER: STEPHEN HOLT
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-335715
PROPERTY OWNER: KEVIN WHEELER
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-343654
PROPERTY OWNER: DANIEL J. KESSLER
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-314628
PROPERTY OWNER: VERNON FISH
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-294624
PROPERTY OWNER: JOHN H. STEWART
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-310588
PROPERTY OWNER: ADRIAN PARTRIDGE
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-186555
PROPERTY OWNER: SCOTT YO
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-136560
PROPERTY OWNER: DAVID LEDERKRAMER
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-115640
PROPERTY OWNER: PETER W. SPARBER
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-137672
PROPERTY OWNER: LYZZETTE BULLOCK
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

ENGINEERING, DESIGN, & PLANS PREPARED BY:

RENNIA ENGINEERING DESIGN, PLLC

CIVIL ▪ ENVIRONMENTAL ▪ STRUCTURAL

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

THE UNDERSIGNED OWNER OF THE PROPERTY HEREON STATES THAT I AM FAMILIAR WITH THIS MAP, ITS CONTENTS AND LEGENDS AND HEREBY CONSENT TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON AND TO THE FILING OF THIS PLAN IN THE OFFICE OF THE CLERK OF THE TOWN OF HYDE PARK, DUTCHESS COUNTY, NY.

SIGNED THIS _____ DAY OF _____ 2022

_____ OWNER'S SIGNATURE

PLANNING BOARD APPROVAL

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE TOWN OF HYDE PARK, NEW YORK, ON THE _____ DAY OF _____ , 20_____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____ , 20____ BY

_____
CHAIRPERSON

DATE	REVISION
8/8/2022	REVISED FOR PLANNING BOARD SUBMISSION
10/10/2022	REVISED FOR PLANNING BOARD SUBMISSION

DATE: 12/01/2021

TITLE

SHEET: 0 OF 6

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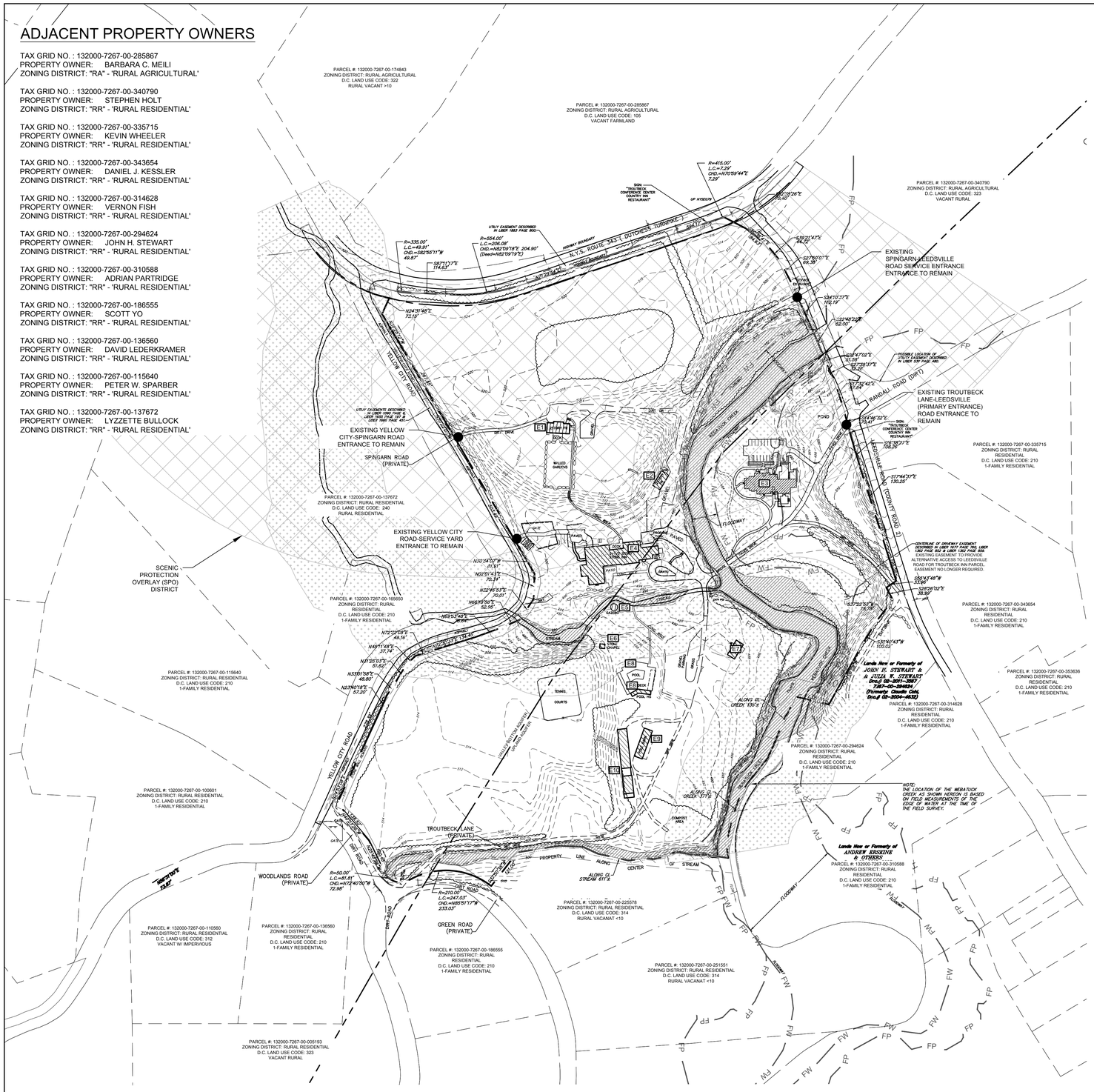

0 150' 300'
1" = 150'
GRAPHIC SCALE

FLOOD ZONE NOTES:
1. PROPERTY SHOWN HEREON LIES WITHIN "SPECIAL FLOOD HAZARD AREA ZONE AE", WITHIN "OTHER AREAS, ZONE X" (UNSHADED), AND WITHIN "FLOODWAY AREAS IN ZONE AE" AS SHOWN ON FEMA, NFIP, FIRM PANEL 36027C0332E, WITH AN EFFECTIVE DATE OF MAY 2, 2012.
2. THE "ZONE AE, BASE FLOOD ELEVATIONS" DETERMINED TO AFFECT THIS PARCEL ARE IN THE RANGE OF 480' TO 487' (NAVD88).

MAP NOTES:
1. PROPERTY DATA AND EXISTING FEATURES BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE APRIL 26, 2016 PREPARED BY CHAZEN ENGINEERING AND SURVEYING, PC.
2. TOPOGRAPHIC CONTOURS BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE DECEMBER 8, 2004 PREPARED BY STEVEN ALEX, L.S. OF CHAZEN ENGINEERING AND SURVEYING, PC.

TROUTBECK INN - ADAPTIVE REUSE PLAN

EXISTING STRUCTURE INVENTORY

BUILDING #	BUILDING	EXISTING BUILDING USE	FLOORS	FOOTPRINT (SF)	TOTAL BUILDING SQ.FT.	LODGING UNITS / STAFF APARTMENTS
E1	GARDEN HOUSE*	STAFF APARTMENTS/ GUEST LODGING	2-STORY	1,931	3,862	4 LODGING UNITS 2 STAFF APARTMENTS
E2	CARETAKER HOUSE / MAINTENANCE GARAGE	STAFF APARTMENT / MAINTENANCE	2-STORY	1,172	1,800	1 STAFF APARTMENT
E3	BENTON HOUSE (FORMERLY CENTURY LODGE & ANNEX)	LODGING	2-STORY	5,860	9,783	17 LODGING UNITS
E4	MANOR HOUSE	LODGING/EVENT SPACE/DINING	2.5-STORY	14,264	35,773	17 LODGING UNITS
E5	GAZEEBO*	GUEST AMENITY	1-STORY	315	315	N/A
E6	STONE CHAPEL	GUEST AMENITY	1-STORY	174	174	N/A
E7	DELAMETER HOUSE	VACANT/UNUSED	2-STORY	1,143	2,012	N/A
E8	POOL FACILITIES (POOL HOUSE)	GUEST AMENITY	1-STORY	615	615	N/A
E9	POLE BARN	GUEST AMENITY	1-STORY	2,081	2,081	N/A
E10	THE BARNS (WELLNESS)	GUEST AMENITY/ FITNESS/ WELLNESS	1-STORY	4,925	4,925	N/A
TOTAL					LODGING UNITS	38
					STAFF APTS.	3

*SCHEDULED TO BE REMOVED AS PART OF PROPOSED ADAPTIVE REUSE PLAN DEVELOPMENT.

EXISTING USES

AS SHOWN IN THE HISTORICAL NARRATIVE, THE TROUTBECK PROJECT SITE HAS BEEN IN ACTIVE USE SINCE THE 1700'S. THE SITE HAS BEEN USED FOR A VARIETY OF USES IN THE PAST AND CONTINUES TO DO SO TODAY. CURRENTLY THE SITE HAS ESTABLISHED SEVERAL EXISTING USES, WHICH WILL BE CONTINUED UNDER THE ADAPTIVE REUSE PLAN. PROVIDED BELOW IS A LIST OF ALL EXISTING USES PRESENT ON THE PROJECT SITE:

- LODGING/HOTEL/COUNTRY INN/RESORT
- RESTAURANT
- TAVERN/BAR
- CATERING
- BANQUET HALL
- EVENT SPACE
- FITNESS GYM
- WELLNESS SPA
- RESIDENTIAL (SINGLE & MULTIFAMILY)
- MEMBERSHIP CLUB
- RETAIL BUSINESSES (ASSOCIATED W/ RESORT USE USE)
- ART GALLERY
- RECREATIONAL BUSINESS, INCLUDING:CAMPING, FISHING, HIKING, LAWN SPORTS, TENNIS, EQUESTRIAN, SWIMMING/WATER SPORTS, CROSS COUNTRY SKIING/SNOWSHOEING, AND OTHER GENERAL OUTDOORS ACTIVITIES
- BAKERY
- CONFERENCE CENTER
- MEETING HALL
- BOTANICAL GARDEN

LEGEND

PROJECT PROPERTY LINE
NEIHGBORING PROPERTY
EXISTING CONTOUR MAJOR (510)
EXISTING CONTOUR MINOR (508)
STONE WALL
EXISTING UTILITY POLE
EXISTING LIGHT POLE
EXISTING SPOT GRADE (× 340.1)
EXISTING OVERHEAD UTILITIES (OH)
EXISTING TREELINE
EXISTING STREAM BOUNDARY
FEMA FLOODWAY BOUNDARY (FW)
FEMA FLOODPLAIN BOUNDARY (FP)
AQUIFER BOUNDARY
SCENIC PROTECTION OVERLAY (SPO)
STREAM CORRIDOR OVERLAY (SCO)

ZONING DISTRICT: "RR" RURAL RESIDENTIAL
LOT SIZE: 43.5 ACRES
TAX GRID NO. : 132000-7267-00-227675
PROPERTY ADDRESS: 515 LEEDSVILLE ROAD AMENIA, NY 12501
PROPERTY OWNER: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501
APPLICANT: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501

DATE	REVISION
12/1/2021	REVISED FOR PLANNING BOARD SUBMISSION
2/16/2022	REVISED FOR PLANNING BOARD SUBMISSION
3/2/2022	REVISED FOR PLANNING BOARD SUBMISSION
8/29/2022	REVISED FOR PLANNING BOARD SUBMISSION
10/10/2022	REVISED FOR PLANNING BOARD SUBMISSION

ENGINEERING, DESIGN, & PLANS PREPARED BY:
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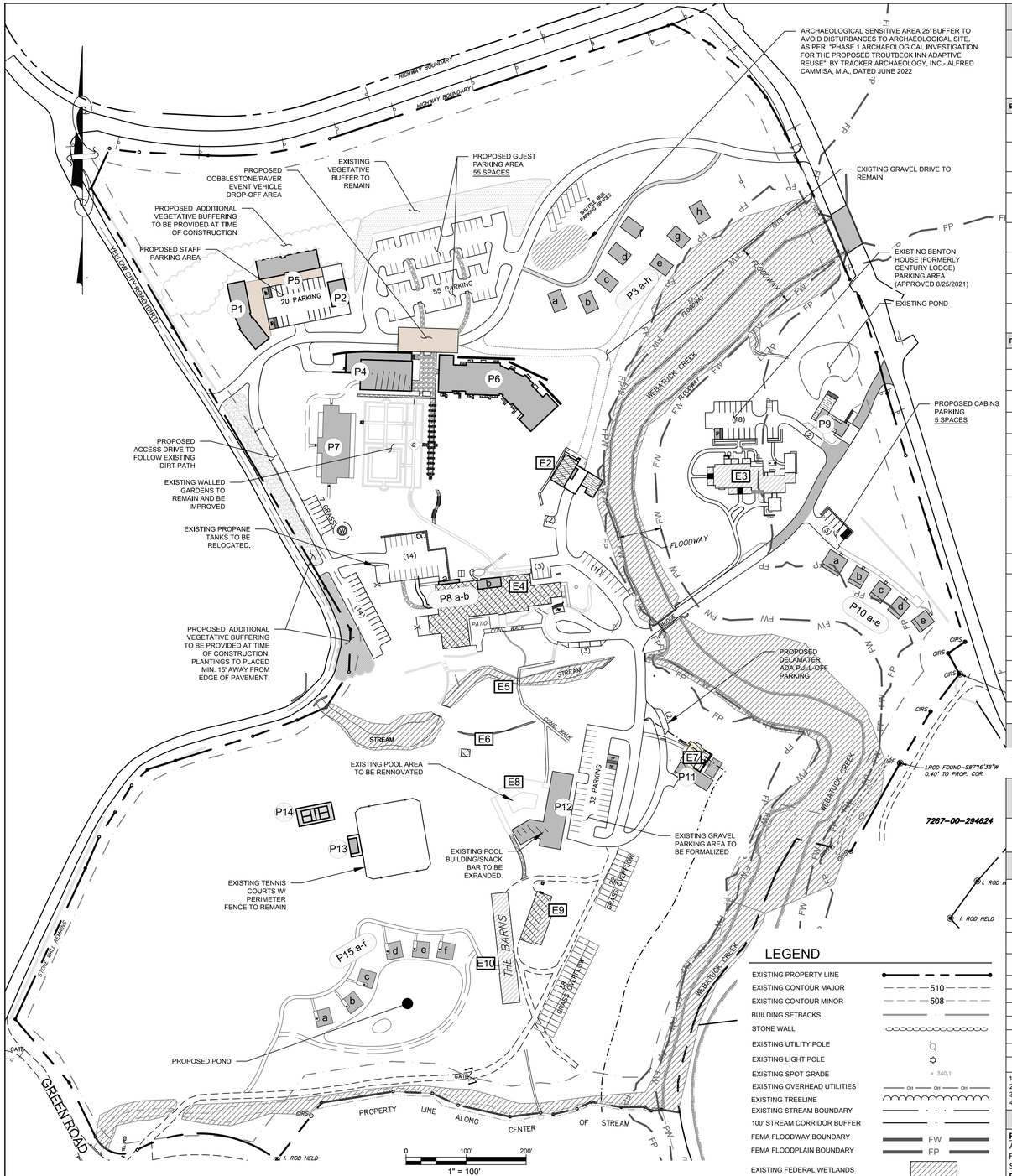
TROUTBECK ADAPTIVE REUSE
TOWN OF AMENIA — DUTCHESS COUNTY, NY

MASTER PLAN
EXISTING CONDITIONS PLAN

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
11/3/2021	1" = 150'	RED	RED	RAR	16-019	1 of 6



LEGEND

- EXISTING PROPERTY LINE
- EXISTING CONTOUR MAJOR (510)
- EXISTING CONTOUR MINOR (508)
- BUILDING SETBACKS
- STONE WALL
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SPOT GRADE (× 340.1)
- EXISTING OVERHEAD UTILITIES (OH)
- EXISTING TREELINE
- EXISTING STREAM BOUNDARY
- 100' STREAM CORRIDOR BUFFER
- FEMA FLOODWAY BOUNDARY (FW)
- FEMA FLOODPLAIN BOUNDARY (FP)
- EXISTING FEDERAL WETLANDS
- PROPOSED BUILDING (P#)
- EXISTING BUILDING (E#)

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2. THE "ZONE AE, BASE FLOOD ELEVATIONS" DETERMINED TO AFFECT THIS PARCEL ARE IN THE RANGE OF 480' TO 487' (NAVD88).

OWNER'S CONSENT NOTE:

THE UNDERSIGNED OWNER OF THE PROPERTY HEREON STATES THAT I AM FAMILIAR WITH THIS MAP, ITS CONTENTS AND LEGENDS AND HEREBY CONSENT TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON AND TO THE FILING OF THIS PLAN IN THE OFFICE OF THE CLERK OF THE COUNTY OF DUTCHESS, IF REQUIRED.

SIGNED THIS_____ DAY OF _____2022

_____ OWNER'S SIGNATURE

ZONING DISTRICT: "RR" RURAL RESIDENTIAL
LOT SIZE: 43.5 ACRES
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APPLICANT: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501

BUILDING INVENTORY

EXISTING-PROPOSED CONDITIONS[1]

BUILDING #	BUILDING	BUILDING USE		FLOORS	BUILDING FOOTPRINT (SF) | TOTAL BUILDING AREA (SF) (ALL FLOORS)		STAFF APARTMENTS / LODGING UNITS
		EXISTING	PROPOSED		EXISTING	PROPOSED	
EXISTING STRUCTURES							
E2	CARETAKER HOUSE → BAKERY	MAINTENANCE GARAGE/STAFF RESIDENCE	BAKERY: GUEST AMENITY	2-STORY	FOOTPRINT: 1,172 TOTAL: 1,800	FOOTPRINT: 1,277 TOTAL: 1,905	1 STAFF APT.
E3	BENTON HOUSE (FORMERLY CENTURY LODGE & ANNEX)	LODGING	LODGING (NO CHANGE)	2-STORY	FOOTPRINT: 5,860 TOTAL: 9,783 (NO CHANGE)	FOOTPRINT: 5,860 TOTAL: 9,783	17 LODGING UNITS
E4	MANOR HOUSE	LODGING/EVENT SPACE/DINING	LODGING / ALTERNATIVE EVENT SPACE / ALTERNATIVE DINING / ENHANCE STAFF/GUEST AREAS	2.5-STORY	FOOTPRINT: 14,264 TOTAL: 35,773	FOOTPRINT: 15,091 TOTAL: 36,792	17 LODGING UNITS
E6	STONE CHAPEL	GUEST AMENITY	GUEST AMENITY (NO CHANGE)	1-STORY	FOOTPRINT: 174 TOTAL: 174 (NO CHANGE)	FOOTPRINT: 174 TOTAL: 174	N/A
E7	DELAMETER HOUSE	SINGLE-FAMILY RESIDENCE (DERELICT)	RESTAURANT / BAR	1-STORY W/ BASEMENT	FOOTPRINT: 1,143 TOTAL: 2,012	FOOTPRINT: 2,209 TOTAL: 4,347	N/A
E8	POOL FACILITIES (POOL HOUSE)	GUEST AMENITY	GUEST AMENITY (NO CHANGE)	1-STORY	FOOTPRINT: 615 TOTAL: 615	FOOTPRINT: 5,843 TOTAL: 5,843	N/A
E9	POLE BARN	GUEST AMENITY	GUEST AMENITY (NO CHANGE)	1-STORY	FOOTPRINT: 2,081 TOTAL: 2,081 (NO CHANGE)	FOOTPRINT: 2,081 TOTAL: 2,081	N/A
E10	THE BARNS	GUEST AMENITY/ FITNESS/ WELLNESS	GUEST AMENITY/ FITNESS/ WELLNESS (NO CHANGE)	1-STORY	FOOTPRINT: 4,925 TOTAL: 4,925 (NO CHANGE)	FOOTPRINT: 4,925 TOTAL: 4,925	N/A
PROPOSED STRUCTURES							
P1	STAFF HOUSING	-	STAFF RESIDENCE	1-STORY	-	FOOTPRINT: 2,654 TOTAL: 2,654	5 STAFF APT.
P2	TRACTOR SHED	-	UTILITY	1 STORY	-	FOOTPRINT: 1,050 TOTAL: 1,050	N/A
P3 a-h	GARDEN CABINS	-	LODGING	1-STORY	-	FOOTPRINT: 723 (PER BUILDING) TOTAL: 723 (PER BUILDING)	8 LODGING UNITS
P4	GARDEN HALL (EVENT SPACE)	-	EVENT SPACE (I.E: WEDDINGS, CONFERENCES, EXHIBITS)	1-STORY W/ BASEMENT	-	FOOTPRINT: 6,250 TOTAL: 12,500	N/A
P5	CENTRAL ADMIN.	-	ADMINISTRATION	1-STORY W/ BASEMENT	-	FOOTPRINT: 3,150 TOTAL: 4,481	N/A
P6	GARDEN HOTEL	-	LODGING	2.5-STORY	-	FOOTPRINT: 10,396 TOTAL: 22,180	33 LODGING UNITS
P7	FUTURE GARDEN WEST HOTEL EXPANSION	-	LODGING	2.5-STORY	-	FOOTPRINT: 5,748 TOTAL: 14,370	32 LODGING UNITS
P8 a-b	MANOR HOUSE IMPROVEMENTS (DOES NOT INCLUDE EXISTING STRUCTURE - SEE E4)	-	a. SERVICE ENTRANCE b. EXPANDED CONSERVATORY DINING	a. STAFF FACILITIES / UTILITY: 1-STORY W/ BASEMENT	-	FOOTPRINT:192 TOTAL: 384	N/A
				b. EXPANSION OF EXISTING DINING FACILITIES: 1-STORY	-	FOOTPRINT: 635 TOTAL: 635	N/A
P9	GATEHOUSE	-	SECURITY / UTILITY / RECEPTION	1-STORY	-	FOOTPRINT: 962 TOTAL: 962	N/A
P10 a-e	CREEKSIDE CABINS	-	LODGING	1-STORY (ea.)	-	FOOTPRINT: 695 (BUILDING B-E) / FOOTPRINT: 1,022 (BUILDING A) TOTAL: 695 (BUILDING B-E) / TOTAL: 1,022 (BUILDING A)	5 LODGING UNITS
P11	DELAMATER HOUSE BUILDING EXPANSION (DOES NOT INCLUDE EXISTING STRUCTURE - SEE E7)	-	CONSERVATORY DINING W/ FULL BASEMENT	1-STORY	-	FOOTPRINT: 1,277 TOTAL: 2,554	N/A
P12	INDOOR POOL/POOL HOUSE (DOES NOT INCLUDE EXISTING STRUCTURE - SEE E8)	-	GUEST AMENITY	N/A	-	FOOTPRINT: 5,623 TOTAL: 5,623	N/A
P13	TENNIS WARMING HUT	-	GUEST AMENITY	1-STORY	-	FOOTPRINT: 351 TOTAL: 351	N/A
P14	PLATFORM TENNIS	-	GUST AMENITY	N/A	-	FOOTPRINT: 1,800 TOTAL: 1,800	N/A
P15 A-F	POND EXPANSION CABINS	-	LODGING	1-STORY (ea.)	-	FOOTPRINT: 695 (PER BUILDING) TOTAL: 695 (PER BUILDING)	6 LODGING UNITS
TOTAL							118 LODGING UNITS 6 STAFF APTS.

1) ALL S.F./BUILDING HEIGHTS FOR PHASES 2-9 ARE PRELIMINARY AND SUBJECT TO CHANGE DURING SITE PLAN REVIEW PROCESS FOR EACH INDIVIDUAL PHASE.

ADAPTIVE REUSE PLAN

BULK REGULATIONS/PERMITTED USES

AS OUTLINED IN THE TOWN OF AMENIA ZONING CODE, §121-14.2(I)[4] "HISTORIC PRESERVATION OVERLAY DISTRICT" THE ADOPTION OF THE "TROUTBECK - ADAPTIVE REUSE PLAN" INCLUDES THE ESTABLISHMENT OF USE/DIMENSIONAL STANDARDS THAT SHALL REPLACE THE BASE UNDERLYING ZONING DISTRICT REQUIREMENTS. FOLLOWING THE ISSUANCE OF A SPECIAL USE PERMIT FOR THE "TROUTBECK - ADAPTIVE REUSE PLAN", FUTURE SITE PLAN APPROVALS SHALL COMPLY WITH THE REQUIREMENTS OUTLINED BELOW:

BULK REGULATIONS

PROVISION	EXISTING "RURAL RESIDENTIAL" STANDARDS (TO BE NULLIFIED)	PROPOSED ADAPTIVE REUSE STANDARDS
MIN. LOT AREA (ACRES)	5	5.00
MIN. ROAD FRONTAGE (FT)[1]	400 (STATE ROAD)	400 (STATE ROAD)
MIN / MAX FRONT YARD SETBACK (FT)	60 (COUNTY/STATE ROAD) | 40 (TOWN ROAD)	60 (COUNTY/STATE ROAD) | 40 (TOWN ROAD)
MIN. REAR YARD SETBACK (FT)	50	50[1]
MIN. SIDE YARD SETBACK (FT)[3]	30	30
MAX IMPERVIOUS SURFACE (%)	10%	30%[2]
MAX BUILDING HEIGHT (FT)	35	35[3] | 3-STORIES
MAX BUILDING FOOT PRINT (SF)	4,000	16,000
MAXIMUM ALLOWABLE RESIDENTIAL/LODGING DENSITY (LODGING UNITS)	-	168.5[4]
REQUIRED PARKING SPACES (SPACES)	SEE "VEHICLE CIRCULATION/PARKING PLAN" SHEET 6 OF 6.	

1) SITE MAINTAINS ROAD FRONTAGE ON THREE (3) SIDES. NON-FRONTING PROPERTY LINES SHALL COMPLY WITH SIDE YARD SETBACK REQUIREMENTS.
2) EXCLUDING AREAS AND ASSOCIATED FACILITIES (I.E.: BUILDINGS, PARKING AREAS, AMENITY SPACE, ETC.) RELATED TO THE HOUSING OF EMPLOYEES.
3) EXCLUDING HISTORIC STRUCTURES (50+ YEARS) ESTABLISHED AT THE TIME OF THE ADOPTION OF THE ADAPTIVE REUSE PLAN.
4) DENSITY CALCULATIONS BASED ON TOWN OF AMENIA ZONING CODE §121-14.2.I(7). SEE "TROUTBECK INN - PROJECT NARRATIVE & SEQR DOCUMENTATION".

PERMITTED USES

PERMITTED BY RIGHT (P): INTERIOR PEDESTRIAN/VEHICULAR CIRCULATION/WAYFINDING IMPROVEMENTS, REPAIR/REPLACEMENT/MAINTENANCE OF EXISTING STRUCTURES, AGRICULTURAL USES, LANDSCAPING IMPROVEMENTS, TYPICAL RESORT AMENITIES, ADMINISTRATION/STAFF FACILITIES, SINGLE FAMILY RESIDENCE, ACCESSORY APARTMENT, RECREATIONAL USES AND ACTIVITIES NOT REQUIRING A BUILDING PERMIT (INCLUDING ALL EXISTING USES), SEASONAL TENT SITES, WATER FEATURES (FOUNTAINS, PONDS, ETC.), ROOF MOUNTED SOLAR ENERGY SYSTEMS (RMSES), SITE UTILITY IMPROVEMENTS (ELECTRIC, WATER, WASTEWATER, GEOTHERMAL, ETC.), CAMP SITES (<4 SITES), CONSTRUCTION OF ANY STRUCTURE <200 SF.

PERMITTED BY RIGHT W/ SITE PLAN APPROVAL (PS), NEW STRUCTURES UTILIZED FOR THE FOLLOWING: LODGING FACILITIES, RESTAURANT(S), RECREATIONAL BUSINESS, RETAIL SPACE TO SUPPORT LODGING OPERATIONS, MULTIFAMILY DWELLING(S) (STAFF RESIDENCE ONLY), ADMINISTRATION/OFFICE FACILITIES, RESORT AMENITIES, CONFERENCE FACILITIES, SPA, POOL(S), MEETING SPACE, FLEX SPACES, FITNESS FACILITIES, SOLAR ENERGY SYSTEMS (GROUND MOUNTED), CAMP SITES (>4), EDUCATIONAL FACILITIES,BED-AND-BREAKFAST, DEMOLITION OF HISTORIC STRUCTURES.

SPECIAL USE PERMIT (S): SUBSTANTIAL DEVIATION (>25%) FROM DEVELOPMENT CRITERIA ESTABLISHED AS PART OF THE ADOPTION OF THE ADAPTIVE REUSE PLAN, ALL OTHER USES NOT IDENTIFIED ABOVE AS BEING PERMITTED BY RIGHT/REQUIRING SITE PLAN APPROVAL.

DATE	REVISION
11/3/2021	REVISED AS PER TOWN PLANNING BOARD COMMENTS
12/1/2021	REVISED FOR PLANNING BOARD SUBMISSION
2/16/2022	REVISED FOR PLANNING BOARD SUBMISSION
8/8/2022	REVISED FOR PLANNING BOARD SUBMISSION
8/29/2022	REVISED FOR PLANNING BOARD SUBMISSION
10/10/2022	REVISED FOR PLANNING BOARD SUBMISSION

ENGINEERING, DESIGN, & PLANS PREPARED BY:

RENNIA ENGINEERING DESIGN, PLLC

CIVIL • ENVIRONMENTAL • STRUCTURAL

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

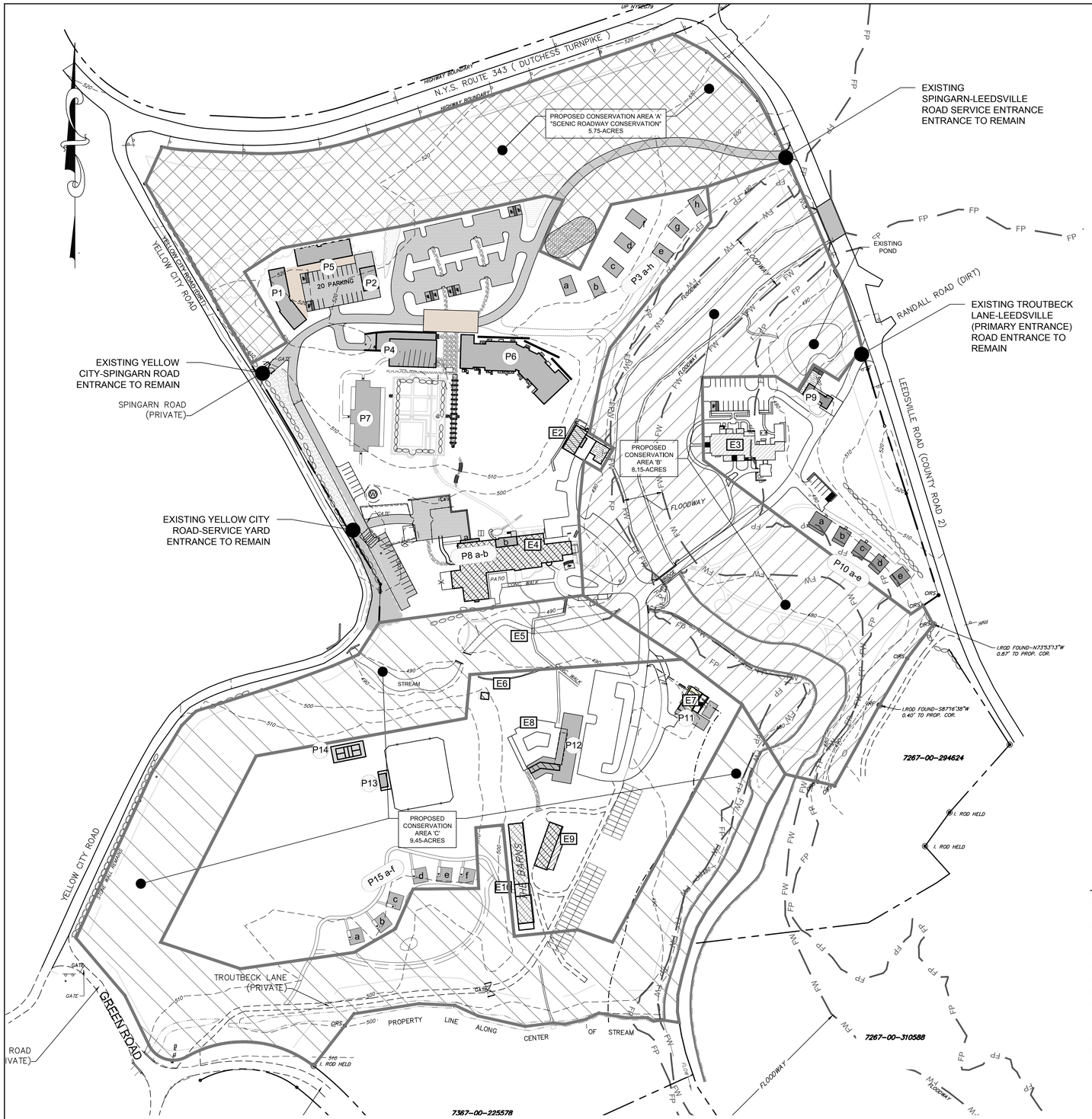
PRELIMINARY

TROUTBECK
ADAPTIVE RE-USE

TOWN OF AMENIA — DUTCHESS COUNTY, NY

OVERALL MASTER PLAN

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
9/15/2021	1" = 100'	RED	RED	RAR	16-019	2 of 6



PROPOSED CONSERVATION AREA	AREA (SF)	AREA (ACRES)	CONSERVATION VALUE
AREA 'A' (Northerly)	**250,483.30**	**5.75**	o Preserve lands located within the 800' "Scenic Protection Overlay District (NYS Route 343). 100% of land within CA "A" are within the SPO. CA "A" will ensure preserve the NYS Route 343 view corridor. o Preserve existing treelined roadway (NYS Route 343). There are numerous mature Black Walnuts (18"-28" Ø) running parallel to NYS Route 343 creating a treelined corridor. There are numerous other matures trees (18"+ Ø) within CA "A" including oak, hickories, locust, and a several large Japanese Pagoda specimen trees, which enhance biodiversity. o Preserve existing agricultural lands and prime soils located within the SPO overlay district. 100% of land within CA "A" are classified as either prime agricultural soils or soils with statewide significance. This portion of the site is regularly hayed and has been throughout the history of the site. o Preserve existing vegetative buffering along Yellow City and Leedsville Road, rural town roads with minimal traffic. o Provide protection for habitat corridors. This area acts as a cross roads for much wildlife movement in the area that travel off adjacent ridge lines. o Provide a management tool for the proposed sewage disposal areas. Including the subsurface sewage disposal system within the conservation area establishes a long-term monitoring and ground water protection instrument that can be monitored by an independent third party. o Preserves open space that can be used to support aquifer recharge. o Preserves exsiting archaeological site.
AREA 'B' (Easterly)	**354,909.47**	**8.15**	o Preserve lands located within the Stream Corridor Overlay District (SCO) applied to Webatuck Creek. Approximately 772 ±1,375 linear feet of Webatuck Creek, trout waters and a direct tributary to the Ten Mile River and ultimately the Housatonic River, will be preserved as an aquatic corridor. o Provide water quality protection and monitoring for sensitive use areas adjacent to the stream such as the existing bridge and roadway. o Preserve existing floodplain/floodway (Floodplain Overlay) to the east and west of Webatuck Creek. Floodplain and floodway areas are, typically prone to erosion and flooding during storm events, will be preserved and left undeveloped. o Preserve existing federal wetlands on either side of Webatuck Creek within overlay districts. Wetlands help mitigate the effects of flooding and provide unique habitat for aquatic, amphibian, and a variety of other species. o Preserve existing pond with outfall into Webatuck Creek. The existing pond provides additional aquatic habitat for common onsite species and an aesthetic feature visible partly from Leedsville Road. o Maintain existing vegetative buffer along the eastern edge of the project site (Leedsville Road). Existing vegetative buffer will assist in screen onsite activities from neighboring residential properties and continue providing native habitat to onsite species. o Numerous mature trees species (18"+ Ø) shall be preserved, many of which are specimen trees, increasing biodiversity. o Preserves steeps slopes, which are more prone to erosion. There are several instances of steeps slopes associated with the banks of the Webatuck Creek. o Preserve existing agricultural lands and prime soils. 100% of land within CA "B" are classified as soils with statewide significance.
AREA 'C' (Southerly)	**411,635.00**	**9.45**	o Preserve existing vegetative buffer along the southern property boundary. Existing vegetative buffer will assist in screen onsite activities from neighboring residential properties and continue providing native habitat to onsite species. o Maintain 100' vegetative buffer between project site and residential lands directly to the south of the property. o Preserve existing vegetative buffer along the southern property boundary bordering Woodlands/Green Road. o Maintain 100' vegetative buffer between project site and residential lands on western side of Yellow City Road. o Preserve lands located within the Stream Corridor Overlay District (SCO) applied to Webatuck Creek. Approximately ±506 linear feet of Webatuck Creek, trout waters and a direct tributary to the Ten Mile River and ultimately the Housatonic River, will be preserved as an aquatic corridor. o Preserve lands located within the Stream Corridor Overlay District (SCO) applied to Dunham Creek. Approximately ±545 liner feet of Dunham Creek, trout spawning waters and a direct tributary to the Webatuck Creek. o Preserve ±974 linear feet of an unnamed tributary that runs along the sites southern border. o Preserve existing floodplain/floodway (Floodplain Overlay) to the east and west of Webatuck Creek. Floodplain and floodway areas are, typically prone to erosion and flooding during storm events, will be preserved and left undeveloped. o Preserve large swaths of steeply sloped land, which are prone to erosion, between existing Wellness Building and fields in the west. o Preserve large swaths of steeply sloped land just south of Dunham Creek. The identified slopes are among the steepest of the project site and contains existing vegetation, which continue providing native habitat for onsite species. o Preserve adjacent lands running along the unclassified stream to the south. o Preserve remains of existing stone wall located along western property line. Stonewalls have historically been used to delineate property boundaries and have historic value. Numerous mature trees species (18"+ Ø) shall be preserved, many of which are specimen trees, increasing biodiversity.
Total	**1,017,027.77**	**23.35**	**Acres**
Percent of Lot Area		**53.7%**	

LEGEND

- EXISTING PROPERTY LINE
- EXISTING CONTOUR MAJOR 510
- EXISTING CONTOUR MINOR 508
- STONE WALL
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SPOT GRADE × 340.1
- EXISTING OVERHEAD UTILITIES OH — OH — OH
- EXISTING TREELINE
- EXISTING STREAM BOUNDARY
- FEMA FLOODWAY BOUNDARY FW
- FEMA FLOODPLAIN BOUNDARY FP
- PROPOSED GRAVEL PARKING
- AQUIFER OVERLAY BOUNDARY
- CONSERVATION EASEMENT AREA - A / AREA - B / AREA - C

FLOOD ZONE NOTES:
1. PROPERTY SHOWN HEREON LIES WITHIN "SPECIAL FLOOD HAZARD AREA ZONE AE", WITHIN "OTHER AREAS, ZONE X" (UNSHADED), AND WITHIN "FLOODWAY AREAS IN ZONE AE" AS SHOWN ON FEMA, NFIP, FIRM PANEL 36027C0332E, WITH AN EFFECTIVE DATE OF MAY 2, 2012.
2. THE "ZONE AE, BASE FLOOD ELEVATIONS" DETERMINED TO AFFECT THIS PARCEL ARE IN THE RANGE OF 480' TO 487' (NAVD88).

MAP NOTES:
1. PROPERTY DATA AND EXISTING FEATURES BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE APRIL 26, 2016 PREPARED BY CHAZEN ENGINEERING AND SURVEYING, PC.
2. TOPOGRAPHIC CONTOURS BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE DECEMBER 8, 2004 PREPARED BY STEVEN ALEX, L.S. OF CHAZEN ENGINEERING AND SURVEYING, PC.

ZONING DISTRICT: "RR" RURAL RESIDENTIAL
LOT SIZE: 43.5 ACRES
TAX GRID No. : 132000-7267-00-227675
PROPERTY ADDRESS: 515 LEEDSVILLE ROAD AMENIA, NY 12501
PROPERTY OWNER: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501
APPLICANT: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501

DATE	REVISION
11/3/2021	REVISED AS PER TOWN PLANNING BOARD COMMENTS
12/1/2021	REVISED FOR PLANNING BOARD SUBMISSION
2/16/2022	REVISED PER HOUSATONIC VALLEY ASSOCIATION
8/29/2022	REVISED FOR PLANNING BOARD SUBMISSION
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TOWN OF AMENIA — DUTCHESS COUNTY, NY

OVERALL CONSERVATION AREA PLAN

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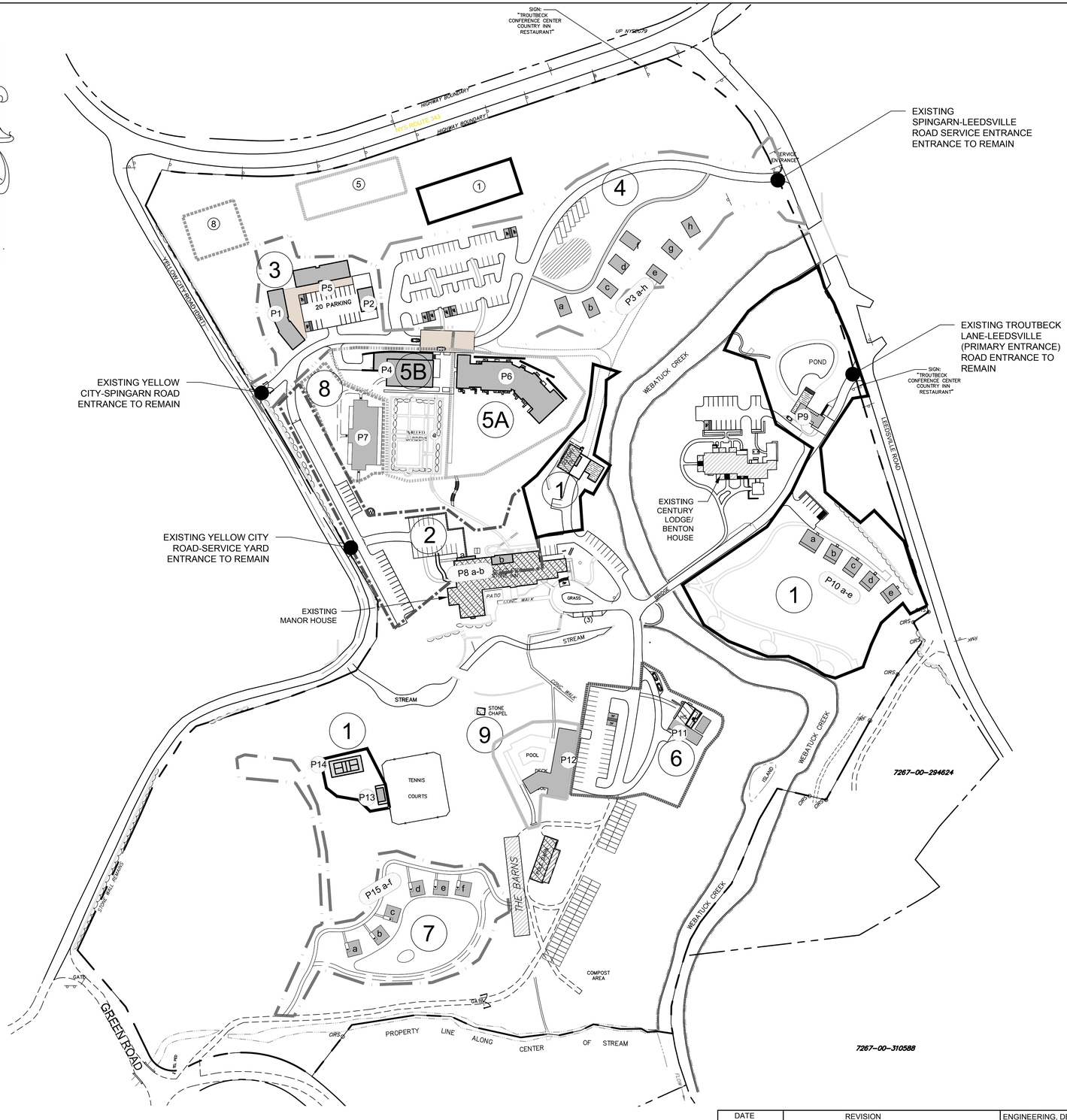

ADAPTIVE REUSE PHASING NOTES:

PHASE*	PROJECT AREA	INFRASTRUCTURE INCLUDED	APPROXIMATE DISTURBANCE AREA	PHASING SYMBOL
1	CREEKSIDE EAST: GATEHOUSE/CREEKSIDE CABINS	GATE HOUSE, 5-CABINS, SEPTIC SYSTEM, WATER SERVICES, ELECTRIC SERVICES, PEDESTRIAN AREAS, LANDSCAPING PARKING/ROAD IMPROVEMENTS	1.48 AC.	
1	TENNIS WARMING HUT & PLATFORM TENNIS COURT	CONSTRUCT BUILDING IMPROVEMENTS, ELECTRIC CONNECTIONS, WALKWAY IMPROVEMENTS, LANDSCAPING & PEDESTRIAN AREAS	0.17 AC.	
1	CARETAKER HOUSE /BAKERY	CONVERT MAINTENANCE AREA TO BAKERY, INSTALL PATIO, SEPTIC SYSTEM (BAKERY & MANOR HOUSE, ELECTRIC SERVICES, ROAD IMPROVEMENTS	0.65 AC.	
2	MANOR HOUSE IMPROVEMENTS: SERVICE YARD, DINING AREA	CONSTRUCT INTERIOR IMPROVEMENTS, WALKWAY IMPROVEMENTS,SERVICE AREA & SERVICE DRIVEWAY RECONFIGURATION, & LANDSCAPING	1.39 AC. (MOSTLY INTERIOR WORK)	
3	CENTRAL ADMIN. / TRACTOR SHED AND STAFF HOUSING	ADMIN. BUILDING, TRACTOR SHED, SEPTIC SYSTEM, WATER SERVICES, WATER SYSTEM IMPROVEMENTS FOR PHASES 3-4, ELECTRIC SERVICES,PARKING LOT & ROAD IMPROVEMENTS, DEMOLITION OF EXISTING GARDEN HOUSE, REMOVE EXISTING GARDEN HOUSE	1.20 AC.	
4	CREEKSIDE NORTH CABIN EXPANSION	8-NEW CABINS, ROAD IMPROVEMENTS, NEW PARKING AREA & STORMWATER, SEPTIC SYSTEM, WATER SERVICES, ELECTRICAL SERVICES & DELINEATE ARCHAEOLOGICAL SITE	3.56 AC.	
5A	GARDEN HOTEL	CONSTRUCT NEW RECEPTION & LODGING BUILDINGS, SEPTIC SYSTEM, WATER SERVICES, ELECTRIC SERVICES, ROAD/WALKWAY IMPROVEMENTS, & LANDSCAPING, WATER SYSTEM IMPROVEMENTS: PHASE 5A/B	1.30 AC.	
5B	GARDEN HALL (EVENT SPACE)	CONSTRUCT NEW EVENT BUILDING, SEPTIC SYSTEM, WATER SERVICES, ELECTRIC SERVICES, ROAD/WALKWAY IMPROVEMENTS, & WALLED GARDEN IMPROVEMENTS	0.90 AC	
6	DELAMETER HOUSE	CONSTRUCT BUILDING IMPROVEMENTS ADDITIONS, SEPTIC SYSTEM, ELECTRIC SERVICES, ROAD/WALKWAY IMPROVEMENTS, LANDSCAPING & REC. AREAS, FORMALIZE EXISTING PARKING AREA	1.12 AC	
7	POND EXPANSION CABINS	6-NEW CABINS, WALKWAY IMPROVEMENTS, NEW POND,SEPTIC SYSTEM, WATER SERVICES & ELECTRIC SERVICES, WATER SYSTEM IMPROVEMENTS: PHASES 7-9	1.69 AC.	
8	FUTURE GARDEN KEYS EXPANSION	SEPTIC SYSTEM, WATER SERVICES, ELECTRIC SERVICES, WALKWAY IMPROVEMENTS, & LANDSCAPING	0.63 AC.	
9	POOL RENOVATION	DEMO PORTIONS OF POOL SYSTEMS, CONSTRUCT NEW BUILDING, INDOOR & OUTDOOR POOL, SEPTIC SYSTEM, WATER SERVICE, WALKWAY IMPROVEMENTS & LANDSCAPING	0.46 AC.	

TOTAL ANTICAPATED DISTURBANCE AREAS = 14.55-ACRES

*EACH PHASE DEPICTED ON THE ADAPTIVE REUSE PLAN SHALL REQUIRE SITE PLAN APPROVAL FROM THE TOWN OF AMENIA PLANNING BOARD PRIOR TO THEIR CONSTRUCTION

LEGEND

- EXISTING PROPERTY LINE
- EXISTING CONTOUR MAJOR (510)
- EXISTING CONTOUR MINOR (508)
- BUILDING SETBACKS
- STONE WALL
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SPOT GRADE (× 340.1)
- EXISTING OVERHEAD UTILITIES (OH)
- EXISTING TREELINE
- EXISTING STREAM BOUNDARY
- FEMA FLOODWAY BOUNDARY (FW)
- FEMA FLOODPLAIN BOUNDARY (FP)

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0 100' 200'
1" = 100'
GRAPHIC SCALE

DATE	REVISION
2/16/2022	REVISED FOR PLANNING BOARD SUBMISSION
8/8/2022	REVISED FOR PLANNING BOARD SUBMISSION
8/29/2022	REVISED FOR PLANNING BOARD SUBMISSION
10/10/2022	REVISED FOR PLANNING BOARD SUBMISSION

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OVERALL MASTER PHASING PLAN

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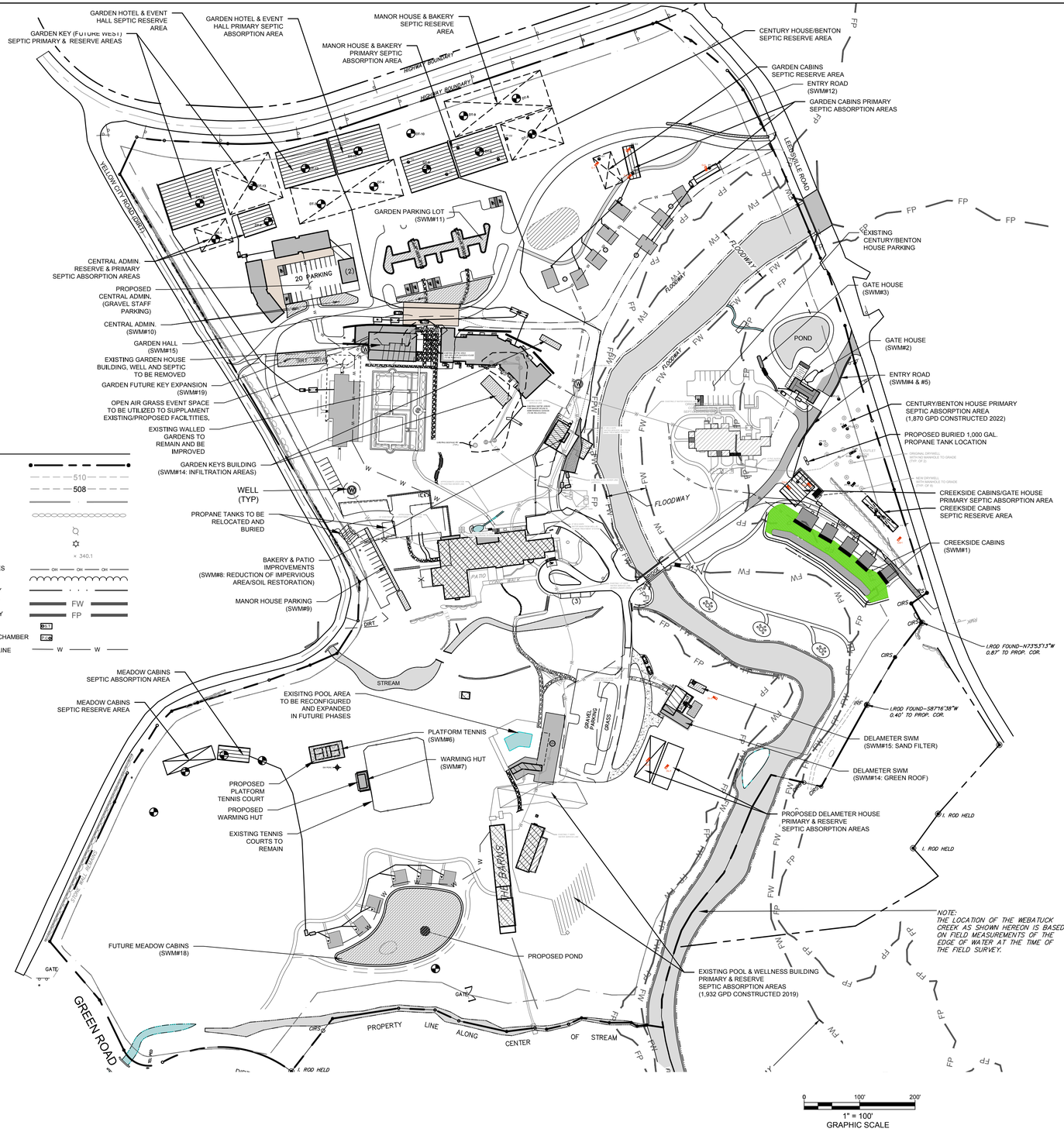

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- EXISTING OVERHEAD UTILITIES (OH)
- EXISTING TREELINE
- EXISTING STREAM BOUNDARY
- FEMA FLOODWAY BOUNDARY (FW)
- FEMA FLOODPLAIN BOUNDARY (FP)
- PROPOSED SEPTIC TANK (ST)
- PROPOSED EFFLUENT PUMP CHAMBER (PCH)
- PROPOSED WATER SERVICE LINE (W)

ADAPTIVE REUSE STORMWATER MANAGEMENT SUMMARY			
PHASE	PROJECT AREA	SWM #	STORMWATER MANAGEMENT INFRASTRUCTURE
1	CREEKSIDE EAST CABINS	SWM #1	DISCONNECTED ROOF LEADERS
			IB-3 INFILTRATION BASIN
			GRASS FILTER STRIP (INFIL. PRETREATMENT)
			PEA GRAVEL DIAPHRAGM (INFIL. PRETREATMENT)
	GATEHOUSE	SWM #2	BR-1 BIORETENTION AREA FOR GATEHOUSE IMP.
			PEA GRAVEL DIAPHRAGM (INFIL. PRETREATMENT)
		SWM #3	SF-1 SAND FILTER FOR GATEHOUSE IMP. AND EX. DISTURBED IMP.
			CS-1 CONVEYANCE SWALE
	ENTRY ROAD	SWM #4	IT-2 INFILTRATION TRENCH
	ENTRY ROAD	SWM #5	IT-3 INFILTRATION TRENCH
	PLATFORM TENNIS AND WARMING HUT	SWM #6	IB-1 INFILTRATION BASIN (PLATFORM TENNIS SMP)
		SWM#7	IT-1 INFILTRATION TRENCH (WARMING HUT SMP)
	CARETAKER HOUSE/BAKERY	SWM #8	NO NEED FOR SMP AS IMPERVIOUS IS REDUCED BY >25%
			SOIL RESTORATION IN EXISTING COMPACTED GRAVEL PARKING AREA
2	MANOR HOUSE	SWM #9	SF-1 SAND FILTER FOR EXPANDED PARKING AREA
3	CENTRAL ADMIN/TRACTOR SHED/STAFF HOUSING	SWM #10	SF-2 AND SF-3 SAND FILTERS FOR NEW IMPERVIOUS AND PARKING AREA
4	GARDEN NORTH CABINS	SWM #11	BR-3 BIORETENTION AREA FOR ENTRY ROAD AND NEW PARKING AREA
		SWM #12	DS-3 DRY SWALE FOR ENTRY ROAD
		SWM #13	DW-1 THROUGH DW-4 DRYWELLS FOR NEW CABIN ROOFS
5A	GARDEN HOTEL	SWM #14	IC-1 AND IC-2 INFILTRATION CHAMBERS FOR NEW HOTEL IMPERVIOUS
5B	GARDEN HALL	SWM #15	IC-3 INFILTRATION CHAMBERS FOR NEW EVENT SPACE IMPERVIOUS
6	DELAMETER HOUSE	SWM #16	GR-1 GREEN ROOF
		SWM #17	SF-4 SAND FILTER FOR ACCESS DRIVE AND PARKING
7	POND EXPANSION CABINS	SWM #18	IB-4 INFILTRATION BASIN FOR FUTURE CABINS AND ACCESSWAYS
8	GARDEN KEYS EXPANSION	SWM #19	IC-4 INFILTRATION CHAMBERS FOR NEW ROOF AND ACCESSWAYS
9	POOL RENOVATION	TBD	SMP TO BE DETERMINED (HARDSCAPE PENDING)

ADAPTIVE REUSE WATER/WASTEWATER SUMMARY:

ADAPTIVE RE-USE BUILDINGS & SPACES	Phase	Proposed SPDES Outfall #	# of Bedrooms	# of Staff Apts.	# of Persons or Seats	Estimated Flow (GPD)	Comments
Manor House	**0**	#001					(Old Outfall #001)
Lodging (Bedroom Units)			17			1870	(110 gpd/rm.)
Restaurant					92	2576	(35 gpd/seat)-20% includes 20-seats outside to be enclosed
Bakery (relocated to former Maintenance Garage)	**1**	#001					
Staff Apt.				1		220	(1 apt, 2beds @ 110 gpd ea.)
Bakery / Resturant					20	320	(20-seats @ 20gpd/seat)-20%
Century Lodge & Annex (Benton)	**0**	#002					(Old Outfall #002)
Guest Rooms			17			1870	(110 gpd/rm.)
Wellness Center Barns & Outdoor Pool	**0**	#003					
Resort Amenity Use						1932	existing system installed in 2019
Creekside Cabins (5)	**1**	#004					(4 - one bedroom cabins and 1 - two bedroom cabin)
Lodging (Bedroom Units)			6		12	660	(110gpd/bdrm)
Gate House	**1**	#004					
Gate monitor					1	12	(1-employee @ 15gpd/person)-20%
Central Administration Area	**3**	#005					
Staff Apartments				5		550	(110gpd/apt.)
Office Employees					8	128	(20gpd/employee)-20% (w/showers)
Garden Cabins (8)	**4**	#006 & #007					(7 - one bedroom cabins and 1 - two bedroom cabin)
Lodging (Bedroom Units)			9		18	990	(110gpd/bdrm)
Garden Hotel	**5A**	#008					
Lodging (Bedroom Units)			33		66	3630	(110gpd/bdrm.)(28-standard/4-one bdrm)
Garden Event Space	**5B**	#008					
Event Space					224	1792	(10gpd/seat)-20%
Delamater House Rennovations	**6**	#009					
Restaurant					87	3045	(35gpd/seat)-20%~(incl. indoor/outdoor seating)
Meadow Cabins (6)	**7**	#010					(5 - one bedroom cabins and 1 - two bedroom cabin)
Lodging (Bedroom Units)			7		14	770	(110gpd/bdrm)
Garden West Hotel	**8**	#011					
Lodging (Bedroom Units)			32			3520	(32 Rms. @ 110 GPD/Rm.)
Outdoor Pool Area Expansion	**9**	#003					
Replacement Outdoor Pool & Deck					130	1040	(10gpd/person)-20%-Replaces Existing Pool Facility
New Dining Deck/snack bar					65	325	(5gpd/person)-Replaces Existing Pool Snack Bar - Assumed half use
TOTAL FLOW			**121**	**6**		**25,250**	

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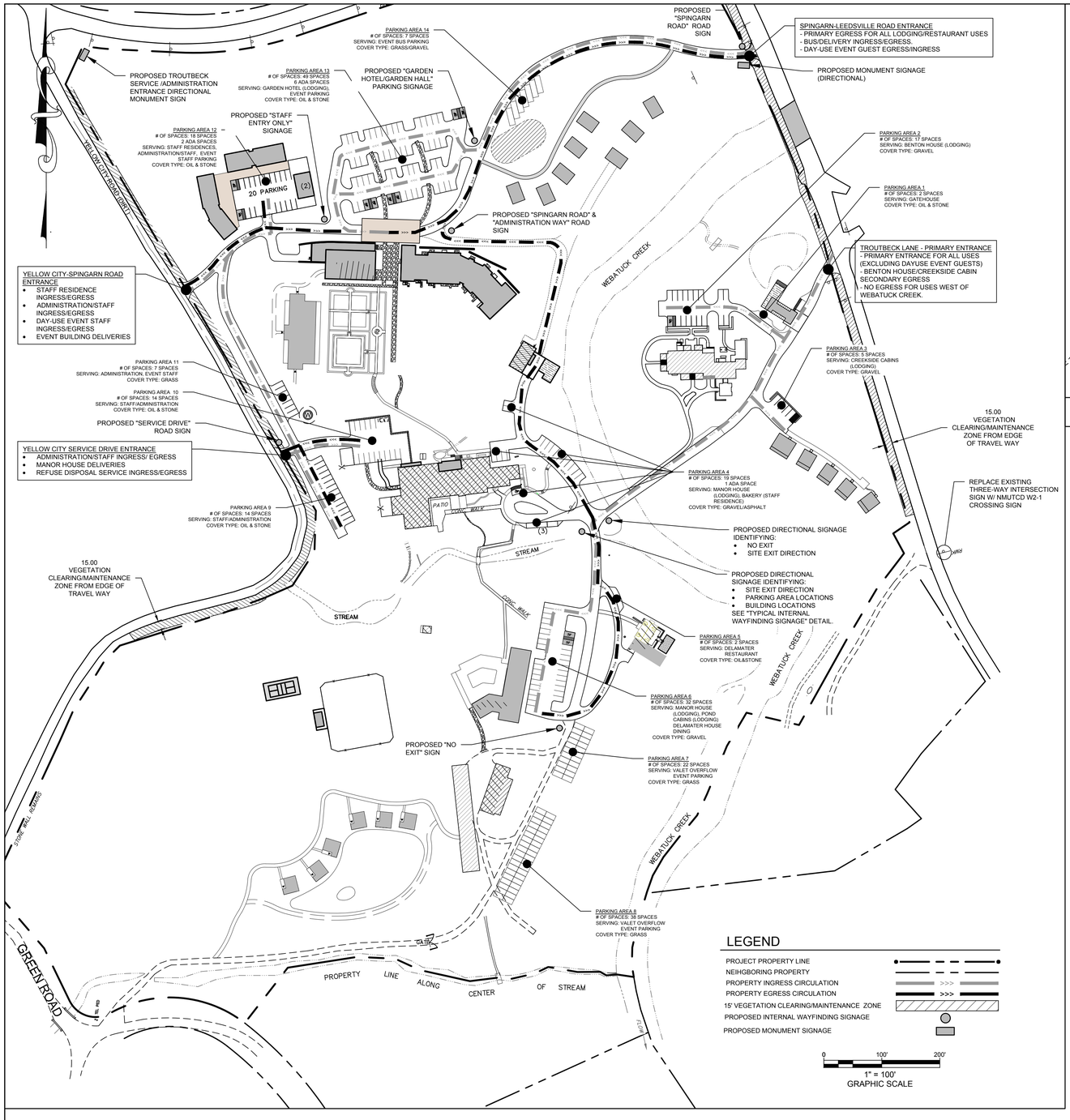
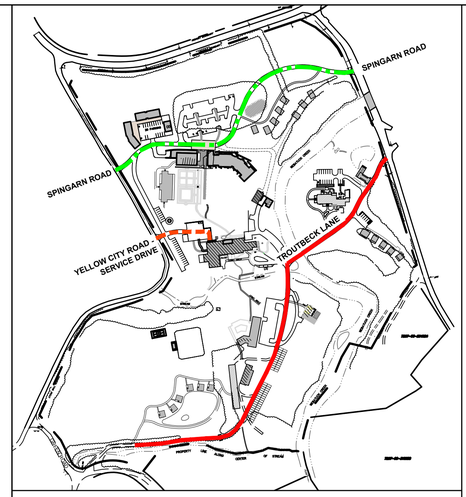




ROAD NAMING PLAN 1" = 300'

TROUTBECK LANE: **SPINGARN ROAD:**

YELLOW CITY ROAD - SERVICE ENTRANCE:

NOTES:
- SUBJECT TO FINAL APPROVAL BY THE DUTCHESS COUNTY DEPARTMENT OF EMERGENCY RESPONSE THE APPLICANT WILL WORK TO DELINEATE AND RENAME INTERIOR ROADWAYS WITH EXISTING ENTRANCES ON LEEDSVILLE AND YELLOW CITY ROAD(S).
- ALL EXISTING/PROPOSED STRUCTURES SHALL BE REASSIGNED ADDRESSES WHICH CORRESPOND WITH NEW ROADWAY DELINEATIONS.
- ALL EXISTING/PROPOSED STRUCTURES SHALL BE ASSIGNED NEW BUILDING #'S.

TRAFFIC/WAYFINDING IMPROVEMENT NOTES

TO IMPROVE INTERIOR AND EXTERIOR SITE TRAFFIC CIRCULATION, SEVERAL IMPROVEMENTS ARE PROPOSED, WHICH WILL BE CONSTRUCTED OVER SEVERAL PHASES.

PHASE 1 - 3
- CLEARING/MAINTENANCE OF VEGETATION 15' FROM EDGE OF EXISTING LEEDSVILLE/ YELLOW CITY ROAD TRAVEL WAY AT EXISTING ENTRANCE TO MAINTAIN ADEQUATE EGRESS.
- GATEHOUSE TO BE CONSTRUCTED IN PHASE 1 WHICH WILL CONTROL TRAFFIC FLOW ENTERING/EXITING SITE AND WILL DIRECT EXITING GUESTS TO SPINGARN-LEEDSVILLE ROAD EGRESS.
- AUGMENTATION OF INTERIOR WAYFINDING TO DIRECT EGRESS TRAFFIC TO SPINGARN-LEEDSVILLE ROAD EXIT (PHASE 1-3).
- REPLACE EXISTING THREE-WAY INTERSECTION SIGN ON LEEDSVILLE ROAD WITH W2-1 CROSSROADS SIGN (PENDING DUTCHESS COUNTY DEPARTMENT PUBLIC WORKS APPROVAL) (PHASE 1).
- PROVIDE ADDITIONAL "TROUTBECK SERVICE/ADMINISTRATION ENTRANCE" MONUMENT SIGN AT YELLOW CITY ROAD-NYS ROUTE 343 INTERSECTION (PHASE 3).

PHASE 4-9
- DESIGNATE EXISTING SPINGARN-LEEDSVILLE ROAD ENTRANCE AS PRIMARY DAY-USE EVENT INGRESS.
- INSTALL MONUMENT SIGN AT SPINGARN-LEEDSVILLE ROAD INGRESS/EGRESS DESIGNATING ENTRANCE USE.
- INSTALL ADDITIONAL INTERIOR SITE WAYFINDING SIGNAGE DIRECTING GUESTS TO APPROPRIATE INGRESS/EGRESS AND PARKING AREAS.
- WORK WITH DUTCHESS COUNTY DEPARTMENT OF EMERGENCY RESPONSE TO BETTER DELIATE EXISTING ROADWAYS AND ESTABLISH BUILDING NUMBERS/ADDRESS FOR ALL EXISTING AND PROPOSED STRUCTURES.

TRAFFIC CIRCULATION NOTES

ONCE THE ADAPTIVE RESUE PLAN IS ADOPTED, TRAFFIC CIRCULATION SHALL BE MODIFIED TO REDUCE TOTAL OUTBOUND VEHICLE TRIPS FOR EXISTING "TROUTBECK LANE - PRIMARY ENTRANCE". PROVIDED BELOW IS AN OUTLINE OF EXISTING/PROPOSED ONSITE TRAFFIC CIRCULATION CONDITIONS:

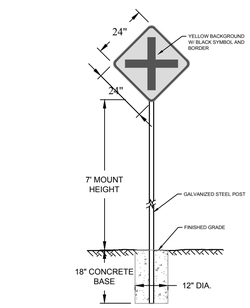
EXISTING CONDITIONS
- *LODGING, RESTAURANT, AND EVENT USES:* CURRENTLY UTILIZE EXISTING "TROUTBECK LANE-LEEDSVILLE ROAD - PRIMARY ENTRANCE" AS PRIMARY INGRESS/EGRESS TO SITE.
- *STAFF/ADMINISTRATION:* STAFF PRIMARILY USE EXISTING YELLOW CITY ROAD-SERVICE ENTRANCE/SPINGARN ROAD FOR INGRESS/EGRESS OF SITE. STAFF PARKING CURRENTLY FOUND THROUGHOUT PROJECT SITE. NO DESIGNATED EGRESS.
- BUS/DELIVERY VEHICLES: CURRENTLY USE SPINGARN-LEEDSVILLE ROAD ENTRANCE AS PRIMARY INGRESS/EGRESS TO SITE.

PHASE 1-3

DURING PHASES 1-3, GUESS WILL UTILIZE EXISTING SPINGARN-LEEDSVILLE ROAD ENTRANCE/SERVICE DRIVE AS EGRESS.
- *LODGING, RESTAURANT (MANOR HOUSE), DAY-USE EVENT GUEST (MANOR HOUSE) USES:* MAJORITY OF GUESTS SHALL ENTER THROUGH "TROUTBECK LANE-LEEDSVILLE ROAD" ENTRANCE. EXITING GUESTS SHALL BE DIRECTED TOWARDS "SPINGARN-LEEDSVILLE ROAD" ENTRANCE.
- *STAFF/ADMINISTRATION:* STAFF PRIMARILY USE EXISTING "YELLOW CITY ROAD - SERVICE DRIVE" & "SPINGARND ROAD" ENTRANCE(S) FOR INGRESS AND EGRESS OF SITE. STAFF MAY OCCASIONALLY EGRESS FROM LEEDSVILLE-SPINGARN - ROAD ENTRANCE.
- BUS/DELIVERY VEHICLES: WILL USE "SPINGARN-LEEDSVILLE ROAD" ENTRANCE AS PRIMARY INGRESS/EGRESS TO SITE.

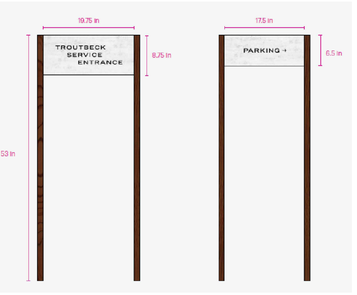
PHASE 4-9

FOLLOWING THE RECONFIGURED SPINGARN ROAD, DAY-USE EVENT GUESTS SHALL BE DIRECTED TO INGRESS/EGRESS VIA SPINGARDN-LEEDSVILLE ROAD ENTRANCE. LODGING (OVERNIGHT GUESTS)/ RESTAURANT USES SHALL CONTINUE TO USE "TROUTBECK LANE-LEEDSVILLE ROAD" ENTRANCE AS PRIMARY INGRESS POINT AND "SPINGARN-LEEDSVILLE ROAD" ENTRANCE AS PRIMARY EGRESS POINT.
- *ALL GUEST USES (LODGING, RESTURANT, ETC.), EXCLUDING DAY-USE GUESTS:* ALL GUESTS SHALL INGRESS THROUGH "TROUTBECK LANE-LEEDSVILLE ROAD" ENTRANCE. FOR EGRESS, GUESTS SHALL BE DIRECTED TOWARDS "SPINGARN-LEEDSVILLE ROAD" ENTRANCE.
- *STAFF/ADMINISTRATION/DELIVERIES:* STAFF/DELIVERIES SHALL USE EXISTING "YELLOW CITY ROAD-SERVICE DRIVE" & "SPINGARN ROAD" ENTRANCES FOR INGRESS AND EGRESS OF SITE. ALTERNATIVE STAFF EGRESS TO BE PROVIDED BY SPINGARN-LEEDSVILLE ROAD ENTRANCE.
- *DAY-USE EVENT GUEST (GARDEN EVENT):* ALL NON-RESIDENT EVENT ATTENDEES SHALL BE TO INGRESS THROUGH "SPINGARN-LEEDSVILLE ROAD" ENTRANCE.



NMUTCD W2-1 CROSSROADS SIGN

N.T.S.



TYPICAL SITE WAYFINDING SIGNAGE

N.T.S

PARKING CALCULATIONS

EXISTING/PROPOSED USES - FULL BUILDOUT - RECOMMENDED PARKING SPACES
- **LODGING UNITS:** 118 UNITS X 1 SPACE PER UNIT = **118 SPACES**
- RESIDENTIAL UNITS: 6 STAFF APARTMENTS X 1.5 SPACE PER UNIT (MULTIFAMILY) = **9 SPACES**
- **FTE STAFF:** (67 STAFF X 1 SPACE PER EMPLOYEE) X .75 (ASSUMED STAGGERED SCHEDULING, WHICH FREES SPACES FOR LATER SHIFT) = **50 SPACES**
- **EVENT SPACE (PUBLIC ASSEMBLY):** (240 OCCUPANTS (GUEST + ADDITIONAL STAFF) / 1 SPACE PER 3 PEOPLE) X .55 (ASSUMED LODGING/EVENT USE OVERLAP - GUEST STAYING ON SITE MAKE UP 45% OF EVENT BUILDING CAPACITY) = **44 SPACES**
- **RESTAURANT (DELAMATER):** 87 SEATS / 1 SPACE PER 3 PEOPLE = **29 SPACES**

TOTAL REQUIRED PARKING SPACES: 250 SPACES*
TOTAL PROVIDED PARKING SPACES: 284 SPACES

PARKING AREAS
1. GATE HOUSE: 2 SPACES
2. BENTON HOUSE PARKING: 18 SPACES
3. CREEKSIDE CABINS: 5 SPACES
4. MANOR HOUSE ADJACENT PARKING: 20 SPACES
5. DELAMATER ADA PARKING: 2 SPACES
6. DELAMATER PARKING AREA(S): 32 SPACES
7. GRASS OVERFLOW PARKING AREA(S)(VALET): 22 SPACES**
8. GRASS OVERFLOW PARKING AREA(S)(VALET):38 SPACES**
9. MANOR HOUSE SERVICE YARD AREA - SOUTH: 14 SPACES
10. MANOR HOUSE SERVICE YARD AREA: 14 SPACES
11. MANOR HOUSE SERVICE YARD AREA - NORTH: 7 SPACES
12. ADMINISTERATION/STAFF RESIDENCE: 20 SPACES
13. GARDEN HOTEL(S)/EVENT PARKING: 55 SPACES
14. GRASS BUS EVENT PARKING: 7 SPACES = 35 SPACE EQUIVALENT

*BASED ON TOWN OF AMENIA RECOMMENDED PARKING CALCULATIONS. ASSUMES FULL CAPACITY FOR PROJECT SITE.
**GRASS OVERFLOW PARKING AREAS SHALL BE RESERVED FOR LARGE EVENTS AND SHALL NOT BE USED UNLESS REQUIRED.

MAP NOTES:
1. PROPERTY DATA AND EXISTING FEATURES BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE APRIL 26, 2016 PREPARED BY CHAZEN ENGINEERING AND SURVEYING, PC.
2. TOPOGRAPHIC CONTOURS BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE DECEMBER 8, 2004 PREPARED BY STEVEN ALEX, L.S. OF CHAZEN ENGINEERING AND SURVEYING, PC.

FLOOD ZONE NOTES:
1. PROPERTY SHOWN HEREON LIES WITHIN "SPECIAL FLOOD HAZARD AREA ZONE AE", WITHIN "OTHER AREAS, ZONE X" (UNSHADED), AND WITHIN "FLOODWAY AREAS IN ZONE AE" AS SHOWN ON FEMA, NFIP, FIRM PANEL 36027C0332E. WITH AN EFFECTIVE DATE OF MAY 2, 2012.
2. THE "ZONE AE, BASE FLOOD ELEVATIONS" DETERMINED TO AFFECT THIS PARCEL ARE IN THE RANGE OF 480' TO 487' (NAVD88).

OWNER'S CONSENT NOTE:

THE UNDERSIGNED OWNER OF THE PROPERTY HEREON STATES THAT I AM FAMILIAR WITH THIS MAP, ITS CONTENTS AND LEGENDS AND HEREBY CONSENT TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON AND TO THE FILING OF THIS PLAN IN THE OFFICE OF THE CLERK OF THE COUNTY OF DUTCHESS, IF REQUIRED.

SIGNED THIS_____ DAY OF _____2022

_____ OWNER'S SIGNATURE

ZONING DISTRICT: "RR" RURAL RESIDENTIAL
LOT SIZE: 43.5 ACRES
TAX GRID No. : 132000-7267-00-227675
PROPERTY ADDRESS: 515 LEEDSVILLE ROAD AMENIA, NY 12501
PROPERTY OWNER: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501
APPLICANT: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501

DATE	REVISION

ENGINEERING, DESIGN, & PLANS PREPARED BY:
RENNIA ENGINEERING DESIGN, PLLC
CIVIL • ENVIRONMENTAL • STRUCTURAL
6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

PRELIMINARY

TROUTBECK ADAPTIVE RE-USE

TOWN OF AMENIA — DUTCHESS COUNTY, NY

VEHICLE CIRCULATION/PARKING IMPROVEMENT PLAN

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
10/10/2022	1" = 100'	RED	RED	RAR	16-019	6 of 6

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Troutbeck - Adaptive Reuse Plan/Phase 1 Site Plan		
Project Location (describe, and attach a general location map): 515 Leedsville Road, Amenia, NY 12501		
Brief Description of Proposed Action (include purpose or need): The applicant is proposing to expand the existing lodging and recreational uses of the existing site through adaptive re-use of the site for the purposes of updating the accommodations and increasing the capacity. To summarize, the applicant is looking to obtain Special Use Permit approval for the Adaptive Reuse Plan (Master Plan) prepared for the site, as well as Phase 1 Site Plan approval for the initial phase outlined in said plan. See "Troutbeck Inn Adaptive Reuse - Project Narrative & SEQR Documentation" dated 8/29/2022, revised 10/10/2022		
Name of Applicant/Sponsor: Troutbeck Holding, LP c/o Anthony Champalimaud	Telephone: 845-789-1560 E-Mail: anthony@troutbeck.com	
Address: 515 Leedsville Road		
City/PO: Amenia	State: NY	Zip Code: 12501
Project Contact (if not same as sponsor; give name and title/role): Richard Rennia Jr., P.E.	Telephone: 845-877-0555 E-Mail:	
Address: 6 Dover Village Plaza		
City/PO: Dover Plains	State: New York	Zip Code: 12594
Property Owner (if not same as sponsor):	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☐Yes ☑No		
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Amenia Planning Board - Site Plan & Special Use Permit (HPO - Adaptive Reuse Plan)	9/2021
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☑Yes ☐No	Town of Amenia Building Dept. Floodplain Development Permit	TBD
e. County agencies ☑Yes ☐No	DCDOH Approval For Water & Wastewater	TBD
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSDEC SPDES General Permit GP-0-20-001, Wastewater SPDES Discharge Permit. NYSHPO Advisory Review	TBD
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Rural Residential "RR" Zoning District, Historic Preservation Overlay District (HPO), Road Visual Protection Corridor, Stream Corridor Buffer (SCO), Floodplain Overlay District (FPO), Aquifer Overlay District (AQO)

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Webutuck Central School District

b. What police or other public protection forces serve the project site?
State Police Department (10.8 mi)

c. Which fire protection and emergency medical services serve the project site?
Amenia Fire House (2.6 mi), NDP Station 5 (6.2 mi)

d. What parks serve the project site?
Beekman Park, Benton Hill Preserve,

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)?
Commercial: Lodging, Restaurant

b. a. Total acreage of the site of the proposed action? 43.5 acres
b. Total acreage to be physically disturbed? 14.55 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 43.5 acres

c. Is the proposed action an expansion of an existing project or use? ☑ Yes ☐ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % 210.5% (118 vs 38) Units: Lodging Units

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☑ Yes ☐ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated 9
- Anticipated commencement date of phase 1 (including demolition) Jan month 2023 year
- Anticipated completion date of final phase Nov. month 2029 year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases:
Adaptive Reuse Plan Special Permit and Phase 1 Site Plan approvals are currently being obtained, with Phase 1 to be constructed as once approved. Phases 2-9 will require separate Site Plan approvals, which will commence one Phase 1 Site Plan approval is obtained.

f. Does the project include new residential uses? ☑ Yes ☐ No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)	
Initial Phase	1 (Staff Apt.)	1 (2 Staff Apt.) (To be Removed)	0		Existing Facilities - No Change in Phase 1
At completion of all phases	1 (1 Staff Apts.)			1 (5 Staff Apts.)	Proposed Multi-Family (Staff Apartments) to be constructed in Phase 3.

g. Does the proposed action include new non-residential construction (including expansions)? ☑ Yes ☐ No

If Yes,

i. Total number of structures 28

ii. Dimensions (in feet) of largest proposed structure: 32 height; 63 width; and 175 length

iii. Approximate extent of building space to be heated or cooled: 22,180 square feet

Garden Hotel - Phase 5a

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☑ Yes ☐ No

If Yes,

i. Purpose of the impoundment: Proposed Pond (Meadow Expansion - Phase 7)

ii. If a water impoundment, the principal source of the water: ☑ Ground water ☑ Surface water streams ☐ Other specify:
Pond will be created using ground water and surface water runoff.

iii. If other than water, identify the type of impounded/contained liquids and their source.

iv. Approximate size of the proposed impoundment. Volume: 1.2 million gallons; surface area: 0.46 acres

v. Dimensions of the proposed dam or impounding structure: 4 height; 20 length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):
Earth & Rock

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☑ Yes ☐ No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) Meadow Expansion - Pond Construction - Phase 7

If Yes:

i. What is the purpose of the excavation or dredging? Create Water Feature (Recreational Pond)

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): 15,000
- Over what duration of time? 6-months

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.
Native Sand and Gravel to be excavated and spoils to be used on site for general fill and bedding material.

iv. Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☑ No
If yes, describe.

v. What is the total area to be dredged or excavated? acres

vi. What is the maximum area to be worked at any one time? acres

vii. What would be the maximum depth of excavation or dredging? feet

viii. Will the excavation require blasting? ☐ Yes ☐ No

ix. Summarize site reclamation goals and plan:

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description):

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☑ No
If Yes, describe:

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☑ No
If Yes:

- acres of aquatic vegetation proposed to be removed:
- expected acreage of aquatic vegetation remaining after project completion:
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access):
- proposed method of plant removal:
- if chemical/herbicide treatment will be used, specify product(s):

v. Describe any proposed reclamation/mitigation following disturbance:

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No
If Yes:

i. Total anticipated water usage/demand per day: 25,250 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑ Yes ☐ No
If Yes:

- Name of district or service area: Troutbeck Inn PWS ID#NY133035
- Does the existing public water supply have capacity to serve the proposal? ☐ Yes ☑ No
- Is the project site in the existing district? N/A ☐ Yes ☐ No
- Is expansion of the district needed? N/A ☐ Yes ☐ No
- Do existing lines serve the project site? N/A ☐ Yes ☐ No

iii. Will line extension within an existing district be necessary to supply the project? ☑ Yes ☐ No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project:
  Expand the source, storage & distribution of the existing system
- Source(s) of supply for the district: On Site Well

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☑ No
If, Yes:

- Applicant/sponsor for new district:
- Date application submitted or anticipated:
- Proposed source(s) of supply for new district:

v. If a public water supply will not be used, describe plans to provide water supply for the project:

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: 30 gallons/minute.

d. Will the proposed action generate liquid wastes? ☑ Yes ☐ No
If Yes:

i. Total anticipated liquid waste generation per day: 25,250 gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each):
Sanitary Wastewater

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐ Yes ☑ No
If Yes:

- Name of wastewater treatment plant to be used:
- Name of district:
- Does the existing wastewater treatment plant have capacity to serve the project? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☑No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

Onsite subsurface sanitary disposal systems to be assessed and provided on a phase-by-phase basis.

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

Liquid waste will be treated/infiltrated through the subsurface disposal systems

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 8.34 acres (impervious surface)

_____ Square feet or 43.5 acres (parcel size)

ii. Describe types of new point sources. Pipe outlet from stormwater management practices and sheet flow from disconnected roof leaders

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

On-site stormwater management facilities.

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☐Yes ☑No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☑No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☑Yes ☐No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☑ Evening ☑Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): Food delivery vehicles. 1 resupply trip/week

iii. Parking spaces: Existing 165 Proposed 284 Net increase/decrease 182

iv. Does the proposed action include any shared use parking? ☑Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe: Reconfiguration of Spingarn Road, an existing interior road/driveway.

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☑No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☑Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☑No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☑Yes ☐No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: 2 to 3-million kWHrs

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other): grid/local utility

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7:00 AM - 6:00 PM
- Saturday: 9:00 AM - 5:00 PM
- Sunday: _____
- Holidays: _____

ii. During Operations: (Lodging/Staff Residence to provide 24/hour service)

- Monday - Friday: (24 hours / 365 days a year)
- Saturday: (24 hours / 365 days a year)
- Sunday: (24 hours / 365 days a year)
- Holidays: (24 hours / 365 days a year)

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

General Construction Noise - 8am-6pm, Existing Event Use - Duration of Events (Anticipated time between 3pm-10pm)

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe:

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Street/Parking Lighting. Pedestrian Wayfinding and Illumination Fixtures. Security Lighting. Exact fixtures to be identified on a phase-by-phase basis.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe: Significant vegetative buffers/conservation areas will remain around the boundaries of the parcel.

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☑ Yes ☐ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures:

Proposed restaurant uses will emit food odor during operation duration.

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities:

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: 8 tons per week (unit of time)
- Operation : 3.2 tons per week (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: Reuse materials when feasible and compost organics (vegetation debris)
- Operation: Recycling & composting organics

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: Trucking to Dutchess County Resource Recovery or other approved disposal site
- Operation: Trucking to Dutchess County Resource Recovery or other approved disposal site

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☑ Commercial ☑ Residential (suburban) ☑ Rural (non-farm)
☑ Forest ☐ Agriculture ☑ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	4.59	8.34	+ 3.75
• Forested	9.42	7.9	- 1.52
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	24.34	22.11	- 2.23
• Agricultural (includes active orchards, field, greenhouse etc.)	0.0	0.0	
• Surface water features (lakes, ponds, streams, rivers, etc.)	2.25	2.25	No Change
• Wetlands (freshwater or tidal)	2.90	2.90	No Change
• Non-vegetated (bare rock, earth or fill)	0.0	0.0	0.0
• Other Describe: _____	0.0	0.0	0.0

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No

If Yes,

i. Identify Facilities:

_____

_____

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☑ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☐ No

☐ Yes – Spills Incidents database — Provide DEC ID number(s): _____

☐ Yes – Environmental Site Remediation database — Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

_____

_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No

If yes, provide DEC ID number(s): _____

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

_____

_____

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☐ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? >6.56 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site:

Copake gravelly silt loam, rolling (CuC)	68 %
Copake gravelly silt loam, nearly level (CuA)	31.9 %
Copake gravelly silt loam, undulatin (CuB)	0.1 %

d. What is the average depth to the water table on the project site? Average: >6.56 feet

e. Drainage status of project site soils:
☑ Well Drained: 100 % of site
☐ Moderately Well Drained: _____ % of site
☐ Poorly Drained _____ % of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 32 % of site
☑ 10-15%: 68 % of site
☐ 15% or greater: 6.8 % of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name 825-107, 825-113 Classification C(T), C(TS)
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Waters, Federal Waters, Federal Waters,... Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☑ Yes ☐ No

j. Is the project site in the 100-year Floodplain? ☑ Yes ☐ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No
If Yes:

i. Name of aquifer: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:

White-tailed Deer | Eastern Gray Squirrel |
Red Fox | Additional Common Wildlife Species |

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): _____

ii. Source(s) of description or evaluation: _____

iii. Extent of community/habitat:

- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No

If Yes:

i. Species and listing (endangered or threatened): Timber Rattlesnake, Bog Turtle

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☑ Yes ☐ No

If Yes:

i. Species and listing: New England Cottontail

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☑ Yes ☐ No

If yes, give a brief description of how the proposed action may affect that use: Fishing on Webatuck Creek

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No

If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No

i. If Yes: acreage(s) on project site? 43.5-acres (Copake Gravelly Silt Loam, Nearly Level (CuA:13.77-acres) + Rolling (CuC: 29.73-acres))

ii. Source(s) of soil rating(s): Prime Agricultural Soils, Soils of Statewide Importance

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If Yes:

i. CEA name: _____

ii. Basis for designation: _____

iii. Designating agency and date: _____

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☑ Yes ☐ No

If Yes:

i. Nature of historic/archaeological resource: ☑ Archaeological Site ☑ Historic Building or District

ii. Name: Lewis Mumford House / Webatuck Agricultural Valley Historic District, Archaeological Site - Prehistoric (Phase 1a/b Archaeological Report)

iii. Brief description of attributes on which listing is based:

Historically Significant Site of Poet-Naturalist Lewis Mumford. Noteworthy growth of agricultural community in 19th century.

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Scenic Overlook, US-44, Amenia, NY

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): Established Highway Overlook

iii. Distance between project and resource: 4.2 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Peter Sander Date 10/10/2022

Signature Peter S Title Staff Planner

PRINT FORM

RENNIA ENGINEERING DESIGN, PLLC

CIVIL & ENVIRONMENTAL ENGINEERING

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

October 10, 2022

Town of Amenia Planning Board
Amenia Town Hall
4988 Route 22
Amenia, NY 12501

Attn: Robert Boyles, Chairperson

Re: Troutbeck - Adaptive Reuse
& Phase 1 Site Plan
515 Leedsville Road
132000-7267-00-227675

Dear Mr. Boyles and Planning Board Members,

The applicant is proposing to expand on Troutbeck Inn's existing hospitality/lodging/restaurant use by developing an Adaptive Reuse Plan under the town's Historic Preservation Overlay District regulations, which will outline the proposed uses for the site and how the sites existing historic resources will be preserved. The proposed development will occur in 9 phases, with plans for the development and construction of Phase 1 (Gatehouse, 5 guest lodging cabins, platform tennis court/warming hut, and the conversion of existing maintenance garage/staff apartment into a guest amenity bakery), included with this application.

Since our previous submission, which was reviewed during the 9/14/2022 Planning Board meeting, we have revised the various plans and supporting documentation to reflect questions and concerns stated during the above-referenced meeting and in the subsequent Planning Board Consultant meeting held on 9/21/2022.

Additionally, a follow up submission was provided to the Board and their consultants on 10/05/2022 to provide updates on recently completed shovel testing, for additional areas of potential disturbance to be reviewed by SHPO, and for a Traffic Assessment analyzing how the potential buildout of the project may affect existing site/roadway traffic conditions. To summarize this previous submission:

- Completed shovel testing in additional areas approved by SHPO, has yielded no other archaeological artifacts since the initial report was completed and submitted to the Planning Board. The provided Phase 1 Archaeological Investigation report has been revised to reflect these findings.
- The Traffic Assessment found that the buildout of the site will not have an effect on the Level of Service (LOS) of adjacent roadways and that only minor site improvements are recommend as part of the buildout of the proposed improvements. All recommended improvement has been incorporated into the Adaptive Reuse Plan.

Re: Troutbeck – Adaptive Reuse
& Phase 1 Site Plan
515 Leedsville Road
132000-7267-00-227675

In addition to the items outlined above, included as part of this submission is a Preliminary Stormwater Pollution Prevention Plan (SWPPP) for the site. The provide SWPPP outlines stormwater practice proposed for Phase 1 and conceptual layouts for stormwater management practices involved in future phases.

Attached for your review and approval please find three (3) copies of the following items:

- Troutbeck – Adaptive Reuse Plan (Master Plan) Set, sheets 0-6, dated 12/01/2021, revised 10/10/2022
- Troutbeck – Phase 1 Site Plan Set, sheets 0-7, dated 8/29/2022, revised 10/10/2022
- Troutbeck Inn – Project Narrative/SEQR Documentation, dated 8/29/2022, revised 10/10/2022
- Troutbeck - Stormwater Pollution Prevention Plan, dated10/10/2022 (1 Copy)
- Full Environmental Assessment Form – Revised 10/10/2022

Please do not hesitate to contact me with any questions, (845) 877-0555.

Sincerely,

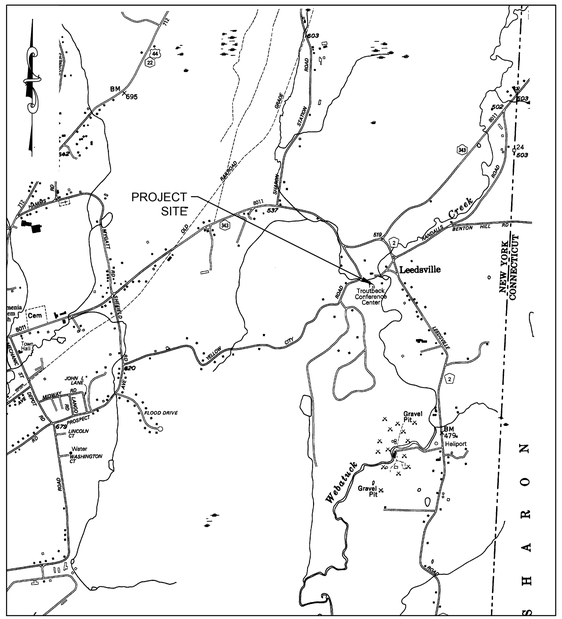
Peter Sander
Staff Planner

TROUTBECK

PHASE 1 SITE PLAN

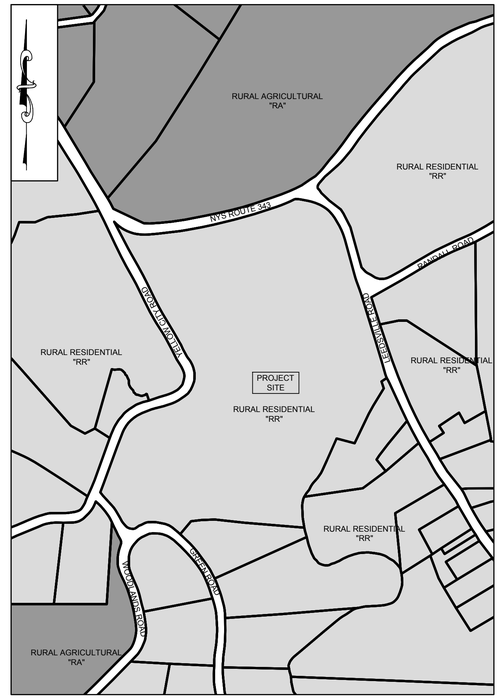
TOWN OF AMENIA
DUTCHESS COUNTY, NY

VICINITY PLAN



SCALE: 1" = 2000'

AREA PLAN



SCALE: 1" = 400'

- RURAL AGRICULTURAL
- RURAL RESIDENTIAL

DRAWING LIST

PLANS PREPARED FOR:

TROUTBECK HOLDINGS LP.
515 LEEDSVILLE RD.
AMENIA, NY 12501

PARCEL INFORMATION

ZONING DISTRICT: "RR" RURAL RESIDENTIAL
LOT SIZE: 43.5 ACRES
TAX GRID No. : 132000-7267-00-227675
PROPERTY ADDRESS: 515 LEEDSVILLE ROAD AMENIA, NY 12501
PROPERTY OWNER: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501
APPLICANT: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501

ADJACENT PROPERTY OWNERS

TAX GRID NO. : 132000-7267-00-285867
PROPERTY OWNER: BARBARA C. MEILI
ZONING DISTRICT: "RA" - 'RURAL AGRICULTURAL'

TAX GRID NO. : 132000-7267-00-340790
PROPERTY OWNER: STEPHEN HOLT
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-335715
PROPERTY OWNER: KEVIN WHEELER
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-343654
PROPERTY OWNER: DANIEL J. KESSLER
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-314628
PROPERTY OWNER: VERNON FISH
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-294624
PROPERTY OWNER: JOHN H. STEWART
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-310588
PROPERTY OWNER: ADRIAN PARTRIDGE
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-186555
PROPERTY OWNER: SCOTT YO
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-136560
PROPERTY OWNER: DAVID LEDERKRAMER
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-115640
PROPERTY OWNER: PETER W. SPARBER
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

TAX GRID NO. : 132000-7267-00-137672
PROPERTY OWNER: LYZZETTE BULLOCK
ZONING DISTRICT: "RR" - 'RURAL RESIDENTIAL'

ENGINEERING, DESIGN, & PLANS PREPARED BY:

RENNIA ENGINEERING DESIGN, PLLC

CIVIL ▪ ENVIRONMENTAL ▪ STRUCTURAL

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

THE UNDERSIGNED OWNER OF THE PROPERTY HEREON STATES THAT I AM FAMILIAR WITH THIS MAP, ITS CONTENTS AND LEGENDS AND HEREBY CONSENT TO ALL SAID TERMS AND CONDITIONS AS STATED HEREON AND TO THE FILING OF THIS PLAN IN THE OFFICE OF THE CLERK OF THE TOWN OF HYDE PARK, DUTCHESS COUNTY, NY.

SIGNED THIS_____ DAY OF _____2022

_____ OWNER'S SIGNATURE

PLANNING BOARD APPROVAL

APPROVED BY RESOLUTION OF THE PLANNING BOARD OF THE TOWN OF AMENIA, NEW YORK, ON THE ____ DAY OF _____, 20____, SUBJECT TO ALL REQUIREMENTS AND CONDITIONS OF SAID RESOLUTION. ANY CHANGE, ERASURE, MODIFICATION OR REVISION OF THIS PLAT, AS APPROVED, SHALL VOID THIS APPROVAL.

SIGNED THIS _____ DAY OF _____, 20____ BY

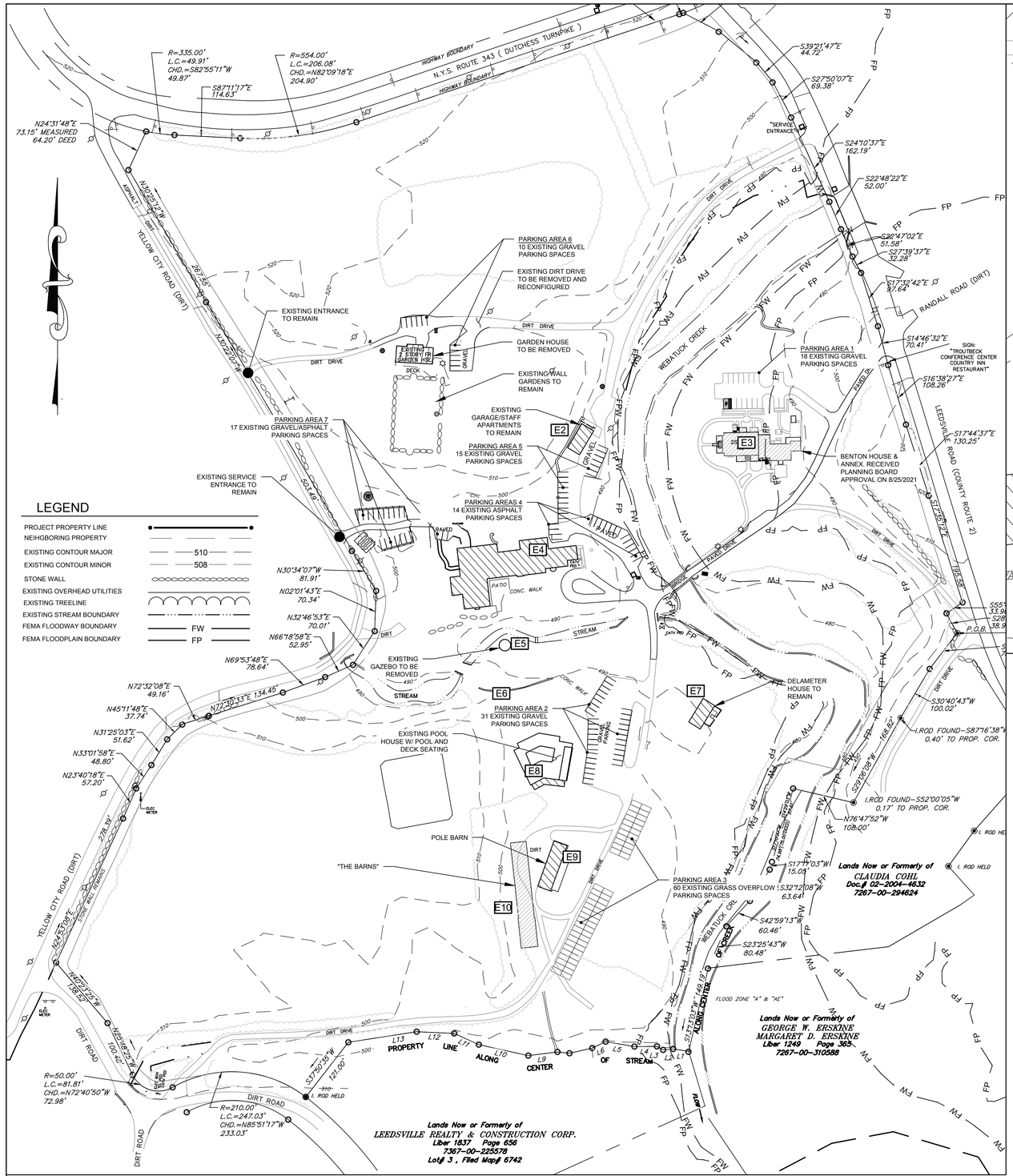
_____
CHAIRPERSON

DATE	REVISION
8/29/2022	REVISED FOR PLANNING BOARD SUBMISSION
10/10/2022	REVISED FOR PLANNING BOARD SUBMISSION

DATE: 12/01/2021

TITLE

SHEET: 0 OF 6



OVERALL EXISTING CONDITIONS PLAN

SCALE: 1" = 100'

PHASE 1 EXISTING CONDITIONS PLAN

SCALE: 1" = 50'

EXISTING PARKING SPACES

PARKING AREA LOCATION	COVER TYPE	# OF PARKING SPACES
AREA 1 BENTON HOUSE	GRAVEL	18
AREA 2 POOL FACILITIES	GRAVEL	31
AREA 3 GRASS OVERFLOW	GRASS	60
AREA 4 MANOR HOUSE	ASPHALT	14
AREA 5 MAINTENANCE GARAGE/STAFF RESIDENCE	GRAVEL	15
AREA 6 GARDEN HOUSE	GRAVEL	10
AREA 7 MANOR HOUSE - SERVICE YARD	GRAVEL/ASPHALT	17
TOTAL		165 SPACES

TROUTBECK - ADAPTIVE REUSE PLAN

EXISTING STRUCTURE INVENTORY

BUILDING #	BUILDING	EXISTING BUILDING USE	FLOORS	FOOTPRINT (SF)	TOTAL BUILDING SQ.FT.	LODGING UNITS / STAFF APARTMENTS
E1	GARDEN HOUSE*	STAFF APARTMENTS/ GUEST LODGING	2-STORY	1,931	3,862	4 LODGING UNITS 2 STAFF APARTMENTS
E2	CARETAKER HOUSE / MAINTENANCE GARAGE	STAFF APARTMENT / MAINTENANCE	2-STORY	1,172	1,800	1 STAFF APARTMENT
E3	BENTON HOUSE (FORMERLY CENTURY LODGE & ANNEX)	LODGING	2-STORY	5,860	9,783	17 LODGING UNITS
E4	MANOR HOUSE	LODGING/EVENT SPACE/DINING	2.5-STORY	14,264	35,773	17 LODGING UNITS
E5	GAZEEBO*	GUEST AMENITY	1-STORY	315	315	N/A
E6	STONE CHAPEL	GUEST AMENITY	1-STORY	174	174	N/A
E7	DELAMETER HOUSE	VACANT/UNUSED	2-STORY	1,143	2,012	N/A
E8	POOL FACILITIES (POOL HOUSE)	GUEST AMENITY	1-STORY	615	615	N/A
E9	POLE BARN	GUEST AMENITY	1-STORY	2,081	2,081	N/A
E10	THE BARNS (WELLNESS)	GUEST AMENITY/ FITNESS/ WELLNESS	1-STORY	4,925	4,925	N/A
TOTAL					**LODGING UNITS**	38
					STAFF APTS.	3

*SCHEDULED TO BE REMOVED AS PART OF PROPOSED ADAPTIVE REUSE PLAN DEVELOPMENT.

MAP NOTES:
1. PROPERTY DATA AND EXISTING FEATURES BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE APRIL 26, 2016 PREPARED BY CHAZEN ENGINEERING AND SURVEYING, PC.
2. TOPOGRAPHIC CONTOURS BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE DECEMBER 9, 2004 PREPARED BY STEVEN ALEX, L.S. OF CHAZEN ENGINEERING AND SURVEYING, PC.

FLOOD ZONE NOTES:
1. PROPERTY SHOWN HEREON LIES WITHIN "SPECIAL FLOOD HAZARD AREA ZONE AE", WITHIN "OTHER AREAS, ZONE X" (UNSHADED), AND WITHIN "FLOODWAY AREAS IN ZONE AE" AS SHOWN ON FEMA, NFIP, FIRM PANEL 36027C0332E, WITH AN EFFECTIVE DATE OF MAY 2, 2012.
2. THE "ZONE AE, BASE FLOOD ELEVATIONS" DETERMINED TO AFFECT THIS PARCEL ARE IN THE RANGE OF 480' TO 487' (NAVD88).

ZONING DISTRICT: "RR" RURAL RESIDENTIAL
LOT SIZE: 43.5 ACRES
TAX GRID No. : 132000-7267-00-227675
PROPERTY ADDRESS: 515 LEEDSVILLE ROAD AMENIA, NY 12501
PROPERTY OWNER: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501
APPLICANT: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501

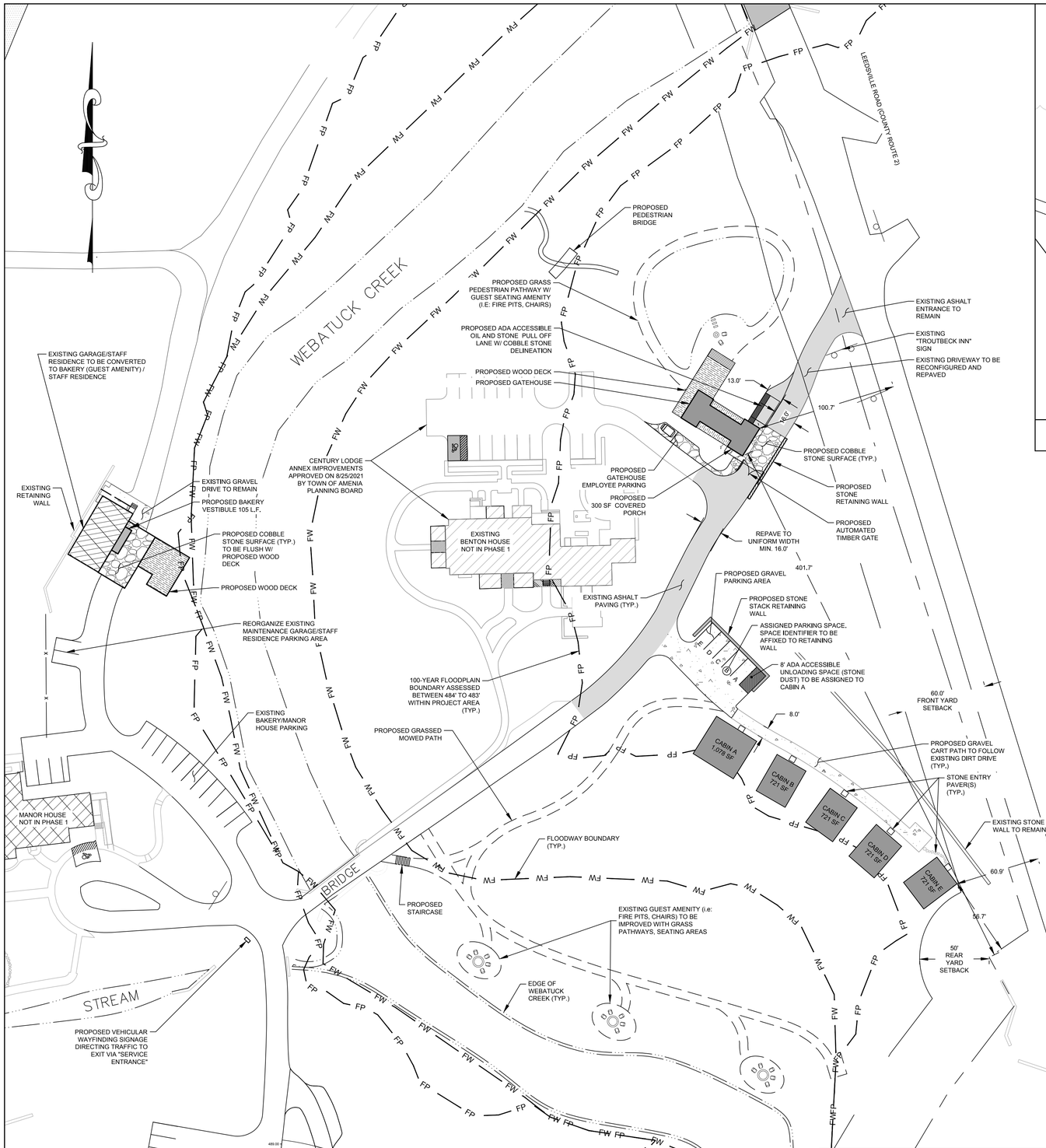
DATE	REVISION

ENGINEERING, DESIGN, & PLANS PREPARED BY:
RENNIA ENGINEERING DESIGN, PLLC
CIVIL • ENVIRONMENTAL • STRUCTURAL
6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

TROUTBECK
ADAPTIVE REUSE
TOWN OF AMENIA — DUTCHESS COUNTY, NY

PHASE 1
EXISTING CONDITIONS PLAN

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
10/10/2022	AS SHOWN	RED	RED	RAR	16-019	1 of 7



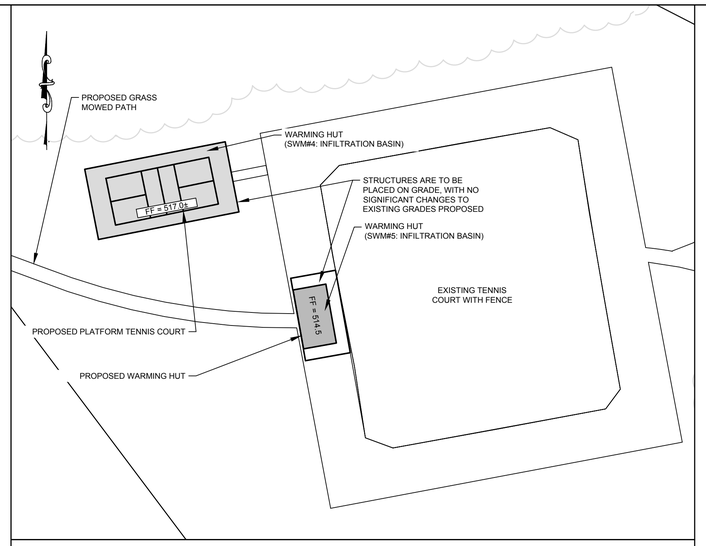
SITE PLAN - CREEKSIDE CABINS & GATE HOUSE

SCALE: 1" = 40'

FLOOD ZONE NOTES:
1. PROPERTY SHOWN HEREON LIES WITHIN "SPECIAL FLOOD HAZARD AREA ZONE AE", WITHIN "OTHER AREAS, ZONE X" (UNSHADED), AND WITHIN "FLOODWAY AREAS IN ZONE AE" AS SHOWN ON FEMA, NFIP, FIRM PANEL 36027C0332E, WITH AN EFFECTIVE DATE OF MAY 2, 2012.
2. THE "ZONE AE, BASE FLOOD ELEVATIONS" DETERMINED TO AFFECT THIS PARCEL ARE IN THE RANGE OF 480' TO 487' (NAVD88).

MAP NOTES:
1. PROPERTY DATA AND EXISTING FEATURES BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE APRIL 26, 2016 PREPARED BY CHAZEN ENGINEERING AND SURVEYING, PC.
2. TOPOGRAPHIC CONTOURS BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE DECEMBER 8, 2004 PREPARED BY STEVEN ALEX, L.S. OF CHAZEN ENGINEERING AND SURVEYING, PC.

0 40' 80'
1" = 40'
GRAPHIC SCALE



SITE PLAN - TENNIS

SCALE: 1" = 30'

BULK REGULATIONS

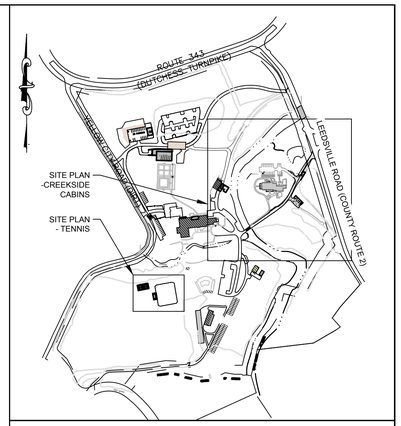
PHASE 1: CREEKSIDE CABINS/GATEHOUSE/BAKERY

PROVISION	REQUIRED[4] (ADAPTIVE REUSE)	PROPOSED GATEHOUSE	PROPOSED CABINS (5)	PLATFORM TENNIS
MIN. LOT AREA (ACRES)	5	43.5	43.5	43.5
MIN. ROAD FRONTAGE (FT)	400	1169 (LEEDSVILLE)	1169 (LEEDSVILLE)	1169 (LEEDSVILLE)
MIN / MAX FRONT[1] YARD SETBACK (FT)	60 (COUNTY ROAD)	100.7	60.7 (CABIN E)	138.2
MIN. REAR YARD SETBACK (FT)	50	401.7	56.7 (CABIN E)	1086.9
MIN. SIDE YARD SETBACK (FT)[3]	30	N/A	N/A	N/A
MAX BUILDING HEIGHT (FT)	35	13.5	13.3	N/A
MAX. IMPERVIOUS SURFACE (%)	30%	10.8	10.8	10.8
MAX BUILDING FOOT PRINT (SF)	16,000	962	1,078 (CABIN A)	N/A

NOTES
1) MEASURED FROM CENTERLINE OF ROADWAY.
2) MEASURED FROM NEAREST ROADWAY.
3) THE SITE IS BORDERED ON 3 SIDES BY EXISTING ROADWAYS. ONLY REAR YARD SETBACK IS UTILIZED.
4) BULK REGULATION REQUIREMENTS ESTABLISHED AS PART OF THE "ADAPTIVE REUSE" OF THE SITE. PERMITTED AS PER SECTION 121-14.2.I OF THE AMENIA ZONING CODE.

LEGEND

- EXISTING PROPERTY LINE
- STONE WALL
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING OVERHEAD UTILITIES — OHW
- EXISTING TREELINE
- EXISTING STREAM BOUNDARY
- FEMA FLOODWAY BOUNDARY — FW
- FEMA FLOODPLAIN BOUNDARY — FP
- RETAINING WALL ELEVATIONS — T.W.=318.50, B.W.=317.00
- PROPOSED RETAINING WALL



AREA MAP

SCALE: 1" = 400'

PARKING CALCULATIONS

EXISTING USES - RECOMMENDED PARKING SPACES
- LODGING UNITS: 38 UNITS X 1 SPACE PER UNIT = **38 SPACES**
- RESIDENTIAL UNITS: 3 STAFF APARTMENTS X 1.5 SPACE PER UNIT (MULTIFAMILY) = **5 SPACES**
- FTE STAFF: (53 STAFF X 1 SPACE PER EMPLOYEE) X .75 (ASSUMED STAGGERED SCHEDULING, WHICH FREES SPACES FOR LATER SHIFT) = **40 SPACES**
- EVENT SPACE (PUBLIC ASSEMBLY): (225 OCCUPANTS / 1 SPACE PER 3 PEOPLE) X .55 (ASSUMED LODGING/EVENT USE OVERLAP - GUEST STAYING ON SITE MAKE UP 45% OF EVENT BUILDING CAPACITY) = **42 SPACES**

PROPOSED USES - RECOMMENDED PARKING SPACES
- GATEHOUSE: 1 SPACE PER EMPLOYEE = **1 SPACE REQ.**
- BAKERY: 1.5 SPACE PER RESIDENCE/EMPLOYEE = **2 SPACE REQ.**
- CREEKSIDE CABINS (5): 5 LODGING UNITS X 1 SPACE PER UNIT = **5 SPACES REQ.**

EXISTING/PROPOSED PARKING SPACES

PARKING AREA LOCATION	COVER TYPE	# OF PARKING SPACES
EXISTING SPACES		
AREA 1 BENTON HOUSE	GRAVEL	18
AREA 2 POOL FACILITIES	GRAVEL	31
AREA 3 GRASS OVERFLOW	GRASS	60
AREA 4 MANOR HOUSE	ASPHALT	14
AREA 5 MAINTENANCE GARAGE/STAFF RESIDENCE	GRAVEL	SEE "BAKERY" BELOW
AREA 6 GARDEN HOUSE	GRAVEL	10
AREA 7 MANOR HOUSE - SERVICE YARD	GRAVEL/ASPHALT	17
PROPOSED SPACES		
GATEHOUSE	COBBLESTONE	2
CREEKSIDE CABINS	GRAVEL	5
BAKERY	GRAVEL	2
TOTAL RECOMMEND SPACES		132 SPACES
TOTAL PROVIDED SPACES		159

SITE DATA

ZONING DISTRICT: "RR" RURAL RESIDENTIAL
LOT SIZE: 43.5 ACRES
TAX GRID No. : 132000-7267-00-227675
PROPERTY ADDRESS: 515 LEEDSVILLE ROAD AMENIA, NY 12501
PROPERTY OWNER: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501
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DATE	REVISION
10/10/2022	REVISED FOR PLANNING BOARD SUBMISSION

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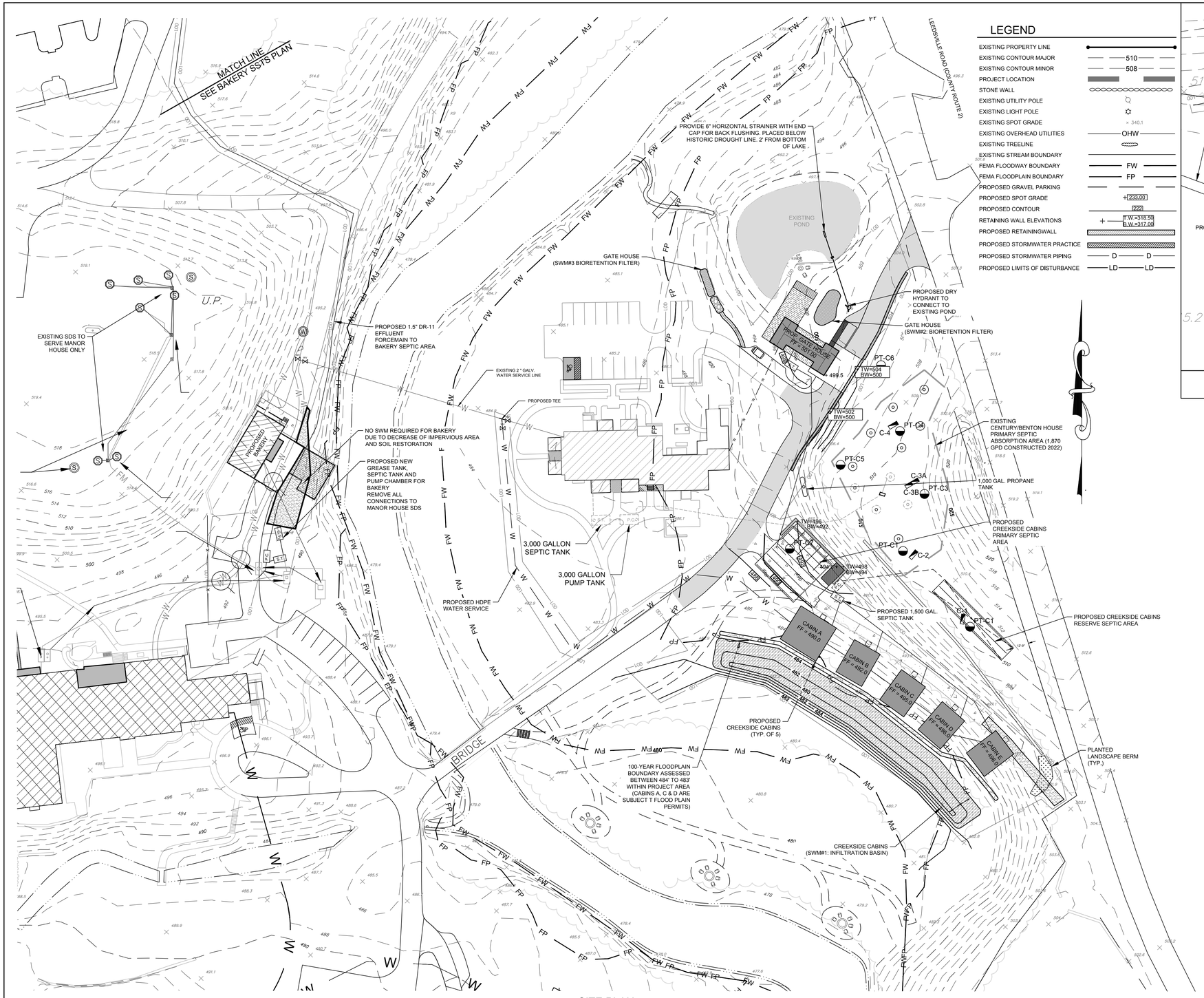
TROUTBECK ADAPTIVE REUSE
TOWN OF AMENIA — DUTCHESS COUNTY, NY

PHASE 1 SITE PLAN

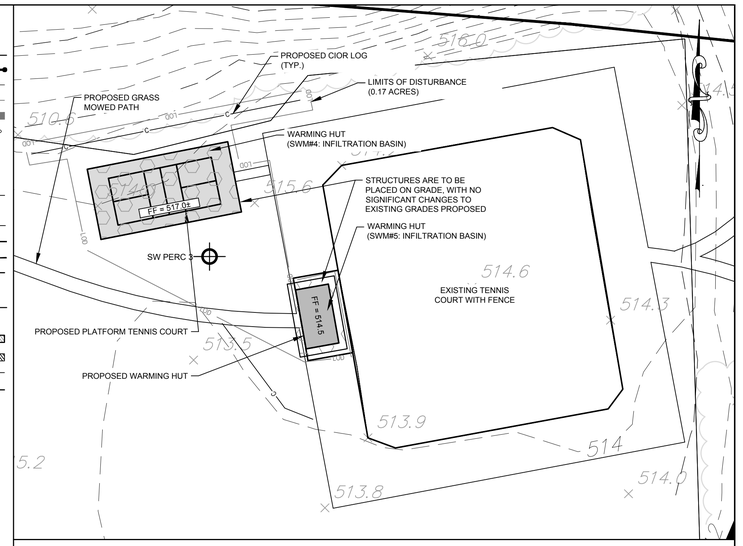
DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
8/29/2022	AS SHOWN	RED	RED	RAR	16-019	2 of 7



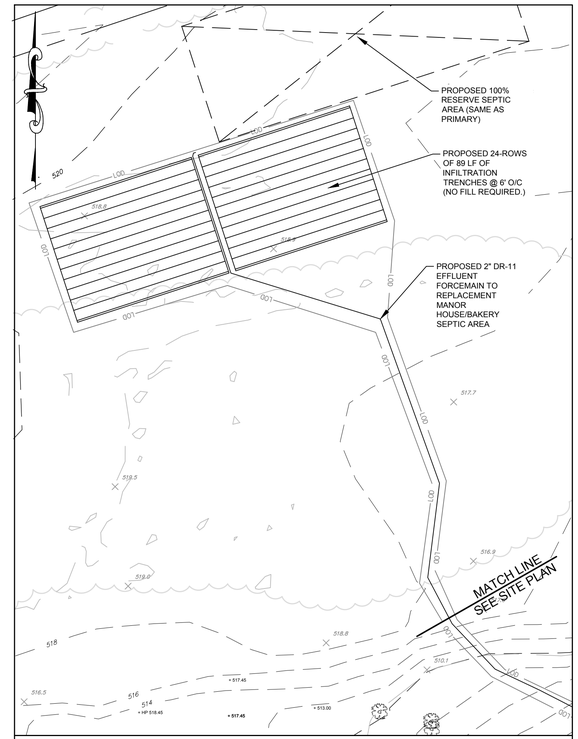
LEGEND

- EXISTING PROPERTY LINE
- EXISTING CONTOUR MAJOR — 510
- EXISTING CONTOUR MINOR — 508
- PROJECT LOCATION
- STONE WALL
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING SPOT GRADE × 340.1
- EXISTING OVERHEAD UTILITIES — OHW
- EXISTING TREELINE
- EXISTING STREAM BOUNDARY
- FEMA FLOODWAY BOUNDARY — FW
- FEMA FLOODPLAIN BOUNDARY — FP
- PROPOSED GRAVEL PARKING
- PROPOSED SPOT GRADE +233.00
- PROPOSED CONTOUR 222
- RETAINING WALL ELEVATIONS + TW=318.50 BW=317.00
- PROPOSED RETAININGWALL
- PROPOSED STORMWATER PRACTICE
- PROPOSED STORMWATER PIPING — D — D
- PROPOSED LIMITS OF DISTURBANCE — LD — LD

SITE PLAN
SCALE: 1" = 40'



SITE PLAN - TENNIS
SCALE: 1" = 30'



MANOR HOUSE & BAKERY SSTS REPLACEMENT PLAN
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0 40' 80'
1" = 40'
GRAPHIC SCALE

DATE	REVISION
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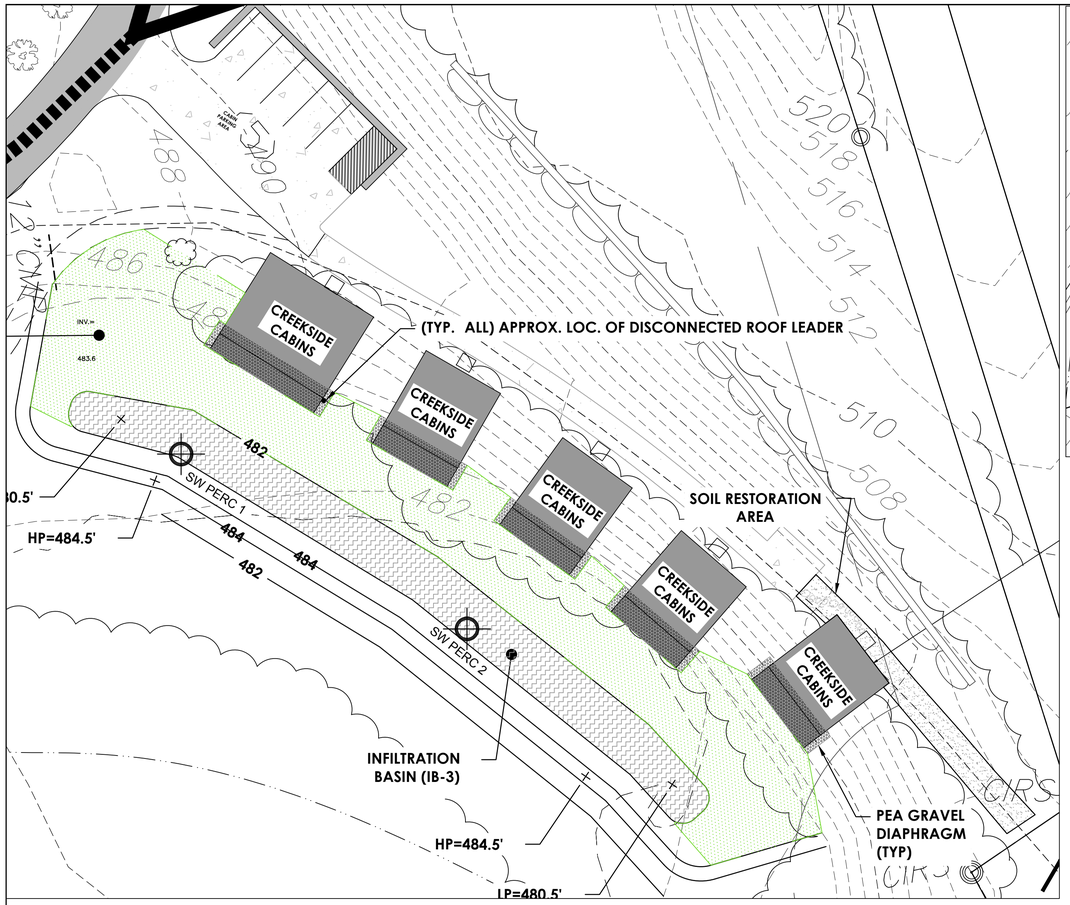
TROUBECK ADAPTIVE REUSE

TOWN OF AMENIA — DUTCHESS COUNTY, NY

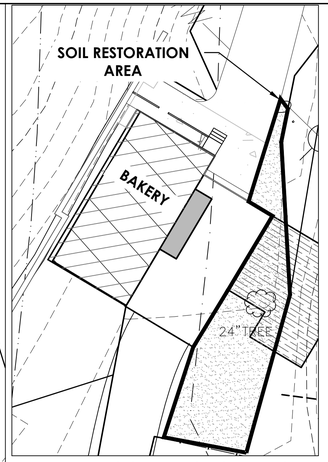
PHASE 1 GRADING/UTILITIES PLAN

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
8/29/2022	1" = 40'	RED	RED	RAR	16-019	3 of 7



INFILTRATION BASIN IB-3

SCALE: 1" = 20'



BAKERY SOIL RESTORATION

SCALE: 1" = 20'

PRE vs POST DEVELOPMENT COMPARISON					
DRAINAGE AREA	AREA (AC)	STORM EVENT	PRE-DEV RUNOFF (cfs)	POST DEV RUNOFF (cfs)	PRE vs POST Δ%
DA-1/DP-1	22.6	1-year	0.09	-	-
		10-year	3.94	-	-
		100-year	25.57	-	-
DA-2/DP-3	2.17	1-year	0	0	0%
		10-year	0.02	0.02	0.00%
		100-year	1.12	1.11	-0.89%
DA-3/DP-9	5.05	1-year	0	-	-
		10-year	0.07	-	-
		100-year	2.77	-	-
DA-4/DP-8	2.25	1-year	0	0	0.00%
		10-year	0.24	0.24	0.00%
		100-year	2.82	2.81	-0.35%
DA-5/DP-7	4.3	1-year	0	-	-
		10-year	0.24	-	-
		100-year	4.03	-	-
DA-6/DP-6	4.16	1-year	0.01	-	-
		10-year	0.83	-	-
		100-year	7	-	-
DA-7/DP-5	3.42	1-year	0	0	0.00%
		10-year	0.05	0	-100.00%
		100-year	2.24	0	-100.00%
DA-8/DP-2	4.16	1-year	0	0	0.00%
		10-year	0.07	0.07	0.00%
		100-year	2.7	2.62	-2.96%
DA-9/DP-4	8.19	1-year	0	0	0.00%
		10-year	0.14	0.11	-21.43%
		100-year	3.06	2.73	-10.78%

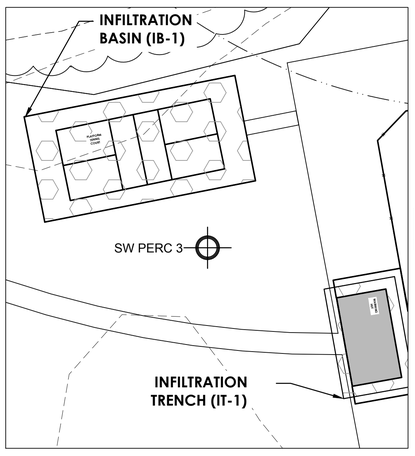
PHASE 1 SMP DIMENSIONS									
Drainage Area	SMP #	Inlet Type	Inlet Invert	Outlet Type	Outlet Invert	Practice Length	Practice Width	Practice Area	Practice Depth
DA-2	IB-1	Sheet Flow	514.75	Broadcrested Weir/Berm	514.75	31	61	1891	1.5
DA-4	IT-1	Sheet Flow	516.75	Broadcrested Weir/Berm	515.25	102	2	204	1.5
DA-7	IB-3	Sheet Flow	484.5	Broadcrested Weir/Berm	484	250	2	6887	1.5
DA-8B	BR-1	Sheet Flow	500	Broadcrested Weir/Berm	500	Non-Geometric	Non-Geometric	372	3
DA-8B	SF-1	Conv. Swale	492	Broadcrested Weir/Berm	491.5	15	9	135	4.5
DA-8B	CS-1	Sheet Flow	493	Channel Flow	492	32	10	320	1
DA-8C	IT-2	Sheet Flow	506	Broadcrested Weir/Berm	505.5	78	2	156	1.5
DA-8C	IT-3	Sheet Flow	505.5	Broadcrested Weir/Berm	505	75	2	150	1.5

LEGEND

- EXISTING PROPERTY LINE
- EXISTING CONTOUR (340)
- PROPOSED TIME OF CONCENTRATION Tc >
- PROPOSED DRAINAGE AREA
- PROPOSED INFIL. OR BIORET. AREA
- PROPOSED SOIL RESTORATION AREA
- PROPOSED SAND FILTER

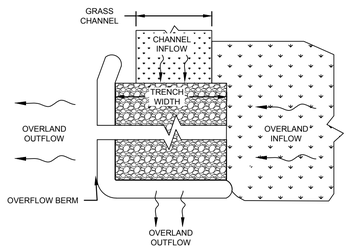
BIORETENTION AREAS BR-1 AND BR-2

SCALE: 1" = 20'

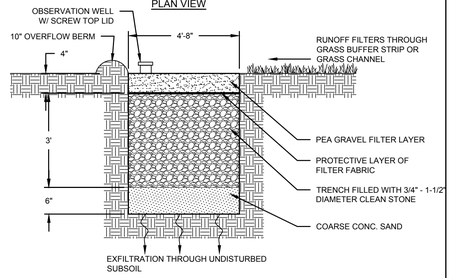


INFILTRATION TRENCHES IB-1 AND IB-2

SCALE: 1" = 20'



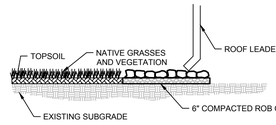
PLAN VIEW



SECTION VIEW

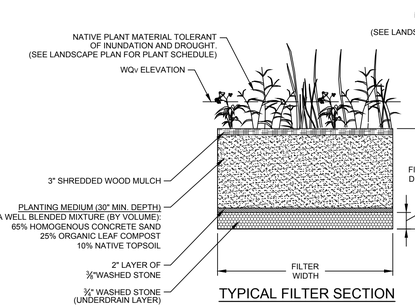
INFILTRATION TRENCH DETAIL

NTS

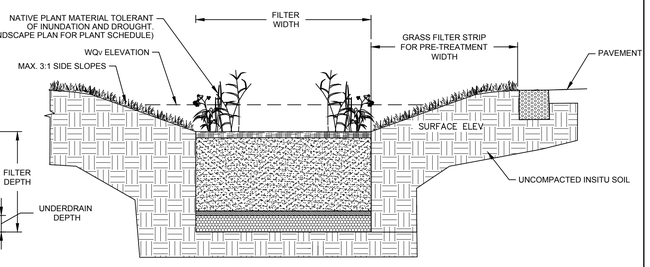


DISCONNECTED ROOF LEADER DETAIL

N.T.S.



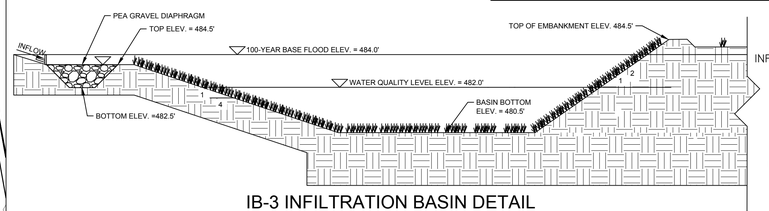
TYPICAL FILTER SECTION



THRU YARD DRAIN

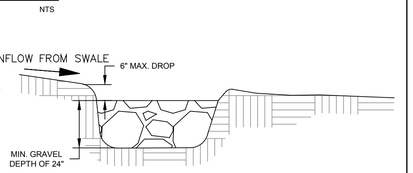
BIO RETENTION CROSS-SECTION

NTS



IB-3 INFILTRATION BASIN DETAIL

N.T.S.



BR-2 PEA STONE DIAGRAM

NTS

IB-3 STAGE STORAGE TABLE					
ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)	CONIC TOTAL VOL. (cu. ft.)
482.0	2861	2	0	0	3457
484.0	6113	2	8771	8771	8771

ZONING DISTRICT: "RR" RURAL RESIDENTIAL
LOT SIZE: 43.5 ACRES
TAX GRID No. : 132000-7267-00-227675
PROPERTY ADDRESS: 515 LEEDSVILLE ROAD AMENIA, NY 12501
PROPERTY OWNER: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501
APPLICANT: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501

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0 20' 40'
1" = 20'
GRAPHIC SCALE

DATE	REVISION

ENGINEERING, DESIGN, & PLANS PREPARED BY:

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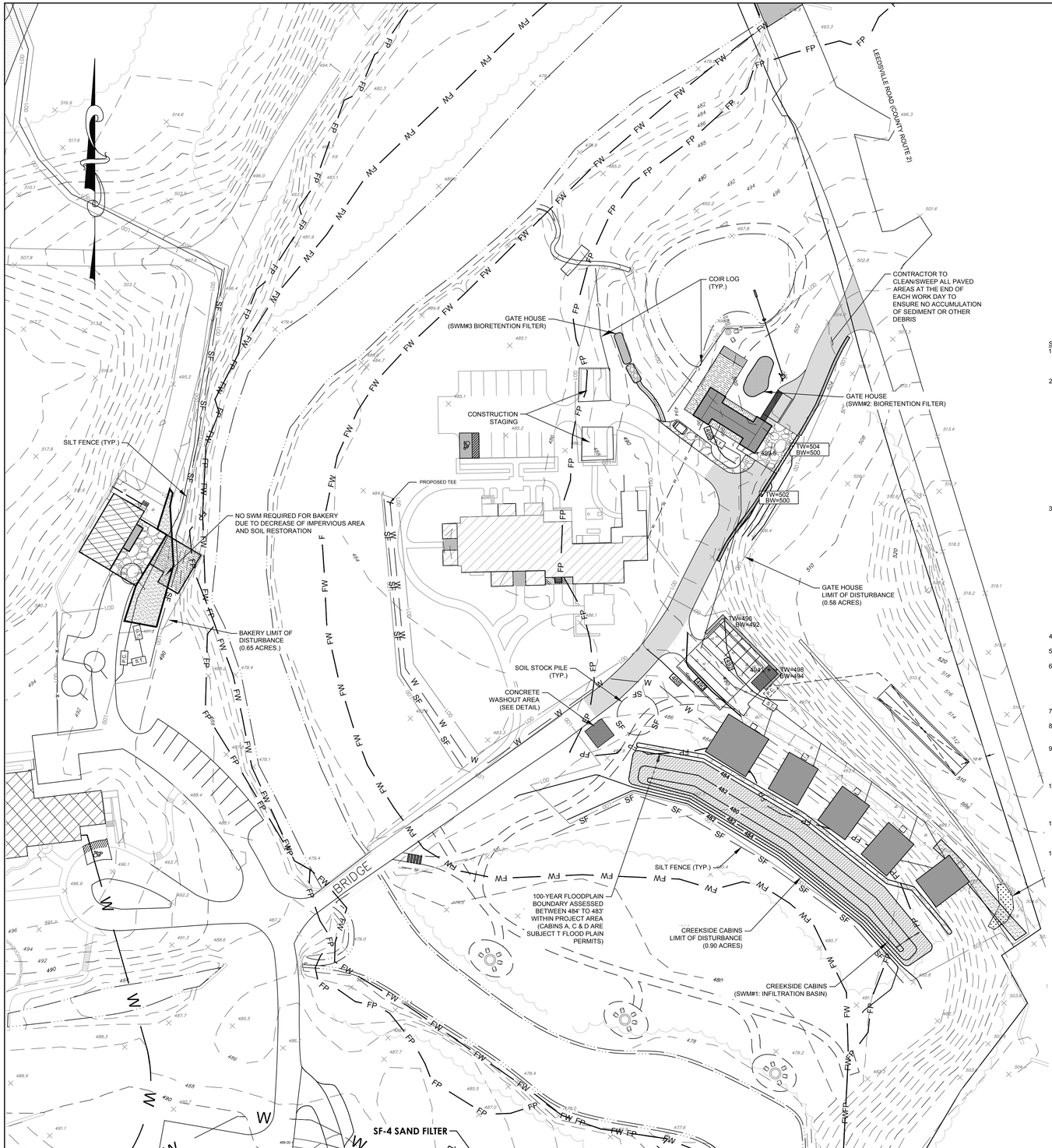
TROUTBECK MASTER PLAN

TOWN OF AMENIA — DUTCHESS COUNTY, NY

PHASE 1 STORMWATER MANAGEMENT PLAN

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
10/10/2022	AS NOTED	WTS	WTS	RAR	16-019	4 of 7



EROSION & SEDIMENT CONTROL PLAN

SCALE: 1" = 40'

0 40' 80'

1" = 40'
GRAPHIC SCALE

FLOOD ZONE NOTES:
1. PROPERTY SHOWN HEREON LIES WITHIN "SPECIAL FLOOD HAZARD AREA ZONE AE", WITHIN "OTHER AREAS, ZONE X" (UNSHADED), AND WITHIN "FLOODWAY AREAS IN ZONE AE" AS SHOWN ON FEMA, NFIP, FIRM PANEL 36027C0332E, WITH AN EFFECTIVE DATE OF MAY 2, 2012.
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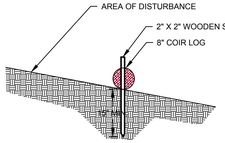


TYPICAL COIR LOG DETAIL

N.T.S.

SOIL EROSION AND SEDIMENT CONTROL NOTES:
1. ALL SOIL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE NEW YORK STANDARD AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL MANUAL. (REFERRED TO IN REMAINING TEXT AS "NEW YORK STANDARDS AND SPECIFICATIONS".)

2. ANY DISTURBED AREAS THAT WILL BE LEFT EXPOSED MORE THAN FOURTEEN (14) DAYS, AND ARE NOT SUBJECT TO CONSTRUCTION TRAFFIC, SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING. IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER, THE DISTURBED AREAS SHALL BE MULCHED WITH STRAW OR EQUIVALENT MATERIAL. THE SEEDING SHALL BE DONE IN ACCORDANCE WITH THE NEW YORK STANDARDS AND SPECIFICATIONS, AS FOLLOWS:
   A) FERTILIZER: THE FERTILIZER SHALL BE APPLIED AT A RATE OF FOURTEEN (14) POUNDS PER ONE THOUSAND SQUARE FEET, USING 5-10-10 OR EQUAL.
   B) SEED: ANNUAL RYE GRASS APPLIED AT A RATE OF 30 LBS./ACRE OR OTHER SELECT MIXTURE AS DESCRIBED IN THE NEW YORK GUIDELINES.
   C) MULCH: SALT-HAY OR SMALL GRAIN STRAW APPLIED AT A RATE OF NINETY (90) POUNDS PER ONE THOUSAND SQUARE FT. OR TWO (2) TONS PER ACRE, TO BE APPLIED AND ANCHORED ACCORDING TO THE NEW YORK STANDARDS AND SPECIFICATIONS.
   D) IN AREAS OF SLOPES STEEPER THAN ONE ON THREE AND IN DRAINAGE CHANNELS WHERE RUNOFF VELOCITIES EXCEED 2.5 FEET PER SECOND, JUTE MATTING SHALL BE USED TO STABILIZE SEEDED AND/OR PLANTED AREAS. JUTE MATTING SHALL BE INSTALLED AND ANCHORED IN ACCORDANCE WITH THE NEW YORK STANDARDS AND SPECIFICATIONS.

3. ANY GRADED AREAS NOT SUBJECT TO FURTHER DISTURBANCE OR CONSTRUCTION TRAFFIC SHALL, WITHIN TEN (10) DAYS AFTER FINAL GRADING, RECEIVE PERMANENT VEGETATIVE COVER IN COMBINATION WITH A SUITABLE MULCH AS FOLLOWS:
   A) FERTILIZER: FERTILIZER APPLIED AT A RATE OF TWENTY (20) POUNDS PER ONE THOUSAND SQUARE FEET USING 14-28-15 OR EQUAL.
   B) SEED MIXTURE: TO BE PLANTED BETWEEN APRIL 1ST AND MAY 15TH OR BETWEEN AUGUST 15TH AND OCTOBER 15TH. MIXTURE SHALL BE 30% KENTUCKY BLUEGRASS BLEND, 50% PERENNIAL RYE GRASS AND 20% FINE FESCUE. SEED AT RATE OF 4 LBS./1000 SQUARE FEET.
   C) MULCH: SALT-HAY OR SMALL GRAIN STRAW APPLIED AT A RATE OF NINETY (90) POUNDS PER ONE THOUSAND SQUARE FEET OR TWO (2) TONS PER ACRE TO BE APPLIED AND ANCHORED ACCORDING TO THE NEW YORK STANDARDS AND SPECIFICATIONS.
   D) IN AREAS OF SLOPES STEEPER THAN ONE ON THREE AND IN DRAINAGE CHANNELS WHERE RUNOFF VELOCITIES EXCEED 2.5 FEET PER SECOND, "BioNet SC150BN" OR EQUAL EROSION CONTROL MATTING SHALL BE USED TO STABILIZE SEEDED AND/OR PLANTED AREAS. "BioNet SC150BN" SHALL BE INSTALLED AND ANCHORED IN ACCORDANCE WITH THE MANUFACTURES INSTRUCTIONS AS WELL AS THE NEW YORK STANDARDS AND SPECIFICATIONS.

4. SLOPES STEEPER THAN ONE ON THREE SHALL BE STABILIZED IMMEDIATELY AFTER GRADING.

5. PAVED ROADWAYS SHALL BE KEPT CLEAN AT ALL TIMES.

6. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORM WATER RUNOFF IS DIVERTED TO SOIL EROSION OR SEDIMENT CONTROL FACILITIES EXCEPT FOR MINOR PERIMETER EMBANKMENT AREAS, ALL GRADED AREAS SHALL BE DIRECTED THROUGH ONE OF THE SEDIMENT BARRIERS. DIVERSION SWALES MAY BE USED TO DIRECT DRAINAGE RUNOFF UNTIL THE PERMANENT STORM DRAINAGE SYSTEM IS IN PLACE.

7. DUST SHALL BE CONTROLLED BY SPRINKLING OR OTHER APPROVED METHODS.

8. STOCKPILES SHALL NOT BE LOCATED WITHIN FIFTY FEET (50') OF ROADWAYS OR DRAINAGE FACILITIES. THE BASE OF ALL STOCKPILES SHALL BE PROTECTED BY SILT FENCE.

9. SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED BY THE CONTRACTOR ON A DAILY BASIS TO ENSURE THAT TEMPORARY AND PERMANENT DITCHES, PIPES AND STRUCTURES ARE CLEAR OF DEBRIS, THAT EMBANKMENTS AND BERMS ARE NOT BREACHED, AND THAT ALL BARRIERS ARE INTACT.

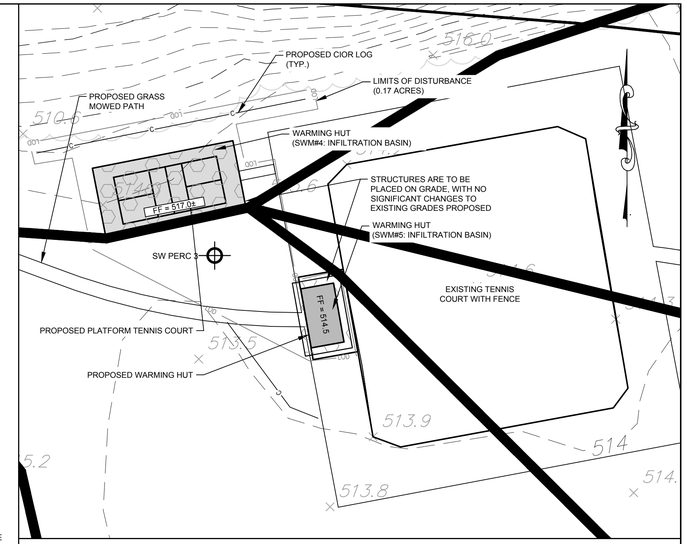
10. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL FINAL ACCEPTANCE OF THE SITE WORK BY THE OWNER. UPON CERTIFICATION OF FINAL ACCEPTANCE, THE OWNER WILL ASSUME RESPONSIBILITY FOR THE CONTINUED MAINTENANCE OF PERMANENT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES.

11. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK BEING DONE ON SITE. MULTIPLE STABILIZED CONSTRUCTION ENTRANCES WILL BE REQUIRED AS THE WORK PROGRESSES AROUND THE SITE.

12. SWEEP AND WASH DOWN EXISTING PAVEMENT AREAS AS NEEDED DURING CONSTRUCTION TO MAINTAIN SEDIMENT DURING CONSTRUCTION.

LEGEND

EXISTING PROPERTY LINE	
EXISTING CONTOUR MAJOR	510
EXISTING CONTOUR MINOR	508
PROJECT LOCATION	
STONE WALL	
EXISTING UTILITY POLE	
EXISTING LIGHT POLE	
EXISTING SPOT GRADE	× 340.1
EXISTING OVERHEAD UTILITIES	OHW
EXISTING TREELINE	
EXISTING STREAM BOUNDARY	
FEMA FLOODWAY BOUNDARY	FW
FEMA FLOODPLAIN BOUNDARY	FP
PROPOSED GRAVEL PARKING	
PROPOSED SPOT GRADE	+233.00
PROPOSED CONTOUR	222
SILT FENCE	SF
LIMITS OF DISTURBANCE	LOD
CONSTRUCTION FENCING	



SITE PLAN - TENNIS

SCALE: 1" = 30'

CONSTRUCTION SEQUENCE:

PERMIT REQUIREMENTS
1. SINCE THE OVERALL ADAPTIVE REUSE PLAN WILL EXCEED 1-ACRE OF DISTURBANCE, THE OVERALL PROJECT REQUIRES A FULL STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND WILL REQUIRE GP-0-20-001 STORMWATER SPDES PERMIT COVERAGE FOR ALL LAND DISTURBANCES.
2. THE SWPPP WILL NEED TO COVER ALL PHASES OF DISTURBANCE, EVEN THOUGH THIS PLAN ONLY ADDRESSES PHASE 1 WORK.
3. PRIOR TO ANY GROUND DISTURBANCES THE NOI SHALL BE FILED AND ACKNOWLEDGEMENT OF PERMIT COVERAGE MUST BE OBTAINED.
4. PRIOR TO CONSTRUCTION, A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTORS AND PROFESSIONAL ENGINEER OVERSEEING CONSTRUCTION TO CONFIRM THAT ALL REQUIRED APPROVALS, DOCUMENTATION AND EROSION AND SEDIMENT CONTROLS ARE IN PLACE.

PHASE 1 - GATE HOUSE - ±0.58-ACRES DISTURBANCE AREA

5. LOCATE AND STAKE ALL STORMWATER MANAGEMENT PRACTICES (SMP) AREA'S TO VERIFY THAT THEY REMAIN UNDISTURBED BY CONSTRUCTION EQUIPMENT.
6. INSTALL SILT FENCE, CONSTRUCTION FENCING AND TREE PROTECTION FENCING SHOWN ON THE LANDSCAPE ARCHITECT'S PLANS.
7. CAREFULLY CLEAR AND GRUB THE PHASE 1 GATE HOUSE AREA.
8. DUE TO THE CLOSE PROXIMITY OF THE WORK AREAS TO THE PAVEMENT AREAS, IN LIEU OF A STABILIZED CONSTRUCTION ENTRANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO CLEAN SOILS, SEDIMENT OR OTHER DEBRIS FROM PAVED AREAS AT THE END OF EACH WORK DAY.
9. ROUGH GRADE AND ESTABLISH CONSTRUCTION STAGING AREAS.
10. INSTALL BUILDING FOUNDATIONS AND HARDSCAPING, UTILITIES AND SMP(S).
11. CONSTRUCT GATE HOUSE.
12. TOPSOIL, SEED AND MULCH ALL DISTURBANCES AND INSTALL LANDSCAPING.
13. UPON STABILIZATION AND A MINIMUM OF 80% VEGETATION COVERAGE, REMOVE ALL PHASE 1 TEMPORARY EROSION SEDIMENT CONTROL MEASURES.

PHASE 1 - CREEKSIDE CABINS - ±0.90-ACRES DISTURBANCE AREA

14. LOCATE AND STAKE ALL STORMWATER MANAGEMENT PRACTICES (SMP) AREA'S TO VERIFY THAT THEY REMAIN UNDISTURBED BY CONSTRUCTION EQUIPMENT.
15. INSTALL SILT FENCE, CONSTRUCTION FENCING AND TREE PROTECTION FENCING SHOWN ON THE LANDSCAPE ARCHITECT'S PLANS.
16. CAREFULLY CLEAR AND GRUB THE PHASE 1 CREEKSIDE PARKING, CART PATH AND CABIN AREAS.
17. DUE TO THE CLOSE PROXIMITY OF THE WORK AREAS TO THE PAVEMENT AREAS, IN LIEU OF A STABILIZED CONSTRUCTION ENTRANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO CLEAN SOILS, SEDIMENT OR OTHER DEBRIS FROM PAVED AREAS AT THE END OF EACH WORK DAY.
18. ROUGH GRADE AND ESTABLISH CONSTRUCTION STAGING AREAS.
19. INSTALL CABIN FOUNDATIONS AND HARDSCAPING, UTILITIES AND SMP(S).
20. CONSTRUCT CABINS.
21. TOPSOIL, SEED AND MULCH ALL DISTURBANCES AND INSTALL LANDSCAPING.
22. UPON STABILIZATION AND A MINIMUM OF 80% VEGETATION COVERAGE, REMOVE ALL PHASE 1 TEMPORARY EROSION SEDIMENT CONTROL MEASURES.

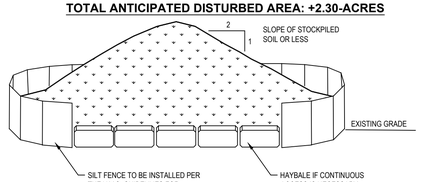
PHASE 1 - CARETAKERS HOUSE AND BAKERY - ±0.65-ACRES DISTURBANCE AREA

23. INSTALL SILT FENCE, CONSTRUCTION FENCING AND TREE PROTECTION FENCING SHOWN ON THE LANDSCAPE ARCHITECT'S PLANS.
24. CAREFULLY CLEAR AND GRUB THE BUILDING AREAS.
25. DUE TO THE CLOSE PROXIMITY OF THE WORK AREAS TO THE PAVEMENT AREAS, IN LIEU OF A STABILIZED CONSTRUCTION ENTRANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO CLEAN SOILS, SEDIMENT OR OTHER DEBRIS FROM PAVED AREAS AT THE END OF EACH WORK DAY.
26. INSTALL STRUCTURE'S FOUNDATIONS AND HARDSCAPING, UTILITIES AND SMP(S).
27. TOPSOIL, SEED AND MULCH ALL DISTURBANCES AND INSTALL LANDSCAPING.
28. UPON STABILIZATION AND A MINIMUM OF 80% VEGETATION COVERAGE, REMOVE ALL PHASE 1 TEMPORARY EROSION SEDIMENT CONTROL MEASURES.

PHASE 1 - TENNIS WARMING HUT & PLATFORM TENNIS COURT - ±0.17-ACRES DISTURBANCE AREA

5. LOCATE AND STAKE ALL STORMWATER MANAGEMENT PRACTICES (SMP) AREA'S TO VERIFY THAT THEY REMAIN UNDISTURBED BY CONSTRUCTION EQUIPMENT.
6. INSTALL SILT FENCE, CONSTRUCTION FENCING AND TREE PROTECTION FENCING SHOWN ON THE LANDSCAPE ARCHITECT'S PLANS.
7. CAREFULLY CLEAR AND GRUB THE BUILDING AREAS.
8. DUE TO THE CLOSE PROXIMITY OF THE WORK AREAS TO THE PAVEMENT AREAS, IN LIEU OF A STABILIZED CONSTRUCTION ENTRANCE, THE CONTRACTOR SHALL BE RESPONSIBLE TO CLEAN SOILS, SEDIMENT OR OTHER DEBRIS FROM PAVED AREAS AT THE END OF EACH WORK DAY.
9. ROUGH GRADE AND ESTABLISH CONSTRUCTION STAGING AREAS.
10. INSTALL STRUCTURE'S FOUNDATIONS AND HARDSCAPING, UTILITIES AND SMP(S).
11. CONSTRUCT COURT & HUT.
12. TOPSOIL, SEED AND MULCH ALL DISTURBANCES AND INSTALL LANDSCAPING.
13. UPON STABILIZATION AND A MINIMUM OF 80% VEGETATION COVERAGE, REMOVE ALL PHASE 1 TEMPORARY EROSION SEDIMENT CONTROL MEASURES.

TOTAL ANTICIPATED DISTURBED AREA: +2.30-ACRES



NOTES:
1. AREA CHOSEN FOR STOCKPILING SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR HAY BALES AND STABILIZED SEED AND MULCH OR JUTE MESH.
4. SEE SPECIFICATIONS FOR INSTALLATION OF SILT FENCE.
5. SIZE OF STOCKPILE SHALL NOT EXCEED THE LIMITATIONS OF DRAINAGE AREA PER SILT FENCE SPECIFICATIONS.
6. INSTALL SILT FENCE A MINIMUM OF 10' FROM THE TOE OF THE STOCKPILE.

TEMPORARY SOIL STOCKPILE STABILIZATION DETAIL

DATE	REVISION
10/10/2022	REVISED FOR PLANNING BOARD SUBMISSION

ENGINEERING, DESIGN, & PLANS PREPARED BY:

RENNIA ENGINEERING DESIGN, PLLC

CIVIL • ENVIRONMENTAL • STRUCTURAL

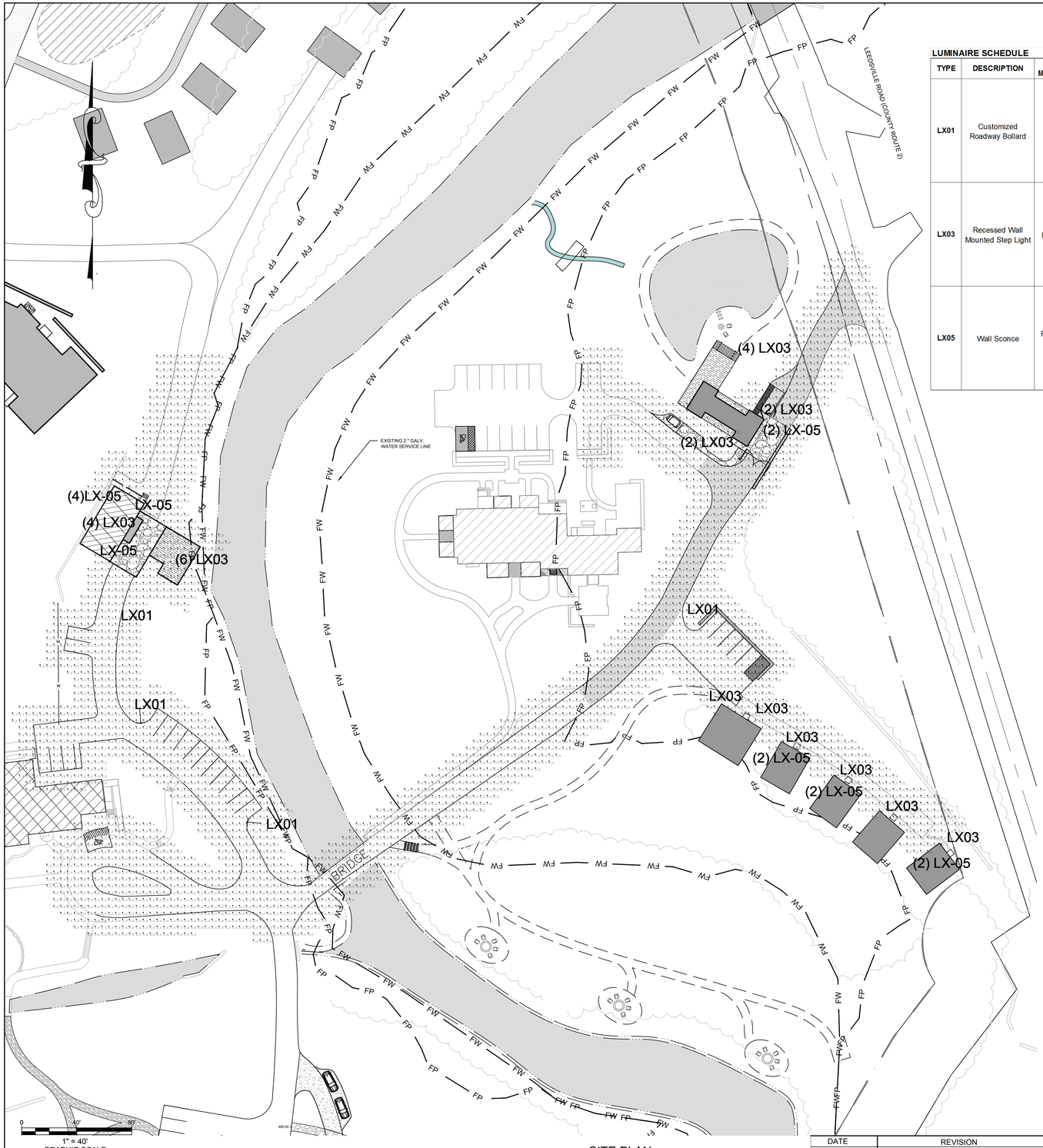
6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

TROUTBECK ADAPTIVE REUSE

TOWN OF AMENIA — DUTCHESS COUNTY, NY

PHASE 1 EROSION & SEDIMENT CONTROL PLAN

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
8/29/2022	1" = 40'	RED	RED	RAR	16-019	5 of 7



SITE PLAN
SCALE: 1" = 40'

FLOOD ZONE NOTES:
1. PROPERTY SHOWN HEREON LIES WITHIN "SPECIAL FLOOD HAZARD AREA ZONE AE", WITHIN "OTHER AREAS, ZONE X" (UNSHADED), AND WITHIN "FLOODWAY AREAS IN ZONE AE" AS SHOWN ON FEMA, NFIP, FIRM PANEL 36027C0332E, WITH AN EFFECTIVE DATE OF MAY 2, 2012.
2. THE "ZONE AE, BASE FLOOD ELEVATIONS" DETERMINED TO AFFECT THIS PARCEL ARE IN THE RANGE OF 480' TO 487' (NAVD88).

MAP NOTES:
1. PROPERTY DATA AND EXISTING FEATURES BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE APRIL 26, 2016 PREPARED BY CHAZEN ENGINEERING AND SURVEYING, PC.
2. TOPOGRAPHIC CONTOURS BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE DECEMBER 8, 2004 PREPARED BY STEVEN ALEX, L.S. OF CHAZEN ENGINEERING AND SURVEYING, PC.

Charlie Dumais

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	LUMINAIRE MANUFACTURER	LUMINAIRE PART NUMBER	TOTAL WATTS	VOLTS	BALLAST/ TRANSFMR/DRIVER	LAMP MANUFACTURER	LAMP INFO	# LAMPS	LAMP WATTS	CONTROL TYPE	MOUNTING	LOCATION	NOTES
LX01	Customized Roadway Bollard	Idaho Wood	Fixture: To Be Determined	12	TBD	Remote	By Manufacturer	2700K 1000 Lumen LED	1	20	On/Off	Ground Mount	Vehicular Roadway	Top of fixture to be mounted 36" above ground plane. Electrician to confirm type and location of J-box, remote power supply and mounting accessories. All fixture finishes to be confirmed by the Landscape Designer. Distributor Net Cost does not include mark-ups, taxes, shipping, labor, or other associated electrical and/or wiring costs.
LX03	Recessed Wall Mounted Step Light	Focus Industries	Fixture: SL-24-MR16-BRS-BAT	10	120	Remote	SORAA	SM16-07-10D-927-03	1	8	On/Off	Recessed Wall Mount	Outdoor Steps and Walls	Mounting Height to be determined. Electrician to confirm type and location of J-box, remote power supply and mounting accessories. All fixture finishes to be confirmed by the Landscape Designer. Distributor Net Cost does not include mark-ups, taxes, shipping, labor, or other associated electrical and/or wiring costs.
LX05	Wall Sconce	Royal Botania via Lightology	Fixture: ROY1026618	10	120	Integral	SORAA	SM16-07-10D-927-03	1	8	On/Off	Wall Mount	Entrances	Mounting Height to be determined. Electrician to confirm type and location of J-box, remote power supply and mounting accessories. All fixture finishes to be confirmed by the Landscape Designer. Distributor Net Cost does not include mark-ups, taxes, shipping, labor, or other associated electrical and/or wiring costs.

TYPE LX01
$750.00 (Distributor Net Cost)

Idaho Wood
Customizec Parking Bollard
Full Cut Off
600 Lumens
36" Tall

MODEL NUMBER

- Fixture: To Bs Determined

LIGHT SOURCE

- SORAA: SM16-07-10D-927-03 (Equivalent)

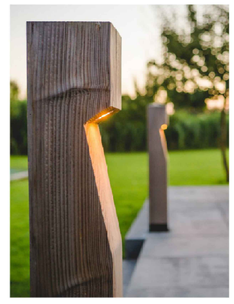
NOTES

36" Tall

Electrician to confirm type and location of J-box, remote power supply and mounting accessories.

All fixture finishes to be confirmed by the Landscape Designer.

Distributor Net Cost does not include mark-ups, taxes, shipping, labor, or other associated electrical and/or wiring costs.



TYPE LX03
$270.00 (Distributor Net Cost)

Focus Industries
Wall Recessed Step-Light
Full Cut Off
600 Lumens
Mounting Height to be Determined.

MODEL NUMBER

- Fixture: SL-24-MR16-BRS-EAT

LIGHT SOURCE

- SORAA: SM16-07-10D-927-03

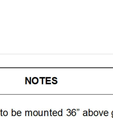
NOTES

Mounting height to be determined.

Electrician to confirm type and location of J-box, remote power supply and mounting accessories.

All fixture finishes to be confirmed by the Landscape Designer.

Distributor Net Cost does not include mark-ups, taxes, shipping, labor, or other associated electrical and/or wiring costs.



TYPE LX05
$650.00 (Distributor Net Cost)

Royal Botania via Lightology
Wall Mounted Sconce
Full Cut Off
600 Lumens
Mounting Height to be Determined.

MODEL NUMBER

- Fixture: ROY1026618

LIGHT SOURCE

- SORAA: SM16-07-10D-927-03

NOTES

Mounting height to be determined.

Electrician to confirm type and location of J-box, remote power supply and mounting accessories.

All fixture finishes to be confirmed by the Landscape Designer.

Distributor Net Cost does not include mark-ups, taxes, shipping, labor, or other associated electrical and/or wiring costs.

DATE	REVISION
10/10/2022	REVISED FOR PLANNING BOARD SUBMISSION

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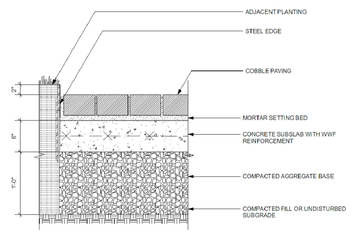
TROUTBECK
ADAPTIVE REUSE
TOWN OF AMENIA — DUTCHESS COUNTY, NY

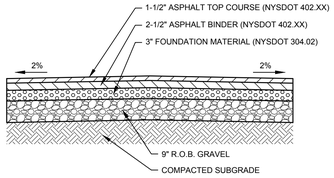
PHASE 1
LIGHTING PLAN

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
8/29/2022	1" = 40'	RED	RED	RAR	16-019	6 of 7



VEHICULAR/ADA RATED COBBLESTONE PAVING

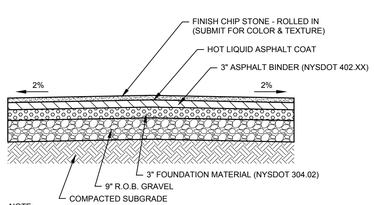
N.T.S.



NOTE:
CONTRACTOR TO PROVIDE ENGINEER WITH GRAVEL BANK SOURCE PRIOR TO INSTALLATION FOR REVIEW AND APPROVAL.

TYPICAL PAVEMENT DETAIL

N.T.S.



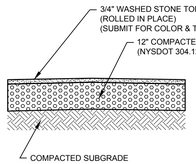
NOTE:
CONTRACTOR TO PROVIDE ENGINEER WITH GRAVEL BANK SOURCE PRIOR TO INSTALLATION FOR REVIEW AND APPROVAL.

OIL & STONE PAVEMENT DETAIL

NOTES:

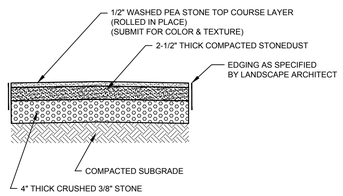
N.T.S.

1) ALSO REFERRED TO AS CHIP-AND-SEAL.



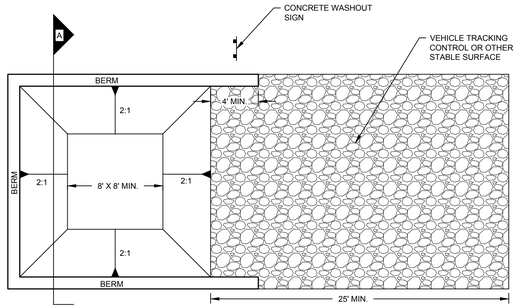
GRAVEL PARKING AREA DETAIL

N.T.S.

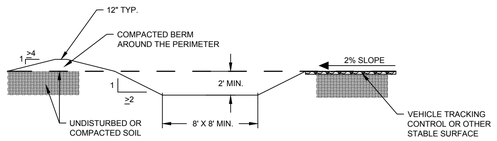


TYPICAL PEASTONE PATH SECTION

N.T.S.



CONCRETE WASHOUT AREA PLAN



SECTION A

CONCRETE WASHOUT AREA DETAIL

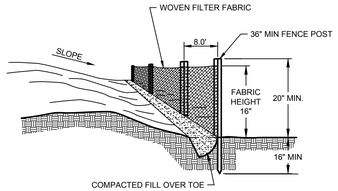
N.T.S.

INSTALLATION NOTES:

1. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
2. THE CONCRETE WASHOUT AREA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 2:1 OR FLATTER. THE PIT SHALL BE AT LEAST 2' DEEP.
3. BERM SURROUNDING SIDES AND BACK OF THE CONCRETE WASHOUT AREA SHALL HAVE A MINIMUM HEIGHT OF 1'.
4. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CONCRETE WASHOUT AREA.
5. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CONCRETE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
6. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

MAINTENANCE NOTES:

1. INSPECT BEST MANAGEMENT PRACTICES (BMPs) EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE, CONCRETE MATERIALS, ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A 75% CAPACITY.
5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
6. THE CONCRETE WASHOUT AREA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
7. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

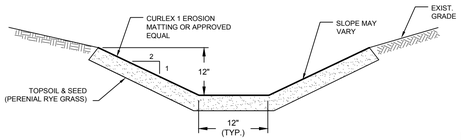


TYPICAL SILT FENCE DETAIL

N.T.S.

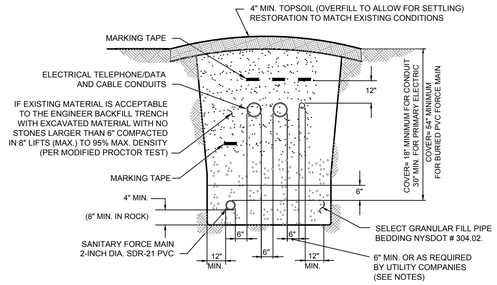
NOTES:

1. LOCATE POSTS DOWNSIDE OF FABRIC TO HELP SUPPORT FENCING.
2. BURY TOE OF FENCE APPROXIMATELY 8" DEEP TO PREVENT UNDERCUTTING.
3. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FABRIC AT A SUPPORT POST WITH OVERLAP TO THE NEXT POST.



GRASS LINED SWALE DETAIL

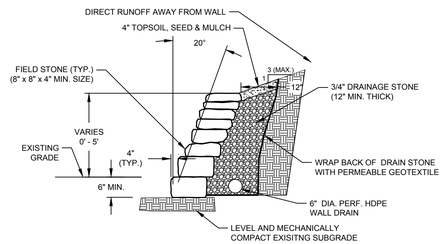
N.T.S.



NOTES:
VERIFY TRENCH CONFIGURATION , CONDUIT SPACING AND ARRANGEMENT WITH RESPECTIVE UTILITY COMPANIES

TYPICAL MULT-UTILTITY PIPE INSTALLATION DETAIL

N.T.S.

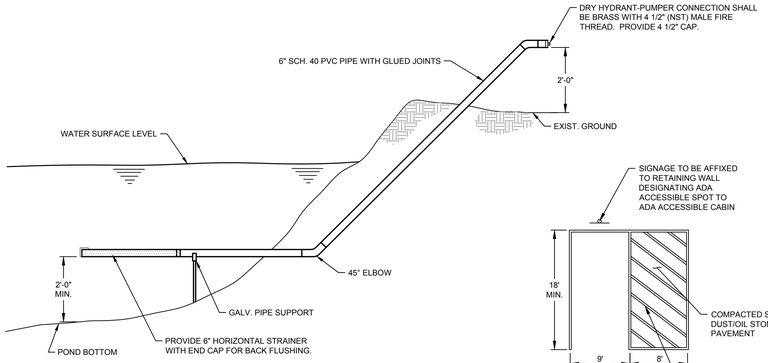


FIELD STONE WALL DETAIL

N.T.S.

NOTES:

1. FIELD STONE SHALL BE SELECTED AND PLACED IN A UNIFORM AND CONSISTENT MANNER TO PROVIDE A UNIFORM ROCK FACE.
2. CONTRACTOR SHALL PROVIDE ADDITIONAL UNDER DRAINS AND/OR DIVERSION SWALES AS ARE NECESSARY TO DIRECT RUNOFF AWAY FROM THE WALL.



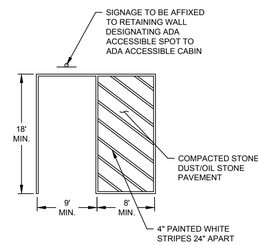
SECTION

TYPICAL DRY HYDRANT

N.T.S.

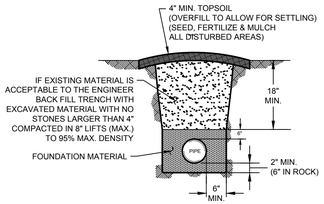
NOTES:

1. ALL MATERIALS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
2. CONTRACTOR SHOULD COORDINATE ALL CONNECTIONS WITH THE FARM MANAGER PRIOR TO INITIATION OF THE PROPOSED WORK.



VAN ACCESSIBLE A.D.A. PARKING STALL DETAIL

N.T.S.

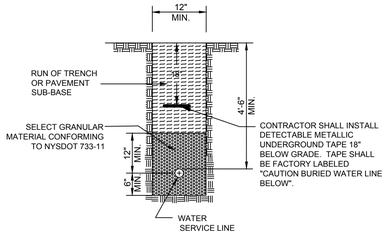


TYPICAL STORM PIPE TRENCH DETAIL

N.T.S.

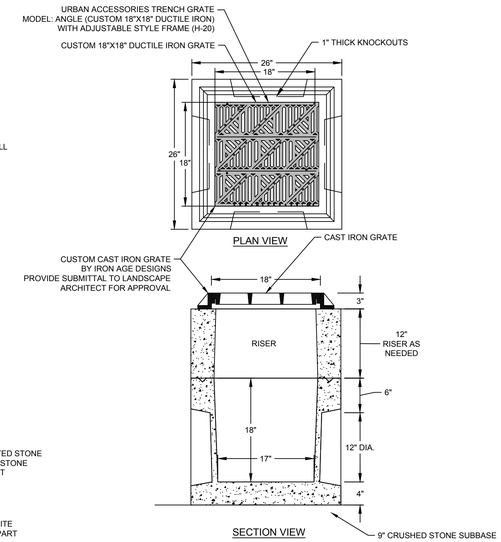
NOTES:

1. INSTALL ALL GRAVITY AND PRESSURE PIPE IN ACCORDANCE WITH THE ABOVE DETAIL.
2. PIPE BEDDING MATERIAL, WHERE APPLICABLE, SHALL BE INSTALLED IN 6" LIFTS BEFORE COMPACTION TO A MINIMUM 95% OF STANDARD PROCTOR MAXIMUM DENSITY.
3. EXCAVATING OVER 5' REQUIRES SHEETING/SHORING OR OVER EXCAVATION OF TRENCH SIDE WALLS PER OSHA.
4. INSTALL ADDITIONAL FILL MATERIAL AS NECESSARY TO MAINTAIN THE MINIMUM PIPE COVER.



WATER SERVICE TRENCH DETAIL

N.T.S.



18" X 18" YARD DRAIN DETAIL

NOTES:

N.T.S.

1. PRECAST CATCH BASIN, FRAME, AND GRATE SHALL BE DESIGNED FOR H-20 LOADING, AND MEET NYSDOT SPECIFICATIONS.
2. ALL PIPES SHALL BE LAID OR CUT FLUSH WITH THE INSIDE OF THE CATCH BASIN WALL AND SHALL BE FIRMLY MORTARED IN PLACE.
3. BACKFILL SHALL BE SELECT FILL OR R.O.B. GRAVEL COMPACTED IN 6" LIFTS.

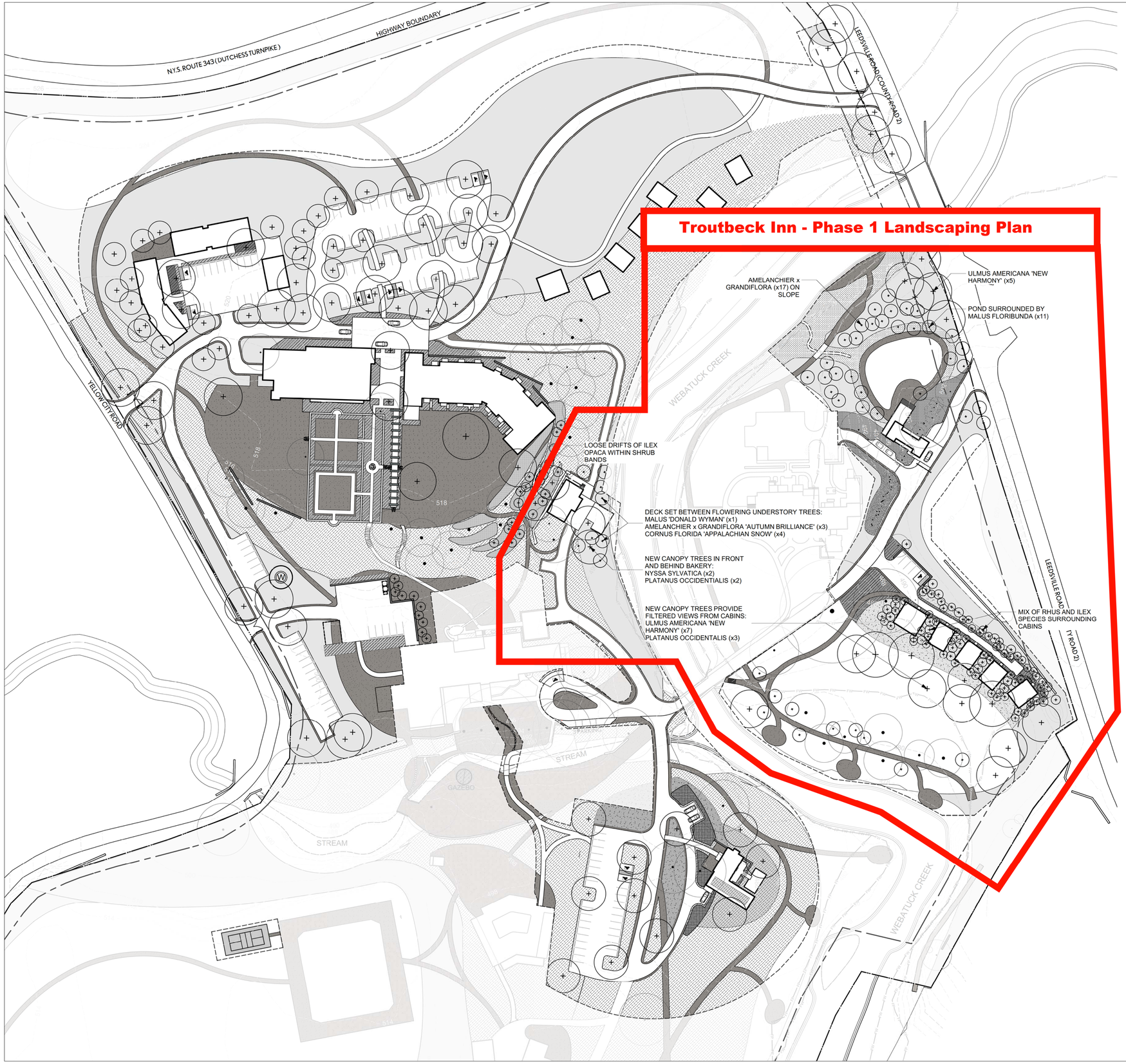
DATE	REVISION
10/10/2022	REVISED FOR PLANNING BOARD SUBMISSION

RENNIA ENGINEERING DESIGN, PLLC
CIVIL • ENVIRONMENTAL • STRUCTURAL
6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

TROUTBECK
ADAPTIVE REUSE
TOWN OF AMENIA — DUTCHESS COUNTY, NY

PHASE 1
DETAILS

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
8/29/2022	N.T.S.	RED	RED	RAR	16-019	7 of 7



GENERAL LEGEND

SYMBOL	DESCRIPTION
	PROPERTY LINE
	SETBACK LINE
FW FW FW FW	FLOODWAY
FP FP FP FP	FLOODPLAIN
WL WL	WETLAND
500	EXISTING CONTOUR MAJOR
498	EXISTING CONTOUR MANOR
	EXISTING TO REMAIN
	EXISTING TREE TO REMAIN

PLANTING LEGEND

SYMBOL	KEYNOTE	DESCRIPTION	QUANTITY
		WOODLAND MIX	TOTAL CANOPY TREES: 1200 (~15' O.C.) (50%) 3" CAL. (30%) 4" CAL. (20%) 5" CAL. TOTAL UNDERSTORY TREES: 1200 (~15' O.C.) (35%) Ilex opaca, 8-12' ht (35%) Ilex glabra, 7 gal (15%) Aesculus parviflora, 7 gal (15%) Amelanchier laevis, multistem 8-10' ht
+		CANOPY TREES	TOTAL: 104 (5) Juglans nigra, 7-8" cal. (10) Juglans nigra, 6" cal. (5) Quercus bicolor, 8-9" CAL. (20) Quercus alba, 6" CAL. (8) Ulmus americana 'New Harmony', 8-9" CAL. (10) Ulmus americana 'New Harmony', 6" CAL. (4) Platanus occidentalis, 7-8" CAL. (30) Platanus occidentalis, 6" CAL. (10) Nyssa sylvatica, 6" CAL. (2) Katsura, 6" CAL.
+		UNDERSTORY TREES	TOTAL: 188 (3) Stewartia pseudocamilia, multistem, 7-8' ht (49) Ilex opaca, 8-10' ht, 10'-12' ht (27) Ilex glabra, 7 gal (30) Rhus glabra, 5 gal (30) Rhus typhina, 5 gal (15) Malus floribunda, 5-6' cal (14) Cornus florida, 8-12' ht (20) Amalanchier x grandiflora 'Autumn Brilliance'
		DELAMETER SHRUB MIX	SEE SPECIFICATIONS
		GARDEN SHRUB MIX	SEE SPECIFICATIONS
		ADMIN SHRUB MIX	SEE SPECIFICATIONS
		LOOSE HEDGE	SEE SPECIFICATIONS
		DELAMETER MEADOW MIX	SEE SPECIFICATIONS
		MEADOW MIX	SEE SPECIFICATIONS
		ADMIN GROUNDCOVER MIX	SEE SPECIFICATIONS
		CABINS GROUNDCOVER MIX	SEE SPECIFICATIONS
		GARDEN MIX	SEE SPECIFICATIONS
		GATE HOUSE GROUNDCOVER MIX	SEE SPECIFICATIONS
		RIPARIAN GROUNDCOVER MIX	SEE SPECIFICATIONS
		ROSES & VINES	TOTAL: 430 SF (25%) Rosa glauca, 3 gal (25%) Clematis 'Gipsy Queen' (25%) Clematis Montana 'Mayleen' (25%) Clematis virginiana
		LAWN SEED MIX	SEE SPECIFICATIONS

TROUTBECK

515 Leedsville Rd, Amenia, New York 12501

GENERAL NOTES

1. Existing conditions and topography data are from from client and surveyed in 2016.

2. Contractor shall verify location of any existing utilities and services and provide protection during construction. Utilities damaged during construction shall be repaired at contractors expense.

3. Contractor shall obtain permits for the work as required and comply with all laws, ordinances, rules and regulations of the local jurisdiction, the state, and all other authorities having jurisdiction.

4. Contractor shall leave site clean and orderly during construction process. Remove from site all excess materials, soil, debris and equipment. Store materials only in an approved location.

PLANTING NOTES

1. The Contractor shall supply all plant material in quantities sufficient to complete the planting shown on all drawings.
2. Contractor shall verify all existing conditions in the field. Report any discrepancies to the Landscape Architect for design prior to commencing planting.
3. All plant material shall conform to the guidelines established by "The American Standard for Nursery Stock" published by the American Nursery and Landscape Association, latest edition.
4. All plants shall be balled and burlap unless otherwise noted on the plant list.
5. All plants shall be approved by Landscape Architect prior to their installation at the site.
6. Individual trees shall be located in the field as indicated on the drawings for Architect's approval prior to planting. Contractor shall provide one foreman, one loader with operator and two laborers to work with Architect in field to determine the final location and orientation of each tree prior to planting. It is anticipated that this process may take several days to complete. Contractor shall plan to have his layout crew available to work with Architect at a slow and deliberate pace in order to achieve the desired results. Individual shrubs and perennials to be planted shall be laid out in plant beds by the Contractor in ample time to allow inspection by the Architect.
7. Plants to be transplanted shall be flagged and exact planting locations staked in the field.
8. All areas disturbed by construction activities are to be fine graded and seeded.

REED-HILDERBRAND

Landscape Architecture
33 Whitney Avenue, 3rd Floor
New Haven CT 06511
P 617 923 2422 F 617 923 3740
www.reedhilderbrand.com

Revisions

Number	Date	Description
1	8/26/22	SD PRICING SET

Job number 3314

Drawn by NG/ MW | Checked by NS/ BHS

Scale 1" = 60'-0" | Date AUG 26, 2022

0' 60'

Stamp

Sheet Title

PLANTING PLAN

Sheet Number

L 4.10

STORMWATER POLLUTION PREVENTION PLAN

Troutbeck Adaptive Reuse Plan

Town of Amenia

APPLICANT: **Troutbeck Holdings LP**
515 Leedsville Road
Town of Amenia, NY 12501

LOCATION: **515 Leedsville Road**
Town of Amenia
Dutchess County
Tax Map #: 132000-7267-00-227675

PROJECT No.: **16-019**

DATE: **October 11, 2022**

PREPARED BY: **Richard A. Rennia, P.E.**

RENNIA ENGINEERING DESIGN, PLLC
CIVIL ▪ ENVIRONMENTAL ▪ STRUCTURAL

6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

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Post-development Drainage Analysis: HydroCAD Report

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1 INTRODUCTION

The applicant is proposing to expand on Troutbeck Inn's existing hospitality/lodging/restaurant use by developing an Adaptive Reuse Plan. The site is currently used for conferences, dining, special events, lodging, retreats, and weddings. The facilities contain typical hospitality industry related amenities such as tennis courts, a pool, wellness center, walking trails, and other outdoor activities. Overall, the proposed improvements focus primarily on expanding the site's existing lodging capacity and will elevate the guest experience by providing a number of additional amenities such as additional food & beverage options, additional wellness options, additional onsite outdoor activities, and formal garden areas. A new event space will replace an existing ballroom located in the Manor House to provide more flexibility and access for events. The project also includes the creation of conservation areas. The intent of these conservation areas is to preserve the significant historic and environmental features present on site and to create a buffer from neighboring properties.

Troutbeck Inn is located within a single 43.5-acre parcel (Parcel #: 132000-7267-00-227675) in the Town of Amenia, Dutchess County, New York. The project is located 100 miles north of New York City and is approximately 3 miles west of Sharon, CT. The project parcel maintains frontage along the south of NYS Route 343 and is divided down the middle by the Webatuck Creek, which runs north to south through the site. The parcel also maintains frontage along Yellow City Road to the west and Leedsville Road to the east.

This SWPPP will focus on the implementation of phases one through nine of the Adaptive Reuse Plan. The phases and their associated developments are described below.

Phase 1 (Total disturbance of approx. 1.66 ac.):

Construction of a 1-story, ±962 SF gatehouse, with an additional ±742 SF of accompanying deck/porch area. An additional pull-off lane, gatehouse employee parking area, and gate will also be provided. The gatehouse will be located off of the existing entrance road from Leedsville Road.

Five (5) 1-story cabins, comprised of 4 1-bedroom cabins and one (1) two-bedroom cabin. The 1-bedroom cabins are ±549 SF with 146 SF of deck and the 2-bedroom cabin is ±830 SF with a ±174 SF deck. A new 5 space chip and seal parking area and pedestrian path constructed on top of an existing roadbed will also be provided to support the cabins.

Conversion of an existing maintenance garage/staff apartment into a 20-seat bakery and staff apartment (2 bedrooms). The conversion will also include a ±100.2 SF building addition, which will allow guest to purchase food from the bakery. This part of the proposed project will also result in the construction of a ±828 SF deck overlooking Webatuck Creek.

The improvement of the existing tennis court area by constructing an ±1,800 SF platform tennis court and ±350 SF Warming Hut.

All associated septic, water, electric services utilities, pedestrian connections, and all associated landscaping/lighting features for the proposed building improvements and new structures will be included in this phase.

Phase 2 (approx. 1.67 ac. of disturbance): Phase 2 includes several minor exterior and interior building additions to the existing Manor House. The existing rear kitchen service/loading entrance shall be reconfigured for better access, which will include a minor ±192 SF building addition and reconfiguration of existing ingress/egresses. Phase 2 shall also include the enclosure and conversion of an existing ±635 SF deck/patio area into a conservatory dining space to provided additional dining area for guest use. Interiorly, this phase will include upgrades to existing kitchen equipment and the installation of three-phased electric. No material changes are proposed to the historic fabric of the Manor House. The proposed SMP for this phase is a sand filter for the expanded parking area.

Phase 3 (approx. 1.20 ac. of disturbance): Includes the construction of 1-story 3,150 SF Administration building to be used for office space and staff facilities, with additional basement storage, a and 1-story 2,654 SF staff apartment buildings with 7 staff residences. This phase will also include the structures septic, water, and electric facilities. Additionally, a 17-space parking lot, a 1-story tractor storage shed (1,050 SF), and the reconfiguration of an existing road is also proposed. Furthermore, this phase will also include the demolition of the existing Garden House (4 lodging units, 2 staff apartments), in order to prepare the site for Phase 5a-b of development. The proposed SMPs for this phase are three (3) sand filters for the new impervious and parking areas.

Phase 4 (approx. 3.54 ac of disturbance): Includes the construction of eight (8) cabins along an existing roadway. The cabins will be of similar size and style of the propose Phase 1 cabins. This phase will include required all associated septic, water, stormwater, and electric services. Additionally, this phase will also include the rerouting of existing roadways and the additional pedestrian pathways to better service the proposed expansion, as well as the construction of 55 space gravel parking area. The proposed SMPs for this phase are two (2) bioretention areas for the entry road and new parking area, dry swale for the entry road, and four (4) drywells for the new cabin roofs.

Phase 5a (approx. 1.2 ac of disturbance): Phase 5a includes the construction of a new 2.5-story reception/lodging (14,374 SF) building, referred to as Garden Hotel. The new Garden Hotel, will provide an additional 33 lodging units with associated retaining walls and patio space. Two (2) infiltration chambers are proposed for SMPs for the new impervious areas.

Phase 5b, will commence once the Garden Hotel is completed and will include the construction of 1-story Event Space Building (±6,250 SF with a full basement), to be constructed where the former Garden Building (to be demolished in Phase 3) was located. The space will be used to host guest events, such as weddings and gatherings and will include a ballroom area (to serve in leu of existing facilities within the Manor House) able to accommodate ±224 guests, a kitchen, and an outdoor terrace.

The proposed phase 5 improvements will include hookup/installation of all associated septic, water, and electric services, as well as aesthetic and functional improvements to roads, walkways, and the existing walled garden. One (1) infiltration chamber is proposed for the new impervious area created by the proposed event space.

Phase 6 (approx. 0.64 ac of disturbance): Phase 6 will include renovations to the existing Delamater House in the southern portions of the site. Currently, unused and in derelict condition, the structure will be renovated to preserve/restore the existing historically significant facade and to convert it into a bar/dining area to serve primarily as a guest amenity, but will also be open to the public. The Delameter House is proposed to serve ±84 guests. Improvements to the structure will also include the addition of ±1,200 SF conservatory dining area, and the construction of several outdoor dining terraces. The improvements will also include the installation of all necessary septic, water, and electric services, as well as additional landscaping improvements. The exterior of the structure will be restored without alteration. The SMPs selected for this phase are one (1) green roof for the Delameter House and one (1) sand filter for the access drive and parking area.

Phase 7 (approx. 1.69 ac of disturbance): Phase 7 will include the construction of six (6) additional guest cabins units, similar in size and style as the Phase 1 Cabins. The development will include the creation a small pond area to serve as a guest amenity/aesthetic feature for the proposed cabins. This phase will also include several new pedestrian paths to access the structures and any necessary water, sewer, or electrical service improvements. The SMP selected for this phase is one (1) infiltration basin for the impervious area created by the new cabins.

Phase 8 (approx. 0.63 ac of disturbance): Phase 8, also referred to as “Garden Future Building” proposes the construction of an additional 2-story hotel-style lodging facility. The proposed structure will contain an addition 32-lodging units and be serviced by the same facilities to be constructed in phases 5a-b. The selected SMP for this phase is one (1) infiltration chamber for the new roof and accessways

Phase 9 (approx. 0.54 ac of disturbance): Phase 9 will result in the renovation and expansion of the existing pool facilities, currently assessed to have a capacity of 58 guest. The site previously maintained an indoor lap pool, which has since been demolished. The proposed renovations/expansion will reintroduce the indoor pool facility, as well as make improvements to the existing snack bar, and reconfigure/expand the pool itself. The new pool facility may increase the overall capacity of the area ±150 guests and will include additional septic system hookups and upgrades. SMPs for this phase have yet to be determined as the hardscape concept is still pending.

Please reference Table 1.1 below for a full list of the phased SMPs proposed for this project.

Table 1-1 Proposed Stormwater Management Practices

ADAPTIVE REUSE STORMWATER MANAGEMENT SUMMARY			
PHASE	PROJECT AREA	SWM #	STORMWATER MANAGEMENT INFRASTRUCTURE
1	CREEKSIDE EAST CABINS	SWM #1	DISCONNECTED ROOF LEADERS
			IB-3 INFILTRATION BASIN
			GRASS FILTER STRIP (INFIL. PRETREATMENT)
			PEA GRAVEL DIAPHRAGM (INFIL. PRETREATMENT)
	GATEHOUSE	SWM #2	BR-1 BIORETENTION AREA FOR GATEHOUSE IMP.
			PEA GRAVEL DIAPHRAGM (INFIL. PRETREATMENT)
		SWM #3	SF-1 SAND FILTER FOR GATEHOUSE IMP. AND EX. DISTURBED IMP.
			CS-1 CONVEYANCE SWALE
	ENTRY ROAD	SWM #4	IT-2 INFILTRATION TRENCH
	ENTRY ROAD	SWM #5	IT-3 INFILTRATION TRENCH
	PLATFORM TENNIS AND WARMING HUT	SWM #6	IB-1 INFILTRATION BASIN (PLATFORM TENNIS SMP)
		SWM#7	IT-1 INFILTRATION TRENCH (WARMING HUT SMP)
	CARETAKER HOUSE/BAKERY	SWM #8	NO NEED FOR SMP AS IMPERVIOUS IS REDUCED BY >25%
			SOIL RESTORATION IN EXISTING COMPACTED GRAVEL PARKING AREA
2	MANOR HOUSE	SWM #9	SF-1 SAND FILTER FOR EXPANDED PARKING AREA
3	CENTRAL ADMIN/TRACTOR SHED/STAFF HOUSING	SWM #10	SF-2 AND SF-3 SAND FILTERS FOR NEW IMPERVIOUS AND PARKING AREA
4	GARDEN NORTH CABINS	SWM #11	BR-3 BIORETENTION AREA FOR ENTRY ROAD AND NEW PARKING AREA
		SWM #12	DS-3 DRY SWALE FOR ENTRY ROAD
		SWM #13	DW-1 THROUGH DW-4 DRYWELLS FOR NEW CABIN ROOFS
5A	GARDEN HOTEL	SWM #14	IC-1 AND IC-2 INFILTRATION CHAMBERS FOR NEW HOTEL IMPERVIOUS
5B	GARDEN HALL	SWM #15	IC-3 INFILTRATION CHAMBERS FOR NEW EVENT SPACE IMPERVIOUS
6	DELAMETER HOUSE	SWM #16	GR-1 GREEN ROOF
		SWM #17	SF-4 SAND FILTER FOR ACCESS DRIVE AND PARKING
7	POND EXPANSION CABINS	SWM #18	IB-4 INFILTRATION BASIN FOR FUTURE CABINS AND ACCESSWAYS
8	GARDEN KEYS EXPANSION	SWM #19	IC-4 INFILTRATION CHAMBERS FOR NEW ROOF AND ACCESSWAYS
9	POOL RENOVATION	TBD	SMP TO BE DETERMINED (HARDSCAPE PENDING)

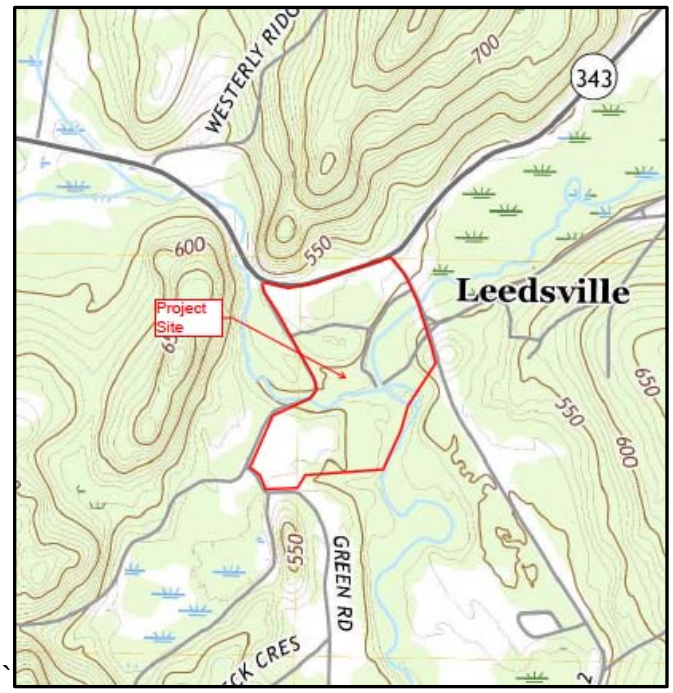
In terms of Stormwater management and pollution prevention planning, each phase of the proposed Adaptive Reuse Plan is expected to generate some level of site disturbance. Phases one through nine of the proposed plan will disturb more than 1 acre of land or vegetation; therefore, the project is subject to the requirements of the New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity, Permit GP #0-20-001. A copy of this permit is included in Appendix A of this report. As part of obtaining permit coverage for this project, a report has been developed and provided to the property owner, site contractor, and Town of Amenia to be used as a guide for the construction phase as well as both the short-term and long-term maintenance of the stormwater facilities designed herein. The project area is shown below in Figure 1-1 Project Site Location.

As mentioned previously, implementation of the Troutbeck Inn Adaptive Reuse Plan is expected to take place over a time span of several years, with 9 separate phases proposed in order to make the implementation of the Adaptive Reuse Plan more manageable. The phased construction projects will vary in classification as defined in the New York State Stormwater Design Manual (NYS SWDM), as each phase will either be considered “New Development”, “Re-Development” or a combination of the two classifications. The classification is based on how much existing impervious ground cover

exists and will be disturbed as a result of future development. All of the proposed phases are expected to result in some level of disturbance to existing impervious ground cover.

As noted above, the proposed project phases one through nine will require permit coverage under the SPDES General Permit, and as such, a full Stormwater Pollution Prevention Plan (SWPPP) has been prepared. This project site is classified as a "Redevelopment Project" per the NYSDEC Design Manual as the work is a redevelopment of a previously developed site. Section 1.1.1 below provides a discussion on the NYSDEC guidelines and how they impact the development of the site and SWPPP design.

Figure 1-1 Project Site Location



1.1 NYSDEC REGULATORY ASSESSMENT

The Troutbeck Inn's Adaptive Reuse Plan project is a multi-phase project that outlines 9 phases of construction that are intended to be completed in succession over the next several years or in a period of time that is feasible to the owners/committee. This SWPPP report has been developed specifically for phase one, with general proposed improvements included for phases two through nine, as outlined in the Adaptive Reuse Plan. This SWPPP will be amended for the inclusion of the proposed improvements for each subsequent phase.

As previously noted, this project is a redevelopment project, therefore the redevelopment activities are subject to the design requirements of Chapter 9: Redevelopment Projects, and the new development activities are subject to the design requirements of Chapter 4: Unified Stormwater Sizing Criteria of the NYSDEC Stormwater Management Design

Manual, 2015 (SWMDM). For proper development of the SWPPP, a review and discussion of this Chapter is performed below.

1.1.1 NYS SWMDM Chapter 9 Redevelopment Regulatory Review

Redevelopment is encouraged from the perspective of stormwater management and land use because it conserves undeveloped resources and redevelops sites that have existing services and infrastructure. Also, redevelopment allows for the correction of existing problems through the use of current Stormwater Management Practices (SMPs) that reduce pollutant discharges. Many previously developed sites had minimal SMPs or were constructed without an effective stormwater pollution prevention plan.

Chapter 9 recognizes that redeveloped sites may have difficulty achieving the goals of the current SWMDM design criteria because these regulations were created to address new development. Therefore, Chapter 9 sets forth alternatives for certain redevelopment projects that adhere to any one of three requirements for the project. Both existing impervious areas that are disturbed and new impervious areas will be assessed by this SWPPP.

1.1.2 Redevelopment Stormwater Management

Chapter 9 provides the following regulatory guidance:

With respect to Water Quantity: “If the redevelopment activities result in no change to hydrology that increases the discharge rate from the project site the ten-year and hundred-year criteria do not apply.” This is specifically noted to include the redevelopment activity portion of a project and any new development. Additionally, the requirement for Channel Protection storage volume for redevelopment activities is not required if there are no changes to hydrology that increase the discharge rate from the project site.

With respect to Water Quality there are four options available for a project to achieve the treatment objectives. This project will utilize option II as outlined in Section 9.2.1.B.II to meet the water quality volume (WQ_v) requirements and sizing criteria for the SMPs for the redevelopment areas. With respect to water quantity requirements, Section 9.2.1.B.II states that; “…The plan proposes that a minimum of 25% of the water quality volume (WQv) from the disturbed, impervious area is captured and treated by the implementation of standard SMP or reduced by application of green infrastructure techniques.” Additionally, the structural SMPs should be targeted to treat areas with the greatest pollutant potential.

Section 9.2.1.B.II also states that; "...If the construction project includes both new development and redevelopment activities, treatment would be required for 25% of existing, disturbed impervious area, however, the stormwater management practices for the new development portion of the project must be designed in accordance with sizing criteria in Chapter 4."

Performance criteria for the selected SMPs is based on the practice design as noted in Chapter 6 of the SWMDM. These criteria were strictly followed on this project. Discussion of the selected SMPs and their applications are included in Chapter 4 of this report.

1.1.3 New Development Stormwater Management

As previously stated, the portions of the project where impervious areas are proposed over existing pervious areas, the stormwater management will be designed following Chapter 4: Unified Sizing Criteria.

1.2 QUANTITATIVE METHOD OF ANALYSIS

A hydrologic analysis was performed that utilizes the methods stated in Technical Release # 55, Urban Hydrology for Small Watersheds, published by the U.S. Department of Agriculture, Soil Conservation Service. A Type III Dutchess County Rainfall Distribution was used to generate tabular hydrographs for the 1, 10, and 100-year storm events, with respective 24-hour rainfall depths of 2.58, 4.64 and 8.29 inches. Sediment and erosion control practices have been selected using the New York State Standards and Specifications for Erosion and Sediment Control, 2016. The site survey data provided by the owner and United States Geological Survey data was used to delineate the overall watershed areas and to select design points. The soil type was delineated as per the Dutchess County Soil Survey.

1.3 STORMWATER MANAGEMENT OBJECTIVES

The introduction of impervious surfaces decreases the natural infiltration rates of developed areas. The impervious surface will accumulate pollutants deposited from the atmosphere, leaked from vehicles, or windblown from adjacent areas. During storm events, these pollutants will wash off during the initial stage of a storm event and will then runoff to downstream waters. Additionally, the natural runoff rate can be increased, which leads to increased downstream erosion, enlarging stream channels and potential degradation of ecological habitats. It is the objective of this report to identify the means proposed to minimize erosion and sediment problems on land undergoing urban development as well as meet NYSDEC pollutant removal goals. Section 3.6 of the NYS SWMDM contains a six-step process for analysis and selection of appropriate (SMPs).

Step 1 of this process is site planning. A detailed map is developed identifying any wetlands, waterways, or sensitive areas. Strategies are used that will maintain the natural drainage design points and avoid erodible soils to the greatest extent possible. Erosion and Sediment control SMPs will be utilized to verify that no sediment will runoff site into any sensitive areas during or after construction.

Step 2 of the process is the determination of the Water Quality Treatment Volume (WQ_v) using the design criteria in Chapter 4 of the SWMDM. These calculations are summarized in Section 4 of this report.

Step 3 of the process is the application of runoff reduction techniques and standard SMPs with RR_v Capacity (e.g. infiltration practices, bioretention and open channel practices) to reduce total WQ_v. This step selects the SMPs that provide: 1) reduction of stormwater runoff from the site, 2) pretreatment of the runoff for contaminant removal, and 3) storage of the calculated volume of the WQ_v of stormwater runoff. For this project, the SMPs

selected will be green roofing, infiltration trenches, stormwater planters, dry wells, sand filters, and bioretention.

Step 4 of the process is the determination of the minimum RR_v required. Here, the minimum RR_v required is calculated and compared to the runoff reduction determined in Step 3.

Step 5 of the process will determine what standard SMPs will be needed for any remaining WQ_v that has not been addressed in Step 3 or 4 of the SMP selection process.

Step 6 of the process will determine the Volume and Peak Rate Control Practices needed. The channel protection volume, overbank flood control, and extreme flood control must be addressed to meet water quantity requirements.

2 EXISTING CONDITIONS

2.1 ARCHEOLOGICAL SENSITIVITY

The Cultural Resource Information System (CRIS) web site was reviewed to determine if there were any National Registered and Archeological Sensitive areas associated with the project site. The site is within an archaeologically sensitive area but none of the onsite buildings are on the State Register of Historic Places. The CRIS map is shown in Appendix C of this report. An archaeological report prepared by Alfred G. Cammisa, M.A., is included in Appendix C as well. Mr. Cammisa performed a close-quarters walk-over of the project parcel, as well as 166 shovel tests performed at 15-meter intervals at a depth of 30-40 centimeters. Three shovel tests produced biface and tertiary flakes, an indication of possible prehistoric artifact presence. Mr. Cammisa recommended that Phase II intensive testing be conducted on the portion of the project site where the flakes were found. He concluded that the project site has a higher than average potential for encountering prehistoric sites.

2.2 FLOOD PLAIN

A review of the FEMA Flood Insurance Rate Map (FIRM) for Town of Amenia shows that the project site is located within the 100-year floodplain. There are no new structures intended for residential use within the floodway and associated 100-year floodplain. The established 100-year flood plain and floodway boundary lines are shown on the project plans, with a base flood elevation ranging from 480 to 487 feet. The FIRM map is shown in Appendix C of this report.

2.3 HABITAT

A review of New York State Department of Environmental Conservation's (NYSDEC) Environmental Resource Mapper (ERM) identified three (3) possible threatened/endangered species that may be present on the project site: Bog Turtle, Timber Rattle Snake, and the New England Cotton Tail. Based on this assessment a certified biologist, Michael Nowicki from Ecological Solutions, LLC., surveyed the property and documented any instances/evidence of the above referenced species and outlined mitigation measures that may be taken to mitigate the impact that the proposed project may have on said species. A Threatened and Endangered Species Habitat Suitability Assessment Report, dated 10/19/2021, was prepared discussing the results of Mr. Nowicki's field investigation. A summary of the report has been provided below:

Bog Turtle

The project site was assessed for the presence of habitat characteristics consistent with the 2017 bog turtle federal recovery plan. Per the Ecological Solutions report, none of the following habitat conditions exist: soft, saturated organic/mineral soil; perennial groundwater discharge; a plant community of low-growing, native flora (including sedges, rushes, grasses, forbs, mosses, and some low shrubs); tree canopy cover less than 50%; fen indicator plants (including shrubby cinquefoil, grass-of-parnassus, and tamarack). The report concluded that "There are no wetland communities on the site that meet the description of potential bog turtle habitat." Additionally, the watercourse and tributaries are not suitable for bog turtle habitat and as such, no mitigation is proposed.

Timber Rattlesnake

The project site was assessed for the presence of Timber Rattlesnake den, basking/gestating, and foraging habitat consistent with known locations of the species. Per the Ecological Solutions report, the following conditions exist: mixed upland fragmented forest; existing developed area; large open fields; watercourses and tributaries.
The report concluded that based on the lack of southeast to southwest facing rock formations for basking, the site likely does not contain any suitable Timber Rattlesnake den areas. Additionally, the consistent agricultural use of the bulk of the site have limited the potential for suitable foraging space due to poor shade, rest, and prey opportunities in the fields. No mitigation is suggested for the site.

New England Cottontail

The project site was assessed for the presence of New England Cottontail habitat and found no suitable shrubby areas, thickets, or wetlands with tree cover. No abandoned farm fields with native shrubs exist on the well-maintained property to provide cover for the species.

The report concluded that potential habitat does not exist on the site and as such no mitigation is proposed.

Based on the information provided within the above-referenced report, there is no suitable habitat present onsite to support any of the threatened/endangered species identified by the NYSDEC Environmental Resource Mapper.

Additional information on the site's slopes, forest/trees, and soils can be referenced in the Conservation Analysis that was done in support of the Adaptive Reuse for the site. The ERM map is included in Appendix C of this report.

2.4 STATE AND NATIONAL WETLANDS/WATERCOURSES

Watercourses

The project site contains three (3) watercourses, two of which have been identified by New York State Department of Environmental Conservation (NYSDEC) and the other being unclassified:

1) *Webatuck Creek, C(T):* Beginning offsite to the north and flowing south underneath NYS Route 343 and through the middle of the project parcel, Webatuck Creek is the larger of the two watercourses present on site. The portion of the creek located on the project site is approximately ±1,876 linear feet long and ranges between ±45'-65' wide. The creek has an existing bridge crossing which is part of Troutbeck Lane.

   The creek maintains a NYSDEC Classification of C, indicating that the watercourse is best used for fishing. The stream has also been designated as possible trout waters.

2) *Dunham Creek, C(TS):* Beginning offsite to the west, the Dunham Creek is a tributary to Webatuck Creek, flowing west underneath Yellow City Road, and into the larger watercourse. The creek is located just south of the existing Manor House and has one (1) pedestrian footbridge and two (2) vehicle crossings.

   The creek maintains a NYSDEC Classification of C, indicating that the watercourse is best used for fishing. The stream has also been designated as possible trout spawning waters.

3) *Unclassified Creek:* An unidentified stream is located within and along the boundary of the property site. Beginning offsite to the southwest, the unclassified stream begins at the outfall of a pond located on a residential property. The stream forms the southern border of the property line before flowing into Webatuck Creek. The portion of the creek located in the project site is approximately ±979 linear feet long and is about ±10' wide. The stream has two (2) earthen crossings.

Wetlands

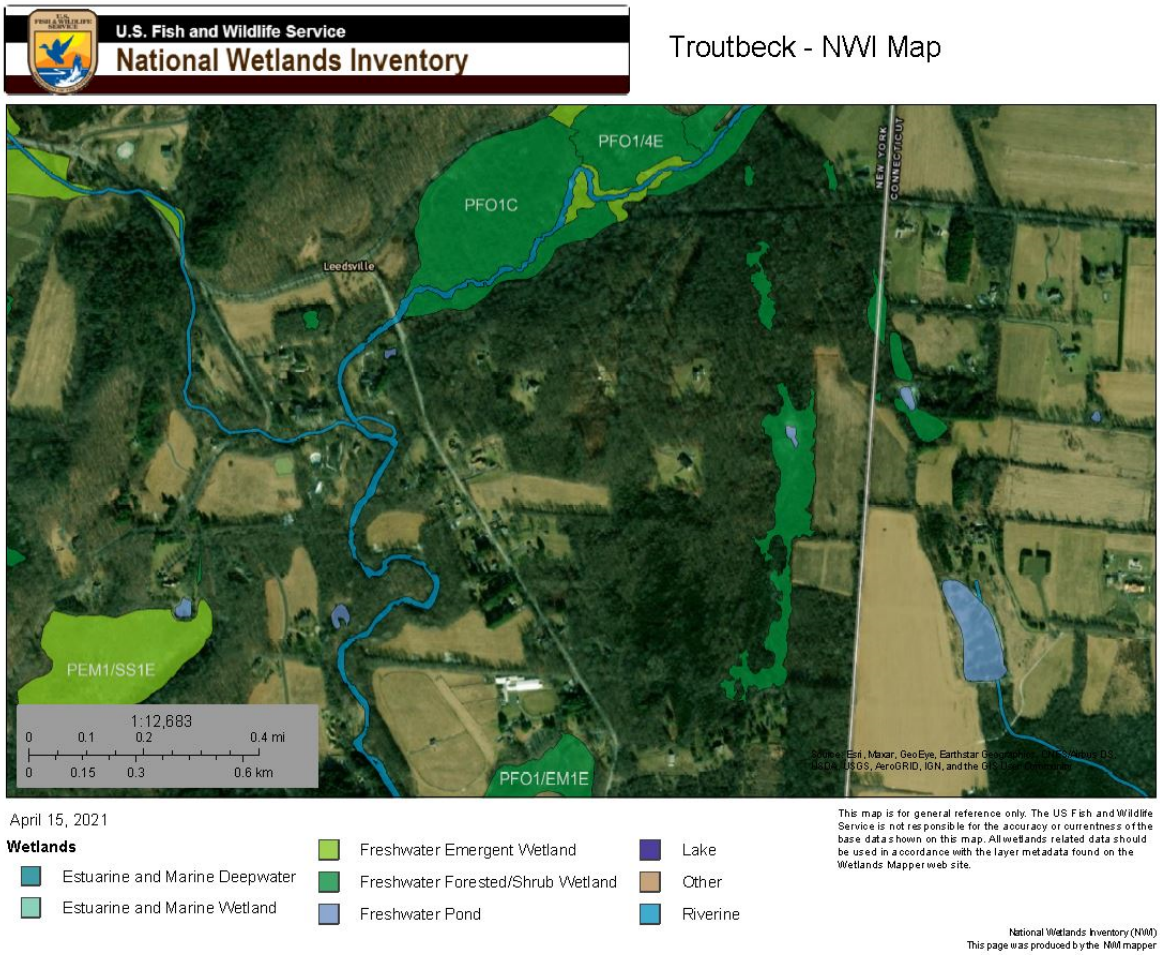
There are no NYSDEC regulated wetlands mapped on the site, but National Wetland Inventory (NWI) mapping indicates there are two (2) Federal wetlands present. The wetlands are identified in Wetland & Watercourses Exhibit in Appendix C and have been summarized below:

Wetland #1: Located along the entire length of the Webatuck, Dunham, and unnamed creek running along the southern edge of the property. The wetland is integral to the riverine system and its boundaries are defined by the banks of the creeks themselves. The wetland is characterized by a continuous flow of water with no tidal influence and unconsolidated bottom. Wetland #1 is approximately ± 2.81 acres in area.

Wetland #2: (PUBHx): Located northeast of Century Lodge and southwest of Leedsville Road-Webatuck Creek crossing, the identified wetland is a manmade pond. Constructed during the 1980's, the existing pond maintains a small overflow channel outfalling into the Webatuck Creek. Its PUBHx classification indicates it is nontidal Palustrine (P) with an unconsolidated bottom (UB) that is permanently flooded (H) due to its original excavation (x). The pond is approximately ± 0.09 acres in area.

Additional information on the site's wetlands and watercourses can be referenced in the Conservation Analysis that was done in support of the Adaptive Reuse for the site. The NWIM map is shown below in Figure 2-1.

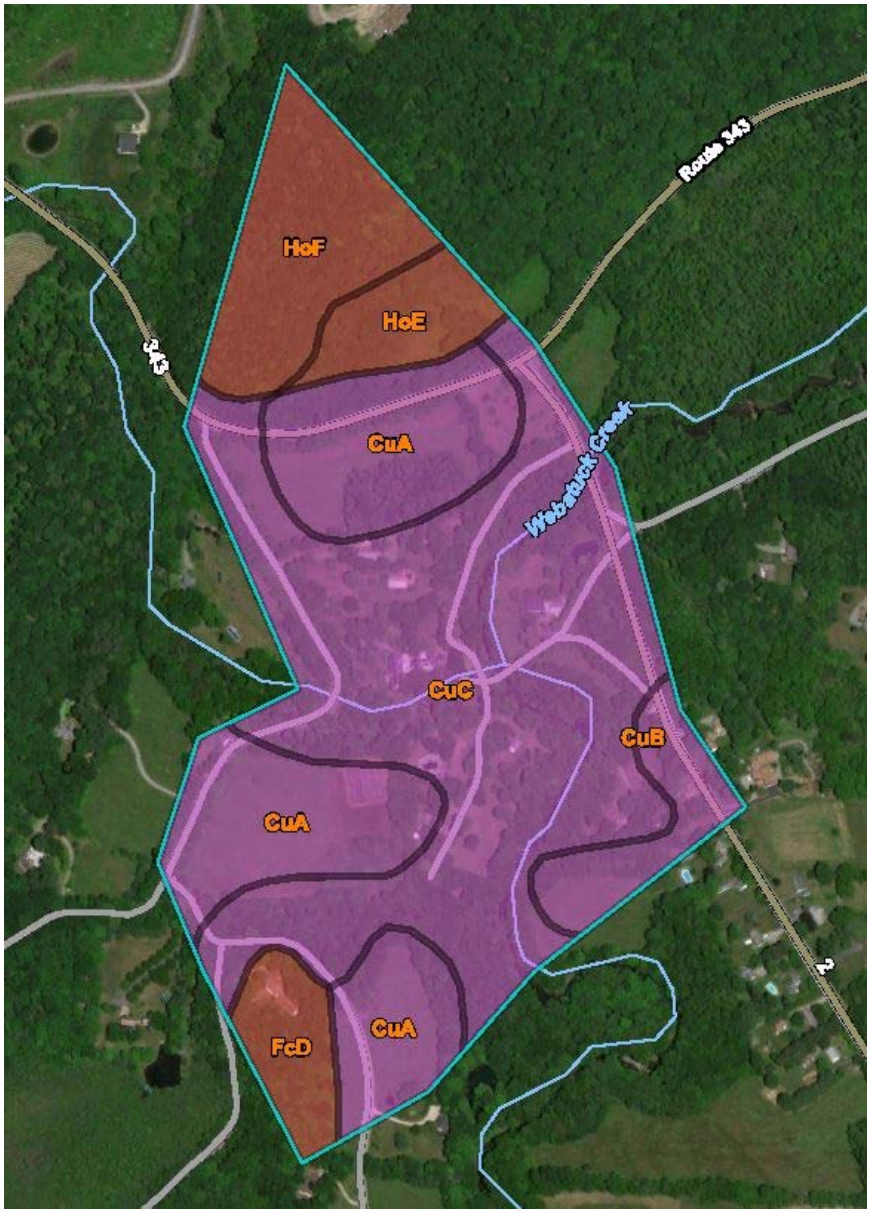
Figure 2-1 National Wetland Inventory Map



2.5 SITE SOILS

Based on a review of the USDA Natural Resources Conservation Service's Soil Survey of Dutchess County, New York, six (6) types of soil are present on the project site. The soils present on the site are: Copake gravelly silt loam, nearly level (CuA); Copake gravelly silt loam, undulating (CuB); Copake gravelly silt loam, rolling (CuC); Farmington-Galway Complex, hilly, very rocky (FcD); Hollis-Chatfield-Rock outcrop complex, steep (HoE); Hollis-Chatfield-Rock outcrop complex, very steep (HoF). The soil distributions are shown below in Figure 2-2 and Table 2-1.

Figure 2-2 Project Site Soils Map



The soils and their descriptions are as follows:

Table 2-1 Soils Present Onsite

Soil Name	ID	HSG	Percent of Site
Copake gravelly silt loam, nearly level	CuA	A	25.3%
Copake gravelly silt loam, undulating	CuB	A	4.7%
Copake gravelly silt loam, rolling	CuC	A	55.4%
Farmington-Galway Complex, hilly, very rocky	FcD	D	0.3%
Hollis-Chatfield-Rock outcrop complex, steep	HoE	D	5.4%
Hollis-Chatfield-Rock outcrop complex, very steep	HoF	D	8.9%
Totals for Area of Interest			100%

The USDA Natural Resource Conservation Service (NRCS) assigns each soil series to a hydrologic soil group (HSG). The HSG is a four-letter index (A-D) that is intended to show the relative potential for a soil to generate runoff.

HSG A soils have a high infiltration rate (low runoff potential) when thoroughly wet. These consist of deep, well drained to excessively drained sands and gravels.

HSG B has a moderate infiltration rate when thoroughly wet. These consist of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture.

HSG C soils have a slow infiltration rate when thoroughly wet. These consist of soils that have a layer that impedes the downward movement of water.

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

The portion of the project site that is proposed for redevelopment is made up of Hydrologic Soil Groups A and D.

2.6 GENERAL SITE CHARACTERISTICS

The topography of the project site slopes from an elevation of approximately 525 feet towards the northwesterly boundary to an elevation of approximately 475 feet at Webatuck Creek on the southeastern boundary. Stormwater typically flows towards the Webatuck Creek or one of its two tributaries that flow through the project site and then onto the adjacent parcel.

Property boundary and topographic survey data that were used as a basis of this design were based upon an actual field survey which was last updated on or before 4/26/2016 by Steven Alex, L.S. of Chazen Engineering and Surveying, P.C.

2.7 PRE-DEVELOPMENT DRAINAGE ANALYSIS

The existing drainage areas can be divided into nine (9) pre-development sub-basin drainage areas (DA-1 through DA-9) as shown on the Pre-Development Drainage plan located in Appendix G. These drainage area flows to nine (9) Design Points (DP-1 through DP-9). A map of these design points and drainage areas are included in Appendix D. Drainage Area 1 contains the entire site parcel, as well as some areas to the north, south, and west that also drain onto the site. Design Point 1 is at the south border of the site, where the Webatuck Creek flows off site.

2.7.1 Existing Drainage Analysis

For the purposes of this analysis, a drainage area map was developed for the project site depicting the previously developed area to determine the impervious area contribution and generate various storm event flow rates that currently exist at the project site. The map outlines the drainage area that contains the entire project area.

A stormwater model was developed using *HydroCAD* version 10.0 to model the existing and proposed drainage areas and attenuation characteristics of the proposed stormwater management practices. The existing and developed hydrologic and hydraulic calculations are shown in Appendix D of this report.

Table 2-2 shown below summarizes the existing conditions for the design points by using the 1, 10, and 100-year storm events.

Table 2-2 Previously Developed Condition Peak Flow Rates

EXISTING CONDITIONS DRAINAGE AREA TABLE					
DRAINAGE AREA/DESIGN POINT	AREA (AC)	TIME OF CONC. (MINS.)	1-YEAR RUNOFF (AC.FT.)	10-YEAR RUNOFF (AC.FT.)	100 YEAR RUNOFF (AC.FT.)
DA-1/DP-1	22.61	51.1	0.09	3.94	25.57
DA-2/DP-3	2.18	13	0	0.02	1.12
DA-3/DP-9	5.05	29.5	0	0.07	2.77
DA-4/DP-8	2.24	28	0	0.24	2.82
DA-5/DP-7	4.3	28.3	0	0.24	4.03
DA-6/DP-6	4.16	16.6	0.01	0.83	7
DA-7/DP-5	3.42	18	0	0.05	2.24
DA-8/DP-2	4.16	34.7	0	0.07	2.7
DA-9/DP-4	8.19	74.9	0	0.14	3.06

3 PROPOSED CONDITIONS

3.1 PHASE 1 POST DEVELOPMENT DRAINAGE ANALYSIS

The post development design will add additional impervious surface to the site, causing an increase in the stormwater runoff flow rate. To properly analyze this condition, nine (9) sub-basins have been used to analyze the redeveloped site (DA-1 through DA-9). The design points (DP-1 through DP-9) remain the same as those for the existing analysis. These basins are shown on the Post-Development Sub-Basin Drainage Plan provided in Appendix G. A summary table of the unmitigated developed site can be found in Table 3-1 below.

Table 3-1 Unmitigated Phase 1 Post-Development Condition Peak Flow Rates

POST DEVELOPMENT UNMITIGATED CONDITIONS DRAINAGE AREA				
DRAINAGE AREA/DESIGN POINT	**TIME OF CONCENTRATION (MINS.)**	**1-YEAR RUNOFF (AC.FT.)**	**10-YEAR RUNOFF (AC.FT.)**	**100 YEAR RUNOFF (AC.FT.)**
DA-1/DP-1	51.1	0.09	3.94	25.47
DA-2/DP-3	12.6	0	0.02	1.13
DA-3/DP-9	29.5	0	0.07	2.77
DA-4/DP-8	28	0	0.24	2.82
DA-5/DP-7	28.3	0	0.24	4.03
DA-6/DP-6	16.6	0.01	0.83	7
DA-7/DP-5	16.7	0	0.08	2.95
DA-8/DP-2	27.4	0	0.07	2.7
DA-9/DP-4	63.8	0	0.55	5.85

3.1.1 Proposed Phase 1 Sub-basin Drainage Analysis

For phase 1 of the project, the selected SMPs are stormwater planters for the gatehouse, dry swales, a bioretention area, and infiltration basins for the Creekside Cabins, and infiltration basins for the tennis warming hut and platform court. As the improvements to the caretaker house/bakery decrease the total area of impervious surfaces by 1,830 sq. feet, a reduction of 40% compared to the existing impervious area, no SMPs are needed. The sub-basins are divided as follows:

DA-1 contains the slope to the north of Route 343, the Webatuck Creek to the southeast, and the existing garden house to the west. A large portion of the center of this drainage area is grassed meadows and wooded areas. There are no proposed improvements to this drainage area in Phase 1. Stormwater in this phase will sheet flow to the Webatuck Creek to the drainage area's southeast corner. Improvements in this drainage area will occur in subsequent phases, and stormwater management practices will be proposed during the associated approval process.

DA-2 contains the northwest corner of the existing tennis courts, the existing stone chapel, and the Dunham Creek. Proposed phase 1 improvements for this drainage area include the platform tennis courts. The existing gazebo located within DA-2 will also be removed, which decreases the disturbed existing impervious area from 489 square feet to 174 square feet. No SMPs are required for disturbed existing impervious area as it has been decreased by 64.5%. Stormwater from the new impervious platform tennis courts will be routed to infiltration basins. The remainder of the stormwater will sheet flow to DP-3.

DA-3 contains the large grassed meadow southwest of the tennis courts. It is bound by Green Road to the west and the south. There are no phase 1 improvements proposed for this drainage area. Stormwater in this phase will sheet flow to DP-9 at the southeast corner of the drainage area and ultimately flow into the Webatuck Creek. SMPs will be implemented in this drainage area as improvements are proposed in later phases.

DA-4 contains a portion of the grassed meadow southwest of the tennis courts and a portion of the existing tennis courts. Proposed phase 1 improvements for this drainage area include the entire proposed tennis warming hut. Stormwater will flow from the impervious platform tennis court and warming hut into infiltration basins adjacent to the new impervious surfaces. Stormwater flowing from undisturbed pervious areas to the south will sheet flow to DP-8 and ultimately flow to the Webatuck Creek. Additional SMPs will be implemented in this drainage area as further improvements are proposed in later phases.

DA-5 contains the southeast corner of the existing tennis courts, the existing wellness barn, and the existing pole barn. DA-5 is bound to the east by the Webatuck Creek. There are no phase 1 improvements proposed for this drainage area. Stormwater in this phase will sheet flow to the Webatuck Creek to the east of the drainage area. SMPs will be implemented in this drainage area as improvements are proposed in later phases.

DA-6 contains the existing Delameter House, northeast corner of the existing tennis courts, and existing pool and associated facilities. There are no phase 1 improvements proposed for this drainage area. Stormwater in this phase will sheet flow to the east into the Webatuck Creek. SMPs will be implemented in this drainage area as improvements are proposed in later phases.

DA-7 contains the Webatuck Creek and small floodplain area to the east of the creek. This drainage area is bound to the east by Leedsville Road. Proposed phase 1 improvements for this drainage area include the Creekside Cabins, picnic area, a 5-space chip and seal parking area, and associated utilities for the proposed cabins. There will be no disturbance of existing impervious, therefore, no SMPs are required to treat the disturbed existing impervious cover. Stormwater from the new impervious surfaces

created by the 5 Creekside Cabins and associated parking area will be captured using an infiltration basin located downslope of the phase 1 improvements, in conjunction with a pea gravel diaphragm for pretreatment. The stormwater will sheet flow from the new parking area to the infiltration basin, and the proposed cabin roofs will either sheet flow into the diaphragm or disconnected roof leaders will sheet flow into the diaphragm. The remainder of the stormwater will fall on pervious surfaces and either infiltrate into the groundwater or sheet flow into the Webatuck Creek to the southwest of the drainage area.

DA-8 contains the existing access road from Leedsville Road, existing pond that outlets into Webatuck Creek, and the existing Century Lodge with 16-space parking area and associated utilities. Proposed phase 1 improvements include the construction of a new gatehouse with employee parking and associated utilities. 3,633 square feet (0.0834 ac) of disturbed existing impervious cover will be subjected to 25% WQ_v treatment. Two infiltration trenches along the entry road, IT-2 and IT-3, will accept runoff from the disturbed impervious areas. Stormwater runoff generated by the proposed gatehouse and will flow into one of two stormwater management practice areas. SF-1 will accept runoff from the northern and eastern half of the gatehouse's roof, while BR-1 will accept runoff from the remaining portion of the gatehouse roof.

DA-9 contains the existing caretaker house, existing Manor House, a portion of the existing garden house, and associated utilities and parking areas for the aforementioned structures. DA-9 is bound to the east by the Webatuck Creek, and bound to the west by Yellow City Road. Proposed phase 1 improvements for this area include the conversion of the existing caretaker house into a bakery with a patio and all associated utilities. The area of the existing parking lot will also be decreased. As these improvements will reduce the disturbed existing impervious cover by 1,830 square feet, and the bakery addition is proposed to convert 105 square feet of existing impervious cover (compacted gravel parking lot) to impervious building space, the redevelopment threshold of 25% reduction of existing impervious cover for this drainage area has been met as this proposed improvement will decrease the disturbed existing impervious area by 40%. The compacted gravel parking lot between the existing gravel road and the Webatuck Creek will be subject to soil restoration prior to the construction of the proposed deck. No additional stormwater management practices are proposed for this drainage area in this phase.

The Post-Development Stormwater Drainage Plan shows the stormwater collection and treatment system for the site and is included in Appendix G.

A pre-development and post-development comparison of the 1-year, 10-year, and 100-year pre- and post-development stormwater runoff analysis was performed using the results of the hydraulic analysis completed with HydroCAD 10.0, located in Appendix D.

Table 3-2 below compares the total flow rates for 1, 10, and 100-year storm events for the pre- vs. post-development with proposed site mitigation.

Table 3-2 Pre vs. Post Development Phase 1 Peak Flow Rates

PRE vs POST DEVELOPMENT COMPARISON					
DRAINAGE AREA	**AREA (AC)**	**STORM EVENT**	**PRE-DEV RUNOFF (cfs)**	**POST DEV RUNOFF (cfs)**	**PRE vs POST Δ%**
DA-1/DP-1	22.6	1-year	0.09	-	-
		10-year	3.94	-	-
		100-year	25.57	-	-
DA-2/DP-3	2.17	1-year	0	0	0%
		10-year	0.02	0.02	0.00%
		100-year	1.12	1.11	-0.89%
DA-3/DP-9	5.05	1-year	0	-	-
		10-year	0.07	-	-
		100-year	2.77	-	-
DA-4/DP-8	2.25	1-year	0	0	0.00%
		10-year	0.24	0.24	0.00%
		100-year	2.82	2.81	-0.35%
DA-5/DP-7	4.3	1-year	0	-	-
		10-year	0.24	-	-
		100-year	4.03	-	-
DA-6/DP-6	4.16	1-year	0.01	-	-
		10-year	0.83	-	-
		100-year	7	-	-
DA-7/DP-5	3.42	1-year	0	0	0.00%
		10-year	0.05	0	-100.00%
		100-year	2.24	0	-100.00%
DA-8/DP-2	4.16	1-year	0	0	0.00%
		10-year	0.07	0.07	0.00%
		100-year	2.7	2.62	-2.96%
DA-9/DP-4	8.19	1-year	0	0	0.00%
		10-year	0.14	0.11	-21.43%
		100-year	3.06	2.73	-10.78%

Table 3-2 demonstrates that the proposed site Stormwater Management improvements mitigate the stormwater runoff generated by this redevelopment.

It is important to note that this proposed management plan reduces stormwater runoff from the site by 20% for the 100-year storm, 60% for the 10-year storm, and does not generate any runoff from the 1-year storm event for the disturbed areas within the project site. There are little to no change in the runoff for DP-3 and DP-8 as the platform tennis court and warming hut add small amounts of impervious surfaces relative to the drainage area size. The runoff generated from these two structures are treated in their entirety.

4 WATER QUALITY AND QUANTITY CONTROLS

Each proposed stormwater management practice is designed in accordance with this section.

4.1 UNIFIED STORMWATER SIZING CRITERIA

The unified stormwater sizing criteria is used to analyze the impacts of a proposed development and to develop stormwater management practices that reduce erosion, prevent overbank flooding, and help control extreme floods. These criteria as presented in Chapter 4 of the SWMDM, provides a means for sizing stormwater practices for such sites. The following outlines the analysis and findings of said criteria as it applies to this particular project. Copies of the detailed Unified Sizing Criteria calculations for this project can be found in Appendix E.

4.1.1 Waivers

The SWMDM outlines specific instances in which any and/or all of the unified stormwater sizing criteria may be waived due to a number of varying circumstances. Such circumstances allow the designer and owner/operator to waive the requirements when designing stormwater management practices. The following practices identify each of the unified stormwater sizing criteria and under which conditions each criterion may be waived.

The Channel Protection Volume (CP_v) may be waived if the entire volume is recharged at the site. It may also be waived if the site discharges directly to tidal waters or fifth order or larger streams. Additionally, the Channel Protection Volume (CP_v) may be waived if a downstream analysis reveals that channel protection is not required.

The Overbank Flood Control requirement (Q_p) may be waived if the site discharges directly to tidal waters of fifth order or larger streams. Additionally, the Overbank Flood Control requirement (Q_p) may be waived if a downstream analysis reveals that overbank flood control is not required.

The Extreme Flood Control requirement (Q_f), or 100-year storm control, may be waived if the site discharged directly to a fifth order of larger stream. If the development is prohibited within the ultimate 100-year floodplain the Extreme Flood Control criteria (Q_f) may be waived. Finally, if a downstream analysis reveals that 100-year storm control is not required, the criteria may be waived.

Being partially a redevelopment project, the site contains an area of existing development that contains existing impervious surface, and the site contains an area of new development, some of which is within the existing developed area and some of which is adjacent to the existing developed areas. All requirements outlined within the SWMDM for the given conditions have been met.

4.1.2 Water Quality Volume

Chapter 9 also gives regulatory guidance on the calculation of the water quality volume (WQ_v) that is required to be managed on a redeveloped site. Section 9.2.1.B.II states that 25% of the calculated WQ_v is required to be captured and treated for the existing

impervious area and 100% of the WQv is required for any new impervious area created by the project using NYSDEC approved stormwater management practices (SMPs). Table 4-1 below summarizes the calculations for the WQ_v.

$$WQ_V = \frac{P * R_V * A}{12}$$

Where:

WQ_V	=	Water Quality Volume in acre-feet
P	=	90% Rainfall Event Number in inches
R_V	=	0.05 + 0.009(I), minimum R_V of 0.2
A	=	Site Area in acres
I	=	Impervious Cover as a Percentage

Table 4-1 Phase 1 Post Development WQv Requirements Summary

Drainage Area ID	Drainage Area (ac)	Total Existing Disturbed Impervious (ac)	Total New Impervious (ac)	100% New WQv (ac-ft)	25% Existing Disturbed (ac-ft)	Total WQv (ac-ft)
DA-1	22.619	-	-	-	-	-
DA-2	2.180	-0.007	0.025	0.0129	0*	0.015
DA-3	5.053	-	-	-	-	-
DA-4	2.249	0	0.0044	0.0120	0	0.012
DA-5	4.301	-	-	-	-	-
DA-6	4.165	-	-	-	-	-
DA-7	3.424	0.0695	0.153	0.0309	0*	0.031
DA-8	4.162	0.0834	0.0282	0.0228	0.007	0.030
DA-9	8.195	-0.0420	0	0	0*	0
Total	56.345	0.1529	0.231	0.075	0.007	0.088

*Denotes that the 25% Existing Disturbed WQv requirement has been satisfied by a reduction in existing disturbed impervious cover by 25% or greater.

Table 4-1 above shows the calculated change in impervious area and the volume of WQ_v storage required for the existing disturbed (25%) and newly created (100%) impervious area combined for the entire site.

In accordance with the SWMDM the volume of the required pretreatment for infiltration practices is dependent on the infiltration rate of the receiving soils. Percolation tests conducted in the field in DA-7 yielded infiltration rates of greater than 5 in/hour infiltration, requiring that 100% of the WQv must be pretreated prior to infiltration (*NYSDEC SWMDM Section 6.3.3-Pretreatment*).

Table 4-2 below summarizes the pretreatment method for each practice.

Table 4-2 Pretreatment Calculation Summary

Treatment Practice	Pretreatment Method
Infiltration Trenches and Basins	Bottom Sand Layer, Grass Filter Strips, Washed Bank Run Gravel as Aggregate, Pea Gravel Diaphragm
Bioretention Areas	Pea Gravel Diaphragm, Grass Filter Strips, Sediment Forebay
Sand Filter	Pea Gravel Diaphragm
Dry Swales	Pea Gravel Diaphragm and Grass Filter Strips

4.1.3 Runoff Reduction Volume (RR_v)

Section 4.3 of the SWMDM describes the calculation for Runoff Reduction Volume (RR_v). Table 4-3 below shows the calculated values for RR_v for the drainage areas where new impervious cover is proposed. Please note that in accordance with the SWMDM, meeting the RR_v sizing criteria is not required for the redevelopment activity portion of a project. Therefore, the RR_v calculation is based on the new impervious areas only.

Table 4-3 Runoff Reduction Volume Requirements Summary

Drainage Area ID	Drainage Area (ac)	Total New Impervious (ac)	Min RRv Required (ac-ft)	Min RRv Required (cu-ft)
DA-1	22.619	0	-	-
DA-2	2.177	0.0298	0.00010	4.45
DA-3	5.053	0	-	-
DA-4	2.249	0.008	0.00002	1.02
DA-5	4.301	0	-	-
DA-6	4.165	0	-	-
DA-7	3.424	0.1528	0.00076	33.09
DA-8	4.162	0.022	0.00007	2.90
DA-9	8.195	0	-	-
Total	56.345	0.2126	0.00095	41.46

4.1.4 Channel Protection Volume (CP_v)

Section 4.4 of the SWMDM describes the calculation for Channel Protection Volume (CP_v) based on a 1-year event. The purpose of the CP_v is to protect stream channels from erosion.

In accordance with Chapter 9, the CP_v does not apply to this project's redevelopment activities, including the new development, because the analysis shows that there is no change to hydrology that increases the discharge rate from the project site. The analysis shows that both the CP_v meets the SWMDM requirement without the need for traditional storage volumes.

For this project, the proposed management plan significantly reduces stormwater runoff from the site without the need for providing additional storage to reduce the 1-year flow peaks. The runoff generated by the 1-year storm with respect to the phase 1 improvements is able to be infiltrated in its entirety by the proposed SMPs. The 10 and 100-year storms are similarly attenuated, with our SMPs reducing runoff by 100% for the 10-year storm.

4.1.5 Overbank Flood Protection Volume (Qp_{10}) and Extreme Flood Protection Volume (Qf_{100})

Section 4.5 of the SWMDM provides calculations for Overbank Flood Protection Volume (Qp_{10}) based on a 10-year storm event. The purpose of the Qp_{10} is to prevent an increase in the frequency and magnitude of out-of-bank flooding that in turn protects the channel from increased erosion. Section 4.6 of the SWMDM provides calculations for Extreme Flood Control Volume (Qf_{100}) based on a 100-year storm event. The purpose of the Qf_{100} is to prevent the increased risk of flood damage from large storm events and to maintain the predevelopment 100-year floodplain boundaries.

In accordance with Chapter 9, the 10-year and 100-year criteria do not apply to these redevelopment activities, including the new development, because the analysis shows that there is no change to hydrology that increases the discharge rate from the project site. The analysis shows that both the Qp_{10} and the Qf_{100} meet the SWMDM requirements without the need for traditional storage volumes. As demonstrated in Table 3-2, the proposed management plan reduces stormwater runoff from the site for the 10-year event by 100% and for the 100-year event by 12% or greater for each of the drainage areas disturbed in phase 1.

4.2 STORMWATER MANAGEMENT PRACTICES

As noted in Section 3 of this report, the SMPs selected for phase 1 will be comprised of infiltration trenches, dry swales, and stormwater planters.

4.3 STORMWATER MANAGEMENT PRACTICE MAINTENANCE

The maintenance of all stormwater management practices will be the responsibility of the contractor during the course of construction and will be the property owner's/operator's responsibility after construction is complete. SMP selection and maintenance tables (Tables 5.1-5.5) list the practices with detailed information concerning the maintenance of the SMPs and is discussed in Section 5 of this report.

The proposed stormwater management practices shall be inspected once every seven (7) days. The inspection reports shall be kept within the Construction Log book located in an accessible onsite location. Upon completion of construction, the owner/operator will retain responsibility for all SMP maintenance.

4.4 POLLUTION PREVENTION MEASURES

Non-structural stormwater controls will focus on preventing non-sediment related pollutants from entering stormwater runoff, sediment control structures, storm drainage systems, and receiving bodies of water. Pollutants that may be generated on a construction site and could potentially enter stormwater runoff from the site if not controlled include gasoline, oils, grease, paints, solvents, paper, plastics, Styrofoam, aluminum cans, glass bottles, solid or liquid waste and raw materials such as sand, aggregate and cement. “Good housekeeping” practices shall be used to prevent these pollutants from entering the site stormwater discharges. The following measures are to be taken to control the accidental exposure of materials and substances to stormwater runoff.

- Solid waste shall be disposed of in waste receptacles of adequate capacity at convenient locations to site workers. Regular collection and disposal of the collected wastes shall occur as needed.
- Storage areas will be protected from stormwater in accordance with any manufacturer’s guidelines for storage of chemicals, paints, solvents, acids, pesticides, fertilizers, or other potential pollutants.
- Raw construction materials shall be stored in areas controlled by retention-type sediment control devices.
- Equipment wash down areas shall be designated on site and in areas draining to regularly maintained sediment control devices. Equipment maintenance areas are to be protected from stormwater and shall be designated and shall include appropriate waste receptacles for spent oils, gasoline, grease and solvents. Accumulated waste shall be regularly collected as needed.
- Sanitary facilities shall be provided in convenient locations to site workers and shall be adequately maintained.
- Any spill of chemicals including oil, hazardous materials, chemicals, etc. should be reported as required and the necessary clean-up measures put in place.

5 EROSION AND SEDIMENT CONTROL

The stormwater pollution prevention plan reflects the New York State requirements for erosion and sediment control. To ensure compliance, this plan was prepared in accordance with the New York State standards outlined in the New York Standards and Specifications for Erosion and Sediment Control (2016).

5.1 EROSION AND SEDIMENT CONTROL MEASURES

The erosion and sediment control measures shall be constructed prior to clearing and/or grading of any area of the proposed project. When construction activity temporarily

ceases, areas shall be stabilized with temporary seed and mulch within 14 days of the last disturbance activity. Additionally, all erosion and sediment control practices outlined on the erosion and sediment control and grading plans are to be installed prior to disturbance. All practices are to be designed and installed in accordance with the New York Standards and Specifications for Erosion and Sediment Control (2016). A description of the temporary structural measures proposed is as follows:

Table 5-1 Temporary Erosion Control Measures

Erosion Control Measure	In Use	Description
Silt Fence	X	Temporary geo-textile fabric barrier
Compost Filter Sock		Temporary degradable geo-textile with compost filter media
Stabilized Construction Entrance	X	Aggregate underlain with geo-textile where traffic enters site
Stabilized Stockpile	x	Stockpiles stabilized with mulch or vegetation, and silt fence installed at toe of slope
Concrete Washout Area	x	Isolated area which captures wash water from concrete trucks to prevent flow of high alkalinity water into the watershed
Storm Drain Inlet Protection	X	Temporary permeable barrier installed around storm inlets

Table 5-2 Vegetative Erosion Control Measures

Vegetative Measures	In Use	Description
Mulching	X	Use of straw along with vegetation
Protection of Vegetation	X	Protection of existing plants
Seeding	X	Use of grass seed for stabilization
Topsoiling	X	Spreading and depth of topsoil

Table 5-3 Permanent Erosion Control Measures

Permanent Measures	In Use	Description
Land Grading	X	Grading of sloped to prevent erosion
Level Spreaders for Roof Leaders	X	Causes stormwater to sheet flow for a lower velocity and erosion prevention
Soil Restoration	X	Decompaction of previously disturbed areas.

5.2 EROSION AND SEDIMENT CONTROL MAINTENANCE

A combination of temporary and permanent erosion control measures shall be installed on site per the provided plans. All catch basins and drainage inlets are to be protected using filter fabric drop inlet protection. All inlets and outlets of drainage pipe and culverts will be stabilized with rock rip-rap outlet and inlet protection. Slopes and other disturbed areas will be protected with silt fence and shall be temporarily seeded and mulched during the construction phase as necessary.

Excavated stockpile soils and other material will be stabilized on site in a temporary soil stockpile. The area in which the soil will be stockpiled will be determined and located as necessary during the course of construction.

Upon completion of construction, any temporary sediment and erosion control measures will be removed from the site and the site will be stabilized with a permanent seed mixture. Once permanent seeding has occurred the area will be mulched in accordance with the plans.

Vegetative and structural erosion control practices shall be maintained, repaired, or cleaned as per the SMP maintenance schedule or on a weekly basis, by a qualified individual. The owner or operator shall have a trained contractor inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times.

A qualified inspector shall conduct site inspections for sites with on-going soil disturbance activities at least once every seven (7) calendar days. Such inspections are to be conducted by either a New York State Licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training. Inspection schedules for temporary and permanent SMPs are shown in Table 5-4 and Table 5-5 below.

Table 5-4 Temporary SMP Maintenance Schedule

Erosion and Sediment Control Measure	Inspection & Maintenance Intervals	Inspection/Maintenance Requirements
Stabilized Construction Entrance	Weekly	Periodic top dressing with additional aggregate as required. Clean sediment in public rights-of-way immediately.
Inlet Protection	Weekly	Verify that the fabric protection is intact. Remove sediment that has collect in the fabric.
Silt Fence and Compost Filter Sock	Weekly	Remove & redistribute sediment when bulges develop in the silt fence or sediment build-up along filter sock.

Table 5-5 Permanent SMP Maintenance Schedule

Erosion and Sediment Control Measure	Inspection/Maintenance Intervals	Inspection/Maintenance Requirements
Land Grading	Bi-Annually (Spring and Fall)	Check for uneven settling and cavities, re-contour where necessary, then seed and mulch.
Bioretention Area	Quarterly	Clean out sediment from pretreatment structure when accumulated to a depth of >6". Silt/sediment shall be removed from the filter bed when the accumulation exceeds one inch. When the filtering capacity of the filter diminishes substantially (i.e., when water ponds on the surface of the filter bed for more than 48 hours), the top few inches of discolored material shall be removed and shall be replaced with fresh material. The removed sediments shall be disposed in an acceptable manner (i.e., landfill). Re-mulch on an annual basis. Dead or diseased plant material shall be replaced.
Dry Wells	Bi-Annually (Spring and Fall)	Check for evidence of sediment buildup, Remove any trash or debris. Clean sediment as necessary.
Infiltration Trenches and Basin	Bi-Annually (Spring and Fall)	Check for evidence of sediment buildup, Remove any trash or debris. Inspect after large storm events. Clean sediment from structure as necessary.
Dry Swales	Bi-Annually (Spring and Fall)	Check for evidence of sediment buildup, Remove any trash or debris. Clean sediment as necessary. Vegetation in dry swales is mowed as required during the growing season to maintain grass heights in the 4 to 6-inch range.

Upon completion of site and/or phase stabilization, all temporary erosion and sediment control measures shall be removed by the contractor. Permanent erosion and sediment control measure shall be inspected to ensure that they are installed as per the plans and will function properly.

During construction the maintenance of the temporary and permanent SMPs shall be the responsibility of the site contractor. Upon submission of the NOT to the NYSDEC the maintenance responsibility for the permanent SMPs shall fall to the property owner. For post-construction stormwater management practices that are privately owned, the owner or operator shall have a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

6 CONSTRUCTION SCHEDULE

Construction will begin after a SPDES General Permit #0-20-001 “Notice of Intent” (NOI) has been filed with the New York State Department of Environmental Conservation. Following the filing of the permit and upon receiving notice that the permit has been filed, all erosion and sediment control measures are to be installed in accordance with the plans and the New York Standards and Specifications for Erosion and Sediment Control (2016). Following their installation, site work shall be scheduled as noted on the Erosion and Sediment Control Plan. During the course of construction, all stormwater management practices shall be maintained and replaced as required by subsequent stormwater inspections and as deemed necessary for the adequate function of all practices. When construction is complete all temporary stormwater management practices shall be removed, all permanent stormwater practices shall be inspected, fixed, and or regraded as necessary per the plans provided.

Once construction is complete and the site has been permanently stabilized, a “Notice of Termination for Stormwater Discharges Associated with Construction Activity” (“Notice of Termination”) shall be filed with the New York State Department of Environmental Conservation. All stormwater management practices and permanent erosion and sediment control measures will be inspected as per the post construction inspection outlined in the New York Standards and Specifications for Erosion and Sediment Control (2016) and the SPDES General Permit GP-0-20-001. Appendix F includes a Construction Log Book with the required forms and documents for onsite inspection of the SMP installation, inspection, and maintenance.

7 CONCLUSION

This Stormwater Pollution Prevention Plan will minimize erosion and sediment problems on land undergoing development as well as meet New York State Department of Environmental Conservation pollutant removal goals.

As previously noted, a portion of this project is partially considered redevelopment and is therefore subject to the design requirements of Chapter 9: Redevelopment Projects from the New York State Stormwater Management Design Manual, 2015 (NYS SWMDM).

Chapter 9 recognizes that redeveloped sites may have difficulty achieving the goals of the current SWMDM design criteria because these regulations were created to address new development. Therefore, Chapter 9 sets forth alternatives for certain redevelopment

projects. The portions of the project site with new impervious cover will be considered new development and have been designed to meet the criteria in chapter 4 of the NYSDEC SWMDM.

Performance criteria for the selected SMPs is based on the practice design as noted in Chapter 6 of the SWMDM. These criteria were strictly followed on this project.

A summary of the stormwater design provides the following:

- The NYSDEC SWMDM was strictly followed in the site evaluation and the SMP selection process.
- The selected SMPs provide and maintain Water Quality and Water Quantity volumes for the site.
- Stormwater pretreatment will be provided as required to mitigate contaminant transport.

Also included in the appendices are contractor and owner certifications and forms, which are to be signed, and an original copy of this report, certification, and plans are to be kept at the job site. Prior to the start of any construction activity the Notice of Intent (GP #0-020-001) must be filed with the New York State Department of Environmental Conservation. Upon stabilization and completion of construction activities a Notice of Termination of the GP #0-20-001 must be filed with the New York State Department of Environmental Conservation.

APPENDIX A

SPDES general Permit GP0-0-20-001

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

Table of Contents

Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* (“SWPPP”) the reason(s) for the

deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharge*s are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharge*s that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

(i) No Affect
(ii) No Adverse Affect
(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the “MS4 SWPPP Acceptance” form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

c. the final SWPPP has been prepared, and

d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are <u>not</u> subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has <u>not</u> been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

    a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with

the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharge*s from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

    a. Background information about the scope of the project, including the location, type and size of project

b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River **-** Figure 1
- Onondaga Lake Watershed **-** Figure 2
- Greenwood Lake Watershed **-**Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

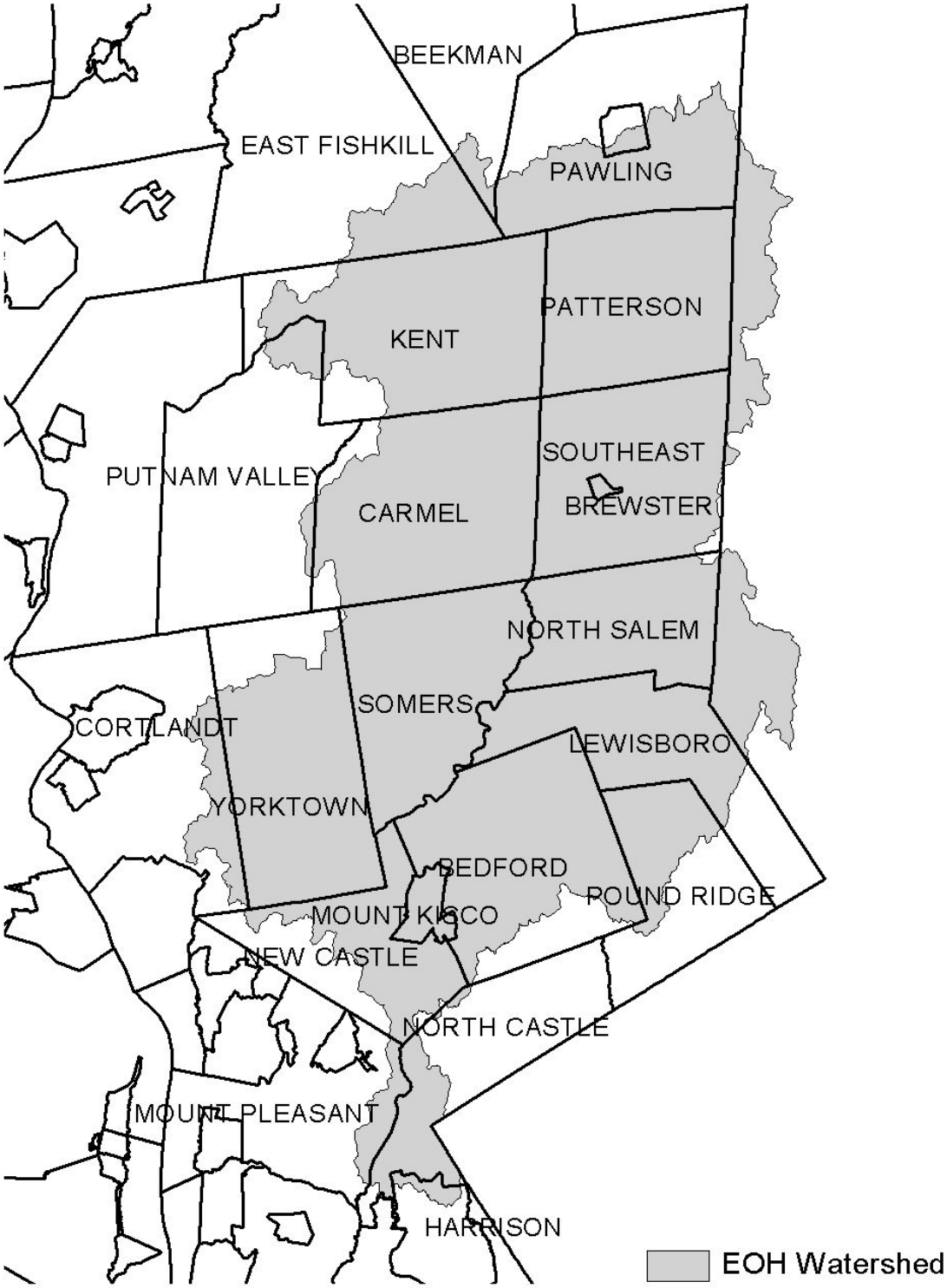


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

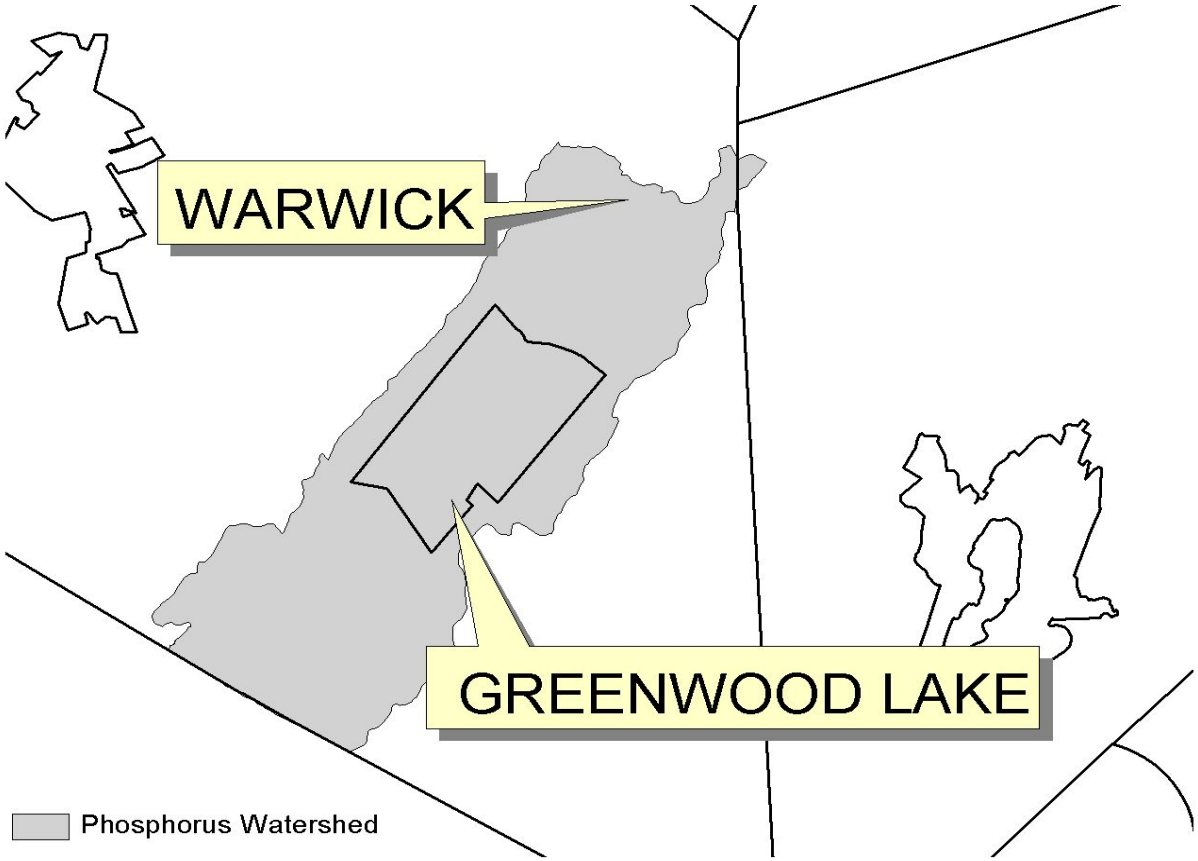


Figure 4 - Oscawana Lake Watershed

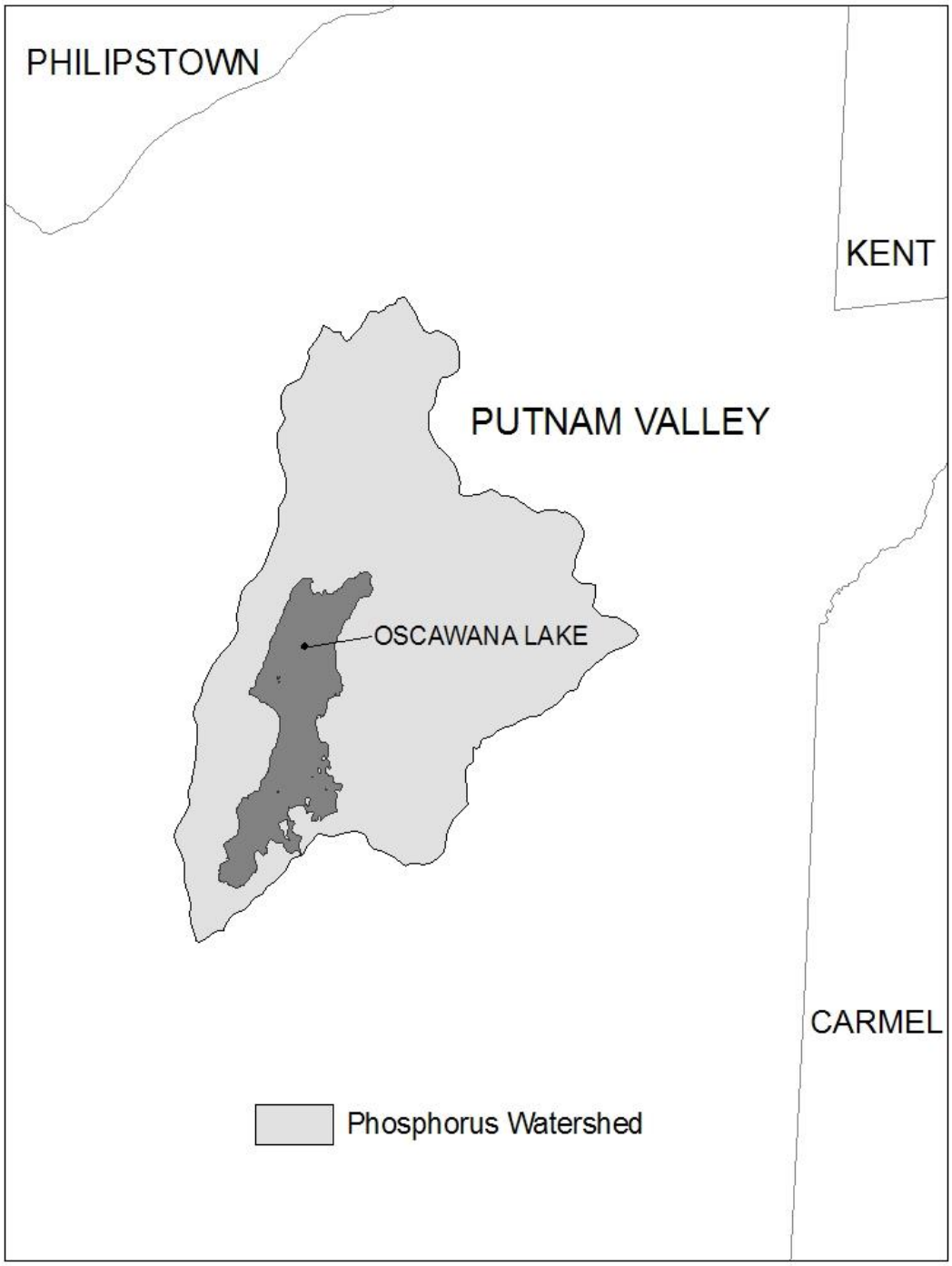
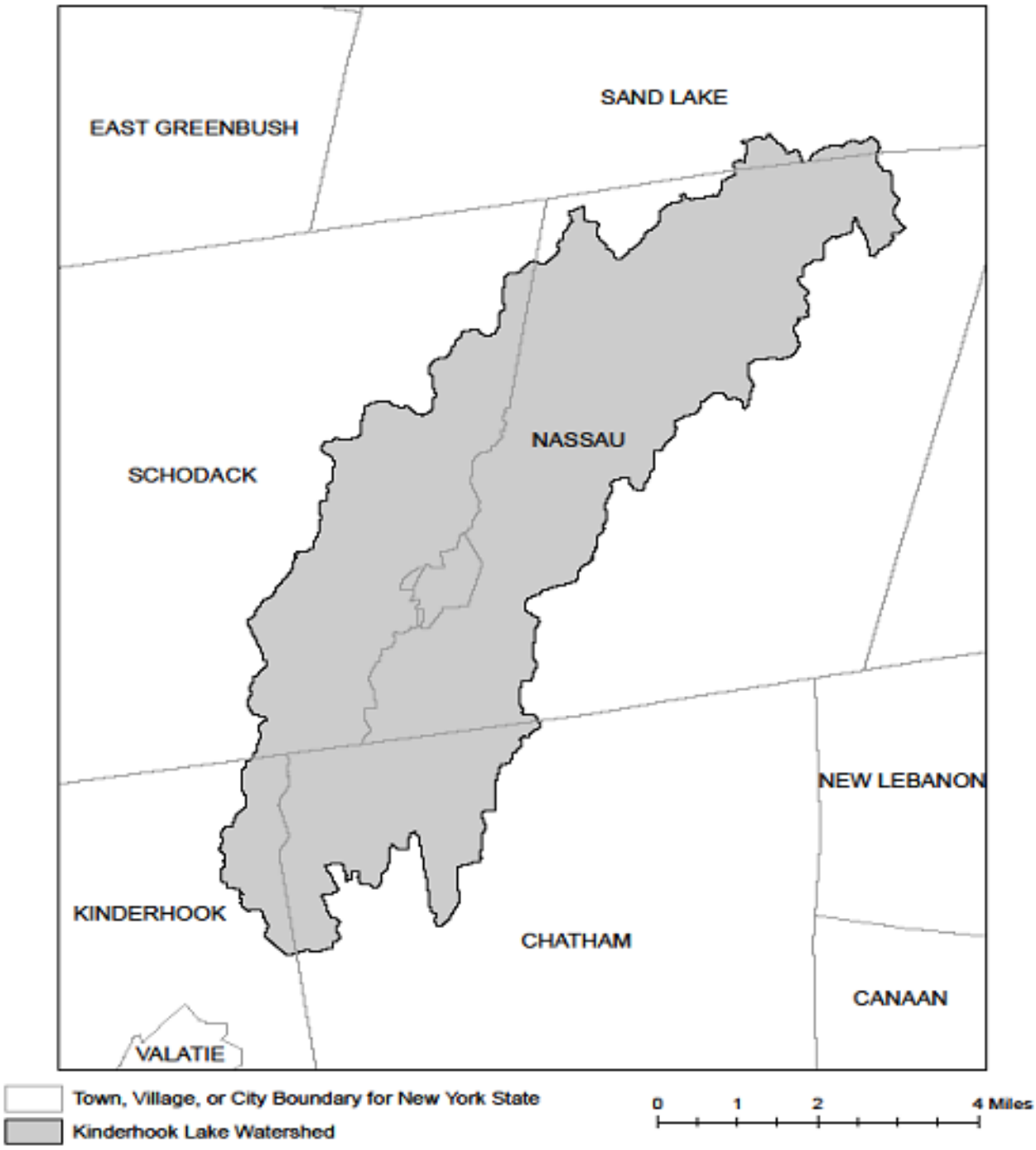


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River **-** See Figure 1 in Appendix C

APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

APPENDIX B

Site Soils Information

Endangered Species Letter from NYSDEC dated 2017-05-24

Blanding’s Turtle Habitat Assessment Report dated 2017-07-23

STORMWATER PERCOLATION TESTING

Name: Troutbeck Phase 1 SW (T)(V)(C) Town of Amenia Date: 9/21/2022

TAX GRID #

132000	7267	0	227675					

By: Thomas Harvey

LOCATION	HOLE #	TEST 1	TEST 2	TEST 3	TEST 4	TEST 5	PERCOLATION RATE
Delameter House	1	15 mins for 24"	12 mins for 24"	12 mins for 24"	12 mins for 24"	12 mins for 24"	120" per hour
Creekside Cabins	1	15 mins for 24"	23 mins for 24"	21 mins for 24"	31 min for 24"		64" per hour
Creekside Cabins	2	40 mins for 24"	60 mins for 19"	60 mins for 19"			19" per hour
Tennis Courts	1	10 mins for 24"	10 mins for 24"	10 mins for 24"			144" per hour

APPENDIX C

FIRM Map

CRIS Map

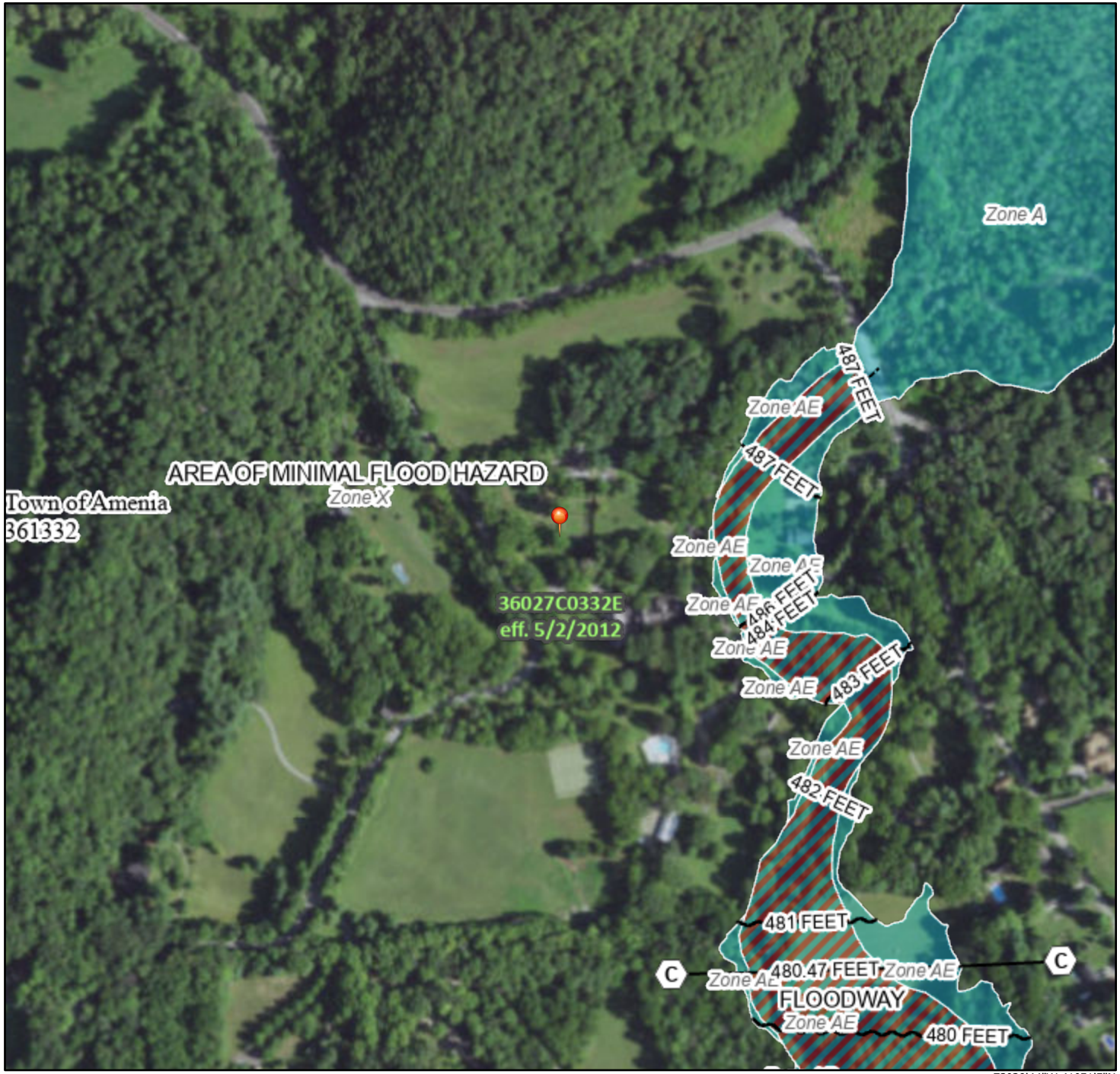
NWIM Map

ERM Map

National Flood Hazard Layer FIRMette

FEMA

73°31'22"W 41°51'32"N



73°30'44"W 41°51'5"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

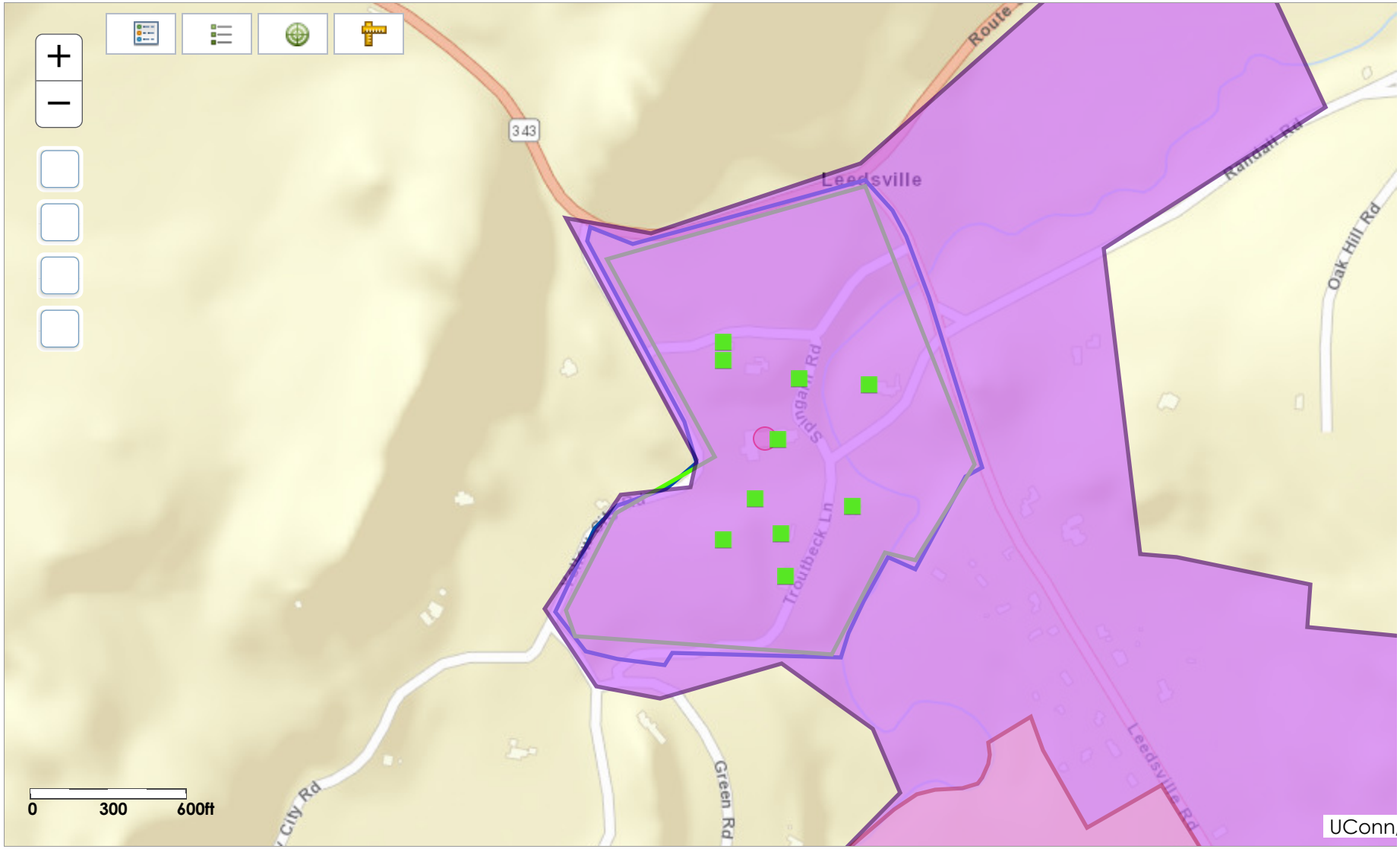
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/19/2022 at 8:06 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

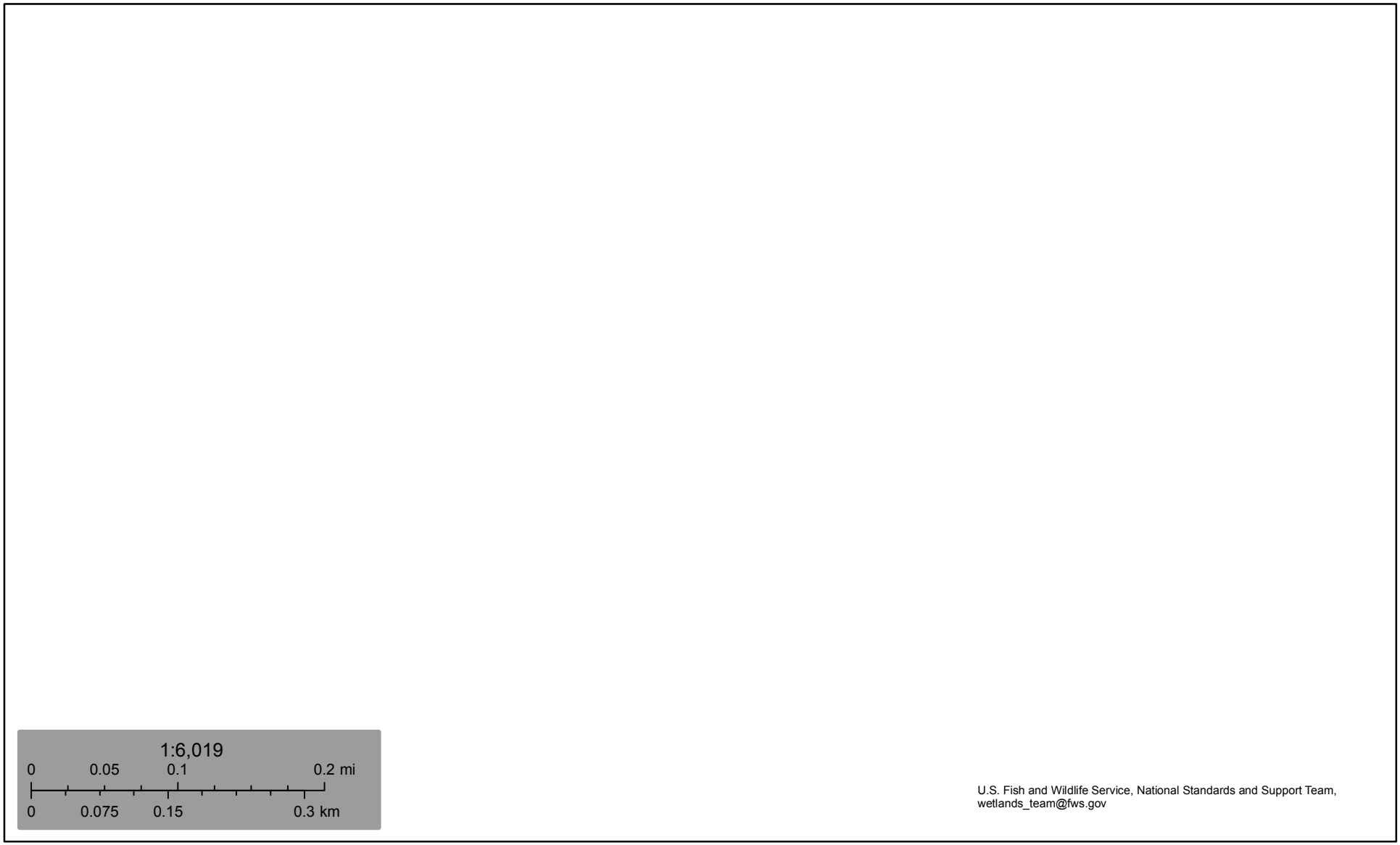
CRIS
Cultural Resource Information System

HOME SUBMIT SEARCH COMMUNICATE



[redacted]

Troutbeck NWIM



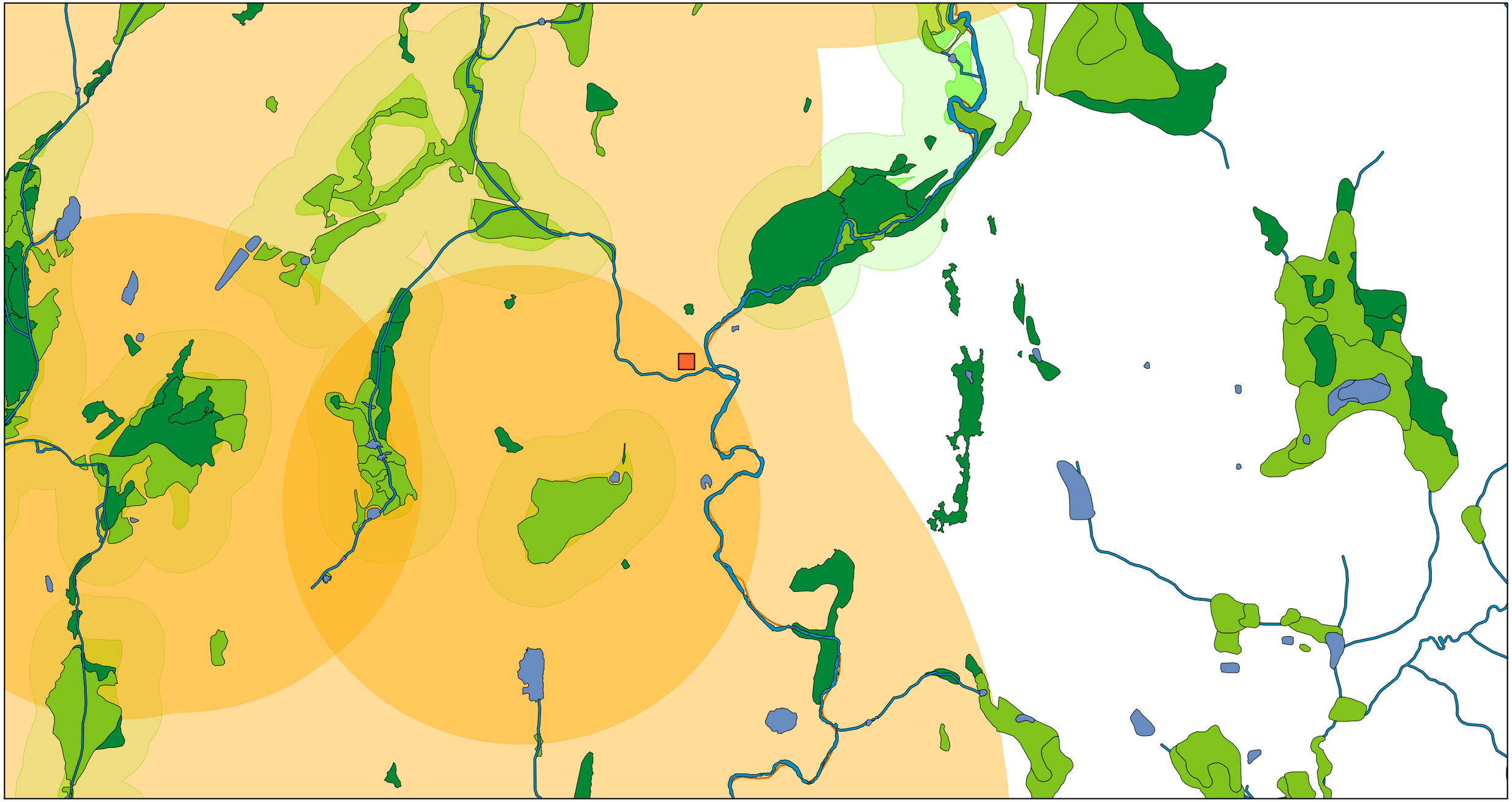
U.S. Fish and Wildlife Service, National Standards and Support Team,
wetlands_team@fws.gov

September 28, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Troutbeck ERM



September 28, 2022

1:18,056

0 0.15 0.3 0.6 mi

0 0.28 0.55 1.1 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Author: Wilson Suzuki
Not a legal document

APPENDIX D

Pre-Developed Drainage Analysis: HydroCAD Report

Unmitigated Post-Development Drainage Analysis: HydroCAD Report

Post-Development Drainage Analysis: HydroCAD Report

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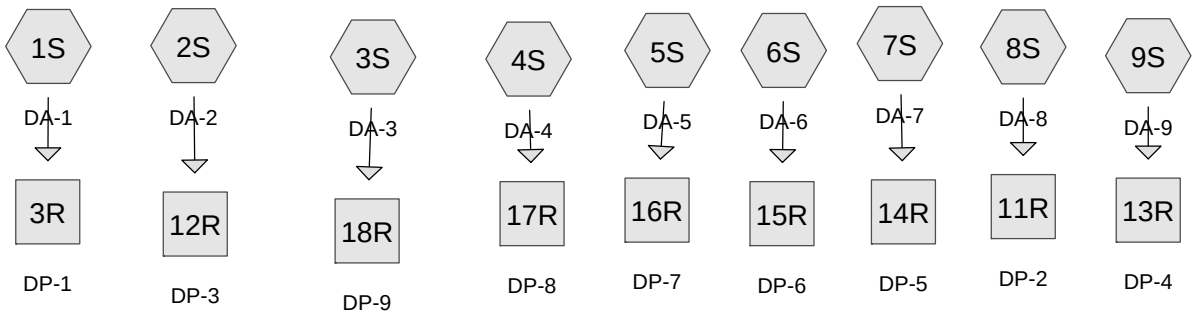


Subcat Reach Pond Link

Routing Diagram for Troutbeck Existing Cond Model
Prepared by Microsoft, Printed 10/11/2022

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
21.846	30	Woods, Good, HSG A (1S, 2S, 3S, 4S, 5S, 7S, 8S, 9S)
23.059	39	Pasture/grassland/range, Good, HSG A (1S, 2S, 3S, 4S, 5S, 6S, 9S)
7.594	77	Woods, Good, HSG D (1S)
1.804	96	Gravel surface, HSG A (1S, 4S, 5S, 6S, 7S, 9S)
0.627	98	Paved parking, HSG A (4S, 5S, 8S)
1.021	98	Unconnected roofs, HSG A (2S, 5S, 6S, 8S, 9S)
0.455	98	Water Surface, HSG A (7S, 8S)
56.406	**45**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
48.812	HSG A	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S, 9S
0.000	HSG B	
0.000	HSG C	
7.594	HSG D	1S
0.000	Other	
56.406		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.627	0.000	0.000	0.000	0.000	0.627	Paved parking	4S, 5S, 8S
1.021	0.000	0.000	0.000	0.000	1.021	Unconnected roofs	2S, 5S, 6S, 8S, 9S
1.804	0.000	0.000	0.000	0.000	1.804	Gravel surface	1S, 4S, 5S, 6S, 7S, 9S
23.059	0.000	0.000	0.000	0.000	23.059	Pasture/grassland/range, Good	1S, 2S, 3S, 4S, 5S, 6S, 9S
21.846	0.000	0.000	7.594	0.000	29.440	Woods, Good	1S, 2S, 3S, 4S, 5S, 7S, 8S, 9S
0.455	0.000	0.000	0.000	0.000	0.455	Water Surface	7S, 8S
48.812	**0.000**	**0.000**	**7.594**	**0.000**	**56.406**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA-1 Runoff Area=22.620 ac 0.00% Impervious Runoff Depth>0.03"
Flow Length=1,906' Slope=0.0540 '/' Tc=51.1 min CN=50 Runoff=0.09 cfs 0.056 af

Subcatchment 2S: DA-2 Runoff Area=2.178 ac 0.51% Impervious Runoff Depth=0.00"
Flow Length=430' Slope=0.1623 '/' Tc=13.0 min CN=36 Runoff=0.00 cfs 0.000 af

Subcatchment 3S: DA-3 Runoff Area=5.054 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=757' Slope=0.0695 '/' Tc=29.5 min CN=38 Runoff=0.00 cfs 0.000 af

Subcatchment 4S: DA-4 Runoff Area=2.249 ac 4.40% Impervious Runoff Depth>0.00"
Flow Length=544' Slope=0.0588 '/' Tc=20.4 min CN=45 Runoff=0.00 cfs 0.000 af

Subcatchment 5S: DA-5 Runoff Area=4.292 ac 9.18% Impervious Runoff Depth=0.00"
Flow Length=1,092' Slope=0.0980 '/' Tc=28.3 min UI Adjusted CN=43 Runoff=0.00 cfs 0.000 af

Subcatchment 6S: DA-6 Runoff Area=4.164 ac 7.13% Impervious Runoff Depth>0.01"
Flow Length=826' Slope=0.1337 '/' Tc=16.6 min UI Adjusted CN=48 Runoff=0.01 cfs 0.005 af

Subcatchment 7S: DA-7 Runoff Area=3.485 ac 9.24% Impervious Runoff Depth=0.00"
Flow Length=575' Slope=0.1184 '/' Tc=18.2 min CN=38 Runoff=0.00 cfs 0.000 af

Subcatchment 8S: DA-8 Runoff Area=181,383 sf 14.17% Impervious Runoff Depth=0.00"
Flow Length=470' Slope=0.0377 '/' Tc=25.9 min UI Adjusted CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment 9S: DA-9 Runoff Area=8.200 ac 4.76% Impervious Runoff Depth=0.00"
Flow Length=1,452' Slope=0.0275 '/' Tc=74.9 min UI Adjusted CN=39 Runoff=0.00 cfs 0.000 af

Reach 3R: DP-1 Inflow=0.09 cfs 0.056 af
Outflow=0.09 cfs 0.056 af

Reach 11R: DP-2 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 12R: DP-3 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 13R: DP-4 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 14R: DP-5 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 15R: DP-6 Inflow=0.01 cfs 0.005 af
Outflow=0.01 cfs 0.005 af

Reach 16R: DP-7 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 17R: DP-8 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 18R: DP-9 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 56.406 ac Runoff Volume = 0.062 af Average Runoff Depth = 0.01"
96.27% Pervious = 54.303 ac 3.73% Impervious = 2.103 ac

Summary for Subcatchment 1S: DA-1

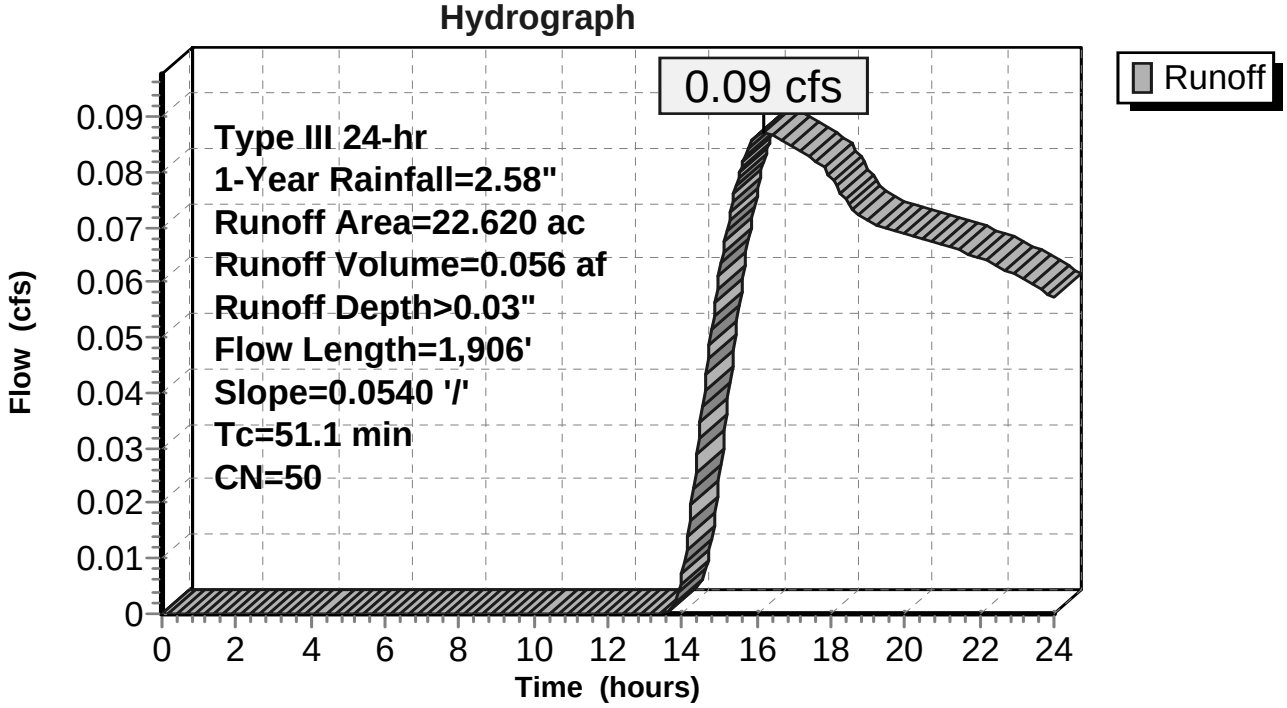
Runoff = 0.09 cfs @ 16.20 hrs, Volume= 0.056 af, Depth> 0.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
7.259	39	Pasture/grassland/range, Good, HSG A
7.409	30	Woods, Good, HSG A
7.594	77	Woods, Good, HSG D
0.358	96	Gravel surface, HSG A
22.620	50	Weighted Average
22.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.1	1,906	0.0540	0.62		**Lag/CN Method,**

Subcatchment 1S: DA-1



Summary for Subcatchment 2S: DA-2

[45] Hint: Runoff=Zero

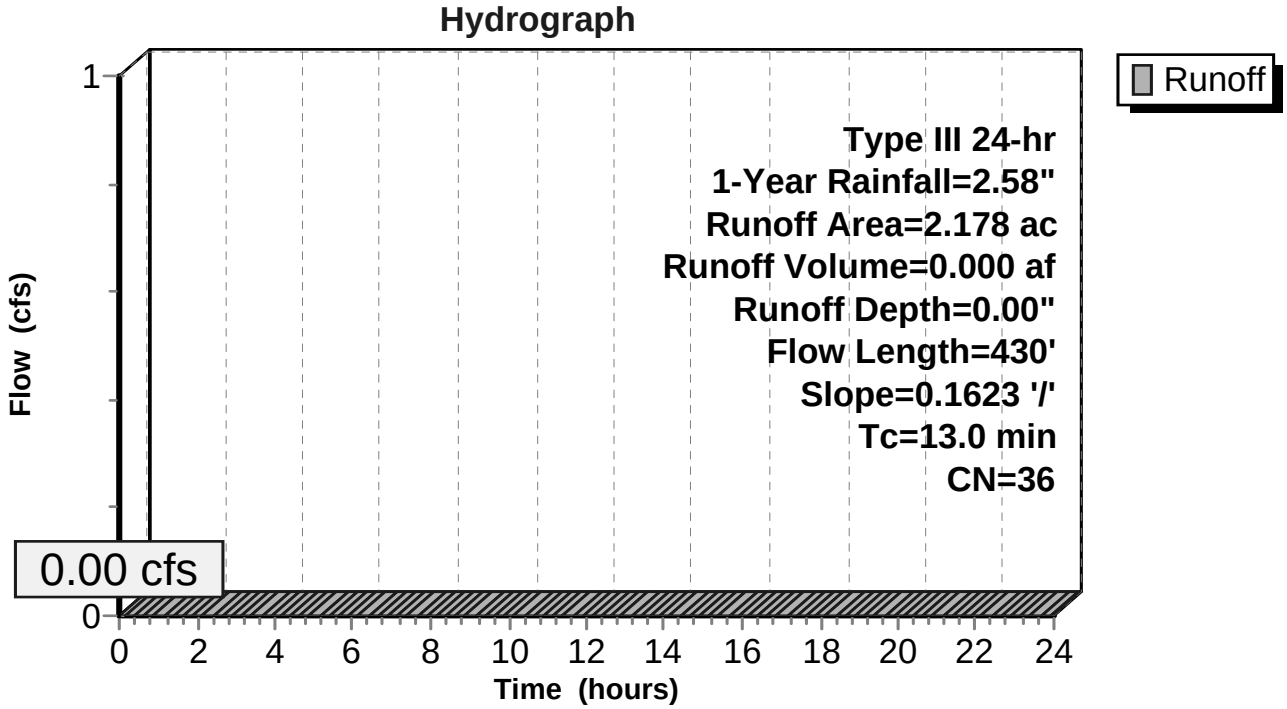
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.748	30	Woods, Good, HSG A
1.419	39	Pasture/grassland/range, Good, HSG A
0.011	98	Unconnected roofs, HSG A
2.178	36	Weighted Average
2.167		99.49% Pervious Area
0.011		0.51% Impervious Area
0.011		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	430	0.1623	0.55		**Lag/CN Method,** Contour Length= 7,700' Interval= 2'

Subcatchment 2S: DA-2



Summary for Subcatchment 3S: DA-3

[45] Hint: Runoff=Zero

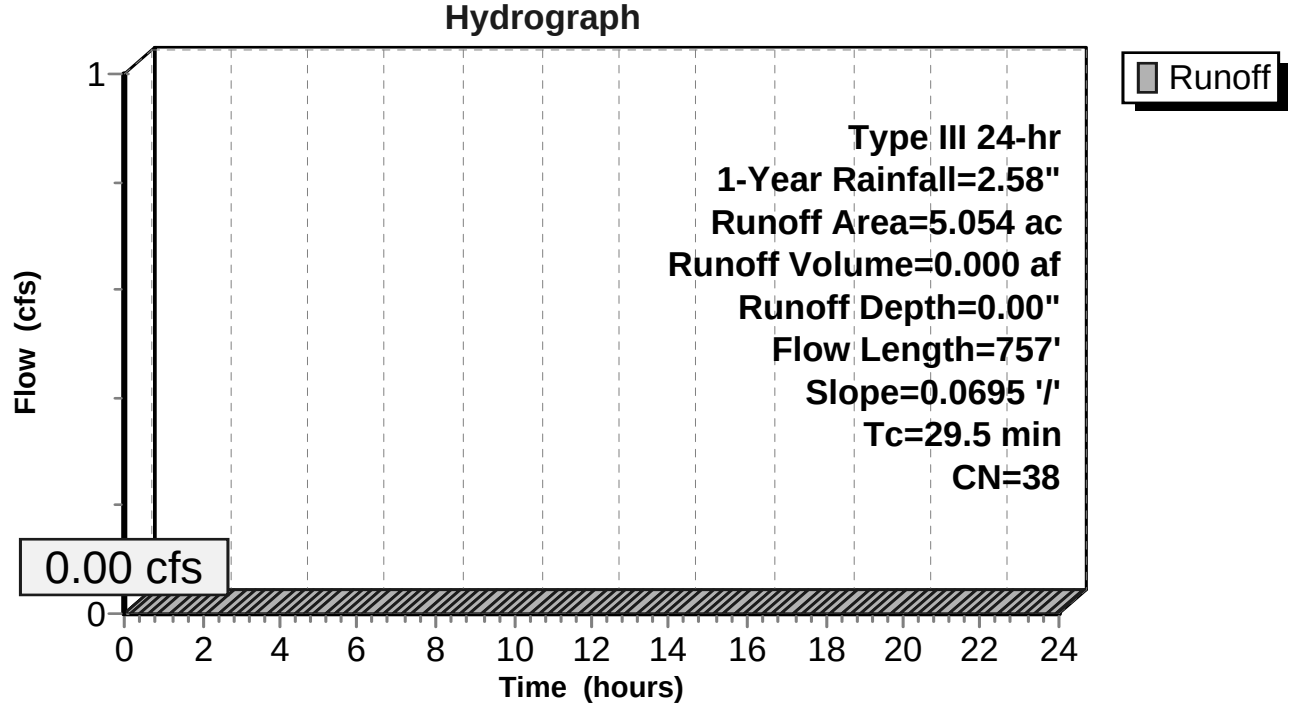
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
4.606	39	Pasture/grassland/range, Good, HSG A
0.448	30	Woods, Good, HSG A
5.054	38	Weighted Average
5.054		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	757	0.0695	0.43		**Lag/CN Method,** Contour Length= 7,650' Interval= 2'

Subcatchment 3S: DA-3



Summary for Subcatchment 4S: DA-4

[73] Warning: Peak may fall outside time span

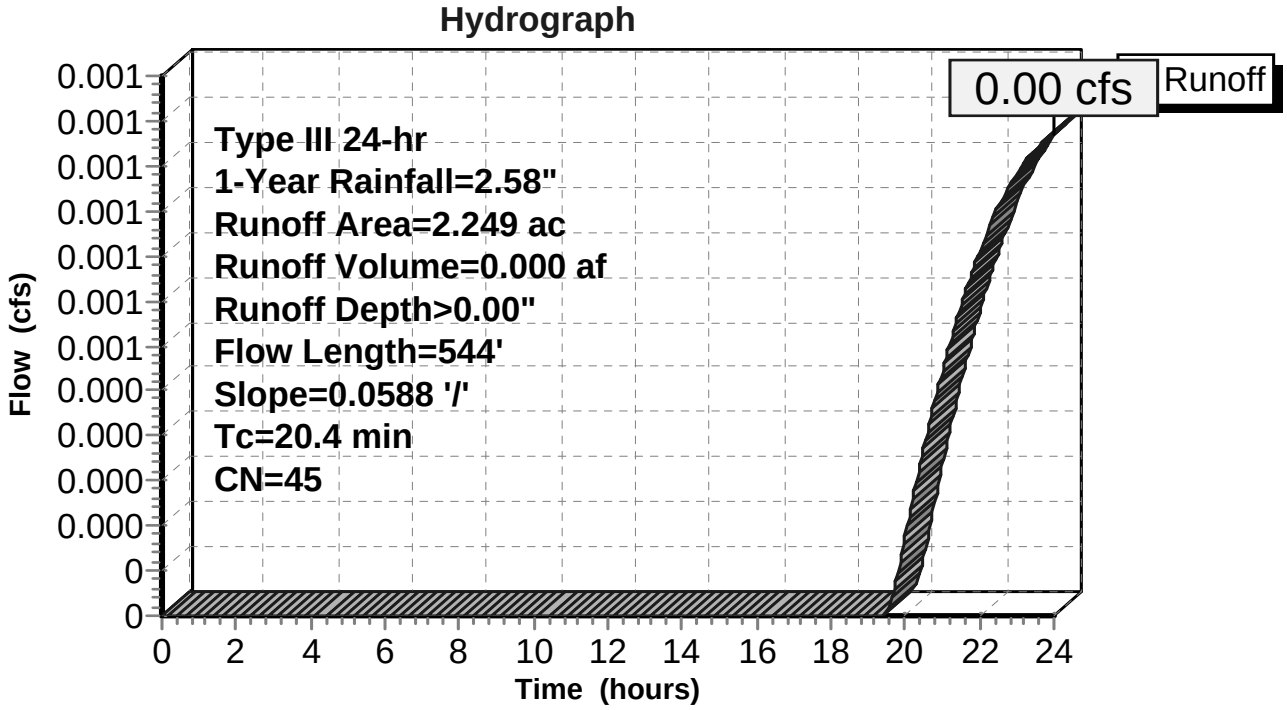
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth> 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
1.930	39	Pasture/grassland/range, Good, HSG A
0.099	98	Paved parking, HSG A
0.080	30	Woods, Good, HSG A
0.140	96	Gravel surface, HSG A
2.249	45	Weighted Average
2.150		95.60% Pervious Area
0.099		4.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	544	0.0588	0.44		**Lag/CN Method,** Contour Length= 2,879' Interval= 2'

Subcatchment 4S: DA-4



Summary for Subcatchment 5S: DA-5

[45] Hint: Runoff=Zero

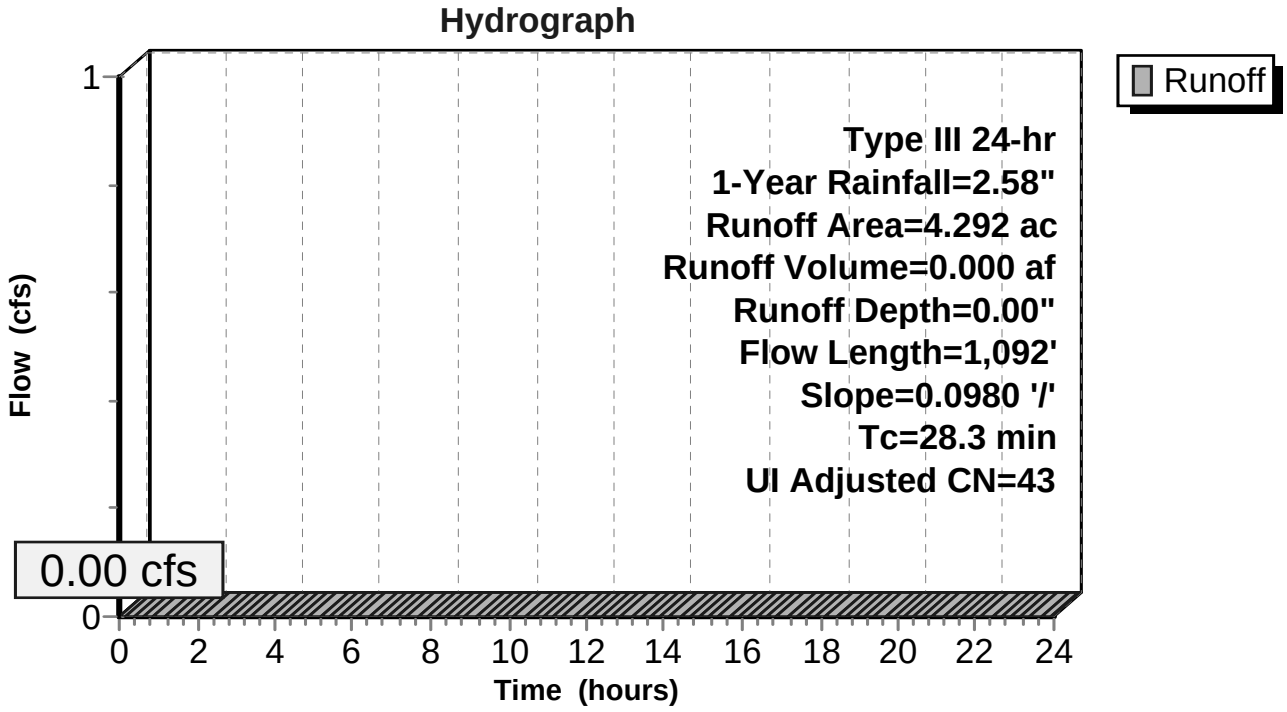
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.206	98	Paved parking, HSG A
1.750	39	Pasture/grassland/range, Good, HSG A
1.884	30	Woods, Good, HSG A
0.188	98	Unconnected roofs, HSG A
0.264	96	Gravel surface, HSG A
4.292	44	Weighted Average, UI Adjusted CN = 43
3.898		90.82% Pervious Area
0.394		9.18% Impervious Area
0.188		47.72% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.3	1,092	0.0980	0.64		**Lag/CN Method,** Contour Length= 9,162' Interval= 2'

Subcatchment 5S: DA-5



Summary for Subcatchment 6S: DA-6

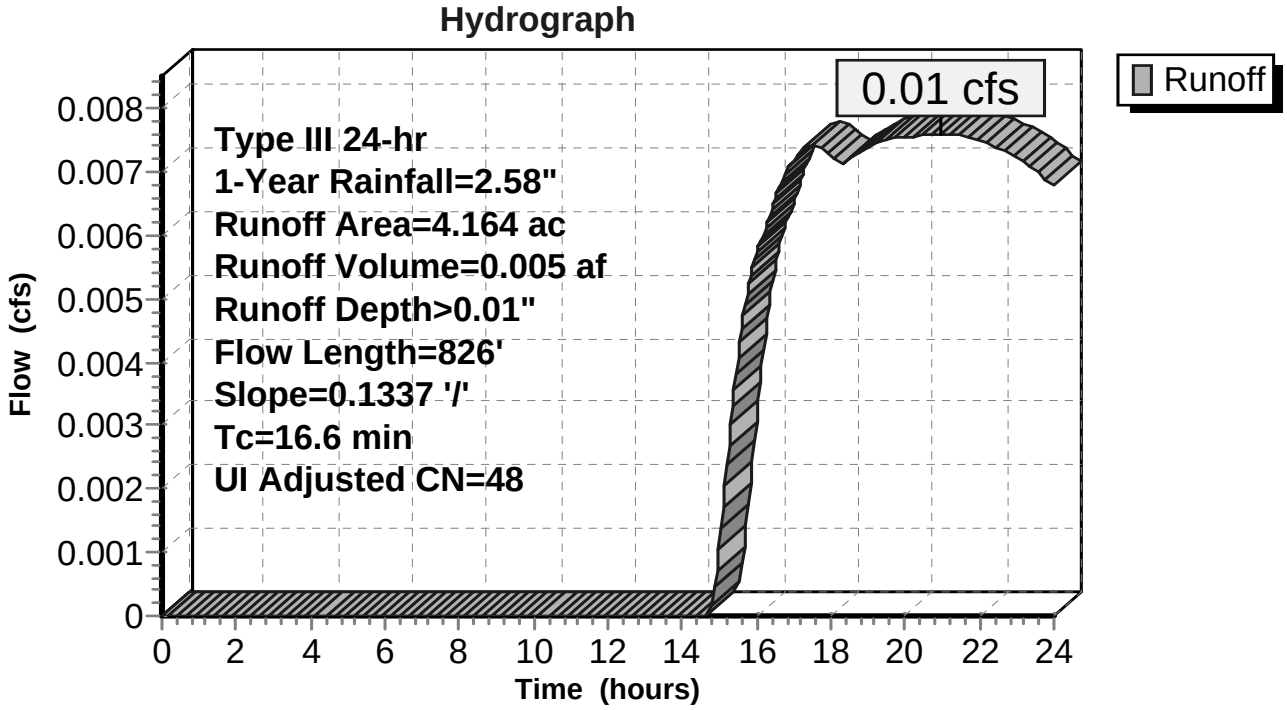
Runoff = 0.01 cfs @ 20.96 hrs, Volume= 0.005 af, Depth> 0.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.297	98	Unconnected roofs, HSG A
3.401	39	Pasture/grassland/range, Good, HSG A
0.466	96	Gravel surface, HSG A
4.164	50	Weighted Average, UI Adjusted CN = 48
3.867		92.87% Pervious Area
0.297		7.13% Impervious Area
0.297		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6	826	0.1337	0.83		**Lag/CN Method,** Contour Length= 12,121' Interval= 2'

Subcatchment 6S: DA-6



Summary for Subcatchment 7S: DA-7

[45] Hint: Runoff=Zero

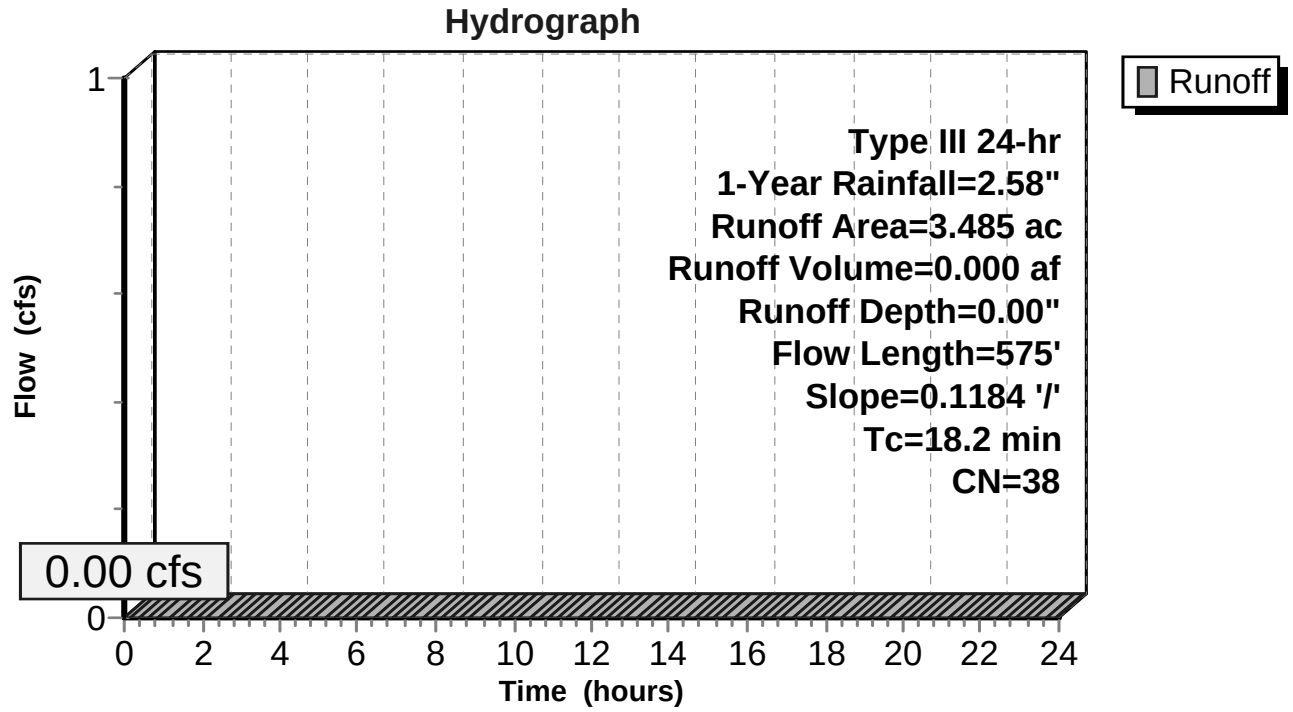
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
3.093	30	Woods, Good, HSG A
0.322	98	Water Surface, HSG A
0.070	96	Gravel surface, HSG A
3.485	38	Weighted Average
3.163		90.76% Pervious Area
0.322		9.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.2	575	0.1184	0.53		**Lag/CN Method,** Contour Length= 8,985' Interval= 2'

Subcatchment 7S: DA-7



Summary for Subcatchment 8S: DA-8

[45] Hint: Runoff=Zero

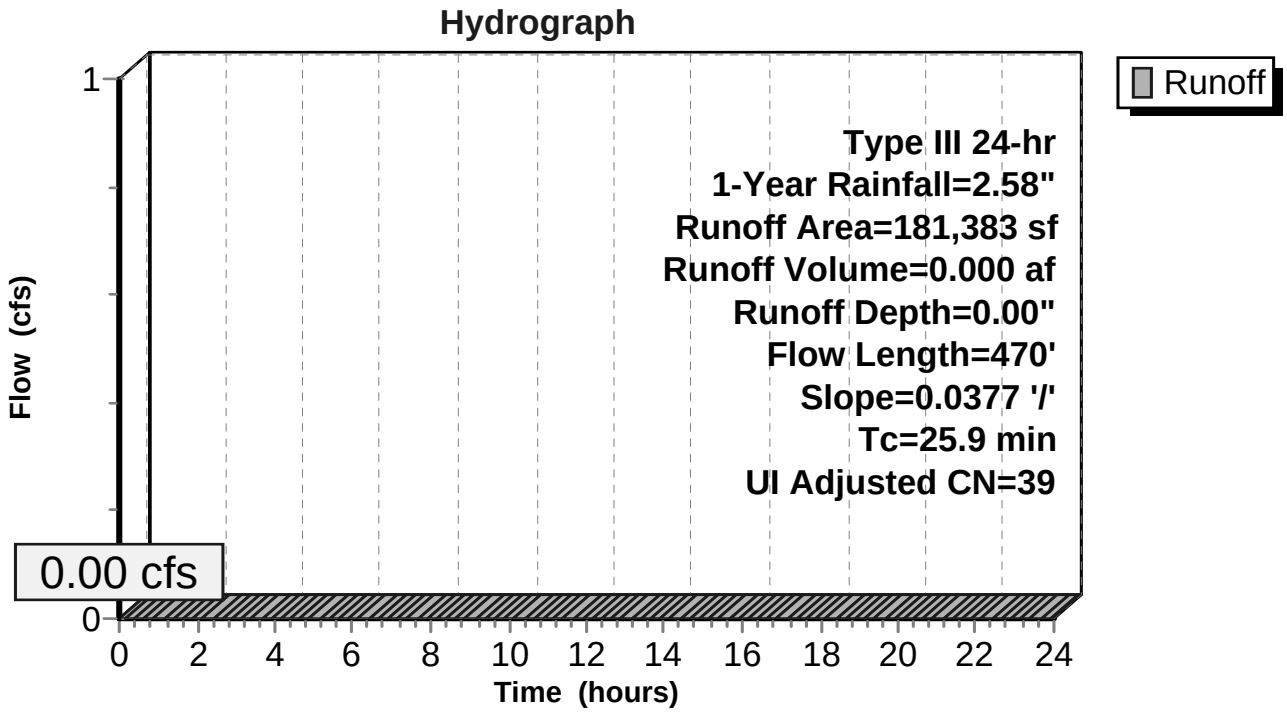
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (sf)	CN	Description
155,683	30	Woods, Good, HSG A
5,881	98	Unconnected roofs, HSG A
14,026	98	Paved parking, HSG A
5,793	98	Water Surface, HSG A
181,383	40	Weighted Average, UI Adjusted CN = 39
155,683		85.83% Pervious Area
25,700		14.17% Impervious Area
5,881		22.88% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	470	0.0377	0.30		**Lag/CN Method,** Contour Length= 3,416' Interval= 2'

Subcatchment 8S: DA-8



Summary for Subcatchment 9S: DA-9

[45] Hint: Runoff=Zero

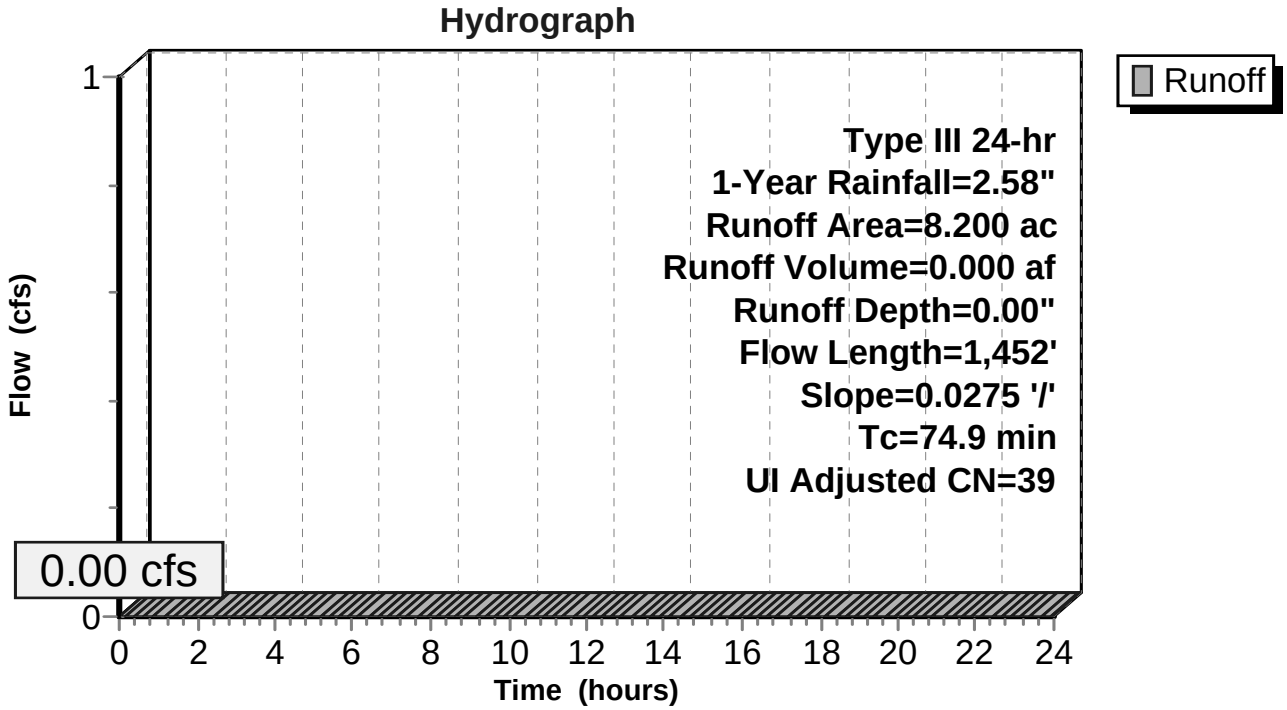
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.506	96	Gravel surface, HSG A
0.390	98	Unconnected roofs, HSG A
4.610	30	Woods, Good, HSG A
2.694	39	Pasture/grassland/range, Good, HSG A
8.200	40	Weighted Average, UI Adjusted CN = 39
7.810		95.24% Pervious Area
0.390		4.76% Impervious Area
0.390		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
74.9	1,452	0.0275	0.32		**Lag/CN Method,** Contour Length= 4,905' Interval= 2'

Subcatchment 9S: DA-9

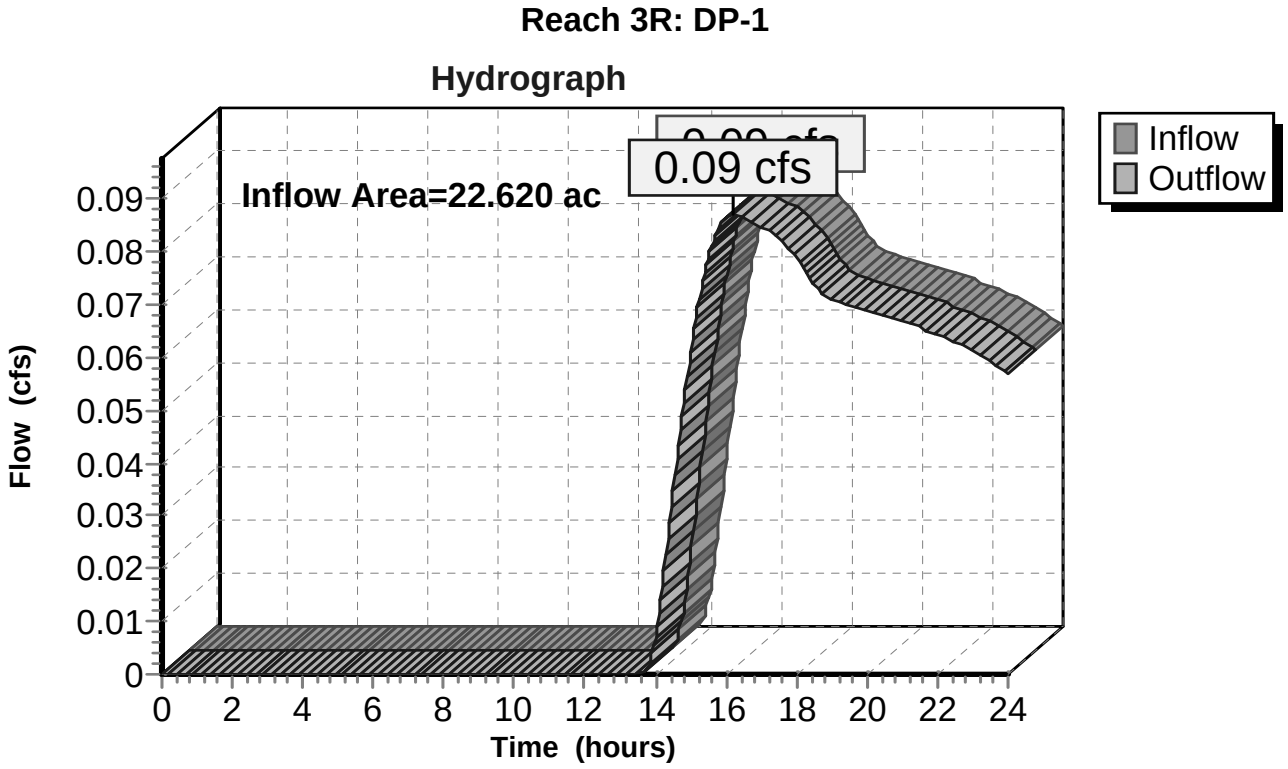


Summary for Reach 3R: DP-1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 22.620 ac, 0.00% Impervious, Inflow Depth > 0.03" for 1-Year event
Inflow = 0.09 cfs @ 16.20 hrs, Volume= 0.056 af
Outflow = 0.09 cfs @ 16.20 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



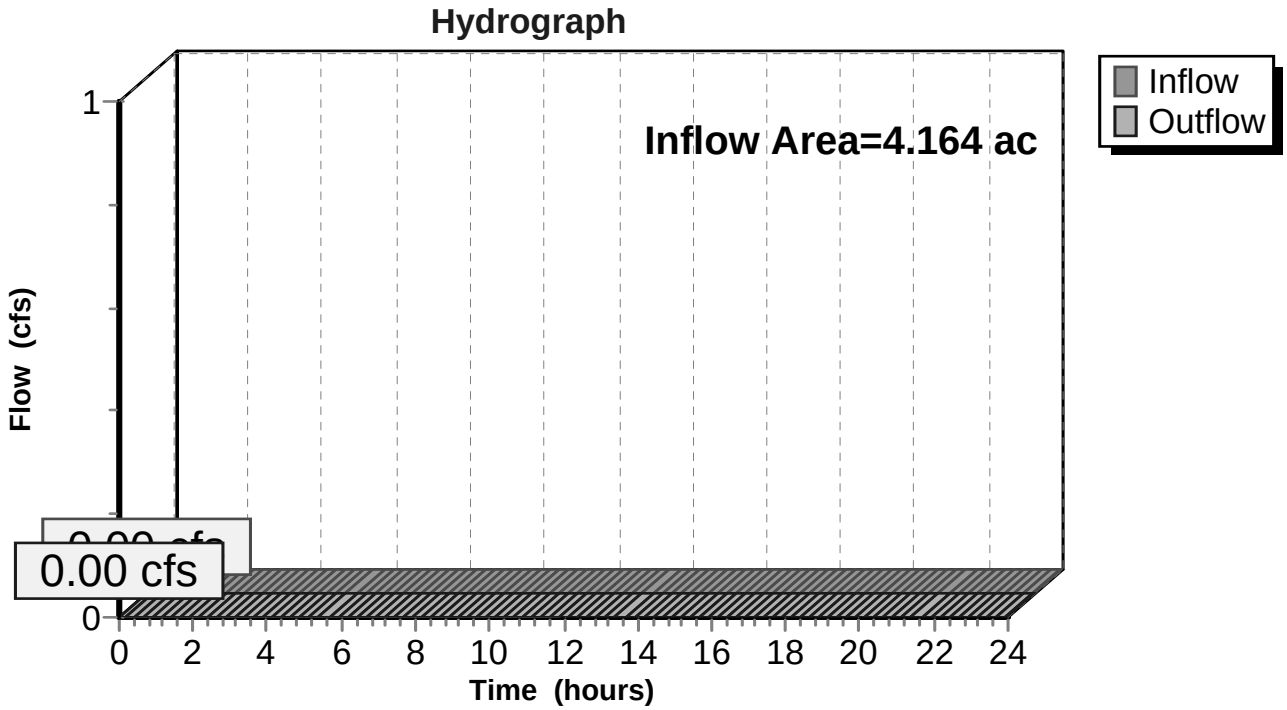
Summary for Reach 11R: DP-2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.164 ac, 14.17% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 11R: DP-2

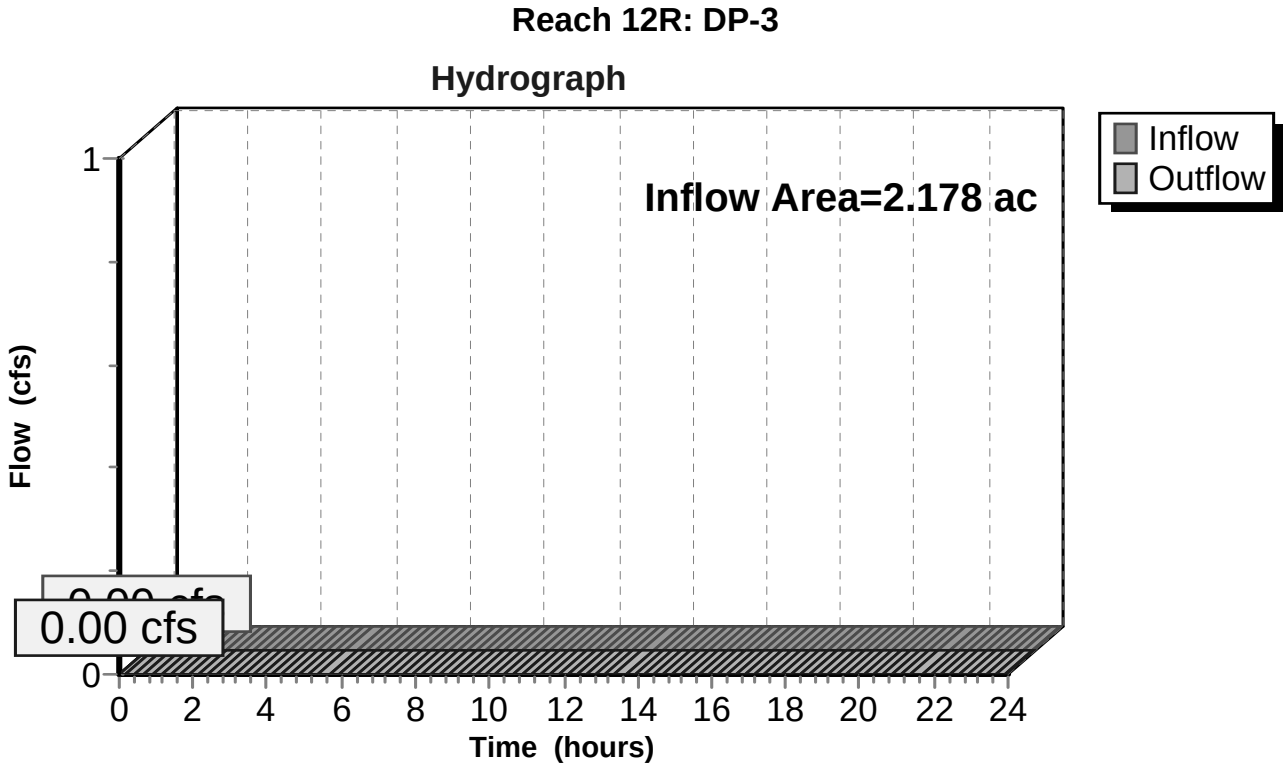


Summary for Reach 12R: DP-3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.178 ac, 0.51% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

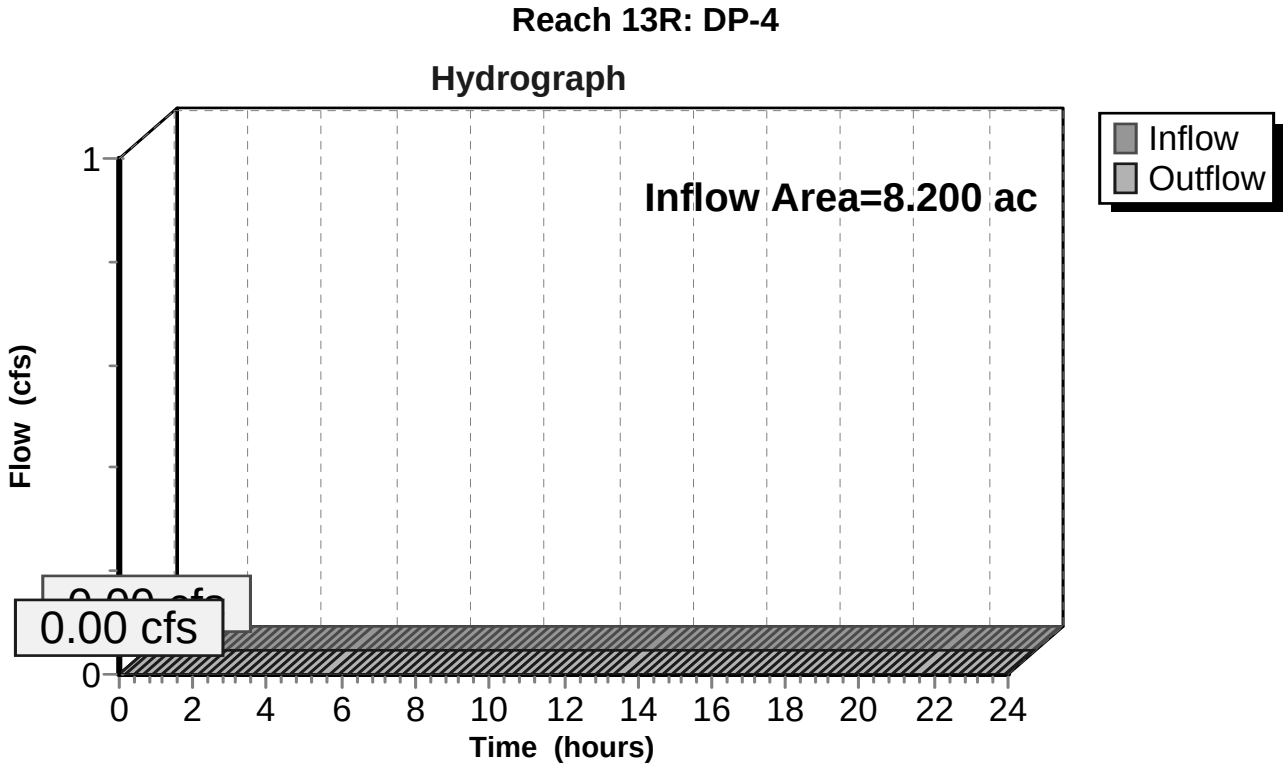


Summary for Reach 13R: DP-4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.200 ac, 4.76% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



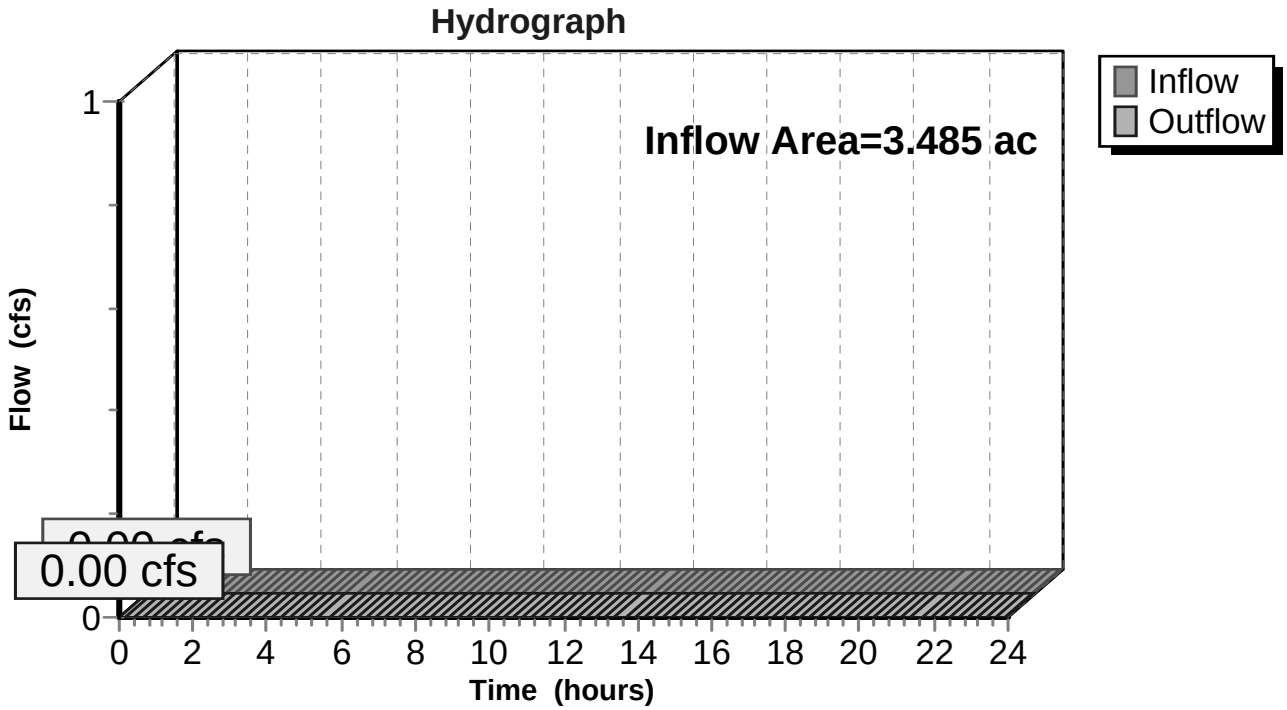
Summary for Reach 14R: DP-5

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.485 ac, 9.24% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 14R: DP-5



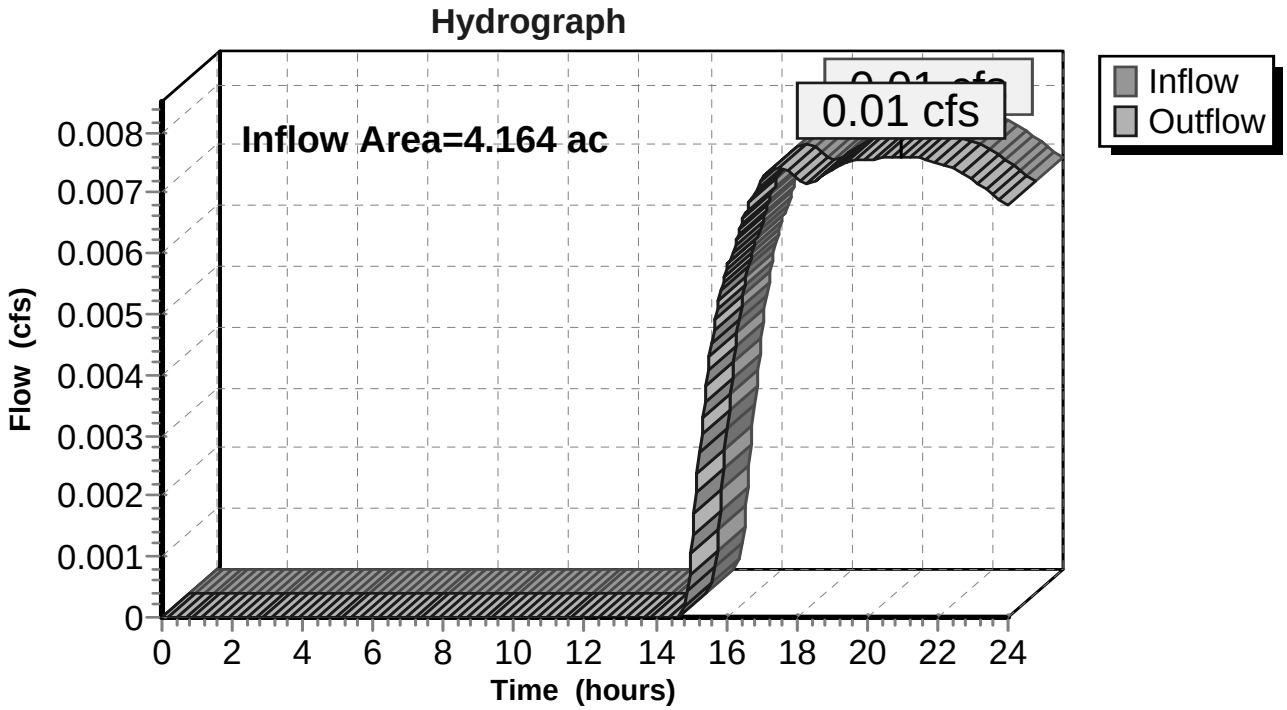
Summary for Reach 15R: DP-6

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.164 ac, 7.13% Impervious, Inflow Depth > 0.01" for 1-Year event
Inflow = 0.01 cfs @ 20.96 hrs, Volume= 0.005 af
Outflow = 0.01 cfs @ 20.96 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 15R: DP-6

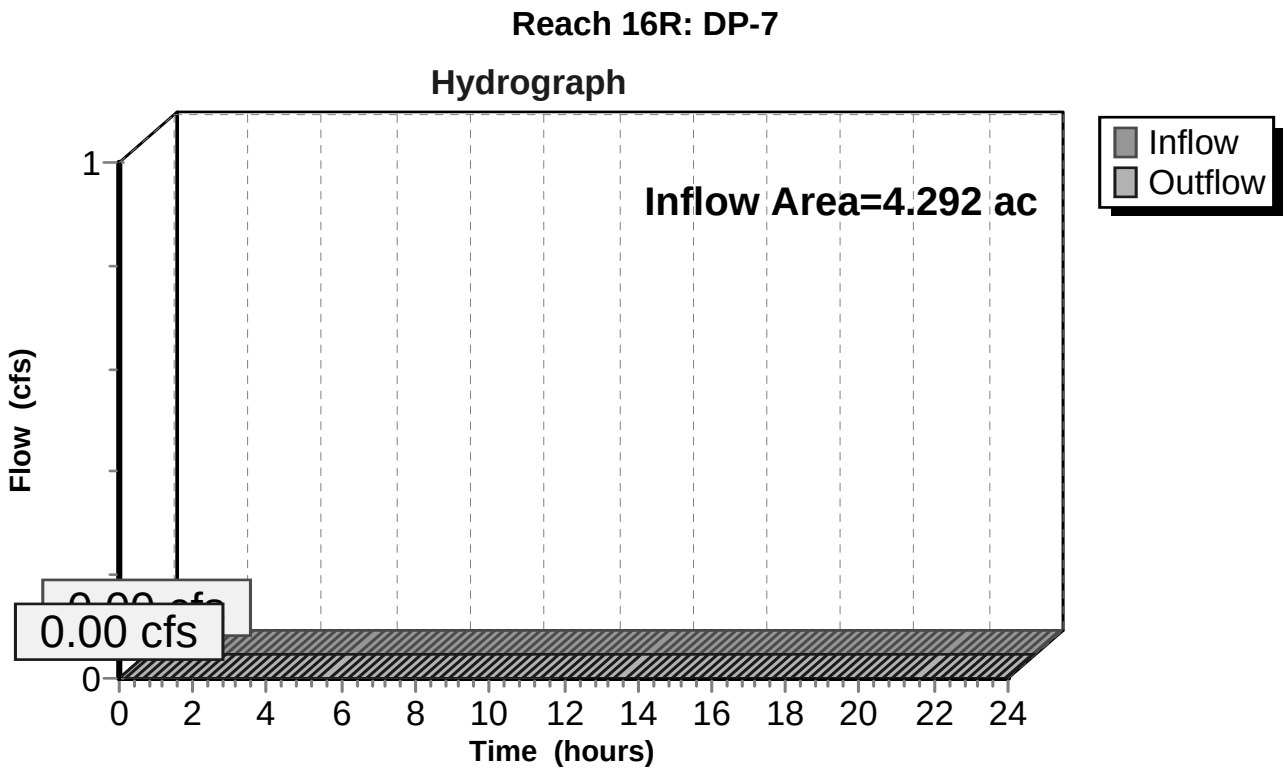


Summary for Reach 16R: DP-7

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.292 ac, 9.18% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



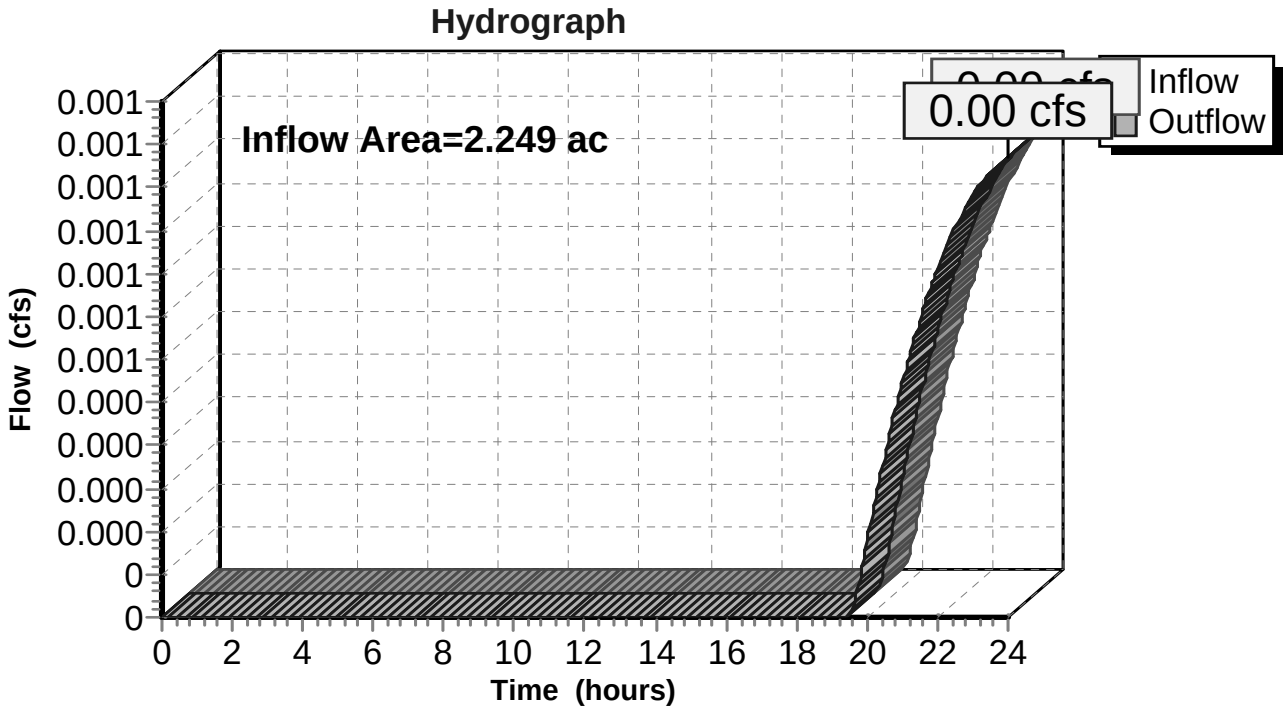
Summary for Reach 17R: DP-8

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.249 ac, 4.40% Impervious, Inflow Depth > 0.00" for 1-Year event
Inflow = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 17R: DP-8

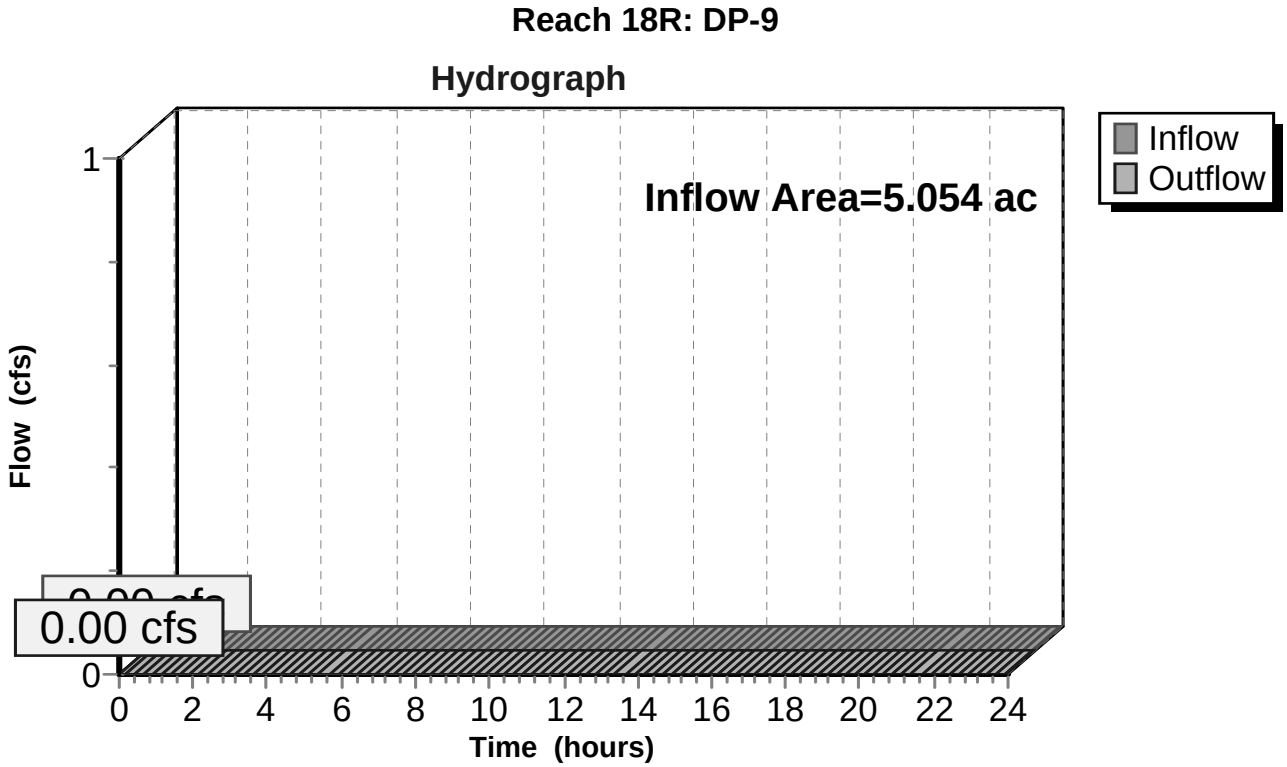


Summary for Reach 18R: DP-9

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.054 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA-1 Runoff Area=22.620 ac 0.00% Impervious Runoff Depth>0.54"
Flow Length=1,906' Slope=0.0540 '/' Tc=51.1 min CN=50 Runoff=3.94 cfs 1.017 af

Subcatchment 2S: DA-2 Runoff Area=2.178 ac 0.51% Impervious Runoff Depth>0.06"
Flow Length=430' Slope=0.1623 '/' Tc=13.0 min CN=36 Runoff=0.02 cfs 0.011 af

Subcatchment 3S: DA-3 Runoff Area=5.054 ac 0.00% Impervious Runoff Depth>0.10"
Flow Length=757' Slope=0.0695 '/' Tc=29.5 min CN=38 Runoff=0.07 cfs 0.044 af

Subcatchment 4S: DA-4 Runoff Area=2.249 ac 4.40% Impervious Runoff Depth>0.33"
Flow Length=544' Slope=0.0588 '/' Tc=20.4 min CN=45 Runoff=0.24 cfs 0.062 af

Subcatchment 5S: DA-5 Runoff Area=4.292 ac 9.18% Impervious Runoff Depth>0.26"
Flow Length=1,092' Slope=0.0980 '/' Tc=28.3 min UI Adjusted CN=43 Runoff=0.24 cfs 0.091 af

Subcatchment 6S: DA-6 Runoff Area=4.164 ac 7.13% Impervious Runoff Depth>0.46"
Flow Length=826' Slope=0.1337 '/' Tc=16.6 min UI Adjusted CN=48 Runoff=0.83 cfs 0.158 af

Subcatchment 7S: DA-7 Runoff Area=3.485 ac 9.24% Impervious Runoff Depth>0.11"
Flow Length=575' Slope=0.1184 '/' Tc=18.2 min CN=38 Runoff=0.05 cfs 0.031 af

Subcatchment 8S: DA-8 Runoff Area=181,383 sf 14.17% Impervious Runoff Depth>0.13"
Flow Length=470' Slope=0.0377 '/' Tc=25.9 min UI Adjusted CN=39 Runoff=0.07 cfs 0.045 af

Subcatchment 9S: DA-9 Runoff Area=8.200 ac 4.76% Impervious Runoff Depth>0.13"
Flow Length=1,452' Slope=0.0275 '/' Tc=74.9 min UI Adjusted CN=39 Runoff=0.14 cfs 0.086 af

Reach 3R: DP-1 Inflow=3.94 cfs 1.017 af
Outflow=3.94 cfs 1.017 af

Reach 11R: DP-2 Inflow=0.07 cfs 0.045 af
Outflow=0.07 cfs 0.045 af

Reach 12R: DP-3 Inflow=0.02 cfs 0.011 af
Outflow=0.02 cfs 0.011 af

Reach 13R: DP-4 Inflow=0.14 cfs 0.086 af
Outflow=0.14 cfs 0.086 af

Reach 14R: DP-5 Inflow=0.05 cfs 0.031 af
Outflow=0.05 cfs 0.031 af

Reach 15R: DP-6 Inflow=0.83 cfs 0.158 af
Outflow=0.83 cfs 0.158 af

Reach 16R: DP-7 Inflow=0.24 cfs 0.091 af
Outflow=0.24 cfs 0.091 af

Reach 17R: DP-8 Inflow=0.24 cfs 0.062 af
Outflow=0.24 cfs 0.062 af

Reach 18R: DP-9 Inflow=0.07 cfs 0.044 af
Outflow=0.07 cfs 0.044 af

Total Runoff Area = 56.406 ac Runoff Volume = 1.545 af Average Runoff Depth = 0.33"
96.27% Pervious = 54.303 ac 3.73% Impervious = 2.103 ac

Summary for Subcatchment 1S: DA-1

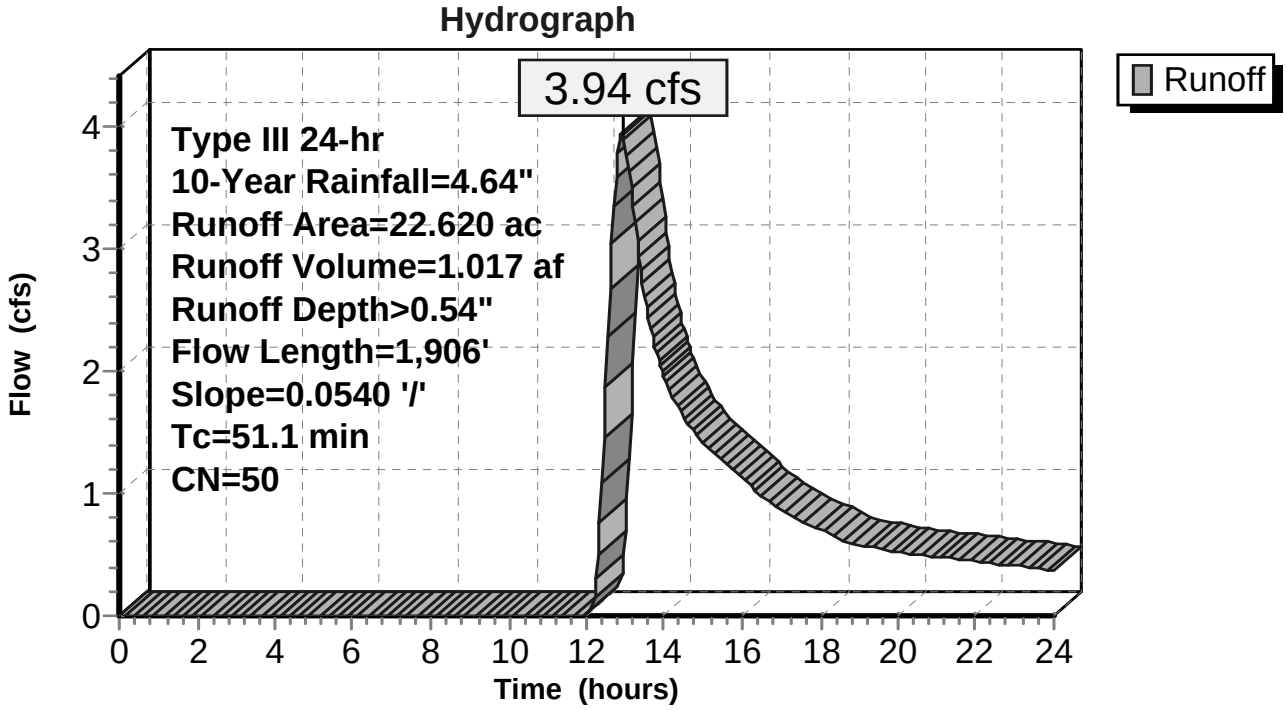
Runoff = 3.94 cfs @ 12.91 hrs, Volume= 1.017 af, Depth> 0.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
7.259	39	Pasture/grassland/range, Good, HSG A
7.409	30	Woods, Good, HSG A
7.594	77	Woods, Good, HSG D
0.358	96	Gravel surface, HSG A
22.620	50	Weighted Average
22.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.1	1,906	0.0540	0.62		**Lag/CN Method,**

Subcatchment 1S: DA-1



Summary for Subcatchment 2S: DA-2

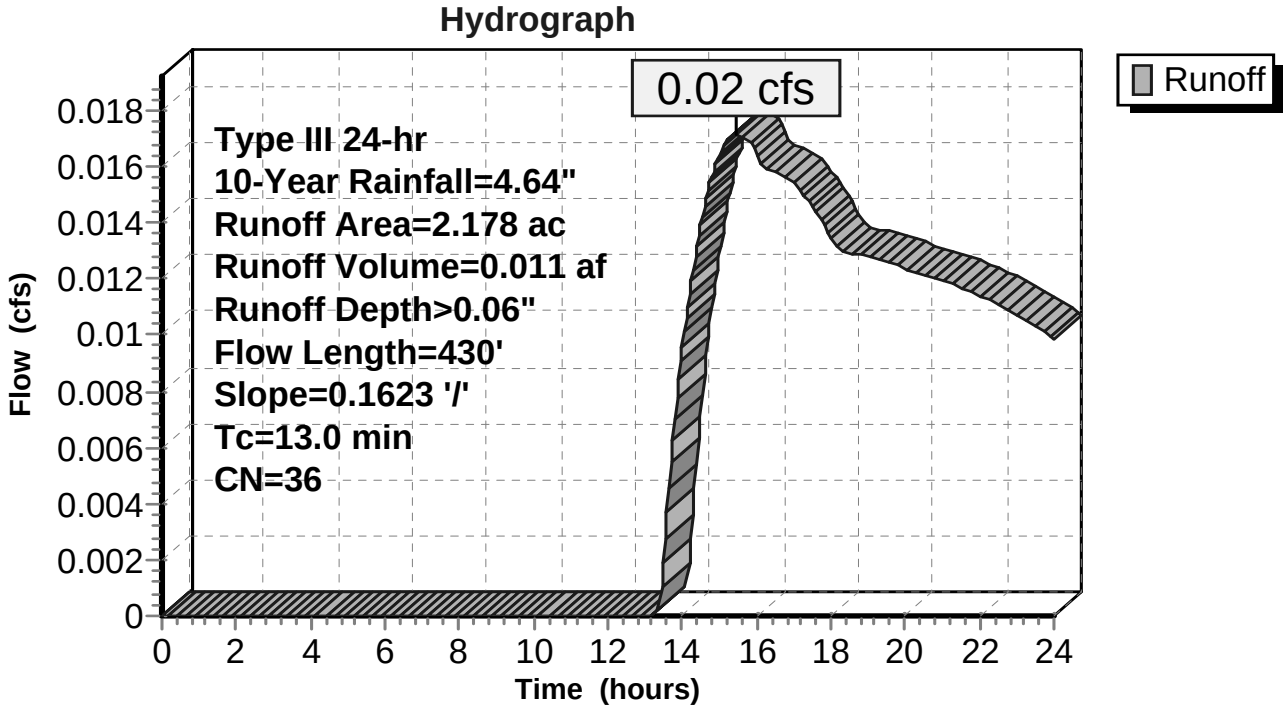
Runoff = 0.02 cfs @ 15.48 hrs, Volume= 0.011 af, Depth> 0.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.748	30	Woods, Good, HSG A
1.419	39	Pasture/grassland/range, Good, HSG A
0.011	98	Unconnected roofs, HSG A
2.178	36	Weighted Average
2.167		99.49% Pervious Area
0.011		0.51% Impervious Area
0.011		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	430	0.1623	0.55		**Lag/CN Method,** Contour Length= 7,700' Interval= 2'

Subcatchment 2S: DA-2



Summary for Subcatchment 3S: DA-3

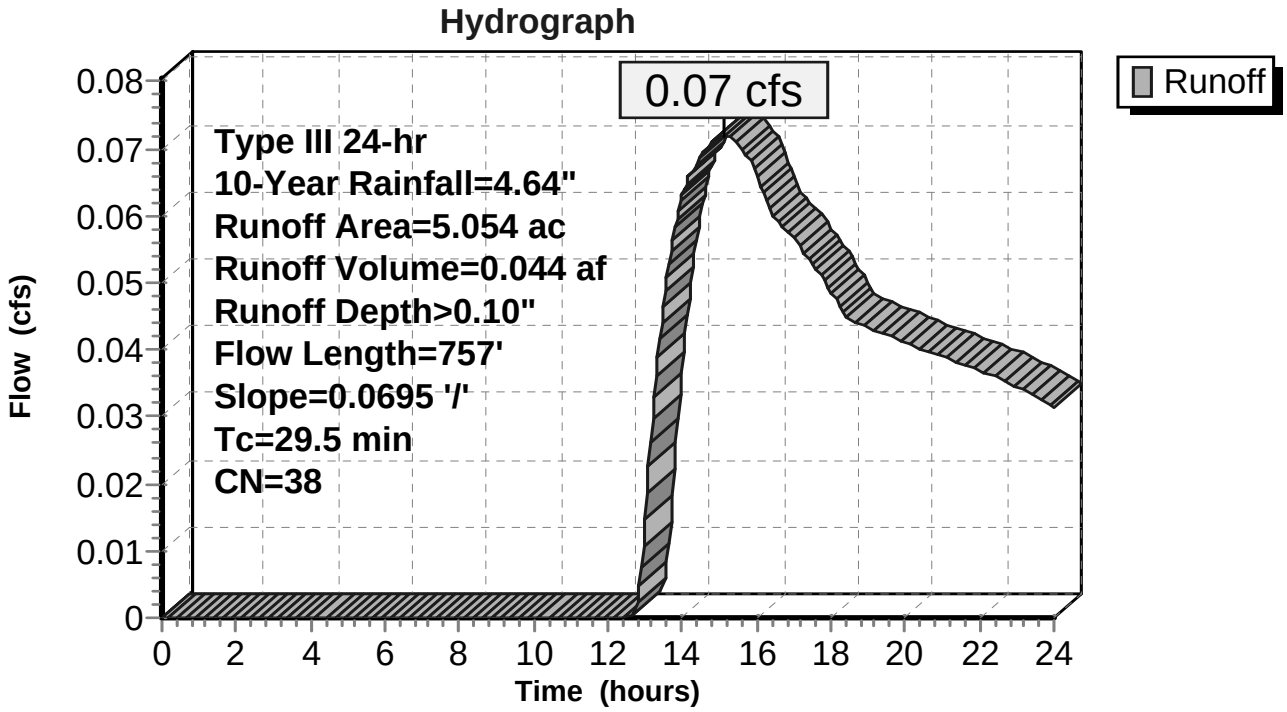
Runoff = 0.07 cfs @ 15.12 hrs, Volume= 0.044 af, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
4.606	39	Pasture/grassland/range, Good, HSG A
0.448	30	Woods, Good, HSG A
5.054	38	Weighted Average
5.054		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	757	0.0695	0.43		**Lag/CN Method,** Contour Length= 7,650' Interval= 2'

Subcatchment 3S: DA-3



Summary for Subcatchment 4S: DA-4

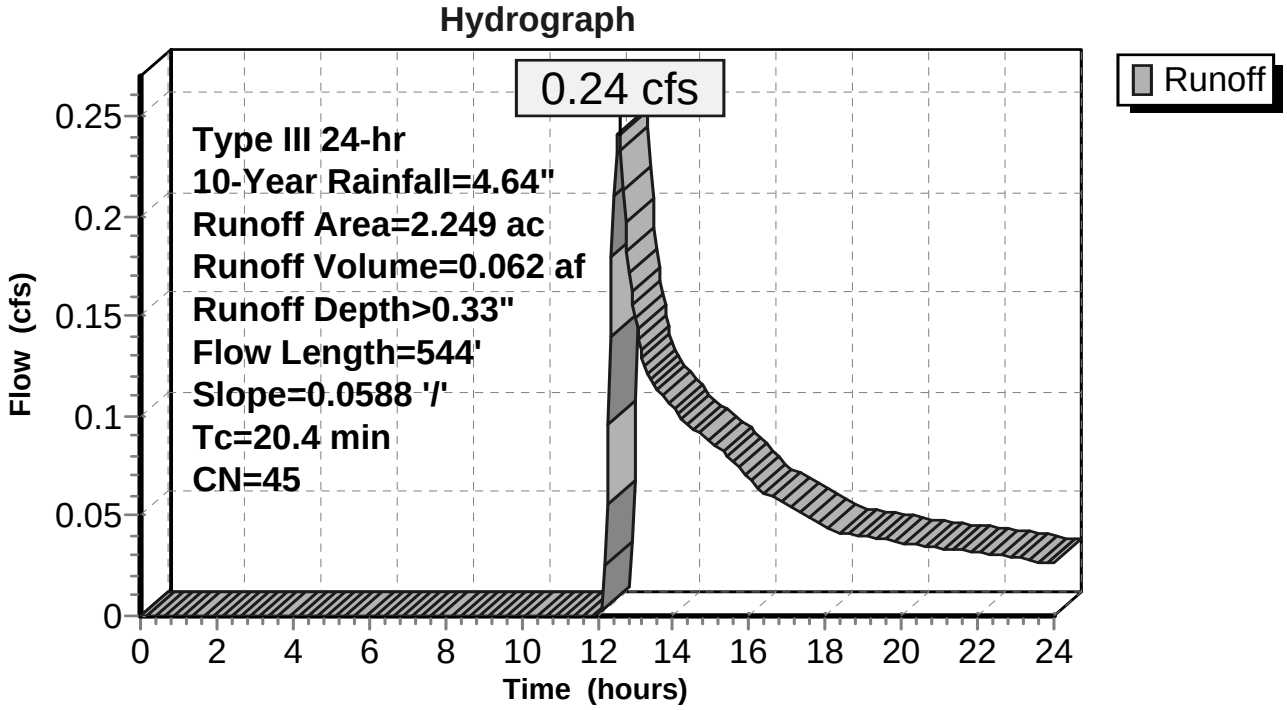
Runoff = 0.24 cfs @ 12.57 hrs, Volume= 0.062 af, Depth> 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
1.930	39	Pasture/grassland/range, Good, HSG A
0.099	98	Paved parking, HSG A
0.080	30	Woods, Good, HSG A
0.140	96	Gravel surface, HSG A
2.249	45	Weighted Average
2.150		95.60% Pervious Area
0.099		4.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	544	0.0588	0.44		**Lag/CN Method,** Contour Length= 2,879' Interval= 2'

Subcatchment 4S: DA-4



Summary for Subcatchment 5S: DA-5

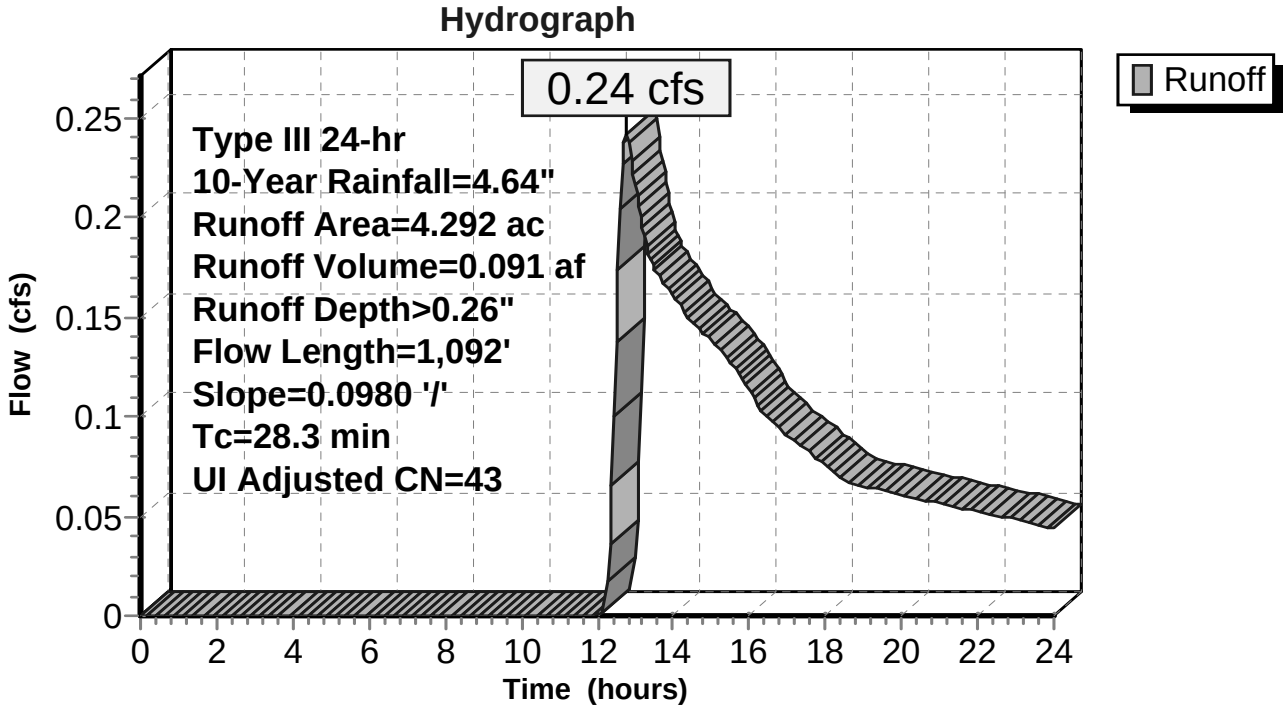
Runoff = 0.24 cfs @ 12.76 hrs, Volume= 0.091 af, Depth> 0.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.206	98	Paved parking, HSG A
1.750	39	Pasture/grassland/range, Good, HSG A
1.884	30	Woods, Good, HSG A
0.188	98	Unconnected roofs, HSG A
0.264	96	Gravel surface, HSG A
4.292	44	Weighted Average, UI Adjusted CN = 43
3.898		90.82% Pervious Area
0.394		9.18% Impervious Area
0.188		47.72% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.3	1,092	0.0980	0.64		**Lag/CN Method,** Contour Length= 9,162' Interval= 2'

Subcatchment 5S: DA-5



Summary for Subcatchment 6S: DA-6

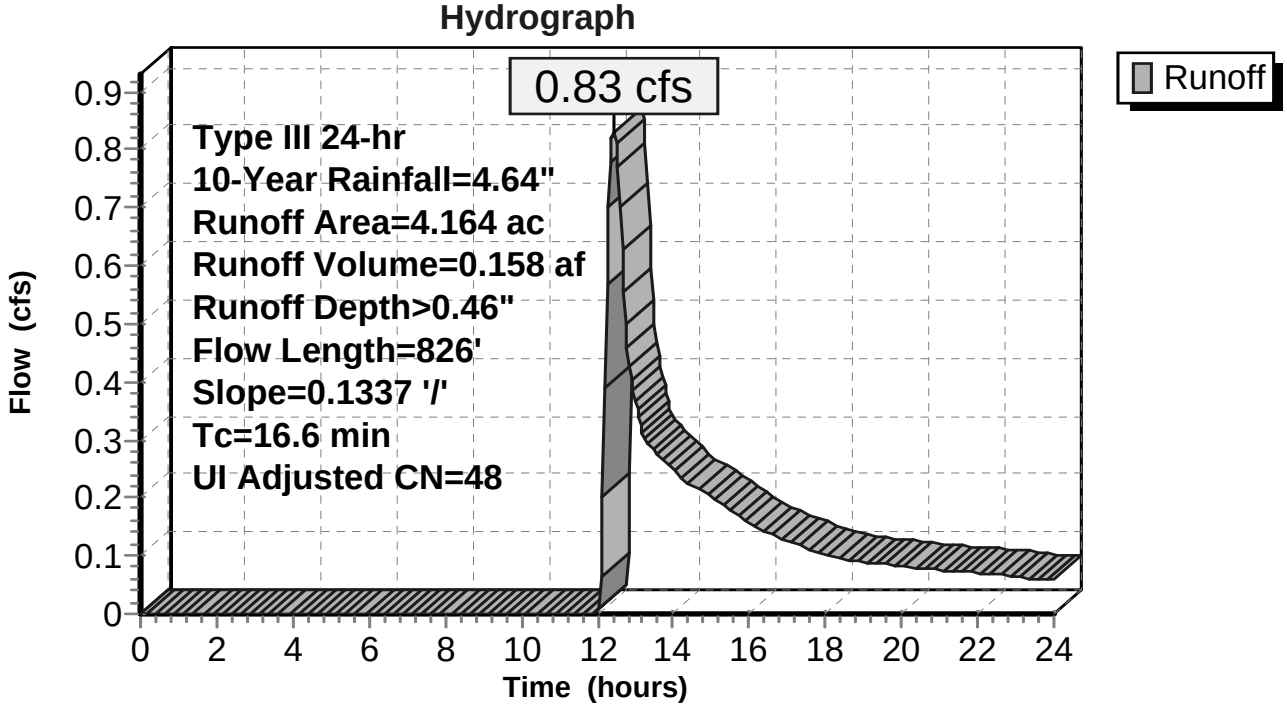
Runoff = 0.83 cfs @ 12.44 hrs, Volume= 0.158 af, Depth> 0.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.297	98	Unconnected roofs, HSG A
3.401	39	Pasture/grassland/range, Good, HSG A
0.466	96	Gravel surface, HSG A
4.164	50	Weighted Average, UI Adjusted CN = 48
3.867		92.87% Pervious Area
0.297		7.13% Impervious Area
0.297		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6	826	0.1337	0.83		**Lag/CN Method,** Contour Length= 12,121' Interval= 2'

Subcatchment 6S: DA-6



Summary for Subcatchment 7S: DA-7

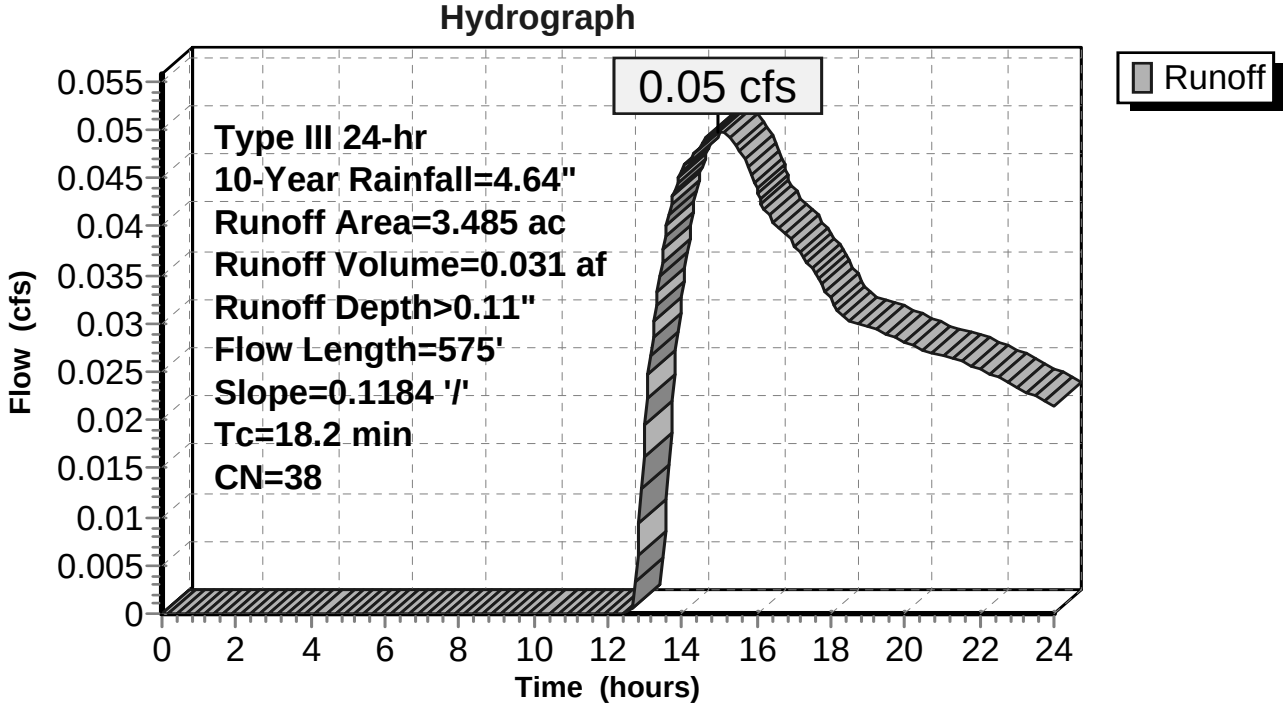
Runoff = 0.05 cfs @ 14.98 hrs, Volume= 0.031 af, Depth> 0.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
3.093	30	Woods, Good, HSG A
0.322	98	Water Surface, HSG A
0.070	96	Gravel surface, HSG A
3.485	38	Weighted Average
3.163		90.76% Pervious Area
0.322		9.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.2	575	0.1184	0.53		**Lag/CN Method,** Contour Length= 8,985' Interval= 2'

Subcatchment 7S: DA-7



Summary for Subcatchment 8S: DA-8

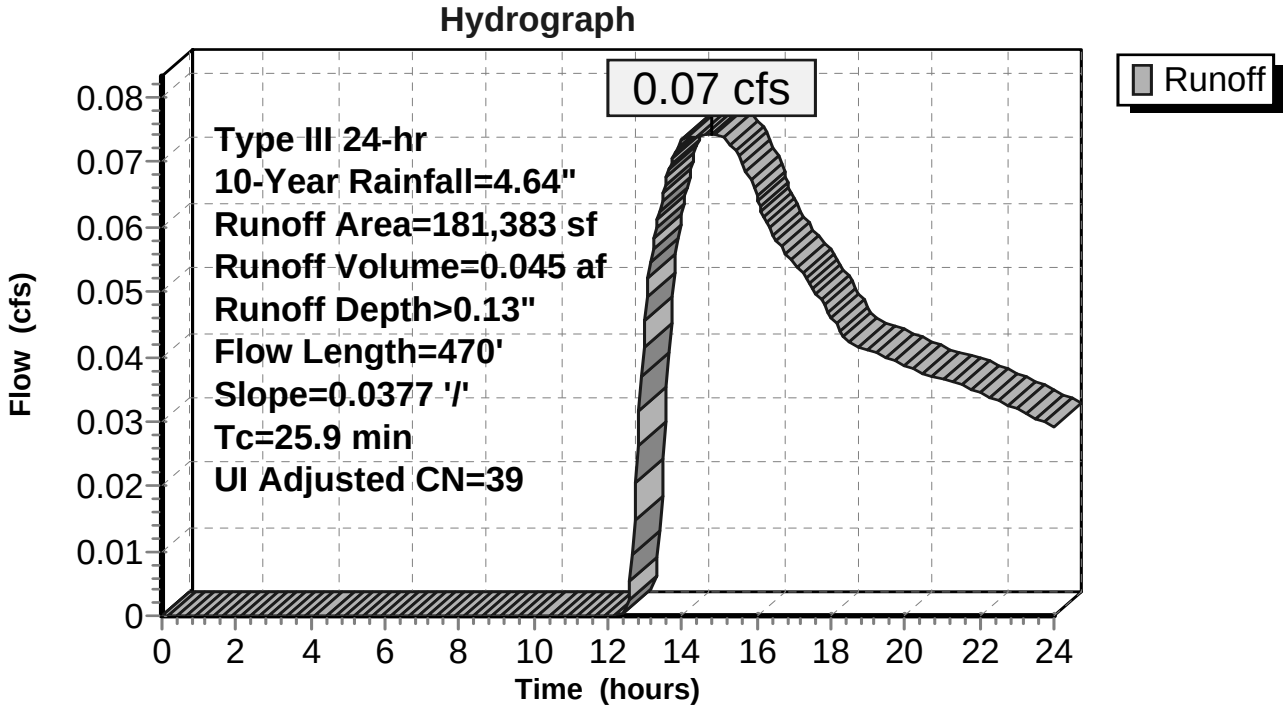
Runoff = 0.07 cfs @ 14.80 hrs, Volume= 0.045 af, Depth> 0.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (sf)	CN	Description
155,683	30	Woods, Good, HSG A
5,881	98	Unconnected roofs, HSG A
14,026	98	Paved parking, HSG A
5,793	98	Water Surface, HSG A
181,383	40	Weighted Average, UI Adjusted CN = 39
155,683		85.83% Pervious Area
25,700		14.17% Impervious Area
5,881		22.88% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	470	0.0377	0.30		**Lag/CN Method,** Contour Length= 3,416' Interval= 2'

Subcatchment 8S: DA-8



Summary for Subcatchment 9S: DA-9

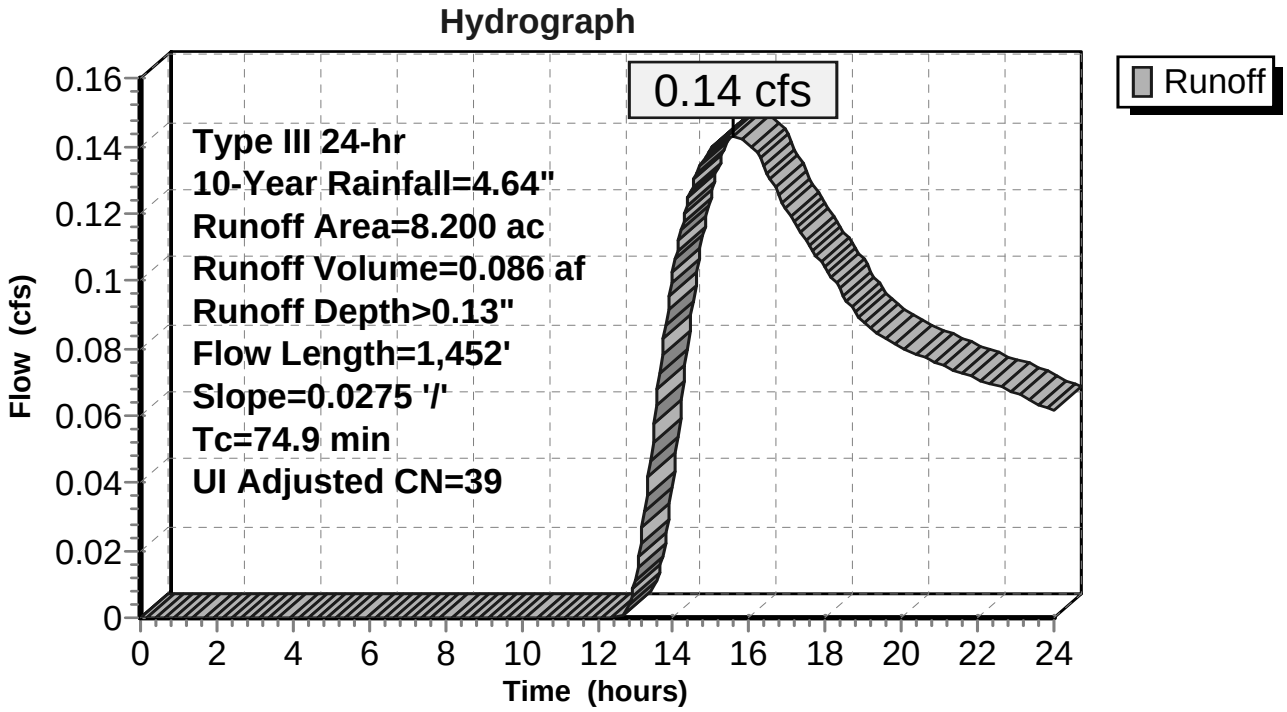
Runoff = 0.14 cfs @ 15.56 hrs, Volume= 0.086 af, Depth> 0.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.506	96	Gravel surface, HSG A
0.390	98	Unconnected roofs, HSG A
4.610	30	Woods, Good, HSG A
2.694	39	Pasture/grassland/range, Good, HSG A
8.200	40	Weighted Average, UI Adjusted CN = 39
7.810		95.24% Pervious Area
0.390		4.76% Impervious Area
0.390		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
74.9	1,452	0.0275	0.32		**Lag/CN Method,** Contour Length= 4,905' Interval= 2'

Subcatchment 9S: DA-9



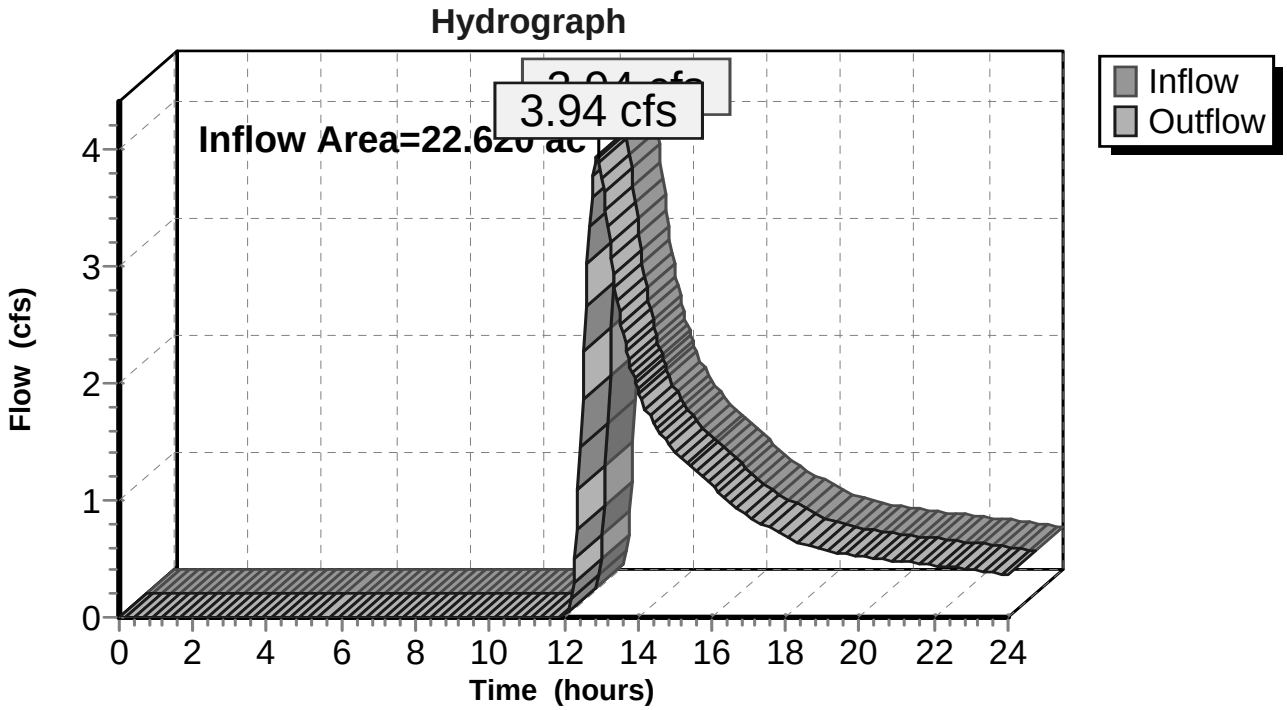
Summary for Reach 3R: DP-1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 22.620 ac, 0.00% Impervious, Inflow Depth > 0.54" for 10-Year event
Inflow = 3.94 cfs @ 12.91 hrs, Volume= 1.017 af
Outflow = 3.94 cfs @ 12.91 hrs, Volume= 1.017 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3R: DP-1



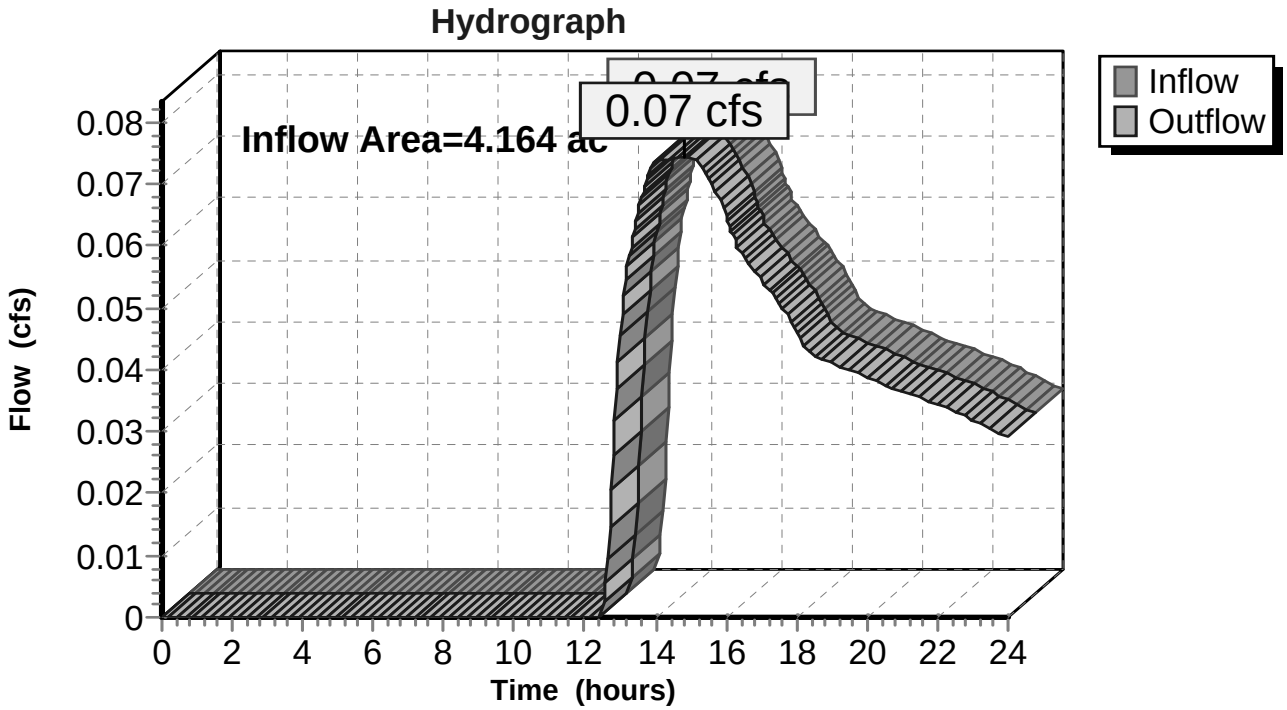
Summary for Reach 11R: DP-2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.164 ac, 14.17% Impervious, Inflow Depth > 0.13" for 10-Year event
Inflow = 0.07 cfs @ 14.80 hrs, Volume= 0.045 af
Outflow = 0.07 cfs @ 14.80 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 11R: DP-2



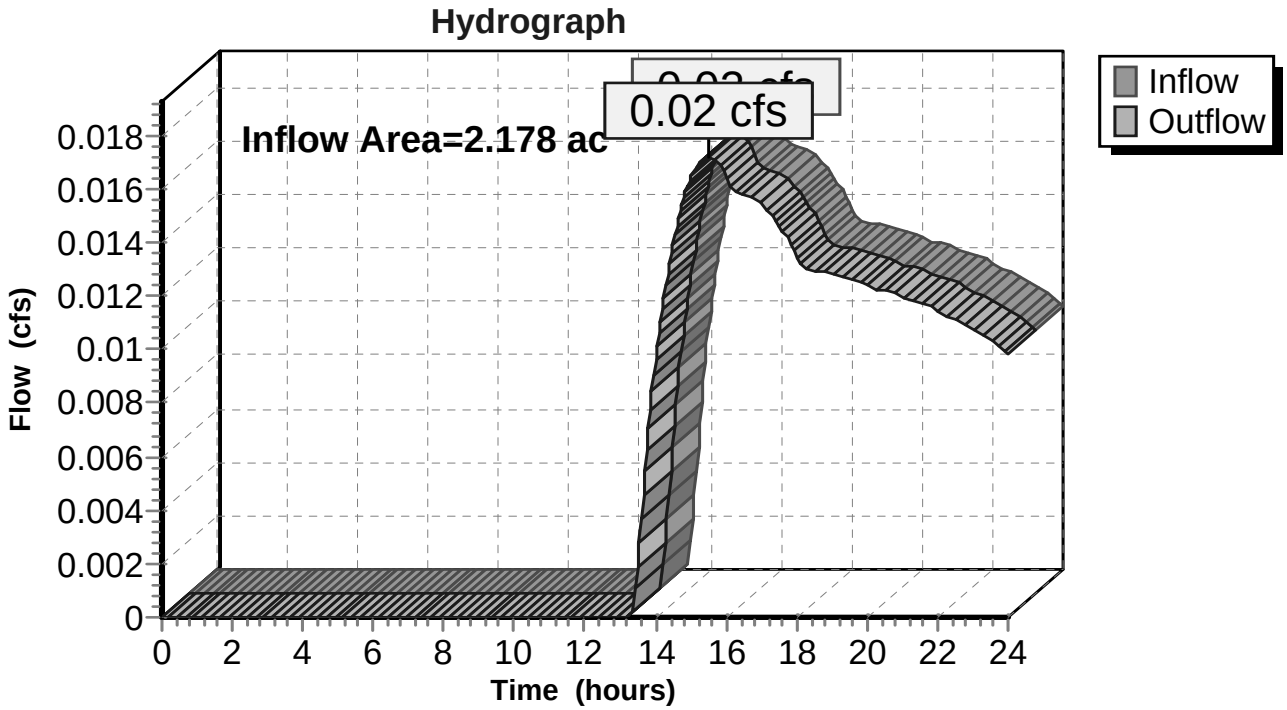
Summary for Reach 12R: DP-3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.178 ac, 0.51% Impervious, Inflow Depth > 0.06" for 10-Year event
Inflow = 0.02 cfs @ 15.48 hrs, Volume= 0.011 af
Outflow = 0.02 cfs @ 15.48 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 12R: DP-3



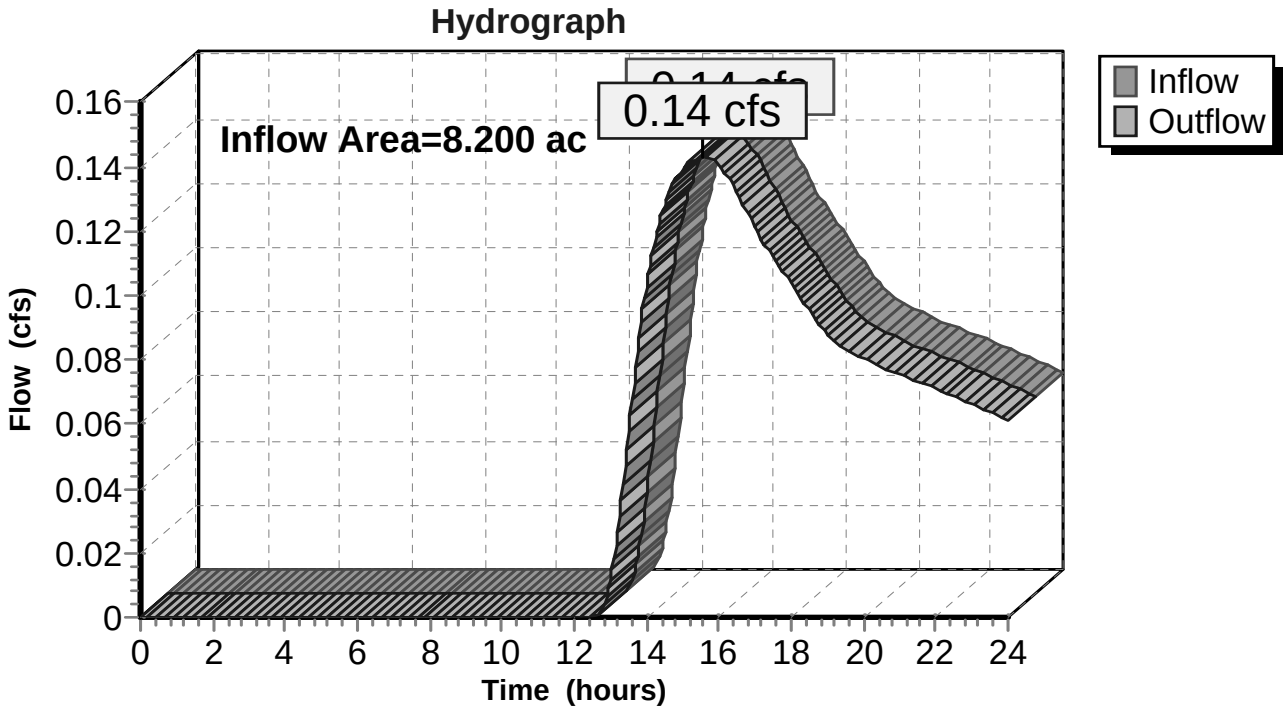
Summary for Reach 13R: DP-4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.200 ac, 4.76% Impervious, Inflow Depth > 0.13" for 10-Year event
Inflow = 0.14 cfs @ 15.56 hrs, Volume= 0.086 af
Outflow = 0.14 cfs @ 15.56 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 13R: DP-4



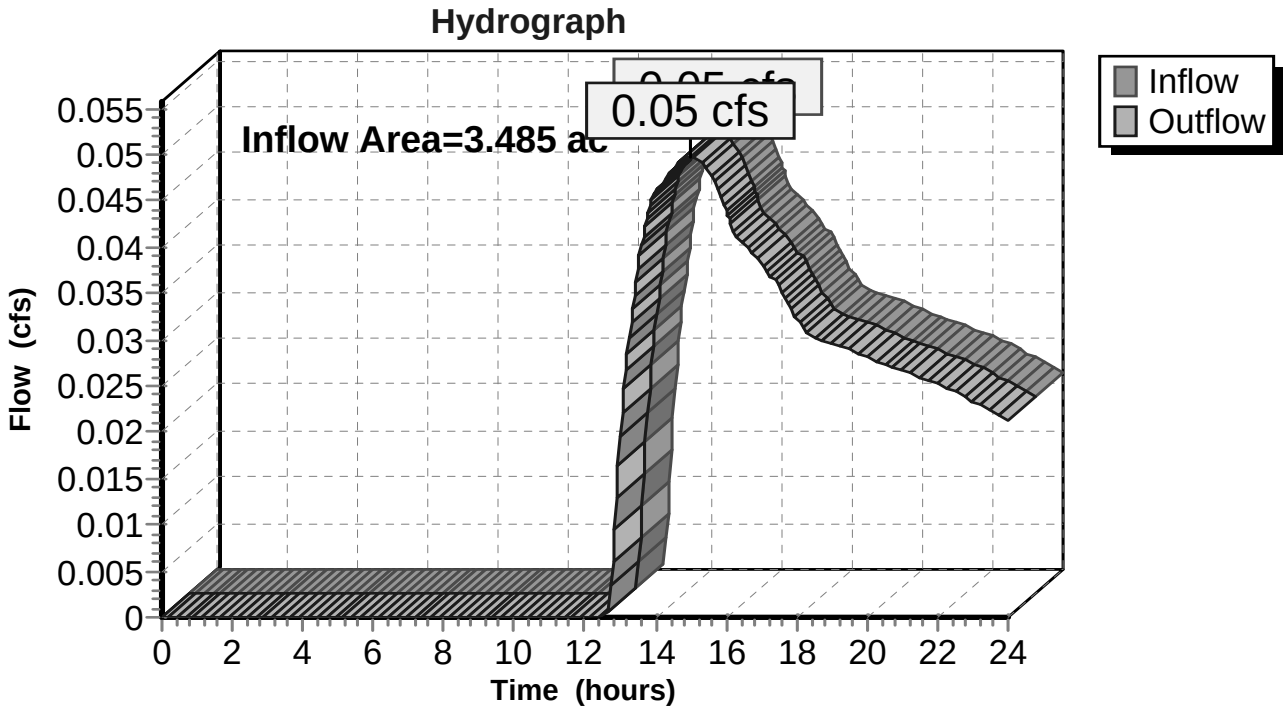
Summary for Reach 14R: DP-5

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.485 ac, 9.24% Impervious, Inflow Depth > 0.11" for 10-Year event
Inflow = 0.05 cfs @ 14.98 hrs, Volume= 0.031 af
Outflow = 0.05 cfs @ 14.98 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 14R: DP-5



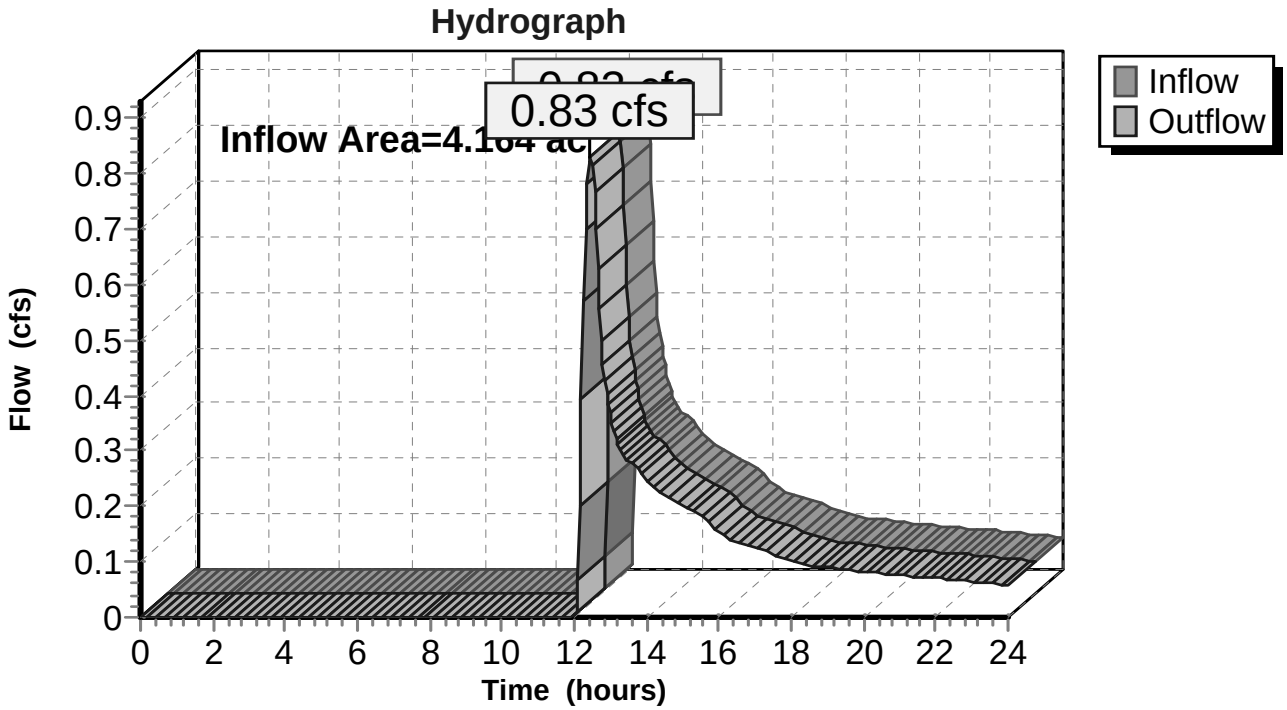
Summary for Reach 15R: DP-6

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.164 ac, 7.13% Impervious, Inflow Depth > 0.46" for 10-Year event
Inflow = 0.83 cfs @ 12.44 hrs, Volume= 0.158 af
Outflow = 0.83 cfs @ 12.44 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 15R: DP-6



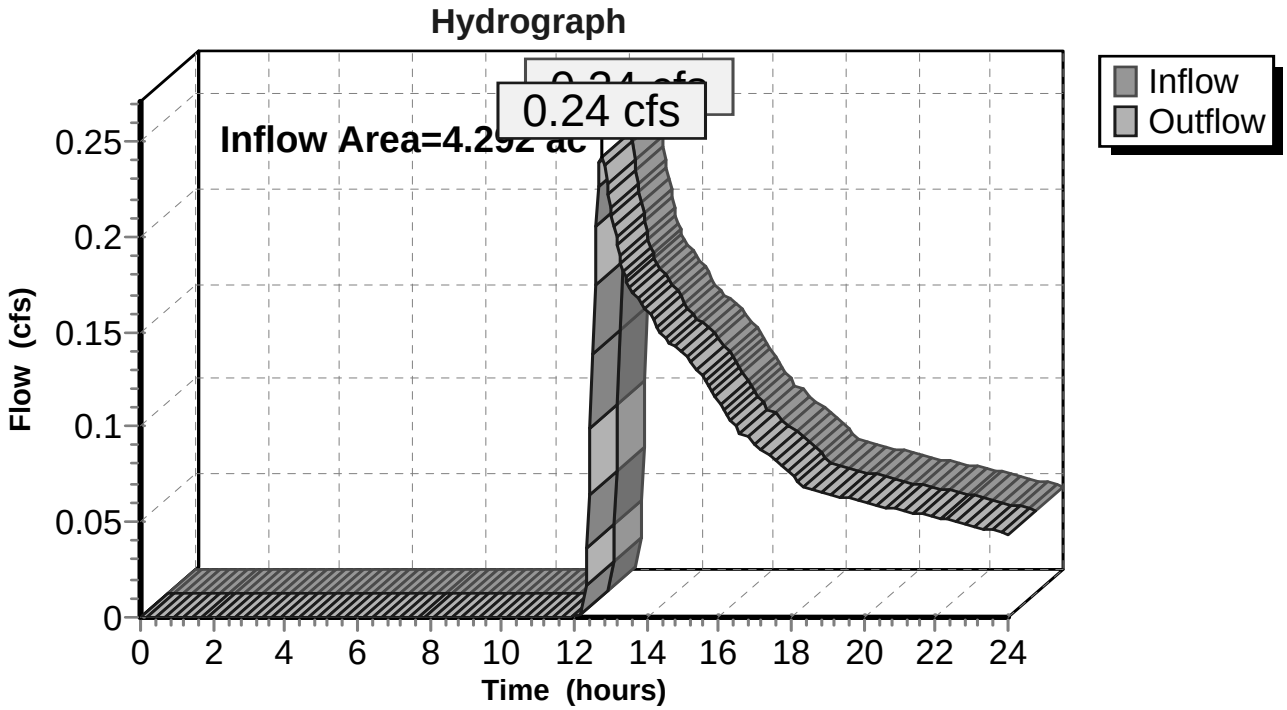
Summary for Reach 16R: DP-7

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.292 ac, 9.18% Impervious, Inflow Depth > 0.26" for 10-Year event
Inflow = 0.24 cfs @ 12.76 hrs, Volume= 0.091 af
Outflow = 0.24 cfs @ 12.76 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 16R: DP-7



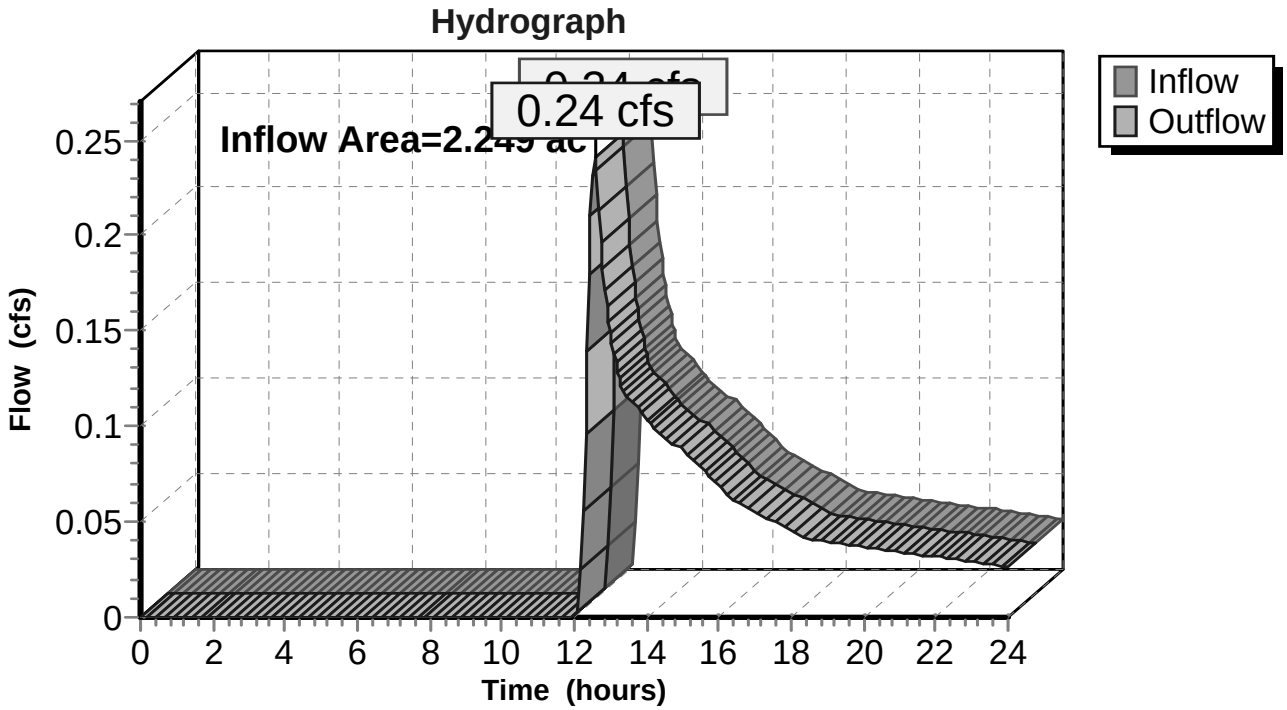
Summary for Reach 17R: DP-8

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.249 ac, 4.40% Impervious, Inflow Depth > 0.33" for 10-Year event
Inflow = 0.24 cfs @ 12.57 hrs, Volume= 0.062 af
Outflow = 0.24 cfs @ 12.57 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 17R: DP-8

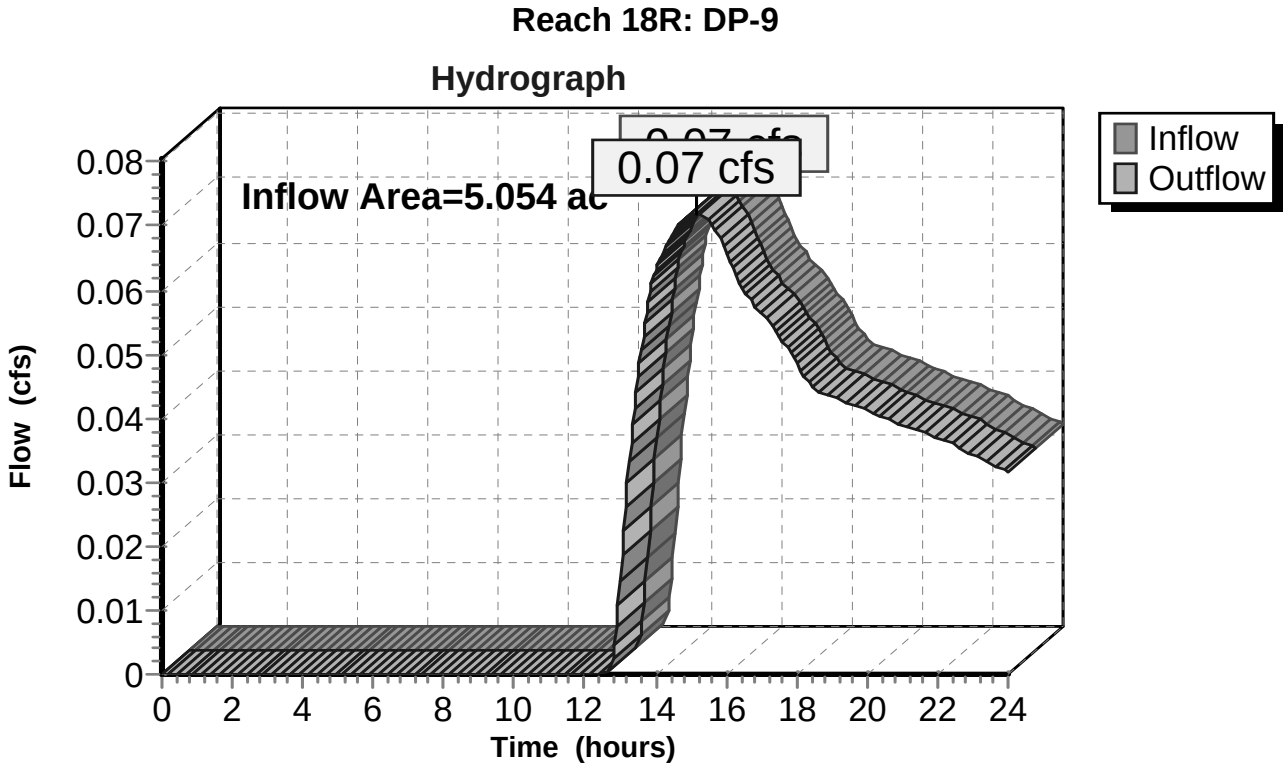


Summary for Reach 18R: DP-9

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.054 ac, 0.00% Impervious, Inflow Depth > 0.10" for 10-Year event
Inflow = 0.07 cfs @ 15.12 hrs, Volume= 0.044 af
Outflow = 0.07 cfs @ 15.12 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA-1 Runoff Area=22.620 ac 0.00% Impervious Runoff Depth>2.39"
Flow Length=1,906' Slope=0.0540 '/' Tc=51.1 min CN=50 Runoff=25.57 cfs 4.511 af

Subcatchment 2S: DA-2 Runoff Area=2.178 ac 0.51% Impervious Runoff Depth>0.99"
Flow Length=430' Slope=0.1623 '/' Tc=13.0 min CN=36 Runoff=1.12 cfs 0.180 af

Subcatchment 3S: DA-3 Runoff Area=5.054 ac 0.00% Impervious Runoff Depth>1.17"
Flow Length=757' Slope=0.0695 '/' Tc=29.5 min CN=38 Runoff=2.77 cfs 0.493 af

Subcatchment 4S: DA-4 Runoff Area=2.249 ac 4.40% Impervious Runoff Depth>1.88"
Flow Length=544' Slope=0.0588 '/' Tc=20.4 min CN=45 Runoff=2.82 cfs 0.352 af

Subcatchment 5S: DA-5 Runoff Area=4.292 ac 9.18% Impervious Runoff Depth>1.67"
Flow Length=1,092' Slope=0.0980 '/' Tc=28.3 min UI Adjusted CN=43 Runoff=4.03 cfs 0.596 af

Subcatchment 6S: DA-6 Runoff Area=4.164 ac 7.13% Impervious Runoff Depth>2.20"
Flow Length=826' Slope=0.1337 '/' Tc=16.6 min UI Adjusted CN=48 Runoff=7.00 cfs 0.764 af

Subcatchment 7S: DA-7 Runoff Area=3.485 ac 9.24% Impervious Runoff Depth>1.18"
Flow Length=575' Slope=0.1184 '/' Tc=18.2 min CN=38 Runoff=2.24 cfs 0.342 af

Subcatchment 8S: DA-8 Runoff Area=181,383 sf 14.17% Impervious Runoff Depth>1.27"
Flow Length=470' Slope=0.0377 '/' Tc=25.9 min UI Adjusted CN=39 Runoff=2.70 cfs 0.440 af

Subcatchment 9S: DA-9 Runoff Area=8.200 ac 4.76% Impervious Runoff Depth>1.24"
Flow Length=1,452' Slope=0.0275 '/' Tc=74.9 min UI Adjusted CN=39 Runoff=3.06 cfs 0.849 af

Reach 3R: DP-1 Inflow=25.57 cfs 4.511 af
Outflow=25.57 cfs 4.511 af

Reach 11R: DP-2 Inflow=2.70 cfs 0.440 af
Outflow=2.70 cfs 0.440 af

Reach 12R: DP-3 Inflow=1.12 cfs 0.180 af
Outflow=1.12 cfs 0.180 af

Reach 13R: DP-4 Inflow=3.06 cfs 0.849 af
Outflow=3.06 cfs 0.849 af

Reach 14R: DP-5 Inflow=2.24 cfs 0.342 af
Outflow=2.24 cfs 0.342 af

Reach 15R: DP-6 Inflow=7.00 cfs 0.764 af
Outflow=7.00 cfs 0.764 af

Reach 16R: DP-7 Inflow=4.03 cfs 0.596 af
Outflow=4.03 cfs 0.596 af

Reach 17R: DP-8 Inflow=2.82 cfs 0.352 af
Outflow=2.82 cfs 0.352 af

Reach 18R: DP-9 Inflow=2.77 cfs 0.493 af
Outflow=2.77 cfs 0.493 af

Total Runoff Area = 56.406 ac Runoff Volume = 8.528 af Average Runoff Depth = 1.81"
96.27% Pervious = 54.303 ac 3.73% Impervious = 2.103 ac

Summary for Subcatchment 1S: DA-1

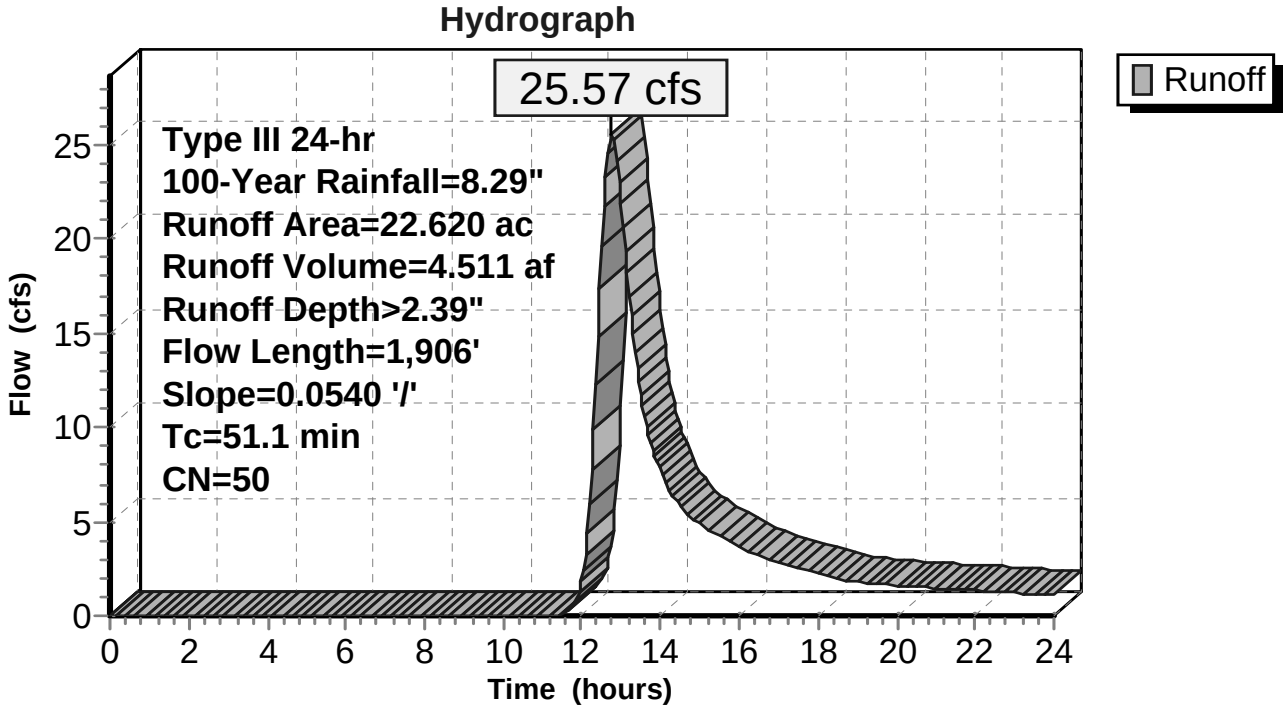
Runoff = 25.57 cfs @ 12.76 hrs, Volume= 4.511 af, Depth> 2.39"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
7.259	39	Pasture/grassland/range, Good, HSG A
7.409	30	Woods, Good, HSG A
7.594	77	Woods, Good, HSG D
0.358	96	Gravel surface, HSG A
22.620	50	Weighted Average
22.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.1	1,906	0.0540	0.62		**Lag/CN Method,**

Subcatchment 1S: DA-1



Summary for Subcatchment 2S: DA-2

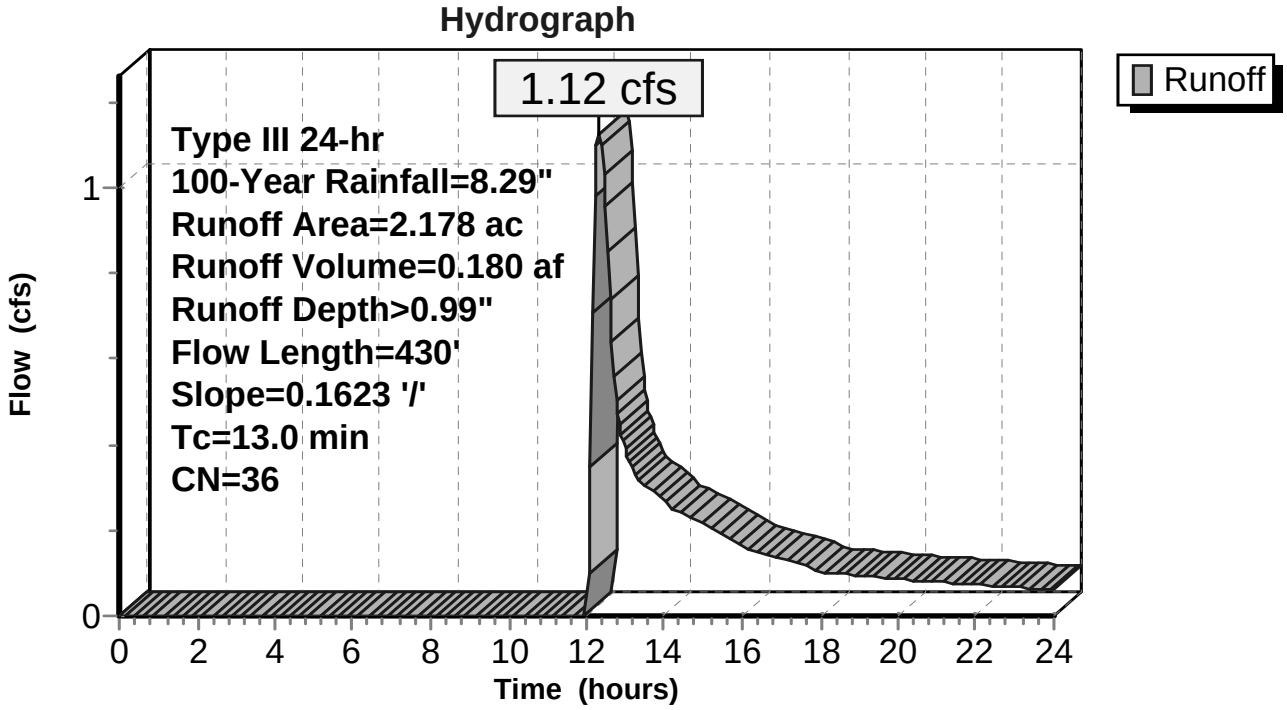
Runoff = 1.12 cfs @ 12.31 hrs, Volume= 0.180 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.748	30	Woods, Good, HSG A
1.419	39	Pasture/grassland/range, Good, HSG A
0.011	98	Unconnected roofs, HSG A
2.178	36	Weighted Average
2.167		99.49% Pervious Area
0.011		0.51% Impervious Area
0.011		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	430	0.1623	0.55		**Lag/CN Method,** Contour Length= 7,700' Interval= 2'

Subcatchment 2S: DA-2



Summary for Subcatchment 3S: DA-3

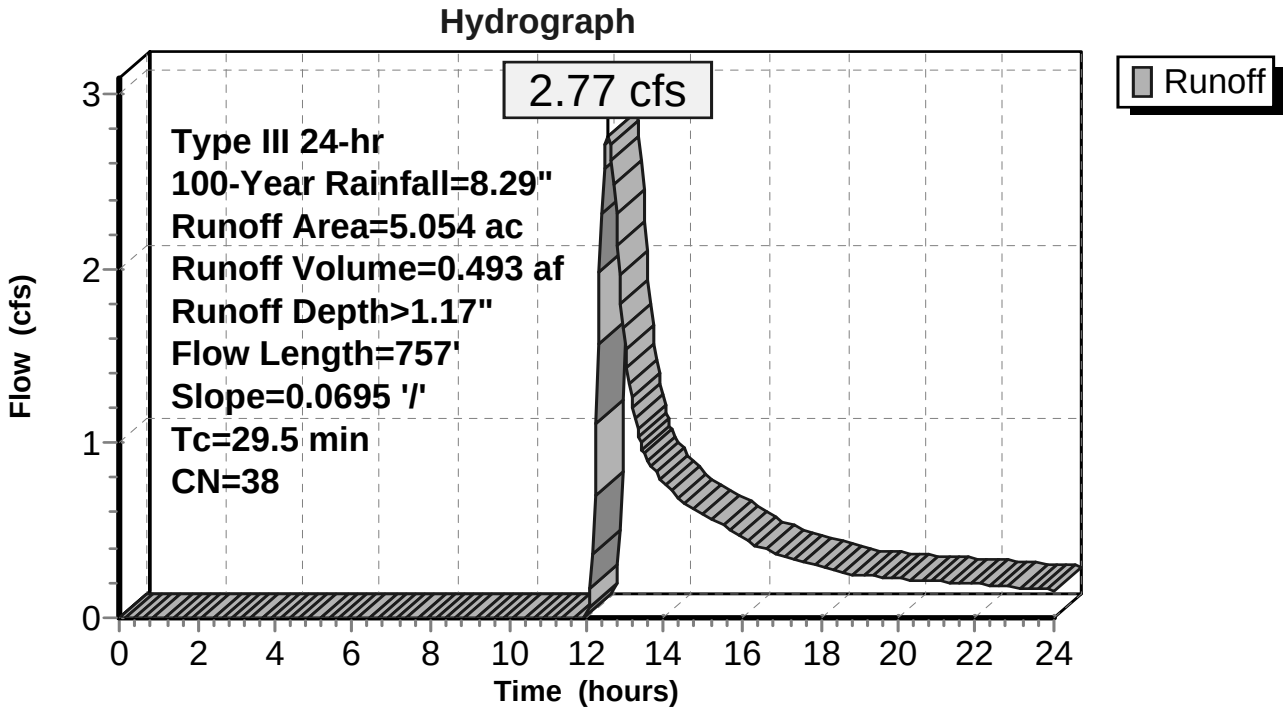
Runoff = 2.77 cfs @ 12.55 hrs, Volume= 0.493 af, Depth> 1.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
4.606	39	Pasture/grassland/range, Good, HSG A
0.448	30	Woods, Good, HSG A
5.054	38	Weighted Average
5.054		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	757	0.0695	0.43		**Lag/CN Method,** Contour Length= 7,650' Interval= 2'

Subcatchment 3S: DA-3



Summary for Subcatchment 4S: DA-4

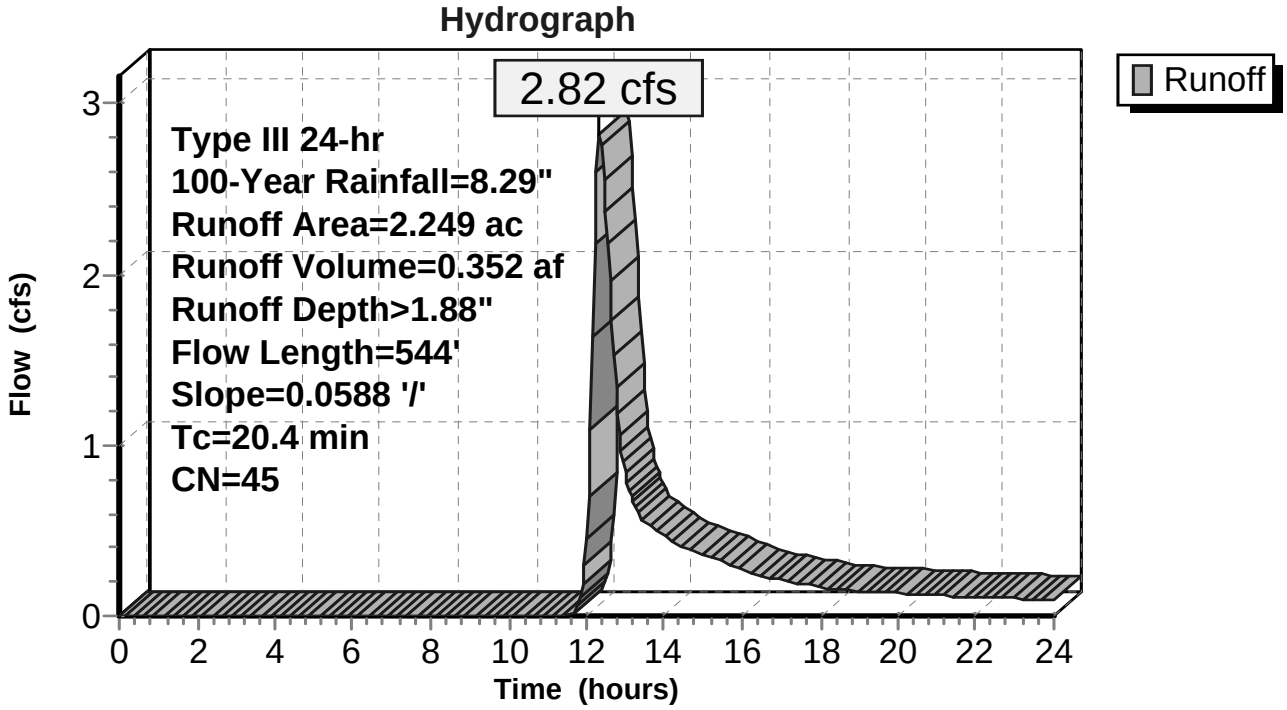
Runoff = 2.82 cfs @ 12.33 hrs, Volume= 0.352 af, Depth> 1.88"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
1.930	39	Pasture/grassland/range, Good, HSG A
0.099	98	Paved parking, HSG A
0.080	30	Woods, Good, HSG A
0.140	96	Gravel surface, HSG A
2.249	45	Weighted Average
2.150		95.60% Pervious Area
0.099		4.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	544	0.0588	0.44		**Lag/CN Method,** Contour Length= 2,879' Interval= 2'

Subcatchment 4S: DA-4



Summary for Subcatchment 5S: DA-5

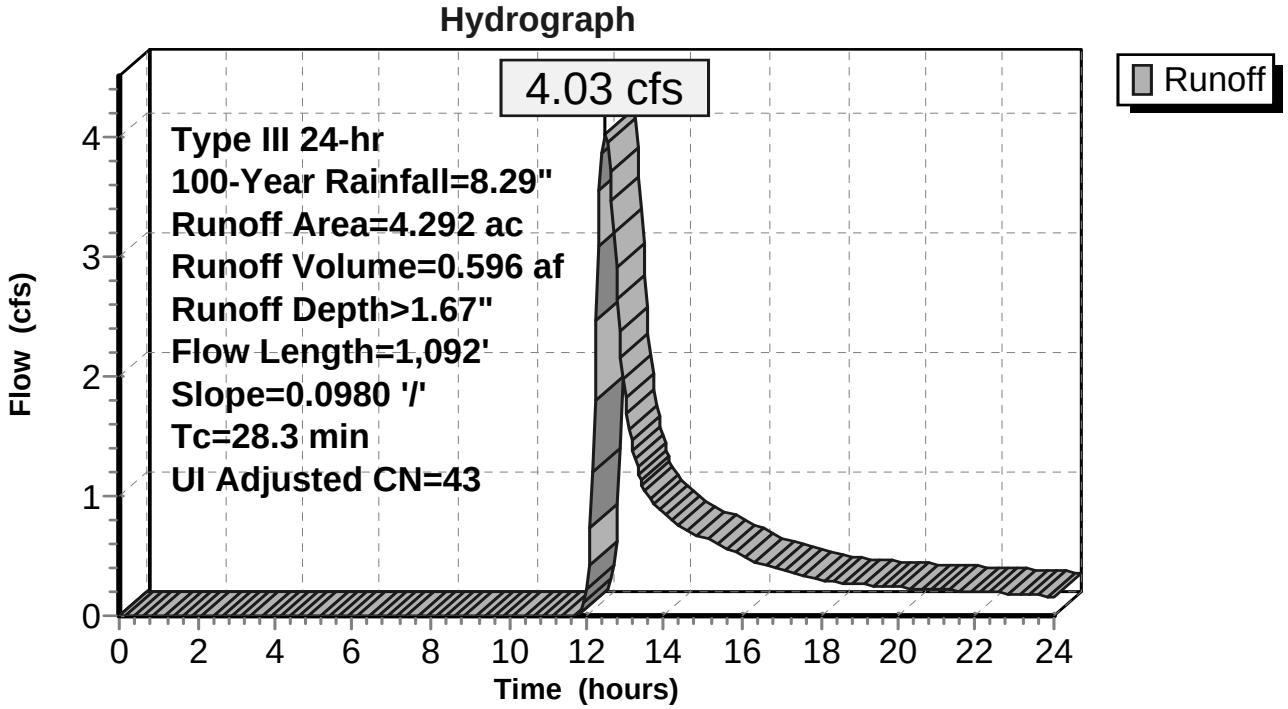
Runoff = 4.03 cfs @ 12.48 hrs, Volume= 0.596 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.206	98	Paved parking, HSG A
1.750	39	Pasture/grassland/range, Good, HSG A
1.884	30	Woods, Good, HSG A
0.188	98	Unconnected roofs, HSG A
0.264	96	Gravel surface, HSG A
4.292	44	Weighted Average, UI Adjusted CN = 43
3.898		90.82% Pervious Area
0.394		9.18% Impervious Area
0.188		47.72% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.3	1,092	0.0980	0.64		**Lag/CN Method,** Contour Length= 9,162' Interval= 2'

Subcatchment 5S: DA-5



Summary for Subcatchment 6S: DA-6

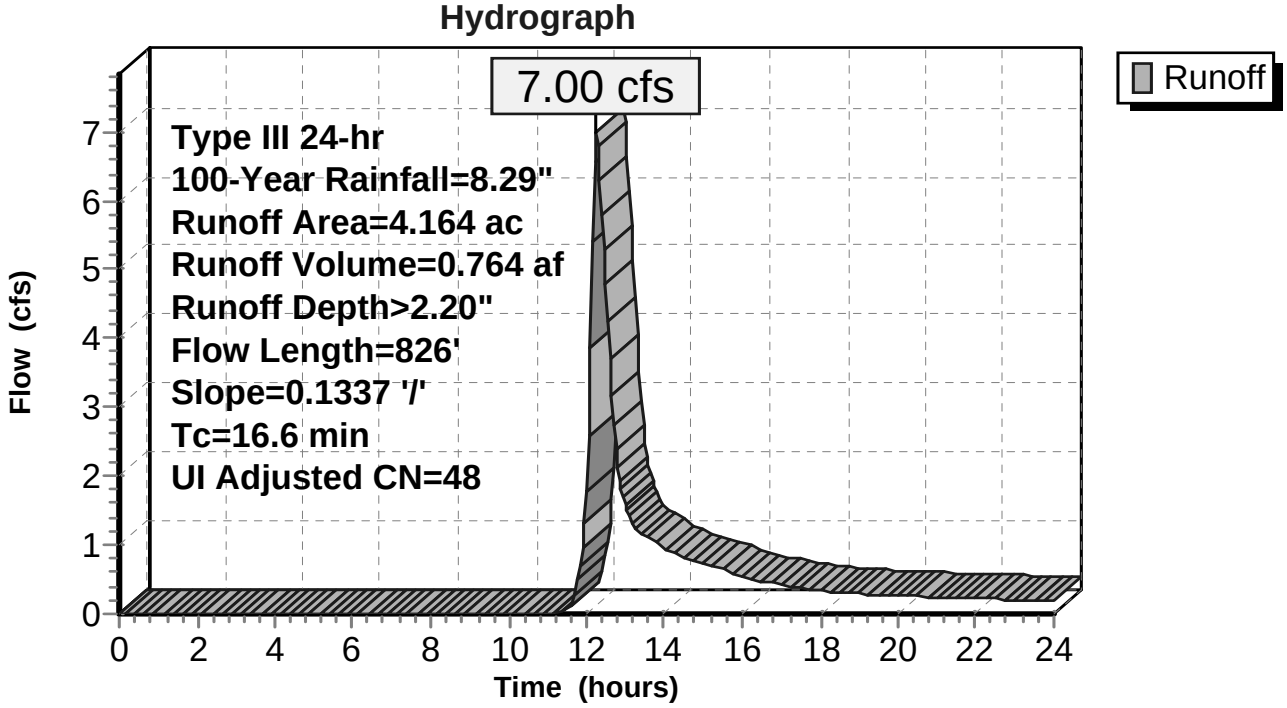
Runoff = 7.00 cfs @ 12.26 hrs, Volume= 0.764 af, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.297	98	Unconnected roofs, HSG A
3.401	39	Pasture/grassland/range, Good, HSG A
0.466	96	Gravel surface, HSG A
4.164	50	Weighted Average, UI Adjusted CN = 48
3.867		92.87% Pervious Area
0.297		7.13% Impervious Area
0.297		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6	826	0.1337	0.83		**Lag/CN Method,** Contour Length= 12,121' Interval= 2'

Subcatchment 6S: DA-6



Summary for Subcatchment 7S: DA-7

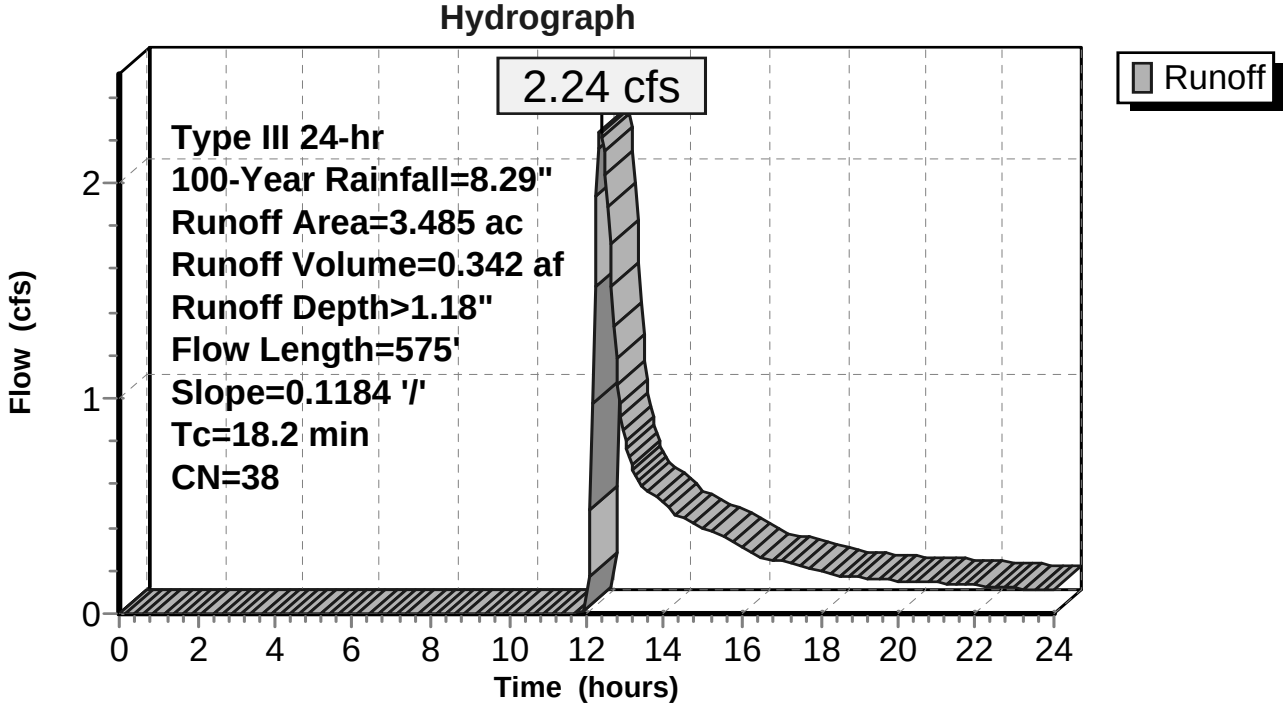
Runoff = 2.24 cfs @ 12.36 hrs, Volume= 0.342 af, Depth> 1.18"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
3.093	30	Woods, Good, HSG A
0.322	98	Water Surface, HSG A
0.070	96	Gravel surface, HSG A
3.485	38	Weighted Average
3.163		90.76% Pervious Area
0.322		9.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.2	575	0.1184	0.53		**Lag/CN Method,** Contour Length= 8,985' Interval= 2'

Subcatchment 7S: DA-7



Summary for Subcatchment 8S: DA-8

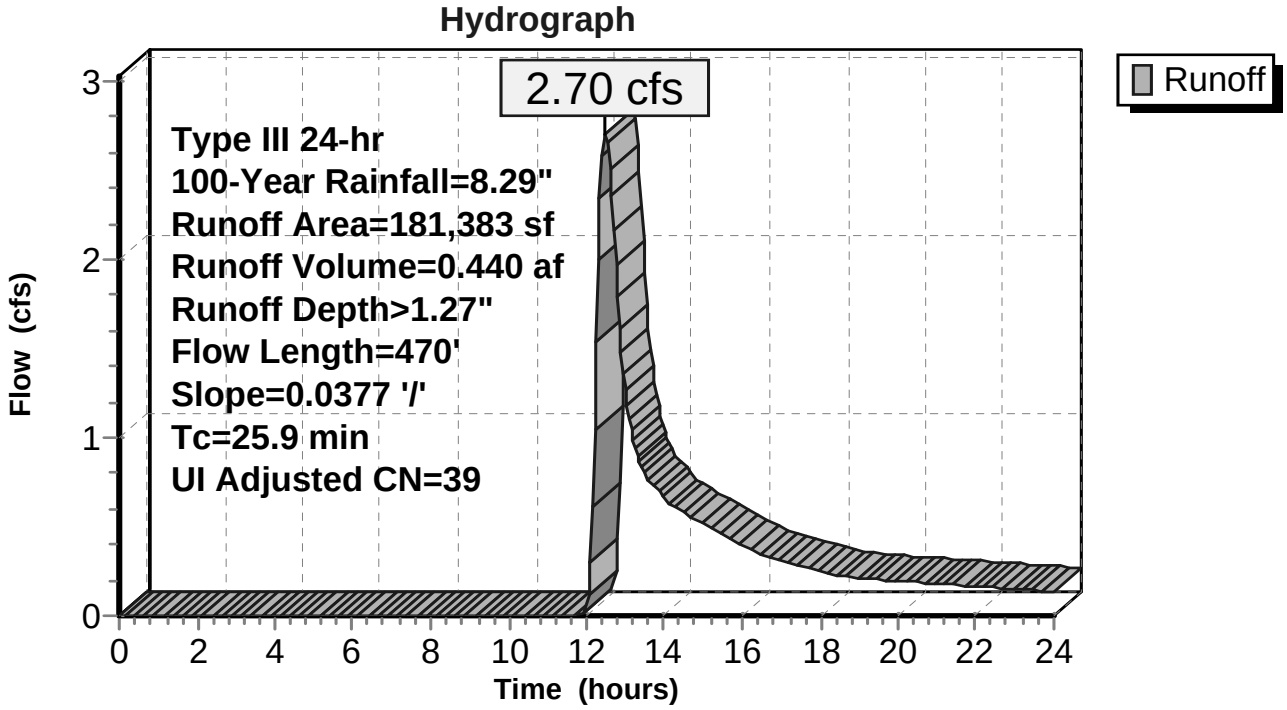
Runoff = 2.70 cfs @ 12.48 hrs, Volume= 0.440 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (sf)	CN	Description
155,683	30	Woods, Good, HSG A
5,881	98	Unconnected roofs, HSG A
14,026	98	Paved parking, HSG A
5,793	98	Water Surface, HSG A
181,383	40	Weighted Average, UI Adjusted CN = 39
155,683		85.83% Pervious Area
25,700		14.17% Impervious Area
5,881		22.88% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	470	0.0377	0.30		**Lag/CN Method,** Contour Length= 3,416' Interval= 2'

Subcatchment 8S: DA-8



Summary for Subcatchment 9S: DA-9

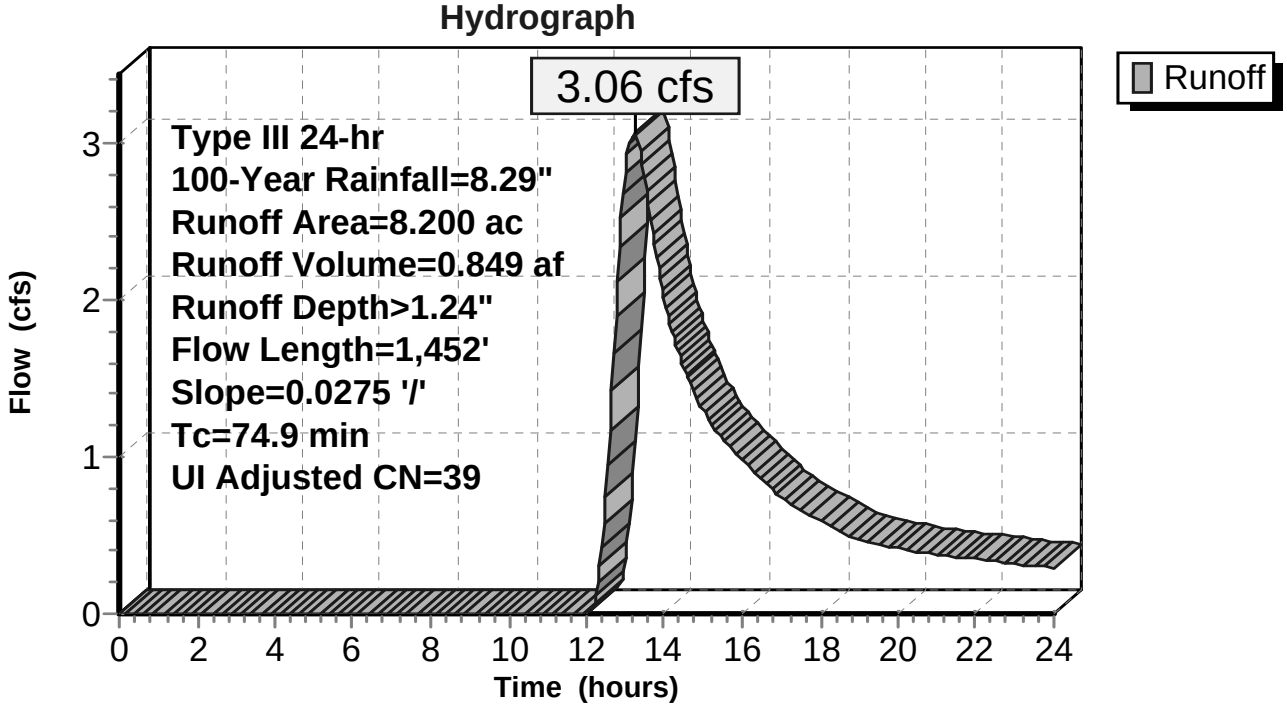
Runoff = 3.06 cfs @ 13.23 hrs, Volume= 0.849 af, Depth> 1.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.506	96	Gravel surface, HSG A
0.390	98	Unconnected roofs, HSG A
4.610	30	Woods, Good, HSG A
2.694	39	Pasture/grassland/range, Good, HSG A
8.200	40	Weighted Average, UI Adjusted CN = 39
7.810		95.24% Pervious Area
0.390		4.76% Impervious Area
0.390		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
74.9	1,452	0.0275	0.32		**Lag/CN Method,** Contour Length= 4,905' Interval= 2'

Subcatchment 9S: DA-9



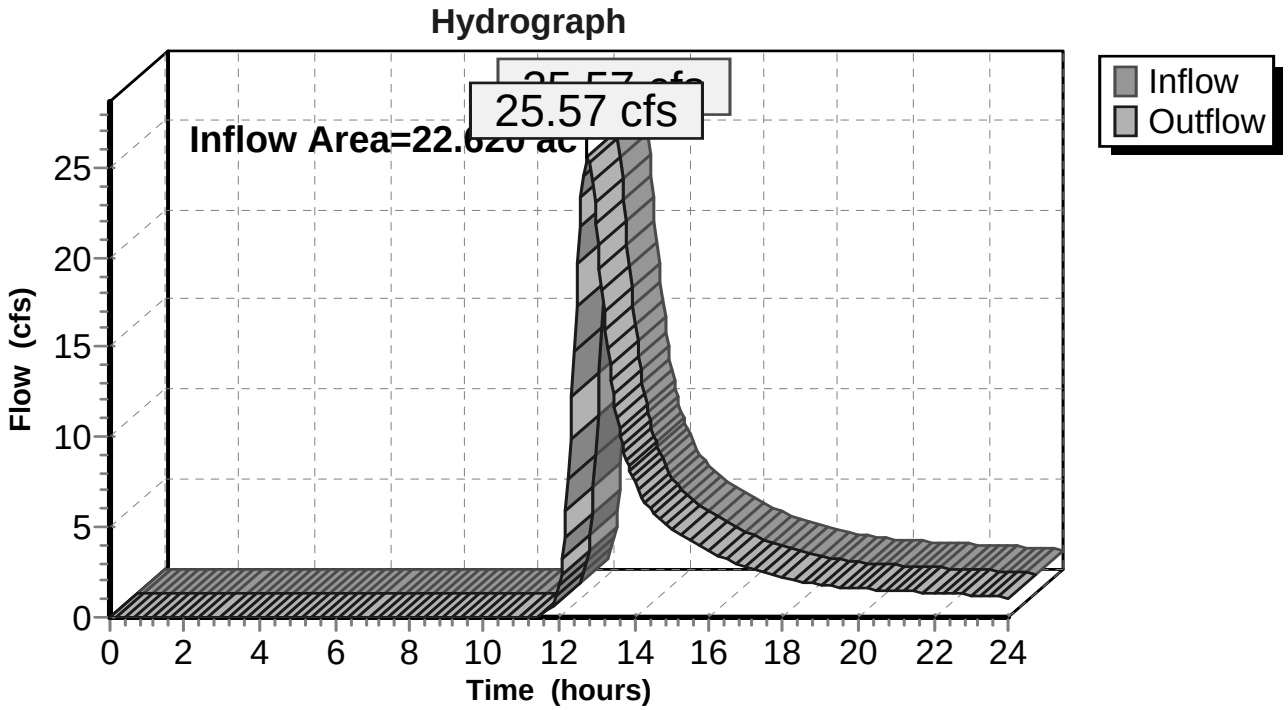
Summary for Reach 3R: DP-1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 22.620 ac, 0.00% Impervious, Inflow Depth > 2.39" for 100-Year event
Inflow = 25.57 cfs @ 12.76 hrs, Volume= 4.511 af
Outflow = 25.57 cfs @ 12.76 hrs, Volume= 4.511 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3R: DP-1



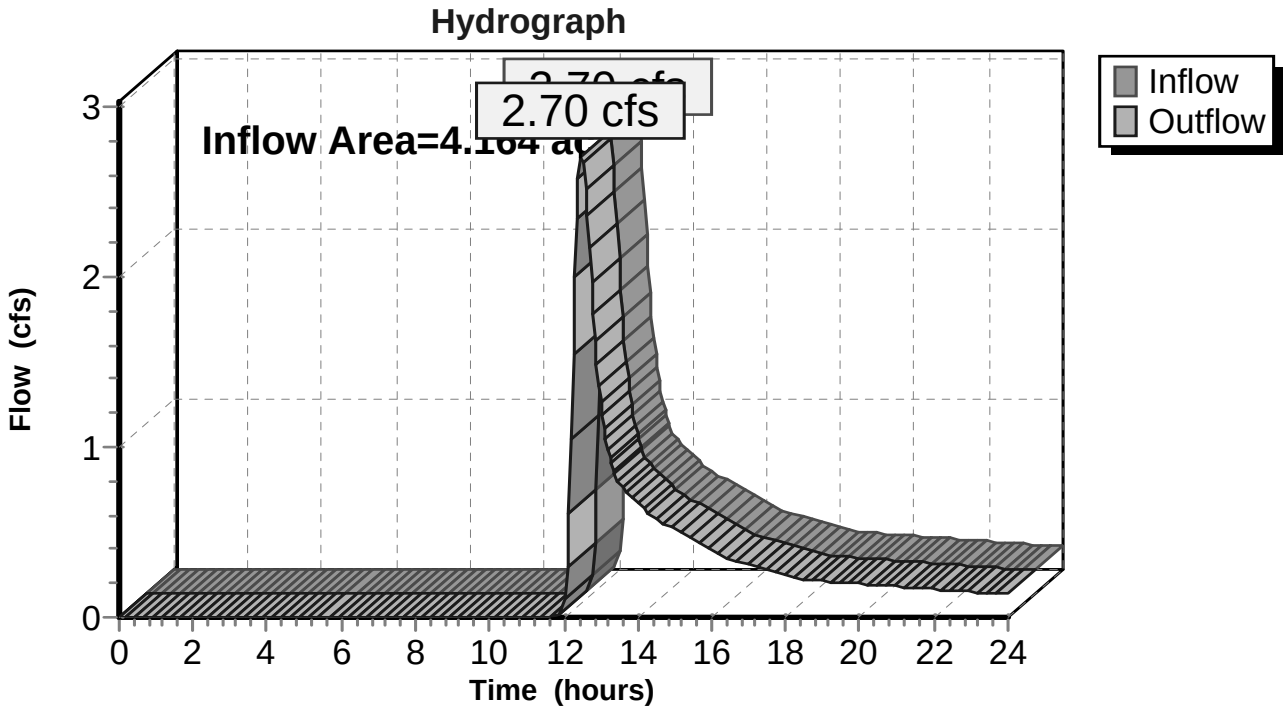
Summary for Reach 11R: DP-2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.164 ac, 14.17% Impervious, Inflow Depth > 1.27" for 100-Year event
Inflow = 2.70 cfs @ 12.48 hrs, Volume= 0.440 af
Outflow = 2.70 cfs @ 12.48 hrs, Volume= 0.440 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 11R: DP-2



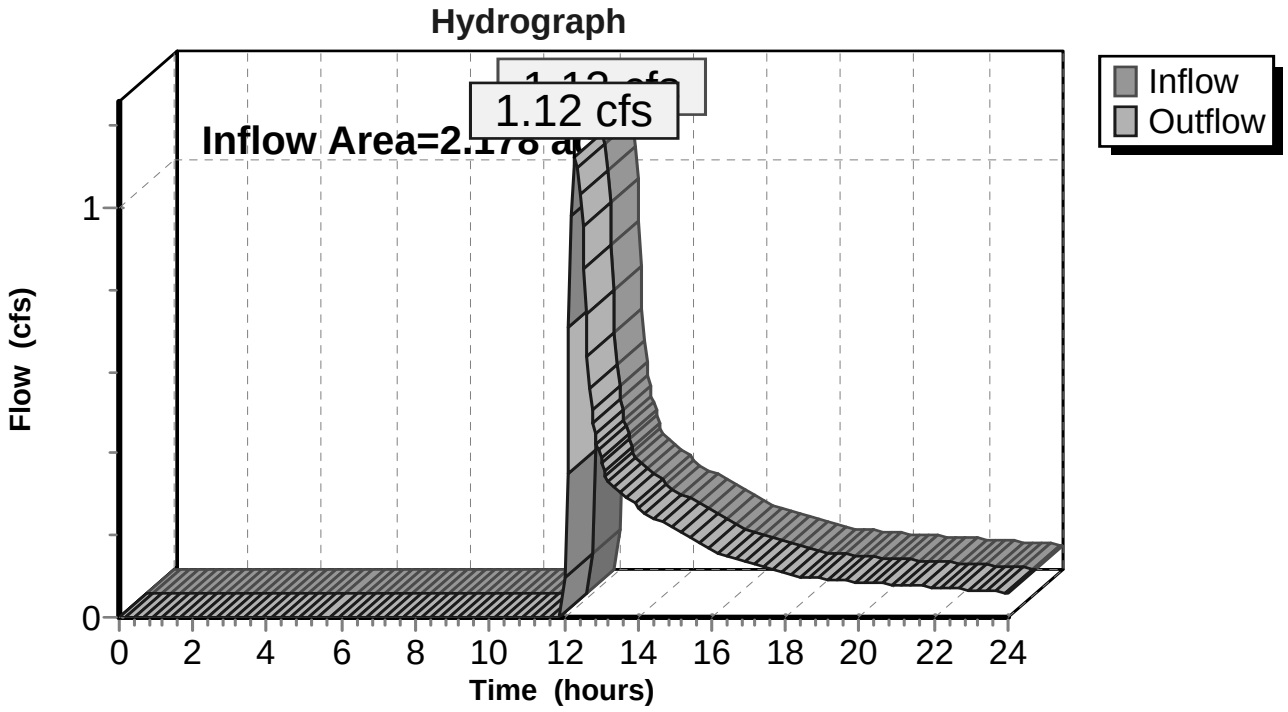
Summary for Reach 12R: DP-3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.178 ac, 0.51% Impervious, Inflow Depth > 0.99" for 100-Year event
Inflow = 1.12 cfs @ 12.31 hrs, Volume= 0.180 af
Outflow = 1.12 cfs @ 12.31 hrs, Volume= 0.180 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 12R: DP-3



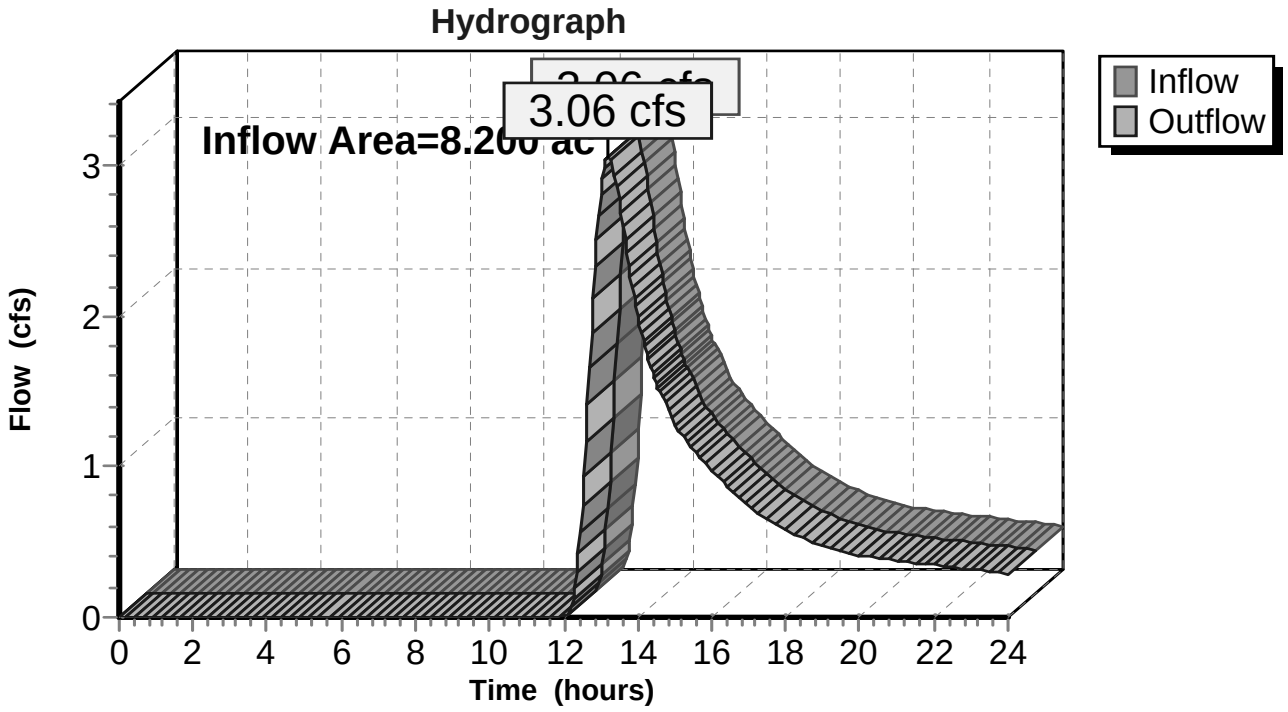
Summary for Reach 13R: DP-4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.200 ac, 4.76% Impervious, Inflow Depth > 1.24" for 100-Year event
Inflow = 3.06 cfs @ 13.23 hrs, Volume= 0.849 af
Outflow = 3.06 cfs @ 13.23 hrs, Volume= 0.849 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 13R: DP-4



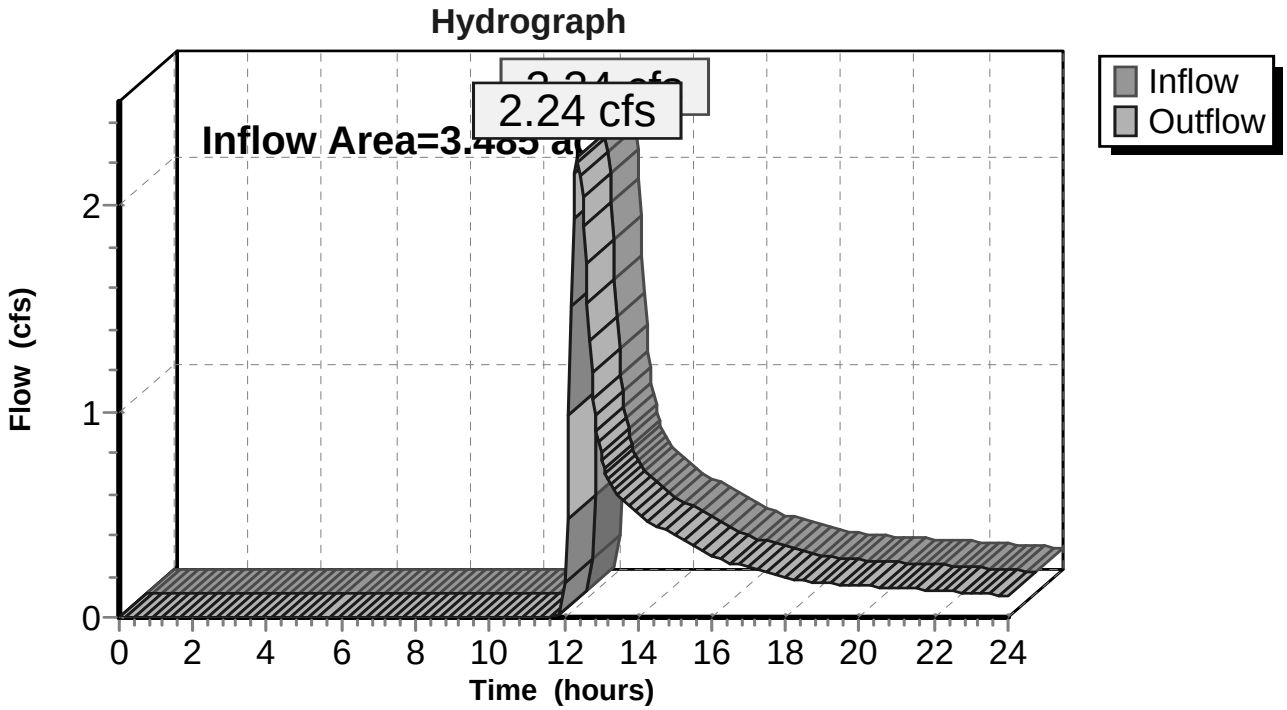
Summary for Reach 14R: DP-5

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.485 ac, 9.24% Impervious, Inflow Depth > 1.18" for 100-Year event
Inflow = 2.24 cfs @ 12.36 hrs, Volume= 0.342 af
Outflow = 2.24 cfs @ 12.36 hrs, Volume= 0.342 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 14R: DP-5



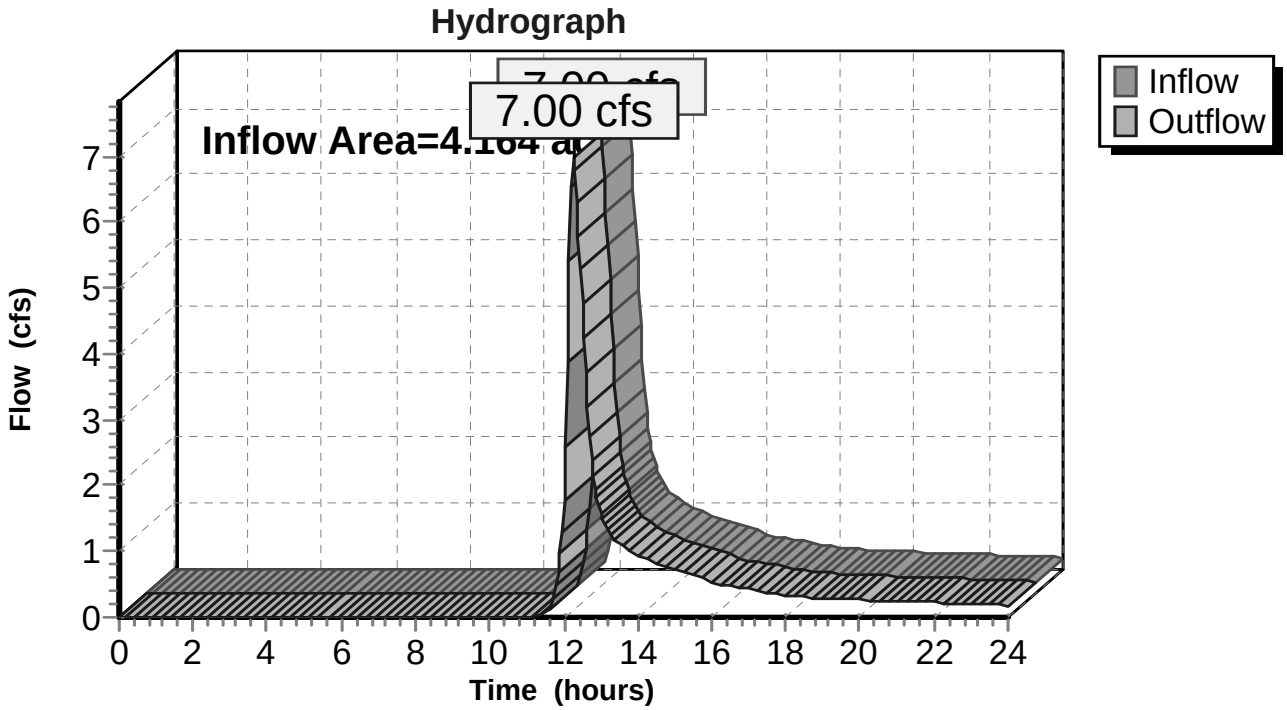
Summary for Reach 15R: DP-6

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.164 ac, 7.13% Impervious, Inflow Depth > 2.20" for 100-Year event
Inflow = 7.00 cfs @ 12.26 hrs, Volume= 0.764 af
Outflow = 7.00 cfs @ 12.26 hrs, Volume= 0.764 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 15R: DP-6



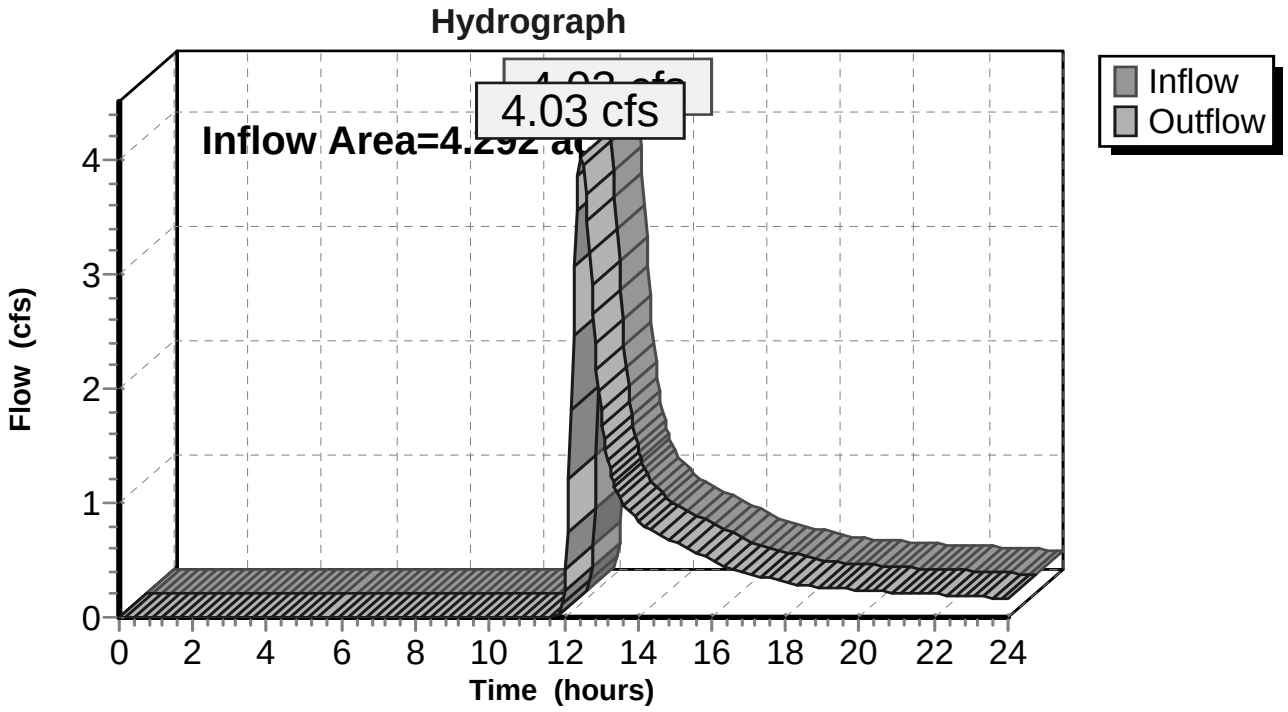
Summary for Reach 16R: DP-7

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.292 ac, 9.18% Impervious, Inflow Depth > 1.67" for 100-Year event
Inflow = 4.03 cfs @ 12.48 hrs, Volume= 0.596 af
Outflow = 4.03 cfs @ 12.48 hrs, Volume= 0.596 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 16R: DP-7



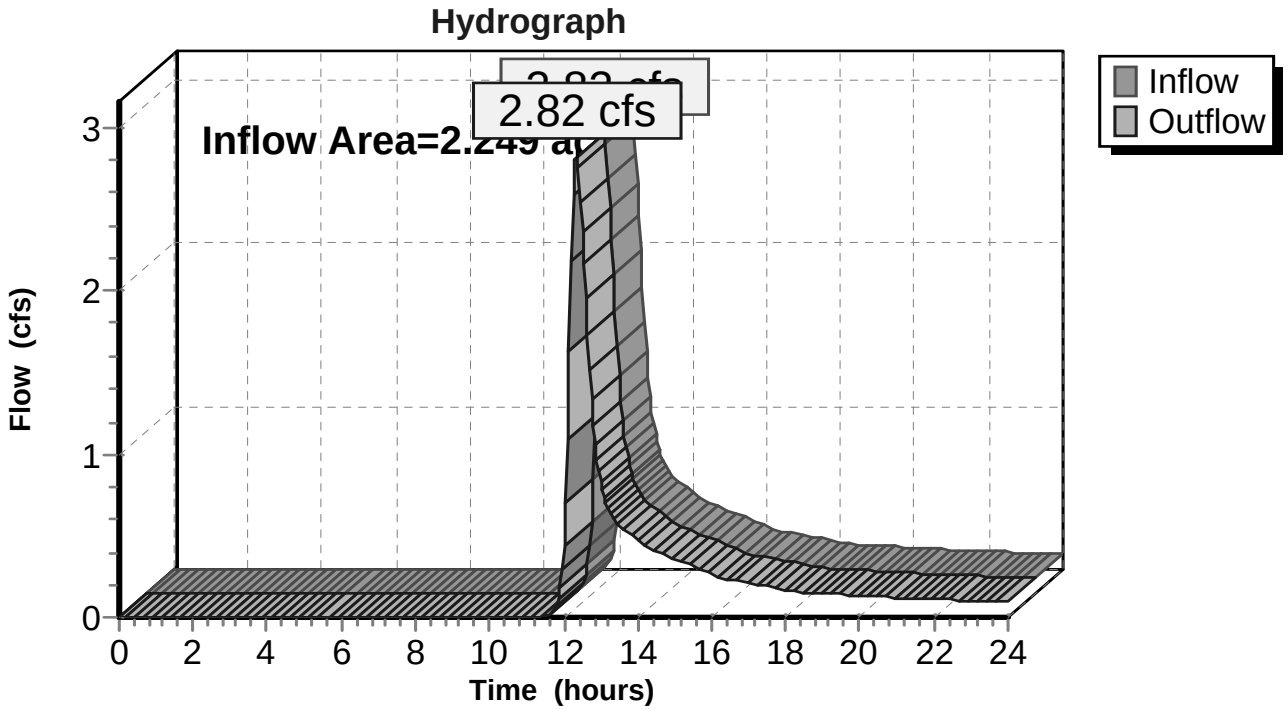
Summary for Reach 17R: DP-8

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.249 ac, 4.40% Impervious, Inflow Depth > 1.88" for 100-Year event
Inflow = 2.82 cfs @ 12.33 hrs, Volume= 0.352 af
Outflow = 2.82 cfs @ 12.33 hrs, Volume= 0.352 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 17R: DP-8



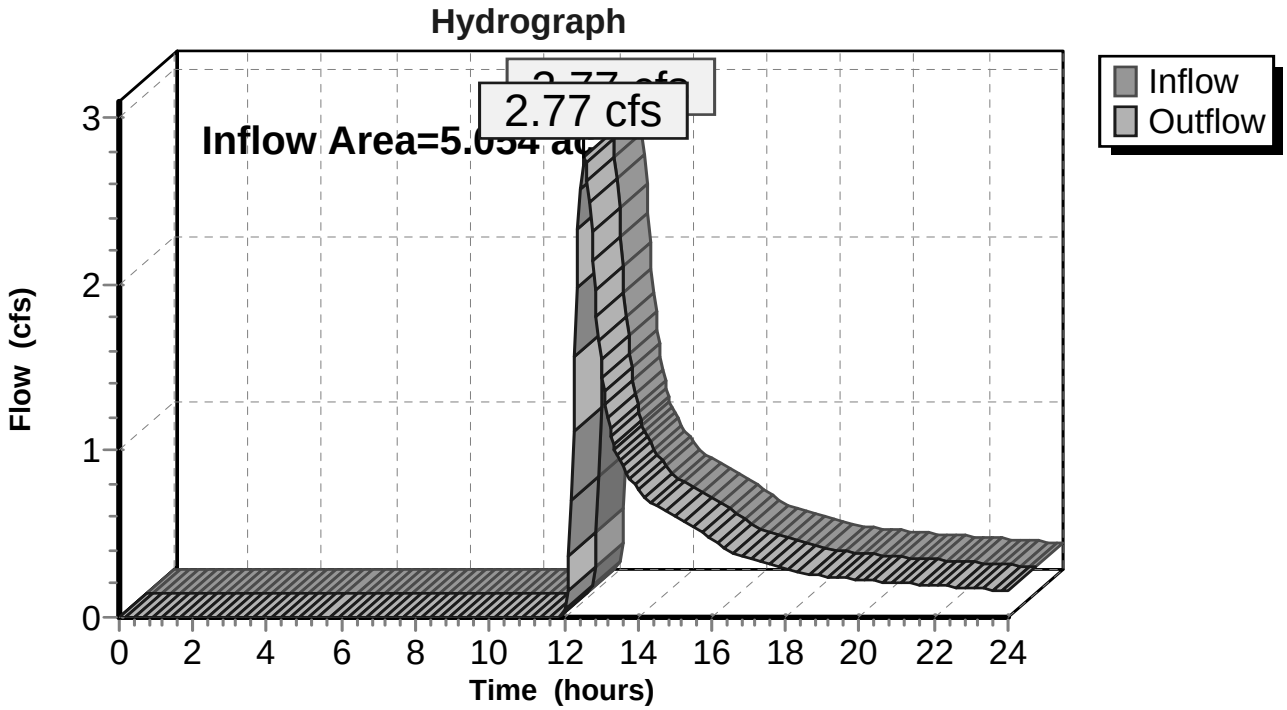
Summary for Reach 18R: DP-9

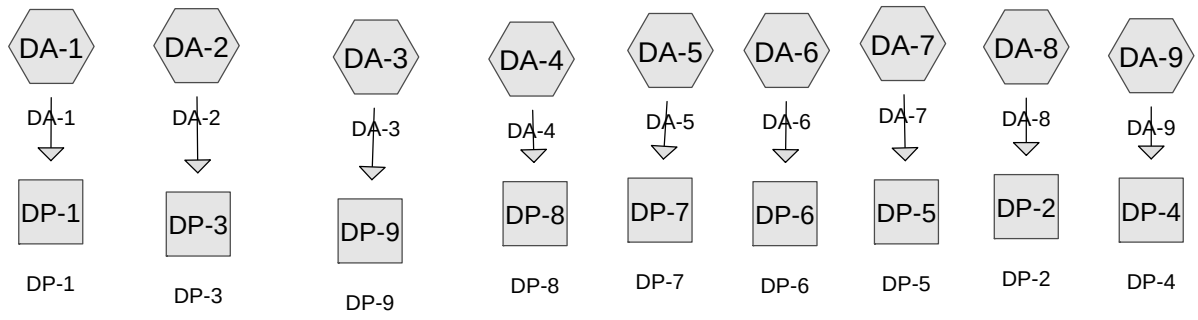
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.054 ac, 0.00% Impervious, Inflow Depth > 1.17" for 100-Year event
Inflow = 2.77 cfs @ 12.55 hrs, Volume= 0.493 af
Outflow = 2.77 cfs @ 12.55 hrs, Volume= 0.493 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 18R: DP-9





Subcat Reach Pond Link

Routing Diagram for Troutbeck Post-Dev Ph1 Unmitigated Model
Prepared by Microsoft, Printed 10/11/2022

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
20.830	30	Woods, Good, HSG A (DA-1, DA-2, DA-3, DA-4, DA-5, DA-7, DA-8, DA-9)
23.070	39	Pasture/grassland/range, Good, HSG A (DA-1, DA-2, DA-3, DA-4, DA-5, DA-6, DA-9)
7.594	77	Woods, Good, HSG D (DA-1)
2.647	96	Gravel surface, HSG A (DA-1, DA-4, DA-5, DA-6, DA-7, DA-9)
0.642	98	Paved parking, HSG A (DA-4, DA-5, DA-8)
1.163	98	Unconnected roofs, HSG A (DA-2, DA-5, DA-6, DA-7, DA-8, DA-9)
0.455	98	Water Surface, HSG A (DA-7, DA-8)
56.401	**46**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
48.807	HSG A	DA-1, DA-2, DA-3, DA-4, DA-5, DA-6, DA-7, DA-8, DA-9
0.000	HSG B	
0.000	HSG C	
7.594	HSG D	DA-1
0.000	Other	
56.401		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.642	0.000	0.000	0.000	0.000	0.642	Paved parking	DA-4, DA-5, DA-8
1.163	0.000	0.000	0.000	0.000	1.163	Unconnected roofs	DA-2, DA-5, DA-6, DA-7, DA-8, DA-9
2.647	0.000	0.000	0.000	0.000	2.647	Gravel surface	DA-1, DA-4, DA-5, DA-6, DA-7, DA-9
23.070	0.000	0.000	0.000	0.000	23.070	Pasture/grassland/range, Good	DA-1, DA-2, DA-3, DA-4, DA-5, DA-6, DA-9

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
20.830	0.000	0.000	7.594	0.000	28.424	Woods, Good	DA-1, DA-2, DA-3, DA-4, DA-5, DA-7, DA-8, DA-9
0.455	0.000	0.000	0.000	0.000	0.455	Water Surface	DA-7, DA-8
48.807	**0.000**	**0.000**	**7.594**	**0.000**	**56.401**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DA-1: DA-1 Runoff Area=22.620 ac 0.00% Impervious Runoff Depth>0.03"
Flow Length=1,906' Slope=0.0540 '/' Tc=51.1 min CN=50 Runoff=0.09 cfs 0.056 af

Subcatchment DA-2: DA-2 Runoff Area=2.178 ac 1.88% Impervious Runoff Depth=0.00"
Flow Length=430' Slope=0.1623 '/' Tc=12.6 min UI Adjusted CN=36 Runoff=0.00 cfs 0.000 af

Subcatchment DA-3: DA-3 Runoff Area=5.054 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=757' Slope=0.0695 '/' Tc=29.5 min CN=38 Runoff=0.00 cfs 0.000 af

Subcatchment DA-4: DA-4 Runoff Area=2.249 ac 4.85% Impervious Runoff Depth>0.00"
Flow Length=544' Slope=0.0588 '/' Tc=20.4 min CN=45 Runoff=0.00 cfs 0.000 af

Subcatchment DA-5: DA-5 Runoff Area=4.292 ac 9.18% Impervious Runoff Depth=0.00"
Flow Length=1,092' Slope=0.0980 '/' Tc=28.3 min UI Adjusted CN=43 Runoff=0.00 cfs 0.000 af

Subcatchment DA-6: DA-6 Runoff Area=4.164 ac 7.13% Impervious Runoff Depth>0.01"
Flow Length=826' Slope=0.1337 '/' Tc=16.6 min UI Adjusted CN=48 Runoff=0.01 cfs 0.005 af

Subcatchment DA-7: DA-7 Runoff Area=3.485 ac 13.63% Impervious Runoff Depth=0.00"
Flow Length=575' Slope=0.1184 '/' Tc=16.7 min UI Adjusted CN=40 Runoff=0.00 cfs 0.000 af

Subcatchment DA-8: DA-8 Runoff Area=181,384 sf 14.82% Impervious Runoff Depth=0.00"
Flow Length=470' Slope=0.0377 '/' Tc=25.9 min UI Adjusted CN=39 Runoff=0.00 cfs 0.000 af

Subcatchment DA-9: DA-9 Runoff Area=8.195 ac 3.99% Impervious Runoff Depth>0.00"
Flow Length=1,452' Slope=0.0275 '/' Tc=63.8 min UI Adjusted CN=45 Runoff=0.00 cfs 0.001 af

Reach DP-1: DP-1 Avg. Flow Depth=0.06' Max Vel=0.45 fps Inflow=0.09 cfs 0.056 af
n=0.040 L=361.0' S=0.0055 '/' Capacity=3,067.20 cfs Outflow=0.09 cfs 0.054 af

Reach DP-2: DP-2 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.040 L=68.6' S=0.0073 '/' Capacity=3,518.07 cfs Outflow=0.00 cfs 0.000 af

Reach DP-3: DP-3 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.040 L=125.5' S=0.0637 '/' Capacity=904.10 cfs Outflow=0.00 cfs 0.000 af

Reach DP-4: DP-4 Avg. Flow Depth=0.00' Max Vel=0.32 fps Inflow=0.00 cfs 0.001 af
n=0.040 L=364.6' S=0.0027 '/' Capacity=2,158.11 cfs Outflow=0.00 cfs 0.001 af

Reach DP-5: DP-5 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.040 L=237.1' S=0.0127 '/' Capacity=4,635.28 cfs Outflow=0.00 cfs 0.000 af

Reach DP-6: DP-6 Avg. Flow Depth=0.01' Max Vel=0.43 fps Inflow=0.01 cfs 0.005 af
n=0.040 L=398.7' S=0.0050 '/' Capacity=2,918.59 cfs Outflow=0.01 cfs 0.005 af

Reach DP-7: DP-7 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.040 L=9,999.0' S=0.0473 '/' Capacity=8,957.85 cfs Outflow=0.00 cfs 0.000 af

Reach DP-8: DP-8 Avg. Flow Depth=0.00' Max Vel=0.82 fps Inflow=0.00 cfs 0.000 af
n=0.040 L=318.7' S=0.0455 '/' Capacity=763.82 cfs Outflow=0.00 cfs 0.000 af

Reach DP-9: DP-9 Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.040 L=102.9' S=0.0534 '/' Capacity=827.88 cfs Outflow=0.00 cfs 0.000 af

Total Runoff Area = 56.401 ac Runoff Volume = 0.063 af Average Runoff Depth = 0.01"
95.99% Pervious = 54.141 ac 4.01% Impervious = 2.260 ac

Summary for Subcatchment DA-1: DA-1

Runoff = 0.09 cfs @ 16.20 hrs, Volume= 0.056 af, Depth> 0.03"

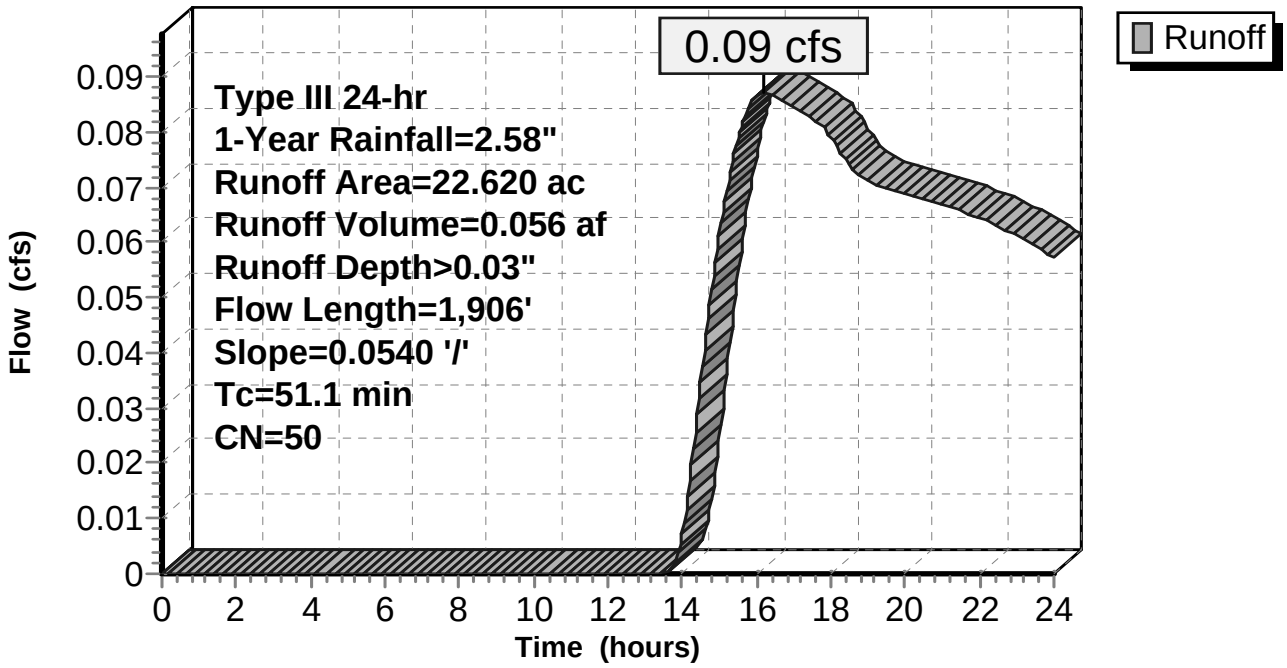
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
7.259	39	Pasture/grassland/range, Good, HSG A
7.409	30	Woods, Good, HSG A
7.594	77	Woods, Good, HSG D
0.358	96	Gravel surface, HSG A
22.620	50	Weighted Average
22.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.1	1,906	0.0540	0.62		**Lag/CN Method,**

Subcatchment DA-1: DA-1

Hydrograph



Summary for Subcatchment DA-2: DA-2

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

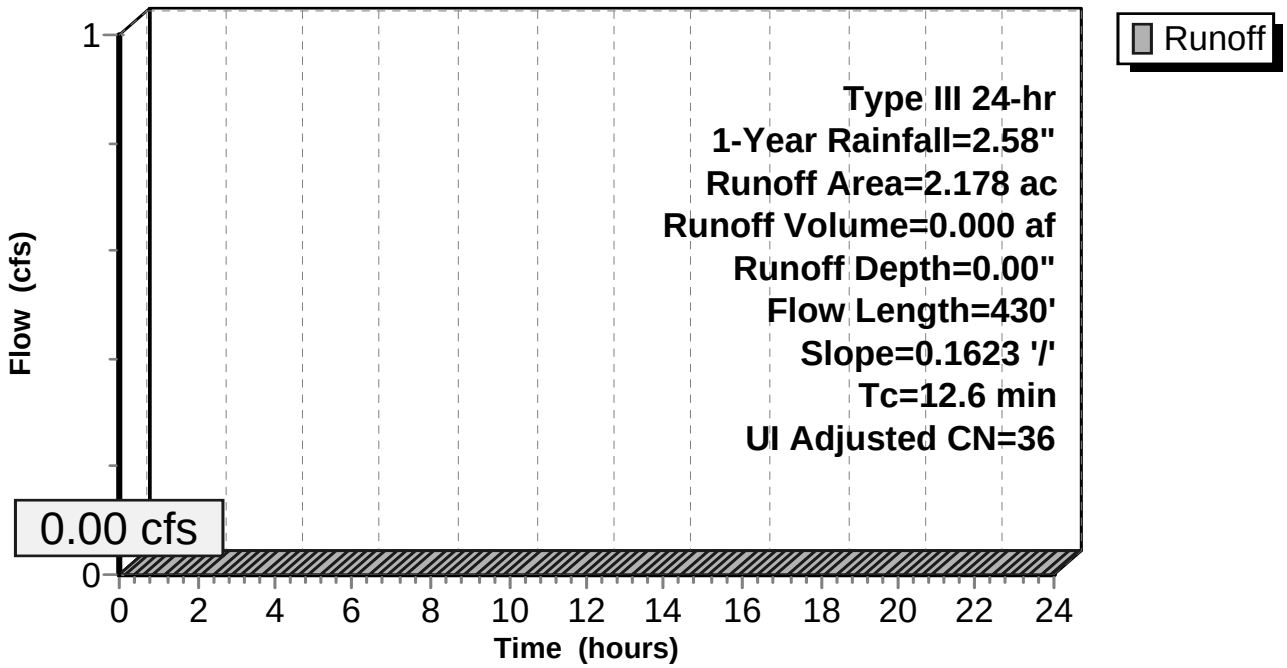
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.748	30	Woods, Good, HSG A
1.389	39	Pasture/grassland/range, Good, HSG A
0.011	98	Unconnected roofs, HSG A
0.030	98	Unconnected roofs, HSG A
2.178	37	Weighted Average, UI Adjusted CN = 36
2.137		98.12% Pervious Area
0.041		1.88% Impervious Area
0.041		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	430	0.1623	0.57		**Lag/CN Method,** Contour Length= 7,700' Interval= 2'

Subcatchment DA-2: DA-2

Hydrograph



Summary for Subcatchment DA-3: DA-3

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

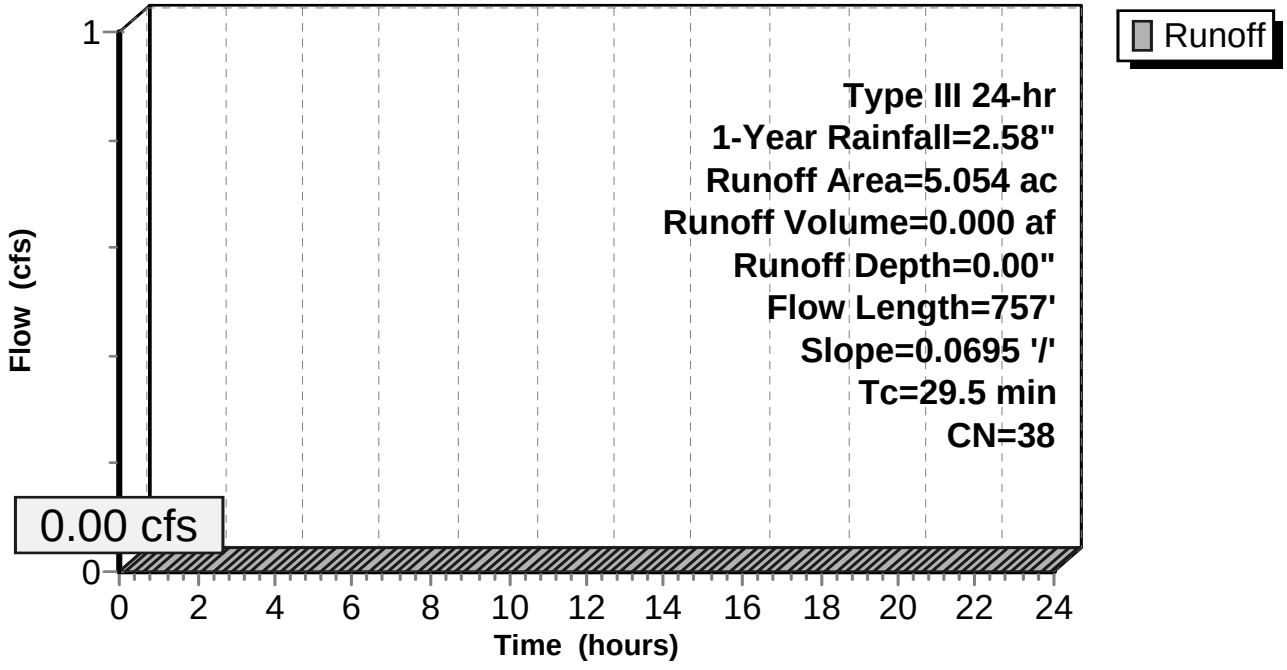
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
4.606	39	Pasture/grassland/range, Good, HSG A
0.448	30	Woods, Good, HSG A
5.054	38	Weighted Average
5.054		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	757	0.0695	0.43		**Lag/CN Method,** Contour Length= 7,650' Interval= 2'

Subcatchment DA-3: DA-3

Hydrograph



Summary for Subcatchment DA-4: DA-4

[73] Warning: Peak may fall outside time span

Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth> 0.00"

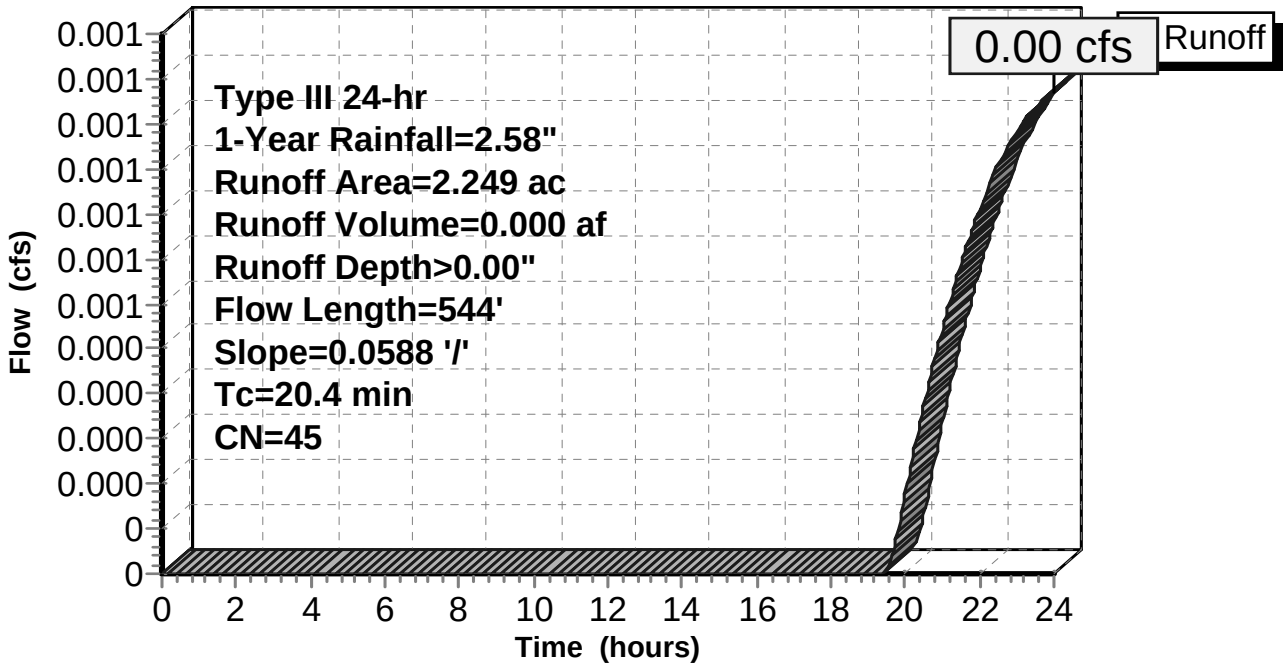
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
1.920	39	Pasture/grassland/range, Good, HSG A
0.080	30	Woods, Good, HSG A
0.140	96	Gravel surface, HSG A
0.109	98	Paved parking, HSG A
2.249	45	Weighted Average
2.140		95.15% Pervious Area
0.109		4.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	544	0.0588	0.44		**Lag/CN Method,** Contour Length= 2,879' Interval= 2'

Subcatchment DA-4: DA-4

Hydrograph



Summary for Subcatchment DA-5: DA-5

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

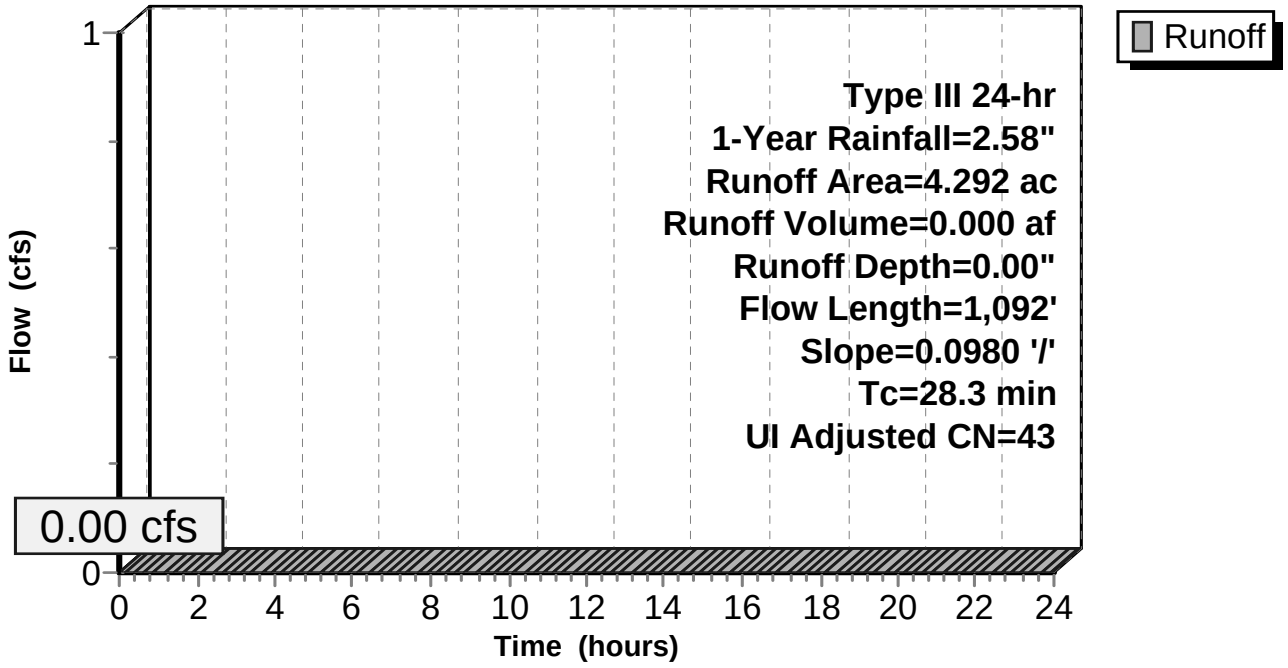
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.206	98	Paved parking, HSG A
1.750	39	Pasture/grassland/range, Good, HSG A
1.884	30	Woods, Good, HSG A
0.188	98	Unconnected roofs, HSG A
0.264	96	Gravel surface, HSG A
4.292	44	Weighted Average, UI Adjusted CN = 43
3.898		90.82% Pervious Area
0.394		9.18% Impervious Area
0.188		47.72% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.3	1,092	0.0980	0.64		**Lag/CN Method,** Contour Length= 9,162' Interval= 2'

Subcatchment DA-5: DA-5

Hydrograph



Summary for Subcatchment DA-6: DA-6

Runoff = 0.01 cfs @ 20.96 hrs, Volume= 0.005 af, Depth> 0.01"

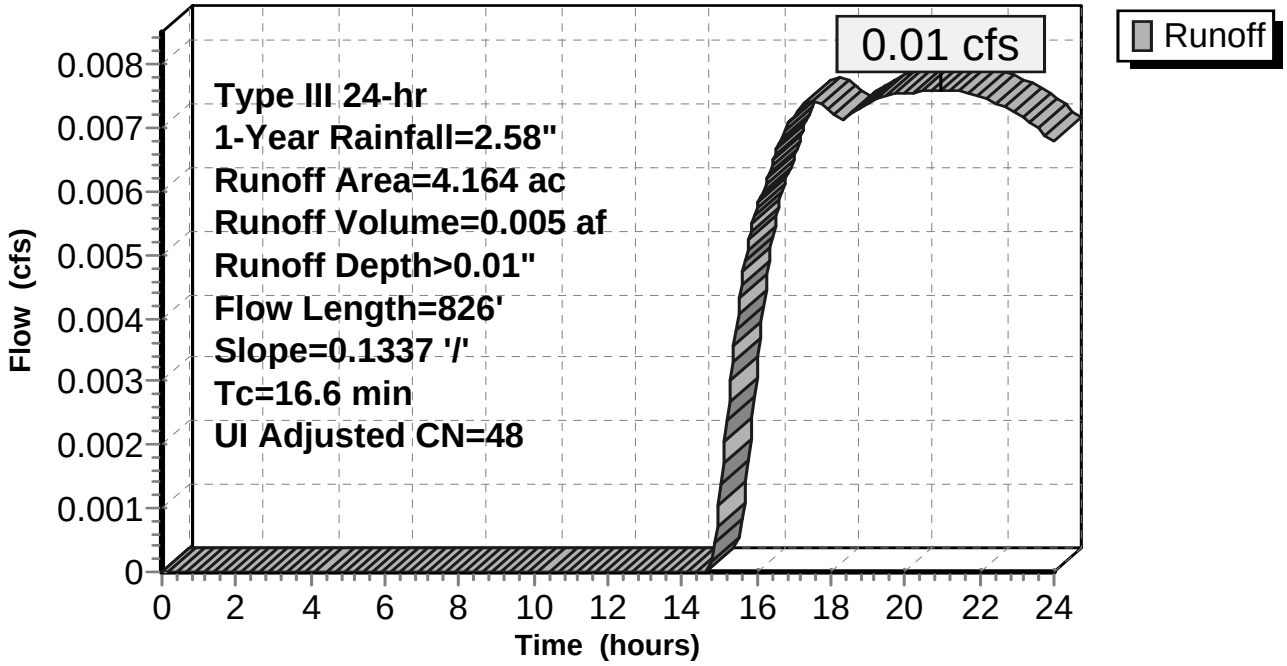
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.297	98	Unconnected roofs, HSG A
3.401	39	Pasture/grassland/range, Good, HSG A
0.466	96	Gravel surface, HSG A
4.164	50	Weighted Average, UI Adjusted CN = 48
3.867		92.87% Pervious Area
0.297		7.13% Impervious Area
0.297		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6	826	0.1337	0.83		**Lag/CN Method,** Contour Length= 12,121' Interval= 2'

Subcatchment DA-6: DA-6

Hydrograph



Summary for Subcatchment DA-7: DA-7

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

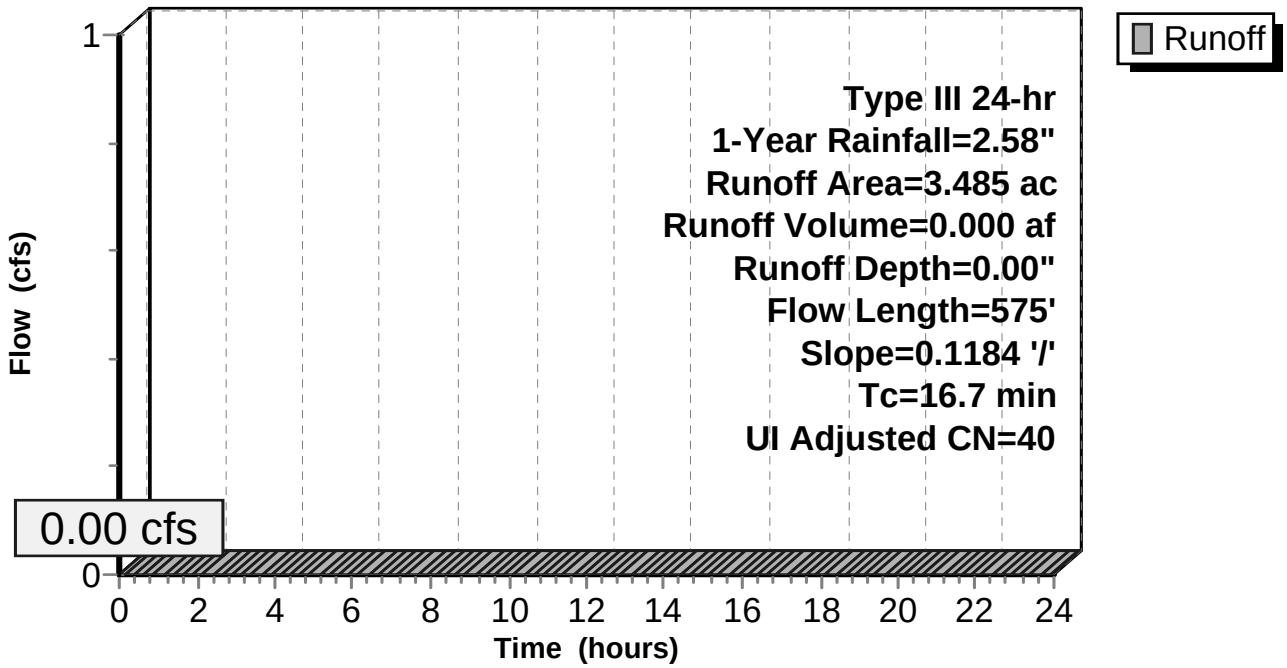
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
2.904	30	Woods, Good, HSG A
0.322	98	Water Surface, HSG A
0.106	96	Gravel surface, HSG A
0.153	98	Unconnected roofs, HSG A
3.485	41	Weighted Average, UI Adjusted CN = 40
3.010		86.37% Pervious Area
0.475		13.63% Impervious Area
0.153		32.21% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	575	0.1184	0.57		**Lag/CN Method,** Contour Length= 8,985' Interval= 2'

Subcatchment DA-7: DA-7

Hydrograph



Summary for Subcatchment DA-8: DA-8

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

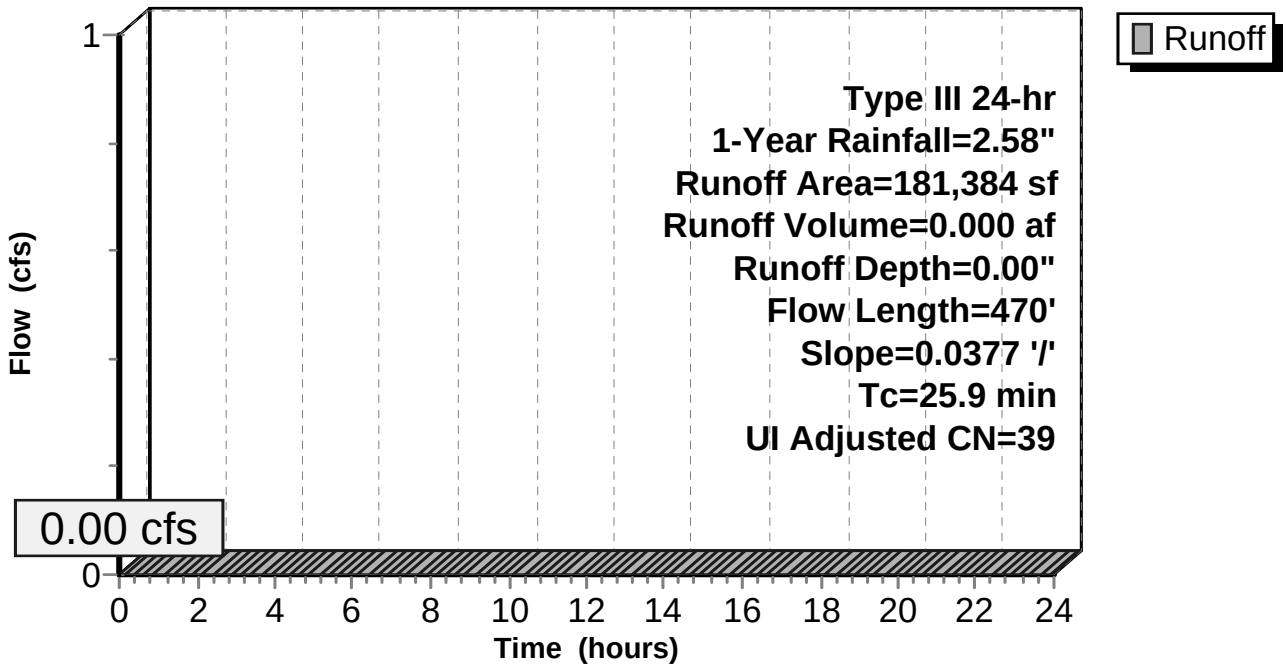
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (sf)	CN	Description
154,508	30	Woods, Good, HSG A
6,839	98	Unconnected roofs, HSG A
14,244	98	Paved parking, HSG A
5,793	98	Water Surface, HSG A
181,384	40	Weighted Average, UI Adjusted CN = 39
154,508		85.18% Pervious Area
26,876		14.82% Impervious Area
6,839		25.45% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	470	0.0377	0.30		**Lag/CN Method,** Contour Length= 3,416' Interval= 2'

Subcatchment DA-8: DA-8

Hydrograph



Summary for Subcatchment DA-9: DA-9

[73] Warning: Peak may fall outside time span

Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth> 0.00"

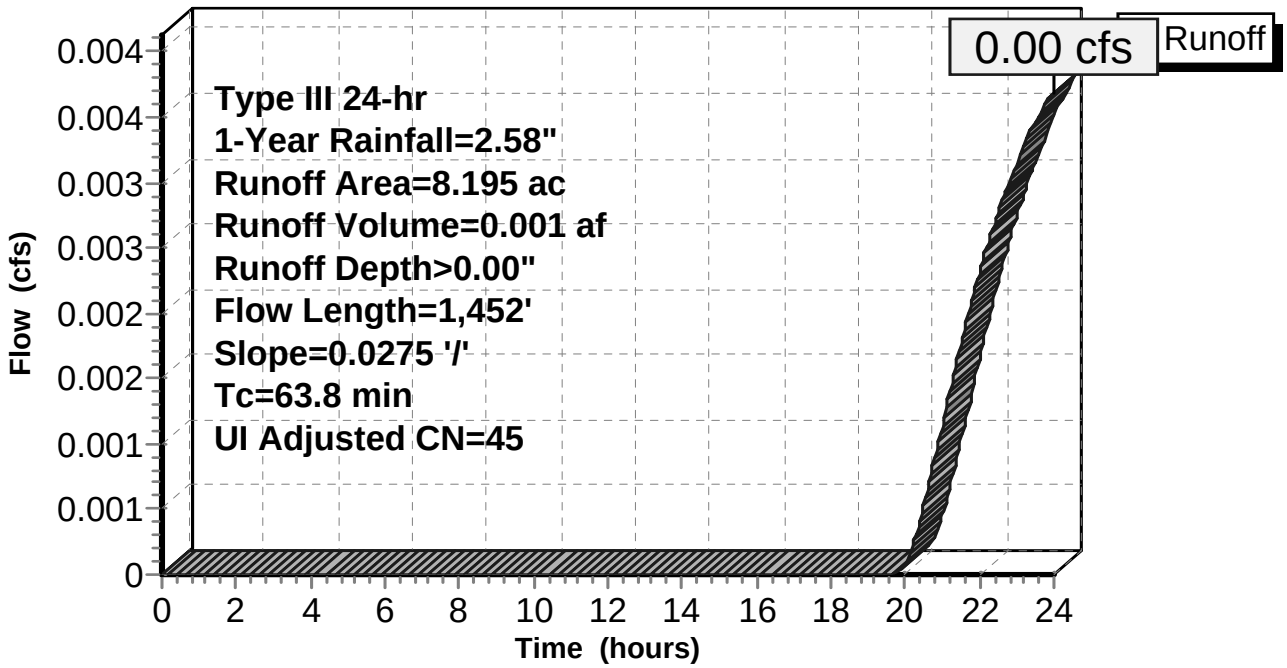
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
1.313	96	Gravel surface, HSG A
0.327	98	Unconnected roofs, HSG A
3.810	30	Woods, Good, HSG A
2.745	39	Pasture/grassland/range, Good, HSG A
8.195	46	Weighted Average, UI Adjusted CN = 45
7.868		96.01% Pervious Area
0.327		3.99% Impervious Area
0.327		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
63.8	1,452	0.0275	0.38		**Lag/CN Method,** Contour Length= 4,905' Interval= 2'

Subcatchment DA-9: DA-9

Hydrograph



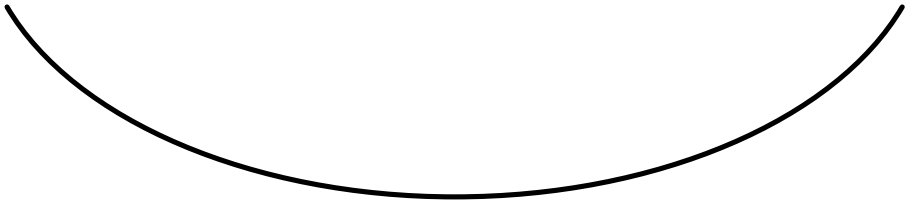
Summary for Reach DP-1: DP-1

Inflow Area = 22.620 ac, 0.00% Impervious, Inflow Depth > 0.03" for 1-Year event
Inflow = 0.09 cfs @ 16.20 hrs, Volume= 0.056 af
Outflow = 0.09 cfs @ 16.69 hrs, Volume= 0.054 af, Atten= 1%, Lag= 29.6 min

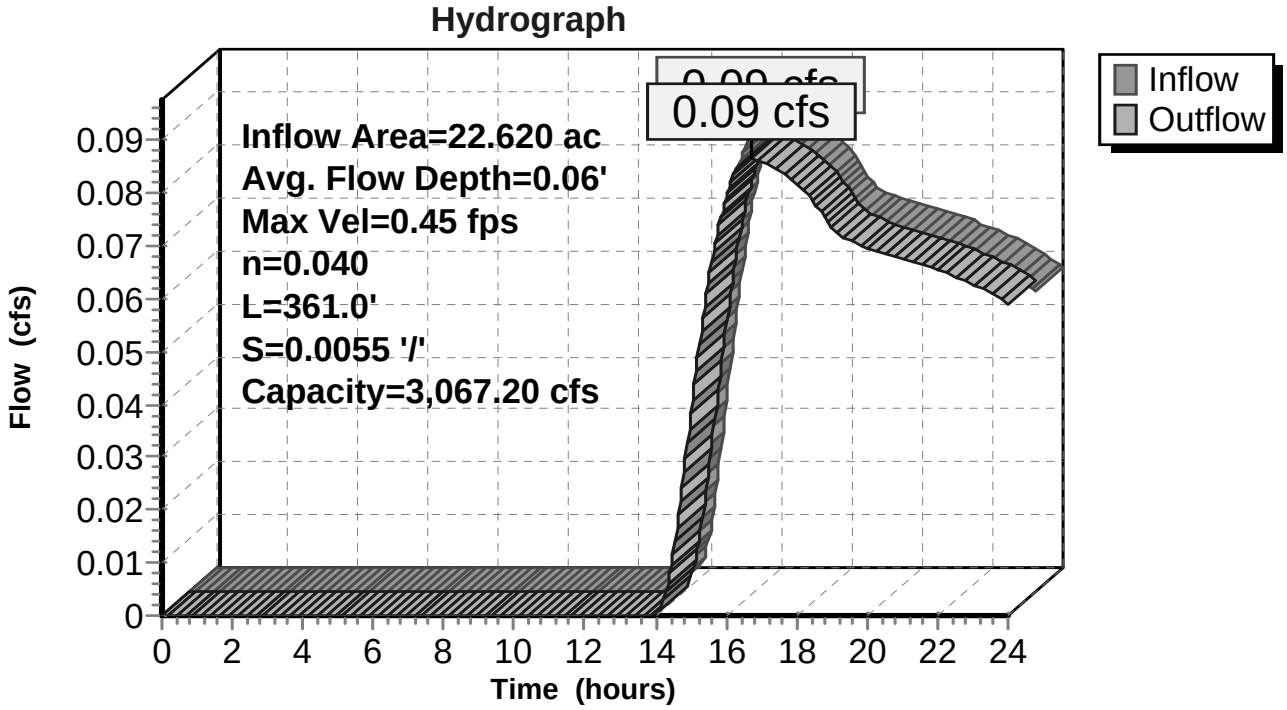
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.45 fps, Min. Travel Time= 13.2 min
Avg. Velocity = 0.45 fps, Avg. Travel Time= 13.2 min

Peak Storage= 69 cf @ 16.47 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 3,067.20 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 361.0' Slope= 0.0055 '/'
Inlet Invert= 482.00', Outlet Invert= 480.00'



Reach DP-1: DP-1



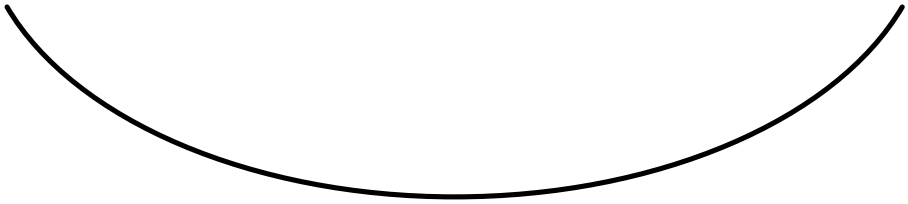
Summary for Reach DP-2: DP-2

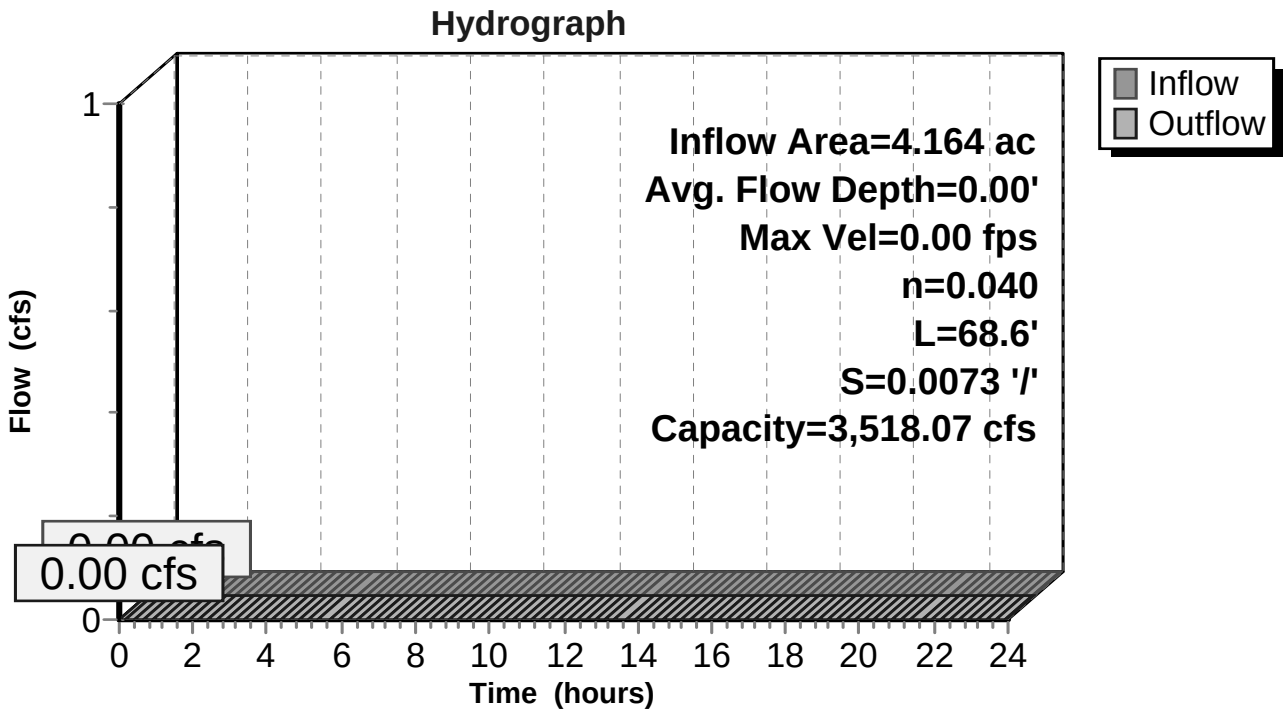
Inflow Area = 4.164 ac, 14.82% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 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= 10.00' Flow Area= 333.3 sf, Capacity= 3,518.07 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 68.6' Slope= 0.0073 '/'
Inlet Invert= 480.00', Outlet Invert= 479.50'





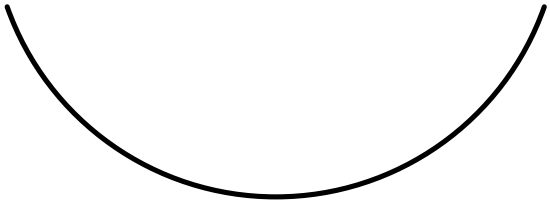
Summary for Reach DP-3: DP-3

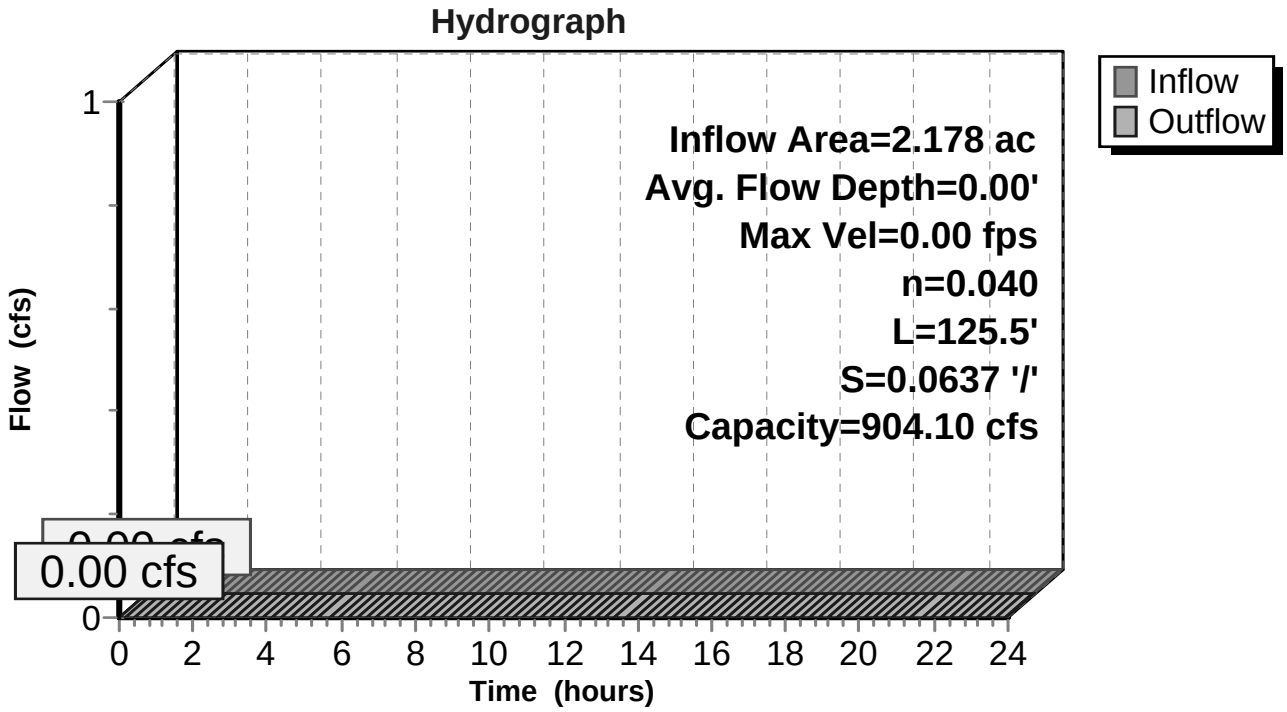
Inflow Area = 2.178 ac, 1.88% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 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= 5.00' Flow Area= 50.0 sf, Capacity= 904.10 cfs

15.00' x 5.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 125.5' Slope= 0.0637 '/'
Inlet Invert= 488.00', Outlet Invert= 480.00'





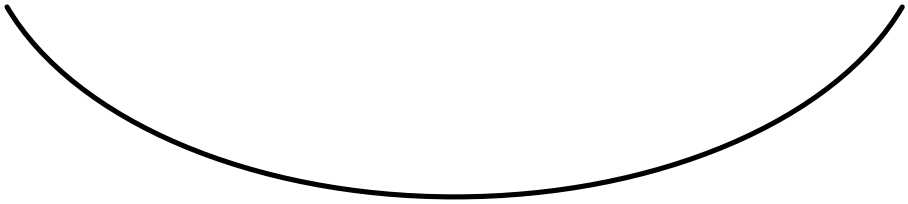
Summary for Reach DP-4: DP-4

Inflow Area = 8.195 ac, 3.99% Impervious, Inflow Depth > 0.00" for 1-Year event
Inflow = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Atten= 9%, Lag= 0.0 min

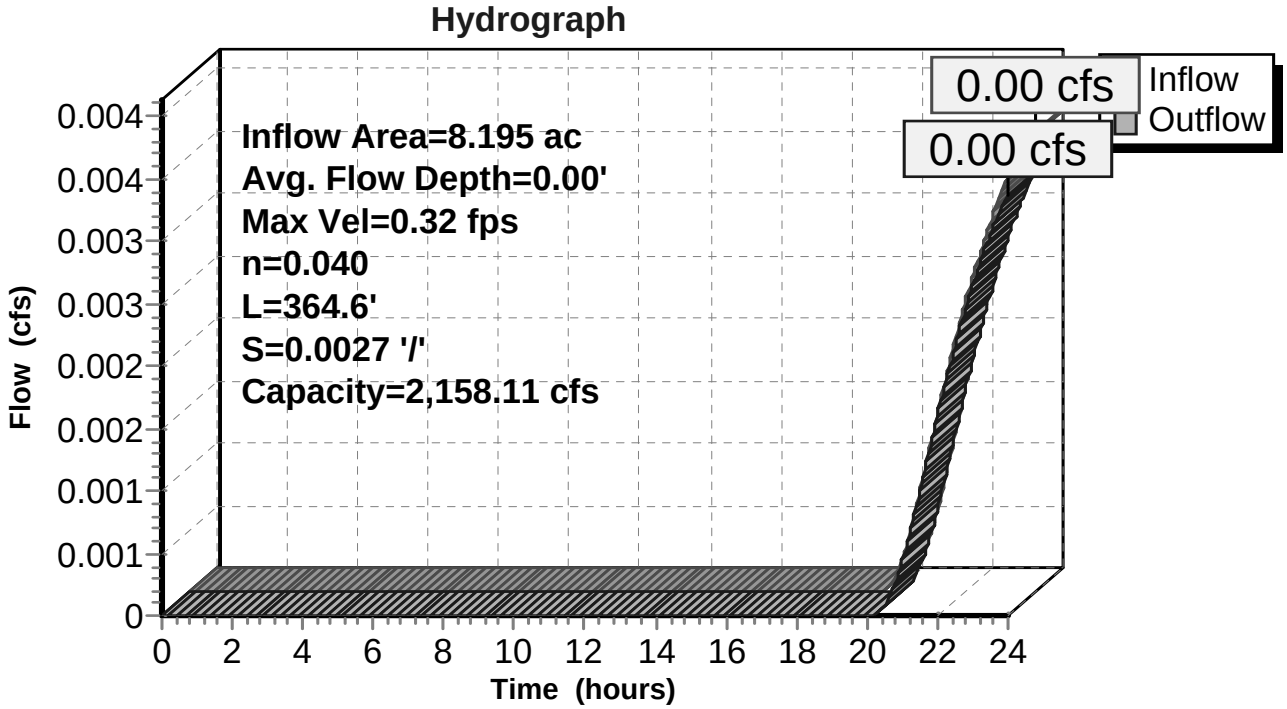
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.32 fps, Min. Travel Time= 19.0 min
Avg. Velocity = 0.32 fps, Avg. Travel Time= 19.0 min

Peak Storage= 4 cf @ 24.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 2,158.11 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 364.6' Slope= 0.0027 '/'
Inlet Invert= 479.50', Outlet Invert= 478.50'



Reach DP-4: DP-4



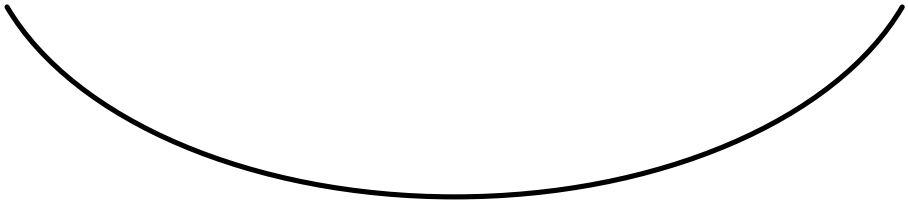
Summary for Reach DP-5: DP-5

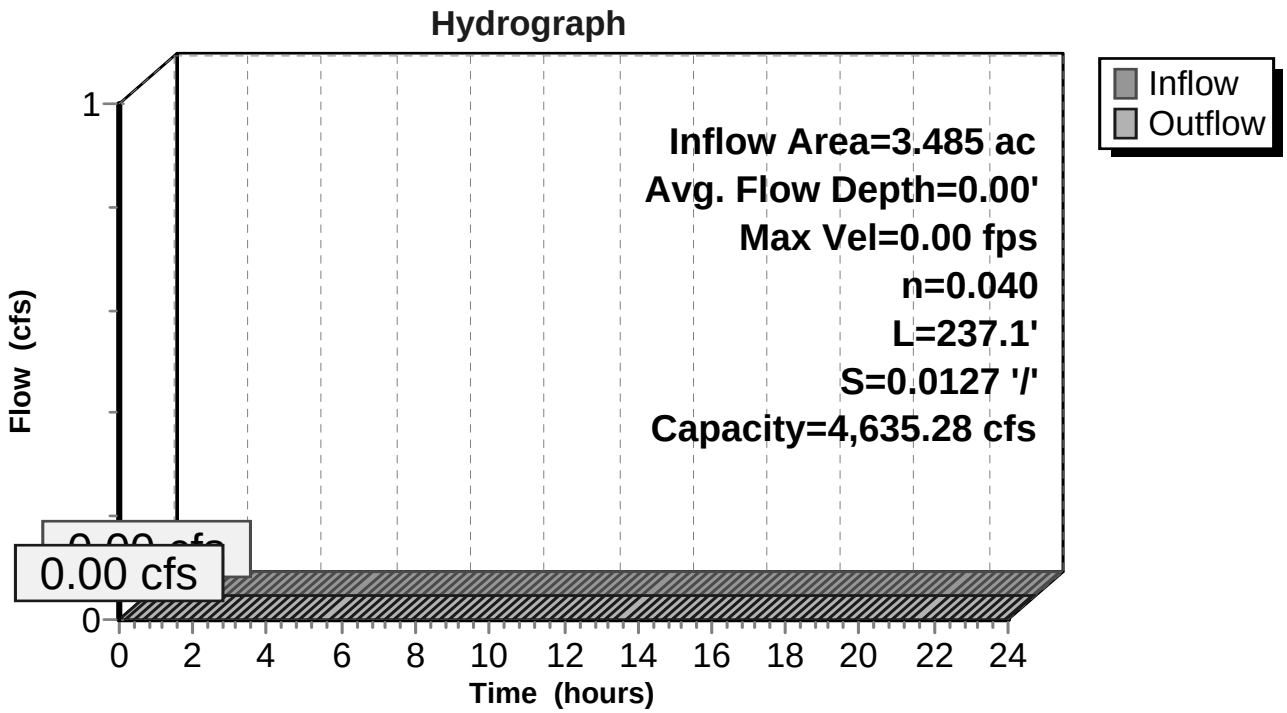
Inflow Area = 3.485 ac, 13.63% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 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= 10.00' Flow Area= 333.3 sf, Capacity= 4,635.28 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 237.1' Slope= 0.0127 '/'
Inlet Invert= 478.50', Outlet Invert= 475.50'





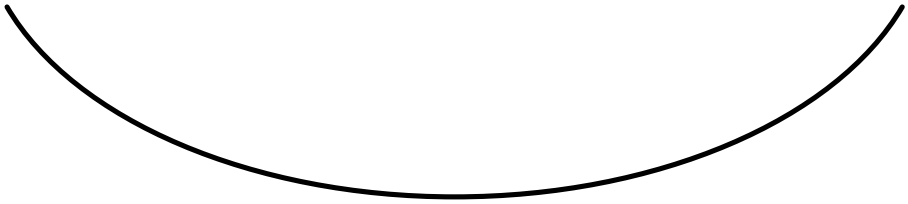
Summary for Reach DP-6: DP-6

Inflow Area = 4.164 ac, 7.13% Impervious, Inflow Depth > 0.01" for 1-Year event
Inflow = 0.01 cfs @ 20.96 hrs, Volume= 0.005 af
Outflow = 0.01 cfs @ 21.47 hrs, Volume= 0.005 af, Atten= 0%, Lag= 30.7 min

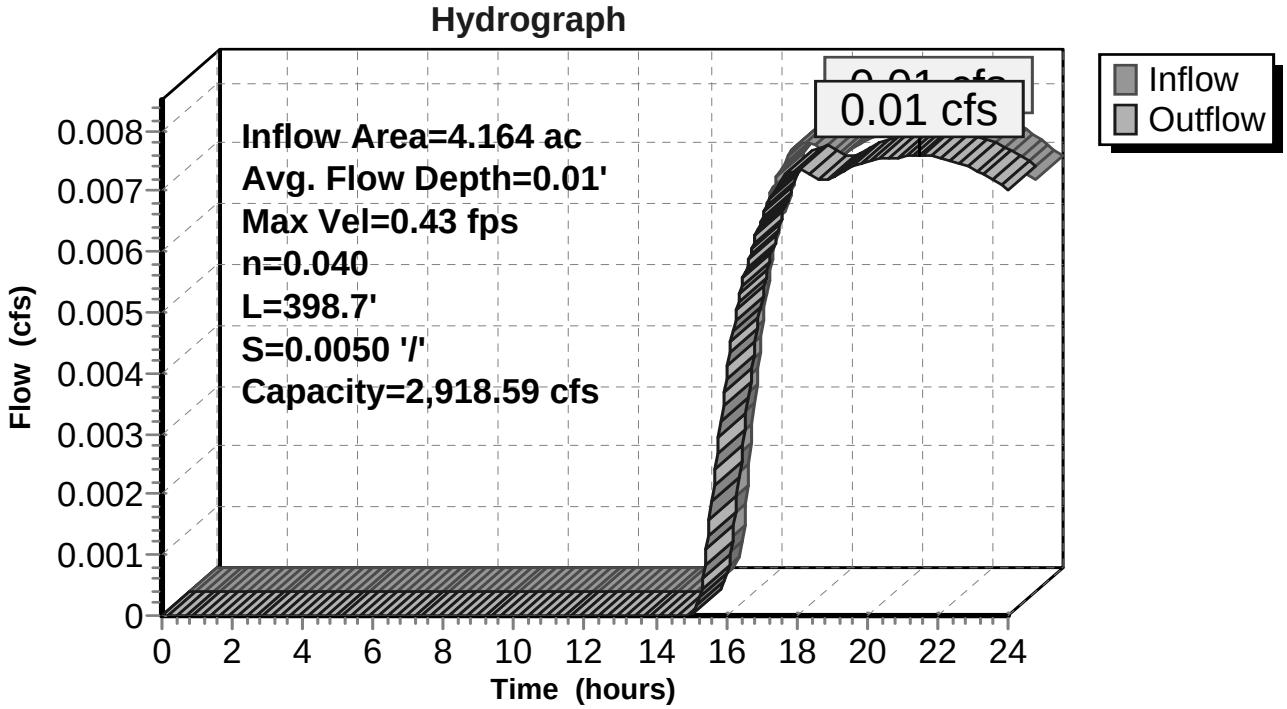
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.43 fps, Min. Travel Time= 15.4 min
Avg. Velocity = 0.43 fps, Avg. Travel Time= 15.4 min

Peak Storage= 7 cf @ 21.21 hrs
Average Depth at Peak Storage= 0.01'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 2,918.59 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 398.7' Slope= 0.0050 '/'
Inlet Invert= 475.50', Outlet Invert= 473.50'



Reach DP-6: DP-6



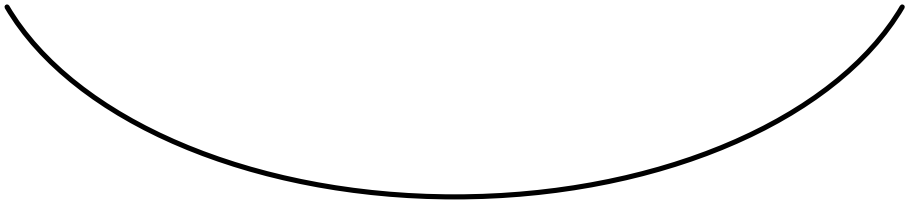
Summary for Reach DP-7: DP-7

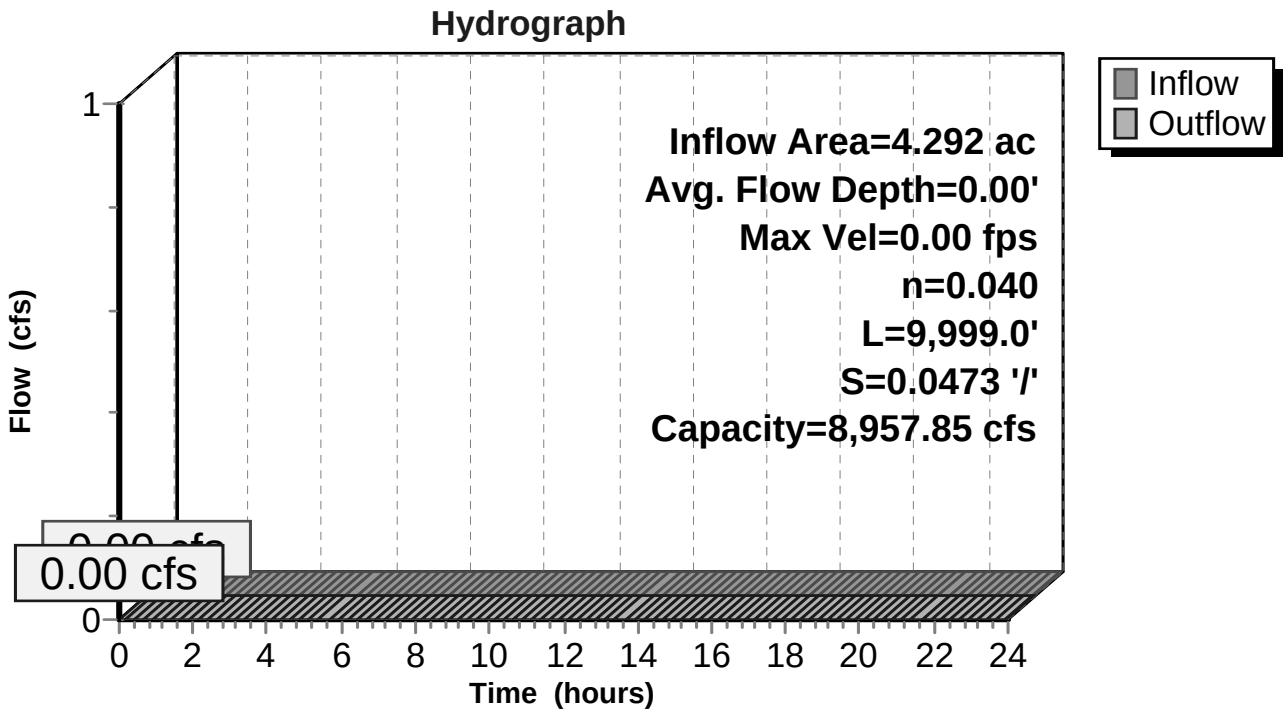
Inflow Area = 4.292 ac, 9.18% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 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= 10.00' Flow Area= 333.3 sf, Capacity= 8,957.85 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 9,999.0' Slope= 0.0473 '/'
Inlet Invert= 473.50', Outlet Invert= 1.00'





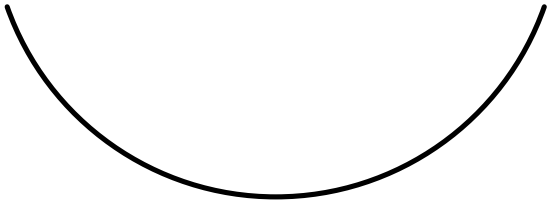
Summary for Reach DP-8: DP-8

Inflow Area = 2.249 ac, 4.85% Impervious, Inflow Depth > 0.00" for 1-Year event
Inflow = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Atten= 1%, Lag= 0.0 min

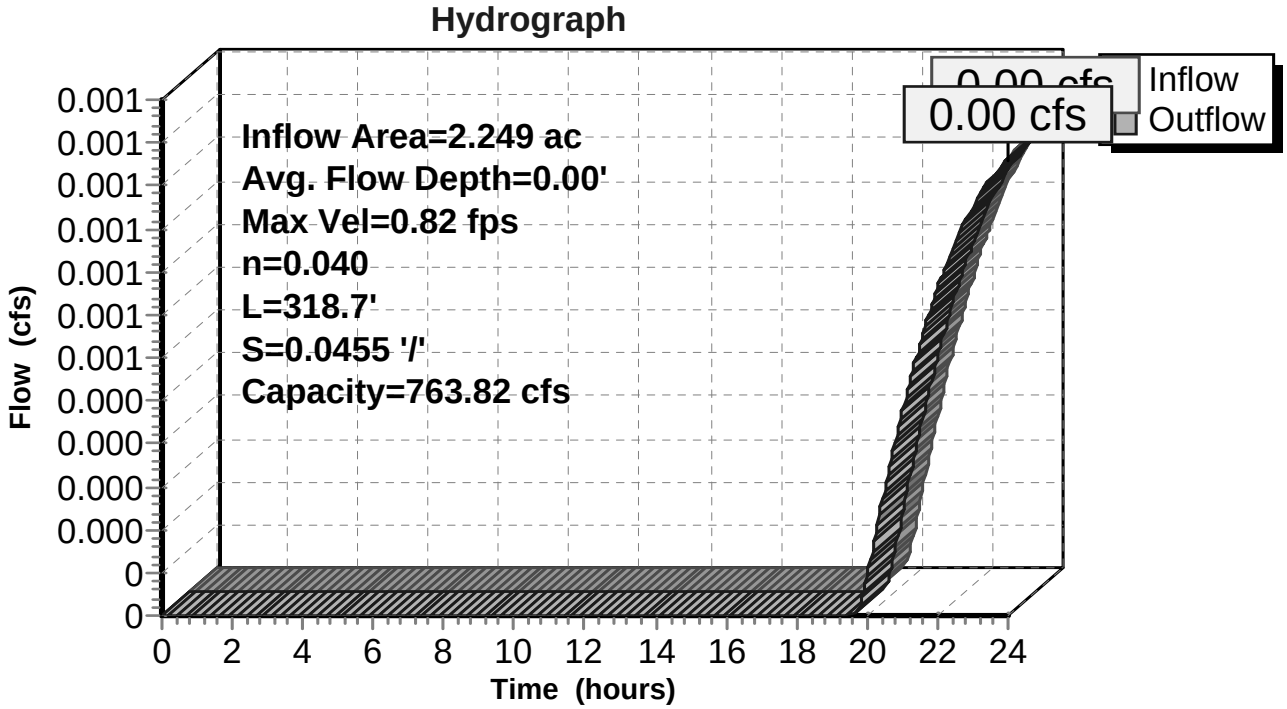
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.82 fps, Min. Travel Time= 6.5 min
Avg. Velocity = 0.82 fps, Avg. Travel Time= 6.5 min

Peak Storage= 0 cf @ 24.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 5.00' Flow Area= 50.0 sf, Capacity= 763.82 cfs

15.00' x 5.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 318.7' Slope= 0.0455 '/'
Inlet Invert= 488.00', Outlet Invert= 473.50'



Reach DP-8: DP-8



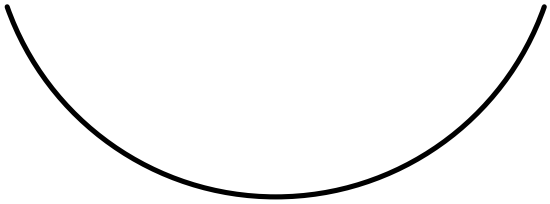
Summary for Reach DP-9: DP-9

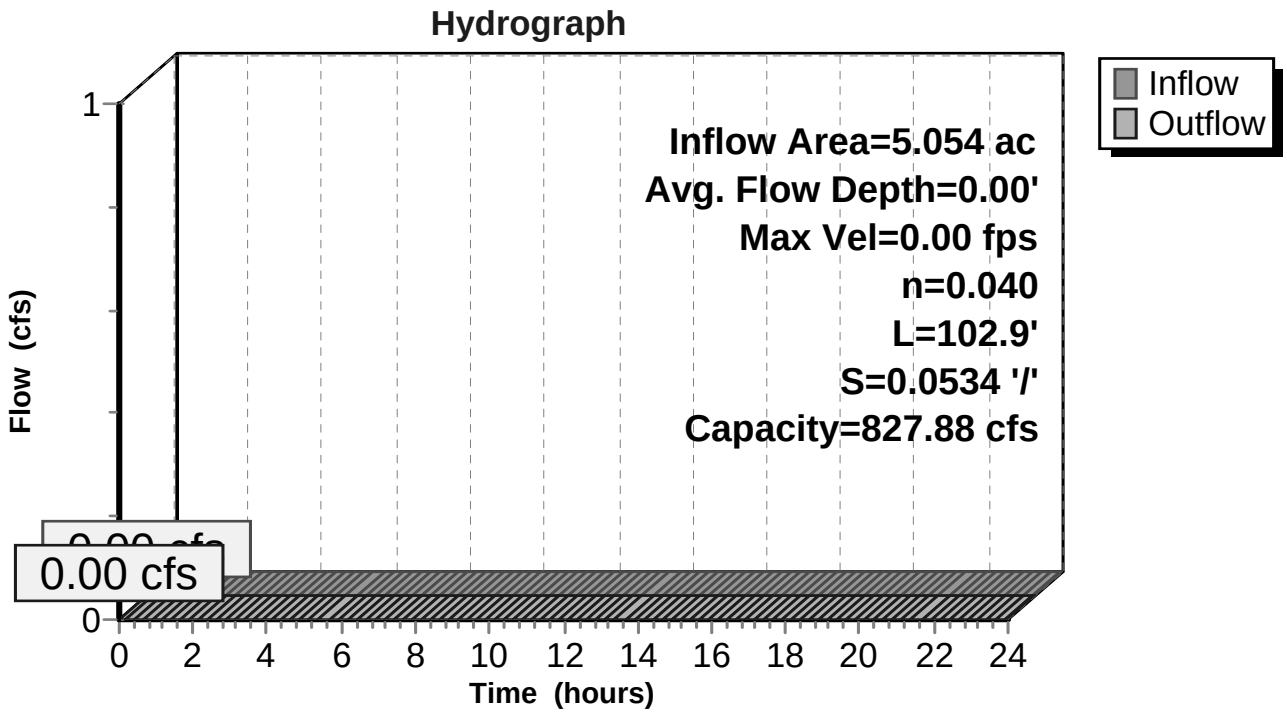
Inflow Area = 5.054 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 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= 5.00' Flow Area= 50.0 sf, Capacity= 827.88 cfs

15.00' x 5.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 102.9' Slope= 0.0534 '/'
Inlet Invert= 493.50', Outlet Invert= 488.00'





Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DA-1: DA-1 Runoff Area=22.620 ac 0.00% Impervious Runoff Depth>0.54"
Flow Length=1,906' Slope=0.0540 '/' Tc=51.1 min CN=50 Runoff=3.94 cfs 1.017 af

Subcatchment DA-2: DA-2 Runoff Area=2.178 ac 1.88% Impervious Runoff Depth>0.06"
Flow Length=430' Slope=0.1623 '/' Tc=12.6 min UI Adjusted CN=36 Runoff=0.02 cfs 0.011 af

Subcatchment DA-3: DA-3 Runoff Area=5.054 ac 0.00% Impervious Runoff Depth>0.10"
Flow Length=757' Slope=0.0695 '/' Tc=29.5 min CN=38 Runoff=0.07 cfs 0.044 af

Subcatchment DA-4: DA-4 Runoff Area=2.249 ac 4.85% Impervious Runoff Depth>0.33"
Flow Length=544' Slope=0.0588 '/' Tc=20.4 min CN=45 Runoff=0.24 cfs 0.062 af

Subcatchment DA-5: DA-5 Runoff Area=4.292 ac 9.18% Impervious Runoff Depth>0.26"
Flow Length=1,092' Slope=0.0980 '/' Tc=28.3 min UI Adjusted CN=43 Runoff=0.24 cfs 0.091 af

Subcatchment DA-6: DA-6 Runoff Area=4.164 ac 7.13% Impervious Runoff Depth>0.46"
Flow Length=826' Slope=0.1337 '/' Tc=16.6 min UI Adjusted CN=48 Runoff=0.83 cfs 0.158 af

Subcatchment DA-7: DA-7 Runoff Area=3.485 ac 13.63% Impervious Runoff Depth>0.16"
Flow Length=575' Slope=0.1184 '/' Tc=16.7 min UI Adjusted CN=40 Runoff=0.08 cfs 0.046 af

Subcatchment DA-8: DA-8 Runoff Area=181,384 sf 14.82% Impervious Runoff Depth>0.13"
Flow Length=470' Slope=0.0377 '/' Tc=25.9 min UI Adjusted CN=39 Runoff=0.07 cfs 0.045 af

Subcatchment DA-9: DA-9 Runoff Area=8.195 ac 3.99% Impervious Runoff Depth>0.32"
Flow Length=1,452' Slope=0.0275 '/' Tc=63.8 min UI Adjusted CN=45 Runoff=0.55 cfs 0.221 af

Reach DP-1: DP-1 Avg. Flow Depth=0.45' Max Vel=1.24 fps Inflow=3.94 cfs 1.017 af
n=0.040 L=361.0' S=0.0055 '/' Capacity=3,067.20 cfs Outflow=3.89 cfs 1.010 af

Reach DP-2: DP-2 Avg. Flow Depth=0.04' Max Vel=0.52 fps Inflow=0.07 cfs 0.045 af
n=0.040 L=68.6' S=0.0073 '/' Capacity=3,518.07 cfs Outflow=0.07 cfs 0.045 af

Reach DP-3: DP-3 Avg. Flow Depth=0.02' Max Vel=0.97 fps Inflow=0.02 cfs 0.011 af
n=0.040 L=125.5' S=0.0637 '/' Capacity=904.10 cfs Outflow=0.02 cfs 0.011 af

Reach DP-4: DP-4 Avg. Flow Depth=0.21' Max Vel=0.53 fps Inflow=0.55 cfs 0.221 af
n=0.040 L=364.6' S=0.0027 '/' Capacity=2,158.11 cfs Outflow=0.53 cfs 0.216 af

Reach DP-5: DP-5 Avg. Flow Depth=0.03' Max Vel=0.69 fps Inflow=0.08 cfs 0.046 af
n=0.040 L=237.1' S=0.0127 '/' Capacity=4,635.28 cfs Outflow=0.08 cfs 0.046 af

Reach DP-6: DP-6 Avg. Flow Depth=0.21' Max Vel=0.72 fps Inflow=0.83 cfs 0.158 af
n=0.040 L=398.7' S=0.0050 '/' Capacity=2,918.59 cfs Outflow=0.75 cfs 0.156 af

Reach DP-7: DP-7 Avg. Flow Depth=0.03' Max Vel=1.33 fps Inflow=0.24 cfs 0.091 af
n=0.040 L=9,999.0' S=0.0473 '/' Capacity=8,957.85 cfs Outflow=0.12 cfs 0.072 af

Reach DP-8: DP-8 Avg. Flow Depth=0.11' Max Vel=1.43 fps Inflow=0.24 cfs 0.062 af
n=0.040 L=318.7' S=0.0455 '/' Capacity=763.82 cfs Outflow=0.24 cfs 0.062 af

Reach DP-9: DP-9 Avg. Flow Depth=0.06' Max Vel=1.09 fps Inflow=0.07 cfs 0.044 af
n=0.040 L=102.9' S=0.0534 '/' Capacity=827.88 cfs Outflow=0.07 cfs 0.044 af

Total Runoff Area = 56.401 ac Runoff Volume = 1.696 af Average Runoff Depth = 0.36"
95.99% Pervious = 54.141 ac 4.01% Impervious = 2.260 ac

Summary for Subcatchment DA-1: DA-1

Runoff = 3.94 cfs @ 12.91 hrs, Volume= 1.017 af, Depth> 0.54"

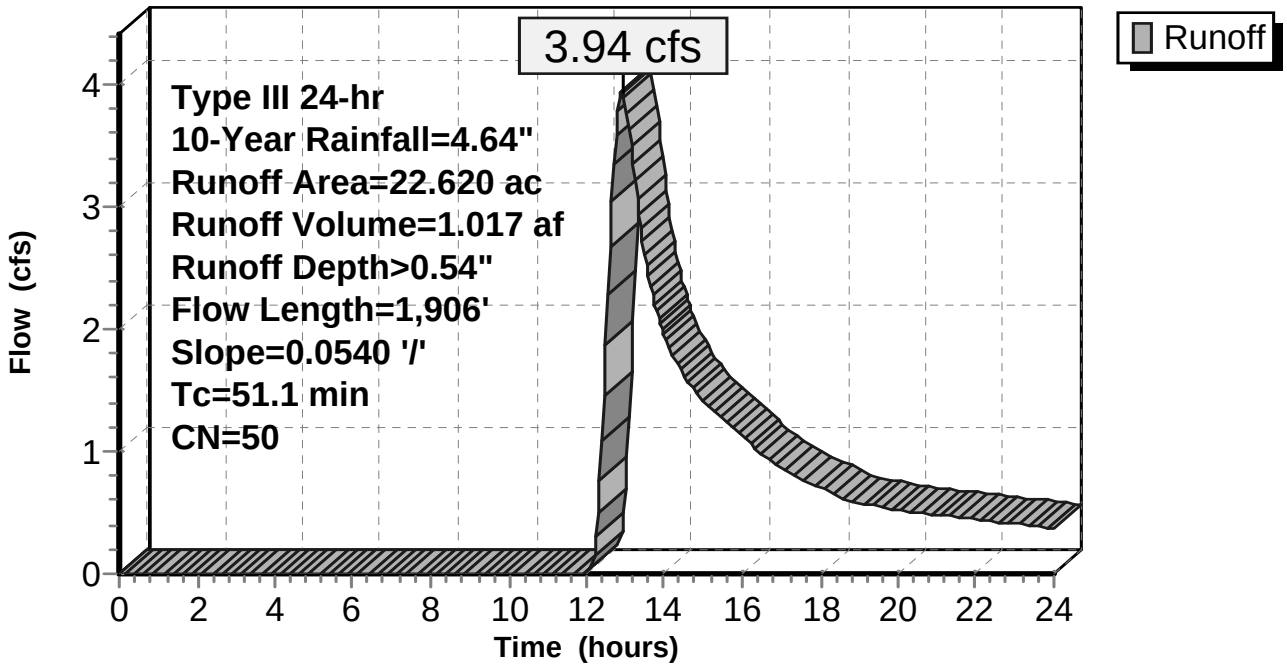
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
7.259	39	Pasture/grassland/range, Good, HSG A
7.409	30	Woods, Good, HSG A
7.594	77	Woods, Good, HSG D
0.358	96	Gravel surface, HSG A
22.620	50	Weighted Average
22.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.1	1,906	0.0540	0.62		**Lag/CN Method,**

Subcatchment DA-1: DA-1

Hydrograph



Summary for Subcatchment DA-2: DA-2

Runoff = 0.02 cfs @ 15.48 hrs, Volume= 0.011 af, Depth> 0.06"

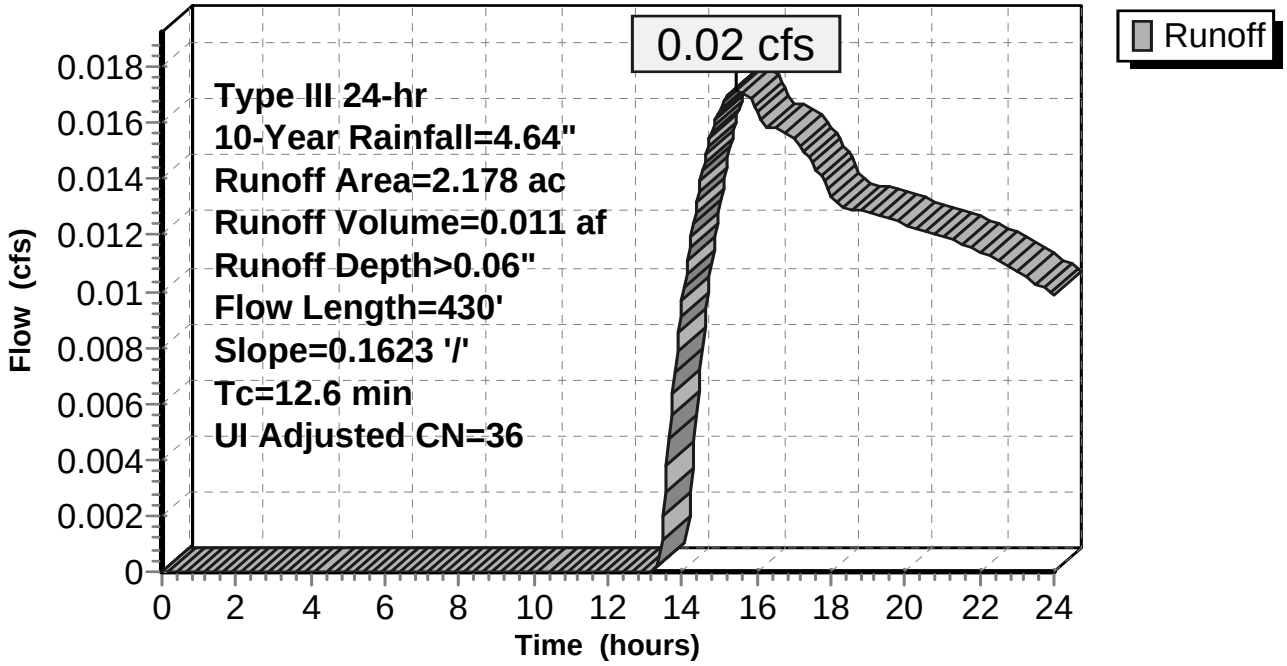
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.748	30	Woods, Good, HSG A
1.389	39	Pasture/grassland/range, Good, HSG A
0.011	98	Unconnected roofs, HSG A
0.030	98	Unconnected roofs, HSG A
2.178	37	Weighted Average, UI Adjusted CN = 36
2.137		98.12% Pervious Area
0.041		1.88% Impervious Area
0.041		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	430	0.1623	0.57		**Lag/CN Method,** Contour Length= 7,700' Interval= 2'

Subcatchment DA-2: DA-2

Hydrograph



Summary for Subcatchment DA-3: DA-3

Runoff = 0.07 cfs @ 15.12 hrs, Volume= 0.044 af, Depth> 0.10"

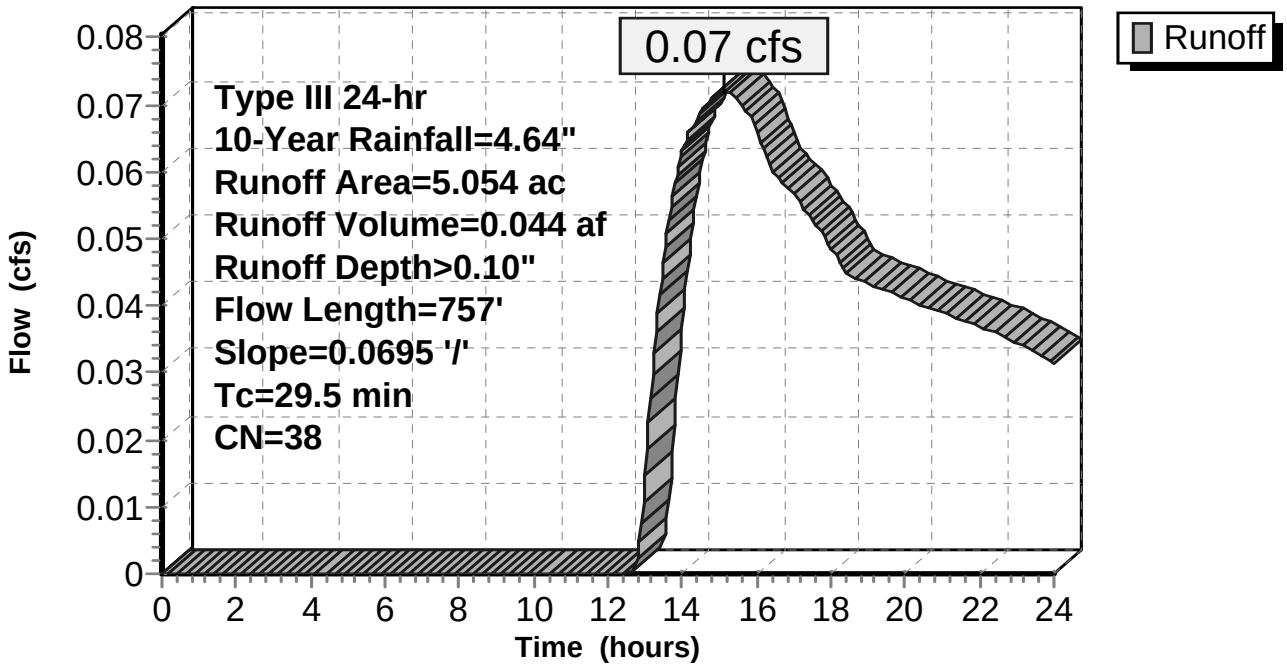
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
4.606	39	Pasture/grassland/range, Good, HSG A
0.448	30	Woods, Good, HSG A
5.054	38	Weighted Average
5.054		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	757	0.0695	0.43		**Lag/CN Method,** Contour Length= 7,650' Interval= 2'

Subcatchment DA-3: DA-3

Hydrograph



Summary for Subcatchment DA-4: DA-4

Runoff = 0.24 cfs @ 12.57 hrs, Volume= 0.062 af, Depth> 0.33"

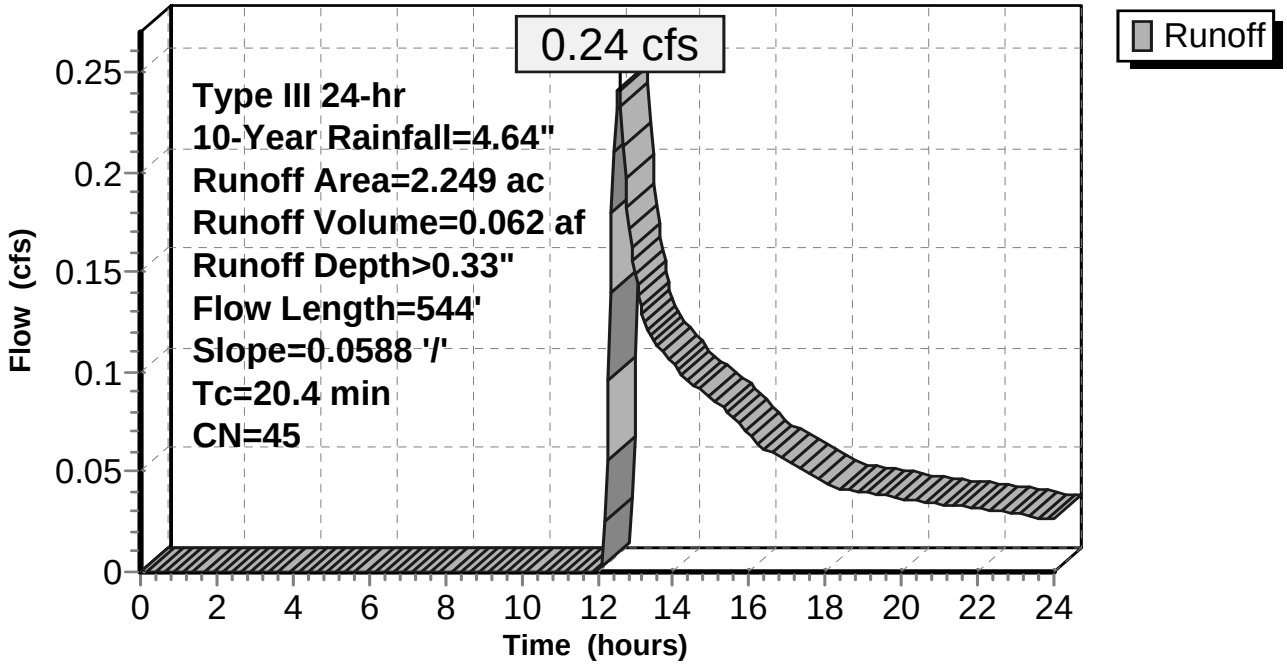
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
1.920	39	Pasture/grassland/range, Good, HSG A
0.080	30	Woods, Good, HSG A
0.140	96	Gravel surface, HSG A
0.109	98	Paved parking, HSG A
2.249	45	Weighted Average
2.140		95.15% Pervious Area
0.109		4.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	544	0.0588	0.44		**Lag/CN Method,** Contour Length= 2,879' Interval= 2'

Subcatchment DA-4: DA-4

Hydrograph



Summary for Subcatchment DA-5: DA-5

Runoff = 0.24 cfs @ 12.76 hrs, Volume= 0.091 af, Depth> 0.26"

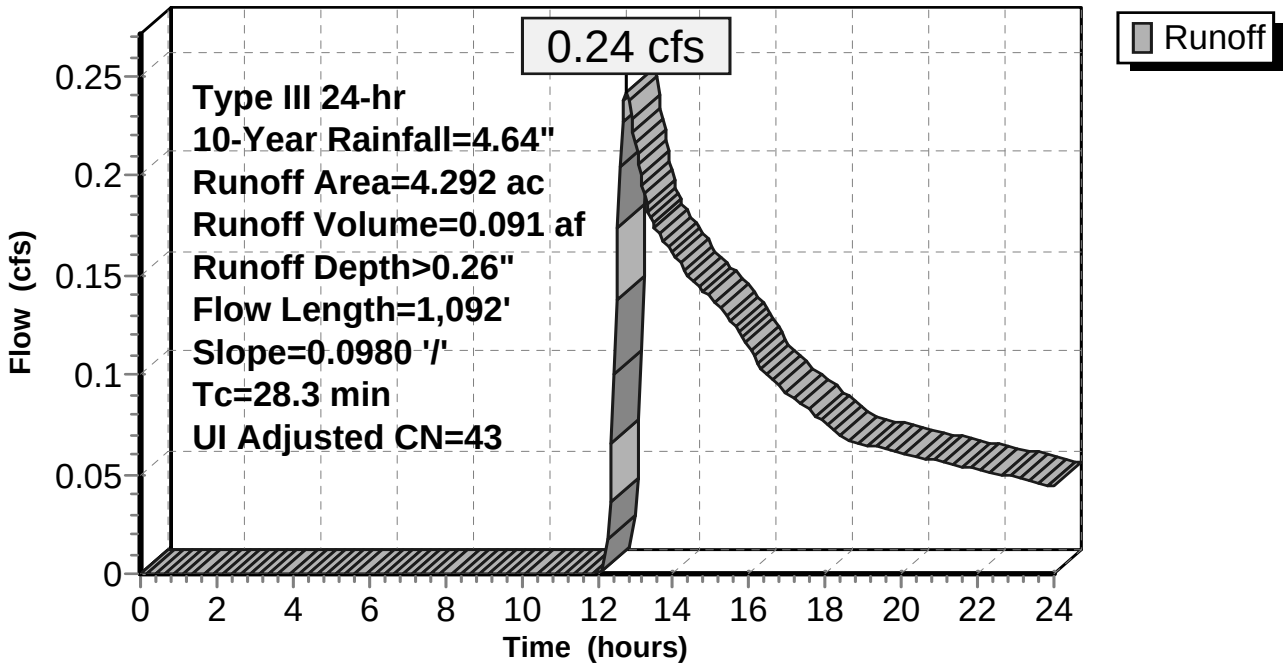
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.206	98	Paved parking, HSG A
1.750	39	Pasture/grassland/range, Good, HSG A
1.884	30	Woods, Good, HSG A
0.188	98	Unconnected roofs, HSG A
0.264	96	Gravel surface, HSG A
4.292	44	Weighted Average, UI Adjusted CN = 43
3.898		90.82% Pervious Area
0.394		9.18% Impervious Area
0.188		47.72% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.3	1,092	0.0980	0.64		**Lag/CN Method,** Contour Length= 9,162' Interval= 2'

Subcatchment DA-5: DA-5

Hydrograph



Summary for Subcatchment DA-6: DA-6

Runoff = 0.83 cfs @ 12.44 hrs, Volume= 0.158 af, Depth> 0.46"

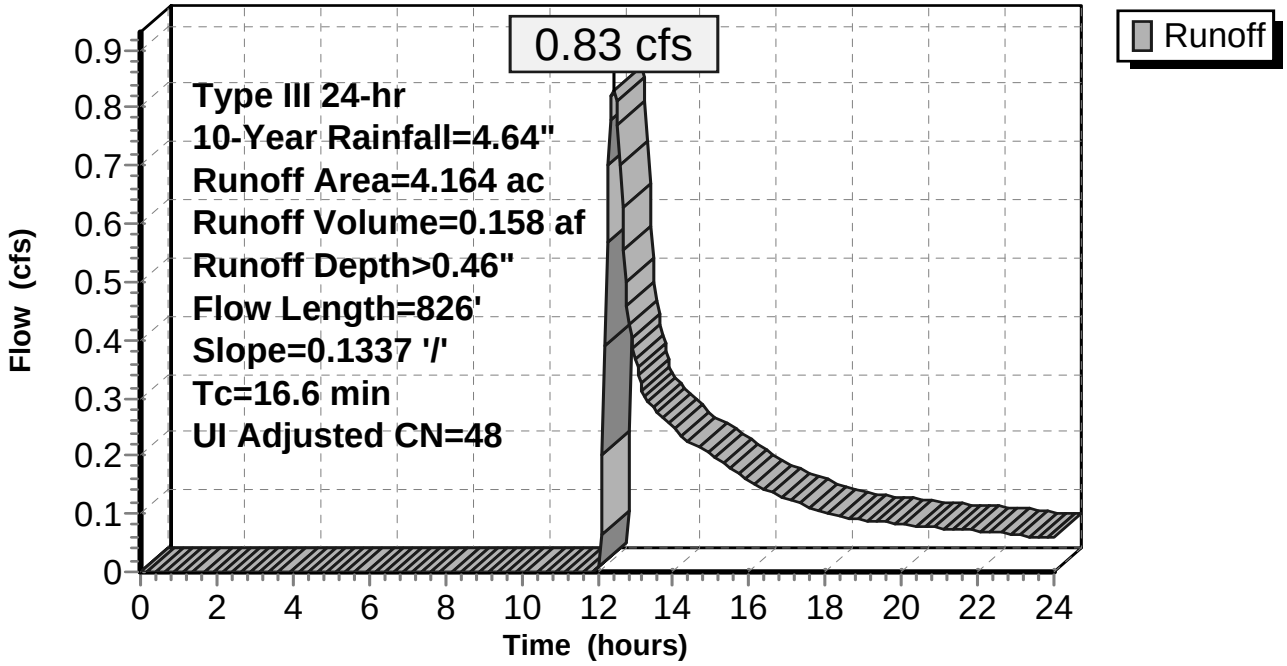
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.297	98	Unconnected roofs, HSG A
3.401	39	Pasture/grassland/range, Good, HSG A
0.466	96	Gravel surface, HSG A
4.164	50	Weighted Average, UI Adjusted CN = 48
3.867		92.87% Pervious Area
0.297		7.13% Impervious Area
0.297		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6	826	0.1337	0.83		**Lag/CN Method,** Contour Length= 12,121' Interval= 2'

Subcatchment DA-6: DA-6

Hydrograph



Summary for Subcatchment DA-7: DA-7

Runoff = 0.08 cfs @ 13.81 hrs, Volume= 0.046 af, Depth> 0.16"

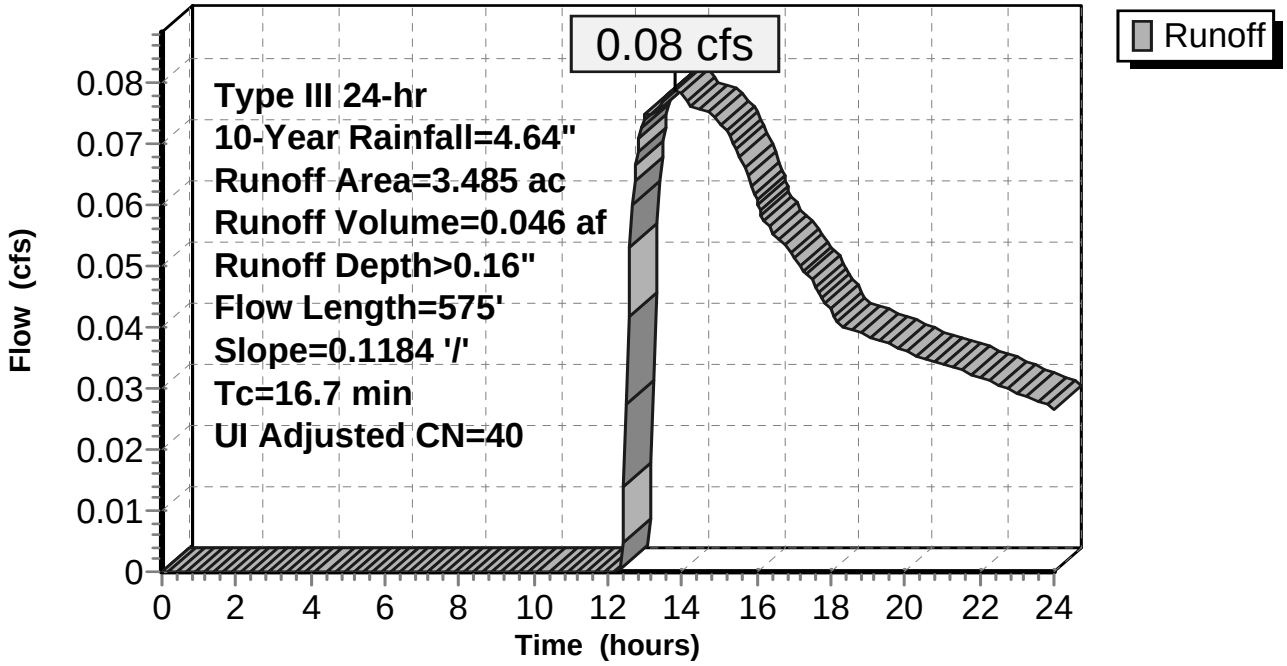
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
2.904	30	Woods, Good, HSG A
0.322	98	Water Surface, HSG A
0.106	96	Gravel surface, HSG A
0.153	98	Unconnected roofs, HSG A
3.485	41	Weighted Average, UI Adjusted CN = 40
3.010		86.37% Pervious Area
0.475		13.63% Impervious Area
0.153		32.21% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	575	0.1184	0.57		**Lag/CN Method,** Contour Length= 8,985' Interval= 2'

Subcatchment DA-7: DA-7

Hydrograph



Summary for Subcatchment DA-8: DA-8

Runoff = 0.07 cfs @ 14.80 hrs, Volume= 0.045 af, Depth> 0.13"

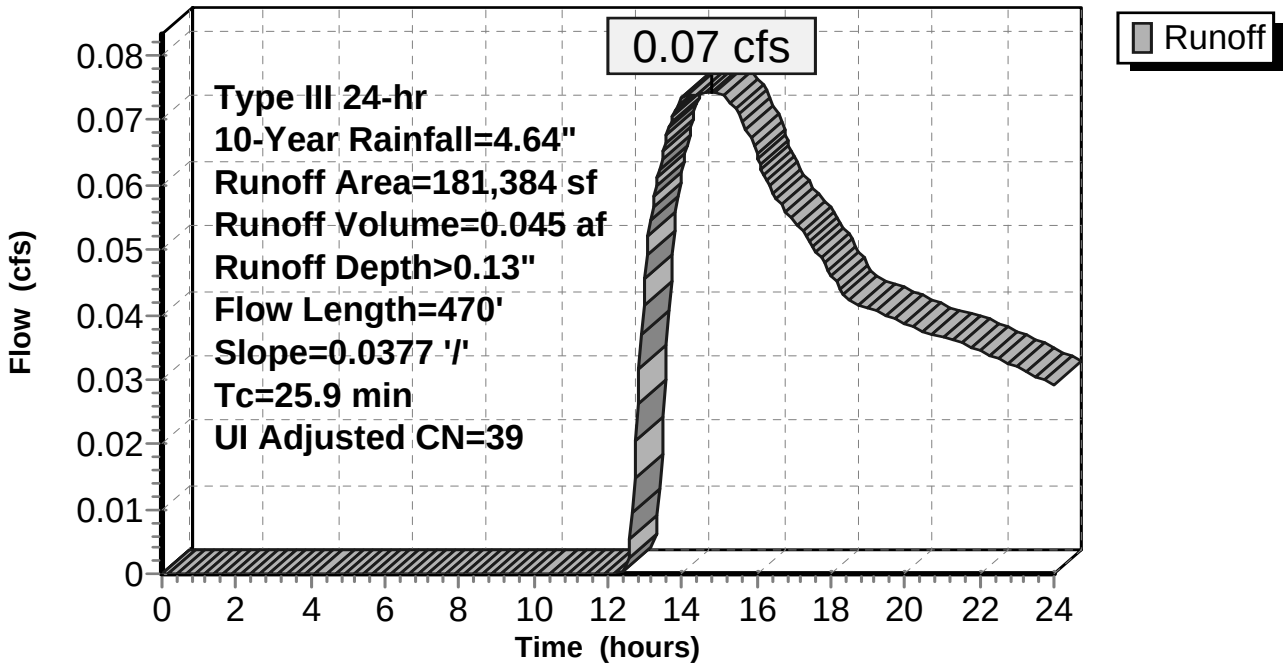
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (sf)	CN	Description
154,508	30	Woods, Good, HSG A
6,839	98	Unconnected roofs, HSG A
14,244	98	Paved parking, HSG A
5,793	98	Water Surface, HSG A
181,384	40	Weighted Average, UI Adjusted CN = 39
154,508		85.18% Pervious Area
26,876		14.82% Impervious Area
6,839		25.45% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	470	0.0377	0.30		**Lag/CN Method,** Contour Length= 3,416' Interval= 2'

Subcatchment DA-8: DA-8

Hydrograph



Summary for Subcatchment DA-9: DA-9

Runoff = 0.55 cfs @ 13.28 hrs, Volume= 0.221 af, Depth> 0.32"

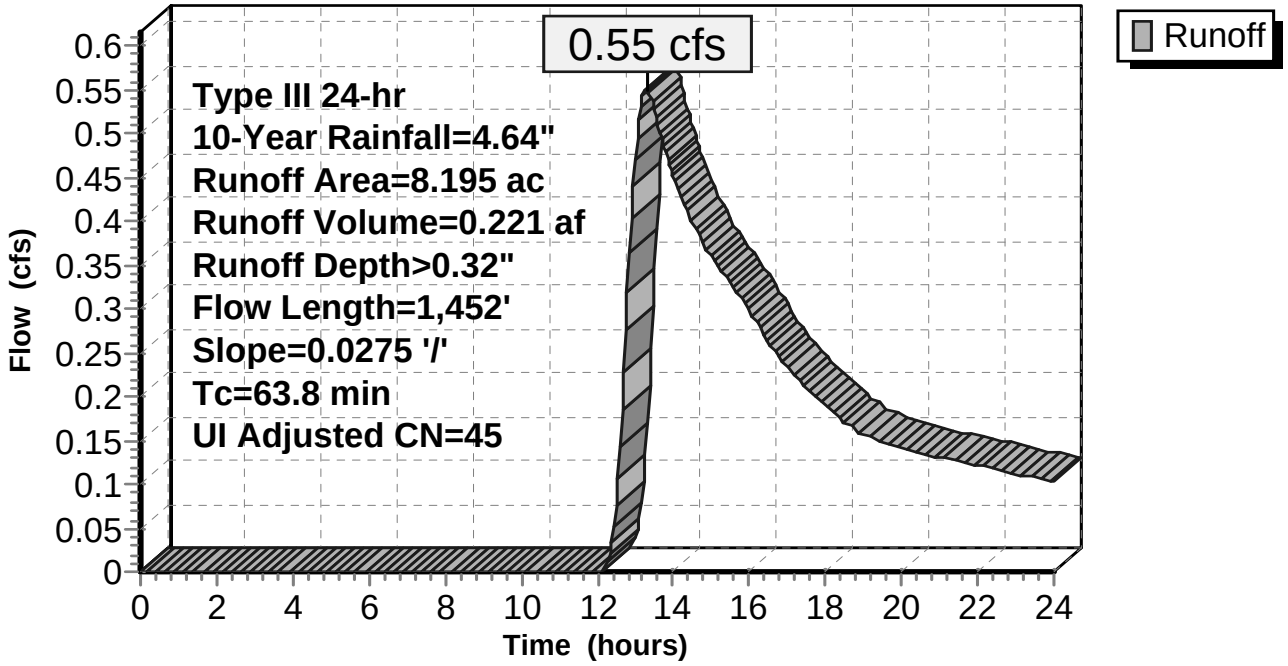
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
1.313	96	Gravel surface, HSG A
0.327	98	Unconnected roofs, HSG A
3.810	30	Woods, Good, HSG A
2.745	39	Pasture/grassland/range, Good, HSG A
8.195	46	Weighted Average, UI Adjusted CN = 45
7.868		96.01% Pervious Area
0.327		3.99% Impervious Area
0.327		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
63.8	1,452	0.0275	0.38		**Lag/CN Method,** Contour Length= 4,905' Interval= 2'

Subcatchment DA-9: DA-9

Hydrograph



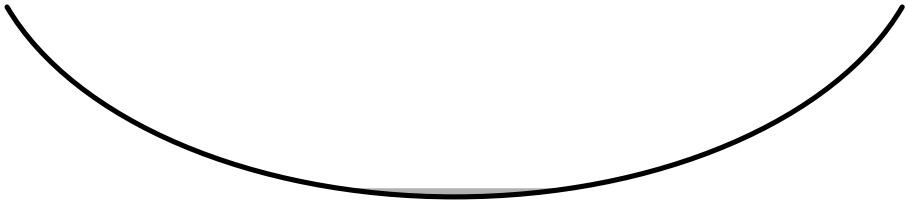
Summary for Reach DP-1: DP-1

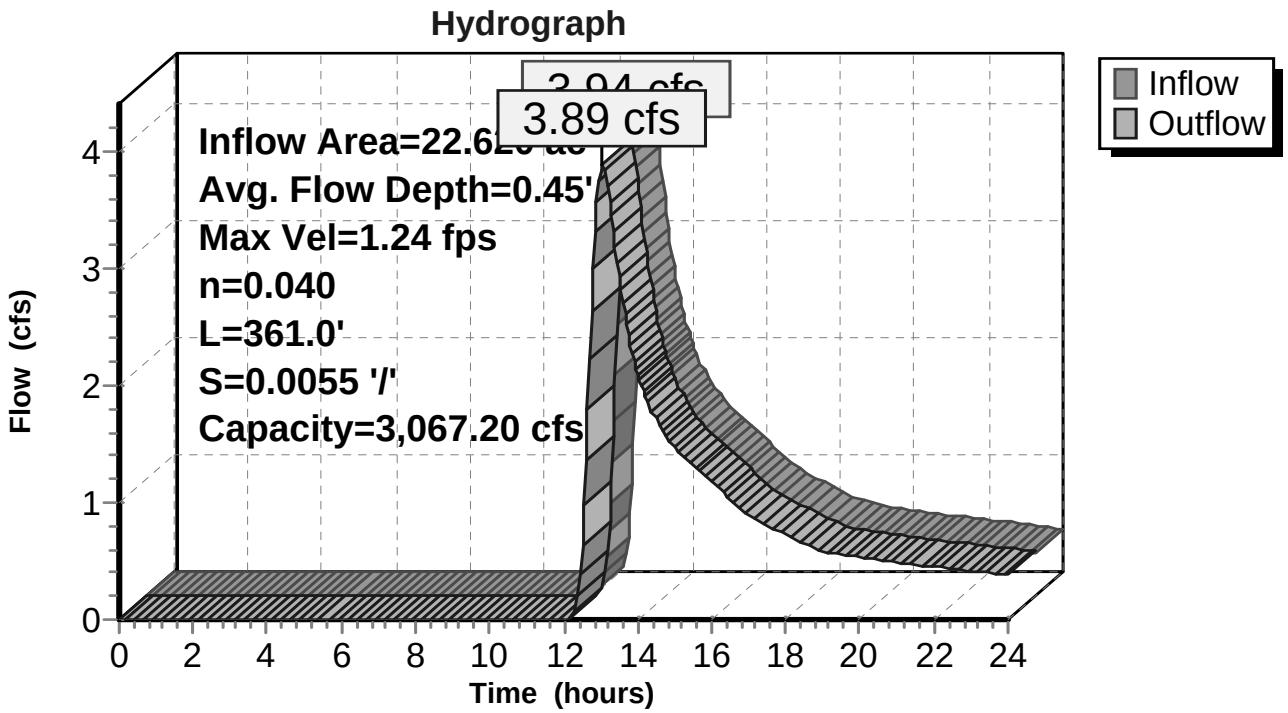
Inflow Area = 22.620 ac, 0.00% Impervious, Inflow Depth > 0.54" for 10-Year event
Inflow = 3.94 cfs @ 12.91 hrs, Volume= 1.017 af
Outflow = 3.89 cfs @ 13.06 hrs, Volume= 1.010 af, Atten= 1%, Lag= 8.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.24 fps, Min. Travel Time= 4.9 min
Avg. Velocity = 0.79 fps, Avg. Travel Time= 7.6 min

Peak Storage= 1,135 cf @ 12.97 hrs
Average Depth at Peak Storage= 0.45'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 3,067.20 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 361.0' Slope= 0.0055 '/'
Inlet Invert= 482.00', Outlet Invert= 480.00'





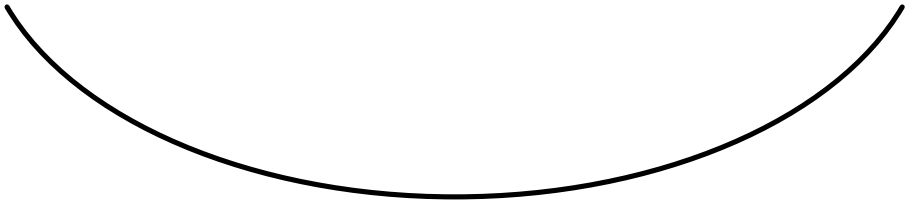
Summary for Reach DP-2: DP-2

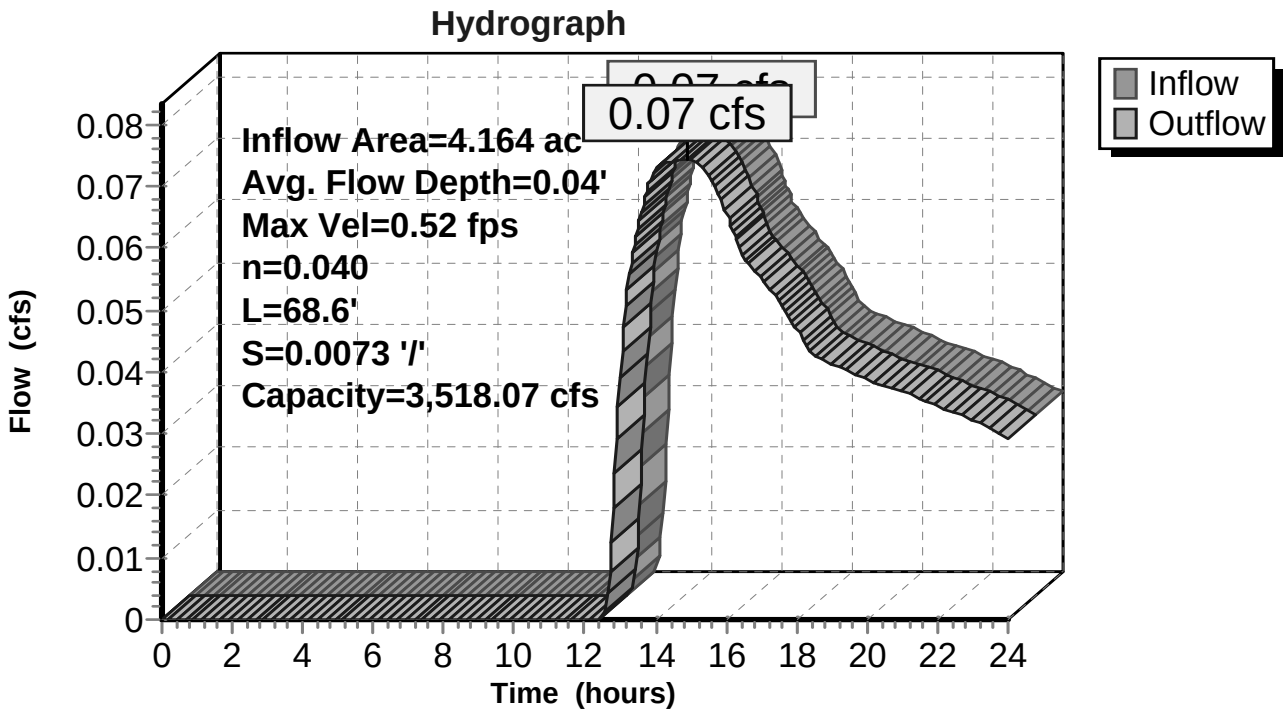
Inflow Area = 4.164 ac, 14.82% Impervious, Inflow Depth > 0.13" for 10-Year event
Inflow = 0.07 cfs @ 14.80 hrs, Volume= 0.045 af
Outflow = 0.07 cfs @ 14.87 hrs, Volume= 0.045 af, Atten= 0%, Lag= 4.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.52 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.52 fps, Avg. Travel Time= 2.2 min

Peak Storage= 10 cf @ 14.83 hrs
Average Depth at Peak Storage= 0.04'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 3,518.07 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 68.6' Slope= 0.0073 '/'
Inlet Invert= 480.00', Outlet Invert= 479.50'





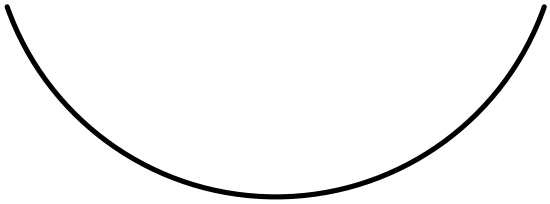
Summary for Reach DP-3: DP-3

Inflow Area = 2.178 ac, 1.88% Impervious, Inflow Depth > 0.06" for 10-Year event
Inflow = 0.02 cfs @ 15.48 hrs, Volume= 0.011 af
Outflow = 0.02 cfs @ 15.55 hrs, Volume= 0.011 af, Atten= 0%, Lag= 4.5 min

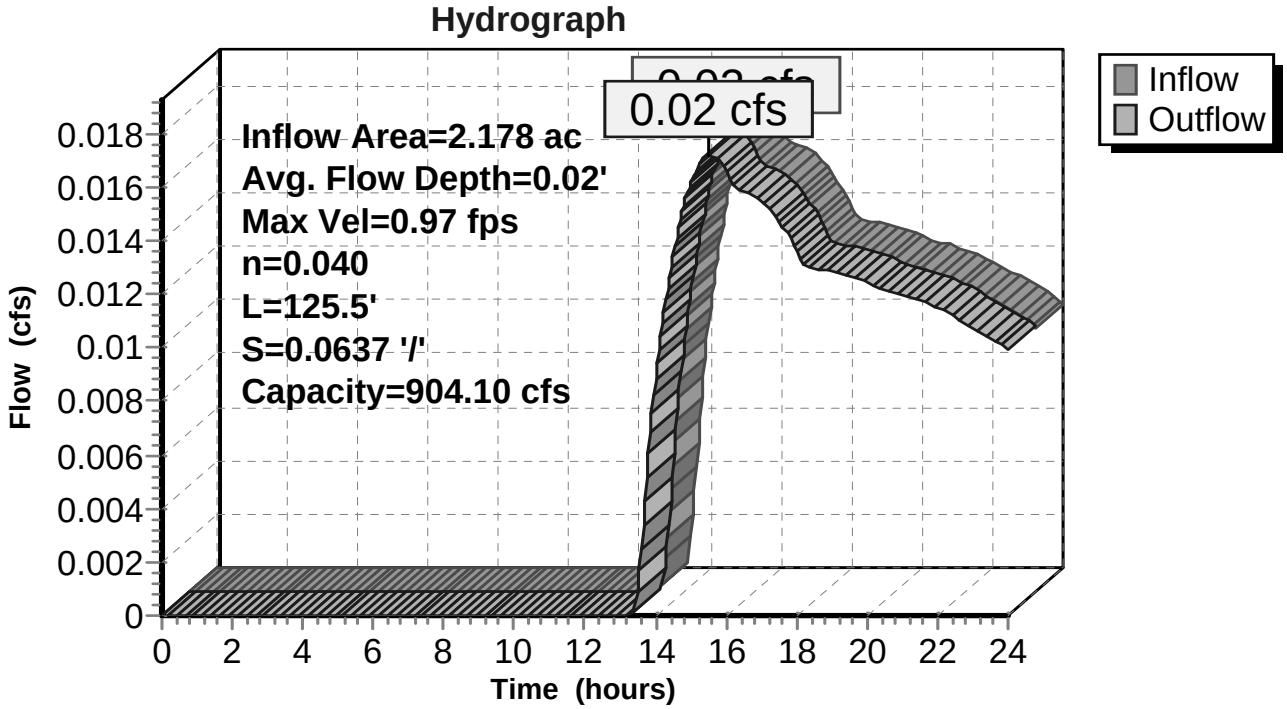
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.97 fps, Min. Travel Time= 2.2 min
Avg. Velocity = 0.97 fps, Avg. Travel Time= 2.2 min

Peak Storage= 2 cf @ 15.51 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 5.00' Flow Area= 50.0 sf, Capacity= 904.10 cfs

15.00' x 5.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 125.5' Slope= 0.0637 '/'
Inlet Invert= 488.00', Outlet Invert= 480.00'



Reach DP-3: DP-3



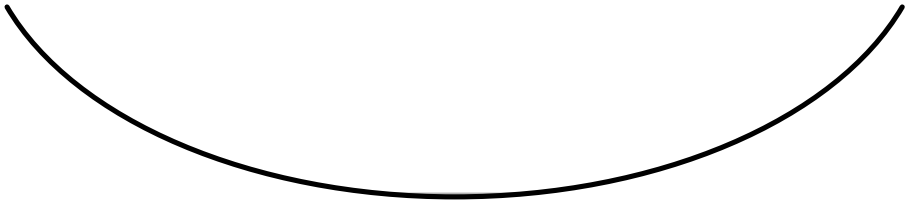
Summary for Reach DP-4: DP-4

Inflow Area = 8.195 ac, 3.99% Impervious, Inflow Depth > 0.32" for 10-Year event
Inflow = 0.55 cfs @ 13.28 hrs, Volume= 0.221 af
Outflow = 0.53 cfs @ 13.66 hrs, Volume= 0.216 af, Atten= 3%, Lag= 22.3 min

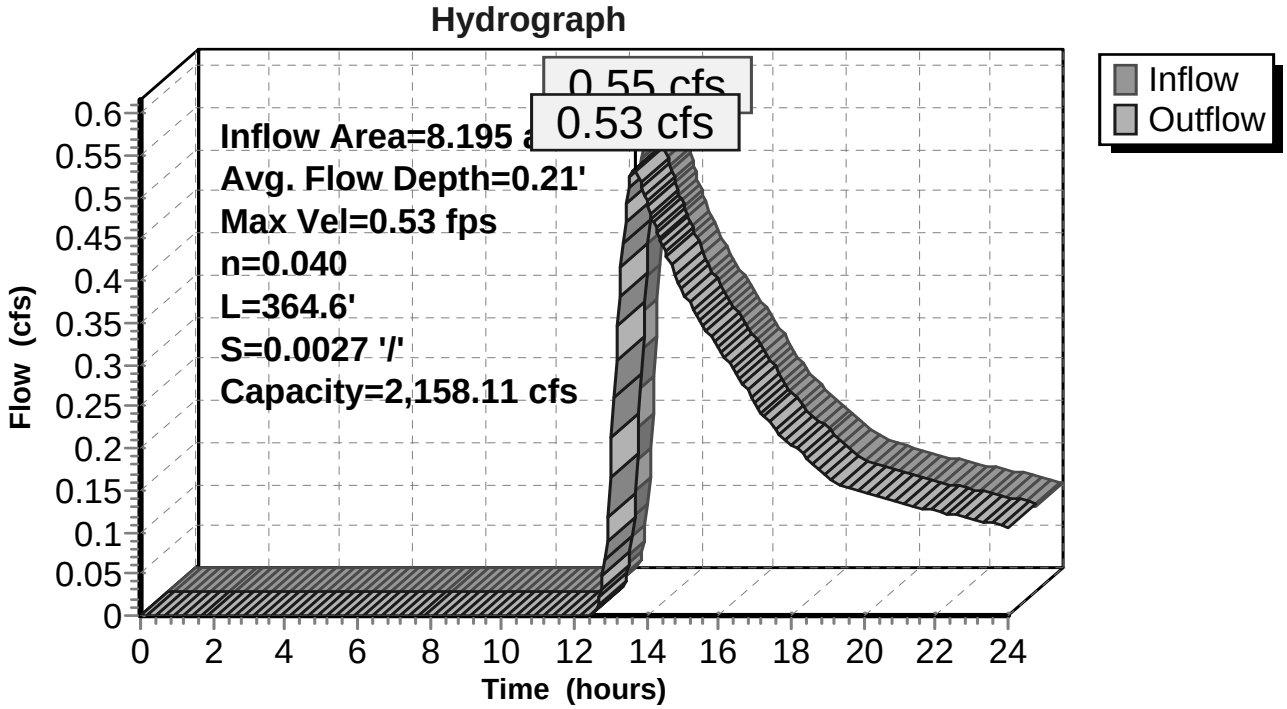
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.53 fps, Min. Travel Time= 11.5 min
Avg. Velocity = 0.40 fps, Avg. Travel Time= 15.1 min

Peak Storage= 368 cf @ 13.46 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 2,158.11 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 364.6' Slope= 0.0027 '/'
Inlet Invert= 479.50', Outlet Invert= 478.50'



Reach DP-4: DP-4



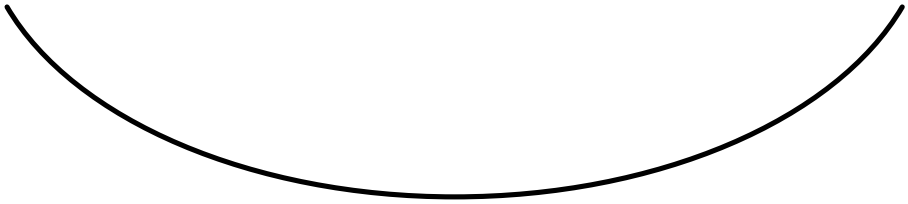
Summary for Reach DP-5: DP-5

Inflow Area = 3.485 ac, 13.63% Impervious, Inflow Depth > 0.16" for 10-Year event
Inflow = 0.08 cfs @ 13.81 hrs, Volume= 0.046 af
Outflow = 0.08 cfs @ 14.00 hrs, Volume= 0.046 af, Atten= 0%, Lag= 11.3 min

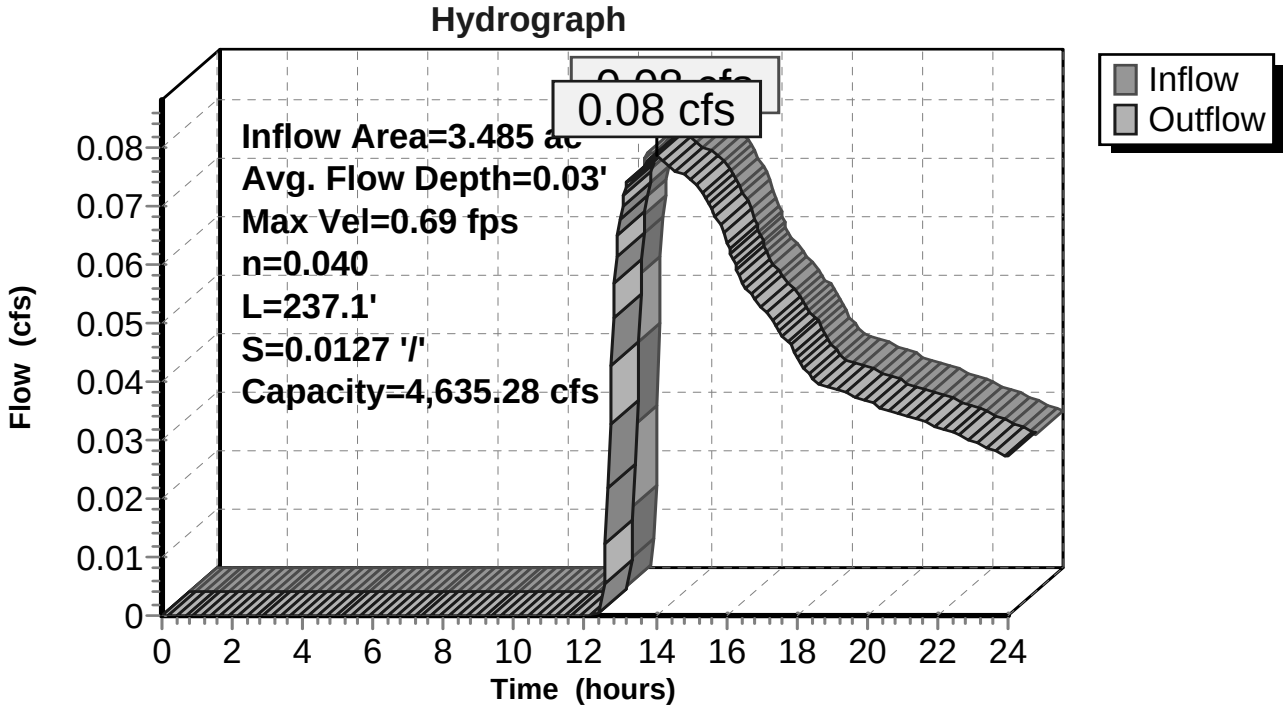
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.69 fps, Min. Travel Time= 5.8 min
Avg. Velocity = 0.69 fps, Avg. Travel Time= 5.8 min

Peak Storage= 27 cf @ 13.90 hrs
Average Depth at Peak Storage= 0.03'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 4,635.28 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 237.1' Slope= 0.0127 '/'
Inlet Invert= 478.50', Outlet Invert= 475.50'



Reach DP-5: DP-5



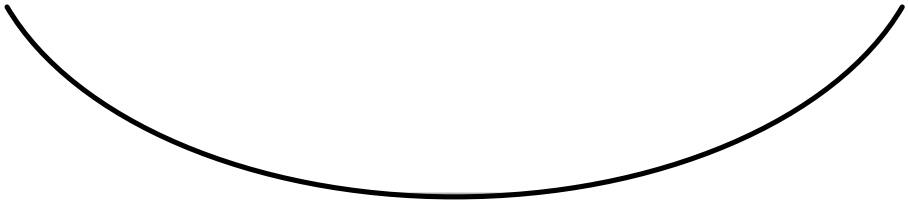
Summary for Reach DP-6: DP-6

Inflow Area = 4.164 ac, 7.13% Impervious, Inflow Depth > 0.46" for 10-Year event
Inflow = 0.83 cfs @ 12.44 hrs, Volume= 0.158 af
Outflow = 0.75 cfs @ 12.72 hrs, Volume= 0.156 af, Atten= 10%, Lag= 16.7 min

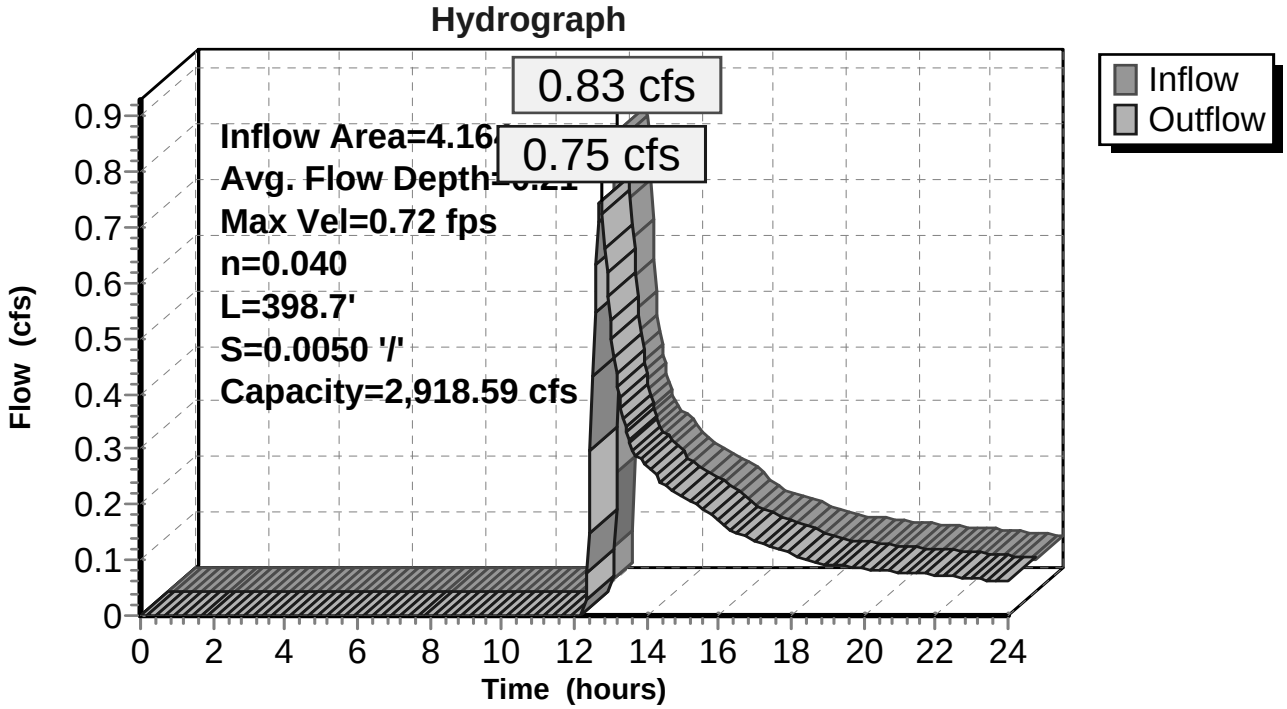
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.72 fps, Min. Travel Time= 9.2 min
Avg. Velocity = 0.47 fps, Avg. Travel Time= 14.1 min

Peak Storage= 411 cf @ 12.57 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 2,918.59 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 398.7' Slope= 0.0050 '/'
Inlet Invert= 475.50', Outlet Invert= 473.50'



Reach DP-6: DP-6



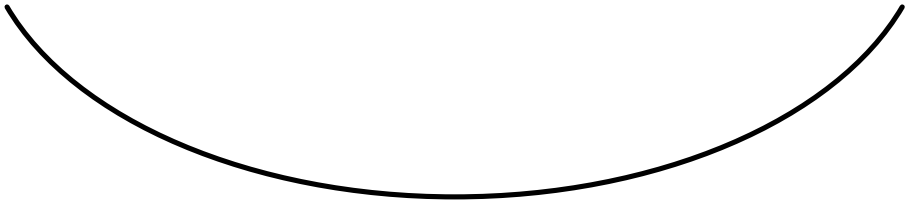
Summary for Reach DP-7: DP-7

Inflow Area = 4.292 ac, 9.18% Impervious, Inflow Depth > 0.26" for 10-Year event
Inflow = 0.24 cfs @ 12.76 hrs, Volume= 0.091 af
Outflow = 0.12 cfs @ 17.82 hrs, Volume= 0.072 af, Atten= 50%, Lag= 303.7 min

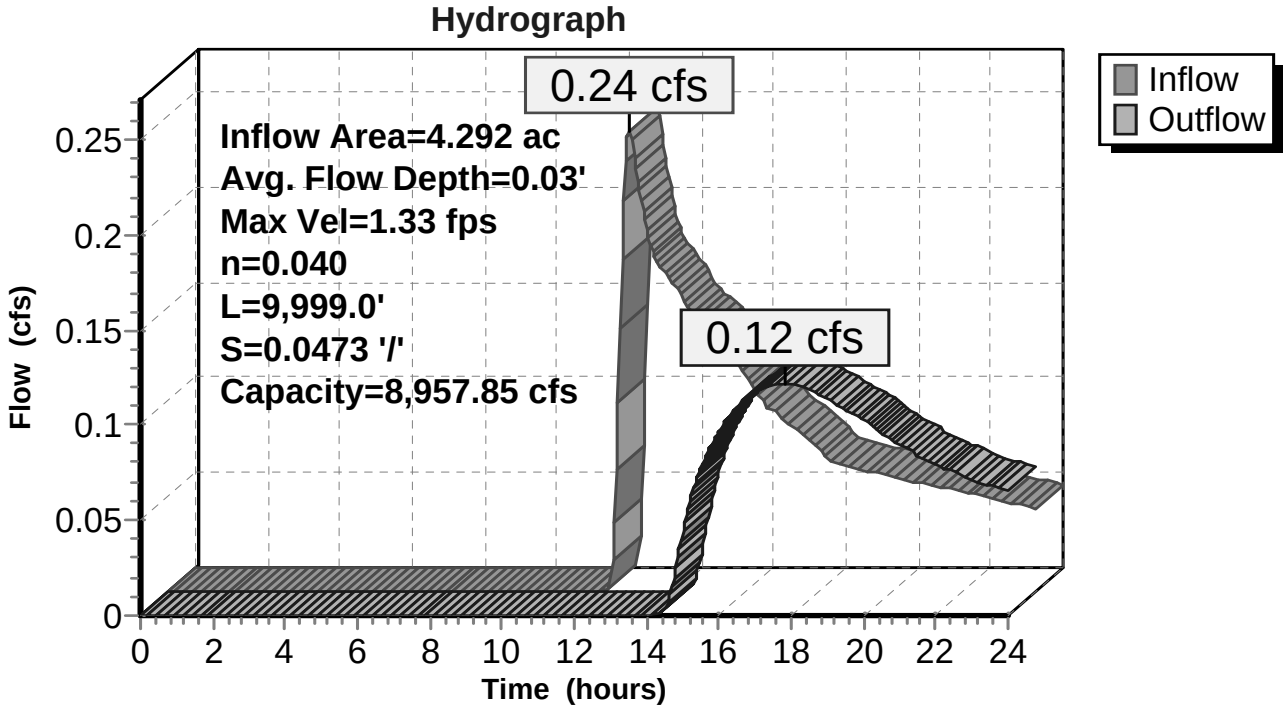
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.33 fps, Min. Travel Time= 125.6 min
Avg. Velocity = 1.33 fps, Avg. Travel Time= 125.6 min

Peak Storage= 916 cf @ 15.72 hrs
Average Depth at Peak Storage= 0.03'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 8,957.85 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 9,999.0' Slope= 0.0473 '/'
Inlet Invert= 473.50', Outlet Invert= 1.00'



Reach DP-7: DP-7



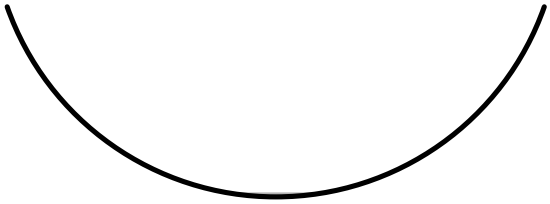
Summary for Reach DP-8: DP-8

Inflow Area = 2.249 ac, 4.85% Impervious, Inflow Depth > 0.33" for 10-Year event
Inflow = 0.24 cfs @ 12.57 hrs, Volume= 0.062 af
Outflow = 0.24 cfs @ 12.67 hrs, Volume= 0.062 af, Atten= 2%, Lag= 6.5 min

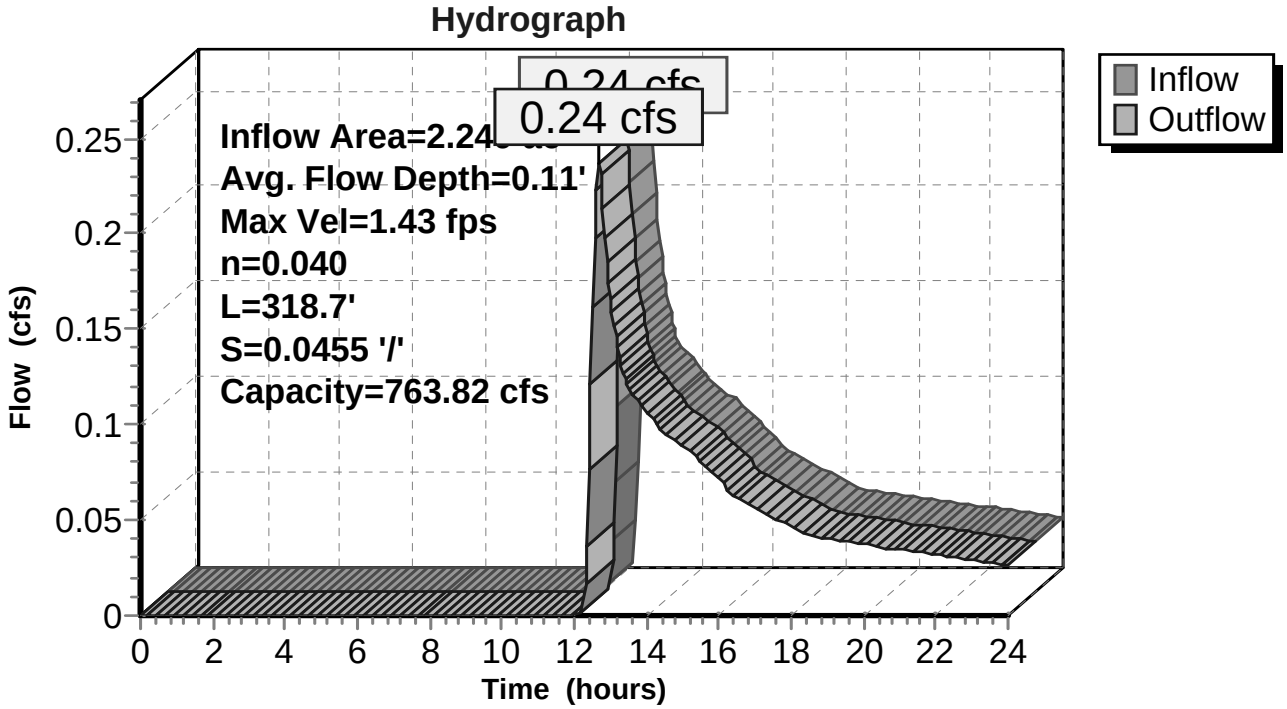
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.43 fps, Min. Travel Time= 3.7 min
Avg. Velocity = 0.95 fps, Avg. Travel Time= 5.6 min

Peak Storage= 53 cf @ 12.61 hrs
Average Depth at Peak Storage= 0.11'
Bank-Full Depth= 5.00' Flow Area= 50.0 sf, Capacity= 763.82 cfs

15.00' x 5.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 318.7' Slope= 0.0455 '/'
Inlet Invert= 488.00', Outlet Invert= 473.50'



Reach DP-8: DP-8



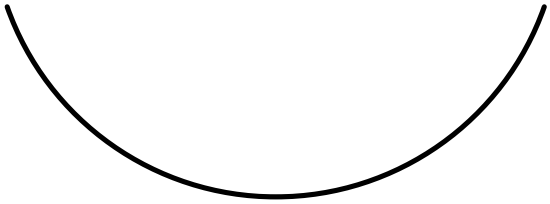
Summary for Reach DP-9: DP-9

Inflow Area = 5.054 ac, 0.00% Impervious, Inflow Depth > 0.10" for 10-Year event
Inflow = 0.07 cfs @ 15.12 hrs, Volume= 0.044 af
Outflow = 0.07 cfs @ 15.17 hrs, Volume= 0.044 af, Atten= 0%, Lag= 3.1 min

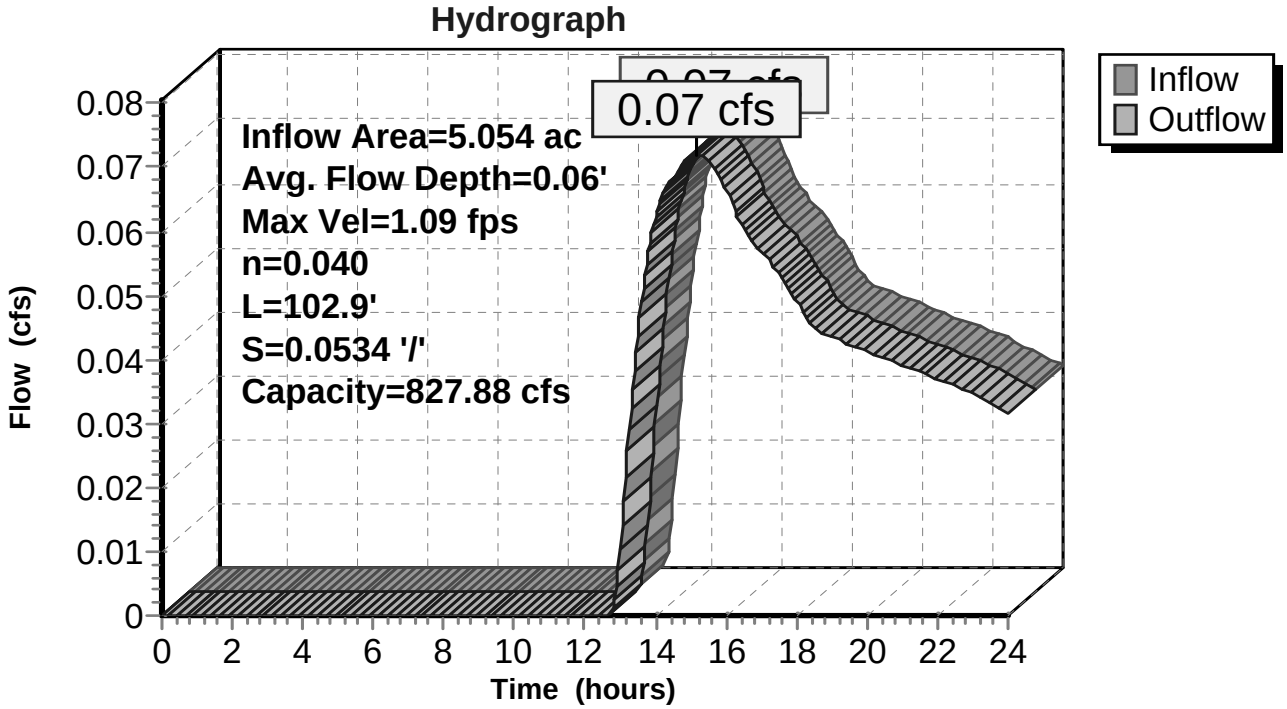
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.09 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 0.94 fps, Avg. Travel Time= 1.8 min

Peak Storage= 7 cf @ 15.14 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 5.00' Flow Area= 50.0 sf, Capacity= 827.88 cfs

15.00' x 5.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 102.9' Slope= 0.0534 '/'
Inlet Invert= 493.50', Outlet Invert= 488.00'



Reach DP-9: DP-9



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment DA-1: DA-1 Runoff Area=22.620 ac 0.00% Impervious Runoff Depth>2.39"
Flow Length=1,906' Slope=0.0540 '/' Tc=51.1 min CN=50 Runoff=25.57 cfs 4.511 af

Subcatchment DA-2: DA-2 Runoff Area=2.178 ac 1.88% Impervious Runoff Depth>0.99"
Flow Length=430' Slope=0.1623 '/' Tc=12.6 min UI Adjusted CN=36 Runoff=1.13 cfs 0.180 af

Subcatchment DA-3: DA-3 Runoff Area=5.054 ac 0.00% Impervious Runoff Depth>1.17"
Flow Length=757' Slope=0.0695 '/' Tc=29.5 min CN=38 Runoff=2.77 cfs 0.493 af

Subcatchment DA-4: DA-4 Runoff Area=2.249 ac 4.85% Impervious Runoff Depth>1.88"
Flow Length=544' Slope=0.0588 '/' Tc=20.4 min CN=45 Runoff=2.82 cfs 0.352 af

Subcatchment DA-5: DA-5 Runoff Area=4.292 ac 9.18% Impervious Runoff Depth>1.67"
Flow Length=1,092' Slope=0.0980 '/' Tc=28.3 min UI Adjusted CN=43 Runoff=4.03 cfs 0.596 af

Subcatchment DA-6: DA-6 Runoff Area=4.164 ac 7.13% Impervious Runoff Depth>2.20"
Flow Length=826' Slope=0.1337 '/' Tc=16.6 min UI Adjusted CN=48 Runoff=7.00 cfs 0.764 af

Subcatchment DA-7: DA-7 Runoff Area=3.485 ac 13.63% Impervious Runoff Depth>1.37"
Flow Length=575' Slope=0.1184 '/' Tc=16.7 min UI Adjusted CN=40 Runoff=2.95 cfs 0.398 af

Subcatchment DA-8: DA-8 Runoff Area=181,384 sf 14.82% Impervious Runoff Depth>1.27"
Flow Length=470' Slope=0.0377 '/' Tc=25.9 min UI Adjusted CN=39 Runoff=2.70 cfs 0.440 af

Subcatchment DA-9: DA-9 Runoff Area=8.195 ac 3.99% Impervious Runoff Depth>1.85"
Flow Length=1,452' Slope=0.0275 '/' Tc=63.8 min UI Adjusted CN=45 Runoff=5.85 cfs 1.265 af

Reach DP-1: DP-1 Avg. Flow Depth=1.07' Max Vel=2.19 fps Inflow=25.57 cfs 4.511 af
n=0.040 L=361.0' S=0.0055 '/' Capacity=3,067.20 cfs Outflow=25.47 cfs 4.496 af

Reach DP-2: DP-2 Avg. Flow Depth=0.35' Max Vel=1.22 fps Inflow=2.70 cfs 0.440 af
n=0.040 L=68.6' S=0.0073 '/' Capacity=3,518.07 cfs Outflow=2.69 cfs 0.440 af

Reach DP-3: DP-3 Avg. Flow Depth=0.21' Max Vel=2.55 fps Inflow=1.13 cfs 0.180 af
n=0.040 L=125.5' S=0.0637 '/' Capacity=904.10 cfs Outflow=1.13 cfs 0.180 af

Reach DP-4: DP-4 Avg. Flow Depth=0.63' Max Vel=1.09 fps Inflow=5.85 cfs 1.265 af
n=0.040 L=364.6' S=0.0027 '/' Capacity=2,158.11 cfs Outflow=5.79 cfs 1.256 af

Reach DP-5: DP-5 Avg. Flow Depth=0.32' Max Vel=1.51 fps Inflow=2.95 cfs 0.398 af
n=0.040 L=237.1' S=0.0127 '/' Capacity=4,635.28 cfs Outflow=2.90 cfs 0.397 af

Reach DP-6: DP-6 Avg. Flow Depth=0.58' Max Vel=1.40 fps Inflow=7.00 cfs 0.764 af
n=0.040 L=398.7' S=0.0050 '/' Capacity=2,918.59 cfs Outflow=6.57 cfs 0.759 af

Reach DP-7: DP-7 Avg. Flow Depth=0.16' Max Vel=1.98 fps Inflow=4.03 cfs 0.596 af
n=0.040 L=9,999.0' S=0.0473 '/' Capacity=8,957.85 cfs Outflow=1.44 cfs 0.534 af

Reach DP-8: DP-8 Avg. Flow Depth=0.35' Max Vel=2.99 fps Inflow=2.82 cfs 0.352 af
n=0.040 L=318.7' S=0.0455 '/' Capacity=763.82 cfs Outflow=2.79 cfs 0.352 af

Reach DP-9: DP-9 Avg. Flow Depth=0.34' Max Vel=3.15 fps Inflow=2.77 cfs 0.493 af
n=0.040 L=102.9' S=0.0534 '/' Capacity=827.88 cfs Outflow=2.76 cfs 0.493 af

Total Runoff Area = 56.401 ac Runoff Volume = 9.000 af Average Runoff Depth = 1.91"
95.99% Pervious = 54.141 ac 4.01% Impervious = 2.260 ac

Summary for Subcatchment DA-1: DA-1

Runoff = 25.57 cfs @ 12.76 hrs, Volume= 4.511 af, Depth> 2.39"

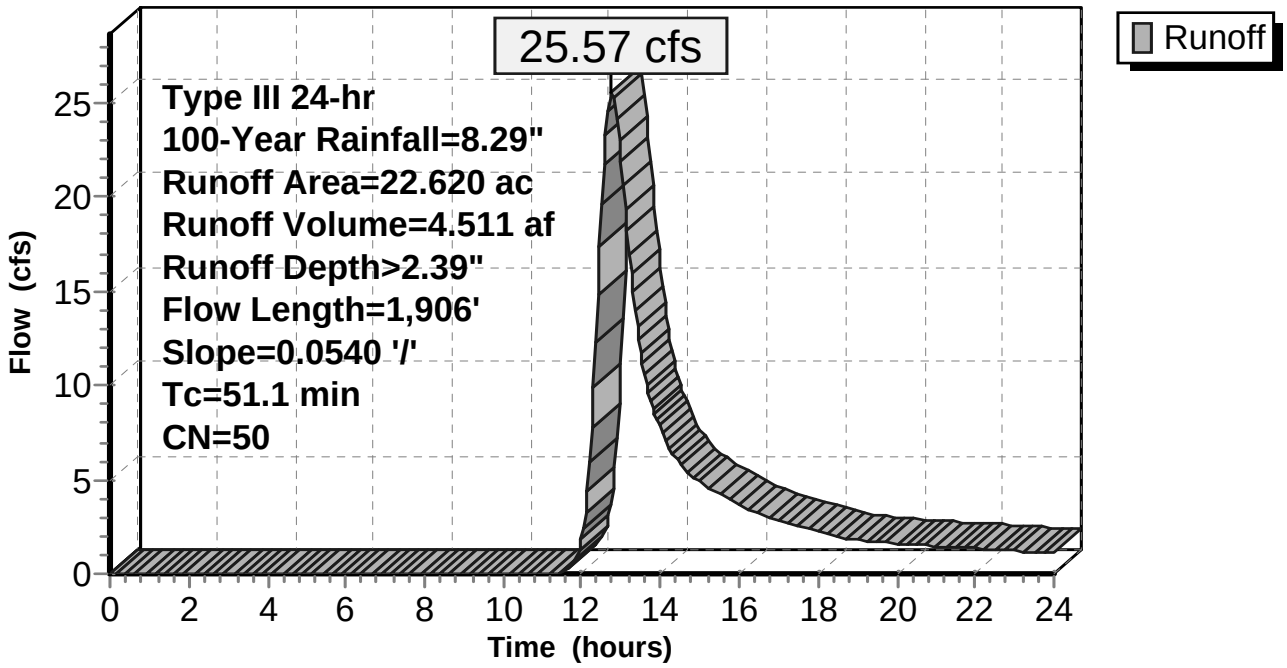
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
7.259	39	Pasture/grassland/range, Good, HSG A
7.409	30	Woods, Good, HSG A
7.594	77	Woods, Good, HSG D
0.358	96	Gravel surface, HSG A
22.620	50	Weighted Average
22.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.1	1,906	0.0540	0.62		**Lag/CN Method,**

Subcatchment DA-1: DA-1

Hydrograph



Summary for Subcatchment DA-2: DA-2

Runoff = 1.13 cfs @ 12.30 hrs, Volume= 0.180 af, Depth> 0.99"

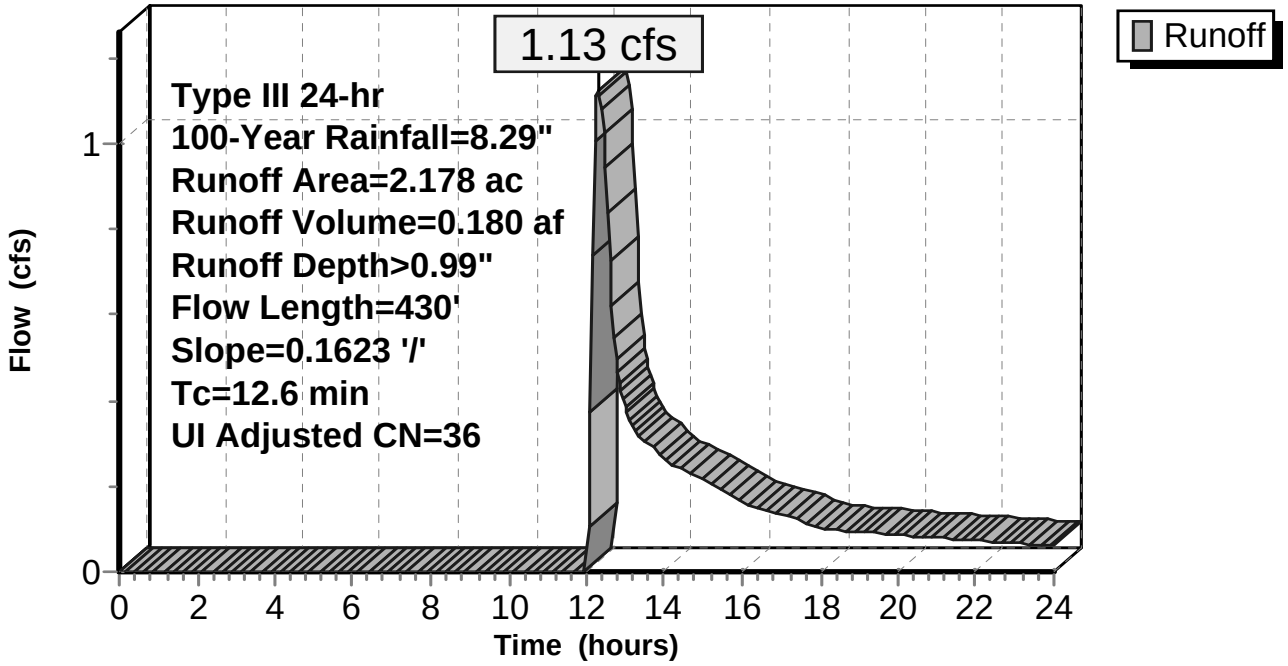
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.748	30	Woods, Good, HSG A
1.389	39	Pasture/grassland/range, Good, HSG A
0.011	98	Unconnected roofs, HSG A
0.030	98	Unconnected roofs, HSG A
2.178	37	Weighted Average, UI Adjusted CN = 36
2.137		98.12% Pervious Area
0.041		1.88% Impervious Area
0.041		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.6	430	0.1623	0.57		**Lag/CN Method,** Contour Length= 7,700' Interval= 2'

Subcatchment DA-2: DA-2

Hydrograph



Summary for Subcatchment DA-3: DA-3

Runoff = 2.77 cfs @ 12.55 hrs, Volume= 0.493 af, Depth> 1.17"

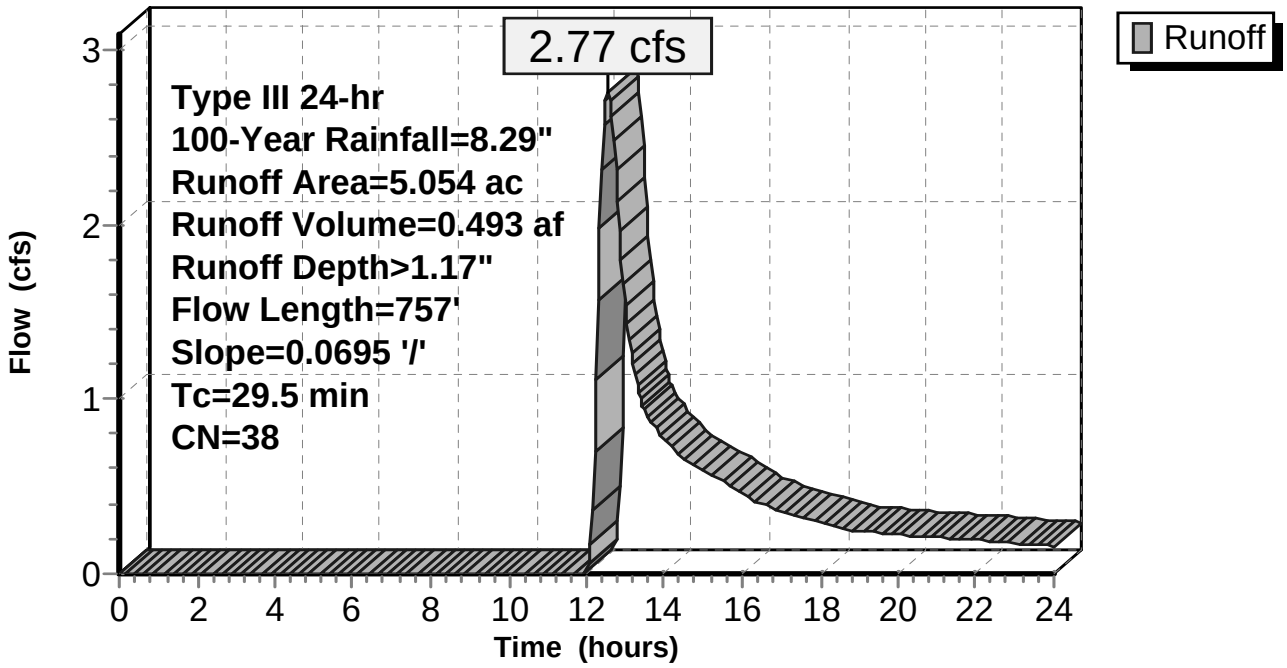
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
4.606	39	Pasture/grassland/range, Good, HSG A
0.448	30	Woods, Good, HSG A
5.054	38	Weighted Average
5.054		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	757	0.0695	0.43		**Lag/CN Method,** Contour Length= 7,650' Interval= 2'

Subcatchment DA-3: DA-3

Hydrograph



Summary for Subcatchment DA-4: DA-4

Runoff = 2.82 cfs @ 12.33 hrs, Volume= 0.352 af, Depth> 1.88"

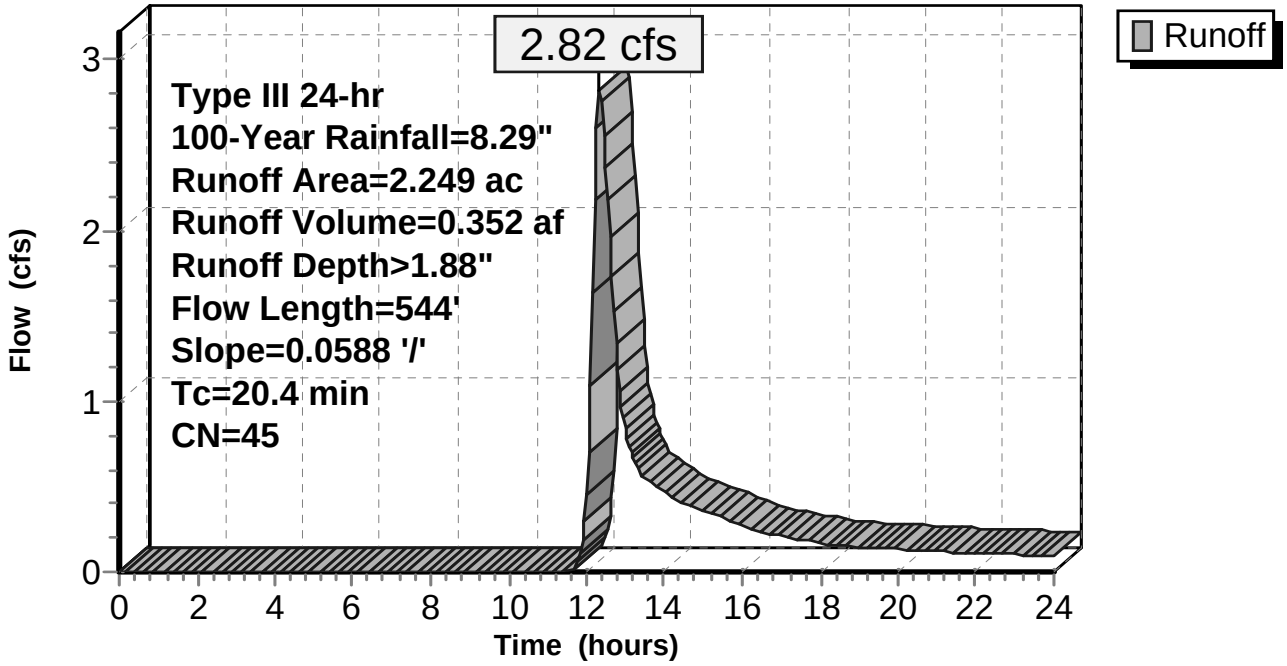
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
1.920	39	Pasture/grassland/range, Good, HSG A
0.080	30	Woods, Good, HSG A
0.140	96	Gravel surface, HSG A
0.109	98	Paved parking, HSG A
2.249	45	Weighted Average
2.140		95.15% Pervious Area
0.109		4.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	544	0.0588	0.44		**Lag/CN Method,** Contour Length= 2,879' Interval= 2'

Subcatchment DA-4: DA-4

Hydrograph



Summary for Subcatchment DA-5: DA-5

Runoff = 4.03 cfs @ 12.48 hrs, Volume= 0.596 af, Depth> 1.67"

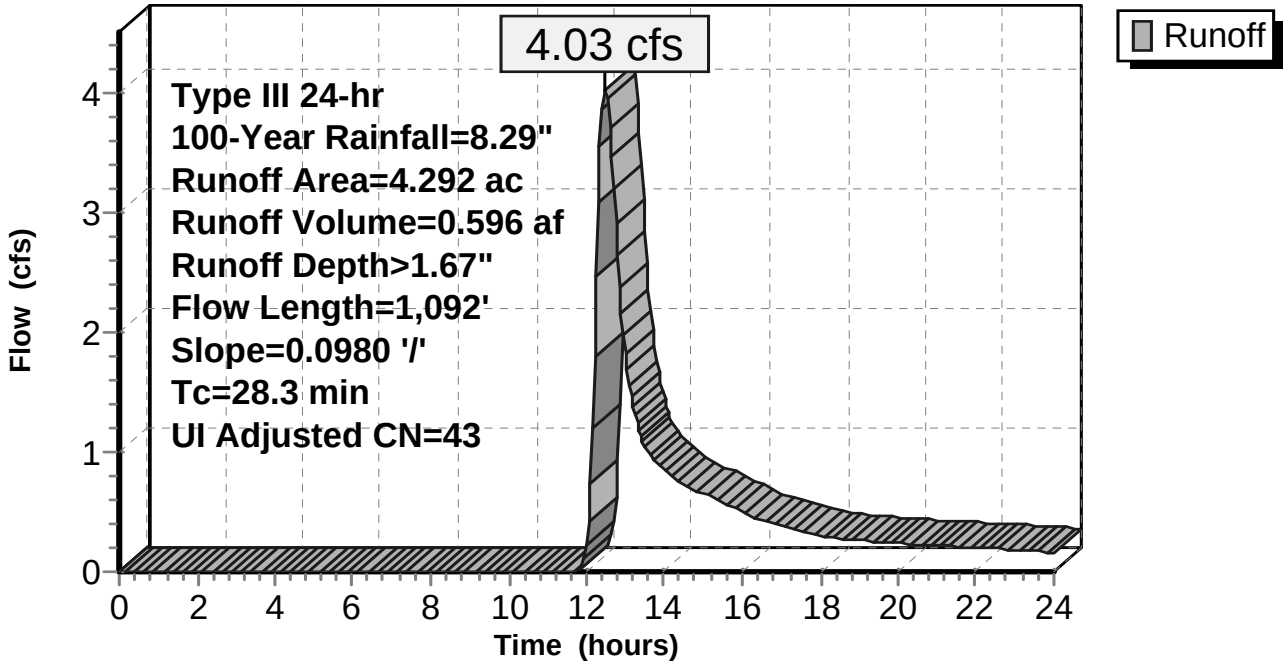
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.206	98	Paved parking, HSG A
1.750	39	Pasture/grassland/range, Good, HSG A
1.884	30	Woods, Good, HSG A
0.188	98	Unconnected roofs, HSG A
0.264	96	Gravel surface, HSG A
4.292	44	Weighted Average, UI Adjusted CN = 43
3.898		90.82% Pervious Area
0.394		9.18% Impervious Area
0.188		47.72% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.3	1,092	0.0980	0.64		**Lag/CN Method,** Contour Length= 9,162' Interval= 2'

Subcatchment DA-5: DA-5

Hydrograph



Summary for Subcatchment DA-6: DA-6

Runoff = 7.00 cfs @ 12.26 hrs, Volume= 0.764 af, Depth> 2.20"

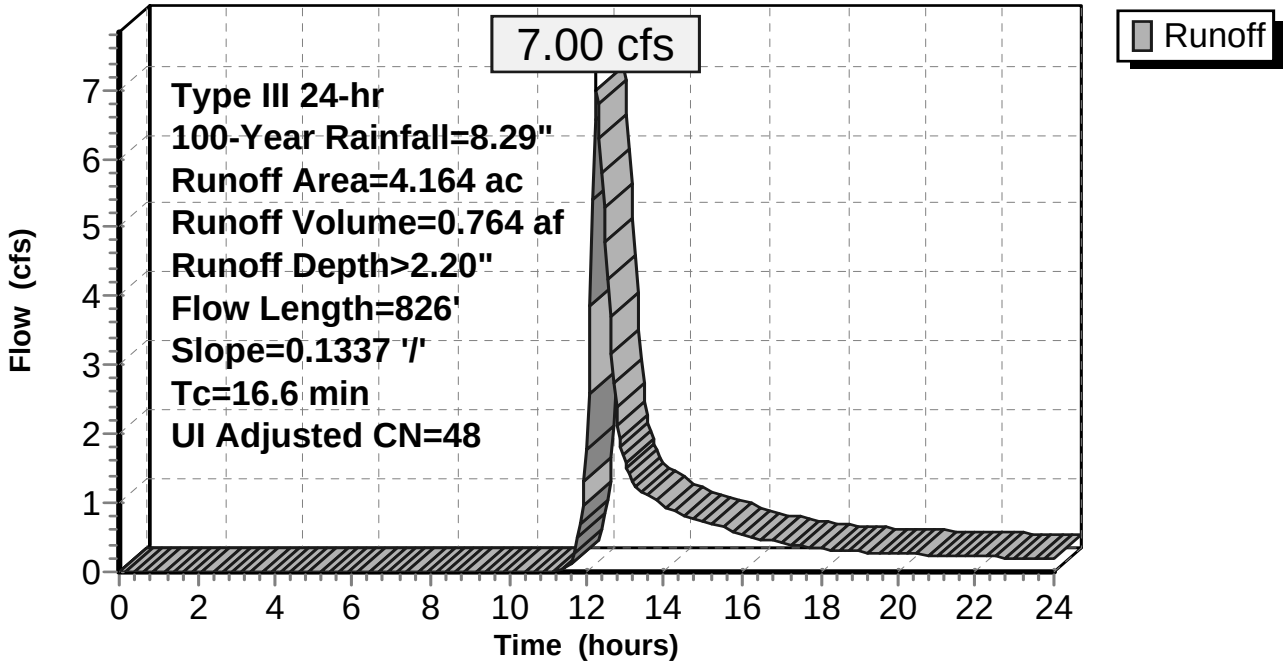
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.297	98	Unconnected roofs, HSG A
3.401	39	Pasture/grassland/range, Good, HSG A
0.466	96	Gravel surface, HSG A
4.164	50	Weighted Average, UI Adjusted CN = 48
3.867		92.87% Pervious Area
0.297		7.13% Impervious Area
0.297		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6	826	0.1337	0.83		**Lag/CN Method,** Contour Length= 12,121' Interval= 2'

Subcatchment DA-6: DA-6

Hydrograph



Summary for Subcatchment DA-7: DA-7

Runoff = 2.95 cfs @ 12.31 hrs, Volume= 0.398 af, Depth> 1.37"

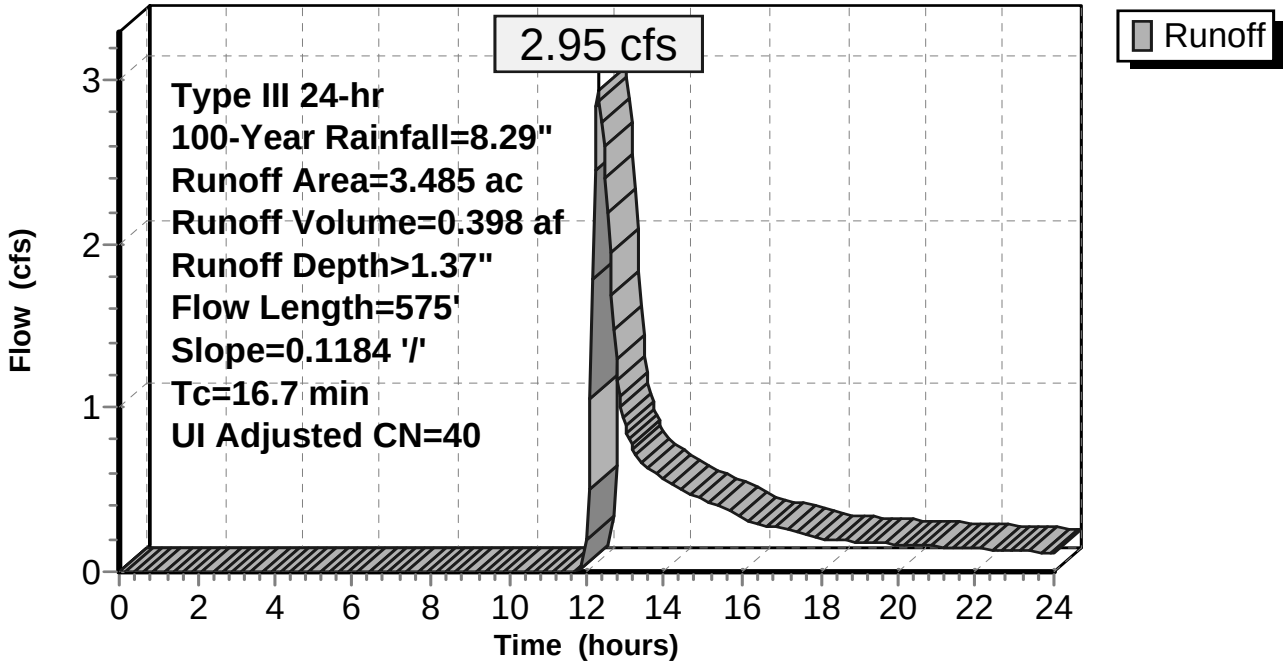
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
2.904	30	Woods, Good, HSG A
0.322	98	Water Surface, HSG A
0.106	96	Gravel surface, HSG A
0.153	98	Unconnected roofs, HSG A
3.485	41	Weighted Average, UI Adjusted CN = 40
3.010		86.37% Pervious Area
0.475		13.63% Impervious Area
0.153		32.21% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	575	0.1184	0.57		**Lag/CN Method,** Contour Length= 8,985' Interval= 2'

Subcatchment DA-7: DA-7

Hydrograph



Summary for Subcatchment DA-8: DA-8

Runoff = 2.70 cfs @ 12.48 hrs, Volume= 0.440 af, Depth> 1.27"

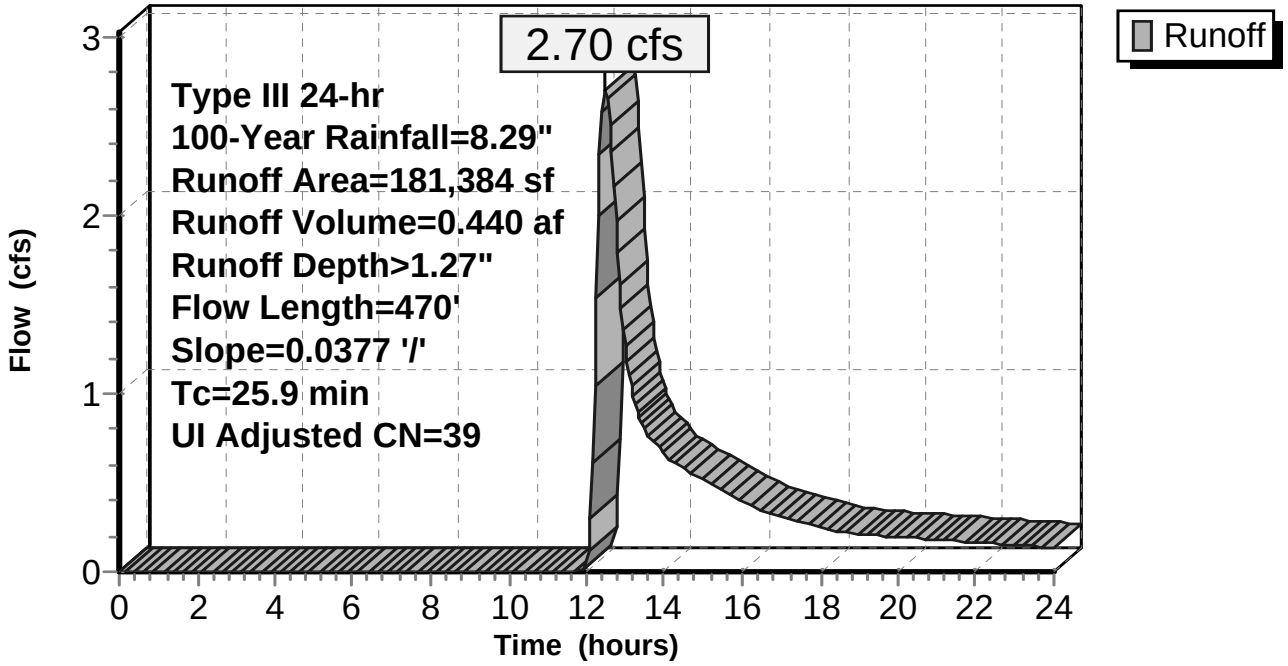
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (sf)	CN	Description
154,508	30	Woods, Good, HSG A
6,839	98	Unconnected roofs, HSG A
14,244	98	Paved parking, HSG A
5,793	98	Water Surface, HSG A
181,384	40	Weighted Average, UI Adjusted CN = 39
154,508		85.18% Pervious Area
26,876		14.82% Impervious Area
6,839		25.45% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	470	0.0377	0.30		**Lag/CN Method,** Contour Length= 3,416' Interval= 2'

Subcatchment DA-8: DA-8

Hydrograph



Summary for Subcatchment DA-9: DA-9

Runoff = 5.85 cfs @ 12.98 hrs, Volume= 1.265 af, Depth> 1.85"

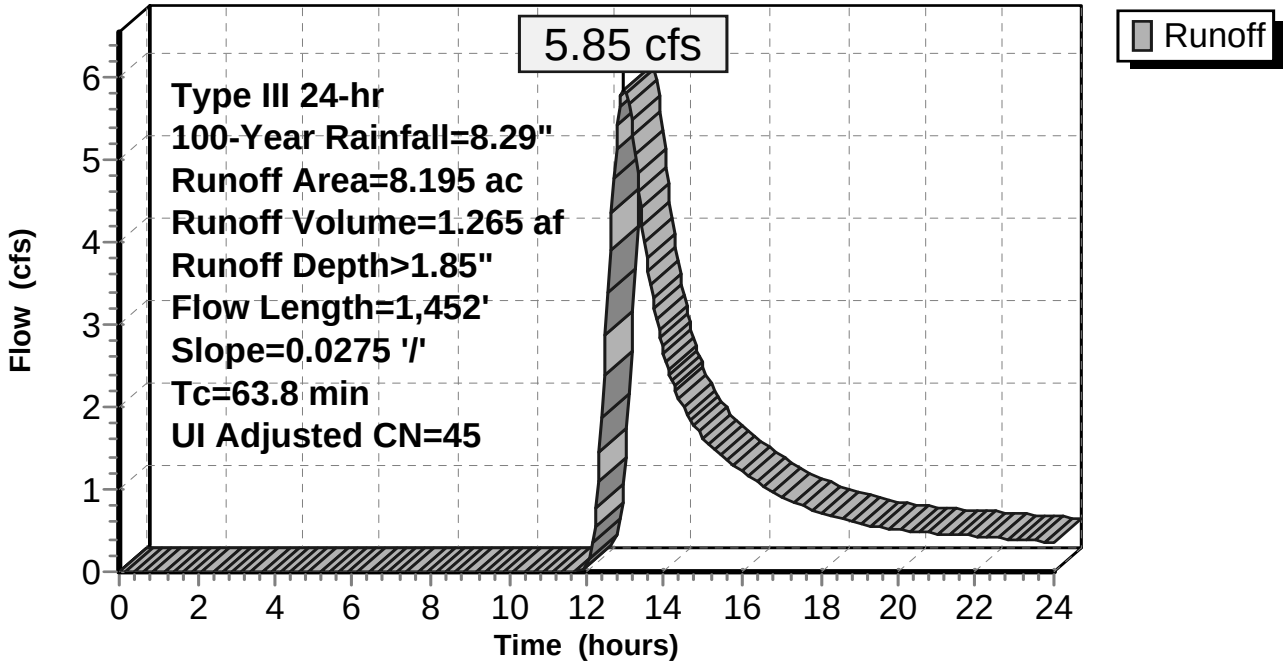
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
1.313	96	Gravel surface, HSG A
0.327	98	Unconnected roofs, HSG A
3.810	30	Woods, Good, HSG A
2.745	39	Pasture/grassland/range, Good, HSG A
8.195	46	Weighted Average, UI Adjusted CN = 45
7.868		96.01% Pervious Area
0.327		3.99% Impervious Area
0.327		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
63.8	1,452	0.0275	0.38		**Lag/CN Method,** Contour Length= 4,905' Interval= 2'

Subcatchment DA-9: DA-9

Hydrograph



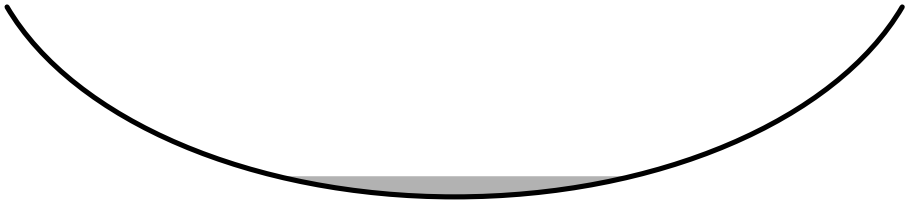
Summary for Reach DP-1: DP-1

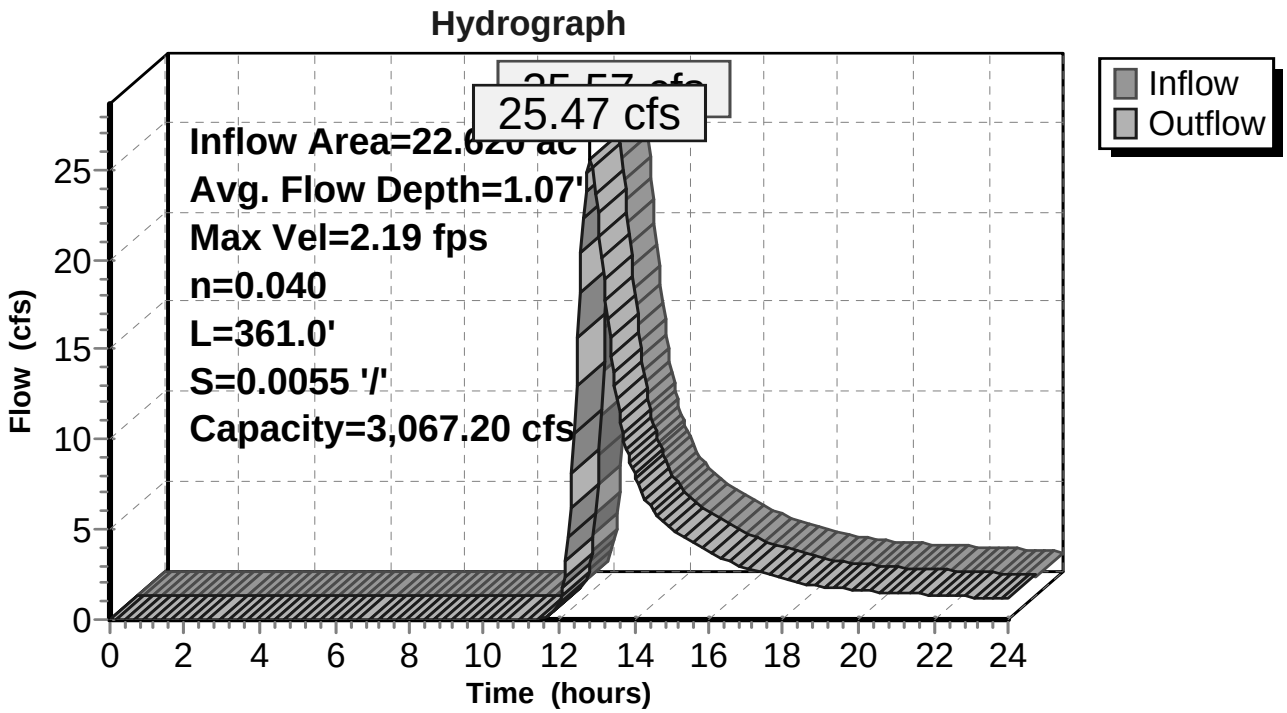
Inflow Area = 22.620 ac, 0.00% Impervious, Inflow Depth > 2.39" for 100-Year event
Inflow = 25.57 cfs @ 12.76 hrs, Volume= 4.511 af
Outflow = 25.47 cfs @ 12.84 hrs, Volume= 4.496 af, Atten= 0%, Lag= 4.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.19 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 1.12 fps, Avg. Travel Time= 5.3 min

Peak Storage= 4,199 cf @ 12.80 hrs
Average Depth at Peak Storage= 1.07'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 3,067.20 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 361.0' Slope= 0.0055 '/'
Inlet Invert= 482.00', Outlet Invert= 480.00'





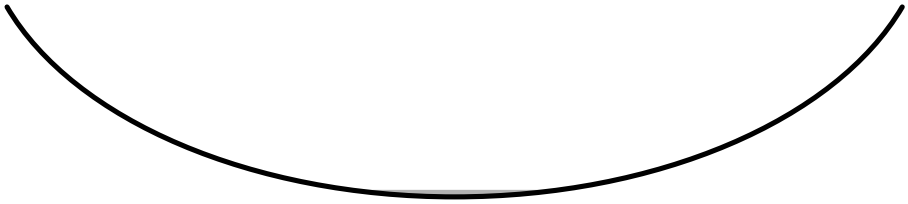
Summary for Reach DP-2: DP-2

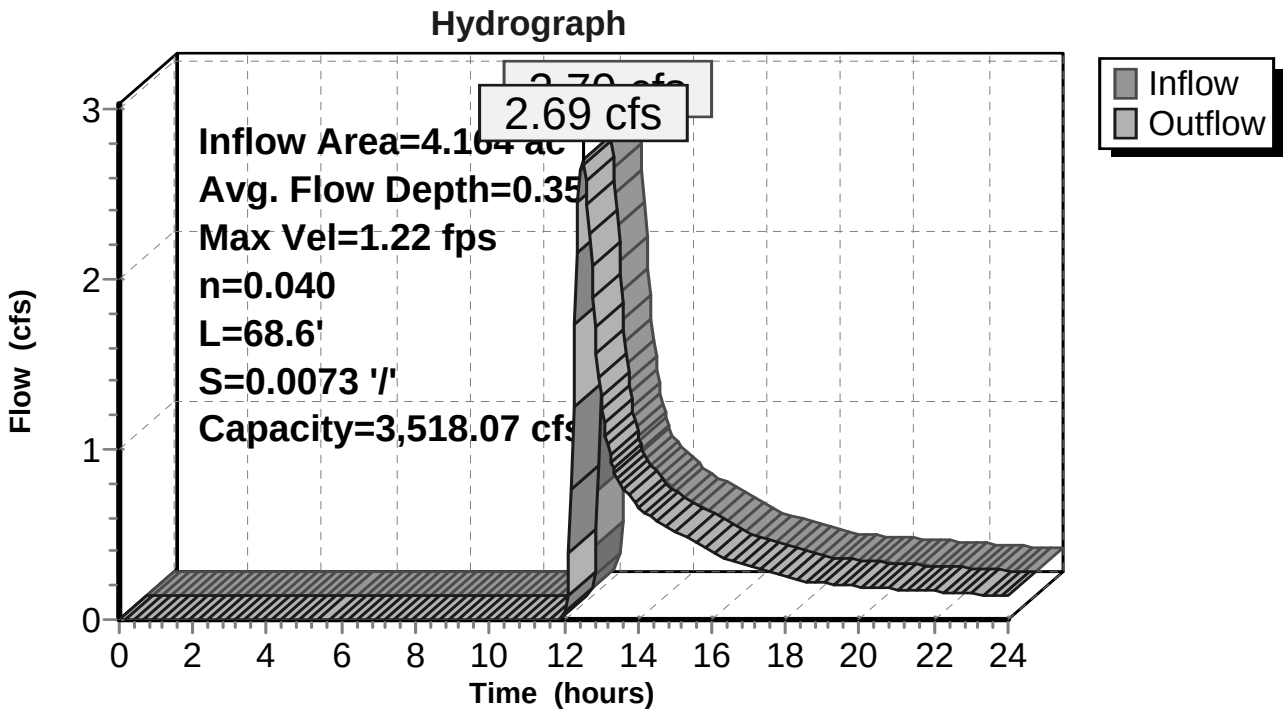
Inflow Area = 4.164 ac, 14.82% Impervious, Inflow Depth > 1.27" for 100-Year event
Inflow = 2.70 cfs @ 12.48 hrs, Volume= 0.440 af
Outflow = 2.69 cfs @ 12.51 hrs, Volume= 0.440 af, Atten= 0%, Lag= 1.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.22 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 0.66 fps, Avg. Travel Time= 1.7 min

Peak Storage= 152 cf @ 12.49 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 3,518.07 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 68.6' Slope= 0.0073 '/'
Inlet Invert= 480.00', Outlet Invert= 479.50'





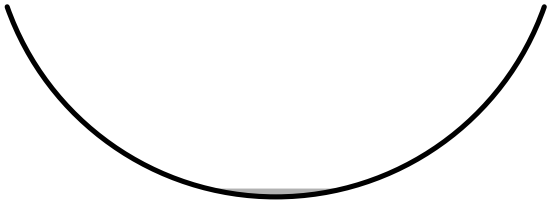
Summary for Reach DP-3: DP-3

Inflow Area = 2.178 ac, 1.88% Impervious, Inflow Depth > 0.99" for 100-Year event
Inflow = 1.13 cfs @ 12.30 hrs, Volume= 0.180 af
Outflow = 1.13 cfs @ 12.32 hrs, Volume= 0.180 af, Atten= 0%, Lag= 1.4 min

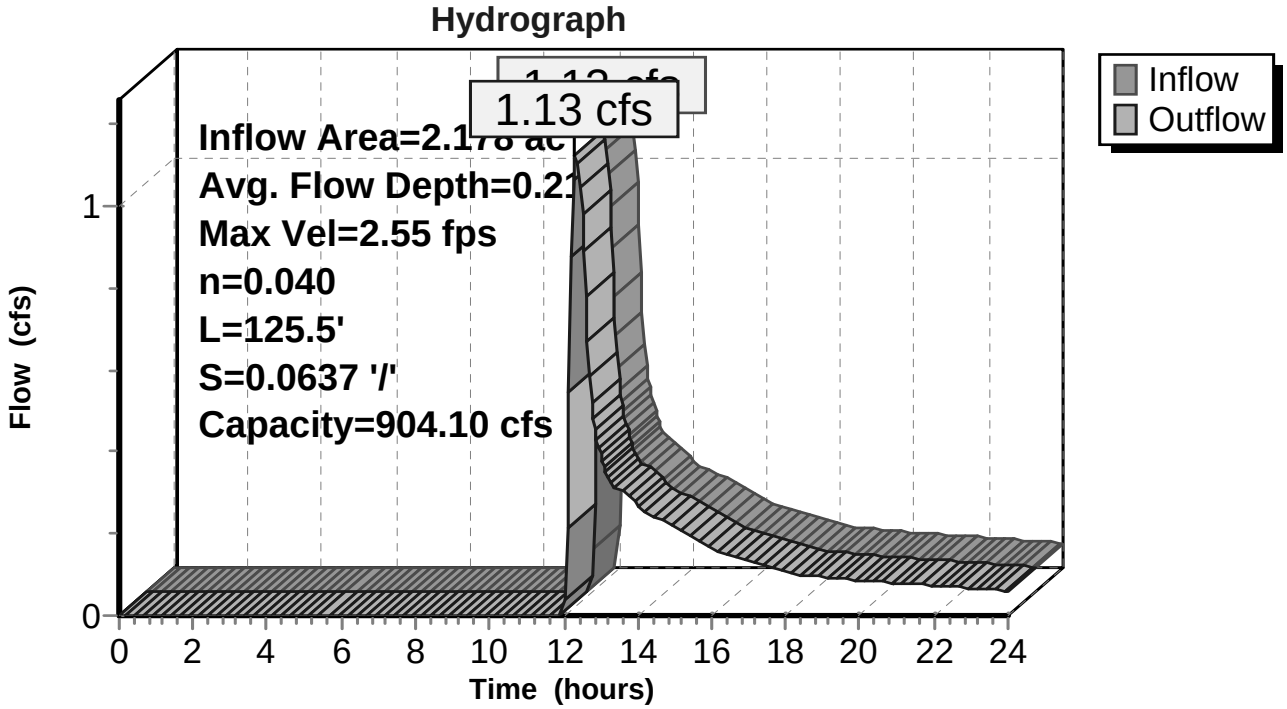
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.55 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 1.40 fps, Avg. Travel Time= 1.5 min

Peak Storage= 55 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 5.00' Flow Area= 50.0 sf, Capacity= 904.10 cfs

15.00' x 5.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 125.5' Slope= 0.0637 '/'
Inlet Invert= 488.00', Outlet Invert= 480.00'



Reach DP-3: DP-3



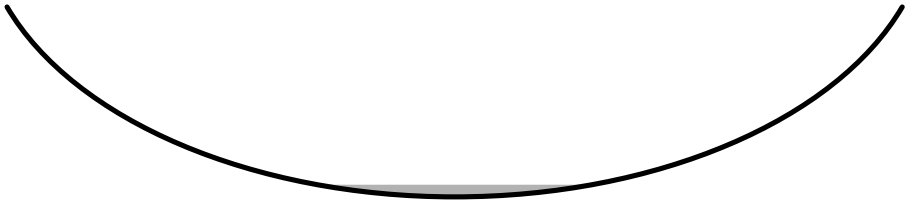
Summary for Reach DP-4: DP-4

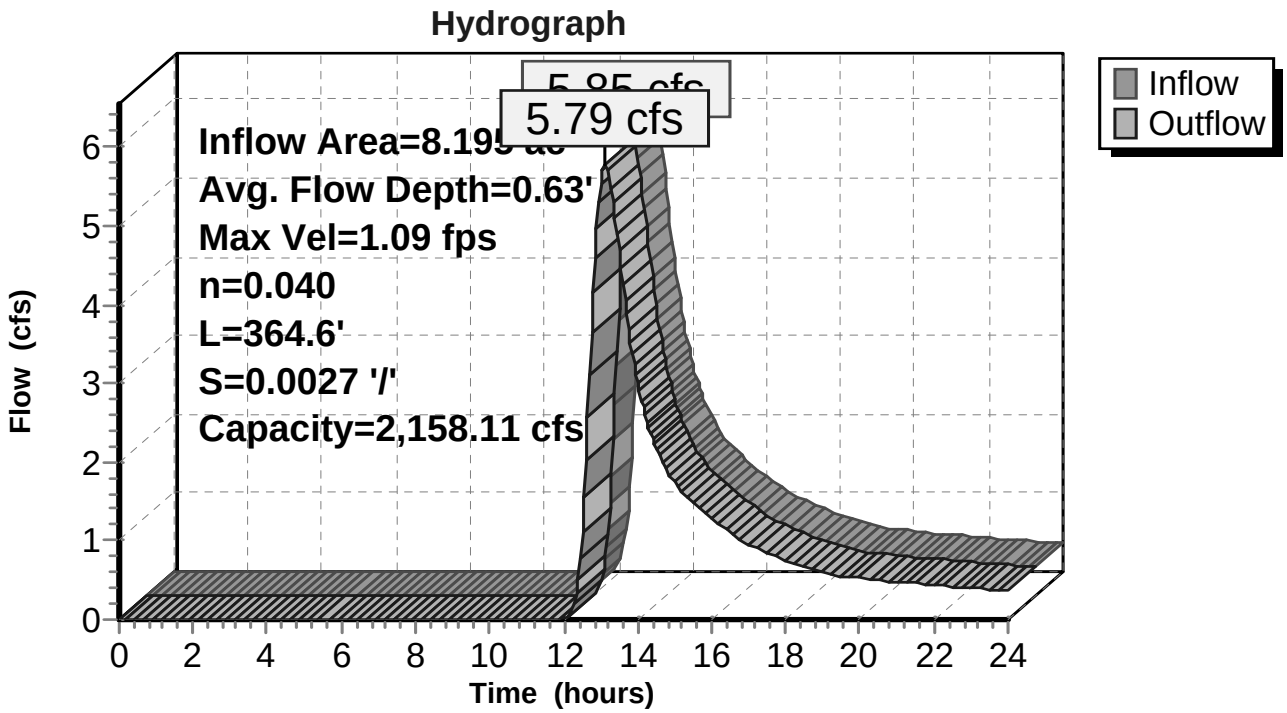
Inflow Area = 8.195 ac, 3.99% Impervious, Inflow Depth > 1.85" for 100-Year event
Inflow = 5.85 cfs @ 12.98 hrs, Volume= 1.265 af
Outflow = 5.79 cfs @ 13.14 hrs, Volume= 1.256 af, Atten= 1%, Lag= 9.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.09 fps, Min. Travel Time= 5.6 min
Avg. Velocity = 0.63 fps, Avg. Travel Time= 9.7 min

Peak Storage= 1,932 cf @ 13.04 hrs
Average Depth at Peak Storage= 0.63'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 2,158.11 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 364.6' Slope= 0.0027 '/'
Inlet Invert= 479.50', Outlet Invert= 478.50'





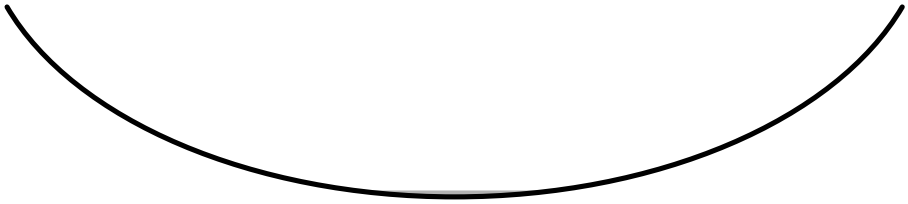
Summary for Reach DP-5: DP-5

Inflow Area = 3.485 ac, 13.63% Impervious, Inflow Depth > 1.37" for 100-Year event
Inflow = 2.95 cfs @ 12.31 hrs, Volume= 0.398 af
Outflow = 2.90 cfs @ 12.39 hrs, Volume= 0.397 af, Atten= 1%, Lag= 4.8 min

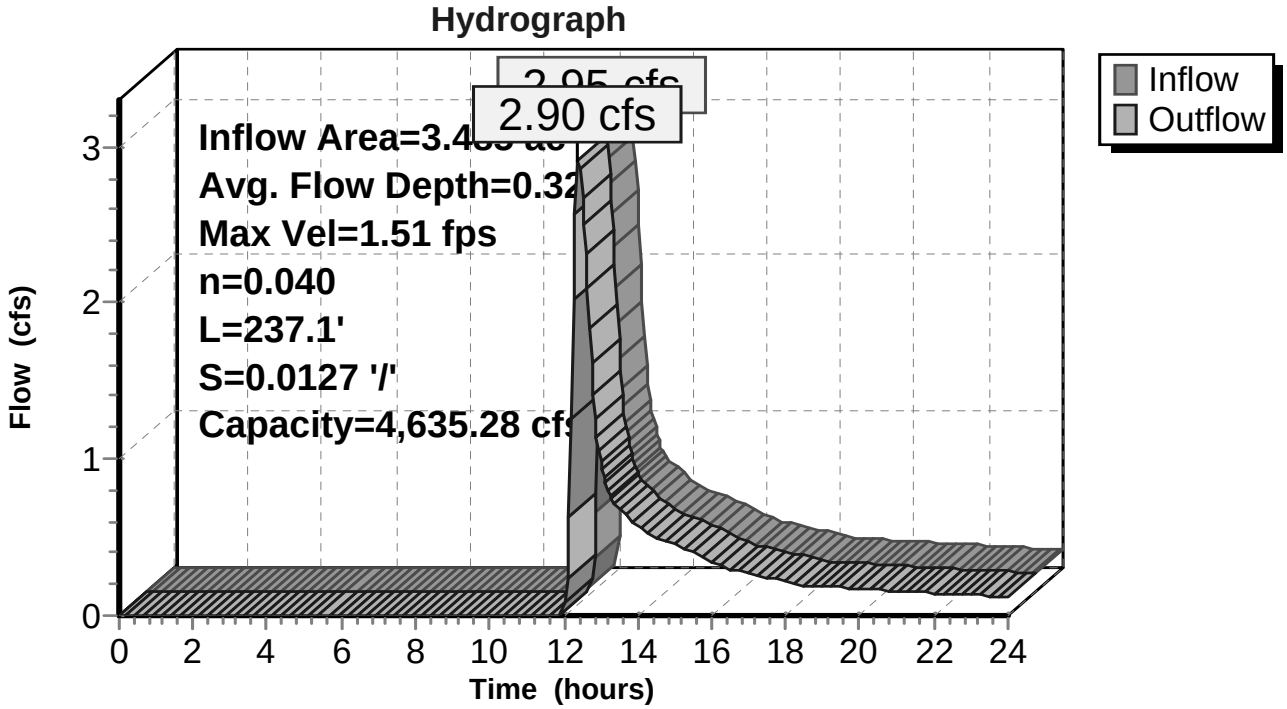
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.51 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 0.80 fps, Avg. Travel Time= 4.9 min

Peak Storage= 456 cf @ 12.34 hrs
Average Depth at Peak Storage= 0.32'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 4,635.28 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 237.1' Slope= 0.0127 '/'
Inlet Invert= 478.50', Outlet Invert= 475.50'



Reach DP-5: DP-5



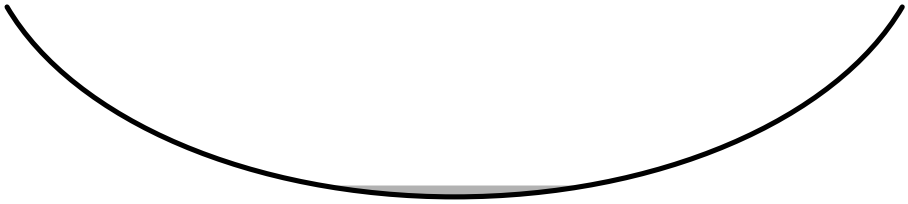
Summary for Reach DP-6: DP-6

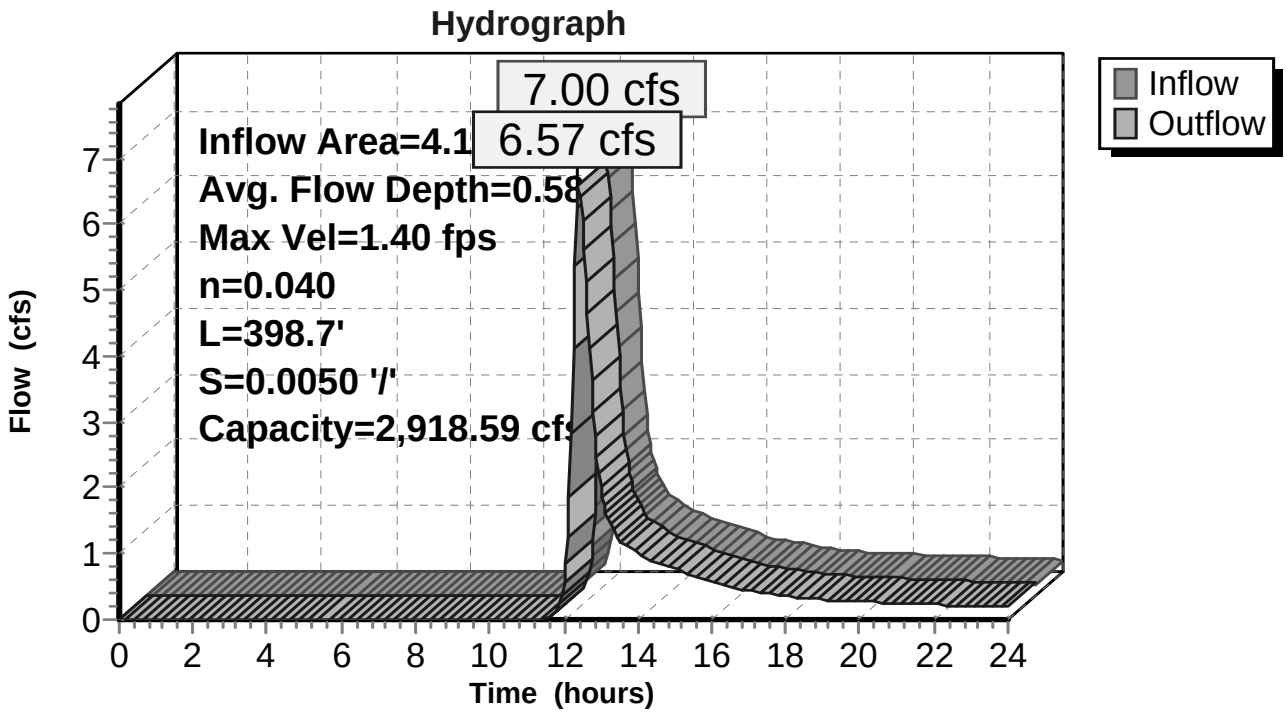
Inflow Area = 4.164 ac, 7.13% Impervious, Inflow Depth > 2.20" for 100-Year event
Inflow = 7.00 cfs @ 12.26 hrs, Volume= 0.764 af
Outflow = 6.57 cfs @ 12.41 hrs, Volume= 0.759 af, Atten= 6%, Lag= 9.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.40 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.65 fps, Avg. Travel Time= 10.2 min

Peak Storage= 1,882 cf @ 12.32 hrs
Average Depth at Peak Storage= 0.58'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 2,918.59 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 398.7' Slope= 0.0050 '/'
Inlet Invert= 475.50', Outlet Invert= 473.50'





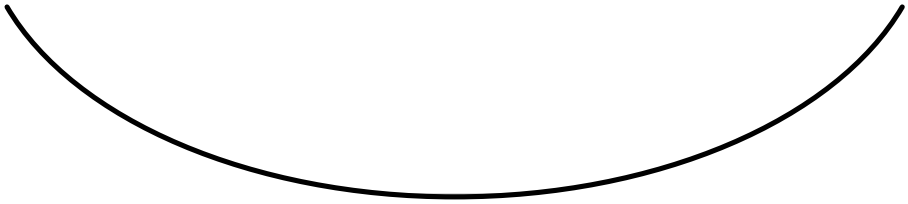
Summary for Reach DP-7: DP-7

Inflow Area = 4.292 ac, 9.18% Impervious, Inflow Depth > 1.67" for 100-Year event
Inflow = 4.03 cfs @ 12.48 hrs, Volume= 0.596 af
Outflow = 1.44 cfs @ 14.57 hrs, Volume= 0.534 af, Atten= 64%, Lag= 125.7 min

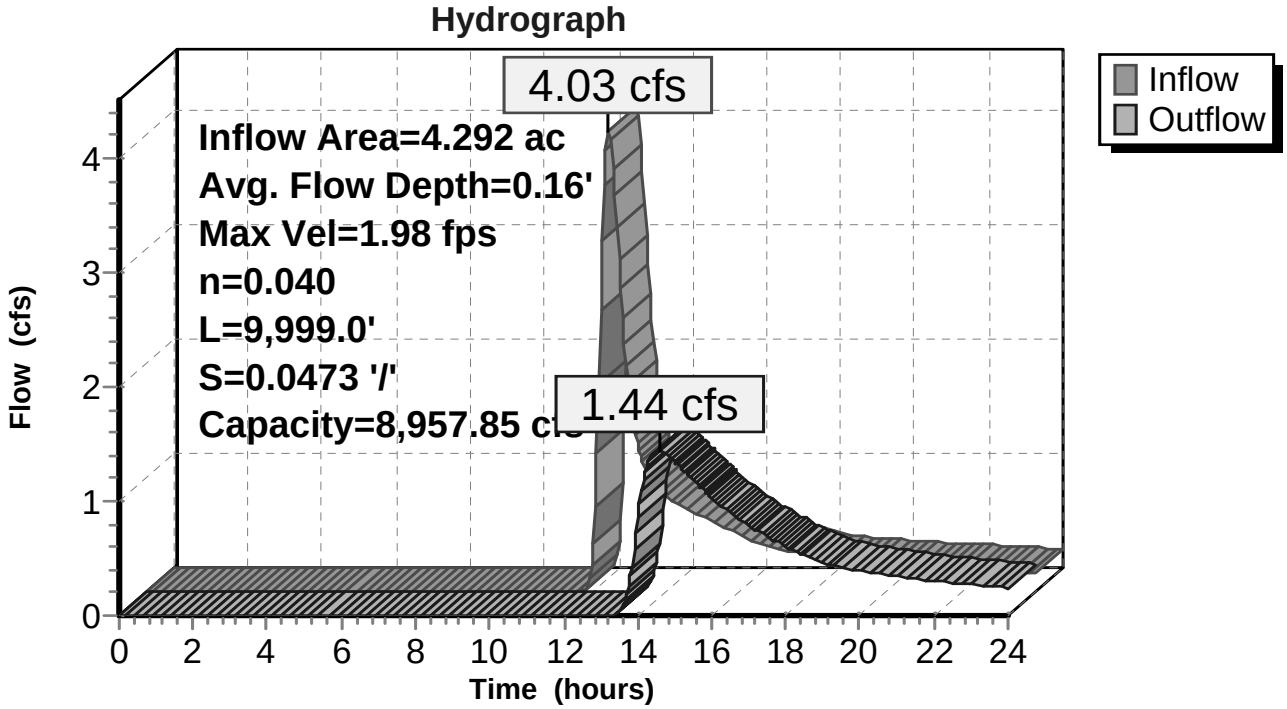
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.98 fps, Min. Travel Time= 84.2 min
Avg. Velocity = 1.49 fps, Avg. Travel Time= 111.7 min

Peak Storage= 7,270 cf @ 13.17 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 10.00' Flow Area= 333.3 sf, Capacity= 8,957.85 cfs

50.00' x 10.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 9,999.0' Slope= 0.0473 '/'
Inlet Invert= 473.50', Outlet Invert= 1.00'



Reach DP-7: DP-7



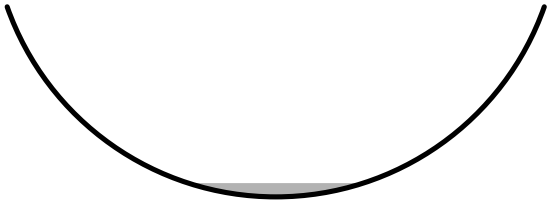
Summary for Reach DP-8: DP-8

Inflow Area = 2.249 ac, 4.85% Impervious, Inflow Depth > 1.88" for 100-Year event
Inflow = 2.82 cfs @ 12.33 hrs, Volume= 0.352 af
Outflow = 2.79 cfs @ 12.39 hrs, Volume= 0.352 af, Atten= 1%, Lag= 3.4 min

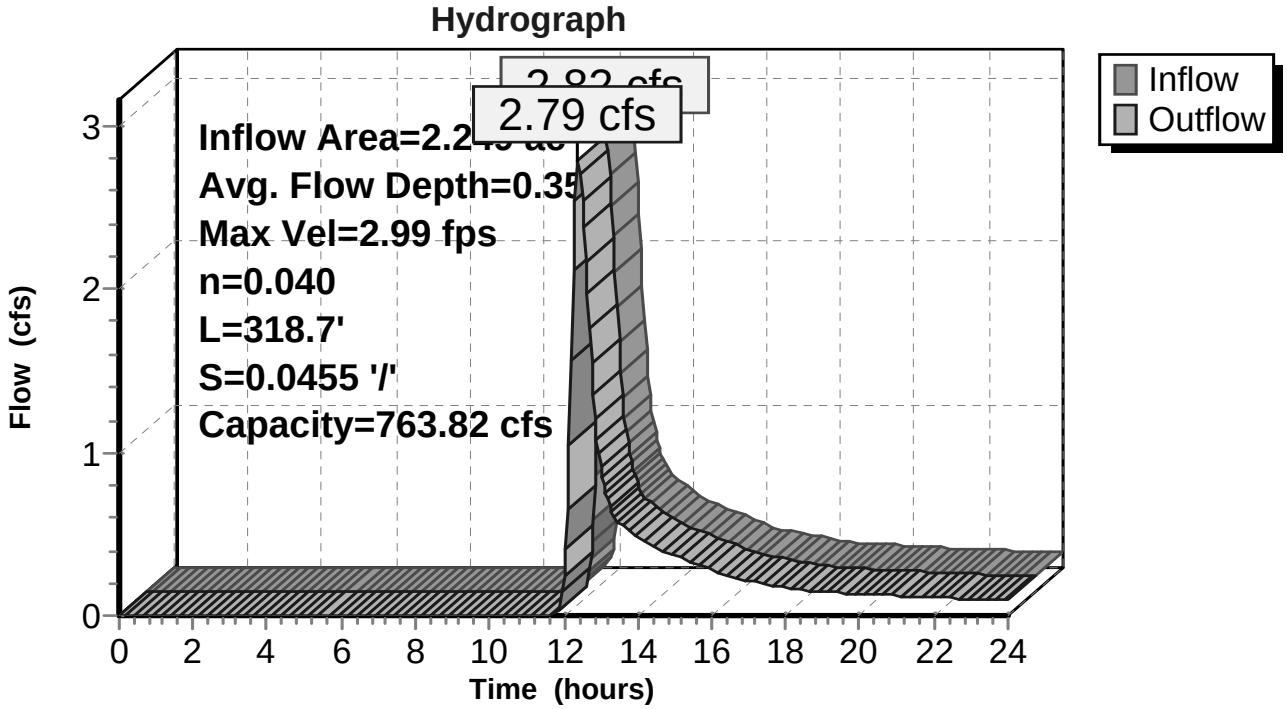
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.99 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 1.44 fps, Avg. Travel Time= 3.7 min

Peak Storage= 300 cf @ 12.36 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 5.00' Flow Area= 50.0 sf, Capacity= 763.82 cfs

15.00' x 5.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 318.7' Slope= 0.0455 '/'
Inlet Invert= 488.00', Outlet Invert= 473.50'



Reach DP-8: DP-8



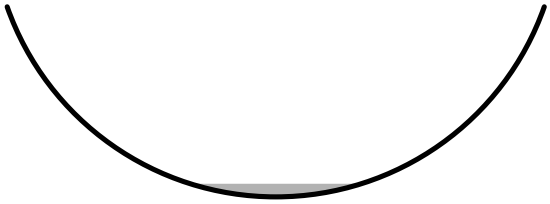
Summary for Reach DP-9: DP-9

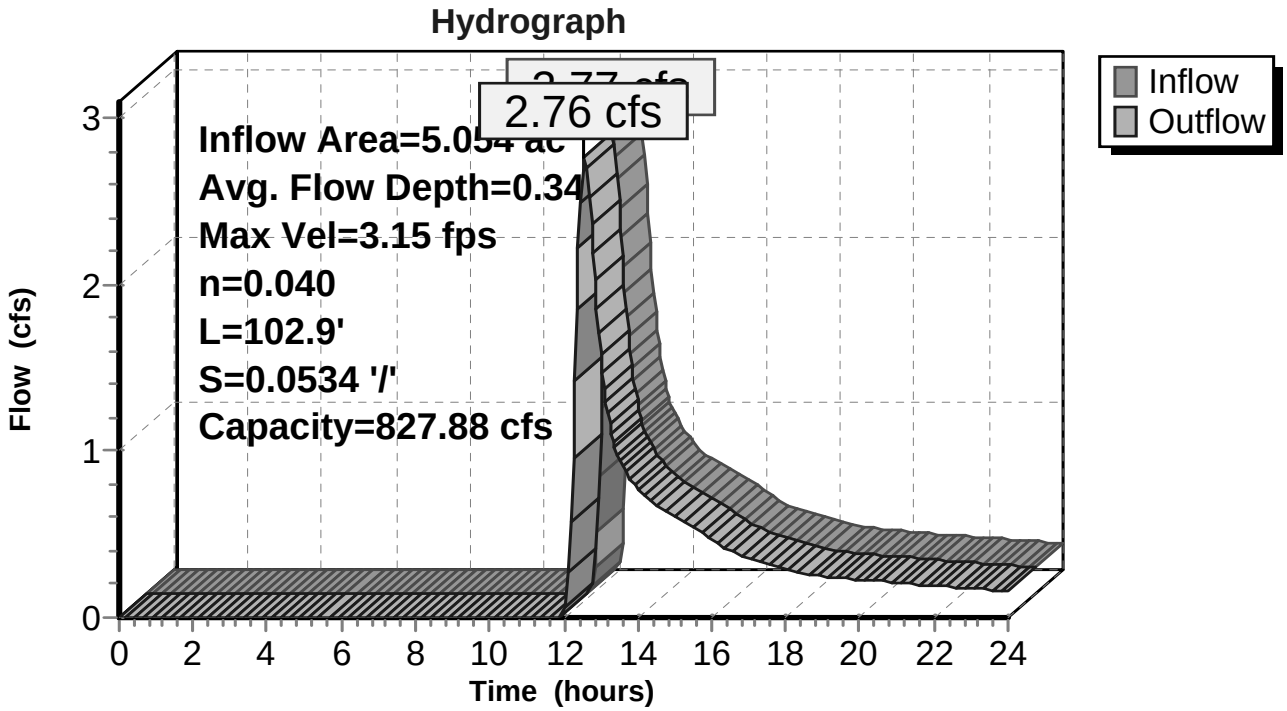
Inflow Area = 5.054 ac, 0.00% Impervious, Inflow Depth > 1.17" for 100-Year event
Inflow = 2.77 cfs @ 12.55 hrs, Volume= 0.493 af
Outflow = 2.76 cfs @ 12.57 hrs, Volume= 0.493 af, Atten= 0%, Lag= 0.9 min

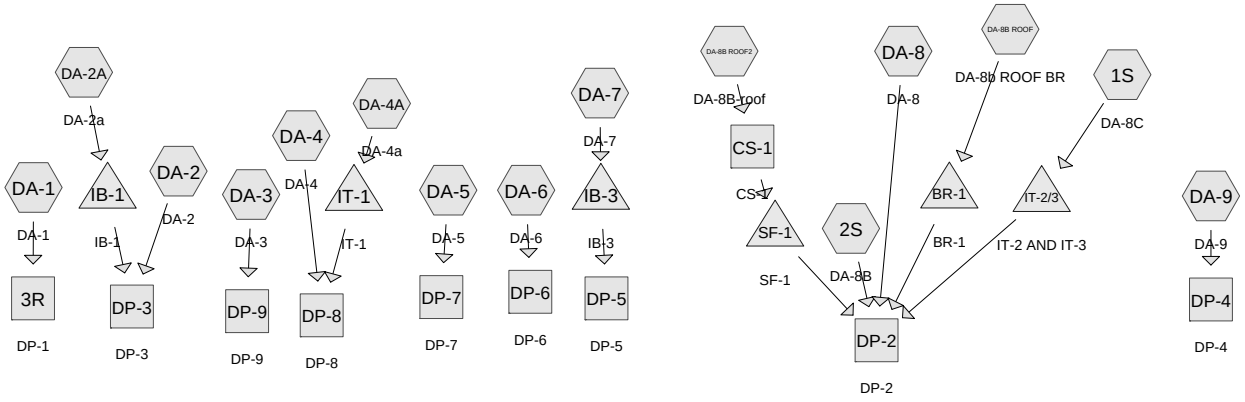
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.15 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.74 fps, Avg. Travel Time= 1.0 min

Peak Storage= 90 cf @ 12.56 hrs
Average Depth at Peak Storage= 0.34'
Bank-Full Depth= 5.00' Flow Area= 50.0 sf, Capacity= 827.88 cfs

15.00' x 5.00' deep Parabolic Channel, n= 0.040 Winding stream, pools & shoals
Length= 102.9' Slope= 0.0534 '/'
Inlet Invert= 493.50', Outlet Invert= 488.00'







Subcat Reach Pond Link

Routing Diagram for Troutbeck Post-Dev Ph1 Mitigated Model
Prepared by Microsoft, Printed 10/11/2022

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
19.805	30	Woods, Good, HSG A (DA-1, DA-2, DA-3, DA-4, DA-5, DA-7, DA-8, DA-9)
1.734	32	Woods/grass comb., Good, HSG A (1S, 2S)
23.067	39	Pasture/grassland/range, Good, HSG A (DA-1, DA-2, DA-3, DA-4, DA-5, DA-6, DA-9)
7.594	77	Woods, Good, HSG D (DA-1)
1.823	96	Gravel surface, HSG A (DA-1, DA-4, DA-5, DA-6, DA-7, DA-9)
0.634	98	Paved parking, HSG A (1S, DA-4, DA-5, DA-8)
0.011	98	Roofs, HSG A (DA-8B ROOF)
1.223	98	Unconnected roofs, HSG A (DA-2, DA-2A, DA-4A, DA-5, DA-6, DA-7, DA-8, DA-8B ROOF2, DA-9)
0.455	98	Water Surface, HSG A (2S, DA-7)
56.346	**45**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
48.752	HSG A	1S, 2S, DA-1, DA-2, DA-2A, DA-3, DA-4, DA-4A, DA-5, DA-6, DA-7, DA-8, DA-8B ROOF, DA-8B ROOF2, DA-9
0.000	HSG B	
0.000	HSG C	
7.594	HSG D	DA-1
0.000	Other	
56.346		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.634	0.000	0.000	0.000	0.000	0.634	Paved parking	1S, DA-4, DA-5, DA-8
0.011	0.000	0.000	0.000	0.000	0.011	Roofs	DA-8B ROOF
1.223	0.000	0.000	0.000	0.000	1.223	Unconnected roofs	DA-2, DA-2A, DA-4A, DA-5, DA-6, DA-7, DA-8, DA-8B ROOF2, DA-9
1.823	0.000	0.000	0.000	0.000	1.823	Gravel surface	DA-1, DA-4, DA-5, DA-6, DA-7, DA-9

Ground Covers (all nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
23.067	0.000	0.000	0.000	0.000	23.067	Pasture/grassland/range, Good	DA-1, DA-2, DA-3, DA-4, DA-5, DA-6, DA-9
1.734	0.000	0.000	0.000	0.000	1.734	Woods/grass comb., Good	1S, 2S
19.805	0.000	0.000	7.594	0.000	27.399	Woods, Good	DA-1, DA-2, DA-3, DA-4, DA-5, DA-7, DA-8, DA-9
0.455	0.000	0.000	0.000	0.000	0.455	Water Surface	2S, DA-7
48.752	**0.000**	**0.000**	**7.594**	**0.000**	**56.346**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA-8C Runoff Area=22,971 sf 13.82% Impervious Runoff Depth=0.00"
Flow Length=151' Slope=0.1850 '/' Tc=4.6 min CN=41 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: DA-8B Runoff Area=61,547 sf 9.41% Impervious Runoff Depth=0.00"
Flow Length=387' Slope=0.0520 '/' Tc=20.0 min CN=38 Runoff=0.00 cfs 0.000 af

Subcatchment DA-1: DA-1 Runoff Area=22.620 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=1,906' Slope=0.0540 '/' Tc=51.1 min CN=50 Runoff=0.09 cfs 0.060 af

Subcatchment DA-2: DA-2 Runoff Area=2.148 ac 0.51% Impervious Runoff Depth=0.00"
Flow Length=430' Slope=0.1646 '/' Tc=12.9 min CN=36 Runoff=0.00 cfs 0.000 af

Subcatchment DA-2A: DA-2a Runoff Area=0.030 ac 100.00% Impervious Runoff Depth=2.35"
Tc=0.0 min CN=98 Runoff=0.09 cfs 0.006 af

Subcatchment DA-3: DA-3 Runoff Area=5.054 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=757' Slope=0.0695 '/' Tc=29.5 min CN=38 Runoff=0.00 cfs 0.000 af

Subcatchment DA-4: DA-4 Runoff Area=2.241 ac 4.42% Impervious Runoff Depth=0.00"
Flow Length=544' Slope=0.0590 '/' Tc=20.4 min CN=45 Runoff=0.00 cfs 0.000 af

Subcatchment DA-4A: DA-4a Runoff Area=0.008 ac 100.00% Impervious Runoff Depth=2.35"
Tc=4.0 min CN=98 Runoff=0.02 cfs 0.002 af

Subcatchment DA-5: DA-5 Runoff Area=4.292 ac 9.18% Impervious Runoff Depth=0.00"
Flow Length=1,092' Slope=0.0980 '/' Tc=28.3 min UI Adjusted CN=43 Runoff=0.00 cfs 0.000 af

Subcatchment DA-6: DA-6 Runoff Area=4.164 ac 7.13% Impervious Runoff Depth=0.02"
Flow Length=826' Slope=0.1337 '/' Tc=16.6 min UI Adjusted CN=48 Runoff=0.01 cfs 0.005 af

Subcatchment DA-7: DA-7 Runoff Area=3.423 ac 13.88% Impervious Runoff Depth=0.00"
Flow Length=575' Slope=0.1205 '/' Tc=16.1 min UI Adjusted CN=41 Runoff=0.00 cfs 0.000 af

Subcatchment DA-8: DA-8 Runoff Area=96,008 sf 17.76% Impervious Runoff Depth=0.00"
Flow Length=554' Slope=0.0712 '/' Tc=20.4 min UI Adjusted CN=40 Runoff=0.00 cfs 0.000 af

Subcatchment DA-8B ROOF: DA-8b ROOF Runoff Area=479 sf 100.00% Impervious Runoff Depth=2.35"
Flow Length=167' Slope=0.1560 '/' Tc=6.6 min CN=98 Runoff=0.03 cfs 0.002 af

Subcatchment DA-8B ROOF2: DA-8B-roof Runoff Area=479 sf 100.00% Impervious Runoff Depth=2.35"
Tc=2.0 min CN=98 Runoff=0.03 cfs 0.002 af

Subcatchment DA-9: DA-9 Runoff Area=8.200 ac 4.76% Impervious Runoff Depth=0.00"
Flow Length=1,452' Slope=0.0275 '/' Tc=74.9 min UI Adjusted CN=38 Runoff=0.00 cfs 0.000 af

Reach 3R: DP-1 Inflow=0.09 cfs 0.060 af
Outflow=0.09 cfs 0.060 af

Reach CS-1: CS-1 Avg. Flow Depth=0.02' Max Vel=0.67 fps Inflow=0.03 cfs 0.002 af
n=0.030 L=31.8' S=0.0311 '/' Capacity=36.70 cfs Outflow=0.03 cfs 0.002 af

Reach DP-2: DP-2 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-3: DP-3 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-4: DP-4 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-5: DP-5 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-6: DP-6 Inflow=0.01 cfs 0.005 af
Outflow=0.01 cfs 0.005 af

Reach DP-7: DP-7 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-8: DP-8 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-9: DP-9 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond BR-1: BR-1 Peak Elev=497.70' Storage=0.001 af Inflow=0.03 cfs 0.002 af
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af

Pond IB-1: IB-1 Peak Elev=512.25' Storage=0.000 af Inflow=0.09 cfs 0.006 af
Discarded=0.08 cfs 0.006 af Primary=0.00 cfs 0.000 af Outflow=0.08 cfs 0.006 af

Pond IB-3: IB-3 Peak Elev=482.00' Storage=0 cf Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond IT-1: IT-1 Peak Elev=514.75' Storage=0.000 af Inflow=0.02 cfs 0.002 af
Discarded=0.02 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.002 af

Pond IT-2/3: IT-2 AND IT-3 Peak Elev=505.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Pond SF-1: SF-1 Peak Elev=488.03' Storage=0.000 af Inflow=0.03 cfs 0.002 af
Discarded=0.01 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.002 af

Total Runoff Area = 56.346 ac Runoff Volume = 0.077 af Average Runoff Depth = 0.02"
95.88% Pervious = 54.023 ac 4.12% Impervious = 2.323 ac

Summary for Subcatchment 1S: DA-8C

[49] Hint: Tc<2dt may require smaller dt
[45] Hint: Runoff=Zero

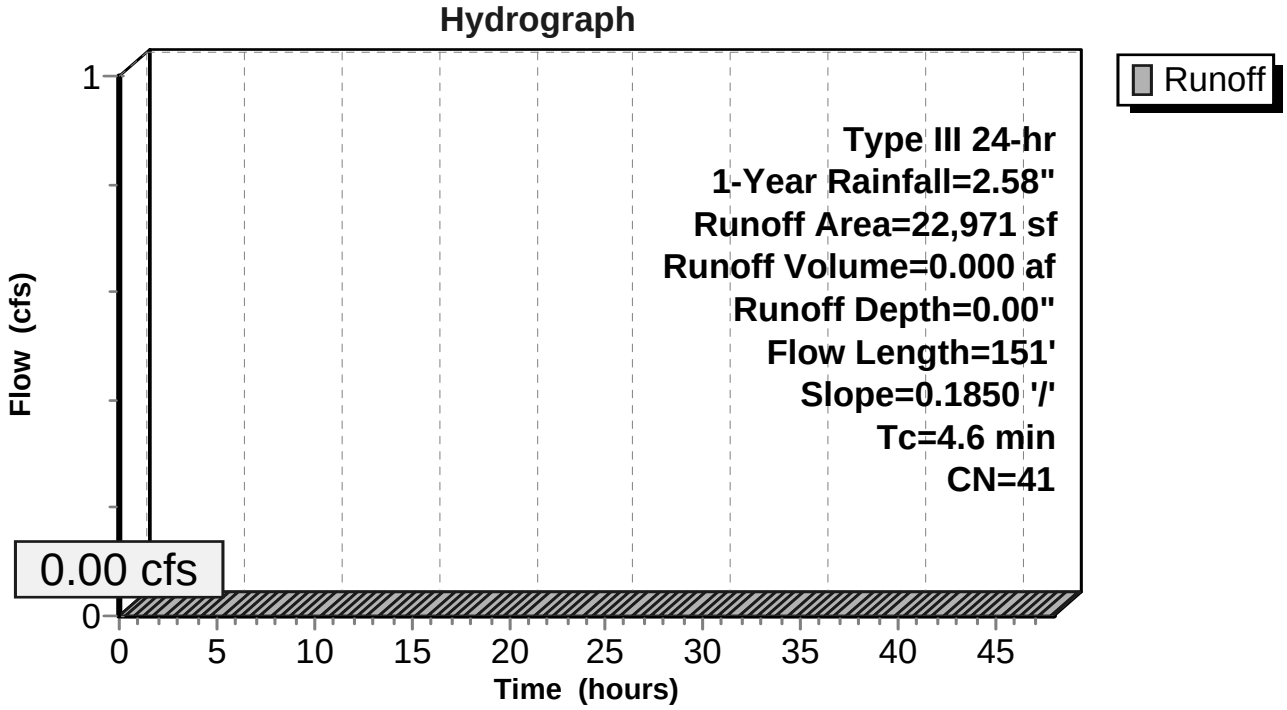
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (sf)	CN	Description
3,174	98	Paved parking, HSG A
19,797	32	Woods/grass comb., Good, HSG A
22,971	41	Weighted Average
19,797		86.18% Pervious Area
3,174		13.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	151	0.1850	0.55		**Lag/CN Method,**

Subcatchment 1S: DA-8C



Summary for Subcatchment 2S: DA-8B

[45] Hint: Runoff=Zero

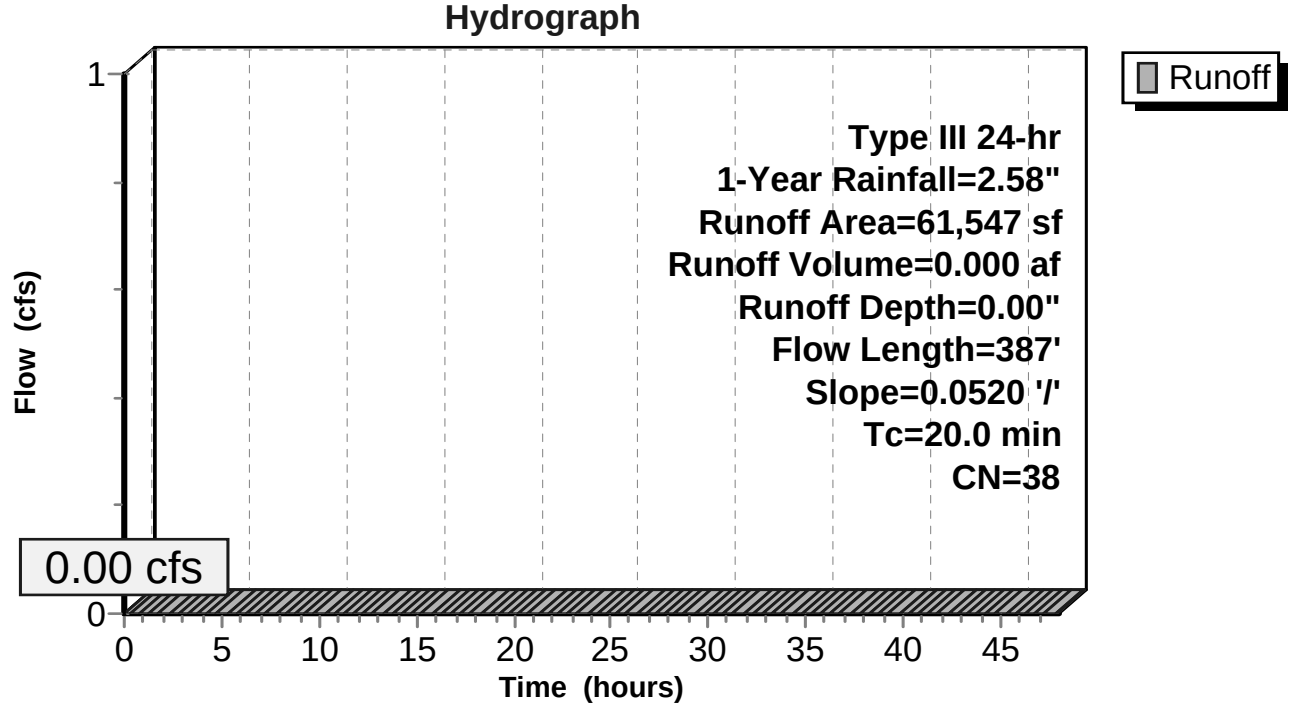
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (sf)	CN	Description
5,793	98	Water Surface, HSG A
55,754	32	Woods/grass comb., Good, HSG A
61,547	38	Weighted Average
55,754		90.59% Pervious Area
5,793		9.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	387	0.0520	0.32		**Lag/CN Method,**

Subcatchment 2S: DA-8B



Summary for Subcatchment DA-1: DA-1

Runoff = 0.09 cfs @ 16.20 hrs, Volume= 0.060 af, Depth= 0.03"

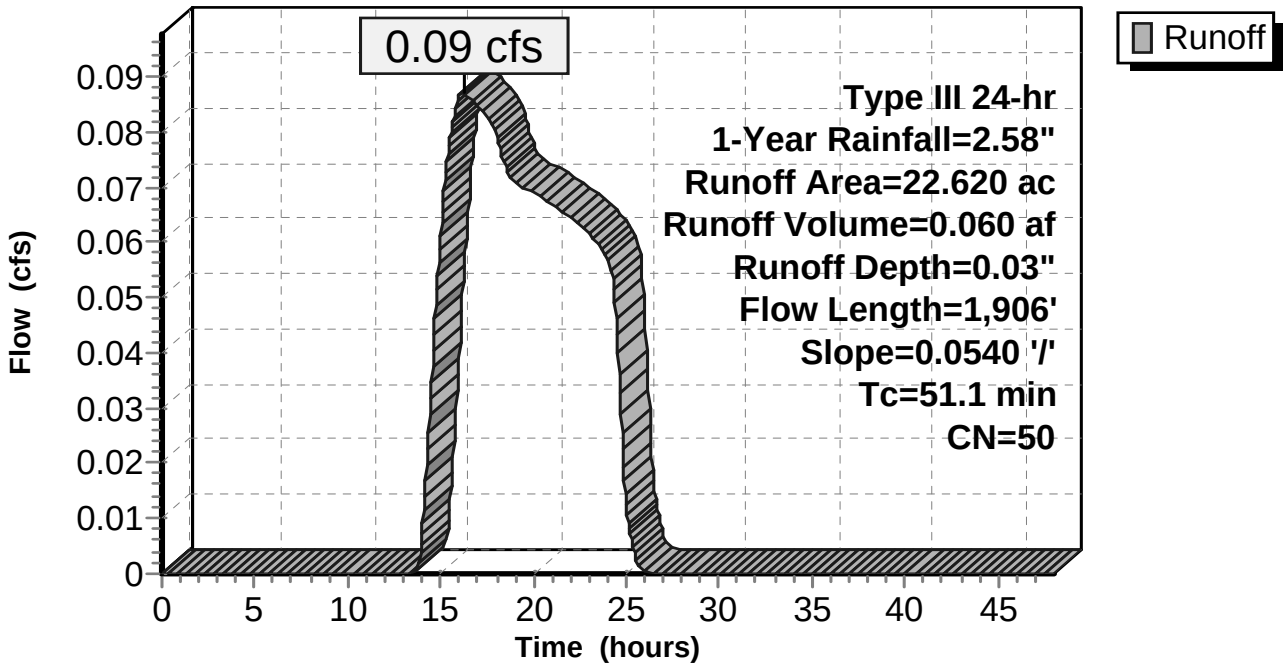
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
7.259	39	Pasture/grassland/range, Good, HSG A
7.409	30	Woods, Good, HSG A
7.594	77	Woods, Good, HSG D
0.358	96	Gravel surface, HSG A
22.620	50	Weighted Average
22.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.1	1,906	0.0540	0.62		**Lag/CN Method,**

Subcatchment DA-1: DA-1

Hydrograph



Summary for Subcatchment DA-2: DA-2

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

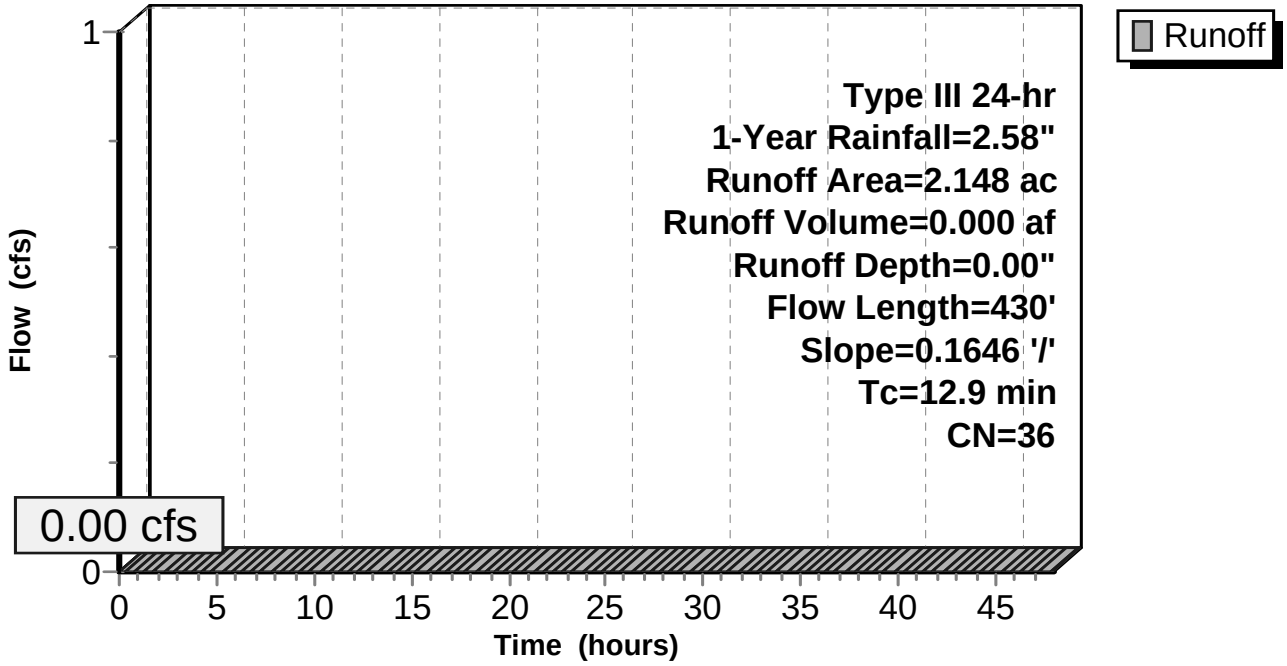
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.748	30	Woods, Good, HSG A
1.389	39	Pasture/grassland/range, Good, HSG A
0.011	98	Unconnected roofs, HSG A
2.148	36	Weighted Average
2.137		99.49% Pervious Area
0.011		0.51% Impervious Area
0.011		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	430	0.1646	0.55		**Lag/CN Method,** Contour Length= 7,700' Interval= 2'

Subcatchment DA-2: DA-2

Hydrograph



Summary for Subcatchment DA-2A: DA-2a

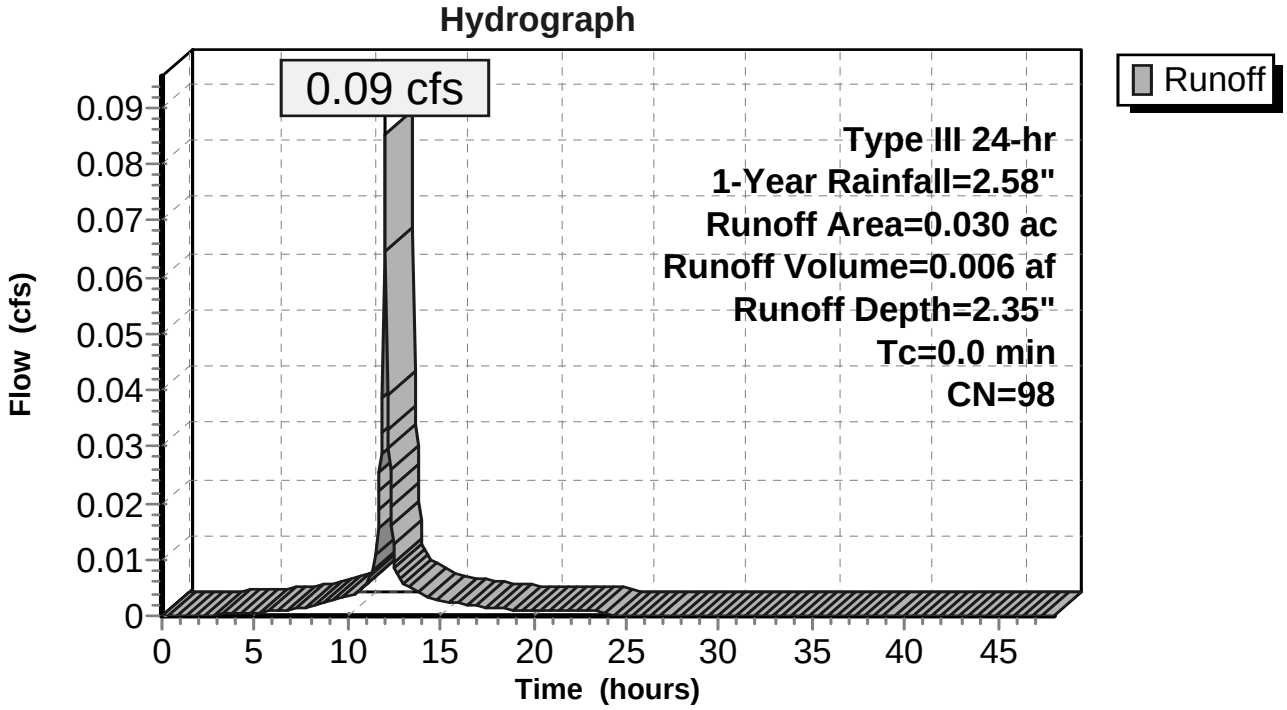
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.09 cfs @ 12.00 hrs, Volume= 0.006 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.030	98	Unconnected roofs, HSG A
0.030		100.00% Impervious Area
0.030		100.00% Unconnected

Subcatchment DA-2A: DA-2a



Summary for Subcatchment DA-3: DA-3

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

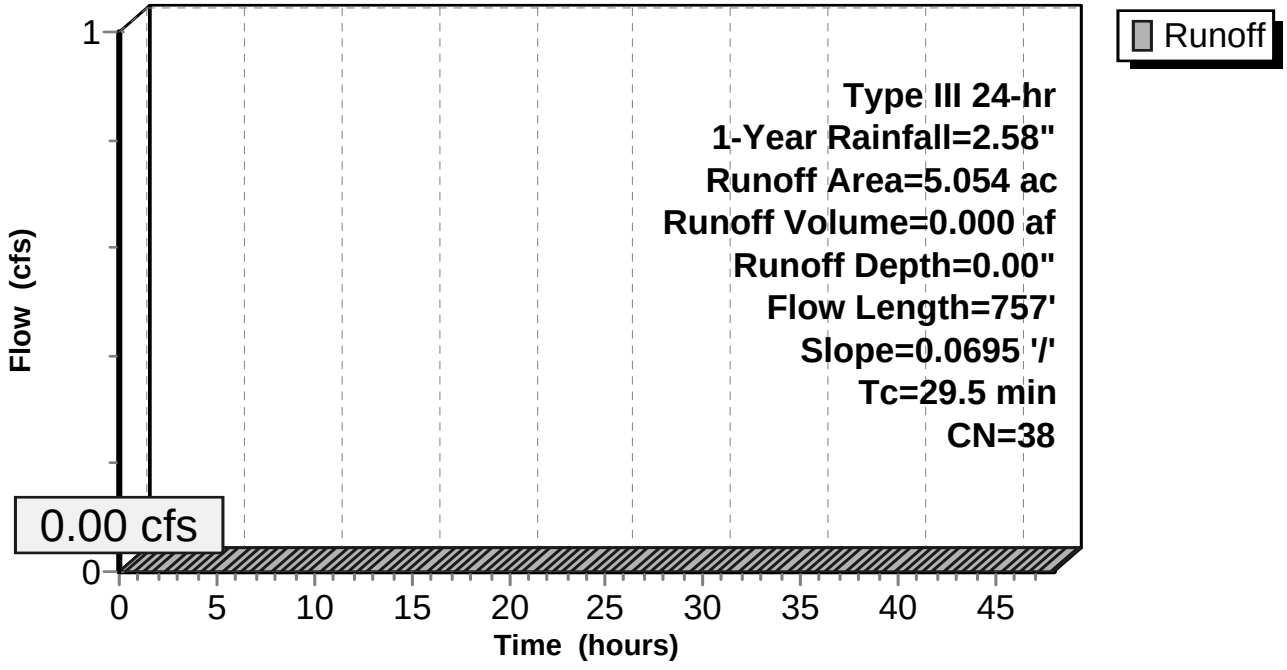
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
4.606	39	Pasture/grassland/range, Good, HSG A
0.448	30	Woods, Good, HSG A
5.054	38	Weighted Average
5.054		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	757	0.0695	0.43		**Lag/CN Method,** Contour Length= 7,650' Interval= 2'

Subcatchment DA-3: DA-3

Hydrograph



Summary for Subcatchment DA-4: DA-4

Runoff = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Depth= 0.00"

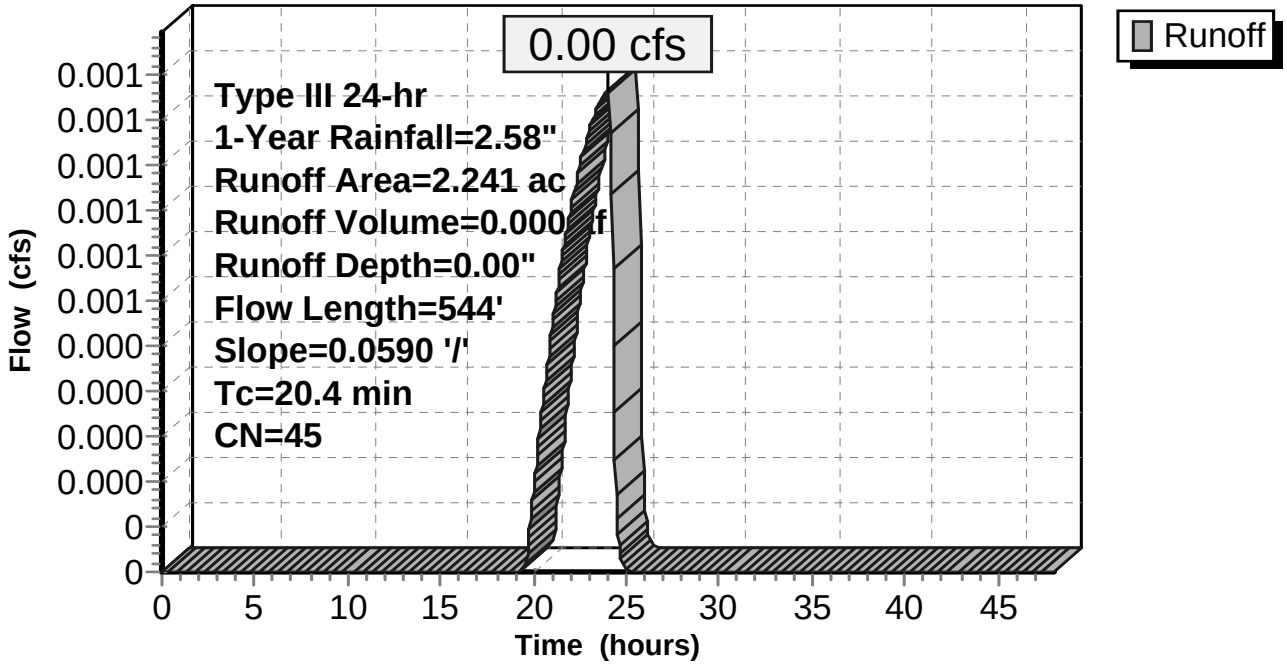
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
1.922	39	Pasture/grassland/range, Good, HSG A
0.080	30	Woods, Good, HSG A
0.140	96	Gravel surface, HSG A
0.099	98	Paved parking, HSG A
2.241	45	Weighted Average
2.142		95.58% Pervious Area
0.099		4.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	544	0.0590	0.44		**Lag/CN Method,** Contour Length= 2,879' Interval= 2'

Subcatchment DA-4: DA-4

Hydrograph



Summary for Subcatchment DA-4A: DA-4a

[49] Hint: Tc<2dt may require smaller dt

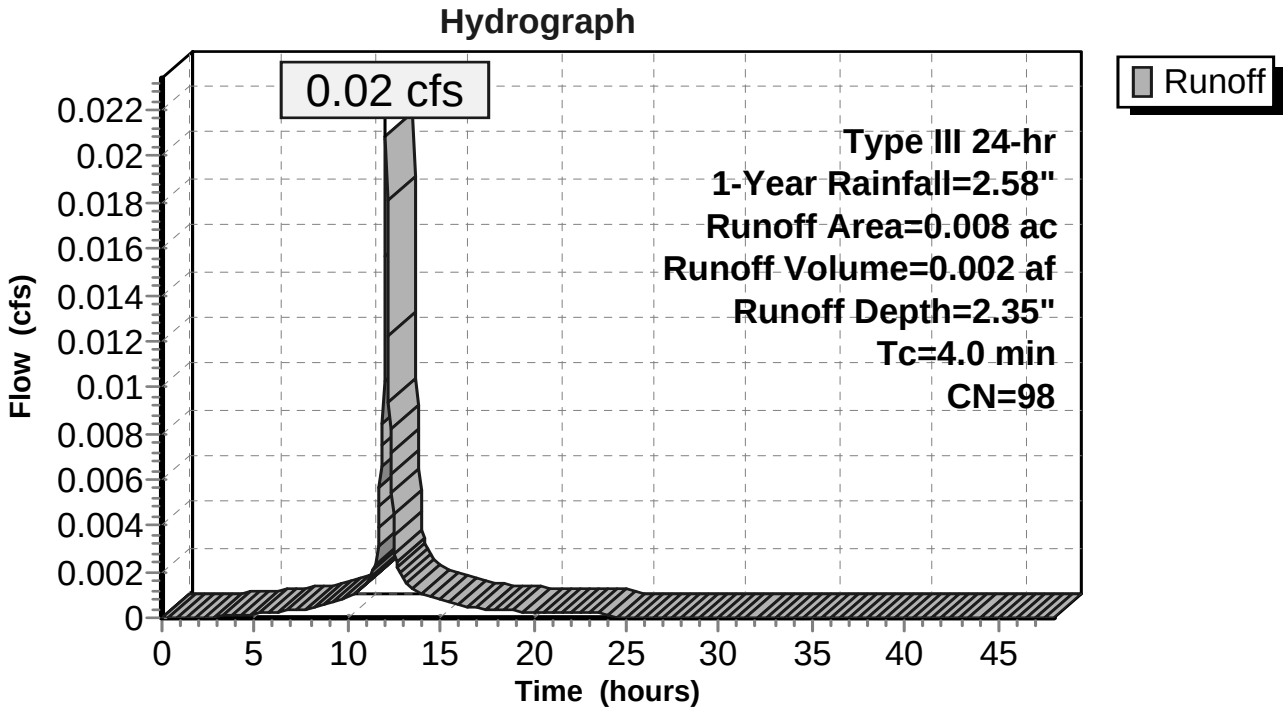
Runoff = 0.02 cfs @ 12.06 hrs, Volume= 0.002 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.008	98	Unconnected roofs, HSG A
0.008		100.00% Impervious Area
0.008		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment DA-4A: DA-4a



Summary for Subcatchment DA-5: DA-5

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

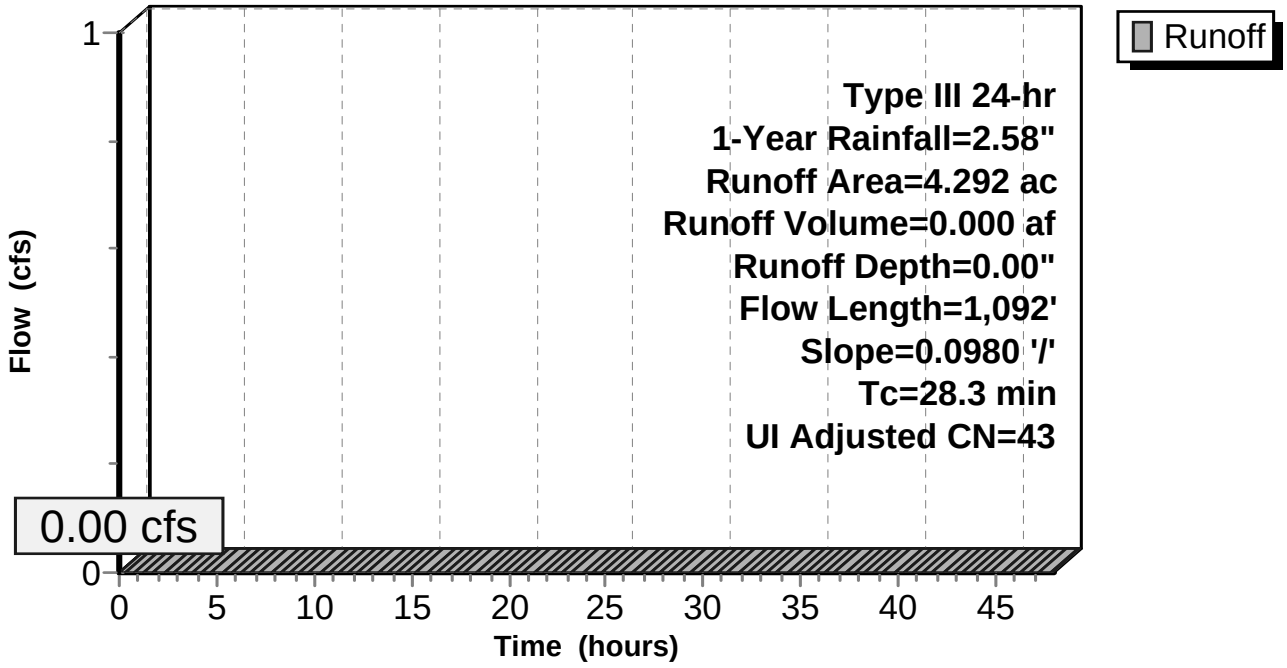
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.206	98	Paved parking, HSG A
1.750	39	Pasture/grassland/range, Good, HSG A
1.884	30	Woods, Good, HSG A
0.188	98	Unconnected roofs, HSG A
0.264	96	Gravel surface, HSG A
4.292	44	Weighted Average, UI Adjusted CN = 43
3.898		90.82% Pervious Area
0.394		9.18% Impervious Area
0.188		47.72% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.3	1,092	0.0980	0.64		**Lag/CN Method,** Contour Length= 9,162' Interval= 2'

Subcatchment DA-5: DA-5

Hydrograph



Summary for Subcatchment DA-6: DA-6

Runoff = 0.01 cfs @ 20.96 hrs, Volume= 0.005 af, Depth= 0.02"

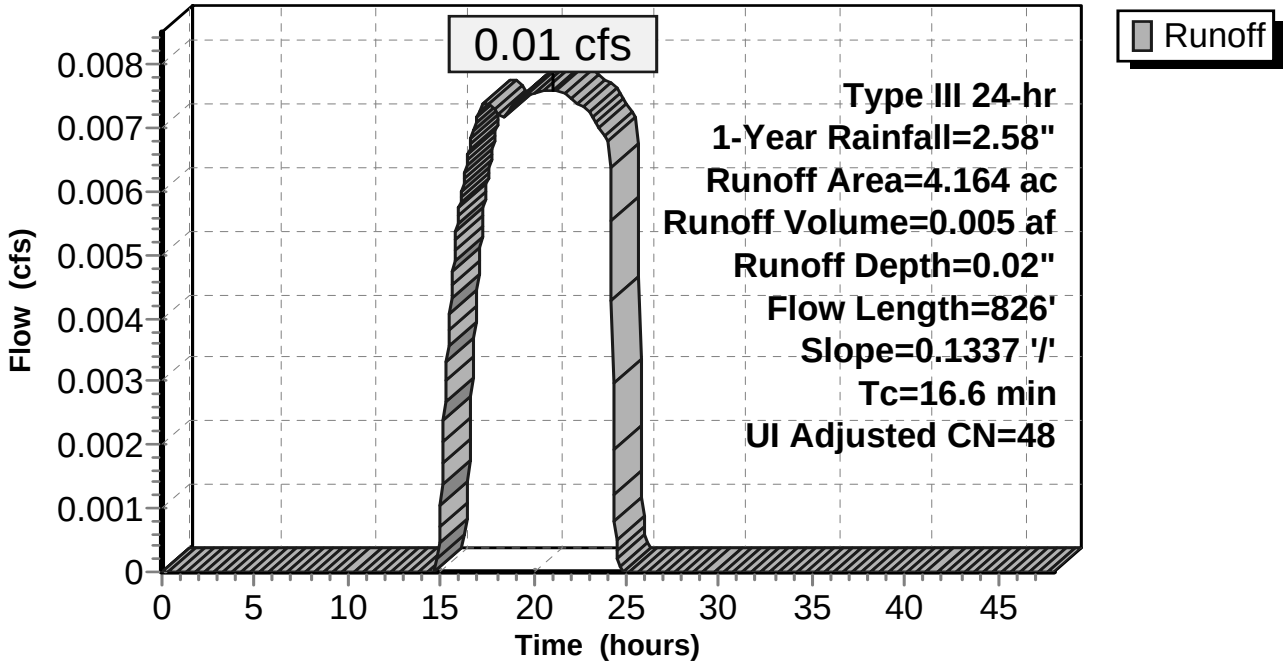
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.297	98	Unconnected roofs, HSG A
3.401	39	Pasture/grassland/range, Good, HSG A
0.466	96	Gravel surface, HSG A
4.164	50	Weighted Average, UI Adjusted CN = 48
3.867		92.87% Pervious Area
0.297		7.13% Impervious Area
0.297		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6	826	0.1337	0.83		**Lag/CN Method,** Contour Length= 12,121' Interval= 2'

Subcatchment DA-6: DA-6

Hydrograph



Summary for Subcatchment DA-7: DA-7

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

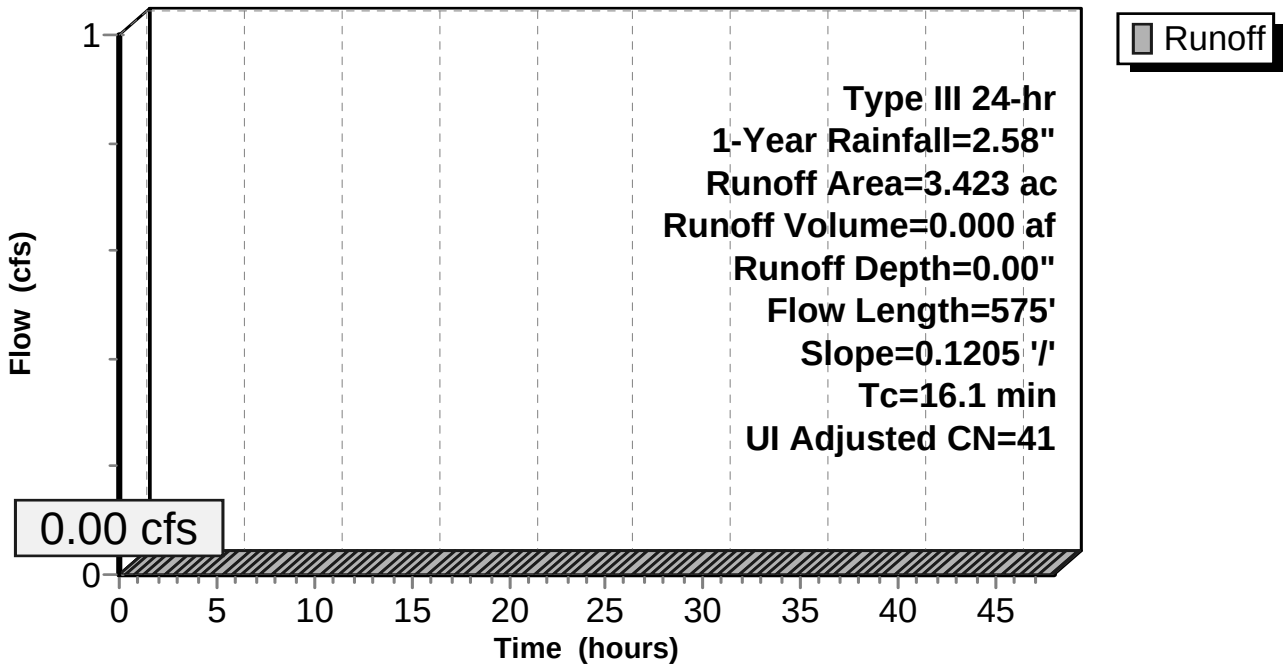
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
2.813	30	Woods, Good, HSG A
0.322	98	Water Surface, HSG A
0.135	96	Gravel surface, HSG A
0.153	98	Unconnected roofs, HSG A
3.423	42	Weighted Average, UI Adjusted CN = 41
2.948		86.12% Pervious Area
0.475		13.88% Impervious Area
0.153		32.21% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	575	0.1205	0.59		**Lag/CN Method,** Contour Length= 8,985' Interval= 2'

Subcatchment DA-7: DA-7

Hydrograph



Summary for Subcatchment DA-8: DA-8

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

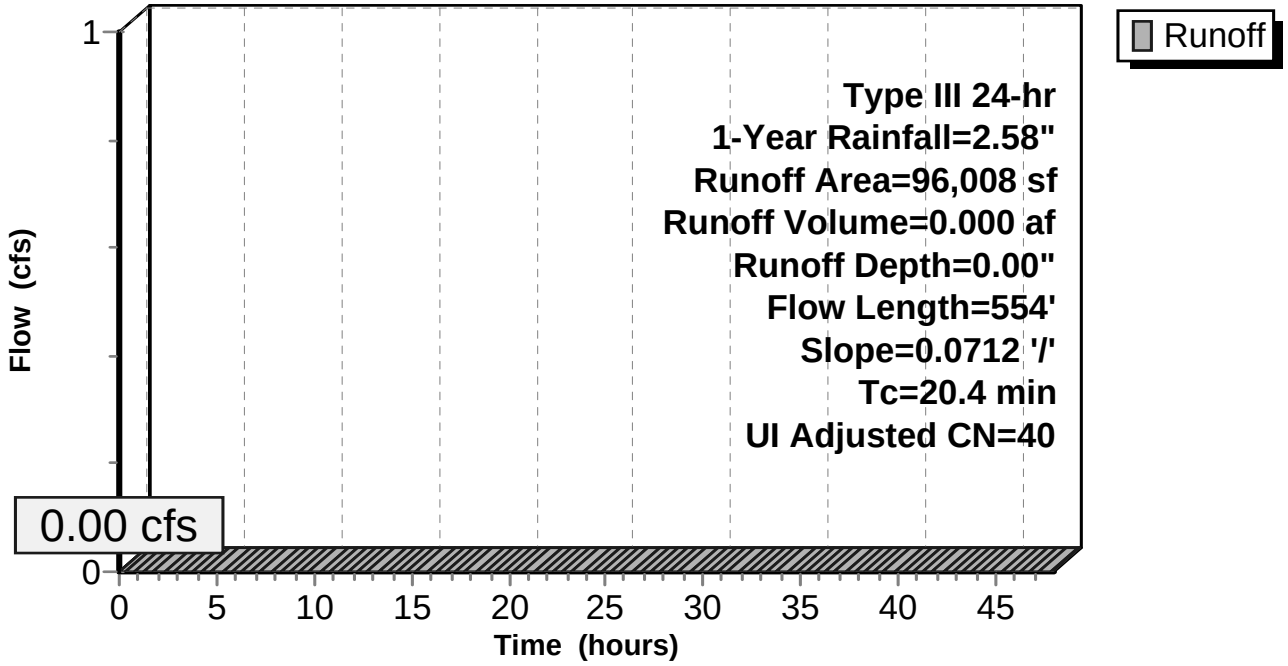
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (sf)	CN	Description
78,957	30	Woods, Good, HSG A
5,881	98	Unconnected roofs, HSG A
11,170	98	Paved parking, HSG A
96,008	42	Weighted Average, UI Adjusted CN = 40
78,957		82.24% Pervious Area
17,051		17.76% Impervious Area
5,881		34.49% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	554	0.0712	0.45		**Lag/CN Method,** Contour Length= 3,416' Interval= 2'

Subcatchment DA-8: DA-8

Hydrograph



Summary for Subcatchment DA-8B ROOF: DA-8b ROOF BR

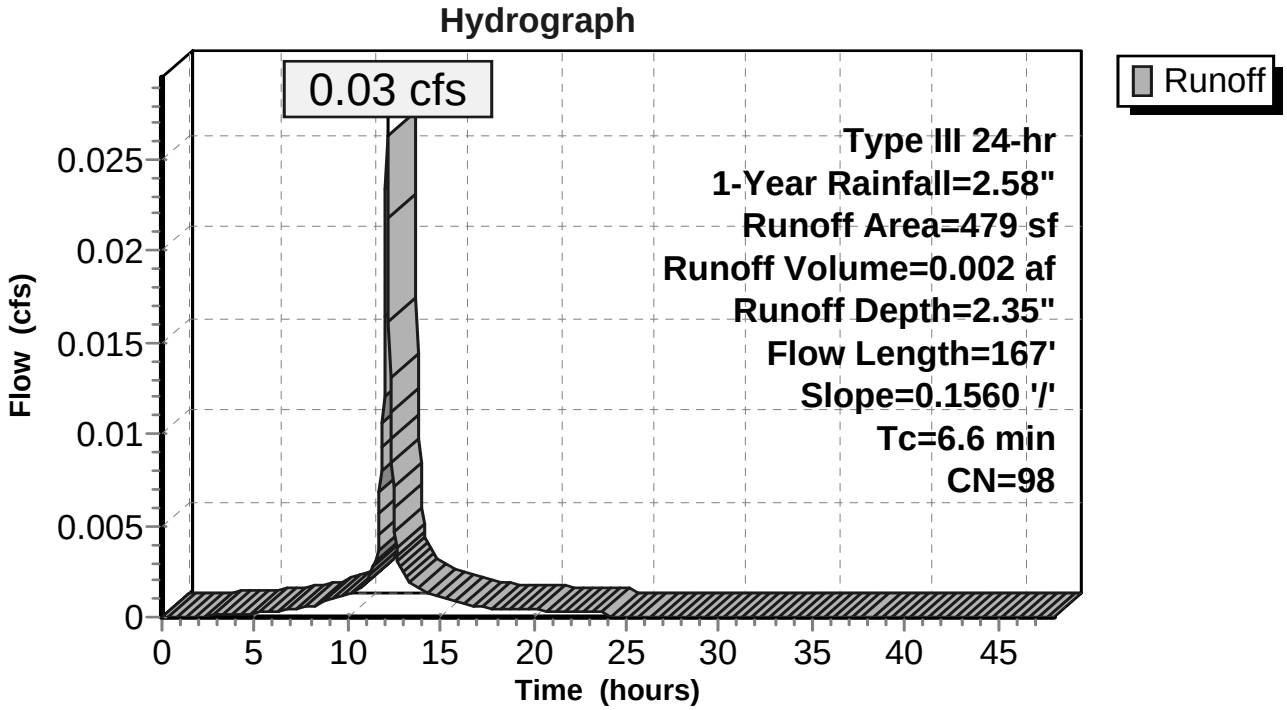
Runoff = 0.03 cfs @ 12.09 hrs, Volume= 0.002 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (sf)	CN	Description
479	98	Roofs, HSG A
479		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	167	0.1560	0.42		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.09"

Subcatchment DA-8B ROOF: DA-8b ROOF BR



Summary for Subcatchment DA-8B ROOF2: DA-8B-roof

[49] Hint: Tc<2dt may require smaller dt

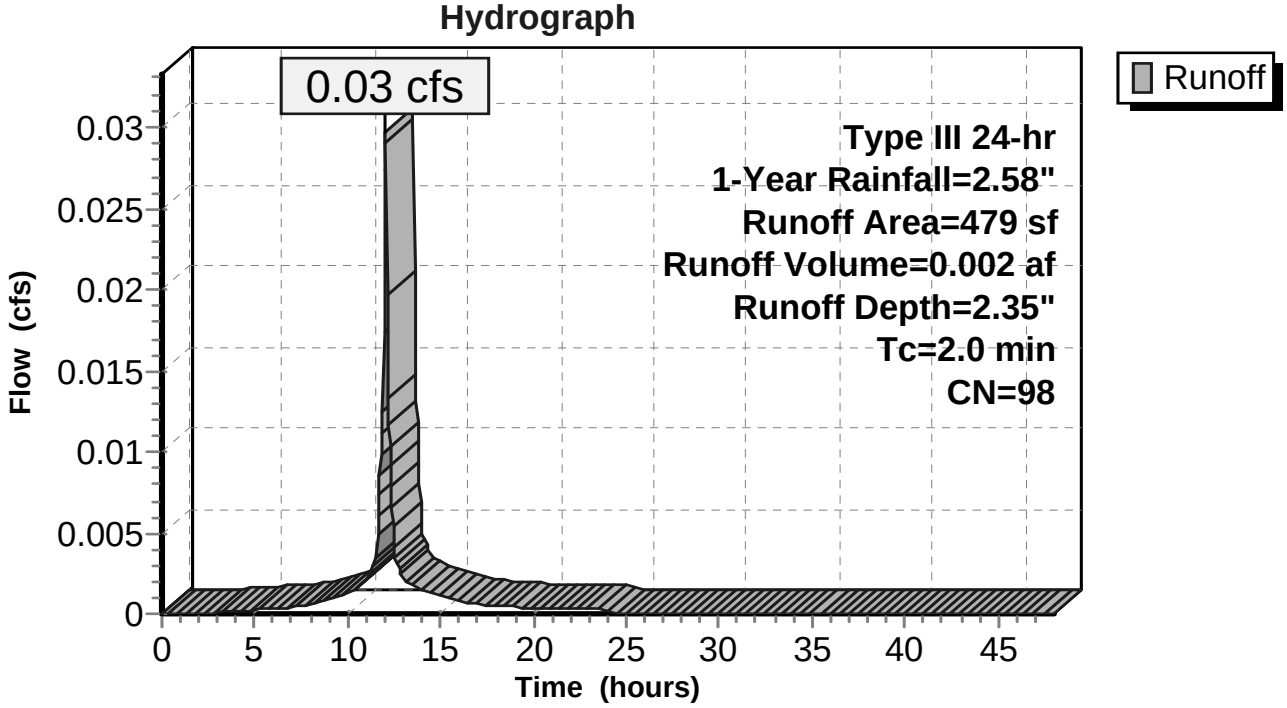
Runoff = 0.03 cfs @ 12.03 hrs, Volume= 0.002 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (sf)	CN	Description
479	98	Unconnected roofs, HSG A
479		100.00% Impervious Area
479		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment DA-8B ROOF2: DA-8B-roof



Summary for Subcatchment DA-9: DA-9

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

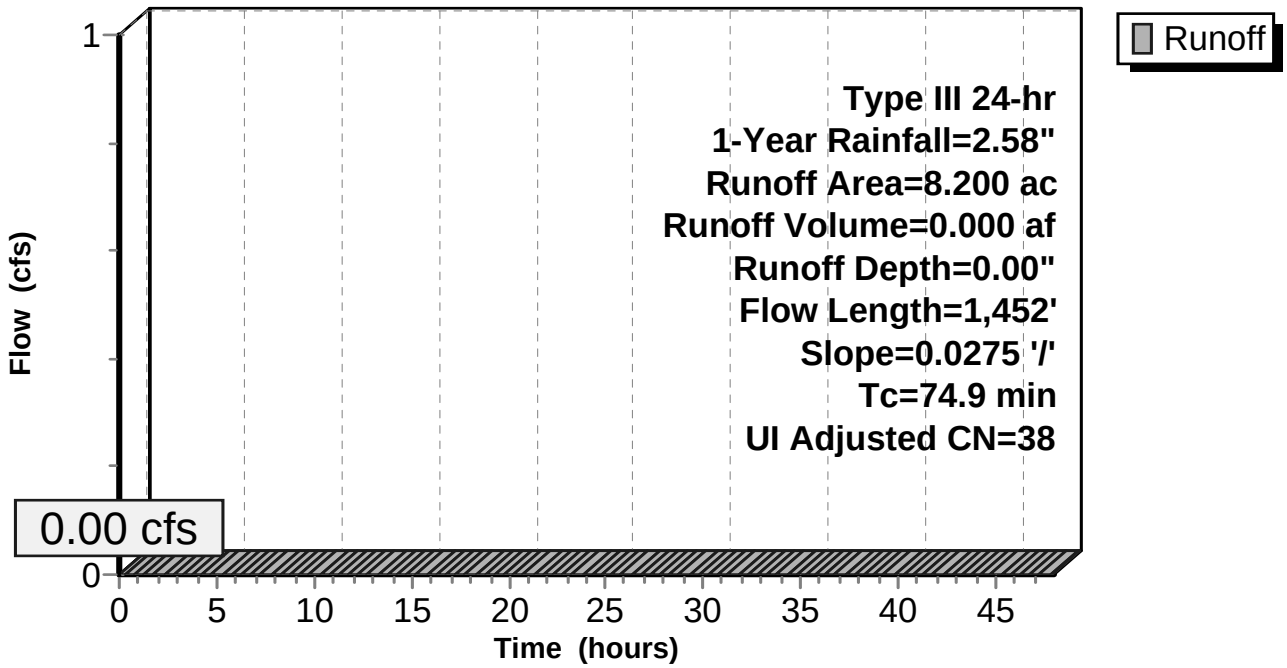
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.58"

Area (ac)	CN	Description
0.460	96	Gravel surface, HSG A
0.390	98	Unconnected roofs, HSG A
4.610	30	Woods, Good, HSG A
2.740	39	Pasture/grassland/range, Good, HSG A
8.200	40	Weighted Average, UI Adjusted CN = 38
7.810		95.24% Pervious Area
0.390		4.76% Impervious Area
0.390		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
74.9	1,452	0.0275	0.32		**Lag/CN Method,** Contour Length= 4,905' Interval= 2'

Subcatchment DA-9: DA-9

Hydrograph



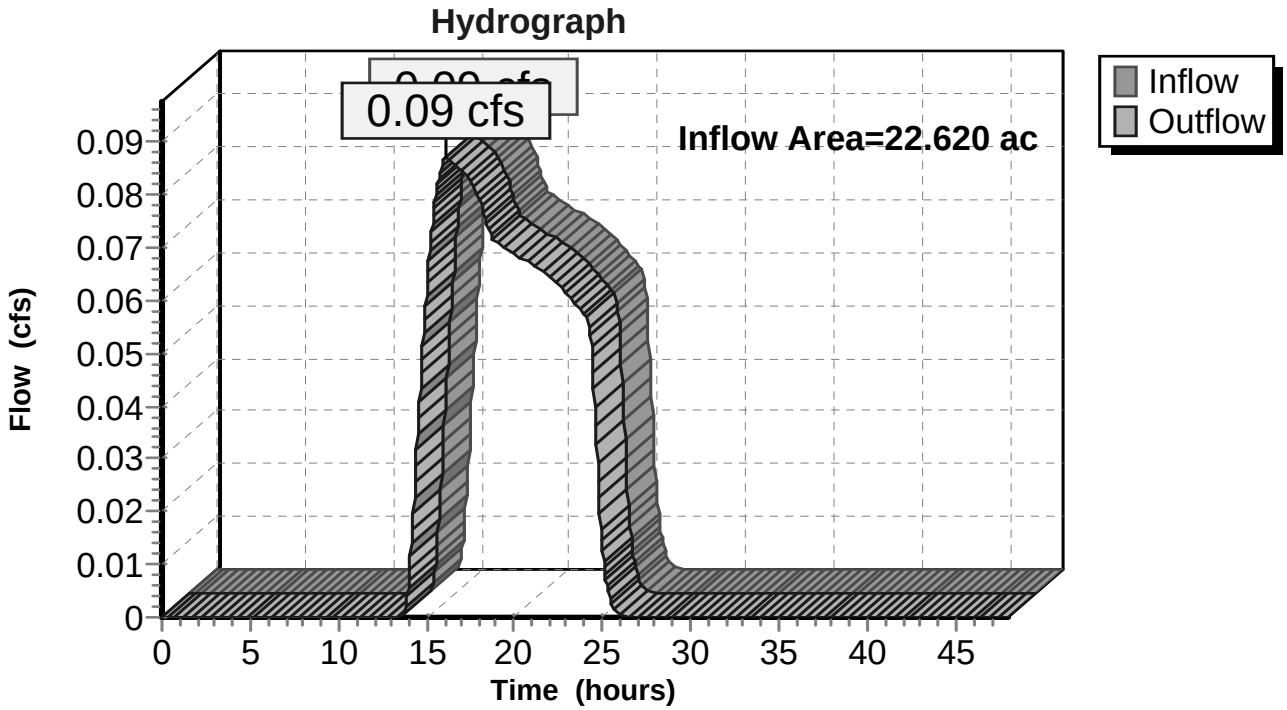
Summary for Reach 3R: DP-1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 22.620 ac, 0.00% Impervious, Inflow Depth = 0.03" for 1-Year event
Inflow = 0.09 cfs @ 16.20 hrs, Volume= 0.060 af
Outflow = 0.09 cfs @ 16.20 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 3R: DP-1



Summary for Reach CS-1: CS-1

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth = 2.35" for 1-Year event
Inflow = 0.03 cfs @ 12.03 hrs, Volume= 0.002 af
Outflow = 0.03 cfs @ 12.05 hrs, Volume= 0.002 af, Atten= 4%, Lag= 1.2 min

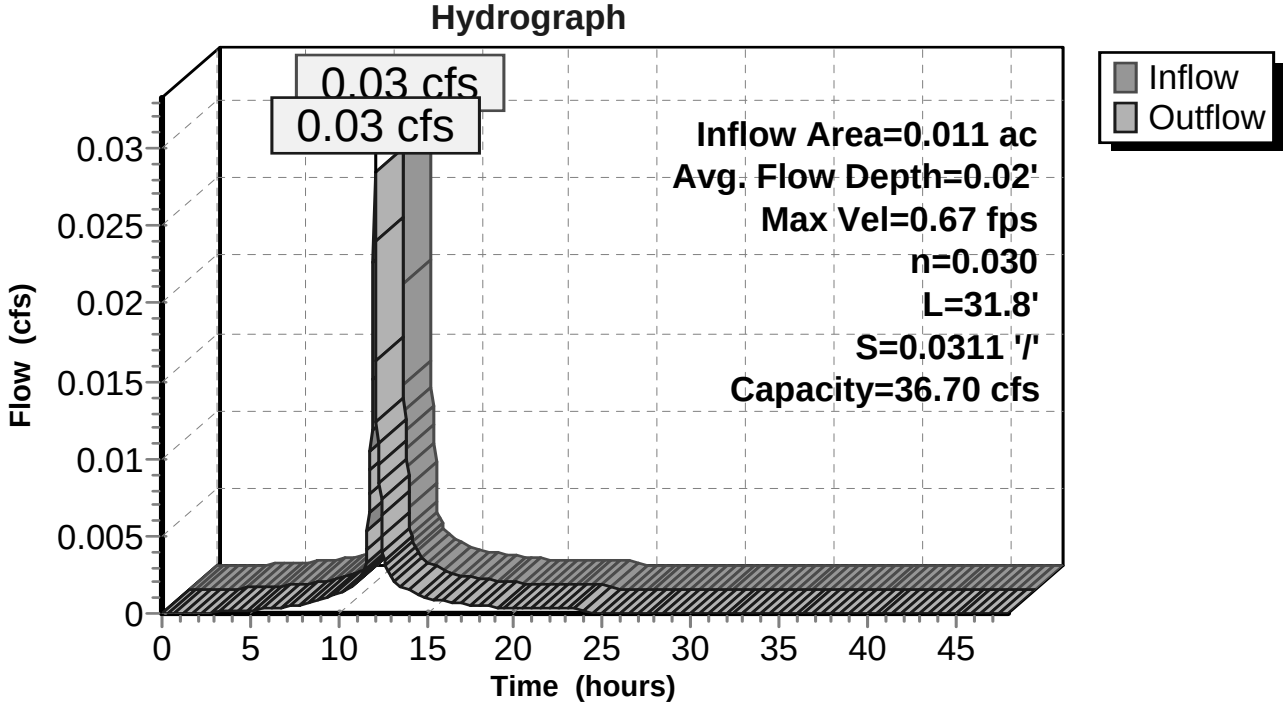
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.67 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 0.40 fps, Avg. Travel Time= 1.3 min

Peak Storage= 1 cf @ 12.04 hrs
Average Depth at Peak Storage= 0.02'
Bank-Full Depth= 1.00' Flow Area= 6.0 sf, Capacity= 36.70 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 4.0 '/' Top Width= 10.00'
Length= 31.8' Slope= 0.0311 '/'
Inlet Invert= 493.00', Outlet Invert= 492.01'

‡

Reach CS-1: CS-1



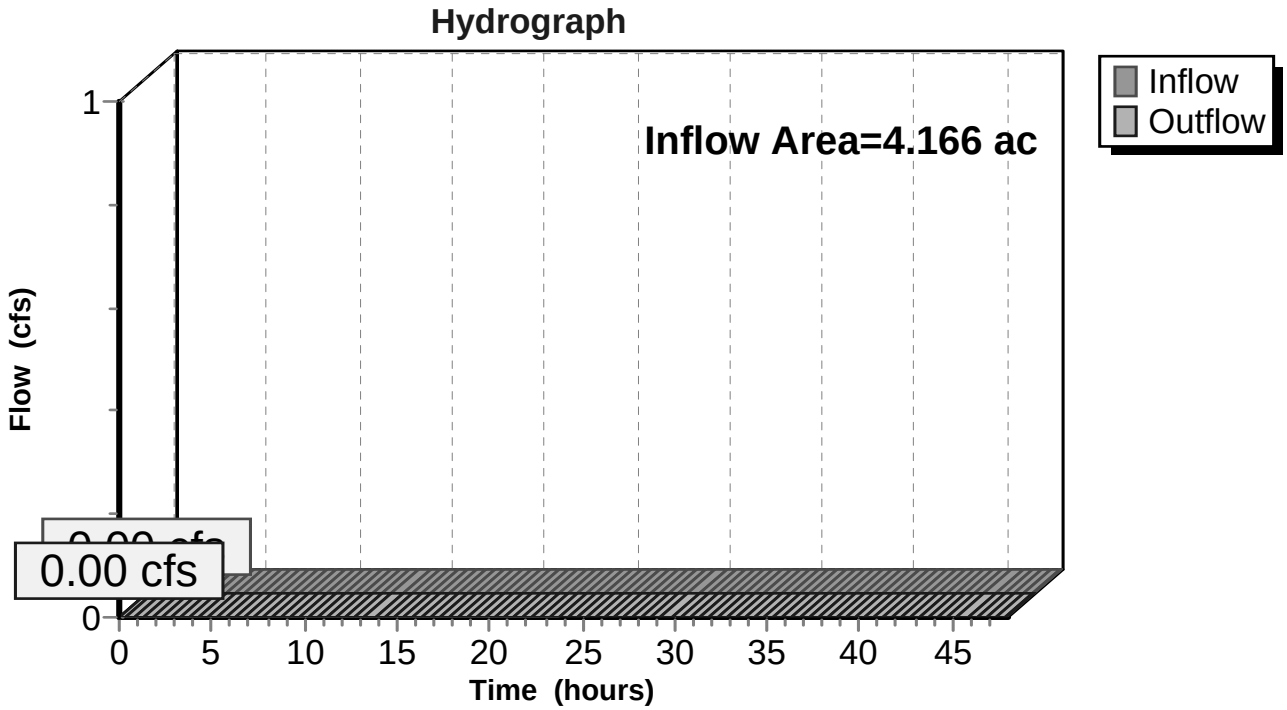
Summary for Reach DP-2: DP-2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.166 ac, 14.86% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-2: DP-2



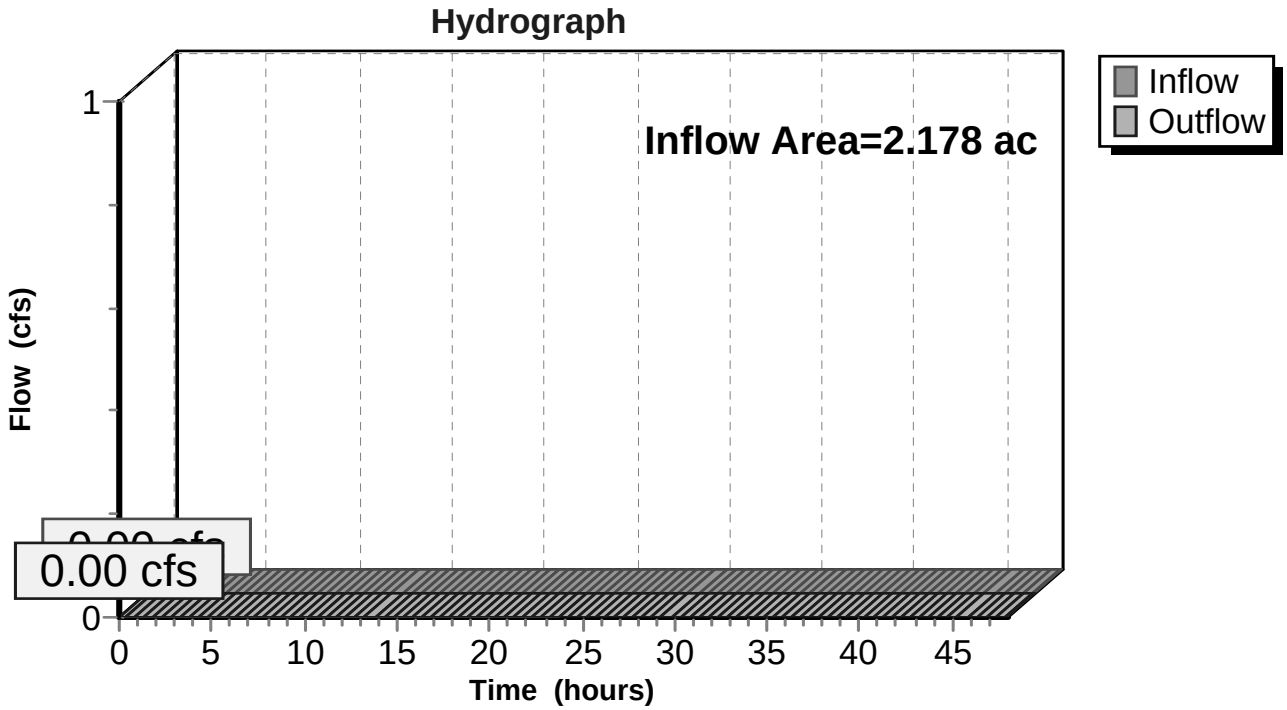
Summary for Reach DP-3: DP-3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.178 ac, 1.88% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-3: DP-3



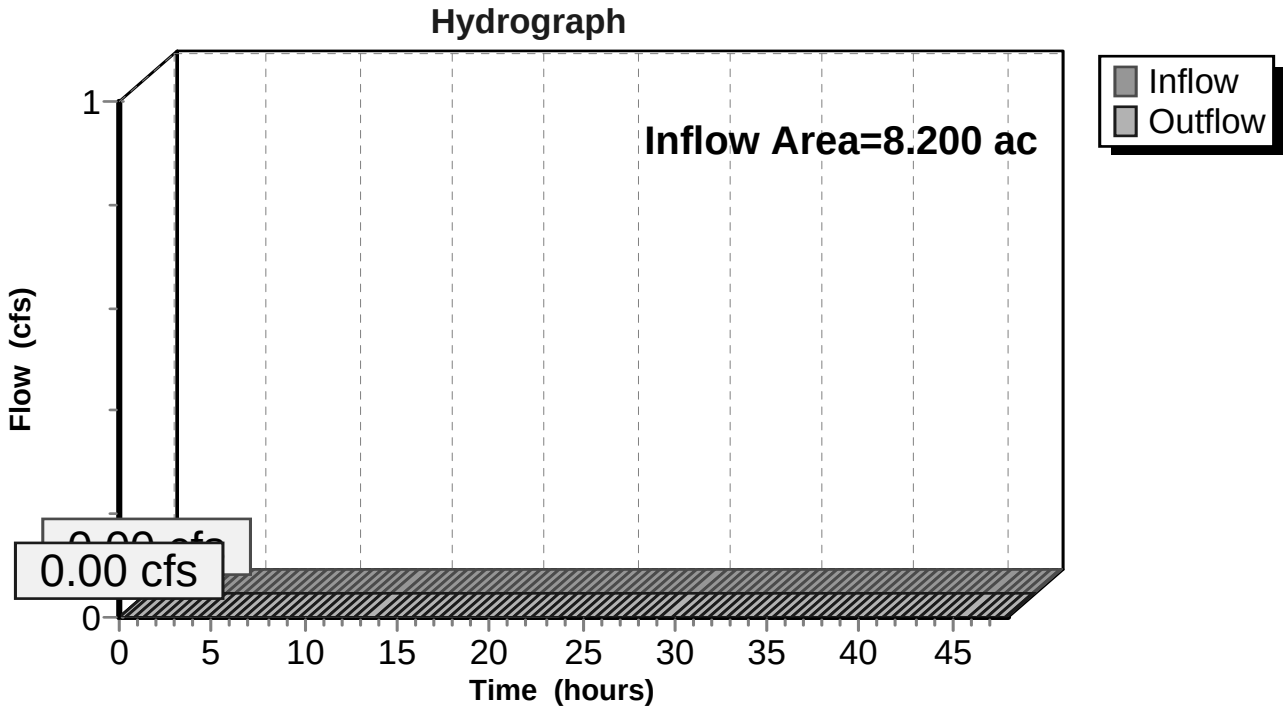
Summary for Reach DP-4: DP-4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.200 ac, 4.76% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-4: DP-4



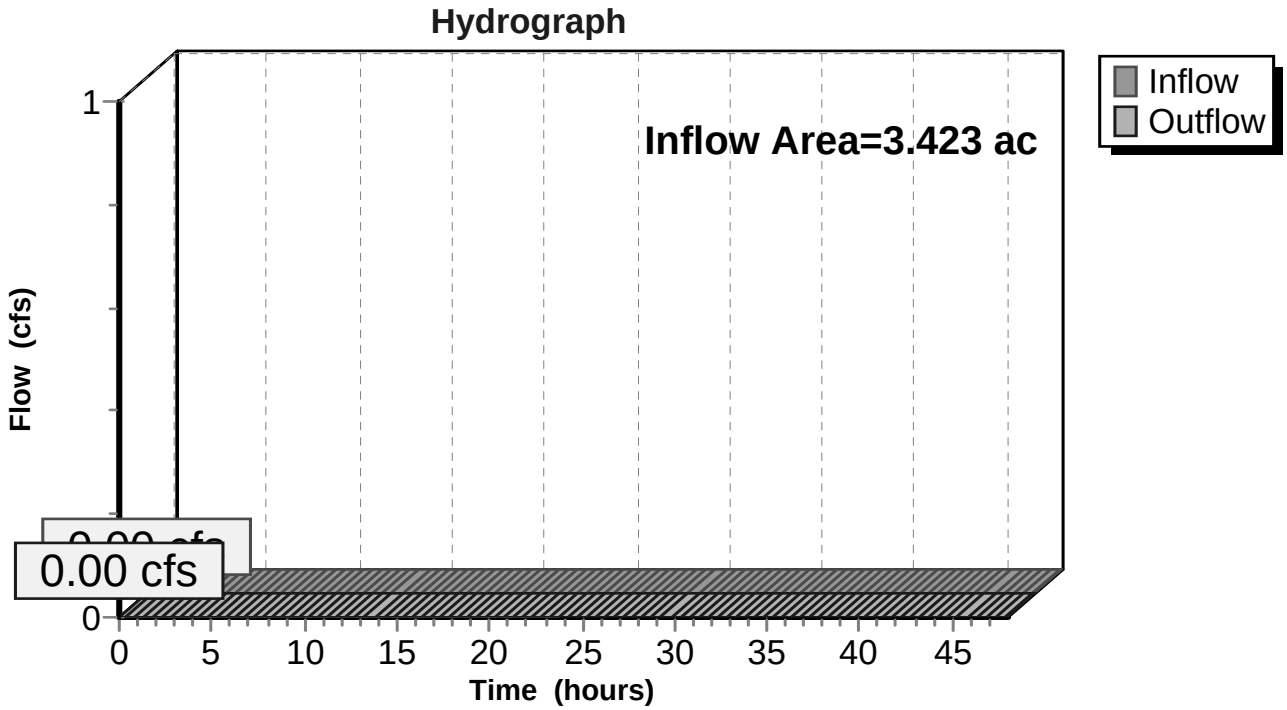
Summary for Reach DP-5: DP-5

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.423 ac, 13.88% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-5: DP-5



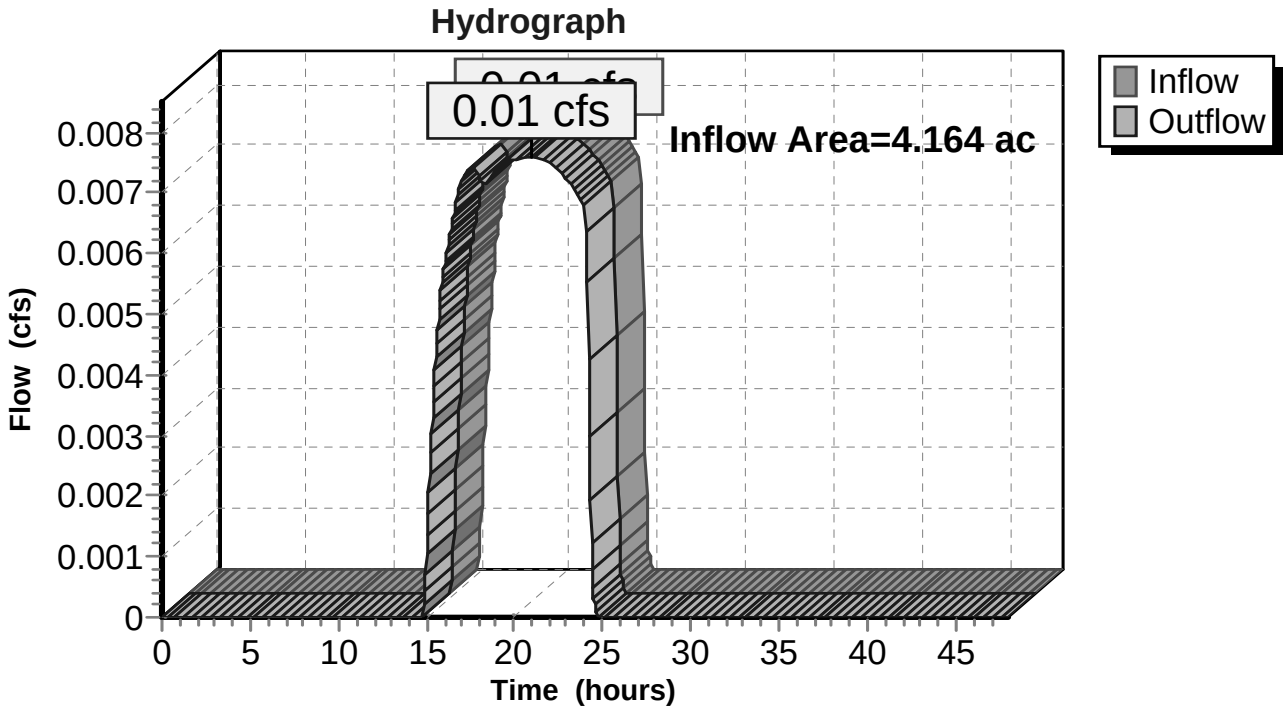
Summary for Reach DP-6: DP-6

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.164 ac, 7.13% Impervious, Inflow Depth = 0.02" for 1-Year event
Inflow = 0.01 cfs @ 20.96 hrs, Volume= 0.005 af
Outflow = 0.01 cfs @ 20.96 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-6: DP-6



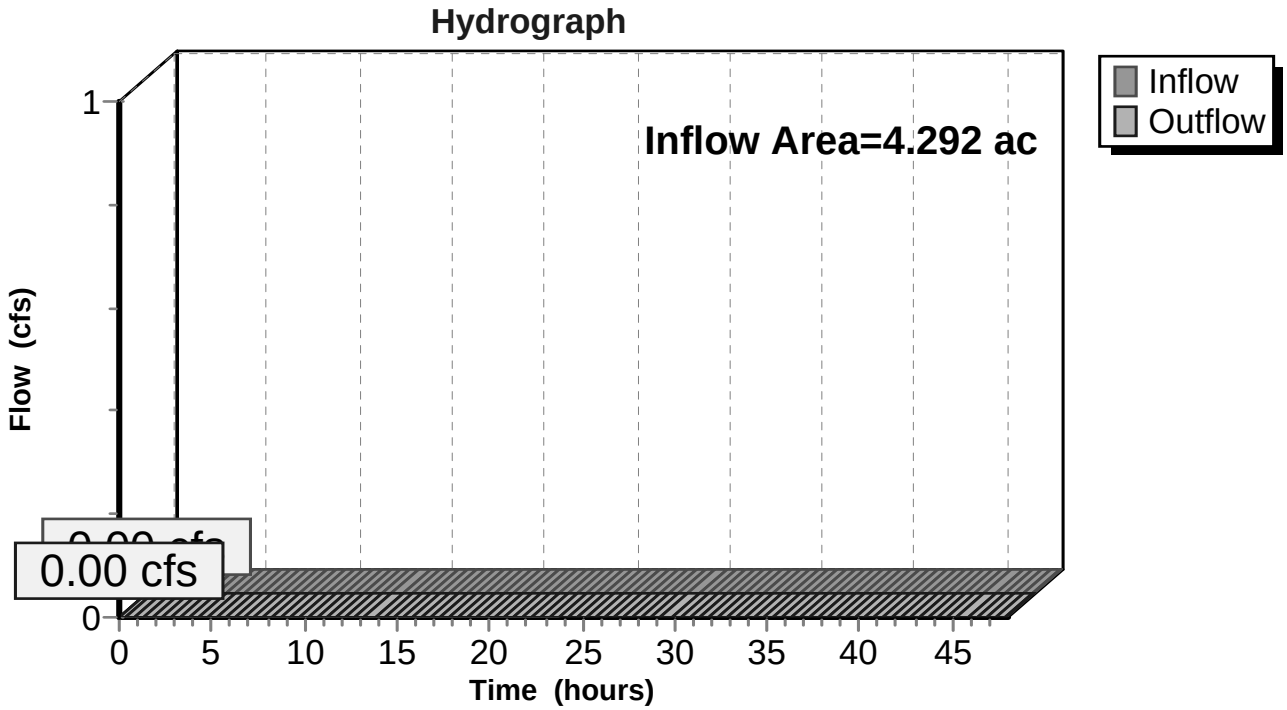
Summary for Reach DP-7: DP-7

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.292 ac, 9.18% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-7: DP-7



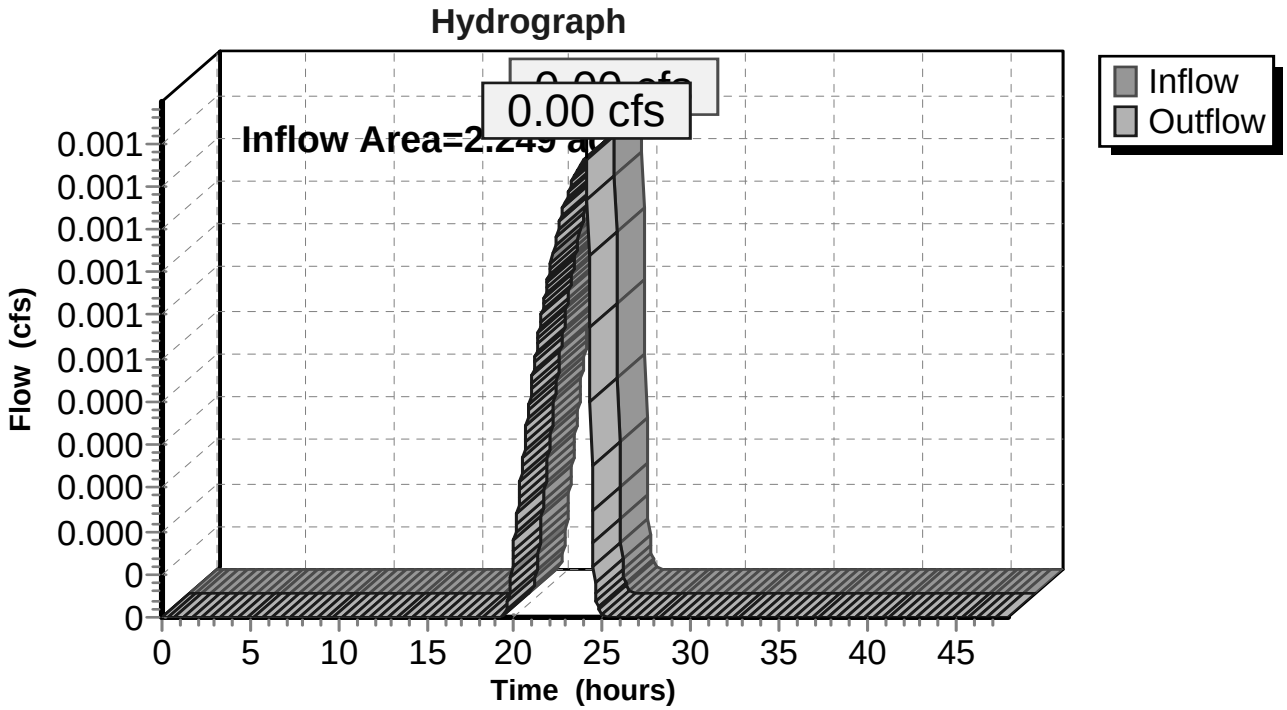
Summary for Reach DP-8: DP-8

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.249 ac, 4.76% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.01 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-8: DP-8



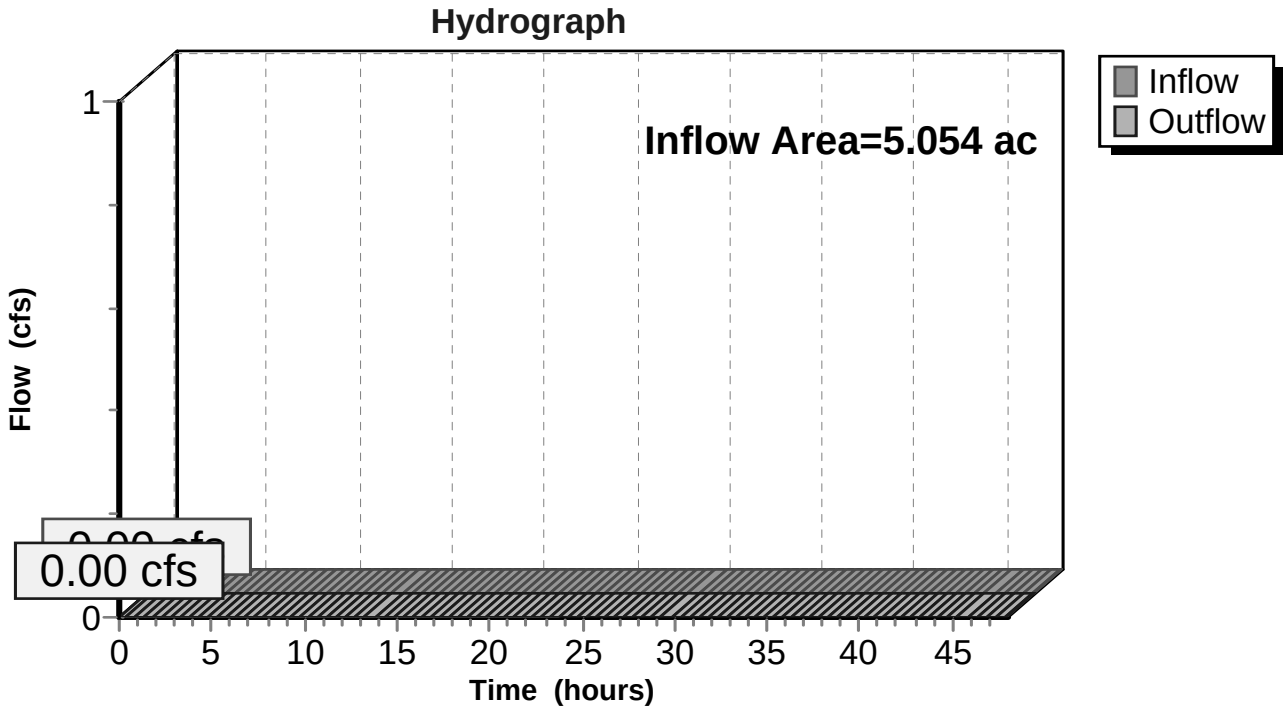
Summary for Reach DP-9: DP-9

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.054 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-9: DP-9



Summary for Pond BR-1: BR-1

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth = 2.35" for 1-Year event
Inflow = 0.03 cfs @ 12.09 hrs, Volume= 0.002 af
Outflow = 0.00 cfs @ 13.34 hrs, Volume= 0.002 af, Atten= 93%, Lag= 74.8 min
Discarded = 0.00 cfs @ 13.34 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 5
Peak Elev= 497.70' @ 13.34 hrs Surf.Area= 0.006 ac Storage= 0.001 af

Plug-Flow detention time= 174.8 min calculated for 0.002 af (100% of inflow)
Center-of-Mass det. time= 174.6 min (936.3 - 761.7)

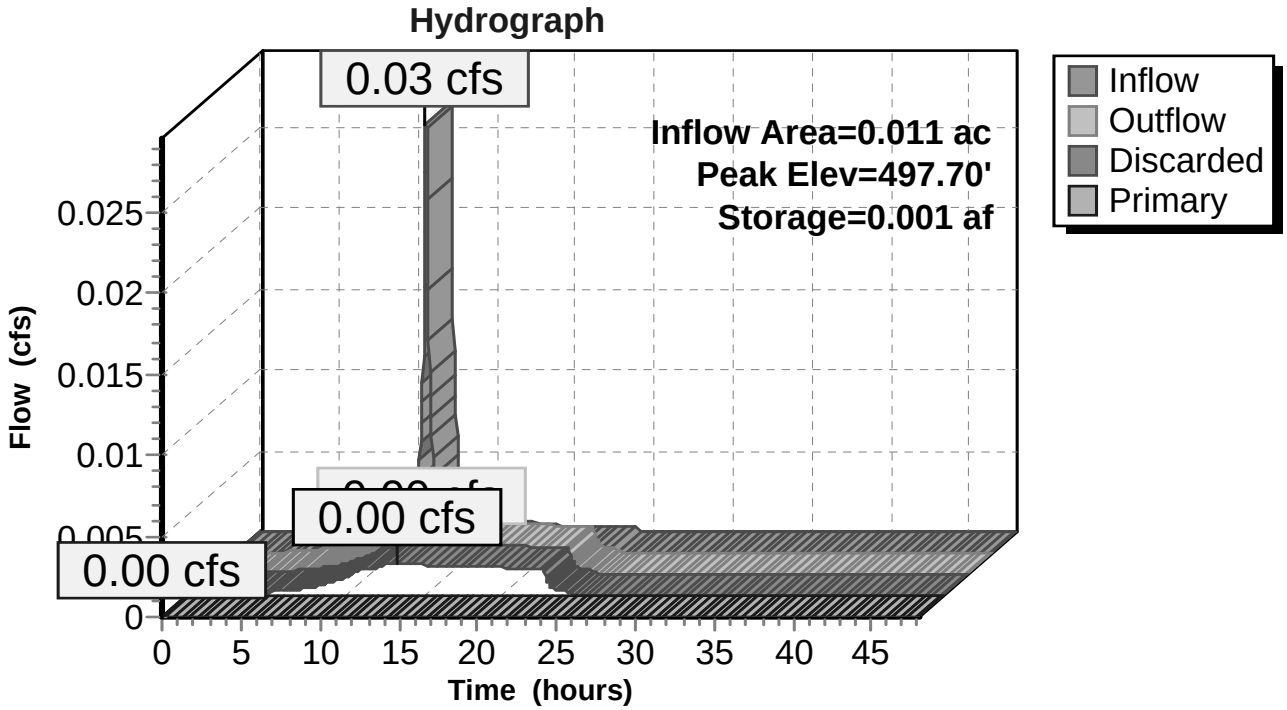
Volume	Invert	Avail.Storage	Storage Description
#1	497.00'	0.004 af	**20.00'W x 14.10'L x 3.00'H Prismatoid** 0.019 af Overall x 20.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	497.00'	**0.250 in/hr Exfiltration over Wetted area**
#2	Primary	500.00'	**76.7' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.00 cfs @ 13.34 hrs HW=497.70' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=497.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond BR-1: BR-1


Hydrograph
0.03 cfs
0.00 cfs
0.00 cfs
Inflow Area=0.011 ac
Peak Elev=497.70'
Storage=0.001 af
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.025
0.02
0.015
0.01
0.005
0
0 5 10 15 20 25 30 35 40 45
Time (hours)

Summary for Pond IB-1: IB-1

Inflow Area = 0.030 ac,100.00% Impervious, Inflow Depth = 2.35" for 1-Year event
Inflow = 0.09 cfs @ 12.00 hrs, Volume= 0.006 af
Outflow = 0.08 cfs @ 12.00 hrs, Volume= 0.006 af, Atten= 1%, Lag= 0.0 min
Discarded = 0.08 cfs @ 12.00 hrs, Volume= 0.006 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 512.25' @ 12.00 hrs Surf.Area= 0.043 ac Storage= 0.000 af

Plug-Flow detention time= 0.1 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (755.7 - 755.6)

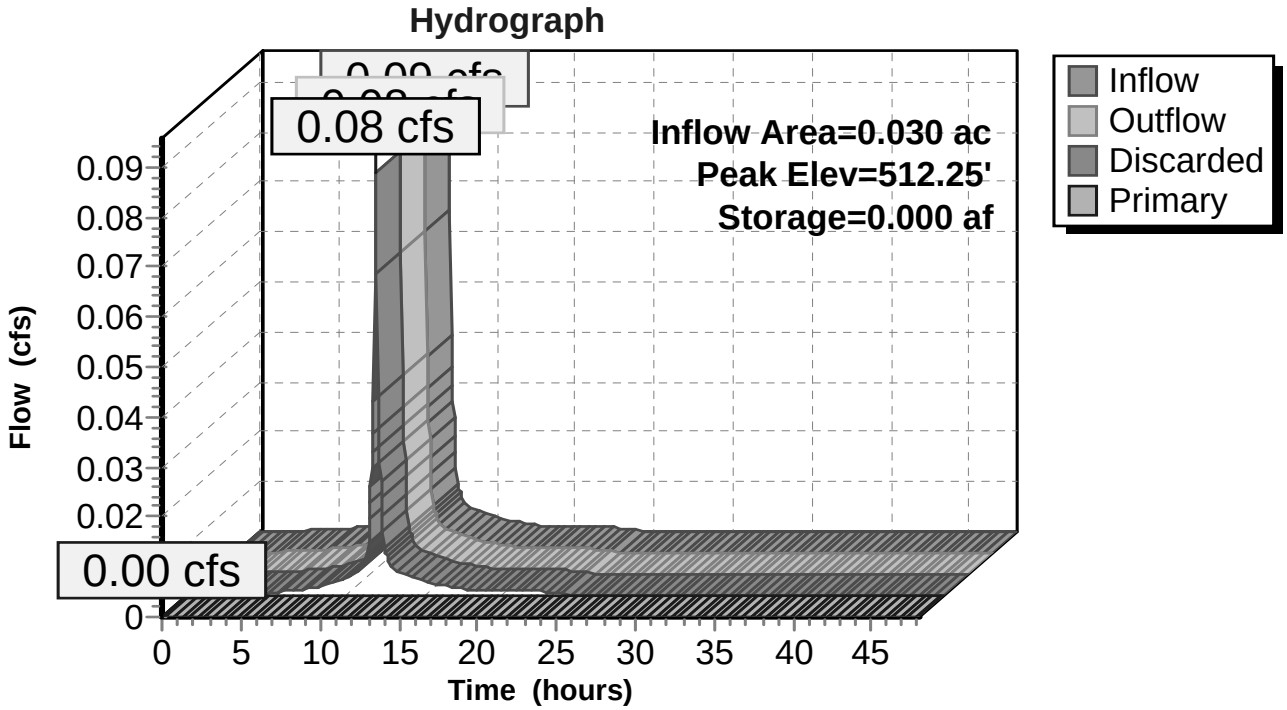
Volume	Invert	Avail.Storage	Storage Description
#1	512.25'	0.033 af	**31.00'W x 61.00'L x 1.50'H Infiltration Trench** 0.065 af Overall x 50.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	512.25'	**64.000 in/hr Exfiltration over Wetted area**
#2	Primary	514.75'	**184.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=2.80 cfs @ 12.00 hrs HW=512.25' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 2.80 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=512.25' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond IB-1: IB-1


Hydrograph
0.08 cfs
0.00 cfs
Inflow Area=0.030 ac
Peak Elev=512.25'
Storage=0.000 af
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0
0 5 10 15 20 25 30 35 40 45
Time (hours)

Summary for Pond IB-3: IB-3

Inflow Area = 3.423 ac, 13.88% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 482.00' @ 0.00 hrs Surf.Area= 2,861 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	8,771 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

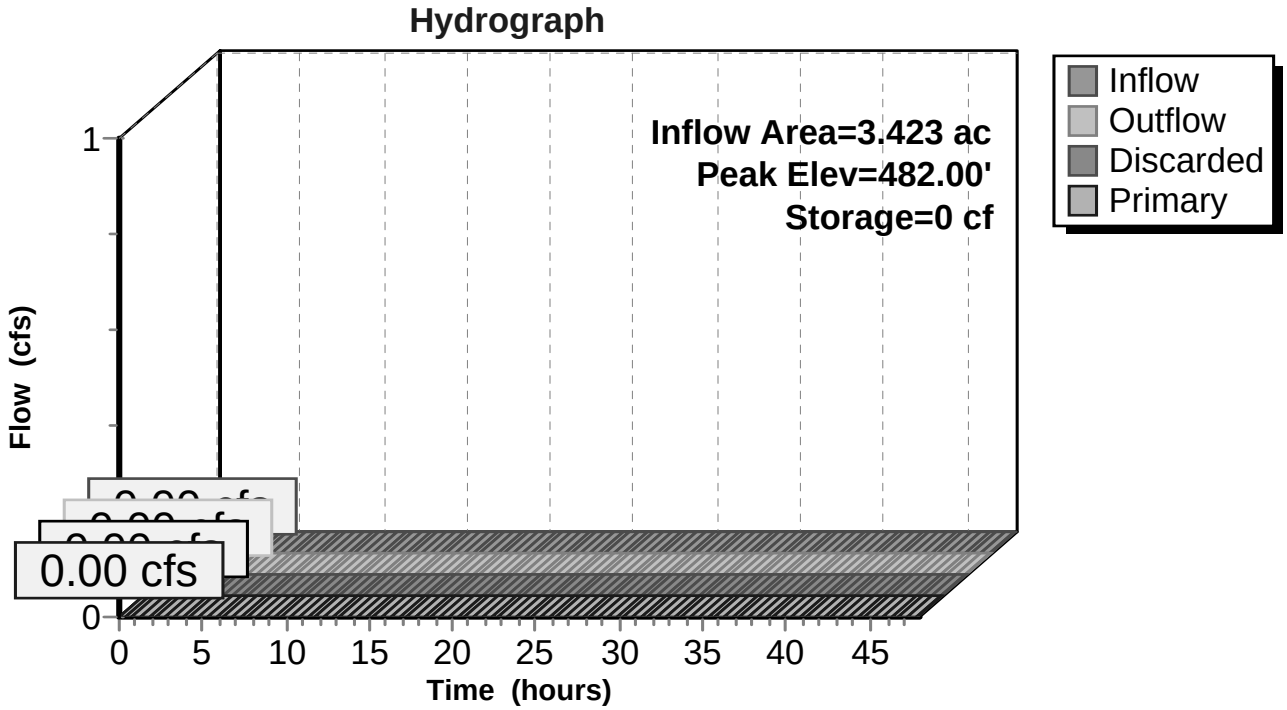
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
482.00	2,861	441.7	0	0	2,861
484.00	6,113	900.0	8,771	8,771	51,812

Device	Routing	Invert	Outlet Devices
#1	Discarded	482.00'	**144.000 in/hr Exfiltration over Wetted area**
#2	Primary	484.50'	**275.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=482.00' (Free Discharge)
1=Exfiltration (Passes 0.00 cfs of 9.54 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=482.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond IB-3: IB-3


Hydrograph
Inflow Area=3.423 ac
Peak Elev=482.00'
Storage=0 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
1
0
0.00 cfs
0 5 10 15 20 25 30 35 40 45
Time (hours)

Summary for Pond IT-1: IT-1

Inflow Area = 0.008 ac,100.00% Impervious, Inflow Depth = 2.35" for 1-Year event
Inflow = 0.02 cfs @ 12.06 hrs, Volume= 0.002 af
Outflow = 0.02 cfs @ 12.06 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.02 cfs @ 12.06 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 514.75' @ 12.06 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= 0.1 min calculated for 0.002 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (759.4 - 759.3)

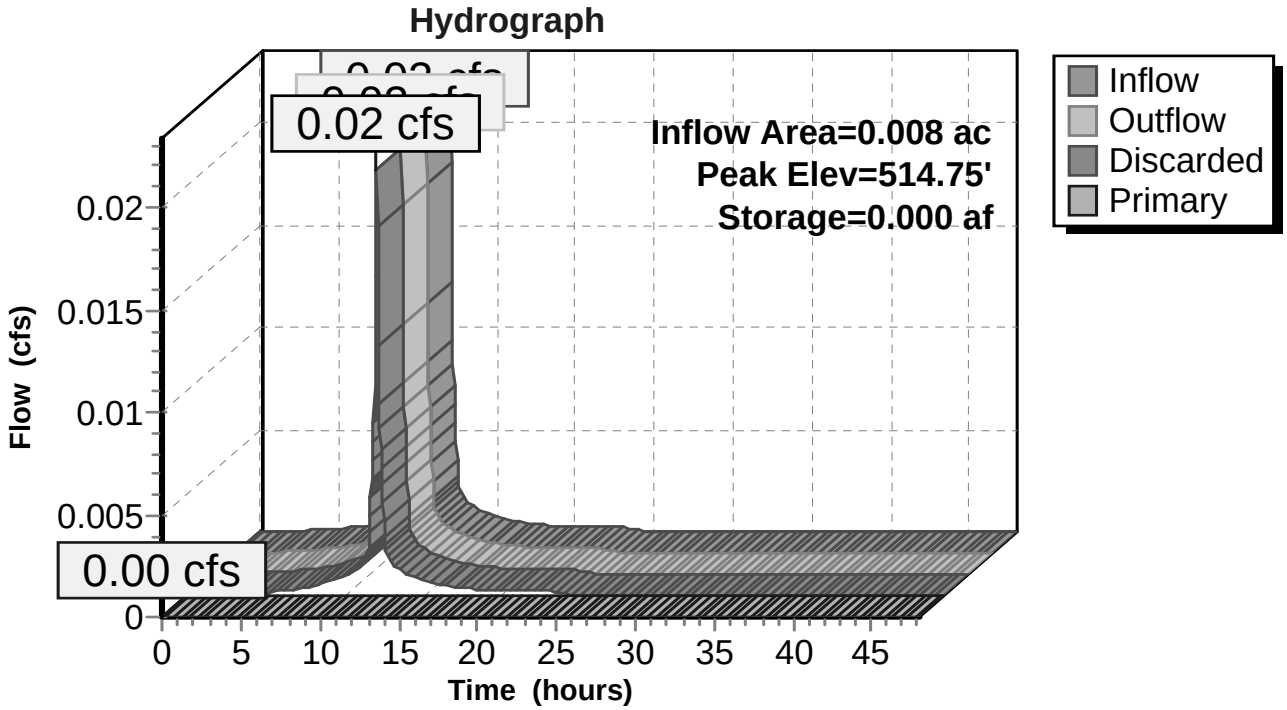
Volume	Invert	Avail.Storage	Storage Description
#1	514.75'	0.003 af	**2.00'W x 102.00'L x 1.50'H Prismatoid** 0.007 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	514.75'	**64.000 in/hr Exfiltration over Wetted area**
#2	Primary	515.25'	**102.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Discarded OutFlow Max=0.30 cfs @ 12.06 hrs HW=514.75' (Free Discharge)
↑└**1=Exfiltration** (Exfiltration Controls 0.30 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=514.75' (Free Discharge)
↑└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond IT-1: IT-1


Hydrograph
0.02 cfs
0.00 cfs
Inflow Area=0.008 ac
Peak Elev=514.75'
Storage=0.000 af
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
0.005
0.01
0.015
0.02
0
5
10
15
20
25
30
35
40
45
Time (hours)

Summary for Pond IT-2/3: IT-2 AND IT-3

Inflow Area = 0.527 ac, 13.82% Impervious, Inflow Depth = 0.00" for 1-Year 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

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 505.00' @ 0.00 hrs Surf.Area= 0.007 ac Storage= 0.000 af

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

Volume	Invert	Avail.Storage	Storage Description
#1	505.00'	0.004 af	**2.00'W x 150.00'L x 1.50'H Prismatoid** 0.010 af Overall x 40.0% Voids

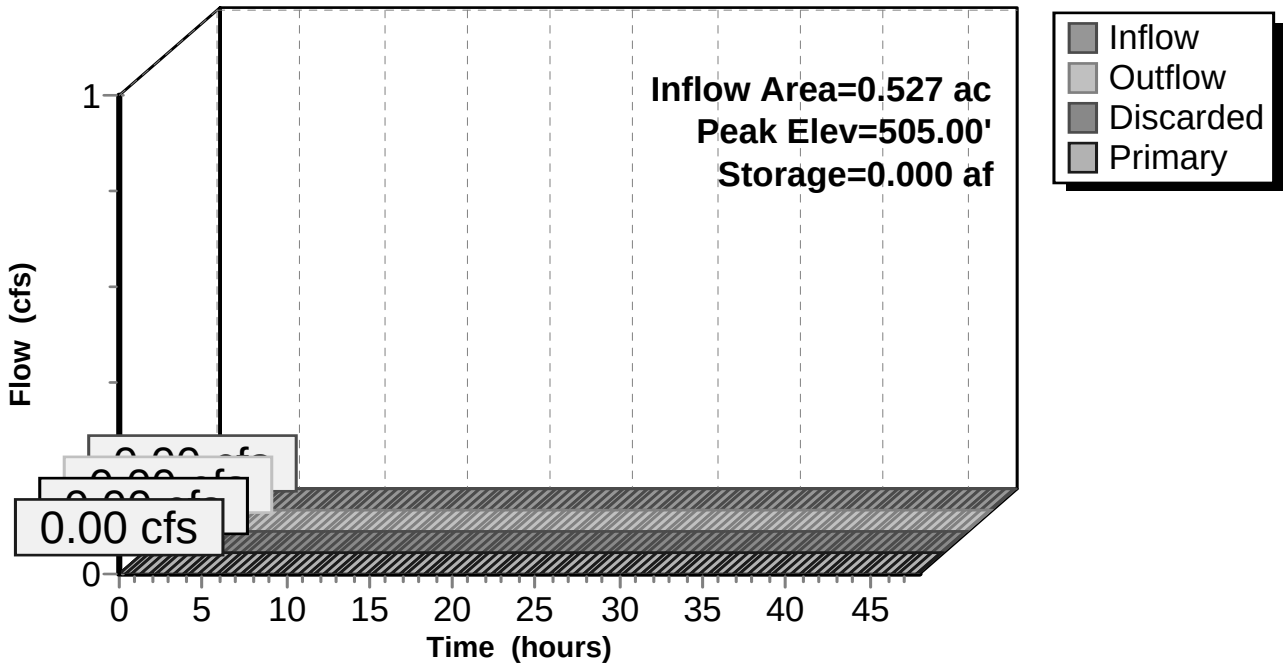
Device	Routing	Invert	Outlet Devices
#1	Discarded	505.00'	**144.000 in/hr Exfiltration over Wetted area**
#2	Primary	505.00'	**2.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=505.00' (Free Discharge)
└**1=Exfiltration** (Passes 0.00 cfs of 1.00 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=505.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond IT-2/3: IT-2 AND IT-3

Hydrograph



Summary for Pond SF-1: SF-1

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth = 2.35" for 1-Year event
Inflow = 0.03 cfs @ 12.05 hrs, Volume= 0.002 af
Outflow = 0.01 cfs @ 12.44 hrs, Volume= 0.002 af, Atten= 77%, Lag= 23.2 min
Discarded = 0.01 cfs @ 12.44 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 488.03' @ 12.44 hrs Surf.Area= 0.003 ac Storage= 0.000 af

Plug-Flow detention time= 20.2 min calculated for 0.002 af (100% of inflow)
Center-of-Mass det. time= 20.1 min (779.6 - 759.5)

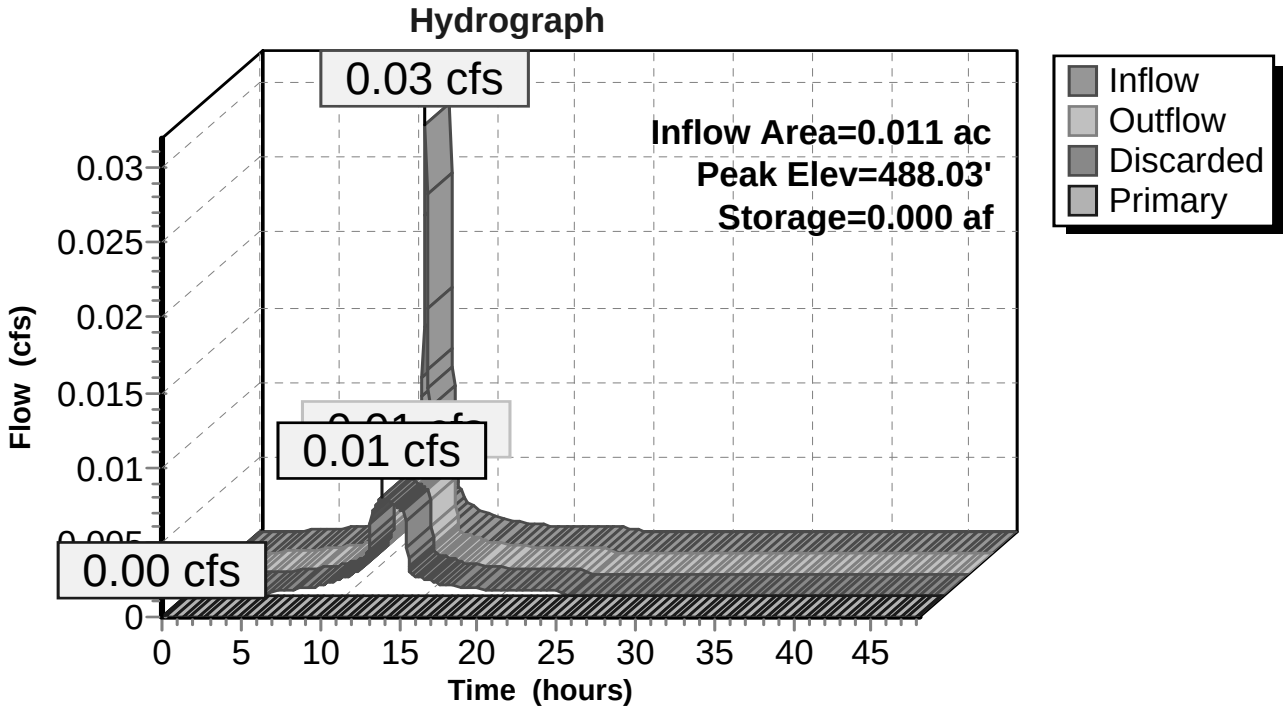
Volume	Invert	Avail.Storage	Storage Description
#1	487.50'	0.004 af	**15.00'W x 9.00'L x 4.50'H Prismatoid** 0.014 af Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	487.50'	**1.750 in/hr Exfiltration over Wetted area**
#2	Primary	492.00'	**10.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.01 cfs @ 12.44 hrs HW=488.03' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=487.50' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond SF-1: SF-1


Hydrograph
0.03 cfs
0.01 cfs
0.00 cfs
Inflow Area=0.011 ac
Peak Elev=488.03'
Storage=0.000 af
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.03
0.025
0.02
0.015
0.01
0
0 5 10 15 20 25 30 35 40 45
Time (hours)

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA-8C Runoff Area=22,971 sf 13.82% Impervious Runoff Depth=0.19"
Flow Length=151' Slope=0.1850 '/' Tc=4.6 min CN=41 Runoff=0.02 cfs 0.008 af

Subcatchment 2S: DA-8B Runoff Area=61,547 sf 9.41% Impervious Runoff Depth=0.11"
Flow Length=387' Slope=0.0520 '/' Tc=20.0 min CN=38 Runoff=0.02 cfs 0.013 af

Subcatchment DA-1: DA-1 Runoff Area=22.620 ac 0.00% Impervious Runoff Depth=0.55"
Flow Length=1,906' Slope=0.0540 '/' Tc=51.1 min CN=50 Runoff=3.94 cfs 1.039 af

Subcatchment DA-2: DA-2 Runoff Area=2.148 ac 0.51% Impervious Runoff Depth=0.06"
Flow Length=430' Slope=0.1646 '/' Tc=12.9 min CN=36 Runoff=0.02 cfs 0.011 af

Subcatchment DA-2A: DA-2a Runoff Area=0.030 ac 100.00% Impervious Runoff Depth=4.40"
Tc=0.0 min CN=98 Runoff=0.16 cfs 0.011 af

Subcatchment DA-3: DA-3 Runoff Area=5.054 ac 0.00% Impervious Runoff Depth=0.11"
Flow Length=757' Slope=0.0695 '/' Tc=29.5 min CN=38 Runoff=0.07 cfs 0.045 af

Subcatchment DA-4: DA-4 Runoff Area=2.241 ac 4.42% Impervious Runoff Depth=0.33"
Flow Length=544' Slope=0.0590 '/' Tc=20.4 min CN=45 Runoff=0.24 cfs 0.062 af

Subcatchment DA-4A: DA-4a Runoff Area=0.008 ac 100.00% Impervious Runoff Depth=4.40"
Tc=4.0 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment DA-5: DA-5 Runoff Area=4.292 ac 9.18% Impervious Runoff Depth=0.26"
Flow Length=1,092' Slope=0.0980 '/' Tc=28.3 min UI Adjusted CN=43 Runoff=0.24 cfs 0.093 af

Subcatchment DA-6: DA-6 Runoff Area=4.164 ac 7.13% Impervious Runoff Depth=0.46"
Flow Length=826' Slope=0.1337 '/' Tc=16.6 min UI Adjusted CN=48 Runoff=0.83 cfs 0.160 af

Subcatchment DA-7: DA-7 Runoff Area=3.423 ac 13.88% Impervious Runoff Depth=0.19"
Flow Length=575' Slope=0.1205 '/' Tc=16.1 min UI Adjusted CN=41 Runoff=0.11 cfs 0.055 af

Subcatchment DA-8: DA-8 Runoff Area=96,008 sf 17.76% Impervious Runoff Depth=0.16"
Flow Length=554' Slope=0.0712 '/' Tc=20.4 min UI Adjusted CN=40 Runoff=0.05 cfs 0.030 af

Subcatchment DA-8B ROOF: DA-8b ROOF Runoff Area=479 sf 100.00% Impervious Runoff Depth=4.40"
Flow Length=167' Slope=0.1560 '/' Tc=6.6 min CN=98 Runoff=0.05 cfs 0.004 af

Subcatchment DA-8B ROOF2: DA-8B-roof Runoff Area=479 sf 100.00% Impervious Runoff Depth=4.40"
Tc=2.0 min CN=98 Runoff=0.05 cfs 0.004 af

Subcatchment DA-9: DA-9 Runoff Area=8.200 ac 4.76% Impervious Runoff Depth=0.11"
Flow Length=1,452' Slope=0.0275 '/' Tc=74.9 min UI Adjusted CN=38 Runoff=0.11 cfs 0.073 af

Reach 3R: DP-1 Inflow=3.94 cfs 1.039 af
Outflow=3.94 cfs 1.039 af

Reach CS-1: CS-1 Avg. Flow Depth=0.03' Max Vel=0.83 fps Inflow=0.05 cfs 0.004 af
n=0.030 L=31.8' S=0.0311 '/' Capacity=36.70 cfs Outflow=0.05 cfs 0.004 af

Reach DP-2: DP-2 Inflow=0.07 cfs 0.042 af
Outflow=0.07 cfs 0.042 af

Reach DP-3: DP-3 Inflow=0.02 cfs 0.011 af
Outflow=0.02 cfs 0.011 af

Reach DP-4: DP-4 Inflow=0.11 cfs 0.073 af
Outflow=0.11 cfs 0.073 af

Reach DP-5: DP-5 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-6: DP-6 Inflow=0.83 cfs 0.160 af
Outflow=0.83 cfs 0.160 af

Reach DP-7: DP-7 Inflow=0.24 cfs 0.093 af
Outflow=0.24 cfs 0.093 af

Reach DP-8: DP-8 Inflow=0.24 cfs 0.062 af
Outflow=0.24 cfs 0.062 af

Reach DP-9: DP-9 Inflow=0.07 cfs 0.045 af
Outflow=0.07 cfs 0.045 af

Pond BR-1: BR-1 Peak Elev=498.58' Storage=0.002 af Inflow=0.05 cfs 0.004 af
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.004 af

Pond IB-1: IB-1 Peak Elev=512.25' Storage=0.000 af Inflow=0.16 cfs 0.011 af
Discarded=0.15 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.011 af

Pond IB-3: IB-3 Peak Elev=482.00' Storage=1 cf Inflow=0.11 cfs 0.055 af
Discarded=0.11 cfs 0.055 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.055 af

Pond IT-1: IT-1 Peak Elev=514.75' Storage=0.000 af Inflow=0.04 cfs 0.003 af
Discarded=0.04 cfs 0.003 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.003 af

Pond IT-2/3: IT-2 AND IT-3 Peak Elev=505.00' Storage=0.000 af Inflow=0.02 cfs 0.008 af
Discarded=0.02 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.008 af

Pond SF-1: SF-1 Peak Elev=488.77' Storage=0.001 af Inflow=0.05 cfs 0.004 af
Discarded=0.01 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.004 af

Total Runoff Area = 56.346 ac Runoff Volume = 1.611 af Average Runoff Depth = 0.34"
95.88% Pervious = 54.023 ac 4.12% Impervious = 2.323 ac

Summary for Subcatchment 1S: DA-8C

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.02 cfs @ 12.45 hrs, Volume= 0.008 af, Depth= 0.19"

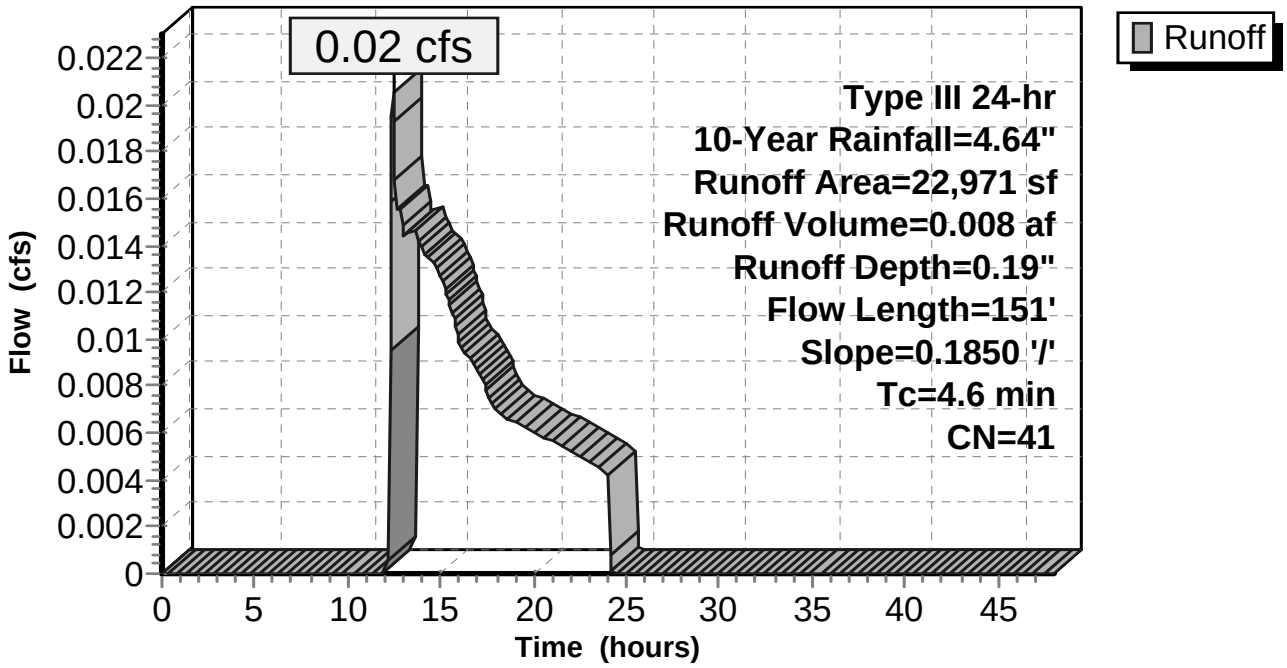
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (sf)	CN	Description
3,174	98	Paved parking, HSG A
19,797	32	Woods/grass comb., Good, HSG A
22,971	41	Weighted Average
19,797		86.18% Pervious Area
3,174		13.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	151	0.1850	0.55		**Lag/CN Method,**

Subcatchment 1S: DA-8C

Hydrograph



Summary for Subcatchment 2S: DA-8B

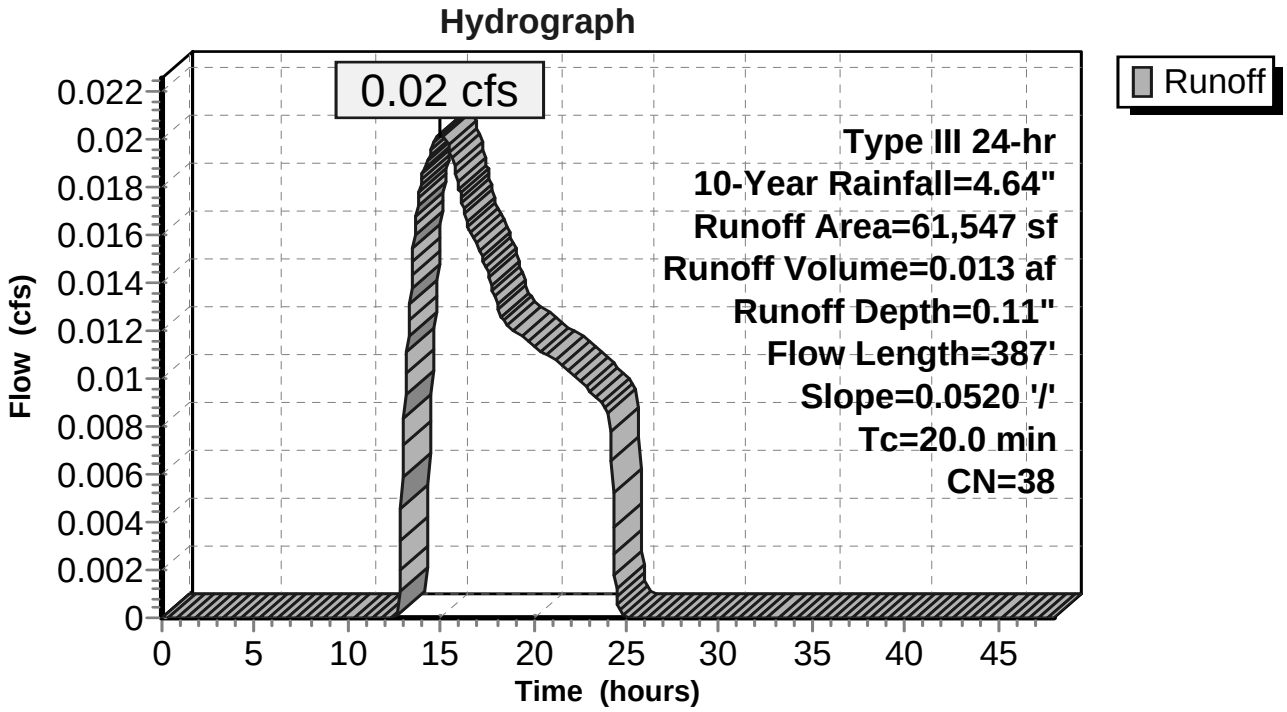
Runoff = 0.02 cfs @ 15.00 hrs, Volume= 0.013 af, Depth= 0.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (sf)	CN	Description
5,793	98	Water Surface, HSG A
55,754	32	Woods/grass comb., Good, HSG A
61,547	38	Weighted Average
55,754		90.59% Pervious Area
5,793		9.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	387	0.0520	0.32		**Lag/CN Method,**

Subcatchment 2S: DA-8B



Summary for Subcatchment DA-1: DA-1

Runoff = 3.94 cfs @ 12.91 hrs, Volume= 1.039 af, Depth= 0.55"

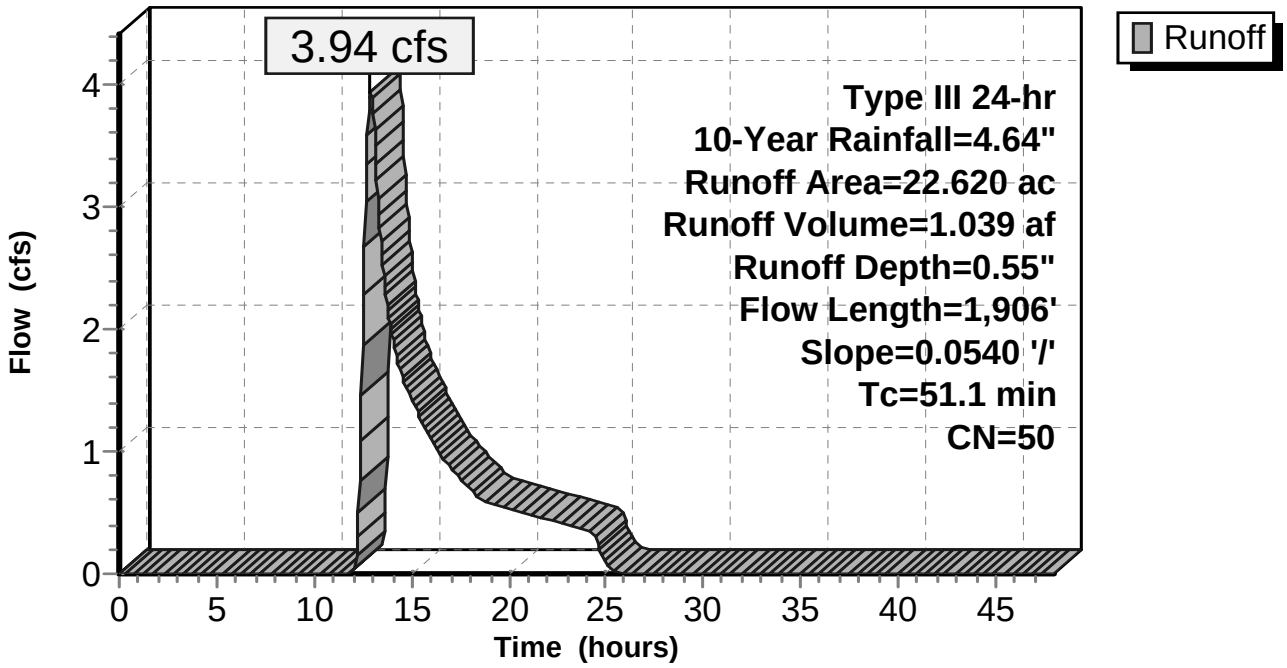
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
7.259	39	Pasture/grassland/range, Good, HSG A
7.409	30	Woods, Good, HSG A
7.594	77	Woods, Good, HSG D
0.358	96	Gravel surface, HSG A
22.620	50	Weighted Average
22.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.1	1,906	0.0540	0.62		**Lag/CN Method,**

Subcatchment DA-1: DA-1

Hydrograph



Summary for Subcatchment DA-2: DA-2

Runoff = 0.02 cfs @ 15.48 hrs, Volume= 0.011 af, Depth= 0.06"

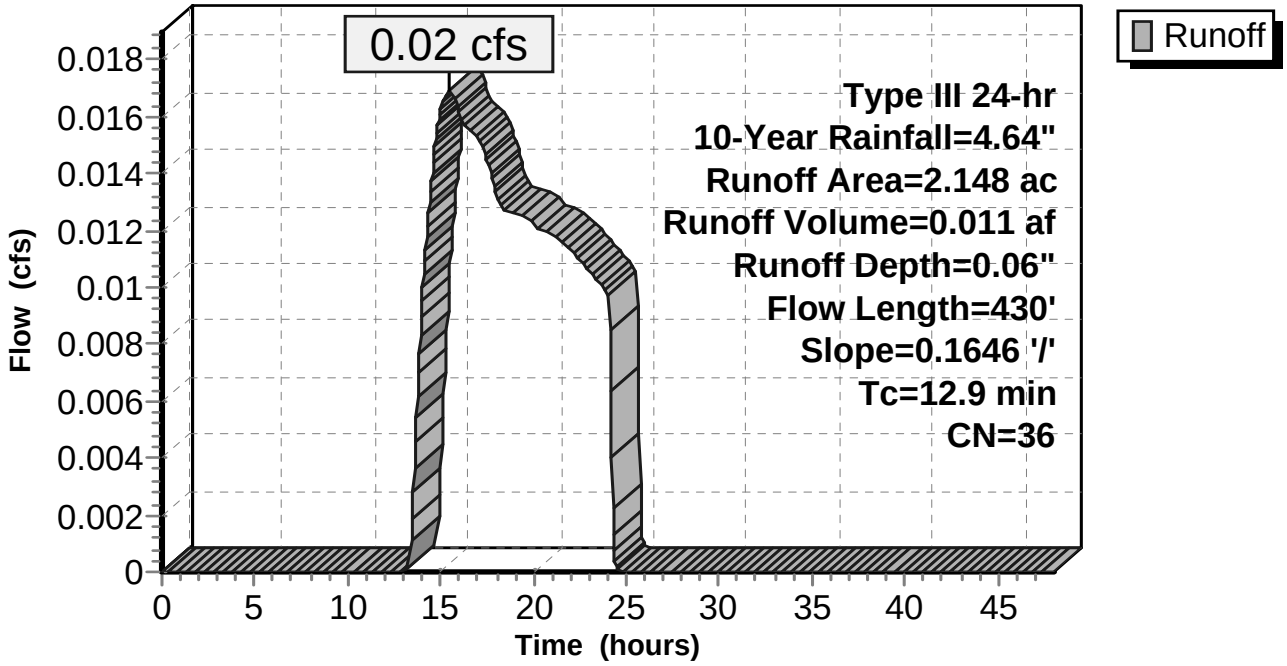
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.748	30	Woods, Good, HSG A
1.389	39	Pasture/grassland/range, Good, HSG A
0.011	98	Unconnected roofs, HSG A
2.148	36	Weighted Average
2.137		99.49% Pervious Area
0.011		0.51% Impervious Area
0.011		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	430	0.1646	0.55		**Lag/CN Method,** Contour Length= 7,700' Interval= 2'

Subcatchment DA-2: DA-2

Hydrograph



Summary for Subcatchment DA-2A: DA-2a

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

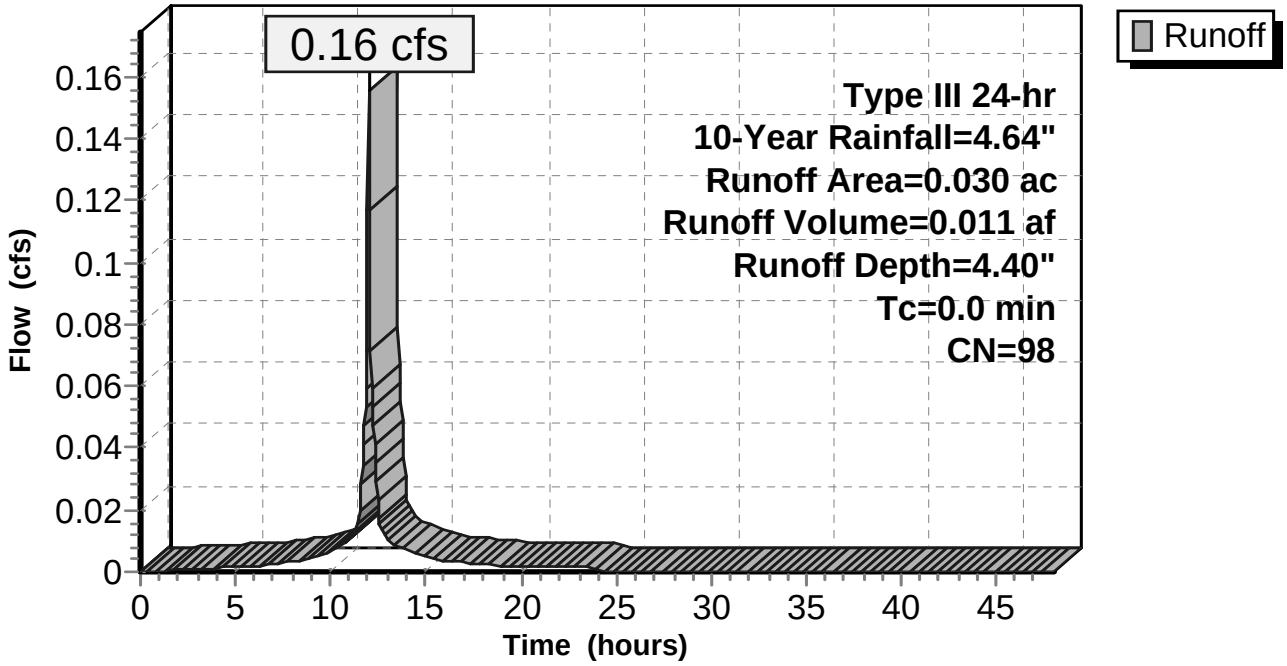
Runoff = 0.16 cfs @ 12.00 hrs, Volume= 0.011 af, Depth= 4.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.030	98	Unconnected roofs, HSG A
0.030		100.00% Impervious Area
0.030		100.00% Unconnected

Subcatchment DA-2A: DA-2a

Hydrograph



Summary for Subcatchment DA-3: DA-3

Runoff = 0.07 cfs @ 15.12 hrs, Volume= 0.045 af, Depth= 0.11"

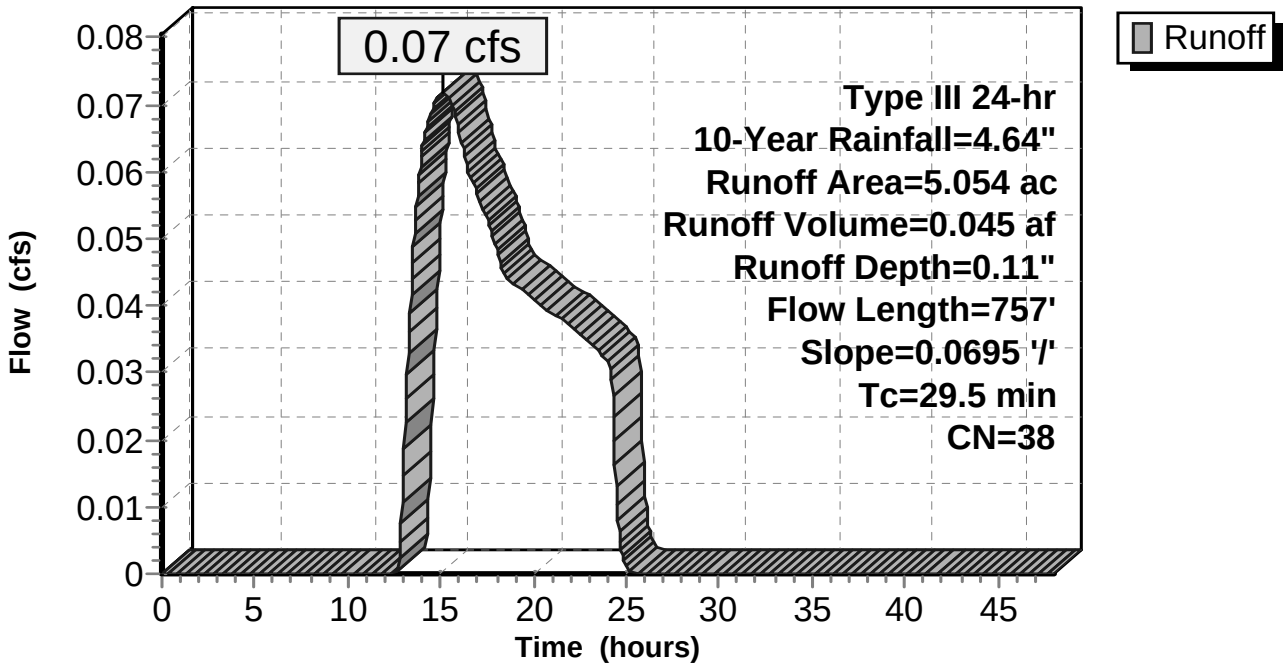
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
4.606	39	Pasture/grassland/range, Good, HSG A
0.448	30	Woods, Good, HSG A
5.054	38	Weighted Average
5.054		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	757	0.0695	0.43		**Lag/CN Method,** Contour Length= 7,650' Interval= 2'

Subcatchment DA-3: DA-3

Hydrograph



Summary for Subcatchment DA-4: DA-4

Runoff = 0.24 cfs @ 12.57 hrs, Volume= 0.062 af, Depth= 0.33"

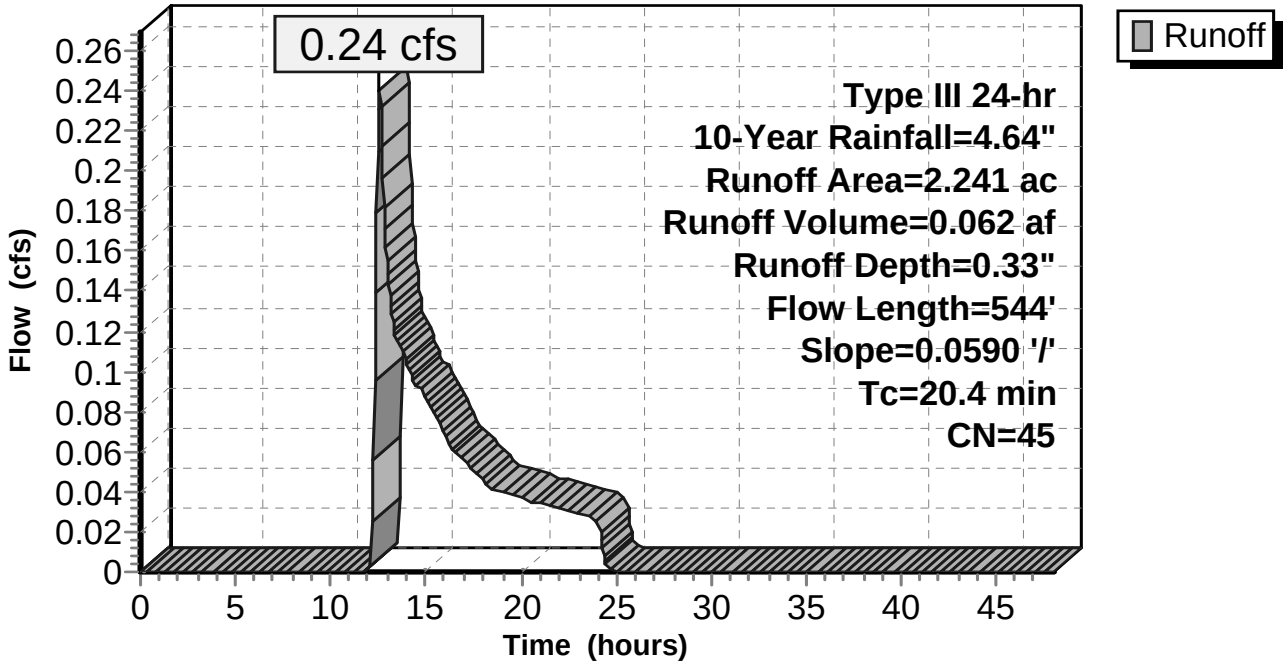
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
1.922	39	Pasture/grassland/range, Good, HSG A
0.080	30	Woods, Good, HSG A
0.140	96	Gravel surface, HSG A
0.099	98	Paved parking, HSG A
2.241	45	Weighted Average
2.142		95.58% Pervious Area
0.099		4.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	544	0.0590	0.44		**Lag/CN Method,** Contour Length= 2,879' Interval= 2'

Subcatchment DA-4: DA-4

Hydrograph



Summary for Subcatchment DA-4A: DA-4a

[49] Hint: Tc<2dt may require smaller dt

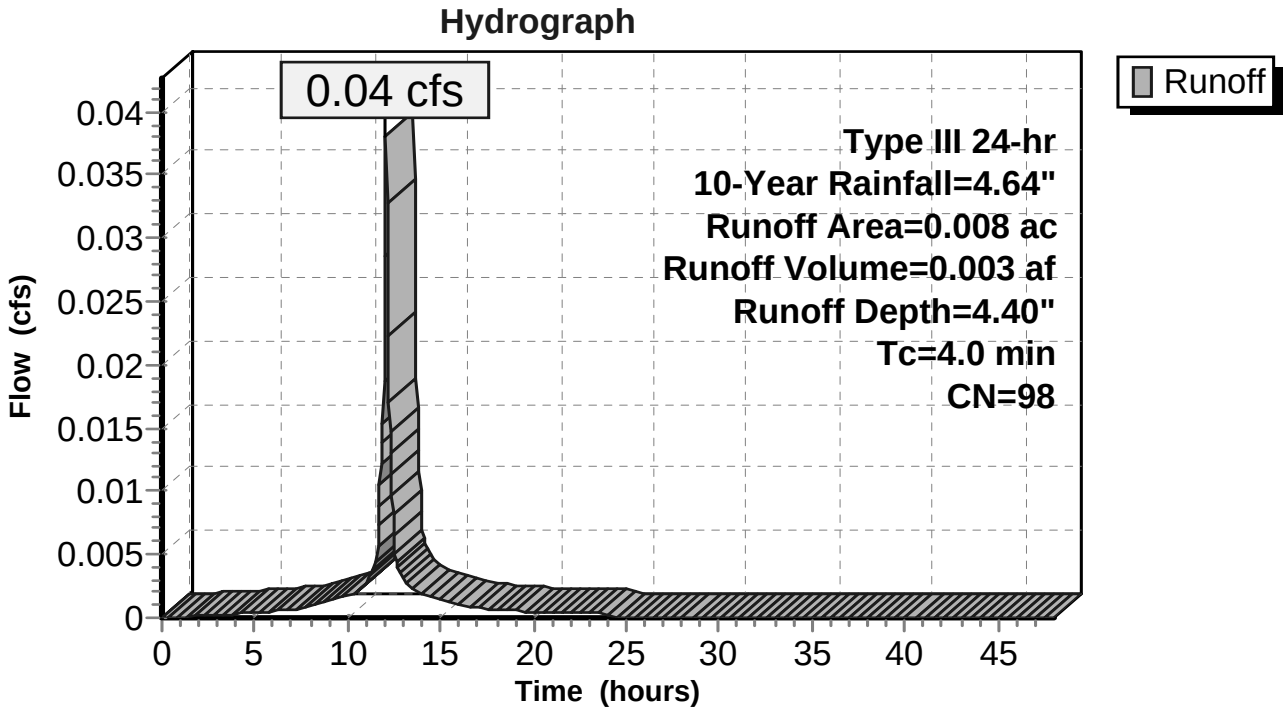
Runoff = 0.04 cfs @ 12.06 hrs, Volume= 0.003 af, Depth= 4.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.008	98	Unconnected roofs, HSG A
0.008		100.00% Impervious Area
0.008		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment DA-4A: DA-4a



Summary for Subcatchment DA-5: DA-5

Runoff = 0.24 cfs @ 12.76 hrs, Volume= 0.093 af, Depth= 0.26"

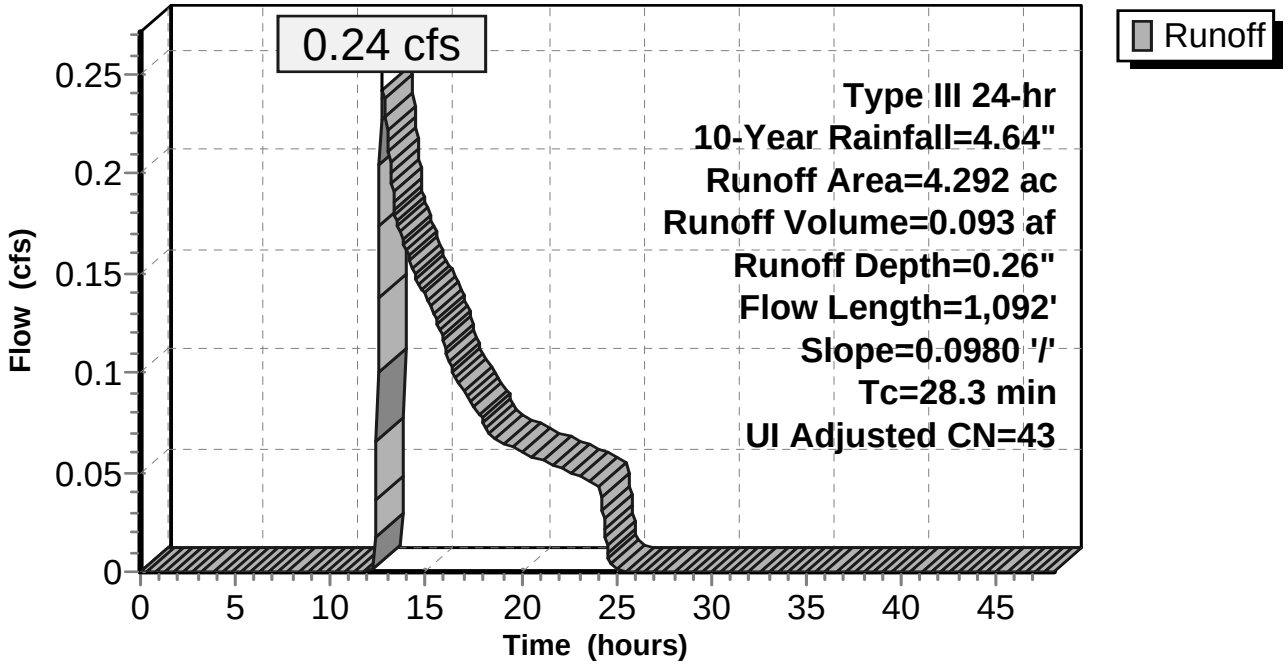
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.206	98	Paved parking, HSG A
1.750	39	Pasture/grassland/range, Good, HSG A
1.884	30	Woods, Good, HSG A
0.188	98	Unconnected roofs, HSG A
0.264	96	Gravel surface, HSG A
4.292	44	Weighted Average, UI Adjusted CN = 43
3.898		90.82% Pervious Area
0.394		9.18% Impervious Area
0.188		47.72% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.3	1,092	0.0980	0.64		**Lag/CN Method,** Contour Length= 9,162' Interval= 2'

Subcatchment DA-5: DA-5

Hydrograph



Summary for Subcatchment DA-6: DA-6

Runoff = 0.83 cfs @ 12.44 hrs, Volume= 0.160 af, Depth= 0.46"

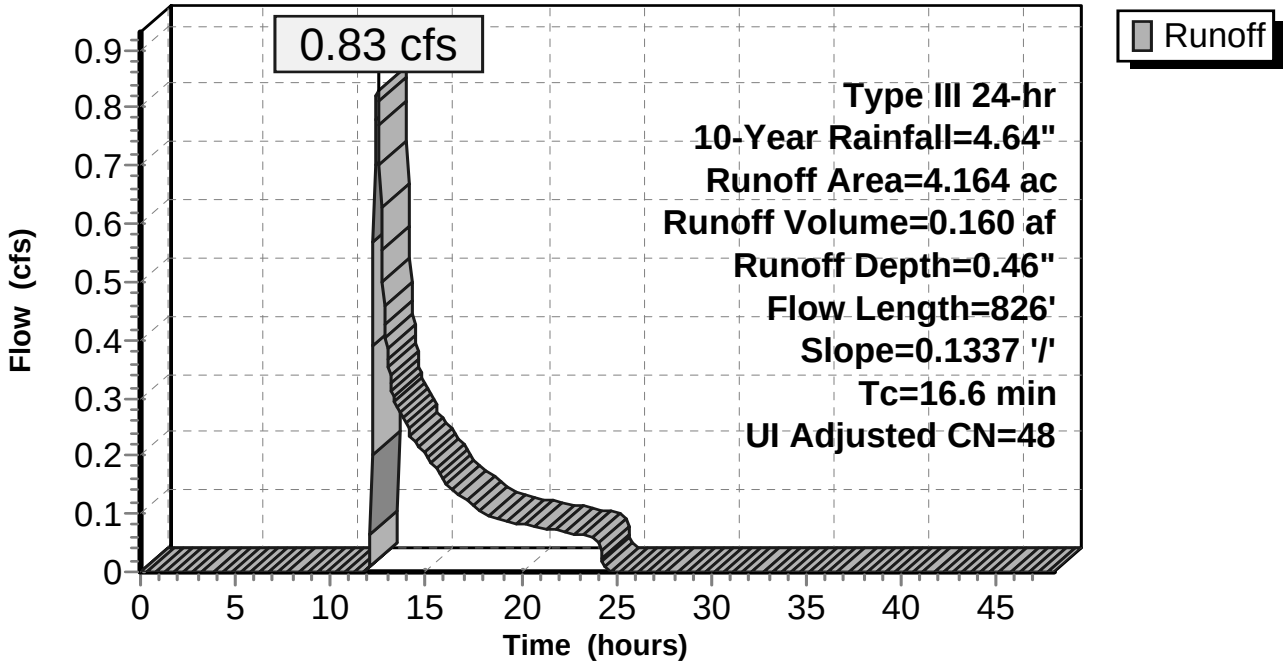
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.297	98	Unconnected roofs, HSG A
3.401	39	Pasture/grassland/range, Good, HSG A
0.466	96	Gravel surface, HSG A
4.164	50	Weighted Average, UI Adjusted CN = 48
3.867		92.87% Pervious Area
0.297		7.13% Impervious Area
0.297		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6	826	0.1337	0.83		**Lag/CN Method,** Contour Length= 12,121' Interval= 2'

Subcatchment DA-6: DA-6

Hydrograph



Summary for Subcatchment DA-7: DA-7

Runoff = 0.11 cfs @ 12.65 hrs, Volume= 0.055 af, Depth= 0.19"

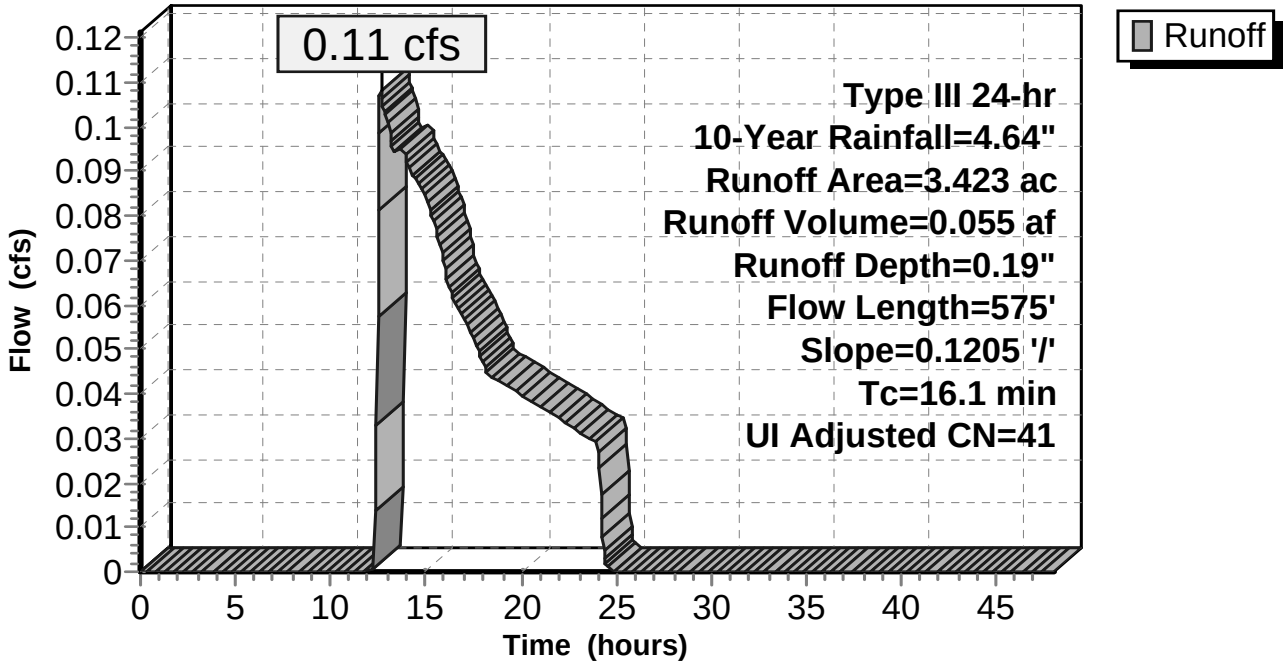
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
2.813	30	Woods, Good, HSG A
0.322	98	Water Surface, HSG A
0.135	96	Gravel surface, HSG A
0.153	98	Unconnected roofs, HSG A
3.423	42	Weighted Average, UI Adjusted CN = 41
2.948		86.12% Pervious Area
0.475		13.88% Impervious Area
0.153		32.21% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	575	0.1205	0.59		**Lag/CN Method,** Contour Length= 8,985' Interval= 2'

Subcatchment DA-7: DA-7

Hydrograph



Summary for Subcatchment DA-8: DA-8

Runoff = 0.05 cfs @ 13.86 hrs, Volume= 0.030 af, Depth= 0.16"

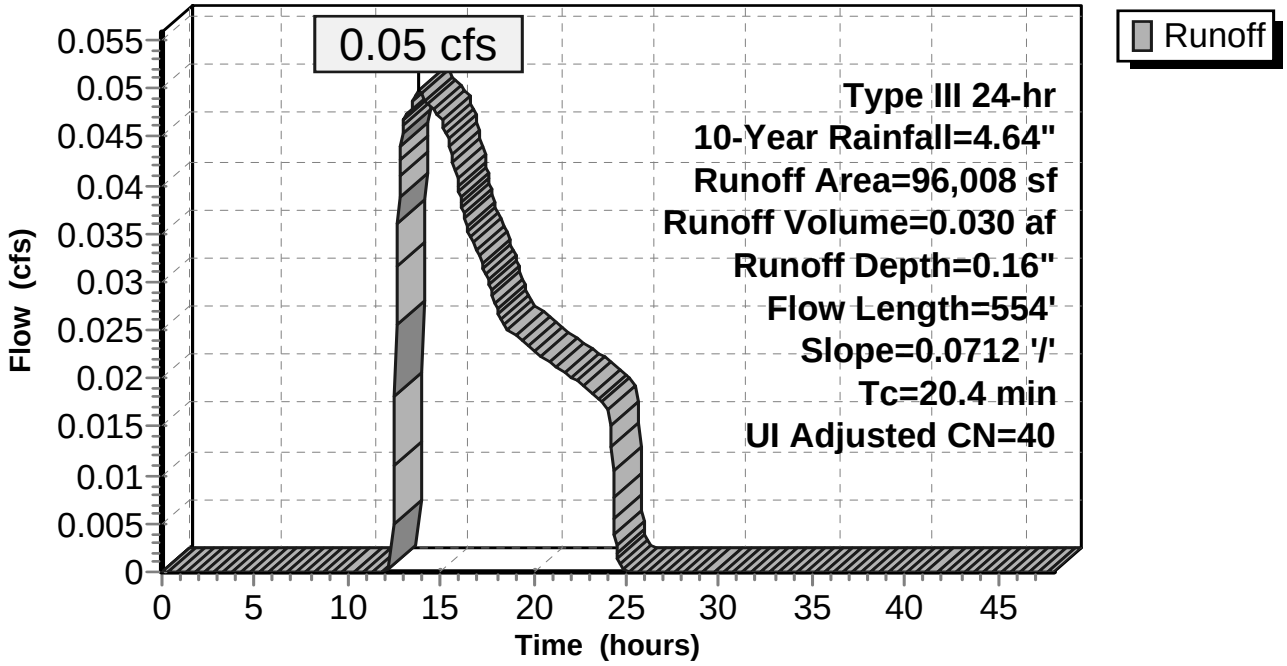
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (sf)	CN	Description
78,957	30	Woods, Good, HSG A
5,881	98	Unconnected roofs, HSG A
11,170	98	Paved parking, HSG A
96,008	42	Weighted Average, UI Adjusted CN = 40
78,957		82.24% Pervious Area
17,051		17.76% Impervious Area
5,881		34.49% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	554	0.0712	0.45		**Lag/CN Method,** Contour Length= 3,416' Interval= 2'

Subcatchment DA-8: DA-8

Hydrograph



Summary for Subcatchment DA-8B ROOF: DA-8b ROOF BR

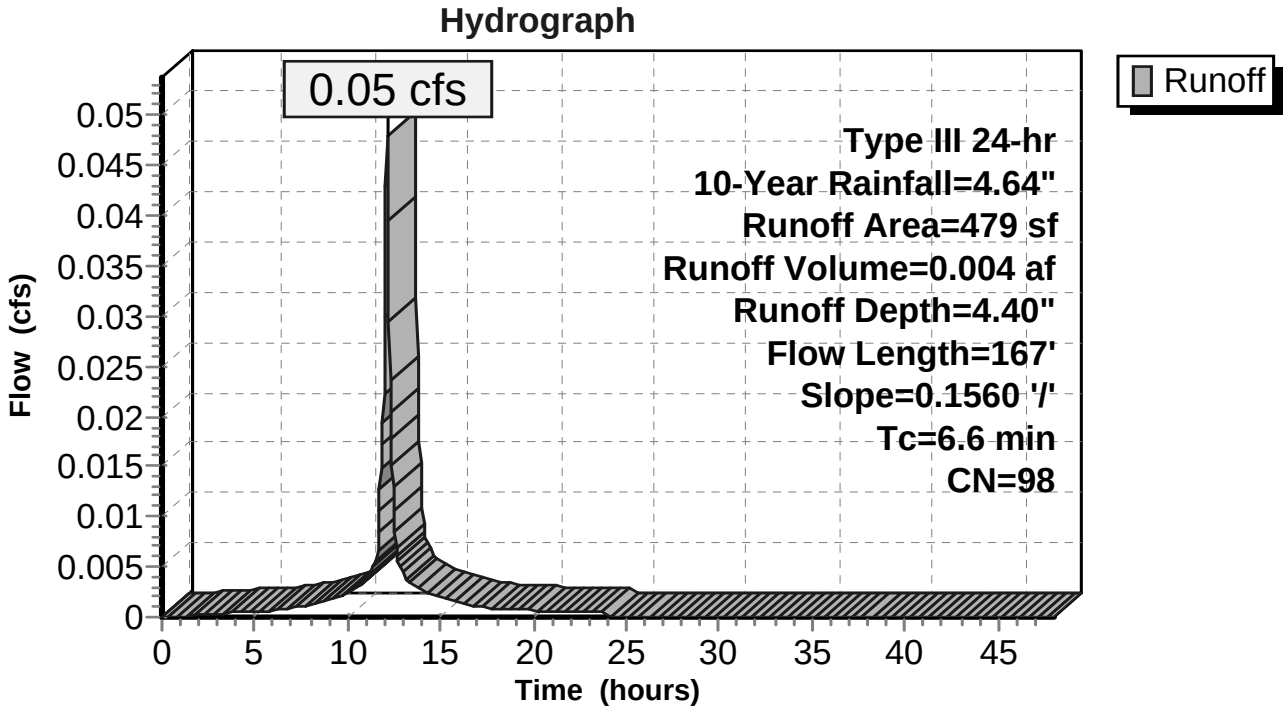
Runoff = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af, Depth= 4.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (sf)	CN	Description
479	98	Roofs, HSG A
479		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	167	0.1560	0.42		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.09"

Subcatchment DA-8B ROOF: DA-8b ROOF BR



Summary for Subcatchment DA-8B ROOF2: DA-8B-roof

[49] Hint: Tc<2dt may require smaller dt

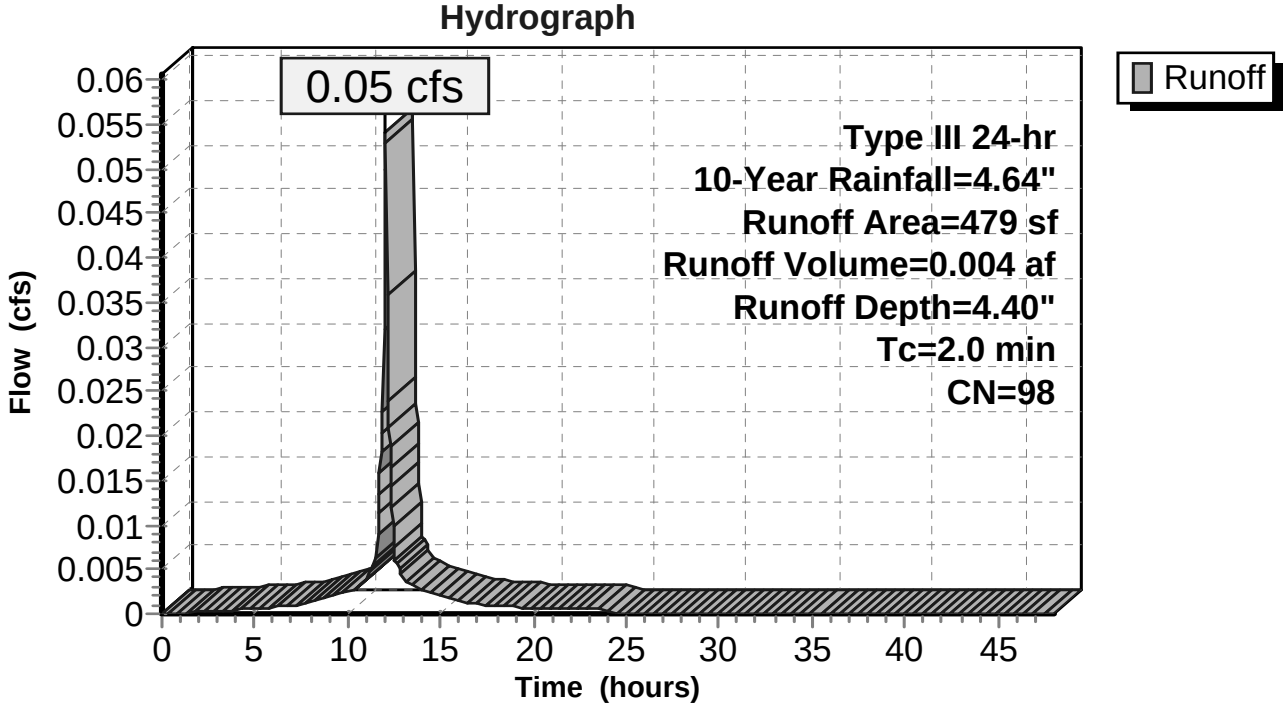
Runoff = 0.05 cfs @ 12.03 hrs, Volume= 0.004 af, Depth= 4.40"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (sf)	CN	Description
479	98	Unconnected roofs, HSG A
479		100.00% Impervious Area
479		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment DA-8B ROOF2: DA-8B-roof



Summary for Subcatchment DA-9: DA-9

Runoff = 0.11 cfs @ 15.89 hrs, Volume= 0.073 af, Depth= 0.11"

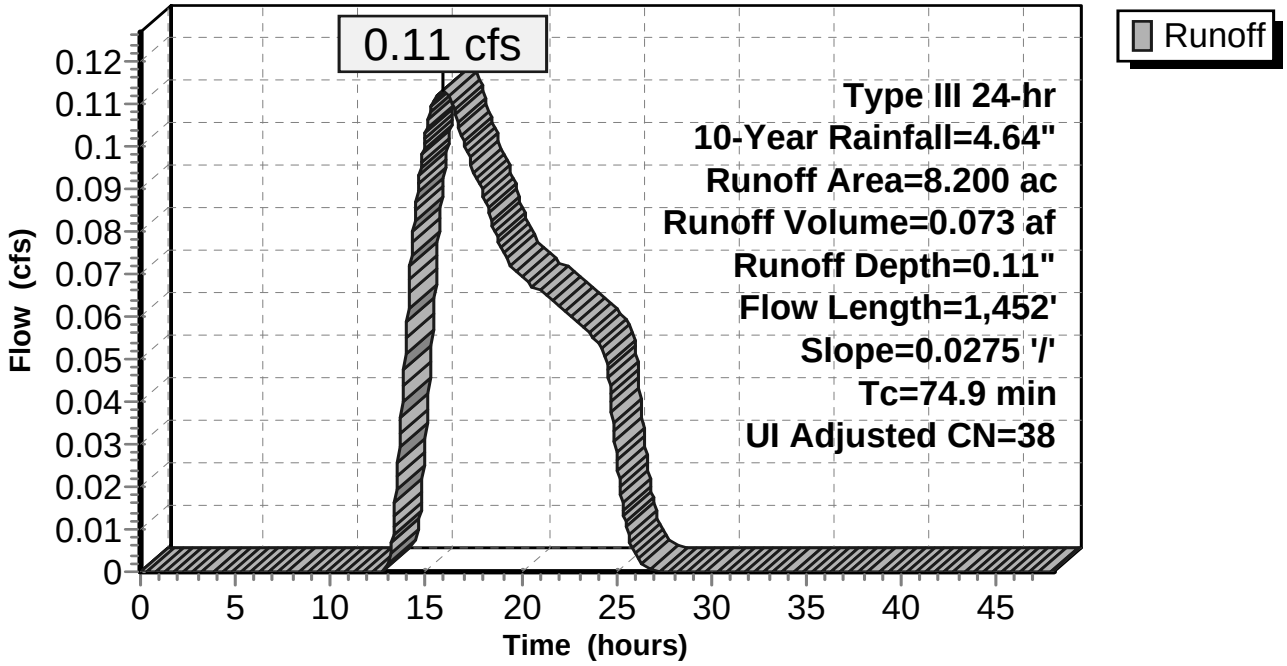
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.64"

Area (ac)	CN	Description
0.460	96	Gravel surface, HSG A
0.390	98	Unconnected roofs, HSG A
4.610	30	Woods, Good, HSG A
2.740	39	Pasture/grassland/range, Good, HSG A
8.200	40	Weighted Average, UI Adjusted CN = 38
7.810		95.24% Pervious Area
0.390		4.76% Impervious Area
0.390		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
74.9	1,452	0.0275	0.32		**Lag/CN Method,** Contour Length= 4,905' Interval= 2'

Subcatchment DA-9: DA-9

Hydrograph



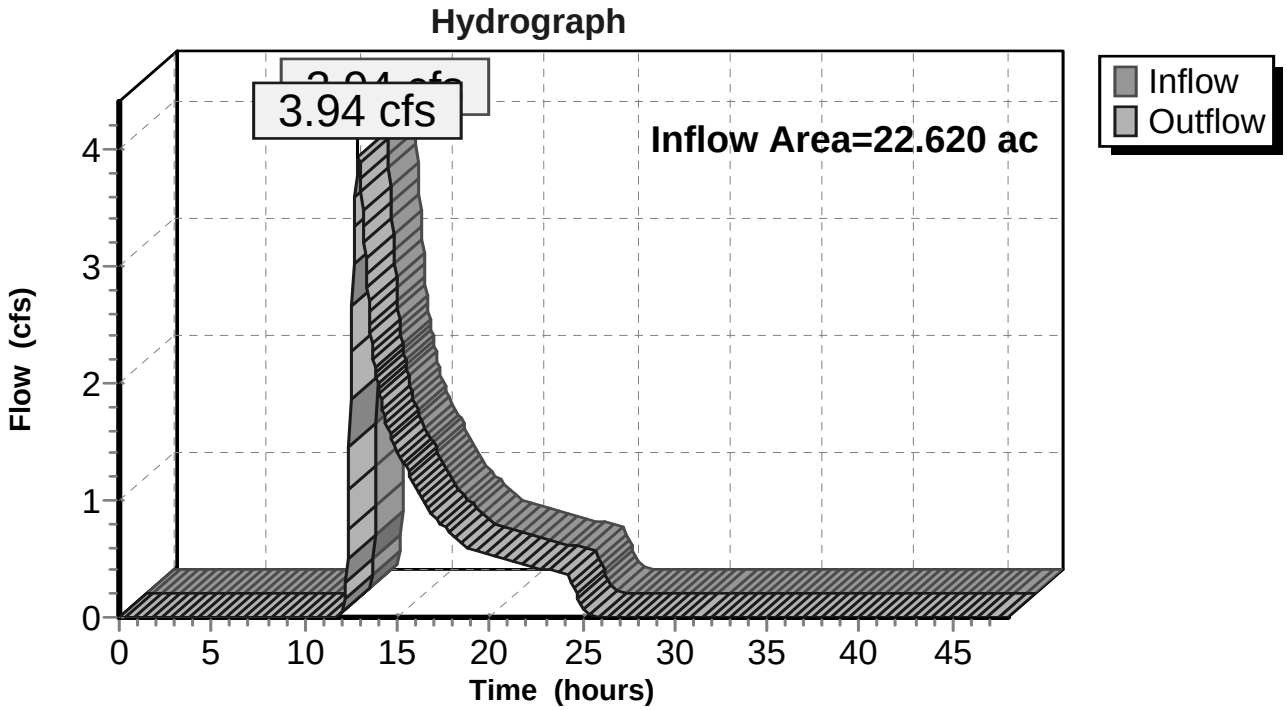
Summary for Reach 3R: DP-1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 22.620 ac, 0.00% Impervious, Inflow Depth = 0.55" for 10-Year event
Inflow = 3.94 cfs @ 12.91 hrs, Volume= 1.039 af
Outflow = 3.94 cfs @ 12.91 hrs, Volume= 1.039 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 3R: DP-1



Summary for Reach CS-1: CS-1

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth = 4.40" for 10-Year event
Inflow = 0.05 cfs @ 12.03 hrs, Volume= 0.004 af
Outflow = 0.05 cfs @ 12.05 hrs, Volume= 0.004 af, Atten= 3%, Lag= 1.0 min

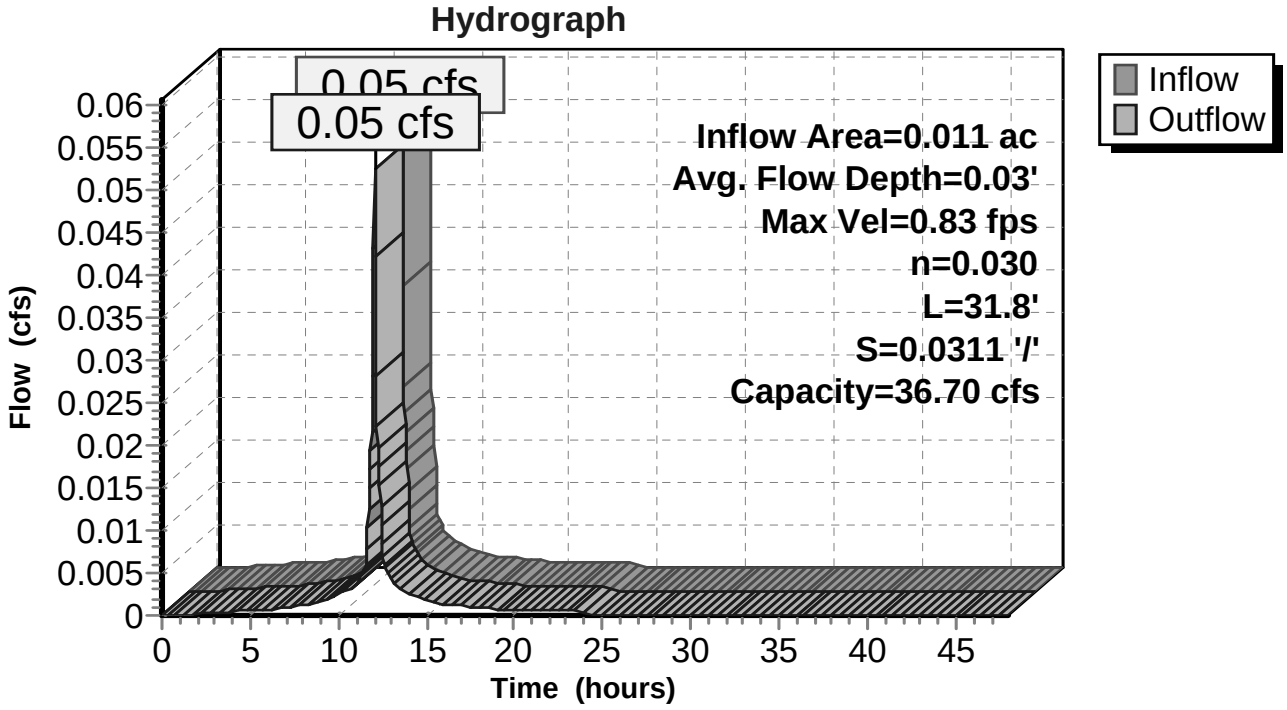
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.83 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 0.41 fps, Avg. Travel Time= 1.3 min

Peak Storage= 2 cf @ 12.04 hrs
Average Depth at Peak Storage= 0.03'
Bank-Full Depth= 1.00' Flow Area= 6.0 sf, Capacity= 36.70 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 4.0 '/' Top Width= 10.00'
Length= 31.8' Slope= 0.0311 '/'
Inlet Invert= 493.00', Outlet Invert= 492.01'

‡

Reach CS-1: CS-1



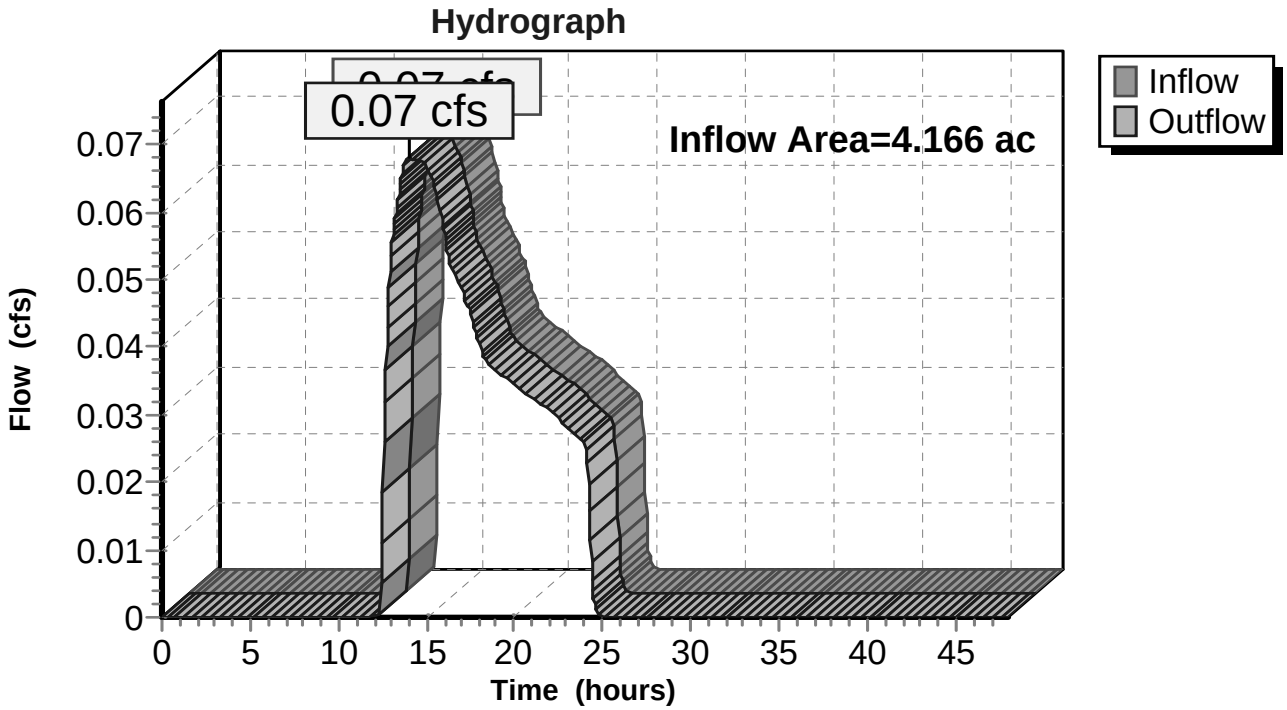
Summary for Reach DP-2: DP-2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.166 ac, 14.86% Impervious, Inflow Depth = 0.12" for 10-Year event
Inflow = 0.07 cfs @ 14.00 hrs, Volume= 0.042 af
Outflow = 0.07 cfs @ 14.00 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-2: DP-2



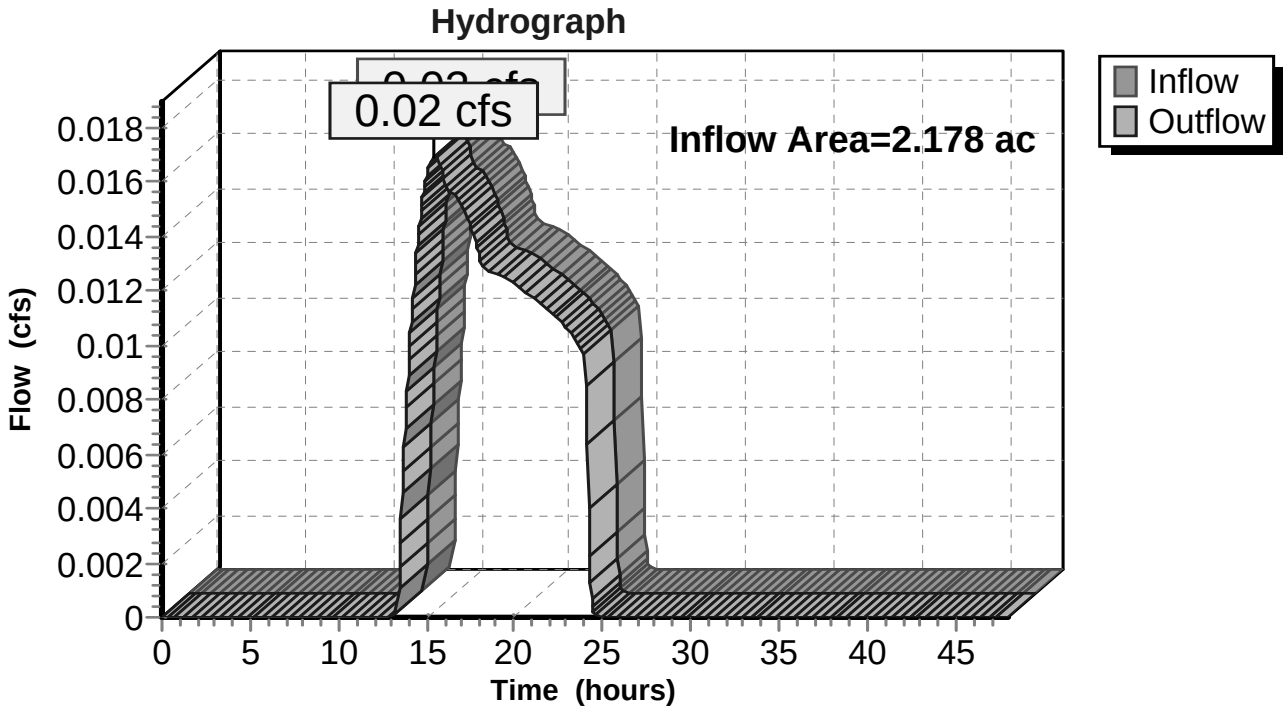
Summary for Reach DP-3: DP-3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.178 ac, 1.88% Impervious, Inflow Depth = 0.06" for 10-Year event
Inflow = 0.02 cfs @ 15.48 hrs, Volume= 0.011 af
Outflow = 0.02 cfs @ 15.48 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-3: DP-3



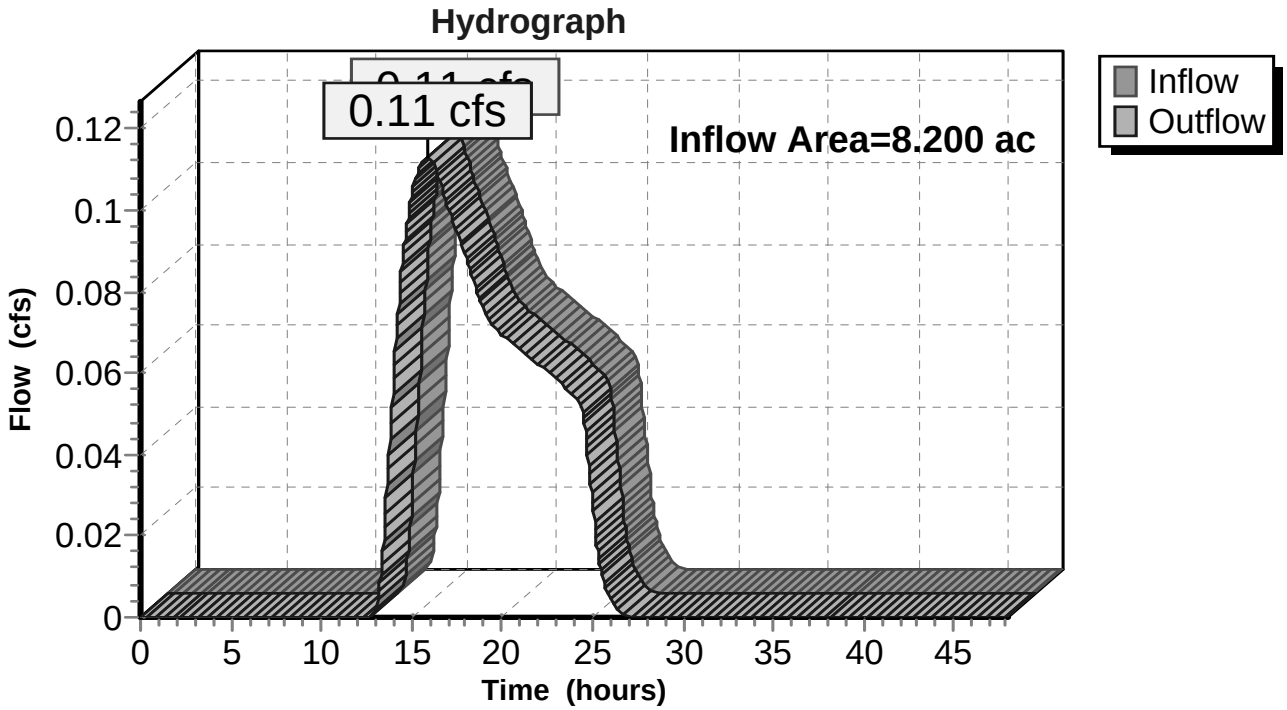
Summary for Reach DP-4: DP-4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.200 ac, 4.76% Impervious, Inflow Depth = 0.11" for 10-Year event
Inflow = 0.11 cfs @ 15.89 hrs, Volume= 0.073 af
Outflow = 0.11 cfs @ 15.89 hrs, Volume= 0.073 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-4: DP-4

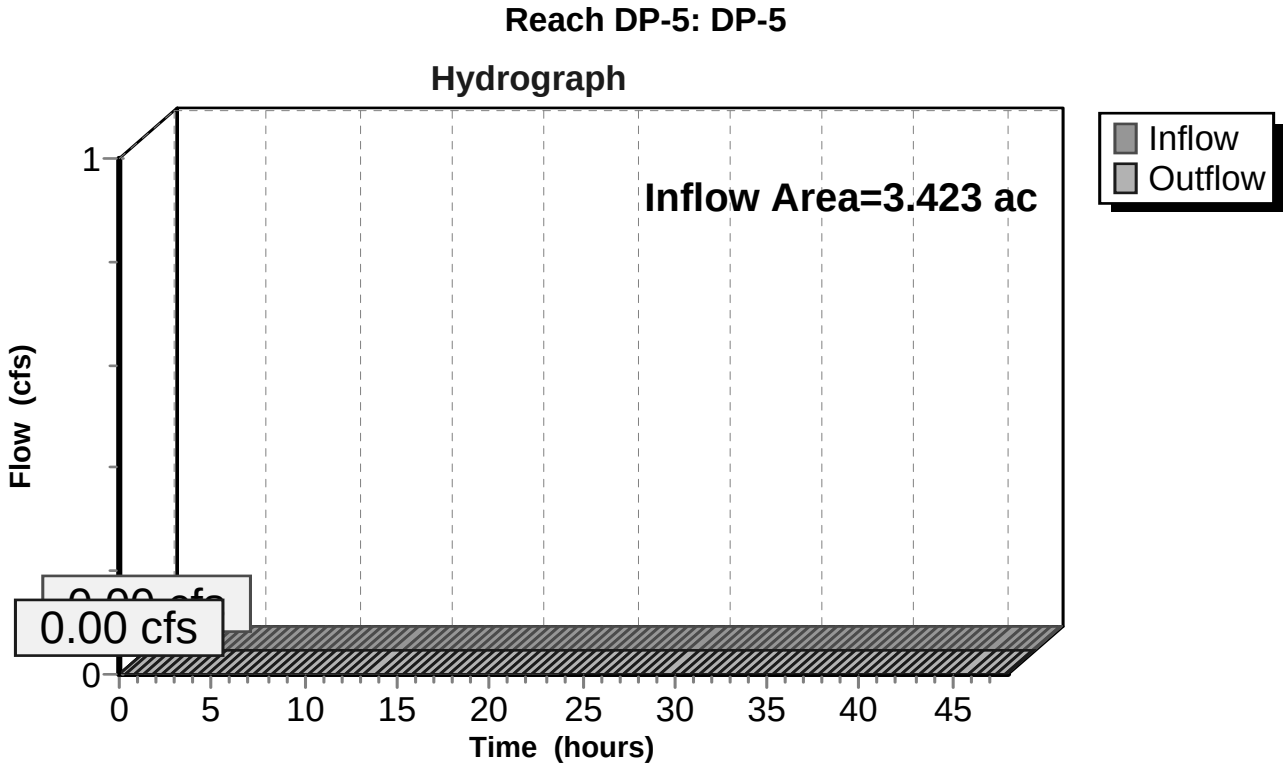


Summary for Reach DP-5: DP-5

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.423 ac, 13.88% Impervious, Inflow Depth = 0.00" for 10-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs



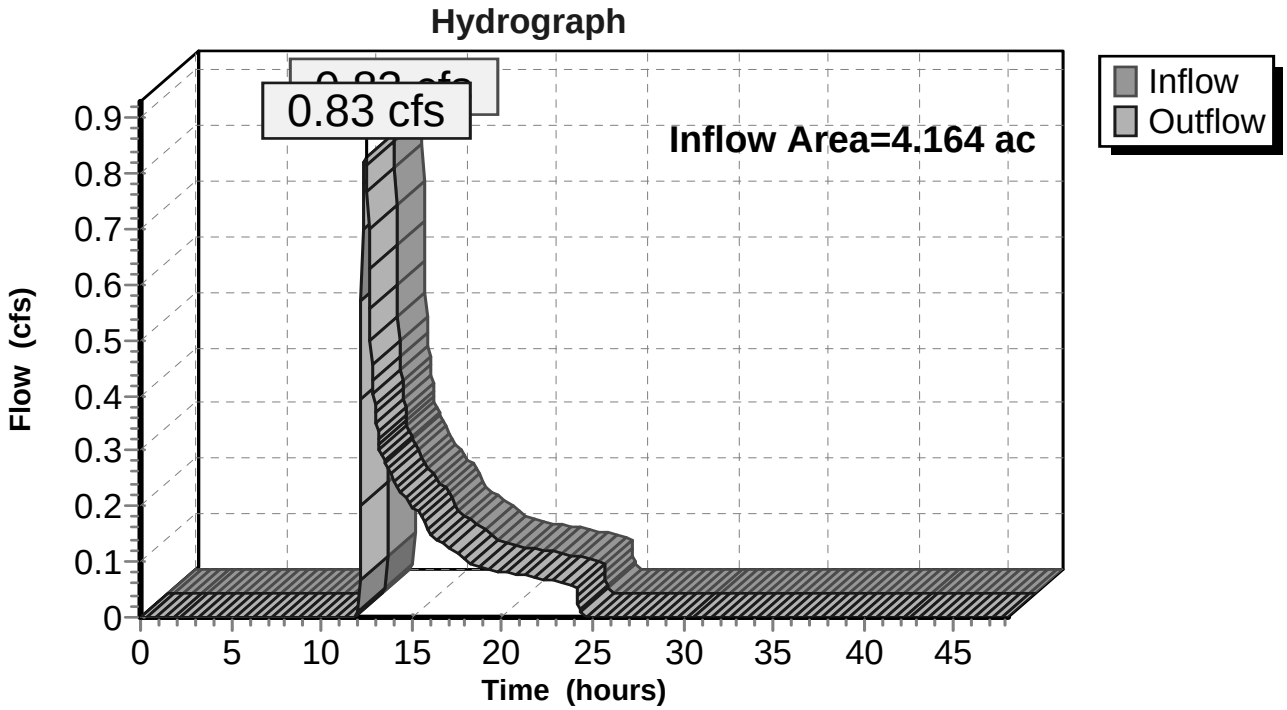
Summary for Reach DP-6: DP-6

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.164 ac, 7.13% Impervious, Inflow Depth = 0.46" for 10-Year event
Inflow = 0.83 cfs @ 12.44 hrs, Volume= 0.160 af
Outflow = 0.83 cfs @ 12.44 hrs, Volume= 0.160 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-6: DP-6



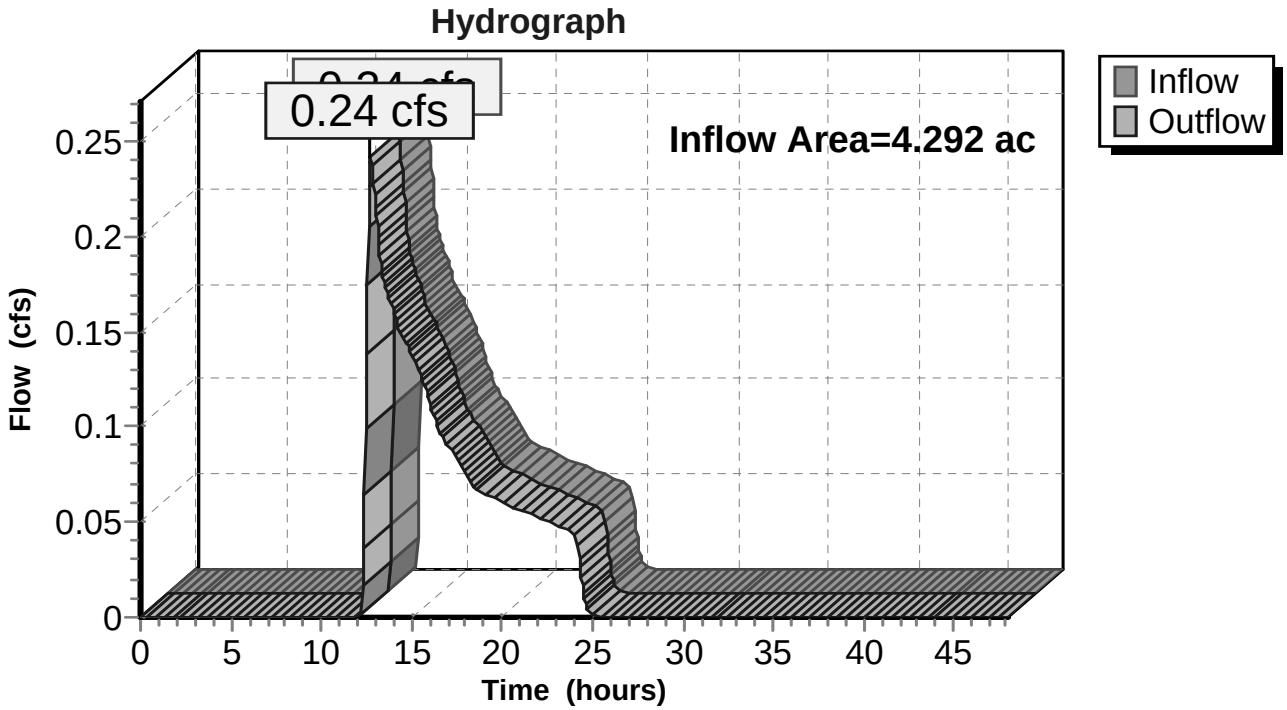
Summary for Reach DP-7: DP-7

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.292 ac, 9.18% Impervious, Inflow Depth = 0.26" for 10-Year event
Inflow = 0.24 cfs @ 12.76 hrs, Volume= 0.093 af
Outflow = 0.24 cfs @ 12.76 hrs, Volume= 0.093 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-7: DP-7



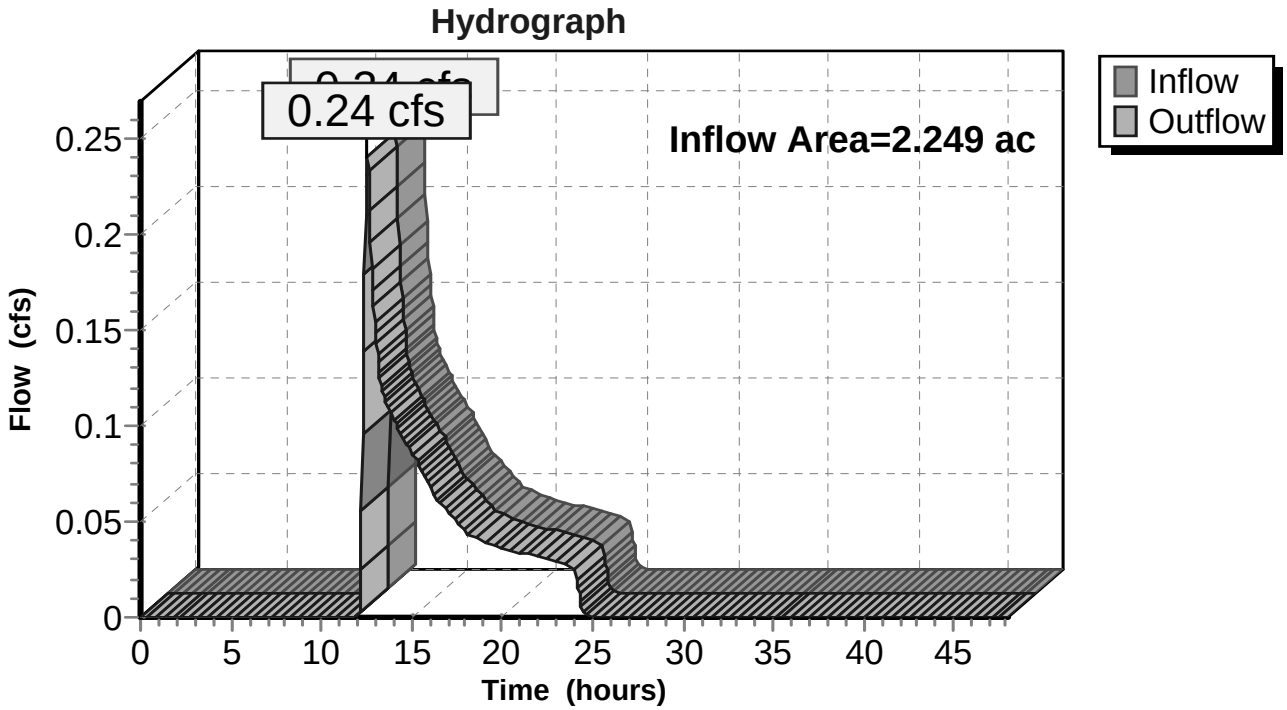
Summary for Reach DP-8: DP-8

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.249 ac, 4.76% Impervious, Inflow Depth = 0.33" for 10-Year event
Inflow = 0.24 cfs @ 12.57 hrs, Volume= 0.062 af
Outflow = 0.24 cfs @ 12.57 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-8: DP-8



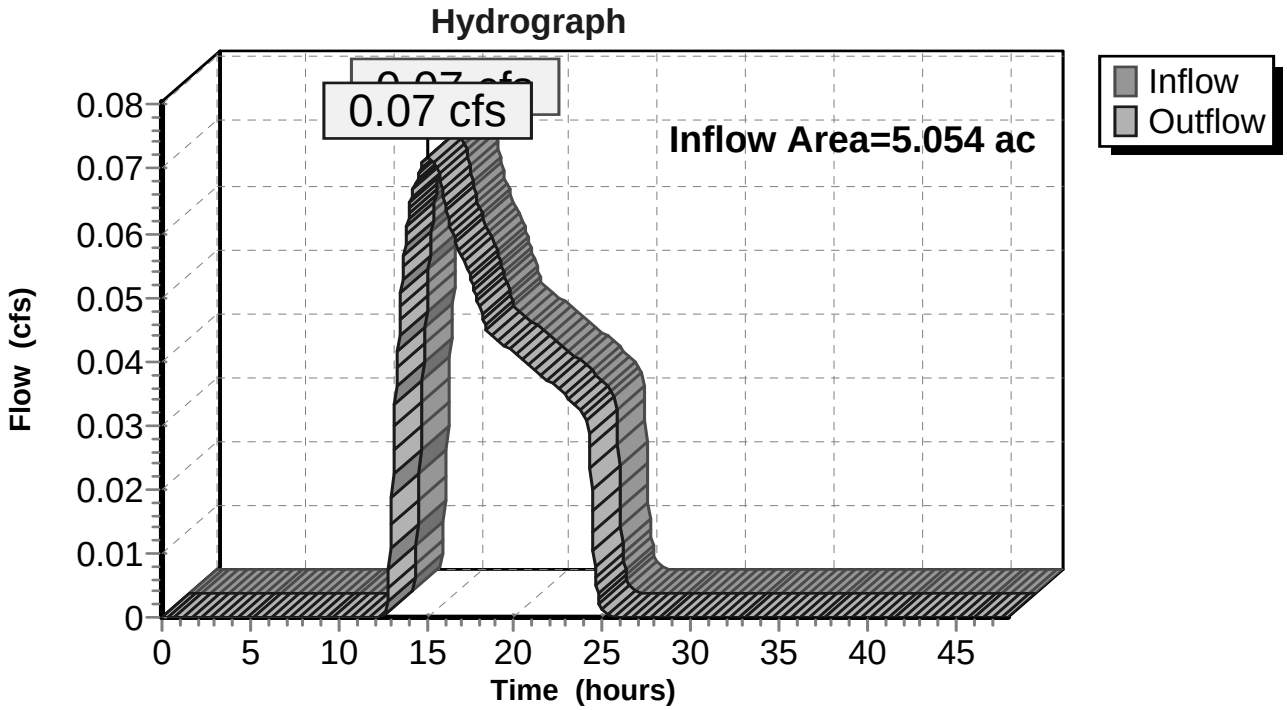
Summary for Reach DP-9: DP-9

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.054 ac, 0.00% Impervious, Inflow Depth = 0.11" for 10-Year event
Inflow = 0.07 cfs @ 15.12 hrs, Volume= 0.045 af
Outflow = 0.07 cfs @ 15.12 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-9: DP-9



Summary for Pond BR-1: BR-1

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth = 4.40" for 10-Year event
Inflow = 0.05 cfs @ 12.09 hrs, Volume= 0.004 af
Outflow = 0.00 cfs @ 14.54 hrs, Volume= 0.004 af, Atten= 95%, Lag= 146.6 min
Discarded = 0.00 cfs @ 14.54 hrs, Volume= 0.004 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 5
Peak Elev= 498.58' @ 14.54 hrs Surf.Area= 0.006 ac Storage= 0.002 af

Plug-Flow detention time= 370.7 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 370.5 min (1,120.3 - 749.8)

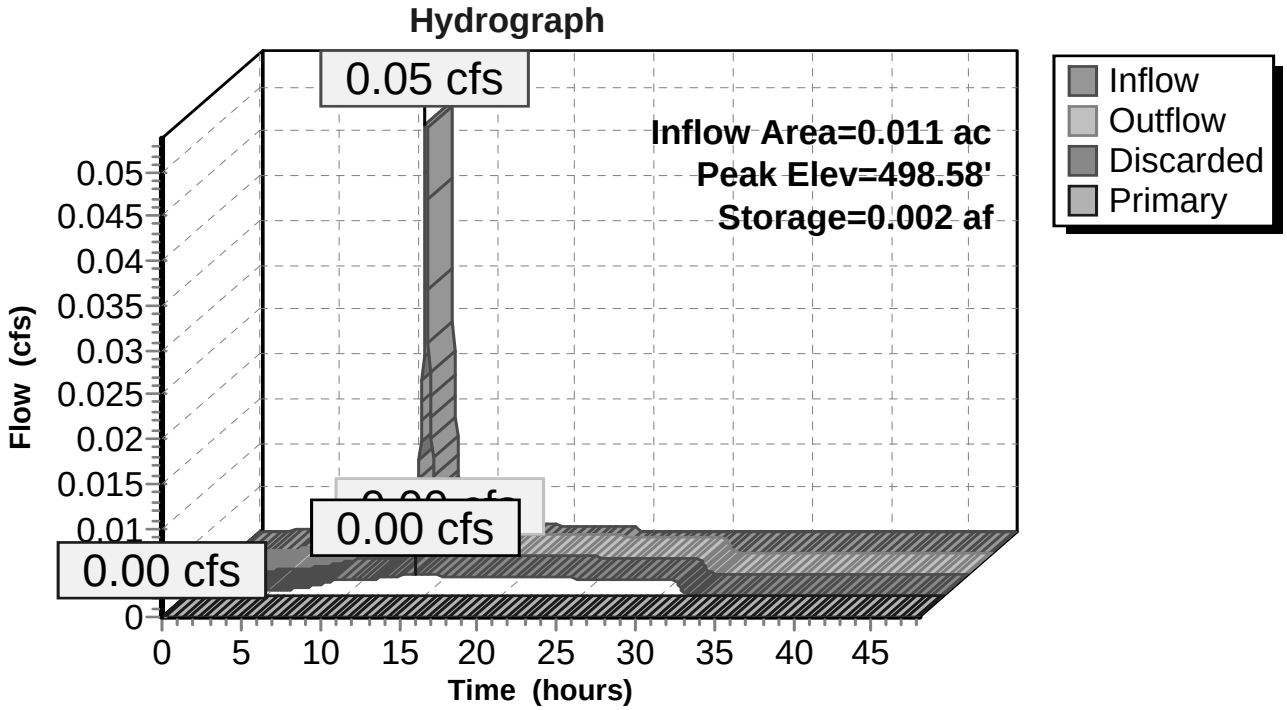
Volume	Invert	Avail.Storage	Storage Description
#1	497.00'	0.004 af	**20.00'W x 14.10'L x 3.00'H Prismatoid** 0.019 af Overall x 20.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	497.00'	**0.250 in/hr Exfiltration over Wetted area**
#2	Primary	500.00'	**76.7' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.00 cfs @ 14.54 hrs HW=498.58' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=497.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond BR-1: BR-1


Hydrograph
0.05 cfs
0.00 cfs
0.00 cfs
Inflow Area=0.011 ac
Peak Elev=498.58'
Storage=0.002 af
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
0.045
0.05
0
5
10
15
20
25
30
35
40
45
Time (hours)

Summary for Pond IB-1: IB-1

Inflow Area = 0.030 ac,100.00% Impervious, Inflow Depth = 4.40" for 10-Year event
Inflow = 0.16 cfs @ 12.00 hrs, Volume= 0.011 af
Outflow = 0.15 cfs @ 12.00 hrs, Volume= 0.011 af, Atten= 1%, Lag= 0.0 min
Discarded = 0.15 cfs @ 12.00 hrs, Volume= 0.011 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 512.25' @ 12.00 hrs Surf.Area= 0.043 ac Storage= 0.000 af

Plug-Flow detention time= 0.1 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (743.9 - 743.7)

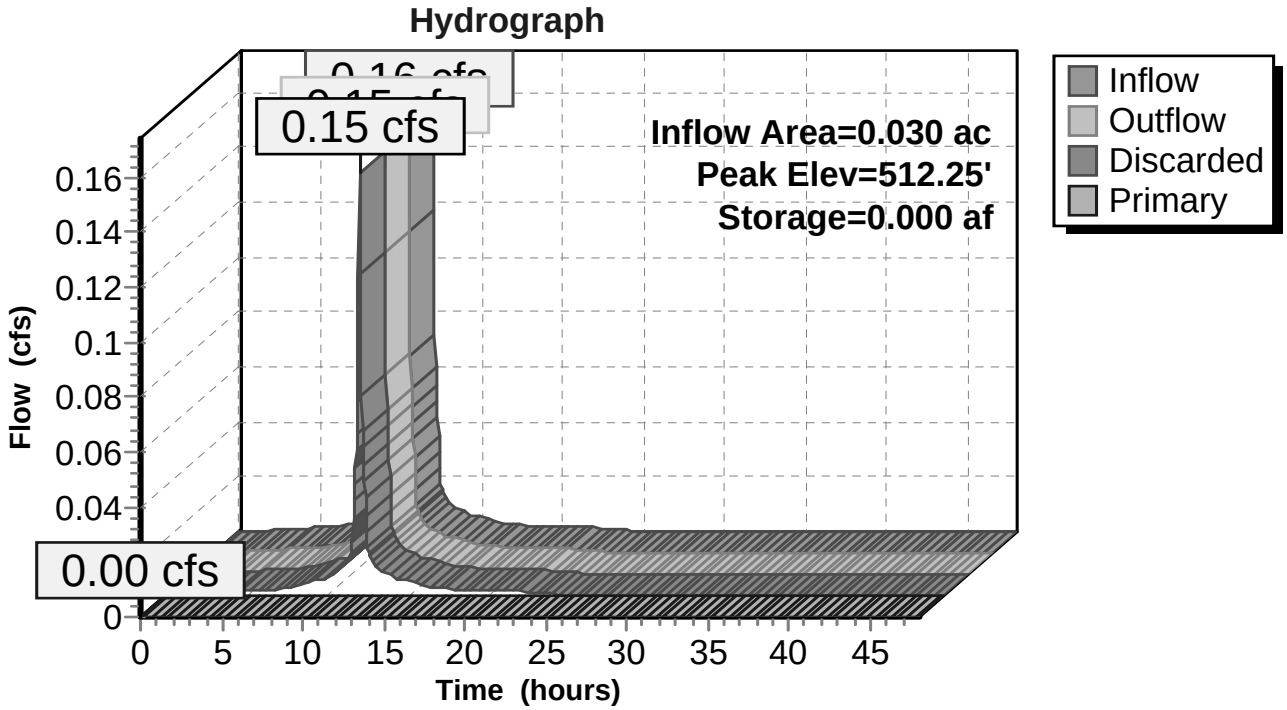
Volume	Invert	Avail.Storage	Storage Description
#1	512.25'	0.033 af	**31.00'W x 61.00'L x 1.50'H Infiltration Trench** 0.065 af Overall x 50.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	512.25'	**64.000 in/hr Exfiltration over Wetted area**
#2	Primary	514.75'	**184.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=2.80 cfs @ 12.00 hrs HW=512.25' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 2.80 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=512.25' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond IB-1: IB-1


Hydrograph
0.15 cfs
0.00 cfs
Inflow Area=0.030 ac
Peak Elev=512.25'
Storage=0.000 af
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0
0 5 10 15 20 25 30 35 40 45
Time (hours)

Summary for Pond IB-3: IB-3

Inflow Area = 3.423 ac, 13.88% Impervious, Inflow Depth = 0.19" for 10-Year event
Inflow = 0.11 cfs @ 12.65 hrs, Volume= 0.055 af
Outflow = 0.11 cfs @ 12.65 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.2 min
Discarded = 0.11 cfs @ 12.65 hrs, Volume= 0.055 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 482.00' @ 12.65 hrs Surf.Area= 2,861 sf Storage= 1 cf

Plug-Flow detention time= 0.1 min calculated for 0.055 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (1,016.8 - 1,016.7)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	8,771 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

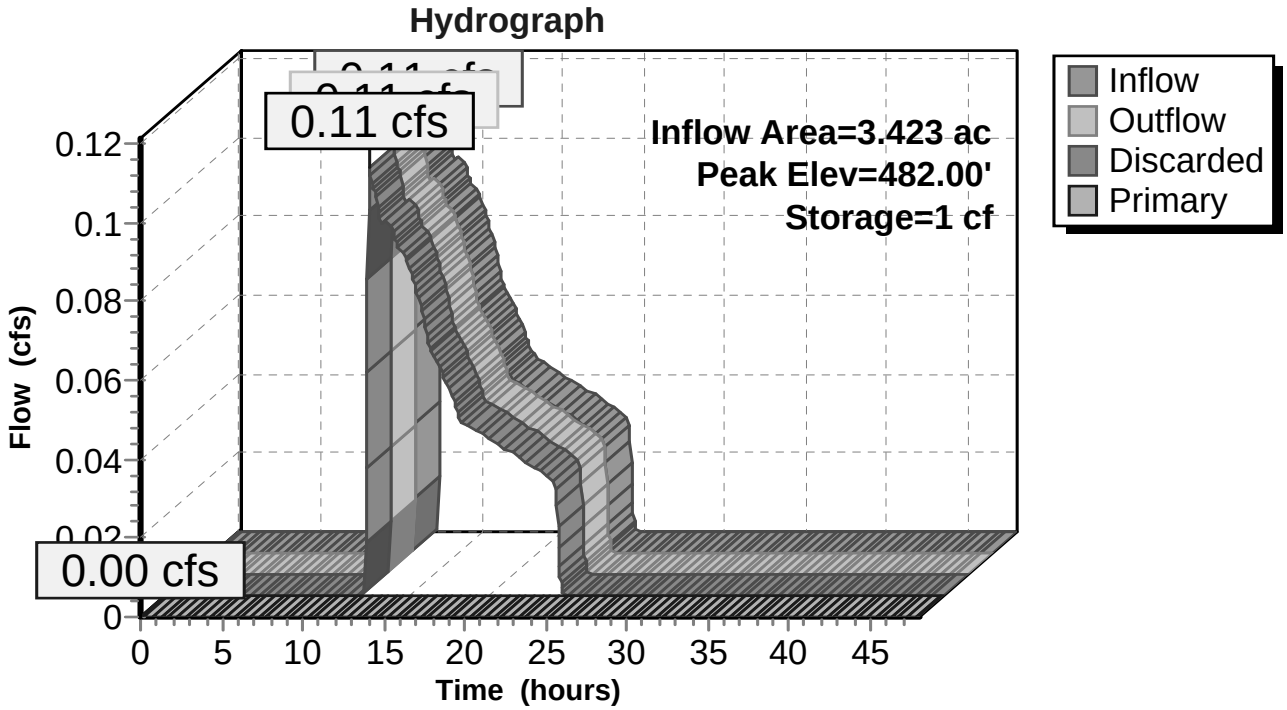
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
482.00	2,861	441.7	0	0	2,861
484.00	6,113	900.0	8,771	8,771	51,812

Device	Routing	Invert	Outlet Devices
#1	Discarded	482.00'	**144.000 in/hr Exfiltration over Wetted area**
#2	Primary	484.50'	**275.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=9.55 cfs @ 12.65 hrs HW=482.00' (Free Discharge)
1=Exfiltration (Exfiltration Controls 9.55 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=482.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond IB-3: IB-3


Hydrograph
0.11 cfs
0.00 cfs
Inflow Area=3.423 ac
Peak Elev=482.00'
Storage=1 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.12
0.1
0.08
0.06
0.04
0
0 5 10 15 20 25 30 35 40 45
Time (hours)

Summary for Pond IT-1: IT-1

Inflow Area = 0.008 ac,100.00% Impervious, Inflow Depth = 4.40" for 10-Year event
Inflow = 0.04 cfs @ 12.06 hrs, Volume= 0.003 af
Outflow = 0.04 cfs @ 12.06 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.04 cfs @ 12.06 hrs, Volume= 0.003 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 514.75' @ 12.06 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= 0.1 min calculated for 0.003 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (747.5 - 747.4)

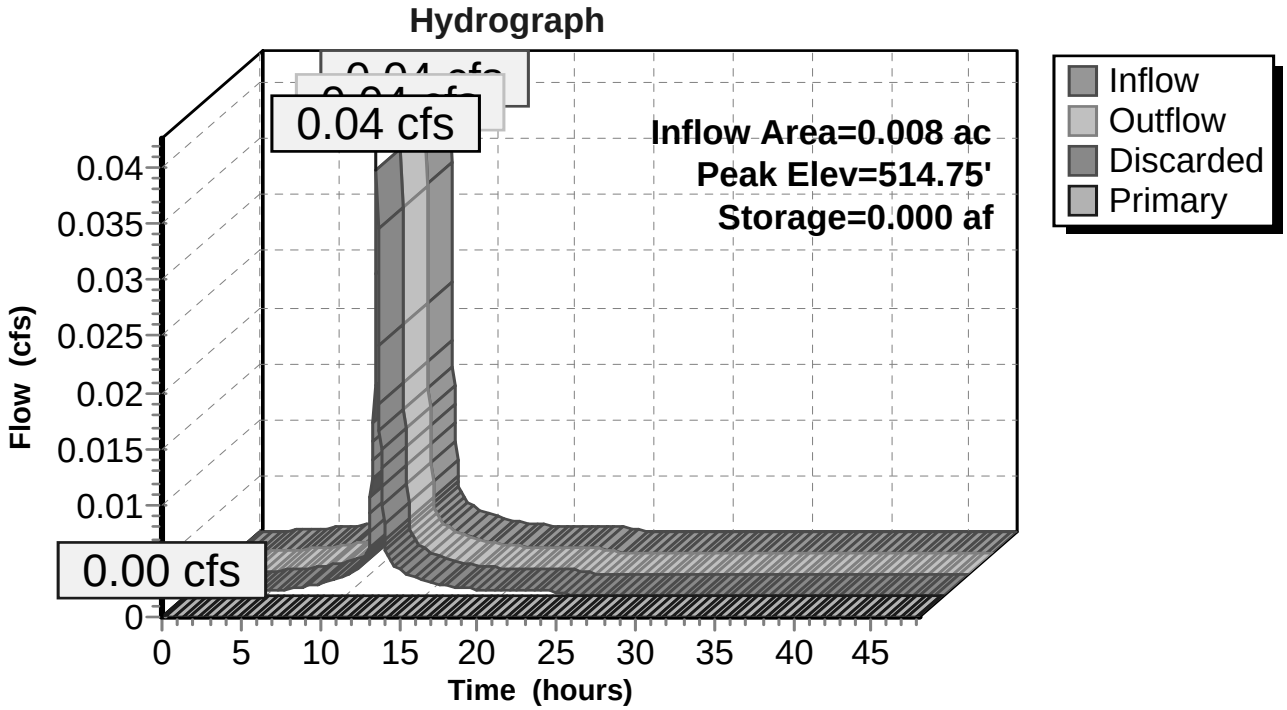
Volume	Invert	Avail.Storage	Storage Description
#1	514.75'	0.003 af	**2.00'W x 102.00'L x 1.50'H Prismatoid** 0.007 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	514.75'	**64.000 in/hr Exfiltration over Wetted area**
#2	Primary	515.25'	**102.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Discarded OutFlow Max=0.30 cfs @ 12.06 hrs HW=514.75' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.30 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=514.75' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond IT-1: IT-1


Hydrograph
0.04 cfs
0.00 cfs
Inflow Area=0.008 ac
Peak Elev=514.75'
Storage=0.000 af
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0
0 5 10 15 20 25 30 35 40 45
Time (hours)

Summary for Pond IT-2/3: IT-2 AND IT-3

Inflow Area = 0.527 ac, 13.82% Impervious, Inflow Depth = 0.19" for 10-Year event
Inflow = 0.02 cfs @ 12.45 hrs, Volume= 0.008 af
Outflow = 0.02 cfs @ 12.45 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.02 cfs @ 12.45 hrs, Volume= 0.008 af
Primary = 0.00 cfs @ 12.45 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 505.00' @ 12.45 hrs Surf.Area= 0.007 ac Storage= 0.000 af

Plug-Flow detention time= 0.0 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (1,006.1 - 1,006.0)

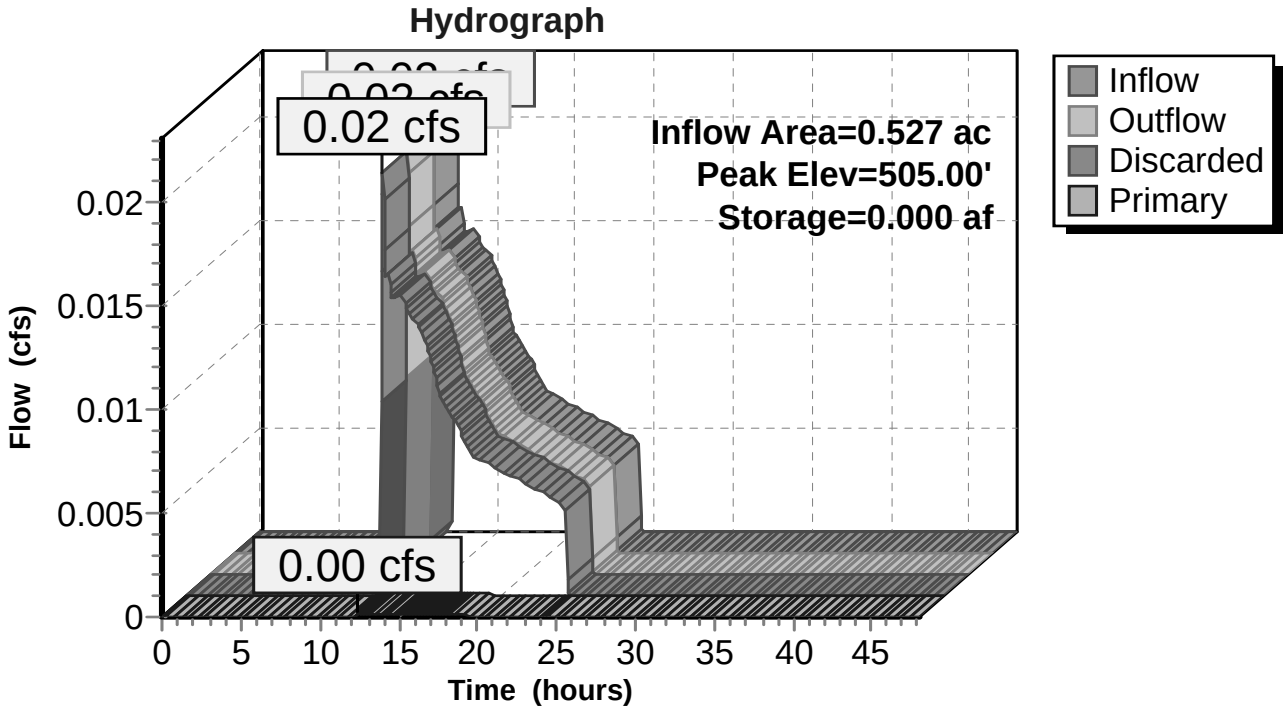
Volume	Invert	Avail.Storage	Storage Description
#1	505.00'	0.004 af	**2.00'W x 150.00'L x 1.50'H Prismatoid** 0.010 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	505.00'	**144.000 in/hr Exfiltration over Wetted area**
#2	Primary	505.00'	**2.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=1.00 cfs @ 12.45 hrs HW=505.00' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 1.00 cfs)

Primary OutFlow Max=0.00 cfs @ 12.45 hrs HW=505.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.05 fps)

Pond IT-2/3: IT-2 AND IT-3



Summary for Pond SF-1: SF-1

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth = 4.40" for 10-Year event
Inflow = 0.05 cfs @ 12.05 hrs, Volume= 0.004 af
Outflow = 0.01 cfs @ 12.52 hrs, Volume= 0.004 af, Atten= 85%, Lag= 28.3 min
Discarded = 0.01 cfs @ 12.52 hrs, Volume= 0.004 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 488.77' @ 12.52 hrs Surf.Area= 0.003 ac Storage= 0.001 af

Plug-Flow detention time= 44.0 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 43.9 min (791.3 - 747.4)

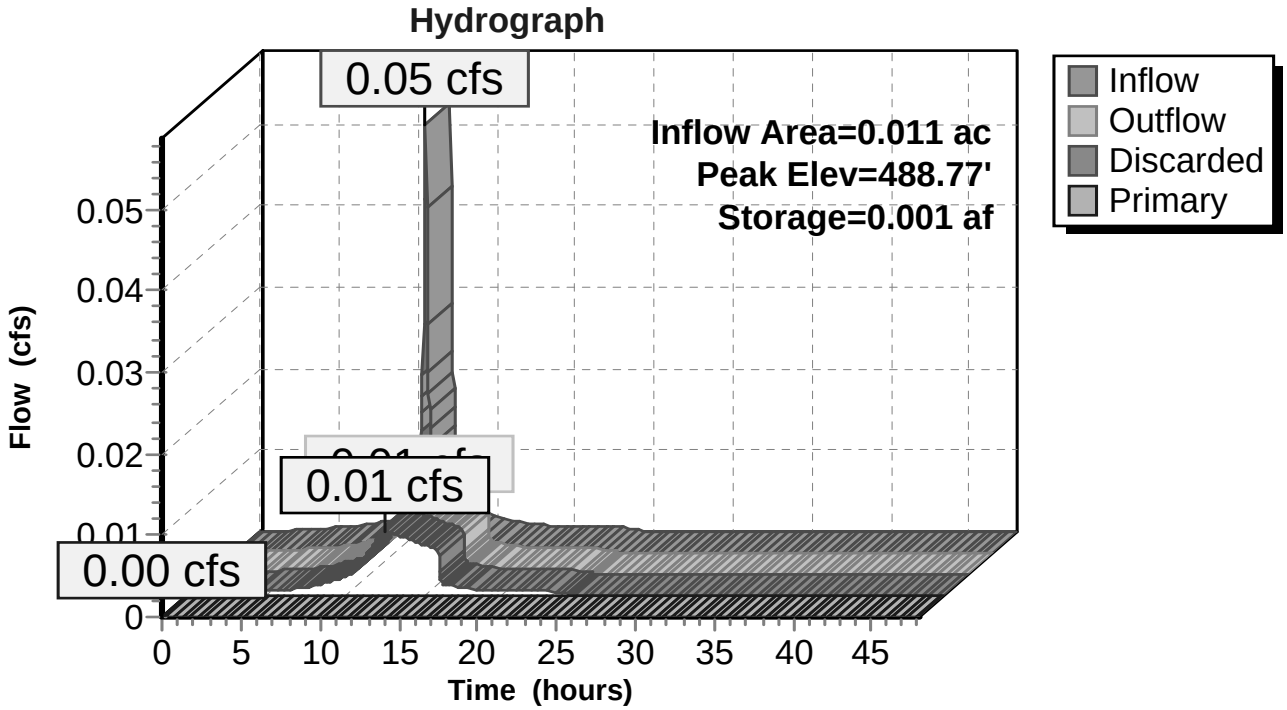
Volume	Invert	Avail.Storage	Storage Description
#1	487.50'	0.004 af	**15.00'W x 9.00'L x 4.50'H Prismatoid** 0.014 af Overall x 30.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	487.50'	**1.750 in/hr Exfiltration over Wetted area**
#2	Primary	492.00'	**10.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.01 cfs @ 12.52 hrs HW=488.77' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=487.50' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond SF-1: SF-1


Hydrograph
0.05 cfs
0.01 cfs
0.00 cfs
Inflow Area=0.011 ac
Peak Elev=488.77'
Storage=0.001 af
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
0.01
0.02
0.03
0.04
0.05
0
5
10
15
20
25
30
35
40
45
Time (hours)

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA-8C Runoff Area=22,971 sf 13.82% Impervious Runoff Depth=1.48"
Flow Length=151' Slope=0.1850 '/' Tc=4.6 min CN=41 Runoff=0.72 cfs 0.065 af

Subcatchment 2S: DA-8B Runoff Area=61,547 sf 9.41% Impervious Runoff Depth=1.18"
Flow Length=387' Slope=0.0520 '/' Tc=20.0 min CN=38 Runoff=0.88 cfs 0.139 af

Subcatchment DA-1: DA-1 Runoff Area=22.620 ac 0.00% Impervious Runoff Depth=2.43"
Flow Length=1,906' Slope=0.0540 '/' Tc=51.1 min CN=50 Runoff=25.57 cfs 4.578 af

Subcatchment DA-2: DA-2 Runoff Area=2.148 ac 0.51% Impervious Runoff Depth=1.00"
Flow Length=430' Slope=0.1646 '/' Tc=12.9 min CN=36 Runoff=1.11 cfs 0.178 af

Subcatchment DA-2A: DA-2a Runoff Area=0.030 ac 100.00% Impervious Runoff Depth=8.05"
Tc=0.0 min CN=98 Runoff=0.28 cfs 0.020 af

Subcatchment DA-3: DA-3 Runoff Area=5.054 ac 0.00% Impervious Runoff Depth=1.18"
Flow Length=757' Slope=0.0695 '/' Tc=29.5 min CN=38 Runoff=2.77 cfs 0.499 af

Subcatchment DA-4: DA-4 Runoff Area=2.241 ac 4.42% Impervious Runoff Depth=1.89"
Flow Length=544' Slope=0.0590 '/' Tc=20.4 min CN=45 Runoff=2.81 cfs 0.353 af

Subcatchment DA-4A: DA-4a Runoff Area=0.008 ac 100.00% Impervious Runoff Depth=8.05"
Tc=4.0 min CN=98 Runoff=0.07 cfs 0.005 af

Subcatchment DA-5: DA-5 Runoff Area=4.292 ac 9.18% Impervious Runoff Depth=1.68"
Flow Length=1,092' Slope=0.0980 '/' Tc=28.3 min UI Adjusted CN=43 Runoff=4.03 cfs 0.602 af

Subcatchment DA-6: DA-6 Runoff Area=4.164 ac 7.13% Impervious Runoff Depth=2.21"
Flow Length=826' Slope=0.1337 '/' Tc=16.6 min UI Adjusted CN=48 Runoff=7.00 cfs 0.767 af

Subcatchment DA-7: DA-7 Runoff Area=3.423 ac 13.88% Impervious Runoff Depth=1.48"
Flow Length=575' Slope=0.1205 '/' Tc=16.1 min UI Adjusted CN=41 Runoff=3.26 cfs 0.422 af

Subcatchment DA-8: DA-8 Runoff Area=96,008 sf 17.76% Impervious Runoff Depth=1.38"
Flow Length=554' Slope=0.0712 '/' Tc=20.4 min UI Adjusted CN=40 Runoff=1.75 cfs 0.253 af

Subcatchment DA-8B ROOF: DA-8b ROOF Runoff Area=479 sf 100.00% Impervious Runoff Depth=8.05"
Flow Length=167' Slope=0.1560 '/' Tc=6.6 min CN=98 Runoff=0.09 cfs 0.007 af

Subcatchment DA-8B ROOF2: DA-8B-roof Runoff Area=479 sf 100.00% Impervious Runoff Depth=8.05"
Tc=2.0 min CN=98 Runoff=0.10 cfs 0.007 af

Subcatchment DA-9: DA-9 Runoff Area=8.200 ac 4.76% Impervious Runoff Depth=1.18"
Flow Length=1,452' Slope=0.0275 '/' Tc=74.9 min UI Adjusted CN=38 Runoff=2.73 cfs 0.809 af

Reach 3R: DP-1 Inflow=25.57 cfs 4.578 af
Outflow=25.57 cfs 4.578 af

Reach CS-1: CS-1 Avg. Flow Depth=0.04' Max Vel=1.03 fps Inflow=0.10 cfs 0.007 af
n=0.030 L=31.8' S=0.0311 '/' Capacity=36.70 cfs Outflow=0.09 cfs 0.007 af

Reach DP-2: DP-2 Inflow=2.62 cfs 0.394 af
Outflow=2.62 cfs 0.394 af

Reach DP-3: DP-3 Inflow=1.11 cfs 0.178 af
Outflow=1.11 cfs 0.178 af

Reach DP-4: DP-4 Inflow=2.73 cfs 0.809 af
Outflow=2.73 cfs 0.809 af

Reach DP-5: DP-5 Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach DP-6: DP-6 Inflow=7.00 cfs 0.767 af
Outflow=7.00 cfs 0.767 af

Reach DP-7: DP-7 Inflow=4.03 cfs 0.602 af
Outflow=4.03 cfs 0.602 af

Reach DP-8: DP-8 Inflow=2.81 cfs 0.353 af
Outflow=2.81 cfs 0.353 af

Reach DP-9: DP-9 Inflow=2.77 cfs 0.499 af
Outflow=2.77 cfs 0.499 af

Pond BR-1: BR-1 Peak Elev=500.00' Storage=0.004 af Inflow=0.09 cfs 0.007 af
Discarded=0.00 cfs 0.007 af Primary=0.01 cfs 0.001 af Outflow=0.01 cfs 0.007 af

Pond IB-1: IB-1 Peak Elev=512.25' Storage=0.000 af Inflow=0.28 cfs 0.020 af
Discarded=0.28 cfs 0.020 af Primary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.020 af

Pond IB-3: IB-3 Peak Elev=482.01' Storage=21 cf Inflow=3.26 cfs 0.422 af
Discarded=3.26 cfs 0.422 af Primary=0.00 cfs 0.000 af Outflow=3.26 cfs 0.422 af

Pond IT-1: IT-1 Peak Elev=514.75' Storage=0.000 af Inflow=0.07 cfs 0.005 af
Discarded=0.07 cfs 0.005 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.005 af

Pond IT-2/3: IT-2 AND IT-3 Peak Elev=505.01' Storage=0.000 af Inflow=0.72 cfs 0.065 af
Discarded=0.71 cfs 0.064 af Primary=0.01 cfs 0.001 af Outflow=0.72 cfs 0.065 af

Pond SF-1: SF-1 Peak Elev=490.24' Storage=0.003 af Inflow=0.09 cfs 0.007 af
Discarded=0.01 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.007 af

Total Runoff Area = 56.346 ac Runoff Volume = 8.706 af Average Runoff Depth = 1.85"
95.88% Pervious = 54.023 ac 4.12% Impervious = 2.323 ac

Summary for Subcatchment 1S: DA-8C

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.72 cfs @ 12.10 hrs, Volume= 0.065 af, Depth= 1.48"

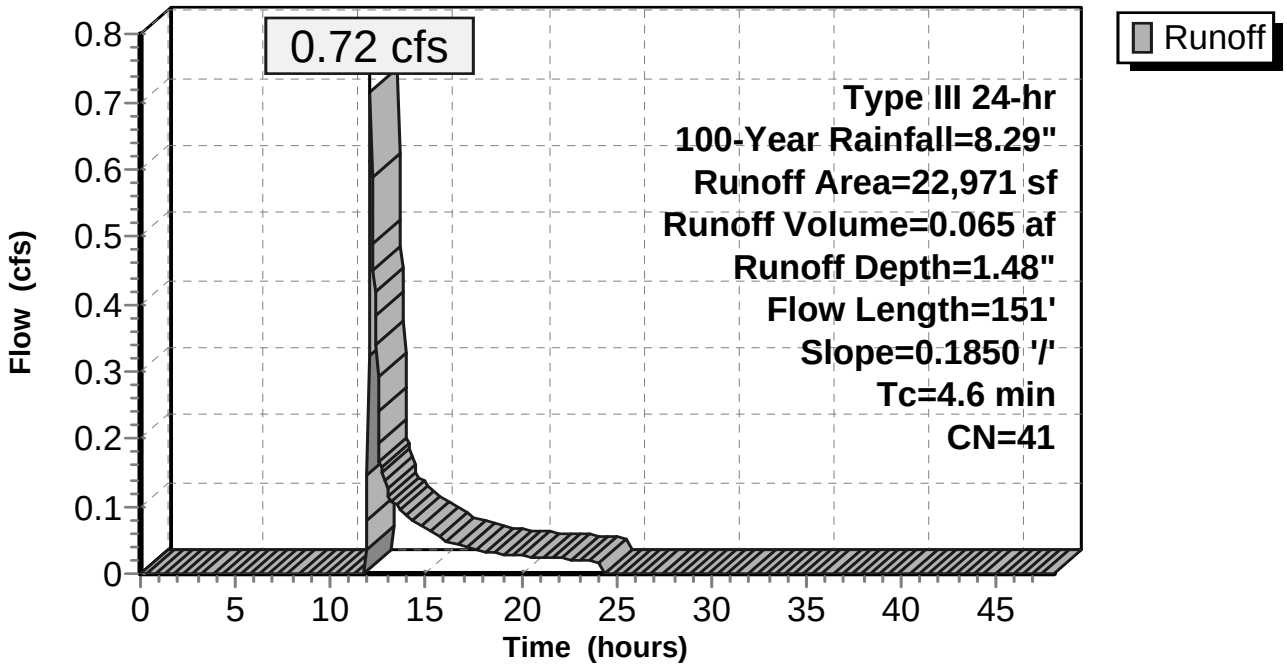
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (sf)	CN	Description
3,174	98	Paved parking, HSG A
19,797	32	Woods/grass comb., Good, HSG A
22,971	41	Weighted Average
19,797		86.18% Pervious Area
3,174		13.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	151	0.1850	0.55		**Lag/CN Method,**

Subcatchment 1S: DA-8C

Hydrograph



Summary for Subcatchment 2S: DA-8B

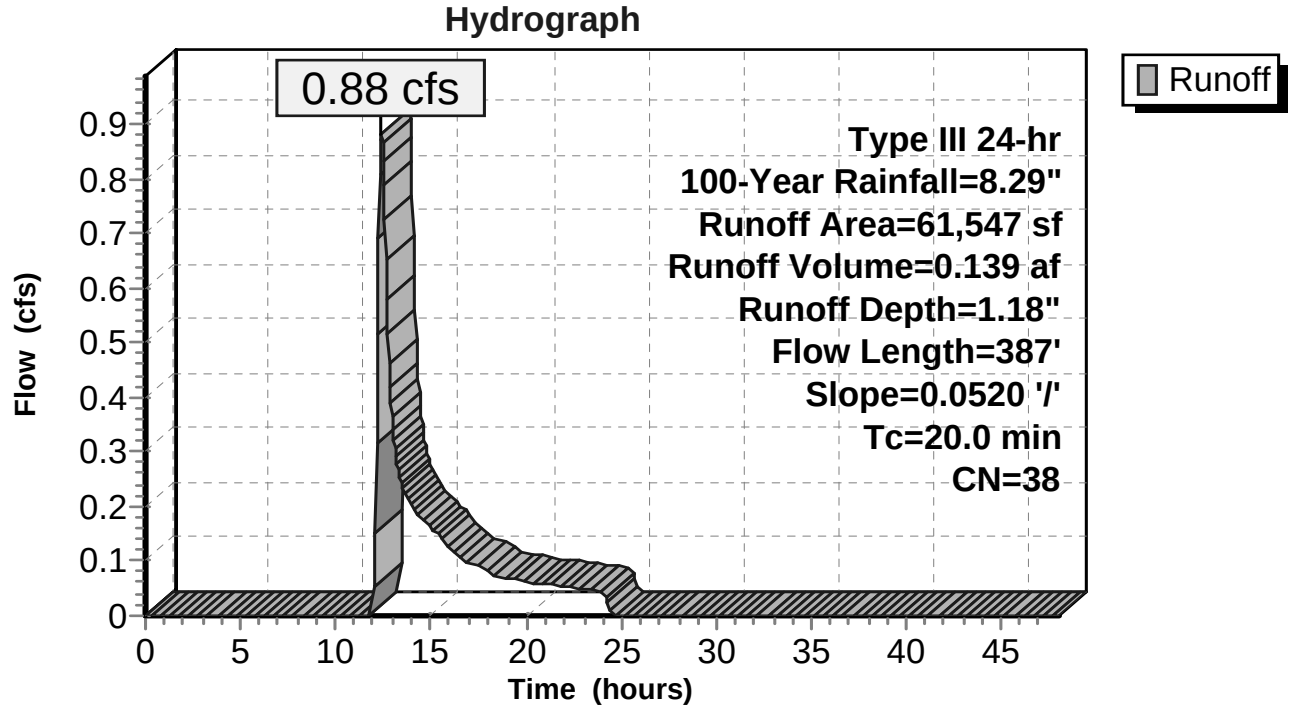
Runoff = 0.88 cfs @ 12.40 hrs, Volume= 0.139 af, Depth= 1.18"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (sf)	CN	Description
5,793	98	Water Surface, HSG A
55,754	32	Woods/grass comb., Good, HSG A
61,547	38	Weighted Average
55,754		90.59% Pervious Area
5,793		9.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.0	387	0.0520	0.32		**Lag/CN Method,**

Subcatchment 2S: DA-8B



Summary for Subcatchment DA-1: DA-1

Runoff = 25.57 cfs @ 12.76 hrs, Volume= 4.578 af, Depth= 2.43"

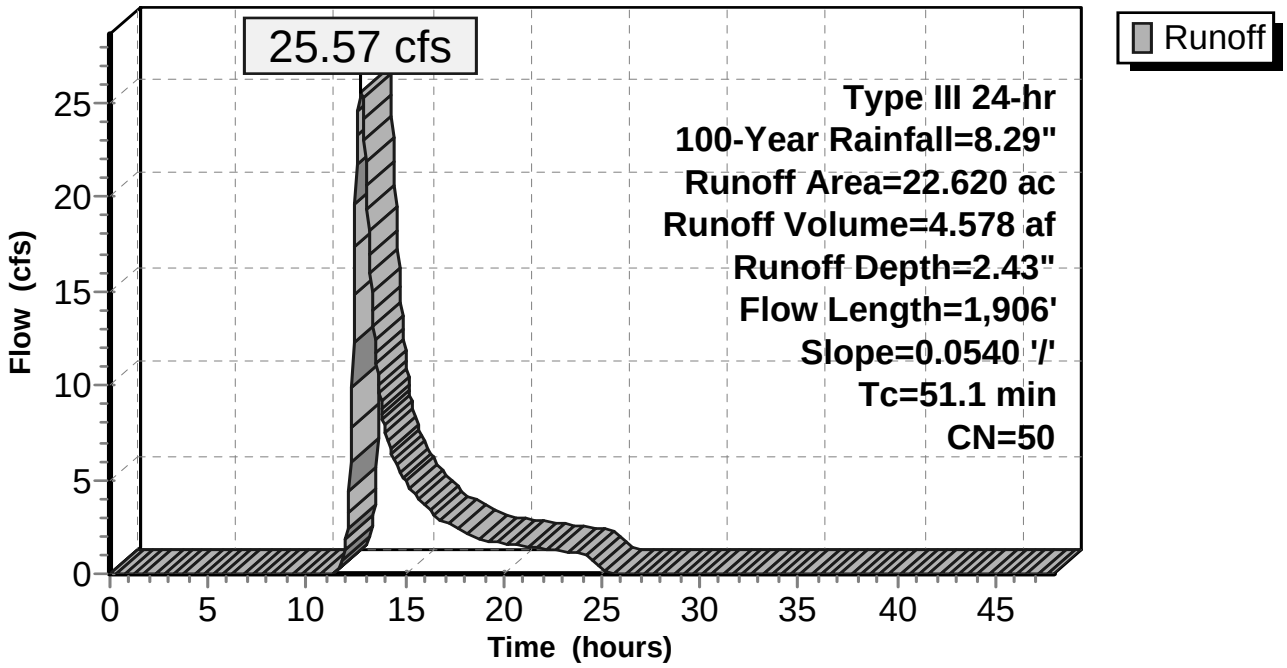
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
7.259	39	Pasture/grassland/range, Good, HSG A
7.409	30	Woods, Good, HSG A
7.594	77	Woods, Good, HSG D
0.358	96	Gravel surface, HSG A
22.620	50	Weighted Average
22.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.1	1,906	0.0540	0.62		**Lag/CN Method,**

Subcatchment DA-1: DA-1

Hydrograph



Summary for Subcatchment DA-2: DA-2

Runoff = 1.11 cfs @ 12.31 hrs, Volume= 0.178 af, Depth= 1.00"

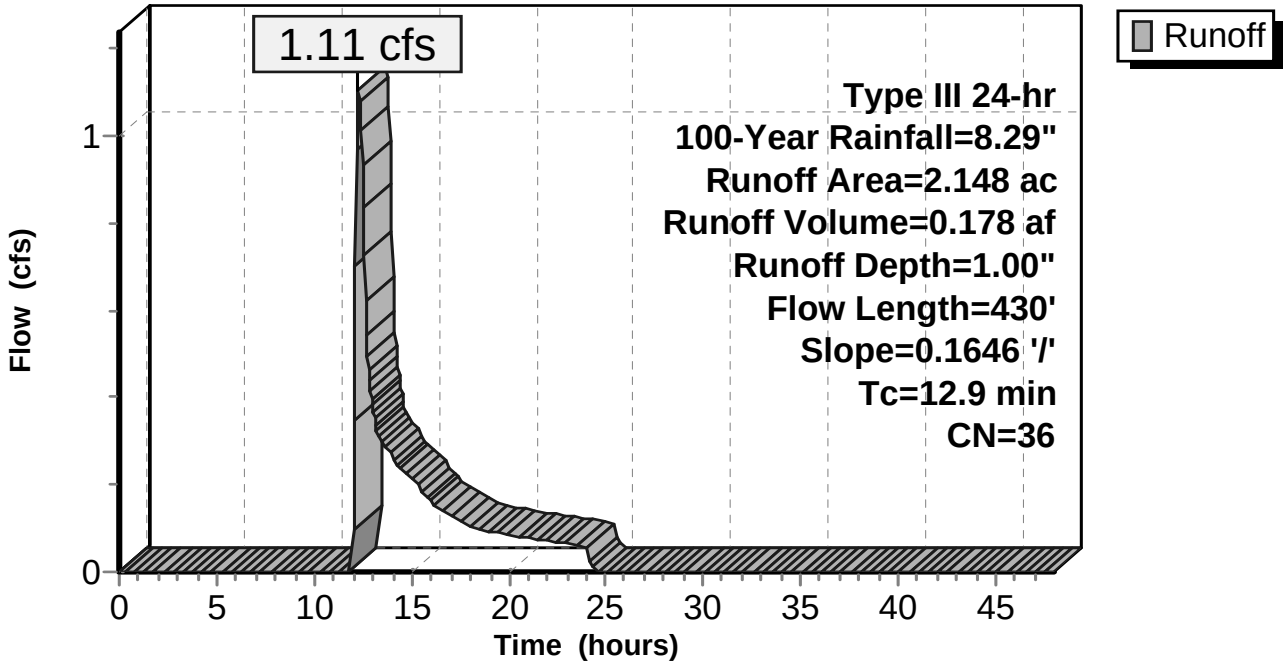
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.748	30	Woods, Good, HSG A
1.389	39	Pasture/grassland/range, Good, HSG A
0.011	98	Unconnected roofs, HSG A
2.148	36	Weighted Average
2.137		99.49% Pervious Area
0.011		0.51% Impervious Area
0.011		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	430	0.1646	0.55		**Lag/CN Method,** Contour Length= 7,700' Interval= 2'

Subcatchment DA-2: DA-2

Hydrograph



Summary for Subcatchment DA-2A: DA-2a

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

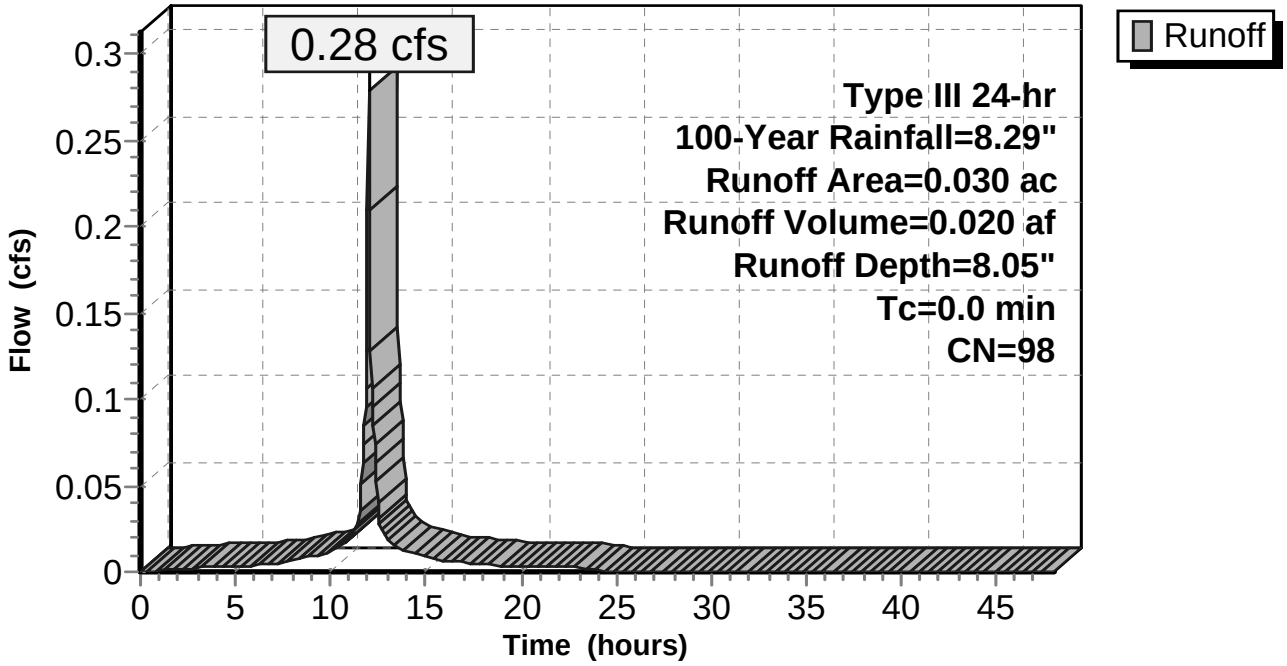
Runoff = 0.28 cfs @ 12.00 hrs, Volume= 0.020 af, Depth= 8.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.030	98	Unconnected roofs, HSG A
0.030		100.00% Impervious Area
0.030		100.00% Unconnected

Subcatchment DA-2A: DA-2a

Hydrograph



Summary for Subcatchment DA-3: DA-3

Runoff = 2.77 cfs @ 12.55 hrs, Volume= 0.499 af, Depth= 1.18"

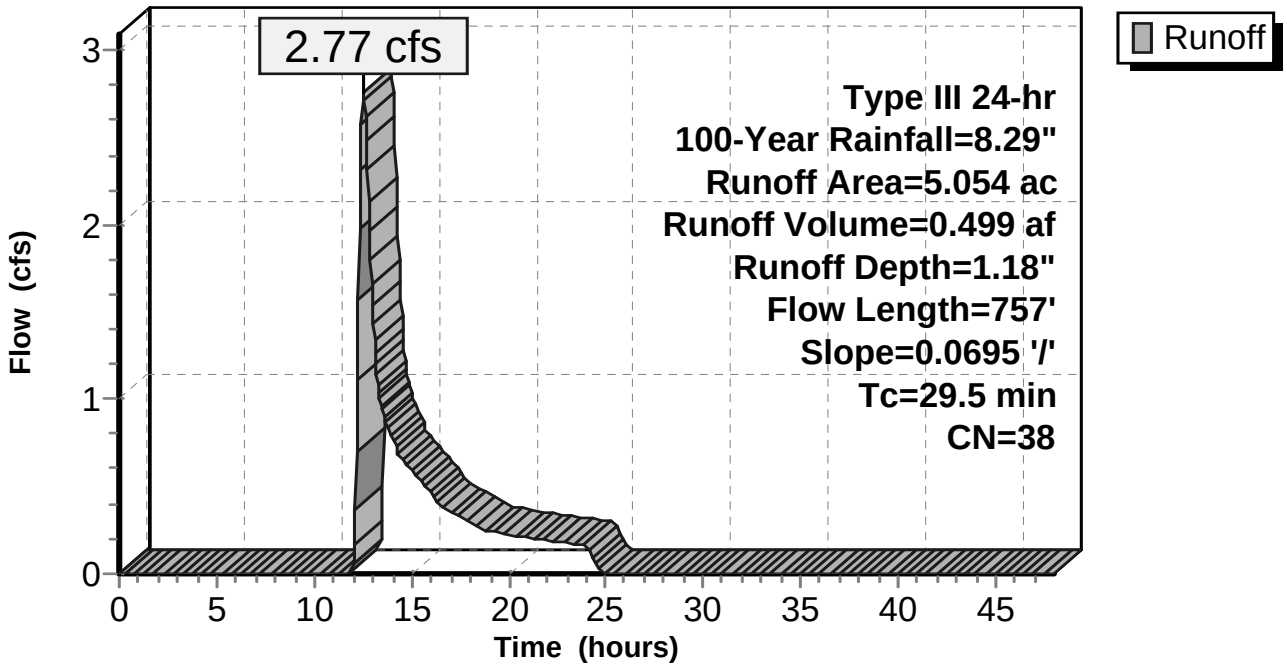
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
4.606	39	Pasture/grassland/range, Good, HSG A
0.448	30	Woods, Good, HSG A
5.054	38	Weighted Average
5.054		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.5	757	0.0695	0.43		**Lag/CN Method,** Contour Length= 7,650' Interval= 2'

Subcatchment DA-3: DA-3

Hydrograph



Summary for Subcatchment DA-4: DA-4

Runoff = 2.81 cfs @ 12.33 hrs, Volume= 0.353 af, Depth= 1.89"

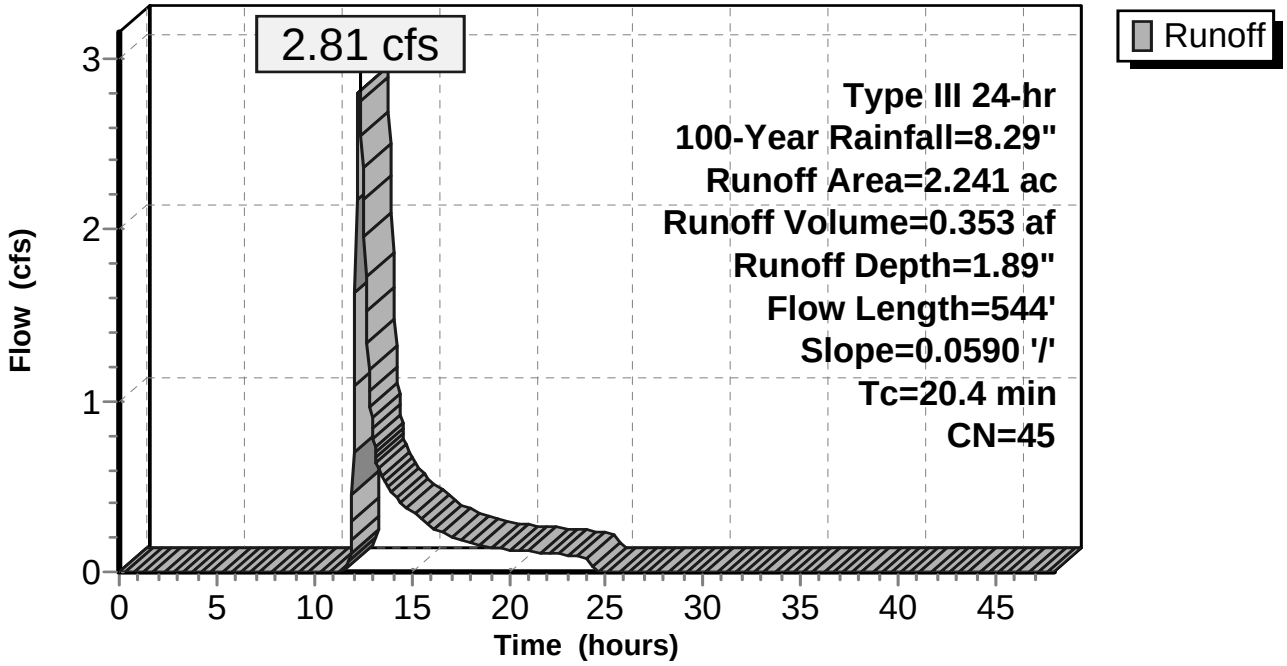
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
1.922	39	Pasture/grassland/range, Good, HSG A
0.080	30	Woods, Good, HSG A
0.140	96	Gravel surface, HSG A
0.099	98	Paved parking, HSG A
2.241	45	Weighted Average
2.142		95.58% Pervious Area
0.099		4.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	544	0.0590	0.44		**Lag/CN Method,** Contour Length= 2,879' Interval= 2'

Subcatchment DA-4: DA-4

Hydrograph



Summary for Subcatchment DA-4A: DA-4a

[49] Hint: Tc<2dt may require smaller dt

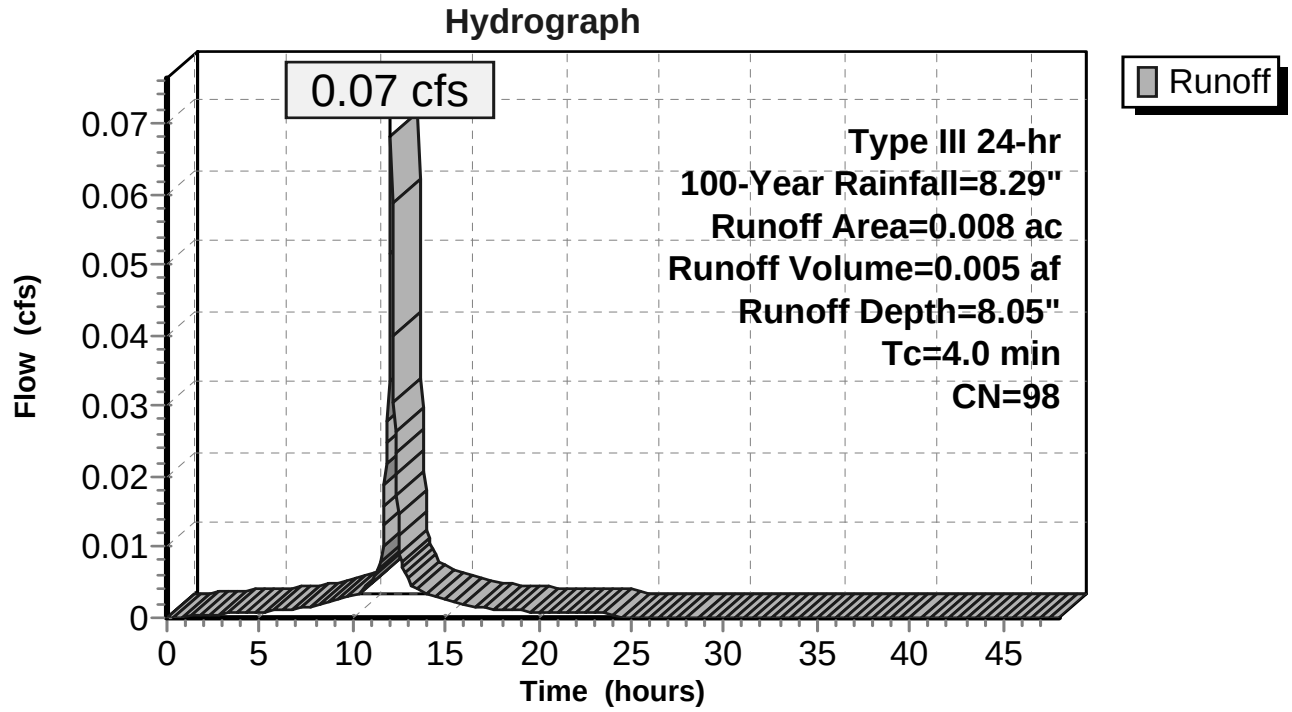
Runoff = 0.07 cfs @ 12.06 hrs, Volume= 0.005 af, Depth= 8.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.008	98	Unconnected roofs, HSG A
0.008		100.00% Impervious Area
0.008		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0					**Direct Entry,**

Subcatchment DA-4A: DA-4a



Summary for Subcatchment DA-5: DA-5

Runoff = 4.03 cfs @ 12.48 hrs, Volume= 0.602 af, Depth= 1.68"

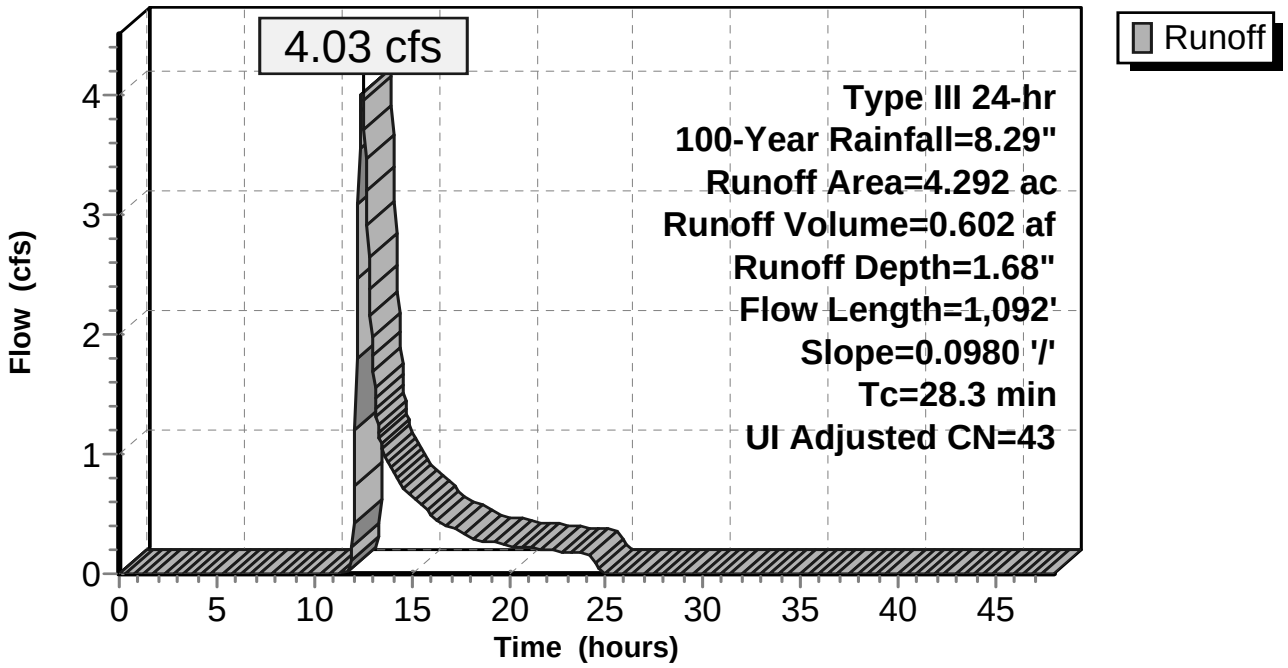
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.206	98	Paved parking, HSG A
1.750	39	Pasture/grassland/range, Good, HSG A
1.884	30	Woods, Good, HSG A
0.188	98	Unconnected roofs, HSG A
0.264	96	Gravel surface, HSG A
4.292	44	Weighted Average, UI Adjusted CN = 43
3.898		90.82% Pervious Area
0.394		9.18% Impervious Area
0.188		47.72% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.3	1,092	0.0980	0.64		**Lag/CN Method,** Contour Length= 9,162' Interval= 2'

Subcatchment DA-5: DA-5

Hydrograph



Summary for Subcatchment DA-6: DA-6

Runoff = 7.00 cfs @ 12.26 hrs, Volume= 0.767 af, Depth= 2.21"

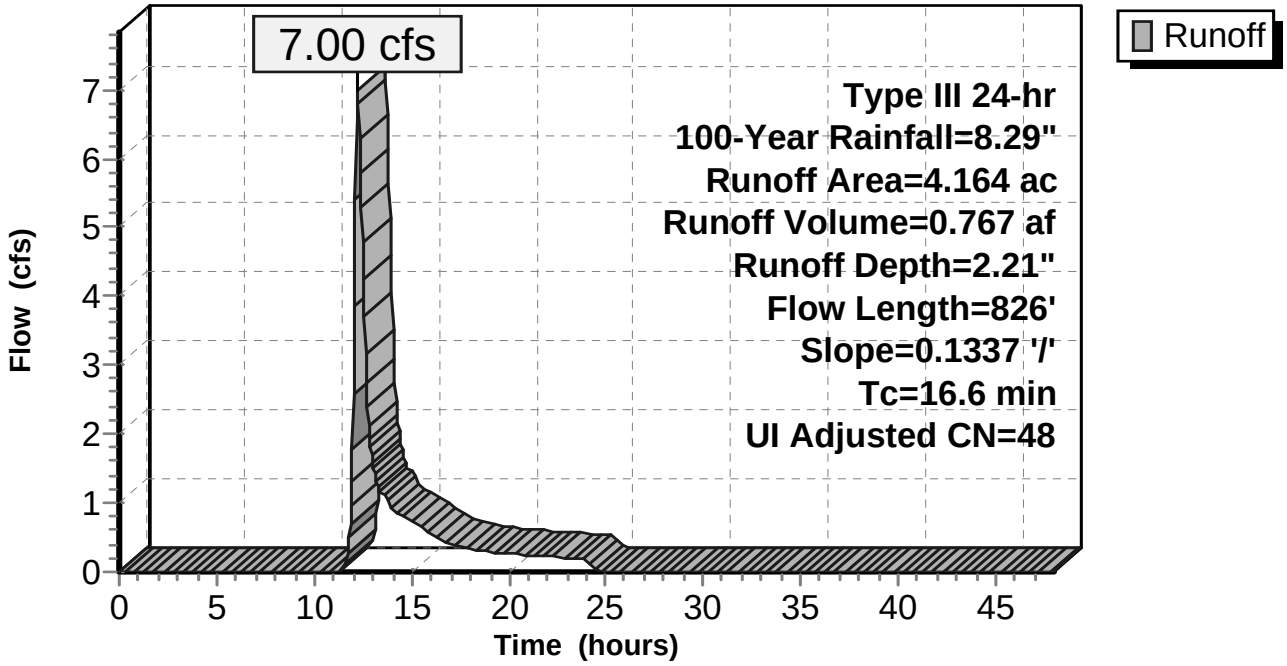
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.297	98	Unconnected roofs, HSG A
3.401	39	Pasture/grassland/range, Good, HSG A
0.466	96	Gravel surface, HSG A
4.164	50	Weighted Average, UI Adjusted CN = 48
3.867		92.87% Pervious Area
0.297		7.13% Impervious Area
0.297		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.6	826	0.1337	0.83		**Lag/CN Method,** Contour Length= 12,121' Interval= 2'

Subcatchment DA-6: DA-6

Hydrograph



Summary for Subcatchment DA-7: DA-7

Runoff = 3.26 cfs @ 12.28 hrs, Volume= 0.422 af, Depth= 1.48"

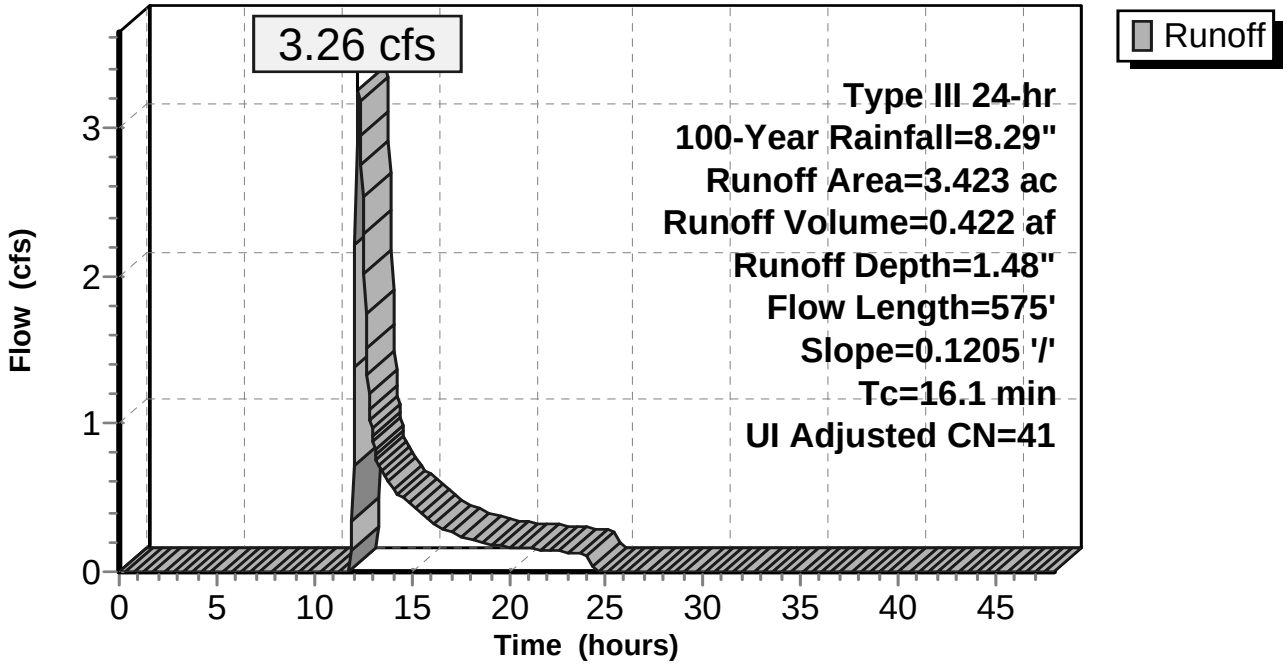
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
2.813	30	Woods, Good, HSG A
0.322	98	Water Surface, HSG A
0.135	96	Gravel surface, HSG A
0.153	98	Unconnected roofs, HSG A
3.423	42	Weighted Average, UI Adjusted CN = 41
2.948		86.12% Pervious Area
0.475		13.88% Impervious Area
0.153		32.21% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	575	0.1205	0.59		**Lag/CN Method,** Contour Length= 8,985' Interval= 2'

Subcatchment DA-7: DA-7

Hydrograph



Summary for Subcatchment DA-8: DA-8

Runoff = 1.75 cfs @ 12.37 hrs, Volume= 0.253 af, Depth= 1.38"

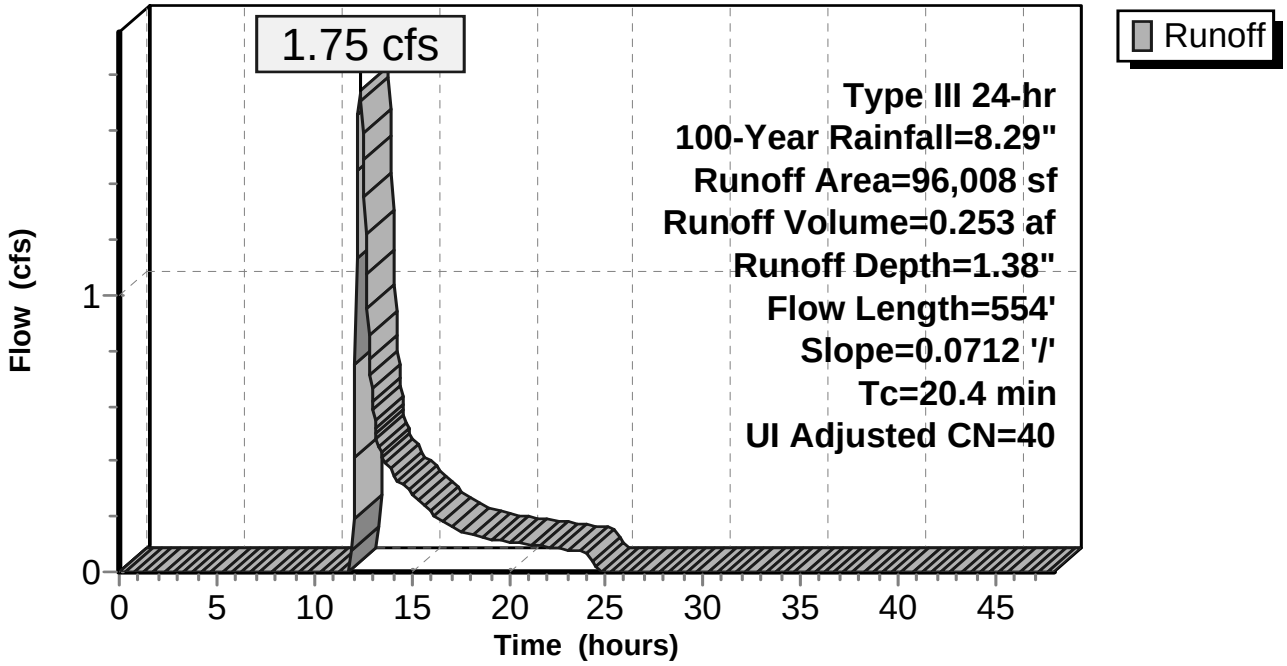
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (sf)	CN	Description
78,957	30	Woods, Good, HSG A
5,881	98	Unconnected roofs, HSG A
11,170	98	Paved parking, HSG A
96,008	42	Weighted Average, UI Adjusted CN = 40
78,957		82.24% Pervious Area
17,051		17.76% Impervious Area
5,881		34.49% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	554	0.0712	0.45		**Lag/CN Method,** Contour Length= 3,416' Interval= 2'

Subcatchment DA-8: DA-8

Hydrograph



Summary for Subcatchment DA-8B ROOF: DA-8b ROOF BR

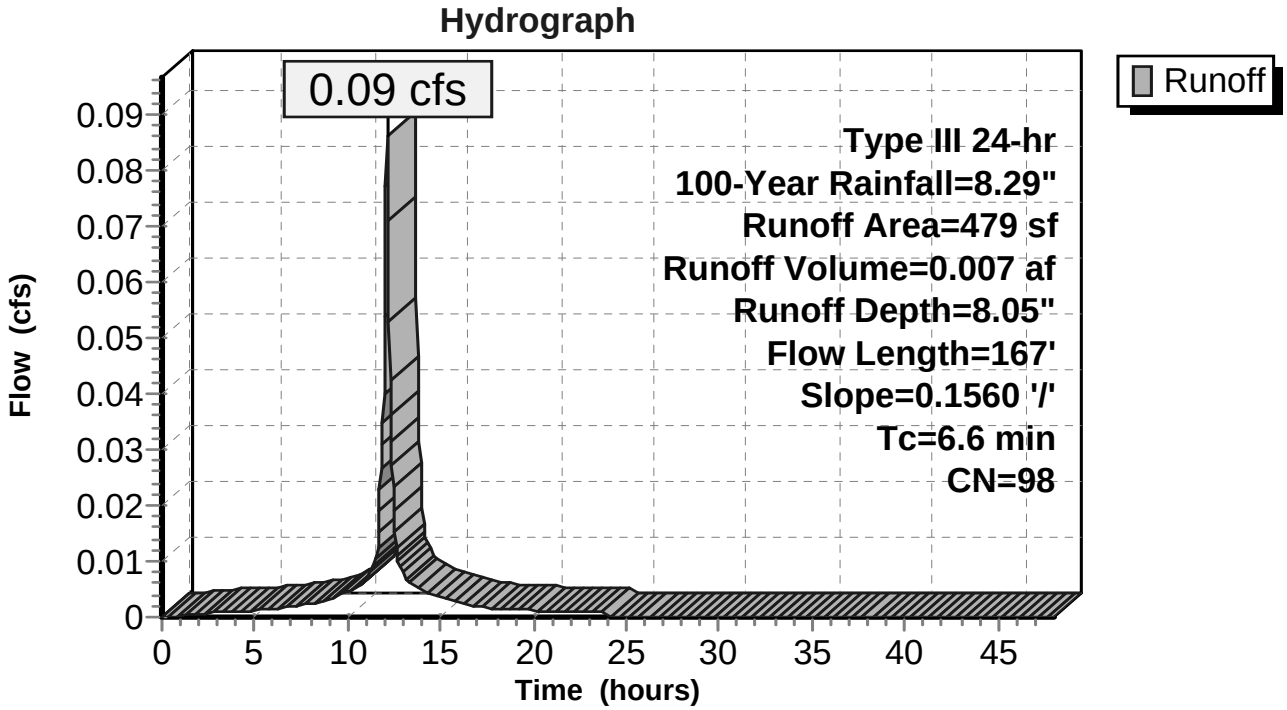
Runoff = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af, Depth= 8.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (sf)	CN	Description
479	98	Roofs, HSG A
479		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	167	0.1560	0.42		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.09"

Subcatchment DA-8B ROOF: DA-8b ROOF BR



Summary for Subcatchment DA-8B ROOF2: DA-8B-roof

[49] Hint: Tc<2dt may require smaller dt

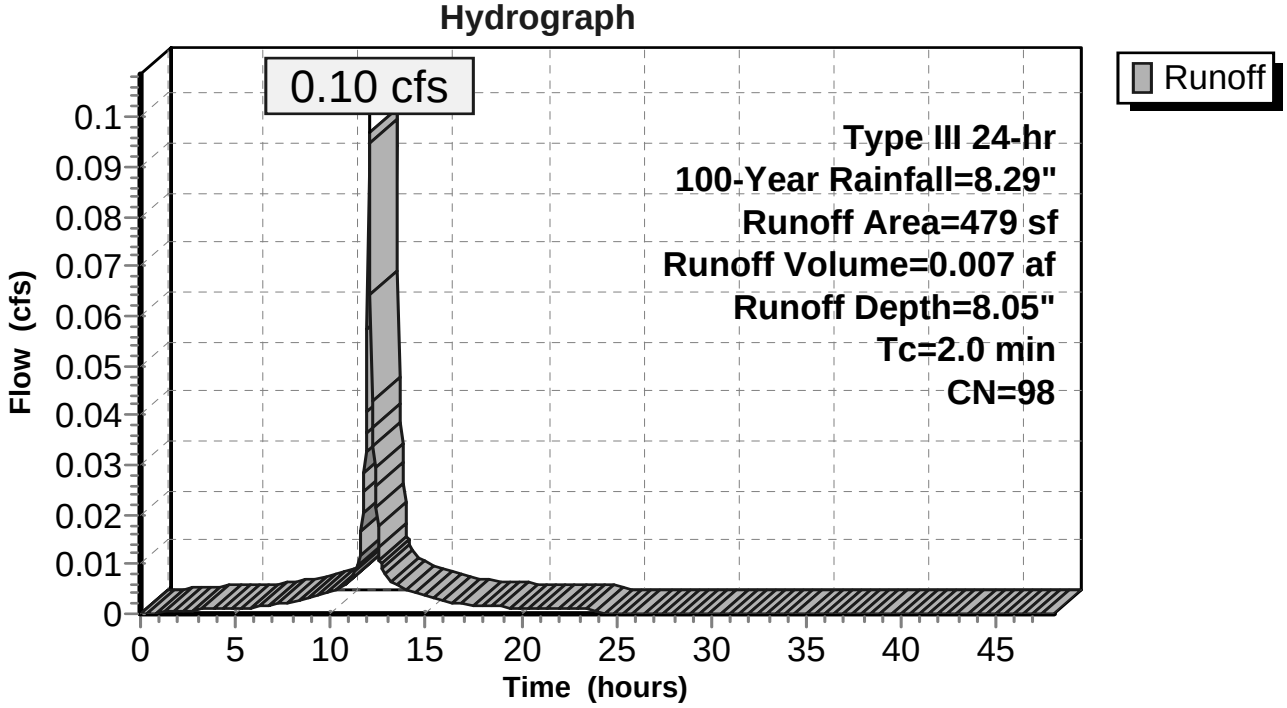
Runoff = 0.10 cfs @ 12.03 hrs, Volume= 0.007 af, Depth= 8.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (sf)	CN	Description
479	98	Unconnected roofs, HSG A
479		100.00% Impervious Area
479		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment DA-8B ROOF2: DA-8B-roof



Summary for Subcatchment DA-9: DA-9

Runoff = 2.73 cfs @ 13.25 hrs, Volume= 0.809 af, Depth= 1.18"

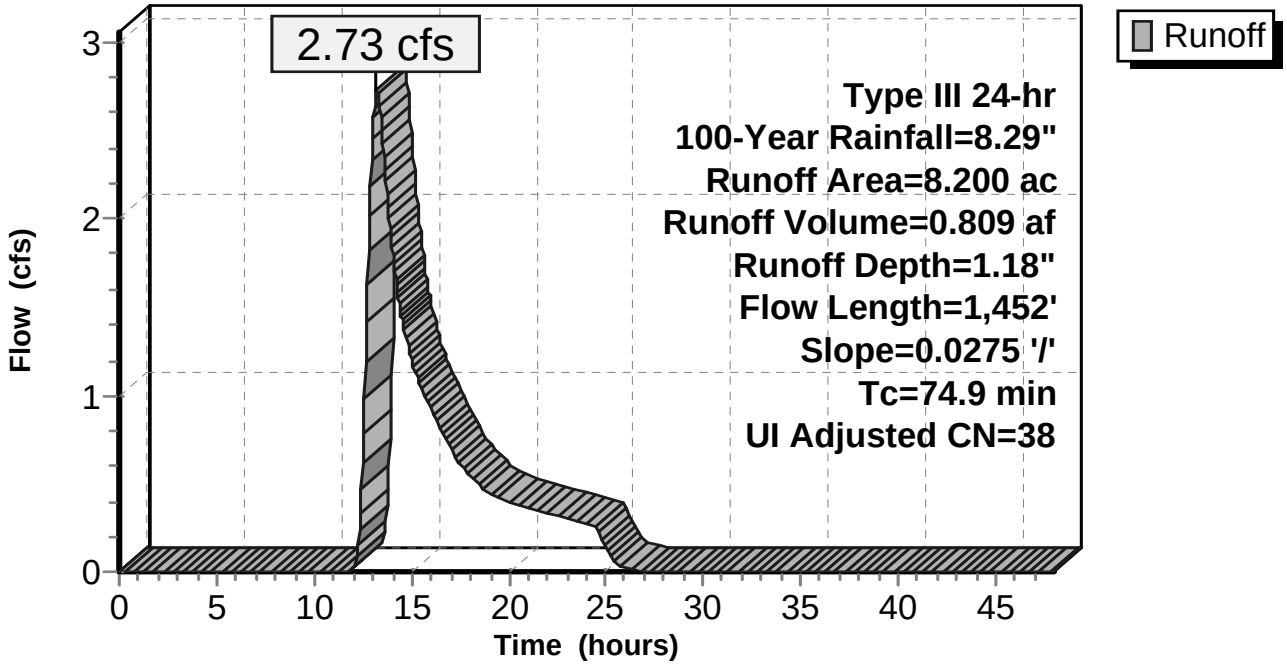
Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.29"

Area (ac)	CN	Description
0.460	96	Gravel surface, HSG A
0.390	98	Unconnected roofs, HSG A
4.610	30	Woods, Good, HSG A
2.740	39	Pasture/grassland/range, Good, HSG A
8.200	40	Weighted Average, UI Adjusted CN = 38
7.810		95.24% Pervious Area
0.390		4.76% Impervious Area
0.390		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
74.9	1,452	0.0275	0.32		**Lag/CN Method,** Contour Length= 4,905' Interval= 2'

Subcatchment DA-9: DA-9

Hydrograph



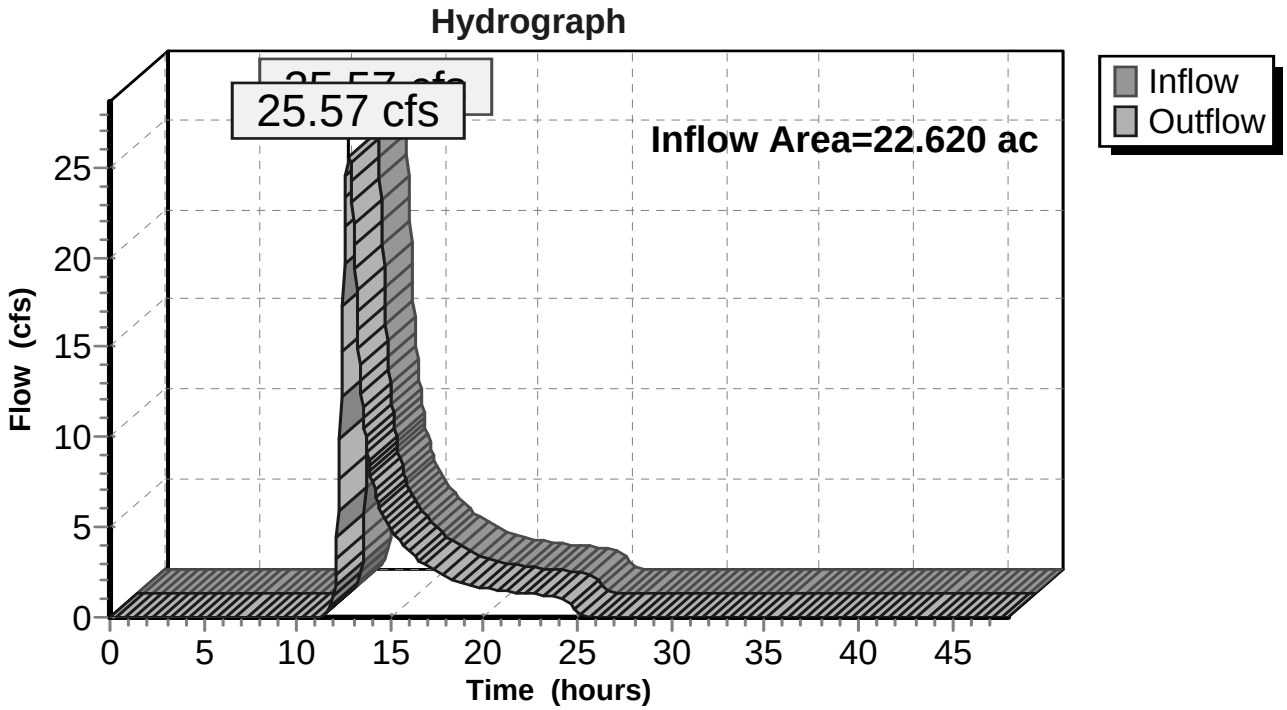
Summary for Reach 3R: DP-1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 22.620 ac, 0.00% Impervious, Inflow Depth = 2.43" for 100-Year event
Inflow = 25.57 cfs @ 12.76 hrs, Volume= 4.578 af
Outflow = 25.57 cfs @ 12.76 hrs, Volume= 4.578 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach 3R: DP-1



Summary for Reach CS-1: CS-1

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth = 8.05" for 100-Year event
Inflow = 0.10 cfs @ 12.03 hrs, Volume= 0.007 af
Outflow = 0.09 cfs @ 12.05 hrs, Volume= 0.007 af, Atten= 2%, Lag= 0.8 min

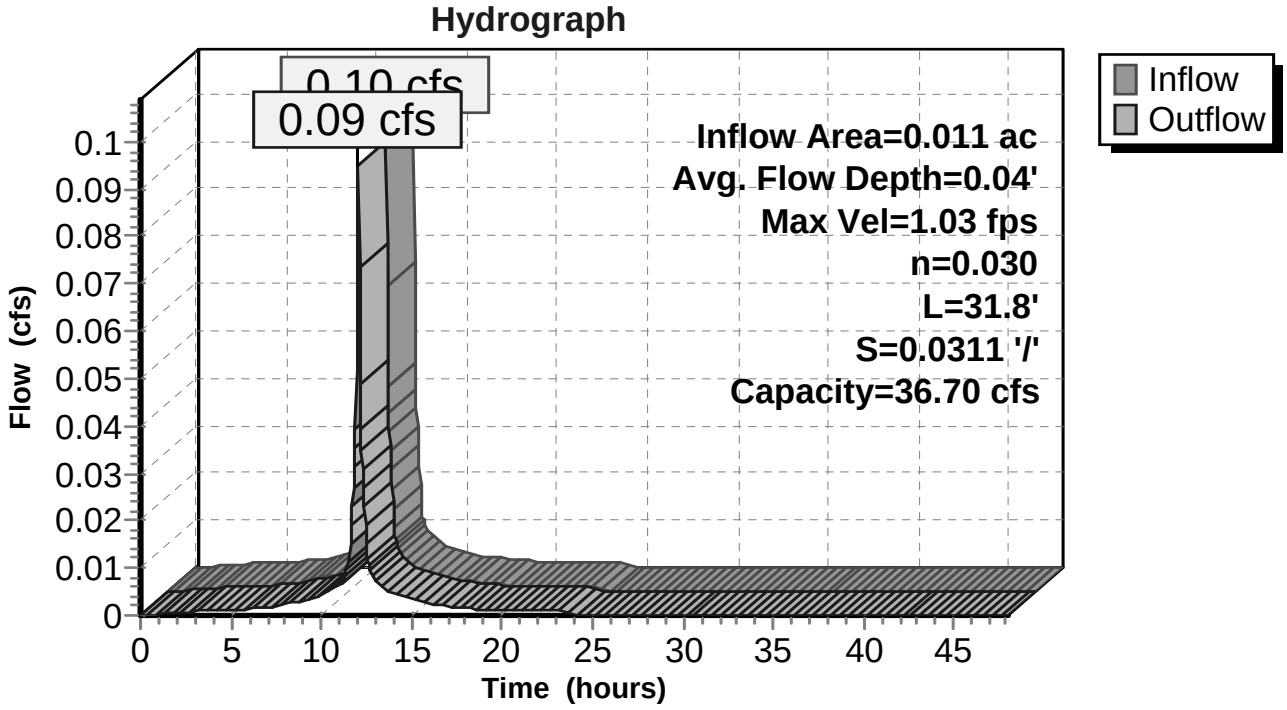
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.03 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 0.41 fps, Avg. Travel Time= 1.3 min

Peak Storage= 3 cf @ 12.04 hrs
Average Depth at Peak Storage= 0.04'
Bank-Full Depth= 1.00' Flow Area= 6.0 sf, Capacity= 36.70 cfs

2.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 4.0 '/' Top Width= 10.00'
Length= 31.8' Slope= 0.0311 '/'
Inlet Invert= 493.00', Outlet Invert= 492.01'

‡

Reach CS-1: CS-1



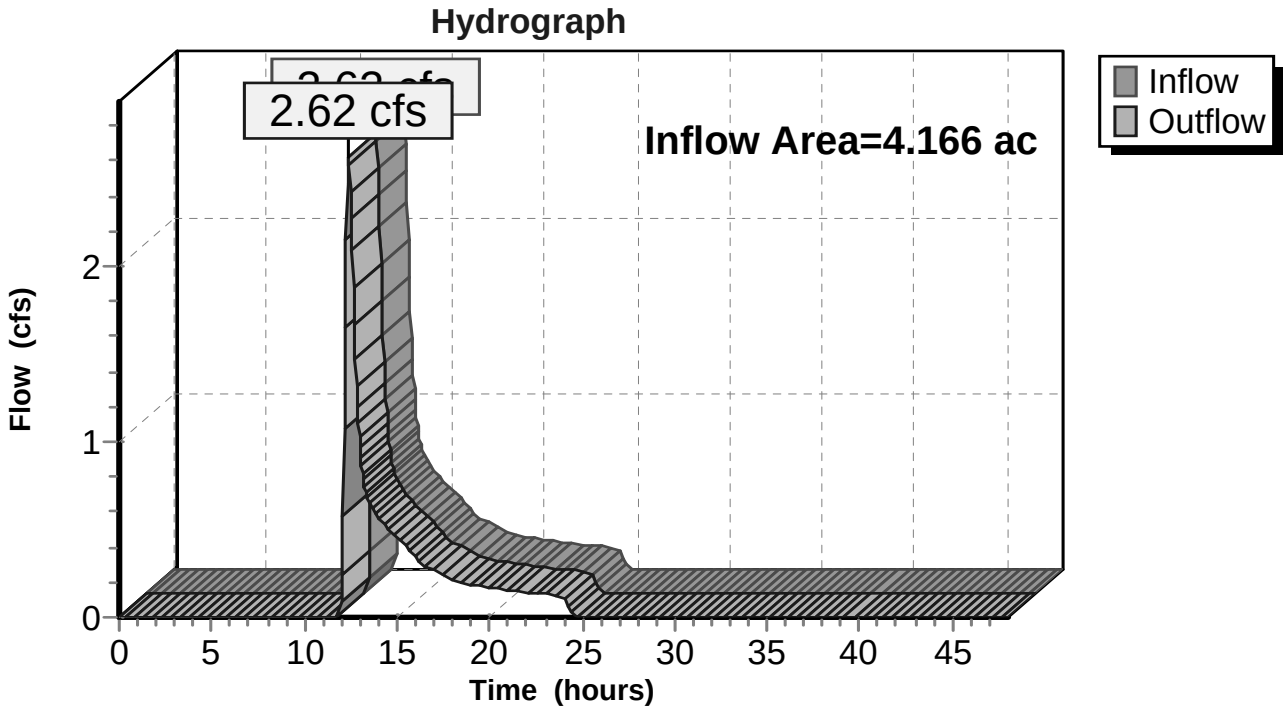
Summary for Reach DP-2: DP-2

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.166 ac, 14.86% Impervious, Inflow Depth = 1.13" for 100-Year event
Inflow = 2.62 cfs @ 12.38 hrs, Volume= 0.394 af
Outflow = 2.62 cfs @ 12.38 hrs, Volume= 0.394 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-2: DP-2



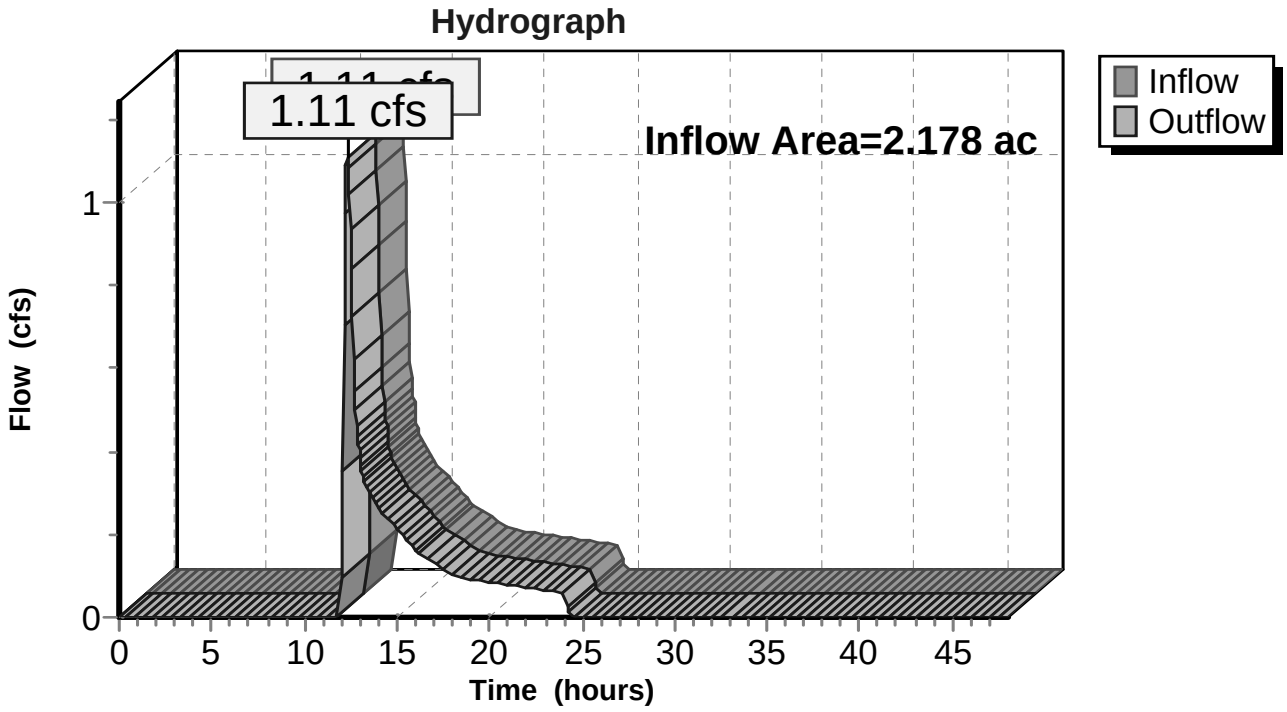
Summary for Reach DP-3: DP-3

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.178 ac, 1.88% Impervious, Inflow Depth = 0.98" for 100-Year event
Inflow = 1.11 cfs @ 12.31 hrs, Volume= 0.178 af
Outflow = 1.11 cfs @ 12.31 hrs, Volume= 0.178 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-3: DP-3



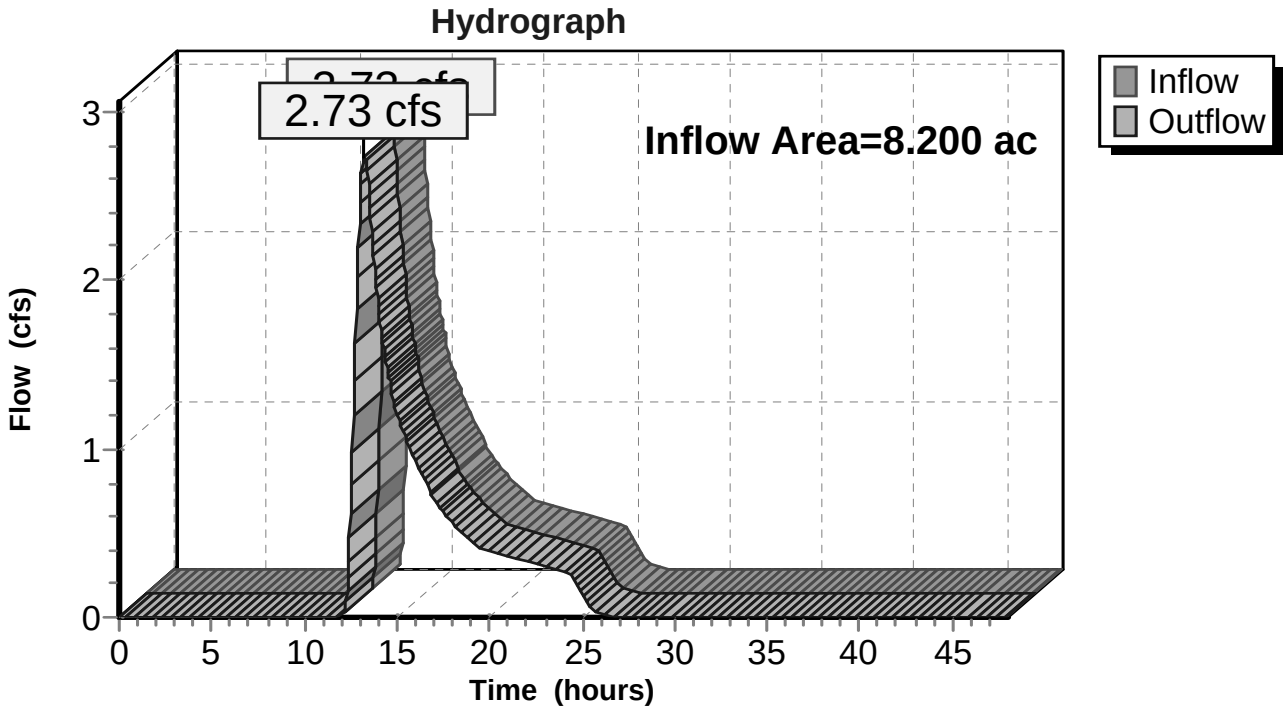
Summary for Reach DP-4: DP-4

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 8.200 ac, 4.76% Impervious, Inflow Depth = 1.18" for 100-Year event
Inflow = 2.73 cfs @ 13.25 hrs, Volume= 0.809 af
Outflow = 2.73 cfs @ 13.25 hrs, Volume= 0.809 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-4: DP-4

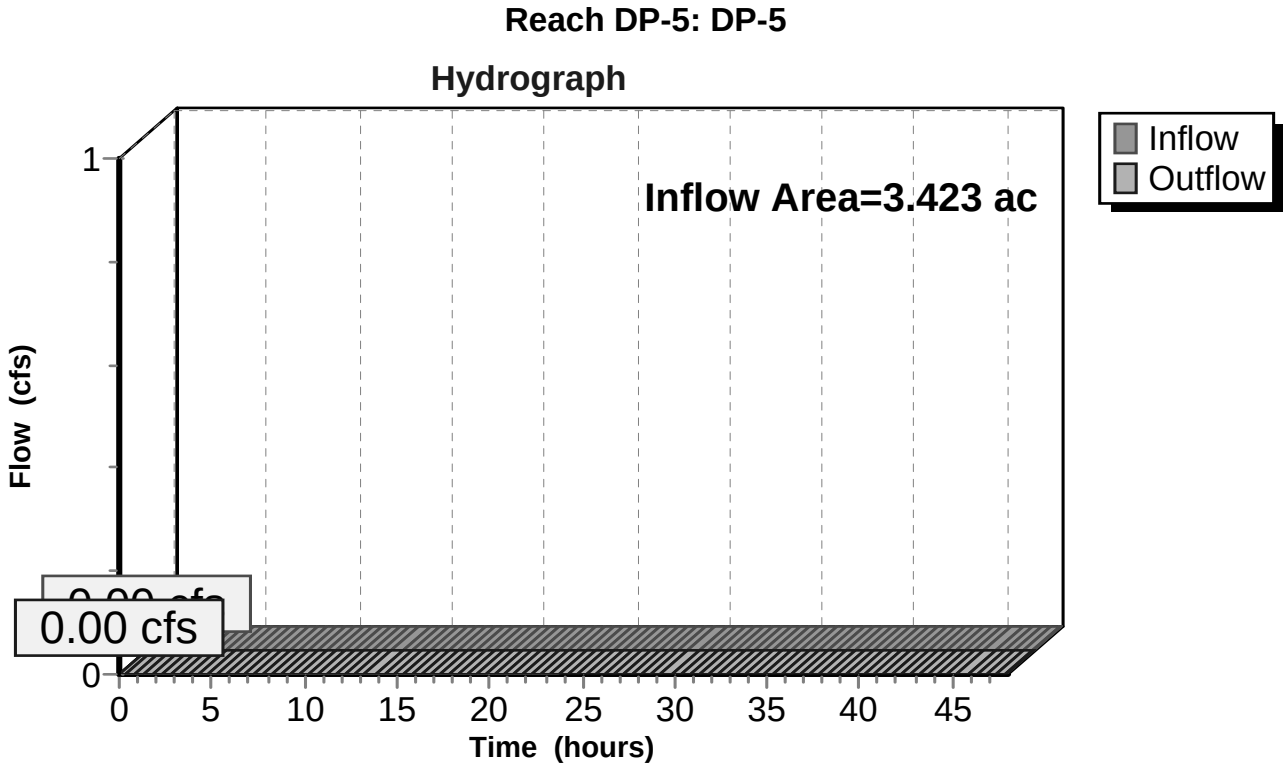


Summary for Reach DP-5: DP-5

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 3.423 ac, 13.88% Impervious, Inflow Depth = 0.00" for 100-Year 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

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs



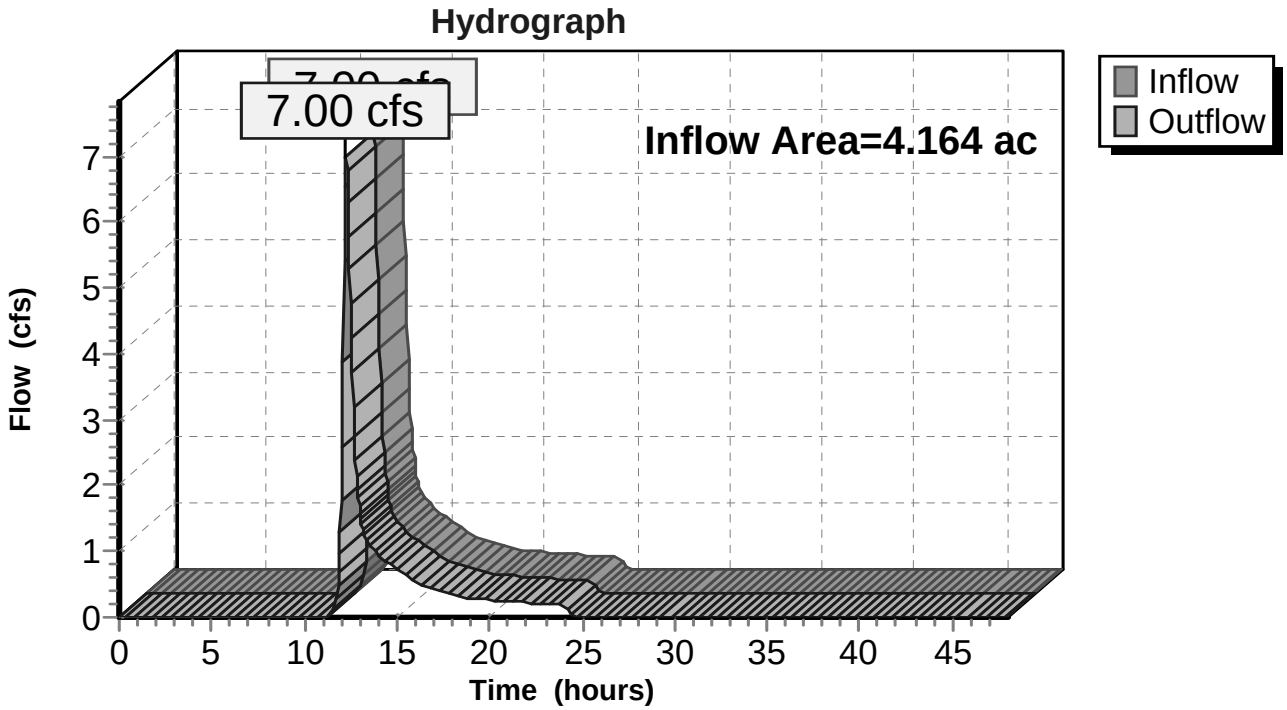
Summary for Reach DP-6: DP-6

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.164 ac, 7.13% Impervious, Inflow Depth = 2.21" for 100-Year event
Inflow = 7.00 cfs @ 12.26 hrs, Volume= 0.767 af
Outflow = 7.00 cfs @ 12.26 hrs, Volume= 0.767 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-6: DP-6



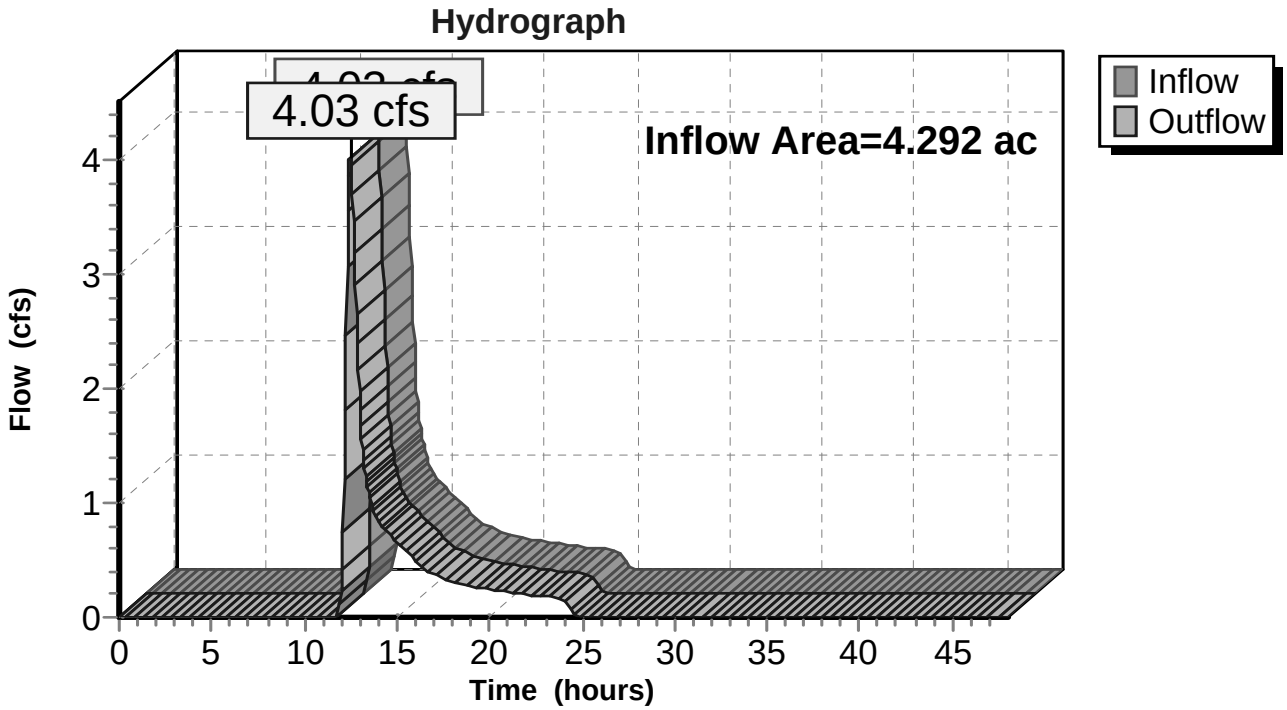
Summary for Reach DP-7: DP-7

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.292 ac, 9.18% Impervious, Inflow Depth = 1.68" for 100-Year event
Inflow = 4.03 cfs @ 12.48 hrs, Volume= 0.602 af
Outflow = 4.03 cfs @ 12.48 hrs, Volume= 0.602 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-7: DP-7



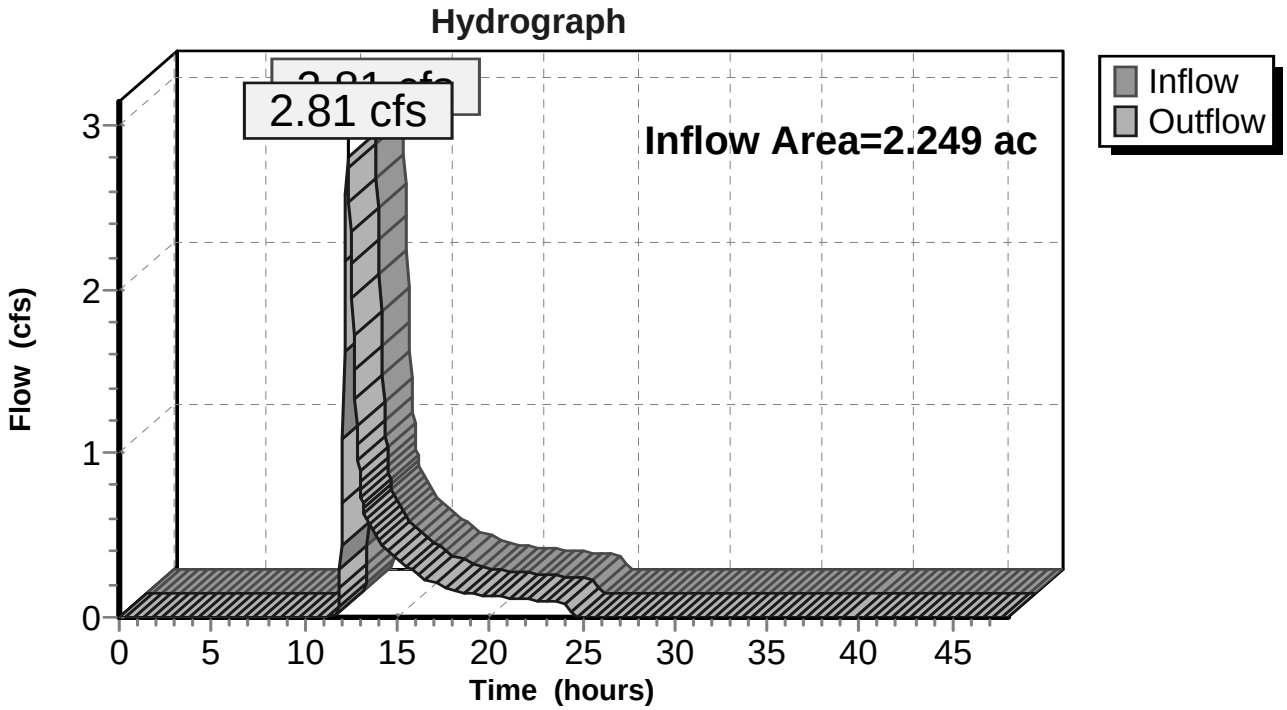
Summary for Reach DP-8: DP-8

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.249 ac, 4.76% Impervious, Inflow Depth = 1.88" for 100-Year event
Inflow = 2.81 cfs @ 12.33 hrs, Volume= 0.353 af
Outflow = 2.81 cfs @ 12.33 hrs, Volume= 0.353 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-8: DP-8



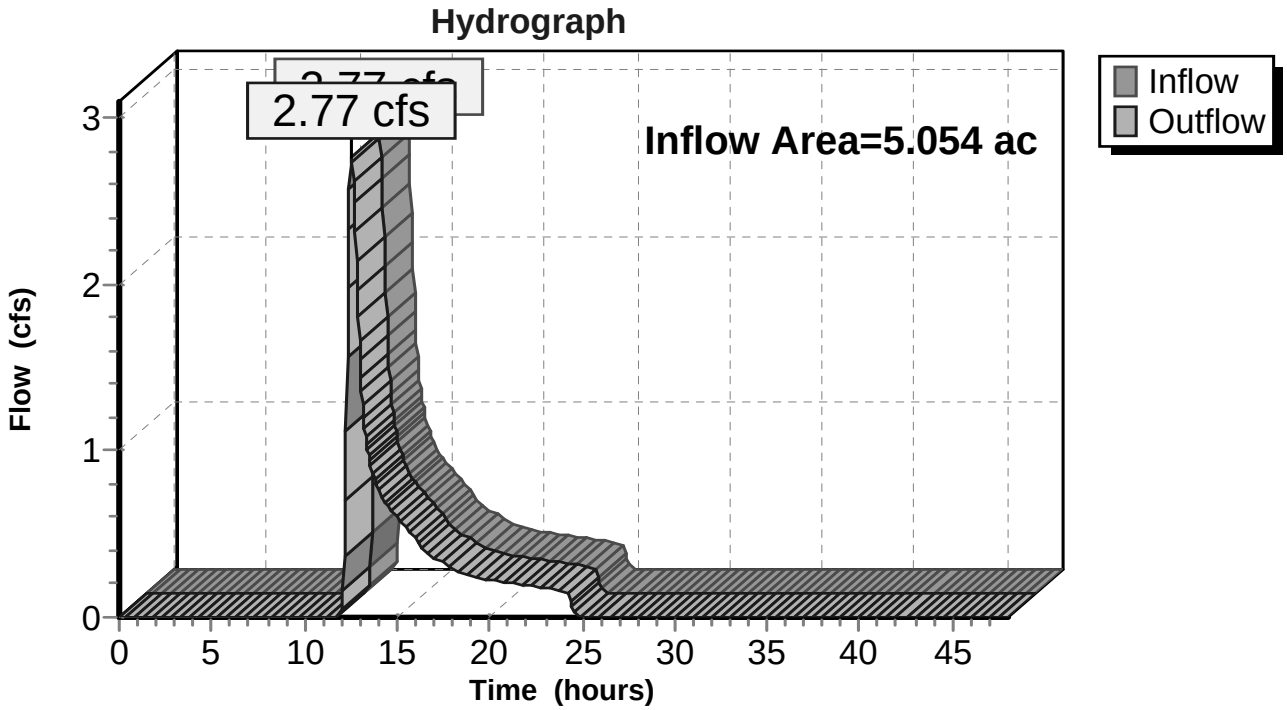
Summary for Reach DP-9: DP-9

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 5.054 ac, 0.00% Impervious, Inflow Depth = 1.18" for 100-Year event
Inflow = 2.77 cfs @ 12.55 hrs, Volume= 0.499 af
Outflow = 2.77 cfs @ 12.55 hrs, Volume= 0.499 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Reach DP-9: DP-9



Summary for Pond BR-1: BR-1

[85] Warning: Oscillations may require Finer Routing>1

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth = 8.05" for 100-Year event
Inflow = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af
Outflow = 0.01 cfs @ 12.80 hrs, Volume= 0.007 af, Atten= 87%, Lag= 42.2 min
Discarded = 0.00 cfs @ 12.75 hrs, Volume= 0.007 af
Primary = 0.01 cfs @ 12.80 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 5
Peak Elev= 500.00' @ 12.80 hrs Surf.Area= 0.006 ac Storage= 0.004 af

Plug-Flow detention time= 564.8 min calculated for 0.007 af (100% of inflow)
Center-of-Mass det. time= 564.3 min (1,305.6 - 741.3)

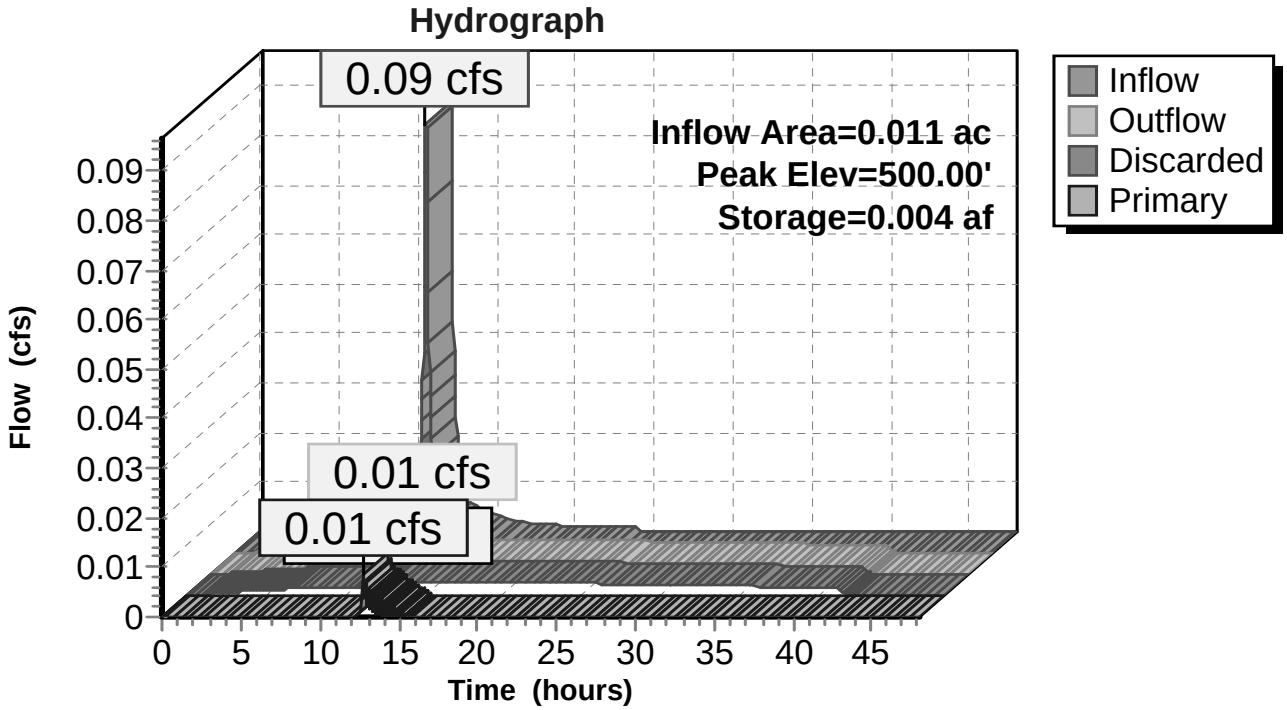
Volume	Invert	Avail.Storage	Storage Description
#1	497.00'	0.004 af	**20.00'W x 14.10'L x 3.00'H Prismatoid** 0.019 af Overall x 20.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	497.00'	**0.250 in/hr Exfiltration over Wetted area**
#2	Primary	500.00'	**76.7' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.00 cfs @ 12.75 hrs HW=500.00' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 12.80 hrs HW=500.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.04 fps)

Pond BR-1: BR-1


Hydrograph
0.09 cfs
0.01 cfs
0.01 cfs
Inflow Area=0.011 ac
Peak Elev=500.00'
Storage=0.004 af
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0
5
10
15
20
25
30
35
40
45
Time (hours)

Summary for Pond IB-1: IB-1

Inflow Area = 0.030 ac,100.00% Impervious, Inflow Depth = 8.05" for 100-Year event
Inflow = 0.28 cfs @ 12.00 hrs, Volume= 0.020 af
Outflow = 0.28 cfs @ 12.00 hrs, Volume= 0.020 af, Atten= 1%, Lag= 0.0 min
Discarded = 0.28 cfs @ 12.00 hrs, Volume= 0.020 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 512.25' @ 12.00 hrs Surf.Area= 0.043 ac Storage= 0.000 af

Plug-Flow detention time= 0.1 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (735.3 - 735.2)

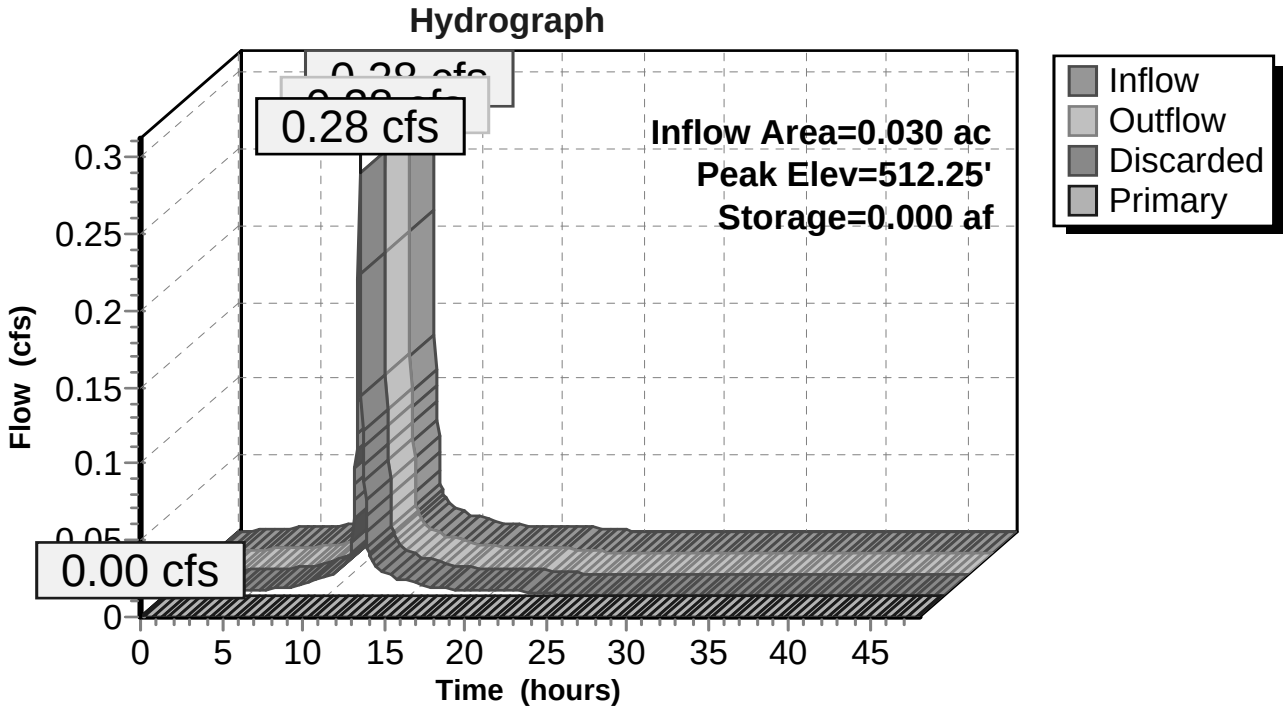
Volume	Invert	Avail.Storage	Storage Description
#1	512.25'	0.033 af	**31.00'W x 61.00'L x 1.50'H Infiltration Trench** 0.065 af Overall x 50.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	512.25'	**64.000 in/hr Exfiltration over Wetted area**
#2	Primary	514.75'	**184.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=2.80 cfs @ 12.00 hrs HW=512.25' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 2.80 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=512.25' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond IB-1: IB-1


Hydrograph
0.28 cfs
0.00 cfs
Inflow Area=0.030 ac
Peak Elev=512.25'
Storage=0.000 af
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.3
0.25
0.2
0.15
0.1
0
0 5 10 15 20 25 30 35 40 45
Time (hours)

Summary for Pond IB-3: IB-3

Inflow Area = 3.423 ac, 13.88% Impervious, Inflow Depth = 1.48" for 100-Year event
Inflow = 3.26 cfs @ 12.28 hrs, Volume= 0.422 af
Outflow = 3.26 cfs @ 12.29 hrs, Volume= 0.422 af, Atten= 0%, Lag= 0.2 min
Discarded = 3.26 cfs @ 12.29 hrs, Volume= 0.422 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 482.01' @ 12.29 hrs Surf.Area= 2,871 sf Storage= 21 cf

Plug-Flow detention time= 0.1 min calculated for 0.421 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (908.0 - 907.9)

Volume	Invert	Avail.Storage	Storage Description
#1	482.00'	8,771 cf	**Custom Stage Data (Irregular)**Listed below (Recalc)

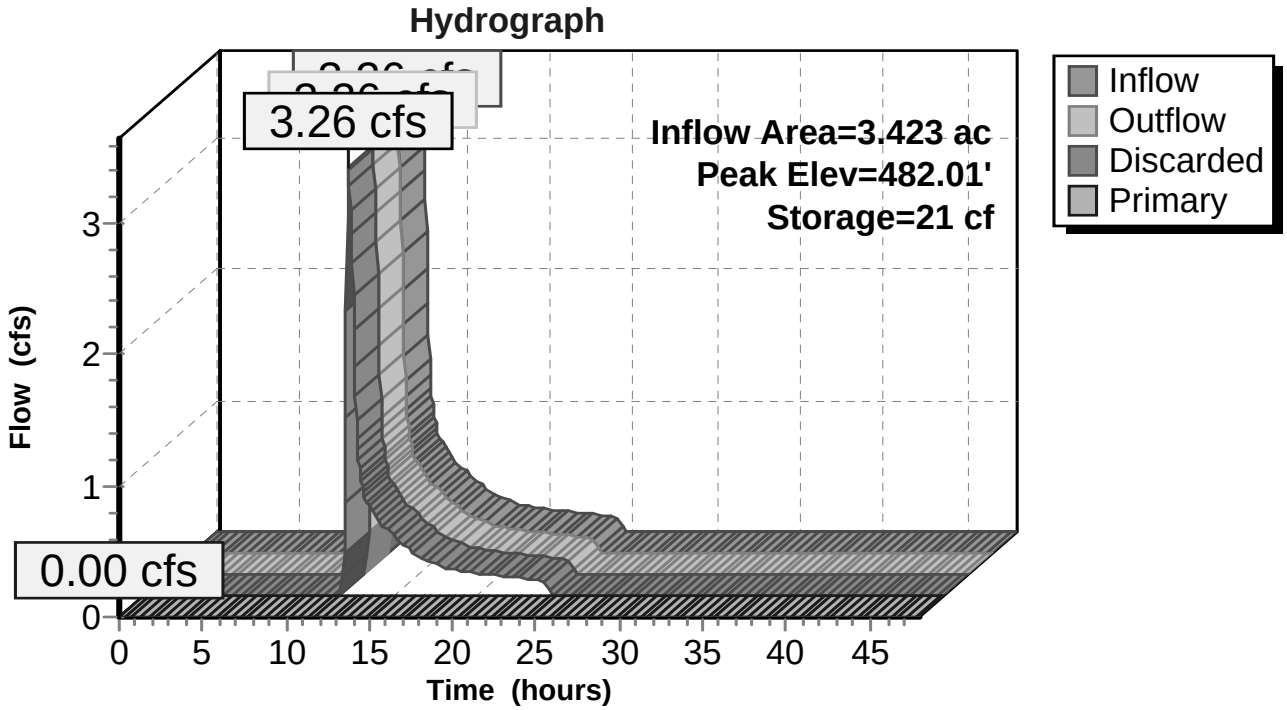
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
482.00	2,861	441.7	0	0	2,861
484.00	6,113	900.0	8,771	8,771	51,812

Device	Routing	Invert	Outlet Devices
#1	Discarded	482.00'	**144.000 in/hr Exfiltration over Wetted area**
#2	Primary	484.50'	**275.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=9.94 cfs @ 12.29 hrs HW=482.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 9.94 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=482.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond IB-3: IB-3


Hydrograph
3.26 cfs
0.00 cfs
Inflow Area=3.423 ac
Peak Elev=482.01'
Storage=21 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
1
2
3
0
5
10
15
20
25
30
35
40
45
Time (hours)

Summary for Pond IT-1: IT-1

Inflow Area = 0.008 ac,100.00% Impervious, Inflow Depth = 8.05" for 100-Year event
Inflow = 0.07 cfs @ 12.06 hrs, Volume= 0.005 af
Outflow = 0.07 cfs @ 12.06 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.07 cfs @ 12.06 hrs, Volume= 0.005 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 514.75' @ 12.06 hrs Surf.Area= 0.005 ac Storage= 0.000 af

Plug-Flow detention time= 0.1 min calculated for 0.005 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (739.0 - 738.9)

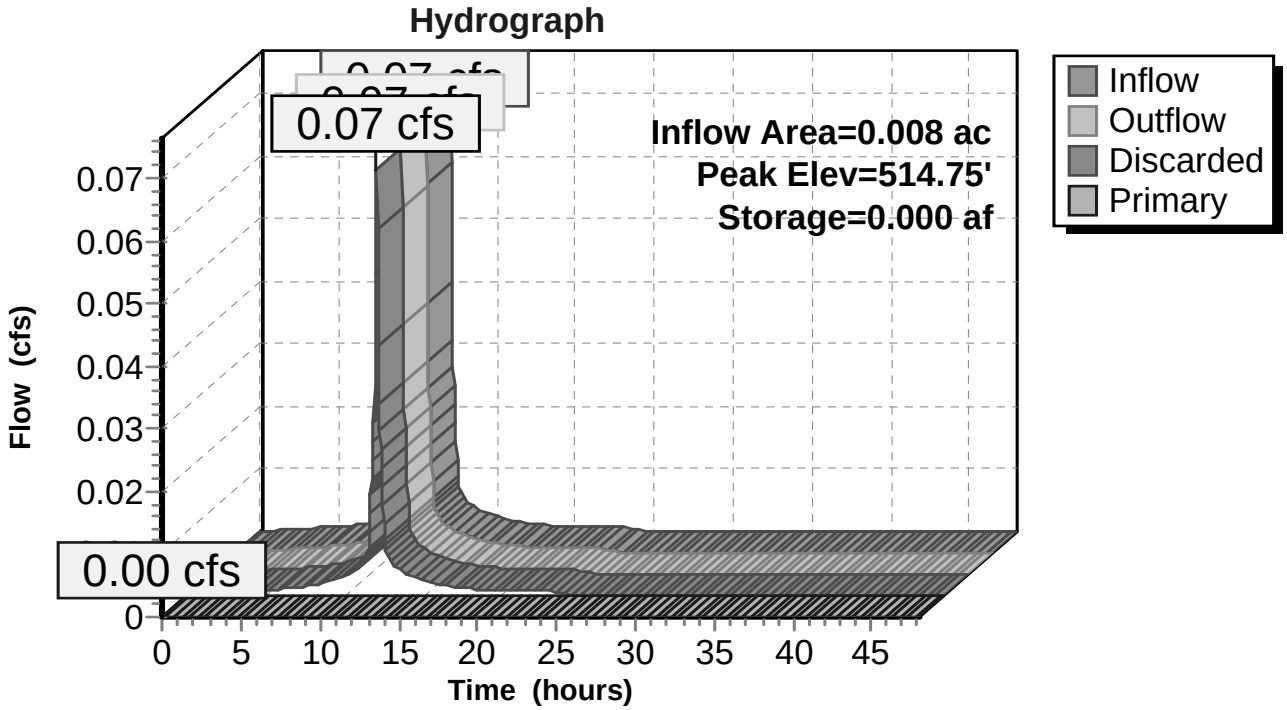
Volume	Invert	Avail.Storage	Storage Description
#1	514.75'	0.003 af	**2.00'W x 102.00'L x 1.50'H Prismatoid** 0.007 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	514.75'	**64.000 in/hr Exfiltration over Wetted area**
#2	Primary	515.25'	**102.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59

Discarded OutFlow Max=0.30 cfs @ 12.06 hrs HW=514.75' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.30 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=514.75' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond IT-1: IT-1


Hydrograph
0.07 cfs
0.00 cfs
Inflow Area=0.008 ac
Peak Elev=514.75'
Storage=0.000 af
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0.07
0.06
0.05
0.04
0.03
0.02
0
0 5 10 15 20 25 30 35 40 45
Time (hours)

Summary for Pond IT-2/3: IT-2 AND IT-3

Inflow Area = 0.527 ac, 13.82% Impervious, Inflow Depth = 1.48" for 100-Year event
Inflow = 0.72 cfs @ 12.10 hrs, Volume= 0.065 af
Outflow = 0.72 cfs @ 12.10 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.71 cfs @ 12.10 hrs, Volume= 0.064 af
Primary = 0.01 cfs @ 12.10 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 505.01' @ 12.10 hrs Surf.Area= 0.007 ac Storage= 0.000 af

Plug-Flow detention time= 0.0 min calculated for 0.065 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (897.3 - 897.2)

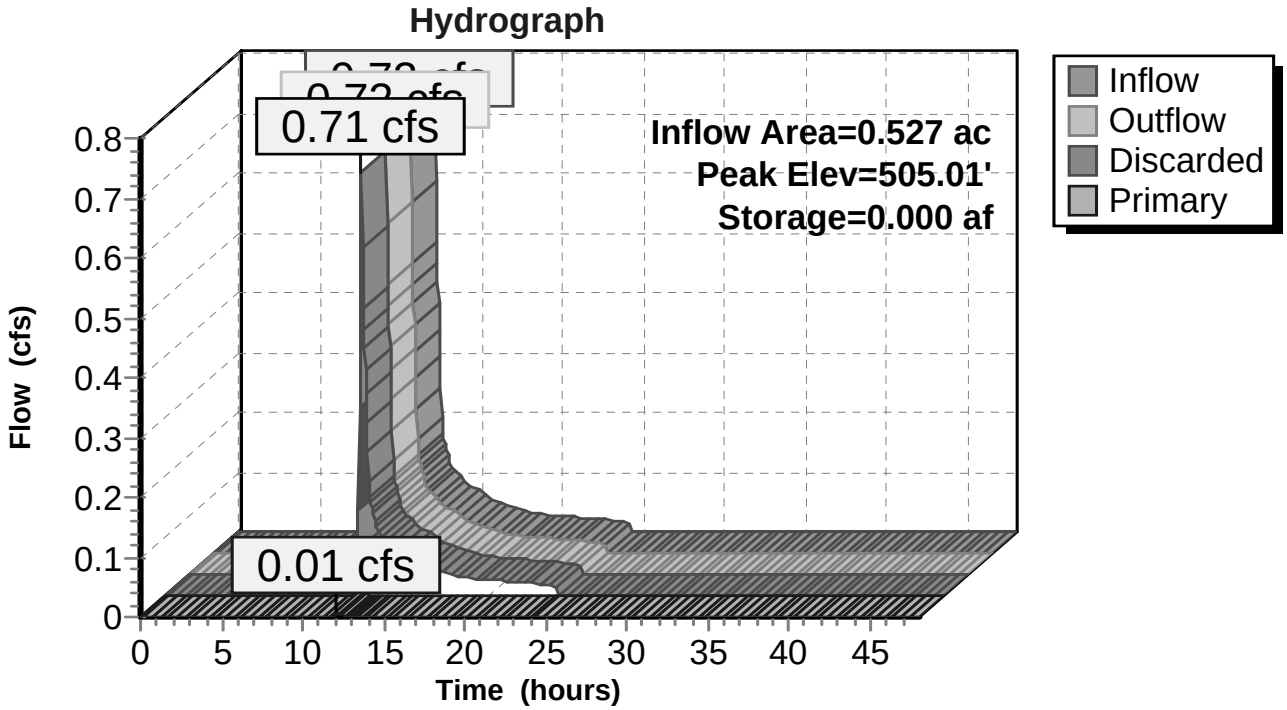
Volume	Invert	Avail.Storage	Storage Description
#1	505.00'	0.004 af	**2.00'W x 150.00'L x 1.50'H Prismatoid** 0.010 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	505.00'	**144.000 in/hr Exfiltration over Wetted area**
#2	Primary	505.00'	**2.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=1.01 cfs @ 12.10 hrs HW=505.01' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 1.01 cfs)

Primary OutFlow Max=0.01 cfs @ 12.10 hrs HW=505.01' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.29 fps)

Pond IT-2/3: IT-2 AND IT-3



Summary for Pond SF-1: SF-1

Inflow Area = 0.011 ac,100.00% Impervious, Inflow Depth = 8.05" for 100-Year event
Inflow = 0.09 cfs @ 12.05 hrs, Volume= 0.007 af
Outflow = 0.01 cfs @ 12.60 hrs, Volume= 0.007 af, Atten= 89%, Lag= 33.1 min
Discarded = 0.01 cfs @ 12.60 hrs, Volume= 0.007 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 490.24' @ 12.60 hrs Surf.Area= 0.003 ac Storage= 0.003 af

Plug-Flow detention time= 82.8 min calculated for 0.007 af (100% of inflow)
Center-of-Mass det. time= 82.7 min (821.4 - 738.6)

Volume	Invert	Avail.Storage	Storage Description
#1	487.50'	0.004 af	**15.00'W x 9.00'L x 4.50'H Prismatoid** 0.014 af Overall x 30.0% Voids

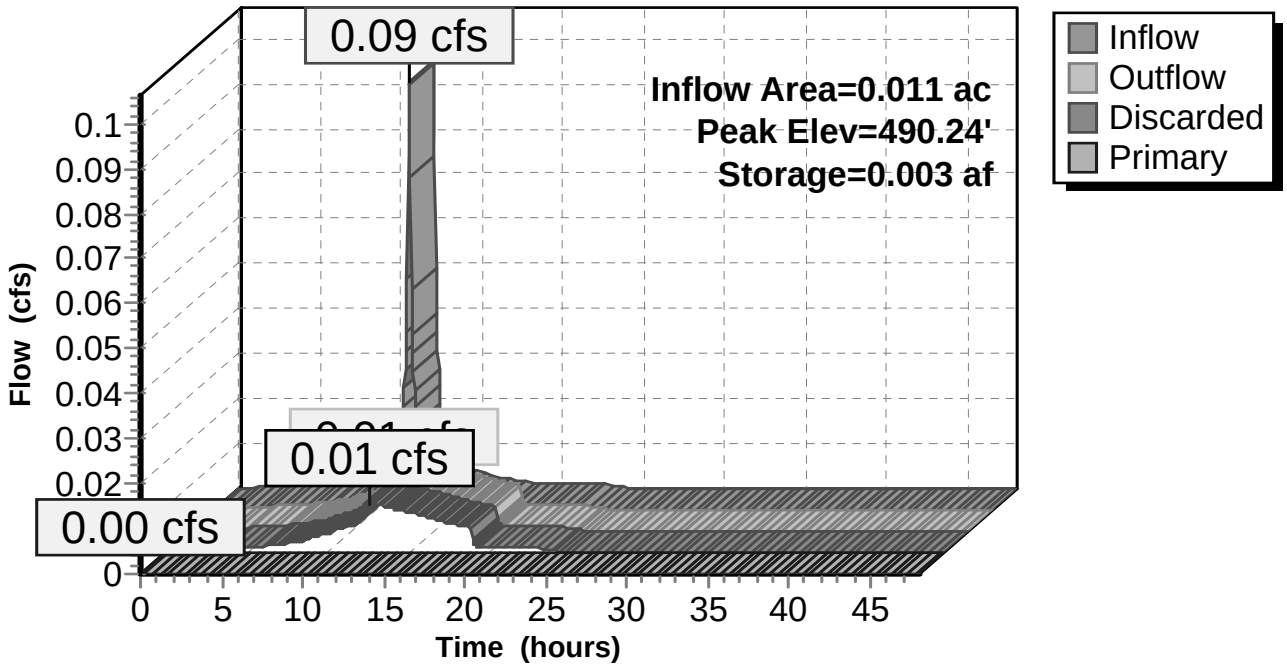
Device	Routing	Invert	Outlet Devices
#1	Discarded	487.50'	**1.750 in/hr Exfiltration over Wetted area**
#2	Primary	492.00'	**10.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.01 cfs @ 12.60 hrs HW=490.24' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=487.50' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond SF-1: SF-1

Hydrograph



APPENDIX E

Unified Sizing Criteria

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Project:	16-019
Project Na	Troutbeck Inn
Location:	Town of Amenia
County:	Dutchess
State:	NY
Date:	9/23/2022

$$WQ_V = \frac{P * Rv * A}{12}$$

Rv = 0.05 + 0.009 (I)

A = site area in acres

P= rainfall (in)

Water Quality Calculations

WATER QUALITY VOLUME CALCULATION FOR NEW IMPERVIOUS

Drainage Area ID	Drainage Area (ac)	New Impervious (ac)	New I (%)	New Rv	P	100 % New Imp. WQ_v (ac-ft)	100 % New Imp. WQ_v (cu-ft)	
2	2.18	0.0220	1.0	0.06	1.2	0.0129	560.327	Removal of gazebo decreases disturbed existing by 64.5%
4	2.25	0.0080	0.4	0.05	1.2	0.0120	521.332	
7	3.42	0.1528	4.5	0.09	1.2	0.0309	1344.877	
8	4.16	0.0000	0.0	0.05	1.2	0.0208	906.484	
8B	1.42	0.0257	1.8	0.07	2.2	0.0173	752.982	
9	8.20	0.0000	0.0	0.05	1.2	0.0410	1784.871	Decrease of 40% disturbed existing impervious

WATER QUALITY VOLUME CALCULATION FOR EXISTING IMPERVIOUS

Drainage Area ID	Drainage Area (ac)	Ex. Impervious (ac)	Ex. I (%)	New Rv	P	25% Ex. Imp. WQ_v (ac-ft)	25% Ex. Imp. WQ_v (cu-ft)	
1	22.62	0.0000	0.0	0.05	1.2	0.028	1231.550	
2	2.18	0.0000	0.0	0.05	1.2	0.003	118.538	Removal of gazebo decreases disturbed existing by 64.5%
3	5.05	0.0000	0.0	0.05	1.2	0.006		
4	2.25	0.0000	0.0	0.05	1.2	0.003	122.458	
5	4.30	0.0000	0.0	0.05	1.2	0.005	234.189	
6	4.17	0.0000	0.0	0.05	1.2	0.005	226.784	
7	3.42	0.0695	2.0	0.07	1.2	0.006	254.554	No 25% Ex. WQv needed with reduction of gravel rd imp
8	4.16	0.0834	2.0	0.07	1.2	0.007	308.361	
9	8.20	0.0000	0.0	0.05	1.2	0.010	446.490	

Post-Dev. Drainage Area	Contributing Area (acres)	Total New Impervious (acres)	I (%)	Rv	P	Aic	S	Min RRv Required (ac-ft)	Min RRv Required (cu-ft)	Comments
DA-1	22.62	0.000	0.00	0.05	1.2	0.000	0.55	0.00000	0.00	
DA-2	2.18	0.030	1.37	0.06	1.2	0.030	0.55	0.00010	4.45	
DA-3	5.05	0.000	0.00	0.05	1.2	0.000	0.55	0.00000	0.00	
DA-4	2.25	0.008	0.36	0.05	1.2	0.008	0.55	0.00002	1.02	
DA-5	4.30	0.000	0.00	0.05	1.2	0.000	0.55	0.00000	0.00	
DA-6	4.17	0.000	0.00	0.05	1.2	0.000	0.55	0.00000	0.00	
DA-7	3.42	0.153	4.47	0.09	1.2	0.153	0.55	0.00076	33.09	
DA-8	4.16	0.022	0.53	0.05	1.2	0.022	0.55	0.00007	2.90	
DA-9	8.20	0.000	0.00	0.05	1.2	0.000	0.55	0.00000	0.00	
	56.35	0.21					Total	0.001	41.45	

**Since there is a reduction in impervious it is assumed that RRv is zero for a conservative estimate

$$RR_V = \frac{P * Rv * Aic * S}{12}$$

Where:

$RR_{v\ min}$ = Minimum Runoff Reduction Volume

P = 90% Rainfall Event Number (see Figure 4.1)

I = Impervious Cover (Percent)

Rv = 0.05 + 0.009 (I) where I =100%

Aic = Total Area of New Impervious Cover

S = Hydrologic Soil Group (HSG) Specific Reduction Factor (S)

Project:	16-019
Project Name:	Troutbeck Inn
Location:	Town of Amenia
County:	Dutchess
State:	NY
Date:	9/23/2022

Required Basin Area: **Infiltration Basin**

$A = WQ_v / (n \times d_b)$

A = Surface area of the basin (ft^2)
WQ_v = Water Quality Volume (ft^3)
d_b = Basin depth (ft)
n = Porosity factor

Drainage Area #	Drainage Area (ac)	Drainage Area (ft^2)	WQv Required (ft^3)	Depth of Basin (ft)	Porosity Factor n (assume 0.4 as per the NYSWDM section 6.3)	Minimum Basin Surface Area (ft^2)	Min. Basin Surf. Width (ft)	Trench Length	Approx. Bottom of Infil. Trench Area (ft^2)	Min. Bottom of Trench Width (ft)	Trench Volume (ft^3)	100% WQv Pretreatment Required (ft^3)
DA-2	2.1770	94,830	560.327	1.50	0.40	933.88	15.565	60.000	374	6.23	1,400.82	560.327
DA-4	2.2490	97,966	521.332	1.50	0.40	868.89	8.519	102.000	348	3.41	1,303.33	521.332
DA-7	3.4240	149,149	1,344.877	4.00	0.40	840.55	3.417	246.000	336	1.37	3,362.19	1,344.877
DA-8 NEW	4.1600	181,210	906.484	1.50	0.40	1,510.81	6.117	247.000	604	2.45	2,266.21	906.484
DA-8 EXISTING	4.1600	181,210	308.361	1.50	0.40	513.94	3.426	150.000	206	1.37	770.90	308.361

Pretreatment A Calculation-Grass Filter Strip			
Drainage Area #	Filter Strip Area (ft^2)	Depth of Rainfall (ft)	Pretreatment WQv Provided (ft^3)
DA-7	6859.9	0.10	686.0

DA-7 Infil. Trench Pretreatment Calculation- Pea Gravel Trench					
Stone Diaphram Length (ft)	Width (ft)	Depth (ft)	Trench Volume (ft^3)	Stone Void Ratio	Pretreatment WQv Provided (ft^3)
150.0	8	1.5	1800.0	0.4	720.0
			Provided		1406.0 ✓

INFILTRATION PRACTICES DIMENSIONS			
SMP #	**LENGTH (ft)**	**WIDTH (ft)**	**DEPTH (ft)**
IB-1	61	31	1.5
IT-1	102	2	1.5
IT-2	75	2	1.5
IT-3	75	2	1.5
IB-3	NON GEOM.	NON GEOM.	6

Project:	16-019
Project Name:	Troutbeck Inn
Location:	Town of Amenia
County:	Dutchess
State:	NY
Date:	9/23/2022

Bioretention Design Required Filter Bed Area:

Af =(WQv)*(df) / [(k)*(hf + df)*(tf)]

A_f =	Surface area of filter bed (ft^2)
df =	Filter bed depth (ft)
k =	Coefficient of permeability of filter media (ft/day)
hf =	Average height of water above filter bed (ft)
tf =	Design filter bed drain time (days)
	(2 days or 48 hours is recommended maximum tf for Bioretention)

Drainage Area	Drainage Area (ac)	WQv (ft^3)	df	k	hf	tf	Af (ft^2)
DA-8b	1.42	376.49	1.5	0.5	0.5	2	282

Provided By Bioretention	Length (ft)	width (ft)	Area Provided (ft^2)	Provided WQv (ft^3)	
Non geometric shaped area			285	380.0	✓

Project:	16-019
Project Name:	Troutbeck Inn
Location:	Town of Amenia
County:	Dutchess
State:	NY
Date:	9/23/2022

Sand Filter Design Required Filter Bed Area:

Af =(WQv)*(df) / [(k)*(hf + df)*(tf)]

A_f =	Surface area of filter bed (ft^2)
df =	Filter bed depth (ft)
k =	Coefficient of permeability of filter media (ft/day)
hf =	Average height of water above filter bed (ft)
tf =	Design filter bed drain time (days)
	(2 days or 48 hours is recommended maximum tf for Bioretention)

Drainage Area Number	Drainage Area (ac)	WQv (ft^3)	df	k	hf	tf	Af (ft^2)
DA-8	4.16	376.49	4.5	3.5	0.5	1.67	58

Treatment Provided Sand Filter Area				
Length* (ft)	width (ft)	Area Provided (ft^2)	Provided WQv (ft^3)	
15	9.0	135	876.8	✓

Pea Gravel Diaphragm Pretreatment Calculation for SF-1					
Pretreatment Volume Required (ft^3)	Pretreatment Area Provided (ft^2)	Depth of Stone (ft)	Voids (%)	Volume of Trench (ft^3)	
37.6	80.0	2	0.4	64.0	✓

APPENDIX F

MS4 SWPPP Acceptance Form

Pre-Construction Documents

Owner/Operator Certification

Contractor Certification

Subcontractor Certification

Qualified Professional Certification

Construction Inspection Reports

Monthly Summary

SWPPP Modification Form

NYSDEC Notice of Intent (NOI)

NYSDEC Notice of Termination (NOT)

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NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information
1. Owner/Operator Name:
2. Contact Person:
3. Street Address:
4. City/State/Zip:
II. Project Site Information
5. Project/Site Name:
6. Street Address:
7. City/State/Zip:
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information
8. SWPPP Reviewed by:
9. Title/Position:
10. Date Final SWPPP Reviewed and Accepted:
IV. Regulated MS4 Information
11. Name of MS4:
12. MS4 SPDES Permit Identification Number: NYR20A
13. Contact Person:
14. Street Address:
15. City/State/Zip:
16. Telephone Number:

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

PRE-CONSTRUCTION MEETING DOCUMENTS

Project Name: _____
Permit No. _____ Date of Authorization_____
Name of Operator: _____
Prime Contractor: _____

a. Preamble to Site Assessment and Inspections -The Following Information To Be Read By All Person's Involved in The Construction of Stormwater Related Activities:

The Operator agrees to have a qualified professional[1] conduct an assessment of the site prior to the commencement of construction[2] and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements.

When construction starts, site inspections shall be conducted by the qualified professional at least every 7 calendar days (Construction Duration Inspections). The Operator shall maintain a record of all inspection reports in this site logbook. The site logbook shall be maintained on site and be made available to the permitting authorities upon request. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis (Monthly Summary Report).

The operator shall also prepare a written summary of compliance with this general permit at a minimum frequency of every three months (Operator's Compliance Response Form), while coverage exists. The summary should address the status of achieving each component of the SWPPP.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization[3] using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 "Qualified Professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed engineer or someone working under the direction and supervision of a licensed engineer (person must have experience in the principles and practices of erosion and sediment control).

2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.

3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

Pre-construction Site Assessment Checklist

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

[ ] [ ] [ ] Has a Notice of Intent been filed with the NYS Department of Conservation?
[ ] [ ] [ ] Is the SWPPP on-site? Where?_____
[ ] [ ] [ ] Is the Plan current? What is the latest revision date?_____
[ ] [ ] [ ] Is a copy of the NOI (with brief description) onsite? Where?_____
[ ] [ ] [ ] Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

[ ] [ ] [ ] Are construction limits clearly flagged or fenced?
[ ] [ ] [ ] Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
[ ] [ ] [ ] Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

[ ] [ ] [ ] Clean stormwater runoff has been diverted from areas to be disturbed.
[ ] [ ] [ ] Bodies of water located either on site or in the vicinity of the site have been identified and protected.
[ ] [ ] [ ] Appropriate practices to protect on-site or downstream surface water are installed.
[ ] [ ] [ ] Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Entrance

Yes No NA

[ ] [ ] [ ] A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
[ ] [ ] [ ] Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
[ ] [ ] [ ] Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Perimeter Sediment Controls

Yes No NA

[ ] [ ] [ ] Silt fence material and installation comply with the standard drawing and specifications.
[ ] [ ] [ ] Silt fences are installed at appropriate spacing intervals
[ ] [ ] [ ] Sediment/detention basin was installed as first land disturbing activity.
[ ] [ ] [ ] Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

[ ] [ ] [ ] The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
[ ] [ ] [ ] The plan is contained in the SWPPP on page _____
[ ] [ ] [ ] Appropriate materials to control spills are onsite. Where? _____

OWNER/OPERATOR'S CERTIFICATION

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

Area of Responsibility:

Company Name (please print):_____

Individual Name (please print):_____

Title _____ **Date:**_____

Address: _____

Phone: _____ **Email:**_____

Signature:_____

Trained Contractor Name (please print):_____

Trained Contractor Title:_____

CONTRACTORS CERTIFICATION

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

Area of Responsibility:

Company Name (please print): _____

Individual Name (please print): _____

Title _____ **Date:** _____

Address: _____

Phone: _____ **Email:** _____

Signature: _____

Trained Contractor Name (please print): _____

Trained Contractor Title: _____

SUBCONTRACTORS CERTIFICATION

"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings. "

Area of Responsibility:

Company Name (please print):_____

Individual Name (please print):_____

Title _____ **Date:**_____

Address: _____

Phone: _____ **Email:**_____

Signature:_____

Trained Contractor Name (please print):_____

Trained Contractor Title:_____

QUALIFIED PROFESSIONAL'S CREDENTIALS & CERTIFICATION

"I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

Area of Responsibility:

Company Name (please print):_____

Individual Name (please print):_____

Title _____ **Date:**_____

Address: _____

Phone: _____ **Email:**_____

Signature:_____

Qualified Inspector Name (please print):_____

Qualified Inspector Title:_____

Stormwater Construction Site Inspection Report

General Information			
Project Name			
SPDES Tracking No.	NYR-	**Municipality/County**	
Date of Inspection		**Start Time**	**End Time**
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Signature			
Inspector's Contact Information	Rennia Engineering 6 Dover Village Plaza, Suite 5 Dover Plains, NY 12522 (845) 877-0555		
Inspector's Qualifications			
Describe present phase of construction			
Type of Inspection: x Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event			
Weather Information			
Has there been a storm event since the last inspection? ❑Yes ❑No **If yes, provide:** Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in):			
Weather at time of this inspection? ❑ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds ❑ Other: Temperature:			
Have any discharges occurred since the last inspection? ❑Yes ❑No **If yes, describe:**			
Are there any discharges at the time of inspection? ❑Yes ❑ No **If yes, describe:**			

Site-specific SMPs

	SMP	SMP Installed?	SMP Maintenance Required?	Corrective Action Needed and Notes
1	Silt Fence	❑Yes ❑No	❑Yes ❑No	
2	Stabilized Construction Entrance	❑Yes ❑No	❑Yes ❑No	
3	Bioretention Areas	❑Yes ❑No	❑Yes ❑No	
4	Sand Filter	❑Yes ❑No	❑Yes ❑No	
5	Dry Wells	❑Yes ❑No	❑Yes ❑No	
6	Dry Swale	❑Yes ❑No	❑Yes ❑No	
7	Porous Pavement	❑Yes ❑No	❑Yes ❑No	
10	Site Grading	❑Yes ❑No	❑Yes ❑No	

Insert E&SC Plan on this page

Overall Site Issues

	SWMP/Activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	❑Yes ❑No ❑NA	❑Yes ❑No ❑NA	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar SWMPs?	❑Yes ❑No ❑NA	❑Yes ❑No ❑NA	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	❑Yes ❑No ❑NA	❑Yes ❑No ❑NA	
4	Are discharge points and receiving waters free of any sediment deposits?	❑Yes ❑No ❑NA	❑Yes ❑No ❑NA	
5	Are storm drain inlets properly protected?	❑Yes ❑No ❑NA	❑Yes ❑No ❑NA	
6	Is the construction exit preventing sediment from being tracked into the street?	❑Yes ❑No ❑NA	❑Yes ❑No ❑NA	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	❑Yes ❑No ❑NA	❑Yes ❑No ❑NA	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	❑Yes ❑No ❑NA	❑Yes ❑No ❑NA	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	❑Yes ❑No ❑NA	❑Yes ❑No ❑NA	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	❑Yes ❑No ❑NA	❑Yes ❑No ❑NA	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	❑Yes ❑No ❑NA	❑Yes ❑No ❑NA	

Monthly Summary of Site Inspection Activities

Name of Permitted Facility:	Today's Date:	Reporting Month:
Location:	Permit Identification #:	
Name and Telephone Number of Site Inspector: **Rennia Engineering Design, PLLC 845-877-0555**		

Date of Inspection	Regular / Rainfall based Inspection	Name of Inspector	Items of Concern

Owner/Operator Certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law."

_____ _____

Signature of Permittee or Duly Authorized Representative Name of Permittee or Duly Authorized Representative date

Duly authorized representatives must have written authorization, submitted to DEC, to sign any permit documents.

SITE INSPECTION MODIFICATIONS TO THE SWPPP

The Operator shall amend the SWPPP whenever:

1. There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP; or

2. The SWPPP proves to be ineffective in:

a. Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by this permit; or

b. Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity; and

3. Additionally, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement any measure of the SWPPP.

Modification & Reason:

0644089821

NOTICE OF INTENT

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

NYR ☐☐☐☐☐☐
(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

-IMPORTANT-
RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

Owner/Operator Contact Person First Name

Owner/Operator Mailing Address

City

State ☐☐ Zip ☐☐☐☐☐ - ☐☐☐☐

Phone (Owner/Operator) ☐☐☐ - ☐☐☐ - ☐☐☐☐

Fax (Owner/Operator) ☐☐☐ - ☐☐☐ - ☐☐☐☐

Email (Owner/Operator)

FED TAX ID ☐☐ - ☐☐☐☐☐☐☐ (not required for individuals)

Project Site Information

Project/Site Name

Street Address (NOT P.O. BOX)

Side of Street
○ **North** ○ **South** ○ **East** ○ **West**

City/Town/Village (THAT ISSUES BUILDING PERMIT)

State N Y Zip - County DEC Region

Name of Nearest Cross Street

Distance to Nearest Cross Street (Feet)

Project In Relation to Cross Street
○ **North** ○ **South** ○ **East** ○ **West**

Tax Map Numbers
Section-Block-Parcel

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site. To do this, go to the NYSDEC Stormwater Interactive Map on the DEC website at:

https://gisservices.dec.ny.gov/gis/stormwater/

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located the centroid of your project site, go to the bottom right hand corner of the map for the X, Y coordinates. Enter the coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)
-7
Ex. -73.749

Y Coordinates (Northing)
4
Ex. 42.652

2. What is the nature of this construction project?

○ **New Construction**

○ **Redevelopment with increase in impervious area**

○ **Redevelopment with no increase in impervious area**

3. Select the predominant land use for both pre and post development conditions.
SELECT ONLY ONE CHOICE FOR EACH

Pre-Development Existing Land Use

- ○ FOREST
- ○ PASTURE/OPEN LAND
- ○ CULTIVATED LAND
- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY
- ○ PARKING LOT
- ○ OTHER

Post-Development Future Land Use

- ○ SINGLE FAMILY HOME
- ○ SINGLE FAMILY SUBDIVISION — Number of Lots
- ○ TOWN HOME RESIDENTIAL
- ○ MULTIFAMILY RESIDENTIAL
- ○ INSTITUTIONAL/SCHOOL
- ○ INDUSTRIAL
- ○ COMMERCIAL
- ○ MUNICIPAL
- ○ ROAD/HIGHWAY
- ○ RECREATIONAL/SPORTS FIELD
- ○ BIKE PATH/TRAIL
- ○ LINEAR UTILITY (water, sewer, gas, etc.)
- ○ PARKING LOT
- ○ CLEARING/GRADING ONLY
- ○ DEMOLITION, NO REDEVELOPMENT
- ○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
- ○ OTHER

***Note**: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	**Total Area To Be Disturbed**	**Existing Impervious Area To Be Disturbed**	**Future Impervious Area Within Disturbed Area**
.	.	.	.

5. Do you plan to disturb more than 5 acres of soil at any one time? ○ **Yes** ○ **No**

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	**B**	**C**	**D**
%	%	%	%

7. Is this a phased project? ○ **Yes** ○ **No**

8. Enter the planned start and end dates of the disturbance activities.

Start Date / / - **End Date** / /

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

9a. Type of waterbody identified in Question 9?

- ○ Wetland / State Jurisdiction On Site (Answer 9b)
- ○ Wetland / State Jurisdiction Off Site
- ○ Wetland / Federal Jurisdiction On Site (Answer 9b)
- ○ Wetland / Federal Jurisdiction Off Site
- ○ Stream / Creek On Site
- ○ Stream / Creek Off Site
- ○ River On Site
- ○ River Off Site
- ○ Lake On Site
- ○ Lake Off Site
- ○ Other Type On Site
- ○ Other Type Off Site

9b. How was the wetland identified?

- ○ Regulatory Map
- ○ Delineated by Consultant
- ○ Delineated by Army Corps of Engineers
- ○ Other (identify)

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001? ○ **Yes** ○ **No**

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001? ○ **Yes** ○ **No**

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters? ○ **Yes** ○ **No**
If no, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ○ **Yes** ○ **No**
If Yes, what is the acreage to be disturbed?

.

14. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area? ○ **Yes** ○ **No**

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ○ **Yes** ○ **No** ○ **Unknown**

16. What is the name of the municipality/entity that owns the separate storm sewer system?

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ○ **Yes** ○ **No** ○ **Unknown**

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ○ **Yes** ○ **No**

19. Is this property owned by a state authority, state agency, federal government or local government? ○ **Yes** ○ **No**

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ○ **Yes** ○ **No**

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ○ **Yes** ○ **No**

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ○ **Yes** ○ **No**
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ○ **Yes** ○ **No**

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ○ **Professional Engineer (P.E.)**
- ○ **Soil and Water Conservation District (SWCD)**
- ○ **Registered Landscape Architect (R.L.A)**
- ○ **Certified Professional in Erosion and Sediment Control (CPESC)**
- ○ **Owner/Operator**
- ○ **Other**

SWPPP Preparer

Contact Name (Last, Space, First)

Mailing Address

City

State Zip -

Phone - -

Fax - -

Email

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name **MI**

Last Name

Signature

Date / /

25. Has a construction sequence schedule for the planned management practices been prepared? ○ Yes ○ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ○ Check Dams
- ○ Construction Road Stabilization
- ○ Dust Control
- ○ Earth Dike
- ○ Level Spreader
- ○ Perimeter Dike/Swale
- ○ Pipe Slope Drain
- ○ Portable Sediment Tank
- ○ Rock Dam
- ○ Sediment Basin
- ○ Sediment Traps
- ○ Silt Fence
- ○ Stabilized Construction Entrance
- ○ Storm Drain Inlet Protection
- ○ Straw/Hay Bale Dike
- ○ Temporary Access Waterway Crossing
- ○ Temporary Stormdrain Diversion
- ○ Temporary Swale
- ○ Turbidity Curtain
- ○ Water bars

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

- ○ Brush Matting
- ○ Dune Stabilization
- ○ Grassed Waterway
- ○ Mulching
- ○ Protecting Vegetation
- ○ Recreation Area Improvement
- ○ Seeding
- ○ Sodding
- ○ Straw/Hay Bale Dike
- ○ Streambank Protection
- ○ Temporary Swale
- ○ Topsoiling
- ○ Vegetating Waterways

Permanent Structural

- ○ Debris Basin
- ○ Diversion
- ○ Grade Stabilization Structure
- ○ Land Grading
- ○ Lined Waterway (Rock)
- ○ Paved Channel (Concrete)
- ○ Paved Flume
- ○ Retaining Wall
- ○ Riprap Slope Protection
- ○ Rock Outlet Protection
- ○ Streambank Protection

Other

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ○ **Preservation of Undisturbed Areas**
- ○ **Preservation of Buffers**
- ○ **Reduction of Clearing and Grading**
- ○ **Locating Development in Less Sensitive Areas**
- ○ **Roadway Reduction**
- ○ **Sidewalk Reduction**
- ○ **Driveway Reduction**
- ○ **Cul-de-sac Reduction**
- ○ **Building Footprint Reduction**
- ○ **Parking Reduction**

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ○ All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

			.			
			.			**acre-feet**

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)	___.___	and/or	___.___
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)	___.___	and/or	___.___
○ Tree Planting/Tree Pit (RR-3)	___.___	and/or	___.___
○ Disconnection of Rooftop Runoff (RR-4)	___.___	and/or	___.___
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			___.___
○ Rain Garden (RR-6)			___.___
○ Stormwater Planter (RR-7)			___.___
○ Rain Barrel/Cistern (RR-8)			___.___
○ Porous Pavement (RR-9)			___.___
○ Green Roof (RR-10)			___.___
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			___.___
○ Infiltration Basin (I-2)			___.___
○ Dry Well (I-3)			___.___
○ Underground Infiltration System (I-4)			___.___
○ Bioretention (F-5)			___.___
○ Dry Swale (O-1)			___.___
Standard SMPs			
○ Micropool Extended Detention (P-1)			___.___
○ Wet Pond (P-2)			___.___
○ Wet Extended Detention (P-3)			___.___
○ Multiple Pond System (P-4)			___.___
○ Pocket Pond (P-5)			___.___
○ Surface Sand Filter (F-1)			___.___
○ Underground Sand Filter (F-2)			___.___
○ Perimeter Sand Filter (F-3)			___.___
○ Organic Filter (F-4)			___.___
○ Shallow Wetland (W-1)			___.___
○ Extended Detention Wetland (W-2)			___.___
○ Pond/Wetland System (W-3)			___.___
○ Pocket Wetland (W-4)			___.___
○ Wet Swale (O-2)			___.___

Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Alternative SMP	Total Contributing Impervious Area(acres)
○ **Hydrodynamic**	
○ **Wet Vault**	
○ **Media Filter**	
○ **Other**	

Provide the name and manufacturer of the Alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Name

Manufacturer

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided

. **acre-feet**

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28).

○ **Yes** ○ **No**

If Yes, go to question 36.
If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.
[Minimum RRv Required = (P)(0.95)(Ai)/12, Ai=(S)(Aic)]

Minimum RRv Required

. **acre-feet**

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?

○ **Yes** ○ **No**

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

[ ][ ][ ].[ ][ ][ ] **acre-feet**

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a). [ ][ ][ ].[ ][ ][ ]

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ○ **Yes** ○ **No**

If Yes, go to question 36.
If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

[ ][ ][ ].[ ][ ][ ] **acre-feet**

CPv Provided

[ ][ ][ ].[ ][ ][ ] **acre-feet**

36a. The need to provide channel protection has been waived because:

○ Site discharges directly to tidal waters or a fifth order or larger stream.

○ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

[ ][ ][ ].[ ][ ][ ] **CFS**

Post-development

[ ][ ][ ].[ ][ ][ ] **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

[ ][ ][ ].[ ][ ][ ] **CFS**

Post-development

[ ][ ][ ].[ ][ ][ ] **CFS**

37a. The need to meet the Qp and Qf criteria has been waived because:

- ○ Site discharges directly to tidal waters or a fifth order or larger stream.
- ○ Downstream analysis reveals that the Qp and Qf controls are not required

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ○ **Yes** ○ **No**

If Yes, Identify the entity responsible for the long term Operation and Maintenance

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a) This space can also be used for other pertinent project information.

40. Identify other DEC permits, existing and new, that are required for this project/facility.

- ○ Air Pollution Control
- ○ Coastal Erosion
- ○ Hazardous Waste
- ○ Long Island Wells
- ○ Mined Land Reclamation
- ○ Solid Waste
- ○ Navigable Waters Protection / Article 15
- ○ Water Quality Certificate
- ○ Dam Safety
- ○ Water Supply
- ○ Freshwater Wetlands/Article 24
- ○ Tidal Wetlands
- ○ Wild, Scenic and Recreational Rivers
- ○ Stream Bed or Bank Protection / Article 15
- ○ Endangered or Threatened Species(Incidental Take Permit)
- ○ Individual SPDES
- ○ SPDES Multi-Sector GP [N][Y][R][ ][ ][ ][ ][ ][ ]
- ○ Other [ ]
- ○ None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ○ **Yes** ○ **No**
If Yes, Indicate Size of Impact. [ ][ ][ ][ ][ ].[ ]

42. Is this project subject to the requirements of a regulated, traditional land use control MS4? ○ **Yes** ○ **No**
(If No, skip question 43)

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI? ○ **Yes** ○ **No**

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned. [N][Y][R][ ][ ][ ][ ][ ][ ]

Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name **MI**

Print Last Name

Owner/Operator Signature

Date / /

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:	
Title/Position:	
Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

APPENDIX G

Pre-Development Drainage Plan Ph. 1, 1 of 2

Post-Development Drainage Plan Ph. 1, 2 of 2

Stormwater Plan, 5 of 15

Erosion & Sediment Control Plan Phase 1-3, 7 of 15

Erosion & Sediment Control Plan Phase 4-5, 8 of 15

Details, 14 of 15

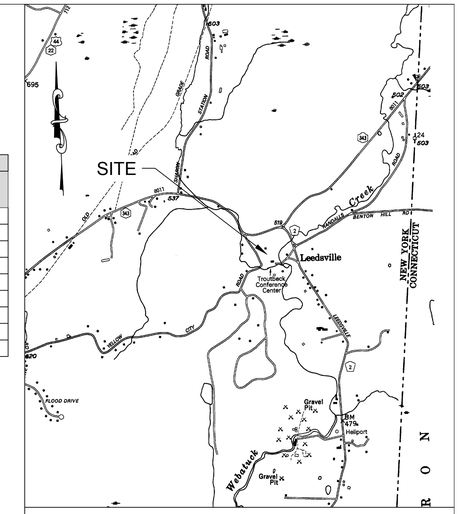
Stormwater Details, 15 of 15

LEGEND

- EXISTING PROPERTY LINE
- EXISTING CONTOUR -340-
- PROPOSED TIME OF CONCENTRATION Tc >
- PROPOSED DRAINAGE AREA
- SOIL TYPE BOUNDARY

EXISTING CONDITIONS DRAINAGE AREA TABLE

DRAINAGE AREA/DESIGN POINT	AREA (AC)	TIME OF CONC. (MINS.)	1-YEAR RUNOFF (AC.FT.)	10-YEAR RUNOFF (AC.FT.)	100 YEAR RUNOFF (AC.FT.)
DA-1/DP-1	22.61	51.1	0.09	3.94	25.57
DA-2/DP-3	2.18	13	0	0.02	1.12
DA-3/DP-9	5.05	29.5	0	0.07	2.77
DA-4/DP-8	2.24	28	0	0.24	2.82
DA-5/DP-7	4.3	28.3	0	0.24	4.03
DA-6/DP-6	4.16	16.6	0.01	0.83	7
DA-7/DP-5	3.42	18	0	0.05	2.24
DA-8/DP-2	4.16	34.7	0	0.07	2.7
DA-9/DP-4	8.19	74.9	0	0.14	3.06



VICINITY PLAN SCALE: 1" = 2,000'

ZONING DISTRICT: "RR" RURAL RESIDENTIAL
LOT SIZE: 43.5 ACRES
TAX GRID NO. : 132000-7267-00-227675
PROPERTY ADDRESS: 515 LEEDSVILLE ROAD AMENIA, NY 12501
PROPERTY OWNER: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501
APPLICANT: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501

MAP NOTES:
1. PROPERTY DATA AND EXISTING FEATURES BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE APRIL 26, 2016 PREPARED BY CHAZEN ENGINEERING AND SURVEYING, PC.
2. TOPOGRAPHIC CONTOURS BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE DECEMBER 8, 2004 PREPARED BY STEVEN ALEX, L.S. OF CHAZEN ENGINEERING AND SURVEYING, PC.

DATE	REVISION

ENGINEERING, DESIGN, & PLANS PREPARED BY:
RENNIA ENGINEERING DESIGN, PLLC
CIVIL • ENVIRONMENTAL • STRUCTURAL
6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

TROUTBECK MASTER PLAN

TOWN OF AMENIA — DUTCHESS COUNTY, NY

EXISTING CONDITIONS DRAINAGE AREA EXHIBIT

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
5/17/2022	1" = 200'	RED	RED	RAR	16-019	1 of 2

ADAPTIVE REUSE STORMWATER MANAGEMENT SUMMARY			
PHASE	PROJECT AREA	SWM #	STORMWATER MANAGEMENT INFRASTRUCTURE
1	CREEKSIDE EAST CABINS	SWM #1	DISCONNECTED ROOF LEADERS
			IB-3 INFILTRATION BASIN
			GRASS FILTER STRIP (INFIL. PRETREATMENT)
			PEA GRAVEL DIAPHRAGM (INFIL. PRETREATMENT)
	GATEHOUSE	SWM #2	BR-1 BIORETENTION AREA FOR GATEHOUSE IMP.
			PEA GRAVEL DIAPHRAGM (INFIL. PRETREATMENT)
		SWM #3	SF-1 SAND FILTER FOR GATEHOUSE IMP. AND EX. DISTURBED IMP.
			CS-1 CONVEYANCE SWALE
	ENTRY ROAD	SWM #4	IT-2 INFILTRATION TRENCH
	ENTRY ROAD	SWM #5	IT-3 INFILTRATION TRENCH
	PLATFORM TENNIS AND WARMING HUT	SWM #6	IB-1 INFILTRATION BASIN (PLATFORM TENNIS SMP)
		SWM#7	IT-1 INFILTRATION TRENCH (WARMING HUT SMP)
	CARETAKER HOUSE/BAKERY	SWM #8	NO NEED FOR SMP AS IMPERVIOUS IS REDUCED BY >25%
			SOIL RESTORATION IN EXISTING COMPACTED GRAVEL PARKING AREA
2	MANOR HOUSE	SWM #9	SF-1 SAND FILTER FOR EXPANDED PARKING AREA
3	CENTRAL ADMIN/TRACTOR SHED/STAFF HOUSING	SWM #10	SF-2 AND SF-3 SAND FILTERS FOR NEW IMPERVIOUS AND PARKING AREA
4	GARDEN NORTH CABINS	SWM #11	BR-3 BIORETENTION AREA FOR ENTRY ROAD AND NEW PARKING AREA
		SWM #12	DS-3 DRY SWALE FOR ENTRY ROAD
		SWM #13	DW-1 THROUGH DW-4 DRYWELLS FOR NEW CABIN ROOFS
5A	GARDEN HOTEL	SWM #14	IC-1 AND IC-2 INFILTRATION CHAMBERS FOR NEW HOTEL IMPERVIOUS
5B	GARDEN HALL	SWM #15	IC-3 INFILTRATION CHAMBERS FOR NEW EVENT SPACE IMPERVIOUS
6	DELAMETER HOUSE	SWM #16	GR-1 GREEN ROOF
		SWM #17	SF-4 SAND FILTER FOR ACCESS DRIVE AND PARKING
7	POND EXPANSION CABINS	SWM #18	IB-4 INFILTRATION BASIN FOR FUTURE CABINS AND ACCESSWAYS
8	GARDEN KEYS EXPANSION	SWM #19	IC-4 INFILTRATION CHAMBERS FOR NEW ROOF AND ACCESSWAYS
9	POOL RENOVATION	TBD	SMP TO BE DETERMINED (HARDSCAPE PENDING)

POST DEVELOPMENT MITIGATED CONDITIONS DRAINAGE AREA TABLE					
DRAINAGE AREA/DESIGN POINT	AREA (AC)	TIME OF CONC. (MINS.)	1-YEAR RUNOFF (AC.FT.)	10-YEAR RUNOFF (AC.FT.)	100 YEAR RUNOFF (AC.FT.)
DA-1/DP-1	22.61	51.1	0.09	3.94	25.57
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DA-4/DP-8	2.24	28	0	0.24	2.81
DA-5/DP-7	4.3	28.3	0	0.24	4.03
DA-6/DP-6	4.16	16.6	0.01	0.83	7
DA-7/DP-5	3.42	16.7	0	0	1.67
DA-8/DP-2	4.16	34.5	0	0.03	1.71
DA-9/DP-4	8.19	74.9	0	0.11	2.73

LEGEND

EXISTING PROPERTY LINE

EXISTING CONTOUR -340-

PROPOSED TIME OF CONCENTRATION Tc >

PROPOSED DRAINAGE AREA

0 100' 200'

1" = 100'
GRAPHIC SCALE

MAP NOTES:
1. PROPERTY DATA AND EXISTING FEATURES BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE APRIL 26, 2016 PREPARED BY CHAZEN ENGINEERING AND SURVEYING, PC.
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DATE	REVISION

ENGINEERING, DESIGN, & PLANS PREPARED BY:
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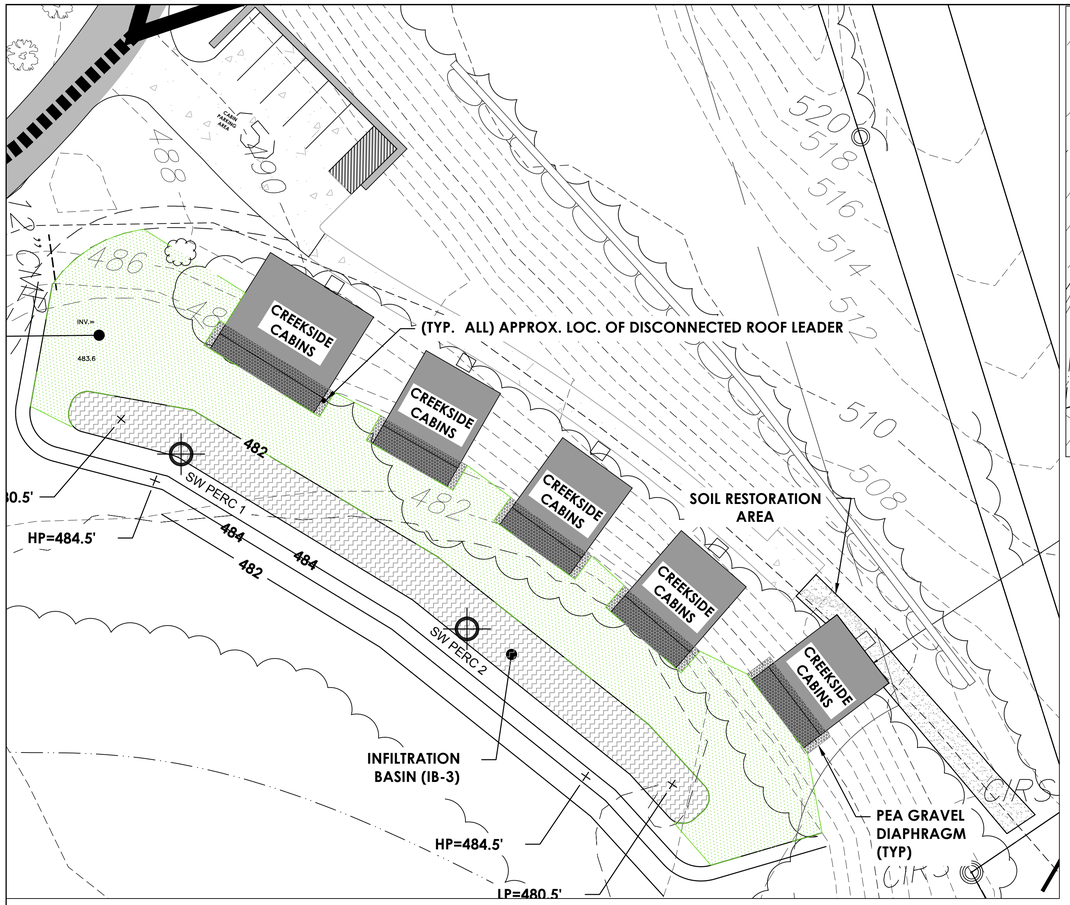
Tel: (845) 877-0555 Fax: (845) 877-0556

TROUTBECK MASTER PLAN

TOWN OF AMENIA — DUTCHESS COUNTY, NY

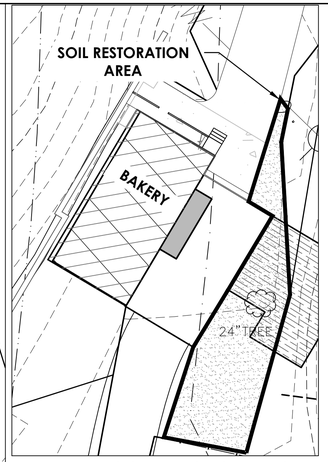
PROPOSED OVERALL CONDITIONS

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
10/10/2022	1" = 100'	WTS	WTS	RAR	16-019	2 of 2



INFILTRATION BASIN IB-3

SCALE: 1" = 20'



BAKERY SOIL RESTORATION

SCALE: 1" = 20'

PRE vs POST DEVELOPMENT COMPARISON					
DRAINAGE AREA	AREA (AC)	STORM EVENT	PRE-DEV RUNOFF (cfs)	POST DEV RUNOFF (cfs)	PRE vs POST Δ%
DA-1/DP-1	22.6	1-year	0.09	-	-
		10-year	3.94	-	-
		100-year	25.57	-	-
DA-2/DP-3	2.17	1-year	0	0	0%
		10-year	0.02	0.02	0.00%
		100-year	1.12	1.11	-0.89%
DA-3/DP-9	5.05	1-year	0	-	-
		10-year	0.07	-	-
		100-year	2.77	-	-
DA-4/DP-8	2.25	1-year	0	0	0.00%
		10-year	0.24	0.24	0.00%
		100-year	2.82	2.81	-0.35%
DA-5/DP-7	4.3	1-year	0	-	-
		10-year	0.24	-	-
		100-year	4.03	-	-
DA-6/DP-6	4.16	1-year	0.01	-	-
		10-year	0.83	-	-
		100-year	7	-	-
DA-7/DP-5	3.42	1-year	0	0	0.00%
		10-year	0.05	0	-100.00%
		100-year	2.24	0	-100.00%
DA-8/DP-2	4.16	1-year	0	0	0.00%
		10-year	0.07	0.07	0.00%
		100-year	2.7	2.62	-2.96%
DA-9/DP-4	8.19	1-year	0	0	0.00%
		10-year	0.14	0.11	-21.43%
		100-year	3.06	2.73	-10.78%

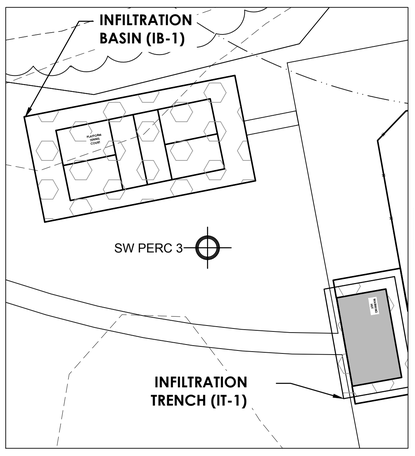
PHASE 1 SMP DIMENSIONS									
Drainage Area	SMP #	Inlet Type	Inlet Invert	Outlet Type	Outlet Invert	Practice Length	Practice Width	Practice Area	Practice Depth
DA-2	IB-1	Sheet Flow	514.75	Broadcrested Weir/Berm	514.75	31	61	1891	1.5
DA-4	IT-1	Sheet Flow	516.75	Broadcrested Weir/Berm	515.25	102	2	204	1.5
DA-7	IB-3	Sheet Flow	484.5	Broadcrested Weir/Berm	484	250	2	6887	1.5
DA-8B	BR-1	Sheet Flow	500	Broadcrested Weir/Berm	500	Non-Geometric	Non-Geometric	372	3
DA-8B	SF-1	Conv. Swale	492	Broadcrested Weir/Berm	491.5	15	9	135	4.5
DA-8B	CS-1	Sheet Flow	493	Channel Flow	492	32	10	320	1
DA-8C	IT-2	Sheet Flow	506	Broadcrested Weir/Berm	505.5	78	2	156	1.5
DA-8C	IT-3	Sheet Flow	505.5	Broadcrested Weir/Berm	505	75	2	150	1.5

LEGEND

- EXISTING PROPERTY LINE
- EXISTING CONTOUR (340)
- PROPOSED TIME OF CONCENTRATION Tc >
- PROPOSED DRAINAGE AREA
- PROPOSED INFIL. OR BIORET. AREA
- PROPOSED SOIL RESTORATION AREA
- PROPOSED SAND FILTER

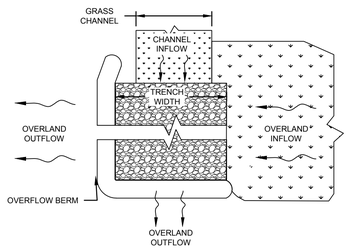
BIORETENTION AREAS BR-1 AND BR-2

SCALE: 1" = 20'

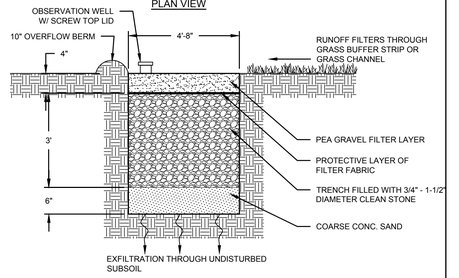


INFILTRATION TRENCHES IB-1 AND IB-2

SCALE: 1" = 20'



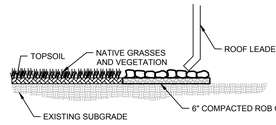
PLAN VIEW



SECTION VIEW

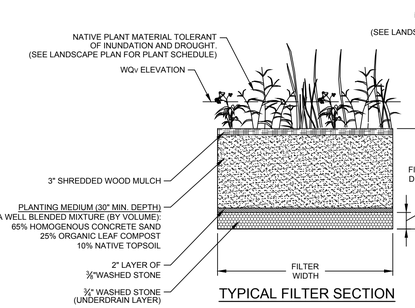
INFILTRATION TRENCH DETAIL

NTS

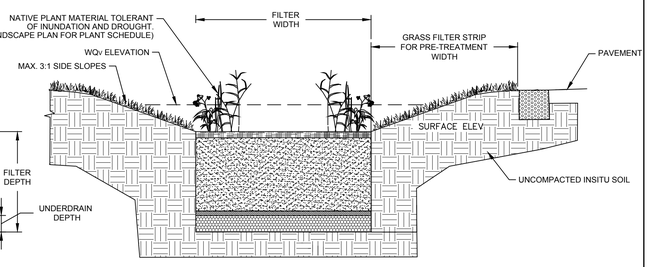


DISCONNECTED ROOF LEADER DETAIL

N.T.S.



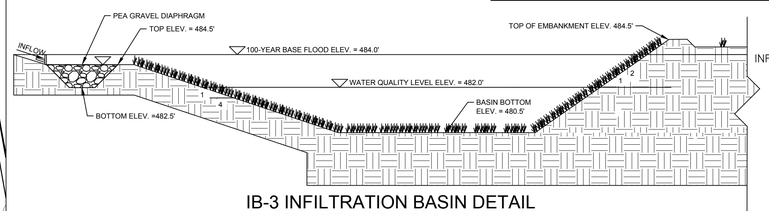
TYPICAL FILTER SECTION



THRU YARD DRAIN

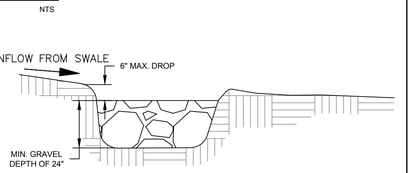
BIO RETENTION CROSS-SECTION

NTS



IB-3 INFILTRATION BASIN DETAIL

N.T.S.



BR-2 PEA STONE DIAGRAM

NTS

IB-3 STAGE STORAGE TABLE					
ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)	CONIC TOTAL VOL. (cu. ft.)
482.0	2861	2	0	0	3457
484.0	6113	2	8771	8771	8771

ZONING DISTRICT: "RR" RURAL RESIDENTIAL
LOT SIZE: 43.5 ACRES
TAX GRID No. : 132000-7267-00-227675
PROPERTY ADDRESS: 515 LEEDSVILLE ROAD AMENIA, NY 12501
PROPERTY OWNER: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501
APPLICANT: TROUTBECK HOLDINGS, LP. 515 LEEDSVILLE ROAD AMENIA, NY 12501

MAP NOTES:
1. PROPERTY DATA AND EXISTING FEATURES BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE APRIL 26, 2016 PREPARED BY CHAZEN ENGINEERING AND SURVEYING, PC.
2. TOPOGRAPHIC CONTOURS BASED UPON ACTUAL FIELD SURVEY COMPLETED ON OR BEFORE DECEMBER 8, 2004 PREPARED BY STEVEN ALEX, L.S. OF CHAZEN ENGINEERING AND SURVEYING, PC.

0 20' 40'
1" = 20'
GRAPHIC SCALE

DATE	REVISION

ENGINEERING, DESIGN, & PLANS PREPARED BY:

RENNIA ENGINEERING DESIGN, PLLC
CIVIL • ENVIRONMENTAL • STRUCTURAL
6 Dover Village Plaza, Suite 5, P.O. Box 400, Dover Plains, NY 12522
Tel: (845) 877-0555 Fax: (845) 877-0556

TROUTBECK MASTER PLAN

TOWN OF AMENIA — DUTCHESS COUNTY, NY

PHASE 1 STORMWATER MANAGEMENT PLAN

DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:	JOB NO.	SHEET NO.
10/10/2022	AS NOTED	WTS	WTS	RAR	16-019	4 of 7