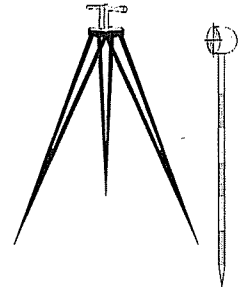


**SPARACO & YOUNGBLOOD, PLLC**  
CIVIL ENGINEERING \* LAND SURVEYING \* SITE PLANNING  
P.O. Box #818; 18 N. Main Street Harriman, N.Y. 10926  
(845) 782-8543 Fax (845) 782-5901  
[sparaco.steve@selsny.com](mailto:sparaco.steve@selsny.com)  
[wdyls1@gmail.com](mailto:wdyls1@gmail.com)



August 21, 2024

Bernard Weintraub  
92 Clinton Avenue  
South Nyack, NY 10960

Re: 92 Clinton Avenue, South Nyack, NY 10960 – Drainage Report (YB-2725)  
Section 66.54, Block 1, Lot #34.1

Dear Mr. Weintraub:

We have prepared a hydrologic analysis of the 0.44-acre 92 Clinton Avenue plot plan project located in the Town of Orangetown, NY.

It is proposed to construct a new 180-foot long, 10-foot wide driveway with turn around area to a proposed two-car garage which will serve a proposed 2-story frame single family residence at the site.

We have determined that drainage on this site generally drains towards from the South and West to one general collection point to the North and East of the site to an existing 42-inch RCP located along the properties Northerly boundary (Study Point #1).

For existing conditions, although this site had previously been developed in the past, we have evaluated this site as if it had been undisturbed for the purposes of this drainage report and to be conservative.

We have reviewed the Rockland County Soil Survey conditions for this area and have determined this site contains Wethersfield Soils (Hydrologic Group Type "C") in the proposed area of work.

We have determined that it is necessary to convey all roof drainage on site and the runoff collected in the proposed driveway on site to a new proposed detention system consisting of 90 LF of 60-inch diameter HDPE with an outlet structure and then discharge via 15-inch diameter pipe to the proposed 42-inch RCP located to the North of the site. The outlet structure will utilize a 2.25-inch orifice and 12-inch diameter overflow riser to route flows draining offsite to less than the existing conditions discharges.

Our analysis includes storms ranging from the 1-year to the 100-year design. Design frequencies were based upon Extreme Precipitation tables for the Northeast (reference: [www.precip.eas.cornell.edu.com](http://www.precip.eas.cornell.edu.com)) for this site location.

Refer to the Summary Table below for a comparison of Existing and Developed Conditions Discharges from the site.

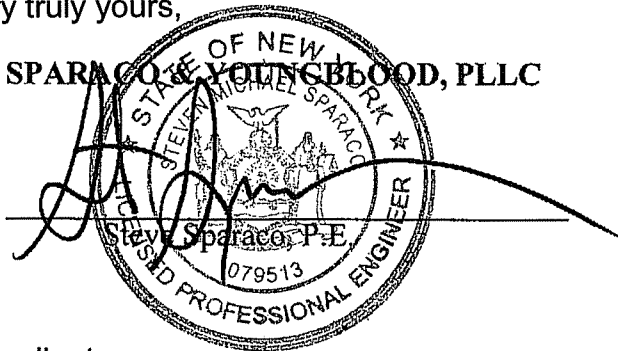
**Summary Table # 1 – 92 Clinton Avenue Discharges just offsite to the North and East (Pt. #1) for Existing and Developed Conditions:**

Conditions	Storm Frequency (in years)					
	1	2	5	10	25	100
Pre-Dev.t Discharges (cfs)	0.17	0.32	0.55	0.79	1.19	2.12
Post-Dev. Discharges (cfs)	0.17	0.27	0.44	0.59	0.84	2.02
Net Change:	-0.00	- 0.05	- 0.11	- 0.20	- 0.35	- 0.10

Attached are drainage area maps, drainage calculations and backup Hec-1 output data in support of our analysis.

Very truly yours,

**SPARACO & YOUNGBLOOD, PLLC**



cc.: client

## **TABLE OF CONTENTS:**

- Drainage Narrative dated 8-21-18
- Table of Contents ^insert^

### **Appendix:**

- 1.) *Methodology*
- 2.) *Figure A: Existing Conditions Drainage Area Map at 1"=30' scale*
- 3.) *Figure B: Developed Conditions Drainage Area Map at 1"=30' scale*
- 4.) *Figure C: Developed Conditions Plan View at 1"=20' scale*
- 5.) *Figure D: Outlet Structure Detail for the Detention System*
- 6.) *Rockland County Soils Information*
- 7.) *Curve Number Calculations*
- 8.) *Volume Calculations*

### **Hec-1 Analyses:**

- 1.) *Cornell University 24-hour Precipitation Reference*
- 2.) *Existing Conditions Hec-1 Model*
- 3.) *Developed Conditions Hec-1 Model*

## **ENGINEERING METHODOLOGY:**

### Area Hydrology:

We have prepared a hydrologic analysis of the 0.44-acre 92 Clinton Avenue plot plan project located in the Town of Orangetown, NY.

### Methodology:

We have determined that drainage on this site generally drains towards from the South and West to one general collection point to the North and East of the site to an existing 42-inch RCP located along the properties Northerly boundary (Study Point #1).

All drainage area delineations and any changes from existing to proposed conditions are indicated graphically on Drainage Area Maps provided in the Appendix.

A hydrologic analysis was performed utilizing procedures outlined in the Soil Conservation Service (SCS) publication Technical Report 55 (TR-55). SCS hydrographs were developed utilizing hydrographs consisting of a 24-hour rainfall event using an SCS Type-III rainfall distribution and unit hydrograph parameters, including drainage area, curve number (CN), time of concentration, and percent impervious.

Onsite time of concentration travel paths were insignificant and diminimus as they pertain to this project upon review of the area hydrology thru this site. A 10-minute minimum was used for existing conditions and a 5-minute minimum time of concentration was used for proposed conditions for all subareas on site.

Curve number calculations were based on hydrologic soil data obtained from available Rockland County Soils Maps. Refer to the Appendix for supporting soils data.

The Army Corps of Engineers hydrologic analysis computer program HEC-1 was utilized to generate runoff hydrographs for the 1, 2, 5, 10, 25 and 100-year frequency storms for pre and post-development conditions. This program was also utilized to perform hydrograph routings and additions to design the required mitigative facilities for developed conditions.

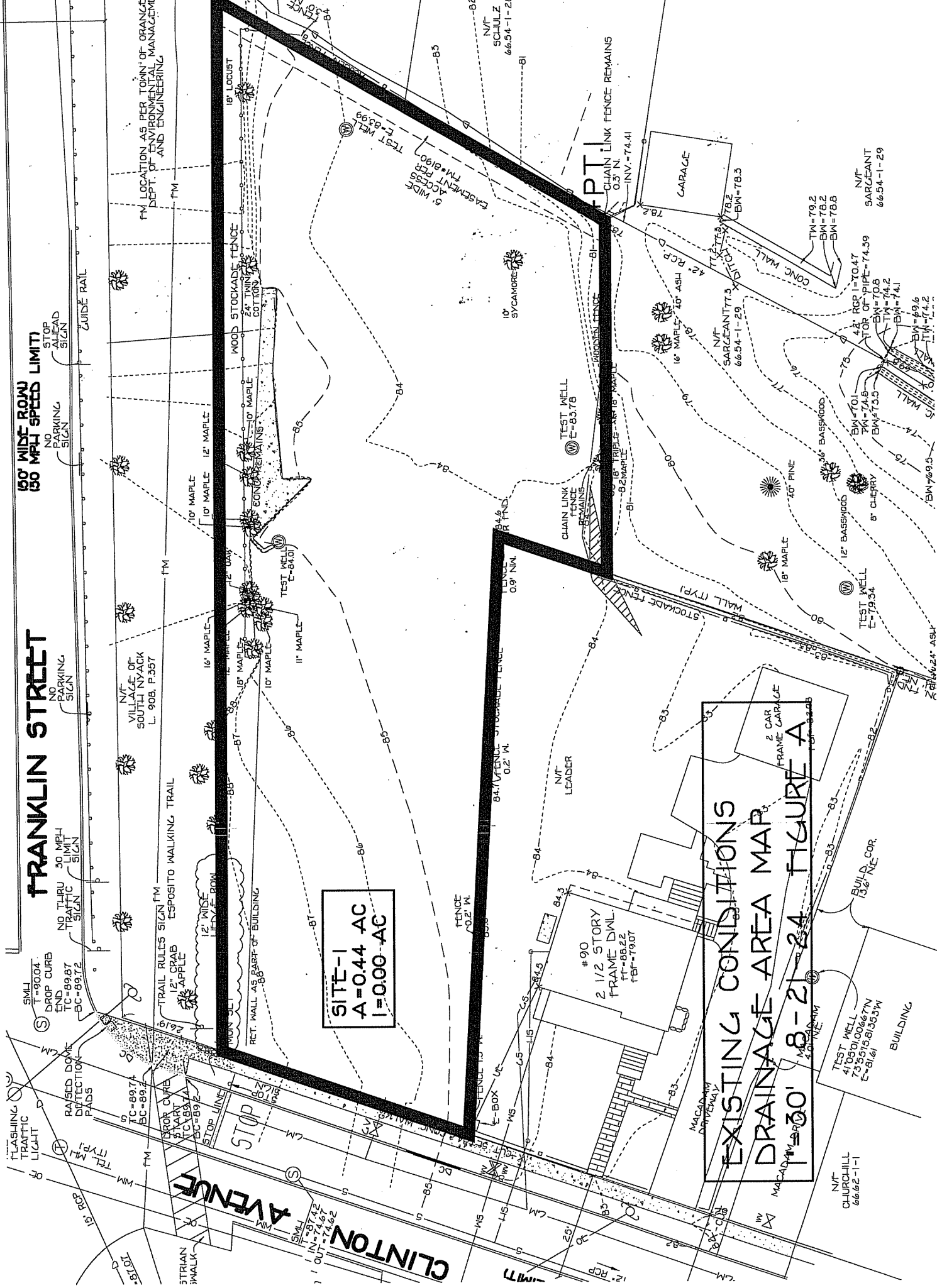
Stormwater Analysis and proposed mitigation:

It is proposed to construct a new 180-foot long, 10-foot wide driveway with turn around area to a proposed two-car garage which will serve a proposed 2-story frame single family residence at the site.

For existing conditions, although this site had previously been developed in the past, we have evaluated this site as if it had been undisturbed for the purposes of this drainage report and to be conservative.

We have reviewed the Rockland County Soil Survey conditions for this area and have determined this site contains Wethersfield Soils (Hydrologic Group Type "C") in the proposed area of work.

We have determined that it is necessary to convey all roof drainage on site and the runoff collected in the proposed driveway on site to a new proposed detention system consisting of 90 LF of 60-inch diameter HDPE with an outlet structure and then discharge via 15-inch diameter pipe to the proposed 42-inch RCP located to the North of the site. The outlet structure will utilize a 2.25-inch orifice and 12-inch diameter overflow riser to route flows draining offsite to less than the existing conditions discharges.



# FRANKLIN STREET

**150' WIDE ROW**  
**150 MPH SPEED LIMIT**

**SITE-1**  
**A=0.44 AC**  
**I=0.00 AC**

**EXISTING CONDITIONS**  
**DRAINAGE AREA MAP**  
**1=30'**  
**8-21-24**  
**FIGURE A**

# CLINTON AVENUE

FM LOCATION AS PER TOWN OF ORANGE  
DEPT. OF ENVIRONMENTAL MANAGEMENT  
AND ENGINEERING

N/V VILLAGE OF SOUTH NYACK  
L. 908, P.357

P.T.I

TRAIL RULES SIGN FM  
ESPOSITO WALKING TRAIL

STOP CURB  
E-ZONE

STOP SIGN

STOP SIGN

N/V LEADER

N/V SYCAMORE

N/V SARGENT

N/V SARGENT

TEST WELL  
E=83.99

TEST WELL  
E=83.78

TEST WELL  
E=84.01

TEST WELL  
E=79.54

TEST WELL  
E=81.61

TEST WELL  
E=81.61

TEST WELL  
E=81.61

IN=74.67  
OUT=74.62

IN=89.74  
OUT=74.67

IN=74.67  
OUT=74.62

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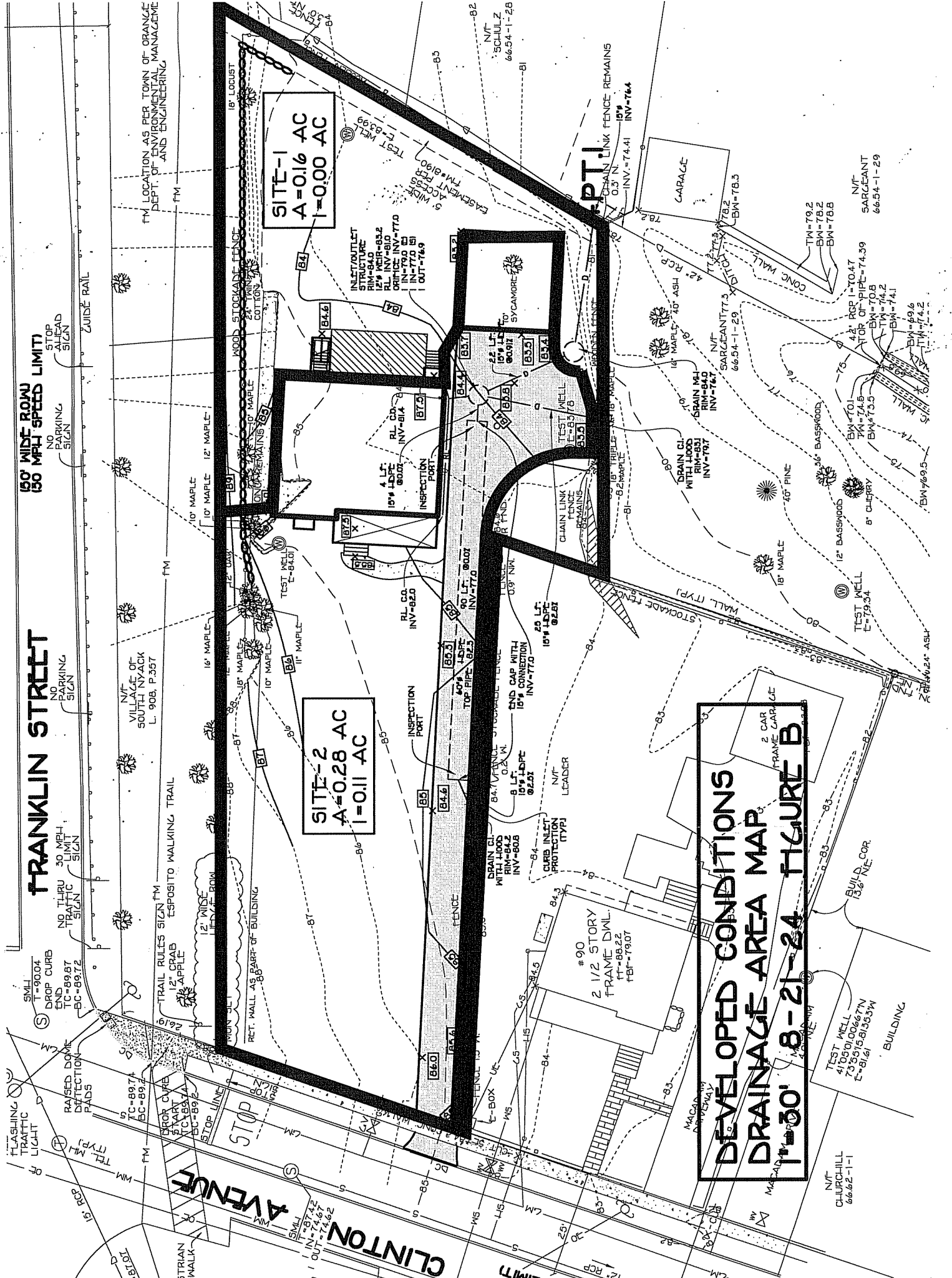
IN=74.67  
OUT=74.62

IN=74.67  
OUT=74.62

IN=74.67  
OUT=74.62

# FRANKLIN STREET

150' WIDE ROW  
150 MPH SPEED LIMIT



**DEVELOPED CONDITIONS  
DRAINAGE AREA MAP  
1"=30' 8-21-24 FIGURE B**

FM LOCATION AS PER TOWN OF ORANGE  
DEPT. OF ENVIRONMENTAL PLANNING  
AND ENGINEERING

TEST MELL  
E=81.61  
IN=74.67  
OUT=74.62

TEST MELL  
E=79.34  
IN=74.39  
OUT=74.2

TEST MELL  
E=81.61  
IN=74.67  
OUT=74.62

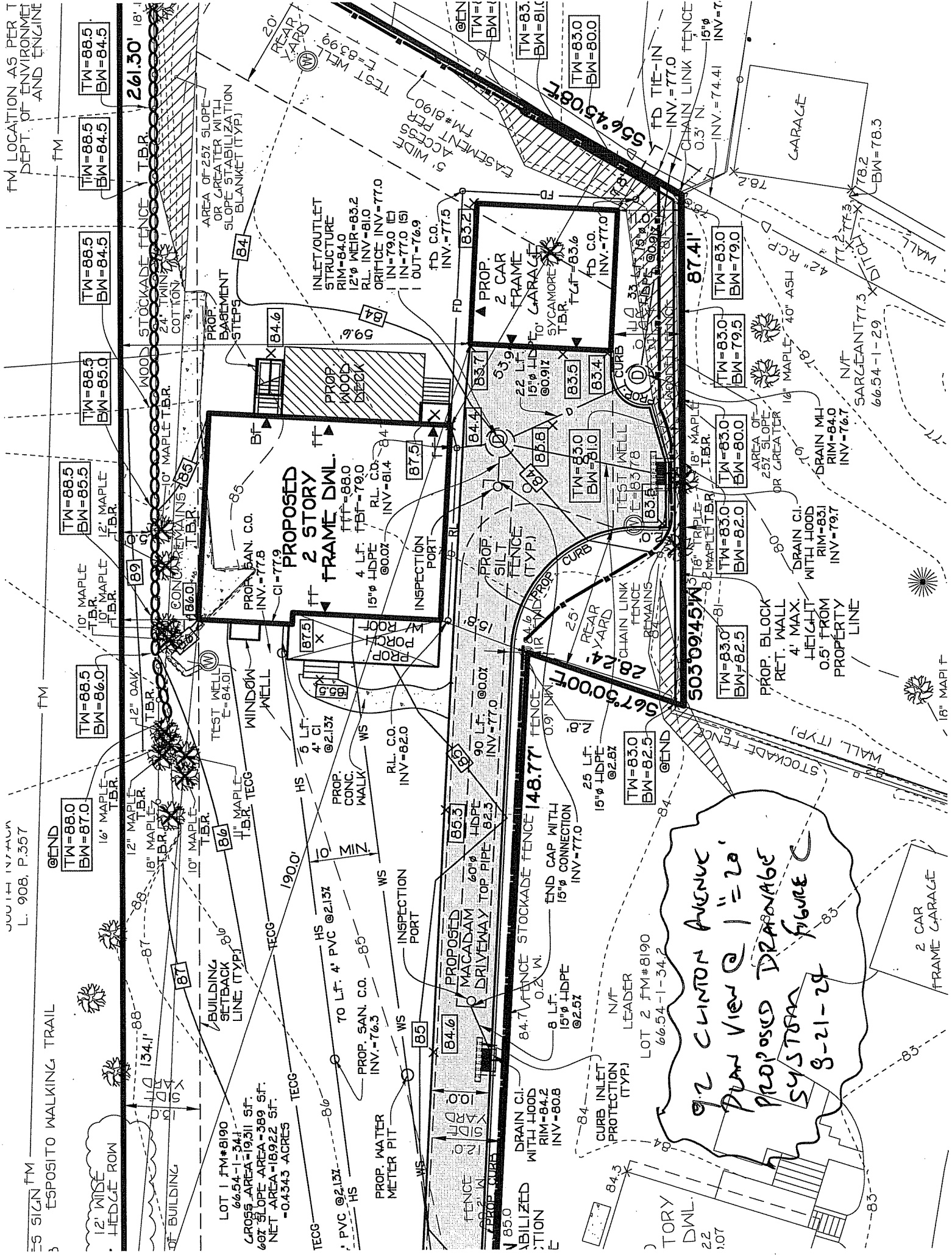
TEST MELL  
E=81.61  
IN=74.67  
OUT=74.62

FM LOCATION AS PER T  
DEPT. OF ENVIRONMENT  
AND ENGINE

JUNITH INTRAM  
L. 908, P.357

ESPOSITO WALKING TRAIL  
12' WIDE  
HEDGE ROW  
OF BUILDING

LOT 1 FM#8190  
66.54-1-34.1  
GROSS AREA=19,311 SF.  
60% SLOPE AREA=389 SF.  
NET AREA=18,922 SF.  
-0.4343 ACRES



912 CLINTON AVENUE  
PLAN VIEW @ 1"=20'  
PROPOSED DRAINAGE  
SYSTEM  
8-21-29  
2 CAR  
FRAME GARAGE

LOT 2 FM#8190  
66.54-1-34.2

5030945 W

5673000 FT

2874

5030945 W

5673000 FT

2874

5030945 W

5673000 FT

2874

5030945 W

5673000 FT

2874

5030945 W

5673000 FT

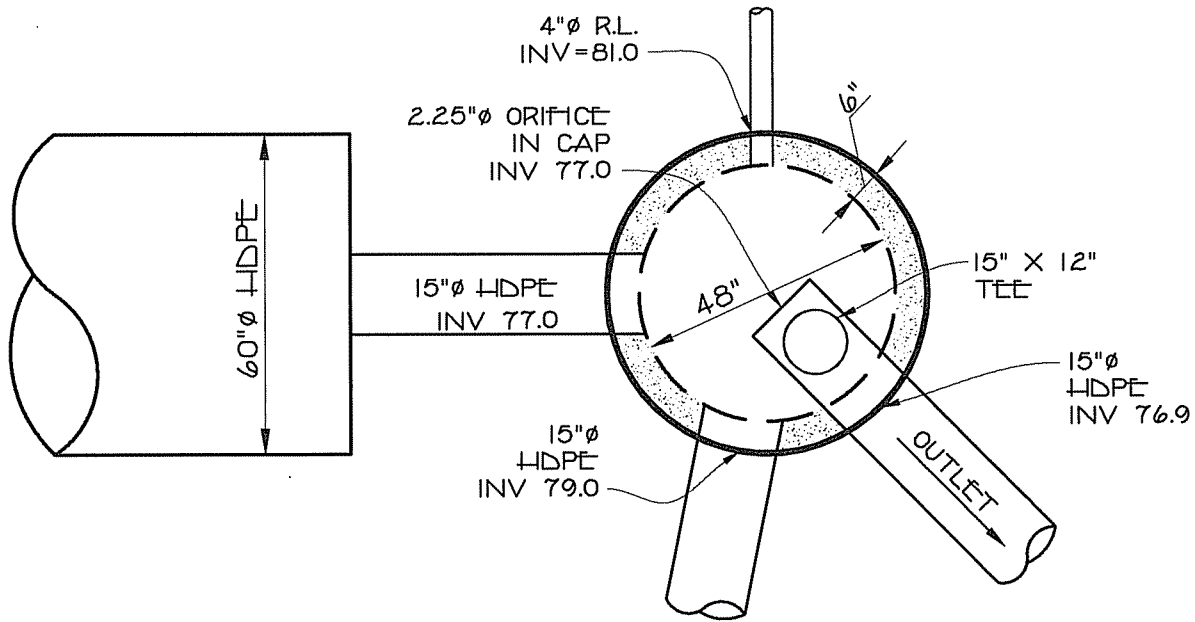
2874

5030945 W

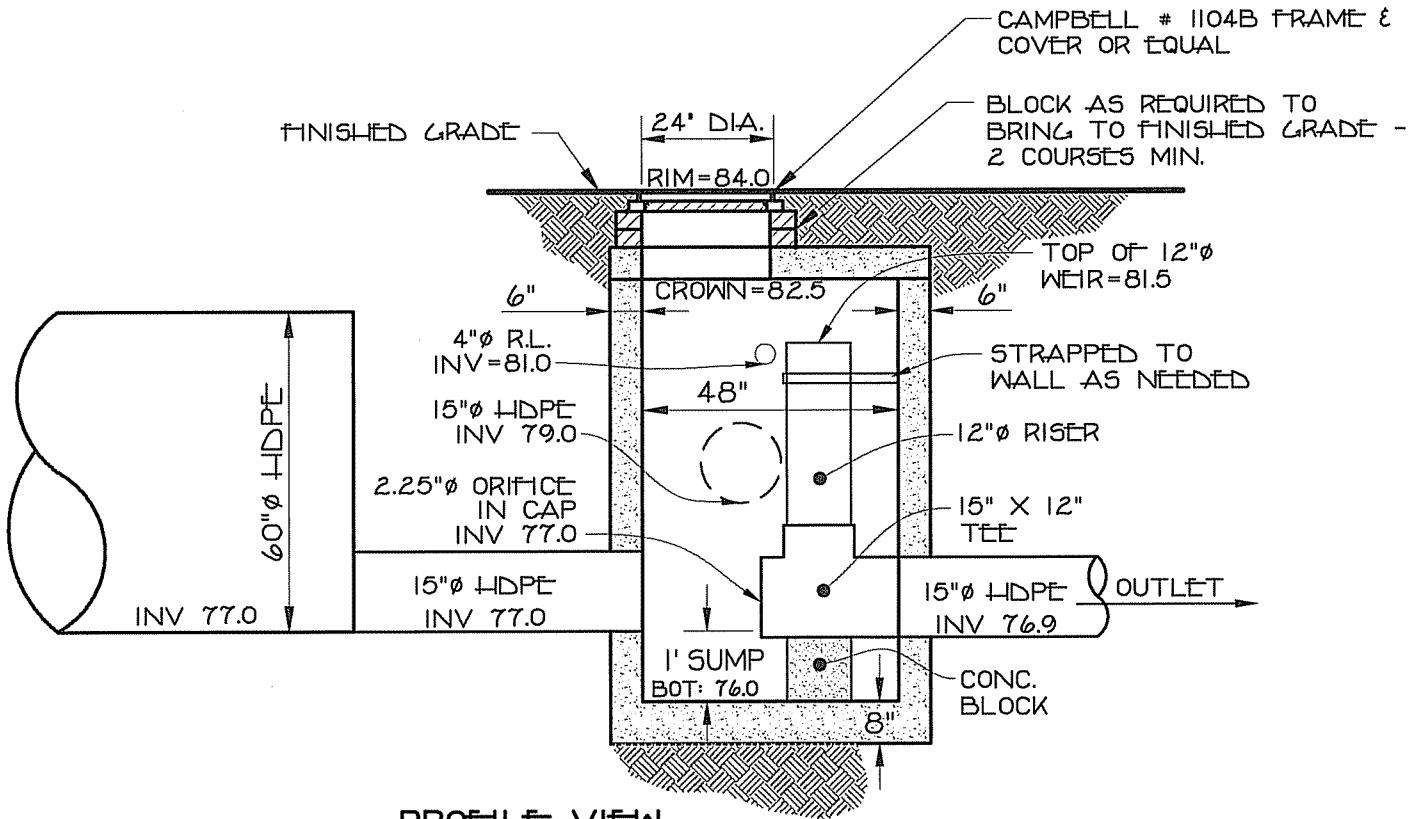
5673000 FT

2874





PLAN VIEW



PROFILE VIEW

**INLET / OUTLET STRUCTURE**

N.T.S

FIGURE D

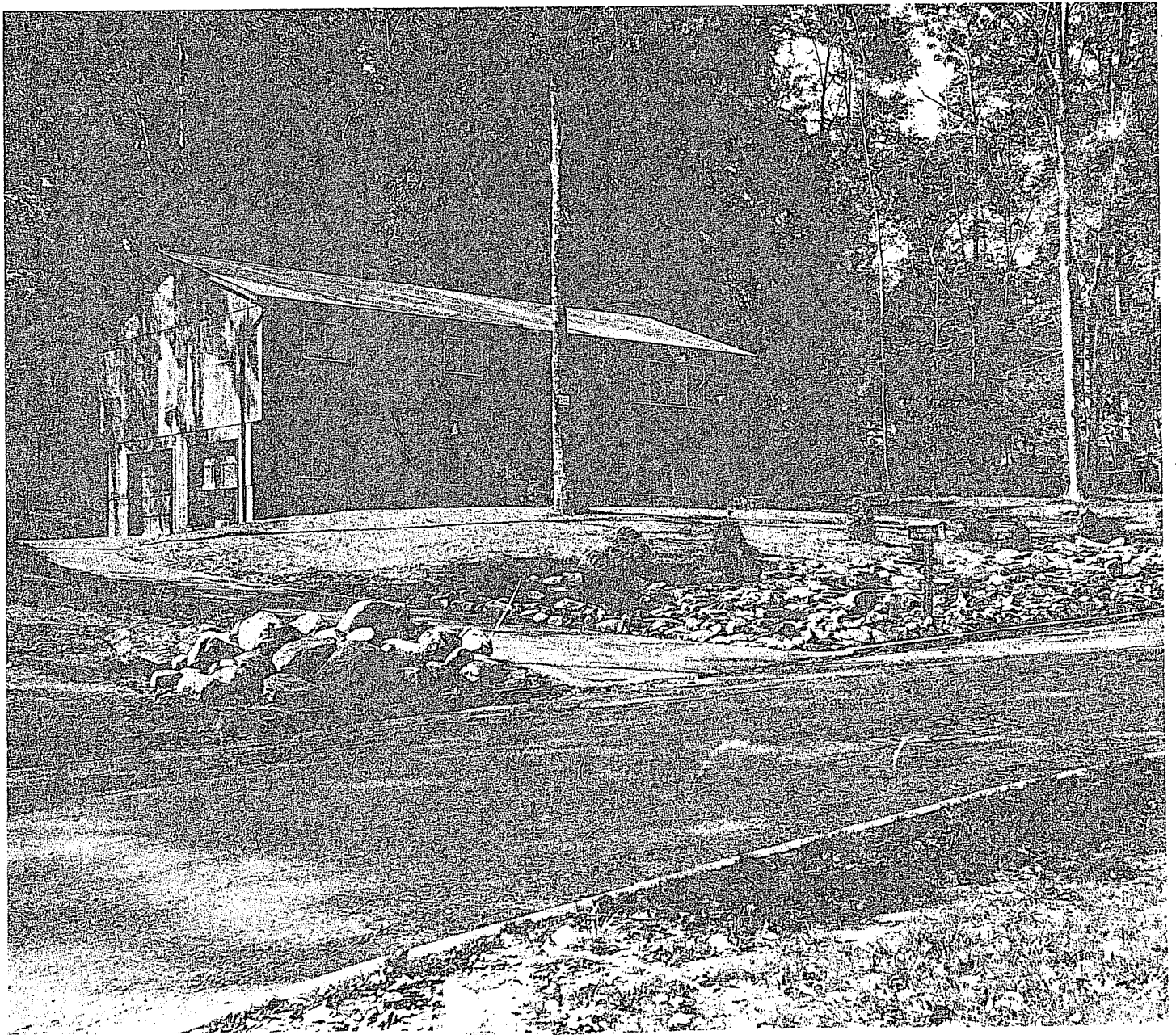
United States  
Department of  
Agriculture

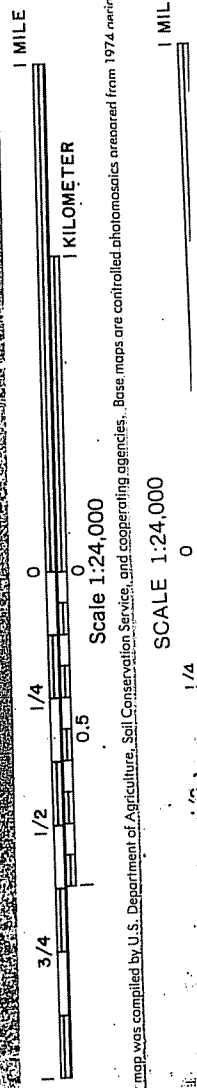
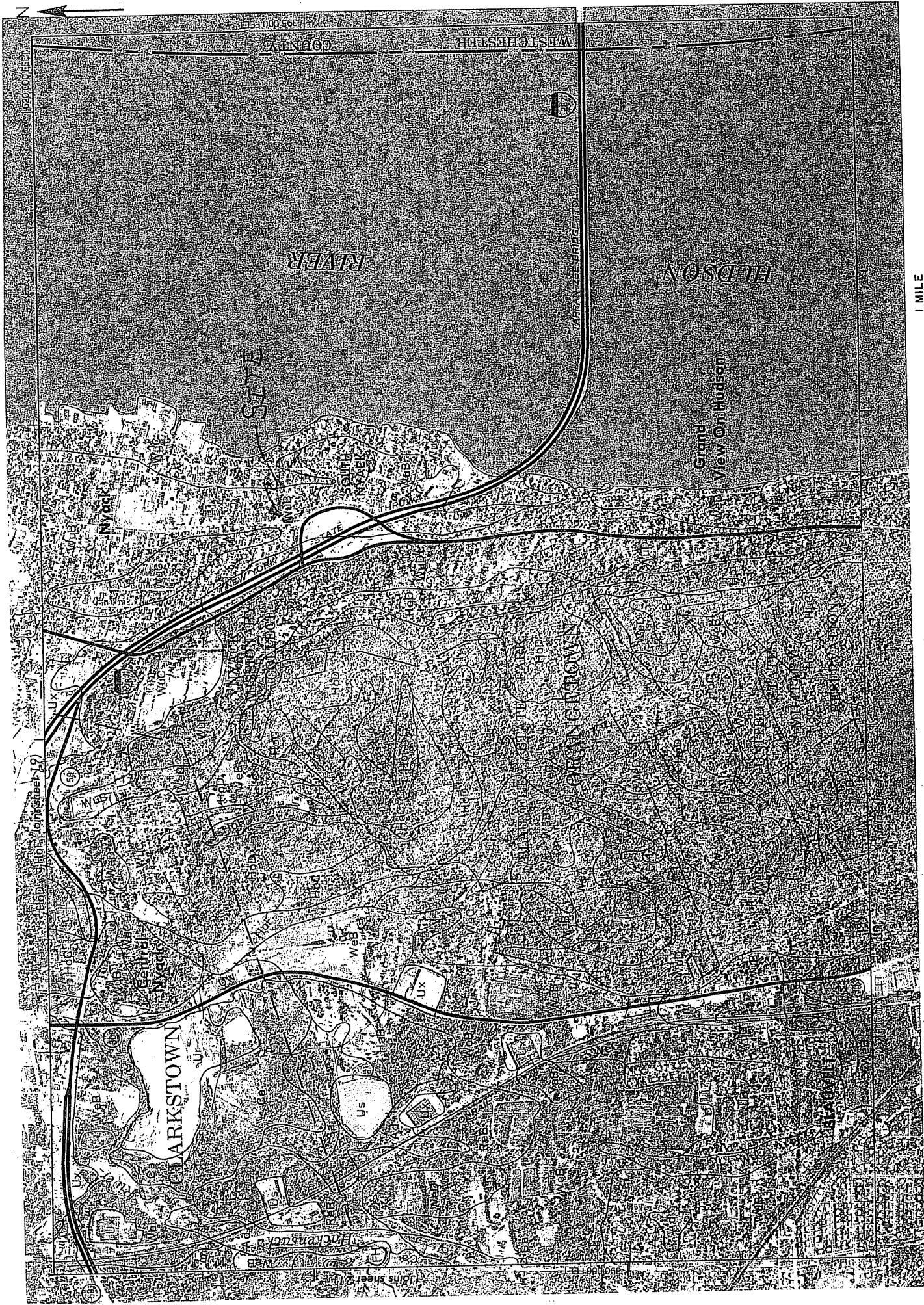
Soil  
Conservation  
Service

In cooperation with  
Cornell University  
Agricultural Experiment  
Station

# Soil Survey of Rockland County, New York

4B-2725  
92 Clinton Ave.  
South Nyack, NY  
10960





This soil survey map was compiled by U.S. Department of Agriculture, Soil Conservation Service, and cooperating agencies. Base maps are controlled photomosaics arranged from 1974 period.

Scale 1:24,000  
SCALE 1:24,000  
1 MILE

TABLE 19.---SOIL AND WATER FEATURES---Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Risk of corrosion		
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Potential frost action	Uncoated steel	Concrete
Pl*, Pv*, Pits					<u>Ft</u>			<u>In</u>				
Ra, Rippowam	C	Frequent	Brief	Oct-May	0-1.5	Apparent	Sep-Jun	>60	---	High	High	High.
ReA, ReB, ReC, Red, Riverhead	B	None	---	---	>6.0	---	---	>60	---	Moderate	Low	High.
RuB*, RuC*, RuD*, Riverhead	B	None	---	---	>6.0	---	---	>60	---	Moderate	Low	High.
Urban land.												
Sa, Sloan	B/D	Occasional	Brief	Nov-Jun	0-1.0	Apparent	Nov-Jun	>60	---	High	High	Low.
Ur*, Us, Uw, Uorthents												
Ux*, Urban land												
Wa, Wallington	C	None	---	---	0.5-1.5	Perched	Jan-Apr	>60	---	High	High	Moderate.
Wc, Watchaug	B	None	---	---	1.5-2.5	Apparent	Nov-Apr	>60	---	High	Low	High.
WeA, WeB, WeC, WeD, Wethersfield	C	None	---	---	1.5-2.5	Perched	Feb-Apr	>60	---	Moderate	Low	Moderate.
WuB*, WuC*, WuD*, Wethersfield	C	None	---	---	1.5-2.5	Perched	Feb-Apr	>60	---	Moderate	Low	Moderate.
Urban land.												
YaB, YaC, YaD, Yalesville	C	None	---	---	>6.0	---	---	20-40	Hard	Low	Low	Moderate.
YuB*, YuC*, YuD*, Yalesville	C	None	---	---	>6.0	---	---	20-40	Hard	Low	Low	Moderate.
Urban land.												

\* See description of the map unit for composition and behavior characteristics of the map unit.

**SPARACO & YOUNGBLOOD, PLLC**  
 18 NORTH MAIN STREET  
 HARRIMAN, NY 10926  
 845-782-8543

**Worksheet 2: Runoff Curve Number and Runoff**

Project: 92 Clinton YB#2725

By: SMS

Date: 7-Aug-24

Location: 92 Clinton St., South Nyack

Checked:

Date:

Shade one:  Existing  Developed

CN for Sub-basin: Site-1

**1. Runoff Curve Number (CN)**

Soil name and hydrologic group (appendix A)	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected / connected impervious area ratio)	CN			Area ■ acres □ mi <sup>2</sup> □ %	Product of CN X AREA
		Table 2-2	Figure 2.3	Figure 2.4		
B	Woods - Good Condition	55			0	0
B	Lawn / Open Space - Good Condition	61			0	0
C	Woods - Good Condition	70			0.44	30.8
C	Lawn / Open Space - Good Condition	74			0	0
D	Woods - Good Condition	77			0	0
D	Lawn / Open Space - Good Condition	80			0	0
	Impervious Surfaces	98			0.00	0
Totals =					0.44	30.8

CN (weighted) =  $\frac{\text{total product}}{\text{total area}} = \frac{30.8}{0.44} = 70$

Use CN = 70

**2. Runoff**

Frequency..... yr.  
 Rainfall, P (24 - hour) ..... in.  
 Runoff, Q ..... in.

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm # 1	Storm # 2	Storm # 3

**SPARACO & YOUNGBLOOD, PLLC**

18 NORTH MAIN STREET  
HARRIMAN, NY 10926  
845-782-8543

**Worksheet 2: Runoff Curve Number and Runoff**

Project: 92 Clinton YB#2725

By: SMS

Date: 7-Aug-17

Location: 92 Clinton St., South Nyack

Checked:

Date:

Shade one: Existing  Developed

CN for Sub-basin: Site-1

**1. Runoff Curve Number (CN)**

Soil name and hydrologic group (appendix A)	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected / connected impervious area ratio)	CN			Area ■ acres □ mi <sup>2</sup> □ %	Product of CN X AREA
		Table 2-2	Figure 2.3	Figure 2.4		
B	Woods - Good Condition	55			0	0
B	Lawn / Open Space - Good Condition	61			0	0
C	Woods - Good Condition	70			0	0
C	Lawn / Open Space - Good Condition	74			0.16	11.84
D	Woods - Good Condition	77			0	0
D	Lawn / Open Space - Good Condition	80			0	0
	Impervious Surfaces	98			0.00	0
Totals =					0.16	11.84

CN (weighted) =  $\frac{\text{total product}}{\text{total area}} = \frac{11.84}{0.16} = 74$

Use CN = 74

**2. Runoff**

Frequency..... yr.  
Rainfall, P (24 - hour) ..... in.  
Runoff, Q ..... in.

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm # 1	Storm # 2	Storm # 3

**SPARACO & YOUNGBLOOD, PLLC**

18 NORTH MAIN STREET  
HARRIMAN, NY 10926  
845-782-8543

**Worksheet 2: Runoff Curve Number and Runoff**

Project: 92 Clinton YB#2725

By: SMS

Date: 7-Aug-24

Location: 92 Clinton St., South Nyack

Checked:

Date:

Shade one: Existing  Developed

CN for Sub-basin: Site-2

**1. Runoff Curve Number (CN)**

Soil name and hydrologic group (appendix A)	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected / connected impervious area ratio)	CN			Area <input type="checkbox"/> acres <input type="checkbox"/> mi <sup>2</sup> <input type="checkbox"/> %	Product of CN X AREA
		Table 2-2	Figure 2.3	Figure 2.4		
B	Woods - Good Condition	55			0	0
B	Lawn / Open Space - Good Condition	61			0	0
C	Woods - Good Condition	70			0	0
C	Lawn / Open Space - Good Condition	74			0.17	12.58
D	Woods - Good Condition	77			0	0
D	Lawn / Open Space - Good Condition	80			0	0
	Impervious Surfaces	98			0.11	10.78
Totals =					0.28	23.36

CN (weighted) =  $\frac{\text{total product}}{\text{total area}} = \frac{23.36}{0.28} = 83.42857143$

Use CN = **83**

**2. Runoff**

Frequency..... yr.  
Rainfall, P (24 - hour) ..... in.  
Runoff, Q ..... in.

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm # 1	Storm # 2	Storm # 3

**SPARACO & YOUNGBLOOD, PLLC**  
 18 North Main Street, PO Box #818  
 Harriman, NY 10926  
 845-782-8543

**Pipe Storage versus Elevation**

**Input:**

Description Proposed Pipe Area Equation when not full:  
 Detention structure for 92 Clinton YB# 2725  $\phi = \text{ARCCOS}((r-d)/r)$   
 HEC-1: Route Where:

*Basic Pipe Information (larger)*

- 1. Pipe Size 60.00 Inches
- 2. Pipe Length 90.00 feet

*Basic Pipe Information (smaller)*

- 1. Pipe Size inches
- 2. Pipe Length feet

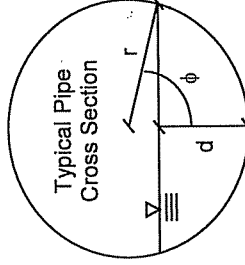
*Storage Information*

- 3. Invert of pipe 77.00 feet

$A = (\phi \times r^2) - ((r-d) \times ((r^2) - (r-d)^2)^{1/2})$

Where:

- $\phi$  = angle (radians)
- r = radius (ft)
- d = depth of water in pipe



**Output:**

Field	1	2	3	4	5
SV (acre-ft)	0.0079	0.0118	0.0203	0.0287	0.0406
SV (gallons)	2584.2	3857.0	6609.1	9361.3	13218.3
SE (ft)	78.25	78.67	79.50	80.33	82.00



**Hec-1 Analyses:**

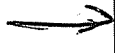
- 1.) *Cornell University 24-hour Precipitation Reference*
- 2.) *Existing Conditions Hec-1 Model*
- 3.) *Developed Conditions Hec-1 Model*

# Extreme Precipitation Tables

## Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point	
Smoothing	Yes
State	
Location	41.084 degrees North
Latitude	73.921 degrees West
Longitude	20 feet
Elevation	Wed Aug 07 2024 14:39:50 GMT-0400 (Eastern Daylight Time)
Date/Time	



### Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min	1hr	2hr	3hr	6hr	12hr	24hr	48hr	1day	2day
1yr	0.33	0.51	0.63	0.83	1.03	1.29	0.89	1.24	1.48	1.83	2.26	2.79	3.19	2.47	3.06
2yr	0.40	0.62	0.77	1.01	1.27	1.59	1.10	1.49	1.83	2.26	2.78	3.41	3.84	3.02	3.65
5yr	0.47	0.73	0.91	1.22	1.56	1.98	1.35	1.84	2.28	2.83	3.49	4.28	4.87	3.79	4.68
10yr	0.52	0.82	1.04	1.41	1.83	2.34	1.58	2.15	2.71	3.37	4.15	5.08	5.83	4.50	5.60
25yr	0.61	0.97	1.23	1.70	2.27	2.92	1.96	2.67	3.40	4.25	5.24	6.40	7.40	5.66	7.12
50yr	0.69	1.10	1.42	1.98	2.66	3.46	2.30	3.13	4.04	5.06	6.24	7.61	8.87	6.74	8.52
100yr	0.78	1.26	1.62	2.30	3.14	4.11	2.71	3.69	4.81	6.03	7.43	9.07	10.64	8.02	10.2
200yr	0.88	1.44	1.86	2.67	3.69	4.87	3.19	4.34	5.72	7.19	8.87	10.81	12.77	9.57	12.2
500yr	1.05	1.73	2.26	3.28	4.59	6.10	3.96	5.38	7.19	9.06	11.20	13.65	16.26	12.08	15.6

### Lower Confidence Limits

	5min	10min	15min	30min	60min	120min	1hr	2hr	3hr	6hr	12hr	24hr	48hr	1day	2day
1yr	0.28	0.43	0.53	0.71	0.87	1.14	0.75	1.12	1.27	1.67	2.13	2.33	2.90	2.07	2.75

```

1*****
*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
*
* MAY 1991 *
*
* VERSION 4.0.1U *
*
* Lahey F77L-EM/32 version 5.01 *
*
* Dodson & Associates, Inc. *
*
* RUN DATE 08/07/24 TIME 14:44:13 *
*
*****
*****

```

```

*
* U.S. ARMY CORPS OF ENGINEERS
*
* HYDROLOGIC ENGINEERING CENTER
*
* 609 SECOND STREET
*
* DAVIS, CALIFORNIA 95616
*
* (916) 551-1748
*

```

**92 CLINTON AVENUE #YB-2725: EXISTING CONDITIONS HEC-1 ANALYSIS**

```

X X XXXXXXX XXXXX X
X X X X X XX
X X X X X X
XXXXXXX XXXX X XXXXX X
X X X X X X
X X X X X X
X X XXXXXXX XXXXX XXX

```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY, DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1

HEC-1 INPUT

PAGE 1

```

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
1 ID -----input file:EX.ih1-----
2 ID
3 ID HYDROLOGY FOR: 92 CLINTON AVENUE YB-2725
4 ID TOWN OF RAMAPO, ROCKLAND COUNT
5 ID DATE: 8-7-24
6 ID
7 ID ANALYSIS PREPARED BY: SPARACO.& YOUNGBLOOD, PLLC
8 ID
9 ID ANALYSIS PARAMETERS:
10 ID EXISTING CONDITIONS RUN
11 ID STORM RECURRENCE INTERVALS = 1, 2, 5, 10, 25 & 100 YEAR
12 ID HYDROGRAPH METHOD: SCS
13 ID RAINFALL DISTRIBUTION: SCS TYPE III
14 ID
15 ID 24 HOUR RAINFALL DATA:
16 ID 1 YEAR: 2.79 INCHES
17 ID 2 YEAR: 3.41 INCHES
18 ID 5 YEAR: 4.28 INCHES
19 ID 10 YEAR: 5.08 INCHES
20 ID 25 YEAR: 6.40 INCHES
21 ID 100 YEAR: 9.07 INCHES
22 ID
23 ID
24 ID *DIAGRAM
IT 6 0 0 300
25 IO 3 0
26 JR PREC 2.79 3.41 4.28 5.08 6.4 9.07
27 KK SITE-1SITE RUNOFF TOWARD POINT#1
28 KM
29 KM *****
30 KM * DRAINAGE AREA = 0.44 AC = 0.0007 SQ. MI. CN=70 *
31 KM * TIME OF CONCENTRATION = 10.0 MIN = 0.167 HR x 0.6 (SCS LAG) = 0.10 *
32 KM *****
33 KM
34 BA 0.0007
35 PB 1
36 IN 6
37 PC 0 0.001 0.002 0.003 0.004 0.005 0.006 0.007 0.008 0.009
38 PC 0.010 0.011 0.012 0.013 0.014 0.015 0.016 0.017 0.018 0.019
39 PC 0.020 0.021 0.022 0.023 0.024 0.026 0.027 0.028 0.029 0.030
40 PC 0.0305 0.031 0.032 0.034 0.035 0.036 0.037 0.038 0.040 0.041
41 PC 0.042 0.043 0.045 0.046 0.047 0.049 0.050 0.051 0.053 0.054
42 PC 0.055 0.057 0.058 0.060 0.061 0.063 0.064 0.066 0.067 0.069
43 PC 0.070 0.072 0.074 0.075 0.077 0.079 0.080 0.082 0.084 0.085
44 PC 0.087 0.089 0.091 0.093 0.095 0.097 0.100 0.103 0.106 0.109

```

45	PC	0.112	0.115	0.118	0.121	0.124	0.127	0.130	0.134	0.137	0.140
46	PC	0.144	0.148	0.151	0.155	0.159	0.163	0.167	0.171	0.176	0.180
47	PC	0.185	0.189	0.194	0.199	0.205	0.210	0.216	0.222	0.228	0.235
48	PC	0.242	0.250	0.258	0.266	0.276	0.287	0.298	0.312	0.328	0.363
49	PC	0.416	0.500	0.584	0.638	0.673	0.689	0.702	0.714	0.725	0.734
50	PC	0.743	0.751	0.758	0.766	0.772	0.779	0.785	0.790	0.796	0.801
51	PC	0.806	0.811	0.816	0.821	0.825	0.829	0.834	0.838	0.842	0.845
52	PC	0.849	0.853	0.857	0.860	0.864	0.867	0.870	0.874	0.877	0.880
53	PC	0.886	0.889	0.892	0.895	0.898	0.900	0.903	0.906	0.908	0.910

HEC-1 INPUT

PAGE 2

LINE	ID	1	2	3	4	5	6	7	8	9	10
54	PC	0.911	0.913	0.915	0.917	0.919	0.920	0.922	0.924	0.925	0.927
55	PC	0.929	0.930	0.932	0.933	0.935	0.936	0.938	0.939	0.941	0.942
56	PC	0.944	0.945	0.946	0.948	0.949	0.951	0.952	0.953	0.955	0.956
57	PC	0.957	0.958	0.960	0.961	0.962	0.963	0.965	0.966	0.967	0.968
58	PC	0.969	0.971	0.972	0.973	0.974	0.975	0.976	0.977	0.978	0.979
59	PC	0.981	0.982	0.983	0.984	0.985	0.986	0.987	0.988	0.989	0.990
60	PC	0.991	0.992	0.993	0.994	0.995	0.996	0.997	0.998	0.999	1.000
61	LS	1	70	0							
62	UD	0.1									
63	ZZ										

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT LINE (V) ROUTING (--->) DIVERSION OR PUMP FLOW  
 NO. (.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW  
 27 SITE-1

(\*\*\*) RUNOFF ALSO COMPUTED AT THIS LOCATION

\*\*\*\*\*  
 \*  
 \* FLOOD HYDROGRAPH PACKAGE (HEC-1) \*  
 \* MAY 1991 \*  
 \* VERSION 4.0.1U \*  
 \* Lahey F77L-EM/32 version 5.01 \*  
 \* Dodson & Associates, Inc. \*  
 \* RUN DATE 08/07/24 TIME 14:44:13 \*  
 \*\*\*\*\*

\*  
 \* U.S. ARMY CORPS OF ENGINEERS \*  
 \* HYDROLOGIC ENGINEERING CENTER \*  
 \* 609 SECOND STREET \*  
 \* DAVIS, CALIFORNIA 95616 \*  
 \* (916) 551-1748 \*  
 \*

-----input file:EX.ih1-----

HYDROLOGY FOR: 92 CLINTON AVENUE YB-2725  
 TOWN OF RAMAPO, ROCKLAND COUNT  
 DATE: 8-7-24

ANALYSIS PREPARED BY: SPARACO & YOUNGBLOOD, PLLC

ANALYSIS PARAMETERS:  
 EXISTING CONDITIONS RUN  
 STORM RECURRENCE INTERVALS = 1, 2, 5, 10, 25 & 100 YEAR  
 HYDROGRAPH METHOD: SCS  
 RAINFALL DISTRIBUTION: SCS TYPE III

24 HOUR RAINFALL DATA:  
 1 YEAR: 2.79 INCHES  
 2 YEAR: 3.41 INCHES  
 5 YEAR: 4.28 INCHES  
 10 YEAR: 5.08 INCHES  
 25 YEAR: 6.40 INCHES  
 100 YEAR: 9.07 INCHES

25 IO OUTPUT CONTROL VARIABLES  
 IPRNT 3 PRINT CONTROL  
 IPLOT 0 PLOT CONTROL  
 QSCAL 0. HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA  
 NMIN 6 MINUTES IN COMPUTATION INTERVAL  
 IDATE 1 0 STARTING DATE  
 ITIME 0000 STARTING TIME  
 NQ 300 NUMBER OF HYDROGRAPH ORDINATES  
 NDDATE 2 0 ENDING DATE  
 NDTIME 0554 ENDING TIME  
 ICENT 19 CENTURY MARK

COMPUTATION INTERVAL 0.10 HOURS

TOTAL TIME BASE 29.90 HOURS

ENGLISH UNITS

DRAINAGE AREA SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION FEET
FLOW CUBIC FEET PER SECOND
STORAGE VOLUME ACRE-Feet
SURFACE AREA ACRES
TEMPERATURE DEGREES FAHRENHEIT

JP MULTI-PLAN OPTION
NPLAN 1 NUMBER OF PLANS

JR MULTI-RATIO OPTION
RATIOS OF PRECIPITATION
2.79 3.41 4.28 5.08 6.40 9.07

\*\*\* \*\*

\*\*\*\*\*
\* \*
27 KK \* SITE-1 \* SITE RUNOFF TOWARD POINT#1
\* \*
\*\*\*\*\*

\*\*\*\*\*
\* DRAINAGE AREA = 0.44 AC = 0.0007 SQ. MI. CN=70 \*
\* TIME OF CONCENTRATION = 10.0 MIN = 0.167 HR x 0.6 (SCS LAG) = 0.10 \*
\*\*\*\*\*

36 IN TIME DATA FOR INPUT TIME SERIES
JXMIN 6 TIME INTERVAL IN MINUTES
JXDATE 1 0 STARTING DATE
JXTIME 0 STARTING TIME

SUBBASIN RUNOFF DATA

34 BA SUBBASIN CHARACTERISTICS
TAREA 0.00 SUBBASIN AREA

PRECIPITATION DATA

35 PB STORM 1.00 BASIN TOTAL PRECIPITATION

37 PI INCREMENTAL PRECIPITATION PATTERN
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.01 0.00 0.01 0.00 0.01 0.01 0.01 0.01 0.01
0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.02 0.03
0.08 0.08 0.05 0.03 0.02 0.01 0.01 0.01 0.01 0.01
0.01 0.01 0.01 0.01 0.01 0.01 0.00 0.01 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

61 LS SCS LOSS RATE
STRTL 1.00 INITIAL ABSTRACTION
CRVNBR 70.00 CURVE NUMBER
RTIMP 0.00 PERCENT IMPERVIOUS AREA

62 UD SCS DIMENSIONLESS UNITGRAPH
TLAG 0.10 LAG

\*\*\*

UNIT HYDROGRAPH
7 END-OF-PERIOD ORDINATES
2. 2. 1. 0. 0. 0. 0.

TOTAL RAINFALL = 1.00, TOTAL LOSS = 1.00, TOTAL EXCESS = 0.00

PEAK FLOW TIME MAXIMUM AVERAGE FLOW
+ (CFS) (HR) 6-HR 24-HR 72-HR 29.90-HR

		(CFS)	0.	0.	0.	0.
+	0.	0.10	(INCHES) 0.000	0.000	0.000	0.000
			(AC-FT) 0.	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

\*\*\*                    \*\*\*                    \*\*\*                    \*\*\*                    \*\*\*

HYDROGRAPH AT STATION SITE-1  
FOR PLAN 1, RATIO = 2.79

TOTAL RAINFALL =		2.79,	TOTAL LOSS =	2.26,	TOTAL EXCESS =	0.53
PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW	24-HR	72-HR
+	(CFS)	(HR)				29.90-HR
+	0.	12.30	(CFS)	0.	0.	0.
			(INCHES)	0.426	0.527	0.527
			(AC-FT)	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

\*\*\*                    \*\*\*                    \*\*\*                    \*\*\*                    \*\*\*

HYDROGRAPH AT STATION SITE-1  
FOR PLAN 1, RATIO = 3.41

TOTAL RAINFALL =		3.41,	TOTAL LOSS =	2.54,	TOTAL EXCESS =	0.87
PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW	24-HR	72-HR
+	(CFS)	(HR)				29.90-HR
+	0.	12.30	(CFS)	0.	0.	0.
			(INCHES)	0.716	0.867	0.867
			(AC-FT)	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

\*\*\*                    \*\*\*                    \*\*\*                    \*\*\*                    \*\*\*

HYDROGRAPH AT STATION SITE-1  
FOR PLAN 1, RATIO = 4.28

TOTAL RAINFALL =		4.28,	TOTAL LOSS =	2.86,	TOTAL EXCESS =	1.42
PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW	24-HR	72-HR
+	(CFS)	(HR)				29.90-HR
+	1.	12.30	(CFS)	0.	0.	0.
			(INCHES)	1.183	1.422	1.422
			(AC-FT)	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

\*\*\*                    \*\*\*                    \*\*\*                    \*\*\*                    \*\*\*

HYDROGRAPH AT STATION SITE-1  
FOR PLAN 1, RATIO = 5.08

TOTAL RAINFALL =		5.08,	TOTAL LOSS =	3.09,	TOTAL EXCESS =	1.99
PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW	24-HR	72-HR
+	(CFS)	(HR)				29.90-HR
+	1.	12.30	(CFS)	0.	0.	0.
			(INCHES)	1.657	1.990	1.990
			(AC-FT)	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

\*\*\*                    \*\*\*                    \*\*\*                    \*\*\*                    \*\*\*

HYDROGRAPH AT STATION SITE-1  
FOR PLAN 1, RATIO = 6.40

TOTAL RAINFALL =		6.40,	TOTAL LOSS =	3.39,	TOTAL EXCESS =	3.01
PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW	24-HR	72-HR
+	(CFS)	(HR)				29.90-HR
+	1.	12.30	(CFS)	0.	0.	0.
			(INCHES)	2.499	3.011	3.011
			(AC-FT)	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

\*\*\* \*\*

HYDROGRAPH AT STATION SITE-1  
FOR PLAN 1, RATIO = 9.07

TOTAL RAINFALL = 9.07, TOTAL LOSS = 3.80, TOTAL EXCESS = 5.27

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	29.90-HR	
2.	12.20	0.	0.	0.	0.	
		(INCHES)	4.331	5.271	5.271	5.271
		(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

1

PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS  
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES  
VOLUME IN ACRE-FEET, TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO PRECIPITATION						
				RATIO 1	RATIO 2	RATIO 3	RATIO 4	RATIO 5	RATIO 6	
				2.79	3.41	4.28	5.08	6.40	9.07	
HYDROGRAPH AT	SITE-1	0.001	1	FLOW	0.17	0.32	0.55	0.79	1.19	2.12
				TIME	12.30	12.30	12.30	12.30	12.30	12.20
				VOLUME	0.02	0.03	0.05	0.07	0.11	0.20

\*\*\* NORMAL END OF HEC-1 \*\*\*

```

1*****
*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
*
*     MAY 1991 *
*
*     VERSION 4.0.1U *
*
*     Lahey F77L-EM/32 version 5.01 *
*
*     Dodson & Associates, Inc. *
*
* RUN DATE 08/07/24 TIME 15:11:34 *
*
*****
*****

```

```

*
* U.S. ARMY CORPS OF ENGINEERS
*
* HYDROLOGIC ENGINEERING CENTER
*
* 609 SECOND STREET
*
* DAVIS, CALIFORNIA 95616
*
* (916) 551-1748
*

```

**92 CLINTON AVENUE #YB-2725: DEVELOPED CONDITIONS HEC-1 ANALYSIS**

```

X  X  XXXXXXX  XXXXX  X
X  X  X  X  X  XX
X  X  X  X  X  X
XXXXXXX  XXXX  X  XXXXX  X
X  X  X  X  X  X
X  X  X  X  X  X
X  X  XXXXXXX  XXXXX  -  XXX

```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY, DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1

HEC-1 INPUT

PAGE 1

```

LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
1          ID          ~~~~~input file:DEV.ih1~~~~~
2          ID
3          ID          HYDROLOGY FOR: 92 CLINTON AVENUE YB-2725
4          ID          TOWN OF RAMAPO, ROCKLAND COUNT
5          ID          DATE: 8-7-24
6          ID
7          ID          ANALYSIS PREPARED BY: SPARACO & YOUNGBLOOD, PLLC
8          ID
9          ID          ANALYSIS PARAMETERS:
10         ID          DEVELOPED CONDITIONS RUN
11         ID          STORM RECURRENCE INTERVALS = 1, 2, 5, 10, 25 & 100 YEAR
12         ID          HYDROGRAPH METHOD:          SCS
13         ID          RAINFALL DISTRIBUTION:      SCS TYPE III
14         ID
15         ID          24 HOUR RAINFALL DATA:
16         ID          1 YEAR: 2.79 INCHES
17         ID          2 YEAR: 3.41 INCHES
18         ID          5 YEAR: 4.28 INCHES
19         ID          10 YEAR: 5.08 INCHES
20         ID          25 YEAR: 6.40 INCHES
21         ID          100 YEAR: 9.07 INCHES
22         ID
23         ID
24         ID          *DIAGRAM
25         ID          IT          6          0          0          300
26         ID          IO          3          0
27         ID          JR          PREC          2.79          3.41          4.28          5.08          6.4          9.07
28         ID
29         ID          KK          SITE-1SITE RUNOFF TOWARD POINT#1
30         ID          KM
31         ID          KM          *****
32         ID          KM          * DRAINAGE AREA = 0.16 AC = 0.0003 SQ. MI.          CN=74          *
33         ID          KM          * TIME OF CONCENTRATION = 5.0 MIN = 0.083 HR x 0.6 (SCS LAG) = 0.05          *
34         ID          KM          *****
35         ID          BA          0.0003
36         ID          PB          1
37         ID          IN          6
38         ID          PC          0          0.001          0.002          0.003          0.004          0.005          0.006          0.007          0.008          0.009
39         ID          PC          0.010          0.011          0.012          0.013          0.014          0.015          0.016          0.017          0.018          0.019
40         ID          PC          0.020          0.021          0.022          0.023          0.024          0.026          0.027          0.028          0.029          0.030
41         ID          PC          0.0305          0.031          0.032          0.034          0.035          0.036          0.037          0.038          0.040          0.041
42         ID          PC          0.042          0.043          0.045          0.046          0.047          0.049          0.050          0.051          0.053          0.054
43         ID          PC          0.055          0.057          0.058          0.060          0.061          0.063          0.064          0.066          0.067          0.069
44         ID          PC          0.070          0.072          0.074          0.075          0.077          0.079          0.080          0.082          0.084          0.085
45         ID          PC          0.087          0.089          0.091          0.093          0.095          0.097          0.100          0.103          0.106          0.109

```



45	PC	0.112	0.115	0.118	0.121	0.124	0.127	0.130	0.134	0.137	0.140
46	PC	0.144	0.148	0.151	0.155	0.159	0.163	0.167	0.171	0.176	0.180
47	PC	0.185	0.189	0.194	0.199	0.205	0.210	0.216	0.222	0.228	0.235
48	PC	0.242	0.250	0.258	0.266	0.276	0.287	0.298	0.312	0.328	0.363
49	PC	0.416	0.500	0.584	0.638	0.673	0.689	0.702	0.714	0.725	0.734
50	PC	0.743	0.751	0.758	0.766	0.772	0.779	0.785	0.790	0.796	0.801
51	PC	0.806	0.811	0.816	0.821	0.825	0.829	0.834	0.838	0.842	0.845
52	PC	0.849	0.853	0.857	0.860	0.864	0.867	0.870	0.874	0.877	0.880
53	PC	0.886	0.889	0.892	0.895	0.898	0.900	0.903	0.906	0.908	0.910

HEC-1 INPUT

PAGE 2

1

LINE	ID	1	2	3	4	5	6	7	8	9	10
54	PC	0.911	0.913	0.915	0.917	0.919	0.920	0.922	0.924	0.925	0.927
55	PC	0.929	0.930	0.932	0.933	0.935	0.936	0.938	0.939	0.941	0.942
56	PC	0.944	0.945	0.946	0.948	0.949	0.951	0.952	0.953	0.955	0.956
57	PC	0.957	0.958	0.960	0.961	0.962	0.963	0.965	0.966	0.967	0.968
58	PC	0.969	0.971	0.972	0.973	0.974	0.975	0.976	0.977	0.978	0.979
59	PC	0.981	0.982	0.983	0.984	0.985	0.986	0.987	0.988	0.989	0.990
60	PC	0.991	0.992	0.993	0.994	0.995	0.996	0.997	0.998	0.999	1.000
61	LS	1	74	0							
62	UD	0.05									
63	KK	SITE2DEV. SITE-2 TO UNDERGROUND STORAGE									
64	KM	*****									
65	KM	*****									
66	KM	* DRAINAGE AREA = 0.28 AC = 0.0004 SQ. MI. CN=83 *									
67	KM	* TIME OF CONCENTRATION = 5.0 MIN = 0.083 HR x 0.6 (SCS LAG) = 0.050 *									
68	KM	*****									
69	KM	*****									
70	BA	0.0004									
71	LS	1	83								
72	UD	0.05									
73	KK	ROUTEROUTING IN UNDERGROUND STORAGE SYSTEM									
74	KM	*****									
75	KM	OUTLET STRUCTURE DATA: 90 LF OF 60" DIA. PIPE									
76	KM	*****									
77	KM	* WEIR LENGTH = 3.14' (12" RISER) WEIR OVERFLOW AT EL.: 81.0 *									
78	KM	* 2.25-INCH DIAMETER ORIFICE AT EL. 77.0 *									
79	KM	*****									
80	KM	*****									
81	RS	1	ELEV	77							
82	SV	0	0.0079	0.0118	0.0203	0.0287	0.0406	0.0406			
83	SE	77	78.25	78.67	79.5	80.33	82	84			
84	SL	77.09	0.0276	0.6	0.5						
85	SS	81.5	3.14	3.0	1.5						
86	ST	83.2	10	3.0	1.5						
87	KK	PT.1COMBINE SITE-1 AND ROUTE HYDROGRAPHS									
88	HC	2									
89	ZZ										

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

```

INPUT LINE (V) ROUTING (--->) DIVERSION OR PUMP FLOW
NO. (.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW

27 SITE-1
.
.
63 . SITE2
. V
. V
73 . ROUTE
.
.
87 PT.1.....

```

(\*\*\*) RUNOFF ALSO COMPUTED AT THIS LOCATION

```

*****
*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* MAY 1991 *
* VERSION 4.0.1U *
* Lahey F77L-EM/32 version 5.01 *
* Dodson & Associates, Inc. *
* RUN DATE 08/07/24 TIME 15:11:34 *
*****
*****

```

```

*
* U.S. ARMY CORPS OF ENGINEERS
* HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET
* DAVIS, CALIFORNIA 95616
* (916) 551-1748
*

```

-----input file:DEV.ih1-----

HYDROLOGY FOR: 92 CLINTON AVENUE YB-2725  
 TOWN OF RAMAPO, ROCKLAND COUNT  
 DATE: 8-7-24

ANALYSIS PREPARED BY: SPARACO & YOUNGBLOOD, PLLC

ANALYSIS PARAMETERS:  
 DEVELOPED CONDITIONS RUN  
 STORM RECURRENCE INTERVALS = 1, 2, 5, 10, 25 & 100 YEAR  
 HYDROGRAPH METHOD: SCS  
 RAINFALL DISTRIBUTION: SCS TYPE III

24 HOUR RAINFALL DATA:  
 1 YEAR: 2.79 INCHES  
 2 YEAR: 3.41 INCHES  
 5 YEAR: 4.28 INCHES  
 10 YEAR: 5.08 INCHES  
 25 YEAR: 6.40 INCHES  
 100 YEAR: 9.07 INCHES

25 IO OUTPUT CONTROL VARIABLES  
 IPRNT 3 PRINT CONTROL  
 IPLOT 0 PLOT CONTROL  
 QSCAL 0. HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA  
 NMIN 6 MINUTES IN COMPUTATION INTERVAL  
 IDATE 1 0 STARTING DATE  
 ITIME 0000 STARTING TIME  
 NQ 300 NUMBER OF HYDROGRAPH ORDINATES  
 NDDATE 2 0 ENDING DATE  
 NDTIME 0554 ENDING TIME  
 ICENT 19 CENTURY MARK  
 COMPUTATION INTERVAL 0.10 HOURS  
 TOTAL TIME BASE 29.90 HOURS

ENGLISH UNITS  
 DRAINAGE AREA SQUARE MILES  
 PRECIPITATION DEPTH INCHES  
 LENGTH, ELEVATION FEET  
 FLOW CUBIC FEET PER SECOND  
 STORAGE VOLUME ACRE-FEET  
 SURFACE AREA ACRES  
 TEMPERATURE DEGREES FAHRENHEIT

JP MULTI-PLAN OPTION  
 NPLAN 1 NUMBER OF PLANS

JR MULTI-RATIO OPTION  
 RATIOS OF PRECIPITATION  
 2.79 3.41 4.28 5.08 6.40 9.07

\*\*\* \*\*

27 KK \*\*\*\*\*  
 \* SITE-1 \* SITE RUNOFF TOWARD POINT#1  
 \*\*\*\*\*

\*\*\*\*\*  
 \* DRAINAGE AREA = 0.16 AC = 0.0003 SQ. MI. CN=74 \*  
 \* TIME OF CONCENTRATION = 5.0 MIN = 0.083 HR x 0.6 (SCS LAG) = 0.05 \*  
 \*\*\*\*\*

36 IN TIME DATA FOR INPUT TIME SERIES  
 JXMIN 6 TIME INTERVAL IN MINUTES  
 JXDATE 1 0 STARTING DATE  
 JXTIME 0 STARTING TIME

SUBBASIN RUNOFF DATA

34 BA SUBBASIN CHARACTERISTICS  
 TAREA 0.00 SUBBASIN AREA

PRECIPITATION DATA

35 PB STORM 1.00 BASIN TOTAL PRECIPITATION

37 PI INCREMENTAL PRECIPITATION PATTERN  
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00  
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.05
0.08	0.08	0.05	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

61 LS SCS LOSS RATE  
 STRL 1.00 INITIAL ABSTRACTION  
 CRVNR 74.00 CURVE NUMBER  
 RTIMP 0.00 PERCENT IMPERVIOUS AREA

62 UD SCS DIMENSIONLESS UNITGRAPH  
 TLAG 0.05 LAG

\*\*\*

UNIT HYDROGRAPH  
 5 END-OF-PERIOD ORDINATES

1.	0.	0.	0.	0.	0.	
TOTAL RAINFALL =		1.00,	TOTAL LOSS =	1.00,	TOTAL EXCESS =	0.00
PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	29.90-HR	
+ (CFS)	(HR)	(CFS)				
+ 0.	0.10	0.	0.	0.	0.	
		(INCHES)	0.000	0.000	0.000	0.000
		(AC-FT)	0.	0.	0.	0.
CUMULATIVE AREA =		0.00 SQ MI				

\*\*\*

HYDROGRAPH AT STATION SITE-1  
 FOR PLAN 1, RATIO = 2.79

TOTAL RAINFALL =		2.79,	TOTAL LOSS =	2.19,	TOTAL EXCESS =	0.60
PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	29.90-HR	
+ (CFS)	(HR)	(CFS)				
+ 0.	12.20	0.	0.	0.	0.	
		(INCHES)	0.491	0.604	0.604	0.604
		(AC-FT)	0.	0.	0.	0.
CUMULATIVE AREA =		0.00 SQ MI				

\*\*\*

HYDROGRAPH AT STATION SITE-1  
 FOR PLAN 1, RATIO = 3.41

TOTAL RAINFALL =		3.41,	TOTAL LOSS =	2.43,	TOTAL EXCESS =	0.98
PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	29.90-HR	
+ (CFS)	(HR)	(CFS)				
+ 0.	12.20	0.	0.	0.	0.	
		(INCHES)	0.815	0.981	0.981	0.981
		(AC-FT)	0.	0.	0.	0.
CUMULATIVE AREA =		0.00 SQ MI				

\*\*\*

HYDROGRAPH AT STATION SITE-1  
 FOR PLAN 1, RATIO = 4.28

TOTAL RAINFALL =		4.28,	TOTAL LOSS =	2.70,	TOTAL EXCESS =	1.58
PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	29.90-HR	
+ (CFS)	(HR)	(CFS)				
+ 0.	12.20	0.	0.	0.	0.	
		(INCHES)	1.325	1.584	1.584	1.584

(AC-FT) 0. 0. 0. 0.  
 CUMULATIVE AREA = 0.00 SQ MI

\*\*\* \*\*

HYDROGRAPH AT STATION SITE-1  
 FOR PLAN 1, RATIO = 5.08

TOTAL RAINFALL = 5.08, TOTAL LOSS = 2.89, TOTAL EXCESS = 2.19

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	29.90-HR
0.	12.20	0.	0.	0.	0.
		(INCHES) 1.833	2.192	2.192	2.192
		(AC-FT) 0.	0.	0.	0.
		CUMULATIVE AREA = 0.00 SQ MI			

\*\*\* \*\*

HYDROGRAPH AT STATION SITE-1  
 FOR PLAN 1, RATIO = 6.40

TOTAL RAINFALL = 6.40, TOTAL LOSS = 3.13, TOTAL EXCESS = 3.27

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	29.90-HR
1.	12.20	0.	0.	0.	0.
		(INCHES) 2.727	3.271	3.271	3.271
		(AC-FT) 0.	0.	0.	0.
		CUMULATIVE AREA = 0.00 SQ MI			

\*\*\* \*\*

HYDROGRAPH AT STATION SITE-1  
 FOR PLAN 1, RATIO = 9.07

TOTAL RAINFALL = 9.07, TOTAL LOSS = 3.45, TOTAL EXCESS = 5.62

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	29.90-HR
1.	12.20	0.	0.	0.	0.
		(INCHES) 4.625	5.622	5.622	5.622
		(AC-FT) 0.	0.	0.	0.
		CUMULATIVE AREA = 0.00 SQ MI			

\*\*\* \*\*

\*\*\*\*\*  
 \* \*  
 63 KK \* SITE2 \* DEV. SITE-2 TO UNDERGROUND STORAGE \*  
 \* \*  
 \*\*\*\*\*

\*\*\*\*\*  
 \* DRAINAGE AREA = 0.28 AC = 0.0004 SQ. MI. CN=83 \*  
 \* TIME OF CONCENTRATION = 5.0 MIN = 0.083 HR x 0.6 (SCS LAG) = 0.050 \*  
 \*\*\*\*\*

SUBBASIN RUNOFF DATA

70 BA SUBBASIN CHARACTERISTICS  
 TAREA 0.00 SUBBASIN AREA

PRECIPITATION DATA

35 PB STORM 1.00 BASIN TOTAL PRECIPITATION

37 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.05
0.08	0.08	0.05	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

71 LS SCS LOSS RATE  
 STRTL 1.00 INITIAL ABSTRACTION  
 CRVNR 83.00 CURVE NUMBER  
 RTIMP 0.00 PERCENT IMPERVIOUS AREA

72 UD SCS DIMENSIONLESS UNITGRAPH  
 TLAG 0.05 LAG

\*\*\*

UNIT HYDROGRAPH  
 5 END-OF-PERIOD ORDINATES

2.	1.	0.	0.	0.	
TOTAL RAINFALL =	1.00,	TOTAL LOSS =	1.00,	TOTAL EXCESS =	0.00
PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW		
+ (CFS)	(HR)	6-HR	24-HR	72-HR	29.90-HR
+ 0.	0.10	(CFS)			
		0.	0.	0.	0.
		(INCHES)	0.000	0.000	0.000
		(AC-FT)	0.	0.	0.
		CUMULATIVE AREA =	0.00	SQ MI	

\*\*\*                    \*\*\*                    \*\*\*                    \*\*\*                    \*\*\*

HYDROGRAPH AT STATION SITE2  
 FOR PLAN 1, RATIO = 2.79

TOTAL RAINFALL =	2.79,	TOTAL LOSS =	1.96,	TOTAL EXCESS =	0.83
PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW		
+ (CFS)	(HR)	6-HR	24-HR	72-HR	29.90-HR
+ 0.	12.20	(CFS)			
		0.	0.	0.	0.
		(INCHES)	0.690	0.835	0.835
		(AC-FT)	0.	0.	0.
		CUMULATIVE AREA =	0.00	SQ MI	

\*\*\*                    \*\*\*                    \*\*\*                    \*\*\*                    \*\*\*

HYDROGRAPH AT STATION SITE2  
 FOR PLAN 1, RATIO = 3.41

TOTAL RAINFALL =	3.41,	TOTAL LOSS =	2.11,	TOTAL EXCESS =	1.30
PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW		
+ (CFS)	(HR)	6-HR	24-HR	72-HR	29.90-HR
+ 0.	12.20	(CFS)			
		0.	0.	0.	0.
		(INCHES)	1.098	1.303	1.303
		(AC-FT)	0.	0.	0.
		CUMULATIVE AREA =	0.00	SQ MI	

\*\*\*                    \*\*\*                    \*\*\*                    \*\*\*                    \*\*\*

HYDROGRAPH AT STATION SITE2  
 FOR PLAN 1, RATIO = 4.28

TOTAL RAINFALL =	4.28,	TOTAL LOSS =	2.26,	TOTAL EXCESS =	2.02
PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW		
+ (CFS)	(HR)	6-HR	24-HR	72-HR	29.90-HR
+ 1.	12.20	(CFS)			
		0.	0.	0.	0.
		(INCHES)	1.711	2.019	2.019
		(AC-FT)	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

\*\*\* \*\*

HYDROGRAPH AT STATION SITE2  
FOR PLAN 1, RATIO = 5.08

TOTAL RAINFALL = 5.08, TOTAL LOSS = 2.36, TOTAL EXCESS = 2.72

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	29.90-HR
+	1.	12.20	0.	0.	0.	0.
		(INCHES)	2.296	2.716	2.716	2.716
		(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

\*\*\* \*\*

HYDROGRAPH AT STATION SITE2  
FOR PLAN 1, RATIO = 6.40

TOTAL RAINFALL = 6.40, TOTAL LOSS = 2.48, TOTAL EXCESS = 3.92

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	29.90-HR
+	1.	12.20	0.	0.	0.	0.
		(INCHES)	3.290	3.915	3.915	3.915
		(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

\*\*\* \*\*

HYDROGRAPH AT STATION SITE2  
FOR PLAN 1, RATIO = 9.07

TOTAL RAINFALL = 9.07, TOTAL LOSS = 2.63, TOTAL EXCESS = 6.44

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	29.90-HR
+	2.	12.20	0.	0.	0.	0.
		(INCHES)	5.299	6.436	6.436	6.436
		(AC-FT)	0.	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

\*\*\* \*\*

```

*****
*
* 73 KK ROUTE * ROUTING IN UNDERGROUND STORAGE SYSTEM
*
*****

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OUTLET STRUCTURE DATA: 90 LF OF 60" DIA. PIPE
*****
* WEIR LENGTH = 3.14' (12" RISER) WEIR OVERFLOW AT EL.: 81.0 *
* 2.25-INCH DIAMETER ORIFICE AT EL. 77.0 *
*****

```

HYDROGRAPH ROUTING DATA

81 RS	STORAGE ROUTING							
	NSTPS	1	NUMBER OF SUBREACHES					
	ITYP	ELEV	TYPE OF INITIAL CONDITION					
	RSVRIC	77.00	INITIAL CONDITION					
	X	0.00	WORKING R AND D COEFFICIENT					
82 SV	STORAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83 SE	ELEVATION	77.00	78.25	78.67	79.50	80.33	82.00	84.00
84 SL	LOW-LEVEL OUTLET							
	ELEVL	77.09'	ELEVATION AT CENTER OF OUTLET					
	CAREA	0.03	CROSS-SECTIONAL AREA					
	COQL	0.60	COEFFICIENT					
	EXPL	0.50	EXPONENT OF HEAD					
85 SS	SPILLWAY							

CREL 81.50 SPILLWAY CREST ELEVATION  
 SPWID 3.14 SPILLWAY WIDTH  
 COQW 3.00 WEIR COEFFICIENT  
 EXPW 1.50 EXPONENT OF HEAD

86 ST TOP OF DAM  
 TOPEL 83.20 ELEVATION AT TOP OF DAM  
 DAMWID 10.00 DAM WIDTH  
 COQD 3.00 WEIR COEFFICIENT  
 EXPD 1.50 EXPONENT OF HEAD

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COMPUTED OUTFLOW-ELEVATION DATA

(EXCLUDING FLOW OVER DAM)

OUTFLOW	0.00	0.00	0.04	0.05	0.06	0.07	0.08	0.11	0.15	0.28
ELEVATION	77.00	77.09	77.19	77.22	77.26	77.34	77.47	77.73	78.44	81.50
OUTFLOW	0.32	0.59	1.30	2.69	4.97	8.37	13.11	19.41	27.49	37.58
ELEVATION	81.53	81.60	81.73	81.90	82.13	82.40	82.73	83.10	83.53	84.00

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

(INCLUDING FLOW OVER DAM)

STORAGE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
OUTFLOW	0.00	0.00	0.04	0.05	0.06	0.07	0.08	0.11	0.14	0.15
ELEVATION	77.00	77.09	77.19	77.22	77.26	77.34	77.47	77.73	78.25	78.44
STORAGE	0.01	0.02	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04
OUTFLOW	0.17	0.21	0.24	0.28	0.32	0.59	1.30	2.69	3.62	4.97
ELEVATION	78.67	79.50	80.33	81.50	81.53	81.60	81.73	81.90	82.00	82.13
STORAGE	0.04	0.04	0.04	0.04	0.04					
OUTFLOW	8.37	13.11	19.41	33.07	59.05					
ELEVATION	82.40	82.73	83.10	83.53	84.00					

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HYDROGRAPH AT STATION ROUTE  
 FOR PLAN 1, RATIO = 2.79

PEAK OUTFLOW IS 0. AT TIME 12.50 HOURS

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	29.90-HR
(CFS)	(HR)	(CFS)			
+	0.	12.50	0.	0.	0.
		(INCHES)	0.663	0.803	0.803
		(AC-FT)	0.	0.	0.
PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	29.90-HR
(AC-FT)	(HR)				
+	0.	12.30	0.	0.	0.
PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	29.90-HR
(FEET)	(HR)				
+	77.54	12.50	77.17	77.09	77.07

CUMULATIVE AREA = 0.00 SQ MI

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HYDROGRAPH AT STATION ROUTE  
 FOR PLAN 1, RATIO = 3.41

PEAK OUTFLOW IS 0. AT TIME 12.50 HOURS

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	29.90-HR
(CFS)	(HR)	(CFS)			
+	0.	12.50	0.	0.	0.
		(INCHES)	1.072	1.270	1.270
		(AC-FT)	0.	0.	0.
PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	29.90-HR
(AC-FT)	(HR)				
+	0.	12.40	0.	0.	0.
PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	29.90-HR
(FEET)	(HR)				
+	78.06	12.50	77.29	77.12	77.09

CUMULATIVE AREA = 0.00 SQ MI

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HYDROGRAPH AT STATION      ROUTE  
FOR PLAN 1, RATIO = 4.28

PEAK OUTFLOW IS            0. AT TIME 12.50 HOURS

PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW	24-HR	72-HR	29.90-HR
+ (CFS)	(HR)	(CFS)					
+ 0.	12.50	(INCHES)	0.	0.	0.	0.	0.
		(AC-FT)	1.709	1.994	1.994	1.994	1.994
			0.	0.	0.	0.	0.
PEAK STORAGE	TIME		6-HR	MAXIMUM AVERAGE STORAGE	24-HR	72-HR	29.90-HR
+ (AC-FT)	(HR)						
+ 0.	12.40		0.	0.	0.	0.	0.
PEAK STAGE	TIME		6-HR	MAXIMUM AVERAGE STAGE	24-HR	72-HR	29.90-HR
+ (FEET)	(HR)						
+ 78.75	12.50		77.55	77.19	77.15	77.15	77.15

CUMULATIVE AREA = 0.00 SQ MI

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HYDROGRAPH AT STATION      ROUTE  
FOR PLAN 1, RATIO = 5.08

PEAK OUTFLOW IS            0. AT TIME 12.50 HOURS

PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW	24-HR	72-HR	29.90-HR
+ (CFS)	(HR)	(CFS)					
+ 0.	12.50	(INCHES)	0.	0.	0.	0.	0.
		(AC-FT)	2.296	2.690	2.690	2.690	2.690
			0.	0.	0.	0.	0.
PEAK STORAGE	TIME		6-HR	MAXIMUM AVERAGE STORAGE	24-HR	72-HR	29.90-HR
+ (AC-FT)	(HR)						
+ 0.	12.50		0.	0.	0.	0.	0.
PEAK STAGE	TIME		6-HR	MAXIMUM AVERAGE STAGE	24-HR	72-HR	29.90-HR
+ (FEET)	(HR)						
+ 79.33	12.50		77.85	77.27	77.21	77.21	77.21

CUMULATIVE AREA = 0.00 SQ MI

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HYDROGRAPH AT STATION      ROUTE  
FOR PLAN 1, RATIO = 6.40

PEAK OUTFLOW IS            0. AT TIME 12.60 HOURS

PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW	24-HR	72-HR	29.90-HR
+ (CFS)	(HR)	(CFS)					
+ 0.	12.50	(INCHES)	0.	0.	0.	0.	0.
		(AC-FT)	3.275	3.887	3.887	3.887	3.887
			0.	0.	0.	0.	0.
PEAK STORAGE	TIME		6-HR	MAXIMUM AVERAGE STORAGE	24-HR	72-HR	29.90-HR
+ (AC-FT)	(HR)						
+ 0.	12.50		0.	0.	0.	0.	0.
PEAK STAGE	TIME		6-HR	MAXIMUM AVERAGE STAGE	24-HR	72-HR	29.90-HR
+ (FEET)	(HR)						
+ 80.41	12.60		78.47	77.43	77.34	77.34	77.34

CUMULATIVE AREA = 0.00 SQ MI

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HYDROGRAPH AT STATION      ROUTE  
FOR PLAN 1, RATIO = 9.07



PEAK OUTFLOW IS 1. AT TIME 12.30 HOURS

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	29.90-HR
+ (CFS)	(HR)				
+ 1.	12.30	0.	0.	0.	0.
		(INCHES)	5.181	6.412	6.412
		(AC-FT)	0.	0.	0.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	29.90-HR
+ (AC-FT)	(HR)				
+ 0.	12.30	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	29.90-HR
+ (FEET)	(HR)				
+ 81.71	12.30	79.37	77.68	77.55	77.55

CUMULATIVE AREA = 0.00 SQ MI

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 \* \*  
 87 KK \* PT.1 \* COMBINE SITE-1 AND ROUTE HYDROGRAPHS  
 \* \*  
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88 HC HYDROGRAPH COMBINATION  
 ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

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HYDROGRAPH AT STATION PT.1  
 FOR PLAN 1, RATIO = 2.79

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	29.90-HR
+ (CFS)	(HR)				
+ 0.	12.30	0.	0.	0.	0.
		(INCHES)	0.588	0.718	0.718
		(AC-FT)	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

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HYDROGRAPH AT STATION PT.1  
 FOR PLAN 1, RATIO = 3.41

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	29.90-HR
+ (CFS)	(HR)				
+ 0.	12.30	0.	0.	0.	0.
		(INCHES)	0.961	1.146	1.146
		(AC-FT)	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

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HYDROGRAPH AT STATION PT.1  
 FOR PLAN 1, RATIO = 4.28

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	29.90-HR
+ (CFS)	(HR)				
+ 0.	12.20	0.	0.	0.	0.
		(INCHES)	1.544	1.818	1.818
		(AC-FT)	0.	0.	0.

CUMULATIVE AREA = 0.00 SQ MI

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HYDROGRAPH AT STATION PT.1  
 FOR PLAN 1, RATIO = 5.08

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
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			6-HR	24-HR	72-HR	29.90-HR
+	(CFS)	(HR)				
+	1.	12.20	0.	0.	0.	0.
		(INCHES)	2.098	2.476	2.476	2.476
		(AC-FT)	0.	0.	0.	0.
		CUMULATIVE AREA =	0.00 SQ MI			

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HYDROGRAPH AT STATION      PT.1  
FOR PLAN 1, RATIO = 6.40

PEAK FLOW	TIME		6-HR	24-HR	72-HR	29.90-HR
+	(CFS)	(HR)				
+	1.	12.20	0.	0.	0.	0.
		(INCHES)	3.038	3.623	3.623	3.623
		(AC-FT)	0.	0.	0.	0.
		CUMULATIVE AREA =	0.00 SQ MI			

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HYDROGRAPH AT STATION      PT.1  
FOR PLAN 1, RATIO = 9.07

PEAK FLOW	TIME		6-HR	24-HR	72-HR	29.90-HR
+	(CFS)	(HR)				
+	2.	12.30	0.	0.	0.	0.
		(INCHES)	4.927	6.074	6.074	6.074
		(AC-FT)	0.	0.	0.	0.
		CUMULATIVE AREA =	0.00 SQ MI			

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PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS  
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES  
VOLUME IN ACRE-FEET, TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO PRECIPITATION						
				RATIO 1	RATIO 2	RATIO 3	RATIO 4	RATIO 5	RATIO 6	
				2.79	3.41	4.28	5.08	6.40	9.07	
HYDROGRAPH AT	SITE-1	0.000	1	FLOW	0.09	0.18	0.30	0.43	0.65	1.10
+				TIME	12.20	12.20	12.20	12.20	12.20	12.20
				VOLUME	0.01	0.02	0.03	0.04	0.05	0.09
HYDROGRAPH AT	SITE2	0.000	1	FLOW	0.19	0.34	0.55	0.74	1.06	1.68
+				TIME	12.20	12.20	12.20	12.20	12.20	12.20
				VOLUME	0.02	0.03	0.04	0.06	0.08	0.14
ROUTED TO	ROUTE	0.000	1	FLOW	0.09	0.13	0.17	0.20	0.24	1.16
+				TIME	12.50	12.50	12.50	12.50	12.50	12.30
				VOLUME	0.02	0.03	0.04	0.06	0.08	0.14
				** PEAK STAGES IN FEET **						
			1	STAGE	77.54	78.06	78.75	79.33	80.41	81.71
				TIME	12.50	12.50	12.50	12.50	12.60	12.30
2 COMBINED AT	PT.1	0.001	1	FLOW	0.17	0.27	0.44	0.59	0.84	2.02
+				TIME	12.30	12.30	12.20	12.20	12.20	12.30
				VOLUME	0.03	0.04	0.07	0.09	0.14	0.23

1

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION      ROUTE  
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....		INITIAL VALUE	SPILLWAY CREST	TOP OF DAM				
	ELEVATION	77.00	81.50	83.20				
	STORAGE	0.	0.	0.				
	OUTFLOW	0.	0.	21.				
	RATIO OF PMF	MAXIMUM OF RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
	2.79	77.54	0.00	0.	0.	0.00	12.50	0.00
	3.41	78.06	0.00	0.	0.	0.00	12.50	0.00
	4.28	78.75	0.00	0.	0.	0.00	12.50	0.00
	5.08	79.33	0.00	0.	0.	0.00	12.50	0.00
	6.40	80.41	0.00	0.	0.	0.00	12.60	0.00
	9.07	81.71	0.00	0.	1.	0.00	12.30	0.00