TOWN of WESTON, CONNECTICUT

Incorporated 1787

Conservation Commission

INLAND WETLANDS AND WATERCOURSES APPLICATION

This Application is for a five-year permit to conduct a regulated activity or activities pursuant to the Inland Wetlands and Watercourses Regulations of the Town of Weston ("The Regulations")

PROPERTY ADDRESS: 32 Kettle creek/Lot 3

Assessor's Map # 29 **Block #** 3 **Lot #** 48

PROJECT DESCRIPTION *(general purpose)* Single family residence

Total Acres 2.03 Total Acres of Wetlands and Watercourses 0.21 ac

Acreage of Wetlands and Watercourses Altered 0.003 ac Upland Area Altered 0.52 ac

Acres Linear Feet of Stream Alteration 0 Total Acres Proposed Open Space 0

OWNER(S) OF RECORD: *(Please list all owners, attach extra sheet if necessary)*

Name: James Harmon Phone:

Address: 43 Kettle Creek rd

Email:

APPLICANT/AUTHORIZED AGENT:

Name: Jon Rogers Phone: 203-943-3544

Address: 229 Good Hill rd, Weston, CT 06883

Email: jon@jdrogersdev.com

CONSULTANTS: *(Please provide, if applicable)*

Engineer: J. Edwards & Associates Phone: 203-268-4205

Address: 227 Stepney Road, Easton Email: info@jedwardsassoc.com

Soil Scientist: Steve Danzer Phone: 203-451-8319

Address: 9 Fara Dr, Stamford Email: Danzer@ctwetlandsconsulting.com

Legal Counsel: Glenn Major Phone: 203-330-2012

Address: 253 Post Road West, Westport Email: wgmajor@pullcom.com

Surveyor: J. Edwards & Associates Phone: _____

Address: _____ Email: _____

PROPERTY INFORMATION

Property Address: 32 Kettle creek rd/ Lot 3

Existing Conditions *(Describe existing property and structures)*: Raw land never developed

Provide a detailed description and purpose of proposed activity *(attach sheet with additional information if needed):* To construct a single family home. Relocate a small pocket of wetlands to the rear of the property. See additional information attached.

Is this property within a subdivision *(circle):* Yes or (No)

Square feet of proposed impervious surfaces *(roads, buildings, parking, etc.)*: 5883

Subject property to be affected by proposed activity contains:

- ☑ wetlands soils
- ☐ swamp
- ☐ floodplain
- ☐ marsh
- ☐ bog
- ☐ lake or pond
- ☐ stream or river
- ☐ other _____

The proposed activity will involve the following within wetlands, watercourse, and/or review area:

- ☑ Alteration
- ☐ Discharge to
- ☑ Removal of Materials
- ☑ Construction
- ☐ Discharge from
- ☐ Deposition of Materials
- ☐ Pollution
- ☐ Bridge or Culvert
- ☐ Other_____

Amount, type, and location of materials to be removed, deposited, or stockpiled:
Excavation and stockpiling of soil necessary to construct house etc.

Description, work sequence, and duration of activities:
1-install silt fence protecting wetlands 2-excavate soil to construct a single family home 3-Construct home 4-stabilize site by planting grass and plants.

Describe alternatives considered and why the proposal described herein was chosen:
We are trying to keep the house away from the larger area of wetlands, to do so the smaller pocket will need to be relocated

Does the proposed activity involve the installation and/or repair of an existing septic system(s) *(circle):* Yes or (No)

The Westport/Weston Health District Approval: YES

ADJOINING MUNICIPALITIES AND NOTICE:

If any of the situations below apply, the applicant is required to give written notice of his/her application to the Inland Wetlands Agency of the adjoining municipality, on the same day that he/she submits this application. Notification must be sent by Certified Mail with Return Receipt Requested.

The property is located within 500 feet of any town boundary line;
A significant portion of the traffic to the completed project will use streets within the adjoining municipality to enter or exit the site;

A portion of the water drainage from the project site will flow through and significantly impact the sewage system or drainage systems within the adjoining municipality; or
Water runoff from the improved site will impact streets or other municipal or private property within the adjoining municipality

AQUARION WATER COMPANY

Pursuant to Section 8.4 of the Weston regulations, the Aquarion Water Company must be notified of any regulated activity proposed within its watersheds. Maps showing approximate watershed boundaries are available at the office of the Commission. If the project site lies within these boundaries, send notice, site plan, and grading and erosion control plan via certified mail, return receipt requested, within seven (7) days of submitting application to the Commission, to:

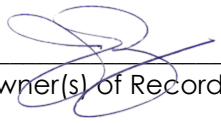
George S. Logan, Director – Environmental Management
Aquarion Water Company
714 Black Rock Turnpike
Easton, CT 06612

The Commissioner of the Connecticut Department of Public Health must also be notified in the same manner in a format prescribed by that commissioner.

The undersigned, as owner(s) of the property, hereby consents to necessary and proper inspections of the above mentioned property by Commissioners and agents of the Conservation Commission, Town of Weston, at reasonable times, both before and after a final decision has been issued by the Commission.

The undersigned hereby acknowledges to have read the "Application Requirements and Procedures" in completing this application.

The undersigned hereby certifies that the information provided in this application, including its supporting documentation is true and he/she is aware of the penalties provided in Section 22a-376 of the Connecticut General Statues for knowingly providing false or misleading information.



August 21, 2024

Signature of Owner(s) of Record — Date

Signature of Authorized Agent — Date

FOR OFFICE USE ONLY

Administrative Approval

Initials — Date

TOWN OF WESTON
INLAND WETLANDS AND WATERCOURSE AREA
APPLICATION REQUIREMENTS AND PROCEDURES

In addition to the application form for permission to conduct a regulated activity within inland wetlands and watercourse area, applicants must submit the following information in accordance to scheduled submittal date. An incomplete application may result in a delay:

1. A signed letter of permission from the Owner of Record.
2. Fee in accordance to the Conservation Commission fee schedule.
3. Nine (9) collated copies of the following:
   - ☐ Completed Inland Wetland and Watercourses Application
   - ☐ Two (2) 24" x 36" Original and Seven (7) 24" x 36" Copies of the following
     - A-2 Survey map and/or site plan of at least 1" = 40'
       - Title of project
       - Name, signature, and Connecticut license professional seal(s).
       - Date map prepared, date of most recent revision, and brief description of revision.
       - Show locations of wetlands boundary, watercourses (with direction of flow, water depth, and bottom characteristics) and other pertinent features and structures such as rock ledges, stonewalls, utility lines.
       - Show location and extent of proposed activities including material and soil stockpiles, erosion and sedimentation controls, ingress and egress patterns.
       - Indicate in acres or square feet of wetlands/watercourse disturbance.
       - North arrow, Scale Bar, Legend, Property lines.
       - Edge of 100' Upland Review Area.
       - Existing and Proposed Conditions, Grading and Drainage Location
       - Double Silt fence detail (slit fence/hay bale/slit fence) configuration.
       - Construction Sequence.
       - Contour lines – 2 foot intervals.
       - Topographic *(This area may be enlarged for certain activities on/or above steep slopes or other physical conditions that may adversely impact wetlands)*.
   - ☐ Drainage report prepared by a professional engineer registered in the State of Connecticut.
4. One electronic copy of all submitted materials emailed to conservationplanner@westonct.gov
5. Westport/ Weston Health District Approval, including a copy of the septic plan or B100 plan stamped and signed by the Health Department *(if applicable)*.
6. If a Soil Scientist is involved, his/her name, written report, and field sketch.
7. List of names and addresses of adjacent property owners and abutters, include addressed and stamped business envelopes.
8. Proof of certified mailings to Aquarion Water Company and adjoining municipalities*, if applicable*.
9. All deeds, conservation easements, or restrictions associated with the property.
10. Location of the 100 year flood line, *if applicable*.
11. Tree removal plan of all trees greater than 12" in diameter.
12. Diagrams of alternatives considered.
13. Completed Part II of the DEEP Statewide Inland Wetlands & Watercourses Activity Reporting Form.

SURVEY NOTES:

1. THIS SURVEY (OR MAP) HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THRU 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996. IT IS A IMPROVEMENT LOCATION SURVEY BASED ON A DEPENDENT RESURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A-2 AND VERTICAL ACCURACY CLASS V-2 AND INTENDED TO BE USED FOR REGULATORY APPROVAL.
2. REFERENCE IS MADE TO THE FOLLOWING MAP:
   A) "PLOT PLAN PREPARED FOR JAMES HARMON, 34 KETTLE CREEK ROAD, WESTON, CONN." SCALE 1"=40'. DATED JUNE 5, 2022. PREPARED BY LEONARD SURVEYORS LLC.

STANDARD NOTES

1. All construction methods, materials and installation of the system to be in accordance with all applicable local and state regulations.
2. Topographic and property data shown are only approximate.
   Topographic data based on STATE OF CT GIS DATA, property lines based on REFERENCED MAPS.
3. The test results and soil types shown apply only to the test holes shown and may vary throughout the site. Soil type and grade should be verified by the owner over the entire leaching area prior to construction.
4. Select fill, if required, to be placed in maximum of 12" lifts and to be compacted to a minimum of 90% compaction. Material to have a maximum of 5% passing the #200 sieve. Prior to the delivery of select fill to the site, the contractor at his expense, shall furnish a certified gradation analysis to the local Health Department and to the Design Engineer. Final approval of septic fill will be conditional on the completion of a percolation test on the inplace material. This test is to be witnessed by the Design Engineer and/or local Health Department official. The maximum allowable percolation rate will be 1"in 10 minutes, unless otherwise noted.
5. Unless otherwise directed hereon, the site requiring placement of select fill shall be prepared by removing all topsoil in the system area and 5 ft on all sides. No heavy equipment shall be used in the prepared area. Fill shall be placed on the perimeter of the trench area and spread with a small crawler, tractor or other approved machinery. Upon placement of the first lift of select fill, material shall be thoroughly harrowed into the existing subsoil layer.
6. Call "Call Before You Dig" 1-800-922-4455 to locate underground utilities on property and show service lines to building from public utilities shown on plan.
7. Contractor shall contact the certifying engineer and Health department at least 24 hours prior to starting construction, or the system installation will not be certified.
8. Oil tank is to be installed inside proposed building.
9. The licensed installer shall cover the septic system with clean soil as prescribed by the latest revision of Technical Standards. Clean soil is native soil, free of contaminants such as boulders, building debris, stumps, etc.
10. Septic system to be staked by Engineer/Surveyor and benchmark set prior to starting construction.
11. A sieve analysis of the septic fill is to be provided to the health district and design engineer verifying compliance to Health Code requirements prior to placement on site.
12. Prior to backfilling septic system Engineer/Surveyor to asbuilt completed septic system and provide plan to health department.

SOIL TEST DATA

SOIL TESTING PERFORMED ON 06-30-23

TH-3-1
0-13" Topsoil
13-24" Orange Brown Silty Sand
24-75" Gray-Brown Silty Sand
Groundwater Seep @ 52", Mottles @ 24", No Ledge, Roots to 30"
Rest Layer 24"

TH-3-2
0-18" Topsoil
18-36" Orange Brown Sandy Loam
36-64" Gray-Brown Silty Sand
Groundwater Seep @ 38", Mottles @ 20", Ledge @ 65", Roots to 12"
Rest Layer 20"

TH-3-3
0-13" Topsoil
13-44" Orange Brown Sandy Loam
44-60" Gray-Brown Silty Sand
Groundwater Seep @ 16", Mottles @ 15", No Ledge, Roots to 10"
Rest Layer 16"

TH-3-4
0-10" Topsoil
10-32" Orange Brown Sandy Loam
32-60" Gray-Brown Silty Sand
Groundwater Seep @ 18", Mottles @ 11", No Ledge, Roots to 10"
Rest Layer 18"

PERCOLATION TEST PERFORMED 5-7-24
DEPTH 20"
PRESOAK 2 HOURS

PERC MW-2

TIME	READING
0 MIN.	5 1/2"
10 MIN.	7"
20 MIN.	8"
30 MIN.	8 1/2"
40 MIN.	9"
50 MIN.	9 1/2"
60 MIN.	10"

RATE 1" IN 20 MIN.

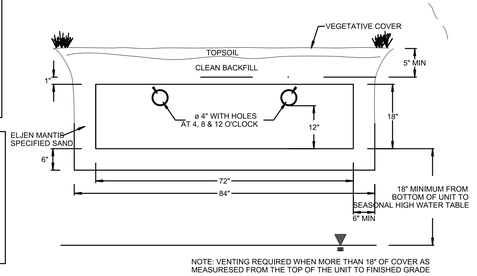
DESIGN INFORMATION

1012.5 SF EFFECTIVE LEACHING AREA REQUIRED FOR 6 BEDROOM HOUSE
1400 SF EFFECTIVE LEACHING AREA PROVIDED FOR 6 BEDROOM HOUSE

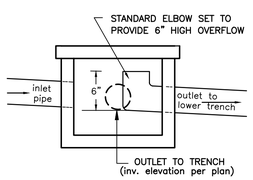
70 lineal feet of MANTIS DOUBLE WIDE 100 UNITS required for proposed 6 bedroom house.

MLSS CALCULATIONS: Depth= 36"* Slope = 9.5% HF= 24 FF= 2.25 PF= 1.25
MLSS = (HF) X (FF) X (PF) = 67.5'

* CALCULATED PER CATEGORY 2, RS DEPTH CALCULATION, "CONNECTICUT PUBLIC HEALTH CODE, ON-SITE SEWAGE DISPOSAL REGULATIONS AND TECHNICAL STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEMS 2024" PAGE 61

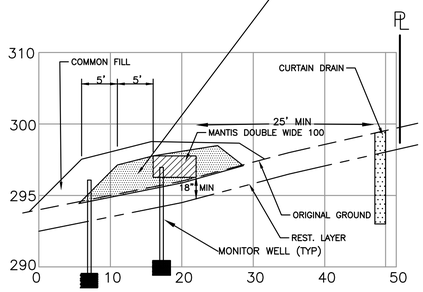


NOTE: VENTING REQUIRED WHEN MORE THAN 18" OF COVER AS MEASURESED FROM THE TOP OF THE UNIT TO FINISHED GRADE



HIGH LEVEL OVERFLOW DISTRIBUTION BOX

PER RS DEPTH CALCULATION CATEGORY 2
24" SELECT FILL ADDED ON TOP OF EXISTING 18.5" RECEIVING SOIL DEPTH IN ORDER TO PROVIDE 36" DEPTH FOR MLSS CALCULATION.



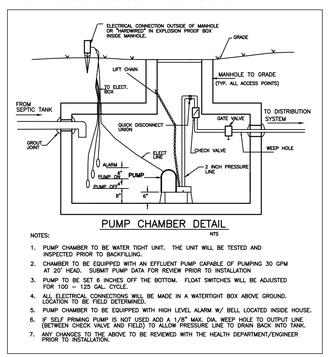
SECTION A-A
Scale = horiz: 1" = 10ft/ vert: 1" = 5ft

SYSTEM DETAILS	
No.	Inv.Elev.
(1)	288.25
(2)	287.5
(3)	287.25
No.	Elev bottom sys
(4)	296.3

* overflow invert to lower trench to be set at elev. of top of trench/unit

ANTI-TRACKING APRON

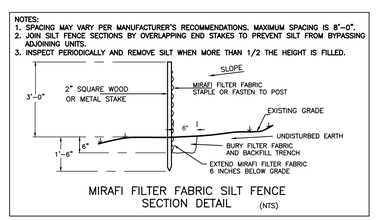
PUMP CYCLE CALCULATIONS
30GAL PER UNIT FOR 100DW UNITS
11 UNITS X 30 =330GAL/CYCLE MAXIMUM
PUMP CYCLE TO BE SET AT 100-120GAL



PUMP CHAMBER DETAIL

NOTES: NTS

1. PUMP CHAMBER TO BE WATER TIGHT UNIT. THE UNIT WILL BE TESTED AND INSPECTED PRIOR TO BACKFILLING.
2. CHAMBER TO BE EQUIPPED WITH AN EFFLUENT PUMP CAPABLE OF PUMPING 30 GPM AT 20' HEAD. SUBMIT PUMP DATA FOR REVIEW PRIOR TO INSTALLATION
3. PUMP TO BE SET 6 INCHES OFF THE BOTTOM. FLOAT SWITCHES WILL BE ADJUSTED FOR 100 +- 125 GAL CYCLE.
4. ALL ELECTRICAL CONNECTIONS WILL BE MADE IN A WATERTIGHT BOX ABOVE GROUND. LOCATION TO BE FIELD DETERMINED.
5. PUMP CHAMBER TO BE EQUIPPED WITH HIGH LEVEL ALARM W/ BELL LOCATED INSIDE HOUSE.
6. IF SELF PRIMING PUMP IS NOT USED ADD A 1/8" MAX. DIA. WEEP HOLE TO OUTPUT LINE (BETWEEN CHECK VALVE AND FIELD) TO ALLOW PRESSURE LINE TO DRAIN BACK INTO TANK.
7. ANY CHANGES TO THE ABOVE TO BE REVIEWED WITH THE HEALTH DEPARTMENT/ENGINEER PRIOR TO INSTALLATION.



MIRAFI FILTER FABRIC SILT FENCE SECTION DETAIL (NTS)

I HEREBY CERTIFY THAT THE PERCOLATION TEST(S) SHOWN HEREON WERE CONDUCTED IN CONFORMANCE WITH ALL CURRENT STATE REGULATIONS UNLESS OTHERWISE NOTED HEREON.

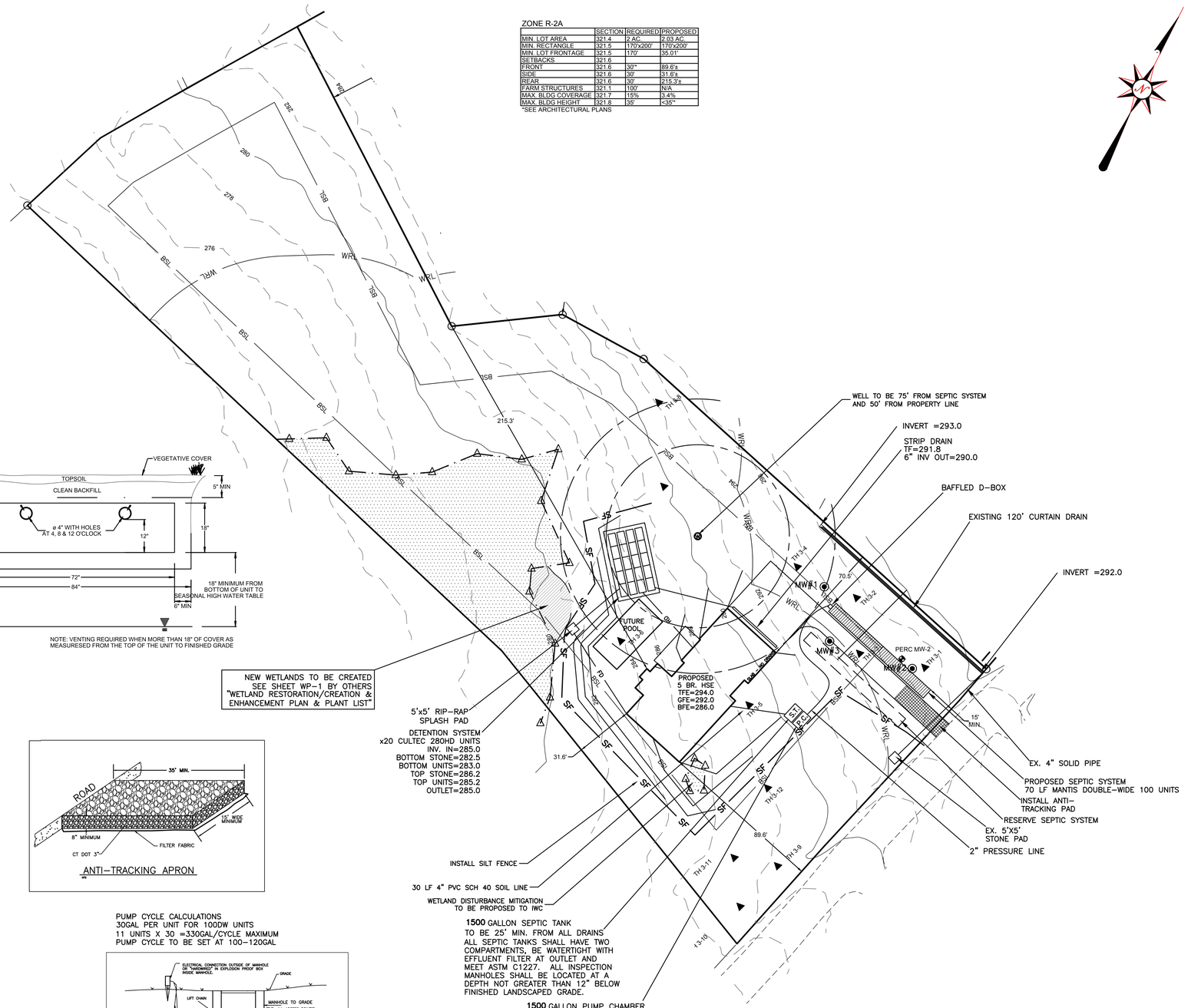
JASON EDWARDS, L.L.S. No. 70308

LARRY EDWARDS, L.S. No. 10937

ZONE R-2A

	SECTION	REQUIRED	PROPOSED
MIN. LOT AREA	321.4	2 AC.	2.03 AC.
MIN. RECTANGLE	321.5	170'x200'	170'x200'
MIN. LOT FRONTAGE	321.5	170'	35.01'
SETBACKS	321.6		
FRONT	321.6	30'*	89.6'±
SIDE	321.6	30'	31.6'±
REAR	321.6	30'	215.3'±
FARM STRUCTURES	321.1	100'	N/A
MAX. BLDG COVERAGE	321.7	15%	3.4%
MAX. BLDG HEIGHT	321.8	35'	<35'*

*SEE ARCHITECTURAL PLANS



LEGEND

- = EXISTING CONTOUR
- = PROPOSED CONTOUR
- = DEEP TEST PIT
- = PERCOLATION TEST
- = FILTER FABRIC FENCE
- = ANTI-TRACKING APRON
- BSL = BUILDING SETBACK LINE

Client: ROGERS
Date: 8/20/24
Scale: 1"=30'
Design: LE
Drawn: IE
Chkd: JE
File # 3007-32

PROPOSED SITE IMPROVEMENT PLAN

PREPARED FOR JON ROGERS

32 KETTLE CREEK ROAD

WESTON, CONNECTICUT

0 30' 60' 90'

J. EDWARDS & ASSOCIATES, LLC
Engineering and Surveying
227 Stepney Road
Easton, CT 06612
(203) 268-4205
www.jedwardsassoc.com

FILE NO. 3007-32

STORMWATER MANAGEMENT REPORT

FOR THE PROPOSED DEVELOPMENT OF

PROPERTY LOCATED AT

32 KETTLE CREEK
WESTON, CT

PREPARED FOR

JON ROGERS

PREPARED ON: August 19, 2024

PREPARED BY:

J. EDWARDS & ASSOCIATES, LLC
227 STEPNEY ROAD, EASTON CT, 06612

Larry Edwards, P.E.

INTRODUCTION:

J. Edwards & Associates has prepared this report to demonstrate compliance with local and state engineering guidelines. These guidelines include drainage design, sediment and erosion control and site grading.

PROJECT OVERVIEW:

The property consists of 2.03 acres and is proposed for the construction of a new single family home. Based on the NRCS web soil survey the upland soils are classified in the C soil group. The site is currently undeveloped.

DRAINAGE ANALYSIS:

A Hydrologic analysis was completed using HydroCAD software which implements SCS-T20 methodology to compute runoff volumes. Rainfall intensities and depths were generated from the NOAA web site.

NOAA RAINFALL DEPTHS

EVENT	24 HR. DEPTH
2 YEAR	3.3
10 YEAR	5.0
25 YEAR	5.7
50 YEAR	6.4

The site was evaluated using SCS TR20 methodology for a 50 year 24 hour rainfall amount of 6.4 inches. The project will include the construction of a new house, driveway and pool. The study area of the lot is 36,144sf. The development of the site will result in a total of 5,883sf of impervious area.

An underground stormwater infiltration systems will collect runoff from the driveway and runoff from the roof drains, pool and connected areas. The system consists of 20 Cultec 280HD units in a stone bed. The system will outlet to a splash pad on the subject property, along with the footing drain outlet.

The change in peak flows from existing conditions to proposed conditions is shown in the following table:

Event	Existing Q	Proposed Q	Change in Q
2 Year	0.89 cfs	0.74 cfs	-0.15 cfs
10 Year	1.92 cfs	1.58 cfs	-0.34 cfs
25 Year	2.37 cfs	1.95 cfs	-0.42 cfs
50 year	2.82 cfs	2.33 cfs	-0.49 cfs

Water Quality Volume (WQV) Calculation

PROJECT	JOB #3007	PREPARED BY	IE
DATE	8/19/2024	CHECKED BY	LE
SUBJECT	32 KETTLE CREEK ROAD, WESTON		
Notes:			

TOTAL SITE AREA (A) = 2.03 acres

DRAINAGE AREAS

Drainage Area	Impervious Area	
Subcatchment-1	0.14	
Subcatchment-2	0.00	
Subcatchment-3	0.00	
Total Impervious	0.14	6.7%

WATER QUALITY VOLUME (WQV) CALCULATION

Design Precipitation (P) =	1.3	inch
% Impervious Cover (I) =	6.7	
Volumetric Runoff Coefficient (R) =	0.110	

WQV =	**0.024**	**ac-ft**
	1052	**cu-ft**

1/2 WQV=	**0.012**	**ac-ft**
=	**526**	**cu-ft**

$$WQV = \frac{(1")(R)(A)}{12}$$

where:
- WQV = water quality volume (ac-ft)
- R = volumetric runoff coefficient = 0.05+0.009(I)
- I = percent impervious cover
- A = site area in acres

227 Stepney Road • Easton, CT • 06612 • Phone:203.268.4205 • Fax: 203.268.5604
www.jedwardsassoc.com • www.leassoc.com
Engineering • Surveying • Site Planning

SYSTEM STORAGE

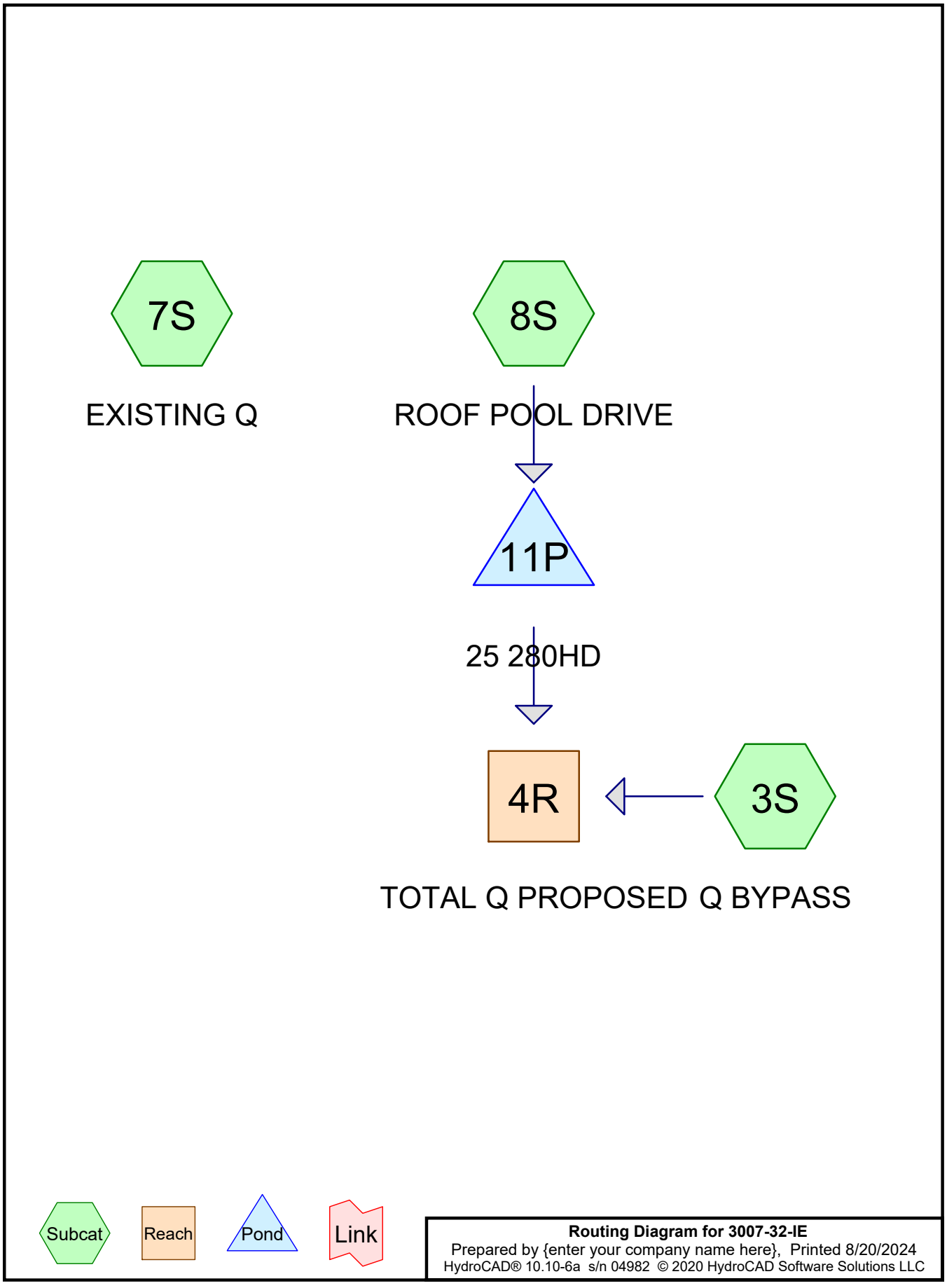
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
282.50	**907**	0
282.60	907	36
282.70	907	73
282.80	907	109
282.90	907	145
283.00	907	181
283.10	907	251
283.20	907	320
283.30	907	388
283.40	907	456
283.50	907	524
283.60	907	591
283.70	907	657
283.80	907	723
283.90	907	788
284.00	907	852
284.10	907	916
284.20	907	979
284.30	907	1,041
284.40	907	1,101
284.50	907	1,160
284.60	907	1,218
284.70	907	1,274
284.80	907	1,328
284.90	907	1,379
285.00	907	1,425
285.10	907	1,466
285.20	907	1,504
285.30	907	1,540
285.40	907	1,576
285.50	907	1,613
285.60	907	1,649
285.70	907	1,685
285.80	907	1,721
285.90	907	1,758
286.00	907	1,794
286.10	907	1,830
286.20	907	**1,866**

Outlet Protection

Outlet protection is provided by a 10'X10' stone pad for discharge from the subsurface stormwater infiltration system as well as the proposed house footing drain.

CONCLUSION

The proposed development will increase the amount of impervious area on the site, resulting in higher peak runoff rates. However, with the installation of the proposed detention system, the original flow patterns will be maintained and there will be no increase in peak runoff for the 2, 10, 25, and 50-year storm events.



Routing Diagram for 3007-32-IE
Prepared by {enter your company name here}, Printed 8/20/2024

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2 yr	Type III 24-hr		Default	24.00	1	3.30	2
2	10 yr	Type III 24-hr		Default	24.00	1	5.00	2
3	25 yr	Type III 24-hr		Default	24.00	1	5.70	2
4	50yr	Type III 24-hr		Default	24.00	1	6.40	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.135	98	Unconnected pavement, HSG C (8S)
1.524	76	Woods/grass comb., Fair, HSG C (3S, 7S)
1.660	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
1.660	HSG C	3S, 7S, 8S
0.000	HSG D	
0.000	Other	
1.660		**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
0.000	0.000	0.135	0.000	0.000	0.135	Unconnected pavement	8S
0.000	0.000	1.524	0.000	0.000	1.524	Woods/grass comb., Fair	3S, 7S
0.000	**0.000**	**1.660**	**0.000**	**0.000**	**1.660**	**TOTAL AREA**	

Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 3S: Q BYPASS Runoff Area=30,261 sf 0.00% Impervious Runoff Depth>1.12"
Tc=14.2 min CN=76 Runoff=0.74 cfs 0.065 af

Subcatchment 7S: EXISTING Q Runoff Area=36,144 sf 0.00% Impervious Runoff Depth>1.12"
Flow Length=300' Tc=13.6 min CN=76 Runoff=0.89 cfs 0.077 af

Subcatchment 8S: ROOF POOL DRIVE Runoff Area=5,883 sf 100.00% Impervious Runoff Depth>2.92"
Flow Length=500' Tc=12.8 min CN=98 Runoff=0.35 cfs 0.033 af

Reach 4R: TOTAL Q PROPOSED Inflow=0.74 cfs 0.065 af
Outflow=0.74 cfs 0.065 af

Pond 11P: 25 280HD Peak Elev=283.76' Storage=698 cf Inflow=0.35 cfs 0.033 af
Discarded=0.02 cfs 0.022 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.022 af

Total Runoff Area = 1.660 ac Runoff Volume = 0.175 af Average Runoff Depth = 1.26"
91.86% Pervious = 1.524 ac 8.14% Impervious = 0.135 ac

Summary for Subcatchment 3S: Q BYPASS

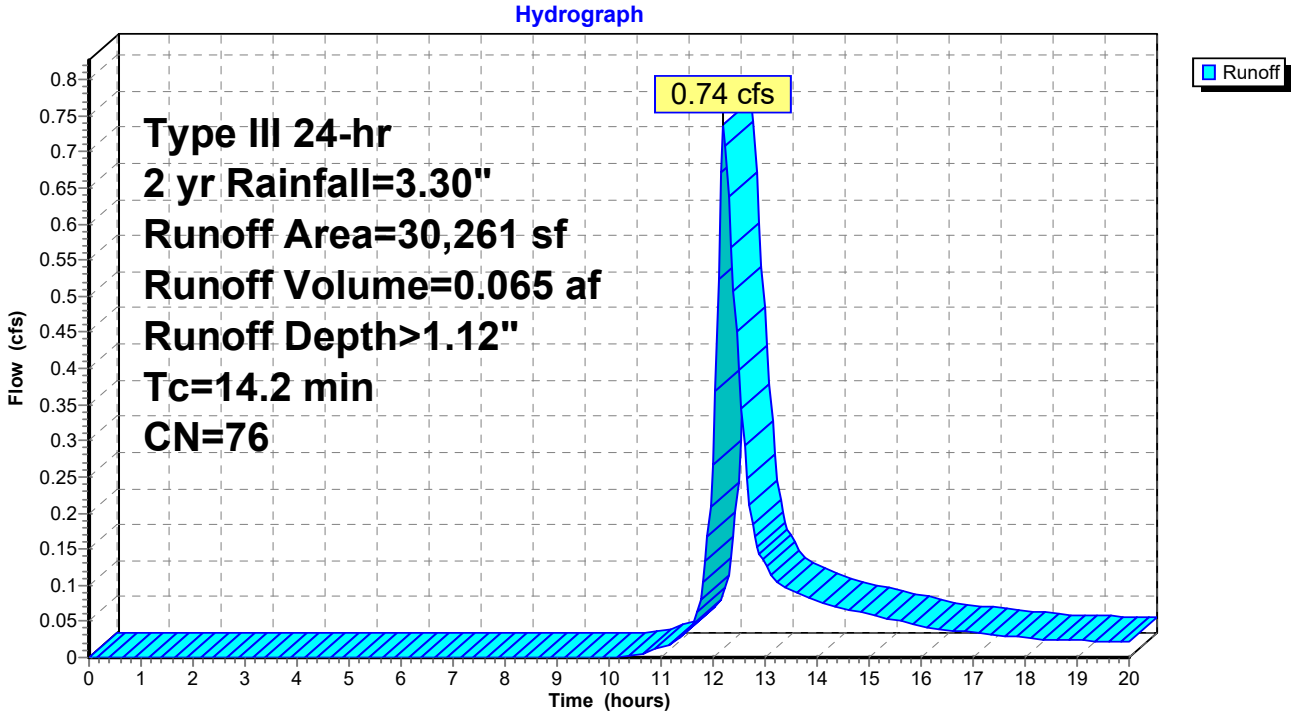
Runoff = 0.74 cfs @ 12.21 hrs, Volume= 0.065 af, Depth> 1.12"
Routed to Reach 4R : TOTAL Q PROPOSED

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (sf)	CN	Description
30,261	76	Woods/grass comb., Fair, HSG C
30,261		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2					**Direct Entry, SAME AS EXISTING**

Subcatchment 3S: Q BYPASS



Summary for Subcatchment 7S: EXISTING Q

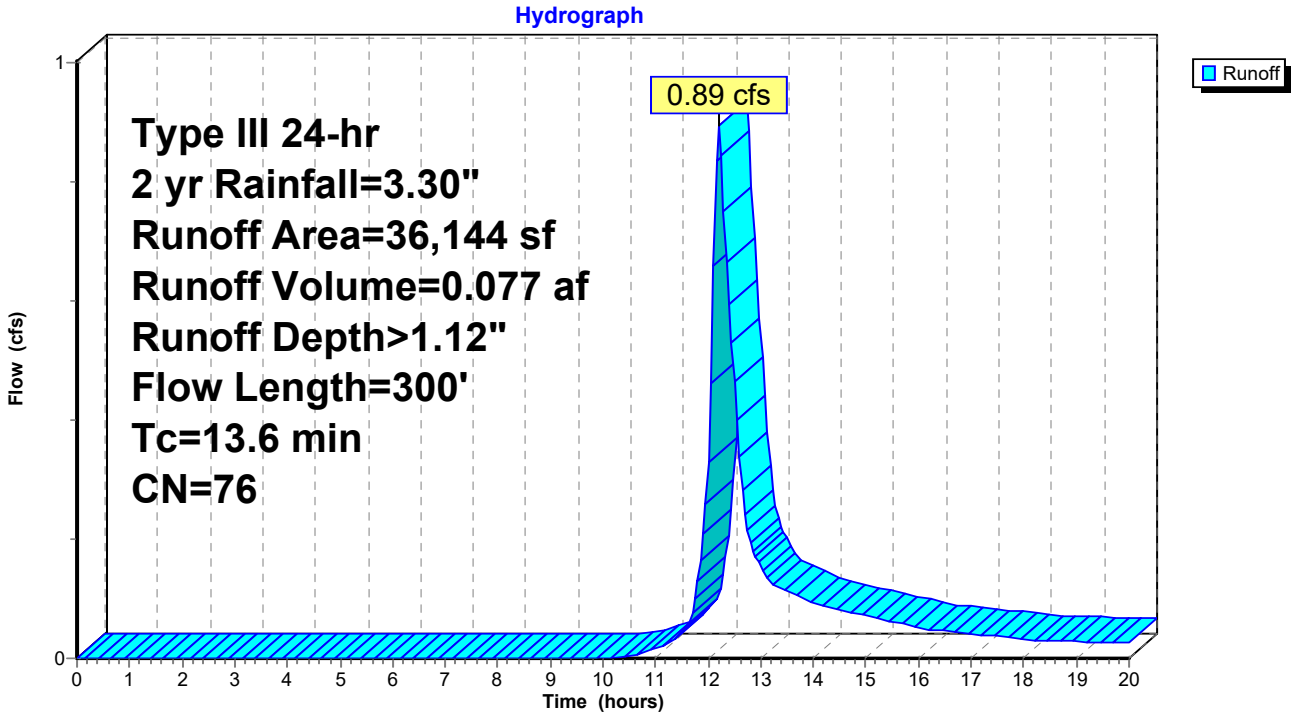
Runoff = 0.89 cfs @ 12.20 hrs, Volume= 0.077 af, Depth> 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (sf)	CN	Description
36,144	76	Woods/grass comb., Fair, HSG C
36,144		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	200	0.1000	0.26		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.30"
0.7	100	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.6	300	Total			

Subcatchment 7S: EXISTING Q



Summary for Subcatchment 8S: ROOF POOL DRIVE

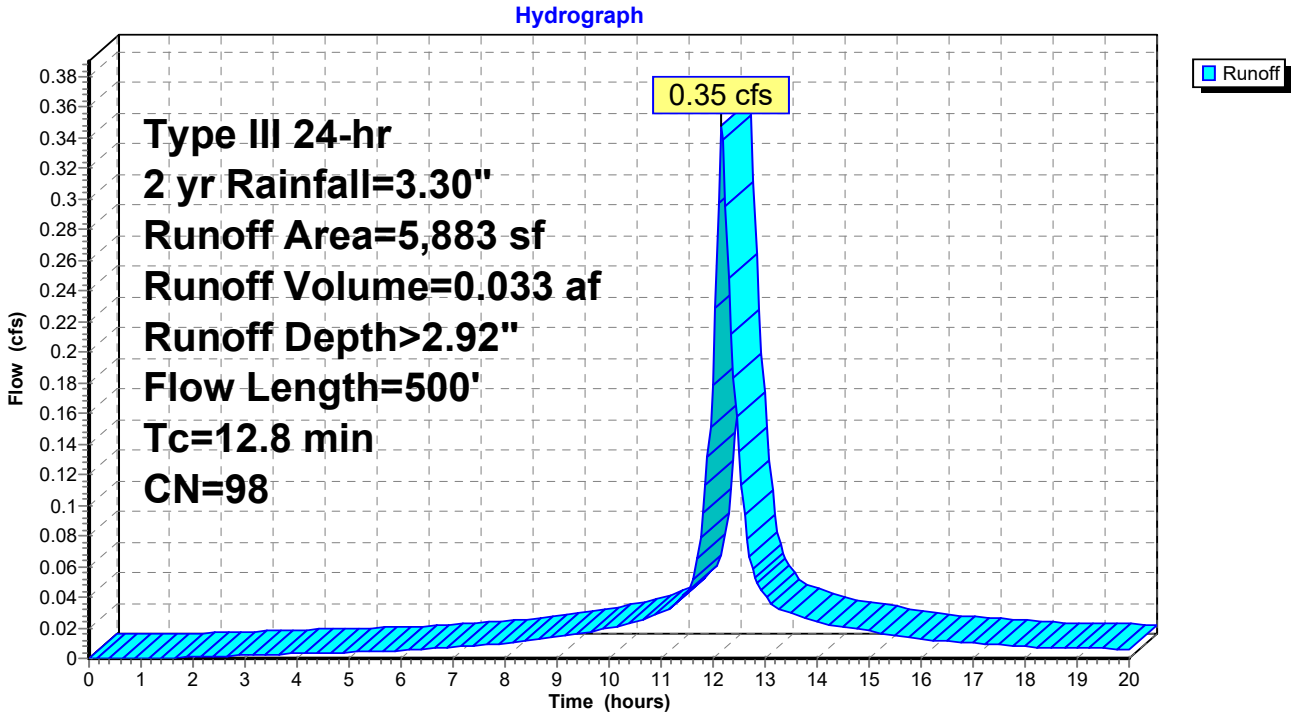
Runoff = 0.35 cfs @ 12.17 hrs, Volume= 0.033 af, Depth> 2.92"
Routed to Pond 11P : 25 280HD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (sf)	CN	Description
5,883	98	Unconnected pavement, HSG C
5,883		100.00% Impervious Area
5,883		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	200	0.1200	0.28		**Sheet Flow, LAWN** Grass: Dense n= 0.240 P2= 3.30"
0.9	300	0.0800	5.74		**Shallow Concentrated Flow, DRIVE** Paved Kv= 20.3 fps
12.8	500	Total			

Subcatchment 8S: ROOF POOL DRIVE



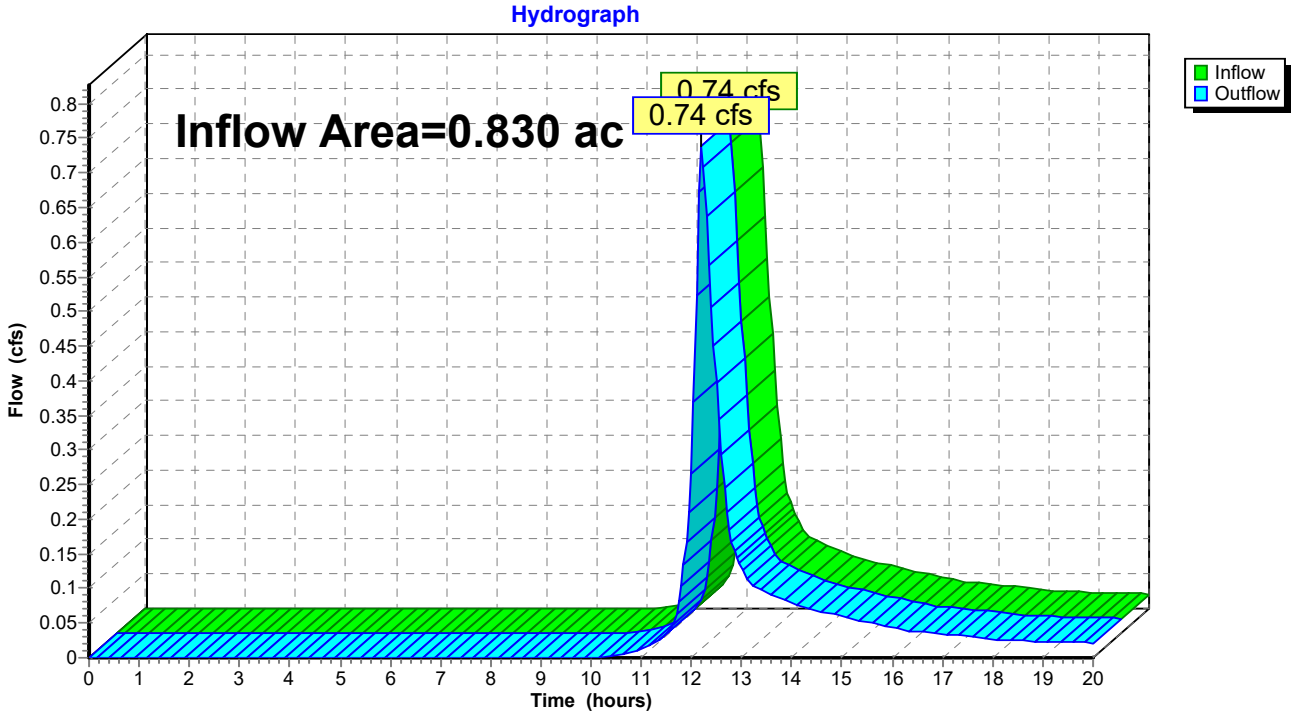
Summary for Reach 4R: TOTAL Q PROPOSED

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.830 ac, 16.28% Impervious, Inflow Depth > 0.94" for 2 yr event
Inflow = 0.74 cfs @ 12.21 hrs, Volume= 0.065 af
Outflow = 0.74 cfs @ 12.21 hrs, Volume= 0.065 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: TOTAL Q PROPOSED



Summary for Pond 11P: 25 280HD

Inflow Area = 0.135 ac,100.00% Impervious, Inflow Depth > 2.92" for 2 yr event
Inflow = 0.35 cfs @ 12.17 hrs, Volume= 0.033 af
Outflow = 0.02 cfs @ 10.40 hrs, Volume= 0.022 af, Atten= 94%, Lag= 0.0 min
Discarded = 0.02 cfs @ 10.40 hrs, Volume= 0.022 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 4R : TOTAL Q PROPOSED

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 283.76' @ 14.38 hrs Surf.Area= 907 sf Storage= 698 cf

Plug-Flow detention time= 155.3 min calculated for 0.022 af (66% of inflow)
Center-of-Mass det. time= 79.7 min (813.4 - 733.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	282.50'	995 cf	**22.67'W x 40.00'L x 3.71'H Field A** 3,362 cf Overall - 874 cf Embedded = 2,488 cf x 40.0% Voids
#2A	283.00'	874 cf	**Cultec R-280HD** x 20 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,869 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	282.50'	**1.000 in/hr OUT over Surface area**
#2	Primary	285.00'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 10.40 hrs HW=282.54' (Free Discharge)
↑—**1=OUT** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=282.50' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 11P: 25 280HD - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)
Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 6.07 sf x 4 rows

47.0" Wide + 12.0" Spacing = 59.0" C-C Row Spacing

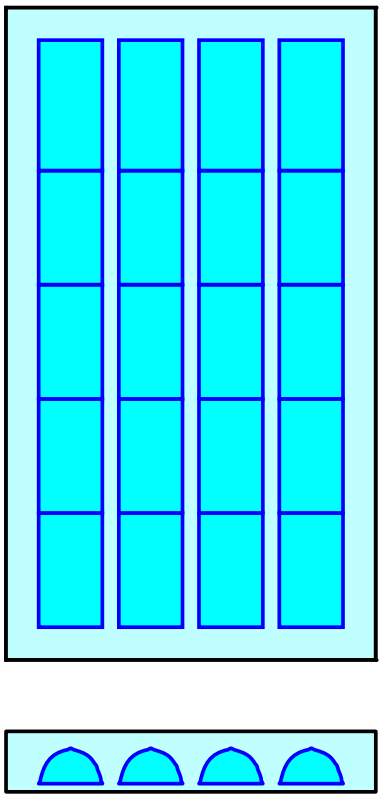
5 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 36.00' Row Length +24.0" End Stone x 2 = 40.00' Base Length
4 Rows x 47.0" Wide + 12.0" Spacing x 3 + 24.0" Side Stone x 2 = 22.67' Base Width
6.0" Stone Base + 26.5" Chamber Height + 12.0" Stone Cover = 3.71' Field Height

20 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 4 Rows = 874.3 cf Chamber Storage

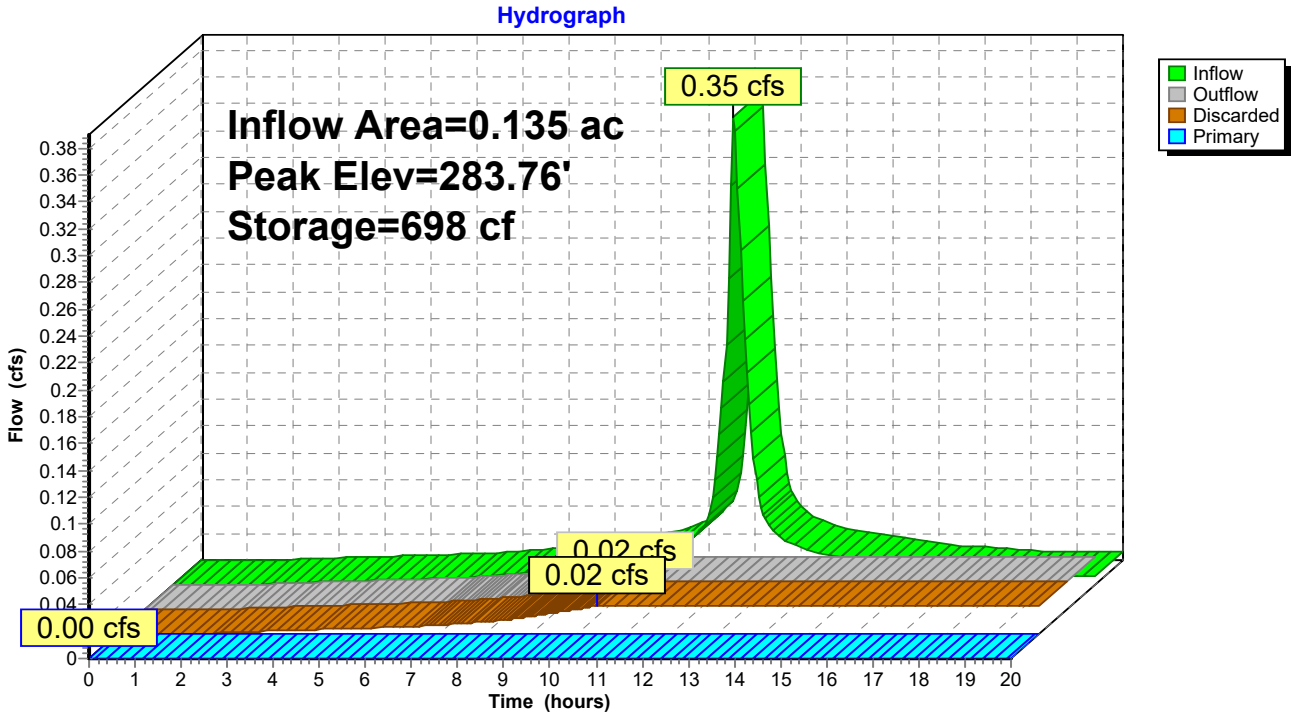
3,362.2 cf Field - 874.3 cf Chambers = 2,487.9 cf Stone x 40.0% Voids = 995.2 cf Stone Storage

Chamber Storage + Stone Storage = 1,869.5 cf = 0.043 af
Overall Storage Efficiency = 55.6%
Overall System Size = 40.00' x 22.67' x 3.71'

20 Chambers
124.5 cy Field
92.1 cy Stone



Pond 11P: 25 280HD



Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 3S: Q BYPASS Runoff Area=30,261 sf 0.00% Impervious Runoff Depth>2.35"
Tc=14.2 min CN=76 Runoff=1.58 cfs 0.136 af

Subcatchment 7S: EXISTING Q Runoff Area=36,144 sf 0.00% Impervious Runoff Depth>2.35"
Flow Length=300' Tc=13.6 min CN=76 Runoff=1.92 cfs 0.162 af

Subcatchment 8S: ROOF POOL DRIVE Runoff Area=5,883 sf 100.00% Impervious Runoff Depth>4.54"
Flow Length=500' Tc=12.8 min CN=98 Runoff=0.53 cfs 0.051 af

Reach 4R: TOTAL Q PROPOSED Inflow=1.58 cfs 0.136 af
Outflow=1.58 cfs 0.136 af

Pond 11P: 25 280HD Peak Elev=284.72' Storage=1,285 cf Inflow=0.53 cfs 0.051 af
Discarded=0.02 cfs 0.024 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.024 af

Total Runoff Area = 1.660 ac Runoff Volume = 0.350 af Average Runoff Depth = 2.53"
91.86% Pervious = 1.524 ac 8.14% Impervious = 0.135 ac

Summary for Subcatchment 3S: Q BYPASS

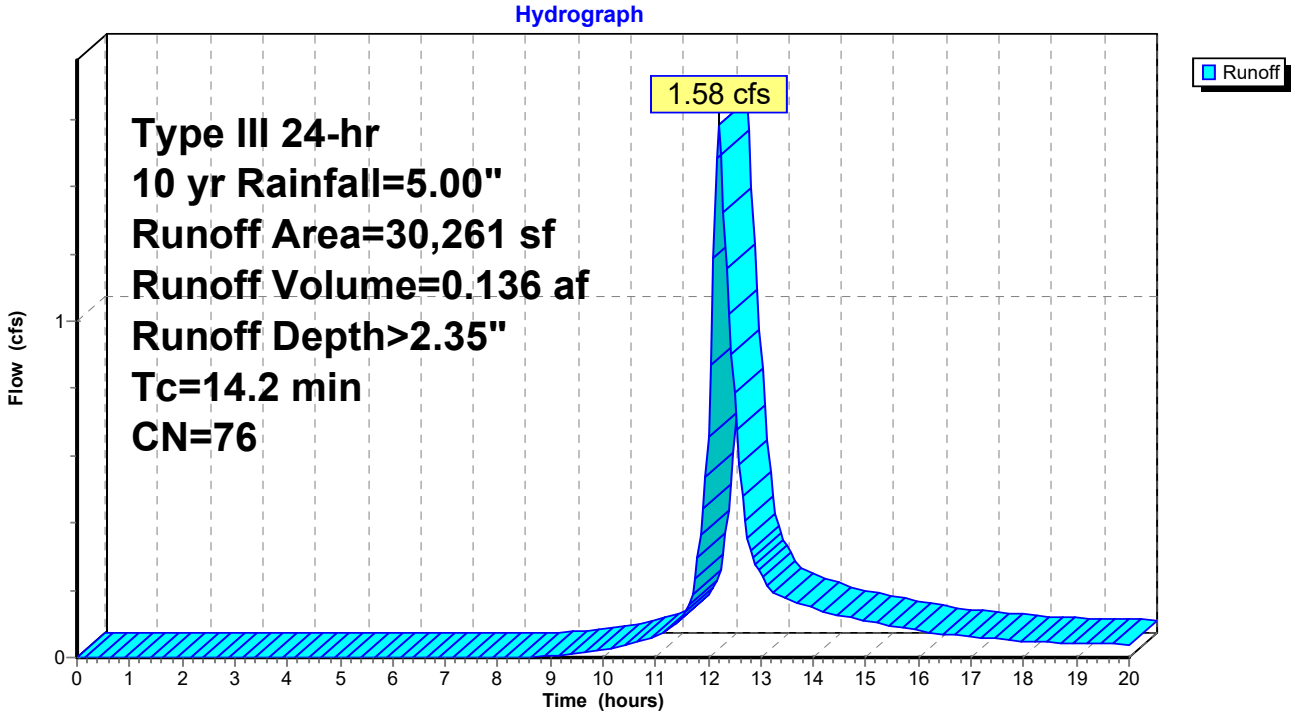
Runoff = 1.58 cfs @ 12.20 hrs, Volume= 0.136 af, Depth> 2.35"
Routed to Reach 4R : TOTAL Q PROPOSED

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (sf)	CN	Description
30,261	76	Woods/grass comb., Fair, HSG C
30,261		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2					**Direct Entry, SAME AS EXISTING**

Subcatchment 3S: Q BYPASS



Summary for Subcatchment 7S: EXISTING Q

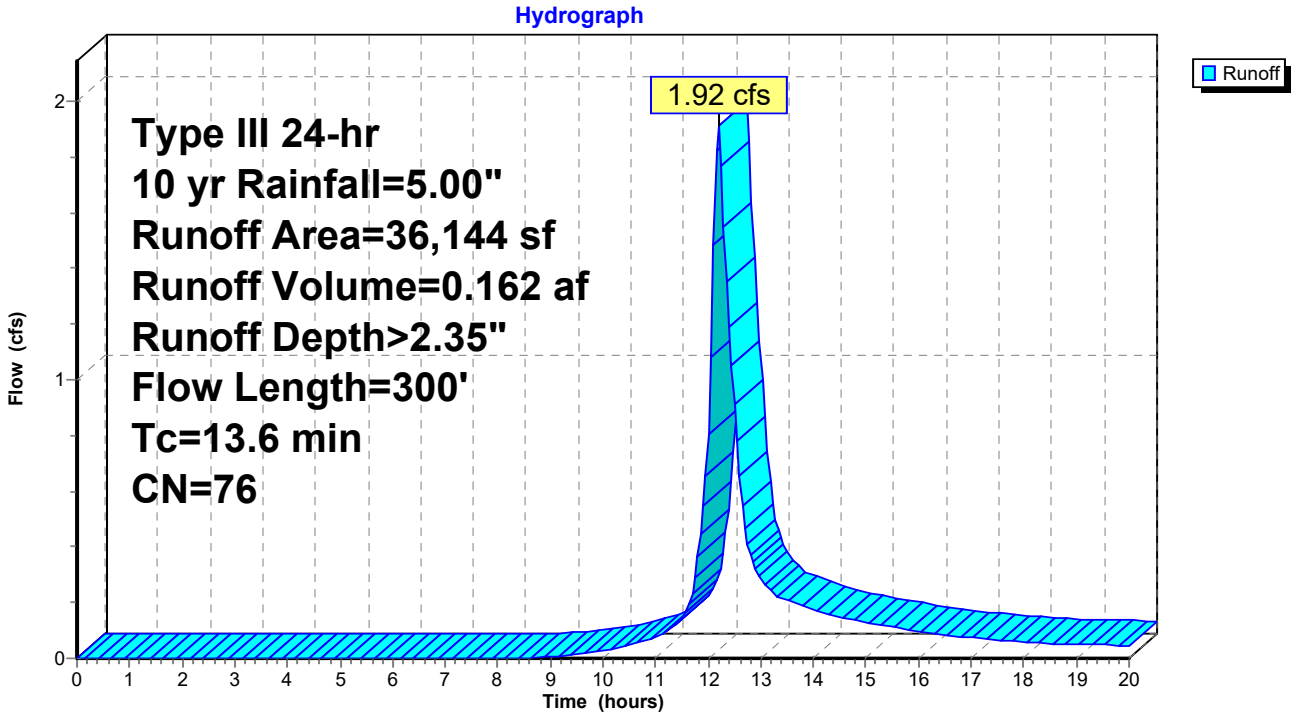
Runoff = 1.92 cfs @ 12.19 hrs, Volume= 0.162 af, Depth> 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (sf)	CN	Description
36,144	76	Woods/grass comb., Fair, HSG C
36,144		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	200	0.1000	0.26		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.30"
0.7	100	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.6	300	Total			

Subcatchment 7S: EXISTING Q



Summary for Subcatchment 8S: ROOF POOL DRIVE

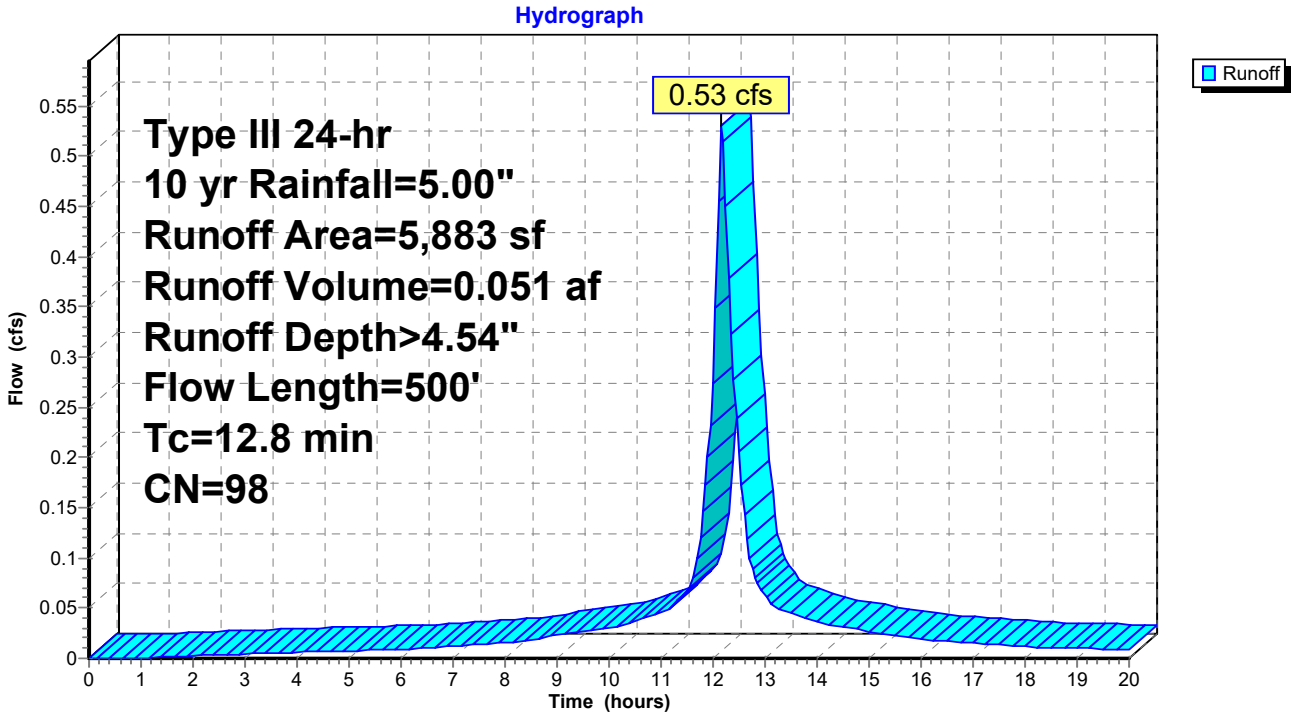
Runoff = 0.53 cfs @ 12.17 hrs, Volume= 0.051 af, Depth> 4.54"
Routed to Pond 11P : 25 280HD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (sf)	CN	Description
5,883	98	Unconnected pavement, HSG C
5,883		100.00% Impervious Area
5,883		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	200	0.1200	0.28		**Sheet Flow, LAWN** Grass: Dense n= 0.240 P2= 3.30"
0.9	300	0.0800	5.74		**Shallow Concentrated Flow, DRIVE** Paved Kv= 20.3 fps
12.8	500	Total			

Subcatchment 8S: ROOF POOL DRIVE



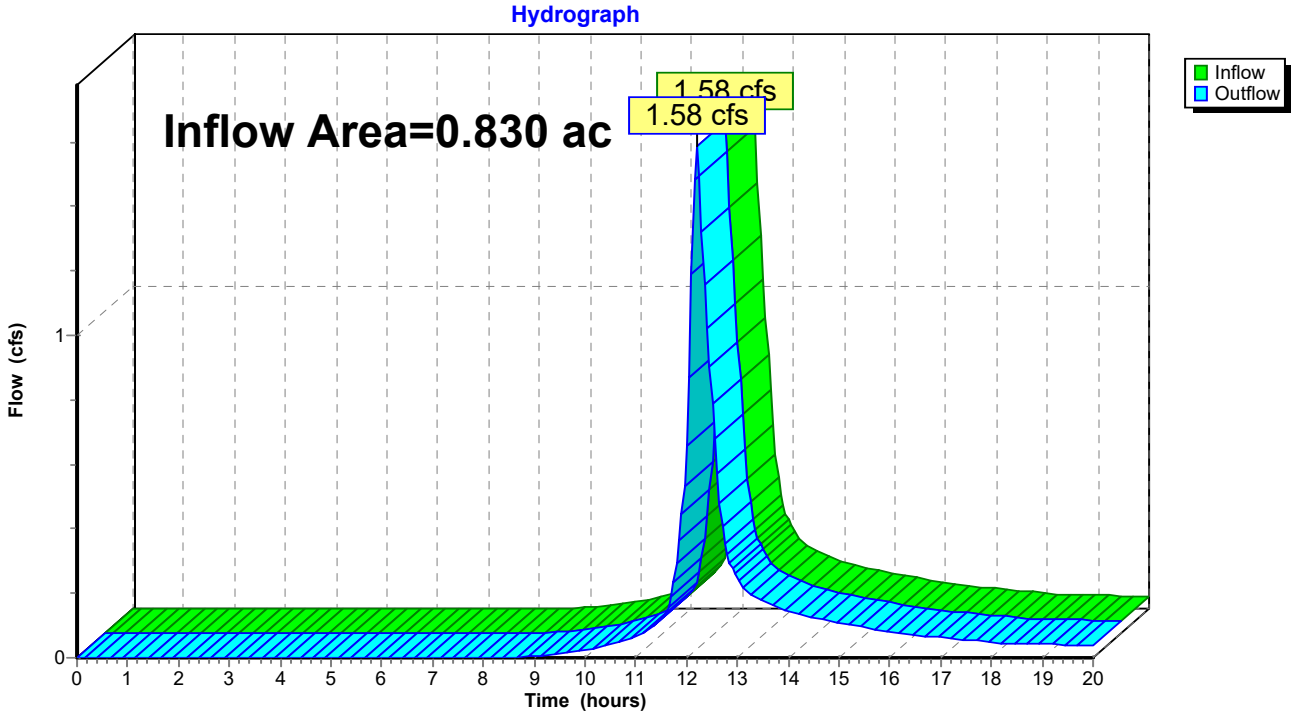
Summary for Reach 4R: TOTAL Q PROPOSED

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.830 ac, 16.28% Impervious, Inflow Depth > 1.97" for 10 yr event
Inflow = 1.58 cfs @ 12.20 hrs, Volume= 0.136 af
Outflow = 1.58 cfs @ 12.20 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: TOTAL Q PROPOSED



Summary for Pond 11P: 25 280HD

Inflow Area = 0.135 ac,100.00% Impervious, Inflow Depth > 4.54" for 10 yr event
Inflow = 0.53 cfs @ 12.17 hrs, Volume= 0.051 af
Outflow = 0.02 cfs @ 9.00 hrs, Volume= 0.024 af, Atten= 96%, Lag= 0.0 min
Discarded = 0.02 cfs @ 9.00 hrs, Volume= 0.024 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 4R : TOTAL Q PROPOSED

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 284.72' @ 15.77 hrs Surf.Area= 907 sf Storage= 1,285 cf

Plug-Flow detention time= 151.8 min calculated for 0.024 af (48% of inflow)
Center-of-Mass det. time= 40.2 min (766.4 - 726.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	282.50'	995 cf	**22.67'W x 40.00'L x 3.71'H Field A** 3,362 cf Overall - 874 cf Embedded = 2,488 cf x 40.0% Voids
#2A	283.00'	874 cf	**Cultec R-280HD** x 20 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,869 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	282.50'	**1.000 in/hr OUT over Surface area**
#2	Primary	285.00'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 9.00 hrs HW=282.54' (Free Discharge)
↑—**1=OUT** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=282.50' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 11P: 25 280HD - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)
Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 6.07 sf x 4 rows

47.0" Wide + 12.0" Spacing = 59.0" C-C Row Spacing

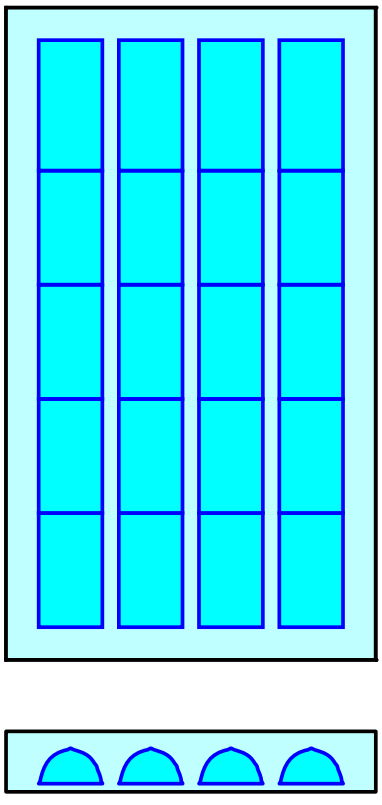
5 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 36.00' Row Length +24.0" End Stone x 2 = 40.00' Base Length
4 Rows x 47.0" Wide + 12.0" Spacing x 3 + 24.0" Side Stone x 2 = 22.67' Base Width
6.0" Stone Base + 26.5" Chamber Height + 12.0" Stone Cover = 3.71' Field Height

20 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 4 Rows = 874.3 cf Chamber Storage

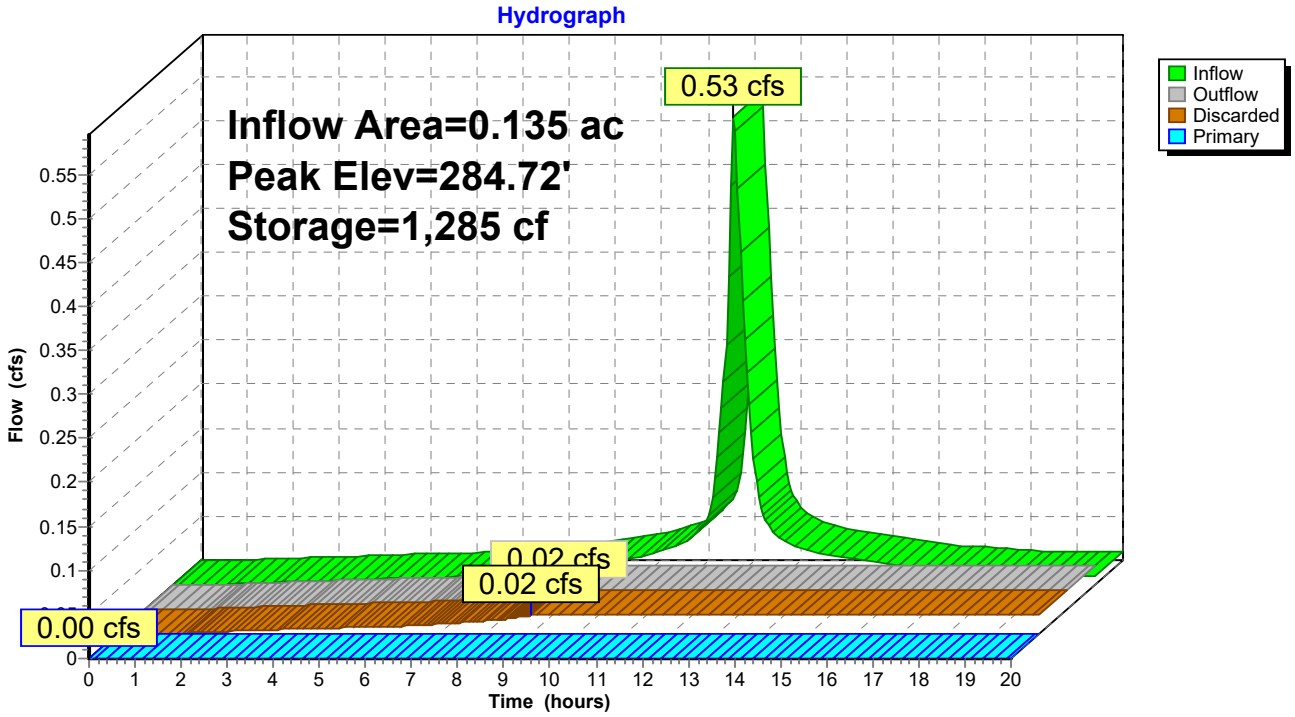
3,362.2 cf Field - 874.3 cf Chambers = 2,487.9 cf Stone x 40.0% Voids = 995.2 cf Stone Storage

Chamber Storage + Stone Storage = 1,869.5 cf = 0.043 af
Overall Storage Efficiency = 55.6%
Overall System Size = 40.00' x 22.67' x 3.71'

20 Chambers
124.5 cy Field
92.1 cy Stone



Pond 11P: 25 280HD



Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 3S: Q BYPASS Runoff Area=30,261 sf 0.00% Impervious Runoff Depth>2.90"
Tc=14.2 min CN=76 Runoff=1.95 cfs 0.168 af

Subcatchment 7S: EXISTING Q Runoff Area=36,144 sf 0.00% Impervious Runoff Depth>2.90"
Flow Length=300' Tc=13.6 min CN=76 Runoff=2.37 cfs 0.201 af

Subcatchment 8S: ROOF POOL DRIVE Runoff Area=5,883 sf 100.00% Impervious Runoff Depth>5.20"
Flow Length=500' Tc=12.8 min CN=98 Runoff=0.61 cfs 0.059 af

Reach 4R: TOTAL Q PROPOSED Inflow=1.95 cfs 0.171 af
Outflow=1.95 cfs 0.171 af

Pond 11P: 25 280HD Peak Elev=285.08' Storage=1,460 cf Inflow=0.61 cfs 0.059 af
Discarded=0.02 cfs 0.025 af Primary=0.02 cfs 0.003 af Outflow=0.04 cfs 0.028 af

Total Runoff Area = 1.660 ac Runoff Volume = 0.427 af Average Runoff Depth = 3.09"
91.86% Pervious = 1.524 ac 8.14% Impervious = 0.135 ac

Summary for Subcatchment 3S: Q BYPASS

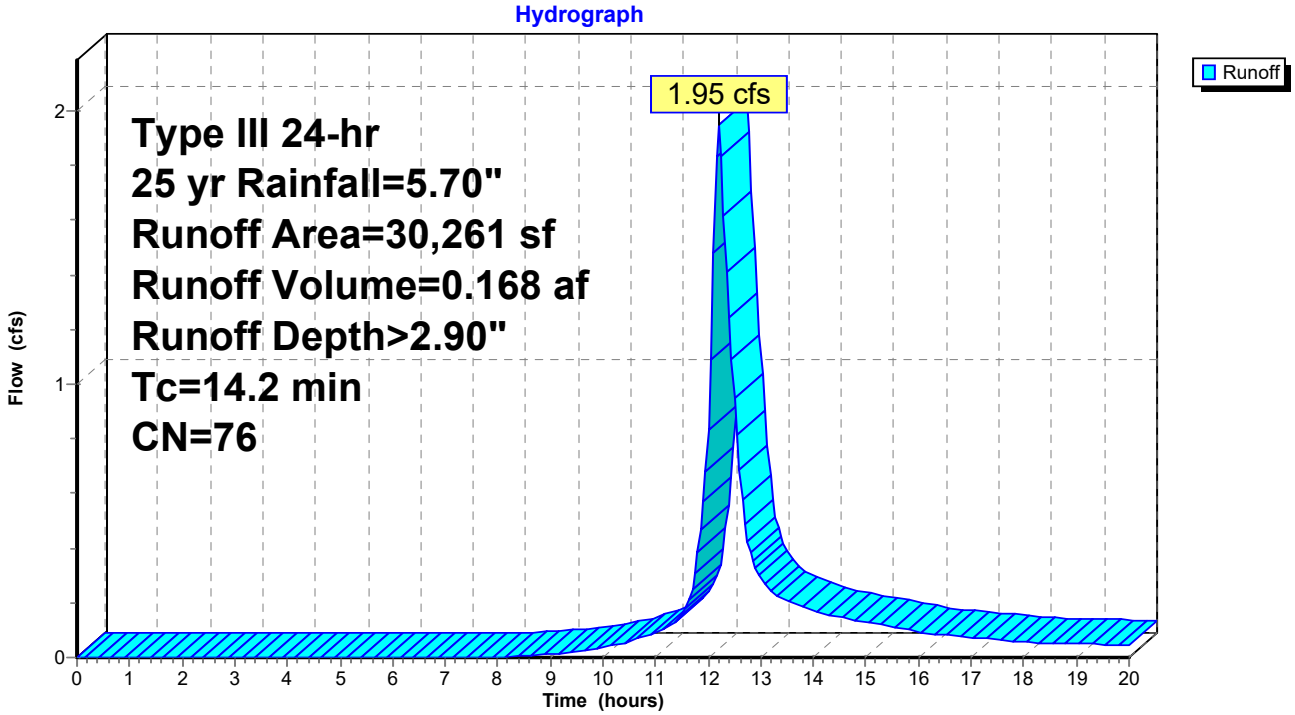
Runoff = 1.95 cfs @ 12.20 hrs, Volume= 0.168 af, Depth> 2.90"
Routed to Reach 4R : TOTAL Q PROPOSED

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 yr Rainfall=5.70"

Area (sf)	CN	Description
30,261	76	Woods/grass comb., Fair, HSG C
30,261		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2					**Direct Entry, SAME AS EXISTING**

Subcatchment 3S: Q BYPASS



Summary for Subcatchment 7S: EXISTING Q

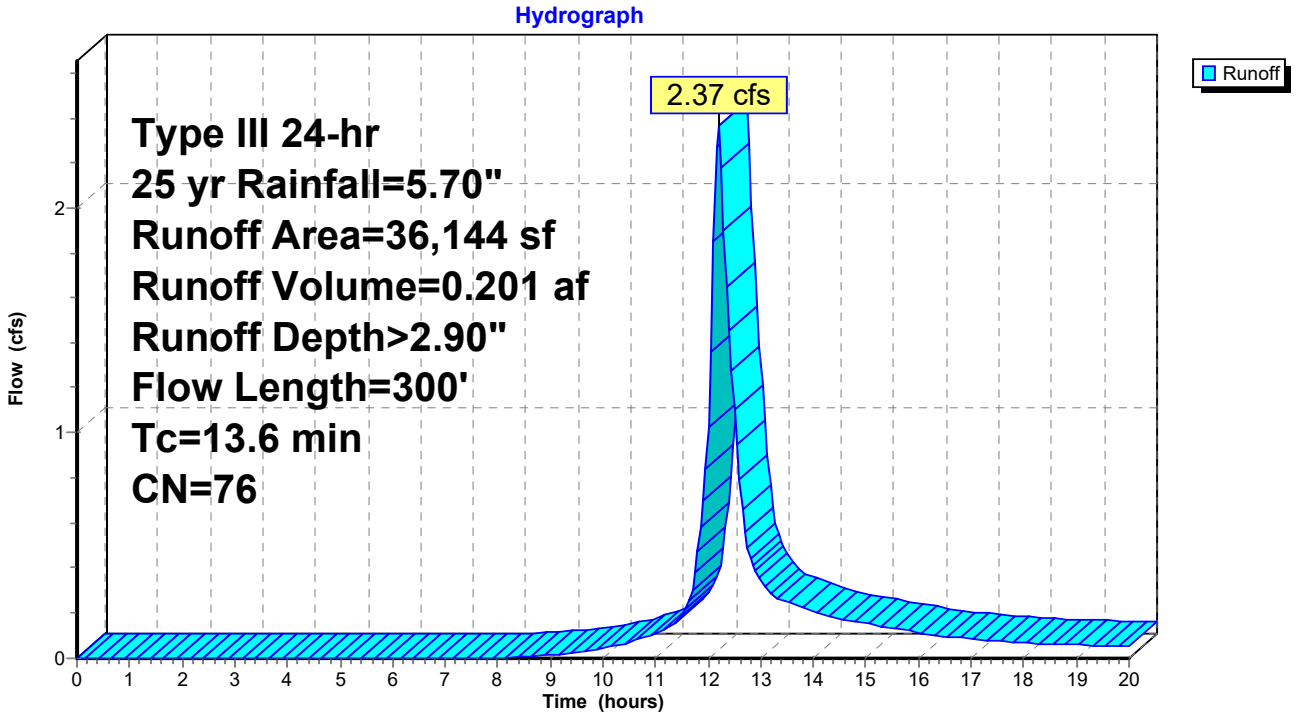
Runoff = 2.37 cfs @ 12.19 hrs, Volume= 0.201 af, Depth> 2.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 yr Rainfall=5.70"

Area (sf)	CN	Description
36,144	76	Woods/grass comb., Fair, HSG C
36,144		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	200	0.1000	0.26		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.30"
0.7	100	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.6	300	Total			

Subcatchment 7S: EXISTING Q



Summary for Subcatchment 8S: ROOF POOL DRIVE

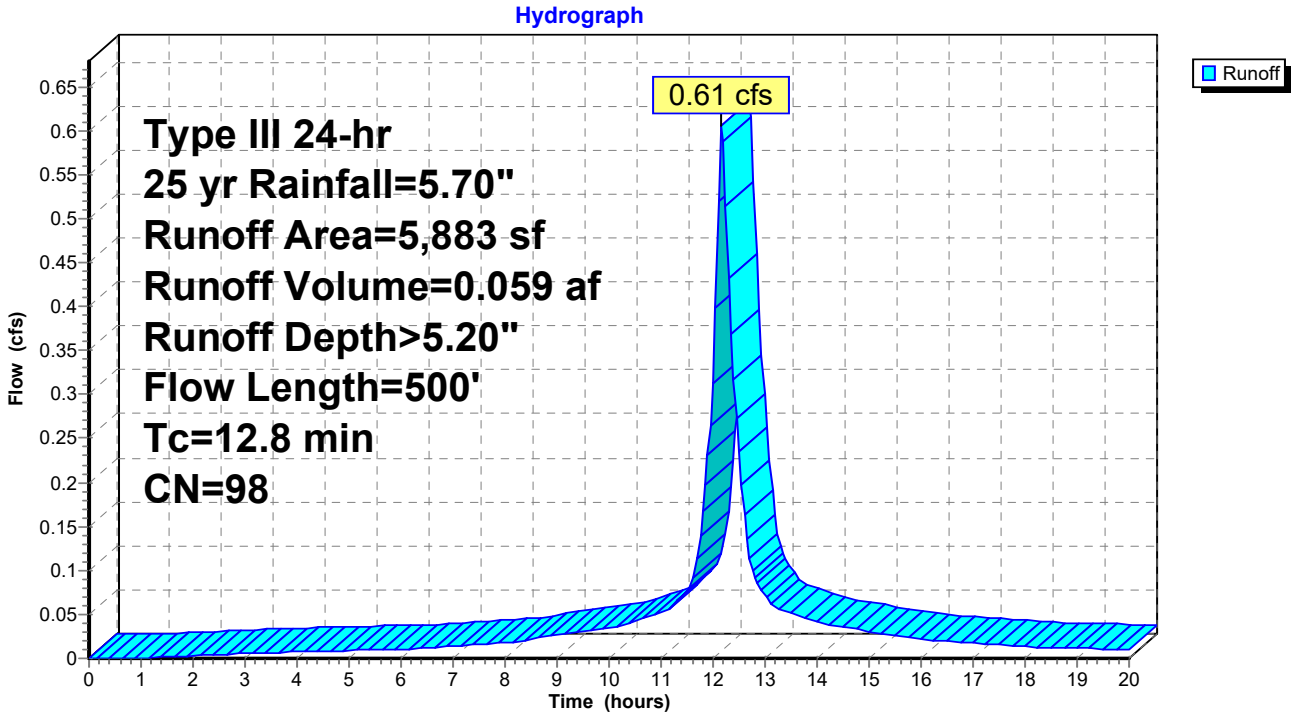
Runoff = 0.61 cfs @ 12.17 hrs, Volume= 0.059 af, Depth> 5.20"
Routed to Pond 11P : 25 280HD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 yr Rainfall=5.70"

Area (sf)	CN	Description
5,883	98	Unconnected pavement, HSG C
5,883		100.00% Impervious Area
5,883		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	200	0.1200	0.28		**Sheet Flow, LAWN** Grass: Dense n= 0.240 P2= 3.30"
0.9	300	0.0800	5.74		**Shallow Concentrated Flow, DRIVE** Paved Kv= 20.3 fps
12.8	500	Total			

Subcatchment 8S: ROOF POOL DRIVE



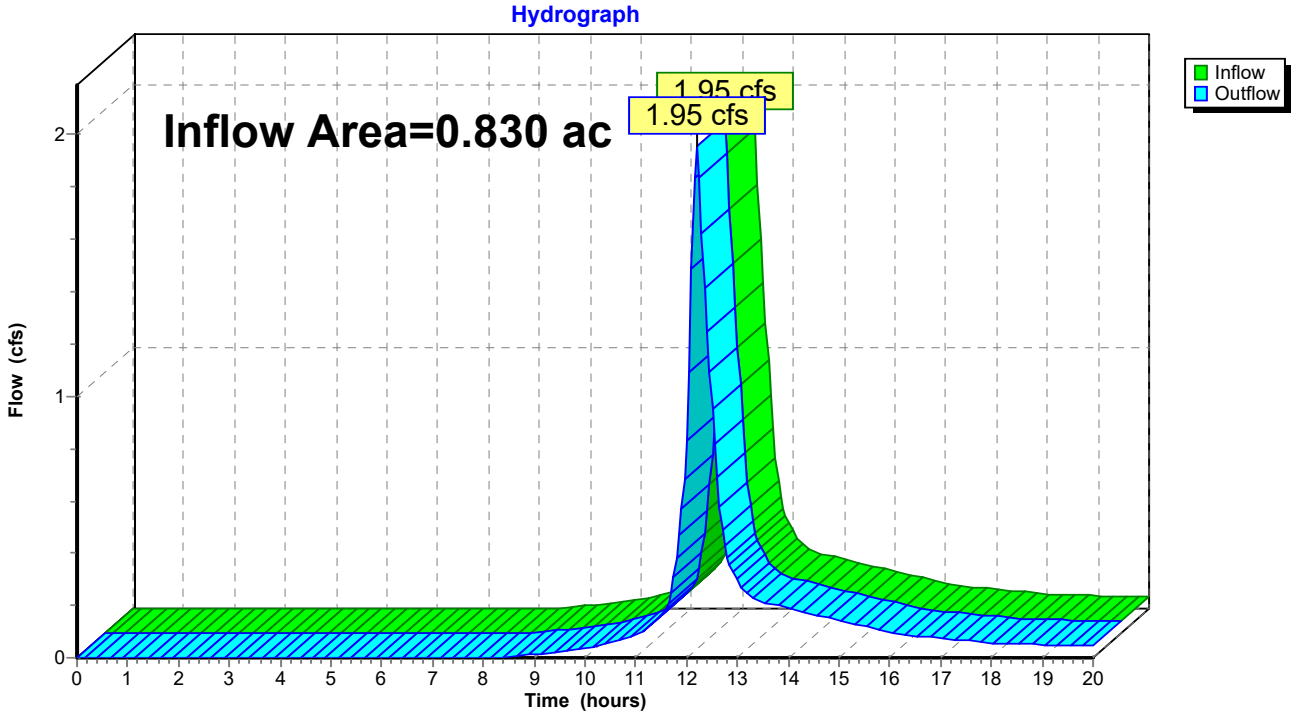
Summary for Reach 4R: TOTAL Q PROPOSED

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.830 ac, 16.28% Impervious, Inflow Depth > 2.47" for 25 yr event
Inflow = 1.95 cfs @ 12.20 hrs, Volume= 0.171 af
Outflow = 1.95 cfs @ 12.20 hrs, Volume= 0.171 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: TOTAL Q PROPOSED



Summary for Pond 11P: 25 280HD

Inflow Area = 0.135 ac,100.00% Impervious, Inflow Depth > 5.20" for 25 yr event
Inflow = 0.61 cfs @ 12.17 hrs, Volume= 0.059 af
Outflow = 0.04 cfs @ 14.22 hrs, Volume= 0.028 af, Atten= 94%, Lag= 122.9 min
Discarded = 0.02 cfs @ 8.60 hrs, Volume= 0.025 af
Primary = 0.02 cfs @ 14.22 hrs, Volume= 0.003 af
Routed to Reach 4R : TOTAL Q PROPOSED

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.08' @ 14.22 hrs Surf.Area= 907 sf Storage= 1,460 cf

Plug-Flow detention time= 153.2 min calculated for 0.028 af (47% of inflow)
Center-of-Mass det. time= 39.3 min (763.5 - 724.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	282.50'	995 cf	**22.67'W x 40.00'L x 3.71'H Field A** 3,362 cf Overall - 874 cf Embedded = 2,488 cf x 40.0% Voids
#2A	283.00'	874 cf	**Cultec R-280HD** x 20 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,869 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	282.50'	**1.000 in/hr OUT over Surface area**
#2	Primary	285.00'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 8.60 hrs HW=282.54' (Free Discharge)
↑—**1=OUT** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.02 cfs @ 14.22 hrs HW=285.08' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 0.99 fps)

Pond 11P: 25 280HD - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)
Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 6.07 sf x 4 rows

47.0" Wide + 12.0" Spacing = 59.0" C-C Row Spacing

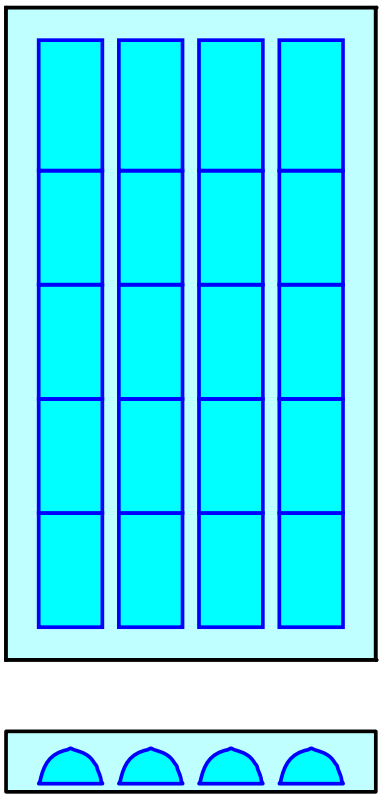
5 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 36.00' Row Length +24.0" End Stone x 2 = 40.00' Base Length
4 Rows x 47.0" Wide + 12.0" Spacing x 3 + 24.0" Side Stone x 2 = 22.67' Base Width
6.0" Stone Base + 26.5" Chamber Height + 12.0" Stone Cover = 3.71' Field Height

20 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 4 Rows = 874.3 cf Chamber Storage

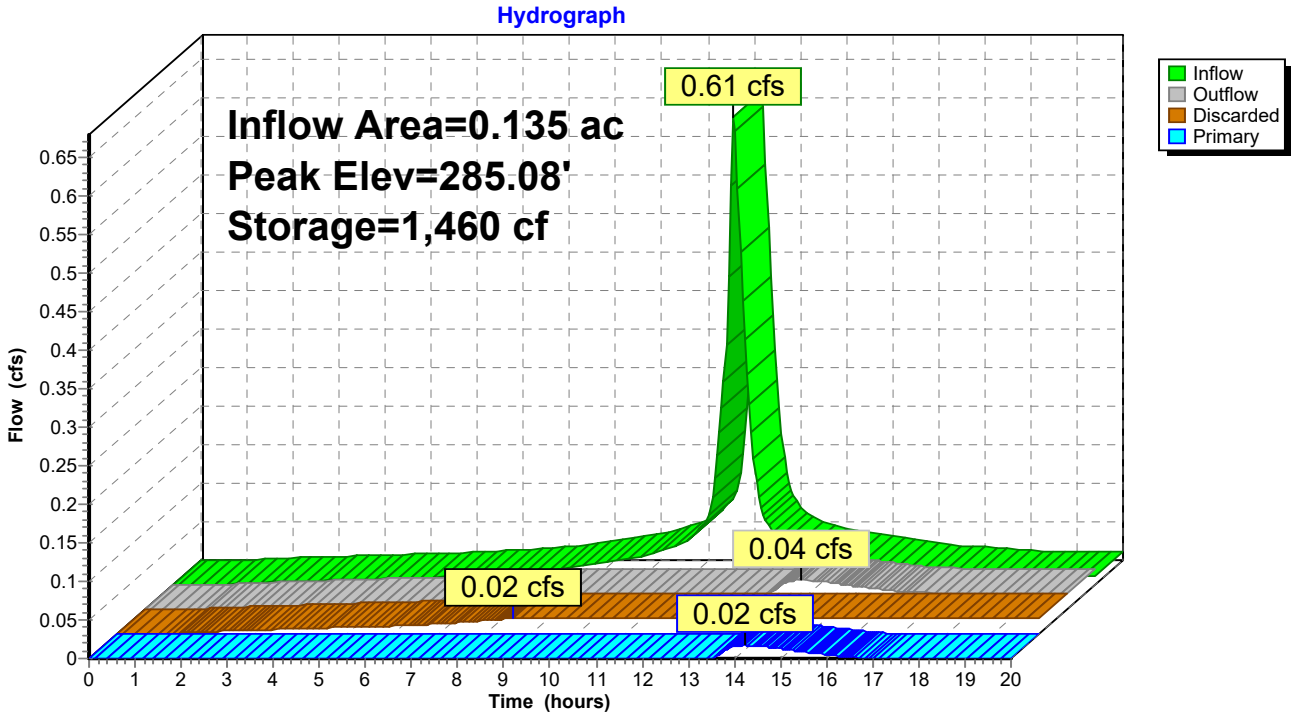
3,362.2 cf Field - 874.3 cf Chambers = 2,487.9 cf Stone x 40.0% Voids = 995.2 cf Stone Storage

Chamber Storage + Stone Storage = 1,869.5 cf = 0.043 af
Overall Storage Efficiency = 55.6%
Overall System Size = 40.00' x 22.67' x 3.71'

20 Chambers
124.5 cy Field
92.1 cy Stone



Pond 11P: 25 280HD



Time span=0.00-20.00 hrs, dt=0.05 hrs, 401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 3S: Q BYPASS Runoff Area=30,261 sf 0.00% Impervious Runoff Depth>3.47"
Tc=14.2 min CN=76 Runoff=2.33 cfs 0.201 af

Subcatchment 7S: EXISTING Q Runoff Area=36,144 sf 0.00% Impervious Runoff Depth>3.47"
Flow Length=300' Tc=13.6 min CN=76 Runoff=2.82 cfs 0.240 af

Subcatchment 8S: ROOF POOL DRIVE Runoff Area=5,883 sf 100.00% Impervious Runoff Depth>5.87"
Flow Length=500' Tc=12.8 min CN=98 Runoff=0.68 cfs 0.066 af

Reach 4R: TOTAL Q PROPOSED Inflow=2.33 cfs 0.210 af
Outflow=2.33 cfs 0.210 af

Pond 11P: 25 280HD Peak Elev=285.18' Storage=1,497 cf Inflow=0.68 cfs 0.066 af
Discarded=0.02 cfs 0.026 af Primary=0.07 cfs 0.009 af Outflow=0.09 cfs 0.035 af

Total Runoff Area = 1.660 ac Runoff Volume = 0.507 af Average Runoff Depth = 3.67"
91.86% Pervious = 1.524 ac 8.14% Impervious = 0.135 ac

Summary for Subcatchment 3S: Q BYPASS

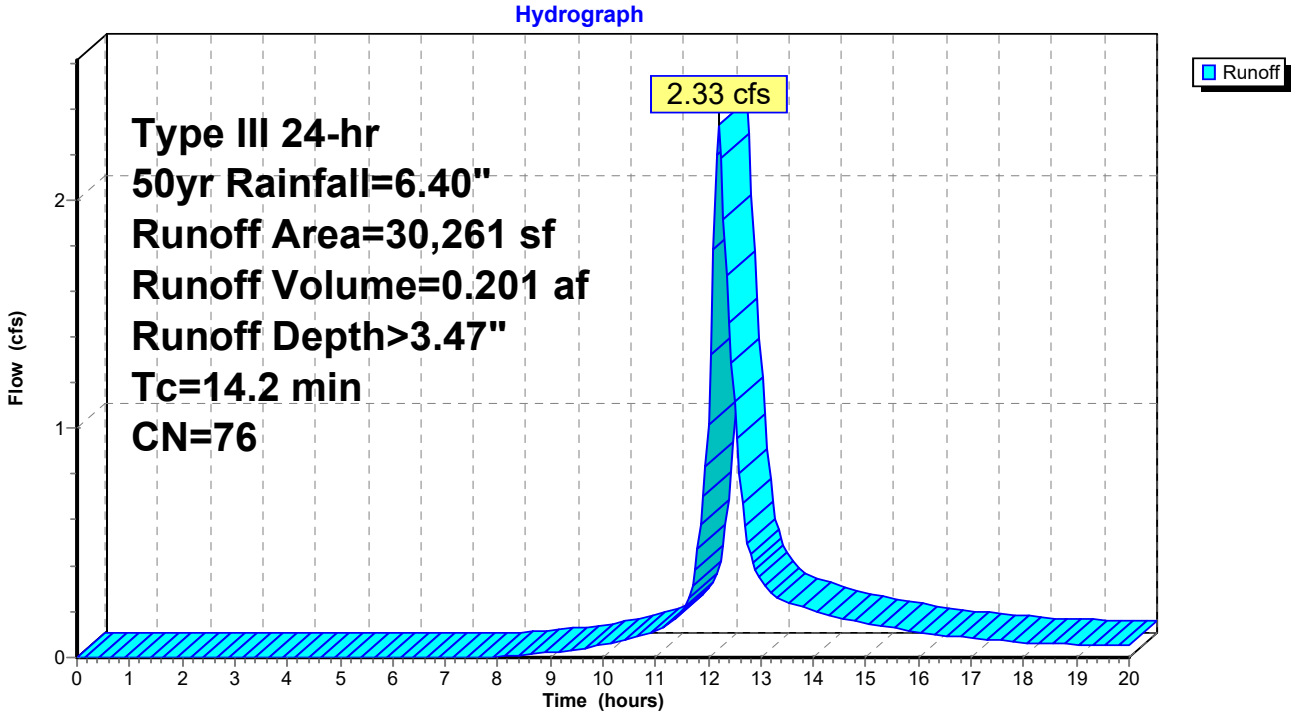
Runoff = 2.33 cfs @ 12.20 hrs, Volume= 0.201 af, Depth> 3.47"
Routed to Reach 4R : TOTAL Q PROPOSED

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50yr Rainfall=6.40"

Area (sf)	CN	Description
30,261	76	Woods/grass comb., Fair, HSG C
30,261		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2					**Direct Entry, SAME AS EXISTING**

Subcatchment 3S: Q BYPASS



Summary for Subcatchment 7S: EXISTING Q

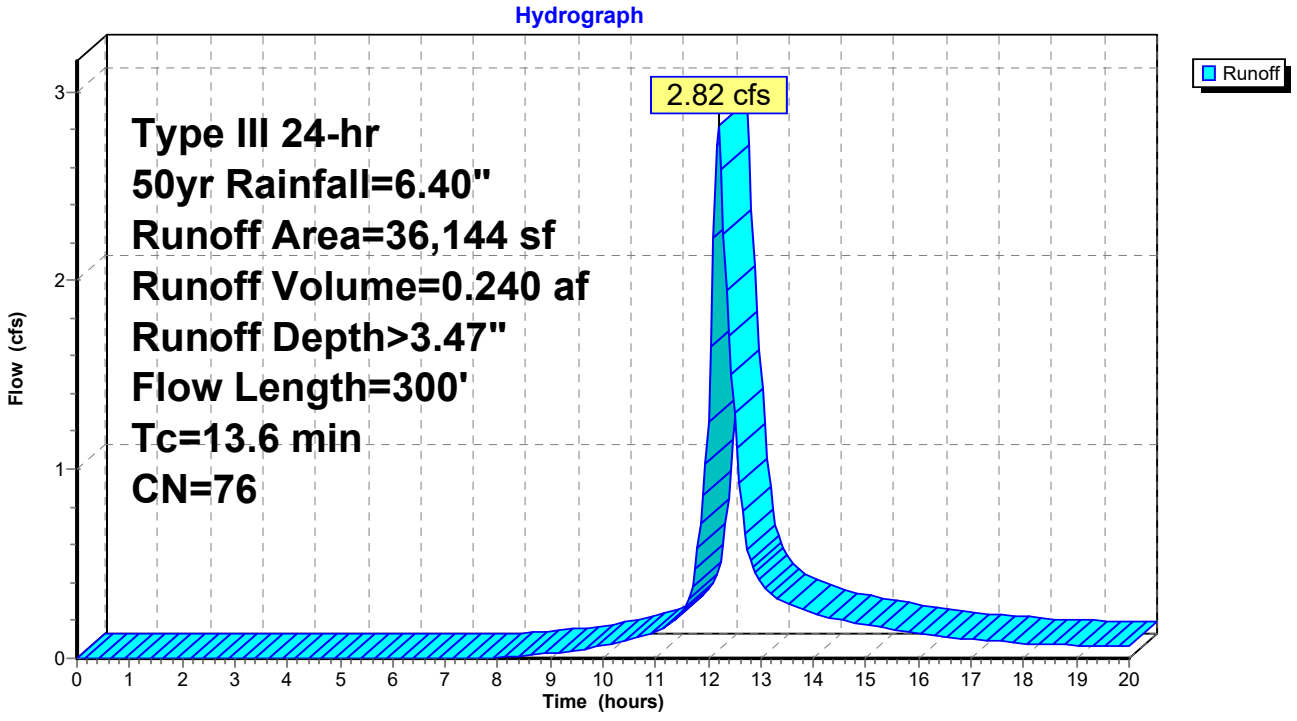
Runoff = 2.82 cfs @ 12.19 hrs, Volume= 0.240 af, Depth> 3.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50yr Rainfall=6.40"

Area (sf)	CN	Description
36,144	76	Woods/grass comb., Fair, HSG C
36,144		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	200	0.1000	0.26		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.30"
0.7	100	0.1200	2.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.6	300	Total			

Subcatchment 7S: EXISTING Q



Summary for Subcatchment 8S: ROOF POOL DRIVE

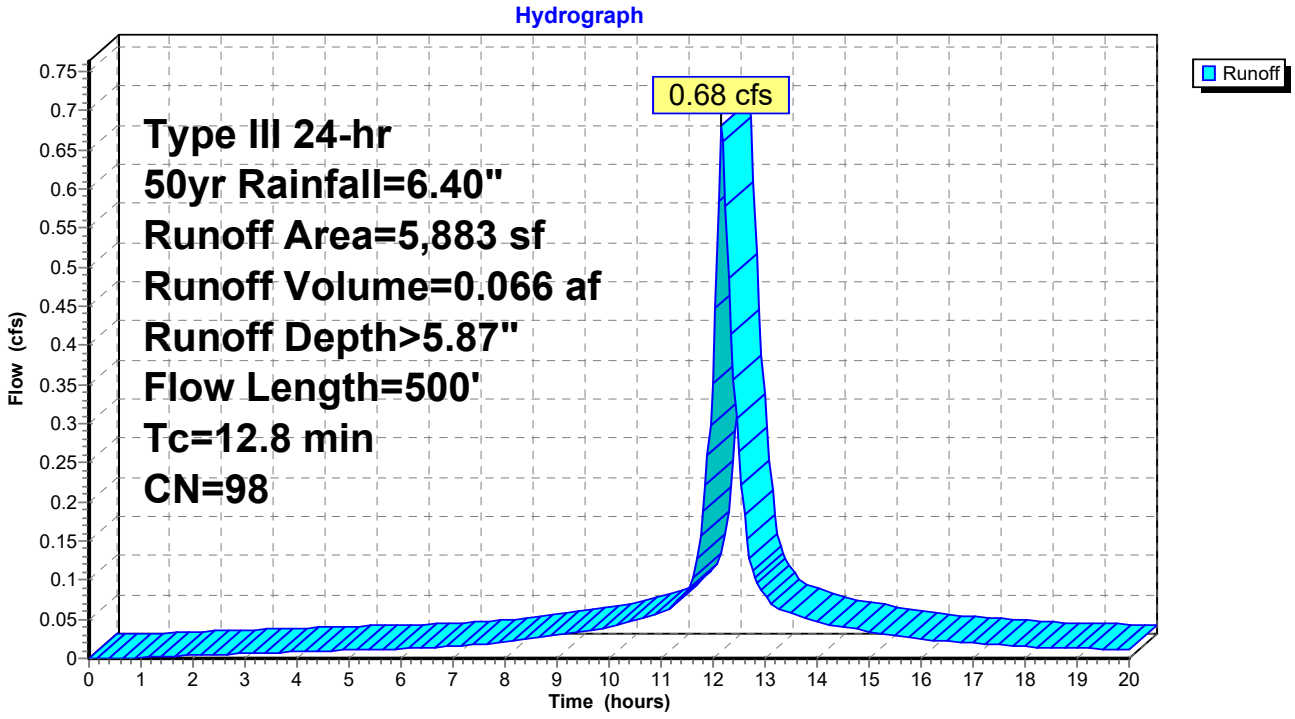
Runoff = 0.68 cfs @ 12.17 hrs, Volume= 0.066 af, Depth> 5.87"
Routed to Pond 11P : 25 280HD

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50yr Rainfall=6.40"

Area (sf)	CN	Description
5,883	98	Unconnected pavement, HSG C
5,883		100.00% Impervious Area
5,883		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	200	0.1200	0.28		**Sheet Flow, LAWN** Grass: Dense n= 0.240 P2= 3.30"
0.9	300	0.0800	5.74		**Shallow Concentrated Flow, DRIVE** Paved Kv= 20.3 fps
12.8	500	Total			

Subcatchment 8S: ROOF POOL DRIVE



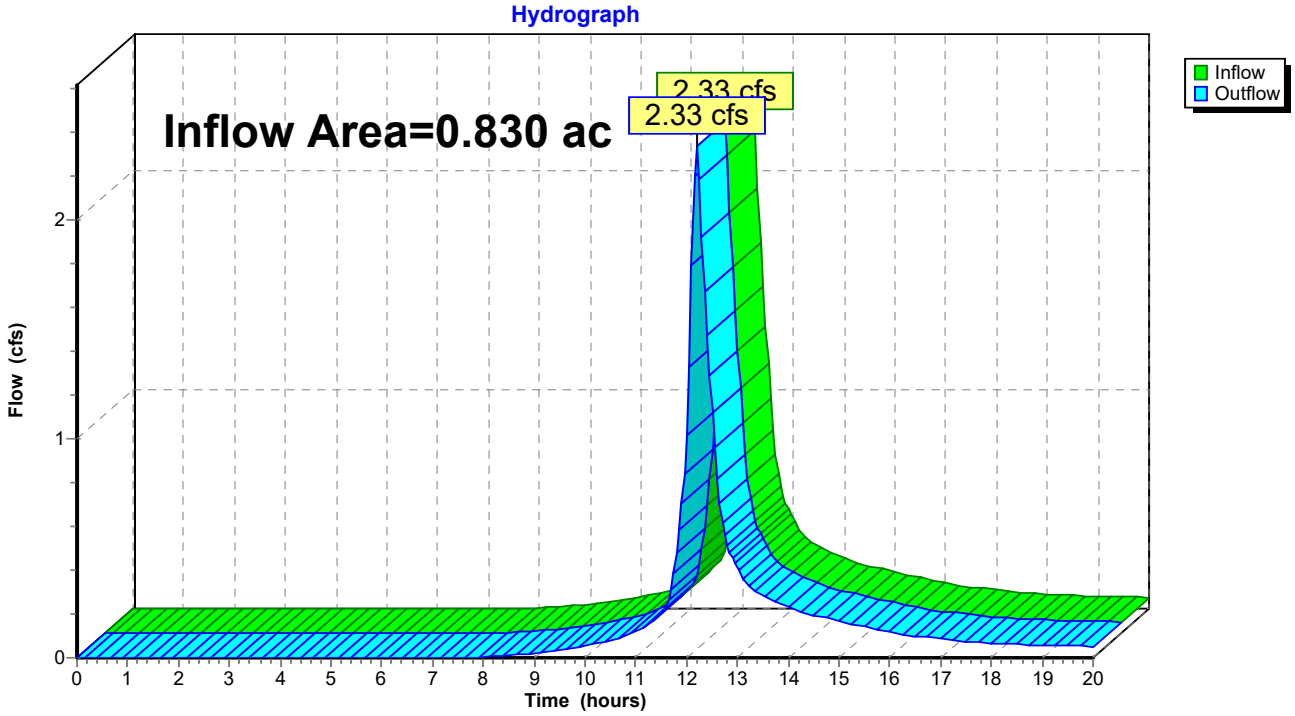
Summary for Reach 4R: TOTAL Q PROPOSED

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.830 ac, 16.28% Impervious, Inflow Depth > 3.03" for 50yr event
Inflow = 2.33 cfs @ 12.20 hrs, Volume= 0.210 af
Outflow = 2.33 cfs @ 12.20 hrs, Volume= 0.210 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs

Reach 4R: TOTAL Q PROPOSED



Summary for Pond 11P: 25 280HD

Inflow Area = 0.135 ac,100.00% Impervious, Inflow Depth > 5.87" for 50yr event
Inflow = 0.68 cfs @ 12.17 hrs, Volume= 0.066 af
Outflow = 0.09 cfs @ 12.89 hrs, Volume= 0.035 af, Atten= 87%, Lag= 43.1 min
Discarded = 0.02 cfs @ 8.25 hrs, Volume= 0.026 af
Primary = 0.07 cfs @ 12.89 hrs, Volume= 0.009 af
Routed to Reach 4R : TOTAL Q PROPOSED

Routing by Stor-Ind method, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 285.18' @ 12.89 hrs Surf.Area= 907 sf Storage= 1,497 cf

Plug-Flow detention time= 141.5 min calculated for 0.035 af (53% of inflow)
Center-of-Mass det. time= 38.6 min (761.2 - 722.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	282.50'	995 cf	**22.67'W x 40.00'L x 3.71'H Field A** 3,362 cf Overall - 874 cf Embedded = 2,488 cf x 40.0% Voids
#2A	283.00'	874 cf	**Cultec R-280HD** x 20 Inside #1 Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap Row Length Adjustment= +1.00' x 6.07 sf x 4 rows
		1,869 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	282.50'	**1.000 in/hr OUT over Surface area**
#2	Primary	285.00'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 8.25 hrs HW=282.54' (Free Discharge)
↑—**1=OUT** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.07 cfs @ 12.89 hrs HW=285.18' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.07 cfs @ 1.45 fps)

Pond 11P: 25 280HD - Chamber Wizard Field A

Chamber Model = Cultec R-280HD (Cultec Recharger® 280HD)
Effective Size= 46.9"W x 26.0"H => 6.07 sf x 7.00'L = 42.5 cf
Overall Size= 47.0"W x 26.5"H x 8.00'L with 1.00' Overlap
Row Length Adjustment= +1.00' x 6.07 sf x 4 rows

47.0" Wide + 12.0" Spacing = 59.0" C-C Row Spacing

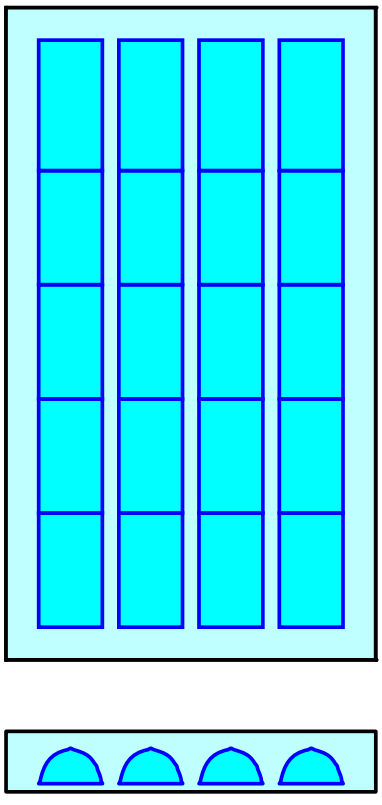
5 Chambers/Row x 7.00' Long +1.00' Row Adjustment = 36.00' Row Length +24.0" End Stone x 2 = 40.00' Base Length
4 Rows x 47.0" Wide + 12.0" Spacing x 3 + 24.0" Side Stone x 2 = 22.67' Base Width
6.0" Stone Base + 26.5" Chamber Height + 12.0" Stone Cover = 3.71' Field Height

20 Chambers x 42.5 cf +1.00' Row Adjustment x 6.07 sf x 4 Rows = 874.3 cf Chamber Storage

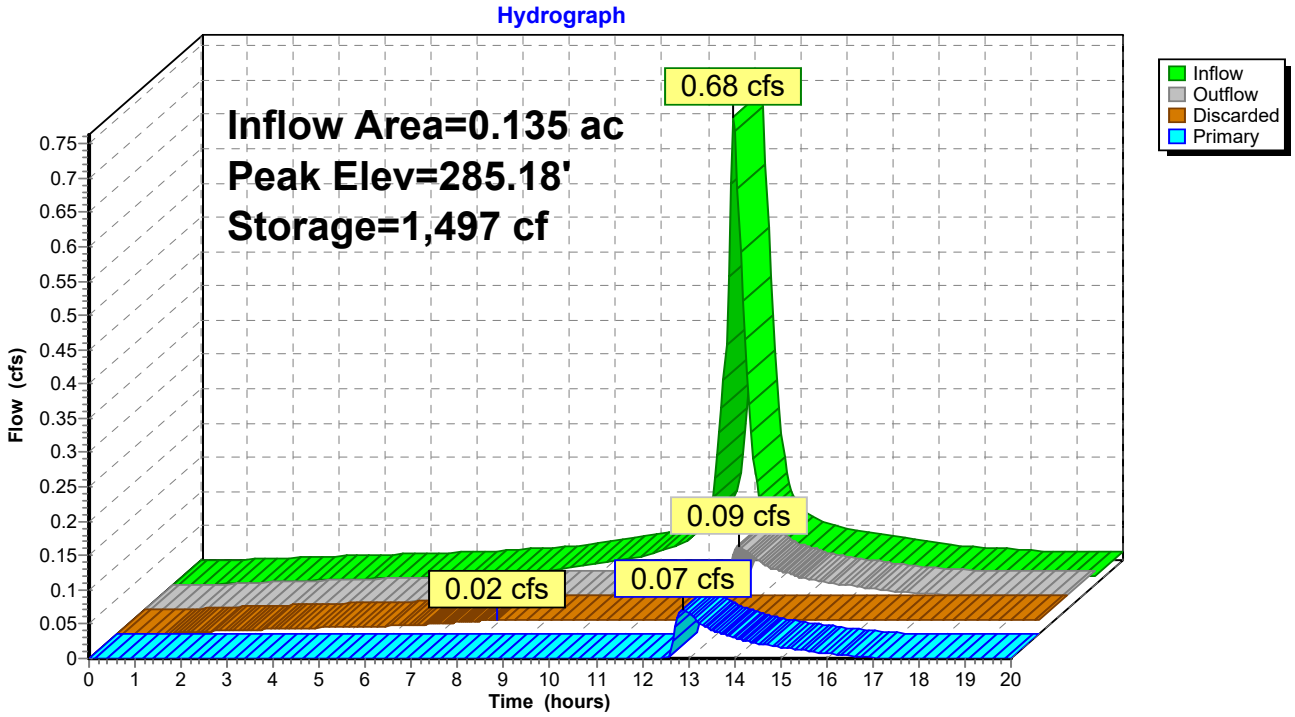
3,362.2 cf Field - 874.3 cf Chambers = 2,487.9 cf Stone x 40.0% Voids = 995.2 cf Stone Storage

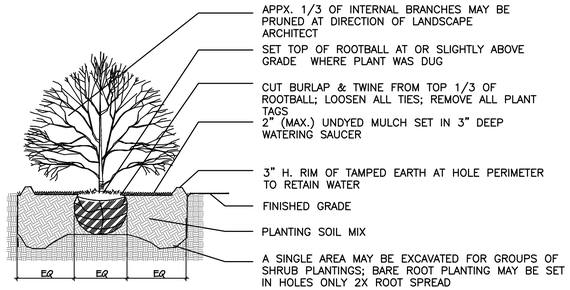
Chamber Storage + Stone Storage = 1,869.5 cf = 0.043 af
Overall Storage Efficiency = 55.6%
Overall System Size = 40.00' x 22.67' x 3.71'

20 Chambers
124.5 cy Field
92.1 cy Stone



Pond 11P: 25 280HD

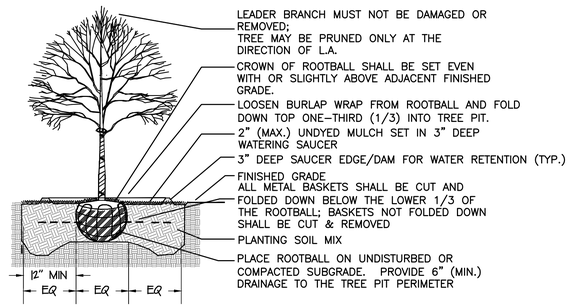




NOTE: FOR ALL CONTAINER GROWN PLANTS, REMOVE FROM CONTAINER JUST PRIOR TO PLANTING AND MAKE VERTICAL INCISIONS ALONG THE SURFACE OF THE ROOTBALL WITH A SHARP INSTRUMENT. CUT THROUGH CIRCULAR ROOTS AND GENTLY COMB OUT ROOTS.

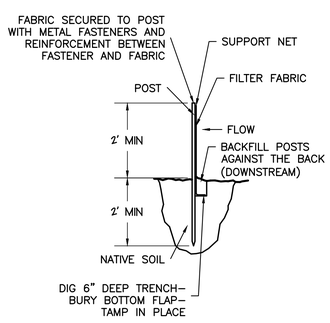
1 WP-2 SHRUB PLANTING DETAIL

NOT TO SCALE

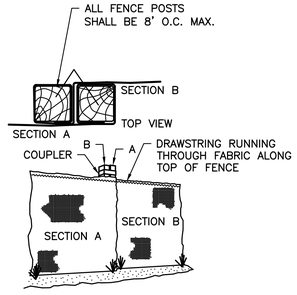


2 WP-2 DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE



TOE–IN METHOD



JOINING SECTIONS OF FENCING

INSTALLATION NOTES:
1. ALL INSTALLATION AS PER ASTM STANDARDS
2. EXCAVATE A 6 INCH TRENCH ALONG THE LOWER PERIMETER OF THE SITE
3. UNROLL A SECTION AT A TIME AND POSITION WALL OF THE TRENCH (NET SIDE AWAY FROM DIRECTION OF FLOW)
4. DRIVE THE POST INTO THE GROUND UNTIL THE NETTING IS APPROXIMATELY 2 INCHES FROM THE TRENCH BOTTOM
5. LAY THE TOE–IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH, BACKFILL THE TRENCH AND TAMP THE SOIL. STEEPER SLOPES REQUIRE AN INTERCEPT TRENCH
6. JOIN SECTIONS AS SHOWN ABOVE

3 WP-2 FABRIC SILTATION FENCE DETAIL

NOT TO SCALE

NEW ENGLAND WETLAND PLANTS, INC
820 WEST STREET, AMHERST, MA 01002
PHONE: 413-548-8000 FAX 413-549-4000
EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

New England Wetmix (Wetland Seed Mix)

Botanical Name	Common Name	Indicator
Carex vulpinoidea	Fox Sedge	OBL
Carex scoparia	Blunt Broom Sedge	FACW
Carex lurida	Lurid Sedge	OBL
Carex lupulina	Hop Sedge	OBL
Poa palustris	Fowl Bluegrass	FACW
Bidens frondosa	Beggar Ticks	FACW
Scirpus atrovirens	Green Bulrush	OBL
Asclepias incarnata	Swamp Milkweed	OBL
Carex crinita	Fringed Sedge	OBL
Vernonia noveboracensis	New York Ironweed	FACW+
Juncus effusus	Soft Rush	FACW+
Aster lateriflorus (Symphyotrichum lateriflorum)	Starved/Calico Aster	FACW
Iris versicolor	Blue Flag	OBL
Glyceria grandis	American Mannagrass	OBL
Mimulus ringens	Square Stemmed Monkey Flower	OBL
Eupatorium maculatum (Eutrochium maculatum)	Spotted Joe Pye Weed	OBL

PRICE PER LB. $135.00 MIN. QUANITY 1 LBS. **TOTAL:** $135.00 APPLY: 18 LBS/ACRE :2500 sq ft/lb

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The mix is well suited for detention basin borders and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months the seed mix will germinate the following spring. During the first season of growth several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons.

The wetland seeds in this mix can be sown by hand, with a hand-held spreader, or hydro-seeded on large or hard to reach sites. Lightly rake to insure good seed-to-soil contact. Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If sowing during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended.

New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is $/bulk pound, FOB warehouse, Plus SH and applicable taxes.

OR EQUAL

4 WP-2 WETMIX SEED MIX SPECIFICATION

NOT TO SCALE

Revisions	Date

C | O
Tracy Chalifoux LLC
Landscape Architect
7 King Street, Danbury, CT 06811
Office: 845-364-1360
E-mail: tlchalifoux@gmail.com

Seal

STATE OF CONNECTICUT · TRACY LEE CHALIFOUX · REGISTERED LANDSCAPE ARCHITECT · NO. 1189

Project Title
WETLAND PLAN
PROPERTY OF
JON ROGERS

Location
32 KETTLE CREEK ROAD
WESTON, CONNECTICUT

Graphic Scale and North Arrow

Date
August 16, 2024

Scale
AS SHOWN

Checked
TLC

Drawn
TLC

Drawing Title
WETLAND RESTORATION/CREATION & ENHANCEMENT DETAILS

Drawing No.
WP-2

NOTE:
REFER TO PLANS PREPARED BY J. EDWARDS & ASSOCIATES, LLC FOR ENGINEERING

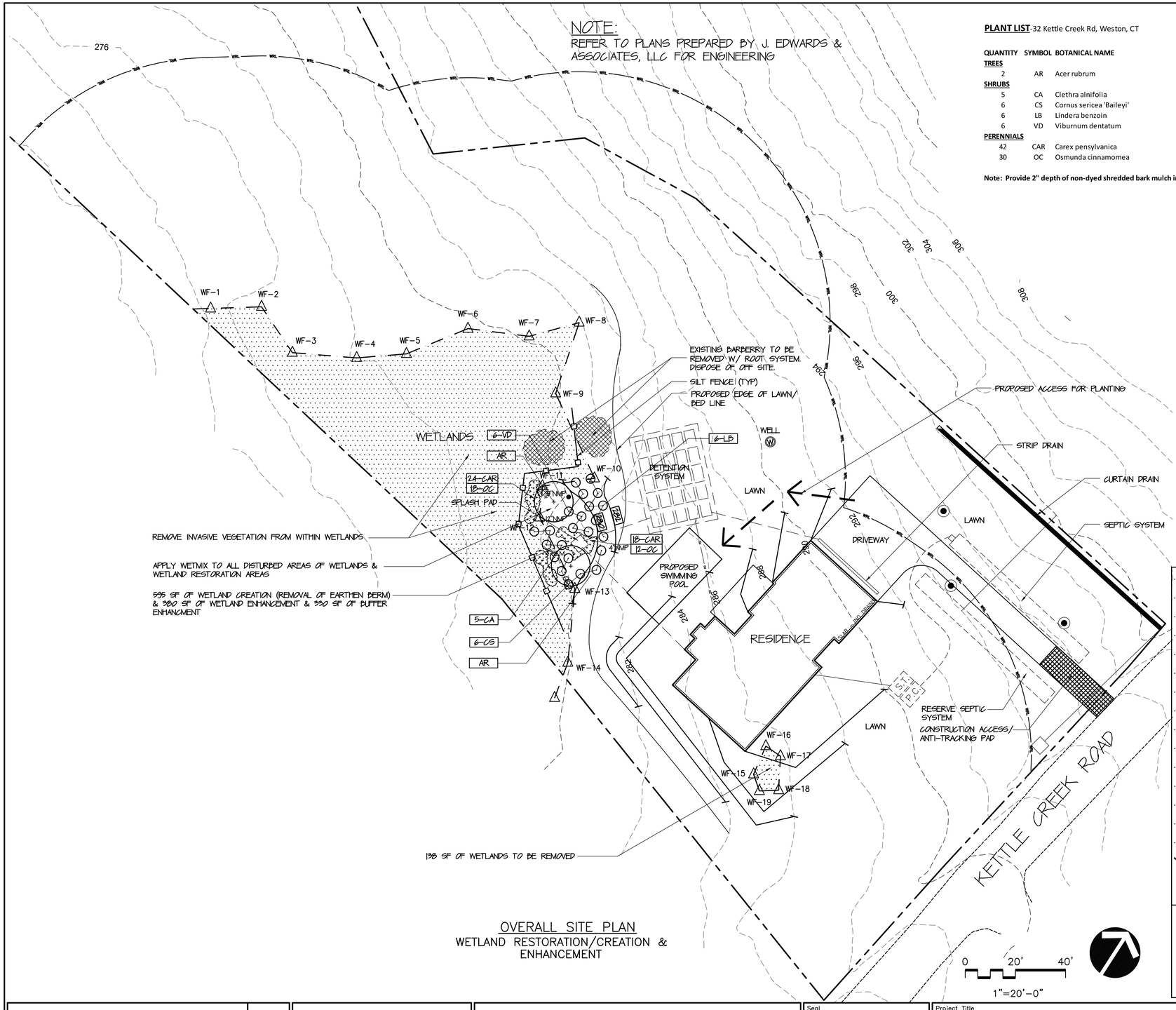
PLANT LIST-32 Kettle Creek Rd, Weston, CT

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	NOTES
TREES						
2	AR	Acer rubrum	Swamp Red Maple	2"-2 1/2" cal.		Full, Heavy, B&B
SHRUBS						
5	CA	Clethra alnifolia	Sweet Pepperbush	3'-3 1/2' ht.		Full, Heavy, Container
6	CS	Cornus sericea 'Baileyi'	Red Twig Dogwood	3'-3 1/2' ht.		Full, Heavy, Container
6	LB	Lindera benzoin	Spicebush	3'-3 1/2' ht.		Full, Heavy, Container
6	VD	Viburnum dentatum	Arrowood Viburnum	3'-3 1/2' ht.		Full, Heavy, Container
PERENNIALS						
42	CAR	Carex pensylvanica	Pennsylvania Sedge	1 Gallon	15" O.C.	Full, Heavy, Container
30	OC	Osmunda cinnamomea	Cinnamon Fern	1 Gallon	24" O.C.	Full, Heavy, Container

Note: Provide 2" depth of non-dyed shredded bark mulch in planting beds.

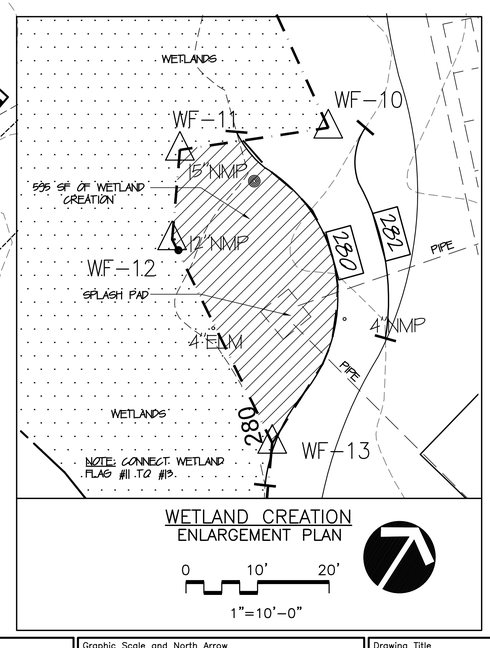
LEGEND

- PROPERTY LINE
- PROPOSED NATIVE SHRUBS
- PROPOSED NATIVE CANOPY TREE OR UNDERSTORY TREE
- PROPOSED NATIVE PERENNIALS
- WETLAND LINE (WF-10)
- WETLAND REVIEW LINE (WRL)
- PROPOSED SILT FENCE
- AREA OF WETLAND CREATION
- PROPOSED CONTOUR (282)
- EXISTING TREE (15"NMP)



OVERALL SITE PLAN
WETLAND RESTORATION/CREATION & ENHANCEMENT

0 20' 40'
1"=20'-0"



WETLAND CREATION
ENLARGEMENT PLAN

0 10' 20'
1"=10'-0"

PLANTING NOTES:

1. CONTACT CALL BEFORE YOU DIG AT 800-922-4455 TO HAVE UNDERGROUND UTILITY LINES MARKED PRIOR TO START OF ANY EXCAVATION WORK.
2. ANY INVASIVE VEGETATION TO BE REMOVED IS TO BE FLAGGED BY A QUALIFIED PROFESSIONAL AND REMOVED BY HAND.
3. EXACT LOCATION OF PLANTINGS, SPECIES TYPES AND QUANTITIES MAY VARY FROM THIS PLAN BASED ON SITE PLAN REVISIONS AND/OR ACTUAL FIELD CONDITIONS.
4. PLANT SPECIES SUBSTITUTIONS MAY BE MADE WITH THE APPROVAL OF THE PROJECT LANDSCAPE ARCHITECT PRIOR TO PLANTING. SUBSTITUTED PLANTS SHALL BE AT AN EQUAL OR GREATER SIZE AS NOTED USING A SIMILAR TYPE PLANT.
5. ALL PLANTING METHODS SHALL BE IN ACCORDANCE WITH THE 'AMERICAN STANDARDS FOR NURSERY STOCK' LATEST EDITION, AS PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
6. IN THE EVENT OF A DISCREPANCY BETWEEN THE QUANTITIES OF PLANTS IN THE 'PLANT LIST' AND THE ACTUAL QUANTITIES SHOWN ON THE PLAN THE PLAN SHALL GOVERN.
7. ALL PLANTING WORK SHALL BE PERFORMED BY HAND OR BY SMALL, RUBBER-TRACKED MACHINERY.
8. ANY PLANTINGS SUSCEPTIBLE TO DEER BROWSING SHALL BE SPRAYED WITH ORGANIC DEER REPELLENT, OR PROTECTED BY PHYSICAL MEANS SUCH AS A WIRE FENCE OR TREE ARMOR.
9. PLANTINGS SHALL BE HAND WATERED OR WATERED WITH A TEMPORARY IRRIGATION SYSTEM UNTIL ESTABLISHMENT.
10. BASE MAP INFORMATION WAS TAKEN FROM "PROPOSED SEPTIC PLAN" PREPARED BY J. EDWARD & ASSOCIATES, LLC DATED JULY 31, 2024.
11. WETLANDS WERE DELINEATED ON FEBRUARY 27, 2023 BY STEVEN DANZER PHD & ASSOCIATES, LLC.

WORK SEQUENCE:

1. INSTALL EROSION CONTROLS AS SHOWN ON PLAN.
2. REMOVE INVASIVE VEGETATION, AS FLAGGED BY A QUALIFIED PROFESSIONAL, BY HAND, ALONG WITH ROOT SYSTEM, AND DISPOSE OF IN AN OFF-SITE LOCATION.
3. UTILIZING RUBBER-TRACKED MACHINERY, AND WORKING AROUND EXISTING TREES TO REMAIN, EXCAVATE NEW WETLAND AREA ACCORDING TO PROPOSED GRADES. CHECK SUITABILITY OF SOIL. IF SOIL IS NOT SUITABLE FOR NEW WETLAND PLANTINGS, CONTACT PROJECT LANDSCAPE ARCHITECT TO DETERMINE AMENDMENTS, OR PROVIDE A MINIMUM OF 12" OF CLEAN, SCREENED TOPSOIL TO FINISH GRADE ELEVATION.
4. INSTALL NATIVE TREES, SHRUBS AND PERENNIALS.
5. PROVIDE 2" OF NON-DYED MULCH BENEATH ALL NEW TREES AND SHRUBS.
6. APPLY WETMIX ACCORDING TO MANUFACTURER'S RECOMMENDATIONS TO ANY DISTURBED AREAS WITHIN THE WETLANDS.
7. FINE RAKE, SEED AND HAY MULCH TO RESTORE ALL DISTURBED LAWN AREAS.
8. REMOVE EROSION CONTROLS AFTER SITE IS STABLE.

Revisions	Date

Tracy Chalifoux LLC
Landscape Architect
7 King Street, Danbury, CT 06811
Office: 845-364-1360
E-mail: tlchalifoux@gmail.com

Seal: STATE OF CONNECTICUT · TRACY LEE CHALIFOUX · No. 1189 · REGISTERED LANDSCAPE ARCHITECT

Project Title: **WETLAND PLAN**
PROPERTY OF
JON ROGERS

Location: 32 KETTLE CREEK ROAD
WESTON, CONNECTICUT

Graphic Scale and North Arrow

Date: August 16, 2024

Scale: AS SHOWN | Checked: TLC | Drawn: TLC

Drawing Title: WETLAND RESTORATION/CREATION & ENHANCEMENT PLAN & PLANT LIST

Drawing No.: **WP-1**

SHEET 1 OF 2

STEVEN DANZER, PHD & ASSOCIATES LLC
Wetlands & Environmental Consulting
WWW.CTWETLANDSCONSULTING.COM
203 451-8319
WETLAND BOUNDARIES • POND & LAKE MANAGEMENT • CONSTRUCTION FEASIBILITY CONSULTATIONS • ENVIRONMENTAL STUDIES

Narrative

Wetland Restoration/Creation & Enhancement

32 Kettle Creek Road, Weston, CT

Date: August 19, 2024

By: Steven Danzer Ph.D.

- Soil Scientist – Certified Nationally by the Soil Science Society of America (#353463).
  – Registered with the Society of Soil Scientists of Southern New England.
- Senior Professional Wetland Scientist - PWS #1321, Society of Wetland Scientists.
- Arborist - CT DEEP License S-5639; ISA Certified NE-7409A.

- Ph.D. - Renewable Natural Resource Studies.

INTRODUCTION

Regulated activities are proposed adjacent to wetlands located at 32 Kettle Creek Road, Weston, Connecticut. The approximately 2 acre lot is currently undeveloped with a mixture of wooded and unmanaged meadow areas.

Two wetland areas are located on the site. The first wetland area (Wetland 1) is located within the eastern region of the site and is best characterized as a small 138 sf patch of wetland soils located on a slope. The second wetland area (Wetland 2) is located within the western region of the lot and is best characterized as a complex of forested sloped wetlands.

The southeast corner of a residence is proposed a few feet to the northwest of Wetland 1. Wetland mitigation (wetland restoration/creation and enhancement) is proposed within the larger Wetland 2 to compensate for any construction or post-construction impacts to the smaller Wetland 1.

The purpose of this report is to document existing conditions and to introduce the mitigation concept.

Wetland 1- existing conditions

Wetland 1 **(Photo 1)** consists of a small patch of wetland soils located on a slope within the eastern region of the property. It is 138 sf (0.003 acres) in size and drains to the south. The area is primarily hydrated from runoff from the slopes, and from seepage.

The small wetland area lacks a woody overstory (i.e. there are no trees within the wetland itself) though there are trees located in the adjacent upland. The woody and herbaceous understory is very sparse, with Virginia Creeper, Dewberry, Multiflora Rose, Poison Ivy and seedlings of Hickory. There were no obligate wetland vegetative species observed in the wetland area, all vegetation growing within the wetland area were upland species.

Vegetation growing within the adjacent upland area was similar to what was growing in the wetland area, with addition of Norway Maple, Red Maple, Wineberry, Euonymus, Knotweed, and Clover.

Roughly 90% of the wetland area is bare ground, with ample erosion observed within the wetland and adjacent to the wetland area **(Photo 1)**. It appears the amount of bare ground has increased since the flagging of the wetlands back in February 2023. The bare ground and erosion now significantly extends into the adjacent upland area as well.

The existing functions and values of the wetland area were evaluated using the New England Army Corp Highway Methodology Descriptive Approach, as modified for application to local conditions. This methodology has been proven useful in similar projects intended for review by municipal wetland commissions and was chosen as the most appropriate methodology for the assessment of the area due to the assessment's descriptive emphasis. The functions and values of the system are described below along with qualifications.

The principal and arguably only real function or value that this wetland system performs is a hydrologic function: *Groundwater Discharge*, due to its location on the slope.

The following functions and values are not supported or performed by this wetland area:

Floodflow Alteration - the area is small, sloped, and therefore does not allow for the retention of flood waters;

Fish and Shellfish Habitat - the area is sloped and there is no aquatic habitat;

Sediment/Toxicant/Pathogen Retention - the area is sloped with no opportunity for sediment trapping due to the sparse vegetation present and the lack of surface water;

Nutrient Removal/Retention/Transformation - the area is sloped with no opportunity for nutrient trapping or aquatic habitat to process nutrients;

Production Export – there is a lack of wetland vegetation as well as a lack of vegetation in general;

Sediment/Shoreline Stabilization - the wetland is sloped and not located on a shoreline;

Wildlife Habitat – there is a lack of dense vegetation within the wetland. The area lacks habitat diversity as it is not a wooded swamp, marsh, or a waterbody. Residential development and a road is located less than 500 feet away;

Educational/Scientific Value – no criteria present;
Uniqueness/Heritage – no criteria present;
Visual Quality/Aesthetics – no criteria present;

Threatened or Endangered Species Habitat - the area is sloped, with no aquatic habitat, and not a vernal pool.

Wetland 2- existing conditions

Wetland 2 consists of a complex of forested sloped wetlands, located within the western region of the lot. The wetland drains southwesterly off-site. The portion of the wetland area located within the site is 8,840 SF (0.20 acres). The northern fringes of the wetland are eroding up into the upland, though the level of erosion appears not be as severe compared to Wetland 1. Scattered piles of fill, with varying degrees of revegetation, are located around the fringes of the wetland area.

Dominant vegetation within the wetland area include Red Maple, Elm, Norway Maple, Barberry, Euonymus, Spicebush, Skunk Cabbage, Jewelweed, Pachysandra, Virginia Creeper, Poison Ivy, and Wintergreen.

The area is hydrated by runoff from the adjacent slopes and by underlying groundwater within the lowland areas.

Unlike Wetland 1, Wetland 2 performs a larger array of functions and values. They include *Groundwater Discharge*, *Sediment/Toxicant/Pathogen Retention, Nutrient Removal/Retention/Transformation*, and a limited level of *Wildlife Habitat.*

Mitigation Concept

Mitigation will include a combination of wetland restoration, wetland creation, and wetland enhancement in the area of Wetland 2.

An existing earthen berm is located along the eastern edge of the wetland area, in the vicinity of wetland flags 11 to 13. The berm is a mixture of older fill soils and natural soils. The berm will be removed, resulting in the restoration/creation of 595 SF of wetland area. The created/restored area will then be contiguous to the existing wetland area by connecting wetland flag 11 directly to wetland flag 13.

The following woody trees/shrubs/groundcovers are located in work area and will likely be removed or otherwise disturbed; 4 Norway maples (15", 12", 5", 2" respectively), a 4" Elm, Wineberry shrub, Euonymus shrub, and Pachysandra groundcover. Two (2) native trees, twenty-three (23) native shrubs and seventy –two (72) native perennials will be replanted in their place after the berm area is removed.

Overall, the ratio of wetland creation/restoration of Wetland 2 to the potentially impacted Wetland 1 will be 4.31 to 1.

There will also be wetland enhancement and wetland buffer enhancement. This will be achieved by removing several prominent stands of invasive vegetation that is currently located within the wetland interior (primarily Barberry) and by then incorporating additional native wetland plantings into the area. In total, 710 SF of area will be enhanced, which includes 380 SF of enhancements within the existing wetland and another 330 SF of enhancements within the adjacent wetland buffer.

Thank you for the opportunity to comment.
Respectfully submitted,
Signed,

Steven Danzer Ph.D.
Professional Wetland Scientist, Soil Scientist, Arborist,
Ph.D. in Renewable Natural Resource Studies

Photo 1. Wetland 1. Looking east across the bare ground. Uphill is to the left. Wooden stakes within the center of the photo are the wetland limits. 8/14/24.

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STATEWIDE INLAND WETLANDS & WATERCOURSES ACTIVITY REPORTING FORM

Pursuant to section 22a-39(m) of the General Statutes of Connecticut and section 22a-39-14 of the Regulations of Connecticut State Agencies, inland wetlands agencies must complete the Statewide Inland Wetlands & Watercourses Activity Reporting Form for **each** action taken by such agency.

This form may be made part of a municipality's inland wetlands application package. If the municipality chooses to do this, it is recommended that a copy of the Town and Quadrangle Index of Connecticut and a copy of the municipality's subregional drainage basin map be included in the package.

Please remember, the inland wetlands agency is responsible for ensuring that the information provided is **accurate** and that it reflects the **final** action of the agency. Incomplete or incomprehensible forms will be mailed back to the agency. Instructions for completing the form are located on the following pages.

The inland wetlands agency shall mail completed forms for actions taken during a calendar month no later than the 15th day of the following month to the Department of Energy and Environmental Protection (DEEP). Do **not** mail this cover page or the instruction pages. Please mail **only** the **completed** reporting form to:

DEEP Land & Water Resources Division
Inland Wetlands Management Program
79 Elm Street, 3rd Floor
Hartford, CT 06106

Questions may be directed to the DEEP's Inland Wetlands Management Program at (860) 424-3019.

INSTRUCTIONS FOR COMPLETING

THE STATEWIDE INLAND WETLANDS & WATERCOURSES ACTIVITY REPORTING FORM

Use a separate form to report EACH action taken by the Agency. Complete this electronic fill-in form as described below. If completing by hand please print and use the pdf version. Do NOT submit a reporting form for withdrawn actions.

PART I: Must Be Completed By The Inland Wetlands Agency

1. Choose the year and month the Inland Wetlands Agency took the action being reported. If multiple actions were taken regarding the same project or activity then multiple forms need to be completed.

2. Choose ONE code letter to describe the final action or decision taken by the Inland Wetlands Agency. Do NOT submit a reporting form for withdrawn actions. Do NOT enter multiple code letters (for example, if the same project or activity had both a permit issued and enforcement action, submit two forms for the two separate actions).

   A = A Permit Granted by the Inland Wetlands Agency (not including map amendments, see code D below)
   B = Any Permit Denied by the Inland Wetlands Agency
   C = A Permit Renewed or Amended by the Inland Wetlands Agency
   D = A Map Amendment to the Official Town Wetlands Map - or -
   An Approved/Permitted Wetland or Watercourse Boundary Amendment to a Project Site Map
   E = An Enforcement Action: Permit Revocation, Citation, Notice of Violation, Order, Court Injunction, or Court Fines
   F = A Jurisdictional Ruling by the Inland Wetlands Agency (activities "permitted as of right" or activities considered non-regulated)
   G = An Agent Approval pursuant to CGS 22a-42a(c)(2)
   H = An Appeal of Agent Approval Pursuant to 22a-42a(c)(2)

3. Check "yes" if a public hearing was held in regards to the action taken; otherwise check "no".

4. Enter the name of the Inland Wetlands Agency official verifying that the information provided on this form is accurate and that it reflects the FINAL action of the agency.

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant - If Part II is completed by the applicant, the applicant MUST return the form to the Inland Wetlands Agency. The Inland Wetlands Agency MUST ensure that the information provided is accurate and that it reflects the FINAL action of the Agency.

5. Enter the name of the municipality for which the Inland Wetlands Agency has jurisdiction and in which the action/project/activity is occurring.

   Check "yes" if the action/project/activity crosses municipal boundaries and enter the name(s) of the other municipality(ies) where indicated. Check "no" if it does not cross municipal boundaries.

6. Enter the USGS Quad Map name or number (1 through 115) as found on the CT Town and Quadrangle Index Map (the directory to all USGS Quad Maps) that contains the location of the action/project/activity. USGS Quad Map information is available at: https://portal.ct.gov/-/media/deep/gis/resources/IndexNamedQuadTownpdf.pdf

   ALSO enter the four-digit identification number of the corresponding Subregional Drainage Basin in which the action/project/activity is located. If located in more than one subregional drainage basin, enter the number of the basin in which the majority of the action/project/activity is located. Town subregional drainage basin maps can be found at UConn CLEAR's website: http://clear.uconn.edu/data/map_set/index.htm (no roads depicted) or at CTECO: http://www.cteco.uconn.edu/map_catalog.asp (depicts roads, choose town and a natural drainage basin map).

7. Enter the name of the individual applying for, petitioning, or receiving the action.

8. Enter the name and address or location of the action/project/activity. Check if the action/project/activity is TEMPORARY or PERMANENT in nature. Also provide a brief DESCRIPTION of the action/project/activity. It is always best to provide as much information as possible (for example, don't state "forestry," provide details such as "20 acre forest harvest, permit required for stream crossing.")

9. Carefully review the list below and enter ONLY ONE code letter which best characterizes the action/project/activity. All state agency projects must code "N."

A = Residential Improvement by Homeowner
B = New Residential Development for Single Family Units
C = New Residential Development for Multi-Family / Condos
D = Commercial / Industrial Uses
E = Municipal Project
F = Utility Company Project
G = Agriculture, Forestry or Conservation
H = Wetland Restoration, Enhancement, Creation
I = Storm Water / Flood Control
J = Erosion / Sedimentation Control
K = Recreation / Boating / Navigation
L = Routine Maintenance
M = Map Amendment
N = State Agency Project
P = Other (this code includes the approval of concept, subdivision or similar plans with no-on-the-ground work)

10. Enter between one and four code numbers to best characterize the action/project/activity being reported. Enter "NA" if this form is being completed for the action of map amendment. You MUST provide code 12 if the activity is located in an established upland review area. You MUST provide code 14 if the activity is located beyond the established upland review area or no established upland review area exists.

1 = Filling
2 = Excavation
3 = Land Clearing / Grubbing (no other activity)
4 = Stream Channelization
5 = Stream Stabilization (includes lakeshore stabilization)
6 = Stream Clearance (removal of debris only)
7 = Culverting (not for roadways)
8 = Underground Utilities Only (no other activities)
9 = Roadway / Driveway Construction (including related culverts)
10 = Drainage Improvements
11 = Pond, Lake Dredging / Dam Construction
12 = Activity in an Established Upland Review Area
14 = Activity in Upland

Examples: Jurisdictional ruling allowing construction of a parking lot in an upland where the municipality does not have an established upland review area must use code 14, other possible codes are 2 and 10. Permitted construction of a free standing garage (residential improvement by homeowner) partially in an established upland review area with the remainder in the upland must use code 12 and 14, other possible codes are 1 and 2.

11. Leave blank for TEMPORARY alterations but please indicate action/project/activity is temporary under question #8 on the form. For PERMANENT alterations, enter in acres the area of wetland soils or watercourses altered. Include areas that are permanently altered, or are proposed to be, for all agency permits, denials, amendments, renewals, jurisdictional rulings, and enforcement actions. For those activities that involve filling or dredging of lakes, ponds or similar open water bodies enter the acres filled or dredged under "open water body." For those activities that involve directly altering a linear reach of a brook, river, lakeshore or similar linear watercourse, enter the total linear feet altered under "stream." Remember, these figures represent only the acreage altered, not the total acreage of wetlands or watercourses on the site. You MUST provide all information in ACRES (or linear feet as indicated) including those areas less than one acre. To convert from square feet to acres, divide square feet by the number 43,560. If this report is being completed for an agency jurisdictional ruling and detailed information is not available, provide an estimate. Enter zero if there is no alteration.

12. Enter in acres the area of upland altered as a result of an ACTIVITY REGULATED BY the inland wetlands agency, or as a result of an AGENT APPROVAL pursuant to CGS section 22a-42a(c)(2). Leave blank for TEMPORARY alterations but please indicate action/project/activity is temporary under question #8 on the form. Include areas that are permanently altered, or proposed to be permanently altered, for all agent approvals, agency permits, denials, amendments, renewals, jurisdictional rulings, and enforcement actions. You MUST provide all information in ACRES including those areas less than one acre. See directions above (#11) for conversion factor. If this report is being completed for an agent approval or an agency jurisdictional ruling and detailed information is not available, provide an estimate. Enter zero if there is no alteration.

13. Enter the acres that are, or are proposed to be, restored, enhanced or created for all agency permits, denials, amendments, renewals, jurisdictional rulings and enforcement actions. NOTE restored or enhanced applies to previously existing wetlands or watercourses. Created applies to a non-wetland or non-watercourse area which is converted into wetlands or watercourses. For created - question #10 must provide 12 and/or 14 as an answer, and question #12 must also be answered. You MUST provide all information in ACRES including those areas less than one acre. See directions above (#11) for conversion factor. Enter zero if there is no restoration, enhancement or creation.

PART III: To Be Completed By The DEEP - Please leave this area blank. Incomplete or incomprehensible forms will be mailed back to the municipal inland wetlands agency.

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GIS CODE #: ___ ___ ___ ___ ___ ___ ___ ___ ___
For DEEP Use Only

Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete and mail this form in accordance with the instructions.
If completing by hand - please print and use the pdf version.
Incomplete or incomprehensible forms will be mailed back to the municipal inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: **Click Here for Year** month: **Click Here for Month**
2. CHOOSE ACTION TAKEN (see instructions for code): **Click Here to Choose a Code**
3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:

   (type name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTIVITY IS OCCURRING (type name): **Weston**
   does this project cross municipal boundaries (check one)? yes ☐ no ☒
   if yes, list the other town(s) in which the activity is occurring (type name(s)): _____, _____
6. LOCATION (click on hyperlinks for information): USGS quad map name: _____ or quad number: _____
   subregional drainage basin number: _____
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (type name): **Jon Rogers**
8. NAME & ADDRESS OF ACTIVITY / PROJECT SITE (type information): **32 Kettle Creek Rd, Weston**
   briefly describe the action/project/activity (check and type information): temporary ☐ permanent ☒ description: _____
   _____
9. ACTIVITY *PURPOSE* CODE (see instructions for code): **B**
10. ACTIVITY *TYPE* CODE(S) (see instructions for codes): **1, 2, 12, 14**
11. WETLAND / WATERCOURSE AREA ALTERED (see instructions for explanation, type acres or linear feet as indicated):
    wetlands: **.003** acres open water body: _____ acres stream: _____ linear feet
12. UPLAND AREA ALTERED (type acres as indicated): **0.52** acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (type acres as indicated): **.022** acres

PART III: To Be Completed By The DEEP

DATE RECEIVED: DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO FORM CORRECTED / COMPLETED: YES NO