

PVI Site Design

18 Glendale Road, Norwood, MA - 339.206.1030
Master Planning - Civil Engineering - Land Entitlements

Holden Planning Board

Town of Holden

1196 Main Street
Holden, MA 01520

April 12, 2021

RE: Jefferson Mill Redevelopment – DPW Comments

Dear Board Members,

We are in receipt of comments from the Holden DPW for the referenced project received via email dated April 8, 2021. Below is a copy of the original comments with our responses in **BOLD** below as applicable. Supporting documents are enclosed with this letter. As the comments that require plan changes are minor and detail oriented, we recommend providing a final plan set as a condition of approval that can incorporate these changes, and any outstanding conditions of the Board.

Comments:

C3. Provide calculation of low and tech spec for the WQU for sizing

The sizing calc was provided directly from Contech and their proprietary software. Attached is the hydrologic calculation for determination of 100-Year flow from townhouse area and the 1-Inch runoff from contributing pavement surfaces that was provided to Contech.

C38. The plans are cut short and the elevation of the invert is missing. Provide detail of calculations

See sheet C001 site preparation plan for the invert information. We will revise sheet C102 so it is visible here as well. Again, Contech provides their own calculation for sizing. Their summary sheet is provided in the appendix of the stormwater report (last page).

C39 the 25yr storm is not in the report. I checked page 6 of PDF

The HydroCAD calculations were provided in the appendix and include the 25-YR storm. See table below with summary information:

TABLE 2.1 – RUNOFF FLOW (CFS) COMPARISON

Design Point		2-YEAR	10-YEAR	25-YEAR	100-YEAR
Flow (CFS)	<i>Existing</i>	4.46	8.33	11.42	17.78
	Proposed	4.43	8.30	11.42	17.75
	<i>Existing</i>	13,373	25,559	35,657	57,040

Volume (CF)	Proposed	13,292	25,450	35,667	56,904
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C42 What page/sheet?

See illicit discharge statement on sheet c102

C43 change of new utilities is not reflected on Utility Plan Also, what is the purpose of new CB?

This change is detailed on sheet C102 and is included in the sewer profile view on C104. We will add it to sheet C103 as well. The purpose of the new CB is to avoid "catch basin to catch basin" connections as was originally designed. The WQ unit will act as a manhole connecting the existing 24" RCP drain and the new catch basin. A bituminous curb is proposed at the bottom of the driveway area. The catch basin is provided to collect runoff from the paved areas and direct it to the WQ unit and existing drainage system.

Water & Sewer Comments:

- The sewer profile for building 3 (profile 2 on sheet C104) shows the 6" PVC crossing Main Street at 1.5% slope then dropping into the sewer line. This should be laid at 2% minimum to meet our standards, and a doghouse manhole should be installed over the main to accept the connection. An interior drop inside the doghouse manhole can be made to achieve the proper elevation if necessary.

The slope will be changed to 2.0% and a doghouse manhole provided.

- The sewer profile for for the building 5 forcemain shows a doghouse manhole. Please provide a detail for the doghouse manhole. Additionally, it should be investigated if the forcemain can discharge into a length of gravity sewer before it enters the new manhole to reduce splashing within the manhole when the pump station runs. This will also allow a proper invert to be built within the new manhole.

We have evaluated this connection. A new manhole can be provided to make a gravity connection to the doghouse manhole. The gravity sewer will have 2-feet of cover in order to avoid conflict with the watermain. A detail of the doghouse manhole will be provided.

- Additionally, level fluctuation of 2.33 inches from pumps on to pumps off is very low.

We will review and modify the holding time, and/or size of the wet well.

- The pump station notes mention the station will be connected to the facilities backup generator. A generator is not shown on the plans, please confirm. If a backup generator with an automatic start is proposed to run the station, it shall be sized as such.

This is a general note to either connect into a generator system, or provide an 8-hour battery backup system for the pumps. A note will be added that the generator must be automatic start if utilized.

- Sliderails and hardware within the station shall be stainless steel not galvanized as indicated.

The detail will be revised.

- An alarm panel with audible alarm shall be mounted in a public location in close proximity to the pump station which will alarm for high level, low level, and available pump failure alarms

Alarm notes have been added to the drawings.

- An operation and maintenance plan shall be created for the pump station which shall include an approximate annual maintenance cost.

An O&M plan will be provided.

- The owners should familiarize themselves with the sanitary sewer overflow regulations, and realize that the property is located within DCR's Wachusett Watershed area and they will need to be notified should there be any sanitary sewer overflows as the result of pump station malfunction.

Noted.

We trust that the above responses and attached revised documents adequately address the comments. If you need any additional information, please feel free to contact our office.

Thank you.

PVI Site Design, LLC



Timothy J. Power, PE
Principal
tpower@PVIsitedesign.com
339-206-1030

Copy: Tim Adler
Enclosures: As noted

WQF

Prepared by PVI Site Design, LLC

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Type III 24-hr inch Rainfall=1.00"

Printed 4/12/2021

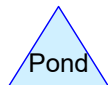
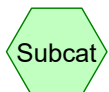
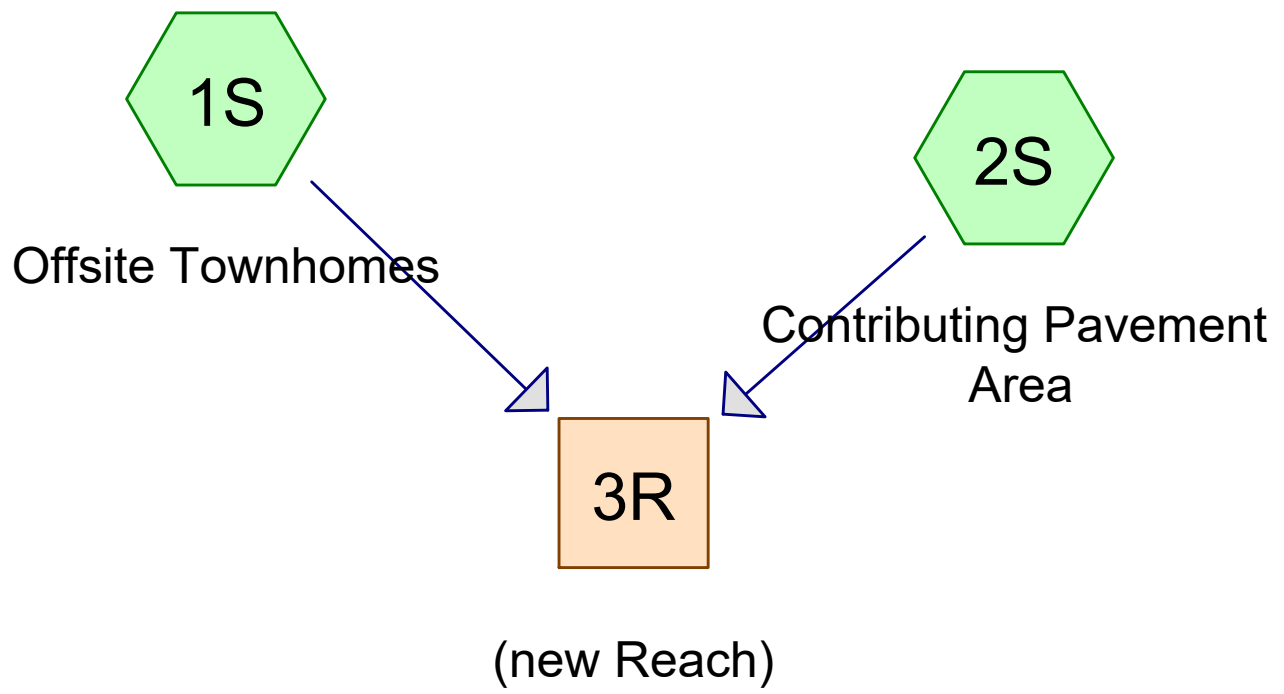
Summary for Subcatchment 2S: Contributing Pavement Area[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

Runoff = 0.48 cfs @ 12.00 hrs, Volume= 1,269 cf, Depth> 0.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, $dt=0.05$ hrs

Type III 24-hr inch Rainfall=1.00"

	Area (sf)	CN	Description
*	20,344	98	
	20,344		100.00% Impervious Area



WQF

Prepared by PVI Site Design, LLC

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Jefferson Mill

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

Printed 4/12/2021

Page 2

Summary for Subcatchment 1S: Offsite Townhomes

Runoff = 15.46 cfs @ 12.09 hrs, Volume= 47,611 cf, Depth> 5.95"

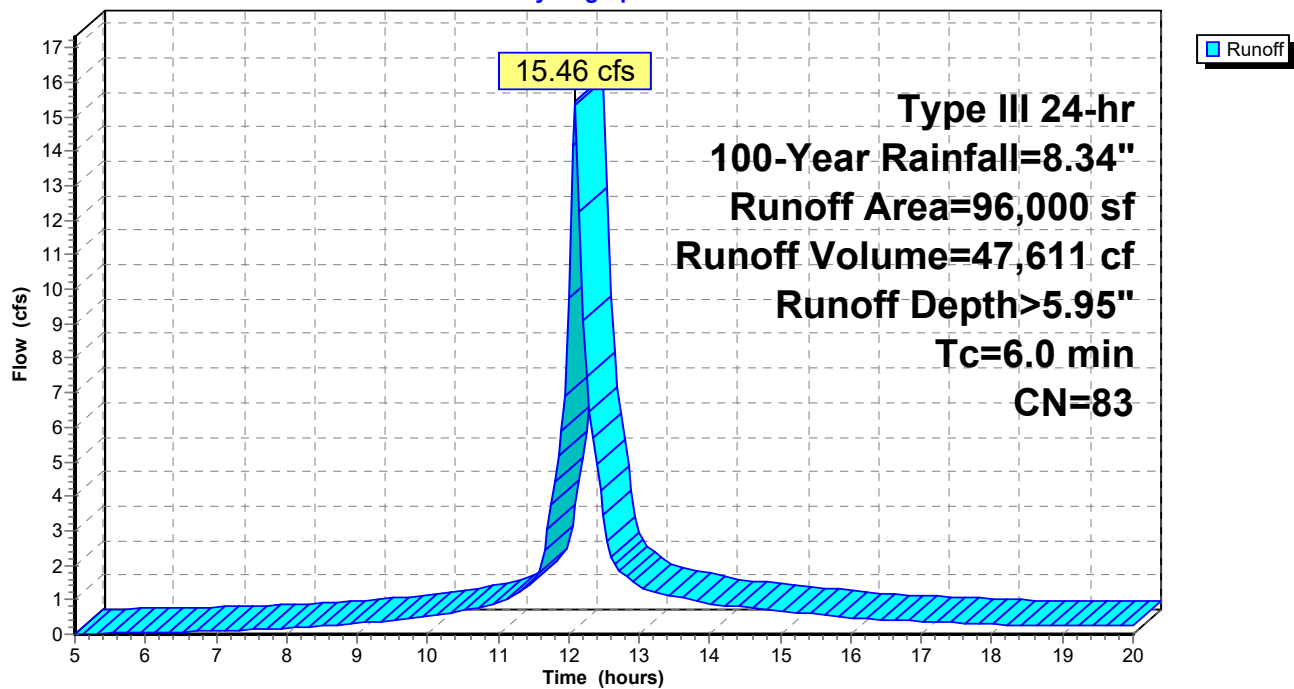
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.34"

Area (sf)	CN	Description
* 96,000	83	Assumed Average
96,000		100.00% Pervious Area

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

Subcatchment 1S: Offsite Townhomes

Hydrograph



WQF

Prepared by PVI Site Design, LLC

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Jefferson Mill

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

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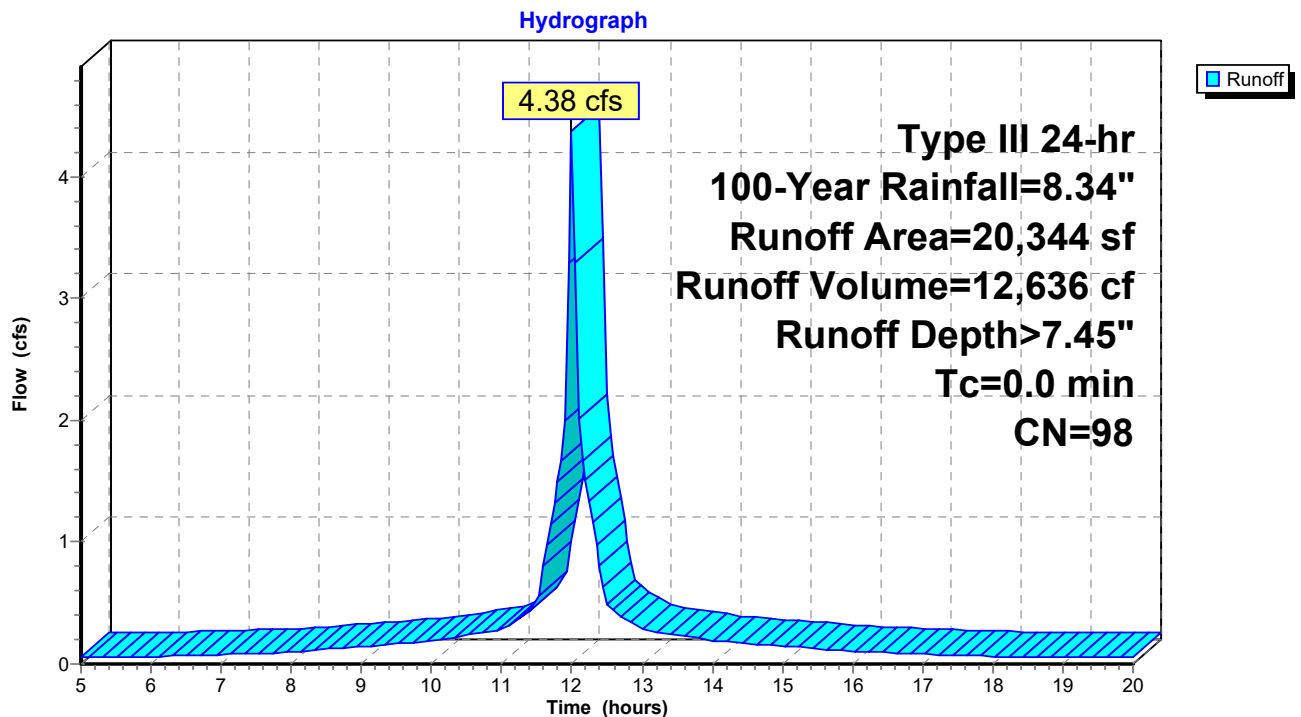
Page 3

Summary for Subcatchment 2S: Contributing Pavement Area

Runoff = 4.38 cfs @ 12.00 hrs, Volume= 12,636 cf, Depth> 7.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.34"

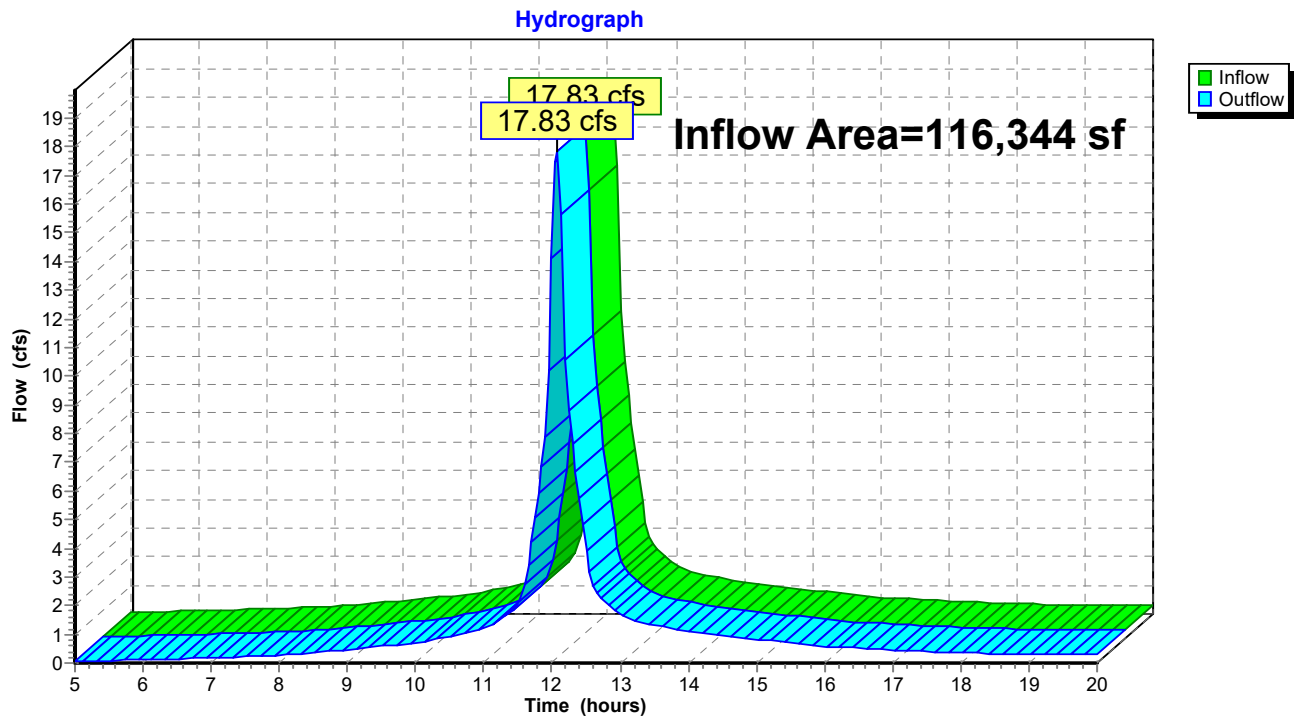
Area (sf)	CN	Description
* 20,344	98	
20,344		100.00% Impervious Area

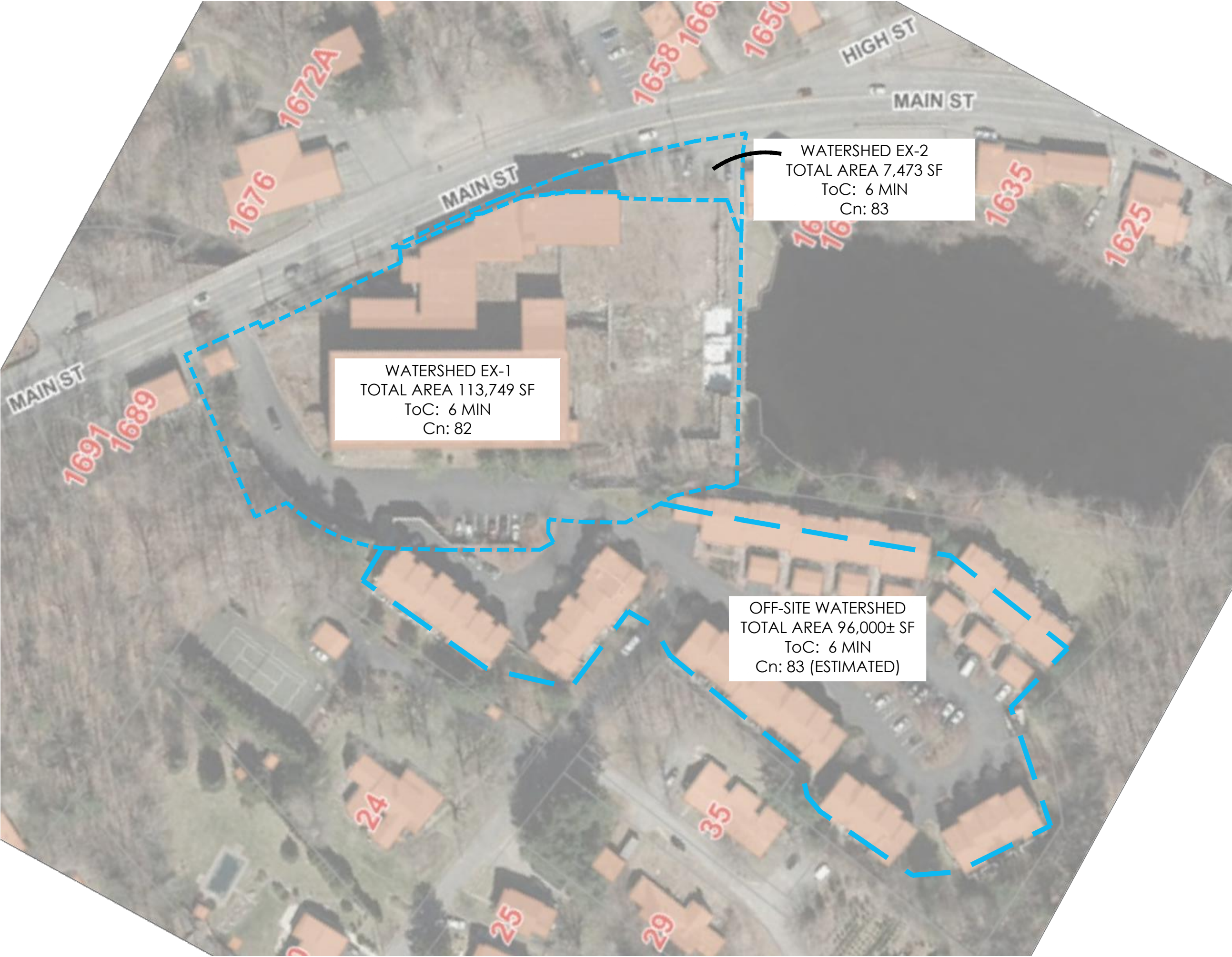
Subcatchment 2S: Contributing Pavement Area

Summary for Reach 3R: (new Reach)

Inflow Area = 116,344 sf, 17.49% Impervious, Inflow Depth > 6.21" for 100-Year event
Inflow = 17.83 cfs @ 12.07 hrs, Volume= 60,247 cf
Outflow = 17.83 cfs @ 12.07 hrs, Volume= 60,247 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach 3R: (new Reach)



CIVIL ENGINEER:

PVI
SITE DESIGN
PVI Site Design, LLC
Civil Engineering - Land Entitlements
Master Planning - Project Management
339-206-1030

PROJECT:

**JEFFERSON MILL REDEVELOPMENT
1665 MAIN STREET, HOLDEN, MA**

OWNER:

NORTH VILLAGE LOFTS, LLC

TITLE:

**EXISTING OFF-SITE
WATERSHED PLAN**

ISSUED:	04-12-2021
REV:	
REV:	
REV:	
REV:	
REV:	

SCALE:	1"=80'
PROJECT:	21-001
FILE:	21-001-WSP
DRAWN:	TJP
CHECKED:	TJP

SHEET NO:

WS-3