

DRAINAGE STATEMENT

Prepared For

Aaron Friedman

Proposed Single-Family Residential Dwelling

**Block 80.03, Lot 10
10 Ridge Road
Township of West Orange
Essex County, New Jersey**

Prepared by:



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A handwritten signature in dark ink, appearing to read 'MB', is positioned above a horizontal line.

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NJ Professional Engineer License #54522

**March 2024
DEC # 5142-24-00053**

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I. Drainage Summary

This Drainage Statement has been prepared to define and analyze the stormwater drainage conditions that would occur as a result of the development of Block 80.03, Lot 10 as shown on the Township of West Orange Tax Map Sheet No. 32, located in the Township of West Orange, Essex County, New Jersey. The subject site consists of 5.77 acres (251,368 SF) and is located at 10 Ridge Road.

Under existing conditions, the site is undeveloped, consisting of overgrown wooded areas. The proposed project consists of the construction of a 2,900 SF footprint, two and a half story single-family residential dwelling. Additional site improvements will include a paved driveway, swimming pool, pickleball court, landscaping, grading, stormwater management, utilities and other associated site amenities as shown on the accompanying Site Plan drawings. The project also proposes a sanitary sewer main extension. The new development will result in 39,823 SF (0.91 AC) of disturbance on site and 2,418 SF (0.06 AC) disturbance within the right-of-way for a total disturbance of 42,241 SF (0.97 AC), along with a 10,113 SF (0.23 AC) increase in impervious coverage. Of the increase in impervious coverage, 3,916 SF (0.09 AC) is motor vehicle surface consisting of the proposed driveway.

The project consists of less than one (1) acre of disturbance and will not increase the net impervious coverage on-site by $\frac{1}{4}$ acre or more, nor the motor vehicle surface. Therefore, the proposed project does not meet the definition of a 'major development' as defined by NJAC 7:8 and therefore is not subject to the NJDEP Stormwater Management Rules & Regulations (NJAC 7:8). As the proposed development proposes disturbance of greater than 5,000 SF with an increase of impervious area less than $\frac{1}{4}$ acre, the project is subject to New Jersey standards for Soil Erosion & Sediment Control runoff rate reductions for downstream stability required for the 2 & 10-year storms.

The stormwater drainage for the proposed site has been designed to maintain existing runoff patterns to the maximum extent feasible. In existing conditions, stormwater runoff from the project area drains to two points of analysis. Stormwater runoff from the northern corner of the site flows via overland flow to the existing headwall located within the adjacent Lot 21. The remaining stormwater runoff within the project area flows via overland to the existing concrete channel at the eastern corner of the site.

II. Design Methodology

The intention of the design of the proposed stormwater management facility for this project is to provide measures as required to address applicable aspects of the Standards for Soil Erosion and Sediment Control in New Jersey and the Township of West Orange Stormwater Management Control Ordinance.

The stormwater runoff from the project area is ultimately tributary to two points of analysis as previously described.

The stormwater drainage for the proposed project has been designed to maintain existing runoff patterns on-site to the maximum extent practicable. A grading plan has been developed for the proposed site improvements with consideration to the existing drainage patterns. The project proposes an underground detention system located to the north of the dwelling. A proposed roof leader system will collect stormwater runoff from the dwelling and discharge into the basin. Two (2) yard inlets are proposed onsite to collect stormwater runoff from the project area.

The proposed basin is designed with an outlet control structure which will release stormwater runoff at a controlled rate to the existing stormwater conveyance pipe located to the east of the proposed dwelling, which is ultimately tributary to the existing concrete channel. A portion of stormwater runoff from the project area will continue to flow undetained via overland to the existing headwall within the adjacent Lot 21.

The hydrology for the site was calculated using the NRCS Runoff Equation and Dimensionless Unit Hydrograph as noted in Part 630, Hydrology National Engineering Handbook. The following particular references were used:

- Curve Numbers were established via Chapter 9 – Hydrologic Soil-Cover Complexes
- Time of Concentrations were calculated in accordance with Chapter 15
- Rainfall Distributions are based on NOAA Type D rainfall distributions
- The SCS Dimensionless Unit Hydrograph was utilized.

III. Runoff Rate Reduction Performance

As noted previously, a majority of stormwater runoff from the project area will be collected by the proposed stormwater conveyance system, detained in an on-site underground detention basin, and released at a controlled rate to the existing onsite stormwater infrastructure. A significant amount of stormwater runoff from the surrounding wooded areas flows through the project area, to be collected and detained in the proposed basin. As these areas remain undisturbed in existing and proposed conditions, peak flows from these areas were accounted for in the basin sizing and outlet control structure design, but were excluded in the peak flow reduction calculations. The undisturbed wooded areas which drain towards the existing headwall within the adjacent Lot 21 were also included in the peak flow calculations, but were excluded in determining the required peak flow reduction.

As a result of the improvements associated with the proposed development, the peak flows discharging to each point of analysis decreases for the two (2) and ten (10) year design storms, modeled as 24-hour SCS Type III design storms, as compared to existing conditions. In addition, the proposed basin and outlet control structure have been designed to provide a fifty (50) percent reduction for the two (2) year and a twenty-five (25) percent reduction for the ten (10) year design storms for the project as a whole. Please refer to the appendix of this report for the hydrograph summary reports indicating same.

Pre-Development and Post Development Peak Runoff Results Summary

Point of Analysis A (Lot 21 Headwall)

Design Storm	Pre-Development Undisturbed Areas (CFS)	Pre-Development Disturbed Areas (CFS)	Total Allowable Peak Flow	Total Proposed Peak Flow (CFS)
2 Year	0.33	0.21	0.54	0.37
10 Year	0.80	0.52	1.32	0.87

Point of Analysis B (Concrete Channel)

Design Storm	Pre-Development Undisturbed Areas (CFS)	Pre-Development Disturbed Areas (CFS)	Total Allowable Peak Flow	Total Proposed Peak Flow (CFS)
2 Year	1.17	0.36	1.53	1.23
10 Year	2.84	0.87	3.71	3.48

Total Site

Design Storm	Pre-Development Undisturbed Areas (CFS)	Pre-Development Disturbed Areas (CFS)	Reduction in Flow in Disturbed Areas (%)	Total Allowable Peak Flow	Total Proposed Peak Flow (CFS)
2 Year	1.34	0.47	50	1.58	1.57
10 Year	3.25	1.14	25	4.11	4.11

IV. Conclusion

The proposed project has been designed to ensure safe and efficient control of stormwater runoff in a manner that will not adversely impact the existing drainage patterns, existing structures, or adjacent parcels. Furthermore, the project results in a decrease in peak stormwater runoff rates from the parcel, increasing downstream stability. As a result, it is anticipated that the proposed development will not adversely impact the existing drainage infrastructure located onsite or within the surrounding properties.

APPENDIX

USGS MAP

USGS MAP: CALDWELL QUADRANGLE



(Not to scale)

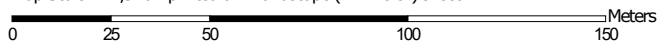
NRCS WEB SOIL SURVEY

Hydrologic Soil Group—Essex County, New Jersey



Soil Map may not be valid at this scale.

Map Scale: 1:1,910 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

3/1/2024
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MAP LEGEND**Area of Interest (AOI)**
 Area of Interest (AOI)
Soils**Soil Rating Polygons**

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Lines

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Points

-  A
-  A/D
-  B
-  B/D

-  C
-  C/D
-  D
-  Not rated or not available

Water Features
 Streams and Canals
Transportation

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

Background
 Aerial Photography
MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

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

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

Soil Survey Area: Essex County, New Jersey
Survey Area Data: Version 19, Aug 29, 2023

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

Date(s) aerial images were photographed: Oct 10, 2022—Oct 16, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BogCc	Boonton loam, 8 to 15 percent slopes, extremely stony	C	1.2	13.6%
BowrB	Boonton - Urban land, Boonton substratum complex, red sandstone lowland, 0 to 8 percent slopes	C	0.2	1.9%
HanBc	Haledon silt loam, 0 to 8 percent slopes, extremely stony	C	2.0	24.0%
YaobBc	Yalesville - Boonton - Holyoke complex, 0 to 8 percent slopes, extremely stony	C	5.0	58.8%
YaohEh	Yalesville - Holyoke complex, 35 to 60 percent slopes, very rocky	C	0.1	1.8%
Totals for Area of Interest			8.5	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

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

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

**HYDROGRAPH SUMMARY REPORTS – 2 & 10-YEAR
STORM EVENTS**

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2024-03-01 HydroCAD

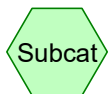
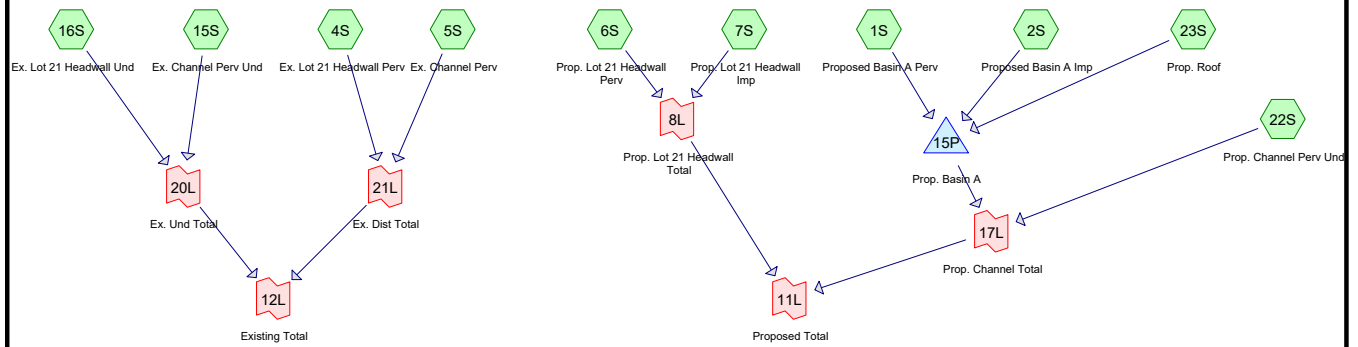
Prepared by Dynamic Engineering

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Printed 3/27/2024

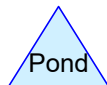
91 Link 21L: Ex. Dist Total



Subcat



Reach



Pond



Link

Routing Diagram for 2024-03-01 HydroCAD

Prepared by Dynamic Engineering, Printed 3/27/2024

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	Type III 24-hr		Default	24.00	1	3.44	2
2	10-Year	Type III 24-hr		Default	24.00	1	5.22	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.682	74	>75% Grass cover, Good, HSG C (1S, 6S, 22S)
0.013	98	Paved driveway, HSG C (7S)
0.077	98	Paved parking, HSG C (2S)
0.067	98	Roofs, HSG C (23S)
0.076	98	Unconnected pavement, HSG C (22S)
5.971	70	Woods, Good, HSG C (1S, 4S, 5S, 6S, 15S, 16S, 22S)
6.885	71	TOTAL AREA

2024-03-01 HydroCAD

Prepared by Dynamic Engineering
HydroCAD® 10.20-4b s/n 08640 © 2023 HydroCAD Software Solutions LLC

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
6.885	HSG C	1S, 2S, 4S, 5S, 6S, 7S, 15S, 16S, 22S, 23S
0.000	HSG D	
0.000	Other	
6.885		TOTAL AREA

2024-03-01 HydroCAD

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.682	0.000	0.000	0.682	>75% Grass cover, Good	1S, 6S, 22S
0.000	0.000	0.013	0.000	0.000	0.013	Paved driveway	7S
0.000	0.000	0.077	0.000	0.000	0.077	Paved parking	2S
0.000	0.000	0.067	0.000	0.000	0.067	Roofs	23S
0.000	0.000	0.076	0.000	0.000	0.076	Unconnected pavement	22S
0.000	0.000	5.971	0.000	0.000	5.971	Woods, Good	1S, 4S, 5S, 6S, 15S, 16S, 22S
0.000	0.000	6.885	0.000	0.000	6.885	TOTAL AREA	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	1S	0.00	0.00	129.0	0.0100	0.010	0.0	8.0	0.0	
2	23S	0.00	0.00	20.0	0.0100	0.010	0.0	6.0	0.0	
3	15P	614.90	614.50	77.0	0.0052	0.010	0.0	15.0	0.0	

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 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 1S: Proposed Basin A Perv Runoff Area=77.866 sf 0.00% Impervious Runoff Depth=1.03"
Flow Length=556' Tc=19.7 min CN=71 Runoff=1.34 cfs 0.153 af

Subcatchment 2S: Proposed Basin A Imp Runoff Area=3.352 sf 100.00% Impervious Runoff Depth=3.21"
Tc=19.7 min CN=98 Runoff=0.18 cfs 0.021 af

Subcatchment 4S: Ex. Lot 21 Headwall Perv Runoff Area=11.322 sf 0.00% Impervious Runoff Depth=0.97"
Tc=13.3 min CN=70 Runoff=0.21 cfs 0.021 af

Subcatchment 5S: Ex. Channel Perv Runoff Area=28.303 sf 0.00% Impervious Runoff Depth=0.97"
Tc=34.9 min CN=70 Runoff=0.36 cfs 0.053 af

Subcatchment 6S: Prop. Lot 21 Headwall Runoff Area=16.356 sf 0.00% Impervious Runoff Depth=1.03"
Flow Length=151' Tc=11.9 min CN=71 Runoff=0.34 cfs 0.032 af

Subcatchment 7S: Prop. Lot 21 Headwall Runoff Area=565 sf 100.00% Impervious Runoff Depth=3.21"
Tc=11.9 min CN=98 Runoff=0.04 cfs 0.003 af

Subcatchment 15S: Ex. Channel Perv Und Runoff Area=92.746 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=674' Tc=34.9 min CN=70 Runoff=1.17 cfs 0.172 af

Subcatchment 16S: Ex. Lot 21 Headwall UndRunoff Area=17.589 sf 0.00% Impervious Runoff Depth=0.97"
Flow Length=148' Tc=13.3 min CN=70 Runoff=0.33 cfs 0.033 af

Subcatchment 22S: Prop. Channel Perv UndRunoff Area=48.924 sf 6.74% Impervious Runoff Depth=1.08"
Flow Length=300' Tc=16.3 min UI Adjusted CN=72 Runoff=0.97 cfs 0.101 af

Subcatchment 23S: Prop. Roof Runoff Area=2.900 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=20' Slope=0.0100 7' Tc=0.1 min CN=98 Runoff=0.25 cfs 0.018 af

Pond 15P: Prop. Basin A Peak Elev=617.19' Storage=2,304 cf Inflow=1.58 cfs 0.191 af
Outflow=0.69 cfs 0.191 af

Link 8L: Prop. Lot 21 Headwall Total

Inflow=0.37 cfs 0.036 af
Primary=0.37 cfs 0.036 af

Link 11L: Proposed Total

Inflow=1.57 cfs 0.328 af
Primary=1.57 cfs 0.328 af

Link 12L: Existing Total

Inflow=1.81 cfs 0.279 af
Primary=1.81 cfs 0.279 af

Link 17L: Prop. Channel Total

Inflow=1.23 cfs 0.292 af
Primary=1.23 cfs 0.292 af

Link 20L: Ex. Und Total

Inflow=1.34 cfs 0.205 af
Primary=1.34 cfs 0.205 af

Link 21L: Ex. Dist Total

Inflow=0.47 cfs 0.074 af
Primary=0.47 cfs 0.074 af

Total Runoff Area = 6.885 ac Runoff Volume = 0.607 af Average Runoff Depth = 1.06"
96.63% Pervious = 6.653 ac 3.37% Impervious = 0.232 ac

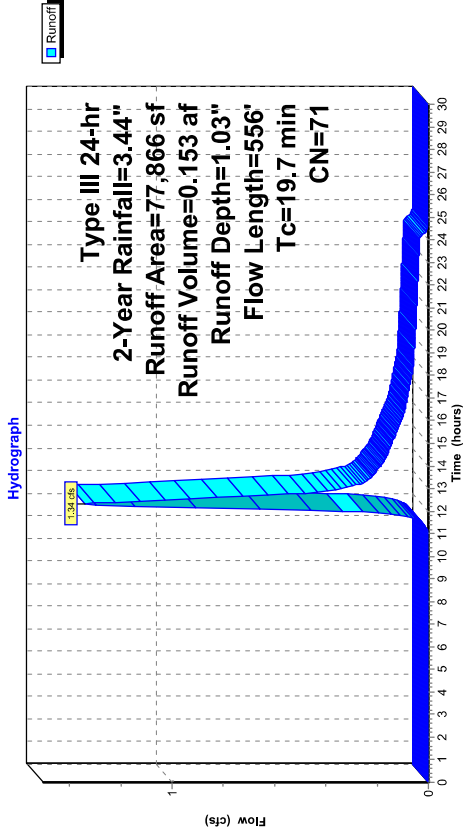
Summary for Subcatchment 1S: Proposed Basin A Perv

Runoff = 1.34 cfs @ 12.30 hrs, Volume= 0.153 af, Depth= 1.03"
Routed to Pond 15P : Prop. Basin A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.44"

Area (sf)		CN	Description		
17,020	74	>75%	Grass cover, Good, HSG C		
60,846	70		Woods, Good, HSG C		
77,866	71	Weighted Average			
77,866		100.00% Pervious Area			
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	20	0.0260	0.04		Sheet Flow, Sheet Flow Woods: Dense underbrush n= 0.800 P2= 3.44"
1.6	77	0.0250	0.79		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
0.4	45	0.1489	1.93		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
2.5	92	0.0150	0.61		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
4.8	128	0.0080	0.45		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
0.8	45	0.0350	0.94		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
0.1	20	0.0389	3.18		Shallow Concentrated Flow, SCF - Grass Unpaved Kv= 16.1 fps
0.5	129	0.0100	4.50	1.57	Pipe Channel, Pipe Flow 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.010 PVC, smooth interior
19.7	556	Total			

Subcatchment 1S: Proposed Basin A Perv



Hydrograph for Subcatchment 1S: Proposed Basin A Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.44	1.03	0.00
0.50	0.02	0.00	0.00	26.50	3.44	1.03	0.00
1.00	0.03	0.00	0.00	27.00	3.44	1.03	0.00
1.50	0.05	0.00	0.00	27.50	3.44	1.03	0.00
2.00	0.07	0.00	0.00	28.00	3.44	1.03	0.00
2.50	0.09	0.00	0.00	28.50	3.44	1.03	0.00
3.00	0.11	0.00	0.00	29.00	3.44	1.03	0.00
3.50	0.13	0.00	0.00	29.50	3.44	1.03	0.00
4.00	0.15	0.00	0.00	30.00	3.44	1.03	0.00
4.50	0.17	0.00	0.00				
5.00	0.20	0.00	0.00				
5.50	0.22	0.00	0.00				
6.00	0.25	0.00	0.00				
6.50	0.28	0.00	0.00				
7.00	0.31	0.00	0.00				
7.50	0.35	0.00	0.00				
8.00	0.39	0.00	0.00				
8.50	0.44	0.00	0.00				
9.00	0.50	0.00	0.00				
9.50	0.57	0.00	0.00				
10.00	0.65	0.00	0.00				
10.50	0.74	0.00	0.00				
11.00	0.86	0.00	0.00				
11.50	1.03	0.01	0.03				
12.00	1.72	0.16	0.34				
12.50	2.41	0.45	1.03				
13.00	2.58	0.53	0.34				
13.50	2.70	0.59	0.22				
14.00	2.79	0.64	0.19				
14.50	2.87	0.69	0.16				
15.00	2.94	0.73	0.14				
15.50	3.00	0.76	0.12				
16.00	3.05	0.79	0.11				
16.50	3.09	0.81	0.09				
17.00	3.13	0.84	0.08				
17.50	3.16	0.86	0.07				
18.00	3.19	0.87	0.06				
18.50	3.22	0.89	0.06				
19.00	3.24	0.91	0.06				
19.50	3.27	0.92	0.05				
20.00	3.29	0.93	0.05				
20.50	3.31	0.95	0.05				
21.00	3.33	0.96	0.05				
21.50	3.35	0.97	0.04				
22.00	3.37	0.98	0.04				
22.50	3.39	1.00	0.04				
23.00	3.41	1.01	0.04				
23.50	3.42	1.02	0.04				
24.00	3.44	1.03	0.03				
24.50	3.44	1.03	0.00				
25.00	3.44	1.03	0.00				
25.50	3.44	1.03	0.00				

Summary for Subcatchment 2S: Proposed Basin A Imp

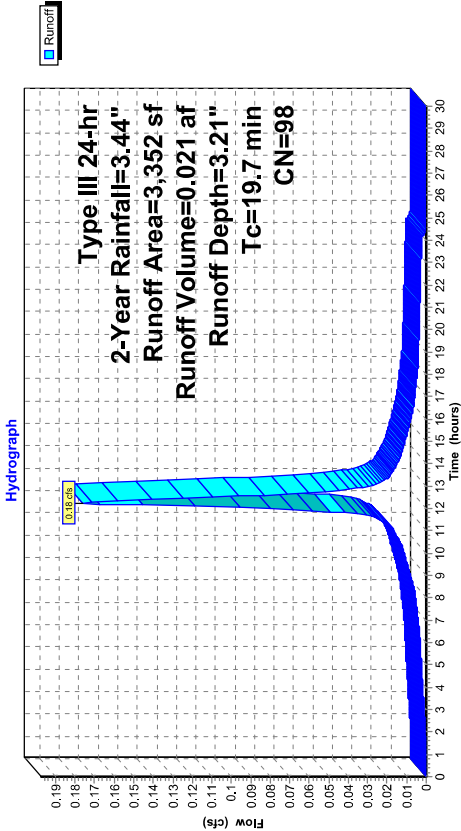
Runoff = 0.18 cfs @ 12.26 hrs, Volume= 0.021 af, Depth= 3.21"
Routed to Pond 15P : Prop. Basin A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.44"

Area (sf)	CN	Description
3,352	98	Paved parking, HSG C
3,352		100.00% Impervious Area

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

Subcatchment 2S: Proposed Basin A Imp



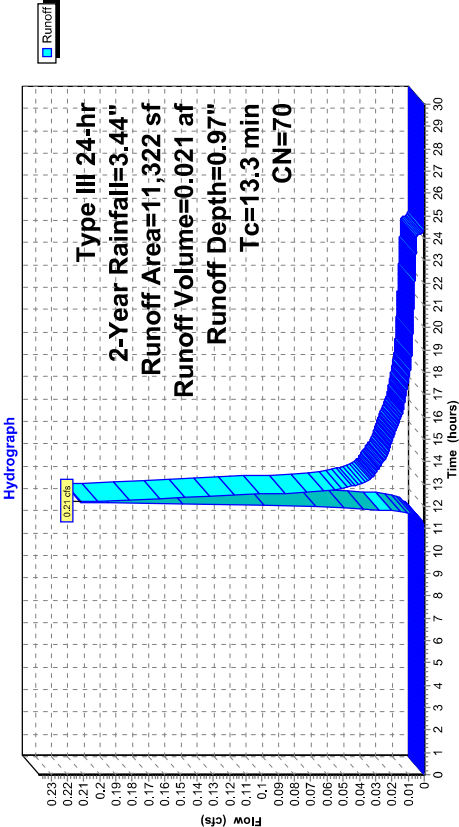
Hydrograph for Subcatchment 2S: Proposed Basin A Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.44	3.21	0.00
0.50	0.02	0.00	0.00	26.50	3.44	3.21	0.00
1.00	0.03	0.00	0.00	27.00	3.44	3.21	0.00
1.50	0.05	0.00	0.00	27.50	3.44	3.21	0.00
2.00	0.07	0.00	0.00	28.00	3.44	3.21	0.00
2.50	0.09	0.01	0.00	28.50	3.44	3.21	0.00
3.00	0.11	0.02	0.00	29.00	3.44	3.21	0.00
3.50	0.13	0.03	0.00	29.50	3.44	3.21	0.00
4.00	0.15	0.04	0.00	30.00	3.44	3.21	0.00
4.50	0.17	0.05	0.00				
5.00	0.20	0.07	0.00				
5.50	0.22	0.08	0.00				
6.00	0.25	0.10	0.00				
6.50	0.28	0.13	0.00				
7.00	0.31	0.15	0.00				
7.50	0.35	0.19	0.00				
8.00	0.39	0.22	0.01				
8.50	0.44	0.27	0.01				
9.00	0.50	0.32	0.01				
9.50	0.57	0.38	0.01				
10.00	0.65	0.46	0.01				
10.50	0.74	0.55	0.01				
11.00	0.86	0.66	0.02				
11.50	1.03	0.82	0.02				
12.00	1.72	1.50	0.08				
12.50	2.41	2.19	0.11				
13.00	2.58	2.35	0.03				
13.50	2.70	2.46	0.02				
14.00	2.79	2.56	0.01				
14.50	2.87	2.64	0.01				
15.00	2.94	2.71	0.01				
15.50	3.00	2.77	0.01				
16.00	3.05	2.82	0.01				
16.50	3.09	2.86	0.01				
17.00	3.13	2.90	0.01				
17.50	3.16	2.93	0.01				
18.00	3.19	2.96	0.00				
18.50	3.22	2.99	0.00				
19.00	3.24	3.01	0.00				
19.50	3.27	3.04	0.00				
20.00	3.29	3.06	0.00				
20.50	3.31	3.08	0.00				
21.00	3.33	3.10	0.00				
21.50	3.35	3.12	0.00				
22.00	3.37	3.14	0.00				
22.50	3.39	3.16	0.00				
23.00	3.41	3.18	0.00				
23.50	3.42	3.19	0.00				
24.00	3.44	3.21	0.00				
24.50	3.44	3.21	0.00				
25.00	3.44	3.21	0.00				
25.50	3.44	3.21	0.00				

Summary for Subcatchment 4S: Ex. Lot 21 Headwall Perv

Runoff = 0.21 cfs @ 12.21 hrs, Volume= 0.021 af, Depth= 0.97"					
Routed to Link 21L : Ex. Dist Total					
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs					
Type III 24-hr 2-Year Rainfall=3.44"					
Area (sf)		CN	Description		
11,322		70	Woods, Good, HSG C		
11,322		100.00% Pervious Area			
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3					Direct Entry, TC

Subcatchmt 4S: Ex. Lot 21 Headwall Perv



Hydrograph for Subcatchment 4S: Ex. Lot 21 Headwall Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.44	0.97	0.00
0.50	0.02	0.00	0.00	26.50	3.44	0.97	0.00
1.00	0.03	0.00	0.00	27.00	3.44	0.97	0.00
1.50	0.05	0.00	0.00	27.50	3.44	0.97	0.00
2.00	0.07	0.00	0.00	28.00	3.44	0.97	0.00
2.50	0.09	0.00	0.00	28.50	3.44	0.97	0.00
3.00	0.11	0.00	0.00	29.00	3.44	0.97	0.00
3.50	0.13	0.00	0.00	29.50	3.44	0.97	0.00
4.00	0.15	0.00	0.00	30.00	3.44	0.97	0.00
4.50	0.17	0.00	0.00				
5.00	0.20	0.00	0.00				
5.50	0.22	0.00	0.00				
6.00	0.25	0.00	0.00				
6.50	0.28	0.00	0.00				
7.00	0.31	0.00	0.00				
7.50	0.35	0.00	0.00				
8.00	0.39	0.00	0.00				
8.50	0.44	0.00	0.00				
9.00	0.50	0.00	0.00				
9.50	0.57	0.00	0.00				
10.00	0.65	0.00	0.00				
10.50	0.74	0.00	0.00				
11.00	0.86	0.00	0.00				
11.50	1.03	0.01	0.00				
12.00	1.72	0.14	0.07				
12.50	2.41	0.42	0.12				
13.00	2.58	0.49	0.04				
13.50	2.70	0.55	0.03				
14.00	2.79	0.60	0.03				
14.50	2.87	0.64	0.02				
15.00	2.94	0.68	0.02				
15.50	3.00	0.71	0.02				
16.00	3.05	0.74	0.01				
16.50	3.09	0.77	0.01				
17.00	3.13	0.79	0.01				
17.50	3.16	0.81	0.01				
18.00	3.19	0.82	0.01				
18.50	3.22	0.84	0.01				
19.00	3.24	0.85	0.01				
19.50	3.27	0.87	0.01				
20.00	3.29	0.88	0.01				
20.50	3.31	0.90	0.01				
21.00	3.33	0.91	0.01				
21.50	3.35	0.92	0.01				
22.00	3.37	0.93	0.01				
22.50	3.39	0.94	0.01				
23.00	3.41	0.95	0.01				
23.50	3.42	0.96	0.01				
24.00	3.44	0.97	0.00				
24.50	3.44	0.97	0.00				
25.00	3.44	0.97	0.00				
25.50	3.44	0.97	0.00				

Summary for Subcatchment 5S: Ex. Channel Perv

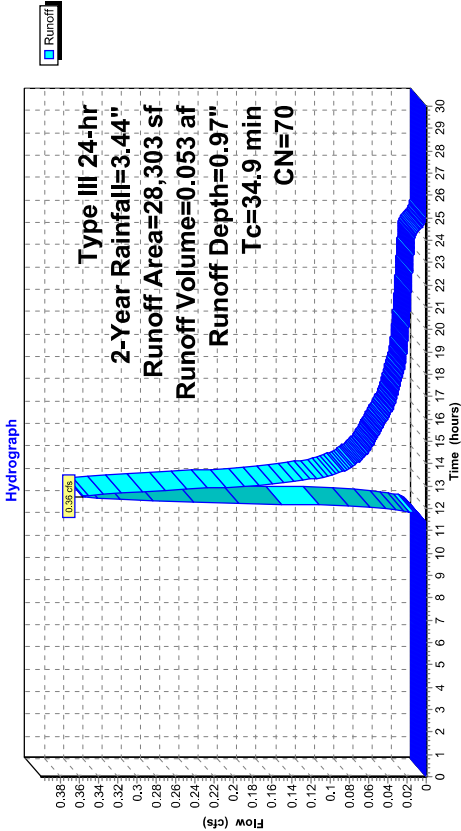
Runoff = 0.36 cfs @ 12.54 hrs, Volume= 0.053 af, Depth= 0.97"
Routed to Link 21L : Ex. Dist Total

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.44"

Area (sf)	CN	Description
28,303	70	Woods, Good, HSG C
28,303	100.00%	Pervious Area

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

Subcatchment 5S: Ex. Channel Perv



Hydrograph for Subcatchment 5S: Ex. Channel Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.44	0.97	0.00
0.50	0.02	0.00	0.00	26.50	3.44	0.97	0.00
1.00	0.03	0.00	0.00	27.00	3.44	0.97	0.00
1.50	0.05	0.00	0.00	27.50	3.44	0.97	0.00
2.00	0.07	0.00	0.00	28.00	3.44	0.97	0.00
2.50	0.09	0.00	0.00	28.50	3.44	0.97	0.00
3.00	0.11	0.00	0.00	29.00	3.44	0.97	0.00
3.50	0.13	0.00	0.00	29.50	3.44	0.97	0.00
4.00	0.15	0.00	0.00	30.00	3.44	0.97	0.00
4.50	0.17	0.00	0.00				
5.00	0.20	0.00	0.00				
5.50	0.22	0.00	0.00				
6.00	0.25	0.00	0.00				
6.50	0.28	0.00	0.00				
7.00	0.31	0.00	0.00				
7.50	0.35	0.00	0.00				
8.00	0.39	0.00	0.00				
8.50	0.44	0.00	0.00				
9.00	0.50	0.00	0.00				
9.50	0.57	0.00	0.00				
10.00	0.65	0.00	0.00				
10.50	0.74	0.00	0.00				
11.00	0.86	0.00	0.00				
11.50	1.03	0.01	0.00				
12.00	1.72	0.14	0.04				
12.50	2.41	0.42	0.35				
13.00	2.58	0.49	0.19				
13.50	2.70	0.55	0.10				
14.00	2.79	0.60	0.07				
14.50	2.87	0.64	0.06				
15.00	2.94	0.68	0.05				
15.50	3.00	0.71	0.05				
16.00	3.05	0.74	0.04				
16.50	3.09	0.77	0.03				
17.00	3.13	0.79	0.03				
17.50	3.16	0.81	0.03				
18.00	3.19	0.82	0.02				
18.50	3.22	0.84	0.02				
19.00	3.24	0.85	0.02				
19.50	3.27	0.87	0.02				
20.00	3.29	0.88	0.02				
20.50	3.31	0.90	0.02				
21.00	3.33	0.91	0.02				
21.50	3.35	0.92	0.02				
22.00	3.37	0.93	0.02				
22.50	3.39	0.94	0.01				
23.00	3.41	0.95	0.01				
23.50	3.42	0.96	0.01				
24.00	3.44	0.97	0.01				
24.50	3.44	0.97	0.01				
25.00	3.44	0.97	0.00				
25.50	3.44	0.97	0.00				

Summary for Subcatchment 6S: Prop. Lot 21 Headwall Perv

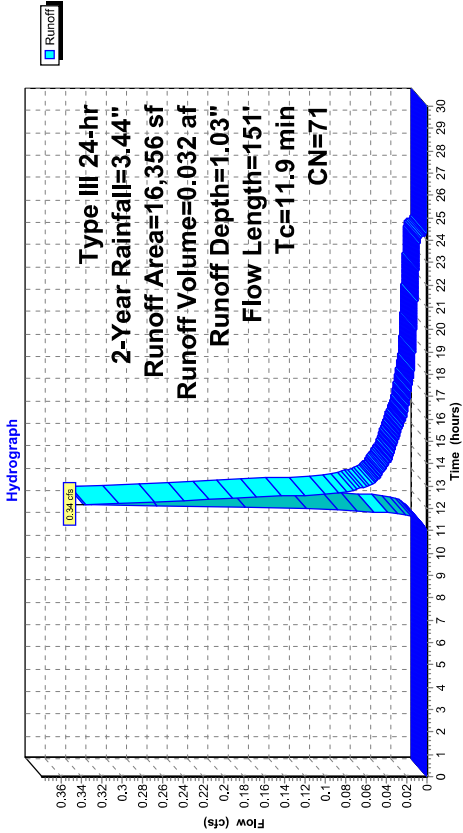
Runoff = 0.34 cfs @ 12.18 hrs, Volume= 0.032 af, Depth= 1.03"
Routed to Link 8L : Prop. Lot 21 Headwall Total

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.44"

Area (sf)	CN	Description
4,160	74	>75% Grass cover, Good, HSG C
12,196	70	Woods, Good, HSG C
16,356	71	Weighted Average
16,356		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	24	0.0355	0.04		Sheet Flow, Sheet Flow - Wooded Woods: Dense underbrush n= 0.800 P2= 3.44" Using McCuen-Spless flow length
1.0	55	0.0358	0.95		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
1.7	72	0.0209	0.72		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
11.9	151	Total			

Subcatchment 6S: Prop. Lot 21 Headwall Perv



Hydrograph for Subcatchment 6S: Prop. Lot 21 Headwall Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.44	1.03	0.00
0.50	0.02	0.00	0.00	26.50	3.44	1.03	0.00
1.00	0.03	0.00	0.00	27.00	3.44	1.03	0.00
1.50	0.05	0.00	0.00	27.50	3.44	1.03	0.00
2.00	0.07	0.00	0.00	28.00	3.44	1.03	0.00
2.50	0.09	0.00	0.00	28.50	3.44	1.03	0.00
3.00	0.11	0.00	0.00	29.00	3.44	1.03	0.00
3.50	0.13	0.00	0.00	29.50	3.44	1.03	0.00
4.00	0.15	0.00	0.00	30.00	3.44	1.03	0.00
4.50	0.17	0.00	0.00				
5.00	0.20	0.00	0.00				
5.50	0.22	0.00	0.00				
6.00	0.25	0.00	0.00				
6.50	0.28	0.00	0.00				
7.00	0.31	0.00	0.00				
7.50	0.35	0.00	0.00				
8.00	0.39	0.00	0.00				
8.50	0.44	0.00	0.00				
9.00	0.50	0.00	0.00				
9.50	0.57	0.00	0.00				
10.00	0.65	0.00	0.00				
10.50	0.74	0.00	0.00				
11.00	0.86	0.00	0.00				
11.50	1.03	0.01	0.01				
12.00	1.72	0.16	0.12				
12.50	2.41	0.45	0.17				
13.00	2.58	0.53	0.06				
13.50	2.70	0.59	0.04				
14.00	2.79	0.64	0.04				
14.50	2.87	0.69	0.03				
15.00	2.94	0.73	0.03				
15.50	3.00	0.76	0.03				
16.00	3.05	0.79	0.02				
16.50	3.09	0.81	0.02				
17.00	3.13	0.84	0.02				
17.50	3.16	0.86	0.02				
18.00	3.19	0.87	0.01				
18.50	3.22	0.89	0.01				
19.00	3.24	0.91	0.01				
19.50	3.27	0.92	0.01				
20.00	3.29	0.93	0.01				
20.50	3.31	0.95	0.01				
21.00	3.33	0.96	0.01				
21.50	3.35	0.97	0.01				
22.00	3.37	0.98	0.01				
22.50	3.39	1.00	0.01				
23.00	3.41	1.01	0.01				
23.50	3.42	1.02	0.01				
24.00	3.44	1.03	0.01				
24.50	3.44	1.03	0.00				
25.00	3.44	1.03	0.00				
25.50	3.44	1.03	0.00				

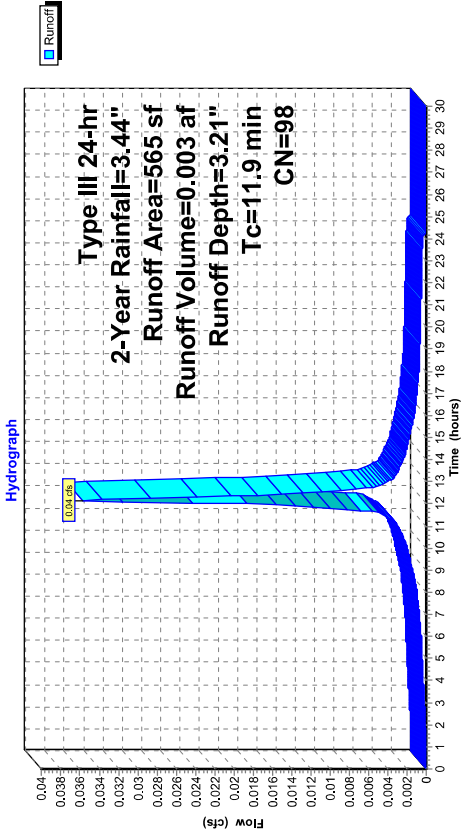
Summary for Subcatchment 7S: Prop. Lot 21 Headwall Imp

Runoff = 0.04 cfs @ 12.16 hrs, Volume= 0.003 af, Depth= 3.21"
Routed to Link 8L : Prop. Lot 21 Headwall Total

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.44"

* Area (sf)	C/N	Description			
565	98	Paved driveway, HSG C			
565		100.00% Impervious Area			
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9					Direct Entry, TC

Subcatchment 7S: Prop. Lot 21 Headwall Imp



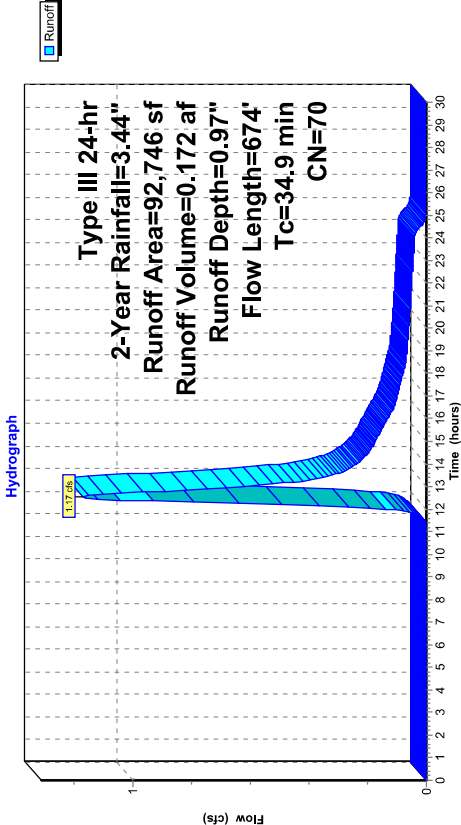
Hydrograph for Subcatchment 7S: Prop. Lot 21 Headwall Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.44	3.21	0.00
0.50	0.02	0.00	0.00	26.50	3.44	3.21	0.00
1.00	0.03	0.00	0.00	27.00	3.44	3.21	0.00
1.50	0.05	0.00	0.00	27.50	3.44	3.21	0.00
2.00	0.07	0.00	0.00	28.00	3.44	3.21	0.00
2.50	0.09	0.01	0.00	28.50	3.44	3.21	0.00
3.00	0.11	0.02	0.00	29.00	3.44	3.21	0.00
3.50	0.13	0.03	0.00	29.50	3.44	3.21	0.00
4.00	0.15	0.04	0.00	30.00	3.44	3.21	0.00
4.50	0.17	0.05	0.00				
5.00	0.20	0.07	0.00				
5.50	0.22	0.08	0.00				
6.00	0.25	0.10	0.00				
6.50	0.28	0.13	0.00				
7.00	0.31	0.15	0.00				
7.50	0.35	0.19	0.00				
8.00	0.39	0.22	0.00				
8.50	0.44	0.27	0.00				
9.00	0.50	0.32	0.00				
9.50	0.57	0.38	0.00				
10.00	0.65	0.46	0.00				
10.50	0.74	0.55	0.00				
11.00	0.86	0.66	0.00				
11.50	1.03	0.82	0.00				
12.00	1.72	1.50	0.02				
12.50	2.41	2.19	0.01				
13.00	2.58	2.35	0.00				
13.50	2.70	2.46	0.00				
14.00	2.79	2.56	0.00				
14.50	2.87	2.64	0.00				
15.00	2.94	2.71	0.00				
15.50	3.00	2.77	0.00				
16.00	3.05	2.82	0.00				
16.50	3.09	2.86	0.00				
17.00	3.13	2.90	0.00				
17.50	3.16	2.93	0.00				
18.00	3.19	2.96	0.00				
18.50	3.22	2.99	0.00				
19.00	3.24	3.01	0.00				
19.50	3.27	3.04	0.00				
20.00	3.29	3.06	0.00				
20.50	3.31	3.08	0.00				
21.00	3.33	3.10	0.00				
21.50	3.35	3.12	0.00				
22.00	3.37	3.14	0.00				
22.50	3.39	3.16	0.00				
23.00	3.41	3.18	0.00				
23.50	3.42	3.19	0.00				
24.00	3.44	3.21	0.00				
24.50	3.44	3.21	0.00				
25.00	3.44	3.21	0.00				
25.50	3.44	3.21	0.00				

Summary for Subcatchment 15S: Ex. Channel Perv Und

Runoff = 1.17 cfs @ 12.54 hrs, Volume= 0.172 af, Depth= 0.97"				
Routed to Link 20L : Ex. Und Total				
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs				
Type III 24-hr 2-Year Rainfall=3.44"				
Area (sf)		CN	Description	
92,746		70	Woods, Good, HSG C	
92,746		100.00% Pervious Area		
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec) Capacity (cfs) Description	
9.0	20	0.0260	0.04	Sheet Flow, Sheet Flow - Wooded Woods: Dense underbrush n= 0.800 P2= 3.44" Using McCuen-Spiess flow length
2.9	138	0.0247	0.79	Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
0.2	25	0.2600	2.55	Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
2.9	126	0.0207	0.72	Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
16.2	175	0.0013	0.18	Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
3.7	190	0.0300	0.87	Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
34.9	674	Total		

Subcatchment 15S: Ex. Channel Perv Und



Hydrograph for Subcatchment 15S: Ex. Channel Perv Und

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.44	0.97	0.00
0.50	0.02	0.00	0.00	26.50	3.44	0.97	0.00
1.00	0.03	0.00	0.00	27.00	3.44	0.97	0.00
1.50	0.05	0.00	0.00	27.50	3.44	0.97	0.00
2.00	0.07	0.00	0.00	28.00	3.44	0.97	0.00
2.50	0.09	0.00	0.00	28.50	3.44	0.97	0.00
3.00	0.11	0.00	0.00	29.00	3.44	0.97	0.00
3.50	0.13	0.00	0.00	29.50	3.44	0.97	0.00
4.00	0.15	0.00	0.00	30.00	3.44	0.97	0.00
4.50	0.17	0.00	0.00				
5.00	0.20	0.00	0.00				
5.50	0.22	0.00	0.00				
6.00	0.25	0.00	0.00				
6.50	0.28	0.00	0.00				
7.00	0.31	0.00	0.00				
7.50	0.35	0.00	0.00				
8.00	0.39	0.00	0.00				
8.50	0.44	0.00	0.00				
9.00	0.50	0.00	0.00				
9.50	0.57	0.00	0.00				
10.00	0.65	0.00	0.00				
10.50	0.74	0.00	0.00				
11.00	0.86	0.00	0.00				
11.50	1.03	0.01	0.01				
12.00	1.72	0.14	0.14				
12.50	2.41	0.42	1.16				
13.00	2.58	0.49	0.62				
13.50	2.70	0.55	0.32				
14.00	2.79	0.60	0.24				
14.50	2.87	0.64	0.20				
15.00	2.94	0.68	0.17				
15.50	3.00	0.71	0.15				
16.00	3.05	0.74	0.13				
16.50	3.09	0.77	0.11				
17.00	3.13	0.79	0.10				
17.50	3.16	0.81	0.09				
18.00	3.19	0.82	0.08				
18.50	3.22	0.84	0.07				
19.00	3.24	0.85	0.07				
19.50	3.27	0.87	0.06				
20.00	3.29	0.88	0.06				
20.50	3.31	0.90	0.06				
21.00	3.33	0.91	0.05				
21.50	3.35	0.92	0.05				
22.00	3.37	0.93	0.05				
22.50	3.39	0.94	0.05				
23.00	3.41	0.95	0.05				
23.50	3.42	0.96	0.04				
24.00	3.44	0.97	0.04				
24.50	3.44	0.97	0.02				
25.00	3.44	0.97	0.00				
25.50	3.44	0.97	0.00				

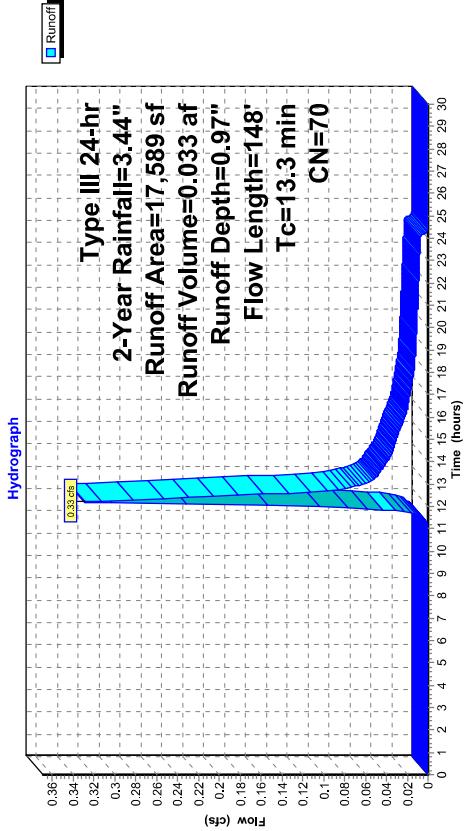
Summary for Subcatchment 16S: Ex. Lot 21 Headwall Und

Runoff = 0.33 cfs @ 12.21 hrs, Volume= 0.033 af, Depth= 0.97"
Routed to Link 20L : Ex. Und Total

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.44"

Area (sf)	CN	Description			
17,589	70	Woods, Good, HSG C			
17,589		100.00% Pervious Area			
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	8	0.0036	0.01		Sheet Flow, Sheet Flow - Wooded Woods: Dense underbrush n= 0.800 P2= 3.44"
3.8	140	0.0150	0.61		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps

Subcatchment 16S: Ex. Lot 21 Headwall Und



Hydrograph for Subcatchment 16S: Ex. Lot 21 Headwall Und

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.44	0.97	0.00
0.50	0.02	0.00	0.00	26.50	3.44	0.97	0.00
1.00	0.03	0.00	0.00	27.00	3.44	0.97	0.00
1.50	0.05	0.00	0.00	27.50	3.44	0.97	0.00
2.00	0.07	0.00	0.00	28.00	3.44	0.97	0.00
2.50	0.09	0.00	0.00	28.50	3.44	0.97	0.00
3.00	0.11	0.00	0.00	29.00	3.44	0.97	0.00
3.50	0.13	0.00	0.00	29.50	3.44	0.97	0.00
4.00	0.15	0.00	0.00	30.00	3.44	0.97	0.00
4.50	0.17	0.00	0.00				
5.00	0.20	0.00	0.00				
5.50	0.22	0.00	0.00				
6.00	0.25	0.00	0.00				
6.50	0.28	0.00	0.00				
7.00	0.31	0.00	0.00				
7.50	0.35	0.00	0.00				
8.00	0.39	0.00	0.00				
8.50	0.44	0.00	0.00				
9.00	0.50	0.00	0.00				
9.50	0.57	0.00	0.00				
10.00	0.65	0.00	0.00				
10.50	0.74	0.00	0.00				
11.00	0.86	0.00	0.00				
11.50	1.03	0.01	0.01				
12.00	1.72	0.14	0.10				
12.50	2.41	0.42	0.18				
13.00	2.58	0.49	0.06				
13.50	2.70	0.55	0.05				
14.00	2.79	0.60	0.04				
14.50	2.87	0.64	0.03				
15.00	2.94	0.68	0.03				
15.50	3.00	0.71	0.03				
16.00	3.05	0.74	0.02				
16.50	3.09	0.77	0.02				
17.00	3.13	0.79	0.02				
17.50	3.16	0.81	0.02				
18.00	3.19	0.82	0.01				
18.50	3.22	0.84	0.01				
19.00	3.24	0.85	0.01				
19.50	3.27	0.87	0.01				
20.00	3.29	0.88	0.01				
20.50	3.31	0.90	0.01				
21.00	3.33	0.91	0.01				
21.50	3.35	0.92	0.01				
22.00	3.37	0.93	0.01				
22.50	3.39	0.94	0.01				
23.00	3.41	0.95	0.01				
23.50	3.42	0.96	0.01				
24.00	3.44	0.97	0.01				
24.50	3.44	0.97	0.00				
25.00	3.44	0.97	0.00				
25.50	3.44	0.97	0.00				

Summary for Subcatchment 22S: Prop. Channel Perv Und

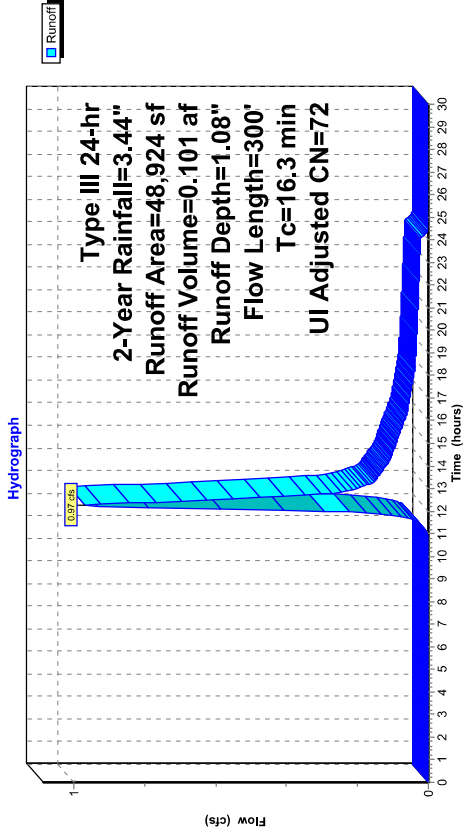
Runoff = 0.97 cfs @ 12.25 hrs, Volume= 0.101 af, Depth= 1.08"
Routed to Link 17L : Prop. Channel Total

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.44"

Area (sf)	CN	Adj	Description
37,098	70		Woods, Good, HSG C
8,530	74		>75% Grass cover, Good, HSG C
3,296	98		Unconnected pavement, HSG C
48,924	73	72	Weighted Average, UI Adjusted
45,628			93.26% Pervious Area
3,296			6.74% Impervious Area
3,296			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	21	0.0271	0.04		Sheet Flow, Sheet Flow - Wooded Woods: Dense underbrush n= 0.800 P2= 3.44"
3.2	134	0.0194	0.70		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
3.5	113	0.0115	0.54		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
0.4	32	0.0813	1.43		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
16.3	300	Total			

Subcatchment 22S: Prop. Channel Perv Und



Hydrograph for Subcatchment 22S: Prop. Channel Perv Und

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.44	1.08	0.00
0.50	0.02	0.00	0.00	26.50	3.44	1.08	0.00
1.00	0.03	0.00	0.00	27.00	3.44	1.08	0.00
1.50	0.05	0.00	0.00	27.50	3.44	1.08	0.00
2.00	0.07	0.00	0.00	28.00	3.44	1.08	0.00
2.50	0.09	0.00	0.00	28.50	3.44	1.08	0.00
3.00	0.11	0.00	0.00	29.00	3.44	1.08	0.00
3.50	0.13	0.00	0.00	29.50	3.44	1.08	0.00
4.00	0.15	0.00	0.00	30.00	3.44	1.08	0.00
4.50	0.17	0.00	0.00				
5.00	0.20	0.00	0.00				
5.50	0.22	0.00	0.00				
6.00	0.25	0.00	0.00				
6.50	0.28	0.00	0.00				
7.00	0.31	0.00	0.00				
7.50	0.35	0.00	0.00				
8.00	0.39	0.00	0.00				
8.50	0.44	0.00	0.00				
9.00	0.50	0.00	0.00				
9.50	0.57	0.00	0.00				
10.00	0.65	0.00	0.00				
10.50	0.74	0.00	0.00				
11.00	0.86	0.00	0.00				
11.50	1.03	0.01	0.03				
12.00	1.72	0.18	0.29				
12.50	2.41	0.48	0.62				
13.00	2.58	0.57	0.20				
13.50	2.70	0.63	0.14				
14.00	2.79	0.69	0.12				
14.50	2.87	0.73	0.10				
15.00	2.94	0.77	0.09				
15.50	3.00	0.81	0.08				
16.00	3.05	0.84	0.07				
16.50	3.09	0.86	0.06				
17.00	3.13	0.89	0.05				
17.50	3.16	0.91	0.05				
18.00	3.19	0.92	0.04				
18.50	3.22	0.94	0.04				
19.00	3.24	0.96	0.04				
19.50	3.27	0.97	0.03				
20.00	3.29	0.99	0.03				
20.50	3.31	1.00	0.03				
21.00	3.33	1.01	0.03				
21.50	3.35	1.03	0.03				
22.00	3.37	1.04	0.03				
22.50	3.39	1.05	0.03				
23.00	3.41	1.06	0.02				
23.50	3.42	1.07	0.02				
24.00	3.44	1.08	0.02				
24.50	3.44	1.08	0.00				
25.00	3.44	1.08	0.00				
25.50	3.44	1.08	0.00				

Summary for Subcatchment 23S: Prop. Roof

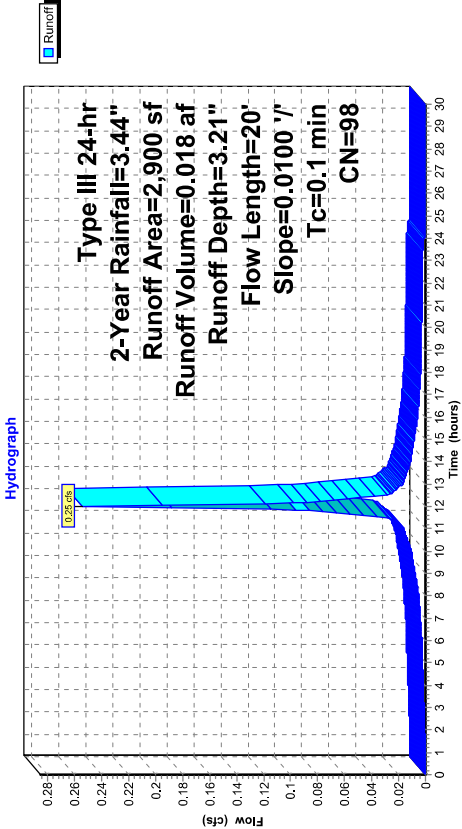
[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.25 cfs @ 12.00 hrs, Volume= 0.018 af, Depth= 3.21"
Routed to Pond 15P : Prop. Basin A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.44"

Area (sf)	CN	Description			
2,900	98	Roofs, HSG C			
2,900	100.00% Impervious Area				
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.0100	3.71	0.73	Pipe Channel, Roof Leaders 6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13' n= 0.010 PVC, smooth interior

Subcatchment 23S: Prop. Roof



Hydrograph for Subcatchment 23S: Prop. Roof

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	3.44	3.21	0.00
0.50	0.02	0.00	0.00	26.50	3.44	3.21	0.00
1.00	0.03	0.00	0.00	27.00	3.44	3.21	0.00
1.50	0.05	0.00	0.00	27.50	3.44	3.21	0.00
2.00	0.07	0.00	0.00	28.00	3.44	3.21	0.00
2.50	0.09	0.01	0.00	28.50	3.44	3.21	0.00
3.00	0.11	0.02	0.00	29.00	3.44	3.21	0.00
3.50	0.13	0.03	0.00	29.50	3.44	3.21	0.00
4.00	0.15	0.04	0.00	30.00	3.44	3.21	0.00
4.50	0.17	0.05	0.00				
5.00	0.20	0.07	0.00				
5.50	0.22	0.08	0.00				
6.00	0.25	0.10	0.00				
6.50	0.28	0.13	0.00				
7.00	0.31	0.15	0.00				
7.50	0.35	0.19	0.00				
8.00	0.39	0.22	0.01				
8.50	0.44	0.27	0.01				
9.00	0.50	0.32	0.01				
9.50	0.57	0.38	0.01				
10.00	0.65	0.46	0.01				
10.50	0.74	0.55	0.01				
11.00	0.86	0.66	0.02				
11.50	1.03	0.82	0.03				
12.00	1.72	1.50	0.25				
12.50	2.41	2.19	0.03				
13.00	2.58	2.35	0.02				
13.50	2.70	2.46	0.01				
14.00	2.79	2.56	0.01				
14.50	2.87	2.64	0.01				
15.00	2.94	2.71	0.01				
15.50	3.00	2.77	0.01				
16.00	3.05	2.82	0.01				
16.50	3.09	2.86	0.01				
17.00	3.13	2.90	0.00				
17.50	3.16	2.93	0.00				
18.00	3.19	2.96	0.00				
18.50	3.22	2.99	0.00				
19.00	3.24	3.01	0.00				
19.50	3.27	3.04	0.00				
20.00	3.29	3.06	0.00				
20.50	3.31	3.08	0.00				
21.00	3.33	3.10	0.00				
21.50	3.35	3.12	0.00				
22.00	3.37	3.14	0.00				
22.50	3.39	3.16	0.00				
23.00	3.41	3.18	0.00				
23.50	3.42	3.19	0.00				
24.00	3.44	3.21	0.00				
24.50	3.44	3.21	0.00				
25.00	3.44	3.21	0.00				
25.50	3.44	3.21	0.00				

Summary for Pond 15P: Prop. Basin A

Inflow Area = 1,931 ac, 7.43% Impervious, Inflow Depth = 1.19" for 2-Year event
Inflow = 1.58 cfs @ 12.29 hrs, Volume= 0.191 af
Outflow = 0.69 cfs @ 12.71 hrs, Volume= 0.191 af, Atten= 57%, Lag= 25.4 min
Primary = 0.69 cfs @ 12.71 hrs, Volume= 0.191 af
Routed to Link 17L : Prop. Channel Total

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 617.19' @ 12.71 hrs Surf.Area= 1,794 sf Storage= 2,304 cf

Plug-Flow detention time= 60.7 min calculated for 0.191 af (100% of inflow)
Center-of-Mass det. time= 60.8 min (916.4 - 855.7)

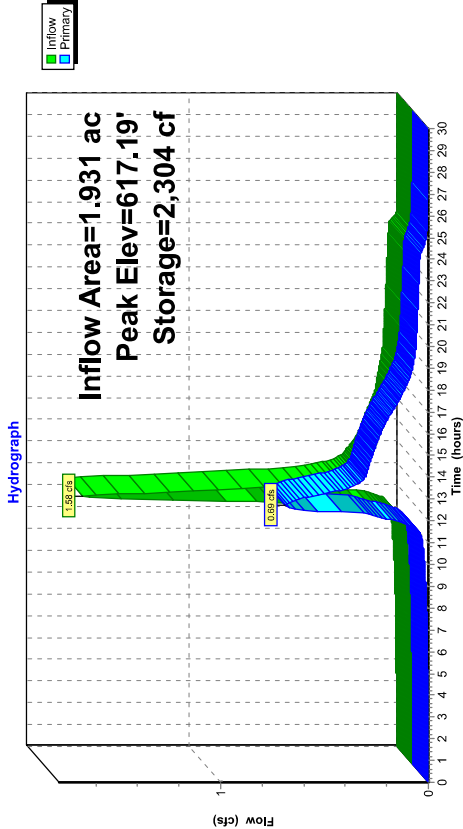
Volume	Invert	Avail.Storage	Storage Description
#1	615.65'	2,121 cf	36.0" Round HDPE_Round 36" x 4 Inside #2 L= 75.0'
#2	614.90'	2,381 cf	23.00"W x 78.00"L x 4.50"H Prismatic 8,073 cf Overall - 2,121 cf Embedded = 5,952 cf x 40.0% Voids
		4,502 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	614.90'	15.0" Round Culvert L= 77.0' Ke= 0.500 Inlet / Outlet Invert= 614.90' / 614.50' S= 0.0052 1' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf
#2	Device 1	614.90'	3.0" Vert. Orifice/Gate C= 0.600 Limited to weir flow at low heads
#3	Device 1	616.60'	4.5" Vert. Orifice/Gate C= 0.600 Limited to weir flow at low heads
#4	Device 1	617.40'	4.5" Vert. Orifice/Gate C= 0.600 Limited to weir flow at low heads
#5	Device 1	619.10'	2.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

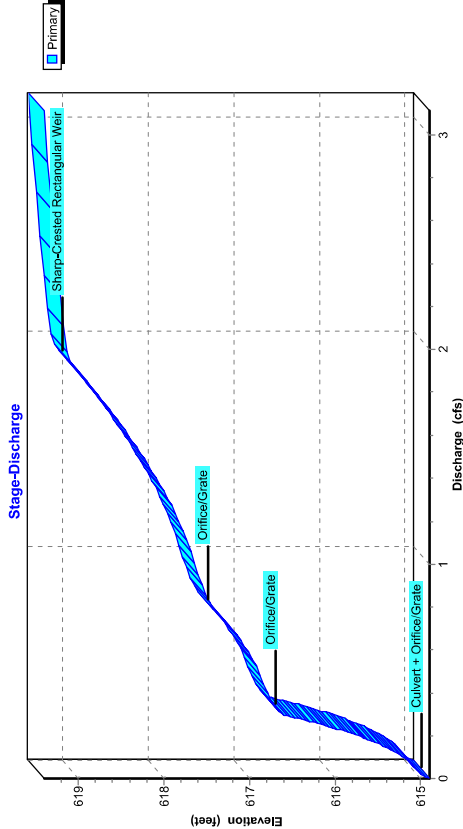
Primary OutFlow Max=0.69 cfs @ 12.71 hrs HW=617.19' (Free Discharge)

- 1=Culvert (Passes 0.69 cfs of 7.38 cfs potential flow)
- 2=Orifice/Gate (Orifice Controls 0.35 cfs @ 7.09 fps)
- 3=Orifice/Gate (Orifice Controls 0.34 cfs @ 3.06 fps)
- 4=Orifice/Gate (Controls 0.00 cfs)
- 5=Sharp-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 15P: Prop. Basin A



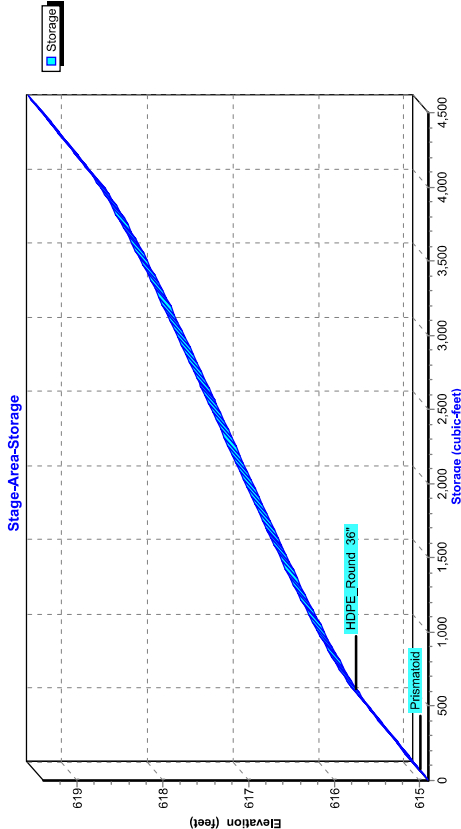
Pond 15P: Prop. Basin A



Hydrograph for Pond 15P: Prop. Basin A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	614.90	0.00
1.00	0.00	0	614.90	0.00
2.00	0.00	1	614.90	0.00
3.00	0.00	5	614.91	0.00
4.00	0.00	12	614.92	0.00
5.00	0.00	19	614.93	0.00
6.00	0.01	27	614.94	0.00
7.00	0.01	36	614.95	0.01
8.00	0.01	44	614.96	0.01
9.00	0.02	54	614.98	0.01
10.00	0.02	68	614.99	0.02
11.00	0.03	85	615.02	0.03
12.00	0.67	404	615.46	0.16
13.00	0.38	2,140	617.06	0.62
14.00	0.21	1,602	616.63	0.30
15.00	0.16	1,238	616.33	0.27
16.00	0.12	843	615.97	0.23
17.00	0.09	482	615.57	0.17
18.00	0.07	263	615.27	0.12
19.00	0.06	166	615.13	0.08
20.00	0.06	140	615.09	0.06
21.00	0.05	129	615.08	0.05
22.00	0.05	122	615.07	0.05
23.00	0.04	115	615.06	0.05
24.00	0.04	108	615.05	0.04
25.00	0.00	52	614.97	0.01
26.00	0.00	29	614.94	0.00
27.00	0.00	18	614.92	0.00
28.00	0.00	11	614.92	0.00
29.00	0.00	7	614.91	0.00
30.00	0.00	4	614.91	0.00

Pond 15P: Prop. Basin A



Stage-Discharge for Pond 15P: Prop. Basin A

Elevation (feet)	Primary (cfs)	Primary (cfs)	Elevation (feet)	Primary (cfs)
614.90	0.00	0.85	617.50	0.85
614.95	0.01	0.89	617.55	0.89
615.00	0.02	0.95	617.60	0.95
615.05	0.04	1.01	617.65	1.01
615.10	0.06	1.07	617.70	1.07
615.15	0.08	1.13	617.75	1.13
615.20	0.10	1.17	617.80	1.17
615.25	0.11	1.22	617.85	1.22
615.30	0.12	1.26	617.90	1.26
615.35	0.13	1.30	617.95	1.30
615.40	0.14	1.33	618.00	1.33
615.45	0.15	1.37	618.05	1.37
615.50	0.16	1.40	618.10	1.40
615.55	0.17	1.44	618.15	1.44
615.60	0.18	1.47	618.20	1.47
615.65	0.19	1.50	618.25	1.50
615.70	0.19	1.53	618.30	1.53
615.75	0.20	1.56	618.35	1.56
615.80	0.21	1.59	618.40	1.59
615.85	0.21	1.62	618.45	1.62
615.90	0.22	1.64	618.50	1.64
615.95	0.23	1.67	618.55	1.67
616.00	0.23	1.70	618.60	1.70
616.05	0.24	1.72	618.65	1.72
616.10	0.25	1.75	618.70	1.75
616.15	0.25	1.77	618.75	1.77
616.20	0.26	1.80	618.80	1.80
616.25	0.26	1.82	618.85	1.82
616.30	0.27	1.85	618.90	1.85
616.35	0.27	1.87	618.95	1.87
616.40	0.28	1.89	619.00	1.89
616.45	0.28	1.92	619.05	1.92
616.50	0.29	1.94	619.10	1.94
616.55	0.29	2.03	619.15	2.03
616.60	0.30	2.19	619.20	2.19
616.65	0.31	2.38	619.25	2.38
616.70	0.33	2.60	619.30	2.60
616.75	0.36	2.85	619.35	2.85
616.80	0.41	3.11	619.40	3.11
616.85	0.45			
616.90	0.50			
616.95	0.54			
617.00	0.58			
617.05	0.61			
617.10	0.64			
617.15	0.66			
617.20	0.69			
617.25	0.71			
617.30	0.74			
617.35	0.76			
617.40	0.78			
617.45	0.81			

Stage-Area-Storage for Pond 15P: Prop. Basin A

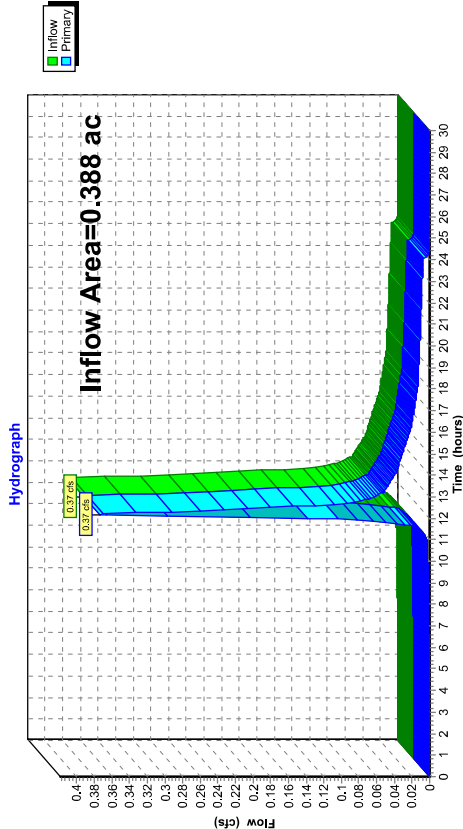
Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
614.90	0	617.50	2,689
614.95	36	617.55	2,751
615.00	72	617.60	2,813
615.05	108	617.65	2,874
615.10	144	617.70	2,936
615.15	179	617.75	2,996
615.20	215	617.80	3,057
615.25	251	617.85	3,117
615.30	287	617.90	3,176
615.35	323	617.95	3,235
615.40	359	618.00	3,294
615.45	395	618.05	3,352
615.50	431	618.10	3,409
615.55	466	618.15	3,465
615.60	502	618.20	3,521
615.65	538	618.25	3,575
615.70	579	618.30	3,629
615.75	623	618.35	3,682
615.80	670	618.40	3,733
615.85	718	618.45	3,783
615.90	768	618.50	3,832
615.95	820	618.55	3,879
616.00	872	618.60	3,923
616.05	926	618.65	3,963
616.10	981	618.70	3,999
616.15	1,036	618.75	4,035
616.20	1,093	618.80	4,071
616.25	1,150	618.85	4,107
616.30	1,208	618.90	4,143
616.35	1,266	618.95	4,179
616.40	1,325	619.00	4,215
616.45	1,385	619.05	4,250
616.50	1,445	619.10	4,286
616.55	1,505	619.15	4,322
616.60	1,566	619.20	4,358
616.65	1,627	619.25	4,394
616.70	1,689	619.30	4,430
616.75	1,750	619.35	4,466
616.80	1,812	619.40	4,502
616.85	1,875		
616.90	1,937		
616.95	2,000		
617.00	2,062		
617.05	2,125		
617.10	2,188		
617.15	2,251		
617.20	2,314		
617.25	2,376		
617.30	2,439		
617.35	2,502		
617.40	2,565		
617.45	2,627		

Summary for Link 8L: Prop. Lot 21 Headwall Total

Inflow Area = 0.388 ac, 3.34% Impervious, Inflow Depth = 1.10" for 2-Year event
Inflow = 0.37 cfs @ 12.18 hrs, Volume= 0.036 af
Primary = 0.37 cfs @ 12.18 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min
Routed to Link 11L : Proposed Total

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 8L: Prop. Lot 21 Headwall Total



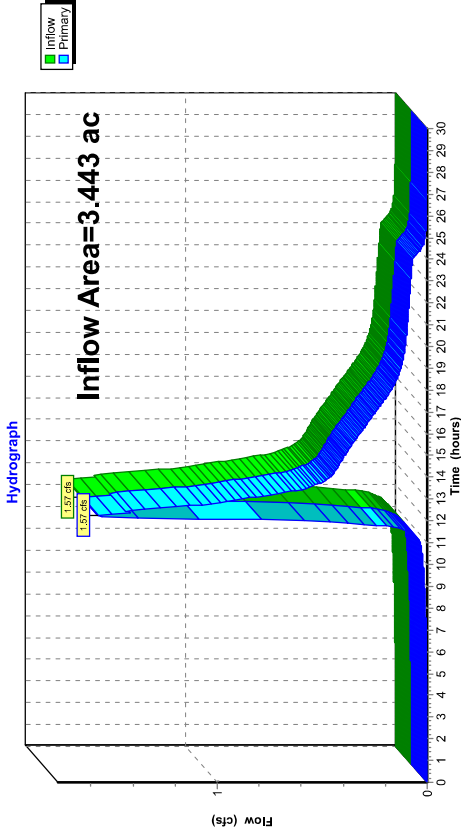
Hydrograph for Link 8L: Prop. Lot 21 Headwall Total

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00				
5.00	0.00	0.00	0.00				
5.50	0.00	0.00	0.00				
6.00	0.00	0.00	0.00				
6.50	0.00	0.00	0.00				
7.00	0.00	0.00	0.00				
7.50	0.00	0.00	0.00				
8.00	0.00	0.00	0.00				
8.50	0.00	0.00	0.00				
9.00	0.00	0.00	0.00				
9.50	0.00	0.00	0.00				
10.00	0.00	0.00	0.00				
10.50	0.00	0.00	0.00				
11.00	0.00	0.00	0.00				
11.50	0.01	0.00	0.01				
12.00	0.14	0.00	0.14				
12.50	0.18	0.00	0.18				
13.00	0.06	0.00	0.06				
13.50	0.05	0.00	0.05				
14.00	0.04	0.00	0.04				
14.50	0.03	0.00	0.03				
15.00	0.03	0.00	0.03				
15.50	0.03	0.00	0.03				
16.00	0.02	0.00	0.02				
16.50	0.02	0.00	0.02				
17.00	0.02	0.00	0.02				
17.50	0.02	0.00	0.02				
18.00	0.01	0.00	0.01				
18.50	0.01	0.00	0.01				
19.00	0.01	0.00	0.01				
19.50	0.01	0.00	0.01				
20.00	0.01	0.00	0.01				
20.50	0.01	0.00	0.01				
21.00	0.01	0.00	0.01				
21.50	0.01	0.00	0.01				
22.00	0.01	0.00	0.01				
22.50	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
23.50	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
24.50	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				

Summary for Link 11L: Proposed Total

Inflow Area = 3.443 ac, 6.74% Impervious, Inflow Depth > 1.14" for 2-Year event
Inflow = 1.57 cfs @ 12.24 hrs, Volume= 0.328 af
Primary = 1.57 cfs @ 12.24 hrs, Volume= 0.328 af, Atten= 0%, Lag= 0.0 min
Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 11L: Proposed Total



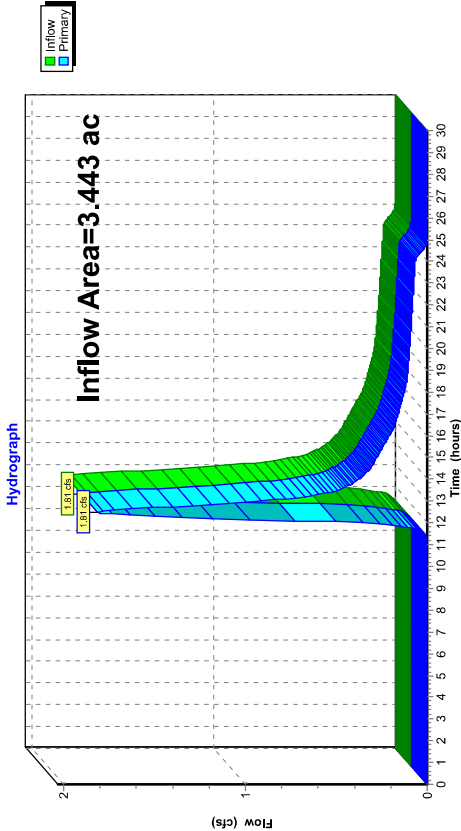
Hydrograph for Link 11L: Proposed Total

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00				
5.00	0.00	0.00	0.00				
5.50	0.00	0.00	0.00				
6.00	0.00	0.00	0.00				
6.50	0.00	0.00	0.00				
7.00	0.01	0.00	0.01				
7.50	0.01	0.00	0.01				
8.00	0.01	0.00	0.01				
8.50	0.01	0.00	0.01				
9.00	0.01	0.00	0.01				
9.50	0.02	0.00	0.02				
10.00	0.02	0.00	0.02				
10.50	0.02	0.00	0.02				
11.00	0.03	0.00	0.03				
11.50	0.09	0.00	0.09				
12.00	0.59	0.00	0.59				
12.50	1.40	0.00	1.40				
13.00	0.88	0.00	0.88				
13.50	0.58	0.00	0.58				
14.00	0.46	0.00	0.46				
14.50	0.42	0.00	0.42				
15.00	0.39	0.00	0.39				
15.50	0.36	0.00	0.36				
16.00	0.32	0.00	0.32				
16.50	0.28	0.00	0.28				
17.00	0.25	0.00	0.25				
17.50	0.21	0.00	0.21				
18.00	0.17	0.00	0.17				
18.50	0.14	0.00	0.14				
19.00	0.13	0.00	0.13				
19.50	0.11	0.00	0.11				
20.00	0.11	0.00	0.11				
20.50	0.10	0.00	0.10				
21.00	0.10	0.00	0.10				
21.50	0.09	0.00	0.09				
22.00	0.09	0.00	0.09				
22.50	0.08	0.00	0.08				
23.00	0.08	0.00	0.08				
23.50	0.07	0.00	0.07				
24.00	0.07	0.00	0.07				
24.50	0.03	0.00	0.03				
25.00	0.01	0.00	0.01				
25.50	0.01	0.00	0.01				

Summary for Link 12L: Existing Total

Inflow Area = 3.443 ac, 0.00% Impervious, Inflow Depth = 0.97" for 2-Year event
Inflow = 1.81 cfs @ 12.49 hrs, Volume= 0.279 af
Primary = 1.81 cfs @ 12.49 hrs, Volume= 0.279 af, Atten= 0%, Lag= 0.0 min
Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 12L: Existing Total



Hydrograph for Link 12L: Existing Total

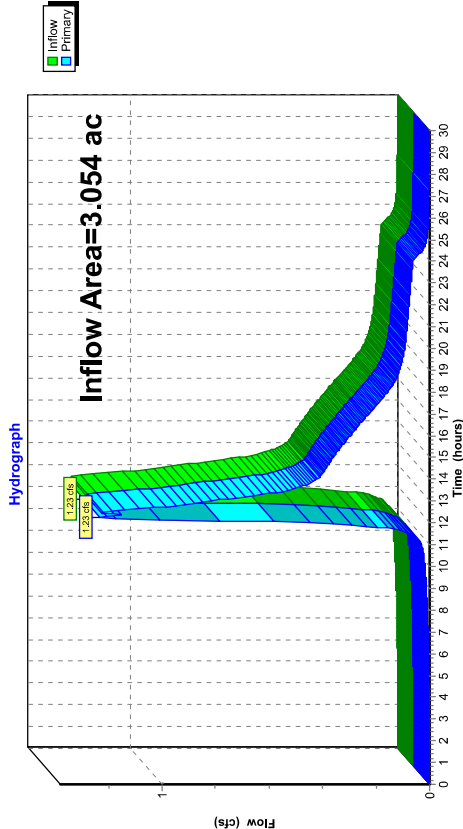
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00				
5.00	0.00	0.00	0.00				
5.50	0.00	0.00	0.00				
6.00	0.00	0.00	0.00				
6.50	0.00	0.00	0.00				
7.00	0.00	0.00	0.00				
7.50	0.00	0.00	0.00				
8.00	0.00	0.00	0.00				
8.50	0.00	0.00	0.00				
9.00	0.00	0.00	0.00				
9.50	0.00	0.00	0.00				
10.00	0.00	0.00	0.00				
10.50	0.00	0.00	0.00				
11.00	0.00	0.00	0.00				
11.50	0.02	0.00	0.02				
12.00	0.35	0.00	0.35				
12.50	1.81	0.00	1.81				
13.00	0.91	0.00	0.91				
13.50	0.49	0.00	0.49				
14.00	0.37	0.00	0.37				
14.50	0.31	0.00	0.31				
15.00	0.28	0.00	0.28				
15.50	0.24	0.00	0.24				
16.00	0.21	0.00	0.21				
16.50	0.18	0.00	0.18				
17.00	0.16	0.00	0.16				
17.50	0.14	0.00	0.14				
18.00	0.13	0.00	0.13				
18.50	0.11	0.00	0.11				
19.00	0.11	0.00	0.11				
19.50	0.10	0.00	0.10				
20.00	0.10	0.00	0.10				
20.50	0.09	0.00	0.09				
21.00	0.09	0.00	0.09				
21.50	0.08	0.00	0.08				
22.00	0.08	0.00	0.08				
22.50	0.08	0.00	0.08				
23.00	0.07	0.00	0.07				
23.50	0.07	0.00	0.07				
24.00	0.07	0.00	0.07				
24.50	0.03	0.00	0.03				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				

Summary for Link 17L: Prop. Channel Total

Inflow Area = 3.054 ac, 7.18% Impervious, Inflow Depth > 1.15" for 2-Year event
Inflow = 1.23 cfs @ 12.26 hrs, Volume= 0.292 af
Primary = 1.23 cfs @ 12.26 hrs, Volume= 0.292 af, Atten= 0%, Lag= 0.0 min
Routed to Link 11L : Proposed Total

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 17L: Prop. Channel Total



Hydrograph for Link 17L: Prop. Channel Total

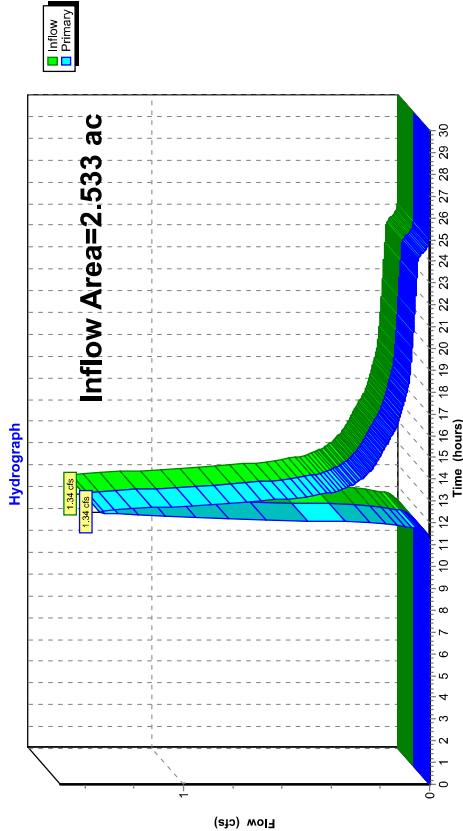
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00				
5.00	0.00	0.00	0.00				
5.50	0.00	0.00	0.00				
6.00	0.00	0.00	0.00				
6.50	0.00	0.00	0.00				
7.00	0.01	0.00	0.01				
7.50	0.01	0.00	0.01				
8.00	0.01	0.00	0.01				
8.50	0.01	0.00	0.01				
9.00	0.01	0.00	0.01				
9.50	0.01	0.00	0.01				
10.00	0.02	0.00	0.02				
10.50	0.02	0.00	0.02				
11.00	0.03	0.00	0.03				
11.50	0.08	0.00	0.08				
12.00	0.45	0.00	0.45				
12.50	1.22	0.00	1.22				
13.00	0.82	0.00	0.82				
13.50	0.53	0.00	0.53				
14.00	0.42	0.00	0.42				
14.50	0.39	0.00	0.39				
15.00	0.36	0.00	0.36				
15.50	0.33	0.00	0.33				
16.00	0.30	0.00	0.30				
16.50	0.26	0.00	0.26				
17.00	0.23	0.00	0.23				
17.50	0.19	0.00	0.19				
18.00	0.16	0.00	0.16				
18.50	0.13	0.00	0.13				
19.00	0.11	0.00	0.11				
19.50	0.10	0.00	0.10				
20.00	0.09	0.00	0.09				
20.50	0.09	0.00	0.09				
21.00	0.08	0.00	0.08				
21.50	0.08	0.00	0.08				
22.00	0.08	0.00	0.08				
22.50	0.07	0.00	0.07				
23.00	0.07	0.00	0.07				
23.50	0.07	0.00	0.07				
24.00	0.06	0.00	0.06				
24.50	0.03	0.00	0.03				
25.00	0.01	0.00	0.01				
25.50	0.01	0.00	0.01				

Summary for Link 20L: Ex. Und Total

Inflow Area = 2.533 ac, 0.00% Impervious, Inflow Depth = 0.97" for 2-Year event
Inflow = 1.34 cfs @ 12.50 hrs, Volume= 0.205 af
Primary = 1.34 cfs @ 12.50 hrs, Volume= 0.205 af, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Existing Total

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 20L: Ex. Und Total



Hydrograph for Link 20L: Ex. Und Total

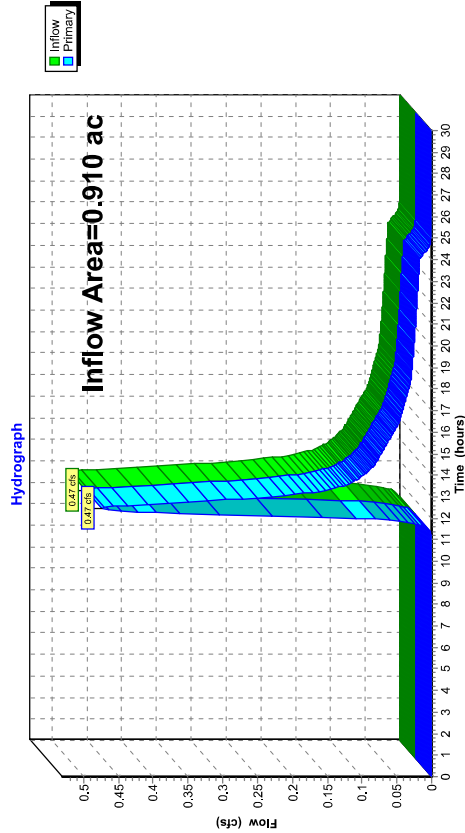
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00				
5.00	0.00	0.00	0.00				
5.50	0.00	0.00	0.00				
6.00	0.00	0.00	0.00				
6.50	0.00	0.00	0.00				
7.00	0.00	0.00	0.00				
7.50	0.00	0.00	0.00				
8.00	0.00	0.00	0.00				
8.50	0.00	0.00	0.00				
9.00	0.00	0.00	0.00				
9.50	0.00	0.00	0.00				
10.00	0.00	0.00	0.00				
10.50	0.00	0.00	0.00				
11.00	0.00	0.00	0.00				
11.50	0.01	0.00	0.01				
12.00	0.24	0.00	0.24				
12.50	1.34	0.00	1.34				
13.00	0.68	0.00	0.68				
13.50	0.37	0.00	0.37				
14.00	0.28	0.00	0.28				
14.50	0.23	0.00	0.23				
15.00	0.20	0.00	0.20				
15.50	0.18	0.00	0.18				
16.00	0.15	0.00	0.15				
16.50	0.13	0.00	0.13				
17.00	0.12	0.00	0.12				
17.50	0.11	0.00	0.11				
18.00	0.09	0.00	0.09				
18.50	0.08	0.00	0.08				
19.00	0.08	0.00	0.08				
19.50	0.07	0.00	0.07				
20.00	0.07	0.00	0.07				
20.50	0.07	0.00	0.07				
21.00	0.07	0.00	0.07				
21.50	0.06	0.00	0.06				
22.00	0.06	0.00	0.06				
22.50	0.06	0.00	0.06				
23.00	0.05	0.00	0.05				
23.50	0.05	0.00	0.05				
24.00	0.05	0.00	0.05				
24.50	0.02	0.00	0.02				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				

Summary for Link 21L: Ex. Dist Total

Inflow Area = 0.910 ac, 0.00% Impervious, Inflow Depth = 0.97" for 2-Year event
Inflow = 0.47 cfs @ 12.46 hrs, Volume= 0.074 af
Primary = 0.47 cfs @ 12.46 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Existing Total

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 21L: Ex. Dist Total



Hydrograph for Link 21L: Ex. Dist Total

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00				
5.00	0.00	0.00	0.00				
5.50	0.00	0.00	0.00				
6.00	0.00	0.00	0.00				
6.50	0.00	0.00	0.00				
7.00	0.00	0.00	0.00				
7.50	0.00	0.00	0.00				
8.00	0.00	0.00	0.00				
8.50	0.00	0.00	0.00				
9.00	0.00	0.00	0.00				
9.50	0.00	0.00	0.00				
10.00	0.00	0.00	0.00				
10.50	0.00	0.00	0.00				
11.00	0.00	0.00	0.00				
11.50	0.00	0.00	0.01				
12.00	0.11	0.00	0.11				
12.50	0.47	0.00	0.47				
13.00	0.23	0.00	0.23				
13.50	0.13	0.00	0.13				
14.00	0.10	0.00	0.10				
14.50	0.08	0.00	0.08				
15.00	0.07	0.00	0.07				
15.50	0.06	0.00	0.06				
16.00	0.05	0.00	0.05				
16.50	0.05	0.00	0.05				
17.00	0.04	0.00	0.04				
17.50	0.04	0.00	0.04				
18.00	0.03	0.00	0.03				
18.50	0.03	0.00	0.03				
19.00	0.03	0.00	0.03				
19.50	0.03	0.00	0.03				
20.00	0.03	0.00	0.03				
20.50	0.02	0.00	0.02				
21.00	0.02	0.00	0.02				
21.50	0.02	0.00	0.02				
22.00	0.02	0.00	0.02				
22.50	0.02	0.00	0.02				
23.00	0.02	0.00	0.02				
23.50	0.02	0.00	0.02				
24.00	0.02	0.00	0.02				
24.50	0.01	0.00	0.01				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				

Link 21L: Ex. Dist Total

Total Runoff Area = 6.885 ac Runoff Volume = 1.330 af Average Runoff Depth = 2.32"
96.63% Pervious = 6.653 ac 3.37% Impervious = 0.232 ac

Inflow=1.14 cfs 0.167 af
Primary=1.14 cfs 0.167 af

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 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 1S: Proposed Basin A Perv Runoff Area=77.866 sf 0.00% Impervious Runoff Depth=2.28"
Flow Length=556' Tc=19.7 min CN=71 Runoff=3.19 cfs 0.340 af

Subcatchment 2S: Proposed Basin A Imp Runoff Area=3.352 sf 100.00% Impervious Runoff Depth=4.98"
Tc=19.7 min CN=98 Runoff=0.27 cfs 0.032 af

Subcatchment 4S: Ex. Lot 21 Headwall Perv Runoff Area=11.322 sf 0.00% Impervious Runoff Depth=2.20"
Tc=13.3 min CN=70 Runoff=0.52 cfs 0.048 af

Subcatchment 5S: Ex. Channel Perv Runoff Area=28.303 sf 0.00% Impervious Runoff Depth=2.20"
Tc=34.9 min CN=70 Runoff=0.87 cfs 0.119 af

Subcatchment 6S: Prop. Lot 21 Headwall Runoff Area=16.356 sf 0.00% Impervious Runoff Depth=2.28"
Flow Length=151' Tc=11.9 min CN=71 Runoff=0.81 cfs 0.071 af

Subcatchment 7S: Prop. Lot 21 Headwall Runoff Area=565 sf 100.00% Impervious Runoff Depth=4.98"
Tc=11.9 min CN=98 Runoff=0.05 cfs 0.005 af

Subcatchment 15S: Ex. Channel Perv Und Runoff Area=92.746 sf 0.00% Impervious Runoff Depth=2.20"
Flow Length=674' Tc=34.9 min CN=70 Runoff=2.84 cfs 0.391 af

Subcatchment 16S: Ex. Lot 21 Headwall Und Runoff Area=17.589 sf 0.00% Impervious Runoff Depth=2.20"
Flow Length=148' Tc=13.3 min CN=70 Runoff=0.80 cfs 0.074 af

Subcatchment 22S: Prop. Channel Perv Und Runoff Area=48.924 sf 6.74% Impervious Runoff Depth=2.37"
Flow Length=300' Tc=16.3 min UI Adjusted CN=72 Runoff=2.25 cfs 0.222 af

Subcatchment 23S: Prop. Roof Runoff Area=2,900 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=20' Slope=0.0100 1' Tc=0.1 min CN=98 Runoff=0.39 cfs 0.028 af

Pond 15P: Prop. Basin A Peak Elev=619.21' Storage=4,362 cf Inflow=3.56 cfs 0.400 af
Outflow=2.21 cfs 0.400 af

Link 8L: Prop. Lot 21 Headwall Total Inflow=0.87 cfs 0.077 af
Primary=0.87 cfs 0.077 af

Link 11L: Proposed Total Inflow=4.11 cfs 0.698 af
Primary=4.11 cfs 0.698 af

Link 12L: Existing Total Inflow=4.39 cfs 0.631 af
Primary=4.39 cfs 0.631 af

Link 17L: Prop. Channel Total Inflow=3.48 cfs 0.621 af
Primary=3.48 cfs 0.621 af

Link 20L: Ex. Und Total Inflow=3.25 cfs 0.465 af
Primary=3.25 cfs 0.465 af

Summary for Subcatchment 1S: Proposed Basin A Perv

[47] Hint: Peak is 203% of capacity of segment #8

Runoff = 3.19 cfs @ 12.28 hrs, Volume= 0.340 af, Depth= 2.28"

Routed to Pond 15P : Prop. Basin A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

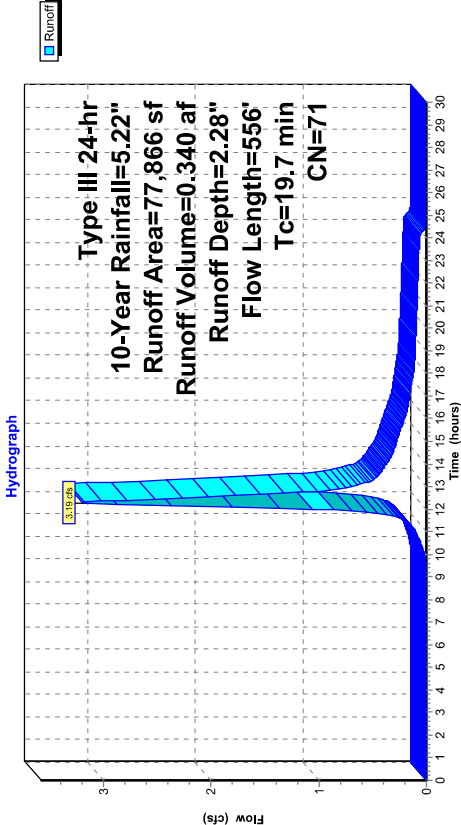
Type III 24-hr 10-Year Rainfall=5.22"

Area (sf)	CN	Description
17,020	74	>75% Grass cover, Good, HSG C
60,846	70	Woods, Good, HSG C
77,866	71	Weighted Average
77,866		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	20	0.0260	0.04		Sheet Flow, Sheet Flow
					Woods: Dense underbrush n= 0.800 P2= 3.44"
1.6	77	0.0250	0.79		Shallow Concentrated Flow, SCF - Wooded
					Woodland Kv= 5.0 fps
0.4	45	0.1489	1.93		Shallow Concentrated Flow, SCF - Wooded
					Woodland Kv= 5.0 fps
2.5	92	0.0150	0.61		Shallow Concentrated Flow, SCF - Wooded
					Woodland Kv= 5.0 fps
4.8	128	0.0080	0.45		Shallow Concentrated Flow, SCF - Wooded
					Woodland Kv= 5.0 fps
0.8	45	0.0350	0.94		Shallow Concentrated Flow, SCF - Wooded
					Woodland Kv= 5.0 fps
0.1	20	0.0389	3.18		Shallow Concentrated Flow, SCF - Grass
					Unpaved Kv= 16.1 fps
0.5	129	0.0100	4.50	1.57	Pipe Channel, Pipe Flow
					8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17'
					n= 0.010 PVC, smooth interior

19.7	556	Total
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Subcatchment 1S: Proposed Basin A Perv



Hydrograph for Subcatchment 1S: Proposed Basin A Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.22	2.28	0.00
0.50	0.03	0.00	0.00	26.50	5.22	2.28	0.00
1.00	0.05	0.00	0.00	27.00	5.22	2.28	0.00
1.50	0.08	0.00	0.00	27.50	5.22	2.28	0.00
2.00	0.10	0.00	0.00	28.00	5.22	2.28	0.00
2.50	0.13	0.00	0.00	28.50	5.22	2.28	0.00
3.00	0.16	0.00	0.00	29.00	5.22	2.28	0.00
3.50	0.19	0.00	0.00	29.50	5.22	2.28	0.00
4.00	0.22	0.00	0.00	30.00	5.22	2.28	0.00
4.50	0.26	0.00	0.00				
5.00	0.30	0.00	0.00				
5.50	0.34	0.00	0.00				
6.00	0.38	0.00	0.00				
6.50	0.42	0.00	0.00				
7.00	0.47	0.00	0.00				
7.50	0.53	0.00	0.00				
8.00	0.60	0.00	0.00				
8.50	0.67	0.00	0.00				
9.00	0.76	0.00	0.00				
9.50	0.87	0.00	0.00				
10.00	0.99	0.01	0.02				
10.50	1.13	0.02	0.05				
11.00	1.30	0.05	0.10				
11.50	1.56	0.11	0.20				
12.00	2.61	0.55	1.06				
12.50	3.66	1.17	2.26				
13.00	3.91	1.34	0.69				
13.50	4.09	1.46	0.44				
14.00	4.23	1.56	0.37				
14.50	4.35	1.64	0.31				
15.00	4.46	1.72	0.28				
15.50	4.55	1.78	0.24				
16.00	4.62	1.84	0.20				
16.50	4.69	1.88	0.17				
17.00	4.75	1.93	0.16				
17.50	4.80	1.97	0.14				
18.00	4.84	2.00	0.12				
18.50	4.88	2.03	0.11				
19.00	4.92	2.06	0.11				
19.50	4.96	2.09	0.10				
20.00	5.00	2.11	0.10				
20.50	5.03	2.14	0.09				
21.00	5.06	2.16	0.09				
21.50	5.09	2.19	0.08				
22.00	5.12	2.21	0.08				
22.50	5.15	2.23	0.08				
23.00	5.17	2.25	0.07				
23.50	5.20	2.27	0.07				
24.00	5.22	2.28	0.06				
24.50	5.22	2.28	0.01				
25.00	5.22	2.28	0.00				
25.50	5.22	2.28	0.00				

Summary for Subcatchment 2S: Proposed Basin A Imp

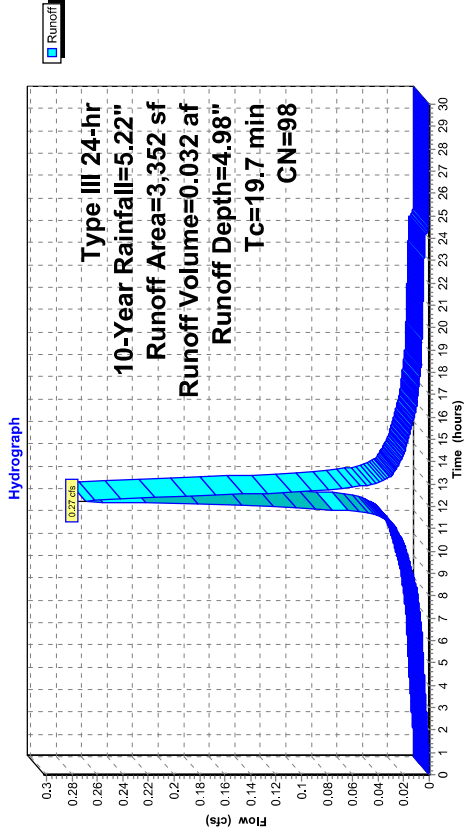
Runoff = 0.27 cfs @ 12.26 hrs, Volume= 0.032 af, Depth= 4.98"
Routed to Pond 15P : Prop. Basin A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.22"

Area (sf)	CN	Description
3,352	98	Paved parking, HSG C
3,352		100.00% Impervious Area

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

Subcatchment 2S: Proposed Basin A Imp



Hydrograph for Subcatchment 2S: Proposed Basin A Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.22	4.98	0.00
0.50	0.03	0.00	0.00	26.50	5.22	4.98	0.00
1.00	0.05	0.00	0.00	27.00	5.22	4.98	0.00
1.50	0.08	0.01	0.00	27.50	5.22	4.98	0.00
2.00	0.10	0.02	0.00	28.00	5.22	4.98	0.00
2.50	0.13	0.03	0.00	28.50	5.22	4.98	0.00
3.00	0.16	0.04	0.00	29.00	5.22	4.98	0.00
3.50	0.19	0.06	0.00	29.50	5.22	4.98	0.00
4.00	0.22	0.09	0.00	30.00	5.22	4.98	0.00
4.50	0.26	0.11	0.00				
5.00	0.30	0.14	0.00				
5.50	0.34	0.17	0.00				
6.00	0.38	0.21	0.01				
6.50	0.42	0.25	0.01				
7.00	0.47	0.29	0.01				
7.50	0.53	0.35	0.01				
8.00	0.60	0.41	0.01				
8.50	0.67	0.48	0.01				
9.00	0.76	0.56	0.01				
9.50	0.87	0.66	0.02				
10.00	0.99	0.78	0.02				
10.50	1.13	0.92	0.02				
11.00	1.30	1.09	0.03				
11.50	1.56	1.33	0.04				
12.00	2.61	2.38	0.12				
12.50	3.66	3.43	0.17				
13.00	3.91	3.68	0.05				
13.50	4.09	3.85	0.03				
14.00	4.23	4.00	0.02				
14.50	4.35	4.12	0.02				
15.00	4.46	4.22	0.02				
15.50	4.55	4.31	0.01				
16.00	4.62	4.39	0.01				
16.50	4.69	4.45	0.01				
17.00	4.75	4.51	0.01				
17.50	4.80	4.56	0.01				
18.00	4.84	4.61	0.01				
18.50	4.88	4.65	0.01				
19.00	4.92	4.69	0.01				
19.50	4.96	4.72	0.01				
20.00	5.00	4.76	0.01				
20.50	5.03	4.79	0.01				
21.00	5.06	4.82	0.00				
21.50	5.09	4.85	0.00				
22.00	5.12	4.88	0.00				
22.50	5.15	4.91	0.00				
23.00	5.17	4.94	0.00				
23.50	5.20	4.96	0.00				
24.00	5.22	4.98	0.00				
24.50	5.22	4.98	0.00				
25.00	5.22	4.98	0.00				
25.50	5.22	4.98	0.00				

Summary for Subcatchment 4S: Ex. Lot 21 Headwall Perv

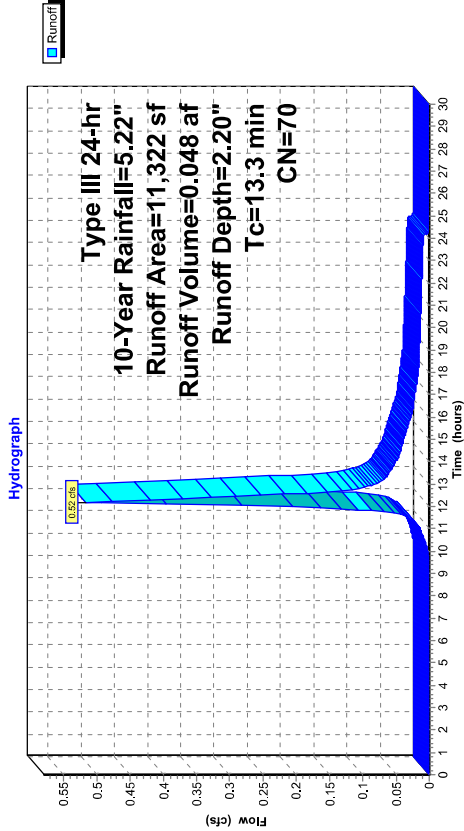
Runoff = 0.52 cfs @ 12.19 hrs, Volume= 0.048 af, Depth= 2.20"
Routed to Link 21L : Ex. Dist Total

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.22"

Area (sf)	CN	Description
11,322	70	Woods, Good, HSG C
11,322		100.00% Pervious Area

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

Subcatchment 4S: Ex. Lot 21 Headwall Perv



Hydrograph for Subcatchment 4S: Ex. Lot 21 Headwall Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.22	2.20	0.00
0.50	0.03	0.00	0.00	26.50	5.22	2.20	0.00
1.00	0.05	0.00	0.00	27.00	5.22	2.20	0.00
1.50	0.08	0.00	0.00	27.50	5.22	2.20	0.00
2.00	0.10	0.00	0.00	28.00	5.22	2.20	0.00
2.50	0.13	0.00	0.00	28.50	5.22	2.20	0.00
3.00	0.16	0.00	0.00	29.00	5.22	2.20	0.00
3.50	0.19	0.00	0.00	29.50	5.22	2.20	0.00
4.00	0.22	0.00	0.00	30.00	5.22	2.20	0.00
4.50	0.26	0.00	0.00				
5.00	0.30	0.00	0.00				
5.50	0.34	0.00	0.00				
6.00	0.38	0.00	0.00				
6.50	0.42	0.00	0.00				
7.00	0.47	0.00	0.00				
7.50	0.53	0.00	0.00				
8.00	0.60	0.00	0.00				
8.50	0.67	0.00	0.00				
9.00	0.76	0.00	0.00				
9.50	0.87	0.00	0.00				
10.00	0.99	0.00	0.00				
10.50	1.13	0.02	0.01				
11.00	1.30	0.04	0.01				
11.50	1.56	0.10	0.03				
12.00	2.61	0.51	0.20				
12.50	3.66	1.11	0.25				
13.00	3.91	1.27	0.08				
13.50	4.09	1.39	0.06				
14.00	4.23	1.49	0.05				
14.50	4.35	1.57	0.04				
15.00	4.46	1.64	0.04				
15.50	4.55	1.71	0.03				
16.00	4.62	1.76	0.03				
16.50	4.69	1.81	0.02				
17.00	4.75	1.85	0.02				
17.50	4.80	1.89	0.02				
18.00	4.84	1.92	0.02				
18.50	4.88	1.95	0.02				
19.00	4.92	1.98	0.01				
19.50	4.96	2.01	0.01				
20.00	5.00	2.03	0.01				
20.50	5.03	2.06	0.01				
21.00	5.06	2.08	0.01				
21.50	5.09	2.10	0.01				
22.00	5.12	2.13	0.01				
22.50	5.15	2.15	0.01				
23.00	5.17	2.17	0.01				
23.50	5.20	2.18	0.01				
24.00	5.22	2.20	0.01				
24.50	5.22	2.20	0.00				
25.00	5.22	2.20	0.00				
25.50	5.22	2.20	0.00				

Summary for Subcatchment 5S: Ex. Channel Perv

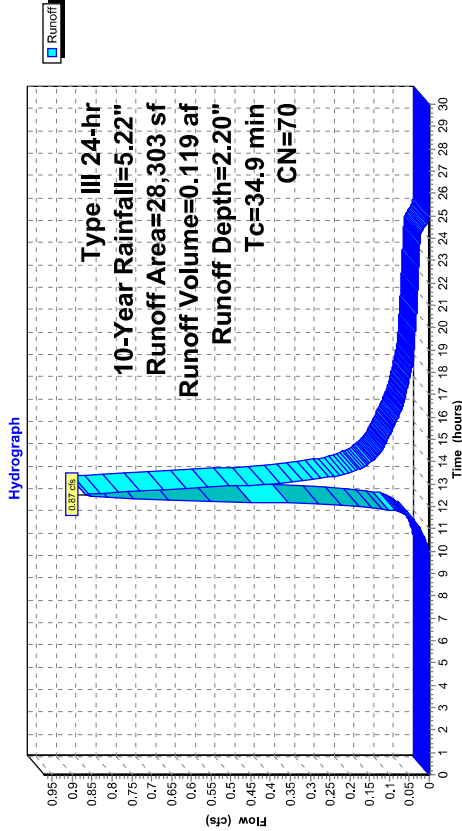
Runoff = 0.87 cfs @ 12.51 hrs, Volume= 0.119 af, Depth= 2.20"
Routed to Link 21L : Ex. Dist Total

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.22"

Area (sf)	CN	Description
28,303	70	Woods, Good, HSG C
28,303		100.00% Pervious Area

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

Subcatchment 5S: Ex. Channel Perv



Hydrograph for Subcatchment 5S: Ex. Channel Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.22	2.20	0.00
0.50	0.03	0.00	0.00	26.50	5.22	2.20	0.00
1.00	0.05	0.00	0.00	27.00	5.22	2.20	0.00
1.50	0.08	0.00	0.00	27.50	5.22	2.20	0.00
2.00	0.10	0.00	0.00	28.00	5.22	2.20	0.00
2.50	0.13	0.00	0.00	28.50	5.22	2.20	0.00
3.00	0.16	0.00	0.00	29.00	5.22	2.20	0.00
3.50	0.19	0.00	0.00	29.50	5.22	2.20	0.00
4.00	0.22	0.00	0.00	30.00	5.22	2.20	0.00
4.50	0.26	0.00	0.00				
5.00	0.30	0.00	0.00				
5.50	0.34	0.00	0.00				
6.00	0.38	0.00	0.00				
6.50	0.42	0.00	0.00				
7.00	0.47	0.00	0.00				
7.50	0.53	0.00	0.00				
8.00	0.60	0.00	0.00				
8.50	0.67	0.00	0.00				
9.00	0.76	0.00	0.00				
9.50	0.87	0.00	0.00				
10.00	0.99	0.00	0.00				
10.50	1.13	0.02	0.01				
11.00	1.30	0.04	0.02				
11.50	1.56	0.10	0.05				
12.00	2.61	0.51	0.18				
12.50	3.66	1.11	0.87				
13.00	3.91	1.27	0.41				
13.50	4.09	1.39	0.20				
14.00	4.23	1.49	0.15				
14.50	4.35	1.57	0.12				
15.00	4.46	1.64	0.10				
15.50	4.55	1.71	0.09				
16.00	4.62	1.76	0.08				
16.50	4.69	1.81	0.07				
17.00	4.75	1.85	0.06				
17.50	4.80	1.89	0.05				
18.00	4.84	1.92	0.05				
18.50	4.88	1.95	0.04				
19.00	4.92	1.98	0.04				
19.50	4.96	2.01	0.04				
20.00	5.00	2.03	0.03				
20.50	5.03	2.06	0.03				
21.00	5.06	2.08	0.03				
21.50	5.09	2.10	0.03				
22.00	5.12	2.13	0.03				
22.50	5.15	2.15	0.03				
23.00	5.17	2.17	0.03				
23.50	5.20	2.18	0.02				
24.00	5.22	2.20	0.02				
24.50	5.22	2.20	0.01				
25.00	5.22	2.20	0.00				
25.50	5.22	2.20	0.00				

Summary for Subcatchment 6S: Prop. Lot 21 Headwall Perv

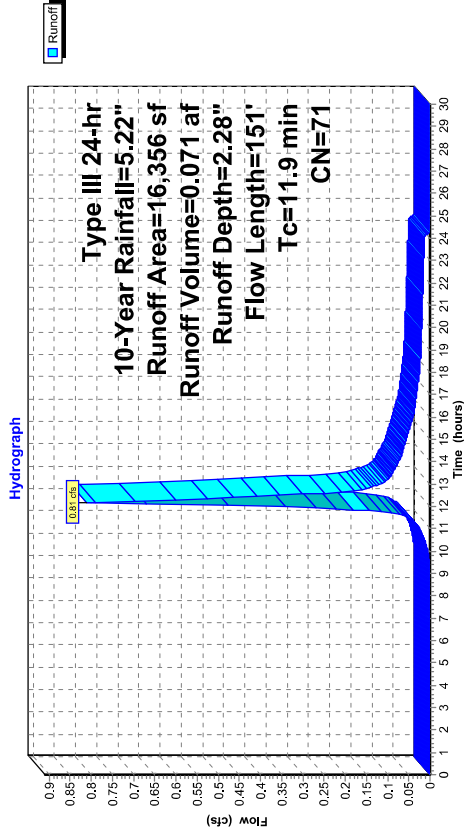
Runoff = 0.81 cfs @ 12.17 hrs, Volume= 0.071 af, Depth= 2.28"
Routed to Link 8L : Prop. Lot 21 Headwall Total

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.22"

Area (sf)	CN	Description
4,160	74	>75% Grass cover, Good, HSG C
12,196	70	Woods, Good, HSG C
16,356	71	Weighted Average
16,356		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	24	0.0355	0.04		Sheet Flow, Sheet Flow - Wooded Woods: Dense underbrush n= 0.800 P2= 3.44" Using McCuen-Spless flow length
1.0	55	0.0358	0.95		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
1.7	72	0.0209	0.72		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
11.9	151	Total			

Subcatchment 6S: Prop. Lot 21 Headwall Perv



Hydrograph for Subcatchment 6S: Prop. Lot 21 Headwall Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.22	2.28	0.00
0.50	0.03	0.00	0.00	26.50	5.22	2.28	0.00
1.00	0.05	0.00	0.00	27.00	5.22	2.28	0.00
1.50	0.08	0.00	0.00	27.50	5.22	2.28	0.00
2.00	0.10	0.00	0.00	28.00	5.22	2.28	0.00
2.50	0.13	0.00	0.00	28.50	5.22	2.28	0.00
3.00	0.16	0.00	0.00	29.00	5.22	2.28	0.00
3.50	0.19	0.00	0.00	29.50	5.22	2.28	0.00
4.00	0.22	0.00	0.00	30.00	5.22	2.28	0.00
4.50	0.26	0.00	0.00				
5.00	0.30	0.00	0.00				
5.50	0.34	0.00	0.00				
6.00	0.38	0.00	0.00				
6.50	0.42	0.00	0.00				
7.00	0.47	0.00	0.00				
7.50	0.53	0.00	0.00				
8.00	0.60	0.00	0.00				
8.50	0.67	0.00	0.00				
9.00	0.76	0.00	0.00				
9.50	0.87	0.00	0.00				
10.00	0.99	0.01	0.01				
10.50	1.13	0.02	0.01				
11.00	1.30	0.05	0.02				
11.50	1.56	0.11	0.05				
12.00	2.61	0.55	0.34				
12.50	3.66	1.17	0.35				
13.00	3.91	1.34	0.12				
13.50	4.09	1.46	0.09				
14.00	4.23	1.56	0.07				
14.50	4.35	1.64	0.06				
15.00	4.46	1.72	0.06				
15.50	4.55	1.78	0.05				
16.00	4.62	1.84	0.04				
16.50	4.69	1.88	0.04				
17.00	4.75	1.93	0.03				
17.50	4.80	1.97	0.03				
18.00	4.84	2.00	0.02				
18.50	4.88	2.03	0.02				
19.00	4.92	2.06	0.02				
19.50	4.96	2.09	0.02				
20.00	5.00	2.11	0.02				
20.50	5.03	2.14	0.02				
21.00	5.06	2.16	0.02				
21.50	5.09	2.19	0.02				
22.00	5.12	2.21	0.02				
22.50	5.15	2.23	0.02				
23.00	5.17	2.25	0.01				
23.50	5.20	2.27	0.01				
24.00	5.22	2.28	0.01				
24.50	5.22	2.28	0.00				
25.00	5.22	2.28	0.00				
25.50	5.22	2.28	0.00				

Summary for Subcatchment 7S: Prop. Lot 21 Headwall Imp

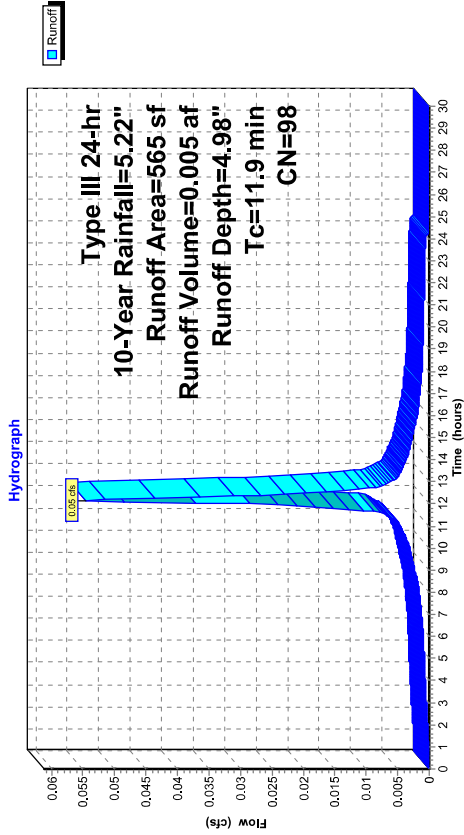
Runoff = 0.05 cfs @ 12.16 hrs, Volume= 0.005 af, Depth= 4.98"
Routed to Link 8L : Prop. Lot 21 Headwall Total

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.22"

*	Area (sf)	CN	Description
	565	98	Paved driveway, HSG C
	565		100.00% Impervious Area

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

Subcatchment 7S: Prop. Lot 21 Headwall Imp



Hydrograph for Subcatchment 7S: Prop. Lot 21 Headwall Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.22	4.98	0.00
0.50	0.03	0.00	0.00	26.50	5.22	4.98	0.00
1.00	0.05	0.00	0.00	27.00	5.22	4.98	0.00
1.50	0.08	0.01	0.00	27.50	5.22	4.98	0.00
2.00	0.10	0.02	0.00	28.00	5.22	4.98	0.00
2.50	0.13	0.03	0.00	28.50	5.22	4.98	0.00
3.00	0.16	0.04	0.00	29.00	5.22	4.98	0.00
3.50	0.19	0.06	0.00	29.50	5.22	4.98	0.00
4.00	0.22	0.09	0.00	30.00	5.22	4.98	0.00
4.50	0.26	0.11	0.00				
5.00	0.30	0.14	0.00				
5.50	0.34	0.17	0.00				
6.00	0.38	0.21	0.00				
6.50	0.42	0.25	0.00				
7.00	0.47	0.29	0.00				
7.50	0.53	0.35	0.00				
8.00	0.60	0.41	0.00				
8.50	0.67	0.48	0.00				
9.00	0.76	0.56	0.00				
9.50	0.87	0.66	0.00				
10.00	0.99	0.78	0.00				
10.50	1.13	0.92	0.00				
11.00	1.30	1.09	0.00				
11.50	1.56	1.33	0.01				
12.00	2.61	2.38	0.03				
12.50	3.66	3.43	0.02				
13.00	3.91	3.68	0.01				
13.50	4.09	3.85	0.00				
14.00	4.23	4.00	0.00				
14.50	4.35	4.12	0.00				
15.00	4.46	4.22	0.00				
15.50	4.55	4.31	0.00				
16.00	4.62	4.39	0.00				
16.50	4.69	4.45	0.00				
17.00	4.75	4.51	0.00				
17.50	4.80	4.56	0.00				
18.00	4.84	4.61	0.00				
18.50	4.88	4.65	0.00				
19.00	4.92	4.69	0.00				
19.50	4.96	4.72	0.00				
20.00	5.00	4.76	0.00				
20.50	5.03	4.79	0.00				
21.00	5.06	4.82	0.00				
21.50	5.09	4.85	0.00				
22.00	5.12	4.88	0.00				
22.50	5.15	4.91	0.00				
23.00	5.17	4.94	0.00				
23.50	5.20	4.96	0.00				
24.00	5.22	4.98	0.00				
24.50	5.22	4.98	0.00				
25.00	5.22	4.98	0.00				
25.50	5.22	4.98	0.00				

Summary for Subcatchment 15S: Ex. Channel Perv Und

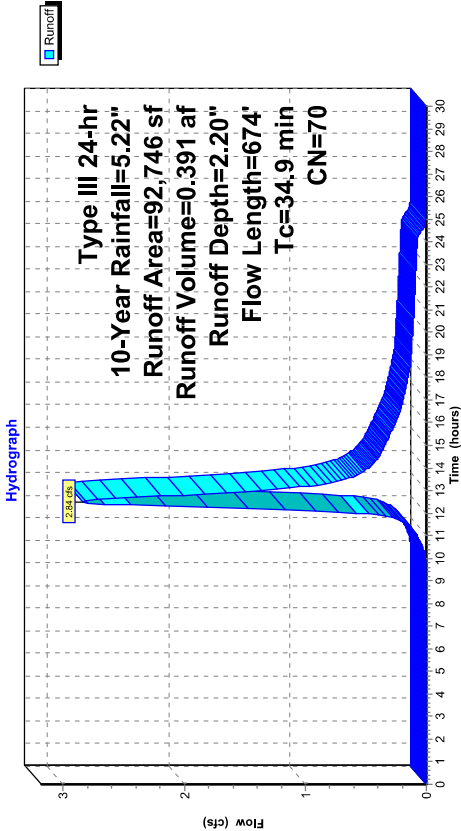
Runoff = 2.84 cfs @ 12.51 hrs, Volume= 0.391 af, Depth= 2.20"
Routed to Link 20L : Ex. Und Total

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.22"

Area (sf)	CN	Description			
92,746	70	Woods, Good, HSG C			
92,746		100.00% Pervious Area			
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	20	0.0260	0.04		Sheet Flow, Sheet Flow - Wooded Woods: Dense underbrush n= 0.800 P2= 3.44" Using McCuen-Spiess flow length
2.9	138	0.0247	0.79		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
0.2	25	0.2600	2.55		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
2.9	126	0.0207	0.72		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
16.2	175	0.0013	0.18		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
3.7	190	0.0300	0.87		Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
34.9	674	Total			

Subcatchment 15S: Ex. Channel Perv Und

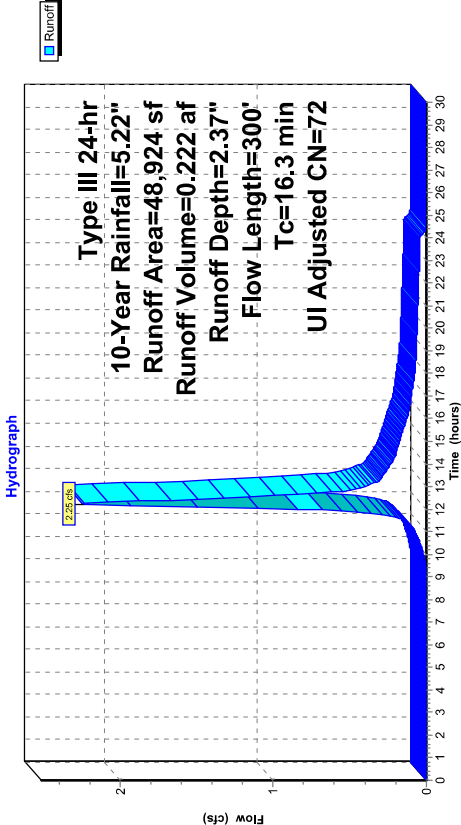
Hydrograph				Hydrograph for Subcatchment 15S: Ex. Channel Perv Und			
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.22	2.20	0.00
0.50	0.03	0.00	0.00	26.50	5.22	2.20	0.00
1.00	0.05	0.00	0.00	27.00	5.22	2.20	0.00
1.50	0.08	0.00	0.00	27.50	5.22	2.20	0.00
2.00	0.10	0.00	0.00	28.00	5.22	2.20	0.00
2.50	0.13	0.00	0.00	28.50	5.22	2.20	0.00
3.00	0.16	0.00	0.00	29.00	5.22	2.20	0.00
3.50	0.19	0.00	0.00	29.50	5.22	2.20	0.00
4.00	0.22	0.00	0.00	30.00	5.22	2.20	0.00
4.50	0.26	0.00	0.00				
5.00	0.30	0.00	0.00				
5.50	0.34	0.00	0.00				
6.00	0.38	0.00	0.00				
6.50	0.42	0.00	0.00				
7.00	0.47	0.00	0.00				
7.50	0.53	0.00	0.00				
8.00	0.60	0.00	0.00				
8.50	0.67	0.00	0.00				
9.00	0.76	0.00	0.00				
9.50	0.87	0.00	0.00				
10.00	0.99	0.00	0.01				
10.50	1.13	0.02	0.03				
11.00	1.30	0.04	0.08				
11.50	1.56	0.10	0.16				
12.00	2.61	0.51	0.58				
12.50	3.66	1.11	2.84				
13.00	3.91	1.27	1.36				
13.50	4.09	1.39	0.66				
14.00	4.23	1.49	0.48				
14.50	4.35	1.57	0.39				
15.00	4.46	1.64	0.34				
15.50	4.55	1.71	0.30				
16.00	4.62	1.76	0.26				
16.50	4.69	1.81	0.22				
17.00	4.75	1.85	0.19				
17.50	4.80	1.89	0.17				
18.00	4.84	1.92	0.15				
18.50	4.88	1.95	0.13				
19.00	4.92	1.98	0.13				
19.50	4.96	2.01	0.12				
20.00	5.00	2.03	0.11				
20.50	5.03	2.06	0.11				
21.00	5.06	2.08	0.10				
21.50	5.09	2.10	0.10				
22.00	5.12	2.13	0.10				
22.50	5.15	2.15	0.09				
23.00	5.17	2.17	0.09				
23.50	5.20	2.18	0.08				
24.00	5.22	2.20	0.08				
24.50	5.22	2.20	0.04				
25.00	5.22	2.20	0.00				
25.50	5.22	2.20	0.00				



Summary for Subcatchment 22S: Prop. Channel Perv Und

Runoff = 2.25 cfs @ 12.23 hrs, Volume= 0.222 af, Depth= 2.37"				
Routed to Link 17L : Prop. Channel Total				
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs				
Type III 24-hr 10-Year Rainfall=5.22"				
Area (sf)	CN	Adj	Description	
37,098	70		Woods, Good, HSG C	
8,530	74		>75% Grass cover, Good, HSG C	
3,296	98		Unconnected pavement, HSG C	
48,924	73	72	Weighted Average, UI Adjusted	
45,628			93.26% Pervious Area	
3,296			6.74% Impervious Area	
3,296			100.00% Unconnected	
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs) Description
9.2	21	0.0271	0.04	Sheet Flow, Sheet Flow - Wooded Woods: Dense underbrush n= 0.800 P2= 3.44"
3.2	134	0.0194	0.70	Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
3.5	113	0.0115	0.54	Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
0.4	32	0.0813	1.43	Shallow Concentrated Flow, SCF - Wooded Woodland Kv= 5.0 fps
16.3	300	Total		

Subcatchment 22S: Prop. Channel Perv Und



Hydrograph for Subcatchment 22S: Prop. Channel Perv Und

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.22	2.37	0.00
0.50	0.03	0.00	0.00	26.50	5.22	2.37	0.00
1.00	0.05	0.00	0.00	27.00	5.22	2.37	0.00
1.50	0.08	0.00	0.00	27.50	5.22	2.37	0.00
2.00	0.10	0.00	0.00	28.00	5.22	2.37	0.00
2.50	0.13	0.00	0.00	28.50	5.22	2.37	0.00
3.00	0.16	0.00	0.00	29.00	5.22	2.37	0.00
3.50	0.19	0.00	0.00	29.50	5.22	2.37	0.00
4.00	0.22	0.00	0.00	30.00	5.22	2.37	0.00
4.50	0.26	0.00	0.00				
5.00	0.30	0.00	0.00				
5.50	0.34	0.00	0.00				
6.00	0.38	0.00	0.00				
6.50	0.42	0.00	0.00				
7.00	0.47	0.00	0.00				
7.50	0.53	0.00	0.00				
8.00	0.60	0.00	0.00				
8.50	0.67	0.00	0.00				
9.00	0.76	0.00	0.00				
9.50	0.87	0.00	0.00				
10.00	0.99	0.01	0.02				
10.50	1.13	0.03	0.04				
11.00	1.30	0.06	0.08				
11.50	1.56	0.13	0.15				
12.00	2.61	0.59	0.84				
12.50	3.66	1.23	1.32				
13.00	3.91	1.40	0.40				
13.50	4.09	1.52	0.28				
14.00	4.23	1.63	0.23				
14.50	4.35	1.71	0.20				
15.00	4.46	1.79	0.17				
15.50	4.55	1.86	0.15				
16.00	4.62	1.91	0.13				
16.50	4.69	1.96	0.11				
17.00	4.75	2.01	0.10				
17.50	4.80	2.04	0.09				
18.00	4.84	2.08	0.08				
18.50	4.88	2.11	0.07				
19.00	4.92	2.14	0.07				
19.50	4.96	2.17	0.06				
20.00	5.00	2.19	0.06				
20.50	5.03	2.22	0.06				
21.00	5.06	2.24	0.06				
21.50	5.09	2.27	0.05				
22.00	5.12	2.29	0.05				
22.50	5.15	2.31	0.05				
23.00	5.17	2.33	0.05				
23.50	5.20	2.35	0.04				
24.00	5.22	2.37	0.04				
24.50	5.22	2.37	0.00				
25.00	5.22	2.37	0.00				
25.50	5.22	2.37	0.00				

Summary for Subcatchment 23S: Prop. Roof

[49] Hint: Tc<2dt may require smaller dt

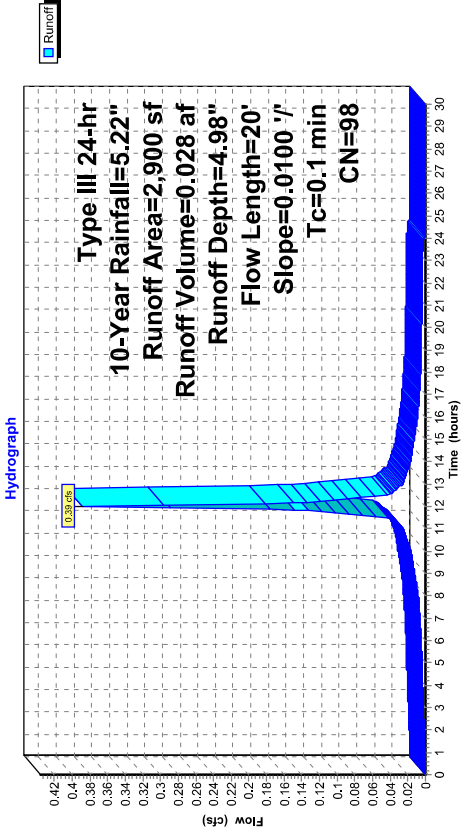
Runoff = 0.39 cfs @ 12.00 hrs, Volume= 0.028 af, Depth= 4.98"
Routed to Pond 15P : Prop. Basin A

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.22"

Area (sf)	CN	Description
2,900	98	Roofs, HSG C
2,900		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.1	20	0.0100	3.71	0.73	Pipe Channel, Roof Leaders
					6.0" Round Area= 0.2 sf Perim= 1.6' r= 0.13'
					n= 0.010 PVC, smooth interior

Subcatchment 23S: Prop. Roof



Hydrograph for Subcatchment 23S: Prop. Roof

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	26.00	5.22	4.98	0.00
0.50	0.03	0.00	0.00	26.50	5.22	4.98	0.00
1.00	0.05	0.00	0.00	27.00	5.22	4.98	0.00
1.50	0.08	0.01	0.00	27.50	5.22	4.98	0.00
2.00	0.10	0.02	0.00	28.00	5.22	4.98	0.00
2.50	0.13	0.03	0.00	28.50	5.22	4.98	0.00
3.00	0.16	0.04	0.00	29.00	5.22	4.98	0.00
3.50	0.19	0.06	0.00	29.50	5.22	4.98	0.00
4.00	0.22	0.09	0.00	30.00	5.22	4.98	0.00
4.50	0.26	0.11	0.00				
5.00	0.30	0.14	0.00				
5.50	0.34	0.17	0.00				
6.00	0.38	0.21	0.00				
6.50	0.42	0.25	0.01				
7.00	0.47	0.29	0.01				
7.50	0.53	0.35	0.01				
8.00	0.60	0.41	0.01				
8.50	0.67	0.48	0.01				
9.00	0.76	0.56	0.01				
9.50	0.87	0.66	0.01				
10.00	0.99	0.78	0.02				
10.50	1.13	0.92	0.02				
11.00	1.30	1.09	0.03				
11.50	1.56	1.33	0.04				
12.00	2.61	2.38	0.39				
12.50	3.66	3.43	0.04				
13.00	3.91	3.68	0.03				
13.50	4.09	3.85	0.02				
14.00	4.23	4.00	0.02				
14.50	4.35	4.12	0.02				
15.00	4.46	4.22	0.01				
15.50	4.55	4.31	0.01				
16.00	4.62	4.39	0.01				
16.50	4.69	4.45	0.01				
17.00	4.75	4.51	0.01				
17.50	4.80	4.56	0.01				
18.00	4.84	4.61	0.01				
18.50	4.88	4.65	0.01				
19.00	4.92	4.69	0.01				
19.50	4.96	4.72	0.00				
20.00	5.00	4.76	0.00				
20.50	5.03	4.79	0.00				
21.00	5.06	4.82	0.00				
21.50	5.09	4.85	0.00				
22.00	5.12	4.88	0.00				
22.50	5.15	4.91	0.00				
23.00	5.17	4.94	0.00				
23.50	5.20	4.96	0.00				
24.00	5.22	4.98	0.00				
24.50	5.22	4.98	0.00				
25.00	5.22	4.98	0.00				
25.50	5.22	4.98	0.00				

Summary for Pond 15P: Prop. Basin A

Inflow Area = 1.931 ac, 7.43% Impervious, Inflow Depth = 2.48" for 10-Year event
Inflow = 3.56 cfs @ 12.28 hrs, Volume= 0.400 af
Outflow = 2.21 cfs @ 12.56 hrs, Volume= 0.400 af, Atten= 38%, Lag= 16.9 min
Primary = 2.21 cfs @ 12.56 hrs, Volume= 0.400 af
Routed to Link 17L : Prop. Channel Total

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 619.21' @ 12.56 hrs Surf.Area= 1,794 sf Storage= 4,362 cf

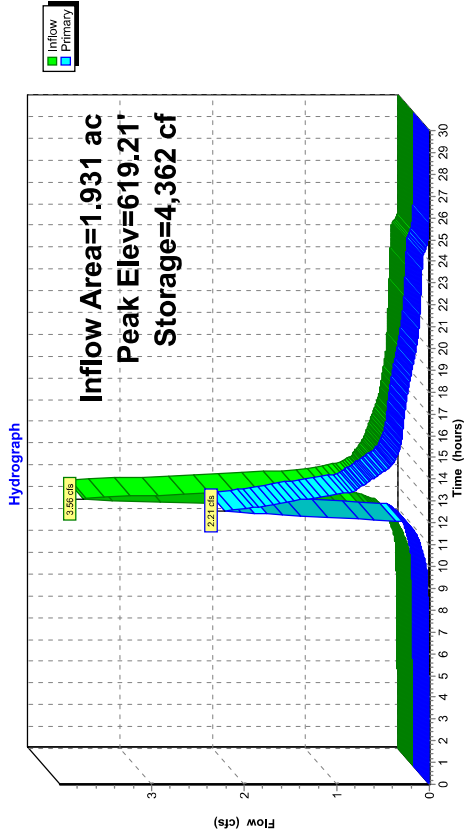
Plug-Flow detention time= 52.9 min calculated for 0.400 af (100% of inflow)
Center-of-Mass det. time= 52.7 min (892.8 - 840.1)

Volume	Invert	Avail.Storage	Storage Description
#1	615.65'	2,121 cf	36.0" Round HDPE_Round 36" x 4 Inside #2 L= 75.0'
#2	614.90'	2,381 cf	23.00"W x 78.00"L x 4.50"H Prismatic 8,073 cf Overall - 2,121 cf Embedded = 5,952 cf x 40.0% Voids
		4,502 cf	Total Available Storage

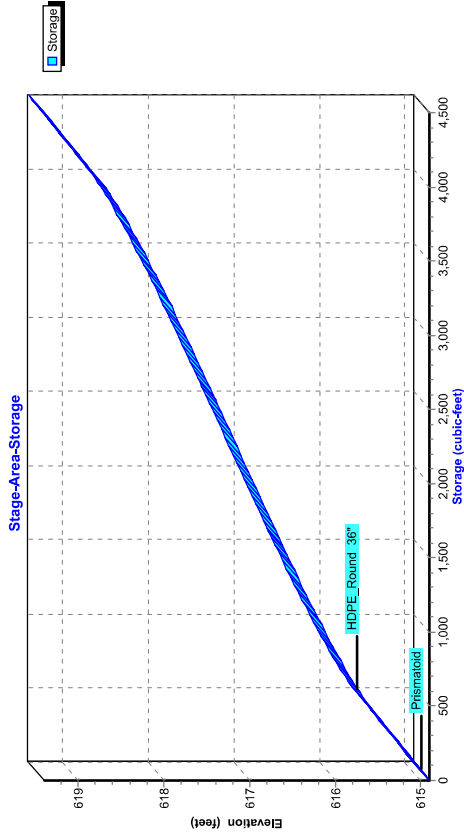
Device	Routing	Invert	Outlet Devices
#1	Primary	614.90'	15.0" Round Culvert L= 77.0' Ke= 0.500 Inlet / Outlet Invert= 614.90' / 614.50' S= 0.00521' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 1.23 sf
#2	Device 1	614.90'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	616.60'	4.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	617.40'	4.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 1	619.10'	2.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=2.19 cfs @ 12.56 hrs HW=619.20' (Free Discharge)
1=Culvert (Passes 2.19 cfs of 11.33 cfs potential flow)
2=Orifice/Grate (Orifice Controls 0.48 cfs @ 9.84 fps)
3=Orifice/Grate (Orifice Controls 0.83 cfs @ 7.48 fps)
4=Orifice/Grate (Orifice Controls 0.68 cfs @ 6.11 fps)
5=Sharp-Crested Rectangular Weir (Weir Controls 0.21 cfs @ 1.04 fps)

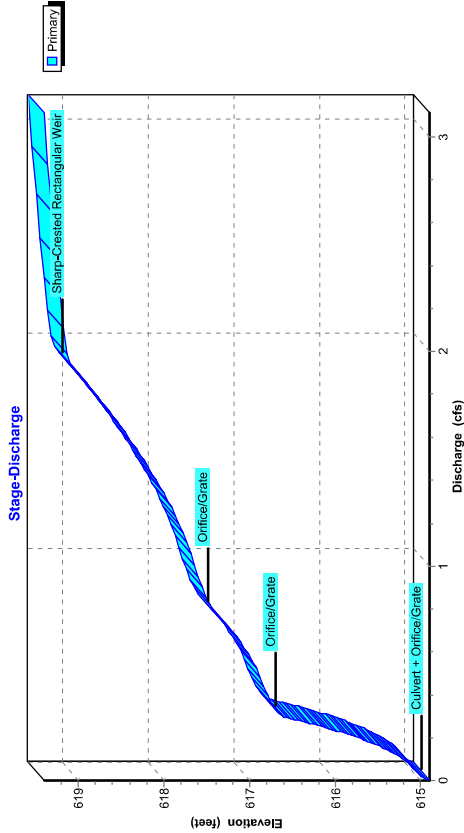
Pond 15P: Prop. Basin A



Pond 15P: Prop. Basin A



Pond 15P: Prop. Basin A



Hydrograph for Pond 15P: Prop. Basin A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	614.90	0.00
1.00	0.00	0	614.90	0.00
2.00	0.00	5	614.91	0.00
3.00	0.00	15	614.92	0.00
4.00	0.01	26	614.94	0.00
5.00	0.01	37	614.95	0.01
6.00	0.01	44	614.96	0.01
7.00	0.01	51	614.97	0.01
8.00	0.02	60	614.98	0.01
9.00	0.03	74	615.00	0.02
10.00	0.05	101	615.04	0.04
11.00	0.15	216	615.20	0.10
12.00	1.57	1,205	616.30	0.27
13.00	0.76	3,517	618.20	1.47
14.00	0.41	2,144	617.06	0.62
15.00	0.31	1,739	616.74	0.36
16.00	0.22	1,543	616.58	0.29
17.00	0.17	1,224	616.31	0.27
18.00	0.14	873	616.00	0.23
19.00	0.12	554	615.67	0.19
20.00	0.11	357	615.40	0.14
21.00	0.10	258	615.26	0.11
22.00	0.09	211	615.19	0.10
23.00	0.08	184	615.16	0.09
24.00	0.07	163	615.13	0.08
25.00	0.00	66	614.99	0.02
26.00	0.00	33	614.95	0.00
27.00	0.00	20	614.93	0.00
28.00	0.00	12	614.92	0.00
29.00	0.00	8	614.91	0.00
30.00	0.00	5	614.91	0.00

Stage-Discharge for Pond 15P: Prop. Basin A

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
614.90	0.00	617.50	0.85
614.95	0.01	617.55	0.89
615.00	0.02	617.60	0.95
615.05	0.04	617.65	1.01
615.10	0.06	617.70	1.07
615.15	0.08	617.75	1.13
615.20	0.10	617.80	1.17
615.25	0.11	617.85	1.22
615.30	0.12	617.90	1.26
615.35	0.13	617.95	1.30
615.40	0.14	618.00	1.33
615.45	0.15	618.05	1.37
615.50	0.16	618.10	1.40
615.55	0.17	618.15	1.44
615.60	0.18	618.20	1.47
615.65	0.19	618.25	1.50
615.70	0.19	618.30	1.53
615.75	0.20	618.35	1.56
615.80	0.21	618.40	1.59
615.85	0.21	618.45	1.62
615.90	0.22	618.50	1.64
615.95	0.23	618.55	1.67
616.00	0.23	618.60	1.70
616.05	0.24	618.65	1.72
616.10	0.25	618.70	1.75
616.15	0.25	618.75	1.77
616.20	0.26	618.80	1.80
616.25	0.26	618.85	1.82
616.30	0.27	618.90	1.85
616.35	0.27	618.95	1.87
616.40	0.28	619.00	1.89
616.45	0.28	619.05	1.92
616.50	0.29	619.10	1.94
616.55	0.29	619.15	2.03
616.60	0.30	619.20	2.19
616.65	0.31	619.25	2.38
616.70	0.33	619.30	2.60
616.75	0.36	619.35	2.85
616.80	0.41	619.40	3.11
616.85	0.45		
616.90	0.50		
616.95	0.54		
617.00	0.58		
617.05	0.61		
617.10	0.64		
617.15	0.66		
617.20	0.69		
617.25	0.71		
617.30	0.74		
617.35	0.76		
617.40	0.78		
617.45	0.81		

Stage-Area-Storage for Pond 15P: Prop. Basin A

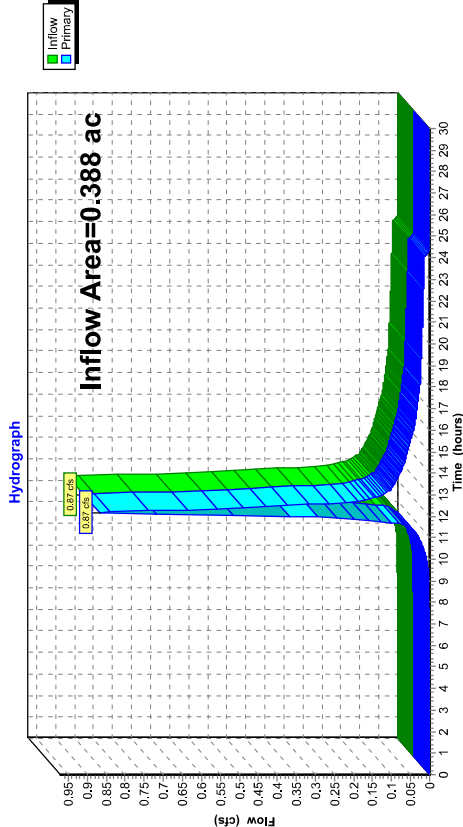
Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
614.90	0	617.50	2,689
614.95	36	617.55	2,751
615.00	72	617.60	2,813
615.05	108	617.65	2,874
615.10	144	617.70	2,936
615.15	179	617.75	2,996
615.20	215	617.80	3,057
615.25	251	617.85	3,117
615.30	287	617.90	3,176
615.35	323	617.95	3,235
615.40	359	618.00	3,294
615.45	395	618.05	3,352
615.50	431	618.10	3,409
615.55	466	618.15	3,465
615.60	502	618.20	3,521
615.65	538	618.25	3,575
615.70	579	618.30	3,629
615.75	623	618.35	3,682
615.80	670	618.40	3,733
615.85	718	618.45	3,783
615.90	768	618.50	3,832
615.95	820	618.55	3,879
616.00	872	618.60	3,923
616.05	926	618.65	3,963
616.10	981	618.70	3,999
616.15	1,036	618.75	4,035
616.20	1,093	618.80	4,071
616.25	1,150	618.85	4,107
616.30	1,208	618.90	4,143
616.35	1,266	618.95	4,179
616.40	1,325	619.00	4,215
616.45	1,385	619.05	4,250
616.50	1,445	619.10	4,286
616.55	1,505	619.15	4,322
616.60	1,566	619.20	4,358
616.65	1,627	619.25	4,394
616.70	1,689	619.30	4,430
616.75	1,750	619.35	4,466
616.80	1,812	619.40	4,502
616.85	1,875		
616.90	1,937		
616.95	2,000		
617.00	2,062		
617.05	2,125		
617.10	2,188		
617.15	2,251		
617.20	2,314		
617.25	2,376		
617.30	2,439		
617.35	2,502		
617.40	2,565		
617.45	2,627		

Summary for Link 8L: Prop. Lot 21 Headwall Total

Inflow Area = 0.388 ac, 3.34% Impervious, Inflow Depth = 2.37" for 10-Year event
Inflow = 0.87 cfs @ 12.17 hrs, Volume= 0.077 af
Primary = 0.87 cfs @ 12.17 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min
Routed to Link 11L : Proposed Total

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 8L: Prop. Lot 21 Headwall Total



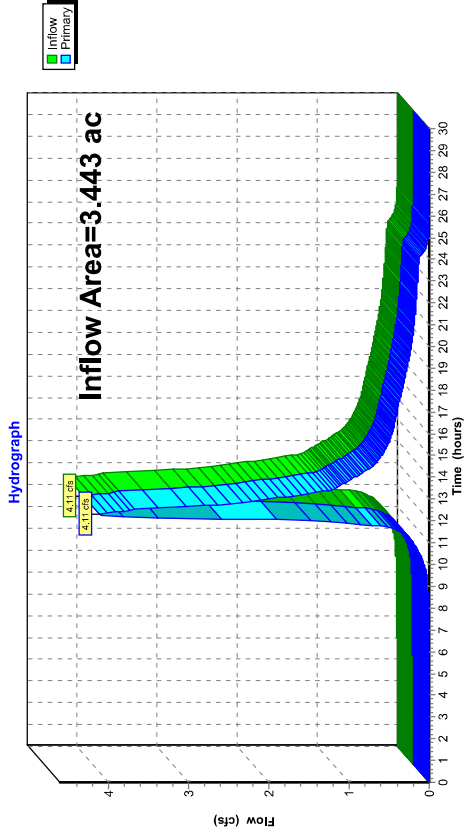
Hydrograph for Link 8L: Prop. Lot 21 Headwall Total

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00				
5.00	0.00	0.00	0.00				
5.50	0.00	0.00	0.00				
6.00	0.00	0.00	0.00				
6.50	0.00	0.00	0.00				
7.00	0.00	0.00	0.00				
7.50	0.00	0.00	0.00				
8.00	0.00	0.00	0.00				
8.50	0.00	0.00	0.00				
9.00	0.00	0.00	0.00				
9.50	0.00	0.00	0.00				
10.00	0.01	0.00	0.00				
10.50	0.02	0.00	0.02				
11.00	0.03	0.00	0.03				
11.50	0.06	0.00	0.06				
12.00	0.37	0.00	0.37				
12.50	0.37	0.00	0.37				
13.00	0.13	0.00	0.13				
13.50	0.09	0.00	0.09				
14.00	0.08	0.00	0.08				
14.50	0.07	0.00	0.07				
15.00	0.06	0.00	0.06				
15.50	0.05	0.00	0.05				
16.00	0.04	0.00	0.04				
16.50	0.04	0.00	0.04				
17.00	0.03	0.00	0.03				
17.50	0.03	0.00	0.03				
18.00	0.03	0.00	0.03				
18.50	0.02	0.00	0.02				
19.00	0.02	0.00	0.02				
19.50	0.02	0.00	0.02				
20.00	0.02	0.00	0.02				
20.50	0.02	0.00	0.02				
21.00	0.02	0.00	0.02				
21.50	0.02	0.00	0.02				
22.00	0.02	0.00	0.02				
22.50	0.02	0.00	0.02				
23.00	0.02	0.00	0.02				
23.50	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
24.50	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				

Summary for Link 11L: Proposed Total

Inflow Area = 3.443 ac, 6.74% Impervious, Inflow Depth > 2.43" for 10-Year event
Inflow = 4.11 cfs @ 12.29 hrs, Volume= 0.698 af
Primary = 4.11 cfs @ 12.29 hrs, Volume= 0.698 af, Atten= 0%, Lag= 0.0 min
Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 11L: Proposed Total



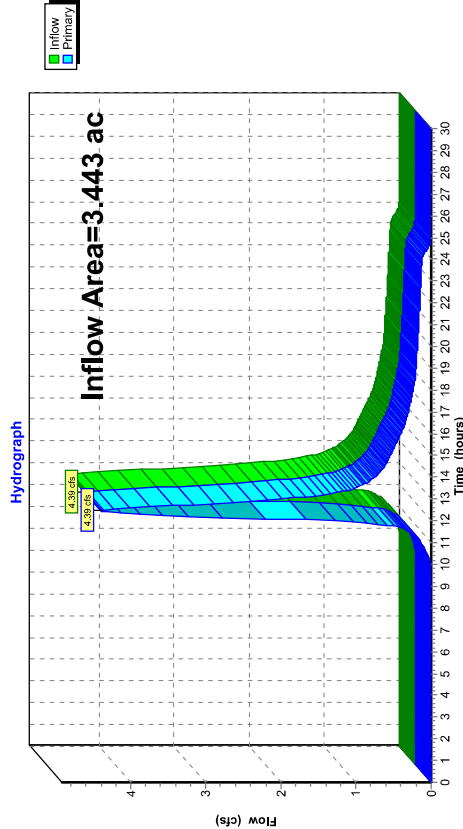
Hydrograph for Link 11L: Proposed Total

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00				
5.00	0.01	0.00	0.01				
5.50	0.01	0.00	0.01				
6.00	0.01	0.00	0.01				
6.50	0.01	0.00	0.01				
7.00	0.01	0.00	0.01				
7.50	0.01	0.00	0.01				
8.00	0.02	0.00	0.02				
8.50	0.02	0.00	0.02				
9.00	0.02	0.00	0.02				
9.50	0.03	0.00	0.03				
10.00	0.06	0.00	0.06				
10.50	0.12	0.00	0.12				
11.00	0.20	0.00	0.20				
11.50	0.35	0.00	0.35				
12.00	1.48	0.00	1.48				
12.50	3.73	0.00	3.73				
13.00	1.99	0.00	1.99				
13.50	1.17	0.00	1.17				
14.00	0.93	0.00	0.93				
14.50	0.71	0.00	0.71				
15.00	0.59	0.00	0.59				
15.50	0.52	0.00	0.52				
16.00	0.46	0.00	0.46				
16.50	0.43	0.00	0.43				
17.00	0.40	0.00	0.40				
17.50	0.37	0.00	0.37				
18.00	0.34	0.00	0.34				
18.50	0.31	0.00	0.31				
19.00	0.28	0.00	0.28				
19.50	0.25	0.00	0.25				
20.00	0.23	0.00	0.23				
20.50	0.21	0.00	0.21				
21.00	0.19	0.00	0.19				
21.50	0.18	0.00	0.18				
22.00	0.16	0.00	0.16				
22.50	0.16	0.00	0.16				
23.00	0.15	0.00	0.15				
23.50	0.14	0.00	0.14				
24.00	0.13	0.00	0.13				
24.50	0.05	0.00	0.05				
25.00	0.02	0.00	0.02				
25.50	0.01	0.00	0.01				

Summary for Link 12L: Existing Total

Inflow Area = 3.443 ac, 0.00% Impervious, Inflow Depth = 2.20" for 10-Year event
Inflow = 4.39 cfs @ 12.46 hrs, Volume= 0.631 af
Primary = 4.39 cfs @ 12.46 hrs, Volume= 0.631 af, Atten= 0%, Lag= 0.0 min
Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 12L: Existing Total



Hydrograph for Link 12L: Existing Total

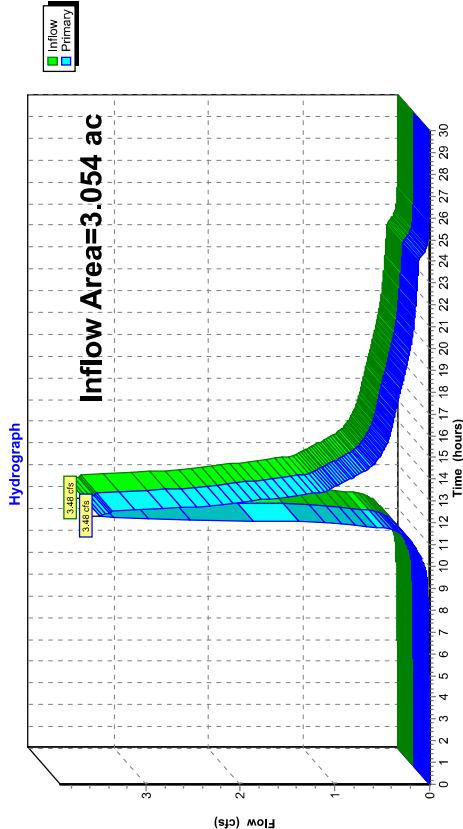
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00				
5.00	0.00	0.00	0.00				
5.50	0.00	0.00	0.00				
6.00	0.00	0.00	0.00				
6.50	0.00	0.00	0.00				
7.00	0.00	0.00	0.00				
7.50	0.00	0.00	0.00				
8.00	0.00	0.00	0.00				
8.50	0.00	0.00	0.00				
9.00	0.00	0.00	0.00				
9.50	0.00	0.00	0.00				
10.00	0.01	0.00	0.00				
10.50	0.06	0.00	0.06				
11.00	0.14	0.00	0.14				
11.50	0.28	0.00	0.28				
12.00	1.28	0.00	1.28				
12.50	4.35	0.00	4.35				
13.00	1.98	0.00	1.98				
13.50	1.02	0.00	1.02				
14.00	0.75	0.00	0.75				
14.50	0.62	0.00	0.62				
15.00	0.54	0.00	0.54				
15.50	0.48	0.00	0.48				
16.00	0.41	0.00	0.41				
16.50	0.34	0.00	0.34				
17.00	0.31	0.00	0.31				
17.50	0.27	0.00	0.27				
18.00	0.24	0.00	0.24				
18.50	0.22	0.00	0.22				
19.00	0.20	0.00	0.20				
19.50	0.19	0.00	0.19				
20.00	0.18	0.00	0.18				
20.50	0.17	0.00	0.17				
21.00	0.17	0.00	0.17				
21.50	0.16	0.00	0.16				
22.00	0.15	0.00	0.15				
22.50	0.15	0.00	0.15				
23.00	0.14	0.00	0.14				
23.50	0.13	0.00	0.13				
24.00	0.12	0.00	0.12				
24.50	0.05	0.00	0.05				
25.00	0.01	0.00	0.01				
25.50	0.00	0.00	0.00				

Summary for Link 17L: Prop. Channel Total

Inflow Area = 3.054 ac, 7.18% Impervious, Inflow Depth > 2.44" for 10-Year event
Inflow = 3.48 cfs @ 12.32 hrs, Volume= 0.621 af
Primary = 3.48 cfs @ 12.32 hrs, Volume= 0.621 af, Atten= 0%, Lag= 0.0 min
Routed to Link 11L : Proposed Total

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 17L: Prop. Channel Total



Hydrograph for Link 17L: Prop. Channel Total

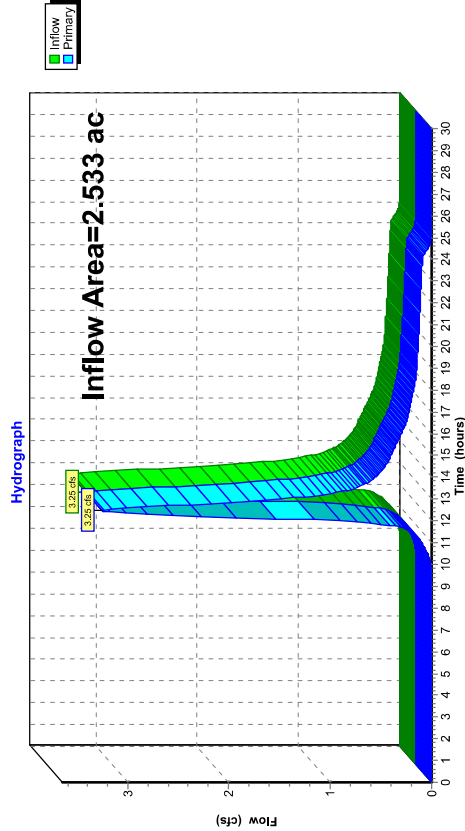
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00				
5.00	0.01	0.00	0.01				
5.50	0.01	0.00	0.01				
6.00	0.01	0.00	0.01				
6.50	0.01	0.00	0.01				
7.00	0.01	0.00	0.01				
7.50	0.01	0.00	0.01				
8.00	0.01	0.00	0.01				
8.50	0.02	0.00	0.02				
9.00	0.02	0.00	0.02				
9.50	0.03	0.00	0.03				
10.00	0.06	0.00	0.06				
10.50	0.11	0.00	0.11				
11.00	0.17	0.00	0.17				
11.50	0.30	0.00	0.30				
12.00	1.11	0.00	1.11				
12.50	3.36	0.00	3.36				
13.00	1.87	0.00	1.87				
13.50	1.08	0.00	1.08				
14.00	0.85	0.00	0.85				
14.50	0.64	0.00	0.64				
15.00	0.53	0.00	0.53				
15.50	0.47	0.00	0.47				
16.00	0.42	0.00	0.42				
16.50	0.39	0.00	0.39				
17.00	0.37	0.00	0.37				
17.50	0.34	0.00	0.34				
18.00	0.31	0.00	0.31				
18.50	0.28	0.00	0.28				
19.00	0.26	0.00	0.26				
19.50	0.23	0.00	0.23				
20.00	0.21	0.00	0.21				
20.50	0.19	0.00	0.19				
21.00	0.17	0.00	0.17				
21.50	0.16	0.00	0.16				
22.00	0.15	0.00	0.15				
22.50	0.14	0.00	0.14				
23.00	0.13	0.00	0.13				
23.50	0.12	0.00	0.12				
24.00	0.12	0.00	0.12				
24.50	0.05	0.00	0.05				
25.00	0.02	0.00	0.02				
25.50	0.01	0.00	0.01				

Summary for Link 20L: Ex. Und Total

Inflow Area = 2.533 ac, 0.00% Impervious, Inflow Depth = 2.20" for 10-Year event
Inflow = 3.25 cfs @ 12.47 hrs, Volume= 0.465 af
Primary = 3.25 cfs @ 12.47 hrs, Volume= 0.465 af, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Existing Total

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 20L: Ex. Und Total



Hydrograph for Link 20L: Ex. Und Total

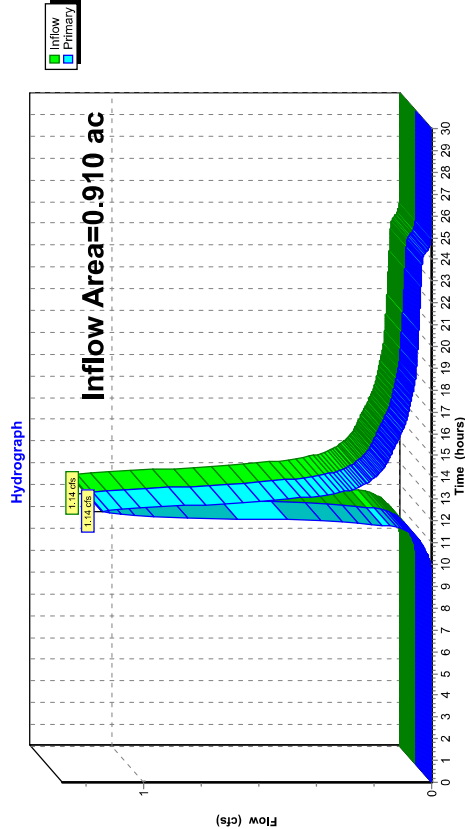
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00				
5.00	0.00	0.00	0.00				
5.50	0.00	0.00	0.00				
6.00	0.00	0.00	0.00				
6.50	0.00	0.00	0.00				
7.00	0.00	0.00	0.00				
7.50	0.00	0.00	0.00				
8.00	0.00	0.00	0.00				
8.50	0.00	0.00	0.00				
9.00	0.00	0.00	0.00				
9.50	0.00	0.00	0.00				
10.00	0.01	0.00	0.00				
10.50	0.04	0.00	0.04				
11.00	0.10	0.00	0.10				
11.50	0.21	0.00	0.21				
12.00	0.90	0.00	0.90				
12.50	3.23	0.00	3.23				
13.00	1.49	0.00	1.49				
13.50	0.75	0.00	0.75				
14.00	0.56	0.00	0.56				
14.50	0.46	0.00	0.46				
15.00	0.40	0.00	0.40				
15.50	0.35	0.00	0.35				
16.00	0.30	0.00	0.30				
16.50	0.25	0.00	0.25				
17.00	0.23	0.00	0.23				
17.50	0.20	0.00	0.20				
18.00	0.18	0.00	0.18				
18.50	0.16	0.00	0.16				
19.00	0.15	0.00	0.15				
19.50	0.14	0.00	0.14				
20.00	0.14	0.00	0.14				
20.50	0.13	0.00	0.13				
21.00	0.12	0.00	0.12				
21.50	0.12	0.00	0.12				
22.00	0.11	0.00	0.11				
22.50	0.11	0.00	0.11				
23.00	0.10	0.00	0.10				
23.50	0.10	0.00	0.10				
24.00	0.09	0.00	0.09				
24.50	0.04	0.00	0.04				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				

Summary for Link 21L: Ex. Dist Total

Inflow Area = 0.910 ac, 0.00% Impervious, Inflow Depth = 2.20" for 10-Year event
Inflow = 1.14 cfs @ 12.43 hrs, Volume= 0.167 af
Primary = 1.14 cfs @ 12.43 hrs, Volume= 0.167 af, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Existing Total

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 21L: Ex. Dist Total



Hydrograph for Link 21L: Ex. Dist Total

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	26.00	0.00	0.00	0.00
0.50	0.00	0.00	0.00	26.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00				
5.00	0.00	0.00	0.00				
5.50	0.00	0.00	0.00				
6.00	0.00	0.00	0.00				
6.50	0.00	0.00	0.00				
7.00	0.00	0.00	0.00				
7.50	0.00	0.00	0.00				
8.00	0.00	0.00	0.00				
8.50	0.00	0.00	0.00				
9.00	0.00	0.00	0.00				
9.50	0.00	0.00	0.00				
10.00	0.00	0.00	0.00				
10.50	0.02	0.00	0.02				
11.00	0.04	0.00	0.04				
11.50	0.08	0.00	0.08				
12.00	0.38	0.00	0.38				
12.50	1.12	0.00	1.12				
13.00	0.50	0.00	0.50				
13.50	0.26	0.00	0.26				
14.00	0.20	0.00	0.20				
14.50	0.16	0.00	0.16				
15.00	0.14	0.00	0.14				
15.50	0.12	0.00	0.12				
16.00	0.11	0.00	0.11				
16.50	0.09	0.00	0.09				
17.00	0.08	0.00	0.08				
17.50	0.07	0.00	0.07				
18.00	0.06	0.00	0.06				
18.50	0.06	0.00	0.06				
19.00	0.05	0.00	0.05				
19.50	0.05	0.00	0.05				
20.00	0.05	0.00	0.05				
20.50	0.05	0.00	0.05				
21.00	0.04	0.00	0.04				
21.50	0.04	0.00	0.04				
22.00	0.04	0.00	0.04				
22.50	0.04	0.00	0.04				
23.00	0.04	0.00	0.04				
23.50	0.03	0.00	0.03				
24.00	0.03	0.00	0.03				
24.50	0.01	0.00	0.01				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				

STORMWATER COLLECTION SYSTEM CALCULATIONS (PIPE SIZING)



**DYNAMIC
ENGINEERING**

Inlet Area Summary and Average Coefficient (C) Calculations

Project: Proposed Single Family Residential Dwelling

Job #: 5142-24-00053

Location: West Orange, NJ

Computed By: DG

Checked By: MB

Date: 3/13/2024

Drainage Area	Impervious Area (sf)	Coefficient (C) Used	Open Space Area for Soil Group C (SF)	Coefficient (C) Used	Wooded Area for Soil Group C (SF)	Coefficient (C) Used	Average Coefficient (C) Used	Total Area (SF)	Total Area (acres)
Yard Inlet #1	3352	0.95	7305	0.35	44213	0.12	0.20	54870	1.26
Yard Inlet #21	2000	0.95	8053	0.35	10245	0.12	0.29	20298	0.47
Yard Inlet #22	1300	0.95	1662	0.35	6388	0.12	0.28	9350	0.21
Roof	2900	0.95	0	0.35	0	0.12	0.95	2900	0.07



Stormwater Collection System Calculations

Project: Proposed Residential

Job #: 5142-24-00053

Location: West Orange, NJ

Design Storm: 25-Year

Computed By: DG

Checked By: MB

Date: 3/13/2024

Revised:

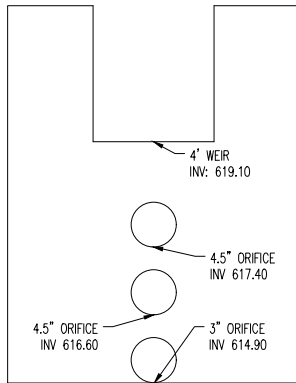
NOTES:

1) Design method used is Rational Method

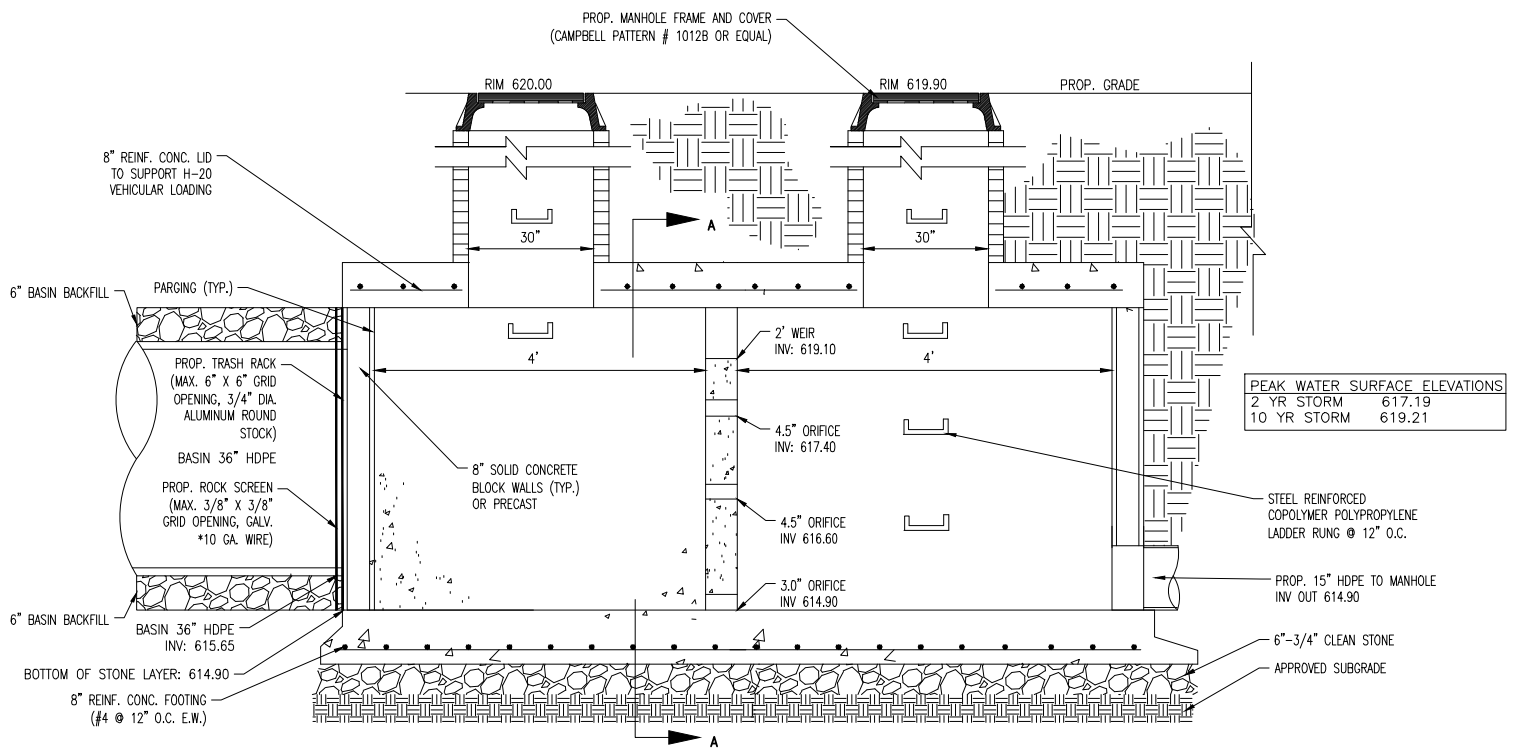
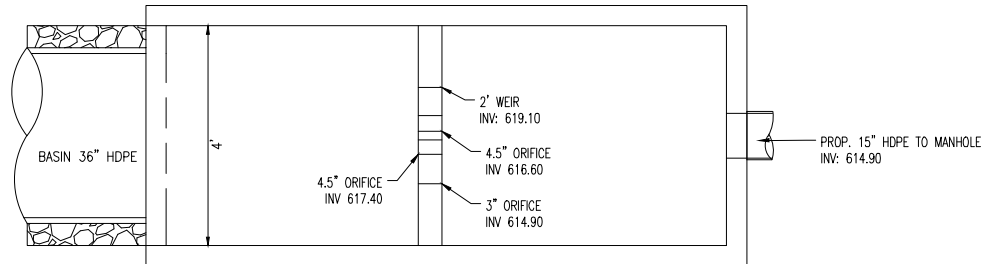
2) Refer to Weighted Runoff Coefficient table for calculation of incremental areas and C values

PIPE SECTION		SUBCATCHMENT AREA	INCREMENTAL		CUMULATIVE	TIME OF CONCENTRATION			I	PEAK RUNOFF		PIPING INPUT			PIPING DATA			
FROM	TO	Area (Acres)	"C"	A x C Ac	A x C (acres)	Tc to Inlet (min)	Tc in Pipe (min.)	Final Tc (min)	(In/Hr)	Q to Inlet (CFS)	Q cum. for Pipe (CFS)	Dia. (In)	Length (Ft)	Man. "n"	Slope (ft/ft)	Pipe Capacity (cfs)	Full Pipe Velocity (fps)	Actual Pipe Velocity (fps)
Inlet #1	Basin A	1.26	0.20	0.25	0.25	10.00	0.14	10.00	6.80	1.70	1.70	8	52.0	0.010	0.0200	2.22	6.36	7.26
Inlet #22	Inlet #21	0.21	0.28	0.06	0.06	10.00	0.68	10.00	6.80	0.41	0.41	8	129.0	0.010	0.0050	1.11	3.18	2.77
Inlet #21	Basin A	0.47	0.29	0.14	0.20	10.00	0.04	10.68	6.68	0.94	1.34	8	20.0	0.010	0.0400	3.14	9.00	8.43
Roof	Basin A	0.07	0.95	0.07	0.07	10.00	0.23	10.00	6.80	0.48	0.48	6	40.0	0.013	0.0100	0.56	2.85	3.25
OCS #4	MH #7	0.40	0.95	0.38	0.38	10.00	0.24	10.00	6.80	2.58	2.58	15	72.0	0.010	0.0055	6.23	5.08	4.65

OUTLET CONTROL STRUCTURE DETAIL



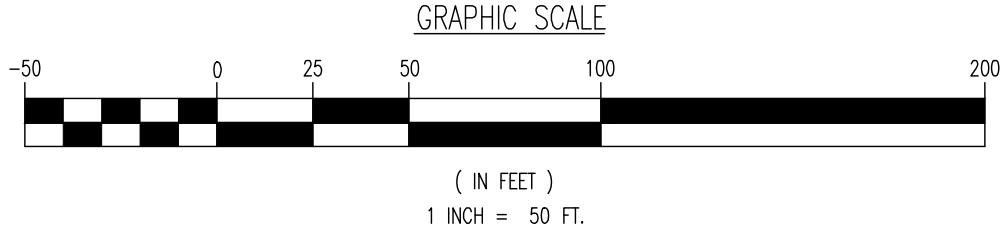
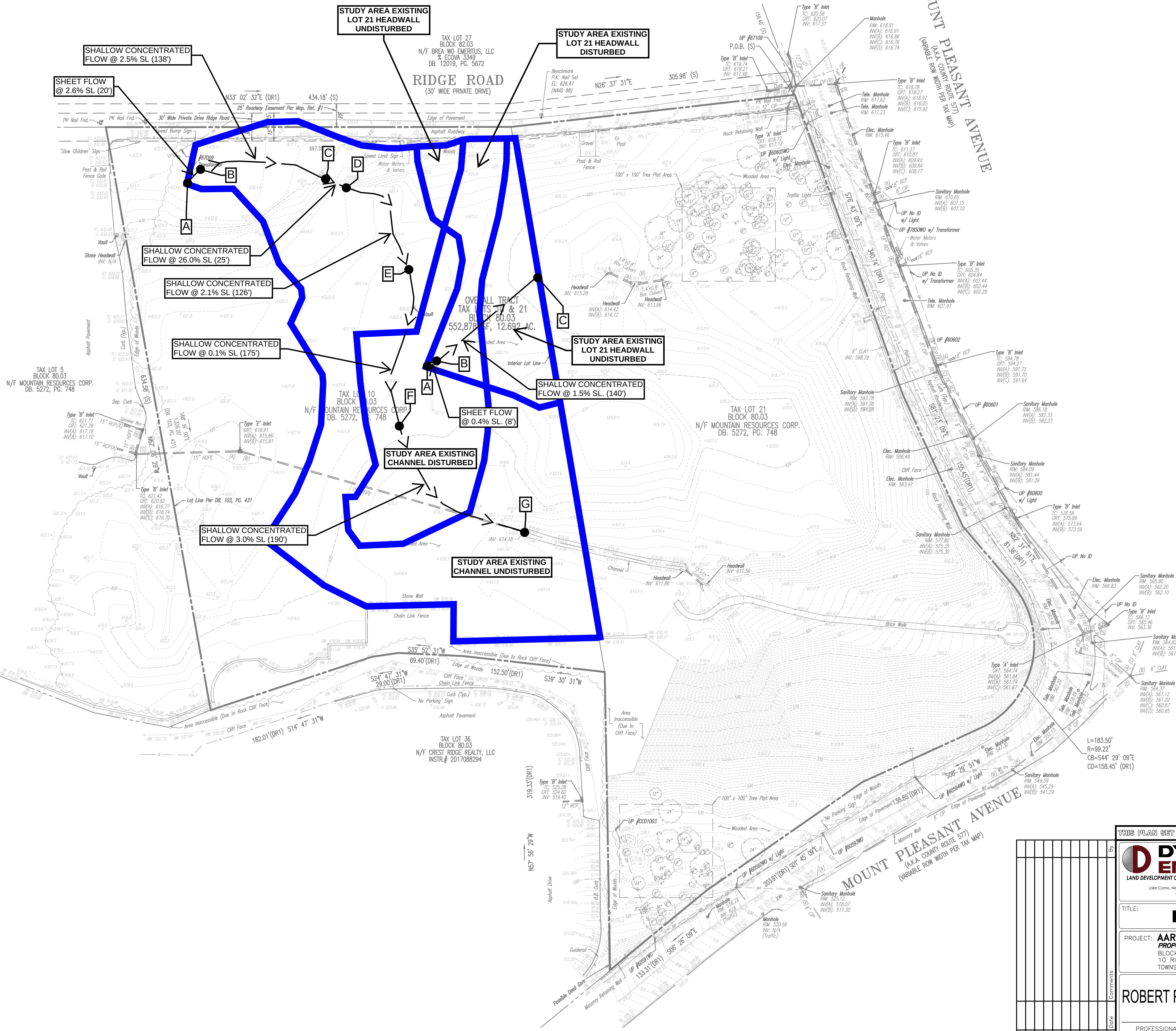
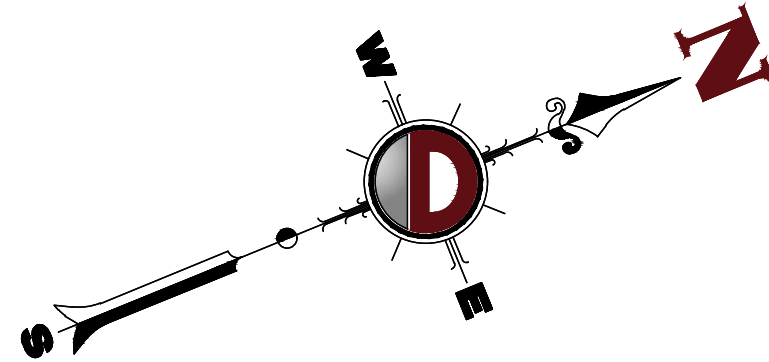
WEIR WALL
SECTION A-A



OUTLET STRUCTURE DETAIL (OCS) STORM STRUCTURE #5

NOT TO SCALE

DRAINAGE AREA MAPS



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EXISTING DRAINAGE AREA MAP

PROJECT: **AARON FRIEDMAN**
PROPOSED SINGLE-FAMILY RESIDENTIAL DWELLING
BLOCK 80.03, LOT 10
TO RIDGE ROAD
TOWNSHIP OF WEST ORANGE, ESSEX COUNTY, NEW JERSEY

JOB No: **5142-24-00053**
DATE: **3/27/2024**
DRAWN BY: **DG**
DESIGNED BY: **DG**
CHECKED BY: **MB**

SCALE: (H) 1" = 50'
(V) 1" = 10'
SHEET No: **1**
OF 3

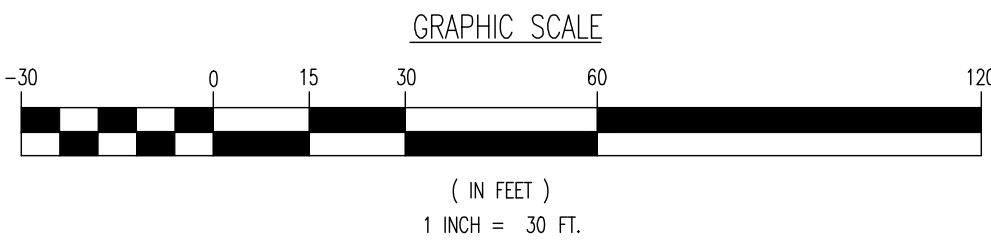
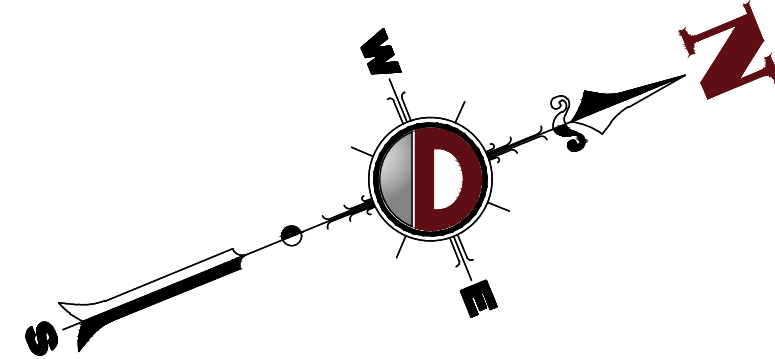
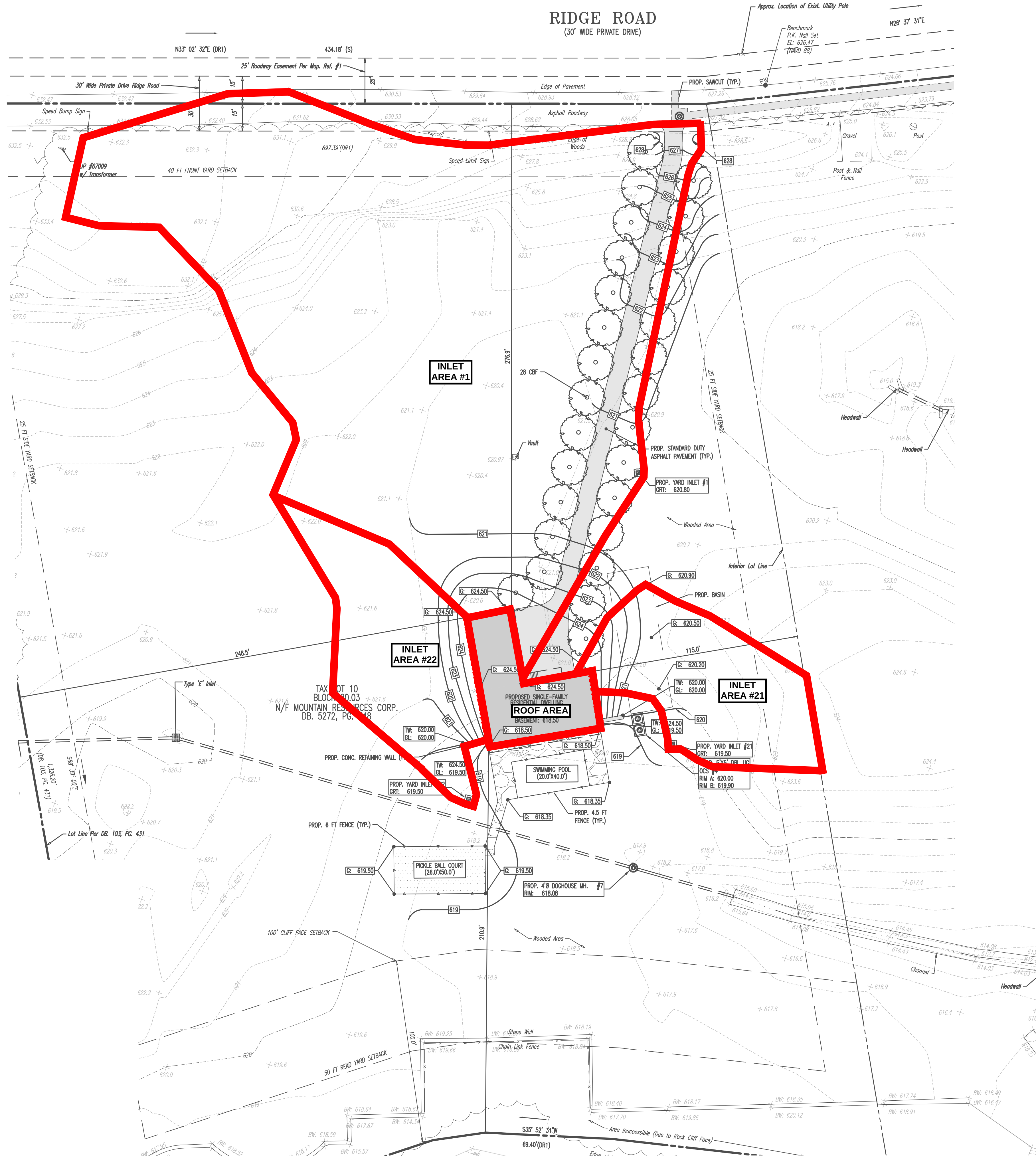
ROBERT P. FREUD
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 41938

MATTHEW J. BERSCH
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE No. 54522

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TAX LOT 27
BLOCK 82.03
N/F BREA WO. EMERITUS, LLC
% ECOVA 3349
DB. 12019, PG. 5672

RIDGE ROAD
(30' WIDE PRIVATE DRIVE)



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Lake Como, NJ 07719
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F: 732.974.3521
www.dynamiceng.com

TITLE: **INLET AREA MAP**

PROJECT: **AARON FRIEDMAN
PROPOSED SINGLE-FAMILY RESIDENTIAL DWELLING**
BLOCK 82.03, LOT 10
10 RIDGE ROAD
TOWNSHIP OF WEST ORANGE, ESSEX COUNTY, NEW JERSEY

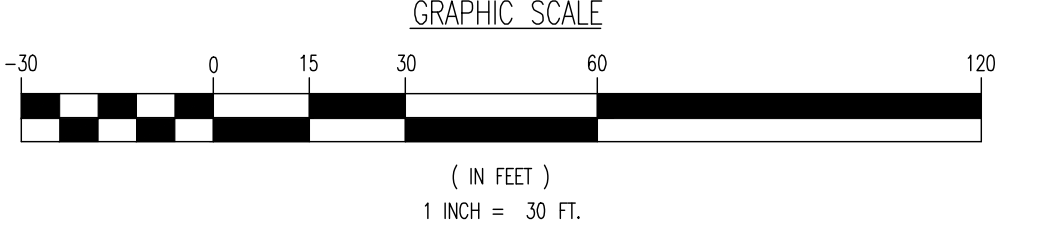
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