



*Civil & Environmental Engineering Consultants
174 Main Street, Beacon, New York 12508
13 Chambers Street, Newburgh, New York 12550
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www.HudsonLandDesign.com*

March 25, 2019

Mr. Dave Buckley
City of Beacon Building Inspector
1 Municipal Center
Beacon, NY 12508

Re: Infiltration and Inflow Investigation
53 Eliza Street Redevelopment
53 Eliza Street
City of Beacon, New York
Tax ID: 6054-29-031870 (± 0.696 acres)

Dear Mr. Buckley,

Hudson Land Design (HLD) has completed an infiltration and inflow investigation at the above referenced parcel as required by the City of Beacon. The investigation was conducted on March 20, 2019 at the existing buildings located at 53 Eliza Street, which consists of two (2) one-story buildings on slab with no basements (each building also has a garage) that support an existing electrical contracting business.

The study consisted of an interior and exterior inspection of the buildings to determine the location of roof leader discharge points, and to determine if there are any floor drains or sump pumps in either of the buildings. Two roof leaders were observed on the building closest to Eliza Street, and both are tied into the existing storm drain system on site. No floor drains or sump pumps were observed in this building. There were two roof leaders and a floor drain observed at the building at the back of the lot. The roof leaders are tied into the sanitary sewer on site, and the floor drain is assumed to be tied into the sanitary sewer system but was not verified (see Figure 1 at the end of this report).

Proposed Mitigation

The building at the rear of the lot is proposed to be re-purposed as part of the project, and at that time the floor drain will be removed and plugged (if necessary) and the two roof leaders will be removed from the sanitary sewer line. It is noted that the floor elevation that the floor drain is located is above grade. Therefore, the likelihood that the

floor drain could pick up groundwater and convey it to the City sewer system is minimal. All roof leaders and the sump pump discharge line will be disconnected from the sewer and re-routed to the City stormwater. The front building will be demolished to allow for construction of the proposed buildings. The existing sewer lateral connection will be cut and plugged so that no groundwater can enter the City sanitary sewer system through the lateral.

Hydrologic Calculations

A hydrologic model has been developed to determine the amount of stormwater removed from the City sewer system as a result of disconnecting the roof leaders that are currently connected to the sewer collection system (no credit was taken for the floor drain). The entire roof area is 3,239 square feet. The hydrologic analysis is summarized within Table I below:

TABLE I
STORMWATER VOLUME REMOVED FROM SANITARY SEWER SYSTEM

Designation	1-Year 2.61 inches	10-Year 4.69 inches	25-Year 5.89 inches	100-Year 8.34 inches
Volume (acre-feet)	0.014	0.026	0.032	0.046
Volume (gallons)	4,561	8,472	10,427	14,989

The hydraulic model can be found within Appendix A.

Based on our observations, HLD believes that there are illicit stormwater connections from the rear building located at 53 Eliza Street to the City of Beacon's sanitary sewer collection system. These connections will be removed as part of the proposed project development.

Should you have any questions, please feel free to call me at 845-440-6926.

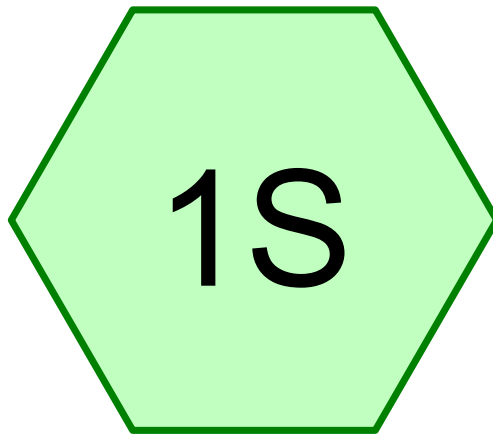
Sincerely,



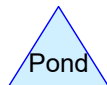
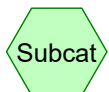
Michael A. Bodendorf, P.E.

cc: PIE Development Co.
 Aryeh Seigel
 Daniel G. Koehler, P.E. (HLD file)

APPENDIX A
HYDROCAD
REPORT



ROOF DRAINAGE



Routing Diagram for DRAINAGE-ROOF I&I

Prepared by Hudson Land Design, P.C. , Printed 3/26/2019
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DRAINAGE-ROOF I&I

Prepared by Hudson Land Design, P.C.

Printed 3/26/2019

HydroCAD® 10.00-20 s/n 04797 © 2017 HydroCAD Software Solutions LLC

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.074	98	Roofs, HSG A (1S)

DRAINAGE-ROOF I&I

Prepared by Hudson Land Design, P.C.

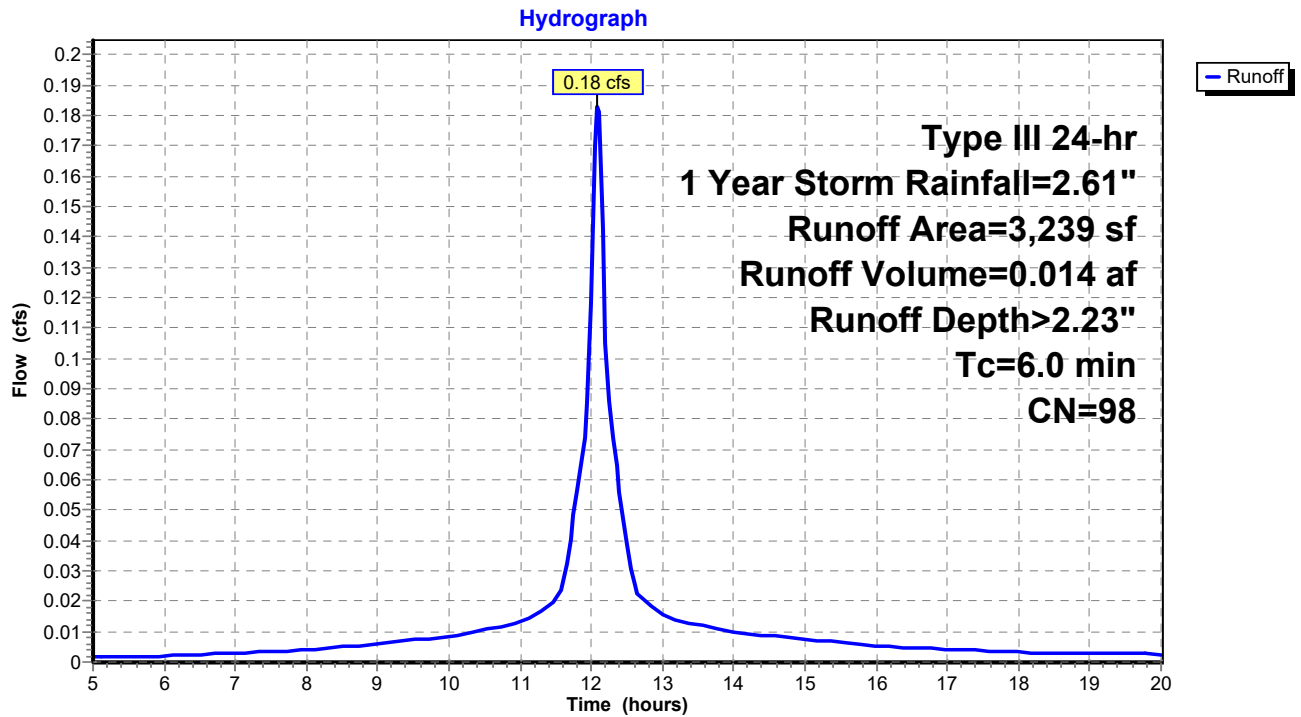
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53 Eliza I&I Report

Type III 24-hr 1 Year Storm Rainfall=2.61"

Printed 3/26/2019

Subcatchment 1S: ROOF DRAINAGE



DRAINAGE-ROOF I&I

Prepared by Hudson Land Design, P.C.

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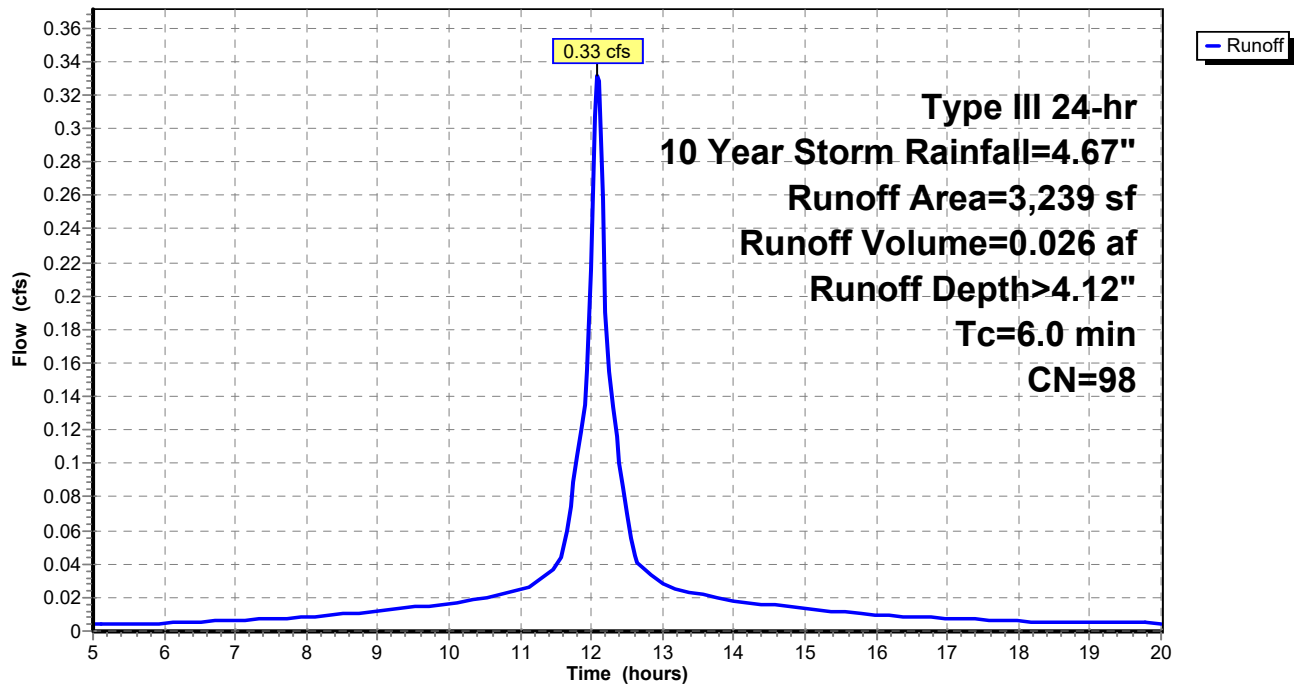
53 Eliza I&I Report

Type III 24-hr 10 Year Storm Rainfall=4.67"

Printed 3/26/2019

Subcatchment 1S: ROOF DRAINAGE

Hydrograph



DRAINAGE-ROOF I&I

Prepared by Hudson Land Design, P.C.

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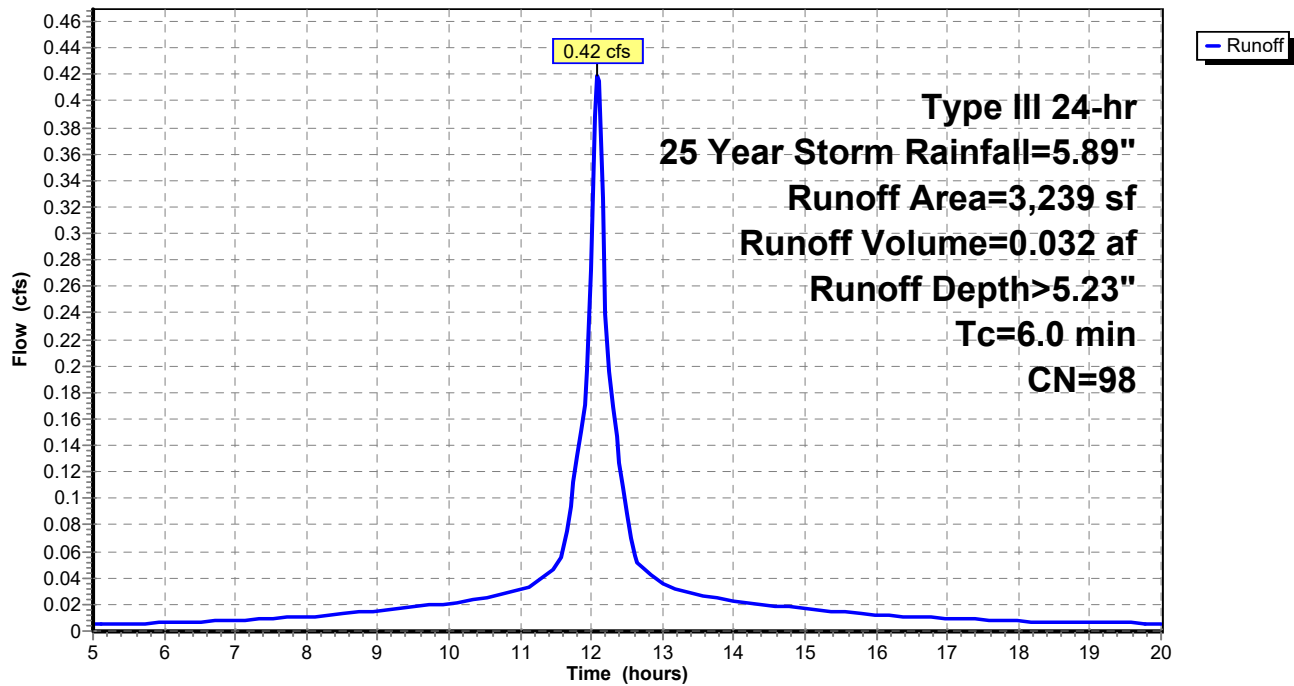
53 Eliza I&I Report

Type III 24-hr 25 Year Storm Rainfall=5.89"

Printed 3/26/2019

Subcatchment 1S: ROOF DRAINAGE

Hydrograph



DRAINAGE-ROOF I&I

Prepared by Hudson Land Design, P.C.

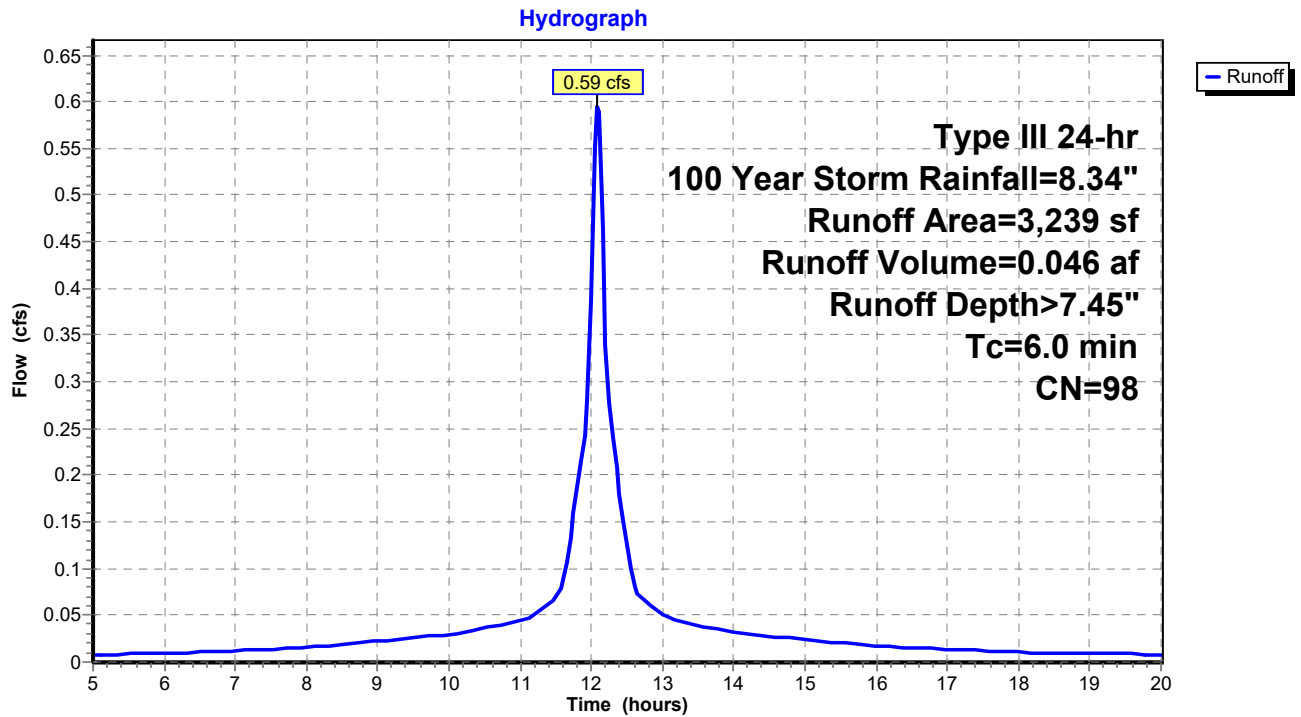
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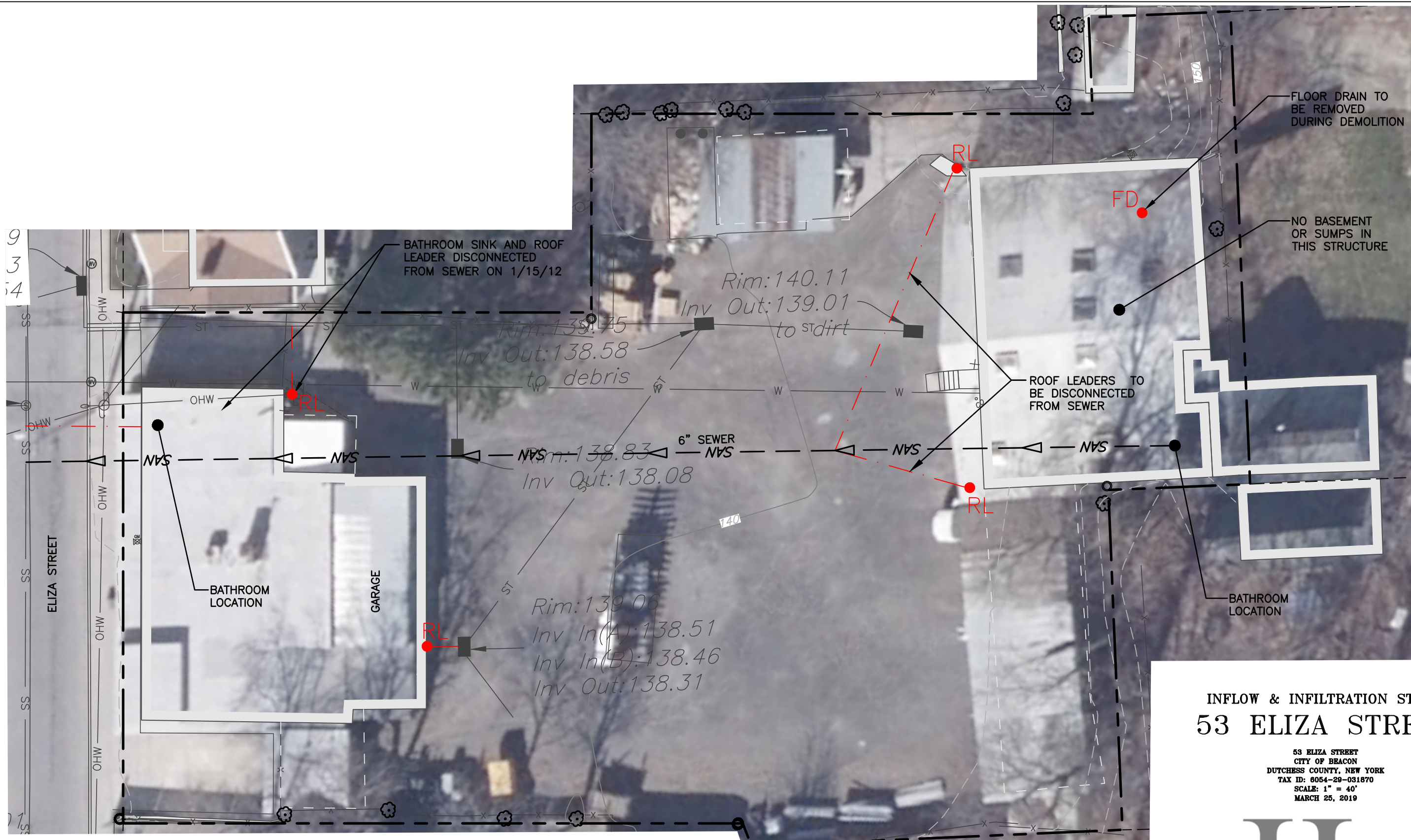
53 Eliza I&I Report

Type III 24-hr 100 Year Storm Rainfall=8.34"

Printed 3/26/2019

Subcatchment 1S: ROOF DRAINAGE





INFLOW & INFILTRATION MAP

SCALE: 1"=20'

DRAWN BY: CMB CHECKED BY: MAB JOB NO.: 2018-032			
REVISIONS:			
NO.	DATE	DESCRIPTION	BY

INFLOW & INFILTRATION STUDY
53 ELIZA STREET

53 ELIZA STREET
CITY OF BEACON
DUTCHESS COUNTY, NEW YORK
TAX ID: 6054-29-031870
SCALE: 1" = 40'
MARCH 25, 2019



HUDSON LAND DESIGN
PROFESSIONAL ENGINEERING P.C.
174 MAIN STREET
BEACON, NEW YORK 12508
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SEAL

JON D. BODENDORF, P.E.
NYS LICENSE NO. 076245
DANIEL G. KOEHLER, P.E.
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SHEET: 1 OF 1