NATHANIEL J. HOLT, PE

dan@holtengineering.net

July 20, 2020

Town of North Castle
Planning Board
17 Bedford Road
Armonk, New York 10504

Attn: Christopher Carthy, Chairman

RE: Application for Site Development Plan Approval
Frank Tedesco
1462 Old Orchard Street
Tax Map: 123.01-1-15

Dear Chairman Carthy and Members:

We last appeared before you on March 9th during the Public Hearing for Site Plan Approval. Most of the discussion revolved around the placement of landscape screening between the Tedesco's proposed residence and that of the Burden's residence some 300 feet away. After a brief discussion the Board determined that:

- Obtain Architectural Review Board approval
- Replace the proposed White Pines with alternate conifers
- Provide additional evergreens at the easterly corner of the proposed residence to increase the screening to the Burden residence

We are pleased to report that on July 15th, the Architectural Review Board (ARB) voted unanimously to granted the Tedesco's Conditional Approval. The only condition was that foundation plantings be placed along both sides (northern and southern) of the proposed residence. As indicated on the attached Site Plans, a total of 28 Crape Myrtles have been proposed as foundation plantings. The selected plant is a fairly dense flowering shrub with a typical maximum height of 4 to 6 feet. A copy of the revised plan reflecting this change has been provided to the ARB.

The previously proposed White Pines have been removed from the plant list and replaced with additional Arborvitae.

Regarding the additional plantings to address Mr. Burden's concerns there was a discussion regarding how many additional trees would be enough. Ultimately we suggested that up to 12 evergreen trees would be planted on the easterly side of the Tedesco home. The final number of trees would be made during construction and at the discretion of Mr. Cermele's office.

592 Route 22 •Pawling, NY 12564 •PHONE: (914) 760-1800
540 N.W. University Boulevard, Suite 105 •Port Saint Lucie, FL 34986 •PHONE: (772) 204-9550 •FAX: (772) 204-9553

In the process of trying to accommodate the additional trees into the plans, it became immediately obvious that the available space was insufficient to approach the target number without overcrowding.

As you can see on the attached plans, additional space was "created" by making two revisions to the Site Plans:

1. The proposed deck on the northerly side of the home has been relocated to the southerly side. In addition to the obvious benefit, by moving the deck, the exposed foundation/access to the basement would be less visible

2. The proposed stormwater mitigation system - which consisted of two separate but interconnected infiltration systems - would be combined into a single unit. They are now located at the southeasterly corner of the house.

These two changes nearly double the available area for additional trees. While the final number of trees should still be at the discretion of Mr. Cermele, there are now 12 evergreen trees in this area. It is important to note that these trees are supplemented by seven additional mature trees. With these changes there are now a total of 24 proposed trees while only 18 will be removed due to construction.

With these changes we would trust that the Planning Board will now be in a position to approve the Site Plans and authorize Mr. Kaufman to prepare a resolution for the next meeting.

Very truly yours

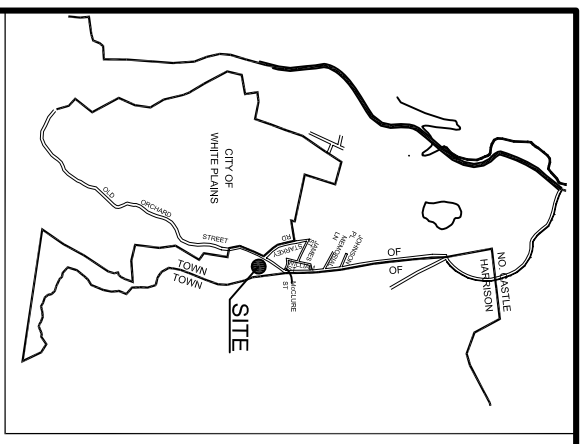
Nathaniel J. Holt, PE
Holt Engineering & Consulting, PA

encl

cc: Frank Tedesco
Adam Kaufman

LOCATION PLAN

SCALE: 1" = 2,000'



OWNER/APPLICANT: FRANK TEDESCO
ADDRESS: 1460 OLD ORCHARD STREET
WEST HARRISON, NY

PROPERTY IDENTIFICATION NUMBER: 123.01-1-15
PROPERTY ADDRESS: 1460 OLD ORCHARD STREET
WEST HARRISON, NY

ZONING DISTRICT: R-1 SINGLE FAMILY RESIDENTIAL - 1 ACRE
NET LOT AREA: 1.598 ACRES (AFTER RIGHT OF WAY TAKING, STEEP SLOPE AND WETLAND AREA DEDUCTIONS)

LEGEND

- EXISTING CONTOUR
- PROPERTY LINE
- DEEP TEST PIT
- DRAIN INLET WITH INLET PROTECTION
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE PROTECTED WITH TREE PROTECTION

GRAPHIC SCALE

(IN FEET)
1 inch = 30 ft.

GENERAL NOTES

1. EXISTING CONDITIONS MAP PREPARED BY THOMAS MERRITTS, LS, DATED: JULY 15, 2015; ADDITIONAL INFORMATION FROM A SURVEY PREPARED BY RALPH MACDONALD,LS. UPDATED BY DENNIS LOWES, LS ON NOVEMBER 21, 2005
2. OFFSITE TOPOGRAPHICAL INFORMATION OBTAINED FROM THE WESTCHESTER COUNTY GIS
3. PROPERTY SERVICED BY PUBLIC WATER (12" DIAMETER MAIN)
4. ALL UTILITY SERVICES TO BE INSTALLED UNDERGROUND
5. PLANS PROVIDE FOR THE POTENTIAL INCREASE IN THE RIGHT OF WAY AND ROAD WIDTH SHOULD THE TOWN OF NORTH CASTLE OPT TO CREATE STANDARDIZED ROADS IN THE VICINITY.
6. THE ZONING BOARD OF APPEALS HAS GRANTED VARIANCES FOR:
   REQUIRED MINIMUM CONTIGUOUS BUILDABLE AREA REDUCED FROM 17,000 SF TO 10,562 SF
   THERE IS AN EXISTING CONNECTION AVAILABLE FOR THE PROPOSED LOW PRESSURE SEWER PIPE. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND PROVIDE THE NECESSARY FITTINGS AS REQUIRED TO COMPLETE THE CONNECTION TO THE SATISFACTION OF THE TOWN OF NORTH CASTLE SEWER AND WATER DEPARTMENT.
8. THE RETAINING WALL AND THE POINT OF CONNECTION SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER.

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED: _____

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

DATE: _____

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO THE RESOLUTION:

JOSEPH M. CERMELE, PE
KELLARD SESSIONS, CONSULTING
CONSULTING TOWN ENGINEERS

DATE: _____

FINAL CONSTRUCTION PLANS

1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NEW YORK

EXISTING CONDITIONS PLAN

NATHANIEL J. HOLT, P.E.
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

Nathaniel J. Holt, P.E.
STATE OF NEW YORK · NATHANIEL HOLT · 074128 · LICENSED PROFESSIONAL ENGINEER
Date: _____

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3	
2	December 11, 2019 Staff Comments
1	Original Date: OCTOBER 10, 2019
	Project Code: TED-3

SHEET: 1 of 8

ZONING CONFORMANCE TABLE R-1A ZONE

	123.01-1-15			
	REQUIRED	CURRENT	AFTER TAKING*	INCLUDES AREA WITHIN TOWN OF HARRISON LOT AREA WITHIN TOWN OF HARRISON
MIN. LOT AREA	1.0 ACRE	1.689 ACRES 0 ac	1.663 ACRES 0 ac	
STEEP SLOPES	50% DEDUCT	0.061 ACRES	0.061 ACRES	
WETLANDS	75% DEDUCT	0	0	
WATER COURSE	75% DEDUCT	0.004 ACRES	0.004 ACRES	
NET LOT AREA	1.0 ACRE	1.624 ACRES	1.598 ACRES	
CONTIGUOUS BUILDABLE AREA	17,000 sf	11,700.78 sf	11,700.78 sf	
MIN. FRONTAGE	125'	50'	50'	
MIN. WIDTH	125'	128.7'	128.7'	
MIN. DEPTH	150'	243'	240'	
FRONT YARD	50'	50' (min)	50' (min)	
SIDE YARD	25'	25' (min)	25' (min)	
REAR YARD	40'	40' (min)	50'	
BLDG. COVERAGE	12% (8,353 sf)	3.50%	3.56%	

* ESRAINSED RIGHT OF WAY BASED UPON SECTION 275-27B OF THE TOWN CODE
STEEP SLOPES ARE CONSIDERED TO BE A 25% GRADE AND 25' MINIMUM DISTANCE IN ALL DIRECTIONS
DRAINAGE COURSE: 250 sf
VARIANCES RECEIVED FROM THE ZONING BOARD OF APPEALS ON MARCH 2, 2018:
MINIMUM CONTIGUOUS BUILDABLE AREA: 10,552 SF
MINIMUM FRONTAGE: 50 FT

PLANT LIST

KEY	QTY	NAME	SIZE	ROOT
WP	9	EASTERN WHITE PINE PINUS STROBUS	10-12' HT	B&B
NS	3	NORWAY SPRUCE PICEA STROBUS	8-10' HT	B&B
EH	6	EASTERN HEMLOCK TSUNGA CANADENSIS	6-8' HT	B&B

PLANTING NOTES

1. LANDSCAPE MATERIAL SUBJECT TO CHANGE ACCORDING TO SITE CONDITIONS
2. ALL LANDSCAPING MATERIALS SHALL BE FROM HEALTH NURSERY STOCK
3. ALL LANDSCAPE MATERIALS SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES.
4. ANY DEAD OR DISEASED PLANTS SHALL BE IMMEDIATELY REPLACED 'IN-KIND' BY THE OWNER
5. THE OWNER HAS AGREED TO INSTALL PLANT MATERIALS ALONG THE SOUTHERLY PROPERTY LINE TO PROVIDE SCREENING FOR THE ADJACENT PROPERTY OWNER. SIMILARLY, ALTERNATE PLANTINGS MAY BE INSTALLED AT THE REQUEST OF THE ADJACENT PROPERTY OWNER

TREE SURVEY

NUMBER	TYPE	DBH	CONDITION	STATUS
1	OAK	18"	GOOD	SAVE
3	TW OAK	16"	GOOD	SAVE
4	OAK	16"	GOOD	SAVE
5	OAK	10"	GOOD	SAVE
7	OAK	14"	GOOD	SAVE
8	OAK	10"	GOOD	SAVE
9	OAK	14"	GOOD	SAVE
10	MAPLE	10"	GOOD	REMOVE
11	TW OAK	14"	GOOD	REMOVE
12	OAK	14"	GOOD	REMOVE
13	OAK	16"	GOOD	REMOVE
14	OAK	14"	GOOD	SAVE
15	OAK	14"	GOOD	REMOVE
16	MAPLE	8"	GOOD	REMOVE
17	OAK	12"	GOOD	REMOVE
18	OAK	10"	GOOD	REMOVE
20	BIRCH	10"	GOOD	REMOVE
21	OAK	24"	GOOD	REMOVE
23	OAK	16"	GOOD	REMOVE
24	OAK	16"	GOOD	REMOVE
25	OAK	10"	GOOD	REMOVE
26	OAK	14"	GOOD	REMOVE
27	OAK	18"	GOOD	REMOVE
28	OAK	16"	GOOD	REMOVE
29	OAK	16"	GOOD	SAVE
30	OAK	12"	GOOD	SAVE
31	OAK	12"	GOOD	SAVE
32	OAK	18"	GOOD	SAVE
33	OAK	18"	GOOD	SAVE
35	OAK	10"	GOOD	SAVE
36	OAK	16"	GOOD	SAVE
37	OAK	22"	DEAD	REMOVE
38	BIRCH	14"	GOOD	SAVE
39	MAPLE	10"	GOOD	SAVE
40	MAPLE	10"	GOOD	SAVE
41	OAK	16"	GOOD	REMOVE
42	MAPLE	10"	GOOD	REMOVE
43	OAK	14"	GOOD	SAVE

LEGEND

- 490 — EXISTING CONTOUR
- PROPERTY LINE
- DEEP TEST PIT
- DRAIN INLET WITH INLET PROTECTION
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE PROTECTED WITH TREE PROTECTION

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

GENERAL NOTES

1. EXISTING CONDITIONS MAP PREPARED BY THOMAS MERRITTS, LS, DATED: JULY 15, 2015; ADDITIONAL INFORMATION FROM A SURVEY PREPARED BY RALPH MACDONALD LS. UPDATED BY DENNIS LOWES, LS ON NOVEMBER 21, 2005
2. OFFSITE TOPOGRAPHICAL INFORMATION OBTAINED FROM THE WESTCHESTER COUNTY GIS
3. PROPERTY SERVICED BY PUBLIC SEWER (LOW PRESSURE MAIN)
4. ALL UTILITY SERVICES TO BE INSTALLED UNDERGROUND
5. PLANS PROVIDE FOR THE POTENTIAL INCREASE IN THE RIGHT OF WAY AND ROAD WIDTH SHOULD THE TOWN OF NORTH CASTLE OPT TO CREATE STANDARDIZED ROADS IN THE VICINITY.
6. THE ZONING BOARD OF APPEALS HAS GRANTED VARIANCES FOR:
   REQUIRED MINIMUM LOT AREA REDUCED FROM 17,000 SF TO 10,552 SF
   REQUIRED MINIMUM FRONTAGE REDUCED FROM 125 FEET TO 50 FEET
7. THERE IS AN EXISTING CONNECTION AVAILABLE FOR THE PROPOSED LOW PRESSURE SEWER PIPE. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND PROVIDE THE NECESSARY FITTINGS AS REQUIRED TO COMPLETE THE CONNECTION TO THE SATISFACTION OF THE TOWN OF NORTH CASTLE SEWER AND WATER DEPARTMENT.
8. THE SEWER SERVICE OF LOT #2 BETWEEN THE FOUNDATION WALL AND THE POINT OF CONNECTION SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER.

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED: _____

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

_____ DATE: _____

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO THE RESOLUTION:

_____ DATE: _____

JOSEPH M. CERMELE, PE
KELLARD SESSIONS, CONSULTING
CONSULTING TOWN ENGINEERS

FINAL CONSTRUCTION PLANS

1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NEW YORK

SITE PLAN

NATHANIEL J. HOLT, P.E.
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

Nathaniel J. Holt, P.E.
STATE OF NEW YORK · NATHANIEL HOLT · 074128 · LICENSED PROFESSIONAL ENGINEER
Date: _____

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2 —
1 December 11, 2019 Staff Comments
Orlginal Date: OCTOBER 10, 2019
Project Code: TED-3

SHEET: 2 of 8

FINAL CONSTRUCTION PLANS

1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NEW YORK

GROSS LAND COVERAGE and MASS EXCAVATION ANALYSIS PLAN

NATHANIEL J. HOLT, P.E.
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

Nathaniel Joseph Holt, P.E.
Date:

No.	Description
1	
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December 11, 2019 Staff Comments
Original Date: OCTOBER 10, 2019
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SHEET: 3 of 8

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED: _____
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

DATE: _____

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO THE RESOLUTION:

DATE: _____
JOSEPH M. CERMELE, PE
KELLARD SESSIONS, CONSULTING CONSULTING TOWN ENGINEERS

GROSS LAND COVERAGE CALCULATIONS WORKSHEET*

APPLICATION NAME: FRANK TEDESCO
TAX MAP DESIGNATION: 123.01-1-1

GROSS LOT COVERAGE	EXISTING	PROPOSED
1. TOTAL LOT AREA	69,606.88 sf*	69,606.88 sf*
2. MAXIMUM PERMITTED GROSS LAND COVERAGE	9,606.75 sf	NA
3. BONUS MAXIMUM GROSS LAND COVER (Distance provided home is beyond minimum front yard setback) 0 in. x .10	0 sf	NA
4. TOTAL MAXIMUM PERMITTED GROSS LAND COVERAGE	11,664 sf	11,664 sf
5. AMOUNT OF LOT AREA COVERED BY PRINCIPAL BUILDING 0 sf (EXISTING) + 2,475 sf (PROPOSED)	0 sf	2,475 sf
6. AMOUNT OF LOT AREA COVERED BY ACCESSORY BLDGS 0 sf (EXISTING) + 0 sf (PROPOSED)	0 sf	0 sf
7. AMOUNT OF LOT AREA COVERED BY DECKS 0 sf (EXISTING) + 180 sf (PROPOSED)	0 sf	180 sf
8. AMOUNT OF LOT AREA COVERED BY PORCHES 0 sf (EXISTING) + 133 sf (PROPOSED)	0 sf	133 sf
9. AMOUNT OF LOT AREA COVERED BY DRIVEWAY, PARKING AREAS AND WALKWAYS 0 sf (EXISTING) + 2,330 sf (PROPOSED)	0 sf	2,330 sf
10. AMOUNT OF LOT AREA COVERED BY TERRACES/PATIOS 0 sf (EXISTING) + 0 sf (PROPOSED)*	0 sf	0 sf
11. AMOUNT OF LOT AREA COVERED BY TENNIS COURT, POOL & MECHANICAL EQUIP. 0 sf (EXISTING) + 0 (PROPOSED)	0 sf	0 sf
12. AMOUNT OF LOT AREA COVERED BY ALL OTHER STRUC. 0 sf (EXISTING) 0 sf (PROPOSED)	0 sf	0 sf
13. PROPOSED GROSS LAND COVERAGE: (Total of Lines 5-12:	0 sf	5,118 sf

*LOT AREA REFERS TO THE "ATTIC TANG" AND THE EXPANDED RIGHT OF WAY UNDER SECTION 275-78 OF THE TOWN OF NORTH CASTLE TOWN CODE AND DEDUCTIONS ASSOCIATED STEEP SLOPES AND WETLANDS

AVERAGE GRADE:	236.9	109,381 = 461.7
J to A	460.0	27,600
I to J	456.0	5,016
G to H	459.0	6,885
F to G	460.5	8,934
E to F	462.0	9,009
D to E	463.0	13,889
C to D	464.0	12,528
B to C	464.0	13,920
A to B	464.0	11,600
POINTS	AVG ELEV	DISTANCE	PRODUCT
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GRAPHIC SCALE
1 inch = 30 ft.
(IN FEET)

GROSS LAND COVERAGE PLAN
with AVERAGE GRADE ANALYSIS

MASS EXCAVATION
ANALYSIS

NET EXCESS: 480 CY
SUM OF "CUT" VOLUMES: 260 CY
SUM OF "FILL" VOLUMES: 180 CY

GENERAL NOTES

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2. OFFSITE TOPOGRAPHICAL INFORMATION OBTAINED FROM THE WESTCHESTER COUNTY GIS WEBSITE AND HAS NOT BEEN ADJUSTED TO ON SITE DATUM.
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4. ALL UTILITY SERVICES TO BE INSTALLED UNDERGROUND
5. PLANS PROVIDE FOR THE POTENTIAL INCREASE IN THE RIGHT OF WAY AND ROAD WIDTH SHOULD THE TOWN OF NORTH CASTLE OPT TO CREATE STANDARDIZED ROADS IN THE VICINITY.
6. THE ZONING BOARD OF APPEALS HAS GRANTED VARIANCES FOR:
REQUIRED FRONTAGE REDUCED FROM 125 FEET TO 60 FEET
REQUIRED MINIMUM CONTIGUOUS BUILDABLE AREA REDUCED FROM 17,000 SF TO 10,562 SF
7. THERE IS AN EXISTING CONNECTION AVAILABLE FOR THE PROPOSED LOW PRESSURE SEWER THE NECESSARY FITTINGS AS REQUIRED TO COMPLETE THE CONNECTION TO THE SATISFACTION OF THE TOWN OF NORTH CASTLE SHALL BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND PROVIDE PIPE. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND PROVIDE
8. THE SEWER SERVICE OF LOT #2 BETWEEN THE FOUNDATION WALL AND THE POINT OF CONNECTION SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER.

LEGEND

- EXISTING CONTOUR (490)
- PROPERTY LINE
- DEEP TEST PIT (1)
- DRAIN INLET WITH INLET PROTECTION (DI)
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE PROTECTED WITH TREE PROTECTION (TP)

PLANT LIST

KEY	QTY	NAME	SIZE	ROOT
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NS	3	NORWAY SPRUCE PICEA STROBUS	8-10' HT	B&B
EH	6	EASTERN HEMLOCK TSUNGA CANADENSIS	6-8' HT	B&B

PLANTING NOTES

1. LOCATION OF LANDSCAPE MATERIAL SUBJECT TO CHANGE ACCORDING TO SITE CONDITIONS OR AS MAY BE MUTUALLY AGREED BETWEEN THE APPLICANT AND ADJACENT PROPERTY OWNERS
2. ALL LANDSCAPING MATERIALS SHALL BE FROM HEALTH NURSERY STOCK
3. ALL LANDSCAPE MATERIALS SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES.
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GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.
20 0 10 20 40 80

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9. THE TOWN OF NORTH CASTLE PLANNING BOARD SHALL RETAIN SITE PLAN JURISDICTION OVER LOTS 1 AND 2.

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED: _____

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD
_____ DATE: _____

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO THE RESOLUTION:

_____ DATE: _____
JOSEPH M. CERMELE, PE
KELLARD SESSIONS, CONSULTING
CONSULTING TOWN ENGINEERS

FINAL CONSTRUCTION PLANS

1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NEW YORK

GRADING, SEDIMENT AND EROSION CONTROL PLANS

NATHANIEL J. HOLT, P.E.
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

Nathaniel J. Holt, P.E.
STATE OF NEW YORK · NATHANIEL HOLT · 074128 · LICENSED PROFESSIONAL ENGINEER
Date: _____

5
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1 December 11, 2019
Staff Comments
Original Date: OCTOBER 10, 2019
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SHEET: 4 of 8

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10. THE PROPOSED DOMESTIC WELL SHALL BE DEVELOPED IN ACCORDANCE WITH THE PERMIT ISSUED BY THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH.

SOIL TESTING FOR STORMWATER MITIGATION PURPOSES

DATE OF TEST: JULY 13, 2018
ATTENDEES: VINCENT FEDERICI, TNC CONSULTING ENGINEER
FRANK TEDESCO
NATHANIEL HOLT, PE

TEST HOLES (TP #1 AND TP #2) WERE EXCAVATED IN THE PROPOSED LOCATION OF THE MITIGATION DEVICES

TEST RESULTS

TP #1

DEPTH: 78"
0-6" TOPSOIL/WOODS DEBRIS
6-72" FINE SAND LOAM
72"-78" FINE SANDY LOAM WITH COBBLES

PERCOLATION RATE: 20 INCHES PER HOUR

TP #2

DEPTH: 78"
0-6" TOPSOIL/WOODS DEBRIS
6"- 72" FINE SANDY LOAM MORE COMPACT
72"-78" COMPACT SAND LOAM WITH COBBLES

PERCOLATION RATE: 10 INCHES PER HOUR

DESIGN RATE: 10 INCHES PER HOUR

OLD ORCHARD STREET
STARKEY ROAD
JOSEPH R. FONTANELLA, JR. & PATRICIA W. FONTANELLA 123.01 - 1 - 14
MICHAEL T. PISANI 123.05 - 1 - 35
TOWN OF NORTH CASTLE / TOWN OF HARRISON
AS PER MacDonald Company, Engineers and Surveyors RIGHT OF WAY LINE BASED ON LOCATION OF EXISTING PAVEMENT CENTERLINE (I.I. 32.56 sf)
AREA RESERVED FOR STREET RE-ALIGNMENT (OR WIDENING) PURPOSES (275-27B)
APPROX LOCATION EXISTING 3" LOW PRESSURE SEWER MAIN
EX. SEWER MANHOLE aka SINGLE BOX - 2 CONNECTIONS RIM=481.08
CONNECT TO EXIST WITH FITTINGS, AS REQUIRED (SEE NOTE #7)
PROVIDE 1' (min) VERTICAL SEPARATION
DRIVEWAY ACCESS EASEMENT PER FILED MAP #29319 DATED AUG 7, 2019
DISTURBANCE LIMIT LINE 22,240 sf
EXIST TREE TO REMAIN (typ)
PROP WELL
WATER LINE, POWER LINE AND CONTROL WIRES
1 Story Frame Residence #1462
F. FLOOR 479.3±
Wood Deck
Garage Under
CONC. PATIO
Ex Well
PROP JB RIM 470.8± INV 468.7
PROP TROUGH DRAIN GRATE: 471.9± INV: 470.0
PROP JB RIM 469.0± INV 467.0
PROP DI#1 RIM 468.9± INV 465.9
PROP DI#2 RIM 467.0± INV 464.0 (in) 463.0 (out)
PROP DI#3 RIM 463.5± INV 460.0
8" HDPE 10LF @ 5.0%
8" HDPE 15LF @ 4.1%
6" HDPE (PERF) 30LF @ 1.9%
6" HDPE 40LF @ 1.9%
8" HDPE 8LF @ 1.3%
8" HDPE 5LF @ 2.0%
6" HDPE (By-Pass)
8" HDPE 75LF @ 2.0%
PROP RESIDENCE F. FLOOR: 466.0± G. FLOOR: 464.0± B. FLOOR: 456.0±
ROOF GUTTER/LEADER
PORCH
DECK
J BOX TOP: 462.0± INV: 459.5
PUMP PIT RIM 460.0± INV: 456.0 (4" RVC) 456.0 (1-1/4" SP)
PIPE INV: 465.5±
J BOX TOP: 459.5± INV: 457.25 458.3 (By-Pass)
J BOX TOP: 458.5± INV: 457.80 (By-Pass) 457.6 (in) 454.0 (out)
INFILTRATION AREA #1 (6) CULTEC #330XLHD TOP 452.8± INV 452.50 (in) 450.25 (out) O'FLOW 453.8 BOTTOM 450.25
INFILTRATION AREA #2 (6) CULTEC #330XLHD TOP 468.5± INV 457.5(in) 457.7(8" out) BOTTOM 455.95
OVERFLOW/DISSAPATOR INV 446.0 SEE DETAIL
RIP RAP OUTLET PROTECTION (See Detail)
EL: 464.5±
EL: 466±
DRAIN RIM=474.45
CLEAN-OUT RIM=474.45
UTILITY POLE
SPIKE
Edge of Asphalt
Paving Stone Drive
Ledge Area
Existing Contour
Proposed Contour
Tanks
Pool
Shed
Garage
Deck
Patio
Porch
Overhang
Roof Line
Bay Window
Bulkhead
Retaining Wall
Fence
Stone Wall
Curb
Sidewalk
Edge of Pavement
Top of Bank
Bottom of Bank
Tree Line
Utility Pole
Guy Wire
Light Pole
Electric Line
Underground Electric
Underground Telephone
Overhead Wires
Gas Line
Water Line
Sanitary Sewer
Storm Sewer
Culvert
Catch Basin
Manhole
Inlet
Hydrant
Gate Valve
Water Meter
Sign
Mailbox
Flood Zone
Wetland Boundary
Wetland Buffer
Limit of Disturbance
Silt Fence
Hay Bale
Construction Fence
Test Pit
Percolation Test
Boring
Monument
Iron Pin
Concrete Bound
Property Line
Adjoining Property Line
Right of Way
Easement
Building Setback
Zoning Boundary
Lot Number
Block Number
Survey Control Point
Benchmark
Spot Elevation
Contour Interval
Index Contour
Intermediate Contour
Depression Contour
Hachure
Shading
Cross Section
Profile
Detail Reference
Sheet Reference
Match Line
Key Map
Legend
Notes
Abbreviations
Symbols
Scale
North Arrow
Title Block
Signature Block
Seal
Date
Revision
Drawing Number
Project Number
Client
Author
Checked By
Approved By
Scale: 1" = 20'
Horizontal Datum
Vertical Datum
Coordinate System
Projection
Zone
Quadrangle
Location Map
Vicinity Map
Aerial Photograph
Orthophoto
Survey Date
Field Work Date
Office Work Date
Plotted Date
Last Revised
Prepared By
Surveyed By
Drawn By
Traced By
Reproduced By
Issued By
Received By
Filed By
Recorded By
Indexed By
Verified By
Certified By
Sealed By
Dated
Signed
Witnessed
Notarized
Commissioned
Expires
Copyright
Reserved
Unauthorized
Duplication
Violation
Applicable
Laws
1-1/4" SDR 11, PE 4710 HDPE TUBING (INSTALLED AS A CONTINUOUS RUN)
15' UTILITY EASEMENT
TOWN LINE
APPROXIMATE LOCATION OF RELOCATED DRAINAGE COURSE
LOW DRAINAGE COURSE SETBACK
20' SETBACK
N 35°00'49" E 50.00'
N 35°00'49" E 50.00'
S 36°48'52" W 89.00' (C)
N 35°58'07" E 184.27' (C)
N 33°48'46" E 45.30' (C)
N 52°00'15" W 170.08' (C)
N 52°00'15" W 170.09' (C)
N 00°01'03" E 294.97' (C)
S 51°59'00" E 295.14' (C)
S 07°36'39" W 114.39' (C)
S 06°34'02" W 329.80' (C)
S 07°16'40" W 268.70' (C)
100.00'
100.24'
58.93'
55.13'
40.94'
28.06'
241.15'
226.14'

LEGEND

- EXISTING CONTOUR
- PROPERTY LINE
- DEEP TEST PIT
- DRAIN INLET WITH INLET PROTECTION
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE PROTECTED WITH TREE PROTECTION

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED: _____

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

_____ DATE: _____

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO THE RESOLUTION:

_____ DATE:_____
JOSEPH M. CERMELE, PE
KELLARD SESSIONS, CONSULTING
CONSULTING TOWN ENGINEERS

SHEET: 5 of 8

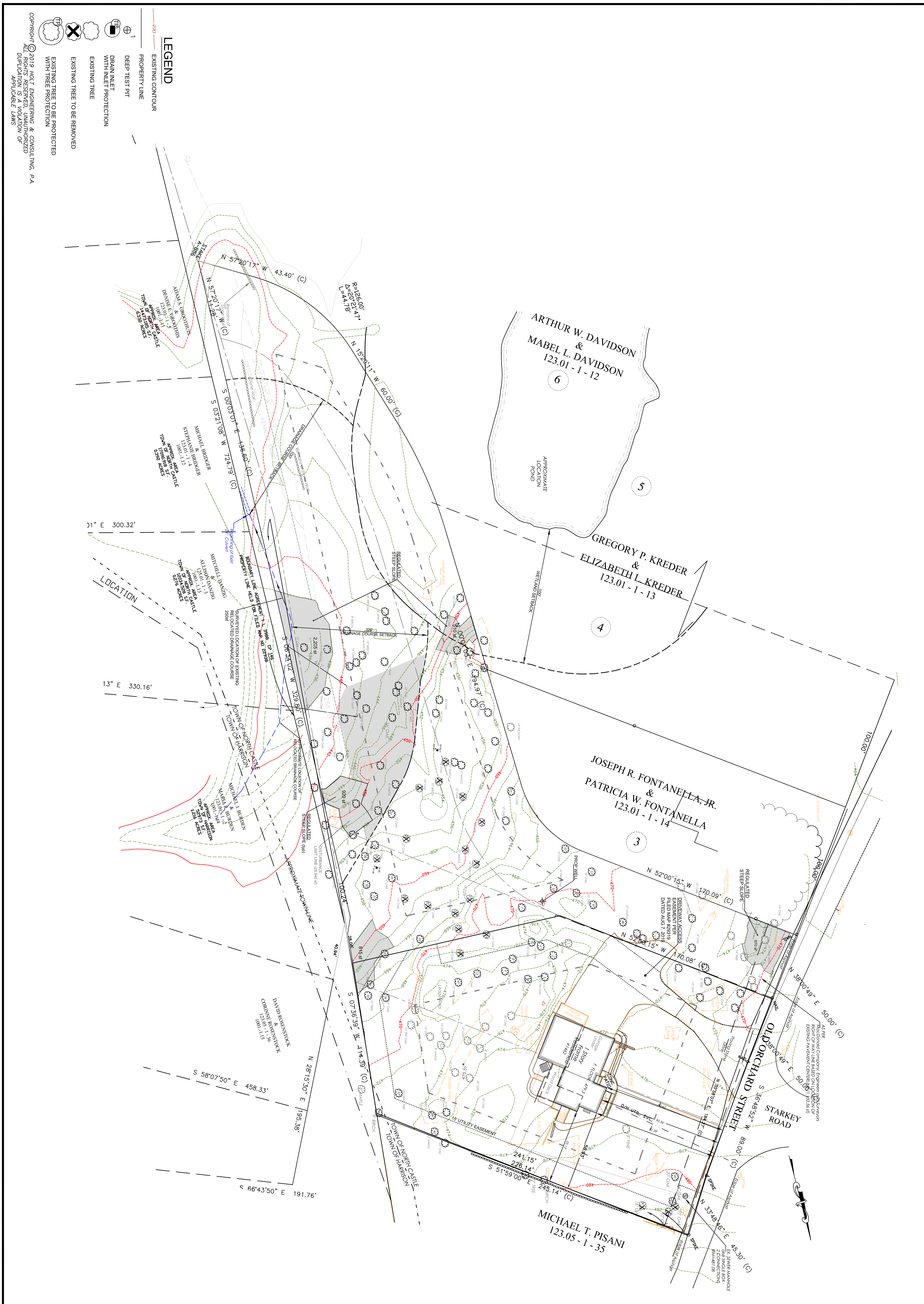
No.	Description	Date
5		
4		
3		
2	Staff Comments	December 11, 2019
1	Original Date: OCTOBER 10, 2019	
	Project Code: TED-3	

Nathaniel J. Holt, P.E. STATE OF NEW YORK 082017 LICENSED PROFESSIONAL ENGINEER
Date:

NATHANIEL J. HOLT, P.E.
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

SITE UTILITIES PLAN

FINAL CONSTRUCTION PLANS
1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NEW YORK



FINAL CONSTRUCTION PLANS 1460 OLD ORCHARD STREET TOWN OF NORTH CASTLE, NEW YORK	HYDROLOGY PLAN (EXISTING CONDITIONS)	NATHANIEL J. HOLT, P.E. 592 ROUTE 22 PAWLING, NEW YORK 12564 (914) 760-1800	Nathaniel J. Holt, P.E. Date:	5 4 3 2 1 December 11, 2019 Staff Comments Original Date: OCTOBER 10, 2019 Project Code: TED-3	SHEET: 1 of 2

LEGEND

- 490 — EXISTING CONTOUR
- PROPERTY LINE
- DEEP TEST PIT
- DRAIN INLET WITH INLET PROTECTION
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE PROTECTED WITH TREE PROTECTION

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

GENERAL NOTES

1. EXISTING CONDITIONS MAP PREPARED BY THOMAS MERRITTS, LS. DATED: JULY 15, 2015; ADDITIONAL INFORMATION FROM A SURVEY PREPARED BY RALPH MACDONALD,LS. UPDATED BY DENNIS LOWES, LS ON NOVEMBER 21, 2005
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3. PROPERTY SERVICED BY PUBLIC SEWER (LOW PRESSURE MAIN)
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8. THE SEWER SERVICE OF LOT #2 BETWEEN THE FOUNDATION WALL AND THE POINT OF CONNECTION SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER.

FINAL CONSTRUCTION PLANS

1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NEW YORK

HYDROLOGY PLAN (FUTURE CONDITION)

NATHANIEL J. HOLT, P.E.
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

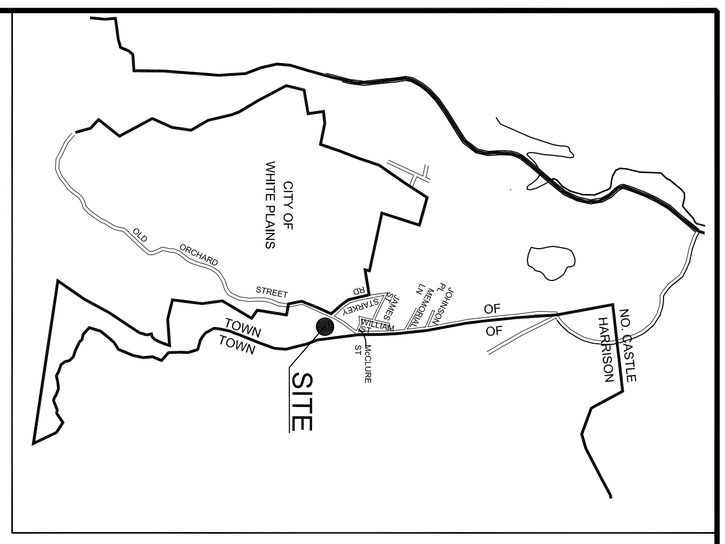
Nathaniel J. Holt, P.E.
STATE OF NEW YORK · NATHANIEL HOLT · 074128 · LICENSED PROFESSIONAL ENGINEER
Date:

5	
4	
3	
2	
1	December 11, 2019 Staff Comments
Original Date:	OCTOBER 10, 2019
Project Code:	TED-3

SHEET: 2 of 2

LOCATION PLAN

SCALE: 1" = ±1,000'



OWNER/APPLICANT: FRANK TEDESCO
ADDRESS: 1462 OLD ORCHARD STREET
WEST HARRISON, NY

PROPERTY IDENTIFICATION NUMBER: 123.01-1-15
PROPERTY ADDRESS: 1460 OLD ORCHARD STREET
WEST HARRISON, NY
ZONING DISTRICT: R-1A SINGLE FAMILY RESIDENTIAL - 1 ACRE
NET LOT AREA: 1.598 ACRES (AFTER RIGHT OF WAY TAKING, STEEP SLOPE AND WETLAND AREA DEDUCTIONS)

LEGEND

- 490 — EXISTING CONTOUR
- #37 12"OAK A-856 (M-269 QUAD MAP)
- STONE PILE
- PROPERTY LINE
- DEEP TEST PIT
- DRAIN INLET WITH INLET PROTECTION
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE PROTECTED WITH TREE PROTECTION

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.
30 0 15 30 60 120

GENERAL NOTES

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8. THE SEWER SERVICE OF LOT #2 BETWEEN THE FOUNDATION WALL AND THE POINT OF CONNECTION SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER.

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED: _____

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

_____ DATE: _____

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO THE RESOLUTION:

_____ DATE: _____
JOSEPH M. CERMELE, PE
KELLARD SESSIONS, CONSULTING
CONSULTING TOWN ENGINEERS

FINAL CONSTRUCTION PLANS

1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NEW YORK

EXISTING CONDITIONS PLAN

NATHANIEL J. HOLT, P.E.
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

Nathaniel J. Holt, P.E.
STATE OF NEW YORK · NATHANIEL HOLT · 074128 · LICENSED PROFESSIONAL ENGINEER
Date: _____

5	
4	
3	
2	July 20, 2020 Landscaping & Revised Drainage
1	December 11, 2019 Staff Comments
Original Date:	OCTOBER 10, 2019
Project Code:	TED-3

SHEET: 1 of 8

ZONING CONFORMANCE TABLE R-1A ZONE

		123.01-1-15		
	REQUIRED	CURRENT	AFTER TAKING*	
MIN. LOT AREA	1.0 ACRE	1.689 ACRES 0 ac	1.663 ACRES 0 ac	INCLUDES AREA WITHIN TOWN OF HARRISON LOT AREA WITHIN TOWN OF HARRISON
STEEP SLOPES	50% DEDUCT	0.061 ACRES	0.061 ACRES	
WETLANDS	75% DEDUCT	0	0	
WATER COURSE	75% DEDUCT	0.004 ACRES	0.004 ACRES	
NET LOT AREA	1.0 ACRE	1.624 ACRES	1.598 ACRES	
CONTIGUOUS BUILDABLE AREA	17,000 sf	11,700.78 sf	11,700.78 sf	
MIN. FRONTAGE	125'	50'	50'	
MIN. WIDTH	125'	128.7'	128.7'	
MIN. DEPTH	150'	243'	240'	
FRONT YARD	50'	50' (min)	50' (min)	
SIDE YARD	25'	25' (min)	25' (min)	
REAR YARD	40'	40' (min)	50'	
BLDG. COVERAGE	12% (8,353 sf)	3.50%	3.56%	

* EXPANDED RIGHT OF WAY BASED UPON SECTION 275-27B OF THE TOWN CODE
STEEP SLOPES ARE CONSIDERED TO BE A 25% GRADE AND 25' MINIMUM DISTANCE IN ALL DIRECTIONS
DRAINAGE COURSE: 250 sf
VARIANCES RECEIVED FROM THE ZONING BOARD OF APPEALS ON MARCH 2, 2018; MINIMUM CONTIGUOUS BUILDABLE AREA: 10,552 SF
MINIMUM FRONTAGE: 50 FT

PLANT LIST

KEY	NAME	QTY	SIZE	ROOT
GG	THUJA "GREEN GIANT" ARBOR VITAE	6 9	6 - 7' HT 4 - 5' HT	B&B
NS	NORWAY SPRUCE PICEA STROBUS	3	6 - 7' HT	B&B
EH	EASTERN HEMLOCK TSUNGA CANADENSIS	3 3	5 - 6' HT 8 - 9' HT	B&B
CM	CRAPE MYRTLE "EARLY BIRD PURPLE" LAGERSTROEMEIA	28	3 GAL	CONTAINER

PLANTING NOTES

1. LANDSCAPE MATERIAL SUBJECT TO CHANGE ACCORDING TO SITE CONDITIONS
2. ALL LANDSCAPING MATERIALS SHALL BE FROM HEALTH NURSERY STOCK
3. ALL LANDSCAPE MATERIALS SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES.
4. ANY DEAD OR DISEASED PLANTS SHALL BE IMMEDIATELY REPLACED "IN-KIND" BY THE OWNER.
5. THE OWNER HAS AGREED TO INSTALL PLANT MATERIALS ALONG THE SOUTHERLY PROPERTY LINE AT THE DIRECTION OF THE ADJACENT PROPERTY OWNER. SIMILARLY, ALTERNATE PLANTINGS MAY BE INSTALLED AT THE REQUEST OF THE ADJACENT PROPERTY OWNER

TREE SURVEY

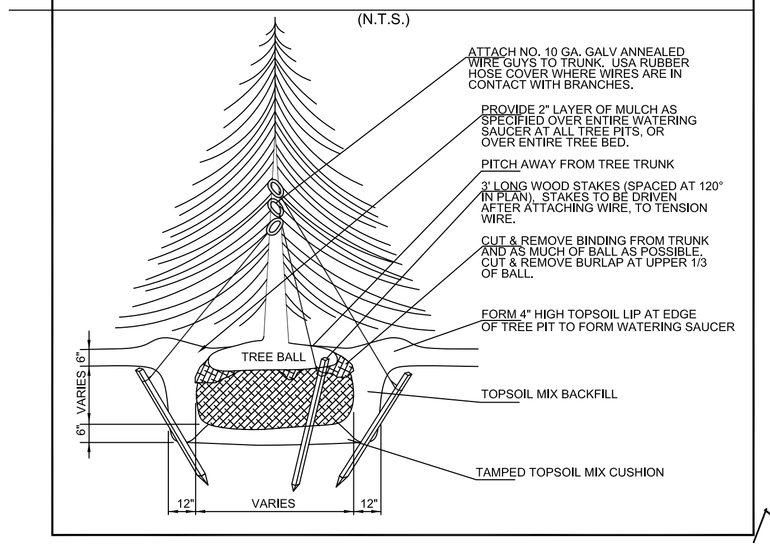
NUMBER	TYPE	DBH	CONDITION	STATUS
1	OAK	18"	GOOD	SAVE
2	OAK	18"	GOOD	SAVE
3	TW OAK	16"	GOOD	SAVE
4	UNK	10"	GOOD	SAVE
5	OAK	10"	GOOD	SAVE
6	OAK	18"	GOOD	SAVE
7	OAK	14"	GOOD	SAVE
8	OAK	10"	GOOD	SAVE
9	OAK	14"	GOOD	SAVE
10	OAK	16"	GOOD	REMOVE
11	MAPLE	10"	GOOD	REMOVE
12	TW OAK	14"	GOOD	REMOVE
13	OAK	16"	GOOD	REMOVE
14	OAK	16"	GOOD	REMOVE
15	OAK	14"	GOOD	SAVE
16	MAPLE	8"	GOOD	REMOVE
17	OAK	12"	GOOD	REMOVE
18	OAK	10"	GOOD	REMOVE
19	OAK	10"	GOOD	REMOVE
20	BIRCH	10"	GOOD	REMOVE
21	OAK	24"	GOOD	REMOVE
22	OAK	10"	GOOD	REMOVE
23	OAK	16"	GOOD	REMOVE
24	OAK	10"	GOOD	SAVE
25	OAK	14"	GOOD	REMOVE
26	OAK	16"	GOOD	SAVE
27	OAK	18"	GOOD	SAVE
28	OAK	16"	GOOD	REMOVE
29	OAK	16"	GOOD	SAVE
30	OAK	10"	GOOD	SAVE
31	OAK	12"	GOOD	SAVE
32	OAK	12"	GOOD	SAVE
33	OAK	18"	GOOD	SAVE
34	OAK	10"	GOOD	SAVE
35	OAK	10"	GOOD	SAVE
36	OAK	16"	GOOD	SAVE
37	OAK	22"	DEAD	REMOVE
38	BIRCH	8"	GOOD	SAVE
39	BIRCH	14"	GOOD	SAVE
40	MAPLE	10"	GOOD	SAVE
41	OAK	16"	GOOD	REMOVE
42	MAPLE	10"	GOOD	REMOVE
43	OAK	14"	GOOD	SAVE

LEGEND

- 490 — EXISTING CONTOUR
- PROPERTY LINE
- 1 — DEEP TEST PIT
- TP — DRAIN INLET WITH INLET PROTECTION
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- TP — EXISTING TREE TO BE PROTECTED WITH TREE PROTECTION

EVERGREEN PLANTING DETAIL

(N.T.S.)



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

GENERAL NOTES

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APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED: _____

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

_____ DATE: _____

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO THE RESOLUTION:

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JOSEPH M. CERMELE, PE
KELLARD SESSIONS, CONSULTING
CONSULTING TOWN ENGINEERS

SHEET: 2 of 8

5		
4		
3	July 20, 2020	Landscaping & Revised Drainage
2	September 11, 2019	Town Comments
1	October 10, 2019	Original Date
	Project Code: TED-3	

Nathaniel J. Holt, P.E.
NEW YORK LICENSED PROFESSIONAL ENGINEER 074126
Date:

NATHANIEL J. HOLT, P.E.
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

SITE PLAN

FINAL CONSTRUCTION PLANS
1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NEW YORK

GENERAL NOTES

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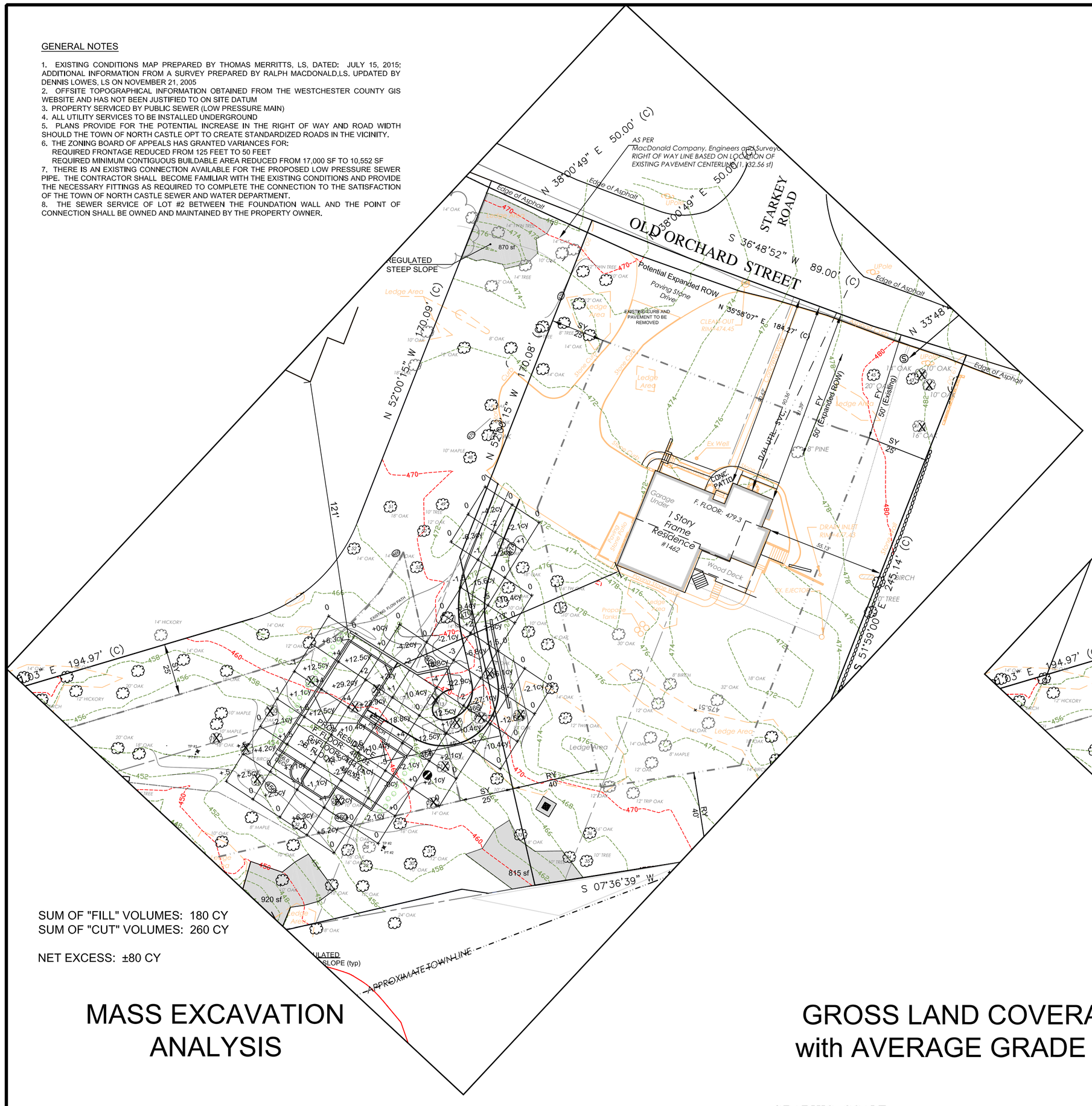
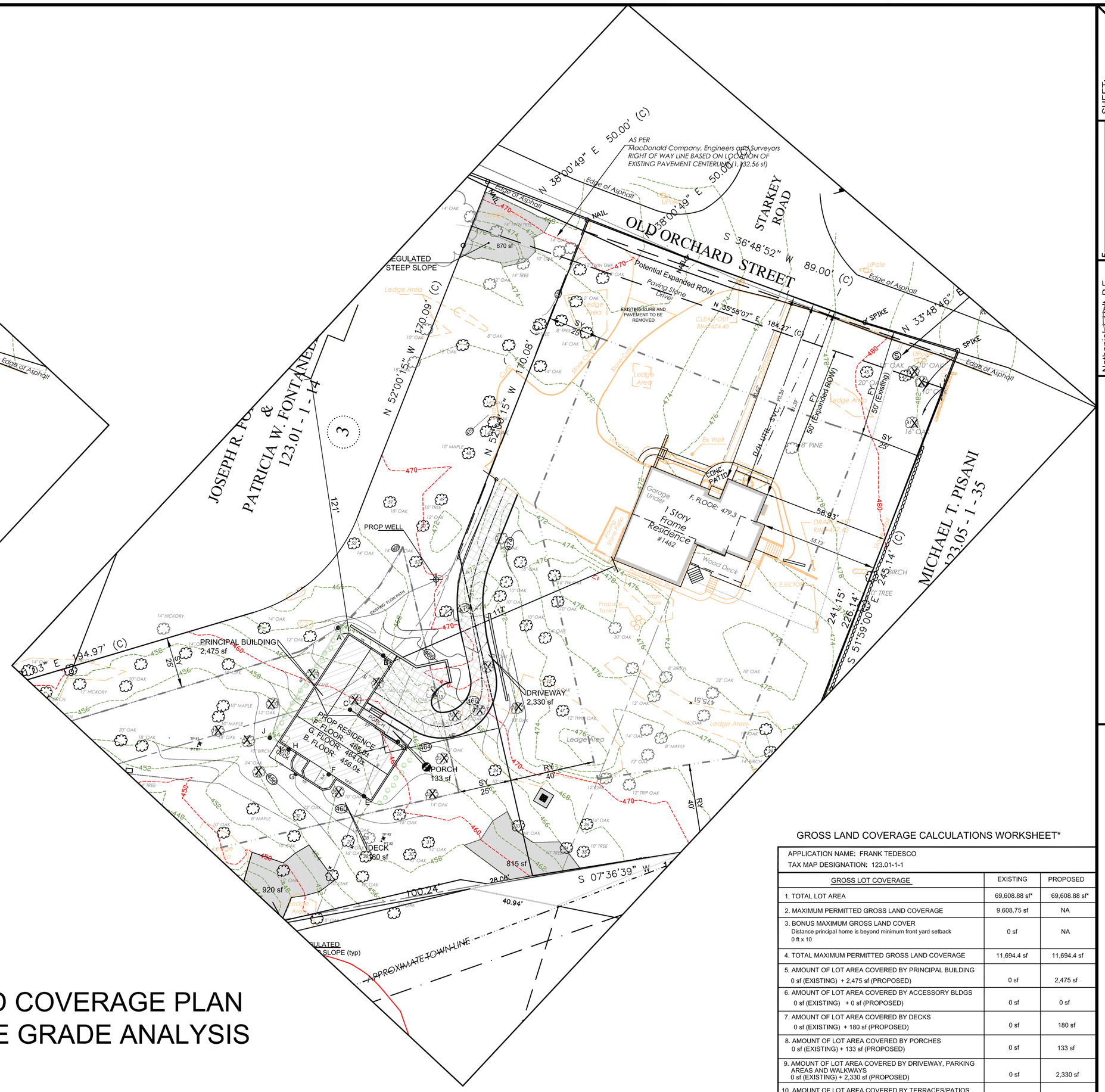


SUM OF "FILL" VOLUMES: 180 CY
SUM OF "CUT" VOLUMES: 260 CY

NET EXCESS: ±80 CY

MASS EXCAVATION ANALYSIS



GROSS LAND COVERAGE PLAN with AVERAGE GRADE ANALYSIS

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

POINTS	AVG ELEV	DISTANCE	PRODUCT
A to B	464.0	25'	11,600
B to C	464.0	30'	13,920
C to D	464.0	27'	12,528
D to E	463.0	30'	13,889
E to F	462.0	19.5'	9,009
F to G	460.5	19.4'	8,934
G to H	459.0	15'	6,885
I to J	456.0	11'	5,016
J to A	460.0	60'	27,600
AVERAGE GRADE:		236.9	109,381 = 461.7

LEGEND

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GROSS LAND COVERAGE CALCULATIONS WORKSHEET*

APPLICATION NAME: FRANK TEDESCO
TAX MAP DESIGNATION: 123.01-1-1

GROSS LOT COVERAGE	EXISTING	PROPOSED
1. TOTAL LOT AREA	69,608.88 sf*	69,608.88 sf*
2. MAXIMUM PERMITTED GROSS LAND COVERAGE	9,608.75 sf	NA
3. BONUS MAXIMUM GROSS LAND COVER Distance principal home is beyond minimum front yard setback 0 ft x 10	0 sf	NA
4. TOTAL MAXIMUM PERMITTED GROSS LAND COVERAGE	11,694.4 sf	11,694.4 sf
5. AMOUNT OF LOT AREA COVERED BY PRINCIPAL BUILDING 0 sf (EXISTING) + 2,475 sf (PROPOSED)	0 sf	2,475 sf
6. AMOUNT OF LOT AREA COVERED BY ACCESSORY BLDGS 0 sf (EXISTING) + 0 sf (PROPOSED)	0 sf	0 sf
7. AMOUNT OF LOT AREA COVERED BY DECKS 0 sf (EXISTING) + 180 sf (PROPOSED)	0 sf	180 sf
8. AMOUNT OF LOT AREA COVERED BY PORCHES 0 sf (EXISTING) + 133 sf (PROPOSED)	0 sf	133 sf
9. AMOUNT OF LOT AREA COVERED BY DRIVEWAY, PARKING AREAS AND WALKWAYS 0 sf (EXISTING) + 2,330 sf (PROPOSED)	0 sf	2,330 sf
10. AMOUNT OF LOT AREA COVERED BY TERRACES/PATIOS 0 sf (EXISTING) + 0 sf (PROPOSED)*	0 sf	0 sf
11. AMOUNT OF LOT AREA COVERED BY TENNIS COURT, POOL & MECHANICAL EQUIP 0 sf (EXISTING) + 0 (PROPOSED)	0 sf	0 sf
12. AMOUNT OF LOT AREA COVERED BY ALL OTHER STRUC. 0 sf (EXISTING) 0 sf (PROPOSED)	0 sf	0 sf
13. PROPOSED GROSS LAND COVERAGE:Total of Lines 5-12:	0 sf	5,118 sf

*LOT AREA REFERS TO THE "AFTER TAKING" AND THE EXPANDED RIGHT OF WAY UNDER SECTION 275-27B OF THE TOWN OF NORTH CASTLE TOWN CODE AND DEDUCTIONS ASSOCIATED STEEP SLOPES AND WETLANDS

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED: _____

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

_____ DATE: _____

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO THE RESOLUTION:

_____ DATE:_____
JOSEPH M. CERMELE, PE
KELLARD SESSIONS, CONSULTING
CONSULTING TOWN ENGINEERS

SHEET: 3 of 8

5		
4		
3	July 20, 2020	Landscaping & Revised Drainage
2	September 11, 2019	Address Comments
1		
	Original Date: OCTOBER 10, 2019	
	Project Code: TED-3	

Nathaniel J. Holt, P.E.
Date:

NATHANIEL J. HOLT, P.E.
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

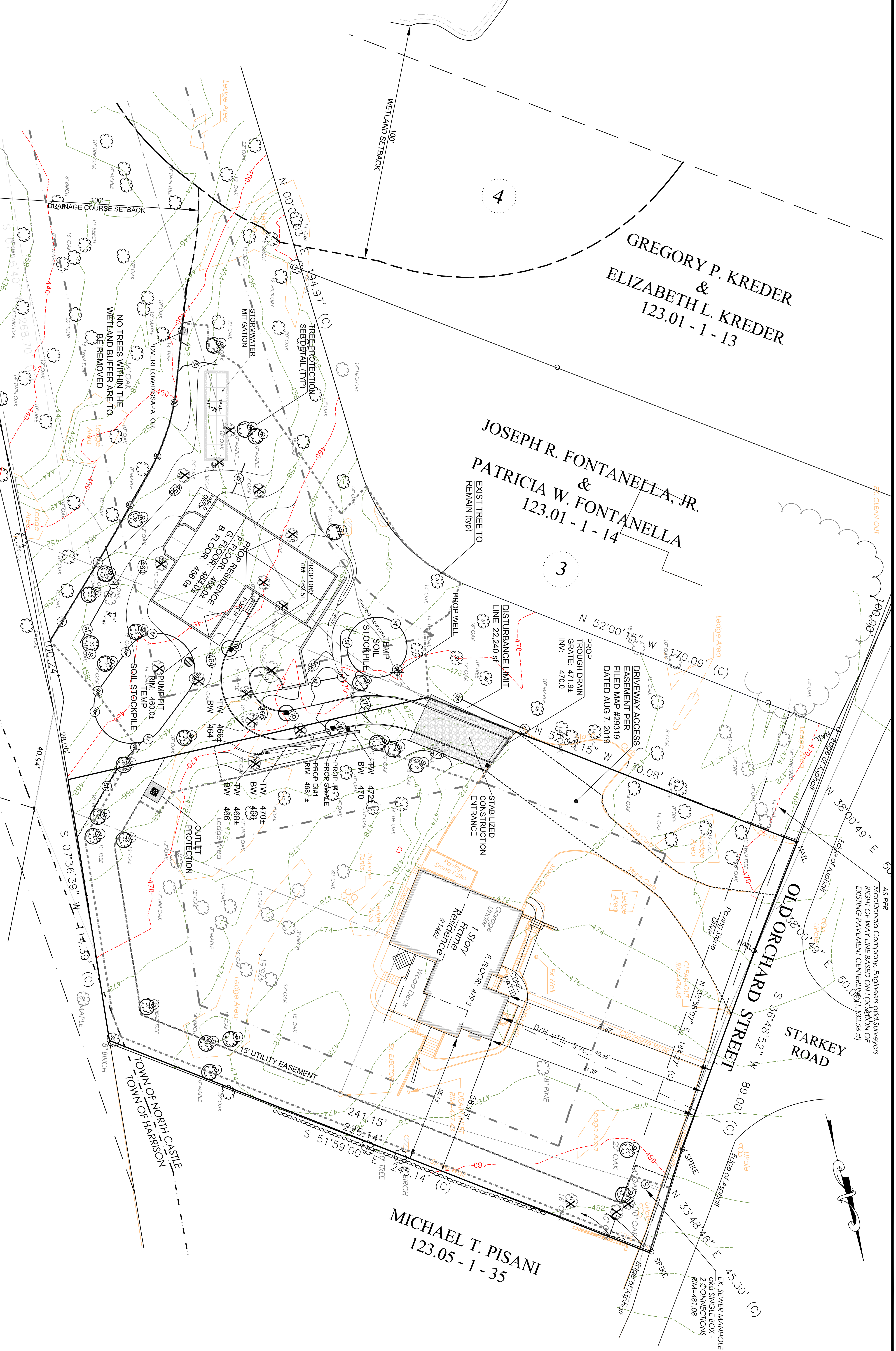
FINAL CONSTRUCTION PLANS

1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NEW YORK

GROSS LAND COVERAGE and MASS EXCAVATION ANALYSIS PLAN

LEGEND

- EXISTING CONTOUR (490)
- PROPERTY LINE
- DEEP TEST PIT
- DRAIN INLET WITH INLET PROTECTION
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE PROTECTED WITH TREE PROTECTION



GENERAL NOTES

1. EXISTING CONDITIONS MAP PREPARED BY THOMAS MERRITTS, LS, DATED: JULY 15, 2015; ADDITIONAL INFORMATION FROM A SURVEY PREPARED BY RALPH MACDONALD,LS. UPDATED BY DENNIS LOWES, LS ON NOVEMBER 21, 2005
2. OFFSITE TOPOGRAPHICAL INFORMATION OBTAINED FROM THE WESTCHESTER COUNTY GIS WEBSITE AND HAS NOT BEEN JUSTIFIED TO ON-SITE DATUM
3. PROPERTY SERVICED BY PUBLIC SEWER (LOW PRESSURE MAIN)
4. ALL UTILITY SERVICES TO BE INSTALLED UNDERGROUND
5. PLANS PROVIDE FOR THE POTENTIAL INCREASE IN THE RIGHT OF WAY AND ROAD WIDTH SHOULD THE TOWN OF NORTH CASTLE OPT TO CREATE STANDARDIZED ROADS IN THE VICINITY.
6. THE ZONING BOARD OF APPEALS HAS GRANTED VARIANCES FOR:
   REQUIRED FRONTAGE REDUCED FROM 125 FEET TO 50 FEET
   REQUIRED MINIMUM CONTIGUOUS BUILDABLE AREA REDUCED FROM 17,000 SF TO 10,552 SF
7. THERE IS AN EXISTING CONNECTION AVAILABLE FOR THE PROPOSED LOW PRESSURE SEWER PIPE. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND PROVIDE THE NECESSARY FITTINGS AS REQUIRED TO COMPLETE THE CONNECTION TO THE SATISFACTION OF THE TOWN OF NORTH CASTLE SEWER AND WATER DEPARTMENT.
8. THE SEWER SERVICE OF LOT #2 BETWEEN THE FOUNDATION WALL AND THE POINT OF CONNECTION SHALL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER.
9. THE TOWN OF NORTH CASTLE PLANNING BOARD SHALL RETAIN SITE PLAN JURISDICTION OVER LOTS 1 AND 2.

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED: ________

____
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD
DATE: ________

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO THE RESOLUTION:

____
JOSEPH M. CERMELE, PE
KELLARD SESSIONS, CONSULTING
CONSULTING TOWN ENGINEERS
DATE: ________

FINAL CONSTRUCTION PLANS 1460 OLD ORCHARD STREET TOWN OF NORTH CASTLE, NEW YORK	GRADING, SEDIMENT AND EROSION CONTROL PLANS	NATHANIEL J. HOLT, P.E. 592 ROUTE 22 PAWLING, NEW YORK 12564 (914) 760-1800	Nathaniel J. Holt, P.E. STATE OF NEW YORK NATHANIEL HOLT 074128 LICENSED PROFESSIONAL ENGINEER Date:	5 4 3 2 July 20, 2020 Landscaping & Revised Drainage 1 December 11, 2019 Staff Comments Original Date: OCTOBER 10, 2019 Project Code: TED-3	SHEET: 4 of 8

GENERAL NOTES

1. EXISTING CONDITIONS MAP PREPARED BY THOMAS MERRITTS, LS, DATED: JULY 15, 2015; ADDITIONAL INFORMATION FROM A SURVEY PREPARED BY RALPH MACDONALD,LS. UPDATED BY DENNIS LOWES, LS ON NOVEMBER 21, 2005
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9. THE TOWN OF NORTH CASTLE PLANNING BOARD SHALL RETAIN SITE PLAN JURISDICTION OVER LOTS 1 AND 2.
10. THE PROPOSED DOMESTIC WELL SHALL BE DEVELOPED IN ACCORDANCE WITH THE PERMIT ISSUED BY THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH.

SOIL TESTING FOR STORMWATER MITIGATION PURPOSES

DATE OF TEST: JULY 13, 2018
ATTENDEES: VINCENT FEDERICI, TNC CONSULTING ENGINEER
FRANK TEDESCO
NATHANIEL HOLT, PE

TEST HOLES (TP #1 AND TP #2) WERE EXCAVATED IN THE PROPOSED LOCATION OF THE MITIGATION DEVICES

TEST RESULTS

TP #1

DEPTH: 78"
O-6" TOPSOIL/WOODS DEBRIS
6-72" FINE SAND LOAM
72"-78" FINE SANDY LOAM WITH COBBLES

PERCOLATION RATE: 20 INCHES PER HOUR

TP #2

DEPTH: 78"
0-6" TOPSOIL/WOODS DEBRIS
6"- 72" FINE SANDY LOAM MORE COMPACT
72"-78" COMPACT SAND LOAM WITH COBBLES

PERCOLATION RATE: 10 INCHES PER HOUR

DESIGN RATE: 10 INCHES PER HOUR

GREGORY P. KREDER & ELIZABETH L. KREDER 123.01 - 1 - 13

JOSEPH R. FONTANELLA, JR. & PATRICIA W. FONTANELLA 123.01 - 1 - 14

MICHAEL T. PISANI 123.05 - 1 - 35

OLD ORCHARD STREET

STARKEY ROAD

AS PER MacDonald Company, Engineers and Surveyors RIGHT OF WAY LINE BASED ON LOCATION OF EXISTING PAVEMENT CENTERLINE (1,132.56 sf)

AREA RESERVED FOR STREET RE-ALIGNMENT (OR WIDENING) PURPOSES (275-27B)

APPROX LOCATION EXISTING 3" LOW PRESSURE SEWER MAIN

EX. SEWER MANHOLE aka SINGLE BOX - 2 CONNECTIONS RIM=481.08

CONNECT TO EXIST WITH FITTINGS, AS REQUIRED (SEE NOTE #7)

PROVIDE 1' (min) VERTICAL SEPARATION

DRIVEWAY ACCESS EASEMENT PER FILED MAP #29319 DATED AUG 7, 2019

DISTURBANCE LIMIT LINE 22,240 sf

EXIST TREE TO REMAIN (typ)

PROP WELL

WATER LINE, POWER LINE AND CONTROL WIRES

PROP TROUGH DRAIN GRATE: 471.9± INV: 470.0

6" HDPE (PERF) 60LF @ 2.8%

PROP JB RIM 470.8± INV 468.7

PROP JB RIM 469.0± INV 467.0

PROP DI#1 RIM 468.9± INV 465.9

6" HDPE (PERF) 90LF @ 1.9%

8" HDPE 15LF @ 9.3%

PROP DI#2 RIM 467.0± INV 464.0 (in) 463.0 (out)

PROP DI#3 RIM 463.5± INV 460.0

6" HDPE 10LF @ 5.0%

8" HDPE, 65LF @ 8.0%

J BOX TOP: 462.0± INV: 459.5

PUMP PIT RIM 460.0± INV: 456.0 (4" PVC) 456.0 (1-1/4" PP)

6" HDPE 40LF @ 1.9%

PIPE INV: 465.5±

RIP RAP OUTLET PROTECTION (See Detail)

EL: 464.5±

EL: 466±

J BOX TOP: 459.5± INV: 457.25

INFILTRATION AREA
(12) CULTEC #330XLHD
TOP 452.8±
INV 452.25 (in)
452.0 (out)
O'FLOW 453.8
BOTTOM 450.25

OVERFLOW/DISSAPATOR INV: 446.0 SEE DETAIL

PROP RESIDENCE F. FLOOR: 465.0± G. FLOOR: 464.0± B. FLOOR: 456.0±

Garage Under

1 Story Frame Residence #1462

F. FLOOR 479.3

Wood Deck

Concr. PATIO

Propane Tanks

Paving Stone Drive

Deck

Porch

ROOF GUTTER/LEADER

Ledge Area

Ex Well

CLEAN-OUT RIM=474.45

D.H. UTIL. SYS.

DRAIN RIM=477.85

EX. EJECTOR

15' UTILITY EASEMENT

1-1/4" SDR 11, PE 4710 HDPE TUBING (INSTALLED AS A CONTINUOUS RUN)

TOWN OF NORTH CASTLE
TOWN OF HARRISON

APPROXIMATE LOCATION OF RELOCATED DRAINAGE COURSE

100' DRAINAGE COURSE SETBACK

100' WETLANDS SETBACK

N 38°00'49" E 50.00'

N 52°00'15" W 170.09' (C)

N 52°00'15" W 170.08' (C)

S 36°48'52" W 89.00' (C)

N 35°58'07" E 184.17' (C)

N 33°48'46" E 45.30' (C)

S 51°59'00" E 245.14' (C)

S 07°36'39" W 114.39' (C)

S 06°54'02" W 329.80' (C)

N 00°00'03" E 194.97' (C)

S 07°36'40" W 268.70'

100.24'

28.06'

40.94'

58.93'

55.13'

24.15'

226.14'

LEGEND

- EXISTING CONTOUR
- PROPERTY LINE
- DEEP TEST PIT
- DRAIN INLET WITH INLET PROTECTION
- EXISTING TREE
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO BE PROTECTED WITH TREE PROTECTION

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED: _____

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

_____ DATE: _____

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO THE RESOLUTION:

_____ DATE: _____
JOSEPH M. CERMELE, PE
KELLARD SESSIONS, CONSULTING
CONSULTING TOWN ENGINEERS

SHEET: 5 of 8

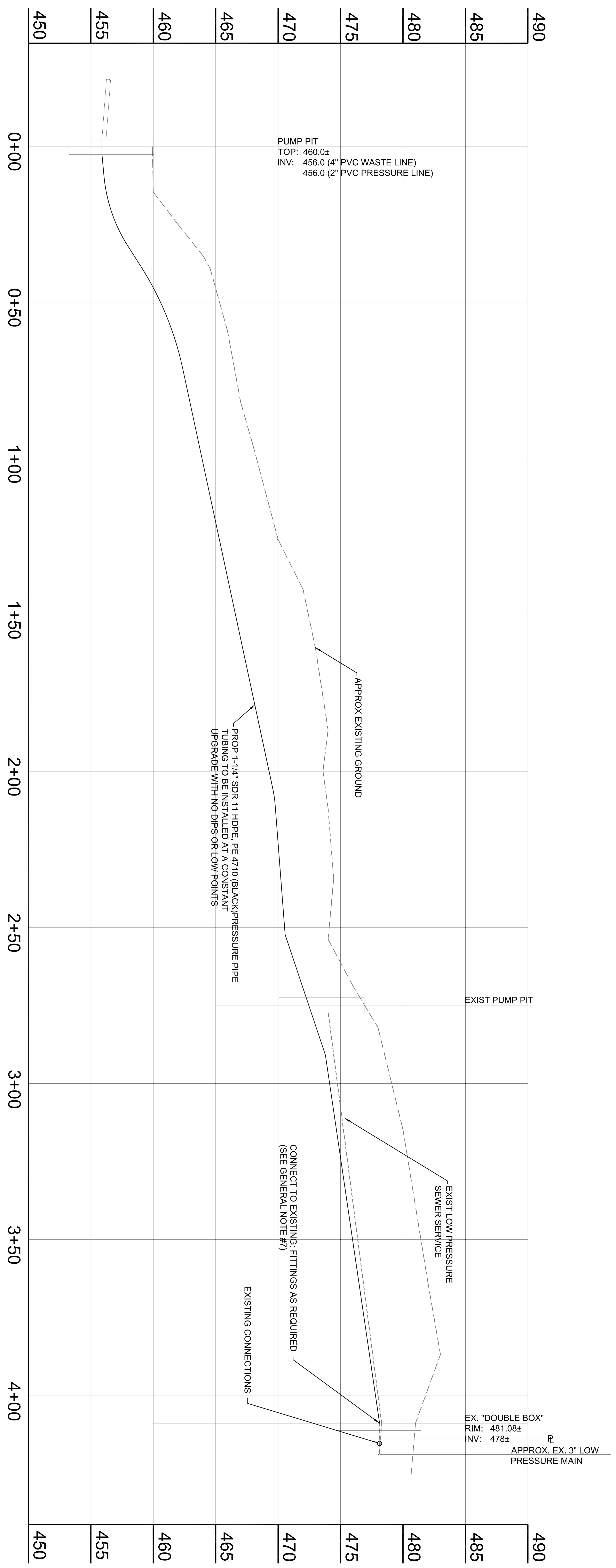
5	July 20, 2020	Landscaping & Revised Drainage
4	September 11, 2019	Driveway Re-Alignment
3	May 15, 2019	Comments
	Original Date: OCTOBER 10, 2019	
	Project Code: TED-3	

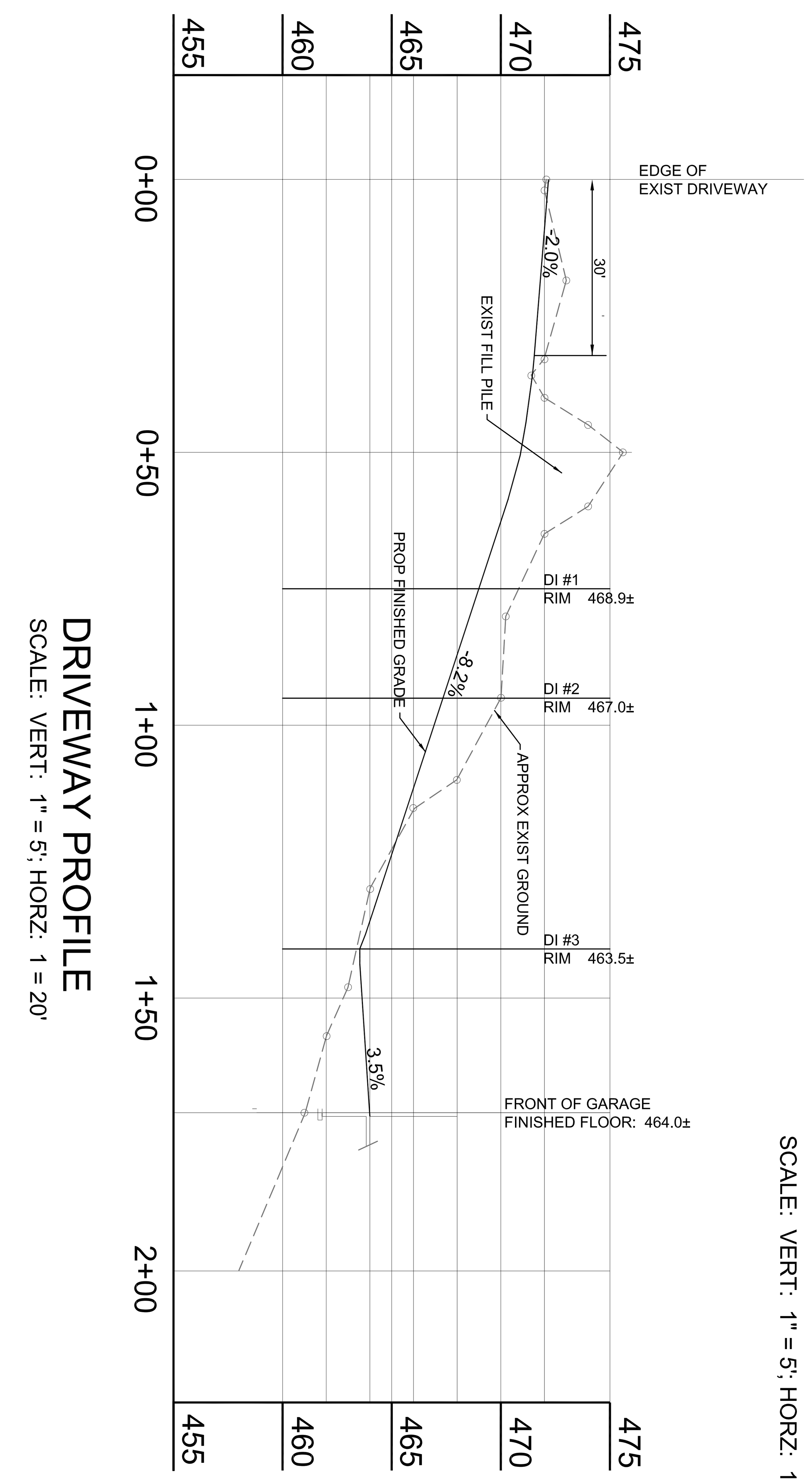
Nathaniel J. Holt, P.E.
Date:

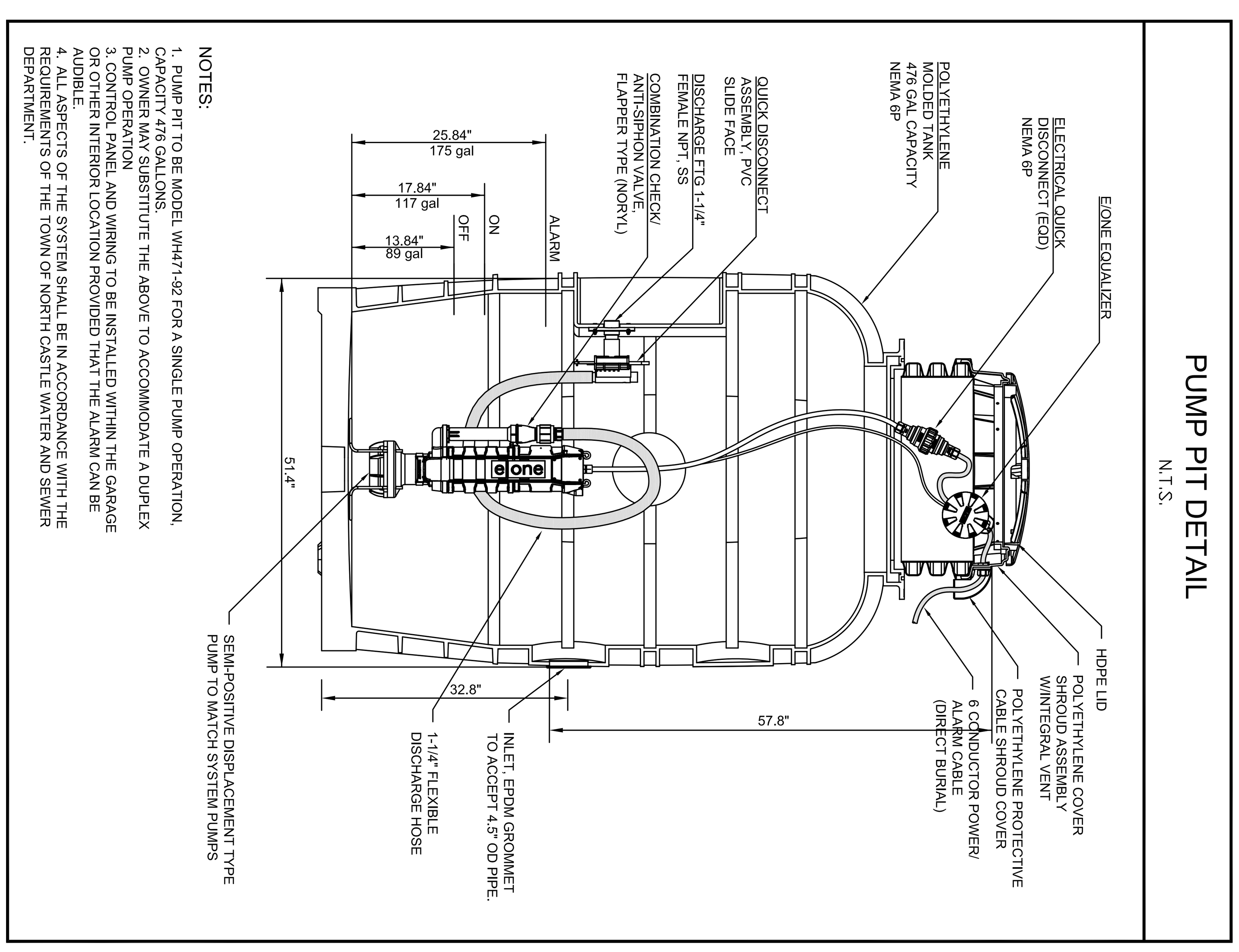
NATHANIEL J. HOLT, P.E.
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

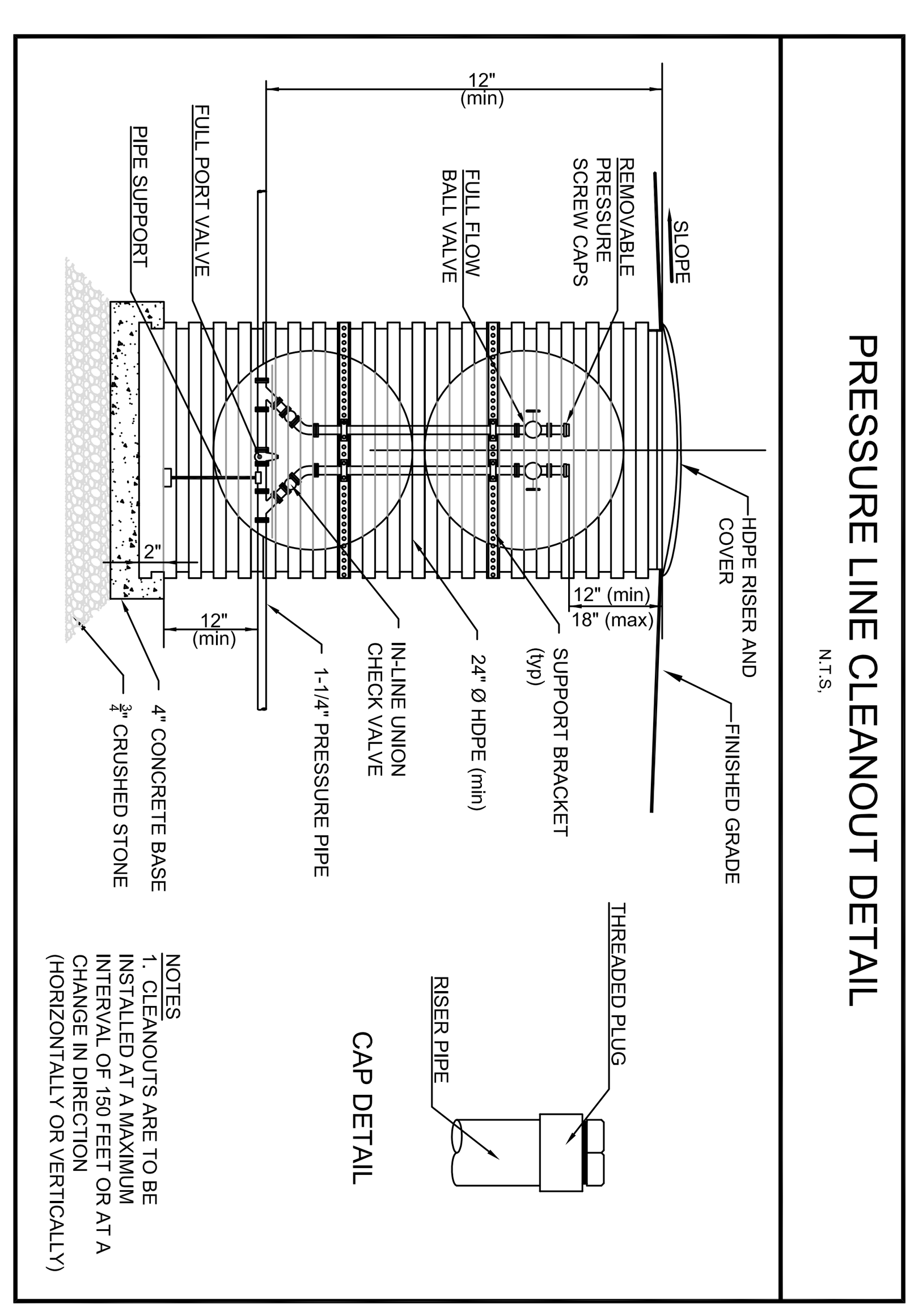
SITE UTILITIES PLAN

FINAL CONSTRUCTION PLANS
1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NEW YORK


SEWAGE EJECTOR LINE PROFILE
SCALE: VERT: 1" = 5'; HORZ: 1 = 20'
PUMP PIT
TOP: 460.0±
INV: 456.0 (4" PVC WASTE LINE)
456.0 (2" PVC PRESSURE LINE)
APPROX EXISTING GROUND
PROP 1-1/4" SDR 11 HDPE, PE 4710 (BLACK)PRESSURE PIPE TUBING TO BE INSTALLED AT A CONSTANT UPGRADE WITH NO DIPS OR LOW POINTS
EXIST PUMP PIT
EXIST LOW PRESSURE SEWER SERVICE
CONNECT TO EXISTING; FITTINGS AS REQUIRED (SEE GENERAL NOTE #7)
EXISTING CONNECTIONS
EX. "DOUBLE BOX"
RIM: 481.08±
INV: 478±
APPROX. EX. 3" LOW PRESSURE MAIN
0+00
0+50
1+00
1+50
2+00
2+50
3+00
3+50
4+00
450
455
460
465
470
475
480
485
490




PUMP PIT DETAIL
N.T.S.
EONE EQUALIZER
HDPE LID
POLYETHYLENE COVER
ELECTRICAL QUICK DISCONNECT (EQD) NEMA 6P
POLYETHYLENE MOLDED TANK 476 GAL CAPACITY NEMA 6P
QUICK DISCONNECT ASSEMBLY, PVC SLIDE FACE
DISCHARGE FTG 1-1/4" FEMALE NPT, SS
COMBINATION CHECK/ ANTI-SIPHON VALVE, FLAPPER TYPE (NORYL)
ALARM
ON
OFF
25.84" 175 gal
17.84" 117 gal
13.84" 89 gal
51.4"
32.8"
57.8"
6 CONDUCTOR POWER/ ALARM CABLE (DIRECT BURIAL)
INLET, EPDM GROMMET TO ACCEPT 4.5" OD PIPE
1-1/4" FLEXIBLE DISCHARGE HOSE
SEMI-POSITIVE DISPLACEMENT TYPE PUMP TO MATCH SYSTEM PUMPS
NOTES:
1. PUMP PIT TO BE MODEL WH471-92 FOR A SINGLE PUMP OPERATION. CAPACITY 476 GALLONS.
2. OWNER MAY SUBSTITUTE THE ABOVE TO ACCOMMODATE A DUPLEX PUMP OPERATION.
3. CONTROL PANEL AND WIRING TO BE INSTALLED WITHIN THE GARAGE OR OTHER INTERIOR LOCATION PROVIDED THAT THE ALARM CAN BE AUDIBLE.
4. ALL ASPECTS OF THE SYSTEM SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWN OF NORTH CASTLE WATER AND SEWER DEPARTMENT.


PRESSURE LINE CLEANOUT DETAIL
N.T.S.
SLOPE
REMOVABLE PRESSURE SCREW CAPS
FULL FLOW BALL VALVE
FULL PORT VALVE
PIPE SUPPORT
12" (min)
HDPE RISER AND COVER
FINISHED GRADE
12" (min)
18" (max)
SUPPORT BRACKET (typ)
24" Ø HDPE (min)
IN-LINE UNION CHECK VALVE
1-1/4" PRESSURE PIPE
4" CONCRETE BASE
2" CRUSHED STONE
THREADED PLUG
RISER PIPE
CAP DETAIL
NOTES
1. CLEANOUTS ARE TO BE INSTALLED AT A MAXIMUM INTERVAL OF 150 FEET OR AT A CHANGE IN DIRECTION (HORIZONTALLY OR VERTICALLY).

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED: ________

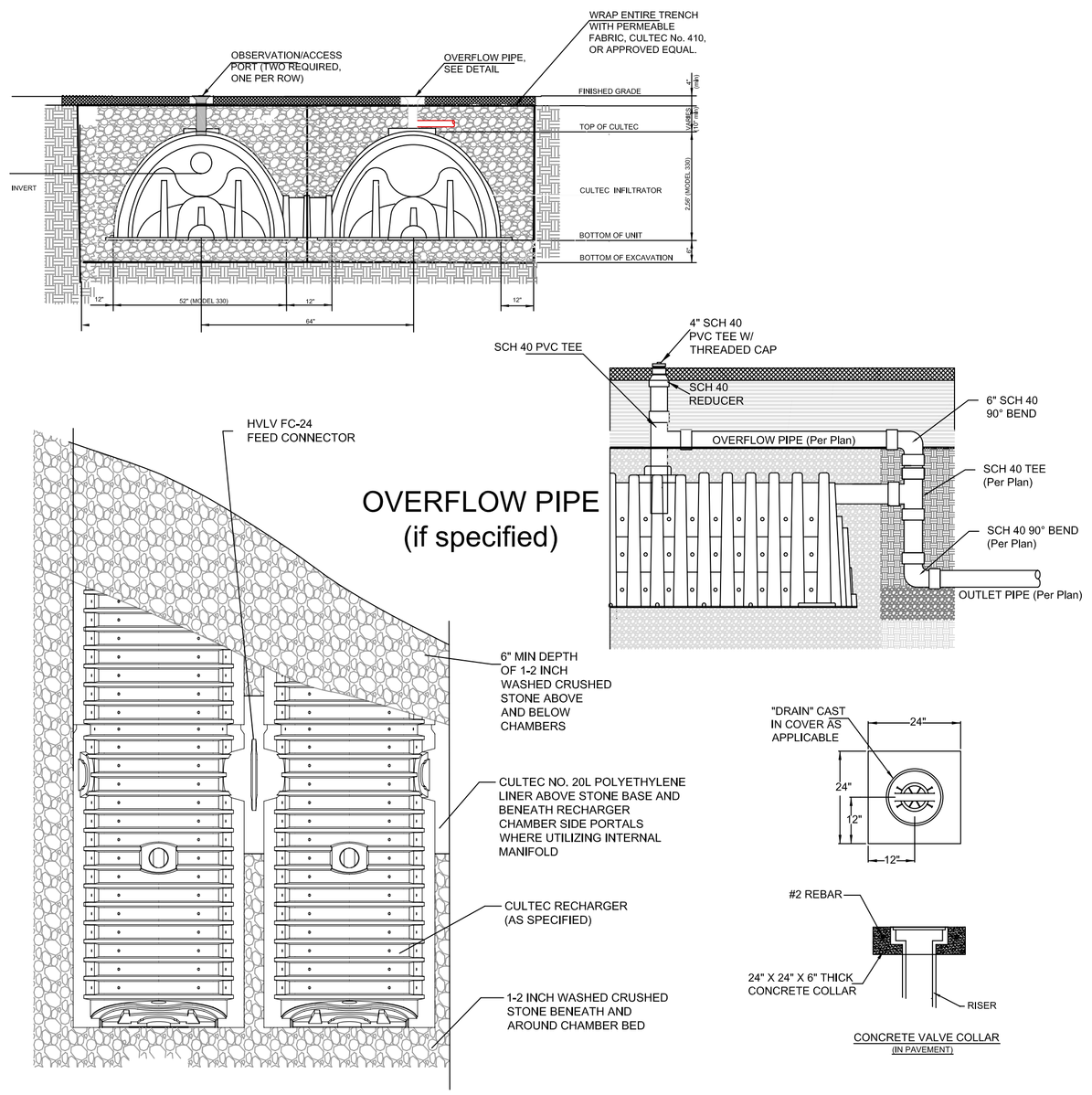
CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD
DATE: ________

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO THE RESOLUTION:

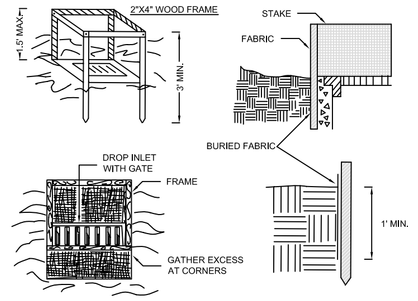
JOSEPH M. CERMELE, PE DATE: ________
KELLARD SESSIONS, CONSULTING
CONSULTING TOWN ENGINEERS

FINAL CONSTRUCTION PLANS 1460 OLD ORCHARD STREET TOWN OF NORTH CASTLE, NEW YORK	PROFILES	NATHANIEL J. HOLT, P.E. 592 ROUTE 22 PAWLING, NEW YORK 12564 (914) 760-1800	Nathaniel J. Holt, P.E. Date:	5 4 3 2 July 20, 2020 Landscaping & Revised Drainage 1 December 11, 2019 Staff Comments Original Date: OCTOBER 10, 2019 Project Code: TED-3	SHEET: 6 of 8

INFILTRATION SYSTEM
N.T.S.



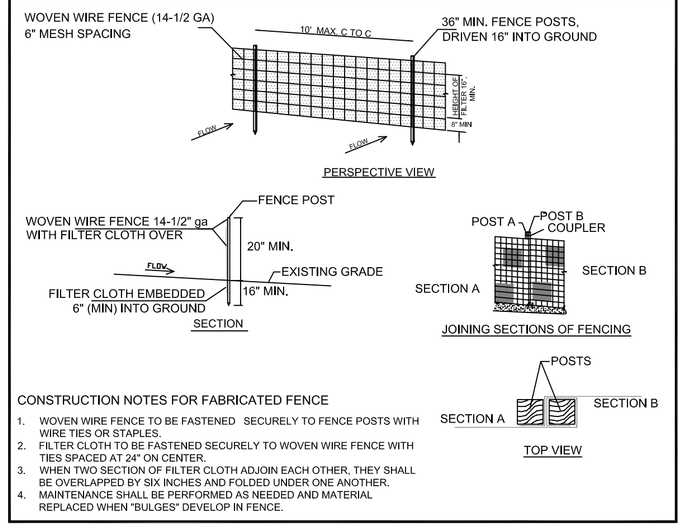
FILTER FABRIC INLET PROTECTION DETAIL (IP)



CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN EOS OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY SHALL BE OVER-LAPPED AT THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT, MINIMUM LENGTH 3 FEET.
4. SPACE STAKES EVENLY AROUND INLET 3 FEET APART AND DRIVEN A MINIMUM OF 18 INCHES DEEP. SPANS GREATER THAN THREE FEET MAY BE BRIDGED WITH WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1 FOOT MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVERFLOW OR STABILITY.
7. MAXIMUM DRAINAGE AREA 1 ACRE

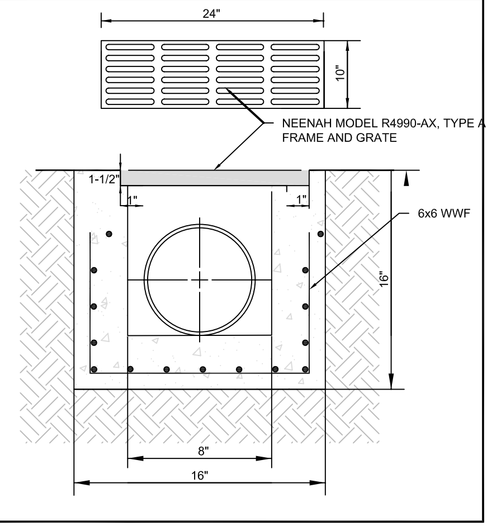
SILT FENCE
N.T.S.



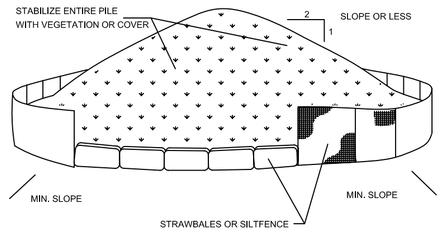
CONSTRUCTION NOTES FOR FABRICATED FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED AT 24" ON CENTER.
3. WHEN TWO SECTION OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED UNDER ONE ANOTHER.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REPLACED WHEN "BULGES" DEVELOP IN FENCE.

TRENCH DRAIN DETAIL
NTS



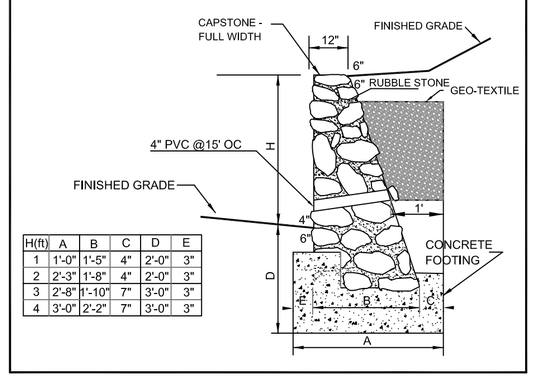
SOIL STOCKPILING DETAIL
N.T.S.



NOTES

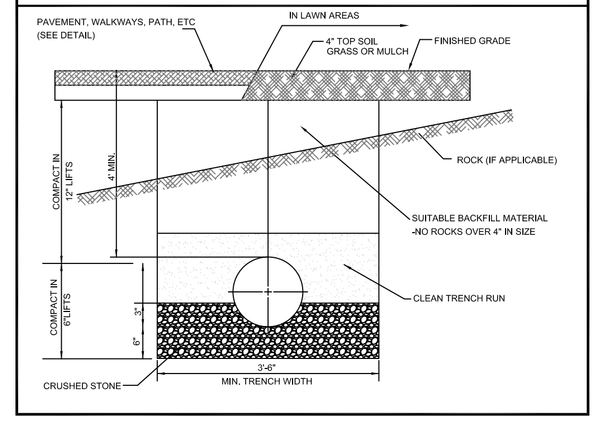
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.
4. SOIL STOCKPILES SHALL BE LOCATED A MINIMUM OF 100' FROM WETLANDS AND WATERCOURSES.

RUBBLE STONE WALL DETAIL
N.T.S.

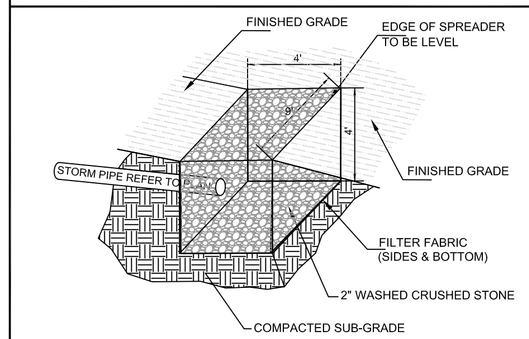


H(ft)	A	B	C	D	E
1	1'-0"	1'-5"	4"	2'-0"	3"
2	2'-3"	1'-8"	4"	2'-0"	3"
3	2'-8"	1'-10"	7"	3'-0"	3"
4	3'-0"	2'-2"	7"	3'-0"	3"

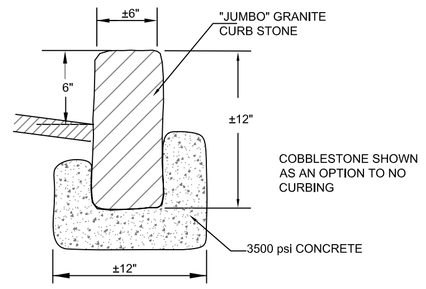
TYPICAL UTILITY SERVICE DETAIL
N.T.S.



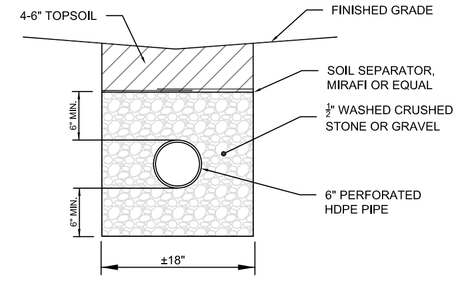
LEVEL SPREADER
NTS



COBBLE STONE CURB DETAIL
N.T.S.

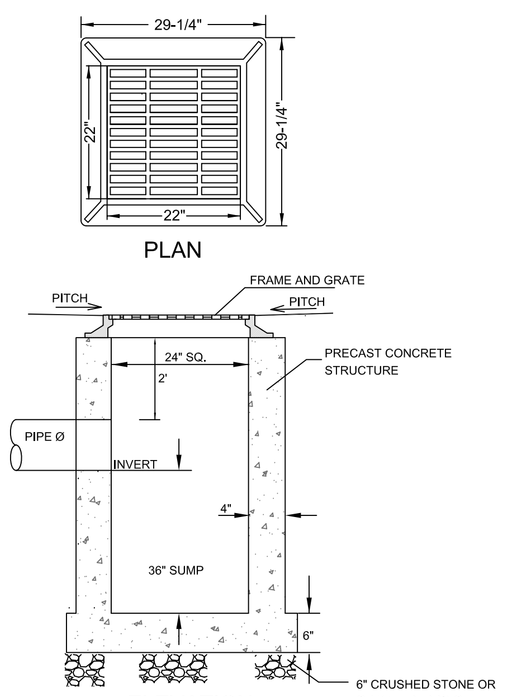


TRENCH DRAIN PIPE DETAIL
NTS

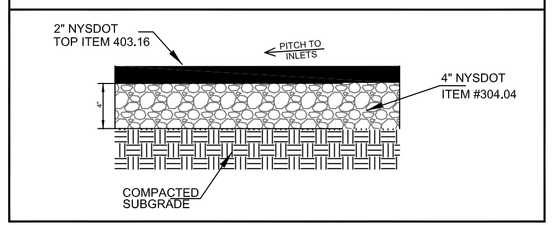


DRAIN INLET DETAIL
N.T.S.

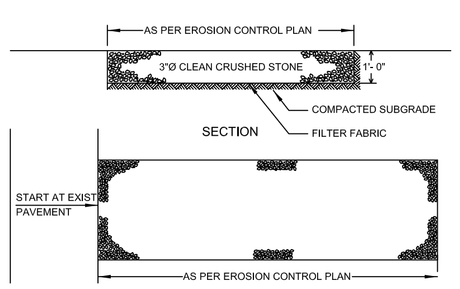
CATCH BASIN FRAME #4190 AND GRATE #6259 BU US FOUNDRY OR EQUAL



DRIVEWAY PAVEMENT DETAIL
N.T.S.



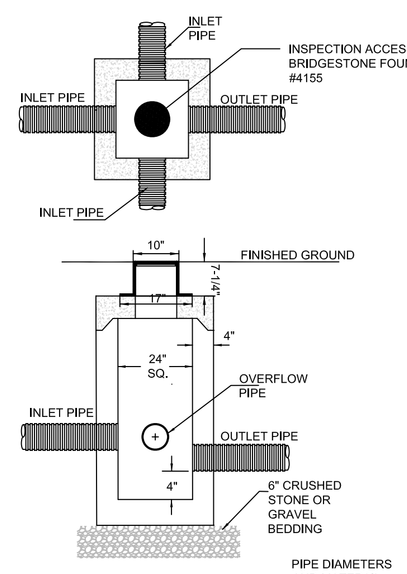
STABILIZED CONSTRUCTION ENTRANCE



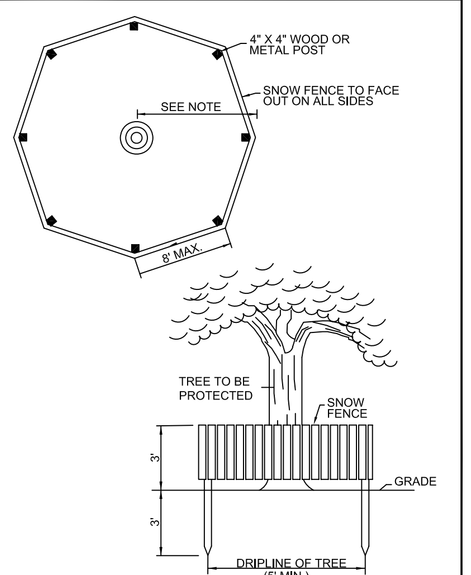
INSTALLATION NOTES

1. STONE SIZE - USE 3" CRUSHED STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS PER PLAN.
3. THICKNESS - AS DETAILED.
4. WIDTH - 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH OF DRIVEWAY.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR THE FLOW OF SEDIMENT ONTO PUBLIC RIGHT OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, THE REPAIR AND/OR REMOVAL OF MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO THE PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO THE PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE COMPLETED ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING PRACTICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE COMPLETED AFTER EACH RAIN EVENT.

JUNCTION BOX DETAIL
NTS

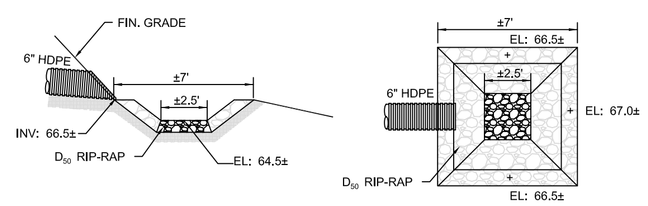


TREE PROTECTION DETAIL (TP)
N.T.S.

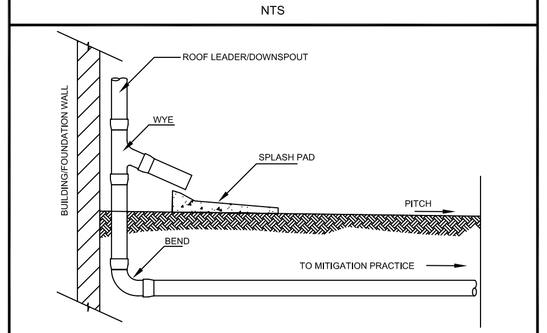


TREE PROTECTION SHALL BE PROVIDED FOR SPECIMEN TREES TO BE SAVED WHICH ARE LOCATED IMMEDIATELY ADJACENT TO CONSTRUCTION AREAS OR AS DIRECTED.

OUTLET PROTECTION
NTS



SURCHARGE PROTECTION
NTS



APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD
RESOLUTION DATED: _____

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

_____ DATE: _____

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO THE RESOLUTION:

_____ DATE:_____
JOSEPH M. CERMELE, PE
KELLARD SESSIONS, CONSULTING
CONSULTING TOWN ENGINEERS

SHEET: 7 of 8

5		
4		
3	July 20, 2020	2 Landscaping & Revised Drainage
2	September 11, 2019	Town Comments
1	October 10, 2019	Original Date: OCTOBER 10, 2019
		Project Code: TED-3

Nathaniel J. Holt, P.E. — Date:

NATHANIEL J. HOLT, P.E.
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

CONSTRUCTION DETAILS

FINAL CONSTRUCTION PLANS
1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NEW YORK

EROSION CONTROL PROTOCOL

PURPOSE

ALL CONSTRUCTION ACTIVITIES INVOLVING THE REMOVAL OF OR DEPOSITION OF SOILS ARE TO BE PROTECTED WITH APPROPRIATE MEASURES TO INHIBIT EROSION AND TO CONTAIN SEDIMENT DEPOSITION WITHIN THE AREA UNDER DEVELOPMENT. THOSE METHODS DEEMED HIGHLY EFFECTIVE ARE DESCRIBED BELOW AND SHOWN ON THESE DRAWINGS.

REQUIRED PROCEDURES

1. PRIOR TO THE START OF ANY SITE CONSTRUCTION, ALL CONSTRUCTION ENTRANCES TO THE SITE SHALL BE INSTALLED AND STABLIZED. ANY TEMPORARY SILTATION BASINS AND/OR OTHER APPROVED SEDIMENT CONTROL MEASURES SHALL BE IN PLACE WHERE DEEMED TO BE THE MOST EFFECTIVE.

2. ALL TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL REMAIN IN PLACE AND MAINTAINED REGULARLY IN PROPER FUNCTIONING CONDITION UNTIL ALL AREAS DISTURBED DURING CONSTRUCTION HAVE BEEN SUITABLY STABILIZED WITH PAVEMENT, PERMANENT STRUCTURES AND/OR FINAL VEGETATIVE COVER.

CONSTRUCTION GUIDELINES

1. WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED BY FENCING, FLAGGING OR SIMILAR MEANS.

2. ONLY THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY TIME DURING CONSTRUCTION.

3. SITE CONSTRUCTION ACTIVITIES SHALL START WHENEVER POSSIBLE AT THE NEAREST POINT UPSTREAM OF THE SILT TRAPS AND PROCEED TO ACTIVITIES FURTHER UPSTREAM.

4. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE PERIOD OF EXPOSURE SHALL BE KEPT TO A MINIMUM, INSTALLING PERMANENT AND FINAL VEGETATION, PAVING, STRUCTURES, ETC AT THE EARLIEST POSSIBLE OPPORTUNITY.

SITE STABILIZATION GUIDELINES

1. ALL TOPSOIL SHALL BE STRIPPED FROM THE AREA BEING DEVELOPED AND STOCKPILED NOT LESS THAN 100 FEET FROM ANY BODY OF SURFACE WATER AND SHALL BE IMMEDIATELY SEEDED WITH PERENNIAL RYE.

2. EROSION AND SEDIMENT CONTROL MEASURES INCLUDING, BUT NOT LIMITED TO SILT TRENCHES, SILT TRAPS, STAKED HAY BALES OR BRUSH CHECK DAMS SHALL ALSO BE EMPLOYED WHERE NECESSARY.

3. DISTURBED AREAS ARE TO BE STABILIZED AS FOLLOWS:

- TOP SOILED WITH NOT LESS THAN FOUR INCHES OF SUITABLE TOPSOIL MATERIAL
- SEEDED WITH THE FOLLOWING GRASS MIXTURE:

---	45% KENTUCKY BLUE GRASS
---	45% CREEPING RED FESCUE
---	10% PERENNIAL RYE GRASS

SEED SHALL BE APPLIED AT A RATE NOT LESS THAN TWO POUNDS PER 1,000 SQAURE FEET.

4. MULCH SHALL BE APPLIED AT A RATE NOT LESS THAN ONE INCH AND NOT MORE THAN THREE INCHES OF STRAW AT TWO TONS PER ACRE AND ANCHORED IN A SUITABLE MANNER.

INSPECTION PROGRAM FOR INFILTRATION SYSTEM

ACTIVITY	SCHEDULE
INSPECT INLET, PRETREATMENT STRUCTURE AND OUTLET CONTROL STRUCTURE TO ENSURE GOOD CONDITION. INSPECT SURFACE AND SUBSURFACE SYSTEMS. INSPECT PAVEMENTS FOR STRUCTURAL INTEGRITY INSPECT NON PAVED AREAS FOR EROSION OR IMPROPER VEGETATIVE COVER	SEASONALLY/QUATERLY DURING THE FIRST YEAR; BIANNUALLY THEREAFTER
INSPECT INLET, PRETREATMENT STRUCTURE AND OUTLET CONTROL STRUCTURE FOR ACCUMULATION OF SILTS AND DEBRIS INSPECT HEADER PIPE FOR ACCUMULATION OF SILTS AND DEBRIS	SEMI ANNUALLY FOR THE FIRST YEAR; ANNUALLY THEREAFTER
INSPECT YARD DRAINS, CATCH BASINS AND INLETS FOR BLOCKAGE OR ACCUMULATION OF DEBRIS INSPECT OBSERVATION WELLS AND OUTLET CONTROL STRUCTURES FOR PROPER DRAWDOWN BETWEEN STORM EVENTS	MONTHLY AND AFTER LARGE SNOW STORMS OR RAIN FALL EVENTS

MAINTENANCE PROGRAM FOR INFILTRATION SYSTEM

ACTIVITY	FREQUENCY	EQUIPMENT
CLEAN SPILLS IN PAVEMENT AREA WHICH ARE TRIBUTARY TO THE INFILTRATION SYSTEM SWEEP ALL PAVEMENTS AND WALKS CLEAN OF SANDS, SILTS AND DEBRIS MAINTAIN (REPAIR) PAVED SURFACES MAINTAIN AND REPLANT VEGETATIVE COVER. REPLACE MULCH CLEAR DEBRIS FROM NON PAVED AREAS CLEAN PIPES		
JET VACUUM ACCUMULATED SILT AND DEBRIS FROM THE HEADER PIPES. USE A HIGH PRESSURE NOZZLE WITH REAR FACING JETS TO WASH SEDIMENT AND DEBRIS INTO THE INLET OR PRE-TREATMENT SUMP.	WHEN 25% OF THE PIPE VOLUME HAS BECOME FILLED WITH DEBRIS	
REMOVE SEDIMENT AND DEBRIS FROM PRE-TREATMENT SUMP APPLY MULTIPE PASSES WITH A JET VACUUM UNTIL BACKWASH WATER RUNS CLEAR	WHEN SEDIMENT ACCUMULATION REACHES ONE HALF THE SUMP CAPACITY	
CLEAR PIPES AND CHAMBERS OF SILT AND DEBRIS. REMOVE SEDIMENT AND DEBRIS FROM SUIMPS IN PRETREATMENT AND OUTLET CONTROL STRUCTURES.	SEMI ANNUALLY IN THE FIRST YEAR; YEARLY THEREAFTER	

SEQUENCE OF CONSTRUCTION

IT IS THE INTENT OF THIS NARRATIVE TO OUTLINE THE GENERAL STEPS ASSOCIATED WITH THE DEVELOPMENT OF THIS PROPERTY, IT MUST BE RECOGNIZED THAT EACH JOB HAS CONDITIONS WHICH MAY WARRANT SOME DEVIATION FROM THE STEPS OUTLINED HEREIN. TO THE EXTENT PRACTICAL THE CONSTRUCTION DRAWINGS PROVIDE THE CONTRACTOR WITH AN UNDERSTANDING OF THE WORK NECESSARY AND THE LOGICAL STEPS WHICH ARE TO BE FOLLOWED THROUGH THE PROCESS. IN THOSE INSTANCES WHERE THE ACTUAL FIELD CONDITIONS DIFFER FROM WHAT IS DEPICTED ON THE DRAWINGS, THE CONTRACTOR SHALL BE REQUIRED TO CONTACT THE OWNER OR THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING FURTHER.

WETLANDS

ALTHOUGH THERE ARE NO ON-SITE DESIGNATED WETLANDS, THERE ARE REGULATED BUFFERS ASSOCIATED WITH A TOWN OF NORTH CASTLE DESIGNATED WATERCOURSE WHICH IS PROTECTED BY THE MUNICIPALITY'S WETLAND AND DRAINAGE LAW. THE DEVELOPMENT OF THE SUBJECT PROPERTY IS SUCH THAT NO WETLAND PERMIT IS REQUIRED AS NO DISTURBANCE BEYOND THE SETBACK LINE IS NECESSARY OR PROPOSED. PRIOR TO THE START OF ANY WORK, THE LIMITS OF THE REFERENCED BUFFER SHALL BE FIELD STAKED FOR THE PURPOSES OF INSTALLING SILT FENCE OR OTHER PROTECTIVE FENCING. UPON COMPLETION OF THE STAKING, THE CONTRACTOR SHALL CONTACT THE TOWN ENGINEER FOR INSPECTION AND APPROVAL. WHEN AUTHORIZED TO DO SO, THE CONTRACTOR SHALL INSTALL THE SILT FENCE AND PROCEED WITH THE WORK. THE WETLAND BUFFER AREA SHALL NOT BE USED FOR THE STORAGE OF EQUIPMENT OR MATERIAL.

CLEARING, GRUBBING AND DEMOLITION

THE PROPERTY IS CURRENTLY UNDEVELOPED HOWEVER, IS CONTIGUOUS TO AN EXISTING RESIDENTIAL PROPERTY . ACCESS TO THE PROPERTY WILL BE OVER THE EXISTING DRIVEWAY,IL STRUCTURE, TWO RESIDENCES, OUT BUILDINGS AND PAVEMENTS. THE DEMOLITION PLAN SPECIFIES THOSE ASPECTS OF THE EXISTING DEVELOPMENT WHICH ARE TO BE REMOVED AND WHICH ARE TO REMAIN UNDISTURBED, THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE CONDITIONS OF THE PROPERTY AND THOSE AREAS WHICH WILL BE CLEARED. SHOULD THERE BE ANY INSTANCE WHERE IT IS NOT CLEAR IF AN EXISTING FEATURE IS TO REMAIN, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD. THERE SHALL BE NO ON-SITE BURIAL OF ANY DEMOLITION MATERIAL OR DEBRIS WHICH MAY BE ENCOUNTERED DURING THIS OPERATION.

ACCEPTABLE AREAS FOR CONSTRUCTION STAGING OR SOIL STOCKPILED ARE INDICATED ON THE PLANS. HOWEVER, THE CONTRACTOR IS ADVISED THAT THE SITE IS CONSTRAINED BY THE DISTURBANCE LIMIT LINE AND THEREFORE THE CONTRACTOR MAY BE REQUIRED TO CREATE OFFSITE STAGING AREAS AND/OR REMOVE EXCAVATED MATERIALS IN LIEU OF ON-SITE STORAGE.ERE ARE LIMITED AREAS PROPERTY CONSISTS OF IMPERVIOUS SURFACES, DEEP TEST PIT EXCAVATIONS REVEALED TOPSOIL TO DEPTHS APPROACHING TWELVE INCHES, TOPSOIL SHALL BE STRIPPED TO ITS FULL DEPTH. ON-SITE STAGING AND THE STORAGE OF MATERIAL IS LIMITED, THEREFORE THE CONTRACTOR MAY HAVE TO ARRANGE FOR OFF SITE STORAGE OF THE TOPSOIL.

SEDIMENT AND EROSION CONTROL

SEDIMENT AND EROSION CONTROL MEASURES SHALL BE AN ON-GOING PROCESS THROUGHOUT CONSTRUCTION AND UNTIL STABILIZATION HAS BEEN ACHIEVED.
UPON COMPLETION OF THE DEMOLITION ACTIVITIES, THE CONTRACTOR SHALL INSTALL THE REQUISITE SILT FENCE AND CONSTRUCTION ENTRANCE INTO THE PROPERTY. SEE SEPARATE EROSION CONTROL PROTOCOL DISCUSSION ON THIS SHEET.

ROUGH GRADING

IN GENERAL, THE ONLY SIGNIFICANT GRADING WILL THAT WHICH IS ASSOCIATED WITH THE NEW DRIVEWAY AND HOUSE SITE. PRELIMINARY ESTIMATES INDICATE THAT THE MOST OF THE MATERIAL GENERATED THROUGH "CUT" CAN BE USED IN AREAS IN NEED OF FILL.

SEWER AND WATER SERVICES

SEWER SERVICE TO THE PROPERTY SHALL BE ACCOMPLISHED THROUGH THE CONSTRUCTION OF A LOW PRESSURE SYSTEM. THE ON-SITE SYSTEM WILL CONSIST OF A PUMP PIT LOCATED NEAR THE RESIDENCE. A 1-1/4" LOW PRESSURE PVC PIPE WILL THEN BE INSTALLED BETWEEN THE PUMP PIT AND THE LOW PRESSURE "MAIN" WITHIN OLD ORCHARD STREET.

WATER SERVICE TO THE SITE WILL BE ACCOMPLISHED THE THE DEVELOPMENT OF A DRILLED DOMESTIC WILL ON THE PROPERTY.

ALL WORK SHALL BE IN ACCORDANCE WITH THE APPROVED PLANS, THE TOWN OF NORTH CASTLE SEWER/WTER DEPARTMENT SPECIFICATIONS AND THE CONDITIONS OF THE PERMIT ISSUED BY THE WESTCHESTER COUNTY DEPARTMENT OF HEALTH.

OTHER SERVICES

ELECTRIC, TELEPHONE, CABLE, ETC WILL ALL BE BROUGHT INTO THE SITE UNDER GROUND. THE PROPOSED LOCATION OF THE SERVICES WILL BE WITHIN THE UTILITY EASEMENT SHOWN ON THE APPROVED PLANS. THE CONTRACTOR SHALL ARRANGE TO HAVE THESE SERVICES INSTALLED BEFORE FINAL RESTORATION HAS BEEN COMPLETED.

GENERAL SEQUENCE OF ACTIVITIES

1. MOBILIZE FOR CONSTRUCTION
2. STAKE THE LOCATION OF THE PROPOSED SEDIMENTATION AND EROSION CONTROL MEASURES; CONTACT TOWN ENGINEER FOR INSPECTION.
3. UPON APPROVAL, INSTALL SEDIMENT AND EROSION CONTROL MEASURES.
4. COMMENCE WITH SITE CLEARING OPERATIONS.
5. STRIP AND STORE TOPSOIL WITHIN GRADING LIMIT LINES.
6. COMPLETE ROUGH GRADING BASED UPON PROPOSED GRADING PLAN
7. EXCAVATE FOR BUILDING FOUNDATION.
8. CONSTRUCT FOOTINGS AND FOUNDATIONS FOR PROPOSED RESIDENCES.
9. EXTEND SEWER SERVICE AND OTHER UTILITIES INTO THE SITE.
10. ESTABLISH DRIVEWAY SUBGRADE
11. CONSTRUCT RETAINING WALL(S)
12. CONSTRUCT DRAINAGE SYSTEM AND INFILTRATION UNITS AS SHOWN.
13. CONSTRUCT RETAINING WALLS
14. PLACE AND COMPACT SUB BASE COURSE MATERIAL IN DRIVEWAY
15. INSTALL CURBING
16. INSTALL ASPHALTIC PAVEMENT
17. IMPORT TOPSOIL, INSTALL PLANT MATERIAL, SEED AND MULCH
18. COMPLETE CONSTRUCTION OF RESIDENCE
19. FINAL CLEANUP AND DEMOBILIZATION

ESTIMATED TIME FOR COMPLETION: 10-12 MONTHS.

APPROVED BY THE TOWN OF NORTH CASTLE
PLANNING BOARD
RESOLUTION DATED: _____

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

_____ DATE: _____

ENGINEERING PLANS REVIEWED FOR
CONFORMANCE TO THE RESOLUTION:

_____ DATE:_____
JOSEPH M. CERMELE, PE
KELLARD SESSIONS, CONSULTING
CONSULTING TOWN ENGINEERS

SHEET: 8 of 8

5		
4		
3	July 20, 2020	Landscaping & Revised Drainage
2	September 11, 2019	Stabilized Construction Entrance
1	Original Date: OCTOBER 10, 2019	
	Project Code: TED-3	

Nathaniel J. Holt P.E.
Date:

NATHANIEL J. HOLT, P.E.
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

CONSTRUCTION DETAILS

FINAL CONSTRUCTION PLANS
1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NEW YORK

STORMWATER POLLUTION PREVENTION PLAN
AND
DRAINAGE ANALYSIS

FOR

1460 OLD ORCHARD STREET
TOWN OF NORTH CASTLE, NY

December 12, 2019
Revised July 21, 2020

PREPARED BY

NATHANIEL J. HOLT, PE
592 ROUTE 22
PAWLING, NEW YORK 12564
(914) 760-1800

CONTACT INFORMATION

APPLICANT

Frank Tedesco
1462 Old Orchard Street
North White Plains, NY
(914) 227-0866

PERSON RESPONSIBLE FOR SWPPP IMPLEMENTATION

Frank Tedesco
1462 Old Orchard Street
North White Plains, NY
(914) 227-0866

ENGINEER OF RECORD

Nathaniel J. Holt, PE
592 Route 22
Pawling, NY 12564
(914) 760-1800

PROPERTY INFORMATION

Project Title: Tedesco Subdivision
Project Address: 1460 Old Orchard Street
North White Plains, NY
Tax Map Number: 123.01-1-15
Project Area: 2.71 Acres

APPLICANT INFORMATION

Applicant Name: Frank Tedesco
1460 Old Orchard Street
North White Plains, NY
(914) 227-0866

CERTIFYING ENGINEER

Name: Nathaniel J. Holt, PE
592 Route 22
Pawling, NY 12564
(914) 760-1800

SHORT TERM RESPONSIBLE PARTY FOR IMPLEMENTATION OF SWPPP

General Contractor: To Be Determined

LONG TERM RESPONSIBLE PARTY FOR SWPPP IMPLEMENTATION

Name: Frank Tedesco
1460 Old Orchard Street
North White Plains, NY
(914) 227-0866

ANTICIPATED PARTY RESPONSIBLE FOR INSPECTION OF REQUIRED SPDES PERMIT

Name: Nathaniel J. Holt, PE
592 Route 22
Pawling, NY 12564
C: (914) 760-1800; L: (772) 204-9550; F: (772) 204-9553
e: Dan@HoltEngineering.net

TABLE OF CONTENTS

I

RESOLUTION OF APPROVAL

TOWN OF NORTH CASTLE
WESTCHESTER COUNTY
17 Bedford Road
Armonk, New York 10504-1898

Telephone: (914) 273-3542
Fax: (914) 273-3554
www.northcastleny.com

PLANNING BOARD
Christopher Carthy, Chair

RECEIVED 5/30/2018
TOWN CLERK'S OFFICE

RESOLUTION

Action:	Final Subdivision Plat Approval
Application Name:	Tedesco Subdivision
Owner:	Connie Tedesco
Applicant:	Frank Tedesco
Designation:	123.01-1-15 & 123.01-1-1
Zone:	R-1A (Residential, 1 Acre Minimum Lot Size) District
Acreage:	2.71 acres
Location:	1460 and 1462 Old Orchard Street
Date of Approval:	May 14, 2018
Expiration Date:	November 10, 2018 (180 Days)

WHEREAS, application dated January 28, 2015 for preliminary subdivision plat approval was submitted to the Planning Board and the application fees were paid; and

WHEREAS, the application consists of the following drawings:

- Plan labeled "Sheet 1 of 10," entitled "Existing Conditions," dated August 8, 2017, last revised April 9, 2018, prepared by Nathaniel J. Holt, P.E.
- Plan labeled "Sheet 1 of 1," entitled "Preliminary Subdivision Plat," dated August 8, 2017, last revised April 25, 2018, prepared by Nathaniel J. Holt, P.E.
- Plan labeled "Sheet 3 of 10," entitled "Site Plan," dated August 8, 2017, last revised April 9, 2018, prepared by Nathaniel J. Holt, P.E.
- Plan labeled "Sheet 4 of 10," entitled "Site Utilities Plan," dated August 8, 2017, last revised April 9, 2018, prepared by Nathaniel J. Holt, P.E.
- Plan labeled "Sheet 5 of 10," entitled "Sediment and Erosion Control Plan," dated August 8, 2017, last revised April 9, 2018, prepared by Nathaniel J. Holt, P.E.
- Plan labeled "Sheet 6 of 10," entitled "Profiles and Sewage Detail Plan," dated August 8, 2017, last revised April 9, 2018, prepared by Nathaniel J. Holt, P.E.
- Plan labeled "Sheet 7 of 10," entitled "Construction Details," dated August 8, 2017, last revised April 9, 2018, prepared by Nathaniel J. Holt, P.E.
- Plan labeled "Sheet 8 of 10," entitled "Constraints Map," dated August 8, 2017, last revised April 9, 2018, prepared by Nathaniel J. Holt, P.E.
- Plan labeled "Sheet 9 of 10," entitled "Dimensional Analysis Plan," dated August 8, 2017, last revised April 9, 2018, prepared by Nathaniel J. Holt, P.E.
- Plan labeled "Sheet 10 of 10," entitled "Maintenance Notes," dated August 8, 2017, last revised April 9, 2018, prepared by Nathaniel J. Holt, P.E.

WHEREAS, the Applicant is seeking final subdivision approval of a two lot residential subdivision in the R-1A Zoning District; and

WHEREAS, the site is currently a 1.7-acre single family lot and a 1.05 acre abandoned right-of-way parcel; and

WHEREAS, the subdivision will create Lot 1 of approximately 1.002 net acres and Lot 2 of approximately 1.598 net acres; and

WHEREAS, proposed Lot 2 provides 11,443 square feet of Minimum Contiguous Buildable area and, therefore, does not meet the Minimum Contiguous Buildable Area requirement of 17,000 square feet; and

WHEREAS, proposed Lot 2 provides 50 feet of frontage along Old Orchard St where 125 feet of frontage is required; and

WHEREAS, the Applicant has obtained the required variances from the Zoning Board of Appeals; and

WHEREAS, the Integrated Plot Plan (IPP) depicts the removal of 14 Town-regulated trees; and

WHEREAS, several trees that are proposed to remain would be located very close to disturbed areas and are unlikely to survive; and

WHEREAS, when the lot is developed additional Town-regulated tree removal may be required to be removed to install the infrastructure, house and to provide a modest rear yard; and

WHEREAS, the IPP does not depict any Town-regulated steep slope disturbance; and

WHEREAS, the IPP does not depict any Town-regulated wetland or wetland buffer disturbance associated with the proposal; and

WHEREAS, when the lot is developed a Town-regulated wetland permit may be required to install the infrastructure, house and to provide a modest rear yard; and

WHEREAS, pursuant to Section 275-25.F.(6) of the Town Code, the Planning Board may require that the subdivider reserve, clear, grade, pave and otherwise improve an area of such size and location as will provide a safe and suitable place for the use of children awaiting school buses; and

WHEREAS, pursuant to Section 275-20 of the Town Code, the Planning Board, at the February 29, 2017 Planning Board meeting, determined that a bus stop location is not necessary; and

WHEREAS, a small portion of the lot with the existing house is located within the Town/Village of Harrison; and

WHEREAS, pursuant to Section 275-6 of the Town Code, for plats straddling municipal boundaries, approval by the Planning Board shall be granted only for that portion of the subdivision lying within the Town, and such approval shall be contingent upon approval by the appropriate municipal agency having jurisdiction over that portion lying within the adjacent municipality; and

WHEREAS, therefore, any North Castle approval shall be subject to obtaining approval from the Town/Village of Harrison; and

WHEREAS, the Planning Board adopted a Negative Declaration on May 14, 2018; and

WHEREAS, the Planning Board has evaluated the proposed total site disturbance, amount of clearing and amount of tree removal; and

WHEREAS, the Planning Board has inspected the site and is familiar with the nature of the site and the surrounding area; and

WHEREAS, the Planning Board has determined that the proposed addition of one (1) new single-family residence will contribute to the existing unmet need for additional park and recreational facilities in the Town, which need cannot be met on the subject property in accordance with the provisions of 275-37 of the Town of North Castle Town Code given its size and characteristics, and on that basis, has determined that the best interests of the Town and future residents of the proposed subdivision will be better served by requiring a cash payment to be earmarked for park, playground and/or other recreational purposes; and

WHEREAS, the Planning Board has received and considered comments from the public, Town Attorney, Town Engineer and Town Planner; and

WHEREAS, the requirements of the Land Subdivision Regulations, the Zoning Ordinance and *The Town of North Castle Comprehensive Plan - April 2018* have been met by the application; and

WHEREAS, under the Town Law the approval of said final subdivision plat by this Planning Board does not affect the power of the Town to change zoning regulations, nor act as an assurance of the granting of any building permits; and

WHEREAS, the Applicant received preliminary subdivision plat approval on May 14, 2018; and

WHEREAS, pursuant to Section 275-16.E of the Town Code, when the Planning Board deems the final plat to be in substantial agreement with a preliminary plat approved under the provisions of the Town Code and modified in accordance with the requirements of such approval if applicable, the Planning Board may waive the requirement for such a public hearing; and

NOW THEREFORE BE IT RESOLVED, that the final subdivision plat approval, as described herein

BE IT FURTHER RESOLVED, that this final subdivision plat approval shall expire 180 days from the date of this resolution unless a written request for an extension of final subdivision plat is granted by the Planning Board.

Conditions to be Completed Before the Final Plat is Signed
(The Planning Board Secretary's initial and date shall be placed in the space below to indicate that the condition has been satisfied.)

_____1. The lot areas included in the Bulk Zoning Table (gross, net and contiguous buildable) shall be coordinated with the areas included in the lot designations on the Preliminary Subdivision Plat to the satisfaction of the Town Planner.

_____2. The Applicant shall provide documentation from the North Castle Police Department and the North White Plains Fire department stating that the proposed common driveway provides adequate access for emergency services to the satisfaction of the Planning Department.

_____3. The plan shall illustrate proposed grades for the development and coordinate the location of any retaining walls that may be required on all plan sheets to the satisfaction of the Town Engineer.

_____4. Provisions to control and divert stormwater runoff from the existing drive shall be clarified on the plan to the satisfaction of the Town Engineer. As shown, it appears runoff will sheet flow onto the proposed drive. If so, the infiltration system must be sized accordingly.

_____5. A Stormwater Pollution Prevention Plan (SWPPP) in accordance with Chapter 267 — Stormwater Management of the Town Code shall be submitted to the satisfaction of the Town Engineer, including a stormwater analysis to mitigate stormwater runoff through the 100 -year design storm based on current extreme precipitation data accepted by the NYSDEC. Soil deep and percolation testing shall be performed by the applicant to be witnessed by the Town Engineer.

_____6. The plans and plat shall be revised to clearly indicate land area by Town to the satisfaction of the Town Planner.

_____7. The plan and plat shall clearly illustrate the area noted as a "potential increase in the right-of-way and road width" for future widening of Old Orchard Street, as required by Section 275-27 B of the Town Code to the satisfaction of the Town Engineer. The area shall be labeled on the plans and metes and bounds provided.

_____8. General Note #6 regarding granted variances, included on the Existing Conditions Plan, shall be coordinated with the same note provided on Sheets 2 of 10 through 5 of 10 to the satisfaction of the Town Engineer.

_____9. The plans shall include design details for the low-pressure sewer ejector system for review and coordination with the Town Water and Sewer Department to the satisfaction of the Town Engineer.

_____10. Ownership and maintenance obligations for the low-pressure sewer ejector system and limitations shall be coordinated with the Town Water and Sewer Department and included on the plans to the satisfaction of the Town Engineer.

_____11. The plans shall clarify proposed tree removal in the vicinity of the house to the satisfaction of the Town Engineer, as several of the same trees are noted to be removed and protected.

_____12. The existing sanitary manhole rim and invert elevations shown on the Sewage Ejector Line Profile shall be verified to the satisfaction of the Town Engineer. The plan and profile shall show locations for all tanks, cleanouts, isolation manholes, etc.

_____13. The plans shall include a Pressure Pipe Cleanout Detail appropriate for low-pressure force main sewers to the satisfaction of the Town Engineer.

_____14. Payment of all applicable fees, including any outstanding consulting fees.

_____15. The applicant shall furnish the necessary documentation confirming that all taxes assessed against the property have been paid.

_____16. The Applicant shall furnish the necessary documentation confirming that the plat can be filed immediately, that there are no liens on the plat whatsoever, or any other impediments to the filing of the Plat with the County Clerk.

_____17. The plat shall be referred to the Tax Assessor for review and for the assignment of the new tax lot numbers. The new tax lot numbers shall be placed on the subdivision plat.

18. The applicant shall prepare Final Construction Plans to the satisfaction of the Town Engineer incorporating all previous comments and requirements addressing landscaping, grading, storm drainage, sediment and erosion controls, etc, which are also outlined within Section 275-34 of the Town of North Castle Land Subdivision Regulations.

_____19. The plat map shall be signed by the Town/Village of Harrison Planning Board for the portion of the property located within the Town/Village of Harrison.

_____20. The plat shall be revised to include a new note, to the satisfaction of the Planning Department, that states "The Planning Board shall retain site plan jurisdiction over Lots 1 and 2."

_____21. The Applicant shall be required to submit an agreement, in recordable form satisfactory to the Town Attorney, concerning the construction, access and maintenance of the common driveway.

_____22. The Applicant shall secure approval and endorsement of the plat by the Westchester County Department of Health. All plans submitted to the Westchester County Department of Health for review and approval shall reflect the identification of all wetland boundaries and their respective surrounding regulated areas. A copy of the integrated plot plan containing the endorsement of the Westchester County Department of Health shall be submitted to the Town Engineer prior to the signing of the final linen.

_____23. The applicant shall produce a Final Subdivision Plat in accordance with the provisions of Section 275-33 of the North Castle Land Subdivision Regulations, and Final Construction Plans in accordance with 273-34 of the Town Land Subdivision Regulations.

_____24. The applicant shall submit payment of the recreation fee in the amount of ten-thousand dollars ($10,000) for each new building lot, for a total of $10,000 as stated in Section 275-37 of the Town Code.

_____25. The Applicant shall obtain approval by the Westchester County Department of Health (WCHD) for the proposed drilled well to the satisfaction of the Town Engineer.

Other Conditions:

1. The Planning Board shall retain site plan jurisdiction over Lots 1 and 2.

2. All references to "the Applicant" shall include the Applicant's successors and assigns.

****

Applicant, agreed and understood as to contents and conditions, including expiration, contained herein

5-15-18
Date

Connie Tedesco, Owner

5/15/18
Date

Frank Tedesco, Applicant

****

NORTH CASTLE PLANNING OFFICE, as to approval by the North Castle Planning Board

5/16/18
Date

Valerie Desimone, Planning Board Secretary
Certified as Approved by the North Castle Planning Board

KELLARD SESSIONS CONSULTING
As to Drainage and Engineering Matters

05/17/18
Date

Joseph M. Cermele, P.E.
Consulting Town Engineer

STEPHENS BARONI REILLY & LEWIS LLP
As to Form and Sufficiency

5/17/18
Date

Roland A. Baroni, Jr. Esq., Town Counsel

NORTH CASTLE PLANNING BOARD

5/29/2018
Date

Christopher Carthy, Chair

II

MS-4 APPROVAL

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

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:	Frank Tedesco
2. Contact Person:	Frank Tedesco
3. Street Address:	1460 Old Orchard Street
4. City/State/Zip:	North White Plains, NY
II. Project Site Information	
5. Project/Site Name:	Tedesco Site Plan Approval
6. Street Address:	1460 Old Orchard Street
7. City/State/Zip:	North White Plains, NY
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	Joseph Cermele, PE
9. Title/Position:	Consulting Town Engineer
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	Town of North Castle
12. MS4 SPDES Permit Identification Number: NYR20A	044
13. Contact Person:	Robert Melillo
14. Street Address:	17 Bedford Road
15. City/State/Zip:	Armonk, NY 10504
16. Telephone Number:	914-273-3000 ext 44

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: Robert Melillo

Title/Position: Building Inspector

Signature:

Date:

VI. Additional Information

(NYS DEC - MS4 SWPPP Acceptance Form - January 2015)

III

NYSDEC NOTICE OF INTENT

III

NYSDEC NOTICE OF INTENT

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-0-15-002

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)
FRANK TEDESCO

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
TEDESCO

Owner/Operator Contact Person First Name
FRANK

Owner/Operator Mailing Address
1462 OLD ORCHARD ST

City
NORTH WHITE PLAINS

State
NY

Zip
10604-

Phone (Owner/Operator)
914-227-0866

Fax (Owner/Operator)
[ ][ ][ ]-[ ][ ][ ]-[ ][ ][ ][ ]

Email (Owner/Operator)
JEWELSETMO@GMAIL.COM

FED TAX ID
[ ][ ]-[ ][ ][ ][ ][ ][ ][ ] (not required for individuals)

Project Site Information

Project/Site Name
CONNIE TEDESCO SUBDIVISION

Street Address (NOT P.O. BOX)
1462 OLD ORCHARD ST

Side of Street
○ North ○ South ◉ East ○ West

City/Town/Village (THAT ISSUES BUILDING PERMIT)
TOWN OF NORTH CASTLE

State: NY
Zip: 10604-
County: WESTCHESTER
DEC Region: 3

Name of Nearest Cross Street
STARKEY ROAD

Distance to Nearest Cross Street (Feet)
50

Project In Relation to Cross Street
○ North ○ South ○ East ◉ West

Tax Map Numbers
Section-Block-Parcel

Tax Map Numbers
123.01-1-15

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)
733751

Y Coordinates (Northing)
4510662

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	Post-Development Future Land Use
○ FOREST	○ SINGLE FAMILY HOME
○ PASTURE/OPEN LAND	● SINGLE FAMILY SUBDIVISION
○ CULTIVATED LAND	○ TOWN HOME RESIDENTIAL
○ SINGLE FAMILY HOME	○ MULTIFAMILY RESIDENTIAL
● SINGLE FAMILY SUBDIVISION	○ INSTITUTIONAL/SCHOOL
○ TOWN HOME RESIDENTIAL	○ INDUSTRIAL
○ MULTIFAMILY RESIDENTIAL	○ COMMERCIAL
○ INSTITUTIONAL/SCHOOL	○ MUNICIPAL
○ INDUSTRIAL	○ ROAD/HIGHWAY
○ COMMERCIAL	○ RECREATIONAL/SPORTS FIELD
○ ROAD/HIGHWAY	○ BIKE PATH/TRAIL
○ RECREATIONAL/SPORTS FIELD	○ LINEAR UTILITY (water, sewer, gas, etc.)
○ BIKE PATH/TRAIL	○ PARKING LOT
○ LINEAR UTILITY	○ CLEARING/GRADING ONLY
○ PARKING LOT	○ DEMOLITION, NO REDEVELOPMENT
○ OTHER	○ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
	○ OTHER

Number of Lots: 2

***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
1.7	0.5	0.0	0.1

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
0 %	0 %	100 %	0 %

7. Is this a phased project? ○ Yes ● No

8. Enter the planned start and end dates of the disturbance activities.

Start Date 04/01/2019 - End Date 06/30/2019

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.

Name

LONG ISLAND SOUND

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

OCEAN

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-0-15-002? ○ Yes ● No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-15-002? ○ 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?

TOWN OF HARRISON

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
NATHANIEL J HOLT

Contact Name (Last, Space, First)
HOLT NATHANIEL J

Mailing Address
592 ROUTE 22 SUITE 4C

City
PAWLING

State NY Zip 12564-

Phone 914-760-1800

Fax 772-204-9553

Email
DANOHOLTENGINEERING.NET

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-0-15-002. 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 NATHANIEL **MI** J

Last Name HOLT

Signature

Date 01/19/2019

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

LANDSCAPING

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.

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

FRANK

MI

Print Last Name

TEDESCO

Owner/Operator Signature

Date

/ /

IV

NARRATIVE

A. INTRODUCTION

1. General

This Stormwater Pollution Prevention Plan (SWPPP) presents the proposed Best Management Practices (BMPs) to control erosion and sedimentation, and manage stormwater associated with the construction of a single family residence located at 1460-1462 Old Orchard Street within the Town of North Castle, New York. The owner of the approximately 2.71 acre properties is Connie Tedesco. The subject property was "created" through the subdivision which received Conditional Subdivision Approval from the Town of North Castle Planning Board on May 14, 2018. Similarly, the Town of Harrison Planning Board granted subdivision approval relating to the approximately 74 square feet of land located within that township.

Although not necessarily apropos to the Stormwater Pollution Prevention Plan, the property owner obtained two variances from the Town of North Castle Zoning Board of Appeals: 1) Street Frontage; 2) Contiguous Buildable Area. However, those variances for Street Frontage and Net Contiguous Buildable Area facilitated a substantial reduction in disturbance and impervious area.

As approved, Lot 1 will be 1.07 acres in which the existing residence would be located; with the "new" building lot would be approximately 1.69 acres. Development of the property will include the extension of an existing driveway (creating a common driveway), the construction of the residence, a drilled domestic well and connection to a public sewer main located in Old Orchard Street.

This SWPPP has been revised to reflect minor revisions to the Site Plans subsequent to a Public Hearing held by the Town of North Castle Planning Board whereby additional Landscape screening was required. To facilitate the additional Landscaping, a portion of the infiltration system was relocated.

2. Purpose

This report has been prepared to outline the stormwater mitigation practices that will be implemented as a result of the proposed development of the project site. In accordance with the Town of North Castle Town Code, a stormwater mitigation plan is to be prepared to mitigate stormwater runoff associated with an increase in the peak rate of runoff associated with the increase in impervious area for storms up to and including the 100 year event.

3. Project Description

As proposed, Lot 2 will be consist of an approximately 2,230 square foot single family residence with a two car garage; access will be accomplished through the extension of the existing driveway serving Lot 1. Importantly, approximately 42,365 square feet of wooded wetlands and associated buffers will remain undisturbed. Requiring no wetland permits to develop the 1.69 acre lot.

The residence is to be of modular construction. Access to the property will be through the extension of the existing driveway which currently services the home of the owner, Connie Tedesco. Sewer service to Lot 2 will be facilitated through the connection to the existing low pressure sewer main located within Old Orchard Street. Provisions for the proposed sewer connection were made at the time that the main was constructed. Water service will be through the construction of a new well on the property. The subdivision plat was submitted to the Westchester County Department of Health and was endorsed for approval. At the time of building permit, an application will be made to the Health Department for a permit to construct the well.

Development of the property will require the temporary disturbance of approximately 19,500 square feet of currently undeveloped property. Upon completion, there will be an estimated 4,650 square feet of impervious area. The remaining disturbed areas will be stabilized through landscaping, and lawn (seed and/or sod). It is estimated that between 15 to 18 trees will be removed in conjunction with the development of the property. (Note that storm activity has damaged some trees that are currently ear-marked for removal). In consideration of the adjacent property owners a total of (at least) 24 evergreen trees will be "spotted" provide the maximum degree of screening as is possible.

To address the increase in impervious surfaces associated with the development of the lot, the stormwater mitigation system will be in the form of infiltration practices. As designed, the system will mitigate the 1, 2, 10 and 100 year events. The goal of the system is to maintain a zero net increase in the peak rate of runoff between the existing and proposed conditions.

The project site is not within a New York City designated watershed nor is within the City of White Plains watershed (runoff flows from the project ultimately reach the Long Island Sound).

B. STORMWATER MANAGEMENT PRACTICES

Methodology

The analysis utilized the HydroCAD Software 10.00-18 by HydroCAD Software Solutions and considered all storm events 1, 2, 10 and 100 year at a single design point located at the westerly side of the property.

Existing

Under the present conditions, there are a total of six "Design Points" associated with the property (simply named Design Points E-1 though E-6). With the exception of Design Point E-4, the other five design points will not be altered through construction of either impervious surfaces ore alteration of the topography. That is; with the exception of Design Point E-4, the peak rate of runoff for all design storms remain

unchanged. The attached HydroCAD analysis provides the peak rate of runoff for each Drainage Area even though there is no change in the future condition.

See Addendum A, entitled "Existing Hydrology" for a representation of the Drainage Areas and their respective design points.

Proposed/Future

As under the Existing Condition, there are a total of 6 Design Points (labeled as Design Points E-1 through E-6) associated with the stormwater runoff of the site. Again, as noted above, the only watershed that will experience any change due to construction is Drainage Area (DA) 4. Therefore in the Future condition, the remaining Drainage Areas (DA-1, DA-2, DA-3, DA-5 and DA-6) remain constant thereby requiring no stormwater mitigation.

In the developed condition, Drainage Area F-4 will remain constant at 63,580 square feet in total area. However, for the purposes of this analysis, it has been further divided into three sub sheds (denoted as "F-4-A", "F-4-B" and "F-4-C"). The respective areas of each sub shed is: 5,525 sf, 33,720 sf and 24,335 sf. Although construction activities will occur in each of the three sub sheds, only F-A and F-C undergo a change in the RCN value due to an increase in impervious areas. (F-4-B will experience regrading activities and restored with grass and/or landscaping). All runoff associated with the development within sub shed F-4-C will be mitigated while the runoff from F-4-A and F-4-B will flow to the design point uncontrolled.

Stormwater runoff will be intercepted with a system of catch basins, drain inlets and junction boxes connected by pipes which lead to the proposed infiltration system.

The infiltration practice to mitigate the increase in stormwater runoff within F-4-C is located within F-4-B.

In summary, the system has been designed to provide:

1. Stormwater mitigation for the 1, 2, 25 and 100 year storm events
2. Water quality will be mitigated by directing flows from impervious areas into an the proposed infiltration system which will completely retain the entire 1 year event

Stormwater

As noted, it is proposed to mitigate the increase in impervious area for each storm event through infiltration. On July 13, 2018 soil tests (deep test pit and percolation) were conducted at each of the proposed locations for treatment. The testing was witnessed by the Town of North Castle's Consulting Engineer.

Both deep tests reached a depth of 78" (fractured cobbles restricted any further depth primarily due to the limitation of the excavation equipment). The composition of the soil in both test pits was light brown sandy loam. The soil was found to be dry, with no evidence of ground water or mottling.

A percolation test was also conducted at each location. The rate of percolation at PT #1 was 20 inches/hour.

The selected device for mitigation is the Cultec Model #330XLHD Recharger and will consist of 12 such units installed in a 2 x 6 array.

The results of the analysis are tabulated below.

COMPARISON OF PRE AND POST REDEVELOPMENT CONDITION DESIGN POINT F-4 AFTER MITIGATION		
STORM EVENT	EXISTING CONDITION (cfs)	DESIGN POINT (cfs)
1 YEAR	1.04	0.67
2 YEAR	1.64	1.14
25 YEAR	5.11	4.01
100 YEAR	8.51	7.58

Water Quality

$WQv = [(P)(Rv)(A)]/12"/ft$

Where: $P = 1.5"$
$Rv = (0.5)\ [0.009\ (I)]$
$A = 5{,}075\ sf = 0.117\ ac\text{-}ft$
$I = 100$

$$WQv = \frac{[(1.5")(0.95)(0.117]}{12} = 0.014\ ac\text{-}ft$$

As indicated in the HydroCad 10.00-18 during the one year storm event, the combined volume of runoff "discarded" via infiltration is equal to 0.025 ac-ft. Therefore the required WQv has been provided.

C. EROSION AND SEDIMENT CONTROL METHODS

The Site Development Plans, prepared by Nathaniel J. Holt, PE includes a plan and details depicting the design of the proposed sediment and erosion controls which are to be implemented into the work during construction. The intent of the Sediment and Erosion Control Plan is first and foremost to limit the extent and amount of land disturbance at any given time; followed by the containment of sediment laden runoff created by the disturbance. If practicable, disturbed areas are to be treated as soon as possible followed by the (temporary and then final) stabilization of disturbed areas. The design of the sediment and erosion control system is based upon the NYS Standards and Specifications for Erosion and Sediment Control, dated November 2016. Also contained with the Site Development Plans is a continuing maintenance program which is to be implemented for the control of sediment

transport and erosion control after throughout the life of the construction process. As stipulated within the General Permit, a Qualified Contractor is responsible for the installation and maintenance during the course of construction. Upon completion of the work, the Owner will be the responsible person to perform the maintenance of the practices installed.

1. Temporary Sediment and Erosion Control Measures

All temporary sediment and erosion control measures shall be put in place and maintained throughout the course of construction. The temporary measures depicted on the Site Development Plans are considered to be the minimum requirements to control sediment laden runoff and erosion. Outlined below is a description of those measures shown on the Site Development Plans.

- Stabilized Construction Entrance will be constructed at the entrance to the site. The stabilized construction entrance will be of AASHTO designation No 1 rock. The minimum dimensions of the entrance shall be 50 feet in length, twenty feet in width and eight inches deep.

- Silt Fence is a geotextile material used to intercept sediment-laden runoff from small drainage areas. The fence is to be installed parallel to the site contours.

- Inlet Protection is either made of a geotextile material or hay bales which are placed around a drain inlet. The purpose of these measures is to limit the amount of sediment laden runoff that enters into the (existing or proposed) drainage system.

- Dust Control is the wetting down of disturbed areas and travel ways used by construction vehicles. Dust control shall be employed on a regular basis, however during periods of extended dry weather, the contractor shall sprinkle the area more often.

- Seeding is applied to create a fast dense vegetative cover over the disturbed areas to prevent/limit soil erosion. Seeded areas will be mulched to provide a damp germinating medium for the grass.

- Mulching is used as an anchor medium for seeded and disturbed areas.

2. Permanent Erosion and Sediment Control Measures

The purpose of permanent erosion and sediment controls is to permanently stabilize the ground surface via vegatative and structural practices, while controlling and reducing runoff velocities. Towards the completion of the re-development of the site, permanent erosion and sediment control measures will be implemented for long term protection. The property owner will be the responsible party for the long term maintenance of these measures. The following permanent sediment and erosion control measures will be implemented into the development of the site.

- Seeding a minimum of 80% vegetative cover will be employed to produce a permanent uniform erosion resistant surface. The seeded areas will be mulched with straw or similar manufactured material designed for such purposes. The optimum seasons for planting are early spring and fall. Summer seeding is acceptable providing sufficient water is available.

- Grading is the re-contouring of the existing land surface to create the proposed site improvements while directing runoff to the stormwater mitigation systems. Grading also considers limiting the extent of steep slopes which tend to be highly erodible. Proper grading and compaction techniques will minimize the amount of long term erosion on the site. Wherever possible retaining walls have been implemented into the design to avoid unnecessary disturbance and grading operations.

- Sumps will be incorporated into the proposed drainage structures. The purpose of the sumps is to provide and containment area for course sands and grits, before they flow into the drainage system. The minimum depth of each sump is to be 36 inches.

- Underdrain will be installed on uphill side of the driveway to intercept surface flows thereby reduced the potential for erosion related washouts.

- Stormwater Mitigation in the form of infiltration was previously installed in the front yard of the property to mitigate drainage related conditions associated with the impervious surfaces in the vicinity. The design of the new driveway will enable the continued use of this system thereby providing mitigation beyond what is required under the regulations.

- Retaining Walls where conditions permit, retaining walls have been proposed to minimize disturbance associated with grading.

D. MAINTENANCE AND INSPECTION REQUIREMENTS

Inspection and maintenance of the sediment and erosion control measures are required to ensure that the practices are performing as intended. Temporary and permanent maintenance inspection requirements are discussed in greater detail below. Proper maintenance and inspections will ensure longevity and effectiveness of the Stormwater Pollution Prevention Plan and the Erosion/Sediment Control Plan.

Contractors and Subcontractors

The Contractor responsible for the installation, constructing, repairing, replacing, inspecting and maintaining of the erosion and sediment control is listed under the "Property Information" at the front of this document. Similarly, the Owner of the property will be responsible for the post construction maintenance of the stormwater management practices included with the SWPPP and is listed in the front of this document under "Property Information". Prior to the start of construction, the Contractor shall name the trained contractor of his firm who will be responsible for the implementation of the above stated practices.

Qualified Inspectors

At the time of this writing, the function of performing site inspections will be Nathaniel J. Holt. However should there be a change the qualified inspector may be any of those listed below:

1. A qualified inspector would have to be:

    a. Licensed Professional Engineer
    b. Certified Professional in Erosion and Sediment Control (CPESC)
    c. Registered Landscape Architect
    d. A person 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 hours of Department endorsed training in proper erosion and sediment control principals from a Soil and Water Conservation District, or other Department endorsed entity.

2. A qualified inspector cannot be the trained contractor unless they meet the conditions of Appendix A of GP # 0 -15-002.

3. Unless otherwise notified by the Department, the qualified inspector shall conduct site inspections in accordance wit the following time table:

a. for construction sites where soil disturbance activities are on-going, the qualified inspector shall conduct a site inspection at least once very seven (7) calendar days.
b. for construction sites where soil disturbance activities are on-going, and th owner or operator has received authorization in accordance with Part IIC.3 to disturb greater that five (5) acres of soil at any one time, the qualified inspector shall conduct at least two site inspections every seven calendar days. The two inspections shall b separated by a minimum of two 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 calendar days
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 for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.
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 site inspections every seven calendar days. The two inspections shall be separated by a minimum of two fill calendar days.

Short and Long Term Maintenance and Inspection Requirements

Periodic inspections during construction is to be performed to verify all practices are functioning properly, correctly maintained and accumulated sediment is removed from all structures; including pipes. The Contractor will also examine the site for any evidence of soil erosion, the potential for pollutants to enter the storm drain system, turbid discharges at all outfalls and the potential for soil and other materials to be transported onto the public roadways. In addition, to these guidelines, the project plans will provide more specific erosion control guidelines as well as a construction sequencing protocol to serve as a general overview for the contractor through the construction process. The contractor shall be responsible for the maintenance of all temporary erosion and sediment control measures throughout the work. Maintenance will include, but is not necessarily limited to:

- in general sediment and erosion control practices are to be inspected on a daily basis before the end of the work day. Sufficient time shall be provided so that any repairs or replacement of the practices can take place before the workers have left for the day. In those instances where there has been a heavy rainfall overnight, the contractor shall inspect and repair any breaches in the practices before starting any other work on the site.

- sediment deposits shall be removed from silt fence when the accumulation reaches 1/3 the total height of the fabric. All removed sedimentation shall be incorporated into fill sections upstream of the practice or as may be directed by the engineer of record. Silt fence that becomes damaged during this process or that became damaged through normal use, shall be replaced immediately.

- the construction entrance is to be checked regularly to ensure that no sediment is deposited onto the public roadway. Any sedimentation that is accumulated onto the roadway shall be removed immediately or no later than the end of the work day. In addition, accumulation of dirt and debris on the surface of the construction entrance requires that the stone and debris be removed and the stone replaced.

- inlet protection will be inspected for debris and sediment accumulation or clogging. In the event that debris and sediment accumulation has clogged the device such that it can no longer function as intended, the contractor shall either remove the clogged sections of the device (along with any debris) and replace it immediately. In the alternative, the contractor may clean the affected portions of the device.

- inlets and outlets to subsurface drainage piping are to remain clear at all times. Periodic inspection of the pipe network is to be performed to ensure that the system is clear and free of debris accumulation. Any material that has accumulated within the pipes is to be removed and properly disposed of. If necessary the contractor shall clear the pipe with hydraulic pressure or in the extreme, remove the affected sections of pipe and replace it.

- in general pipe trenches are not be serve as a dewatering device and not to be left open over any extended period of time. However, when sedimentation and silt laden materials enter the trench it shall be removed and properly disposed.

- dust control shall consist of the moistening of all exposed regraded or disturbed areas. Ideally, the dust control operation is to occur twice per day until such time as either temporary or permanent cover is established.

- in preparation of placing vegetated cover, the contractor shall fine rake the surface parallel to the contours of the slope or gradient. The intent is to minimized concentrated flows or rivulets.

- as soon as is practical and following the fine grading, the disturbed areas shall be stabilized with permanent cover (vegetation, pavement, etc). Should it be determined that the permanent cover will not be installed for a period of

fourteen days or longer, then the contractor shall be required to place temporary seed, mulch or similar stabilization methods.

- inspection and removal of accumulated sediments within the water quality structures shall follow the maintenance guidelines of the manufacturer. Any material removed from these structures shall be properly disposed of in accordance with all applicable regulations.

- inspection and sediment removal within the subsurface detention systems shall occur on an at least annual basis. Sediment accumulation shall be removed when deposits reach approximately 20% of the total storage capacity of each system. (The contractor shall place a painted mark within the access manholes indicting the point at which the debris is to be removed) sediment removal shall be accomplished using water jets and vacuums. Under no circumstances shall the debris be flushed out into the downstream drainage channel(s), rather it shall be collected and disposed of in accordance with all applicable regulations.

E. CONSTRUCTION SEQUENCING

From a construction perspective, the work is a relatively simple process: demolish the existing structures, construct a new driveway and restore the ground associated with the original driveway and demolished structures. More specifically:

1. Mobilize for construction.
2. Stake the location of the proposed sedimentation and erosion control measures, contact the Town Engineer for inspection.
3. Upon approval, install sediment and erosion controls.
4. Commence with clearing operations designated for removal.
5. Repair any damaged erosion controls due to the tree removal operations
6. Strip and store topsoil within grading limit lines.
7. Excavate rough grades to form driveway. Install crushed stone or "Item 4" along its length to create a stabile access road.
8. Commence with retaining wall construction
9. Excavate for building foundation. Haul excess material off-site.
10. Initiate construction of building footings and foundations.
11. Complete footings and foundations for building.
12. Extend sewer service the house
13. Extend electric, cable, telephone, etc services into the site.
14. Install drain inlets and infiltration units as shown. Protect system from construction vehicles and activities.
15. Complete retaining walls.
16. Place and compact sub base course material.
17. Install curbing.
18. Install landscaping
19. Install asphalt pavement

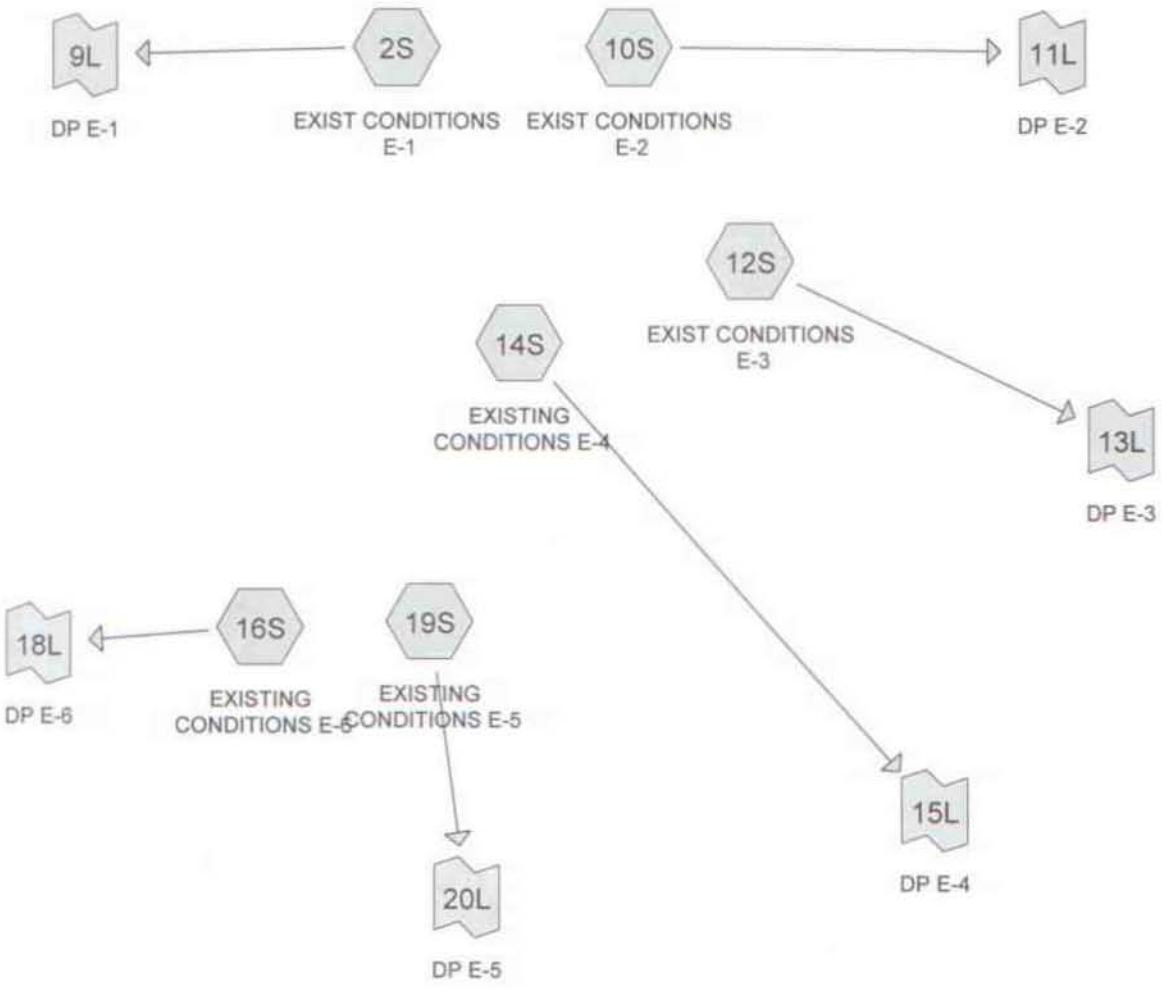
20. Import topsoil, landscaping, seed and mulch all disturbed areas.
21. Complete construction of residence
22. Final cleanup and demobilization.

F. CONCLUSION

The proposed development of the property will be completed in accordance with the NYSDEC Design Manual and the Town of North Castle Ordinances. The proposed stormwater mitigation system will mitigate the peak rate of runoff for the 1, 2, 25 and 100 year storm event such that there will be a zero net increase in the peak rate of runoff when compared to existing conditions. Importantly, water quality will be completely retained on-site through infiltration.

APPENDIX A

PRE-DEVELOPMENT ANALYSIS



Subcat Reach Pond Link

Routing Diagram for tedesco.2019.0323
Prepared by holt engineering, Printed 7/20/2020

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.546	74	>75% Grass cover, Good, HSG C (2S, 10S)
0.206	98	Paved parking, HSG C (2S, 10S, 14S)
1.593	73	Woods, Fair, HSG C (12S, 14S, 16S)
0.409	77	Woods, Poor, HSG C (19S)
2.753	**76**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.753	HSG C	2S, 10S, 12S, 14S, 16S, 19S
0.000	HSG D	
0.000	Other	
2.753		**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	0.546	0.000	0.000	0.546	>75% Grass cover, Good	2S, 10S
0.000	0.000	0.206	0.000	0.000	0.206	Paved parking	2S, 10S, 14S
0.000	0.000	1.593	0.000	0.000	1.593	Woods, Fair	12S, 14S, 16S
0.000	0.000	0.409	0.000	0.000	0.409	Woods, Poor	19S
0.000	**0.000**	**2.753**	**0.000**	**0.000**	**2.753**	**TOTAL AREA**	

Time span=0.00-240.00 hrs, dt=0.05 hrs, 4801 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 2S: EXIST CONDITIONS E-1 Runoff Area=14,165 sf 12.35% Impervious Runoff Depth=0.92"
Tc=8.0 min CN=77 Runoff=0.31 cfs 0.025 af

Subcatchment 10S: EXIST CONDITIONS Runoff Area=13,745 sf 17.40% Impervious Runoff Depth=0.97"
Tc=8.0 min CN=78 Runoff=0.32 cfs 0.026 af

Subcatchment 12S: EXIST CONDITIONS E-3 Runoff Area=7,495 sf 0.00% Impervious Runoff Depth=0.73"
Tc=10.0 min CN=73 Runoff=0.11 cfs 0.010 af

Subcatchment 14S: EXISTING CONDITIONS Runoff Area=63,550 sf 7.62% Impervious Runoff Depth=0.82"
Flow Length=501' Tc=12.4 min CN=75 Runoff=1.04 cfs 0.100 af

Subcatchment 16S: EXISTING CONDITIONS Runoff Area=3,165 sf 0.00% Impervious Runoff Depth=0.73"
Tc=5.0 min CN=73 Runoff=0.06 cfs 0.004 af

Subcatchment 19S: EXISTING CONDITIONS Runoff Area=17,815 sf 0.00% Impervious Runoff Depth=0.92"
Tc=10.0 min CN=77 Runoff=0.36 cfs 0.031 af

Link 9L: DP E-1 Inflow=0.31 cfs 0.025 af
Primary=0.31 cfs 0.025 af

Link 11L: DP E-2 Inflow=0.32 cfs 0.026 af
Primary=0.32 cfs 0.026 af

Link 13L: DP E-3 Inflow=0.11 cfs 0.010 af
Primary=0.11 cfs 0.010 af

Link 15L: DP E-4 Inflow=1.04 cfs 0.100 af
Primary=1.04 cfs 0.100 af

Link 18L: DP E-6 Inflow=0.06 cfs 0.004 af
Primary=0.06 cfs 0.004 af

Link 20L: DP E-5 Inflow=0.36 cfs 0.031 af
Primary=0.36 cfs 0.031 af

Total Runoff Area = 2.753 ac Runoff Volume = 0.196 af Average Runoff Depth = 0.86"
92.51% Pervious = 2.547 ac 7.49% Impervious = 0.206 ac

Summary for Subcatchment 2S: EXIST CONDITIONS E-1

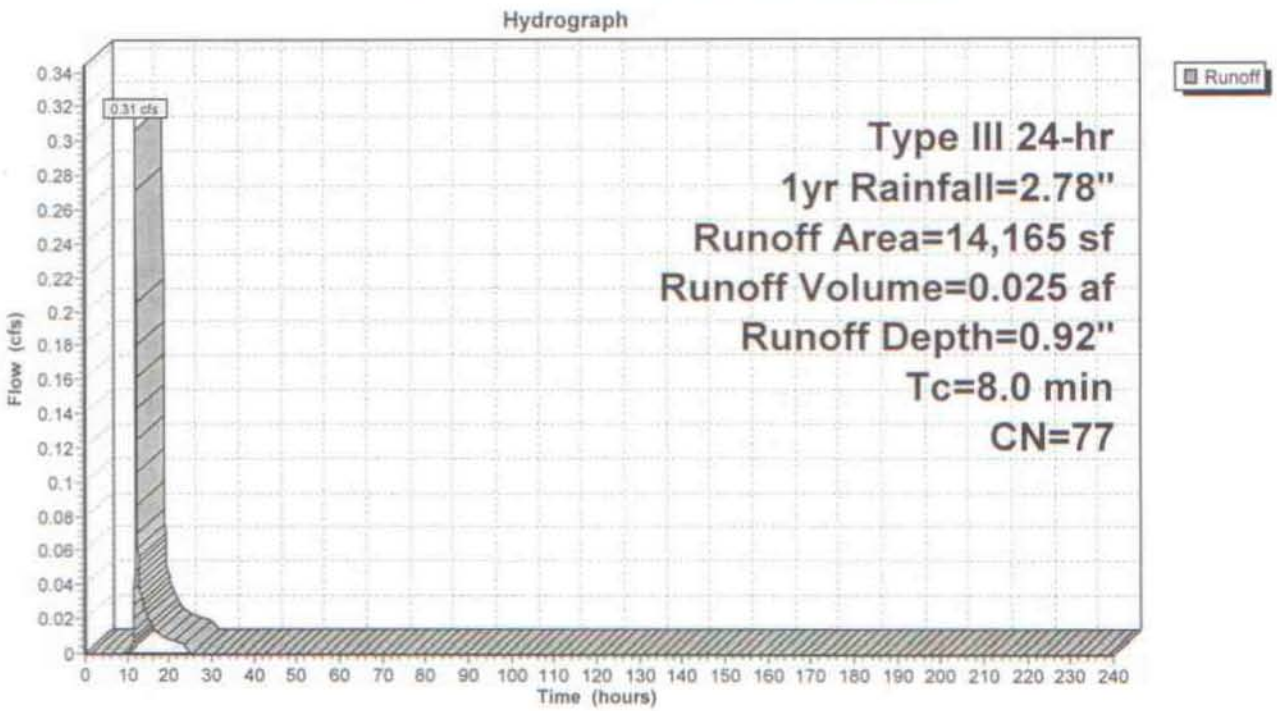
Runoff = 0.31 cfs @ 12.12 hrs, Volume= 0.025 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 1yr Rainfall=2.78"

Area (sf)	CN	Description
1,750	98	Paved parking, HSG C
12,415	74	>75% Grass cover, Good, HSG C
14,165	77	Weighted Average
12,415		87.65% Pervious Area
1,750		12.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					Direct Entry, Point a to Point B

Subcatchment 2S: EXIST CONDITIONS E-1



Summary for Subcatchment 10S: EXIST CONDITIONS E-2

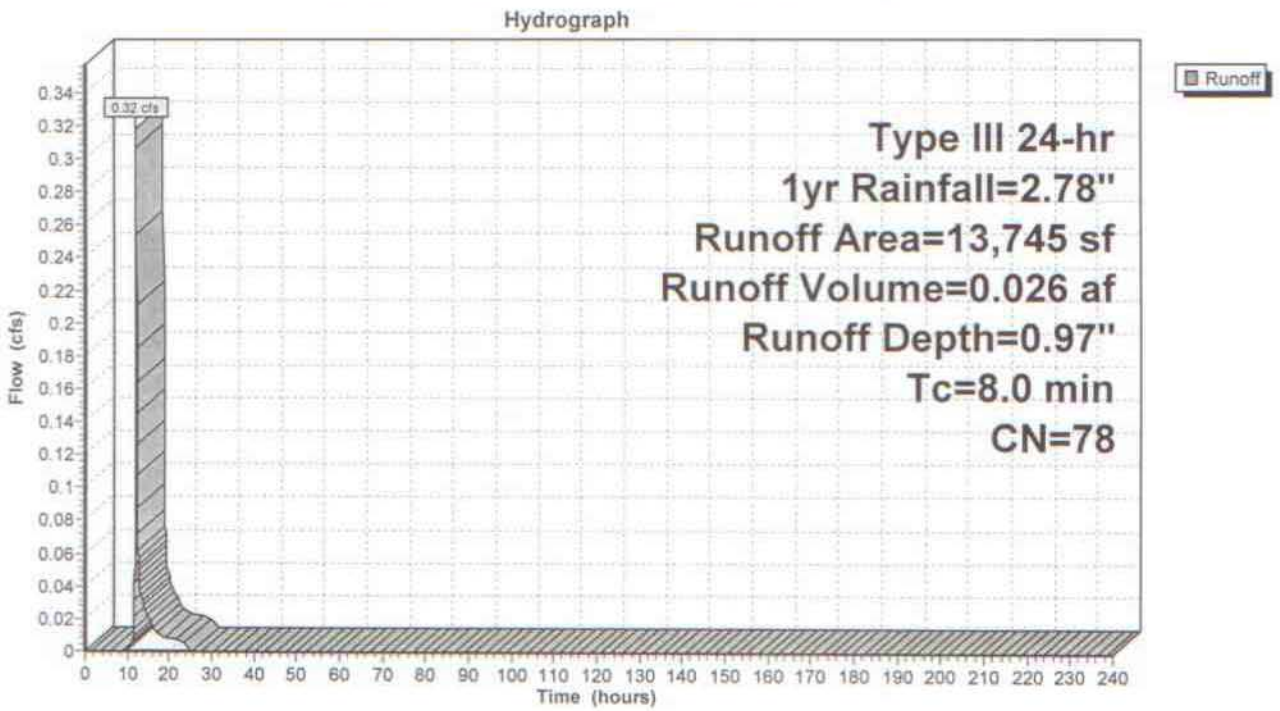
Runoff = 0.32 cfs @ 12.12 hrs, Volume= 0.026 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 1yr Rainfall=2.78"

Area (sf)	CN	Description
2,392	98	Paved parking, HSG C
11,353	74	>75% Grass cover, Good, HSG C
13,745	78	Weighted Average
11,353		82.60% Pervious Area
2,392		17.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					Direct Entry, OVERLAND FLOW

Subcatchment 10S: EXIST CONDITIONS E-2



Summary for Subcatchment 12S: EXIST CONDITIONS E-3

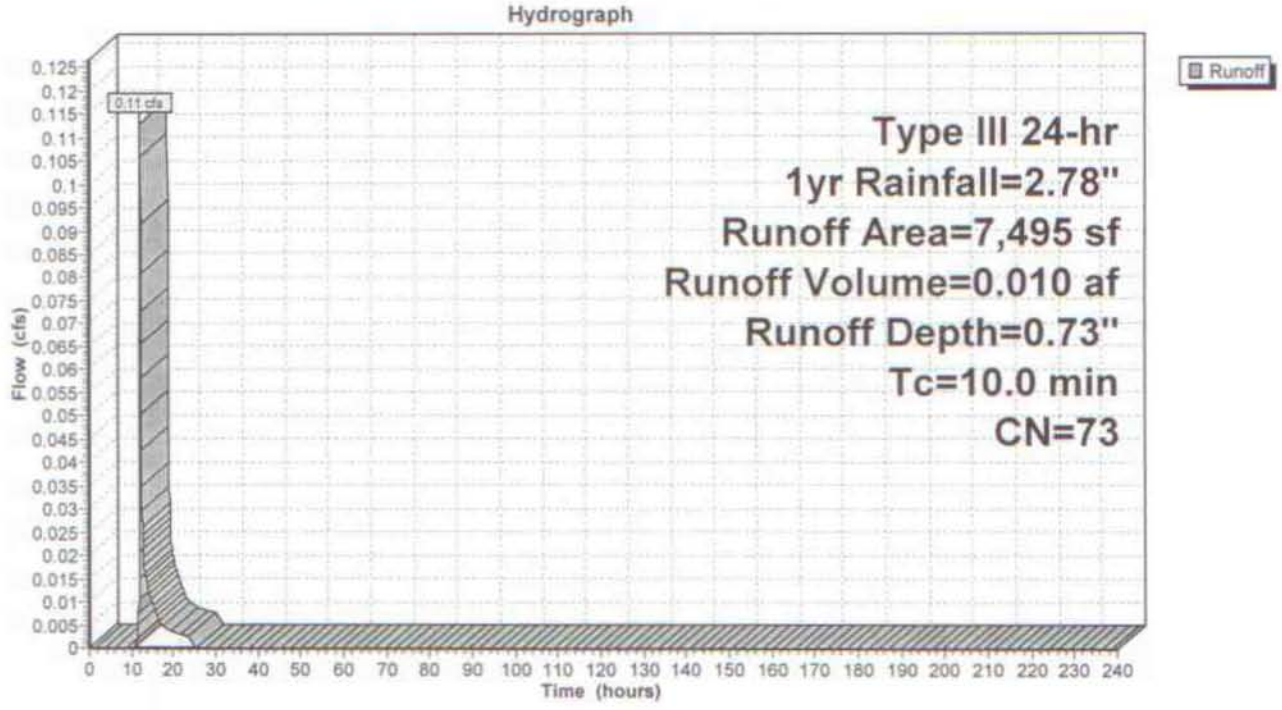
Runoff = 0.11 cfs @ 12.16 hrs, Volume= 0.010 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 1yr Rainfall=2.78"

Area (sf)	CN	Description
7,495	73	Woods, Fair, HSG C
7,495		100.00% Pervious Area

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

Subcatchment 12S: EXIST CONDITIONS E-3



Summary for Subcatchment 14S: EXISTING CONDITIONS E-4

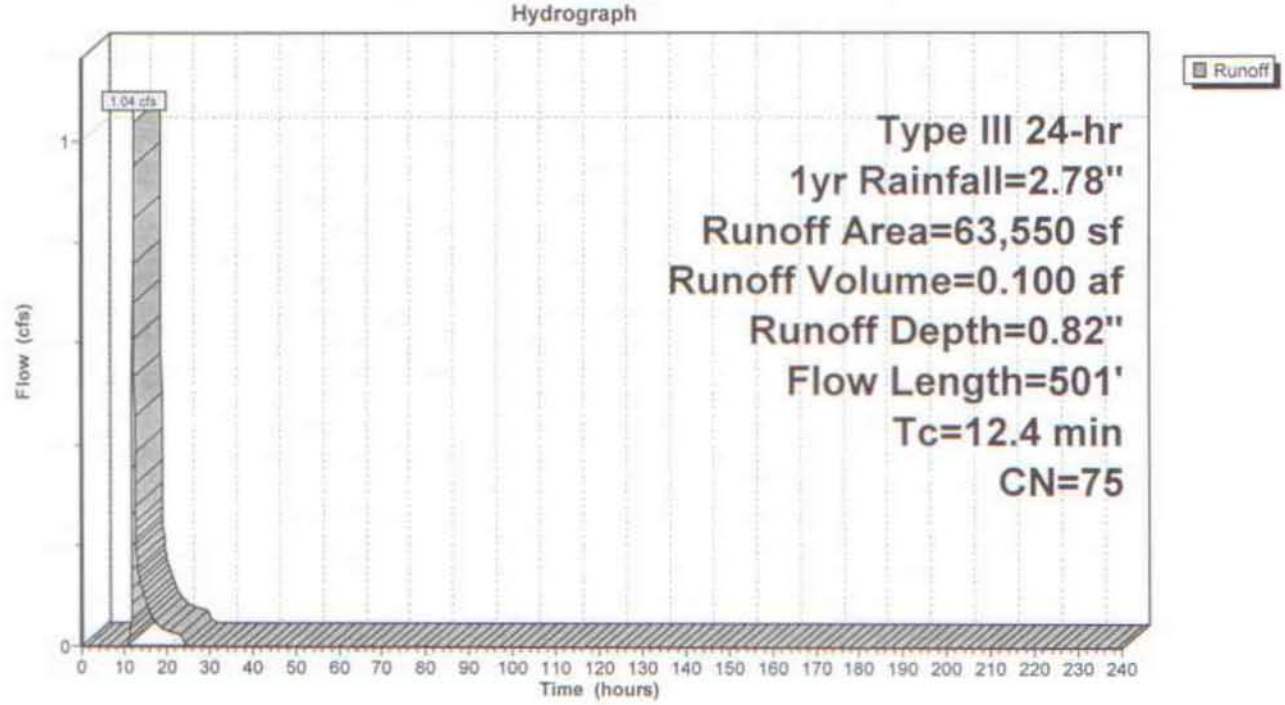
Runoff = 1.04 cfs @ 12.19 hrs, Volume= 0.100 af, Depth= 0.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 1yr Rainfall=2.78"

Area (sf)	CN	Description
4,840	98	Paved parking, HSG C
58,710	73	Woods, Fair, HSG C
63,550	75	Weighted Average
58,710		92.38% Pervious Area
4,840		7.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	76	0.0250	1.49		**Sheet Flow, 1 to 2** Smooth surfaces n= 0.011 P2= 3.50"
0.8	25	0.0100	0.50		**Shallow Concentrated Flow, 2 to 3** Woodland Kv= 5.0 fps
1.2	100	0.0800	1.41		**Shallow Concentrated Flow, 3 to 4** Woodland Kv= 5.0 fps
9.5	300	0.0110	0.52		**Shallow Concentrated Flow, 4 to DP** Woodland Kv= 5.0 fps
12.4	501	Total			

Subcatchment 14S: EXISTING CONDITIONS E-4



Summary for Subcatchment 16S: EXISTING CONDITIONS E-6

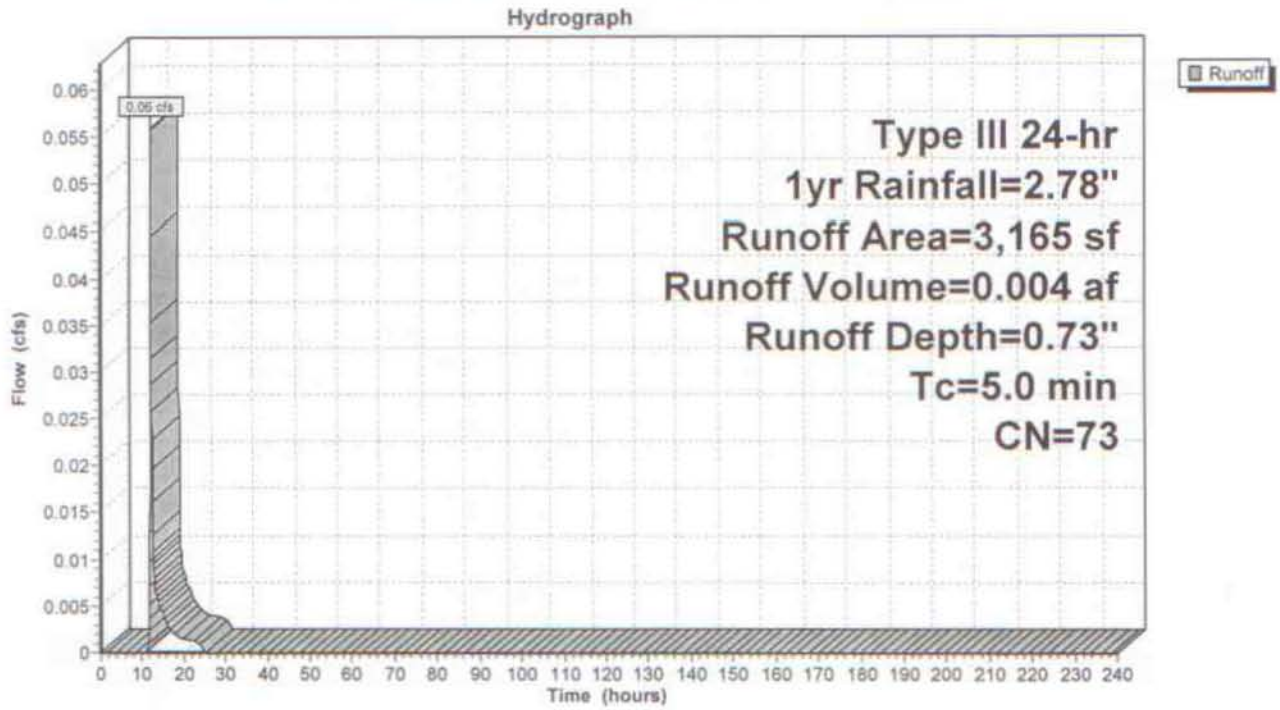
Runoff = 0.06 cfs @ 12.09 hrs, Volume= 0.004 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 1yr Rainfall=2.78"

Area (sf)	CN	Description
3,165	73	Woods, Fair, HSG C
3,165		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, A TO DP

Subcatchment 16S: EXISTING CONDITIONS E-6



Summary for Subcatchment 19S: EXISTING CONDITIONS E-5

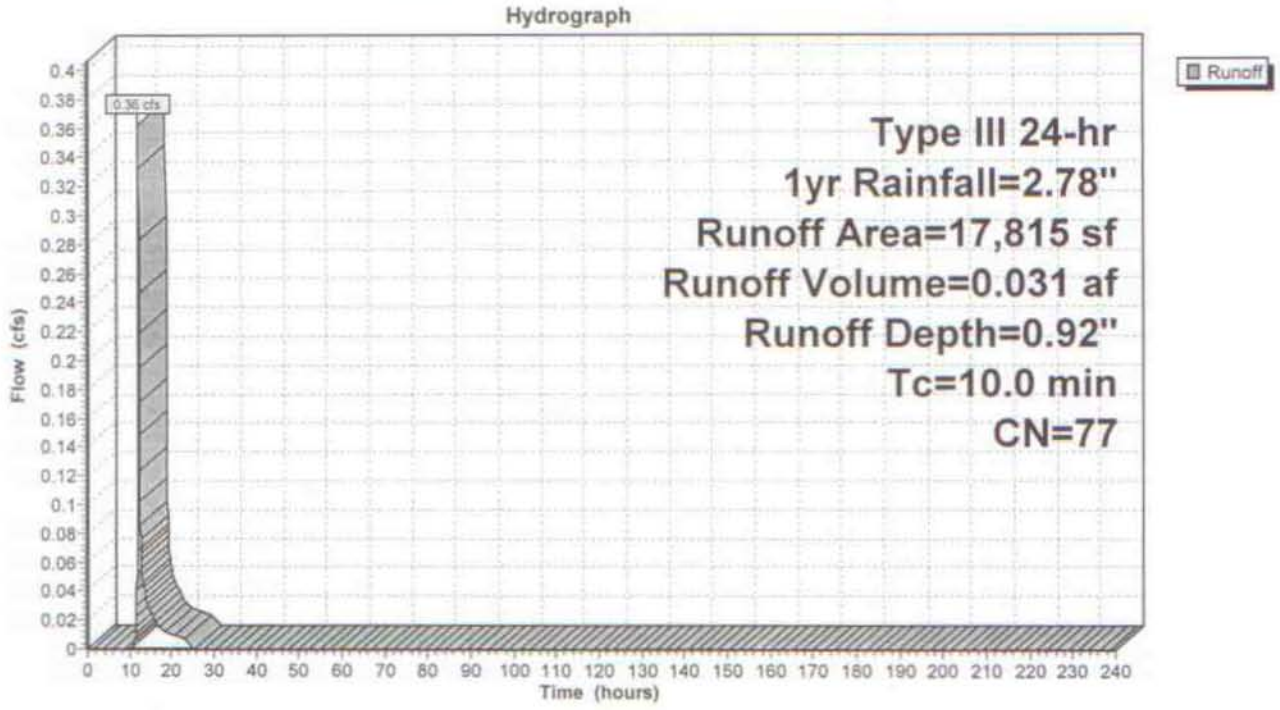
Runoff = 0.36 cfs @ 12.15 hrs, Volume= 0.031 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 1yr Rainfall=2.78"

Area (sf)	CN	Description
17,815	77	Woods, Poor, HSG C
17,815		100.00% Pervious Area

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

Subcatchment 19S: EXISTING CONDITIONS E-5

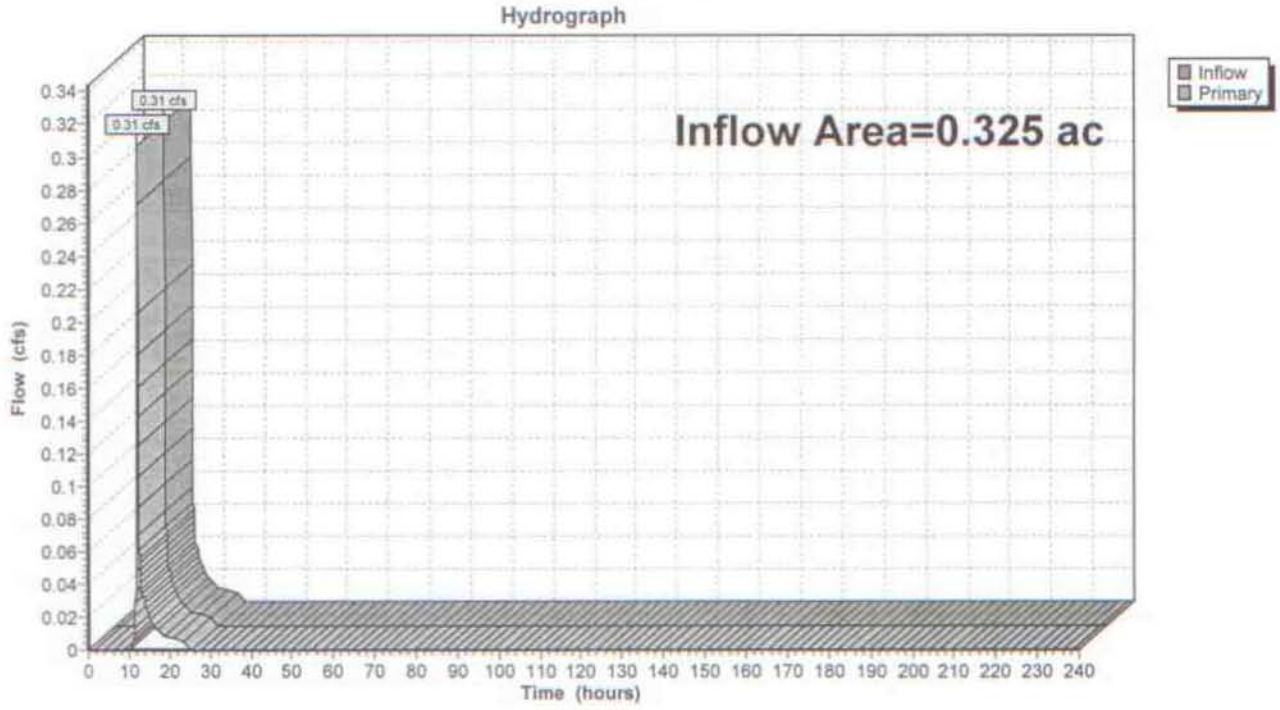


Summary for Link 9L: DP E-1

Inflow Area = 0.325 ac, 12.35% Impervious, Inflow Depth = 0.92" for 1yr event
Inflow = 0.31 cfs @ 12.12 hrs, Volume= 0.025 af
Primary = 0.31 cfs @ 12.12 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 9L: DP E-1

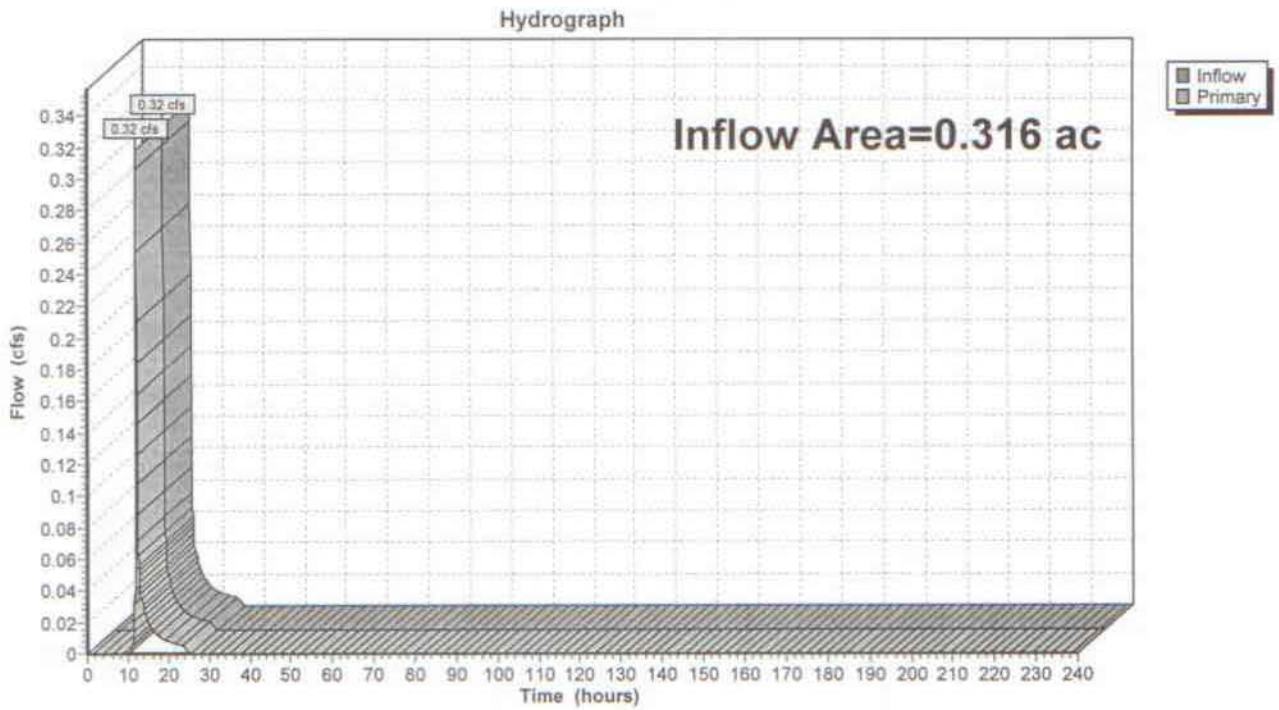


Summary for Link 11L: DP E-2

Inflow Area = 0.316 ac, 17.40% Impervious, Inflow Depth = 0.97" for 1yr event
Inflow = 0.32 cfs @ 12.12 hrs, Volume= 0.026 af
Primary = 0.32 cfs @ 12.12 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 11L: DP E-2

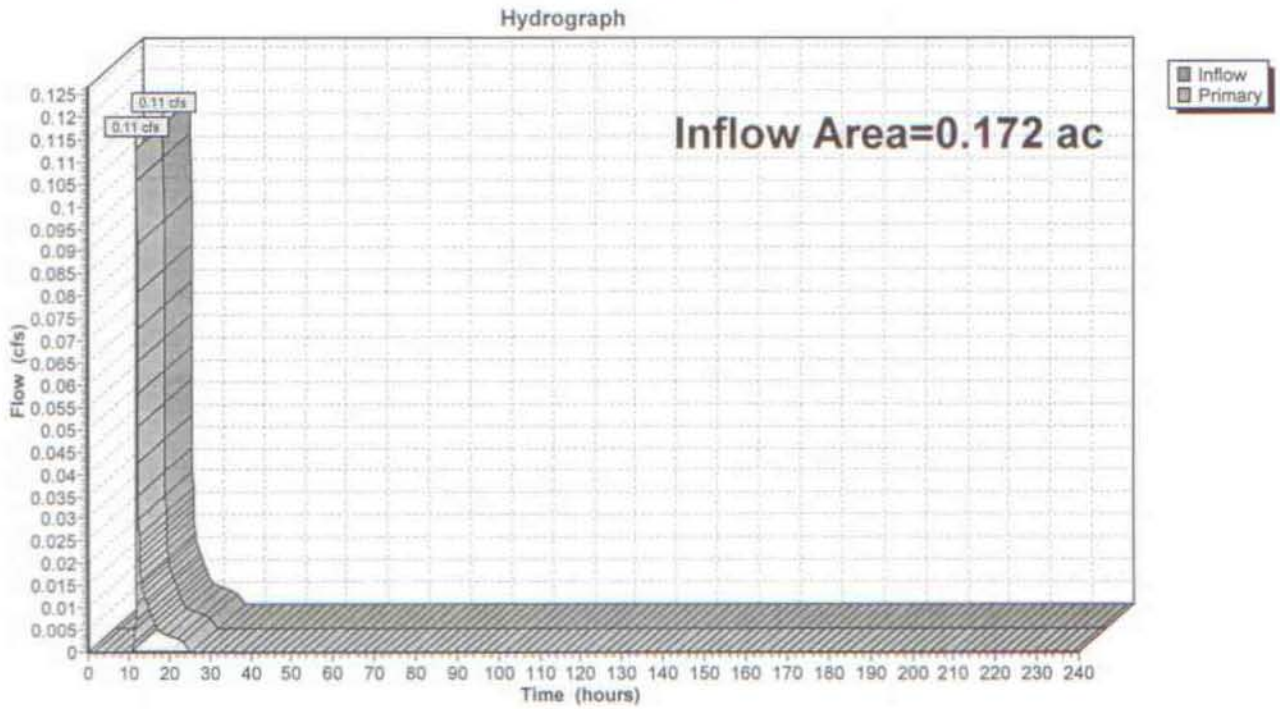


Summary for Link 13L: DP E-3

Inflow Area = 0.172 ac, 0.00% Impervious, Inflow Depth = 0.73" for 1yr event
Inflow = 0.11 cfs @ 12.16 hrs, Volume= 0.010 af
Primary = 0.11 cfs @ 12.16 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 13L: DP E-3

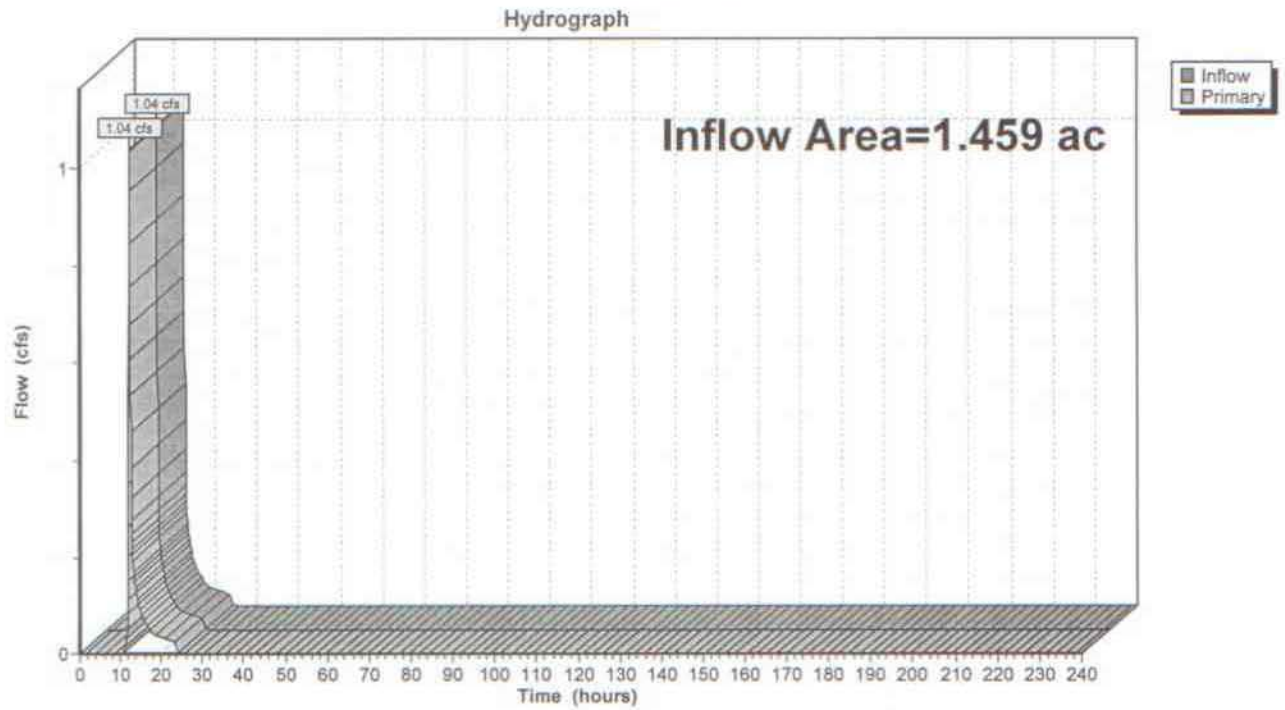


Summary for Link 15L: DP E-4

Inflow Area = 1.459 ac, 7.62% Impervious, Inflow Depth = 0.82" for 1yr event
Inflow = 1.04 cfs @ 12.19 hrs, Volume= 0.100 af
Primary = 1.04 cfs @ 12.19 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 15L: DP E-4

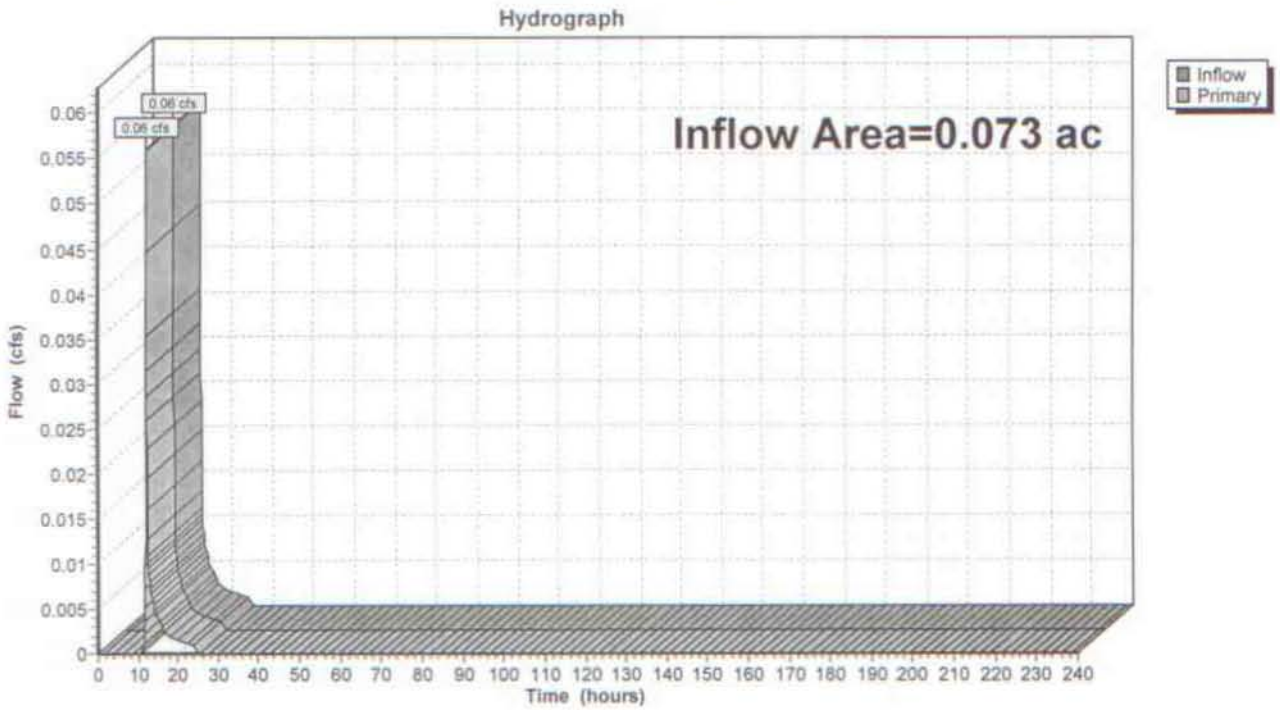


Summary for Link 18L: DP E-6

Inflow Area = 0.073 ac, 0.00% Impervious, Inflow Depth = 0.73" for 1yr event
Inflow = 0.06 cfs @ 12.09 hrs, Volume= 0.004 af
Primary = 0.06 cfs @ 12.09 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 18L: DP E-6

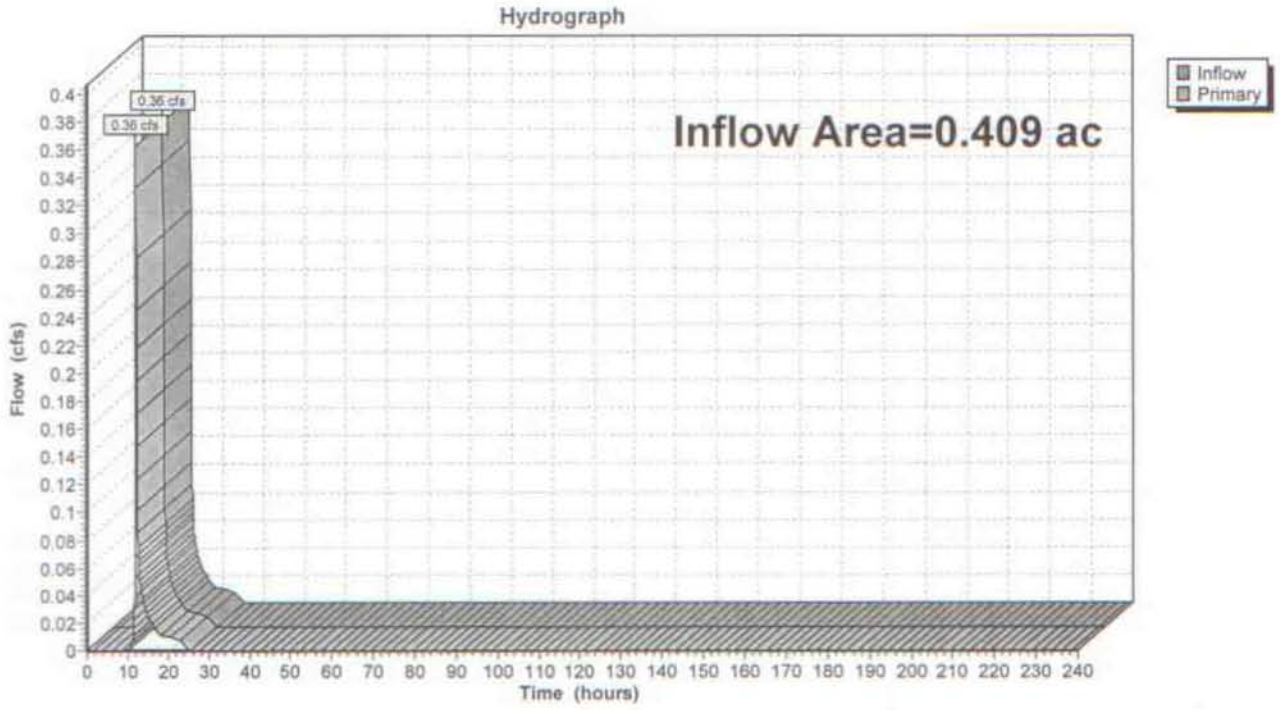


Summary for Link 20L: DP E-5

Inflow Area = 0.409 ac, 0.00% Impervious, Inflow Depth = 0.92" for 1yr event
Inflow = 0.36 cfs @ 12.15 hrs, Volume= 0.031 af
Primary = 0.36 cfs @ 12.15 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 20L: DP E-5



Time span=0.00-240.00 hrs, dt=0.05 hrs, 4801 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 2S: EXIST CONDITIONS E-1 Runoff Area=14,165 sf 12.35% Impervious Runoff Depth=1.36"
Tc=8.0 min CN=77 Runoff=0.47 cfs 0.037 af

Subcatchment 10S: EXIST CONDITIONS Runoff Area=13,745 sf 17.40% Impervious Runoff Depth=1.43"
Tc=8.0 min CN=78 Runoff=0.48 cfs 0.038 af

Subcatchment 12S: EXIST CONDITIONS E-3 Runoff Area=7,495 sf 0.00% Impervious Runoff Depth=1.12"
Tc=10.0 min CN=73 Runoff=0.18 cfs 0.016 af

Subcatchment 14S: EXISTING CONDITIONS Runoff Area=63,550 sf 7.62% Impervious Runoff Depth=1.24"
Flow Length=501' Tc=12.4 min CN=75 Runoff=1.64 cfs 0.151 af

Subcatchment 16S: EXISTING CONDITIONS Runoff Area=3,165 sf 0.00% Impervious Runoff Depth=1.12"
Tc=5.0 min CN=73 Runoff=0.09 cfs 0.007 af

Subcatchment 19S: EXISTING CONDITIONS Runoff Area=17,815 sf 0.00% Impervious Runoff Depth=1.36"
Tc=10.0 min CN=77 Runoff=0.55 cfs 0.046 af

Link 9L: DP E-1 Inflow=0.47 cfs 0.037 af
Primary=0.47 cfs 0.037 af

Link 11L: DP E-2 Inflow=0.48 cfs 0.038 af
Primary=0.48 cfs 0.038 af

Link 13L: DP E-3 Inflow=0.18 cfs 0.016 af
Primary=0.18 cfs 0.016 af

Link 15L: DP E-4 Inflow=1.64 cfs 0.151 af
Primary=1.64 cfs 0.151 af

Link 18L: DP E-6 Inflow=0.09 cfs 0.007 af
Primary=0.09 cfs 0.007 af

Link 20L: DP E-5 Inflow=0.55 cfs 0.046 af
Primary=0.55 cfs 0.046 af

Total Runoff Area = 2.753 ac Runoff Volume = 0.294 af Average Runoff Depth = 1.28"
92.51% Pervious = 2.547 ac 7.49% Impervious = 0.206 ac

Summary for Subcatchment 2S: EXIST CONDITIONS E-1

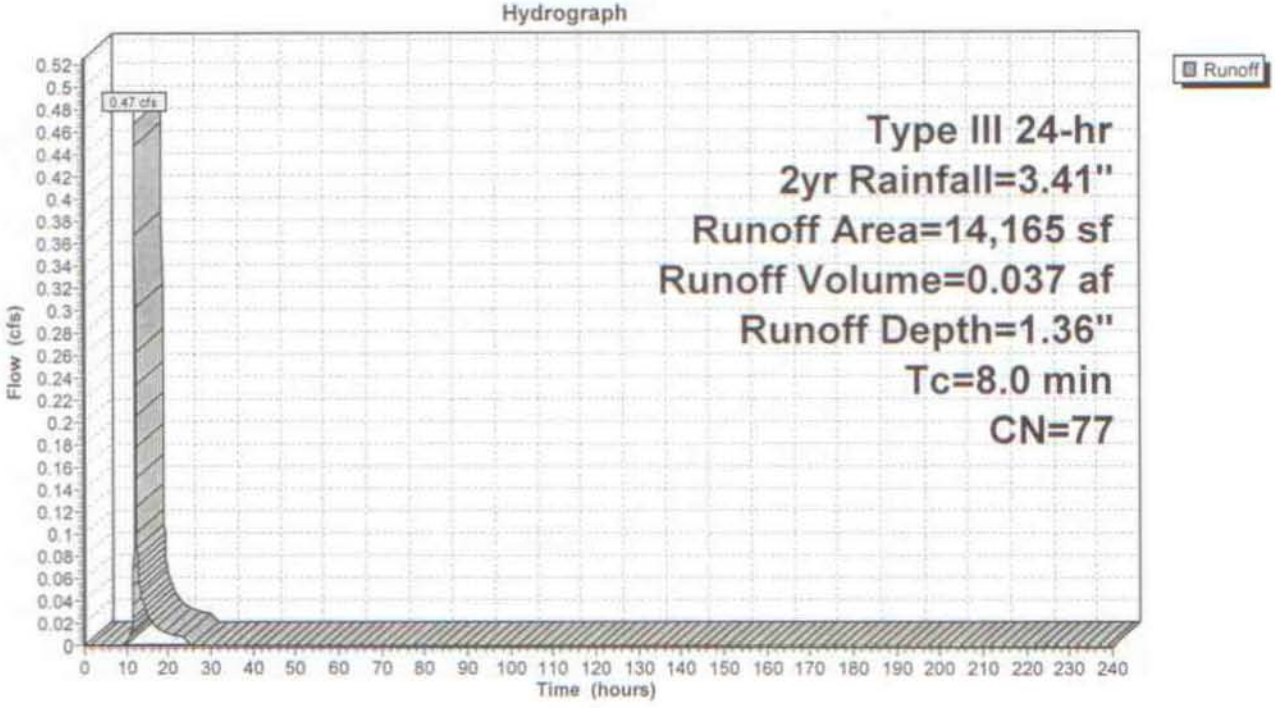
Runoff = 0.47 cfs @ 12.12 hrs, Volume= 0.037 af, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.41"

Area (sf)	CN	Description
1,750	98	Paved parking, HSG C
12,415	74	>75% Grass cover, Good, HSG C
14,165	77	Weighted Average
12,415		87.65% Pervious Area
1,750		12.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					Direct Entry, Point a to Point B

Subcatchment 2S: EXIST CONDITIONS E-1



Summary for Subcatchment 10S: EXIST CONDITIONS E-2

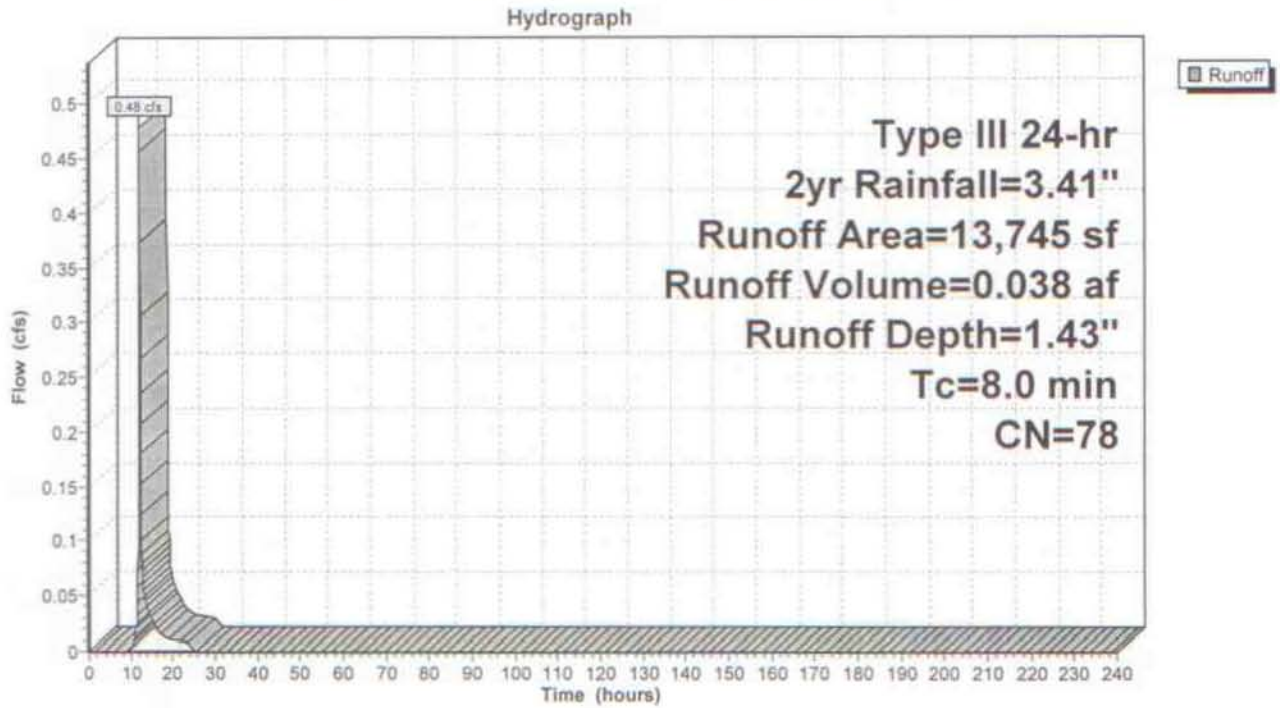
Runoff = 0.48 cfs @ 12.12 hrs, Volume= 0.038 af, Depth= 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.41"

Area (sf)	CN	Description
2,392	98	Paved parking, HSG C
11,353	74	>75% Grass cover, Good, HSG C
13,745	78	Weighted Average
11,353		82.60% Pervious Area
2,392		17.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					Direct Entry, OVERLAND FLOW

Subcatchment 10S: EXIST CONDITIONS E-2



Summary for Subcatchment 12S: EXIST CONDITIONS E-3

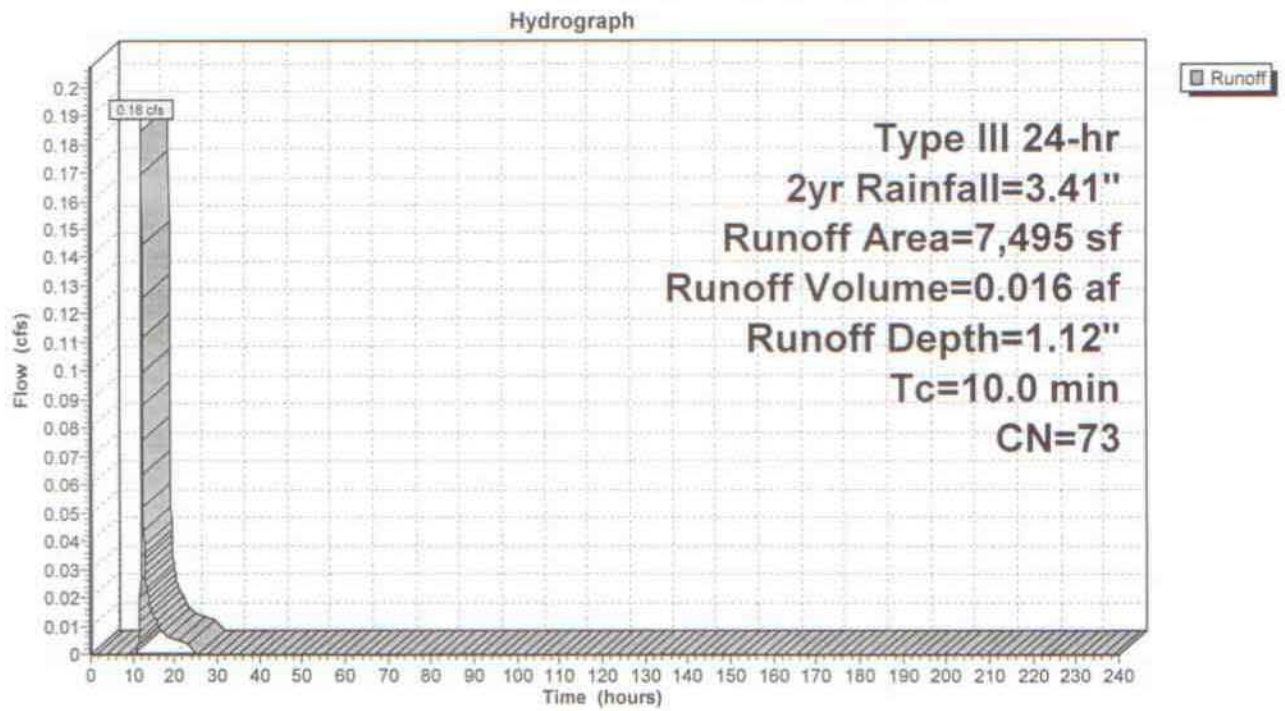
Runoff = 0.18 cfs @ 12.15 hrs, Volume= 0.016 af, Depth= 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.41"

Area (sf)	CN	Description
7,495	73	Woods, Fair, HSG C
7,495		100.00% Pervious Area

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

Subcatchment 12S: EXIST CONDITIONS E-3



Summary for Subcatchment 14S: EXISTING CONDITIONS E-4

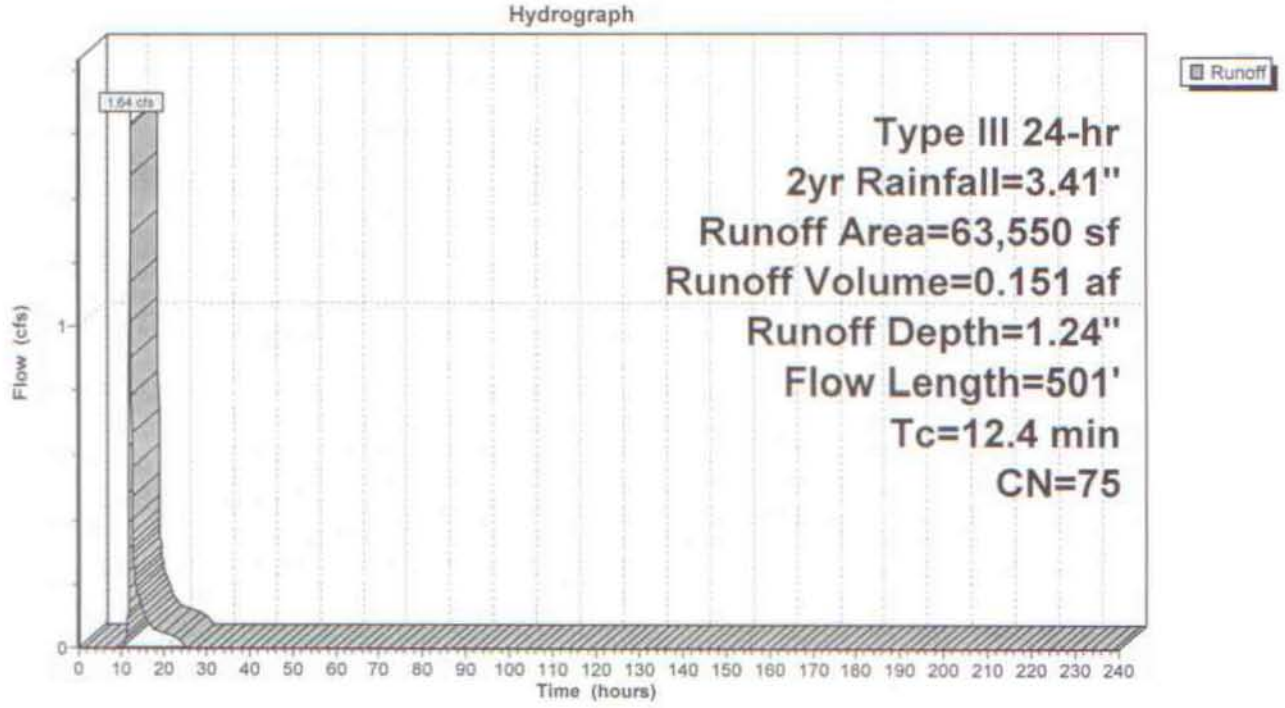
Runoff = 1.64 cfs @ 12.18 hrs, Volume= 0.151 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.41"

Area (sf)	CN	Description
4,840	98	Paved parking, HSG C
58,710	73	Woods, Fair, HSG C
63,550	75	Weighted Average
58,710		92.38% Pervious Area
4,840		7.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	76	0.0250	1.49		**Sheet Flow, 1 to 2** Smooth surfaces n= 0.011 P2= 3.50"
0.8	25	0.0100	0.50		**Shallow Concentrated Flow, 2 to 3** Woodland Kv= 5.0 fps
1.2	100	0.0800	1.41		**Shallow Concentrated Flow, 3 to 4** Woodland Kv= 5.0 fps
9.5	300	0.0110	0.52		**Shallow Concentrated Flow, 4 to DP** Woodland Kv= 5.0 fps
12.4	501	Total			

Subcatchment 14S: EXISTING CONDITIONS E-4



Summary for Subcatchment 16S: EXISTING CONDITIONS E-6

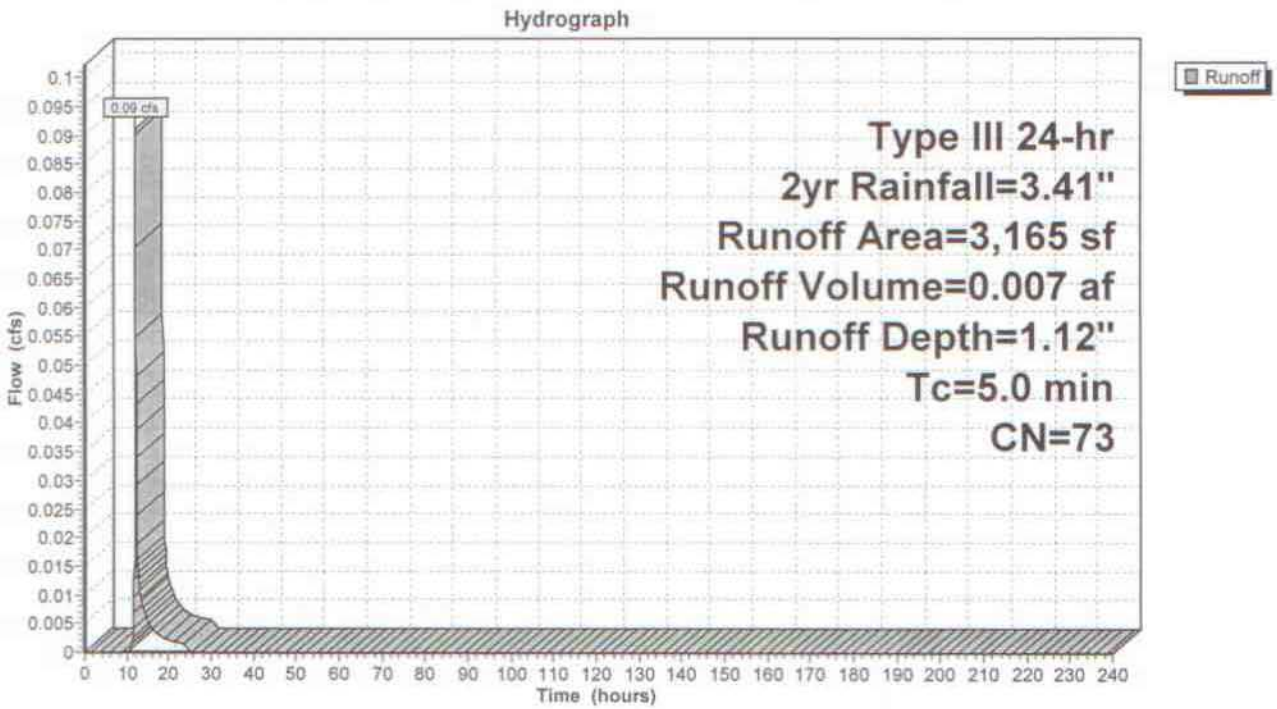
Runoff = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af, Depth= 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.41"

Area (sf)	CN	Description
3,165	73	Woods, Fair, HSG C
3,165		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, A TO DP

Subcatchment 16S: EXISTING CONDITIONS E-6



Summary for Subcatchment 19S: EXISTING CONDITIONS E-5

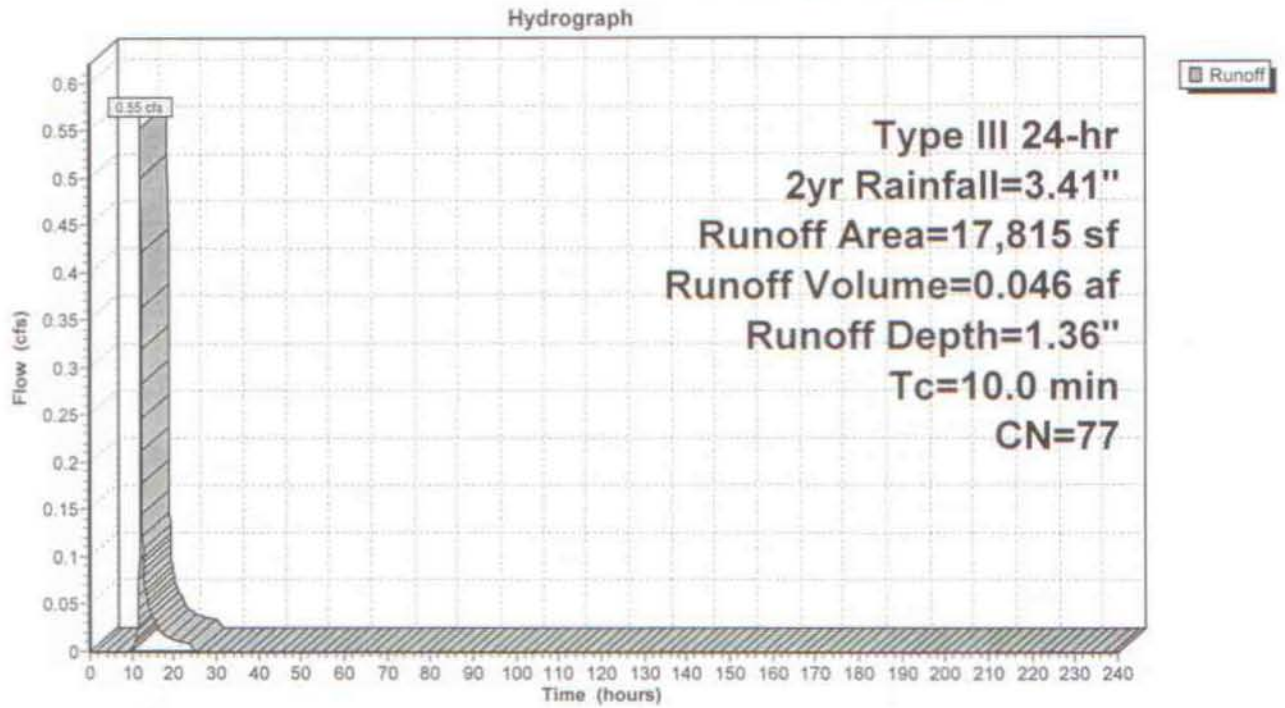
Runoff = 0.55 cfs @ 12.15 hrs, Volume= 0.046 af, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr Rainfall=3.41"

Area (sf)	CN	Description
17,815	77	Woods, Poor, HSG C
17,815		100.00% Pervious Area

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

Subcatchment 19S: EXISTING CONDITIONS E-5

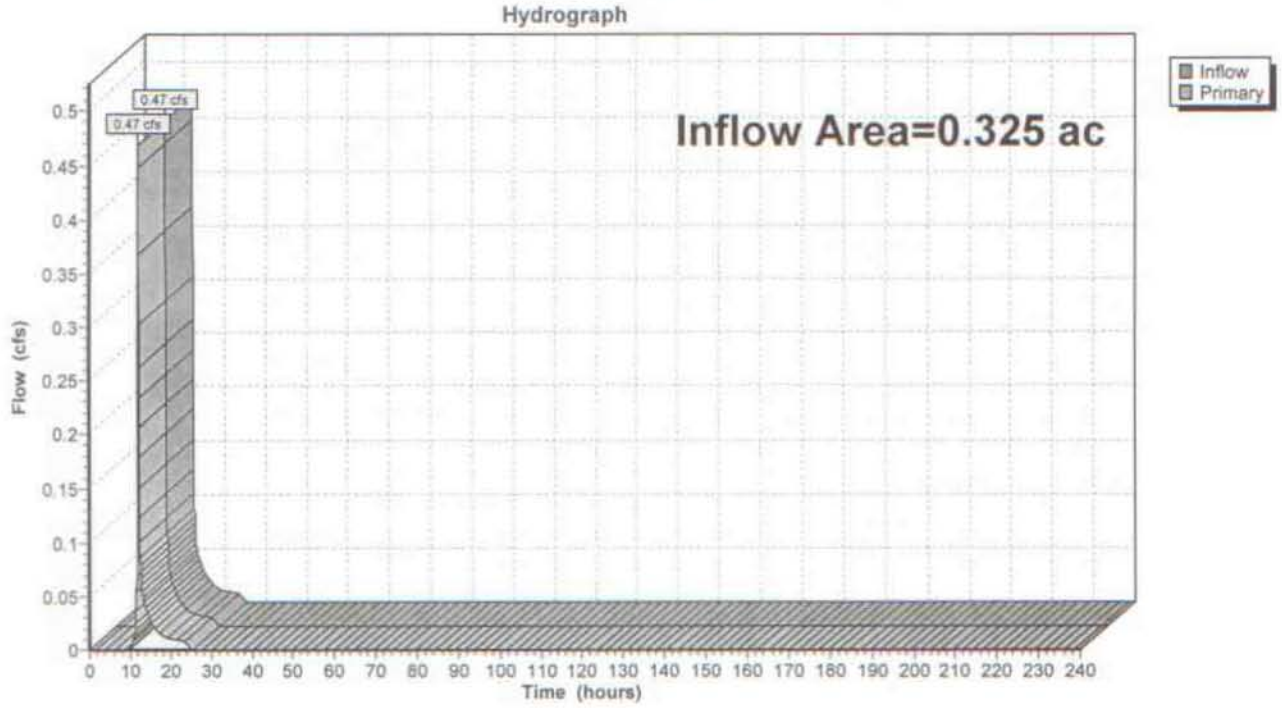


Summary for Link 9L: DP E-1

Inflow Area = 0.325 ac, 12.35% Impervious, Inflow Depth = 1.36" for 2yr event
Inflow = 0.47 cfs @ 12.12 hrs, Volume= 0.037 af
Primary = 0.47 cfs @ 12.12 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 9L: DP E-1

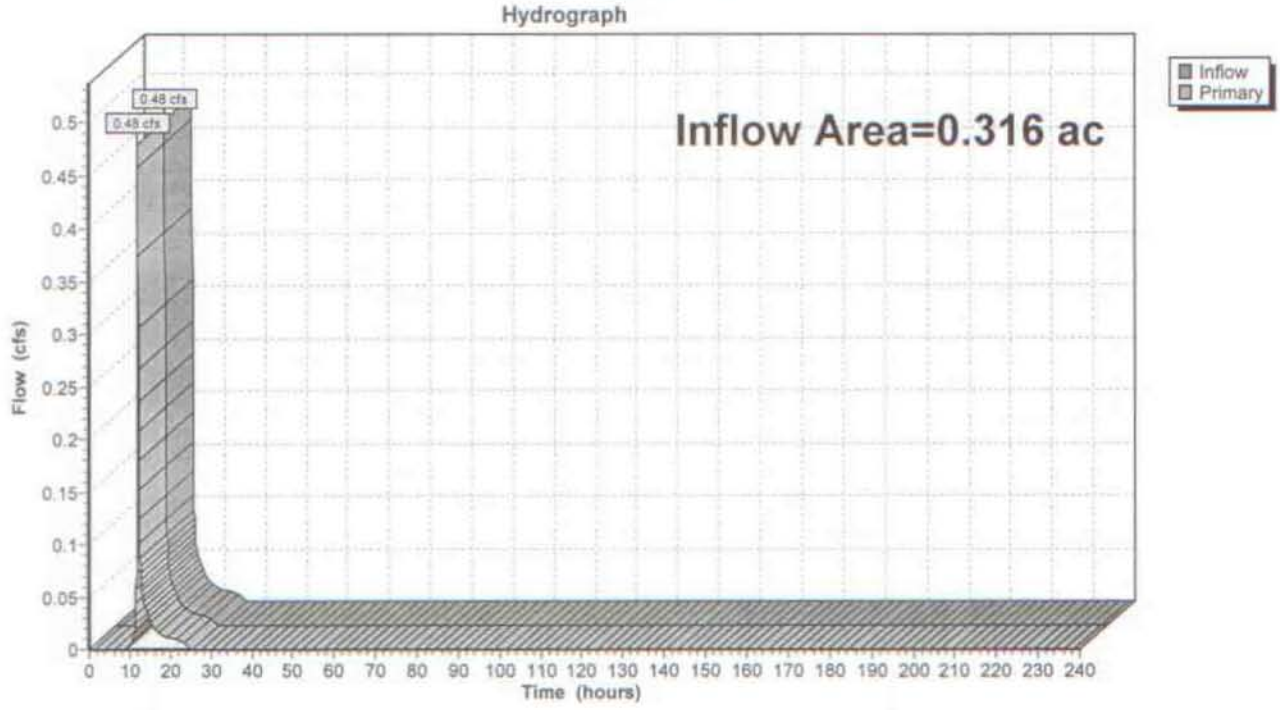


Summary for Link 11L: DP E-2

Inflow Area = 0.316 ac, 17.40% Impervious, Inflow Depth = 1.43" for 2yr event
Inflow = 0.48 cfs @ 12.12 hrs, Volume= 0.038 af
Primary = 0.48 cfs @ 12.12 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 11L: DP E-2

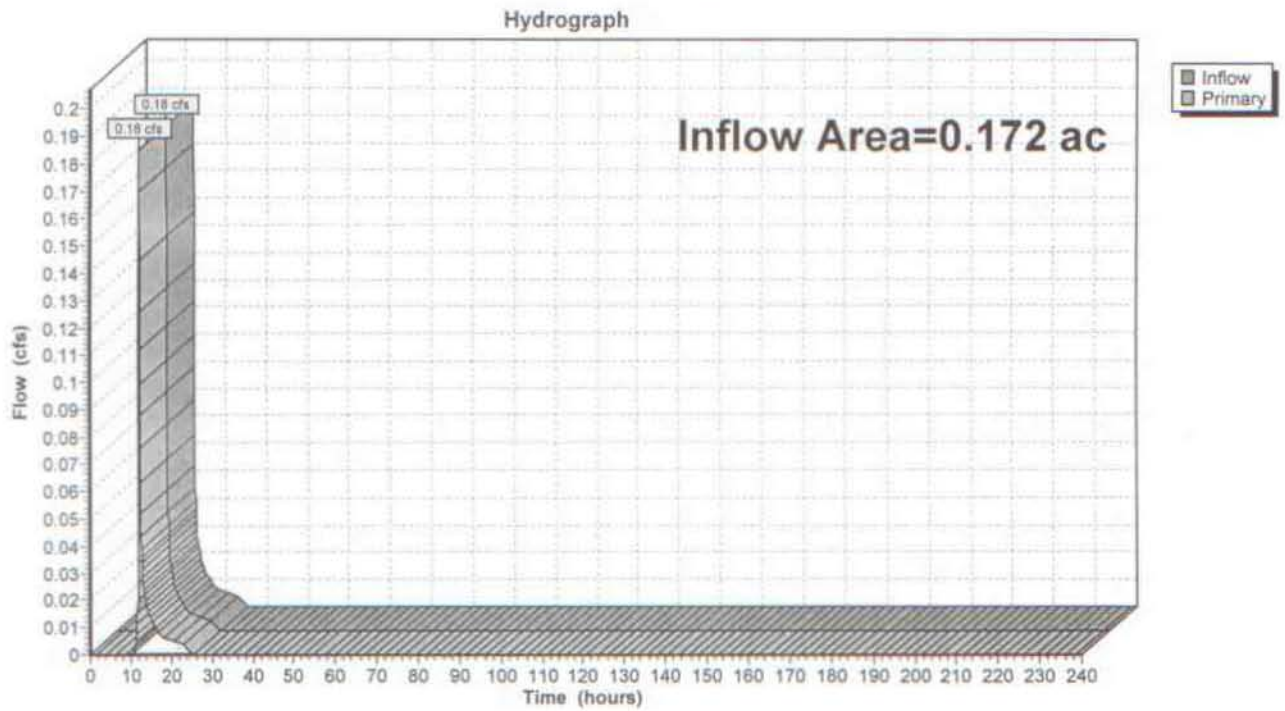


Summary for Link 13L: DP E-3

Inflow Area = 0.172 ac, 0.00% Impervious, Inflow Depth = 1.12" for 2yr event
Inflow = 0.18 cfs @ 12.15 hrs, Volume= 0.016 af
Primary = 0.18 cfs @ 12.15 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 13L: DP E-3

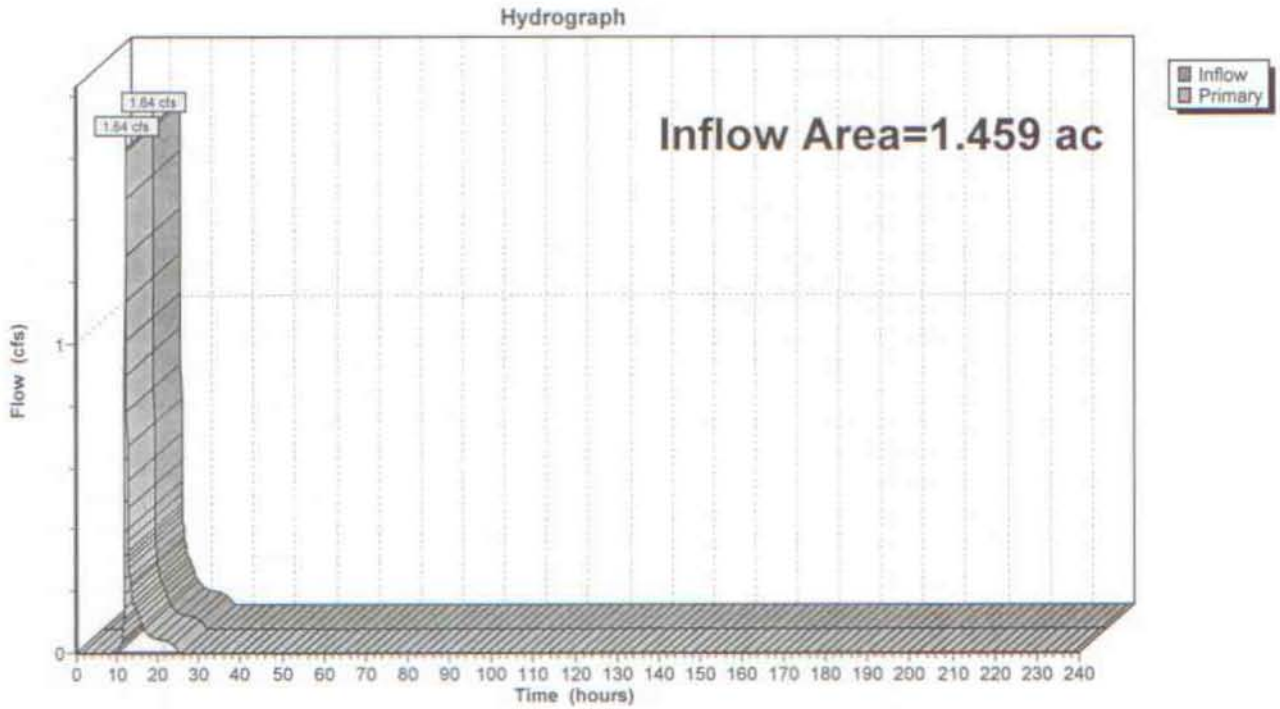


Summary for Link 15L: DP E-4

Inflow Area = 1.459 ac, 7.62% Impervious, Inflow Depth = 1.24" for 2yr event
Inflow = 1.64 cfs @ 12.18 hrs, Volume= 0.151 af
Primary = 1.64 cfs @ 12.18 hrs, Volume= 0.151 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 15L: DP E-4

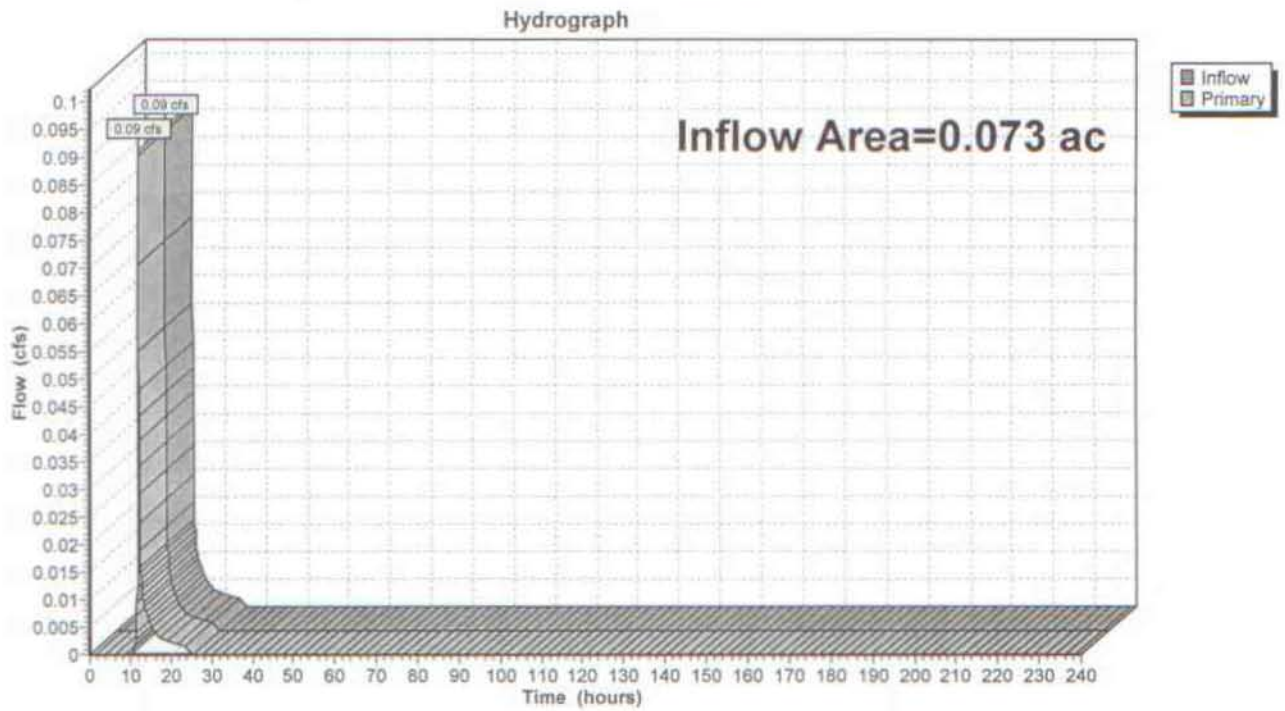


Summary for Link 18L: DP E-6

Inflow Area = 0.073 ac, 0.00% Impervious, Inflow Depth = 1.12" for 2yr event
Inflow = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af
Primary = 0.09 cfs @ 12.09 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 18L: DP E-6

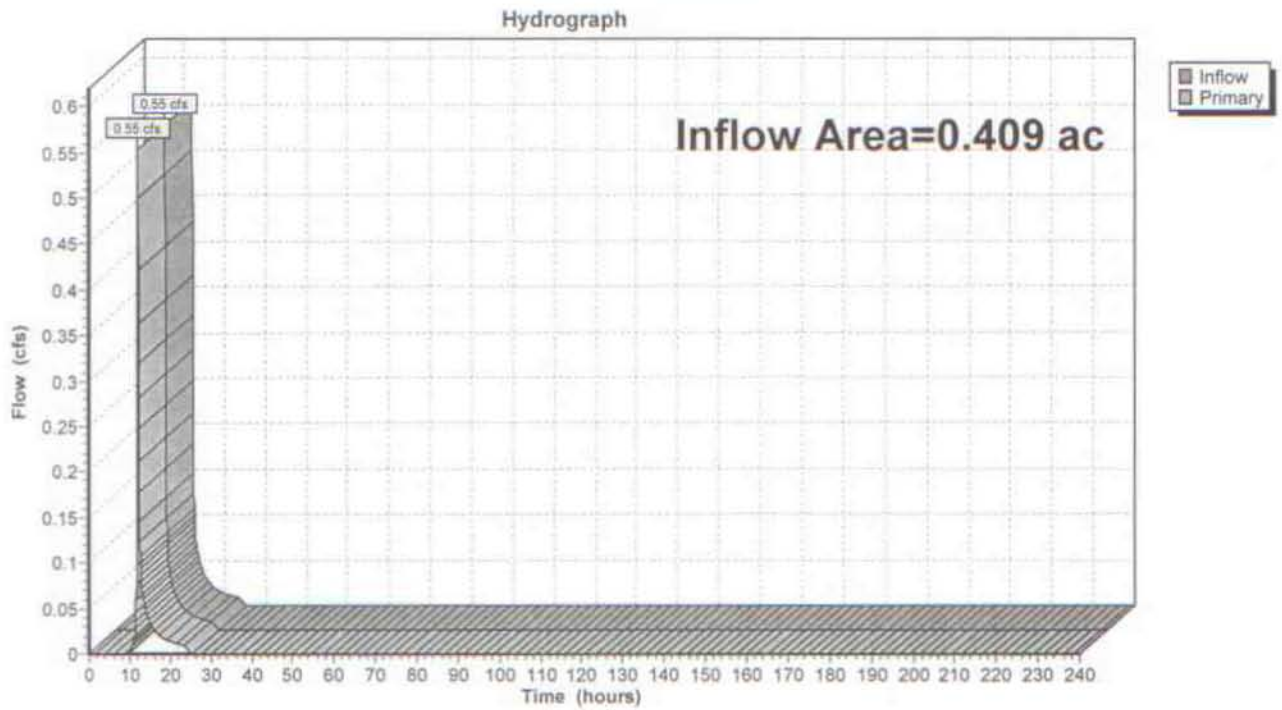


Summary for Link 20L: DP E-5

Inflow Area = 0.409 ac, 0.00% Impervious, Inflow Depth = 1.36" for 2yr event
Inflow = 0.55 cfs @ 12.15 hrs, Volume= 0.046 af
Primary = 0.55 cfs @ 12.15 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 20L: DP E-5



Time span=0.00-240.00 hrs, dt=0.05 hrs, 4801 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 2S: EXIST CONDITIONS E-1 Runoff Area=14,165 sf 12.35% Impervious Runoff Depth=3.91"
Tc=8.0 min CN=77 Runoff=1.37 cfs 0.106 af

Subcatchment 10S: EXIST CONDITIONS Runoff Area=13,745 sf 17.40% Impervious Runoff Depth=4.01"
Tc=8.0 min CN=78 Runoff=1.37 cfs 0.106 af

Subcatchment 12S: EXIST CONDITIONS E-3 Runoff Area=7,495 sf 0.00% Impervious Runoff Depth=3.50"
Tc=10.0 min CN=73 Runoff=0.61 cfs 0.050 af

Subcatchment 14S: EXISTING CONDITIONS Runoff Area=63,550 sf 7.62% Impervious Runoff Depth=3.70"
Flow Length=501' Tc=12.4 min CN=75 Runoff=5.11 cfs 0.450 af

Subcatchment 16S: EXISTING CONDITIONS Runoff Area=3,165 sf 0.00% Impervious Runoff Depth=3.50"
Tc=5.0 min CN=73 Runoff=0.30 cfs 0.021 af

Subcatchment 19S: EXISTING CONDITIONS Runoff Area=17,815 sf 0.00% Impervious Runoff Depth=3.91"
Tc=10.0 min CN=77 Runoff=1.62 cfs 0.133 af

Link 9L: DP E-1 Inflow=1.37 cfs 0.106 af
Primary=1.37 cfs 0.106 af

Link 11L: DP E-2 Inflow=1.37 cfs 0.106 af
Primary=1.37 cfs 0.106 af

Link 13L: DP E-3 Inflow=0.61 cfs 0.050 af
Primary=0.61 cfs 0.050 af

Link 15L: DP E-4 Inflow=5.11 cfs 0.450 af
Primary=5.11 cfs 0.450 af

Link 18L: DP E-6 Inflow=0.30 cfs 0.021 af
Primary=0.30 cfs 0.021 af

Link 20L: DP E-5 Inflow=1.62 cfs 0.133 af
Primary=1.62 cfs 0.133 af

Total Runoff Area = 2.753 ac Runoff Volume = 0.866 af Average Runoff Depth = 3.78"
92.51% Pervious = 2.547 ac 7.49% Impervious = 0.206 ac

Summary for Subcatchment 2S: EXIST CONDITIONS E-1

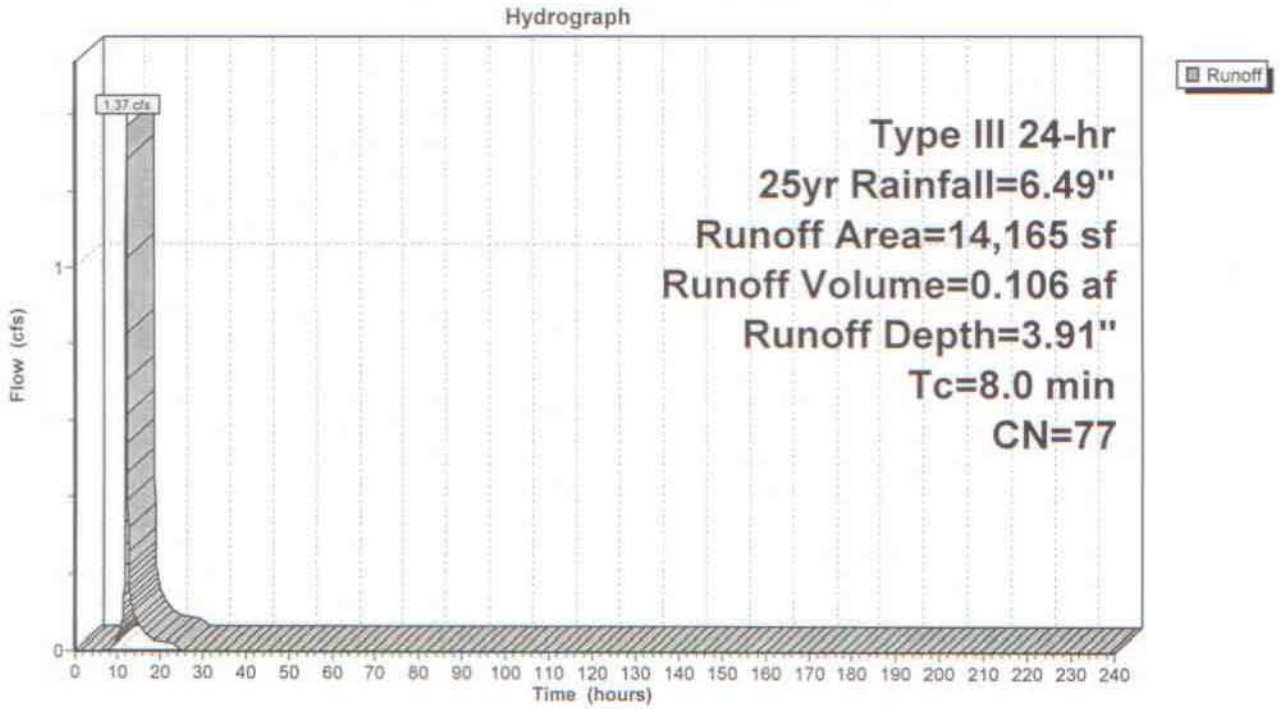
Runoff = 1.37 cfs @ 12.11 hrs, Volume= 0.106 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.49"

Area (sf)	CN	Description
1,750	98	Paved parking, HSG C
12,415	74	>75% Grass cover, Good, HSG C
14,165	77	Weighted Average
12,415		87.65% Pervious Area
1,750		12.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					Direct Entry, Point a to Point B

Subcatchment 2S: EXIST CONDITIONS E-1



Summary for Subcatchment 10S: EXIST CONDITIONS E-2

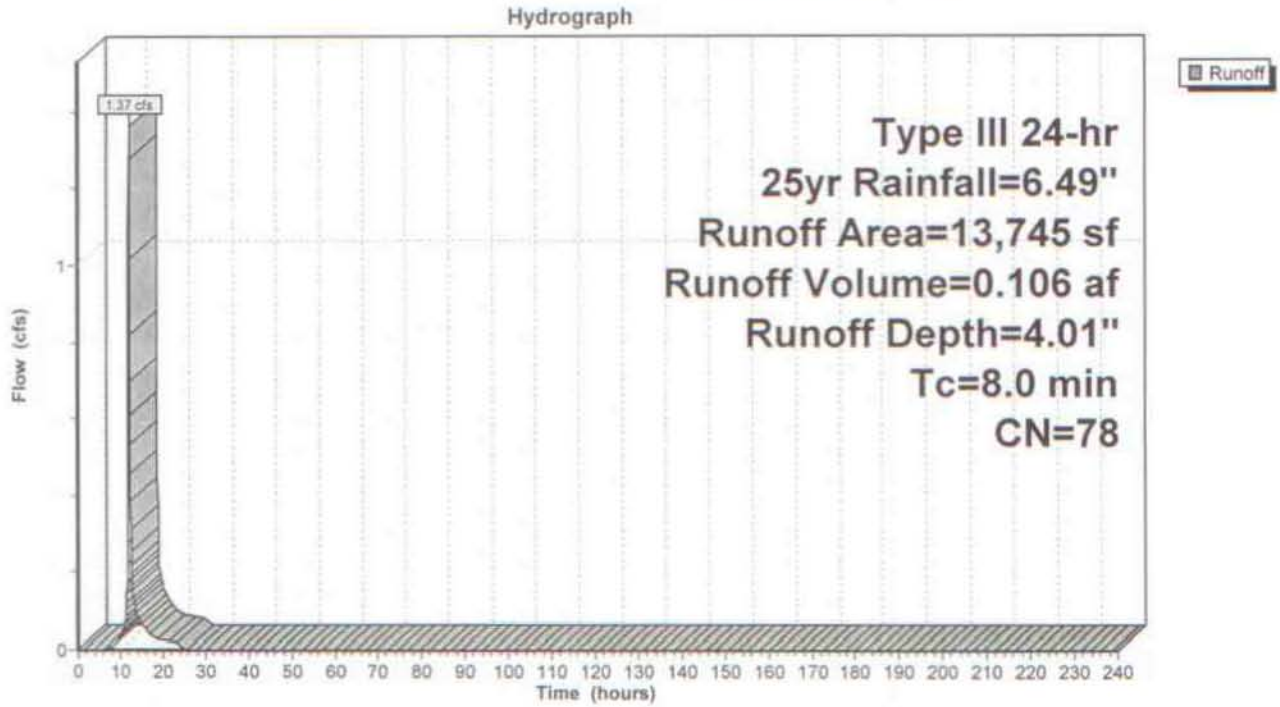
Runoff = 1.37 cfs @ 12.11 hrs, Volume= 0.106 af, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.49"

Area (sf)	CN	Description
2,392	98	Paved parking, HSG C
11,353	74	>75% Grass cover, Good, HSG C
13,745	78	Weighted Average
11,353		82.60% Pervious Area
2,392		17.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					Direct Entry, OVERLAND FLOW

Subcatchment 10S: EXIST CONDITIONS E-2



Summary for Subcatchment 12S: EXIST CONDITIONS E-3

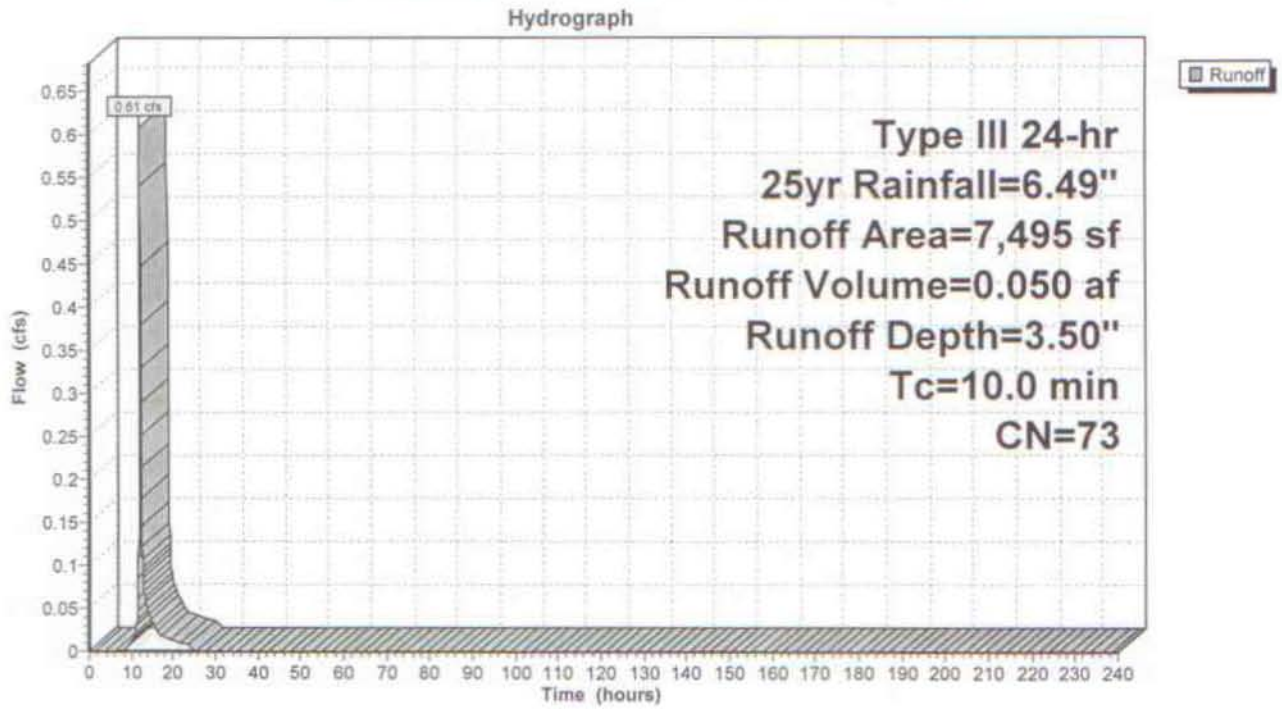
Runoff = 0.61 cfs @ 12.14 hrs, Volume= 0.050 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.49"

Area (sf)	CN	Description
7,495	73	Woods, Fair, HSG C
7,495		100.00% Pervious Area

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

Subcatchment 12S: EXIST CONDITIONS E-3



Summary for Subcatchment 14S: EXISTING CONDITIONS E-4

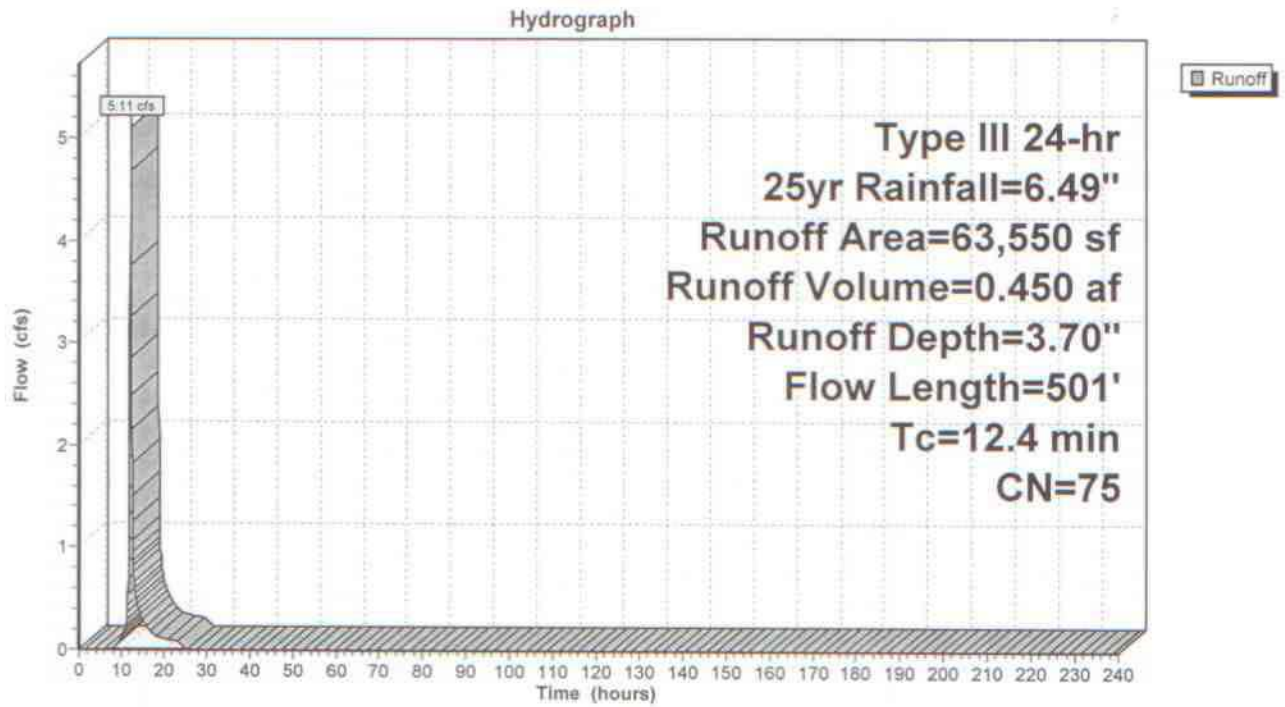
Runoff = 5.11 cfs @ 12.17 hrs, Volume= 0.450 af, Depth= 3.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.49"

Area (sf)	CN	Description
4,840	98	Paved parking, HSG C
58,710	73	Woods, Fair, HSG C
63,550	75	Weighted Average
58,710		92.38% Pervious Area
4,840		7.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	76	0.0250	1.49		**Sheet Flow, 1 to 2** Smooth surfaces n= 0.011 P2= 3.50"
0.8	25	0.0100	0.50		**Shallow Concentrated Flow, 2 to 3** Woodland Kv= 5.0 fps
1.2	100	0.0800	1.41		**Shallow Concentrated Flow, 3 to 4** Woodland Kv= 5.0 fps
9.5	300	0.0110	0.52		**Shallow Concentrated Flow, 4 to DP** Woodland Kv= 5.0 fps
12.4	501	Total			

Subcatchment 14S: EXISTING CONDITIONS E-4



Summary for Subcatchment 16S: EXISTING CONDITIONS E-6

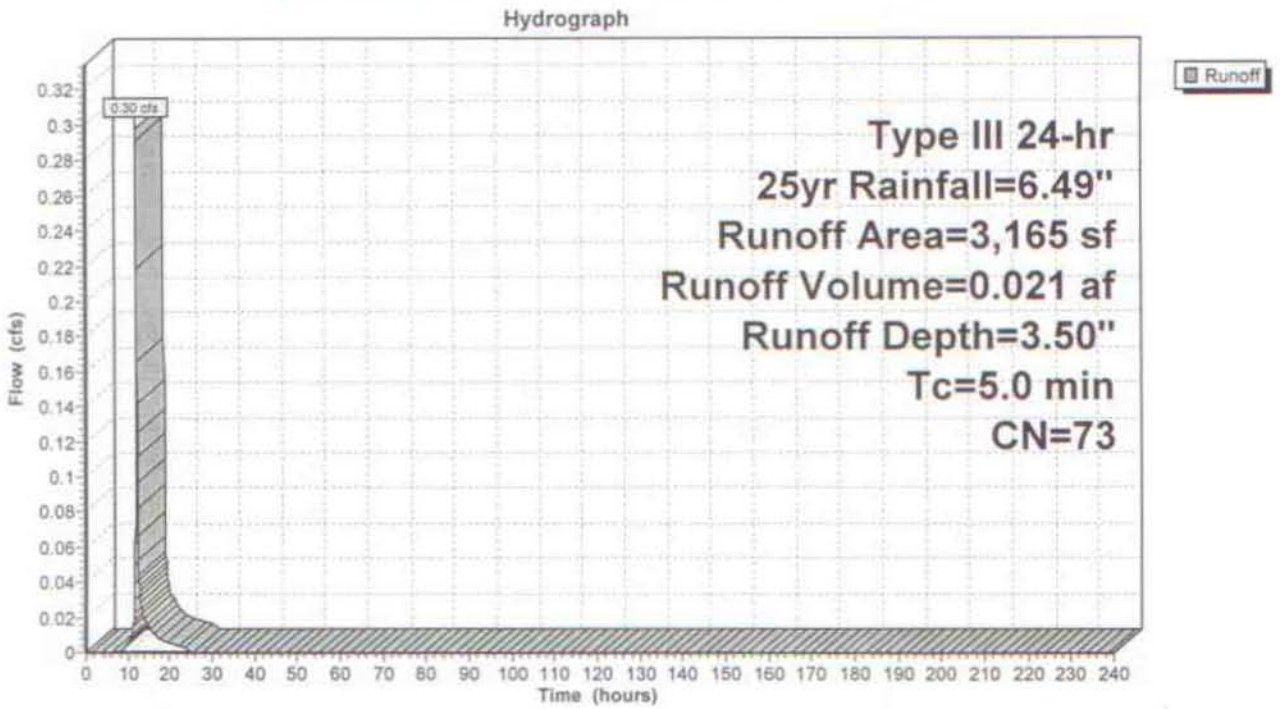
Runoff = 0.30 cfs @ 12.08 hrs, Volume= 0.021 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.49"

Area (sf)	CN	Description
3,165	73	Woods, Fair, HSG C
3,165		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, A TO DP

Subcatchment 16S: EXISTING CONDITIONS E-6



Summary for Subcatchment 19S: EXISTING CONDITIONS E-5

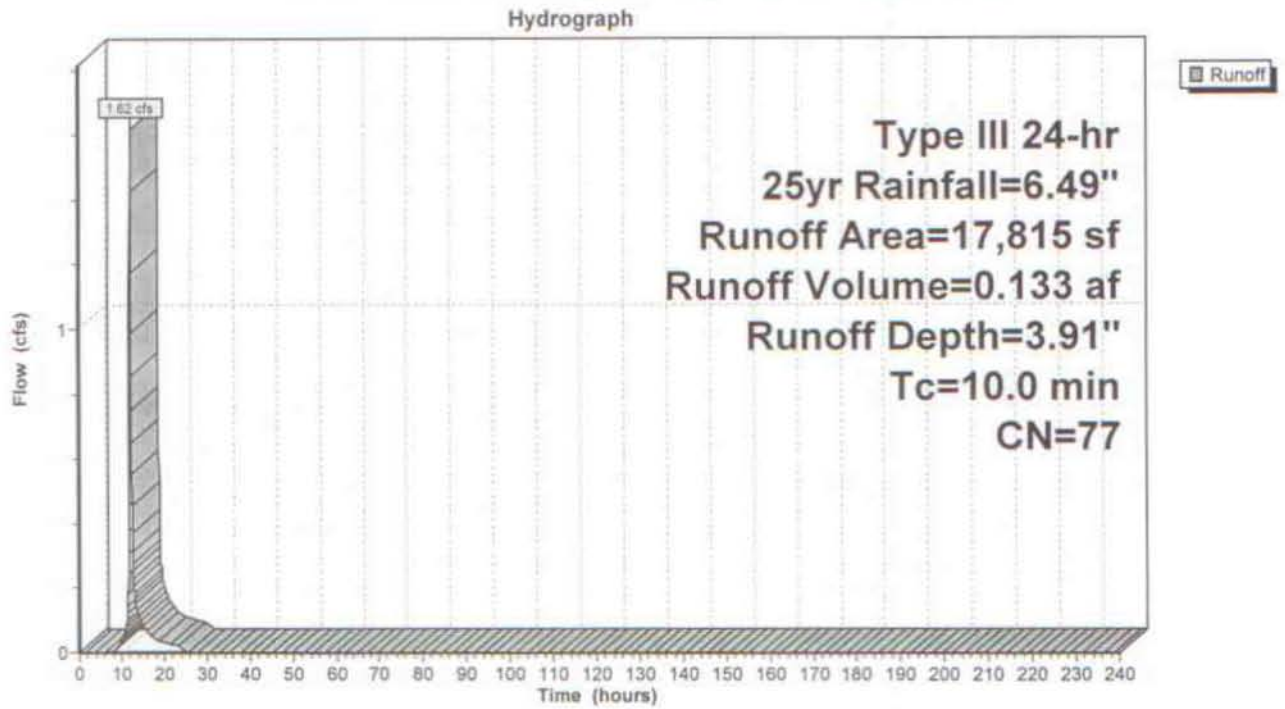
Runoff = 1.62 cfs @ 12.14 hrs, Volume= 0.133 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr Rainfall=6.49"

Area (sf)	CN	Description
17,815	77	Woods, Poor, HSG C
17,815		100.00% Pervious Area

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

Subcatchment 19S: EXISTING CONDITIONS E-5

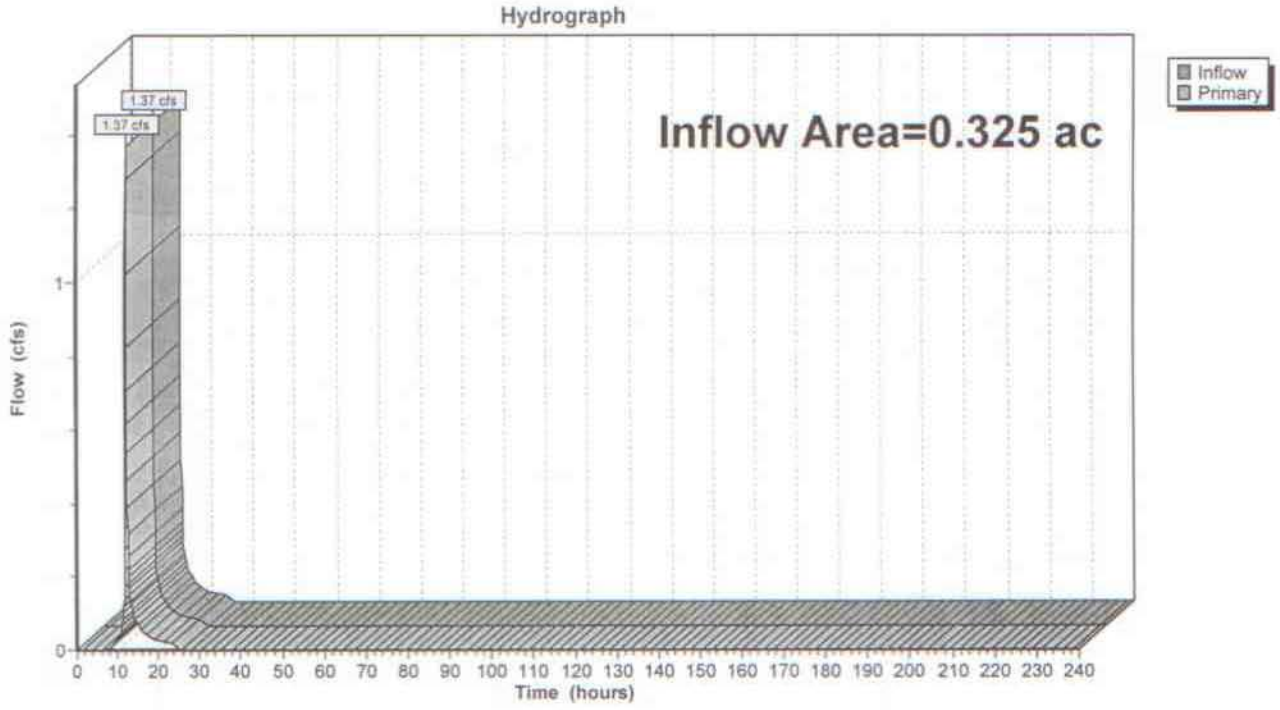


Summary for Link 9L: DP E-1

Inflow Area = 0.325 ac, 12.35% Impervious, Inflow Depth = 3.91" for 25yr event
Inflow = 1.37 cfs @ 12.11 hrs, Volume= 0.106 af
Primary = 1.37 cfs @ 12.11 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 9L: DP E-1

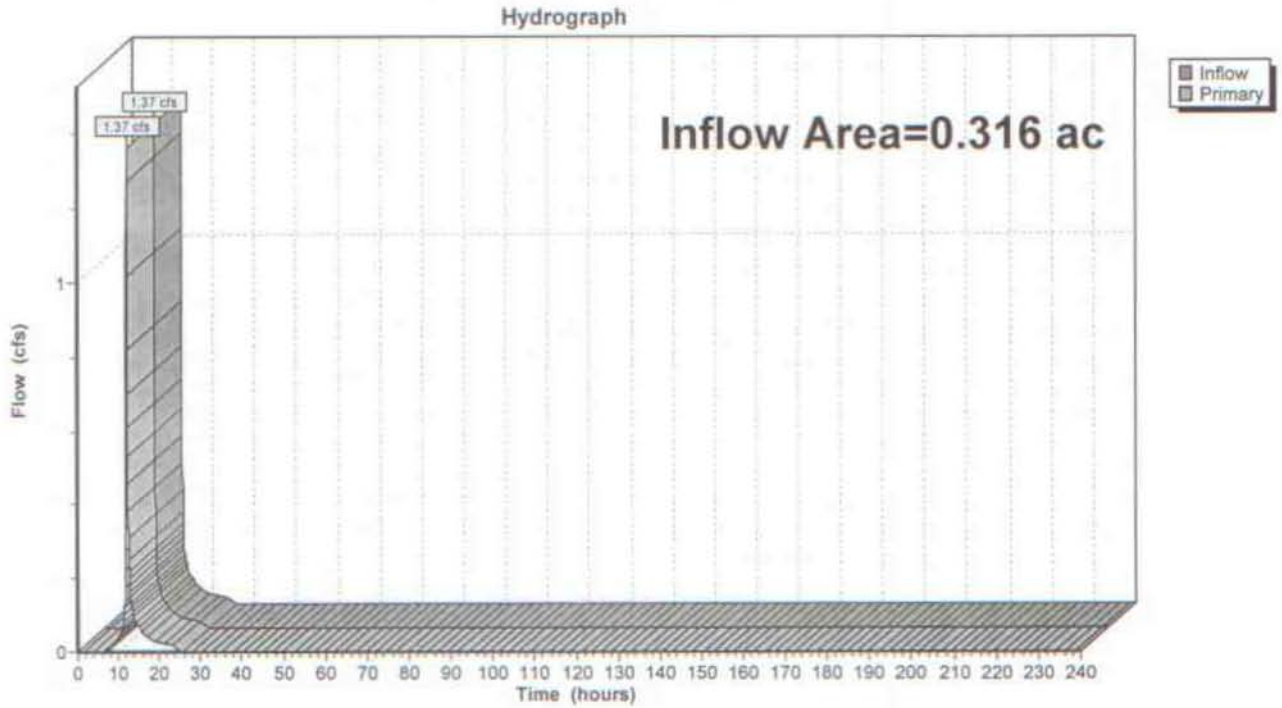


Summary for Link 11L: DP E-2

Inflow Area = 0.316 ac, 17.40% Impervious, Inflow Depth = 4.01" for 25yr event
Inflow = 1.37 cfs @ 12.11 hrs, Volume= 0.106 af
Primary = 1.37 cfs @ 12.11 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 11L: DP E-2

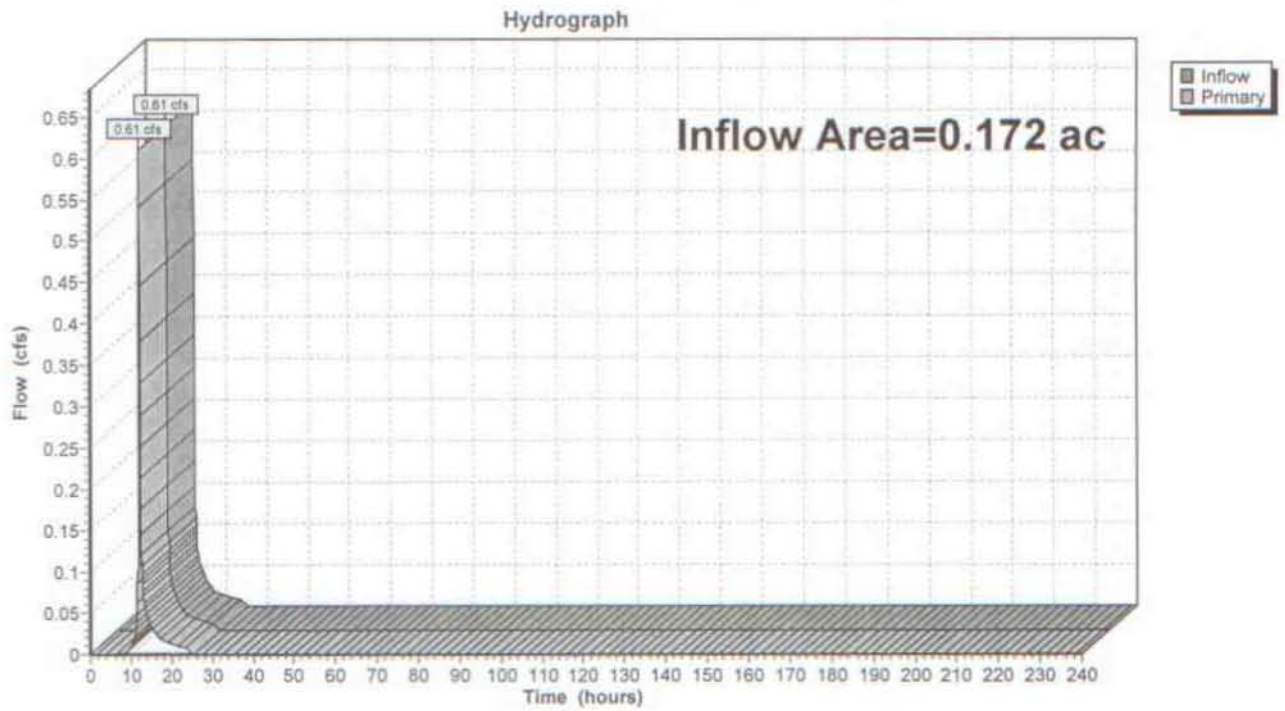


Summary for Link 13L: DP E-3

Inflow Area = 0.172 ac, 0.00% Impervious, Inflow Depth = 3.50" for 25yr event
Inflow = 0.61 cfs @ 12.14 hrs, Volume= 0.050 af
Primary = 0.61 cfs @ 12.14 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 13L: DP E-3

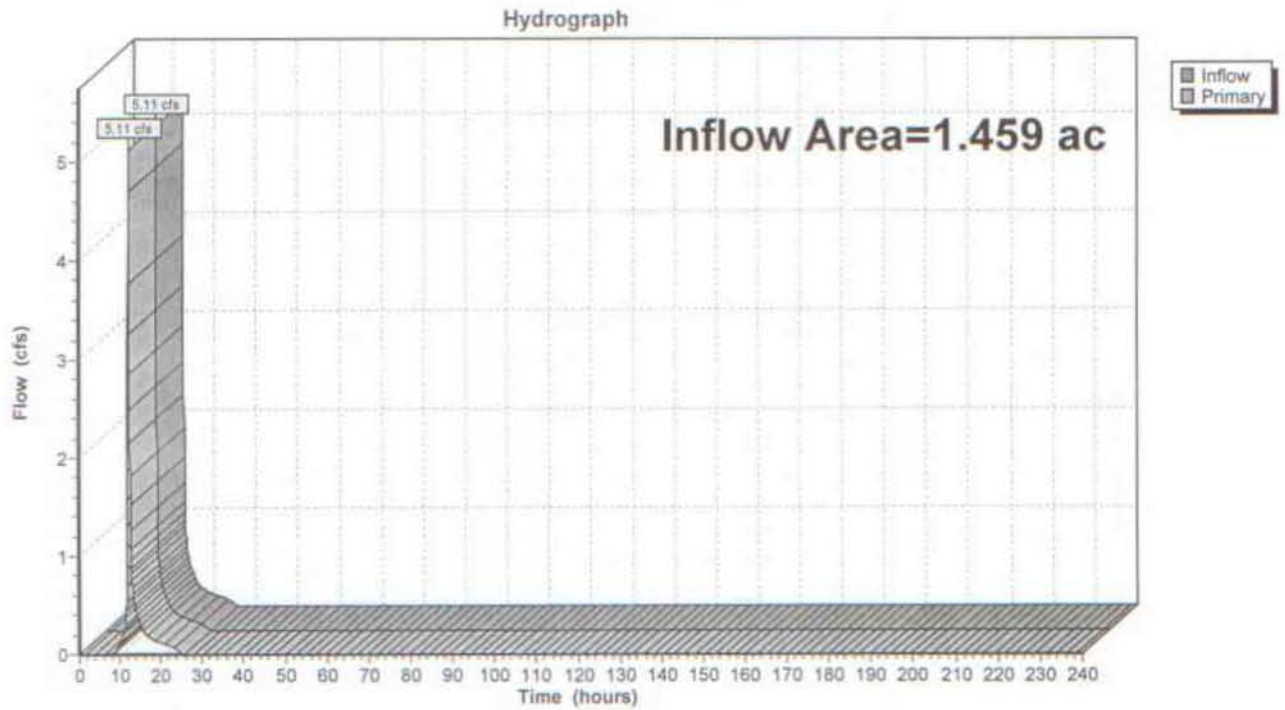


Summary for Link 15L: DP E-4

Inflow Area = 1.459 ac, 7.62% Impervious, Inflow Depth = 3.70" for 25yr event
Inflow = 5.11 cfs @ 12.17 hrs, Volume= 0.450 af
Primary = 5.11 cfs @ 12.17 hrs, Volume= 0.450 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 15L: DP E-4

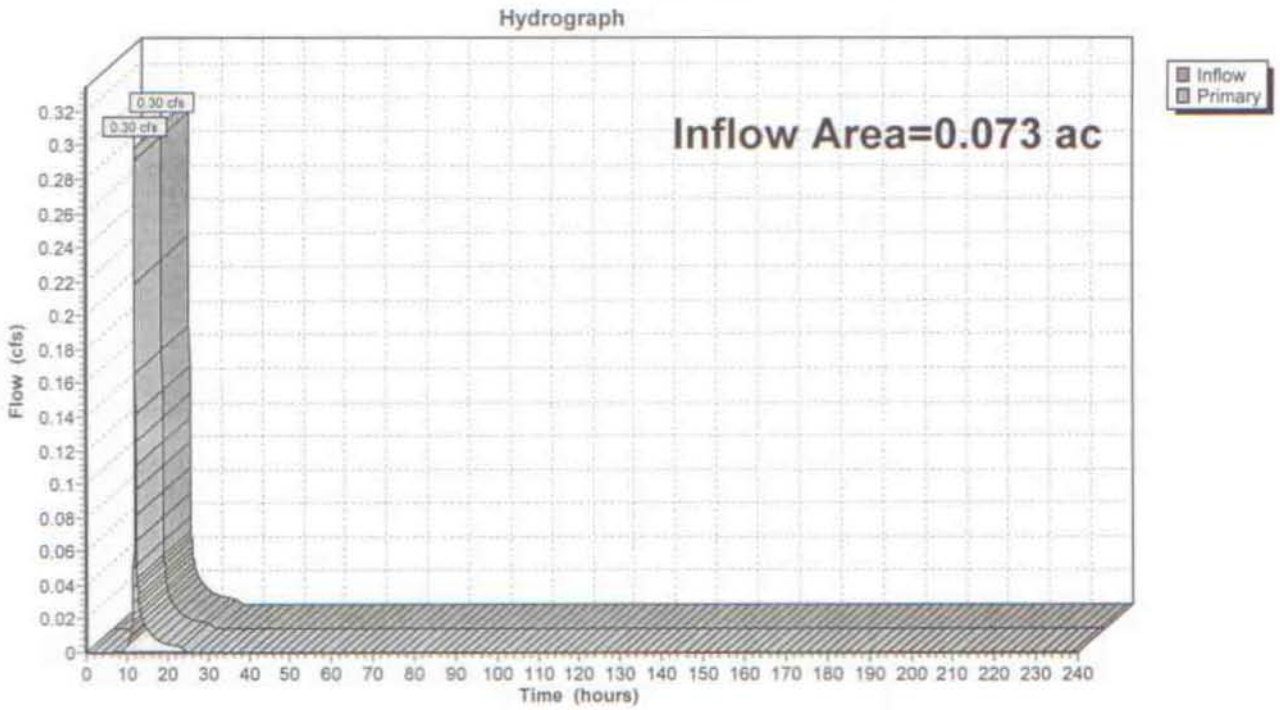


Summary for Link 18L: DP E-6

Inflow Area = 0.073 ac, 0.00% Impervious, Inflow Depth = 3.50" for 25yr event
Inflow = 0.30 cfs @ 12.08 hrs, Volume= 0.021 af
Primary = 0.30 cfs @ 12.08 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 18L: DP E-6

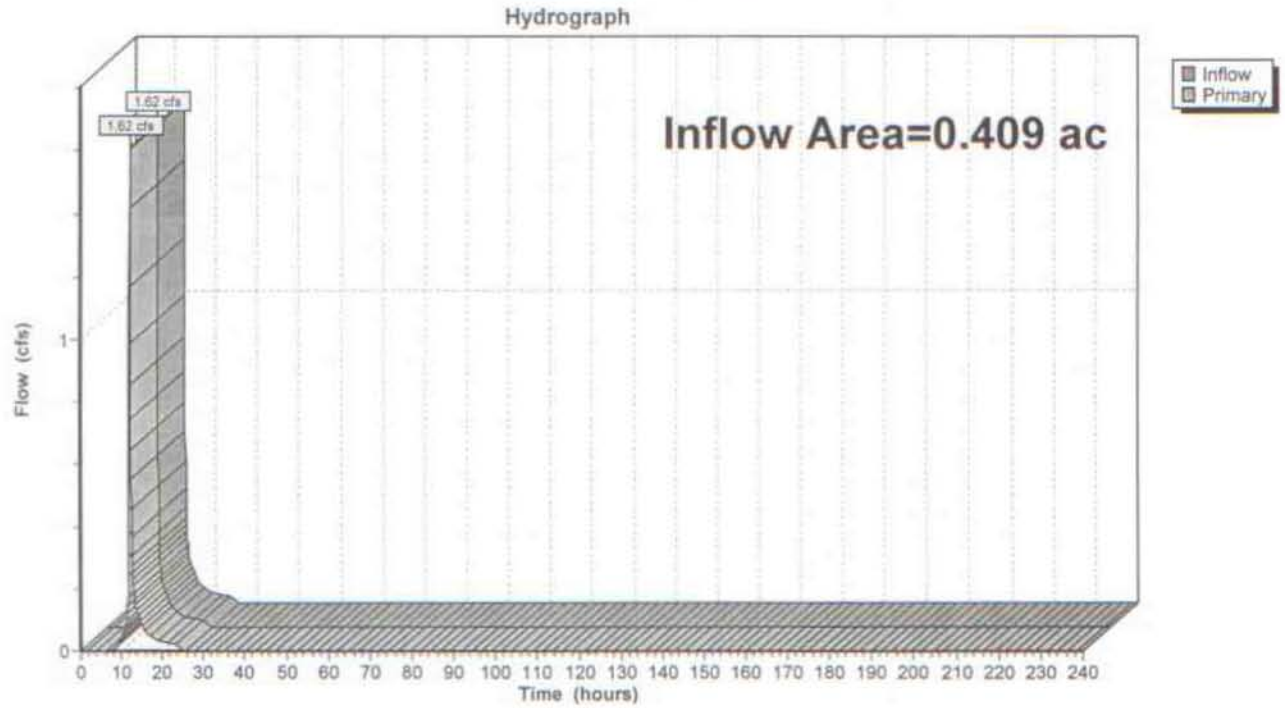


Summary for Link 20L: DP E-5

Inflow Area = 0.409 ac, 0.00% Impervious, Inflow Depth = 3.91" for 25yr event
Inflow = 1.62 cfs @ 12.14 hrs, Volume= 0.133 af
Primary = 1.62 cfs @ 12.14 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 20L: DP E-5



Time span=0.00-240.00 hrs, dt=0.05 hrs, 4801 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 2S: EXIST CONDITIONS E-1 Runoff Area=14,165 sf 12.35% Impervious Runoff Depth=6.46"
Tc=8.0 min CN=77 Runoff=2.24 cfs 0.175 af

Subcatchment 10S: EXIST CONDITIONS Runoff Area=13,745 sf 17.40% Impervious Runoff Depth=6.58"
Tc=8.0 min CN=78 Runoff=2.21 cfs 0.173 af

Subcatchment 12S: EXIST CONDITIONS E-3 Runoff Area=7,495 sf 0.00% Impervious Runoff Depth=5.96"
Tc=10.0 min CN=73 Runoff=1.03 cfs 0.085 af

Subcatchment 14S: EXISTING CONDITIONS Runoff Area=63,550 sf 7.62% Impervious Runoff Depth=6.21"
Flow Length=501' Tc=12.4 min CN=75 Runoff=8.51 cfs 0.755 af

Subcatchment 16S: EXISTING CONDITIONS Runoff Area=3,165 sf 0.00% Impervious Runoff Depth=5.96"
Tc=5.0 min CN=73 Runoff=0.51 cfs 0.036 af

Subcatchment 19S: EXISTING CONDITIONS Runoff Area=17,815 sf 0.00% Impervious Runoff Depth=6.46"
Tc=10.0 min CN=77 Runoff=2.64 cfs 0.220 af

Link 9L: DP E-1 Inflow=2.24 cfs 0.175 af
Primary=2.24 cfs 0.175 af

Link 11L: DP E-2 Inflow=2.21 cfs 0.173 af
Primary=2.21 cfs 0.173 af

Link 13L: DP E-3 Inflow=1.03 cfs 0.085 af
Primary=1.03 cfs 0.085 af

Link 15L: DP E-4 Inflow=8.51 cfs 0.755 af
Primary=8.51 cfs 0.755 af

Link 18L: DP E-6 Inflow=0.51 cfs 0.036 af
Primary=0.51 cfs 0.036 af

Link 20L: DP E-5 Inflow=2.64 cfs 0.220 af
Primary=2.64 cfs 0.220 af

Total Runoff Area = 2.753 ac Runoff Volume = 1.445 af Average Runoff Depth = 6.30"
92.51% Pervious = 2.547 ac 7.49% Impervious = 0.206 ac

Summary for Subcatchment 2S: EXIST CONDITIONS E-1

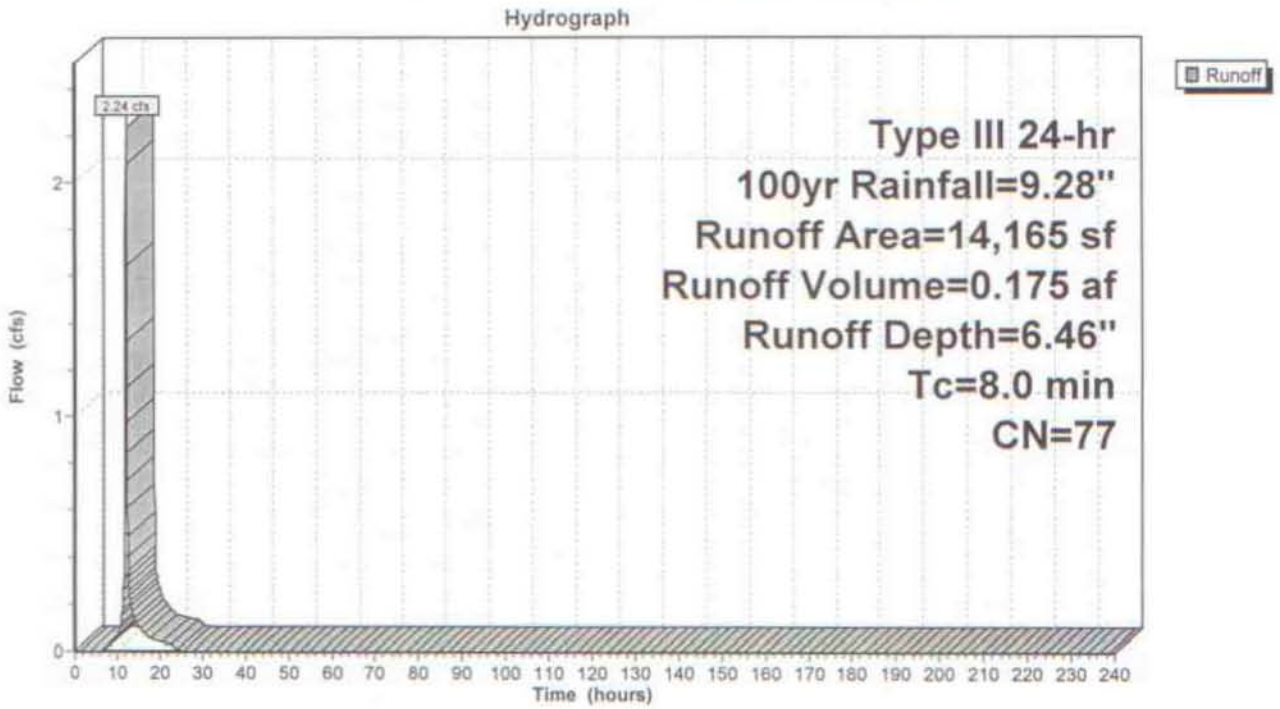
Runoff = 2.24 cfs @ 12.11 hrs, Volume= 0.175 af, Depth= 6.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=9.28"

Area (sf)	CN	Description
1,750	98	Paved parking, HSG C
12,415	74	>75% Grass cover, Good, HSG C
14,165	77	Weighted Average
12,415		87.65% Pervious Area
1,750		12.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					Direct Entry, Point a to Point B

Subcatchment 2S: EXIST CONDITIONS E-1



Summary for Subcatchment 10S: EXIST CONDITIONS E-2

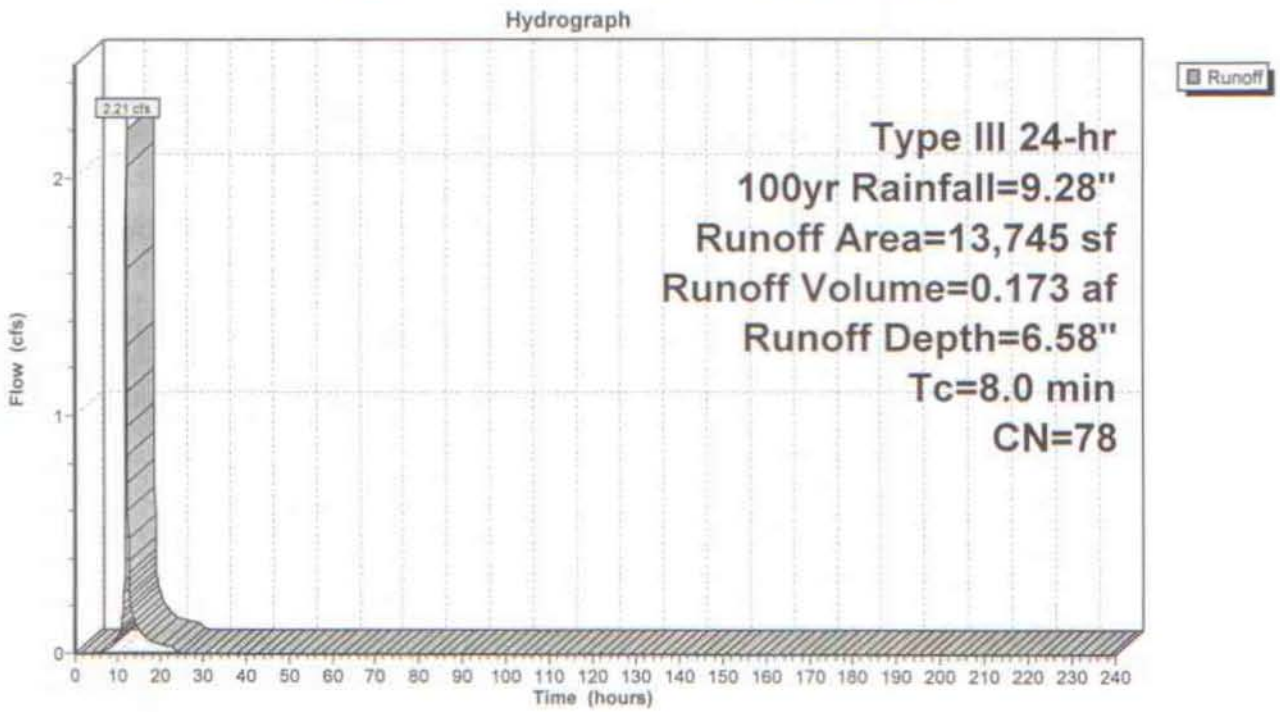
Runoff = 2.21 cfs @ 12.11 hrs, Volume= 0.173 af, Depth= 6.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=9.28"

Area (sf)	CN	Description
2,392	98	Paved parking, HSG C
11,353	74	>75% Grass cover, Good, HSG C
13,745	78	Weighted Average
11,353		82.60% Pervious Area
2,392		17.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					Direct Entry, OVERLAND FLOW

Subcatchment 10S: EXIST CONDITIONS E-2



Summary for Subcatchment 12S: EXIST CONDITIONS E-3

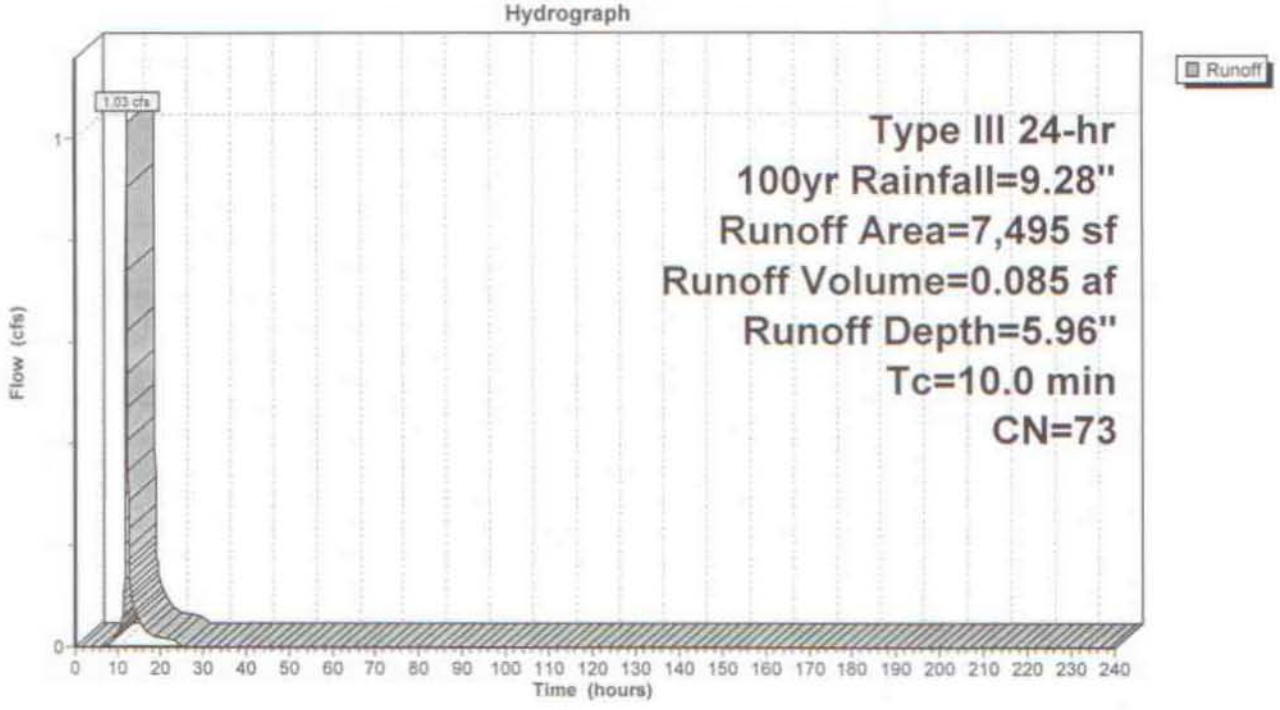
Runoff = 1.03 cfs @ 12.14 hrs, Volume= 0.085 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=9.28"

Area (sf)	CN	Description
7,495	73	Woods, Fair, HSG C
7,495		100.00% Pervious Area

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

Subcatchment 12S: EXIST CONDITIONS E-3



Summary for Subcatchment 14S: EXISTING CONDITIONS E-4

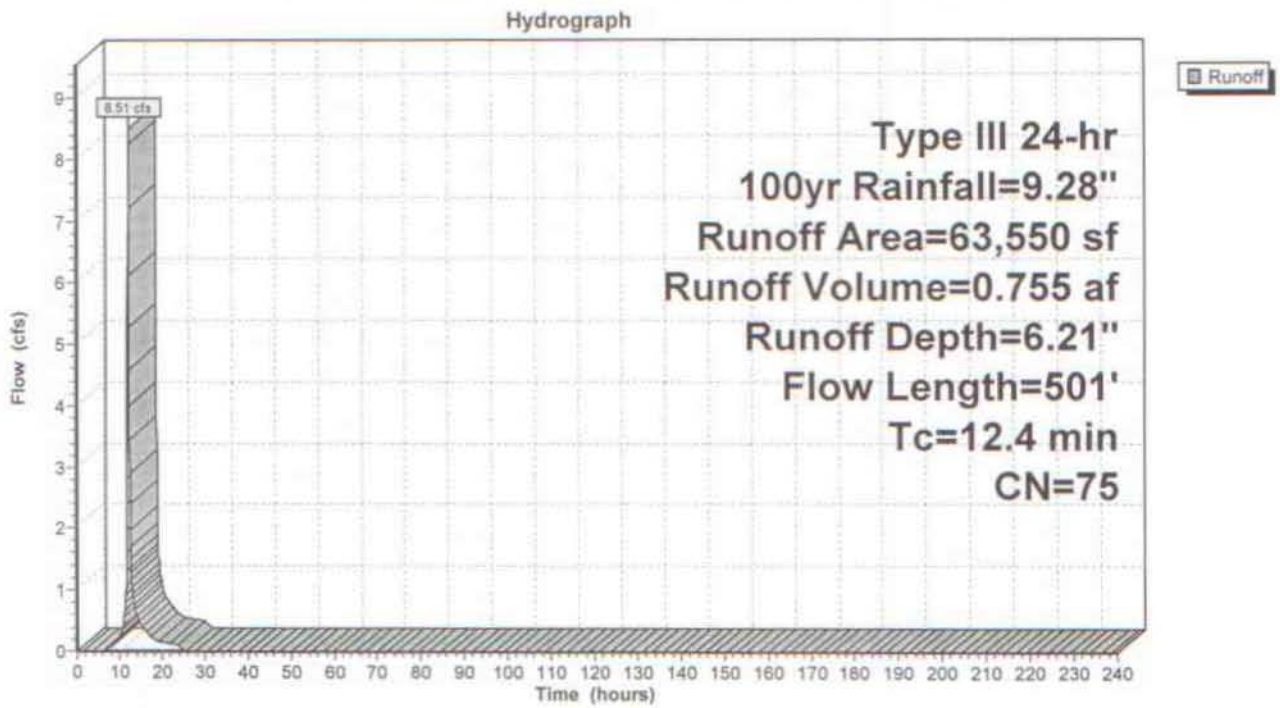
Runoff = 8.51 cfs @ 12.17 hrs, Volume= 0.755 af, Depth= 6.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=9.28"

Area (sf)	CN	Description
4,840	98	Paved parking, HSG C
58,710	73	Woods, Fair, HSG C
63,550	75	Weighted Average
58,710		92.38% Pervious Area
4,840		7.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	76	0.0250	1.49		**Sheet Flow, 1 to 2** Smooth surfaces n= 0.011 P2= 3.50"
0.8	25	0.0100	0.50		**Shallow Concentrated Flow, 2 to 3** Woodland Kv= 5.0 fps
1.2	100	0.0800	1.41		**Shallow Concentrated Flow, 3 to 4** Woodland Kv= 5.0 fps
9.5	300	0.0110	0.52		**Shallow Concentrated Flow, 4 to DP** Woodland Kv= 5.0 fps
12.4	501	Total			

Subcatchment 14S: EXISTING CONDITIONS E-4



Summary for Subcatchment 16S: EXISTING CONDITIONS E-6

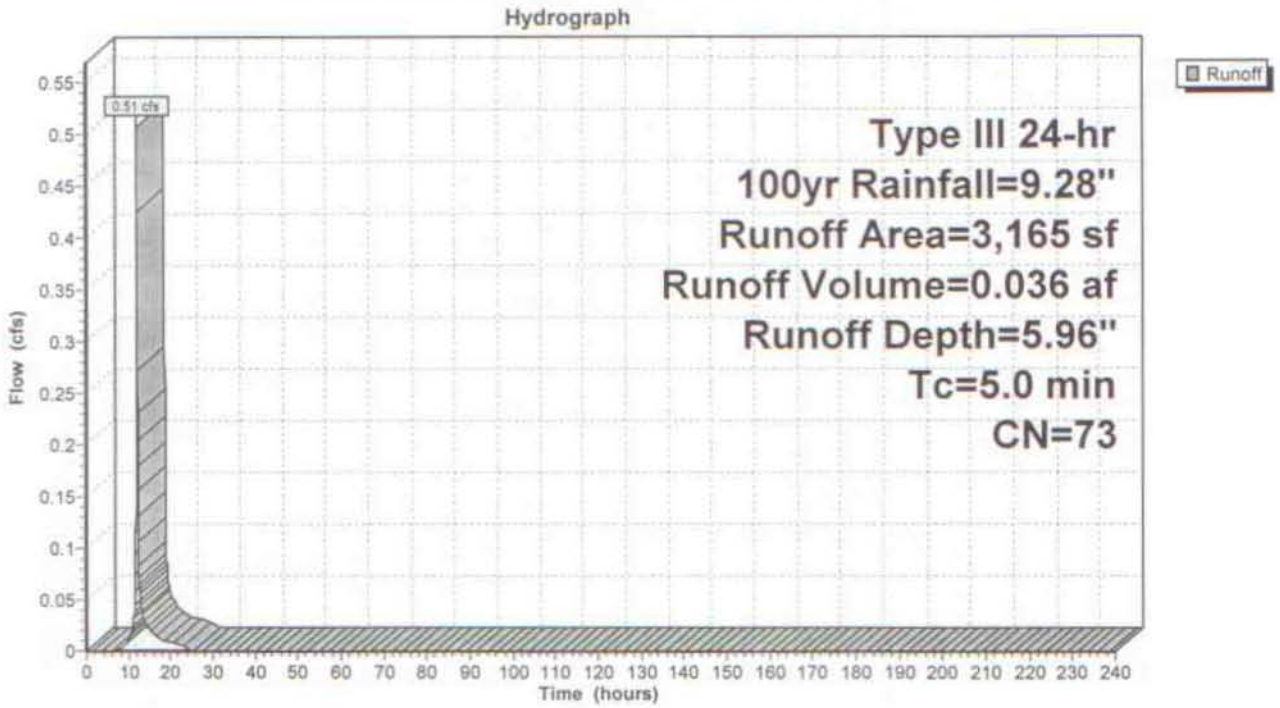
Runoff = 0.51 cfs @ 12.07 hrs, Volume= 0.036 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=9.28"

Area (sf)	CN	Description
3,165	73	Woods, Fair, HSG C
3,165		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, A TO DP

Subcatchment 16S: EXISTING CONDITIONS E-6



Summary for Subcatchment 19S: EXISTING CONDITIONS E-5

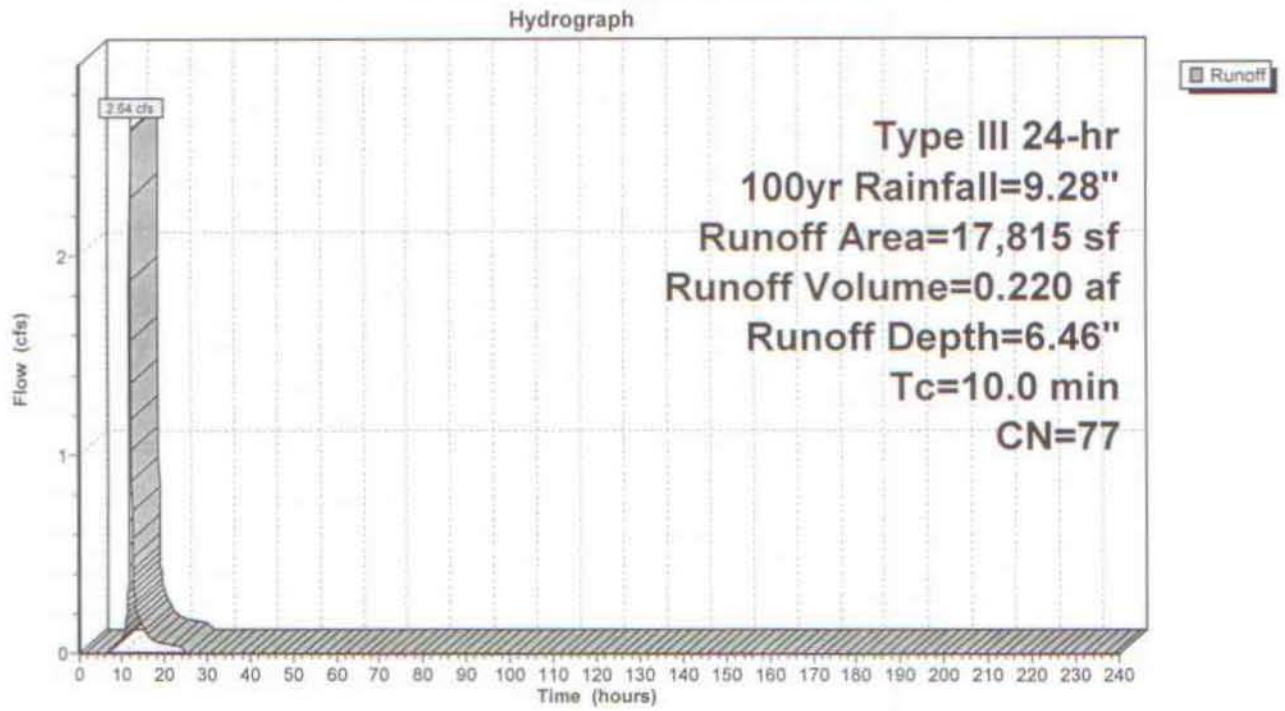
Runoff = 2.64 cfs @ 12.14 hrs, Volume= 0.220 af, Depth= 6.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr Rainfall=9.28"

Area (sf)	CN	Description
17,815	77	Woods, Poor, HSG C
17,815		100.00% Pervious Area

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

Subcatchment 19S: EXISTING CONDITIONS E-5

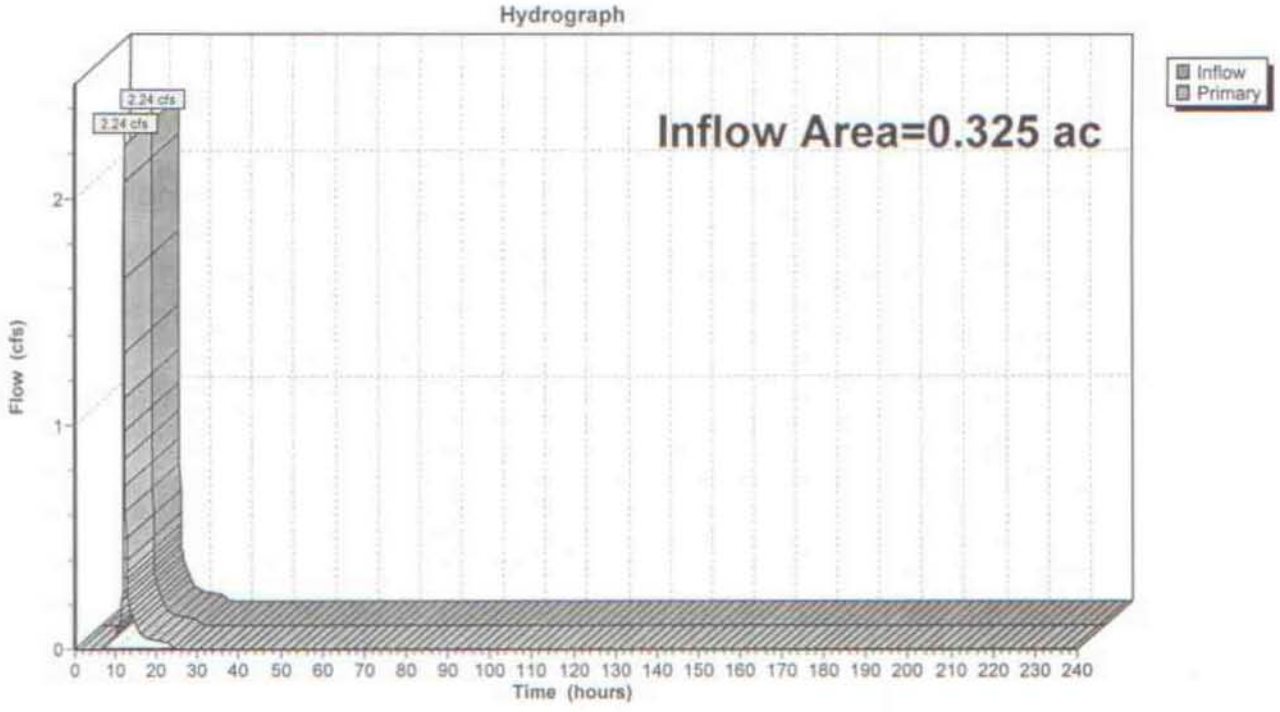


Summary for Link 9L: DP E-1

Inflow Area = 0.325 ac, 12.35% Impervious, Inflow Depth = 6.46" for 100yr event
Inflow = 2.24 cfs @ 12.11 hrs, Volume= 0.175 af
Primary = 2.24 cfs @ 12.11 hrs, Volume= 0.175 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 9L: DP E-1

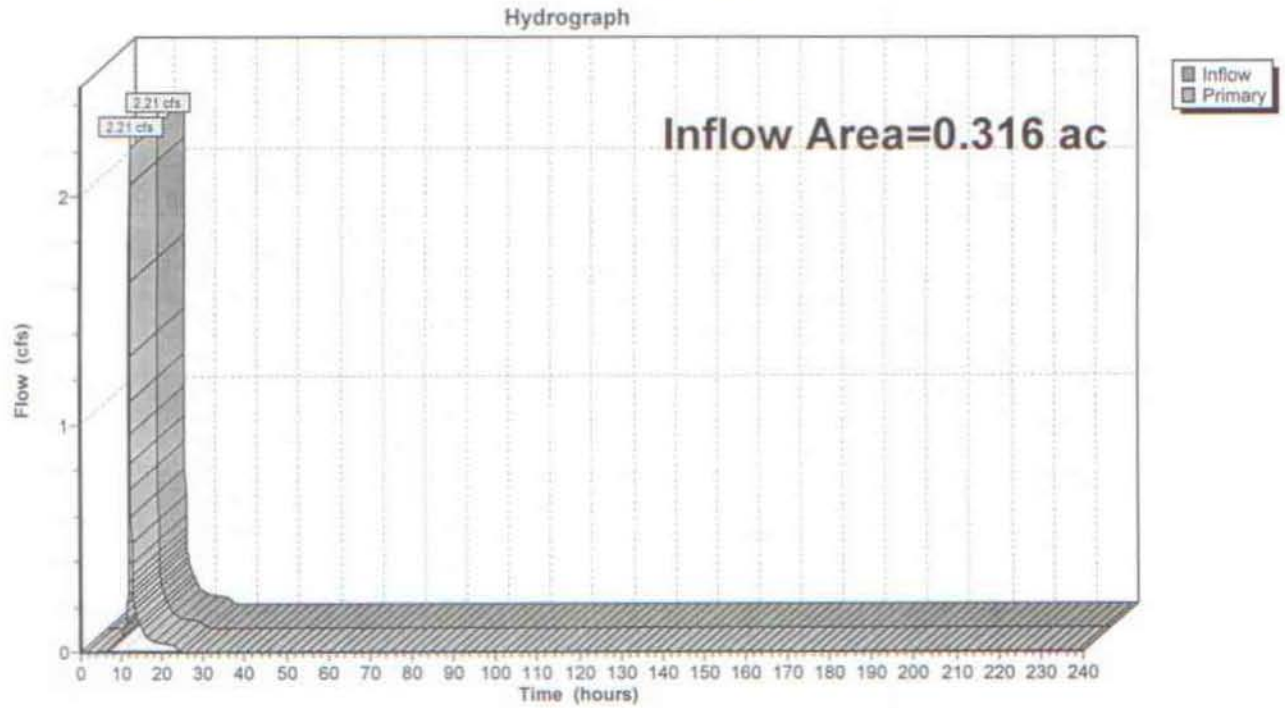


Summary for Link 11L: DP E-2

Inflow Area = 0.316 ac, 17.40% Impervious, Inflow Depth = 6.58" for 100yr event
Inflow = 2.21 cfs @ 12.11 hrs, Volume= 0.173 af
Primary = 2.21 cfs @ 12.11 hrs, Volume= 0.173 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 11L: DP E-2

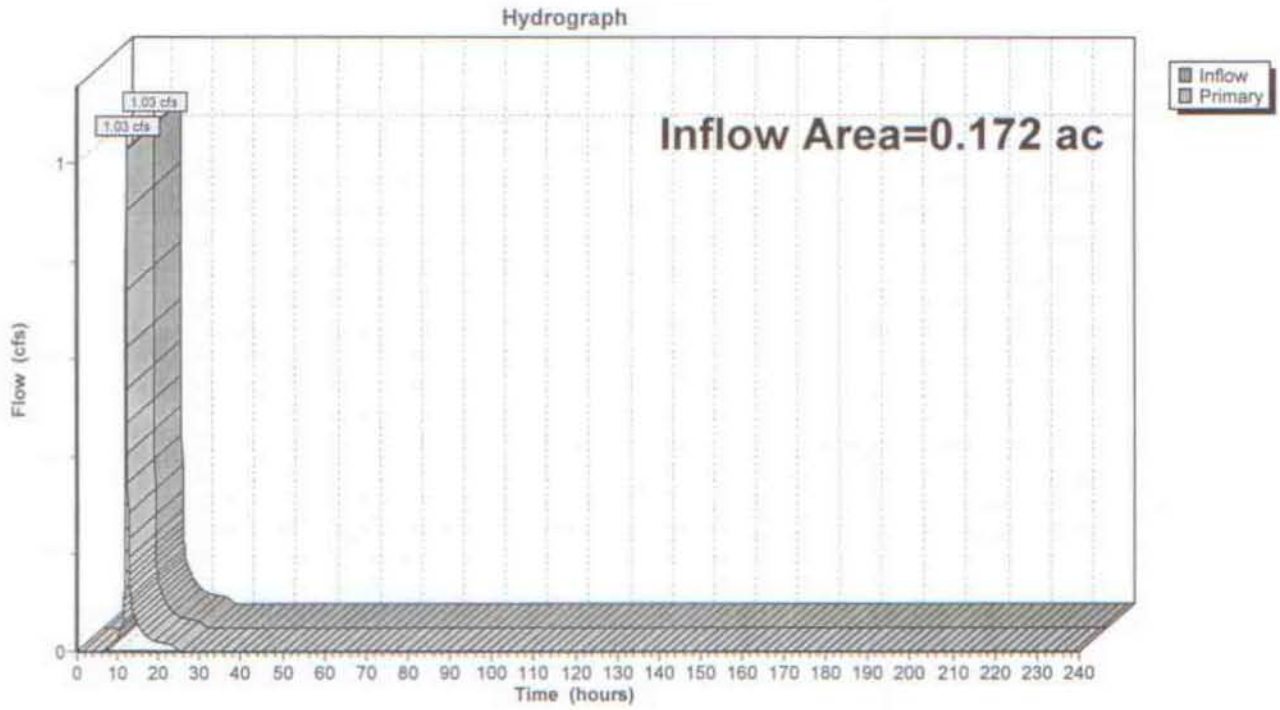


Summary for Link 13L: DP E-3

Inflow Area = 0.172 ac, 0.00% Impervious, Inflow Depth = 5.96" for 100yr event
Inflow = 1.03 cfs @ 12.14 hrs, Volume= 0.085 af
Primary = 1.03 cfs @ 12.14 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 13L: DP E-3

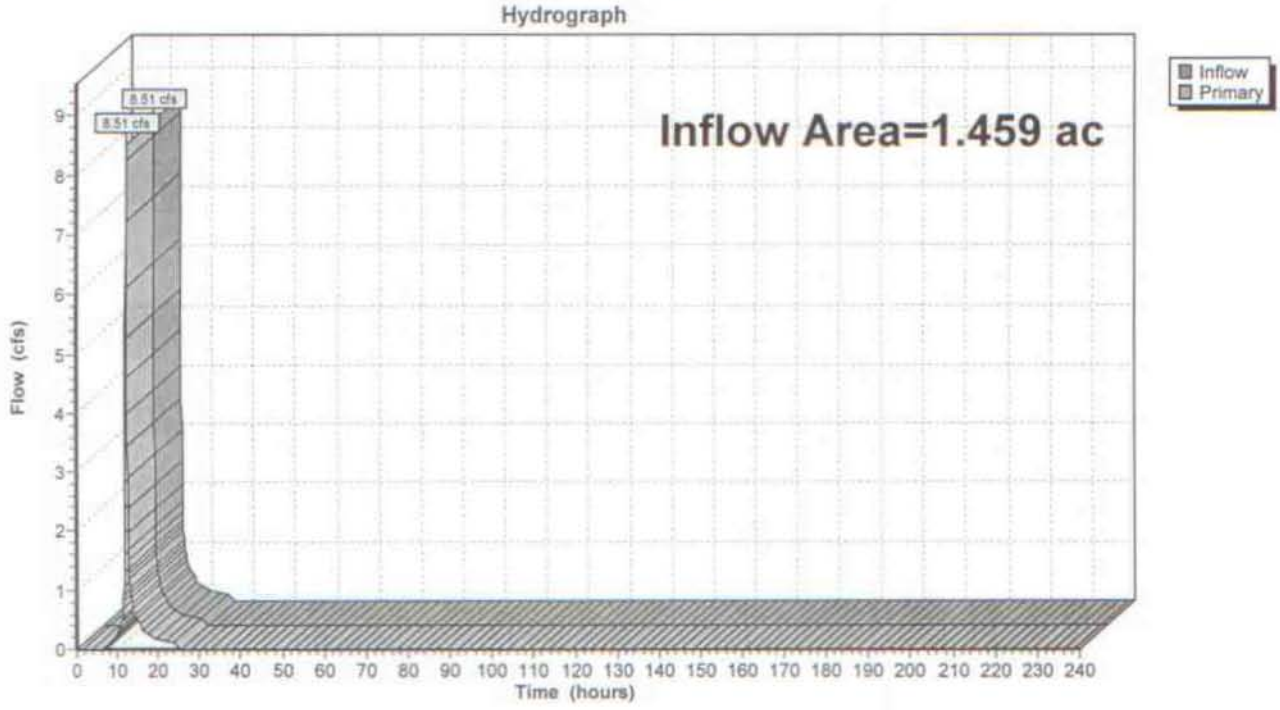


Summary for Link 15L: DP E-4

Inflow Area = 1.459 ac, 7.62% Impervious, Inflow Depth = 6.21" for 100yr event
Inflow = 8.51 cfs @ 12.17 hrs, Volume= 0.755 af
Primary = 8.51 cfs @ 12.17 hrs, Volume= 0.755 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 15L: DP E-4

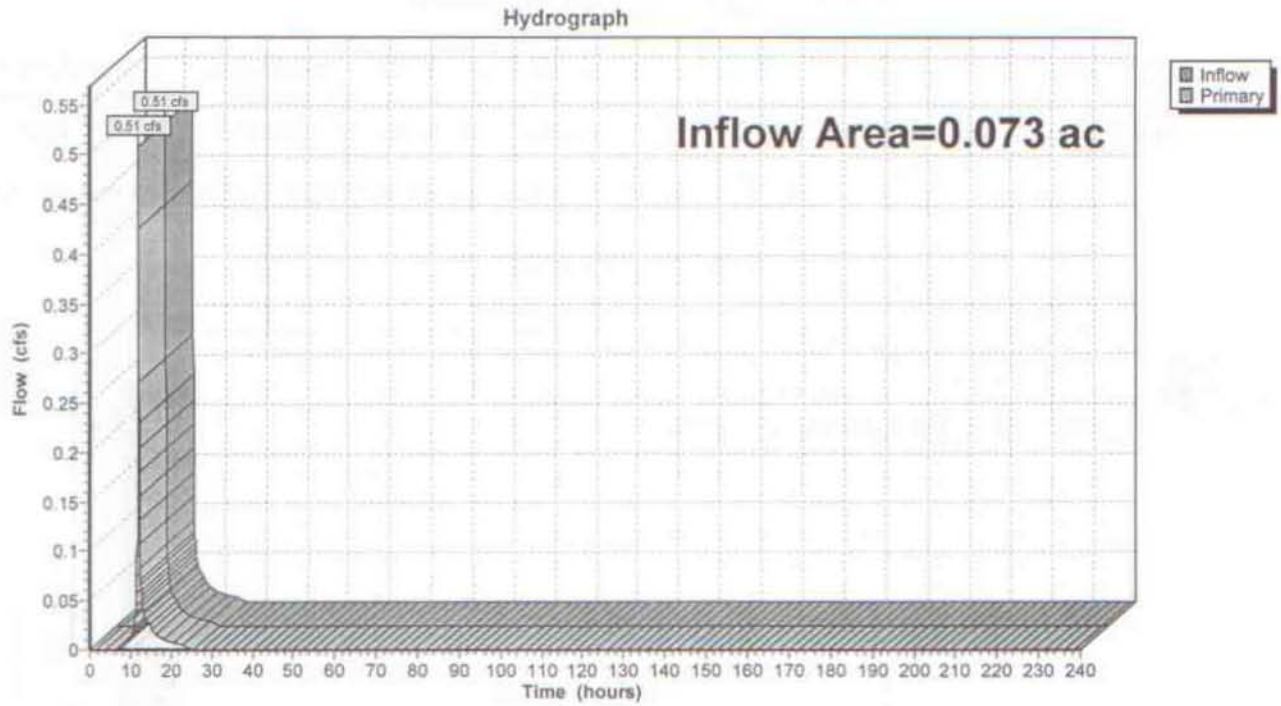


Summary for Link 18L: DP E-6

Inflow Area = 0.073 ac, 0.00% Impervious, Inflow Depth = 5.96" for 100yr event
Inflow = 0.51 cfs @ 12.07 hrs, Volume= 0.036 af
Primary = 0.51 cfs @ 12.07 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

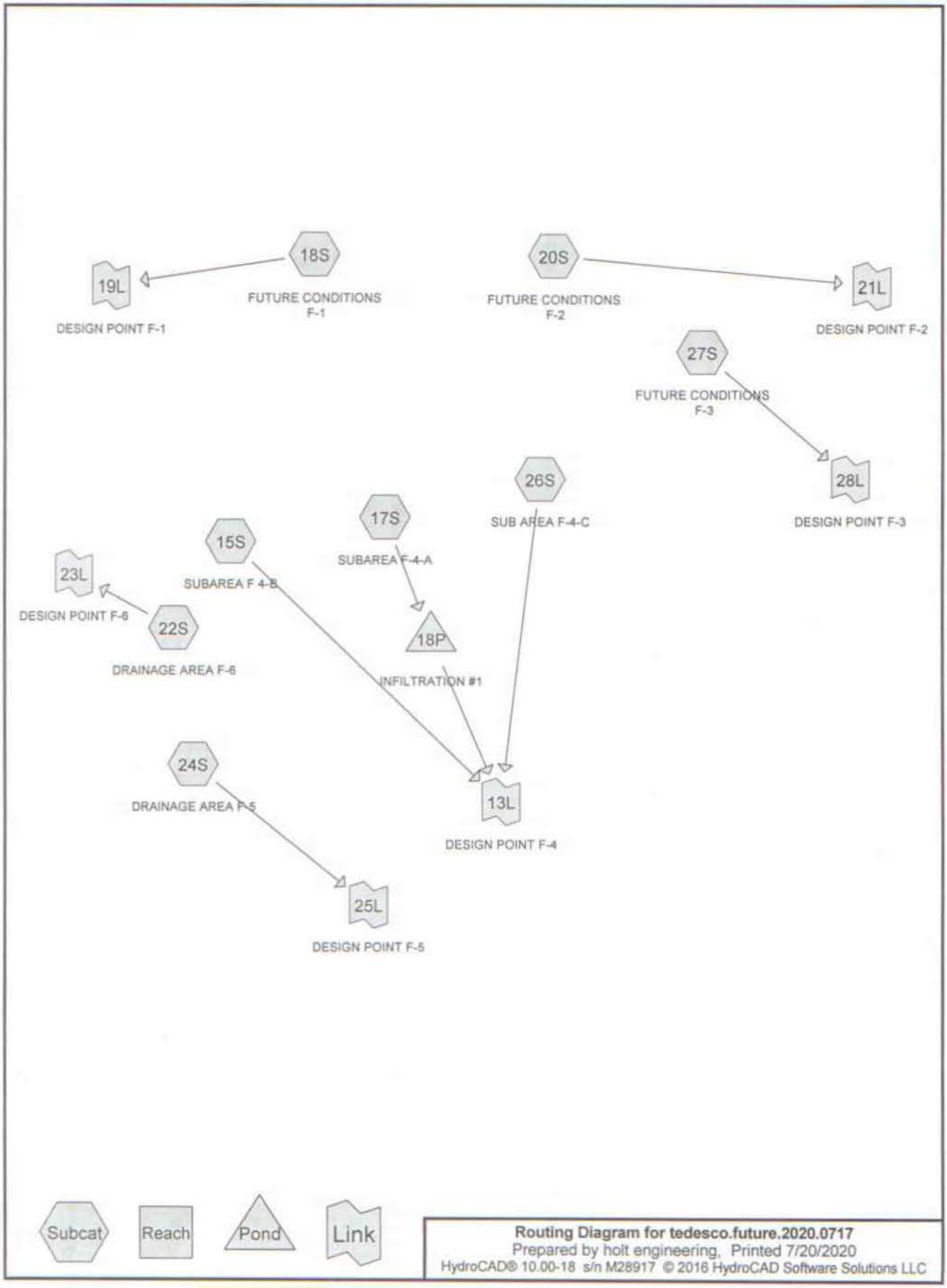
Primary outflow = Inflow, Time Span= 0.00-240.00 hrs, dt= 0.05 hrs

Link 18L: DP E-6



APPENDIX B

POST DEVELOPMENT ANALYSIS



Routing Diagram for tedesco.future.2020.0717
Prepared by holt engineering, Printed 7/20/2020

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.556	74	>75% Grass cover, Good, HSG C (17S, 18S, 20S)
0.095	98	Paved parking, HSG C (18S, 20S)
0.117	98	Unconnected pavement, HSG C (17S)
0.504	73	Woods, Fair, HSG C (22S, 26S, 27S)
0.755	70	Woods, Good, HSG C (15S, 26S)
0.409	77	Woods, Poor, HSG C (24S)
0.163	72	landscape/grass (15S)
0.156	74	lawn/landscape (26S)
2.754	**75**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
2.435	HSG C	15S, 17S, 18S, 20S, 22S, 24S, 26S, 27S
0.000	HSG D	
0.319	Other	15S, 26S
2.754		**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	0.556	0.000	0.000	0.556	>75% Grass cover, Good	17S, 18S, 20S
0.000	0.000	0.095	0.000	0.000	0.095	Paved parking	18S, 20S
0.000	0.000	0.117	0.000	0.000	0.117	Unconnected pavement	17S
0.000	0.000	0.504	0.000	0.000	0.504	Woods, Fair	22S, 26S, 27S
0.000	0.000	0.755	0.000	0.000	0.755	Woods, Good	15S, 26S
0.000	0.000	0.409	0.000	0.000	0.409	Woods, Poor	24S
0.000	0.000	0.000	0.000	0.163	0.163	landscape/grass	15S
0.000	0.000	0.000	0.000	0.156	0.156	lawn/landscape	26S
0.000	**0.000**	**2.435**	**0.000**	**0.319**	**2.754**	**TOTAL AREA**	

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 15S: SUBAREA F 4-B Runoff Area=33,720 sf 0.00% Impervious Runoff Depth=0.60"
Tc=15.0 min CN=70 Runoff=0.34 cfs 0.038 af

Subcatchment 17S: SUBAREA F-4-A Runoff Area=5,525 sf 91.86% Impervious Runoff Depth=2.34"
Tc=5.0 min CN=96 Runoff=0.34 cfs 0.025 af

Subcatchment 18S: FUTURE CONDITIONS Runoff Area=14,165 sf 12.35% Impervious Runoff Depth=0.92"
Tc=8.0 min CN=77 Runoff=0.31 cfs 0.025 af

Subcatchment 20S: FUTURE CONDITIONS Runoff Area=13,745 sf 17.40% Impervious Runoff Depth=0.97"
Tc=8.0 min CN=78 Runoff=0.32 cfs 0.026 af

Subcatchment 22S: DRAINAGE AREA F-6 Runoff Area=3,165 sf 0.00% Impervious Runoff Depth=0.73"
Tc=5.0 min CN=73 Runoff=0.06 cfs 0.004 af

Subcatchment 24S: DRAINAGE AREA F-5 Runoff Area=17,815 sf 0.00% Impervious Runoff Depth=0.92"
Tc=10.0 min CN=77 Runoff=0.37 cfs 0.031 af

Subcatchment 26S: SUB AREA F-4-C Runoff Area=24,335 sf 0.00% Impervious Runoff Depth=0.73"
Tc=12.4 min CN=73 Runoff=0.34 cfs 0.034 af

Subcatchment 27S: FUTURE CONDITIONS Runoff Area=7,495 sf 0.00% Impervious Runoff Depth=0.73"
Tc=10.0 min CN=73 Runoff=0.11 cfs 0.010 af

Pond 18P: INFILTRATION #1 Peak Elev=450.53' Storage=94 cf Inflow=0.34 cfs 0.025 af
Discarded=0.16 cfs 0.025 af Primary=0.00 cfs 0.000 af Outflow=0.16 cfs 0.025 af

Link 13L: DESIGN POINT F-4 Inflow=0.67 cfs 0.072 af
Primary=0.67 cfs 0.072 af

Link 19L: DESIGN POINT F-1 Inflow=0.31 cfs 0.025 af
Primary=0.31 cfs 0.025 af

Link 21L: DESIGN POINT F-2 Inflow=0.32 cfs 0.026 af
Primary=0.32 cfs 0.026 af

Link 23L: DESIGN POINT F-6 Inflow=0.06 cfs 0.004 af
Primary=0.06 cfs 0.004 af

Link 25L: DESIGN POINT F-5 Inflow=0.37 cfs 0.031 af
Primary=0.37 cfs 0.031 af

Link 28L: DESIGN POINT F-3 Inflow=0.11 cfs 0.010 af
Primary=0.11 cfs 0.010 af

Total Runoff Area = 2.754 ac Runoff Volume = 0.194 af Average Runoff Depth = 0.84"
92.32% Pervious = 2.542 ac 7.68% Impervious = 0.212 ac

Summary for Subcatchment 15S: SUBAREA F 4-B

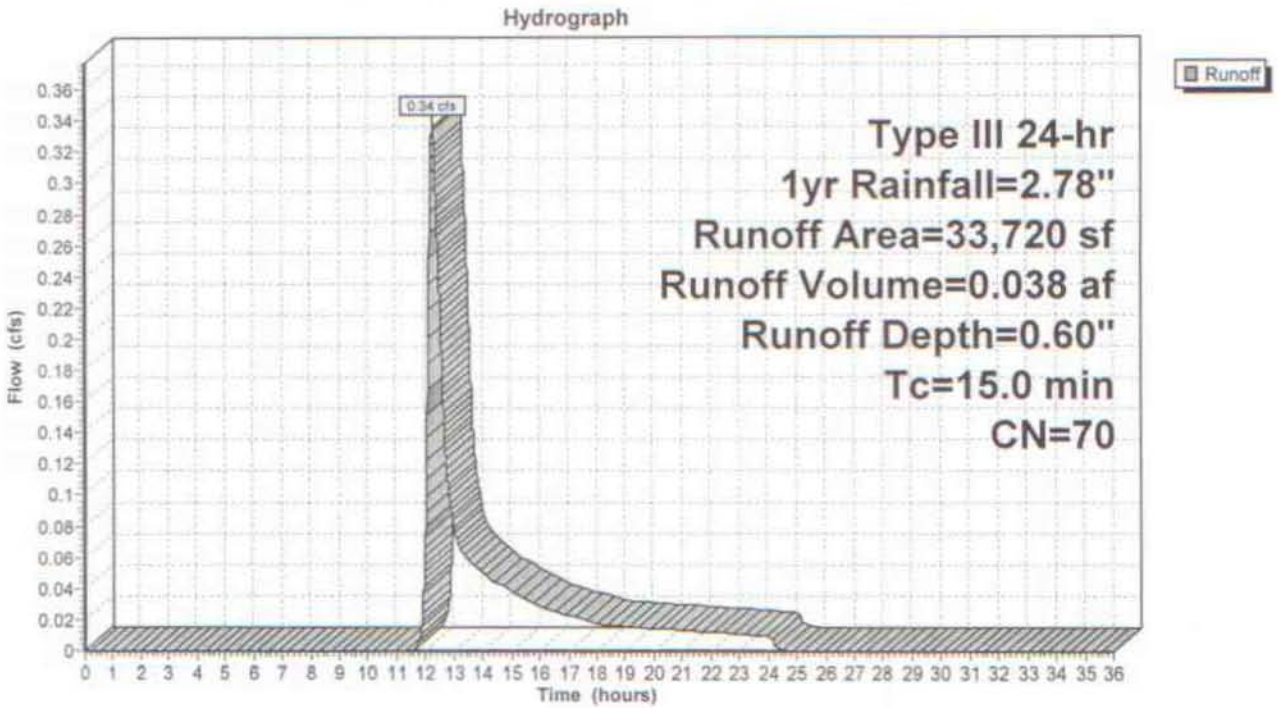
Runoff = 0.34 cfs @ 12.25 hrs, Volume= 0.038 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1yr Rainfall=2.78"

	Area (sf)	CN	Description
*	7,110	72	landscape/grass
	26,610	70	Woods, Good, HSG C
	33,720	70	Weighted Average
	33,720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry, Point C to Point B

Subcatchment 15S: SUBAREA F 4-B



Summary for Subcatchment 17S: SUBAREA F-4-A

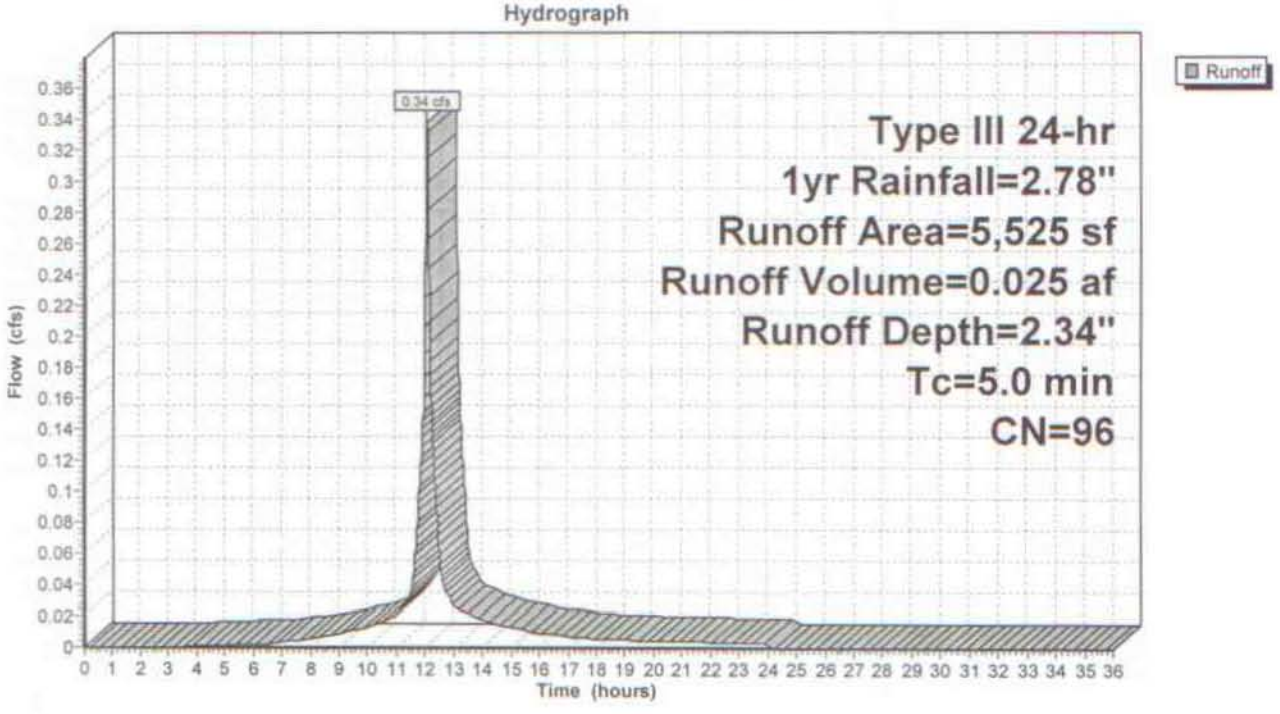
Runoff = 0.34 cfs @ 12.07 hrs, Volume= 0.025 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1yr Rainfall=2.78"

Area (sf)	CN	Description
5,075	98	Unconnected pavement, HSG C
450	74	>75% Grass cover, Good, HSG C
5,525	96	Weighted Average
450		8.14% Pervious Area
5,075		91.86% Impervious Area
5,075		100.00% Unconnected

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

Subcatchment 17S: SUBAREA F-4-A



Summary for Subcatchment 18S: FUTURE CONDITIONS F-1

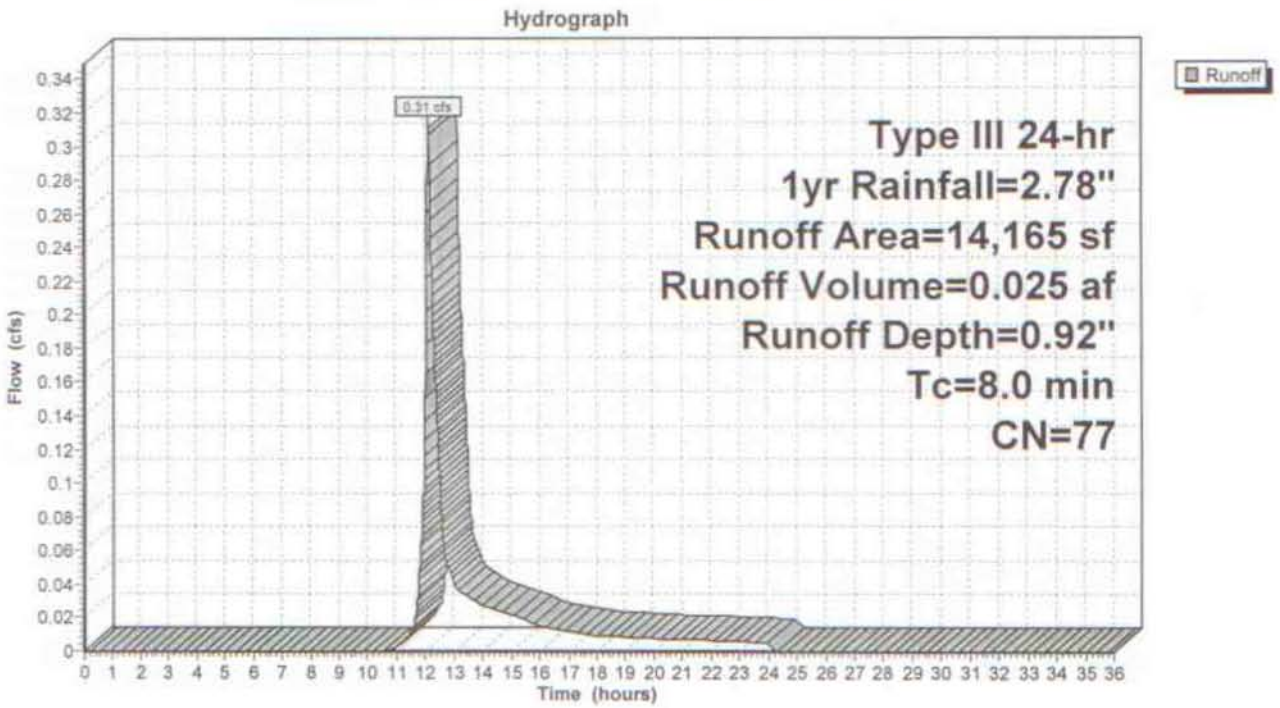
Runoff = 0.31 cfs @ 12.12 hrs, Volume= 0.025 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1yr Rainfall=2.78"

Area (sf)	CN	Description
12,415	74	>75% Grass cover, Good, HSG C
1,750	98	Paved parking, HSG C
14,165	77	Weighted Average
12,415		87.65% Pervious Area
1,750		12.35% Impervious Area

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

Subcatchment 18S: FUTURE CONDITIONS F-1



Summary for Subcatchment 20S: FUTURE CONDITIONS F-2

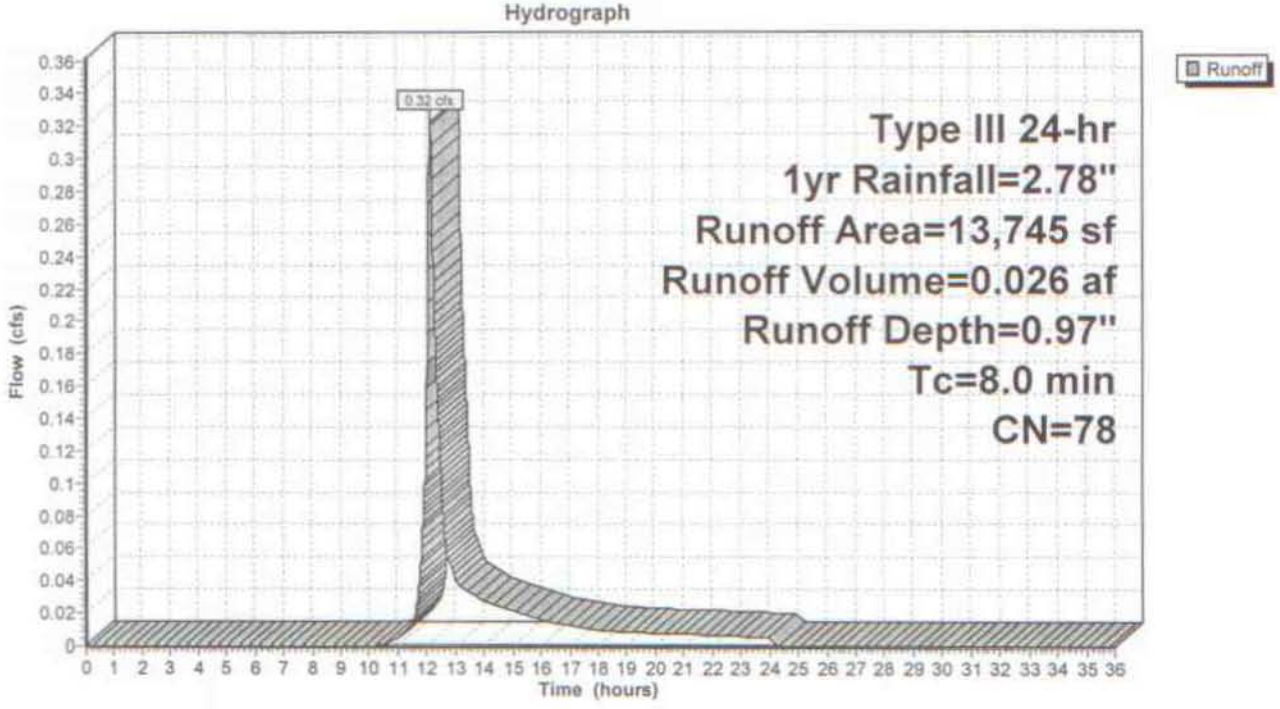
Runoff = 0.32 cfs @ 12.12 hrs, Volume= 0.026 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1yr Rainfall=2.78"

Area (sf)	CN	Description
2,392	98	Paved parking, HSG C
11,353	74	>75% Grass cover, Good, HSG C
13,745	78	Weighted Average
11,353		82.60% Pervious Area
2,392		17.40% Impervious Area

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

Subcatchment 20S: FUTURE CONDITIONS F-2



Summary for Subcatchment 22S: DRAINAGE AREA F-6

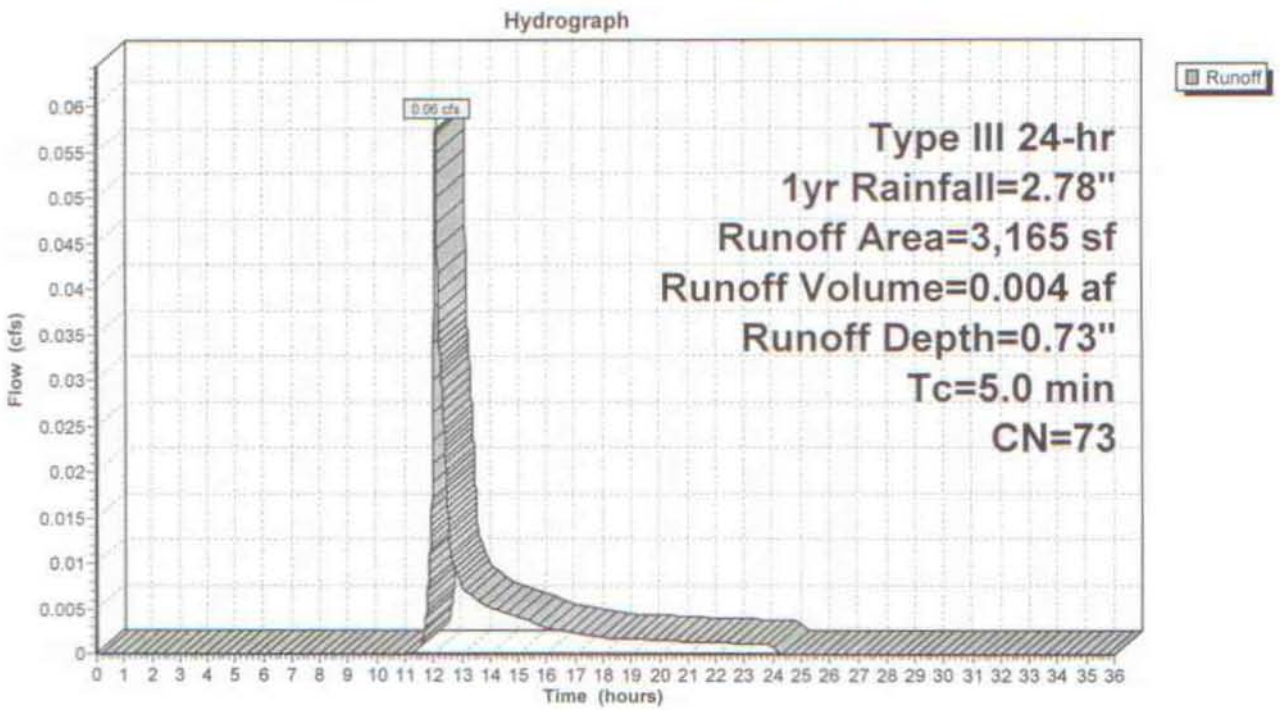
Runoff = 0.06 cfs @ 12.09 hrs, Volume= 0.004 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1yr Rainfall=2.78"

Area (sf)	CN	Description
3,165	73	Woods, Fair, HSG C
3,165		100.00% Pervious Area

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

Subcatchment 22S: DRAINAGE AREA F-6



Summary for Subcatchment 24S: DRAINAGE AREA F-5

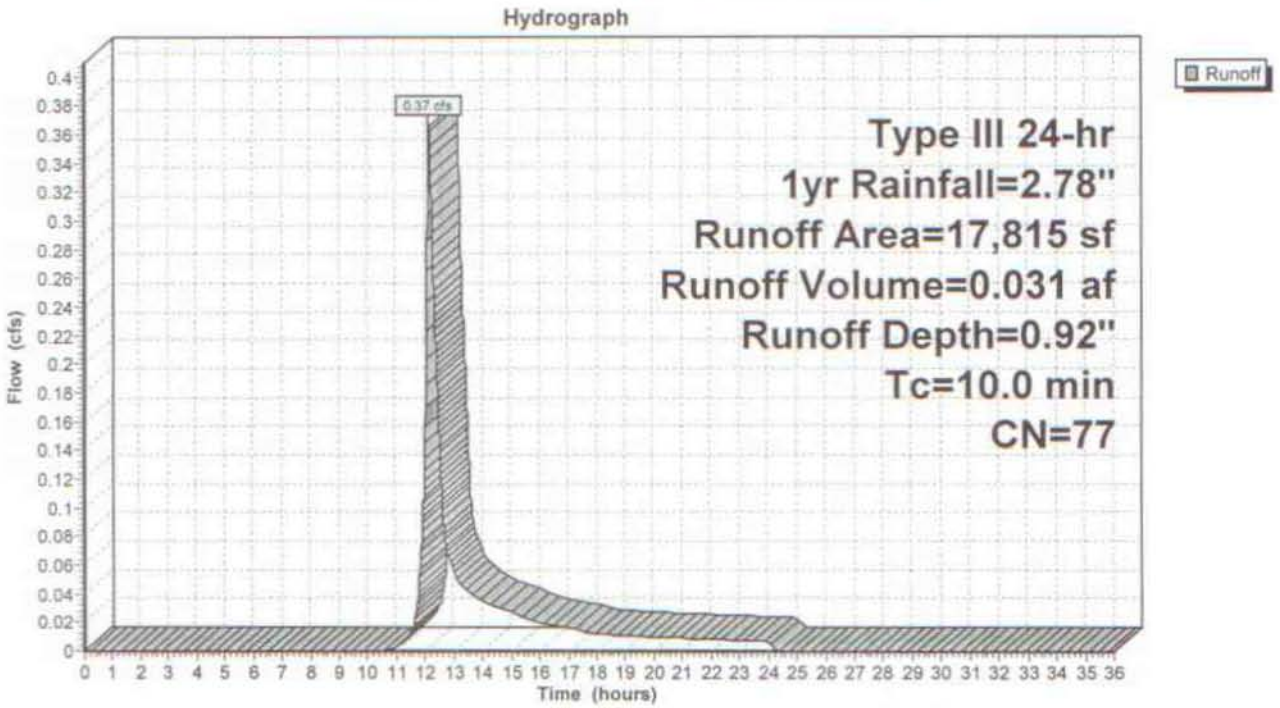
Runoff = 0.37 cfs @ 12.15 hrs, Volume= 0.031 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1yr Rainfall=2.78"

Area (sf)	CN	Description
17,815	77	Woods, Poor, HSG C
17,815		100.00% Pervious Area

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

Subcatchment 24S: DRAINAGE AREA F-5



Summary for Subcatchment 26S: SUB AREA F-4-C

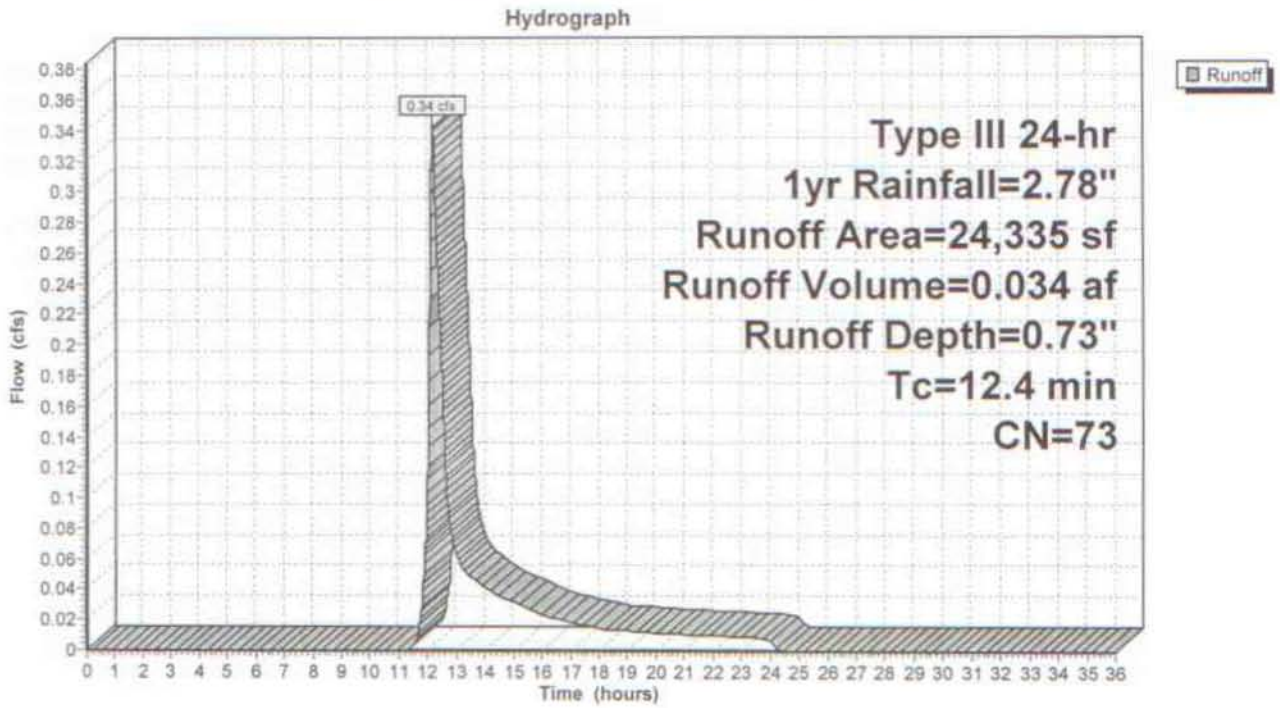
Runoff = 0.34 cfs @ 12.19 hrs, Volume= 0.034 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1yr Rainfall=2.78"

	Area (sf)	CN	Description
*	6,780	74	lawn/landscape
	11,275	73	Woods, Fair, HSG C
	6,280	70	Woods, Good, HSG C
	24,335	73	Weighted Average
	24,335		100.00% Pervious Area

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

Subcatchment 26S: SUB AREA F-4-C



Summary for Subcatchment 27S: FUTURE CONDITIONS F-3

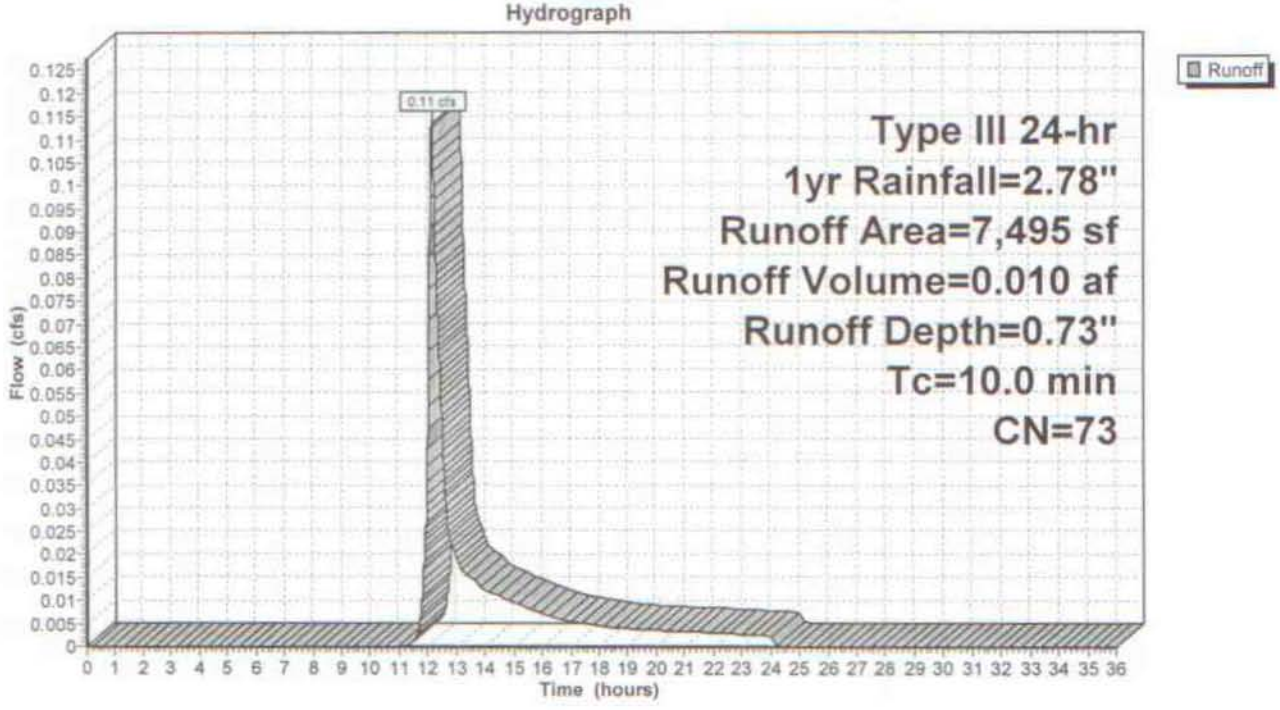
Runoff = 0.11 cfs @ 12.15 hrs, Volume= 0.010 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 1yr Rainfall=2.78"

Area (sf)	CN	Description
7,495	73	Woods, Fair, HSG C
7,495		100.00% Pervious Area

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

Subcatchment 27S: FUTURE CONDITIONS F-3



Summary for Pond 18P: INFILTRATION #1

Inflow Area = 0.127 ac, 91.86% Impervious, Inflow Depth = 2.34" for 1yr event
Inflow = 0.34 cfs @ 12.07 hrs, Volume= 0.025 af
Outflow = 0.16 cfs @ 11.98 hrs, Volume= 0.025 af, Atten= 53%, Lag= 0.0 min
Discarded = 0.16 cfs @ 11.98 hrs, Volume= 0.025 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 450.53' @ 12.22 hrs Surf.Area= 338 sf Storage= 94 cf

Plug-Flow detention time= 2.9 min calculated for 0.025 af (100% of inflow)
Center-of-Mass det. time= 2.9 min (780.1 - 777.2)

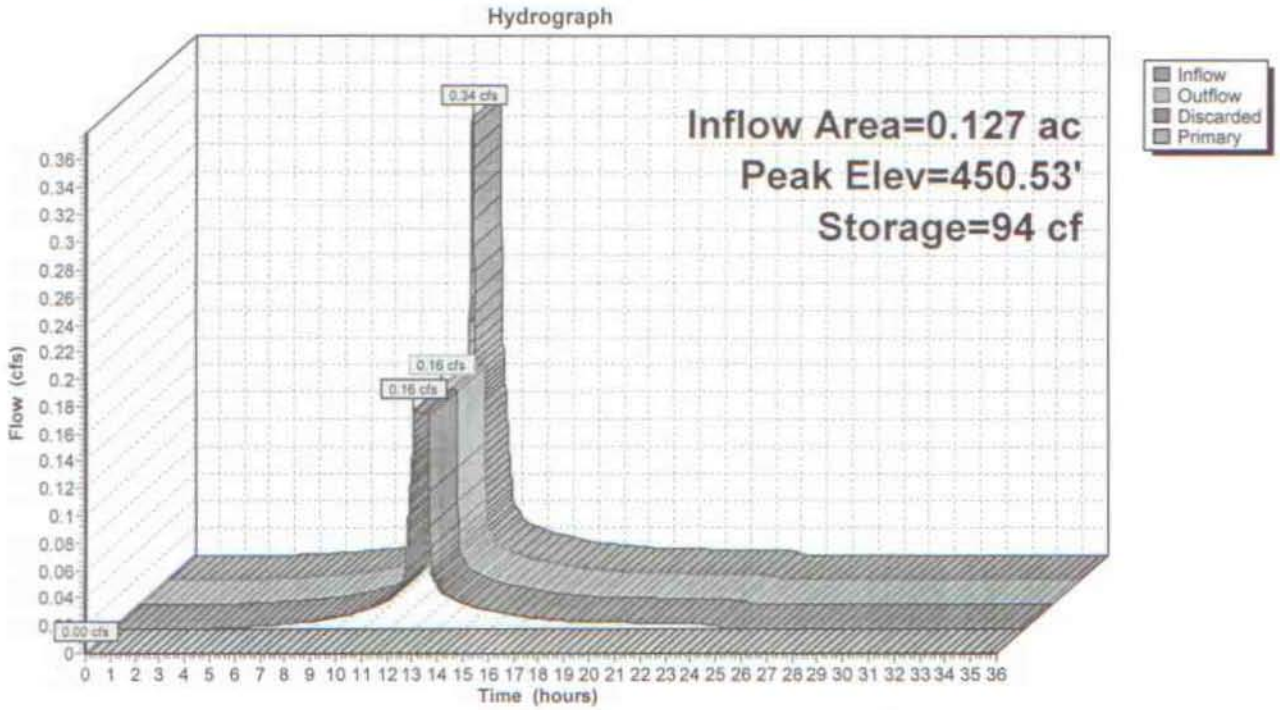
Volume	Invert	Avail.Storage	Storage Description
#1	450.25'	648 cf	**Cultec R-330XLHD** x 12 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

Device	Routing	Invert	Outlet Devices
#1	Discarded	450.25'	**20.000 in/hr Exfiltration over Surface area**
#2	Primary	452.00'	**15.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.16 cfs @ 11.98 hrs HW=450.28' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=450.25' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 18P: INFILTRATION #1

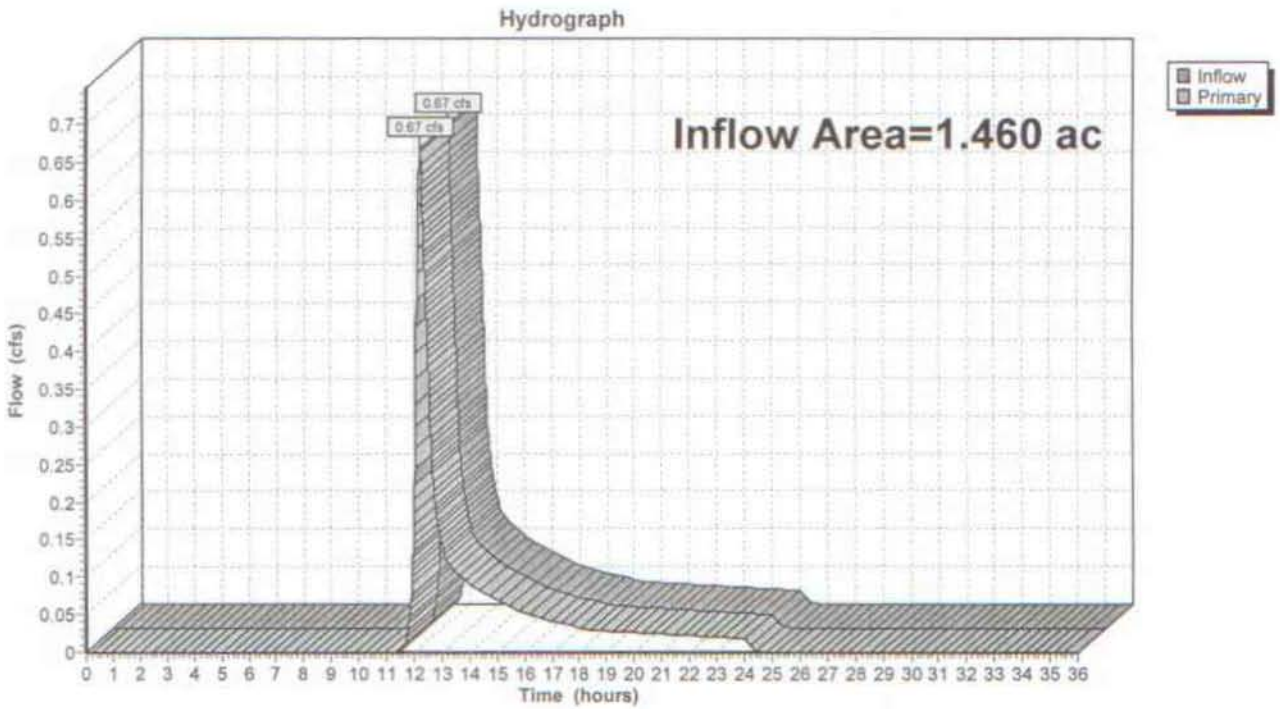


Summary for Link 13L: DESIGN POINT F-4

Inflow Area = 1.460 ac, 7.98% Impervious, Inflow Depth = 0.59" for 1yr event
Inflow = 0.67 cfs @ 12.22 hrs, Volume= 0.072 af
Primary = 0.67 cfs @ 12.22 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 13L: DESIGN POINT F-4

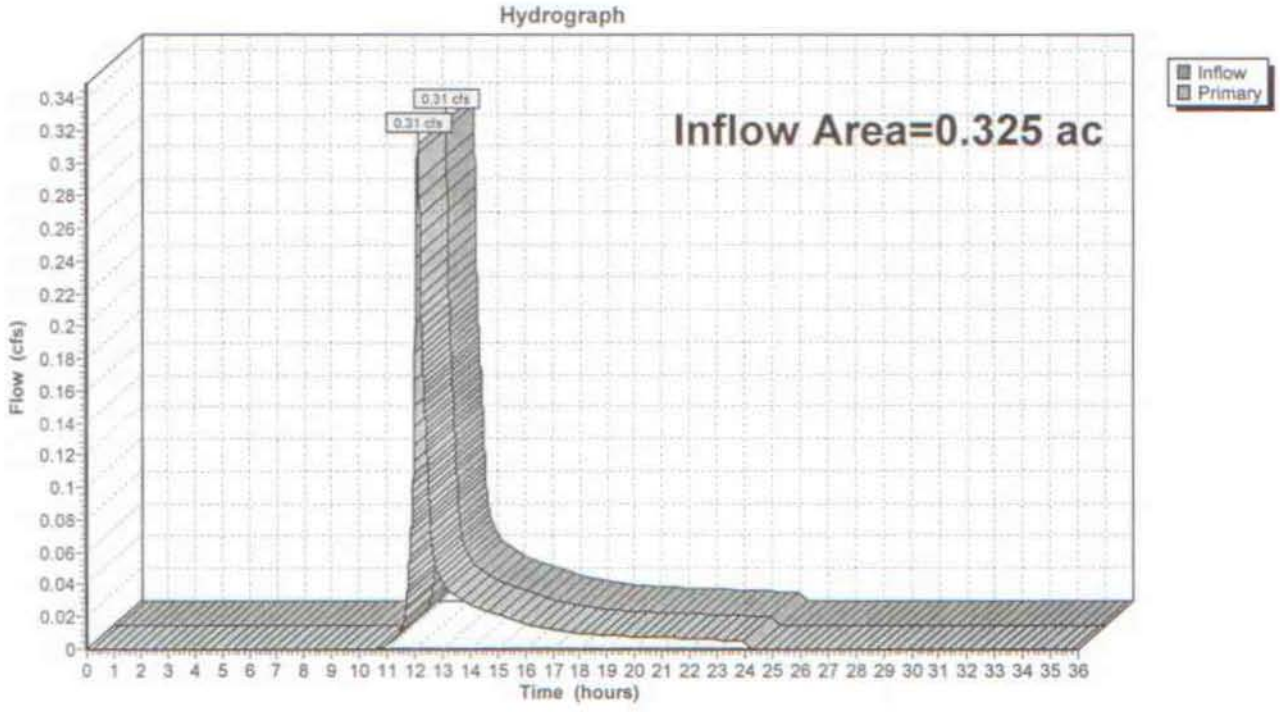


Summary for Link 19L: DESIGN POINT F-1

Inflow Area = 0.325 ac, 12.35% Impervious, Inflow Depth = 0.92" for 1yr event
Inflow = 0.31 cfs @ 12.12 hrs, Volume= 0.025 af
Primary = 0.31 cfs @ 12.12 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 19L: DESIGN POINT F-1

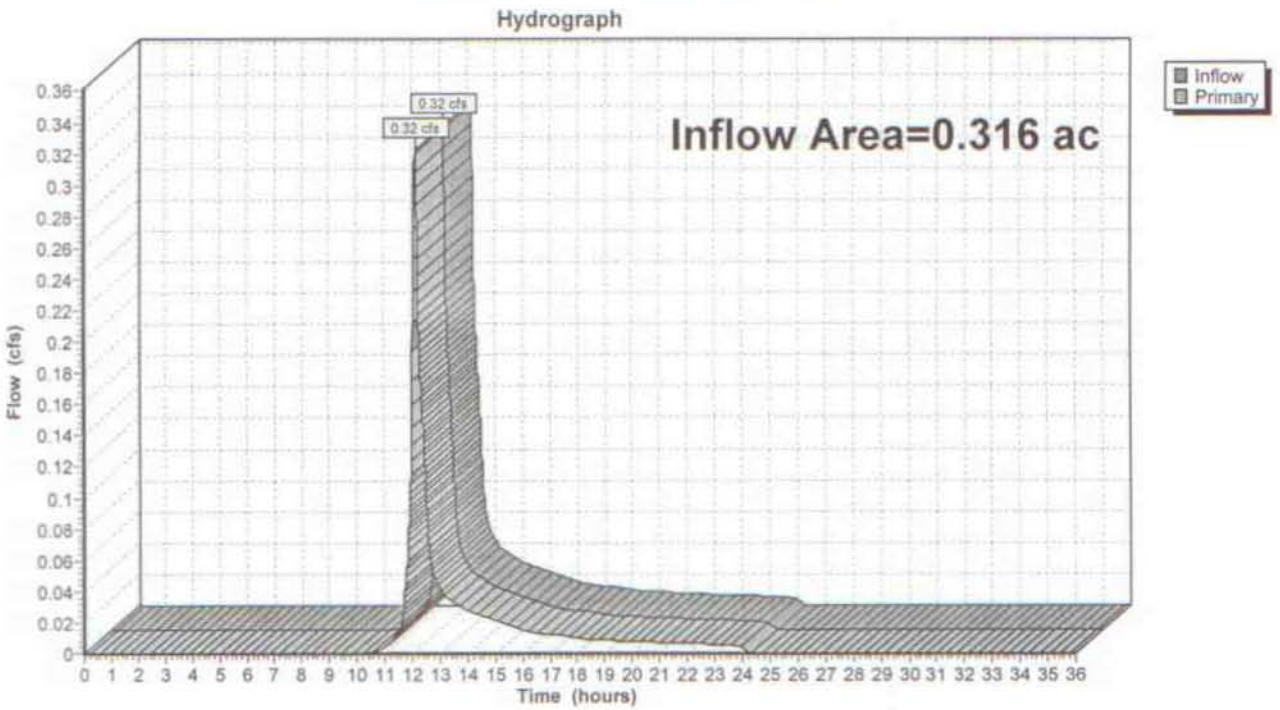


Summary for Link 21L: DESIGN POINT F-2

Inflow Area = 0.316 ac, 17.40% Impervious, Inflow Depth = 0.97" for 1yr event
Inflow = 0.32 cfs @ 12.12 hrs, Volume= 0.026 af
Primary = 0.32 cfs @ 12.12 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 21L: DESIGN POINT F-2

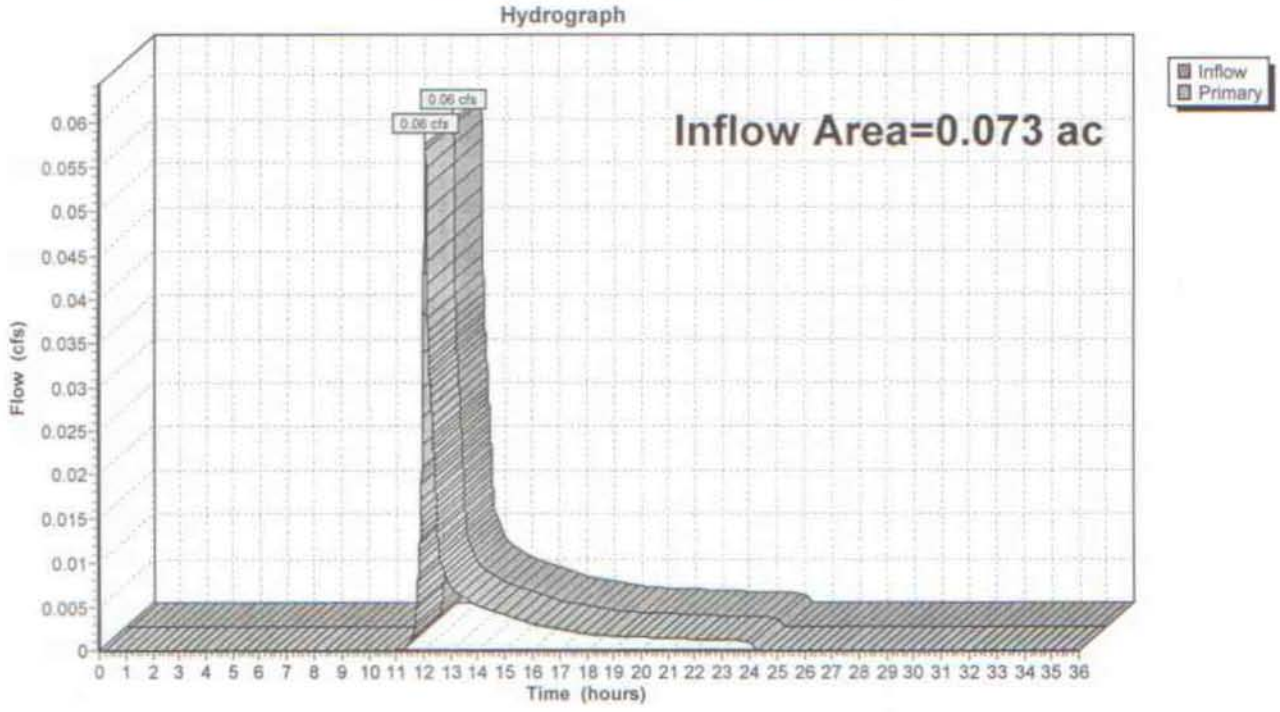


Summary for Link 23L: DESIGN POINT F-6

Inflow Area = 0.073 ac, 0.00% Impervious, Inflow Depth = 0.73" for 1yr event
Inflow = 0.06 cfs @ 12.09 hrs, Volume= 0.004 af
Primary = 0.06 cfs @ 12.09 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 23L: DESIGN POINT F-6

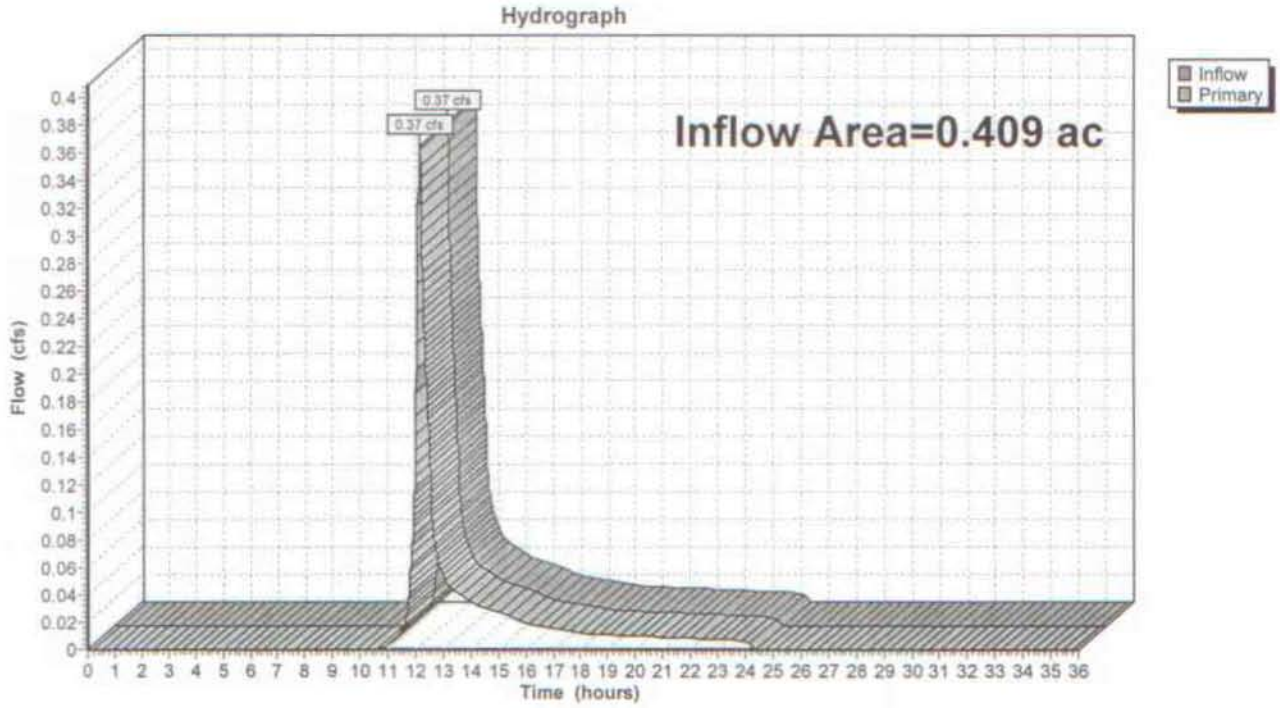


Summary for Link 25L: DESIGN POINT F-5

Inflow Area = 0.409 ac, 0.00% Impervious, Inflow Depth = 0.92" for 1yr event
Inflow = 0.37 cfs @ 12.15 hrs, Volume= 0.031 af
Primary = 0.37 cfs @ 12.15 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 25L: DESIGN POINT F-5

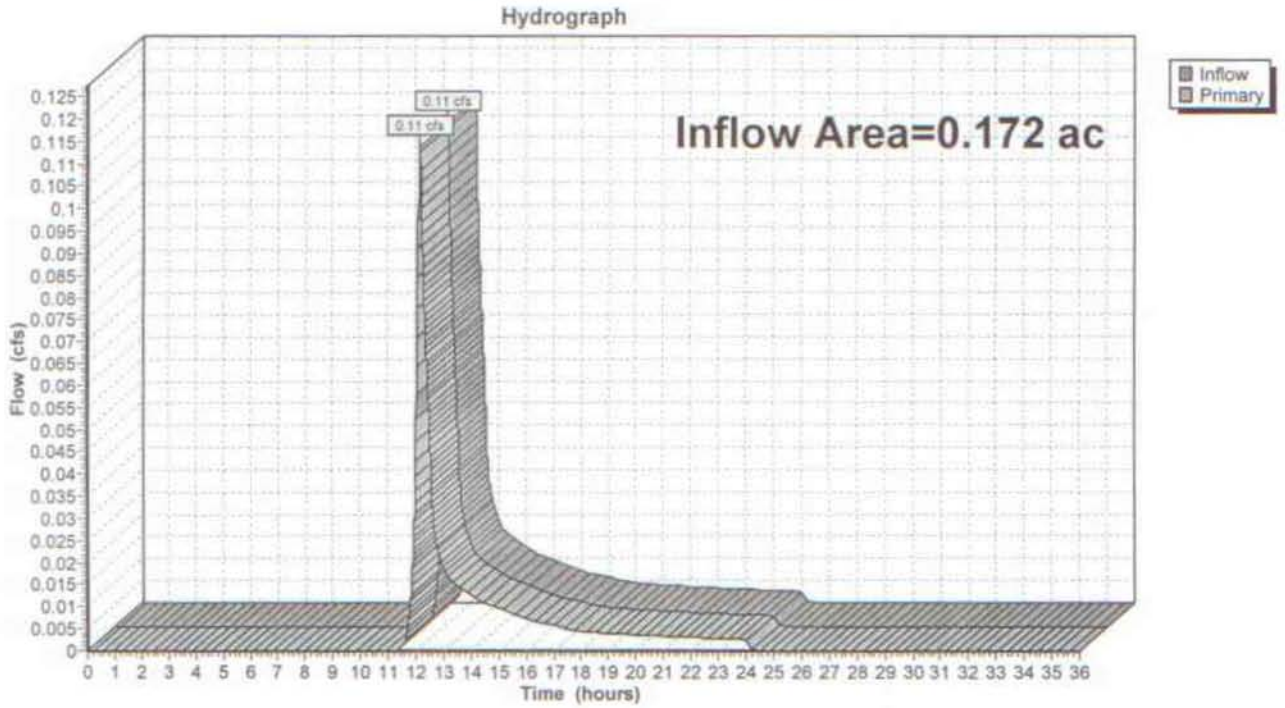


Summary for Link 28L: DESIGN POINT F-3

Inflow Area = 0.172 ac, 0.00% Impervious, Inflow Depth = 0.73" for 1yr event
Inflow = 0.11 cfs @ 12.15 hrs, Volume= 0.010 af
Primary = 0.11 cfs @ 12.15 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 28L: DESIGN POINT F-3



Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 15S: SUBAREA F 4-B Runoff Area=33,720 sf 0.00% Impervious Runoff Depth=0.95"
Tc=15.0 min CN=70 Runoff=0.59 cfs 0.061 af

Subcatchment 17S: SUBAREA F-4-A Runoff Area=5,525 sf 91.86% Impervious Runoff Depth=2.96"
Tc=5.0 min CN=96 Runoff=0.42 cfs 0.031 af

Subcatchment 18S: FUTURE CONDITIONS Runoff Area=14,165 sf 12.35% Impervious Runoff Depth=1.36"
Tc=8.0 min CN=77 Runoff=0.47 cfs 0.037 af

Subcatchment 20S: FUTURE CONDITIONS Runoff Area=13,745 sf 17.40% Impervious Runoff Depth=1.43"
Tc=8.0 min CN=78 Runoff=0.49 cfs 0.038 af

Subcatchment 22S: DRAINAGE AREA F-6 Runoff Area=3,165 sf 0.00% Impervious Runoff Depth=1.12"
Tc=5.0 min CN=73 Runoff=0.09 cfs 0.007 af

Subcatchment 24S: DRAINAGE AREA F-5 Runoff Area=17,815 sf 0.00% Impervious Runoff Depth=1.36"
Tc=10.0 min CN=77 Runoff=0.56 cfs 0.046 af

Subcatchment 26S: SUB AREA F-4-C Runoff Area=24,335 sf 0.00% Impervious Runoff Depth=1.12"
Tc=12.4 min CN=73 Runoff=0.56 cfs 0.052 af

Subcatchment 27S: FUTURE CONDITIONS Runoff Area=7,495 sf 0.00% Impervious Runoff Depth=1.12"
Tc=10.0 min CN=73 Runoff=0.19 cfs 0.016 af

Pond 18P: INFILTRATION #1 Peak Elev=450.73' Storage=162 cf Inflow=0.42 cfs 0.031 af
Discarded=0.16 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.16 cfs 0.031 af

Link 13L: DESIGN POINT F-4 Inflow=1.14 cfs 0.114 af
Primary=1.14 cfs 0.114 af

Link 19L: DESIGN POINT F-1 Inflow=0.47 cfs 0.037 af
Primary=0.47 cfs 0.037 af

Link 21L: DESIGN POINT F-2 Inflow=0.49 cfs 0.038 af
Primary=0.49 cfs 0.038 af

Link 23L: DESIGN POINT F-6 Inflow=0.09 cfs 0.007 af
Primary=0.09 cfs 0.007 af

Link 25L: DESIGN POINT F-5 Inflow=0.56 cfs 0.046 af
Primary=0.56 cfs 0.046 af

Link 28L: DESIGN POINT F-3 Inflow=0.19 cfs 0.016 af
Primary=0.19 cfs 0.016 af

Total Runoff Area = 2.754 ac Runoff Volume = 0.289 af Average Runoff Depth = 1.26"
92.32% Pervious = 2.542 ac 7.68% Impervious = 0.212 ac

Summary for Subcatchment 15S: SUBAREA F 4-B

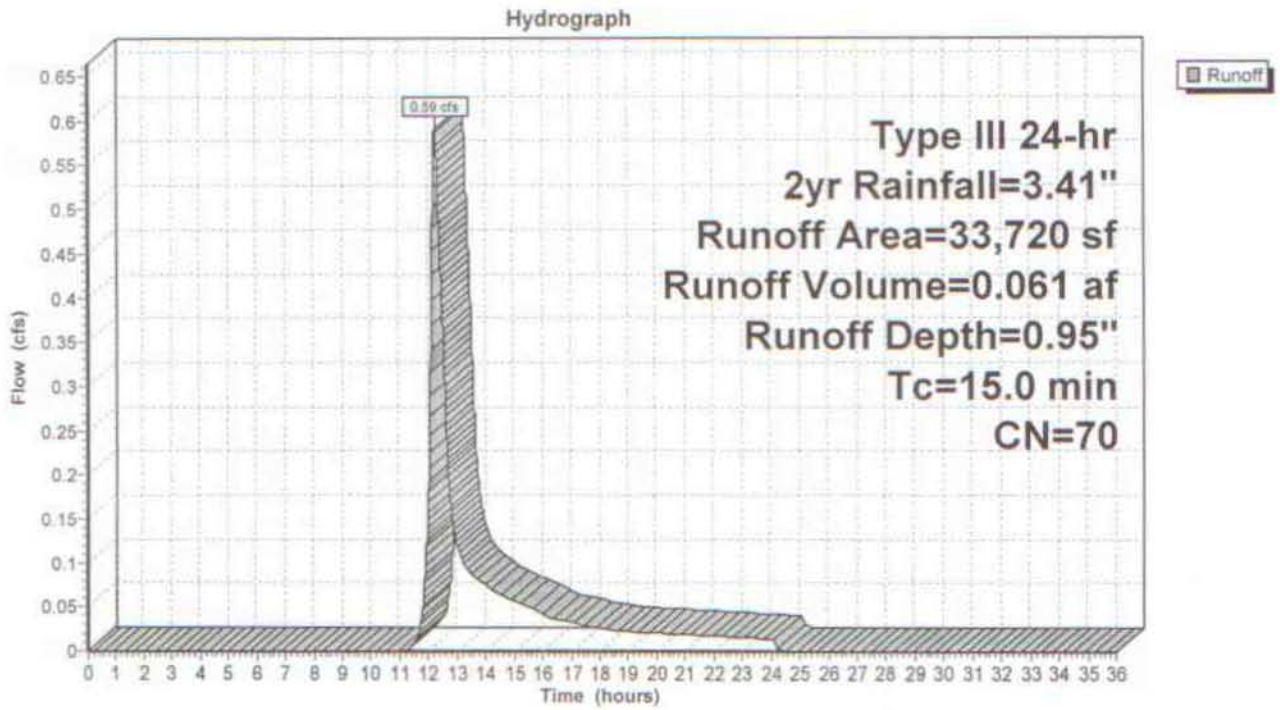
Runoff = 0.59 cfs @ 12.22 hrs, Volume= 0.061 af, Depth= 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=3.41"

	Area (sf)	CN	Description
*	7,110	72	landscape/grass
	26,610	70	Woods, Good, HSG C
	33,720	70	Weighted Average
	33,720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry, Point C to Point B

Subcatchment 15S: SUBAREA F 4-B



Summary for Subcatchment 17S: SUBAREA F-4-A

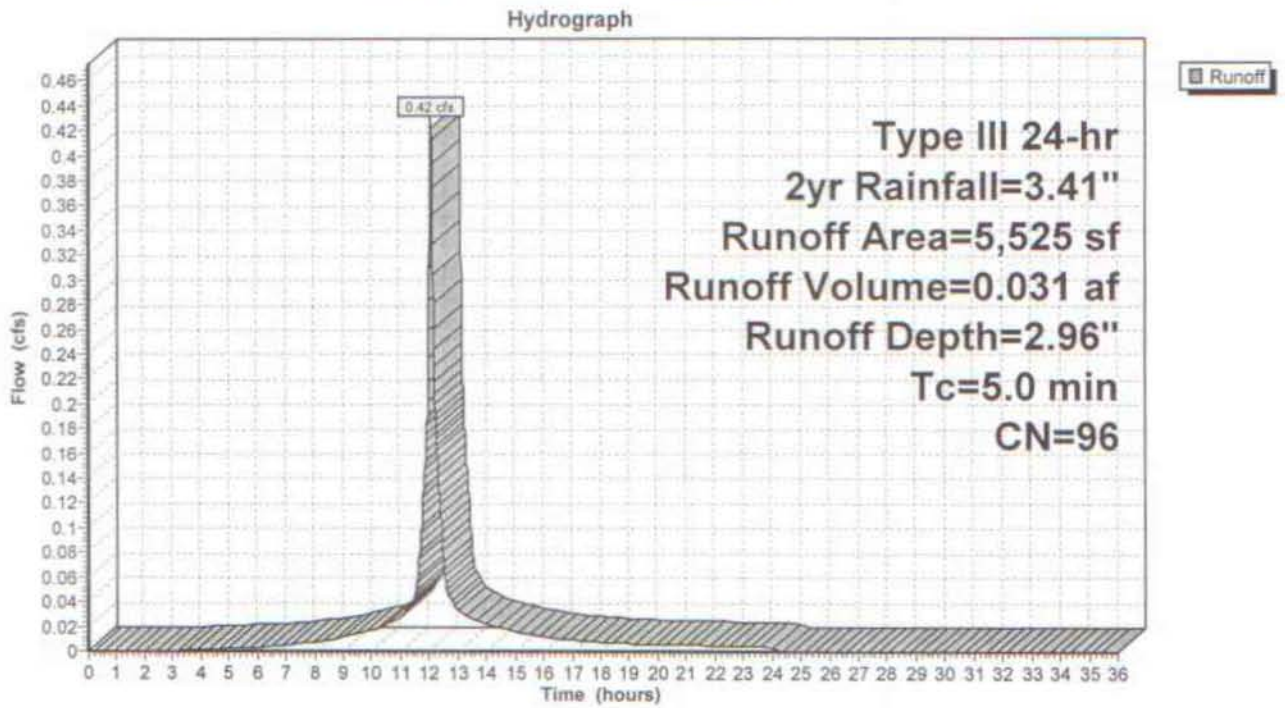
Runoff = 0.42 cfs @ 12.07 hrs, Volume= 0.031 af, Depth= 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=3.41"

Area (sf)	CN	Description
5,075	98	Unconnected pavement, HSG C
450	74	>75% Grass cover, Good, HSG C
5,525	96	Weighted Average
450		8.14% Pervious Area
5,075		91.86% Impervious Area
5,075		100.00% Unconnected

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

Subcatchment 17S: SUBAREA F-4-A



Summary for Subcatchment 18S: FUTURE CONDITIONS F-1

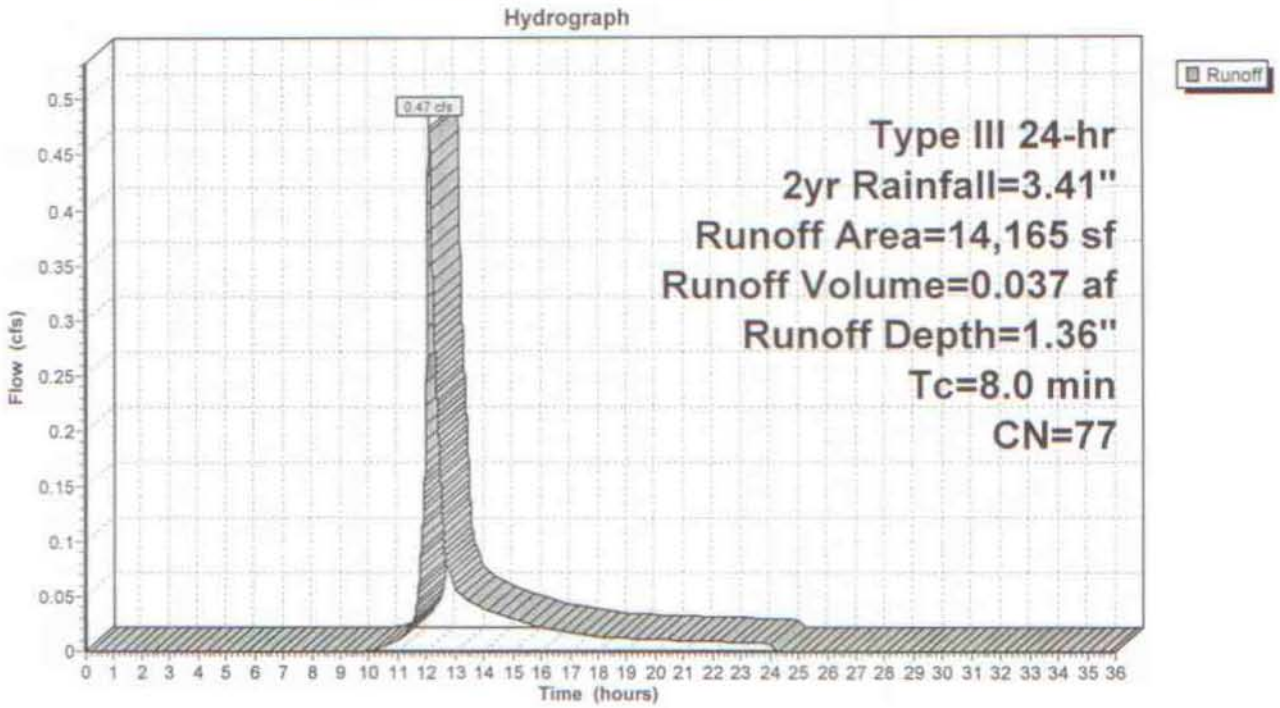
Runoff = 0.47 cfs @ 12.12 hrs, Volume= 0.037 af, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=3.41"

Area (sf)	CN	Description
12,415	74	>75% Grass cover, Good, HSG C
1,750	98	Paved parking, HSG C
14,165	77	Weighted Average
12,415		87.65% Pervious Area
1,750		12.35% Impervious Area

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

Subcatchment 18S: FUTURE CONDITIONS F-1



Summary for Subcatchment 20S: FUTURE CONDITIONS F-2

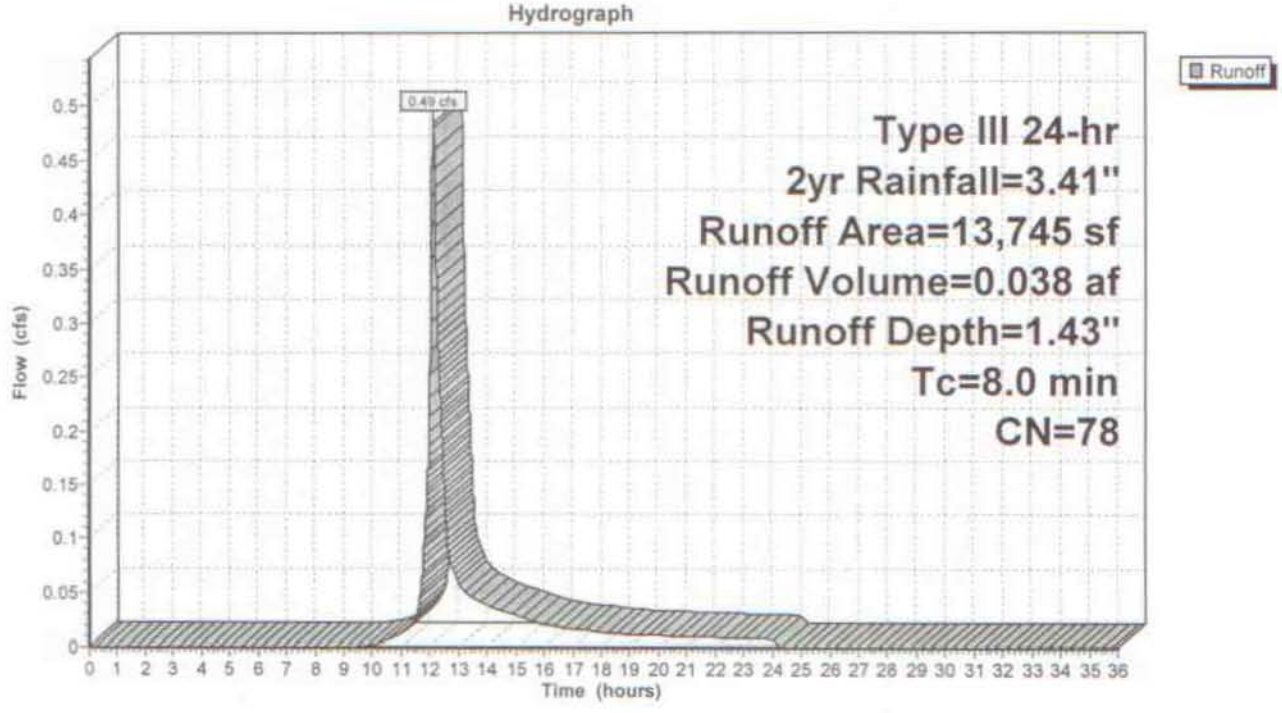
Runoff = 0.49 cfs @ 12.12 hrs, Volume= 0.038 af, Depth= 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=3.41"

Area (sf)	CN	Description
2,392	98	Paved parking, HSG C
11,353	74	>75% Grass cover, Good, HSG C
13,745	78	Weighted Average
11,353		82.60% Pervious Area
2,392		17.40% Impervious Area

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

Subcatchment 20S: FUTURE CONDITIONS F-2



Summary for Subcatchment 22S: DRAINAGE AREA F-6

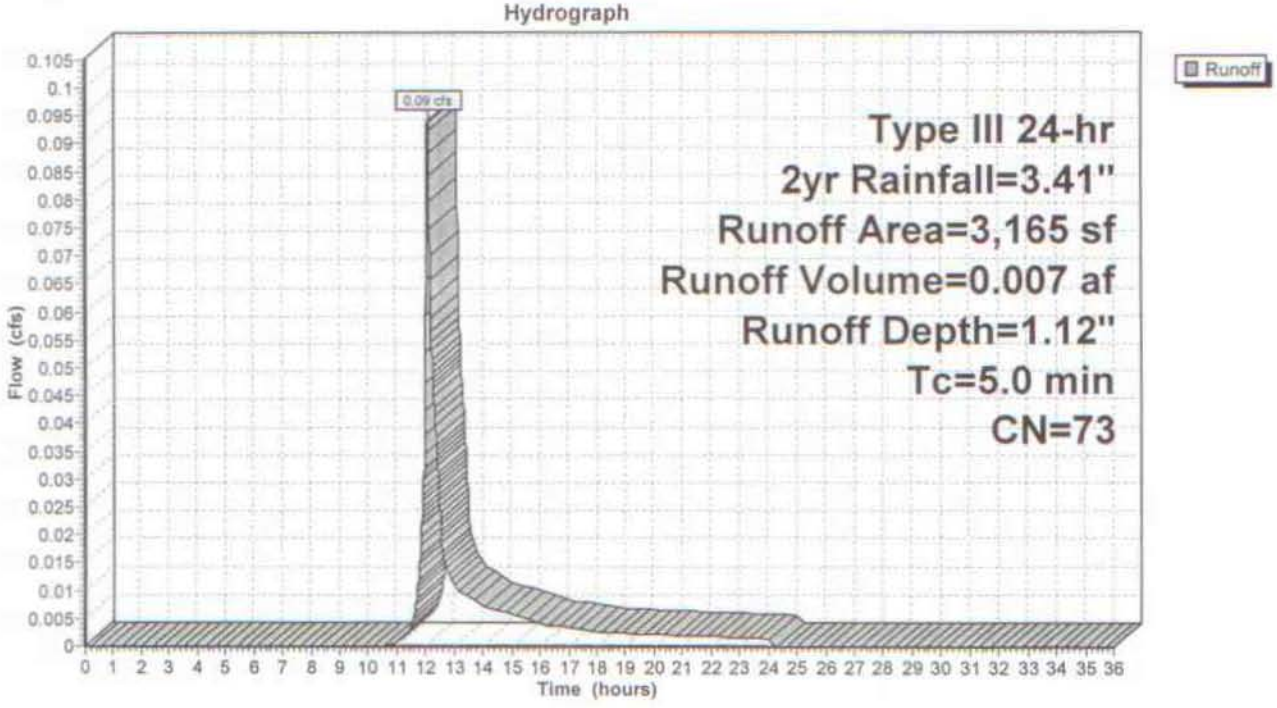
Runoff = 0.09 cfs @ 12.08 hrs, Volume= 0.007 af, Depth= 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=3.41"

Area (sf)	CN	Description
3,165	73	Woods, Fair, HSG C
3,165		100.00% Pervious Area

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

Subcatchment 22S: DRAINAGE AREA F-6



Summary for Subcatchment 24S: DRAINAGE AREA F-5

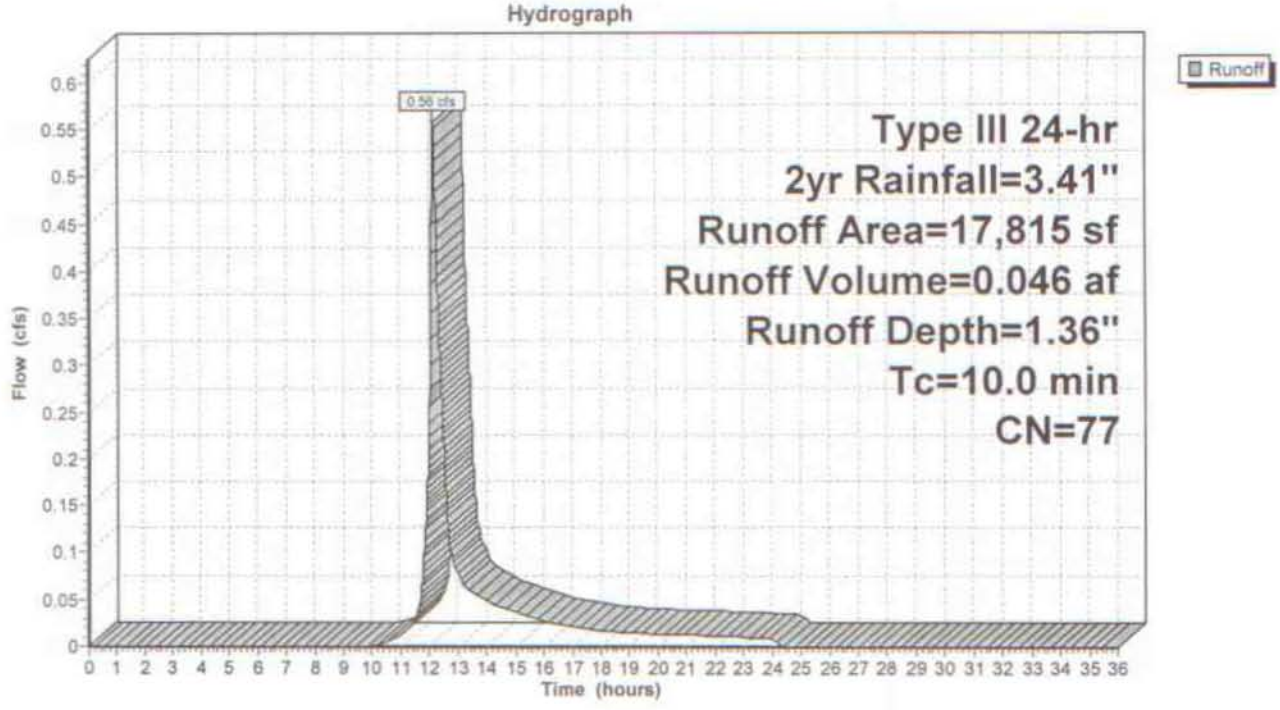
Runoff = 0.56 cfs @ 12.15 hrs, Volume= 0.046 af, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=3.41"

Area (sf)	CN	Description
17,815	77	Woods, Poor, HSG C
17,815		100.00% Pervious Area

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

Subcatchment 24S: DRAINAGE AREA F-5



Summary for Subcatchment 26S: SUB AREA F-4-C

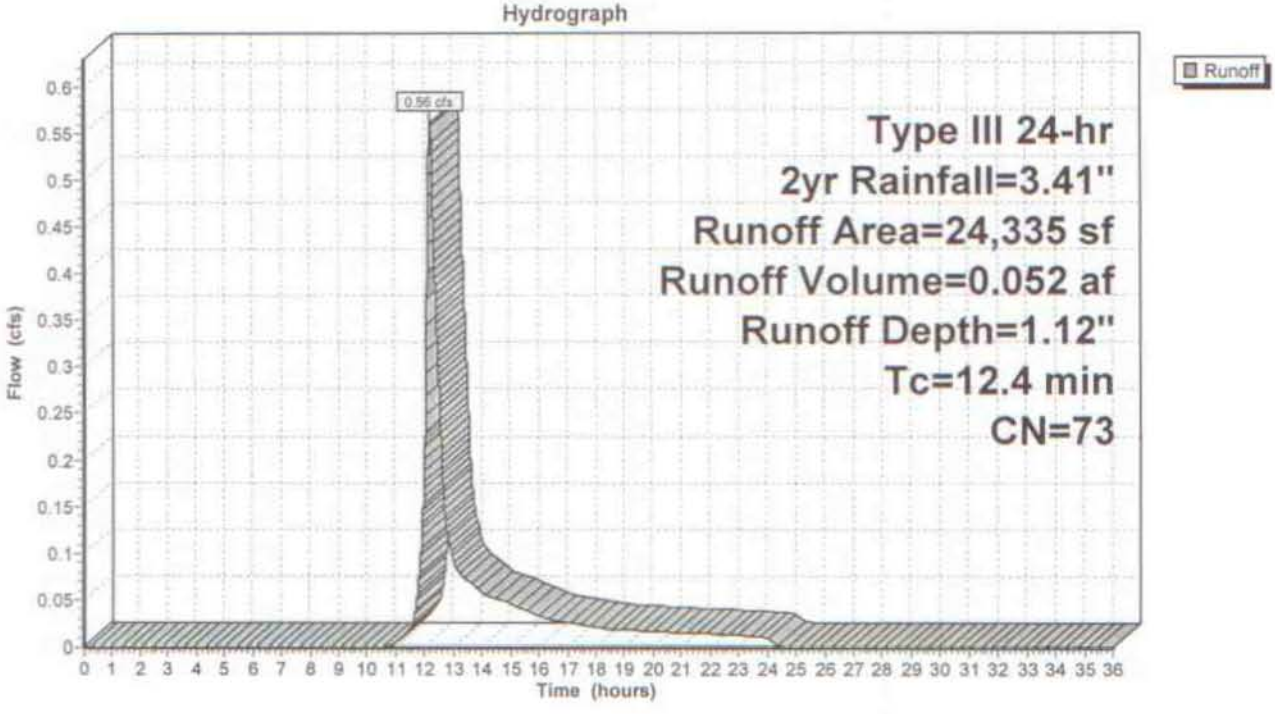
Runoff = 0.56 cfs @ 12.18 hrs, Volume= 0.052 af, Depth= 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=3.41"

	Area (sf)	CN	Description
*	6,780	74	lawn/landscape
	11,275	73	Woods, Fair, HSG C
	6,280	70	Woods, Good, HSG C
	24,335	73	Weighted Average
	24,335		100.00% Pervious Area

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

Subcatchment 26S: SUB AREA F-4-C



Summary for Subcatchment 27S: FUTURE CONDITIONS F-3

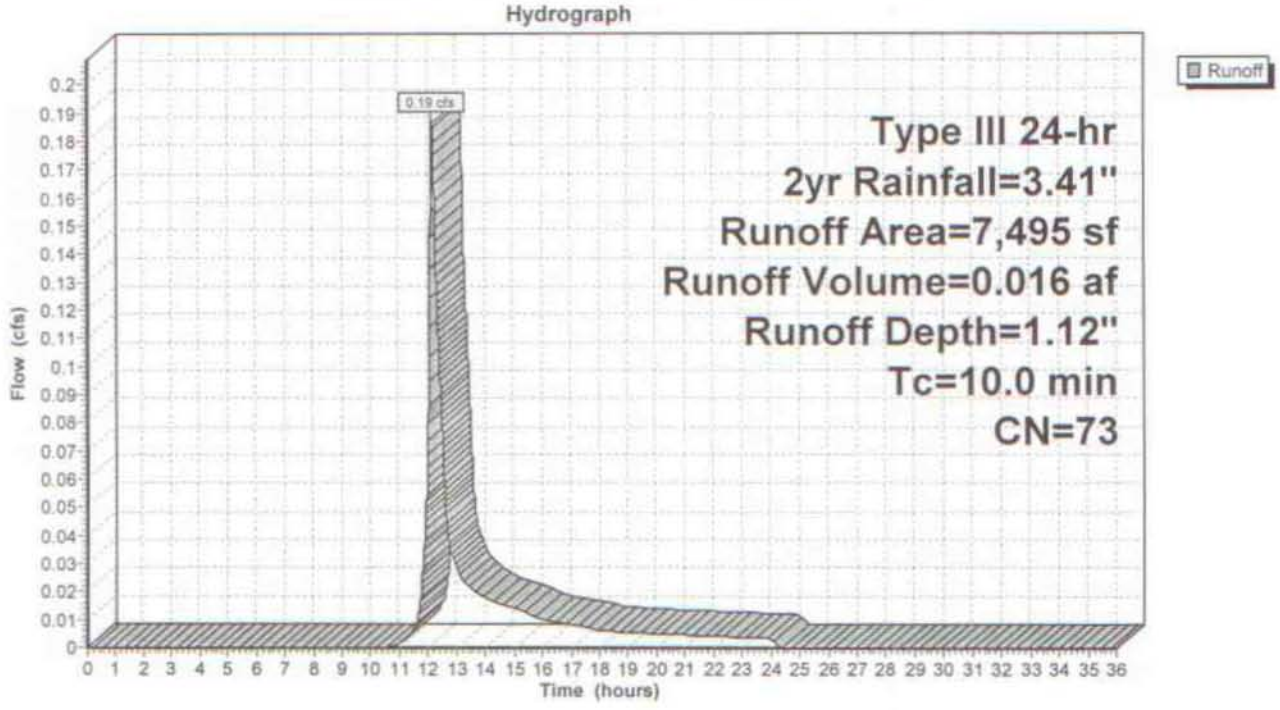
Runoff = 0.19 cfs @ 12.15 hrs, Volume= 0.016 af, Depth= 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 2yr Rainfall=3.41"

Area (sf)	CN	Description
7,495	73	Woods, Fair, HSG C
7,495		100.00% Pervious Area

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

Subcatchment 27S: FUTURE CONDITIONS F-3



Summary for Pond 18P: INFILTRATION #1

Inflow Area = 0.127 ac, 91.86% Impervious, Inflow Depth = 2.96" for 2yr event
Inflow = 0.42 cfs @ 12.07 hrs, Volume= 0.031 af
Outflow = 0.16 cfs @ 11.91 hrs, Volume= 0.031 af, Atten= 62%, Lag= 0.0 min
Discarded = 0.16 cfs @ 11.91 hrs, Volume= 0.031 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 450.73' @ 12.30 hrs Surf.Area= 336 sf Storage= 162 cf

Plug-Flow detention time= 4.7 min calculated for 0.031 af (100% of inflow)
Center-of-Mass det. time= 4.7 min (776.1 - 771.3)

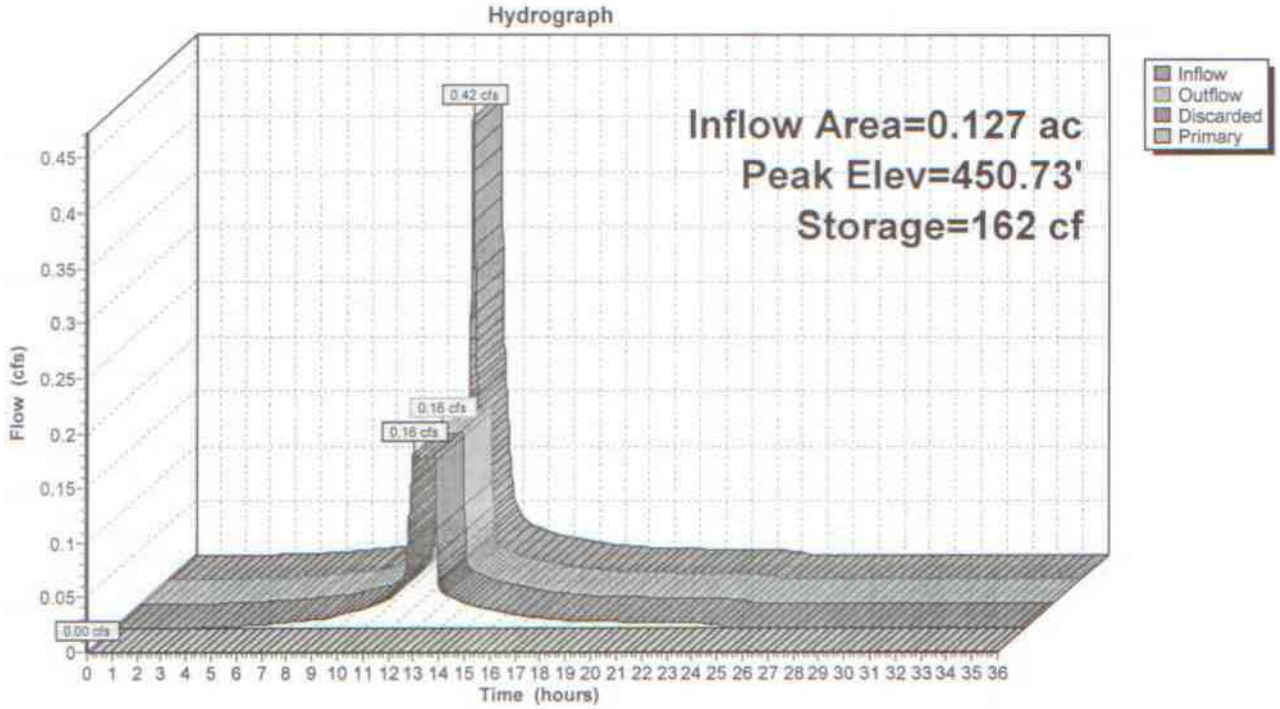
Volume	Invert	Avail.Storage	Storage Description
#1	450.25'	648 cf	**Cultec R-330XLHD** x 12 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

Device	Routing	Invert	Outlet Devices
#1	Discarded	450.25'	**20.000 in/hr Exfiltration over Surface area**
#2	Primary	452.00'	**15.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.16 cfs @ 11.91 hrs HW=450.28' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=450.25' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 18P: INFILTRATION #1

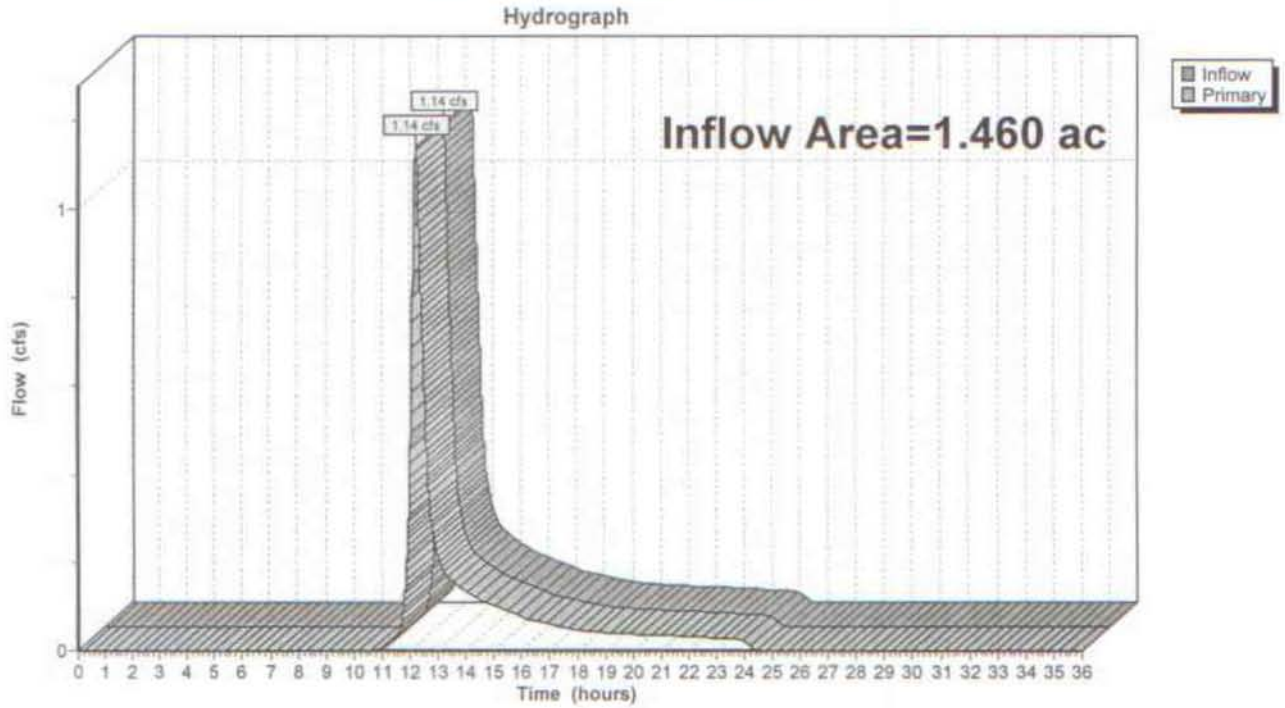


Summary for Link 13L: DESIGN POINT F-4

Inflow Area = 1.460 ac, 7.98% Impervious, Inflow Depth = 0.93" for 2yr event
Inflow = 1.14 cfs @ 12.20 hrs, Volume= 0.114 af
Primary = 1.14 cfs @ 12.20 hrs, Volume= 0.114 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 13L: DESIGN POINT F-4

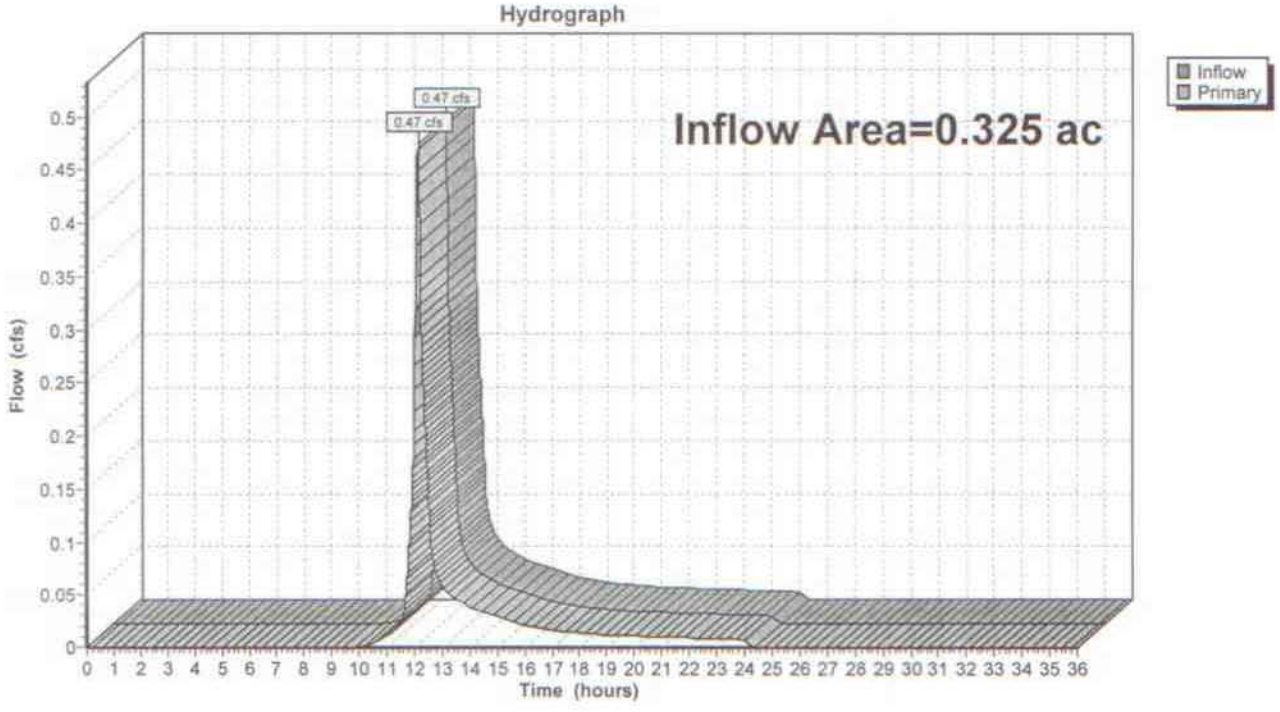


Summary for Link 19L: DESIGN POINT F-1

Inflow Area = 0.325 ac, 12.35% Impervious, Inflow Depth = 1.36" for 2yr event
Inflow = 0.47 cfs @ 12.12 hrs, Volume= 0.037 af
Primary = 0.47 cfs @ 12.12 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 19L: DESIGN POINT F-1

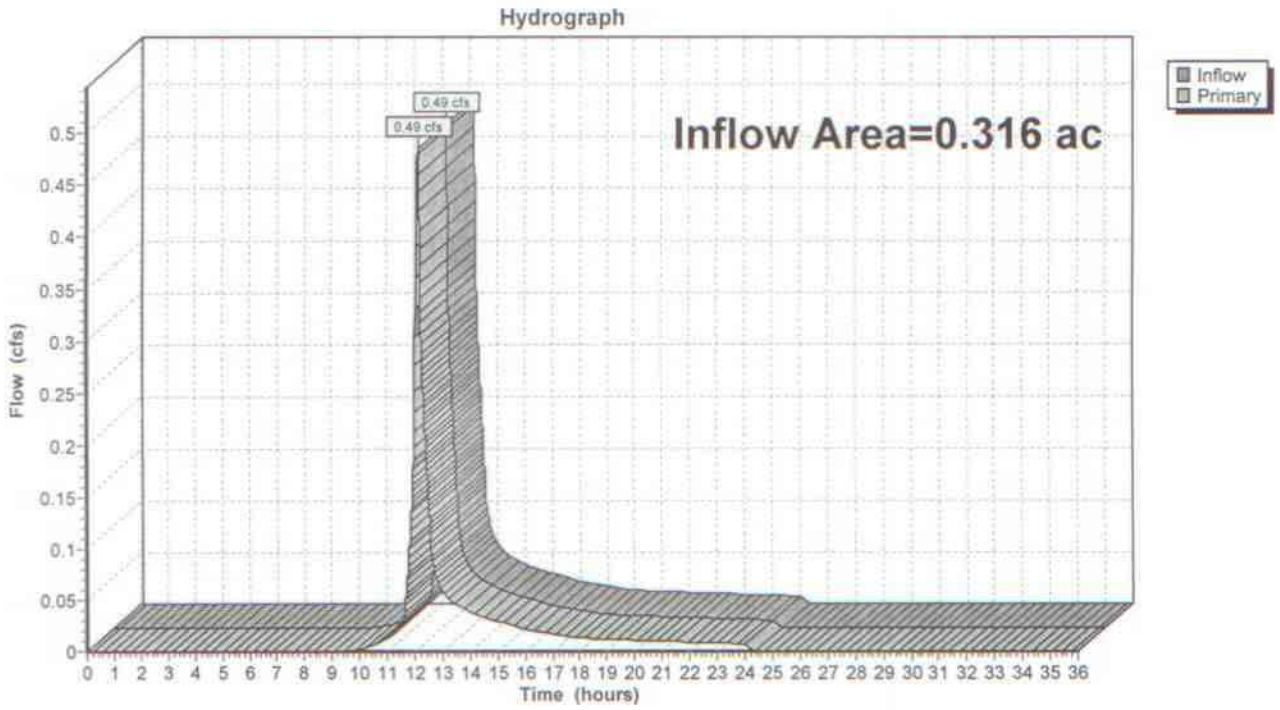


Summary for Link 21L: DESIGN POINT F-2

Inflow Area = 0.316 ac, 17.40% Impervious, Inflow Depth = 1.43" for 2yr event
Inflow = 0.49 cfs @ 12.12 hrs, Volume= 0.038 af
Primary = 0.49 cfs @ 12.12 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 21L: DESIGN POINT F-2

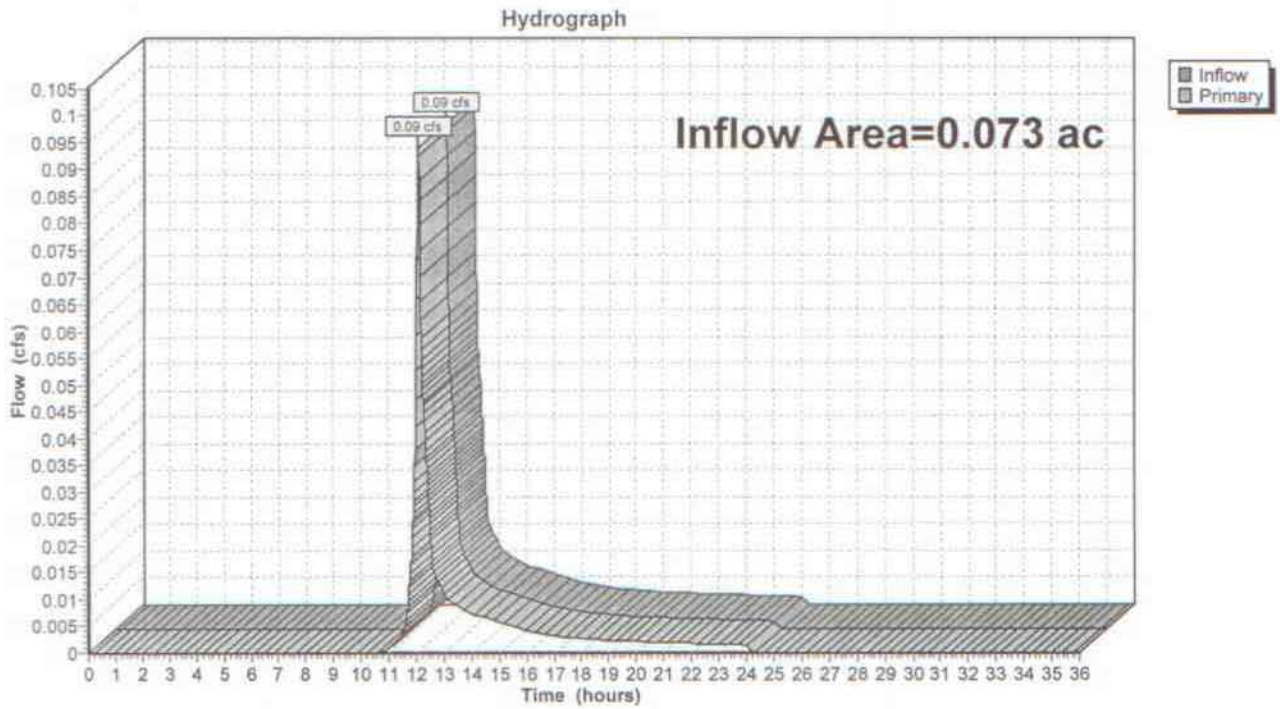


Summary for Link 23L: DESIGN POINT F-6

Inflow Area = 0.073 ac, 0.00% Impervious, Inflow Depth = 1.12" for 2yr event
Inflow = 0.09 cfs @ 12.08 hrs, Volume= 0.007 af
Primary = 0.09 cfs @ 12.08 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 23L: DESIGN POINT F-6

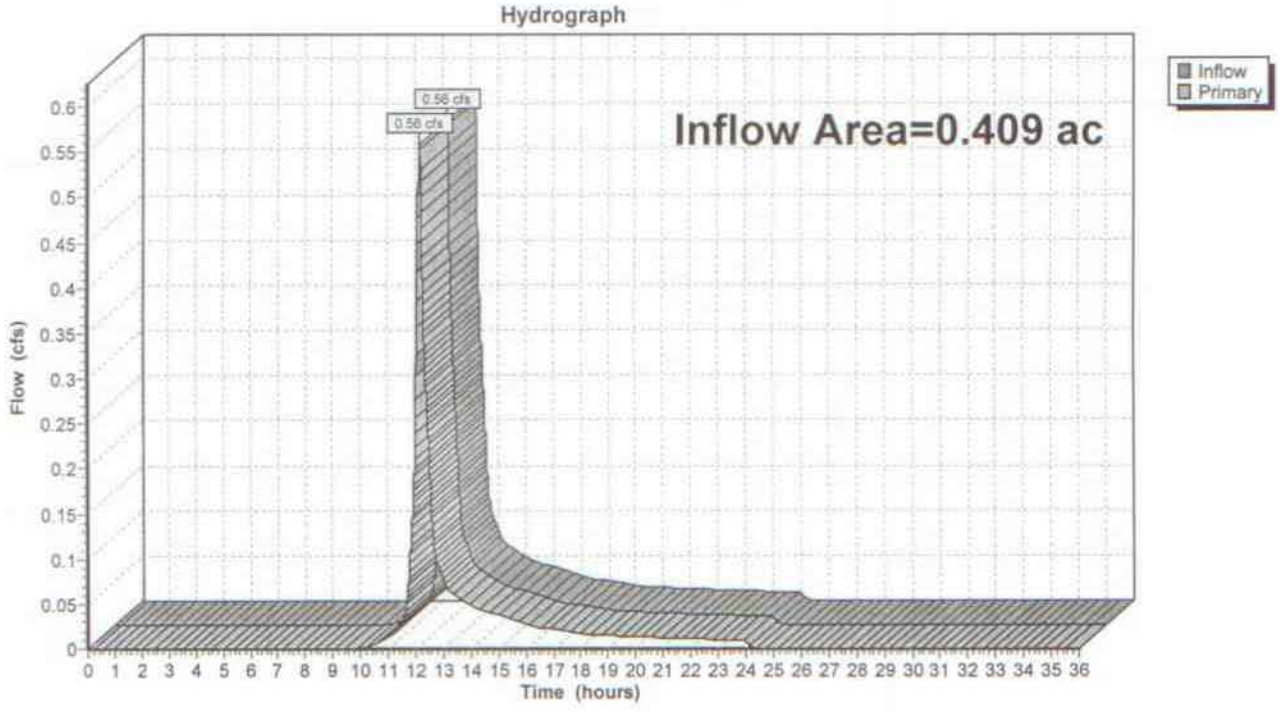


Summary for Link 25L: DESIGN POINT F-5

Inflow Area = 0.409 ac, 0.00% Impervious, Inflow Depth = 1.36" for 2yr event
Inflow = 0.56 cfs @ 12.15 hrs, Volume= 0.046 af
Primary = 0.56 cfs @ 12.15 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

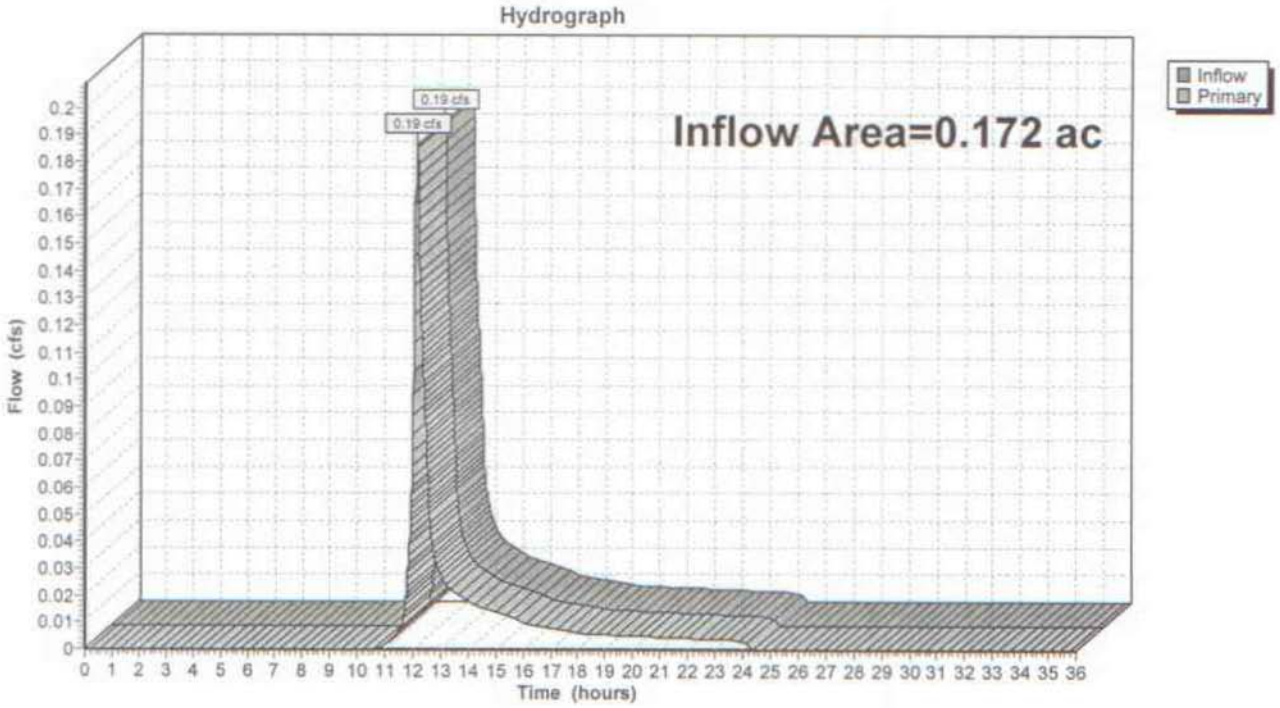
Link 25L: DESIGN POINT F-5



Summary for Link 28L: DESIGN POINT F-3

Inflow Area = 0.172 ac, 0.00% Impervious, Inflow Depth = 1.12" for 2yr event
Inflow = 0.19 cfs @ 12.15 hrs, Volume= 0.016 af
Primary = 0.19 cfs @ 12.15 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Link 28L: DESIGN POINT F-3



Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 15S: SUBAREA F 4-B Runoff Area=33,720 sf 0.00% Impervious Runoff Depth=3.20"
Tc=15.0 min CN=70 Runoff=2.19 cfs 0.206 af

Subcatchment 17S: SUBAREA F-4-A Runoff Area=5,525 sf 91.86% Impervious Runoff Depth=6.02"
Tc=5.0 min CN=96 Runoff=0.83 cfs 0.064 af

Subcatchment 18S: FUTURE CONDITIONS Runoff Area=14,165 sf 12.35% Impervious Runoff Depth=3.91"
Tc=8.0 min CN=77 Runoff=1.39 cfs 0.106 af

Subcatchment 20S: FUTURE CONDITIONS Runoff Area=13,745 sf 17.40% Impervious Runoff Depth=4.01"
Tc=8.0 min CN=78 Runoff=1.38 cfs 0.106 af

Subcatchment 22S: DRAINAGE AREA F-6 Runoff Area=3,165 sf 0.00% Impervious Runoff Depth=3.50"
Tc=5.0 min CN=73 Runoff=0.31 cfs 0.021 af

Subcatchment 24S: DRAINAGE AREA F-5 Runoff Area=17,815 sf 0.00% Impervious Runoff Depth=3.91"
Tc=10.0 min CN=77 Runoff=1.64 cfs 0.133 af

Subcatchment 26S: SUB AREA F-4-C Runoff Area=24,335 sf 0.00% Impervious Runoff Depth=3.50"
Tc=12.4 min CN=73 Runoff=1.86 cfs 0.163 af

Subcatchment 27S: FUTURE CONDITIONS Runoff Area=7,495 sf 0.00% Impervious Runoff Depth=3.50"
Tc=10.0 min CN=73 Runoff=0.62 cfs 0.050 af

Pond 18P: INFILTRATION #1 Peak Elev=452.21' Storage=588 cf Inflow=0.83 cfs 0.064 af
Discarded=0.16 cfs 0.060 af Primary=0.21 cfs 0.004 af Outflow=0.30 cfs 0.064 af

Link 13L: DESIGN POINT F-4 Inflow=4.01 cfs 0.373 af
Primary=4.01 cfs 0.373 af

Link 19L: DESIGN POINT F-1 Inflow=1.39 cfs 0.106 af
Primary=1.39 cfs 0.106 af

Link 21L: DESIGN POINT F-2 Inflow=1.38 cfs 0.106 af
Primary=1.38 cfs 0.106 af

Link 23L: DESIGN POINT F-6 Inflow=0.31 cfs 0.021 af
Primary=0.31 cfs 0.021 af

Link 25L: DESIGN POINT F-5 Inflow=1.64 cfs 0.133 af
Primary=1.64 cfs 0.133 af

Link 28L: DESIGN POINT F-3 Inflow=0.62 cfs 0.050 af
Primary=0.62 cfs 0.050 af

Total Runoff Area = 2.754 ac Runoff Volume = 0.849 af Average Runoff Depth = 3.70"
92.32% Pervious = 2.542 ac 7.68% Impervious = 0.212 ac

Summary for Subcatchment 15S: SUBAREA F 4-B

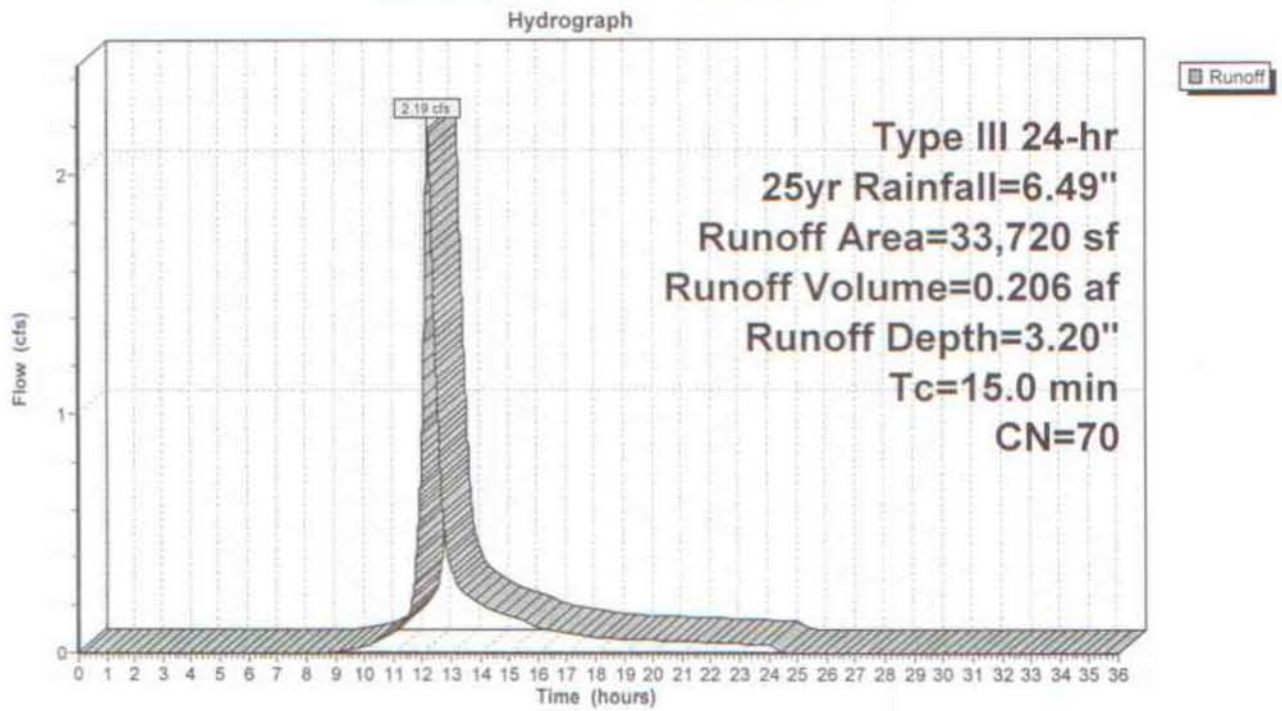
Runoff = 2.19 cfs @ 12.21 hrs, Volume= 0.206 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=6.49"

	Area (sf)	CN	Description
*	7,110	72	landscape/grass
	26,610	70	Woods, Good, HSG C
	33,720	70	Weighted Average
	33,720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry, Point C to Point B

Subcatchment 15S: SUBAREA F 4-B



Summary for Subcatchment 17S: SUBAREA F-4-A

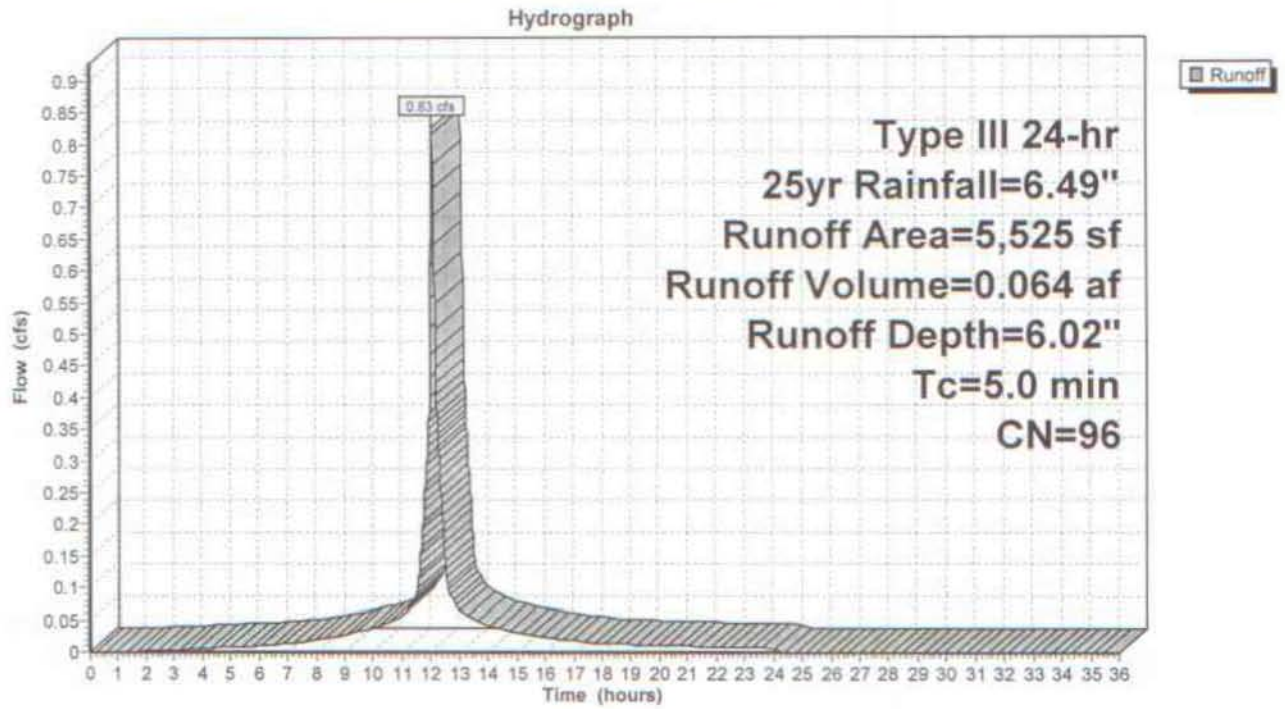
Runoff = 0.83 cfs @ 12.07 hrs, Volume= 0.064 af, Depth= 6.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=6.49"

Area (sf)	CN	Description
5,075	98	Unconnected pavement, HSG C
450	74	>75% Grass cover, Good, HSG C
5,525	96	Weighted Average
450		8.14% Pervious Area
5,075		91.86% Impervious Area
5,075		100.00% Unconnected

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

Subcatchment 17S: SUBAREA F-4-A



Summary for Subcatchment 18S: FUTURE CONDITIONS F-1

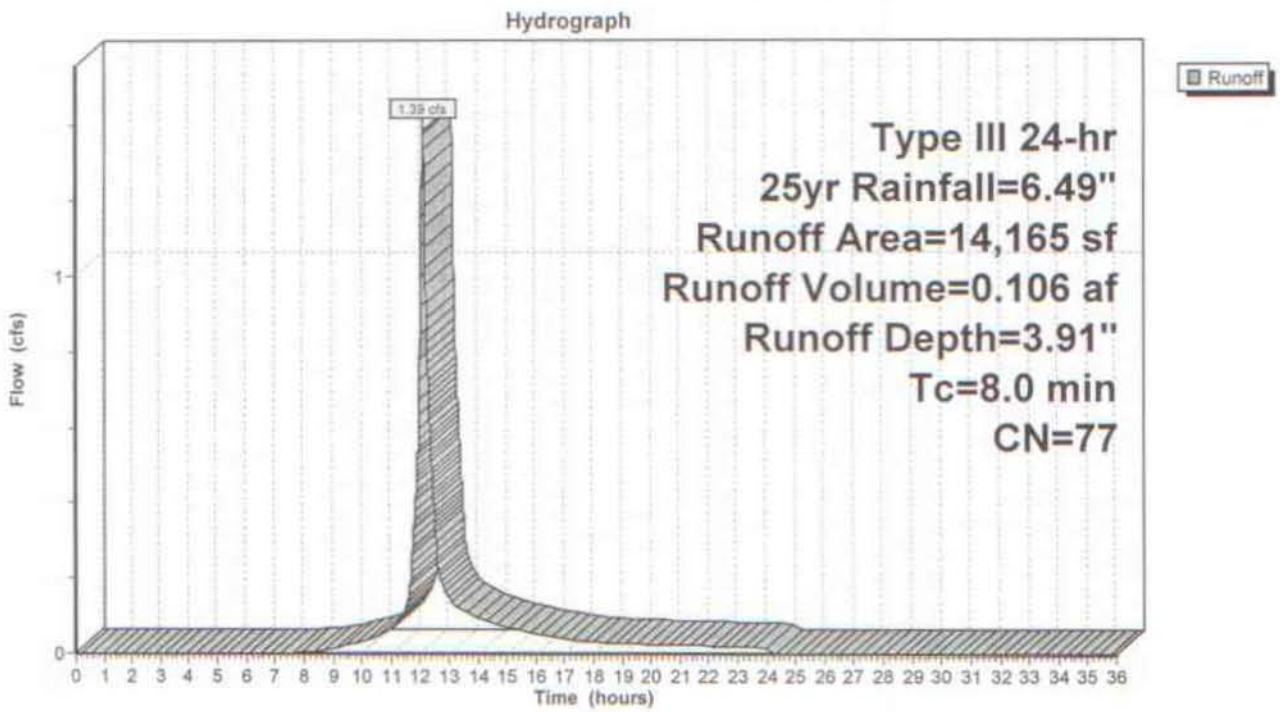
Runoff = 1.39 cfs @ 12.11 hrs, Volume= 0.106 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=6.49"

Area (sf)	CN	Description
12,415	74	>75% Grass cover, Good, HSG C
1,750	98	Paved parking, HSG C
14,165	77	Weighted Average
12,415		87.65% Pervious Area
1,750		12.35% Impervious Area

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

Subcatchment 18S: FUTURE CONDITIONS F-1



Summary for Subcatchment 20S: FUTURE CONDITIONS F-2

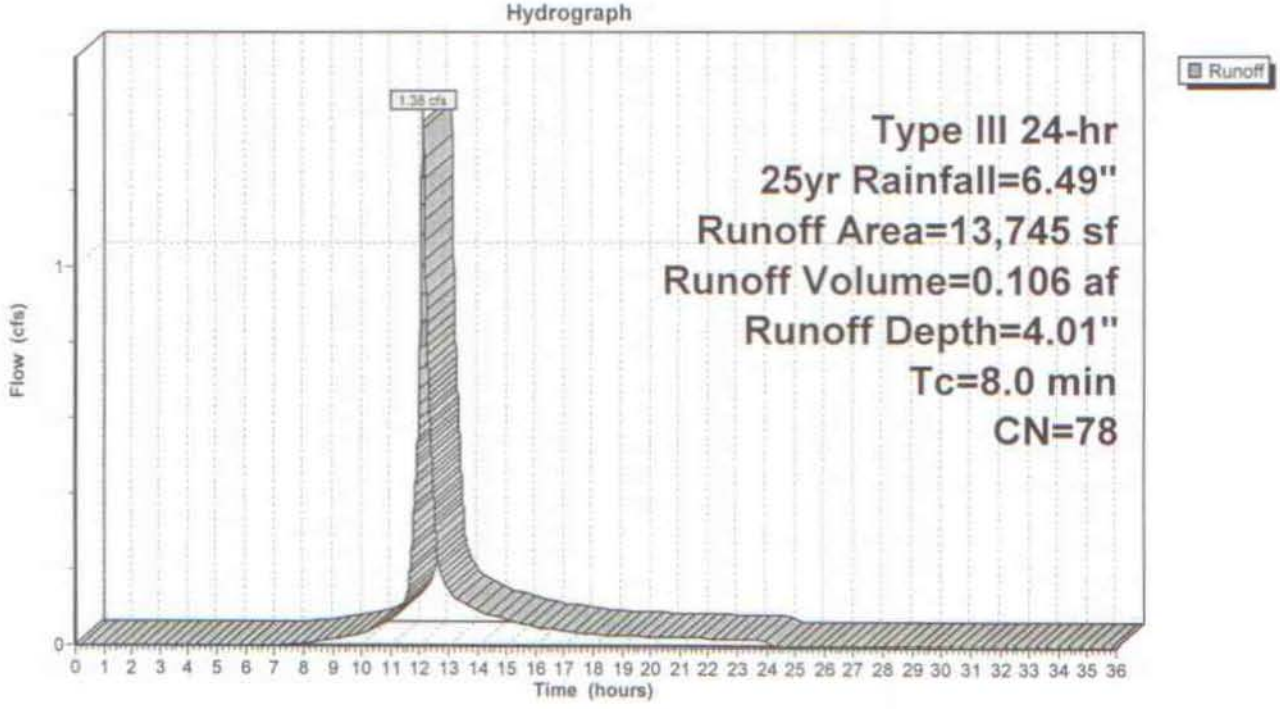
Runoff = 1.38 cfs @ 12.11 hrs, Volume= 0.106 af, Depth= 4.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=6.49"

Area (sf)	CN	Description
2,392	98	Paved parking, HSG C
11,353	74	>75% Grass cover, Good, HSG C
13,745	78	Weighted Average
11,353		82.60% Pervious Area
2,392		17.40% Impervious Area

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

Subcatchment 20S: FUTURE CONDITIONS F-2



Summary for Subcatchment 22S: DRAINAGE AREA F-6

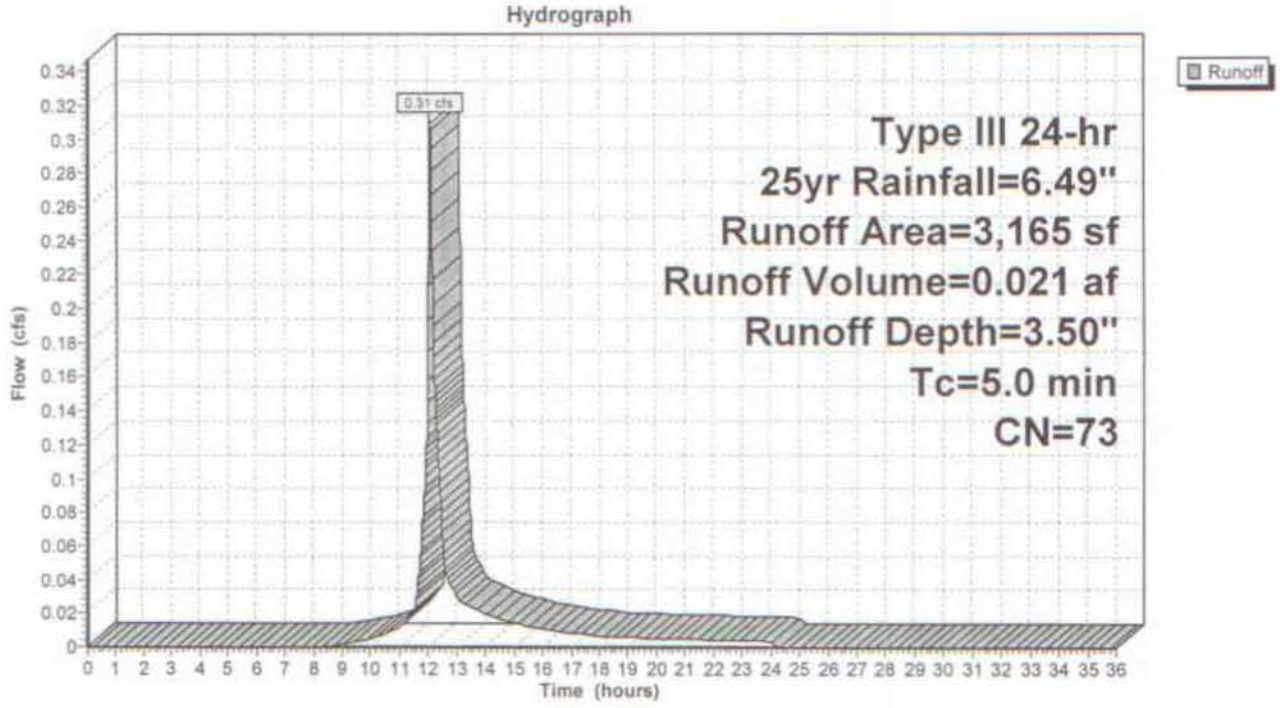
Runoff = 0.31 cfs @ 12.08 hrs, Volume= 0.021 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=6.49"

Area (sf)	CN	Description
3,165	73	Woods, Fair, HSG C
3,165		100.00% Pervious Area

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

Subcatchment 22S: DRAINAGE AREA F-6



Summary for Subcatchment 24S: DRAINAGE AREA F-5

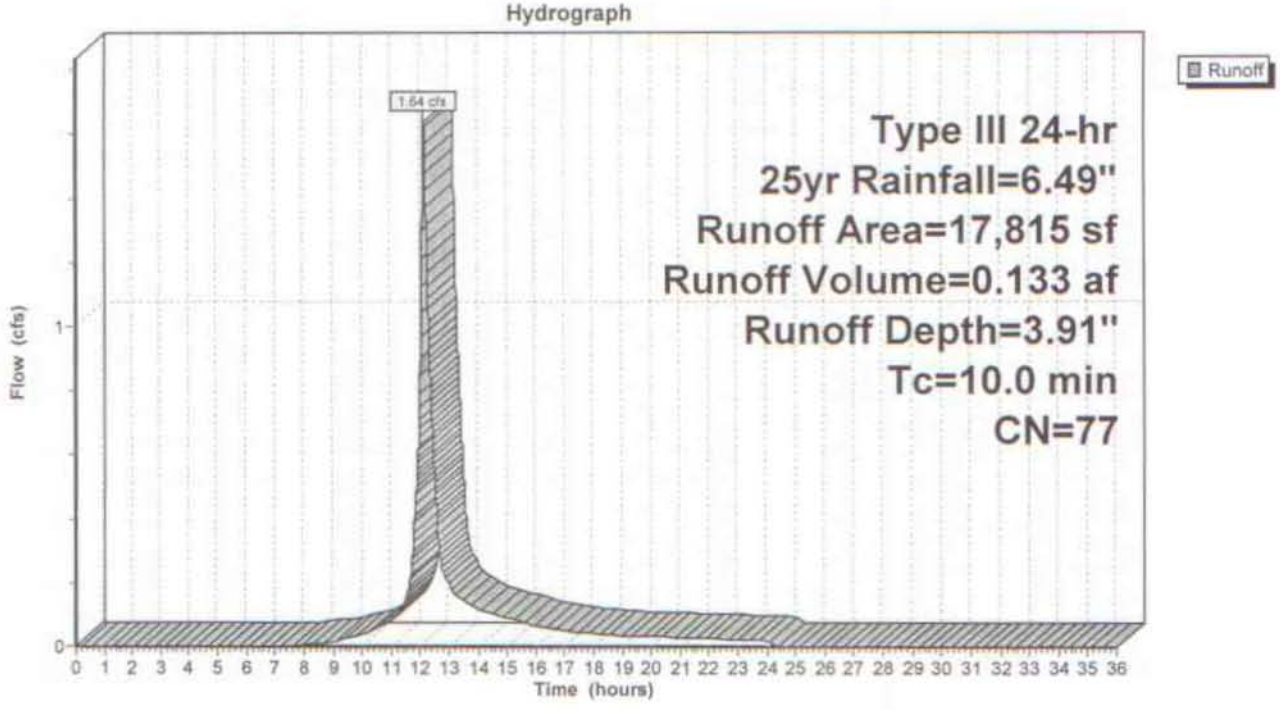
Runoff = 1.64 cfs @ 12.14 hrs, Volume= 0.133 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=6.49"

Area (sf)	CN	Description
17,815	77	Woods, Poor, HSG C
17,815		100.00% Pervious Area

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

Subcatchment 24S: DRAINAGE AREA F-5



Summary for Subcatchment 26S: SUB AREA F-4-C

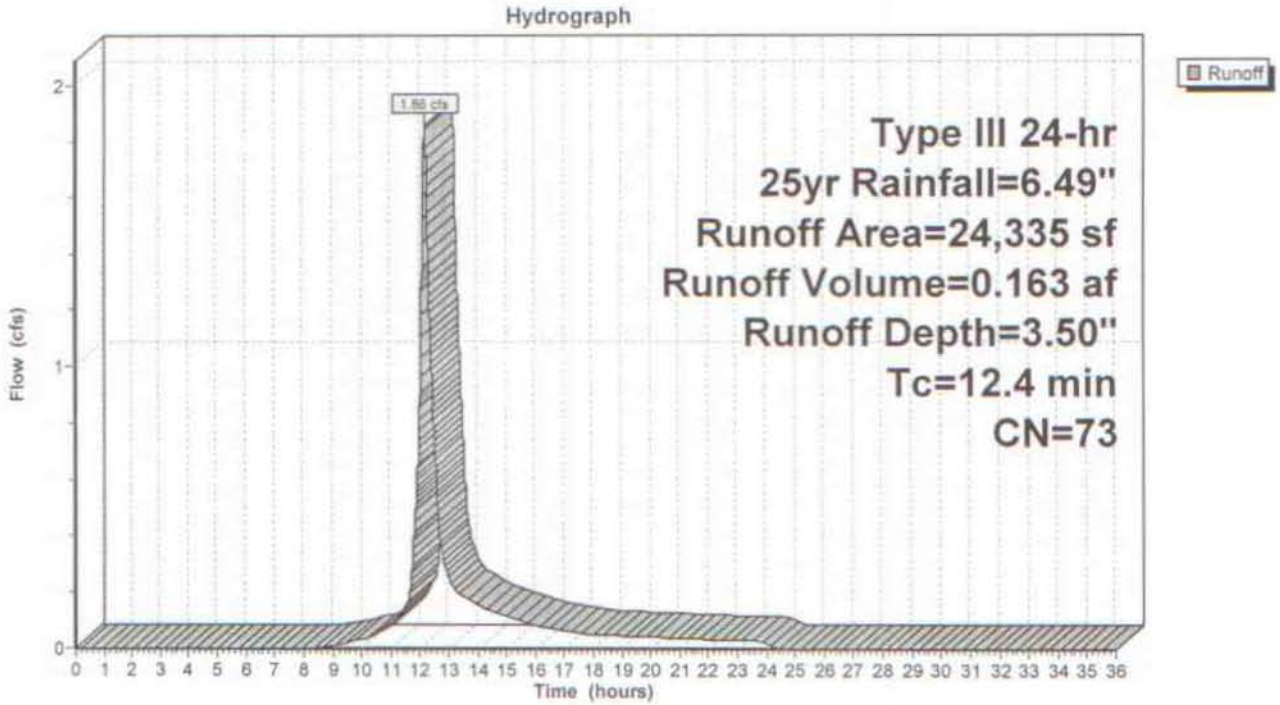
Runoff = 1.86 cfs @ 12.17 hrs, Volume= 0.163 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=6.49"

	Area (sf)	CN	Description
*	6,780	74	lawn/landscape
	11,275	73	Woods, Fair, HSG C
	6,280	70	Woods, Good, HSG C
	24,335	73	Weighted Average
	24,335		100.00% Pervious Area

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

Subcatchment 26S: SUB AREA F-4-C



Summary for Subcatchment 27S: FUTURE CONDITIONS F-3

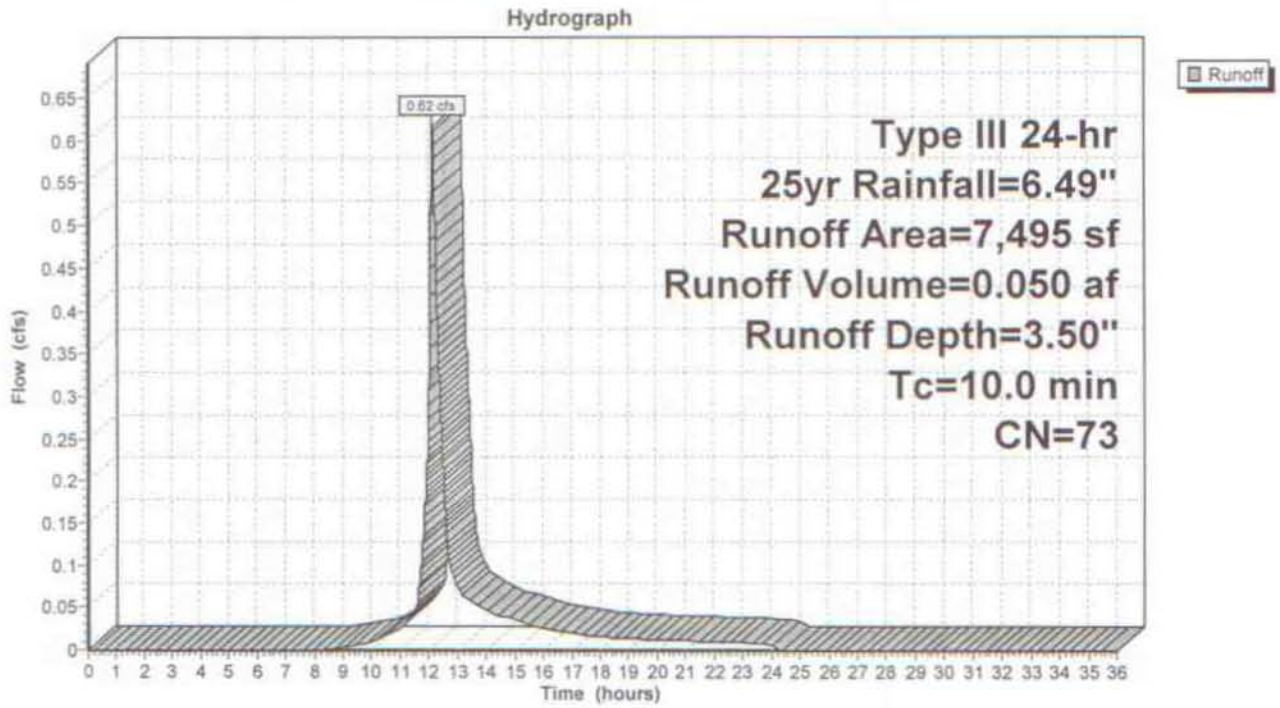
Runoff = 0.62 cfs @ 12.14 hrs, Volume= 0.050 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 25yr Rainfall=6.49"

Area (sf)	CN	Description
7,495	73	Woods, Fair, HSG C
7,495		100.00% Pervious Area

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

Subcatchment 27S: FUTURE CONDITIONS F-3



Summary for Pond 18P: INFILTRATION #1

Inflow Area = 0.127 ac, 91.86% Impervious, Inflow Depth = 6.02" for 25yr event
Inflow = 0.83 cfs @ 12.07 hrs, Volume= 0.064 af
Outflow = 0.30 cfs @ 12.30 hrs, Volume= 0.064 af, Atten= 64%, Lag= 13.9 min
Discarded = 0.16 cfs @ 11.69 hrs, Volume= 0.060 af
Primary = 0.21 cfs @ 12.30 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 452.21' @ 12.30 hrs Surf.Area= 199 sf Storage= 588 cf

Plug-Flow detention time= 21.3 min calculated for 0.064 af (100% of inflow)
Center-of-Mass det. time= 21.3 min (776.9 - 755.6)

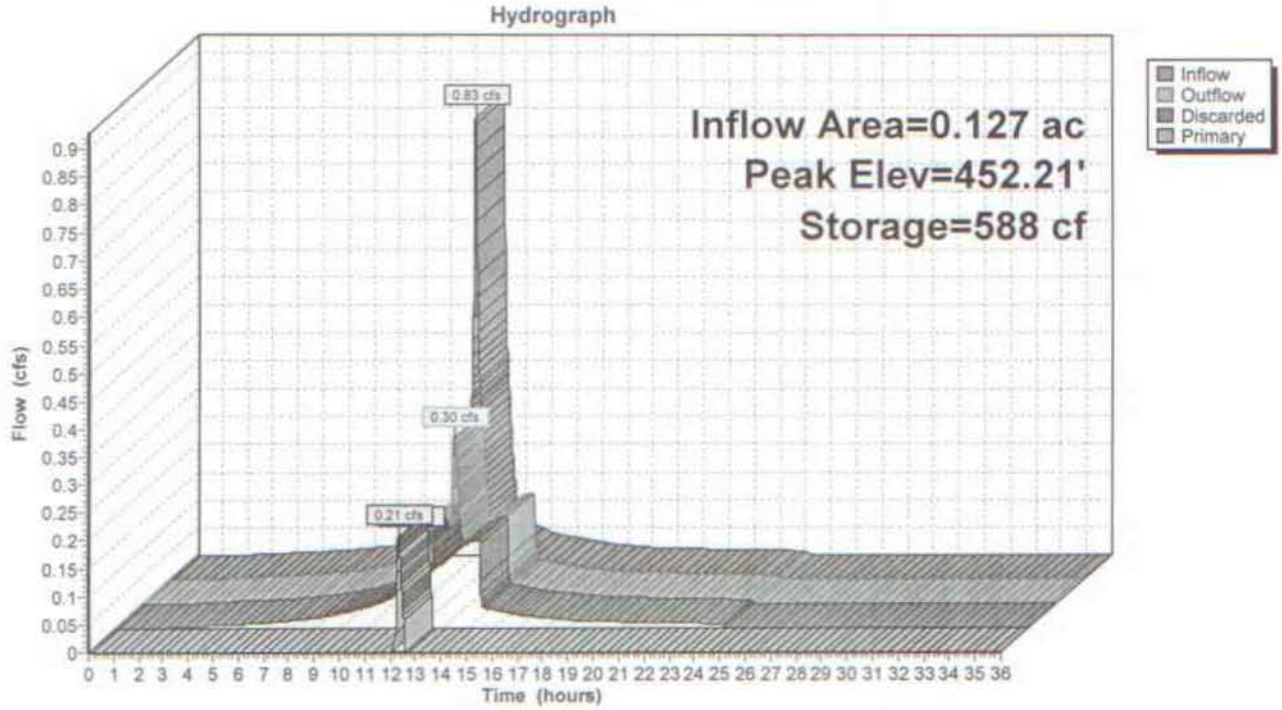
Volume	Invert	Avail.Storage	Storage Description
#1	450.25'	648 cf	**Cultec R-330XLHD** x 12 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

Device	Routing	Invert	Outlet Devices
#1	Discarded	450.25'	**20.000 in/hr Exfiltration over Surface area**
#2	Primary	452.00'	**15.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.16 cfs @ 11.69 hrs HW=450.28' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=0.21 cfs @ 12.30 hrs HW=452.21' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.21 cfs @ 1.55 fps)

Pond 18P: INFILTRATION #1

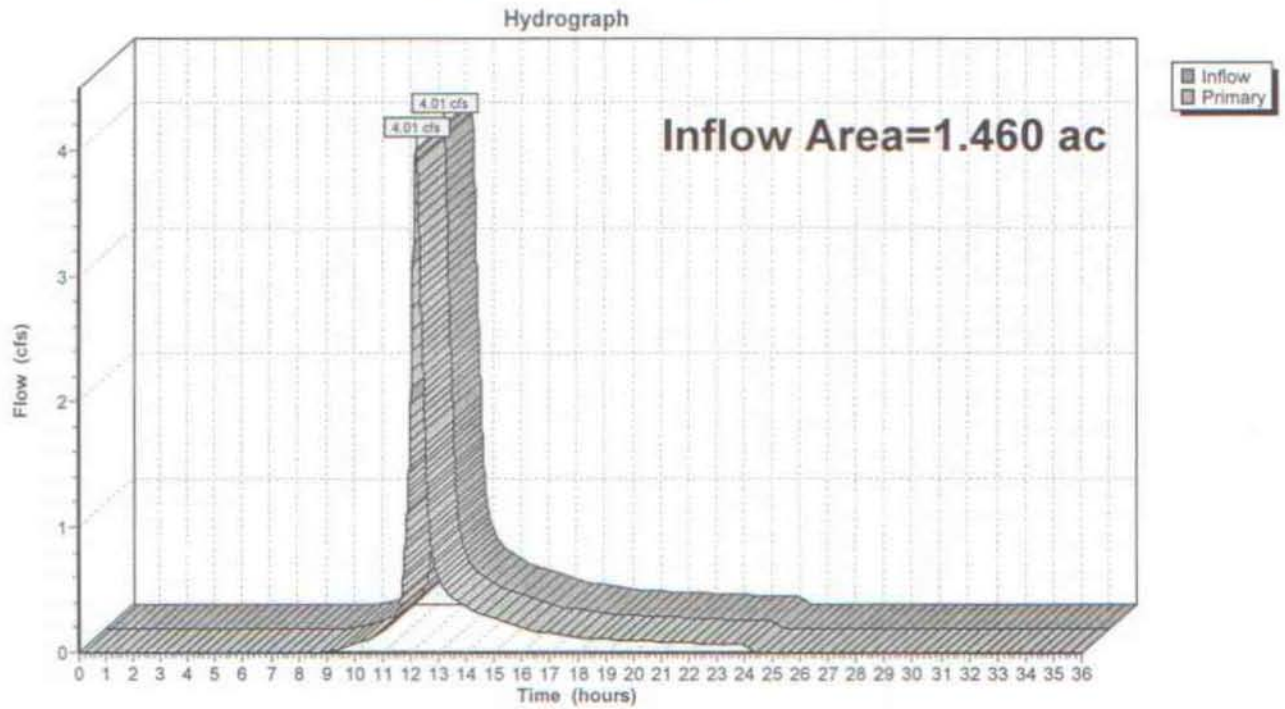


Summary for Link 13L: DESIGN POINT F-4

Inflow Area = 1.460 ac, 7.98% Impervious, Inflow Depth = 3.07" for 25yr event
Inflow = 4.01 cfs @ 12.19 hrs, Volume= 0.373 af
Primary = 4.01 cfs @ 12.19 hrs, Volume= 0.373 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 13L: DESIGN POINT F-4

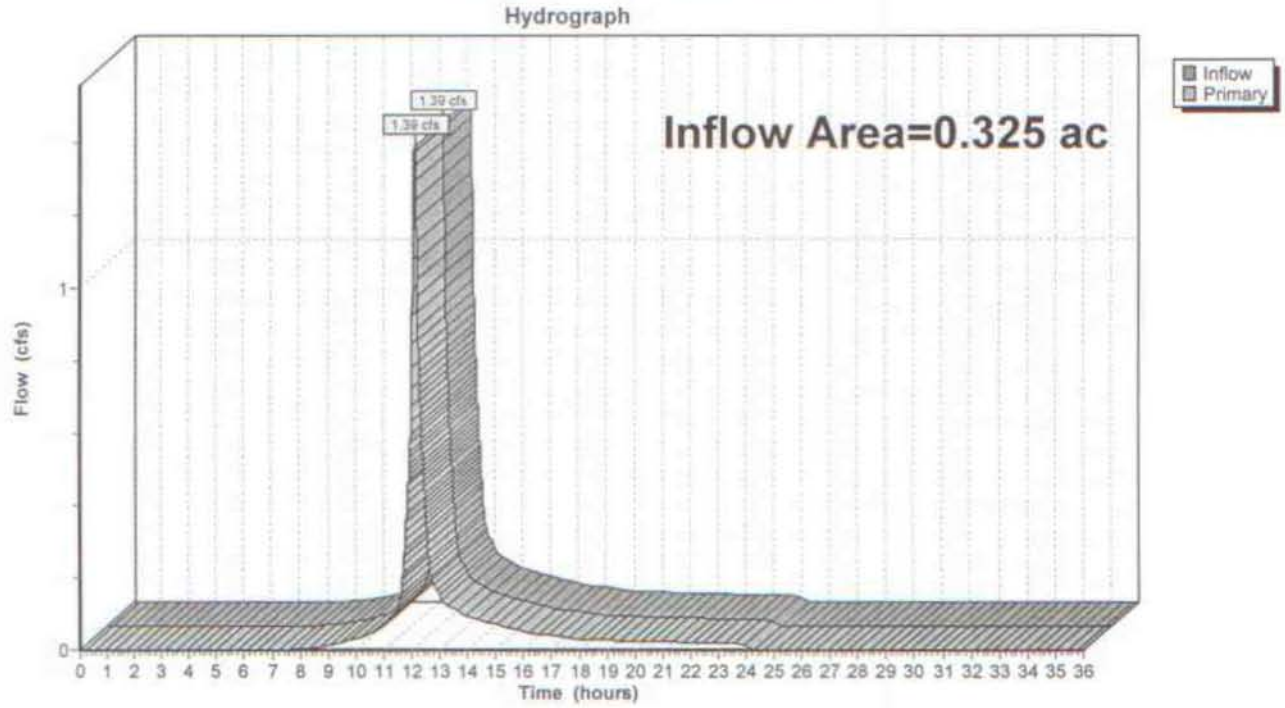


Summary for Link 19L: DESIGN POINT F-1

Inflow Area = 0.325 ac, 12.35% Impervious, Inflow Depth = 3.91" for 25yr event
Inflow = 1.39 cfs @ 12.11 hrs, Volume= 0.106 af
Primary = 1.39 cfs @ 12.11 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 19L: DESIGN POINT F-1

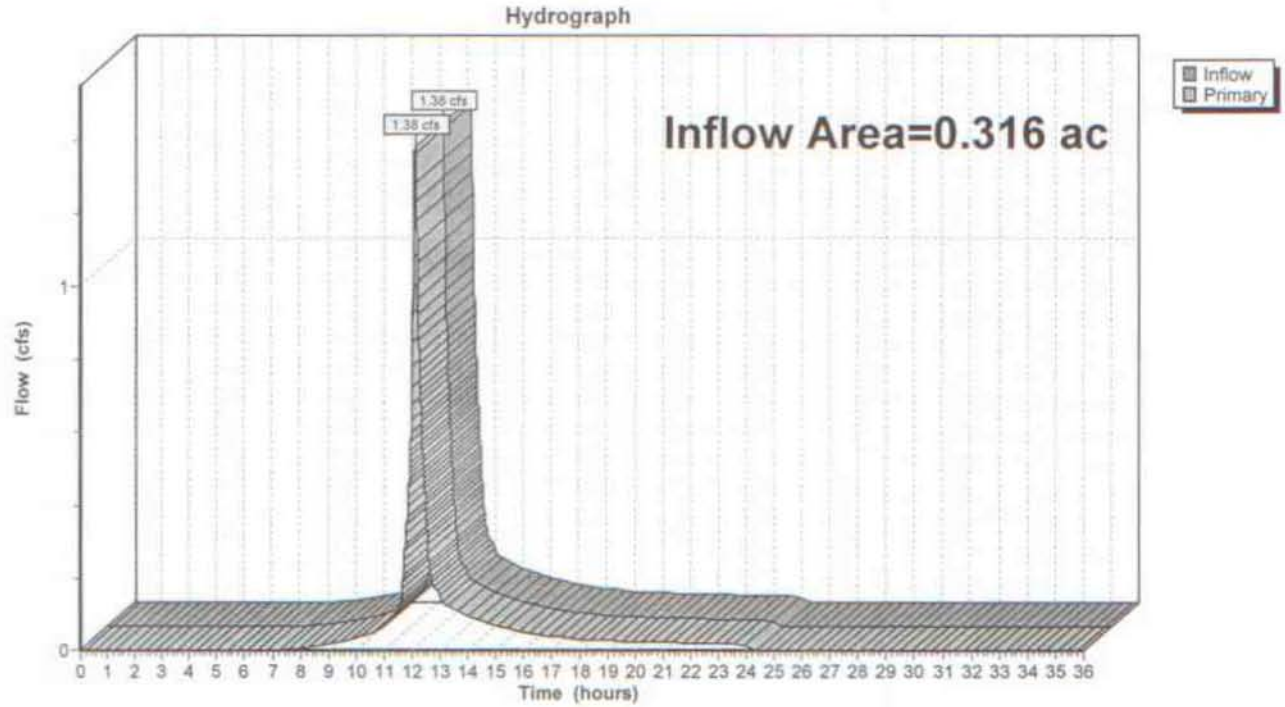


Summary for Link 21L: DESIGN POINT F-2

Inflow Area = 0.316 ac, 17.40% Impervious, Inflow Depth = 4.01" for 25yr event
Inflow = 1.38 cfs @ 12.11 hrs, Volume= 0.106 af
Primary = 1.38 cfs @ 12.11 hrs, Volume= 0.106 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 21L: DESIGN POINT F-2

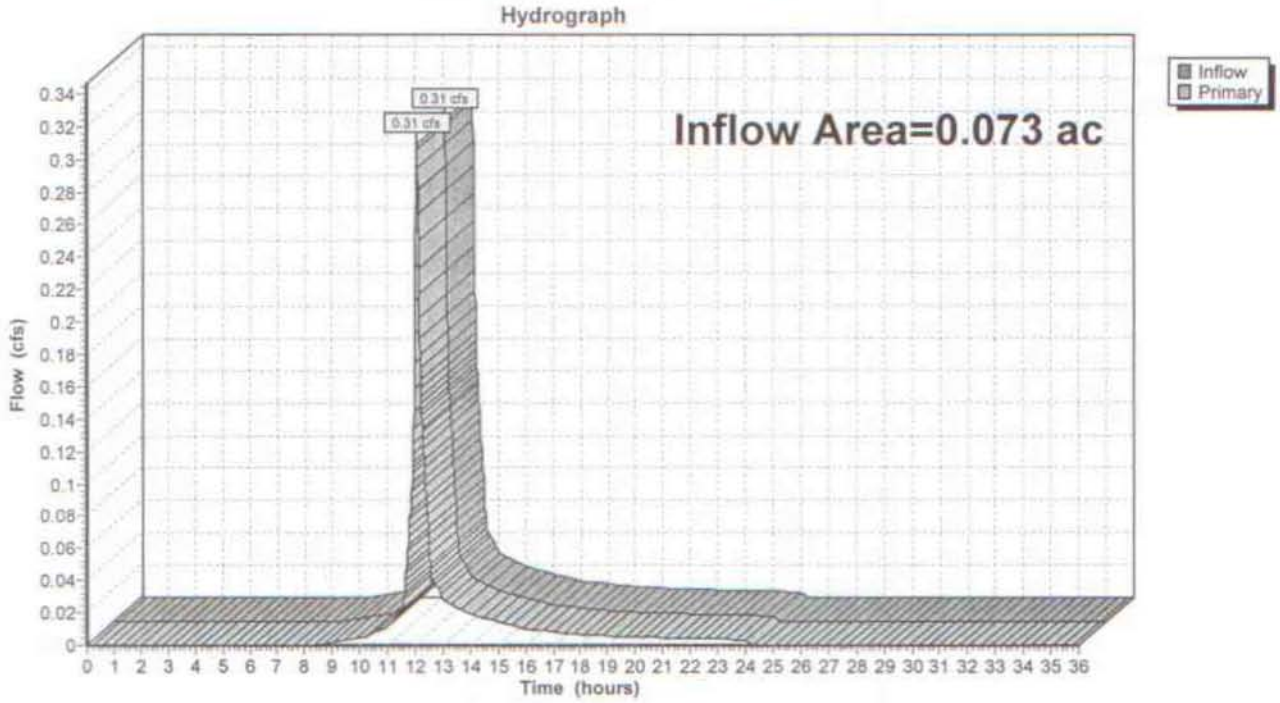


Summary for Link 23L: DESIGN POINT F-6

Inflow Area = 0.073 ac, 0.00% Impervious, Inflow Depth = 3.50" for 25yr event
Inflow = 0.31 cfs @ 12.08 hrs, Volume= 0.021 af
Primary = 0.31 cfs @ 12.08 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

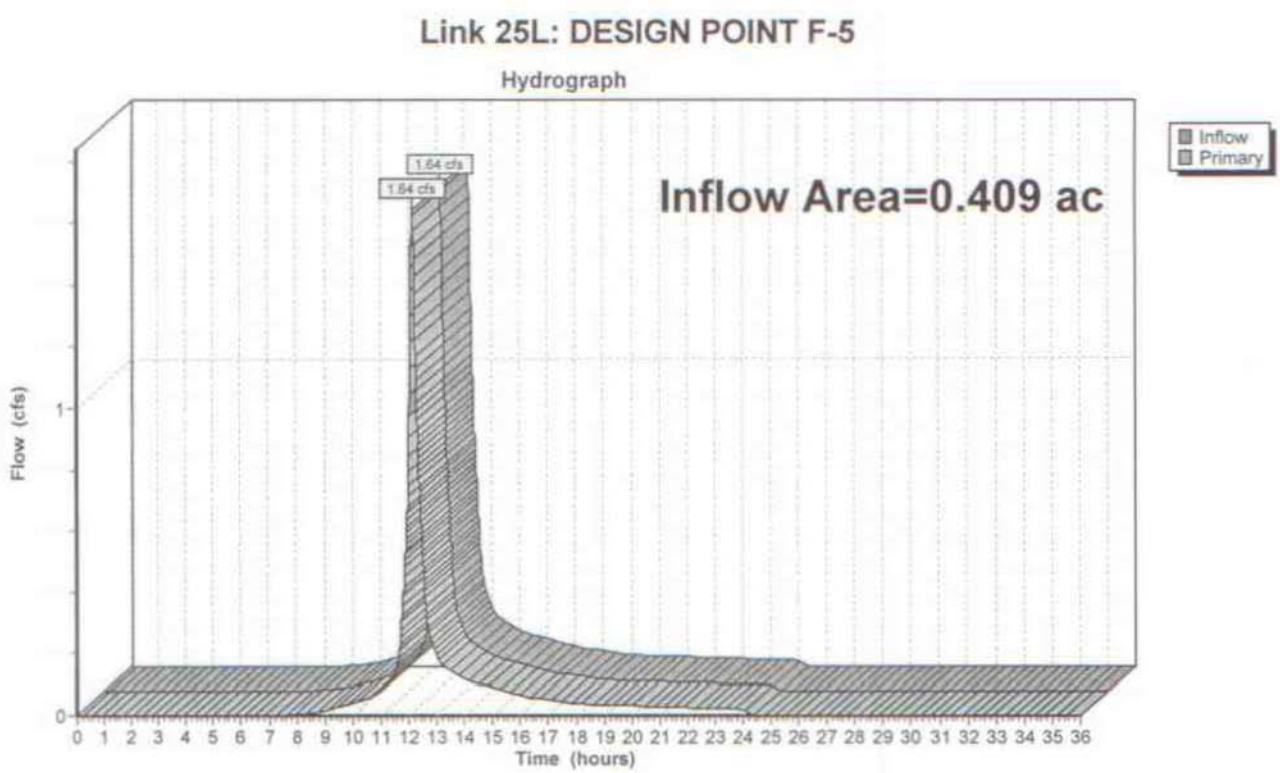
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 23L: DESIGN POINT F-6



Inflow Area = 0.409 ac, 0.00% Impervious, Inflow Depth = 3.91" for 25yr event
Inflow = 1.64 cfs @ 12.14 hrs, Volume= 0.133 af
Primary = 1.64 cfs @ 12.14 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

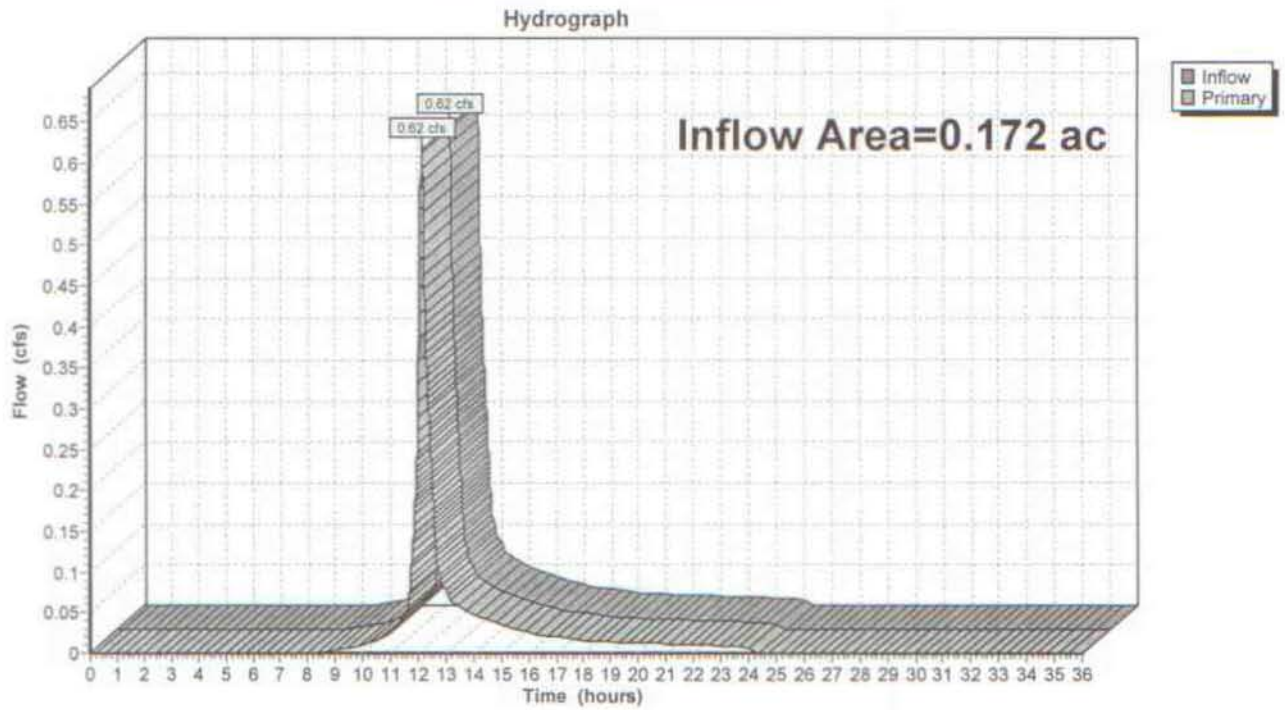


Summary for Link 28L: DESIGN POINT F-3

Inflow Area = 0.172 ac, 0.00% Impervious, Inflow Depth = 3.50" for 25yr event
Inflow = 0.62 cfs @ 12.14 hrs, Volume= 0.050 af
Primary = 0.62 cfs @ 12.14 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 28L: DESIGN POINT F-3



Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 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 15S: SUBAREA F 4-B Runoff Area=33,720 sf 0.00% Impervious Runoff Depth=5.58"
Tc=15.0 min CN=70 Runoff=3.83 cfs 0.360 af

Subcatchment 17S: SUBAREA F-4-A Runoff Area=5,525 sf 91.86% Impervious Runoff Depth=8.80"
Tc=5.0 min CN=96 Runoff=1.19 cfs 0.093 af

Subcatchment 18S: FUTURE CONDITIONS Runoff Area=14,165 sf 12.35% Impervious Runoff Depth=6.46"
Tc=8.0 min CN=77 Runoff=2.27 cfs 0.175 af

Subcatchment 20S: FUTURE CONDITIONS Runoff Area=13,745 sf 17.40% Impervious Runoff Depth=6.58"
Tc=8.0 min CN=78 Runoff=2.24 cfs 0.173 af

Subcatchment 22S: DRAINAGE AREA F-6 Runoff Area=3,165 sf 0.00% Impervious Runoff Depth=5.96"
Tc=5.0 min CN=73 Runoff=0.52 cfs 0.036 af

Subcatchment 24S: DRAINAGE AREA F-5 Runoff Area=17,815 sf 0.00% Impervious Runoff Depth=6.46"
Tc=10.0 min CN=77 Runoff=2.67 cfs 0.220 af

Subcatchment 26S: SUB AREA F-4-C Runoff Area=24,335 sf 0.00% Impervious Runoff Depth=5.96"
Tc=12.4 min CN=73 Runoff=3.16 cfs 0.277 af

Subcatchment 27S: FUTURE CONDITIONS Runoff Area=7,495 sf 0.00% Impervious Runoff Depth=5.96"
Tc=10.0 min CN=73 Runoff=1.05 cfs 0.085 af

Pond 18P: INFILTRATION #1 Peak Elev=452.47' Storage=632 cf Inflow=1.19 cfs 0.093 af
Discarded=0.16 cfs 0.076 af Primary=1.00 cfs 0.017 af Outflow=1.05 cfs 0.093 af

Link 13L: DESIGN POINT F-4 Inflow=7.56 cfs 0.654 af
Primary=7.56 cfs 0.654 af

Link 19L: DESIGN POINT F-1 Inflow=2.27 cfs 0.175 af
Primary=2.27 cfs 0.175 af

Link 21L: DESIGN POINT F-2 Inflow=2.24 cfs 0.173 af
Primary=2.24 cfs 0.173 af

Link 23L: DESIGN POINT F-6 Inflow=0.52 cfs 0.036 af
Primary=0.52 cfs 0.036 af

Link 25L: DESIGN POINT F-5 Inflow=2.67 cfs 0.220 af
Primary=2.67 cfs 0.220 af

Link 28L: DESIGN POINT F-3 Inflow=1.05 cfs 0.085 af
Primary=1.05 cfs 0.085 af

Total Runoff Area = 2.754 ac Runoff Volume = 1.420 af Average Runoff Depth = 6.19"
92.32% Pervious = 2.542 ac 7.68% Impervious = 0.212 ac

Summary for Subcatchment 15S: SUBAREA F 4-B

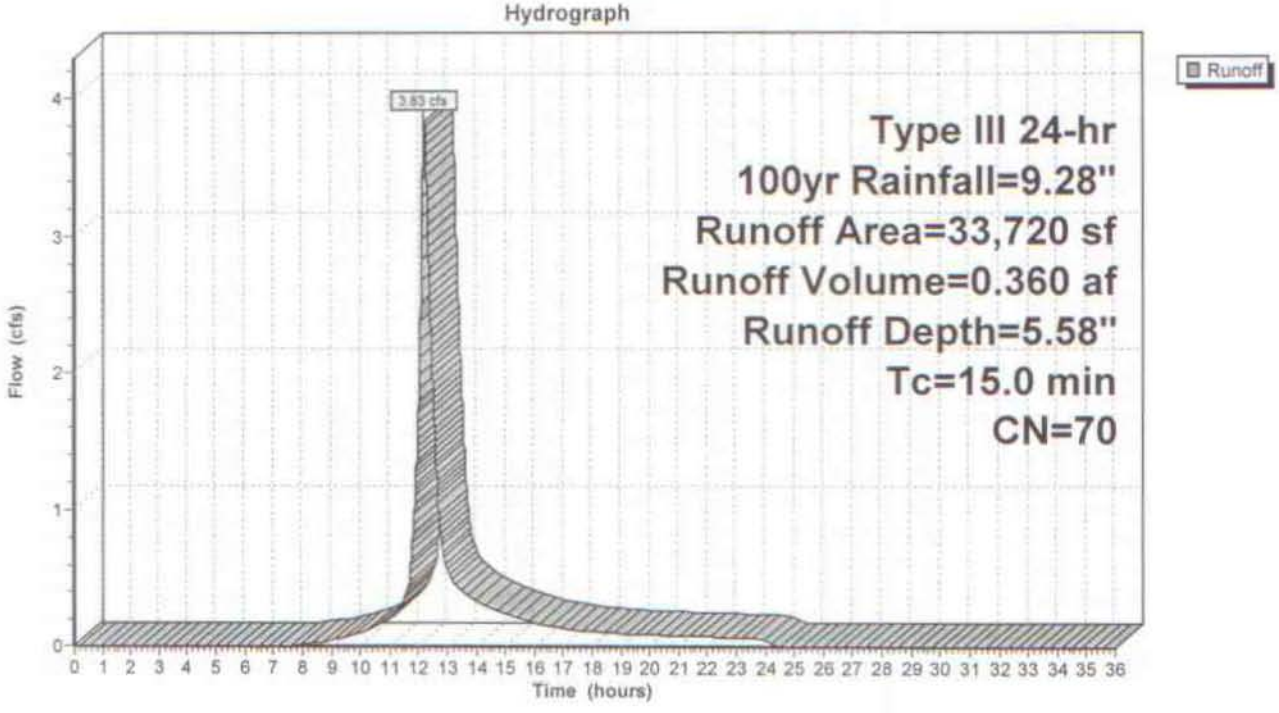
Runoff = 3.83 cfs @ 12.21 hrs, Volume= 0.360 af, Depth= 5.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=9.28"

	Area (sf)	CN	Description
*	7,110	72	landscape/grass
	26,610	70	Woods, Good, HSG C
	33,720	70	Weighted Average
	33,720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry, Point C to Point B

Subcatchment 15S: SUBAREA F 4-B



Summary for Subcatchment 17S: SUBAREA F-4-A

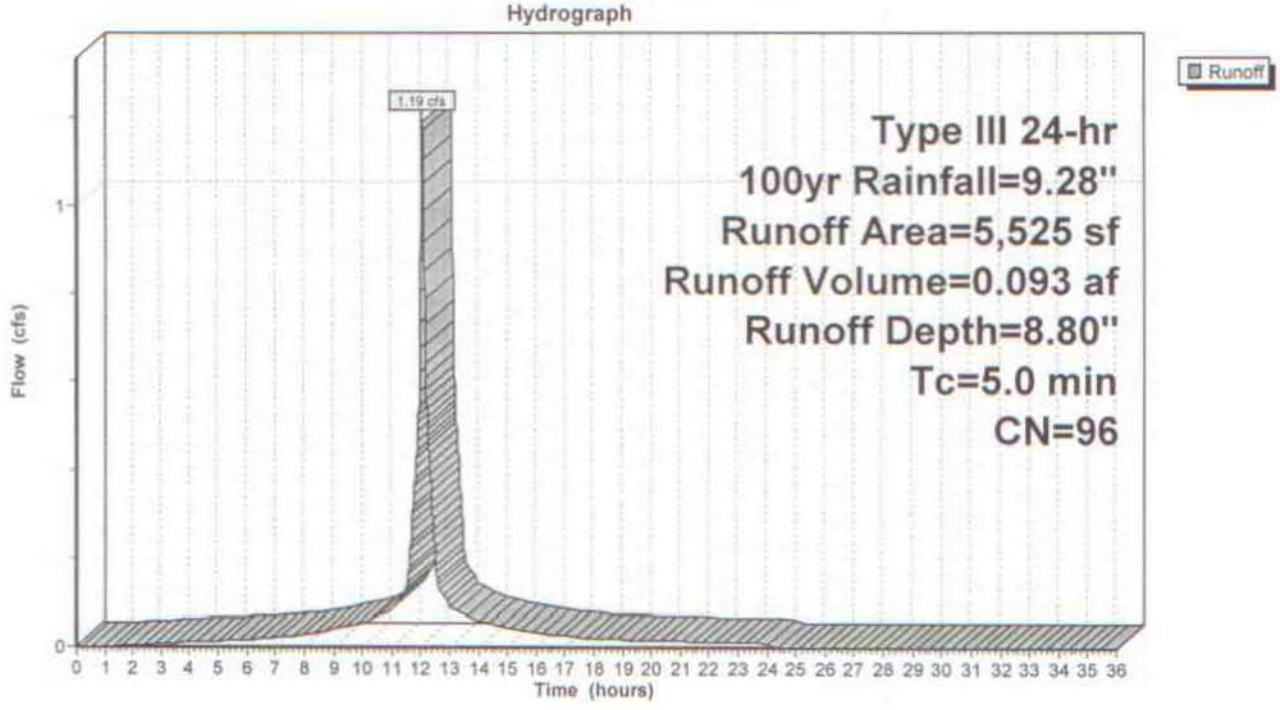
Runoff = 1.19 cfs @ 12.07 hrs, Volume= 0.093 af, Depth= 8.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=9.28"

Area (sf)	CN	Description
5,075	98	Unconnected pavement, HSG C
450	74	>75% Grass cover, Good, HSG C
5,525	96	Weighted Average
450		8.14% Pervious Area
5,075		91.86% Impervious Area
5,075		100.00% Unconnected

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

Subcatchment 17S: SUBAREA F-4-A



Summary for Subcatchment 18S: FUTURE CONDITIONS F-1

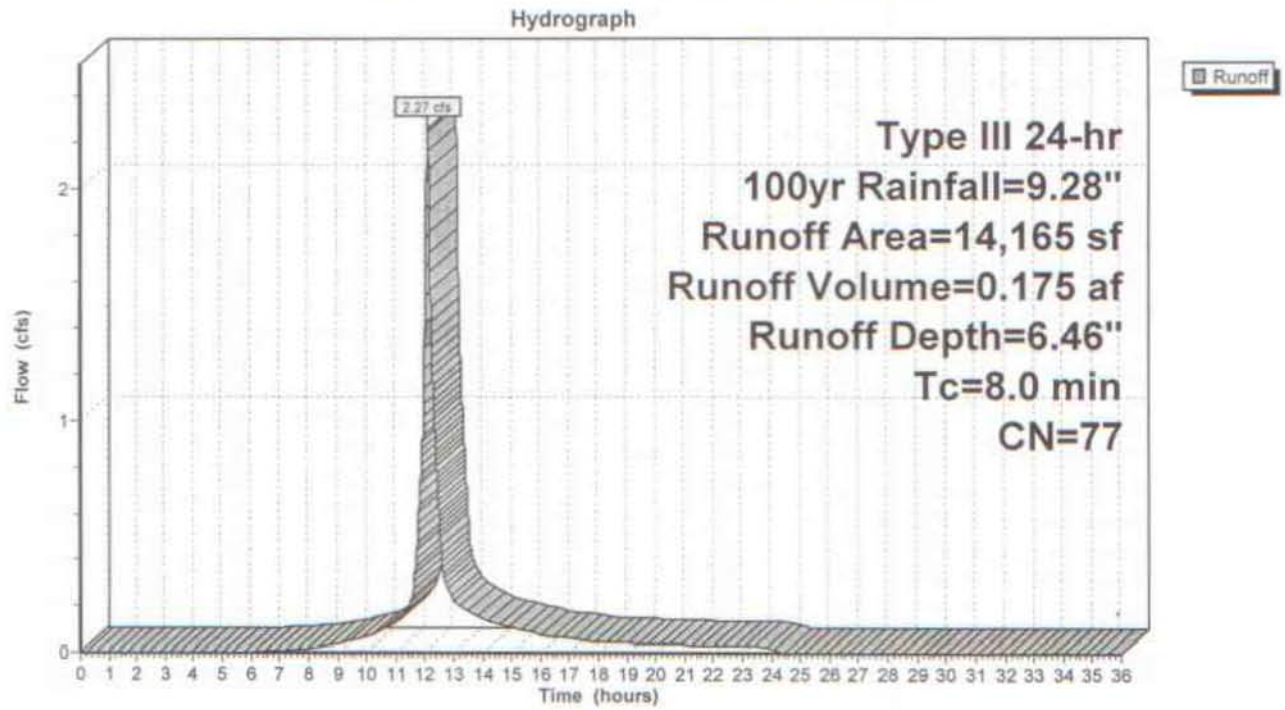
Runoff = 2.27 cfs @ 12.11 hrs, Volume= 0.175 af, Depth= 6.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=9.28"

Area (sf)	CN	Description
12,415	74	>75% Grass cover, Good, HSG C
1,750	98	Paved parking, HSG C
14,165	77	Weighted Average
12,415		87.65% Pervious Area
1,750		12.35% Impervious Area

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

Subcatchment 18S: FUTURE CONDITIONS F-1



Summary for Subcatchment 20S: FUTURE CONDITIONS F-2

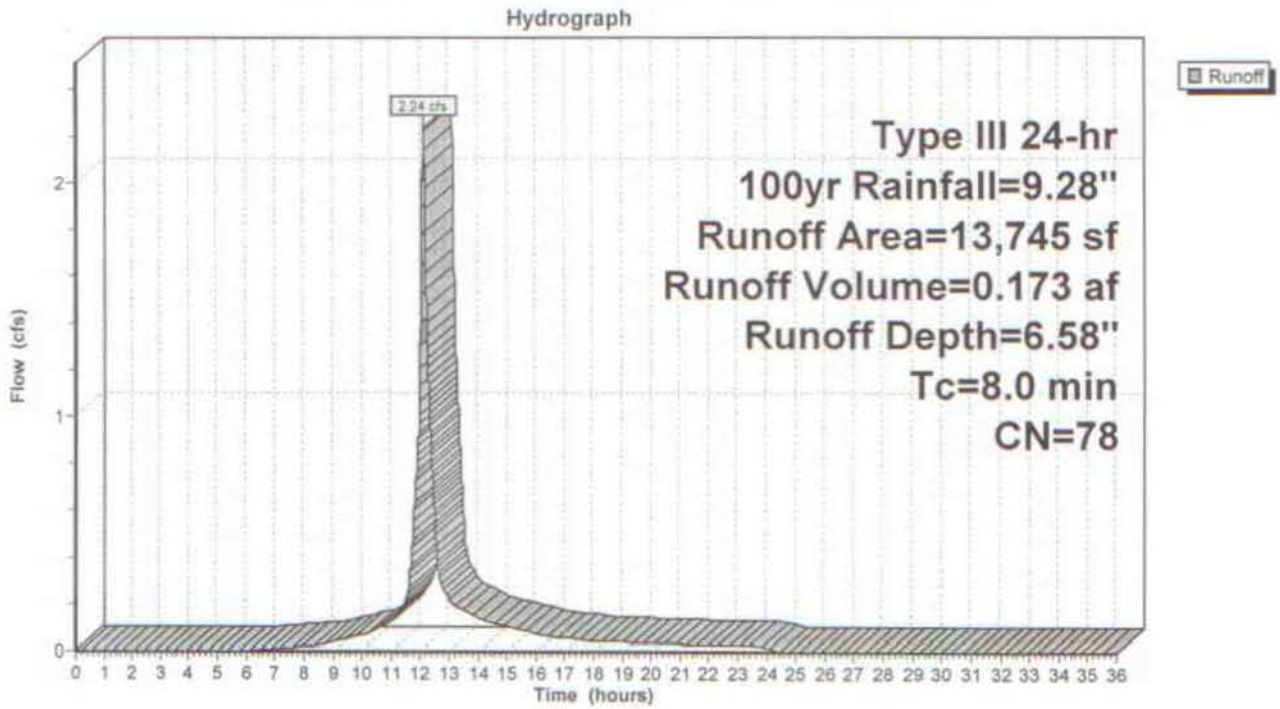
Runoff = 2.24 cfs @ 12.11 hrs, Volume= 0.173 af, Depth= 6.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=9.28"

Area (sf)	CN	Description
2,392	98	Paved parking, HSG C
11,353	74	>75% Grass cover, Good, HSG C
13,745	78	Weighted Average
11,353		82.60% Pervious Area
2,392		17.40% Impervious Area

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

Subcatchment 20S: FUTURE CONDITIONS F-2



Summary for Subcatchment 22S: DRAINAGE AREA F-6

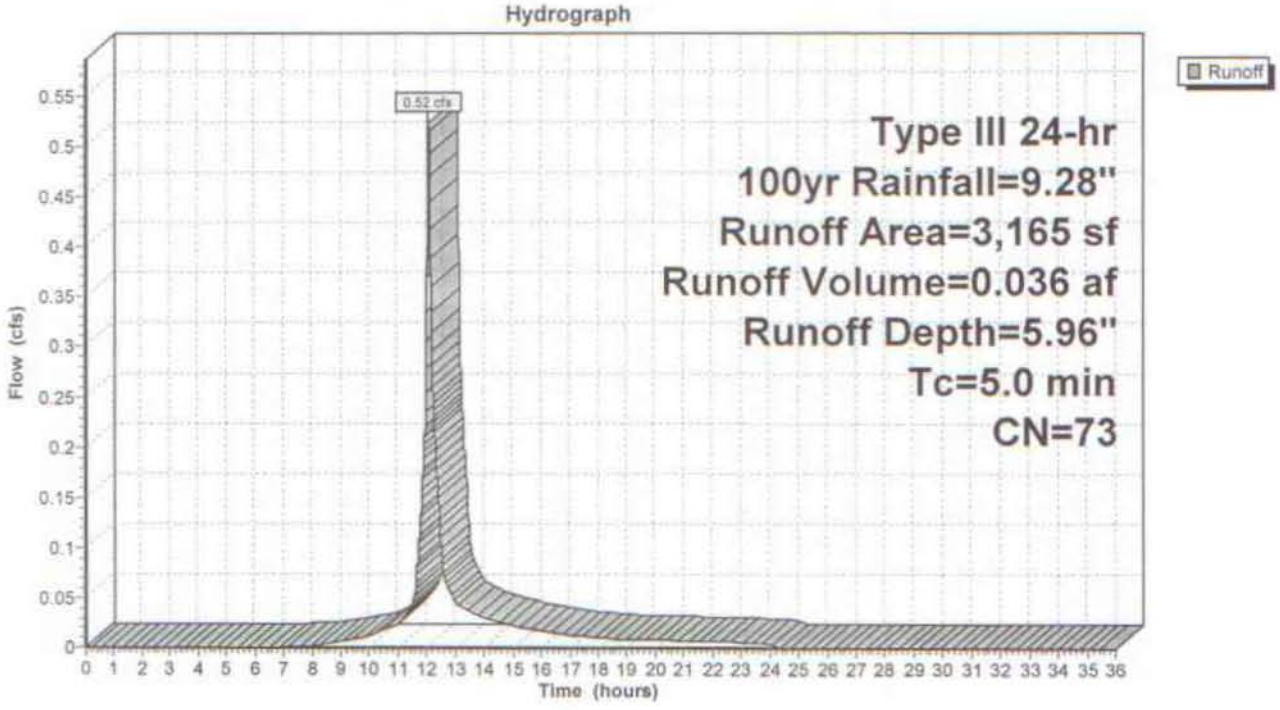
Runoff = 0.52 cfs @ 12.07 hrs, Volume= 0.036 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=9.28"

Area (sf)	CN	Description
3,165	73	Woods, Fair, HSG C
3,165		100.00% Pervious Area

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

Subcatchment 22S: DRAINAGE AREA F-6



Summary for Subcatchment 24S: DRAINAGE AREA F-5

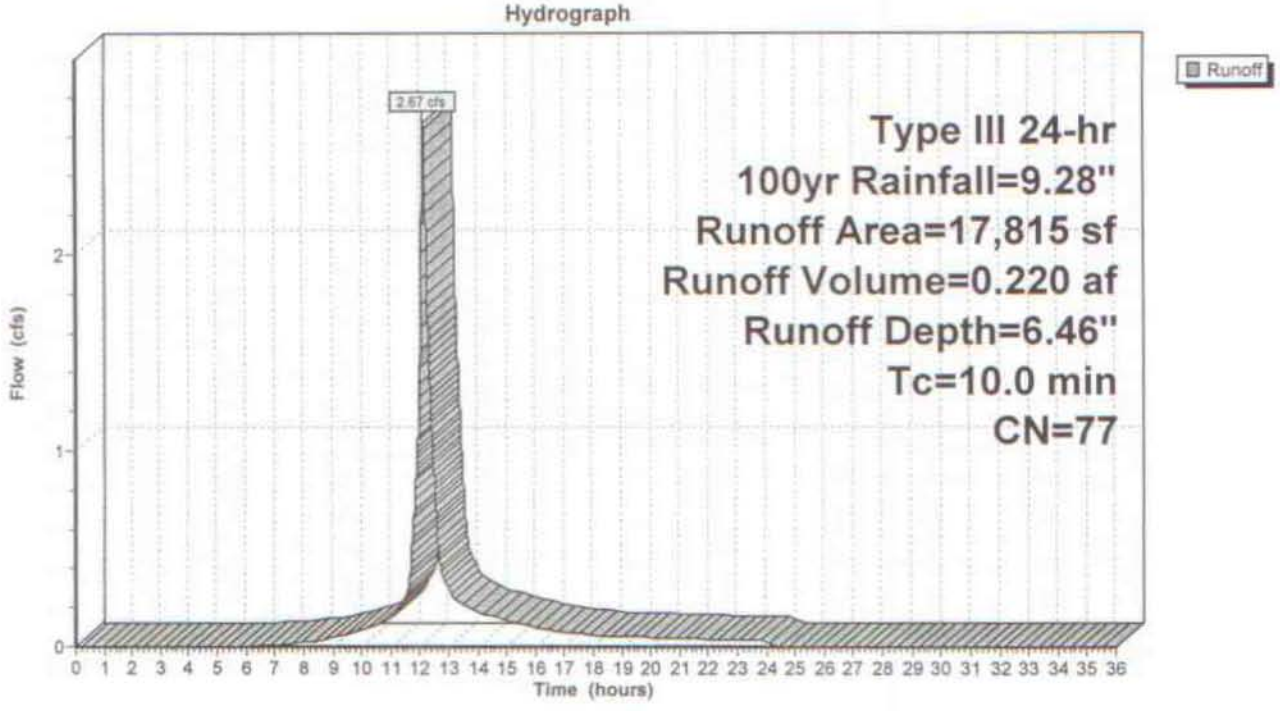
Runoff = 2.67 cfs @ 12.14 hrs, Volume= 0.220 af, Depth= 6.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=9.28"

Area (sf)	CN	Description
17,815	77	Woods, Poor, HSG C
17,815		100.00% Pervious Area

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

Subcatchment 24S: DRAINAGE AREA F-5



Summary for Subcatchment 26S: SUB AREA F-4-C

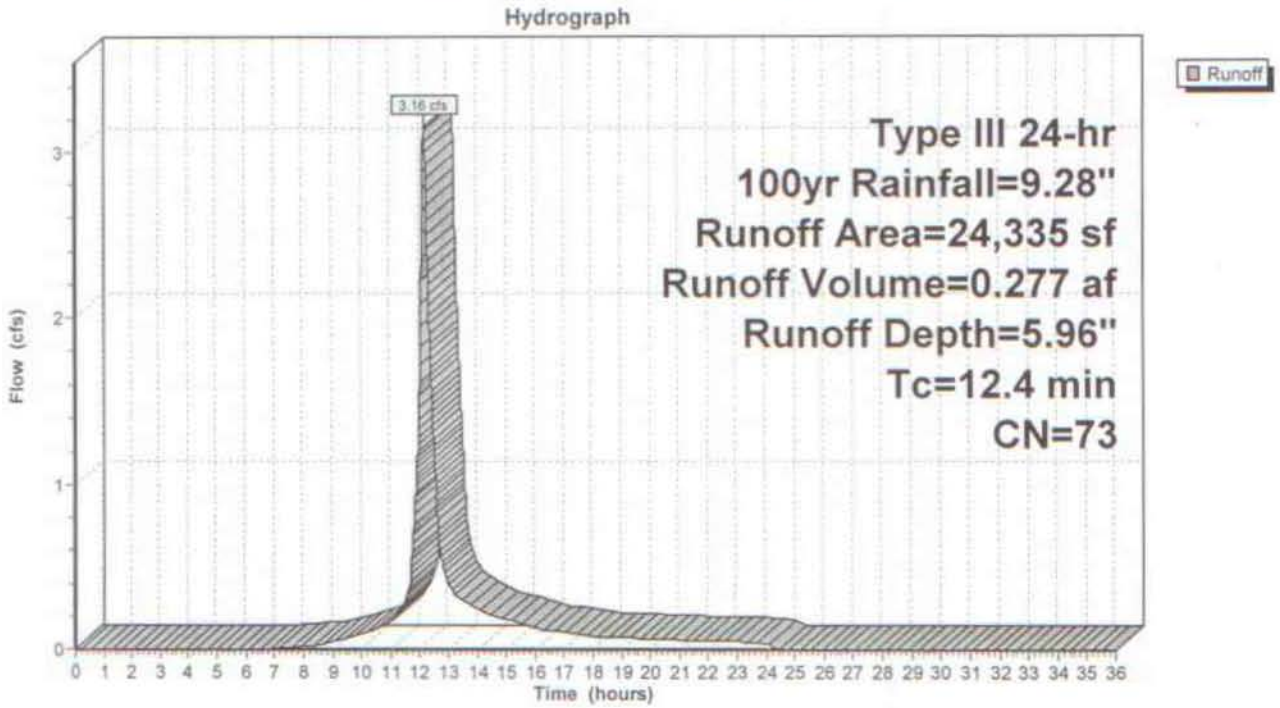
Runoff = 3.16 cfs @ 12.17 hrs, Volume= 0.277 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=9.28"

	Area (sf)	CN	Description
*	6,780	74	lawn/landscape
	11,275	73	Woods, Fair, HSG C
	6,280	70	Woods, Good, HSG C
	24,335	73	Weighted Average
	24,335		100.00% Pervious Area

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

Subcatchment 26S: SUB AREA F-4-C



Summary for Subcatchment 27S: FUTURE CONDITIONS F-3

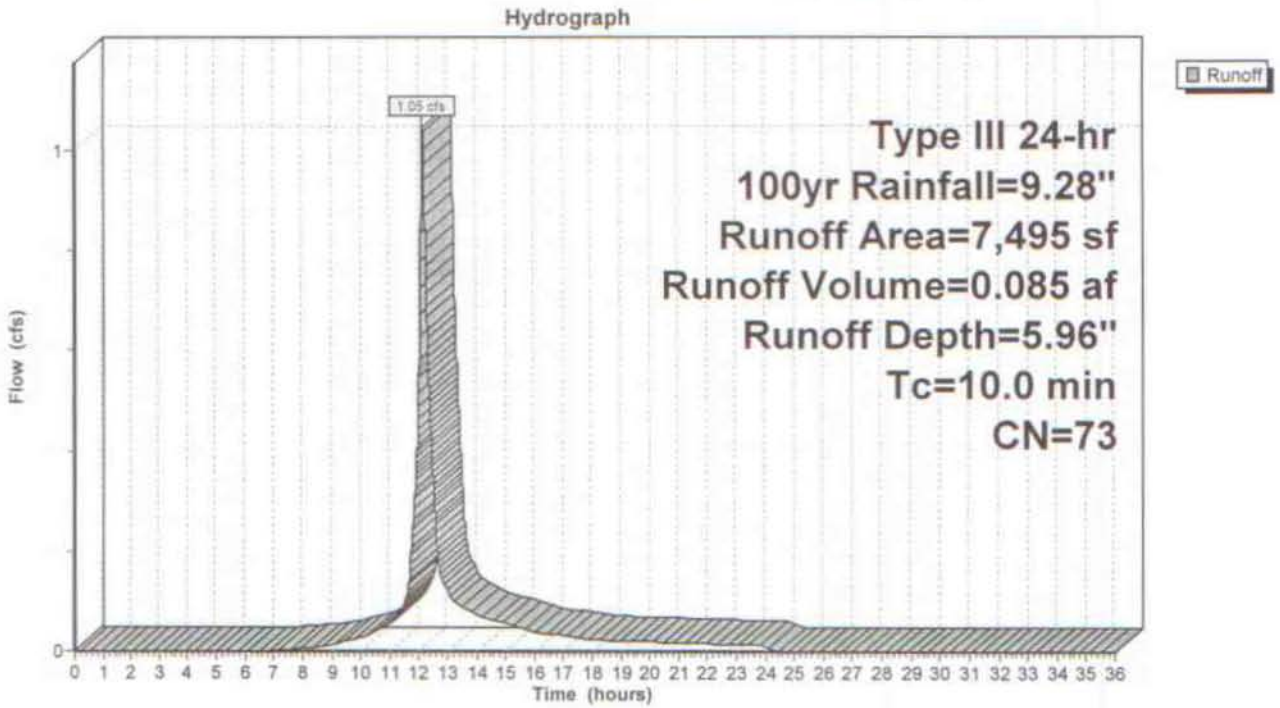
Runoff = 1.05 cfs @ 12.14 hrs, Volume= 0.085 af, Depth= 5.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type III 24-hr 100yr Rainfall=9.28"

Area (sf)	CN	Description
7,495	73	Woods, Fair, HSG C
7,495		100.00% Pervious Area

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

Subcatchment 27S: FUTURE CONDITIONS F-3



Summary for Pond 18P: INFILTRATION #1

Inflow Area = 0.127 ac, 91.86% Impervious, Inflow Depth = 8.80" for 100yr event
Inflow = 1.19 cfs @ 12.07 hrs, Volume= 0.093 af
Outflow = 1.05 cfs @ 12.11 hrs, Volume= 0.093 af, Atten= 12%, Lag= 2.6 min
Discarded = 0.16 cfs @ 11.61 hrs, Volume= 0.076 af
Primary = 1.00 cfs @ 12.11 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Peak Elev= 452.47' @ 12.11 hrs Surf.Area= 120 sf Storage= 632 cf

Plug-Flow detention time= 19.7 min calculated for 0.093 af (100% of inflow)
Center-of-Mass det. time= 19.7 min (768.4 - 748.7)

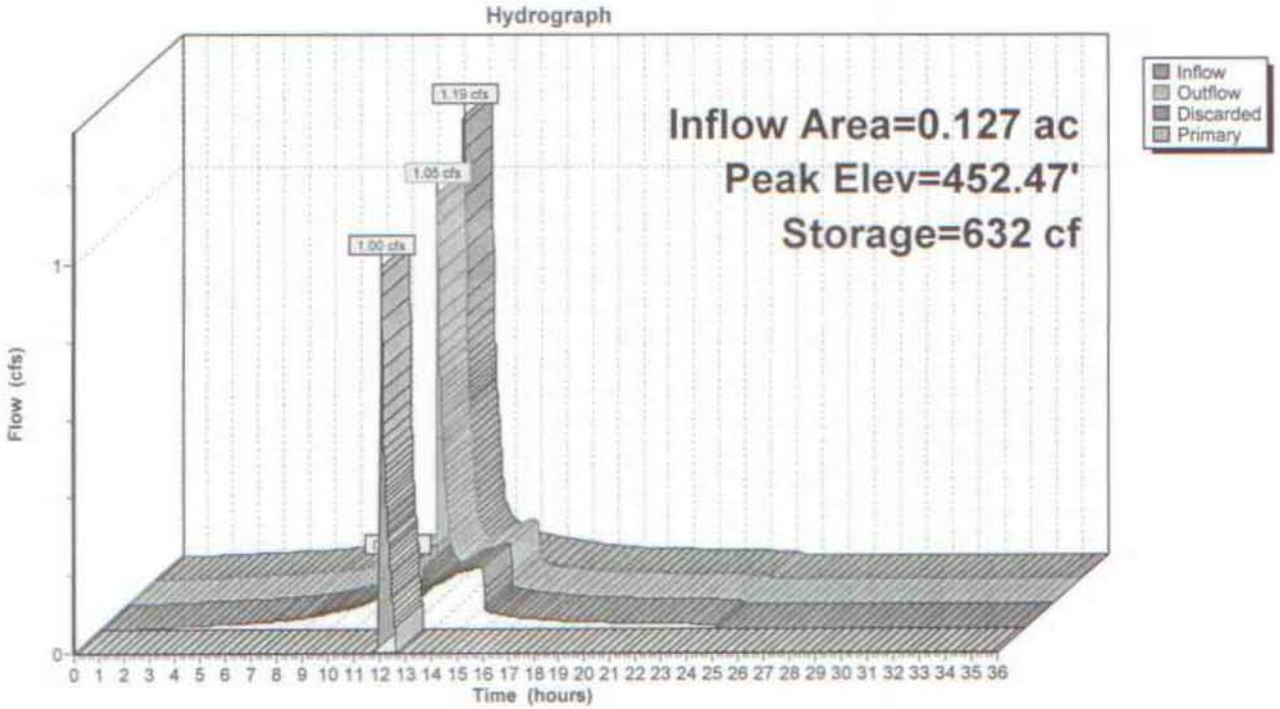
Volume	Invert	Avail.Storage	Storage Description
#1	450.25'	648 cf	**Cultec R-330XLHD** x 12 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

Device	Routing	Invert	Outlet Devices
#1	Discarded	450.25'	**20.000 in/hr Exfiltration over Surface area**
#2	Primary	452.00'	**15.0" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.16 cfs @ 11.61 hrs HW=450.28' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=0.99 cfs @ 12.11 hrs HW=452.47' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.99 cfs @ 2.34 fps)

Pond 18P: INFILTRATION #1

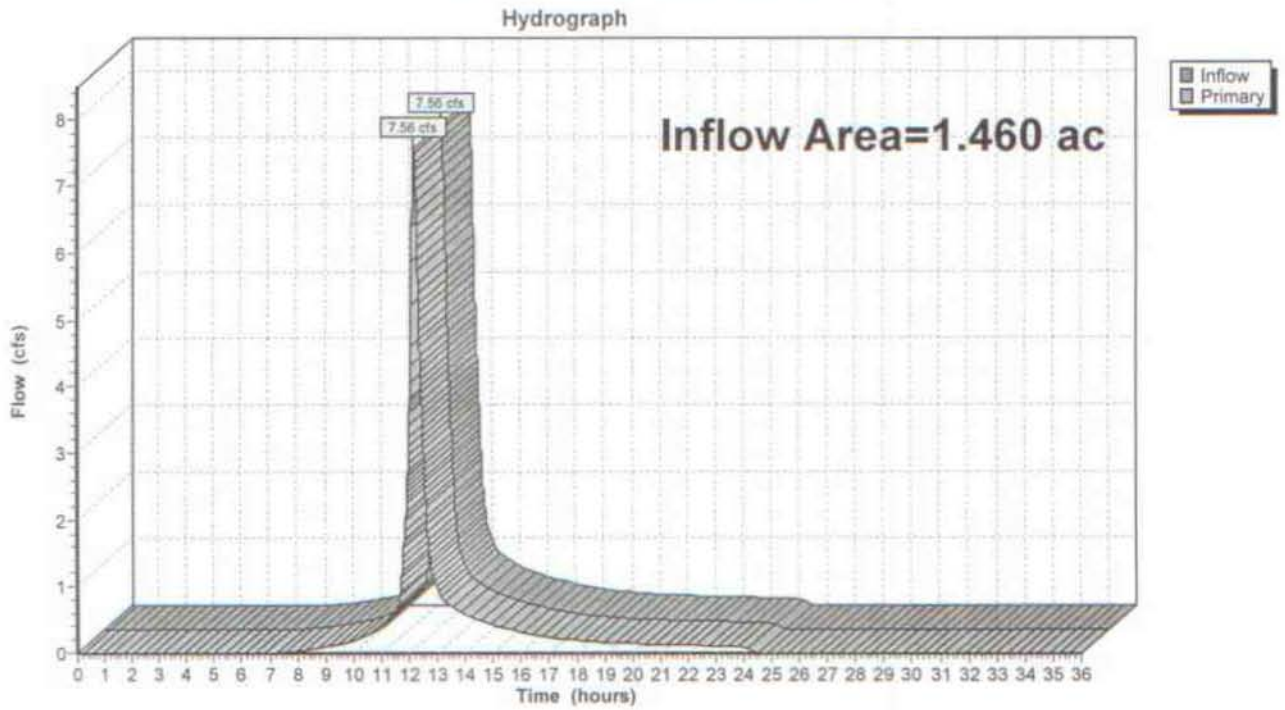


Summary for Link 13L: DESIGN POINT F-4

Inflow Area = 1.460 ac, 7.98% Impervious, Inflow Depth = 5.38" for 100yr event
Inflow = 7.56 cfs @ 12.18 hrs, Volume= 0.654 af
Primary = 7.56 cfs @ 12.18 hrs, Volume= 0.654 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 13L: DESIGN POINT F-4

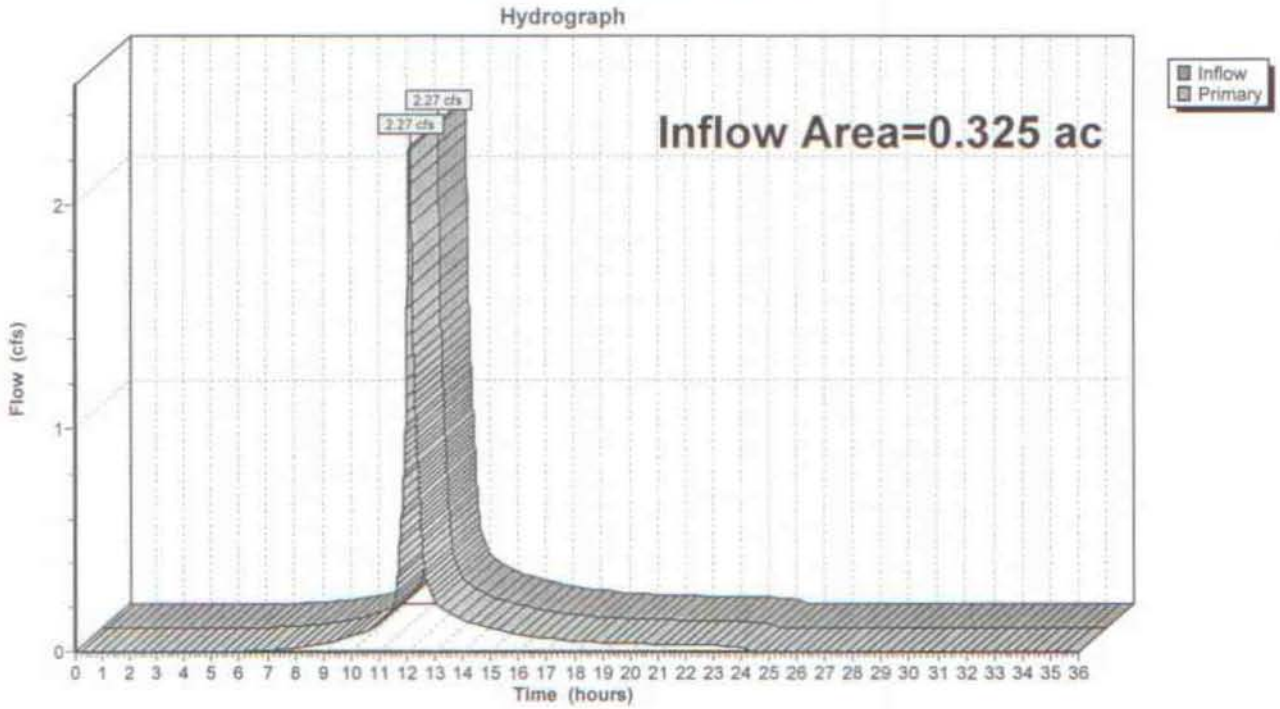


Summary for Link 19L: DESIGN POINT F-1

Inflow Area = 0.325 ac, 12.35% Impervious, Inflow Depth = 6.46" for 100yr event
Inflow = 2.27 cfs @ 12.11 hrs, Volume= 0.175 af
Primary = 2.27 cfs @ 12.11 hrs, Volume= 0.175 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 19L: DESIGN POINT F-1

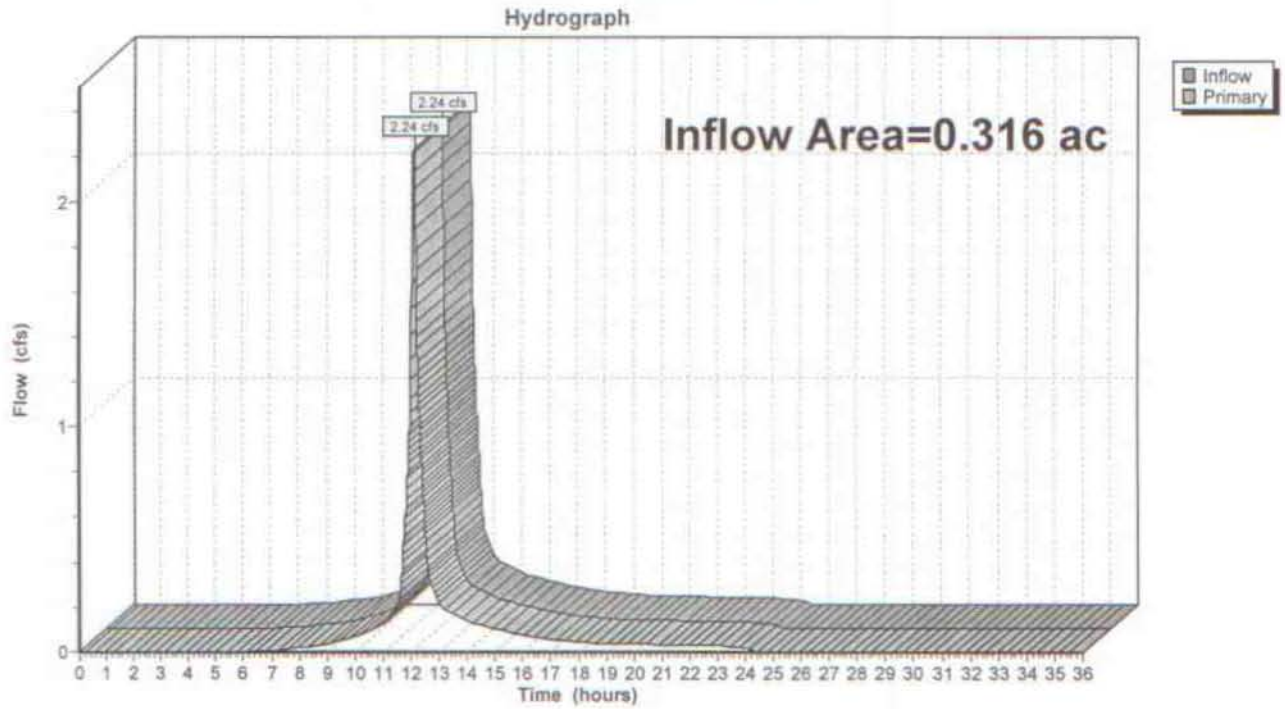


Summary for Link 21L: DESIGN POINT F-2

Inflow Area = 0.316 ac, 17.40% Impervious, Inflow Depth = 6.58" for 100yr event
Inflow = 2.24 cfs @ 12.11 hrs, Volume= 0.173 af
Primary = 2.24 cfs @ 12.11 hrs, Volume= 0.173 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 21L: DESIGN POINT F-2

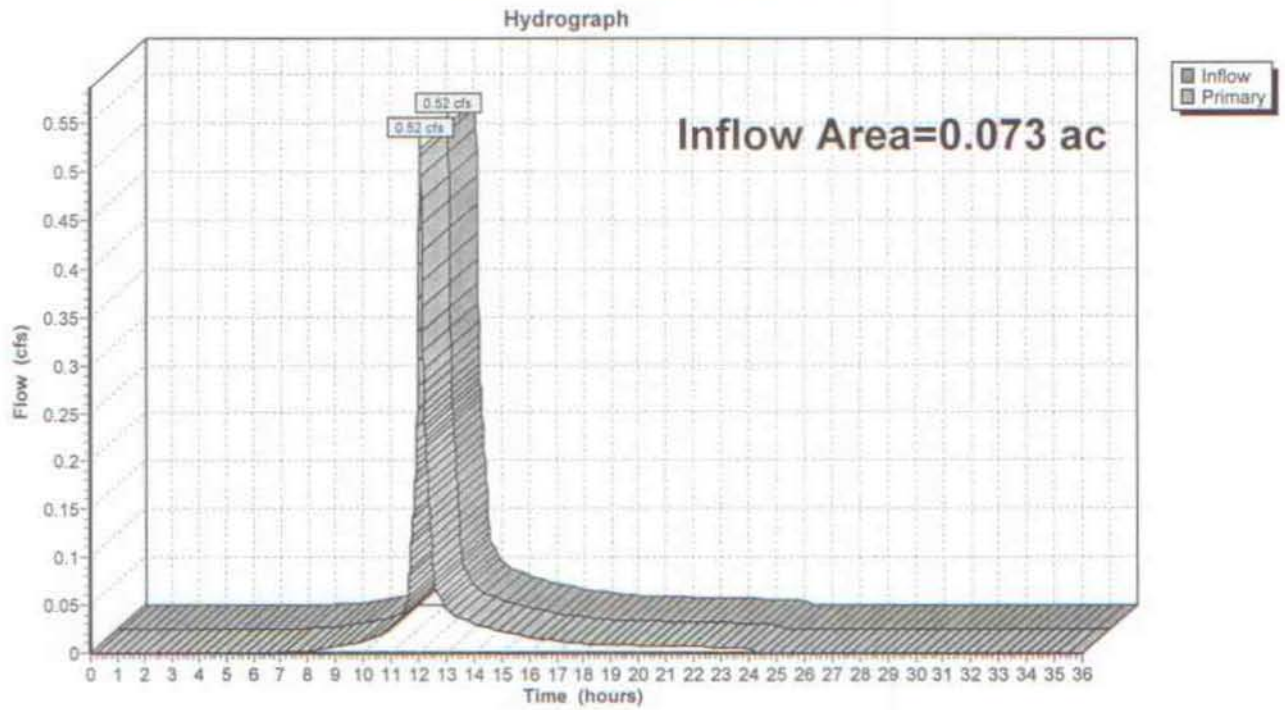


Summary for Link 23L: DESIGN POINT F-6

Inflow Area = 0.073 ac, 0.00% Impervious, Inflow Depth = 5.96" for 100yr event
Inflow = 0.52 cfs @ 12.07 hrs, Volume= 0.036 af
Primary = 0.52 cfs @ 12.07 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 23L: DESIGN POINT F-6

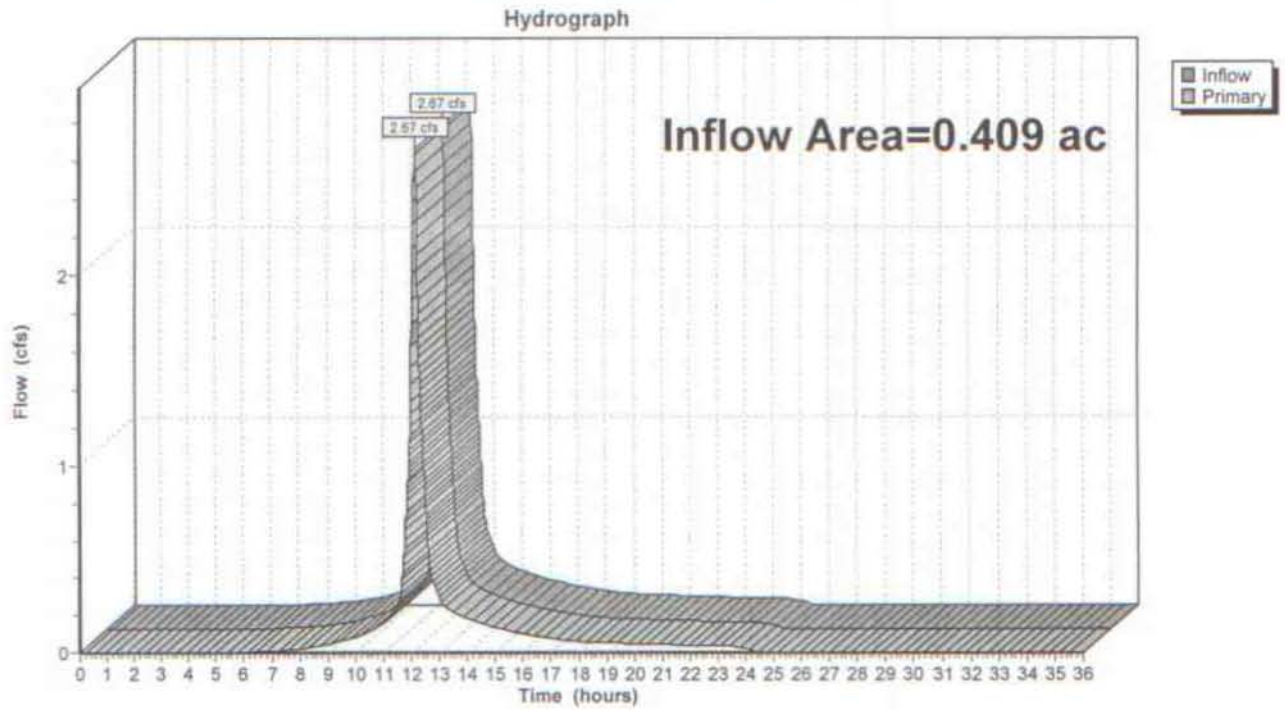


Summary for Link 25L: DESIGN POINT F-5

Inflow Area = 0.409 ac, 0.00% Impervious, Inflow Depth = 6.46" for 100yr event
Inflow = 2.67 cfs @ 12.14 hrs, Volume= 0.220 af
Primary = 2.67 cfs @ 12.14 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 25L: DESIGN POINT F-5

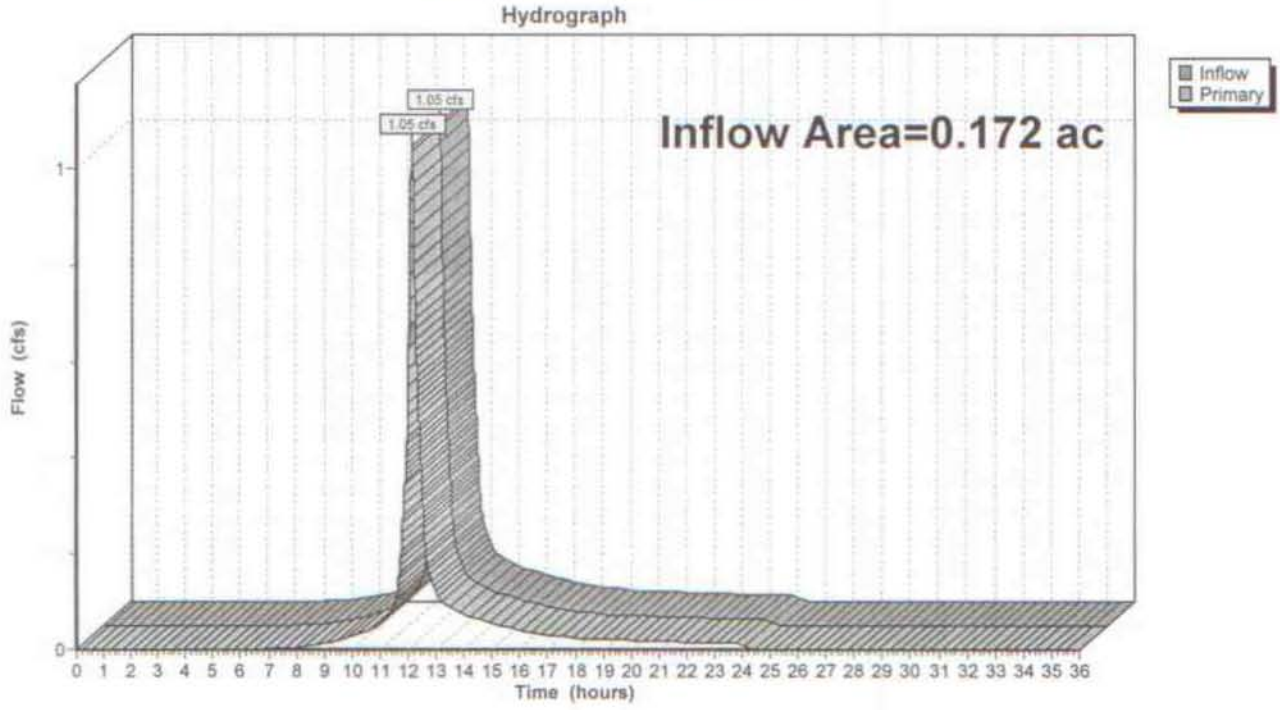


Summary for Link 28L: DESIGN POINT F-3

Inflow Area = 0.172 ac, 0.00% Impervious, Inflow Depth = 5.96" for 100yr event
Inflow = 1.05 cfs @ 12.14 hrs, Volume= 0.085 af
Primary = 1.05 cfs @ 12.14 hrs, Volume= 0.085 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 28L: DESIGN POINT F-3



APPENDIX C

STORMWATER MAINTENANCE REQUIREMENTS

Nathaniel J. Holt, P.E.

Stormwater Pond/Wetland Operation, Maintenance and Management Inspection Checklist

Project Location: _____

Site Status: _____

Date: _____

Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
1. Embankment and emergency spillway (Annual, After Major Storms)		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a. Upstream face		
b. Downstream face		
c. At or beyond toe		
downstream		
upstream		
d. Emergency spillway		
6.Pond, toe & chimney drains clear and functioning		
7.Seeps/leaks on downstream face		
8.Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam "As-Built"		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
10. Emergency spillway clear of obstructions and debris		
11. Other (specify)		
2. Riser and principal spillway (Annual)		
Type: Reinforced concrete _____ Corrugated pipe _____ Masonry _____ 1. Low flow orifice obstructed		
2. Low flow trash rack. a. Debris removal necessary		
b. Corrosion control		
3. Weir trash rack maintenance a. Debris removal necessary		
b. corrosion control		
4. Excessive sediment accumulation insider riser		
5. Concrete/masonry condition riser and barrels a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Metal pipe condition		
7. Control valve a. Operational/exercised		
b. Chained and locked		
8. Pond drain valve a. Operational/exercised		
b. Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
3. Permanent Pool (Wet Ponds) (monthly)		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Other (specify)		
4. Sediment Forebays		
1.Sedimentation noted		
2. Sediment cleanout when depth < 50% design depth		
5. Dry Pond Areas		
1. Vegetation adequate		
2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
6. Condition of Outfalls (Annual , After Major Storms)		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4.Endwalls / Headwalls		
5. Other (specify)		
7. Other (Monthly)		
1. Encroachment on pond, wetland or easement area		

Maintenance Item	Satisfactory/ Unsatisfactory	Comments
2. Complaints from residents		
3.Aesthetics a. Grass growing required		
b. Graffiti removal needed		
c. Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		
8. Wetland Vegetation (Annual)		
1. Vegetation healthy and growing Wetland maintaining 50% surface area coverage of wetland plants after the second growing season. (If unsatisfactory, reinforcement plantings needed)		
2. Dominant wetland plants: Survival of desired wetland plant species Distribution according to landscaping plan?		
3. Evidence of invasive species		
4. Maintenance of adequate water depths for desired wetland plant species		
5. Harvesting of emergent plantings needed		
6. Have sediment accumulations reduced pool volume significantly or are plants "choked" with sediment		
7. Eutrophication level of the wetland.		
8. Other (specify)		

Comments:

Actions to be Taken:

_____

_____

_____

_____

Infiltration Trench Construction Inspection Checklist

Project:
Location:
Site Status:

Date:

Time:

Inspector:

Construction Sequence	Satisfactory/ Unsatisfactory	Comments
1. Pre-Construction		
Pre-construction meeting		
Runoff diverted		
Soil permeability tested		
Groundwater / bedrock sufficient at depth		
2. Excavation		
Size and location		
Side slopes stable		
Excavation does not compact subsoils		
3. Filter Fabric Placement		
Fabric specifications		
Placed on bottom, sides, and top		

CONSTRUCTION SEQUENCE	SATISFACTORY / UNSATISFACTORY	COMMENTS
4. Aggregate Material		
Size as specified		
Clean / washed material		
Placed properly		
5. Observation Well		
Pipe size		
Removable cap / footplate		
Initial depth =_____feet		
6. Final Inspection		
Pretreatment facility in place		
Contributing watershed stabilized prior to flow diversion		
Outlet		

Comments:

Actions to be Taken: