CITY OF CAMBRIDGE

BOARD OF ZONING APPEAL

831 Massachusetts Avenue, Cambridge MA 02139

617-349-6100

2023 MAY 26 AM 10:21
OFFICE OF THE CITY CLERK
CAMBRIDGE, MASSACHUSETTS

BZA Application Form

BZA Number: 223469

General Information

The undersigned hereby petitions the Board of Zoning Appeal for the following:

Special Permit: ___X___ Variance: _____ Appeal: _____

PETITIONER: Cathy Chen

PETITIONER'S ADDRESS: 50 Concord Avenue, Cambridge, MA 02138

LOCATION OF PROPERTY: **50 Concord Ave , Cambridge, MA**

TYPE OF OCCUPANCY: Single Family **ZONING DISTRICT:** Res C-1 and Res A-2 Zone

REASON FOR PETITION:

/Additions/

DESCRIPTION OF PETITIONER'S PROPOSAL:

Construct a new basement level addition with roof deck above. New construction extends existing non-conformity, requiring a special permit. Proposed addition changes the average grade of the structure, therefore negatively affecting existing nonconformities for building height and Res C-1 formula setback calculations. The existing building location is unchanged, and existing ridge location is unchanged.

SECTIONS OF ZONING ORDINANCE CITED:

Article: 8.000 Section: 8.22.2 (Non-Conforming Structure).
Article: 5.000 Section: 5.31 (Table of Dimensional Requirements).
Article: 10.000 Section: 10.40 (Special Permit).

Original Signature(s): _____

(Petitioner (s) / Owner)

CATHY CHEN.

(Print Name)

Address: _____
Tel. No.
E-Mail Address: catlchen@yahoo.com

Date: May 23, 2023

CITY OF CAMBRIDGE

BOARD OF ZONING APPEAL

831 Massachusetts Avenue, Cambridge MA 02139

617-349-6100

BZA Application Form

BZA Number: 223469

General Information

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LOCATION OF PROPERTY: 50 Concord Ave., Cambridge, MA

TYPE OF OCCUPANCY: Single Family ZONING DISTRICT: Res C-1 and Res A-2 Zone

REASON FOR PETITION:

/Additions/

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Article: 5.000 Section: 5.31 (Table of Dimensional Requirements).
Article: 10.000 Section: 10.40 (Special Permit)

Original Signature(s): _____

(Petitioner (s) / Owner)

_____

(Print Name)

Address: _____

Tel. No.

E-Mail Address: catlichen@yahoo.com

Date: _____

BZA APPLICATION FORM - OWNERSHIP INFORMATION

To be completed by OWNER, signed before a notary and returned to The Secretary of the Board of Zoning Appeals.

I/We Cathy Ling-Wei Chen
(OWNER)

Address: 50 Concord Avenue

State that I/We own the property located at 50 Concord Avenue,

which is the subject of this zoning application.

The record title of this property is in the name of Cathy Ling-Wei Chen

*Pursuant to a deed of duly recorded in the date 01/31/2023, Middlesex South County Registry of Deeds at Book 81212, Page 171; or Middlesex Registry District of Land Court, Certificate No. _____ Book _____ Page _____.

*SIGNATURE BY LAND OWNER OR AUTHORIZED TRUSTEE, OFFICER OR AGENT**

Written evidence of Agent's standing to represent petitioner may be requested.

Commonwealth of Massachusetts, County of MIDDLESEX

The above-name CATHY LING-WEI CHEN personally appeared before me, this 12 of MAY, 2023, and made oath that the above statement is true.

Notary

My commission expires 5.13.2027 (Notary Seal).

Kelly J. Boucher
My Commission Expires May 13, 2027
NOTARY PUBLIC
COMMONWEALTH OF MASSACHUSETTS

- If ownership is not shown in recorded deed, e.g. if by court order, recent deed, or inheritance, please include documentation.

COMMONWEALTH OF MASSACHUSETTS
NOTARY PUBLIC
Kelly J. Boucher
My Commission Expires
May 19, 2023

BZA Application Form

SUPPORTING STATEMENT FOR A SPECIAL PERMIT

Please describe in complete detail how you meet each of the following criteria referring to the property and proposed changes or uses which are requested in your application. Attach sheets with additional information for special permits which have additional criteria, e.g.; fast food permits, comprehensive permits, etc., which must be met.

Granting the Special Permit requested for 50 Concord Ave , Cambridge, MA (location) would not be a detriment to the public interest because:

A) Requirements of the Ordinance can or will be met for the following reasons:

The special permit relief is due to topography of the lot and the fact that the height of average grade will be lowered by building the proposed addition. Lower average grade increases nonconformities for building height and side yard setbacks, although the main existing structure setbacks are unchanged, and the ridge location is also unchanged.

B) Traffic generated or patterns of access or egress would not cause congestion hazard, or substantial change in established neighborhood character for the following reasons:

The special permit request is for a small addition at the rear of the property. Traffic patterns are not affected by the application and remain unchanged as a result of this application

C) The continued operation of or the development of adjacent uses as permitted in the Zoning Ordinance would not be adversely affected by the nature of the proposed use for the following reasons:

The proposed project will have no adverse impact on adjacent uses. The use of the property as single family is unchanged and consistent with surrounding structures and the zoning district.

D) Nuisance or hazard would not be created to the detriment of the health, safety, and/or welfare of the occupant of the proposed use or the citizens of the City for the following reasons:

The proposed changes are minimal in scope and will not create a nuisance or hazard to occupants or citizens of the City.

E) For other reasons, the proposed use would not impair the integrity of the district or adjoining district or otherwise derogate from the intent or purpose of this ordinance for the following reasons:

The proposed use is unchanged and consistent with the integrity of this district.

***If you have any questions as to whether you can establish all of the applicable legal requirements, you should consult with an attorney.**

Application Form

SUPPORTING STATEMENT FOR A SPECIAL PERMIT

Please describe in complete detail how you meet each of the following criteria referring to the property and proposed changes or uses which are requested in your application. Attach sheets with additional information for special permits which have additional criteria, e.g.: fast food permits, comprehensive permits, etc., which must be met.

Granting this Special Permit requested for 10 Concord Ave., Cambridge, MA (location) would not be a detriment to the public interest because:

A) Requirements of the Ordinance can or will be met for the following reasons:

The special permit relief is due to topography of the lot and the fact that the height of average grade will be lowered by building the proposed addition. Lower average grade increases nonconformities for building height and side yard setbacks, although the main existing structure setbacks are unchanged, and the ridge location is also unchanged.

B) Traffic generated or patterns of access or egress would not cause congestion hazard, or substantial change in established neighborhood character for the following reasons:

The special permit request is for a small addition at the rear of the property. Traffic patterns are not affected by the application and remain unchanged as a result of this application

C) The continued operation of or the development of adjacent uses as permitted in the Zoning Ordinance would not be adversely affected by the nature of the proposed use for the following reasons:

The proposed project will have no adverse impact on adjacent uses. The use of the property as single family is unchanged and consistent with surrounding structures and the zoning district.

D) Nuisance or hazard would not be created to the detriment of the health, safety, and/or welfare of the occupant of the proposed use or the citizens of the City for the following reasons:

The proposed changes are minimal in scope and will not create a nuisance or hazard to occupants or citizens of the City.

E) For other reasons, the proposed use would not impair the integrity of the district or adjoining district or otherwise derogate from the intent or purpose of this ordinance for the following reasons:

The proposed use is unchanged and consistent with the integrity of this district.

If you have any questions as to whether you can establish all of the applicable legal requirements, you should consult with an attorney.

BZA Application Form

DIMENSIONAL INFORMATION

Applicant: Cathy Chen
Location: 50 Concord Ave , Cambridge, MA
Phone:

Present Use/Occupancy: Single Family
Zone: Res C-1 and Res A-2 Zone
Requested Use/Occupancy: Single Family

		Existing Conditions		Requested Conditions		Ordinance Requirements	
TOTAL GROSS FLOOR AREA:		4793		5165		4291	(max.)
LOT AREA:		6168		unchanged		5000	(min.)
RATIO OF GROSS FLOOR AREA TO LOT AREA: [2]		0.78		0.84		0.69	
LOT AREA OF EACH DWELLING UNIT		6168		unchanged		1500 / 4500	
SIZE OF LOT:	WIDTH	48'		unchanged		50'	
	DEPTH	125'		unchanged		n/a	
SETBACKS IN FEET:	FRONT	36.2'		unchanged		10'	
	REAR	51.9'		34.8'		31.25'	
	LEFT SIDE	4.6'		unchanged		11.5'	
	RIGHT SIDE	9.9'		unchanged		11.5'	
SIZE OF BUILDING:	HEIGHT	40.3'		43.8'		35'	
	WIDTH	41.5'		54.5'		n/a	
	LENGTH	33'		unchanged		n/a	
RATIO OF USABLE OPEN SPACE TO LOT AREA:		53.3%		49.2%		34.4%	
NO. OF DWELLING UNITS:		1		unchanged		3.6	
NO. OF PARKING SPACES:		2		unchanged		0	
NO. OF LOADING AREAS:		0		0		n/a	
DISTANCE TO NEAREST BLDG. ON SAME LOT		n/a		n/a		n/a	

Describe where applicable, other occupancies on the same lot, the size of adjacent buildings on same lot, and type of construction proposed, e.g; wood frame, concrete, brick, steel, etc.:

The wood frame single family home is the only structure on the lot.

1. SEE CAMBRIDGE ZONING ORDINANCE ARTICLE 5.000, SECTION 5.30 (DISTRICT OF DIMENSIONAL REGULATIONS).
2. TOTAL GROSS FLOOR AREA (INCLUDING BASEMENT 7'-0" IN HEIGHT AND ATTIC AREAS GREATER THAN 5') DIVIDED BY LOT AREA.
3. OPEN SPACE SHALL NOT INCLUDE PARKING AREAS, WALKWAYS OR DRIVEWAYS AND SHALL HAVE A MINIMUM DIMENSION OF 15'.

50 CONCORD AVENUE, CAMBRIDGE MA

BOARD OF ZONING APPEALS SET

05.19.23

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BZA-04	GRADE PLANE & VOLUME CALCS.
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BZA-07	EXIST & PROPOSED ELEVATIONS
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BZA-09	PHOTOS AND 3D VIEWS

ZONING REQUEST SUMMARY

PROJECT DESCRIPTION:

WE PROPOSED TO INCREASE EXISTING NONCONFORMITIES IN A SINGLE FAMILY RESIDENTIAL STRUCTURE (AREA / HEIGHT / SETBACK) WITH THE ADDITION OF A SINGLE STORY REAR ADDITION AT THE BASEMENT LEVEL. PROPOSED ADDITION CREATES +373 SF.

50 CONCORD AVE EXISTING NONCONFORMITIES:

FAR / LOT WIDTH / SIDE YARD SETBACKS / BUILDING HEIGHT

ZONING REQUEST

SPECIAL PERMIT:

INCREASE NONCONFORMING FAR

ALLOWABLE FAR: 0.69
EXISTING FAR: 0.78
PROPOSED FAR: 0.84 (+0.06)

4291 SF ALLOWED
4793 SF EXISTING (INCLUDING BASEMENT)
5165 SF PROPOSED (+373 SF)

INCREASE NONCONFORMING SIDE YARD SETBACK (C-1 FORMULA SETBACK)

INCREASE NONCONFORMING BUILDING HEIGHT BY LOWERING OF AVERAGE GRADE, RIDGE LOCATION UNCHANGED

ARCHITECT

KBA
54 HARVARD STREET
BROOKLINE, MA 02445

www.boucherarchitecture.com

OWNER

CATHY CHEN
50 CONCORD ROAD
CAMBRIDGE, MA 02138

No.	Descrip.	Date

stamp

client
CATHY CHEN
50 CONCORD ROAD
CAMBRIDGE, MA 02138

title: COVER SHEET + PROJECT INFORMATION

project: 50 CONCORD AVENUE, CAMBRIDGE MA

K B A
KELLY BOUCHER ARCHITECTURE
kelly@boucherarchitecture.com
phone: (617) 827.3527

job number 23-001

scale 1/4" = 1'-0"

issue date 05.19.23

BOARD OF ZONING APPEALS SET

Sheet no.
BZA-00

5/19/2023 11:19:08 AM

DIMENSIONAL FORM					
50 CONCORD AVE					05.19.23
ZONE	**RES C-1**	**RES A-2**	**Total**	**Existing**	**Proposed**
	LESS RESTRICTED	MORE...			
LOT AREA	4828	1340	6168	6168	unchanged
	78%	22%			
FAR	0.75	0.5	0.69	0.78	0.84
GFA	3621	670	4291	4793	5165
LOT AREA PER DU	1500	4500			
NO OF UNITS	3.2	0.4	3.6	1.0	unchanged
SIZE OF LOT					
W	50'	50'		48'	
D				125'	
SETBACKS					
FRONT	10	N/A		36.2	unchanged
REAR	N/A	31.25'		51.9	34.8'
LEFT SIDE	H+L/5	N/A		4.6	unchanged
RIGHT SIDE	H+L/5	N/A		9.9	unchanged
SIZE OF BLDG					
HEIGHT	35	35		40.3	43.8
LENGTH				41.5'	54.5
WIDTH			tbd	33'	unchanged
RATIO OF PRIVATE OPEN...	30%	50%	34.40%	53.3%	49.2%
TOTAL OPEN SPACE (SF)	1448.4	670.0	2118.4	3289.0	3036.0
PRIVT OPEN SPACE (MIN)	724.2	335.0	1059.2	2240.0	1878.0
PARKING SPACES	0	0		2	2
LOADING AREA	0	0		0	0
DISTANCE TO NEAREST...	n/a	n/a			

ZONING REQUEST SUMMARY

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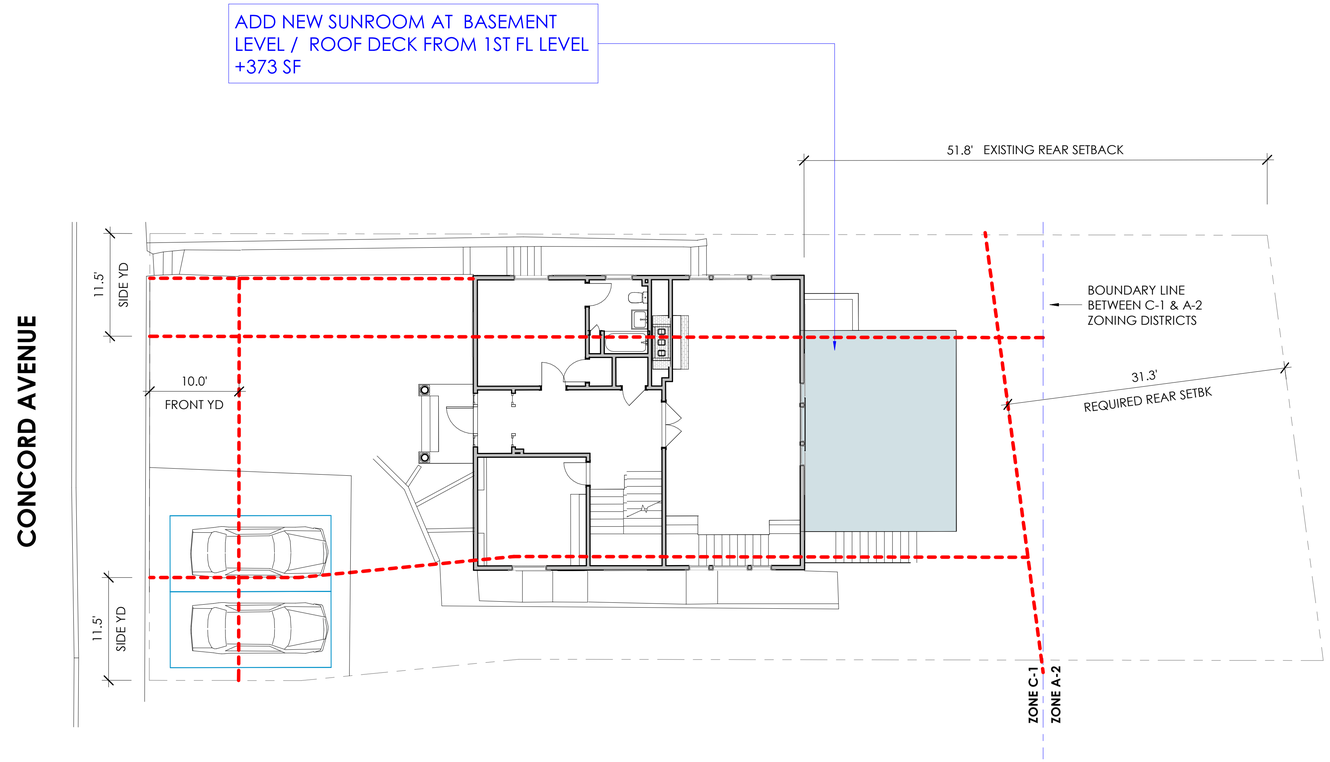
PROPOSED FAR: 0.84 (+0.06)

4291 SF ALLOWED
4793 SF EXISTING (INCLUDING BASEMENT)
5165 SF PROPOSED (+373 SF)

INCREASE NONCONFORMING SIDE YARD SETBACK (C-1 FORMULA SETBACK)

INCREASE NONCONFORMING BUILDING HEIGHT BY LOWERING OF AVERAGE GRADE, RIDGE LOCATION UNCHANGED



SITE PLAN - ZONING REVIEW

1/8" = 1'-0"

0' 4' 8' 16' 32'

ZONING SUMMARY
BOARD OF ZONING APPEALS SET

50 CONCORD AVENUE, CAMBRIDGE MA

KBA
KELLY BOUCHER ARCHITECTURE
kelly@boucherarchitecture.com
phone: (617) 827.3527

Date 05.19.23

Sheet BZA-01

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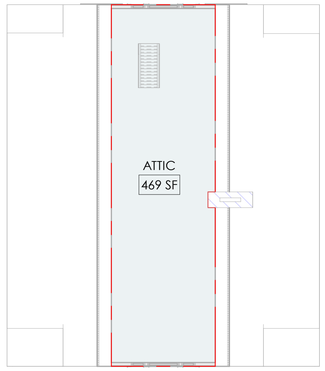
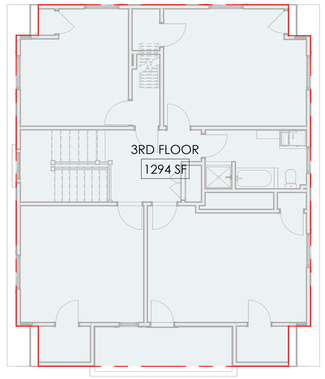
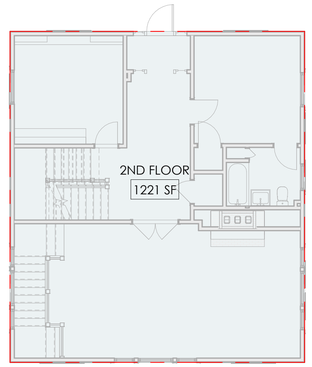
EXISTING GFA	
NAME	**AREA**
1ST FLOOR	1217 SF
2ND FLOOR	1221 SF
3RD FLOOR	1294 SF
ATTIC	469 SF
BASEMENT	591 SF
GFA	4793 SF



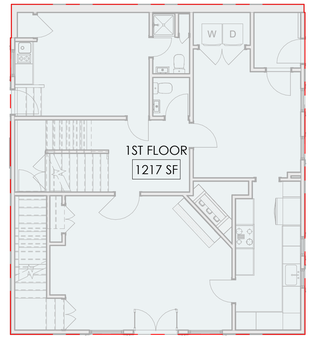
10 EXISTING GFA - ATTIC
1/8" = 1'-0"



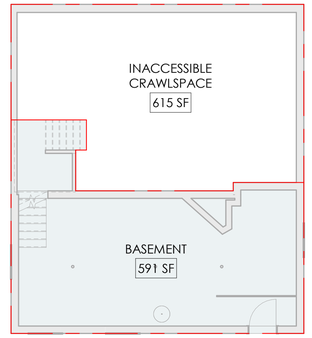
9 EXSITING GFA - 3RD FL
1/8" = 1'-0"



8 EXISTING GFA - 2ND FL
1/8" = 1'-0"

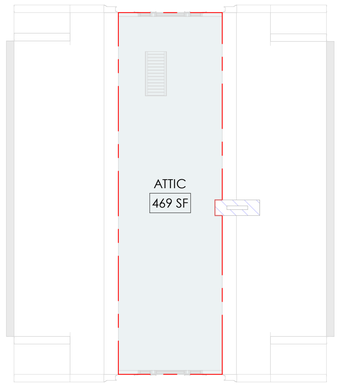


7 EXISTING GFA - 1ST FL
1/8" = 1'-0"

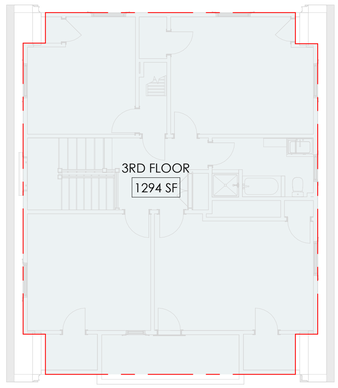


6 EXISTING GFA - GARDEN
1/8" = 1'-0"

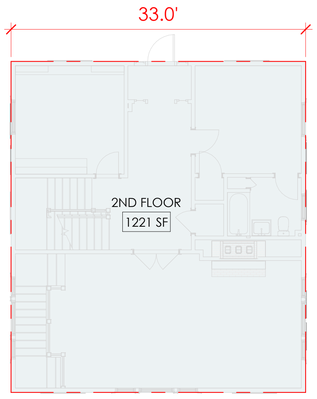
PROPOSED GFA	
NAME	**AREA**
BASEMENT	591 SF
1ST FLOOR	1217 SF
2ND FLOOR	1221 SF
3RD FLOOR	1294 SF
ATTIC	469 SF
PROPOSED ADDITION	373 SF
GFA	5165 SF



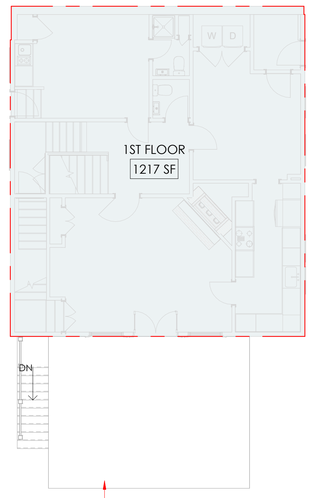
5 PROPOSED GFA - ATTIC
1/8" = 1'-0"



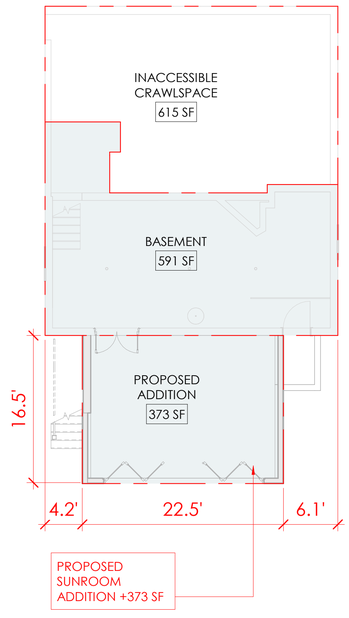
4 PROPOSED GFA - 3RD FL
1/8" = 1'-0"



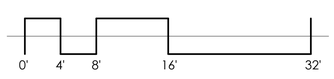
3 PROPOSED GFA - 2ND FL
1/8" = 1'-0"



2 PROPOSED GFA - 1ST FL
1/8" = 1'-0"



1 PROPOSED GFA - GARDEN
1/8" = 1'-0"



GFA AREA DIAGRAMS
BOARD OF ZONING APPEALS SET

50 CONCORD AVENUE, CAMBRIDGE MA

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Date 05.19.23

Sheet BZA-02

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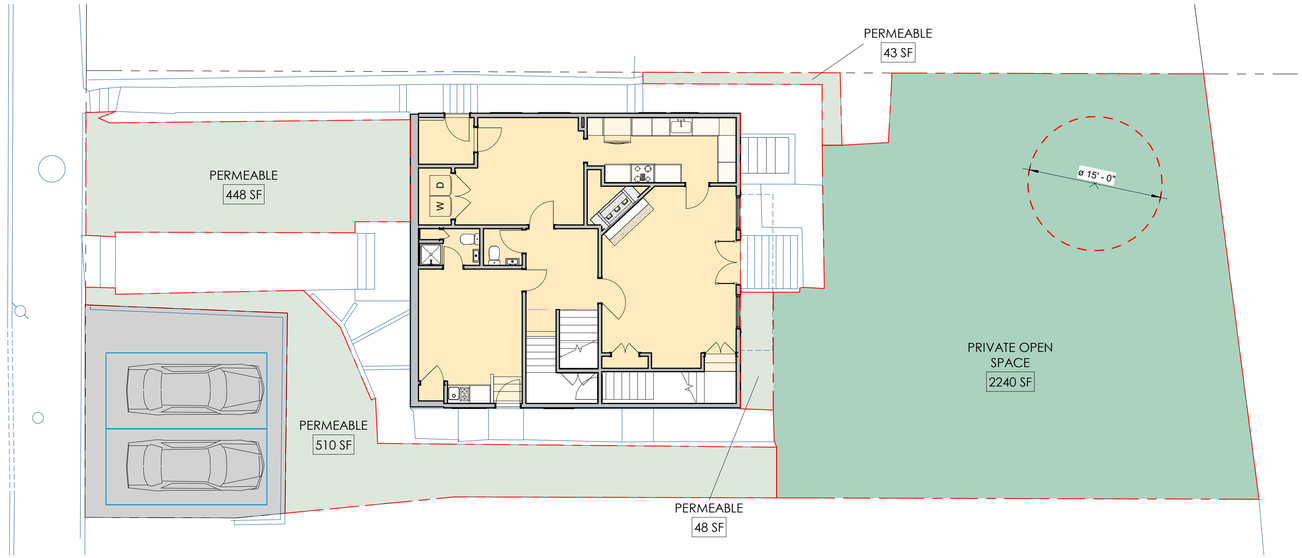
EXISTING OPEN SPACE CALCS		
O.S TYPE	***AREA***	***% OF LOT AREA***
PRIVATE OPEN SPACE	2240 SF	36.3%
PERMEABLE	1049 SF	17.0%
TOTAL	3289 SF	53.3%



OPEN SPACE

PERMEABLE

PRIVATE OPEN SPACE

EXISTING OPEN SPACE DIAGRAM

1/8" = 1'-0"

PROPOSED OPEN SPACE CALCS		
O.S TYPE	***AREA***	***% OF LOT AREA***
PRIVATE OPEN SPACE	1804 SF	29.2%
PERMEABLE	1232 SF	19.9%
TOTAL	3036 SF	49.2%

OPEN SPACE CALCULATION LOT AREA: 6168 SF

REQUIRED OPEN SPACE

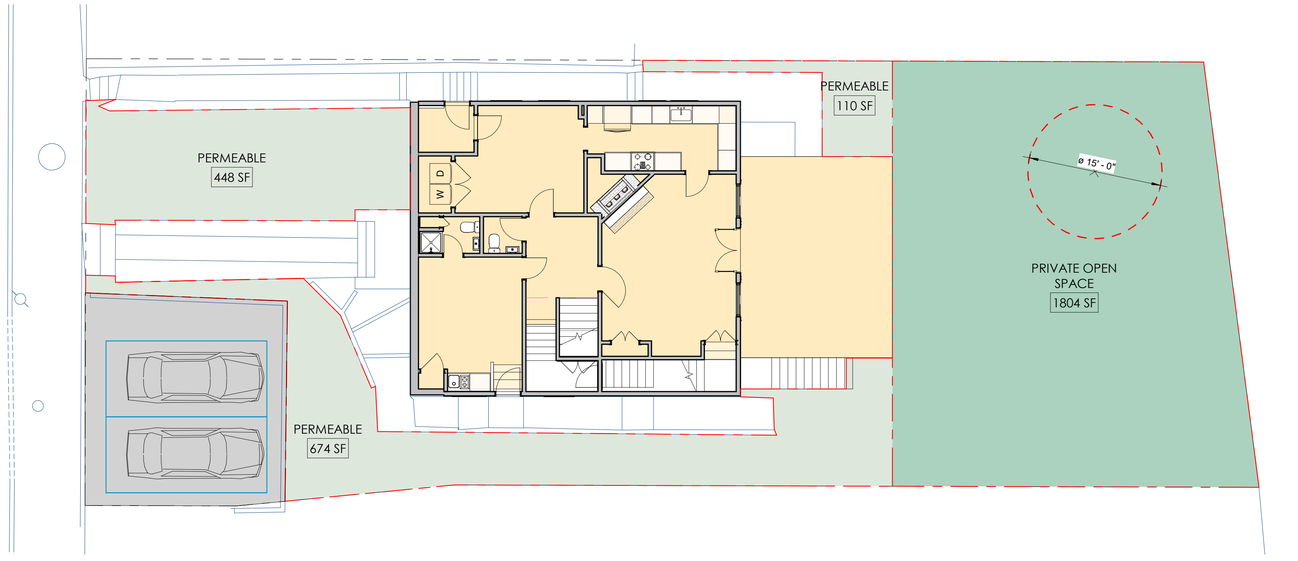
RES C-1 ZONE: 4828 SF X 30%	1448 SF
RES A-2 ZONE: 1340 SF X 50%	670 SF
TOTAL REQ. O.S.	**2118 SF**
TOTAL REQ. PRIVATE (15'X15')	1059 SF MIN.

EXISTING OPEN SPACE

PRIVATE + PERMEABLE O.S. (MIN. 15'X15')	2240 SF	36.3%
PERMEABLE ONLY O.S.	1049 SF	17.0%
TOTAL OPEN SPACE	**3289 SF**	**53.3%**

PROPOSED OPEN SPACE

PRIVATE + PERMEABLE O.S.(MIN. 15'X15')	1804 SF	29.2%
PERMEABLE ONLY O.S.	1232 SF	19.9%
TOTAL OPEN SPACE	**3036 SF**	**49.2%**



PROPOSED OPEN SPACE DIAGRAM

1/8" = 1'-0"

0' 4' 8' 16' 32'

OPEN SPACE DIAGRAMS

BOARD OF ZONING APPEALS SET

50 CONCORD AVENUE, CAMBRIDGE MA

KBA
KELLY BOUCHER ARCHITECTURE
kelly@boucherarchitecture.com
phone: (617) 827.3527

Date 05.19.23

Sheet BZA-03

5/19/2023 11:19:11 AM

GRADE PLANE CALCULATIONS

EXISTING GRADE PLANE CALCULATION

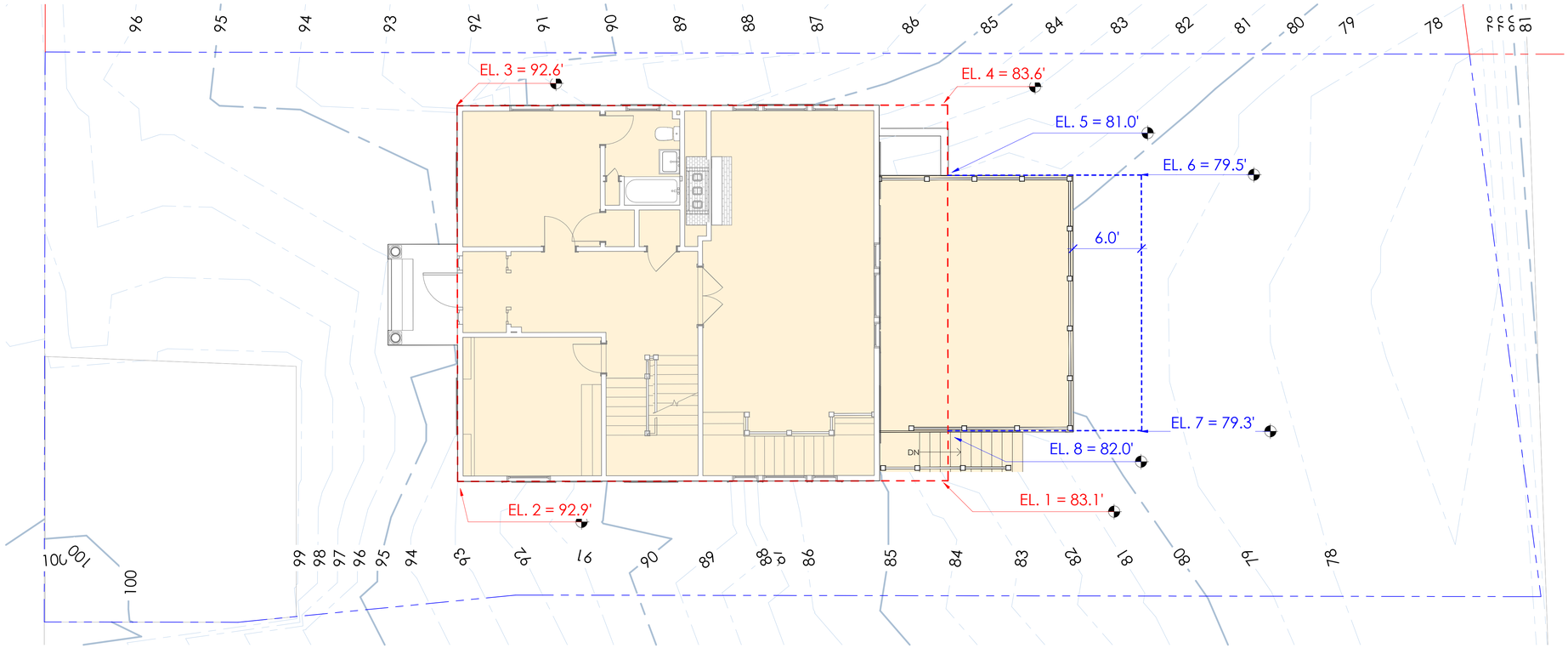
EXISTING GRADE PLANE SPOT ELEVATIONS:
- EL. 1 = 83.9'
- EL. 2 = 93.7'
- EL. 3 = 93.4'
- EL. 4 = 84.4'

EXISTING GRADE PLAN ELEVATION:
= (83.9' + 93.7' + 93.4' + 84.4') / 4
= 355.4' / 4
= 88.85'

PROPOSED GRADE PLANE CALCULATION

PROPOSED GRADE PLANE SPOT ELEVATIONS:
- EL. 1 = 83.9'
- EL. 2 = 93.7'
- EL. 3 = 93.4'
- EL. 4 = 84.4'
- EL. 5 = 81.8'
- EL. 6 = 80.3'
- EL. 7 = 80.2'
- EL. 8 = 82.8'

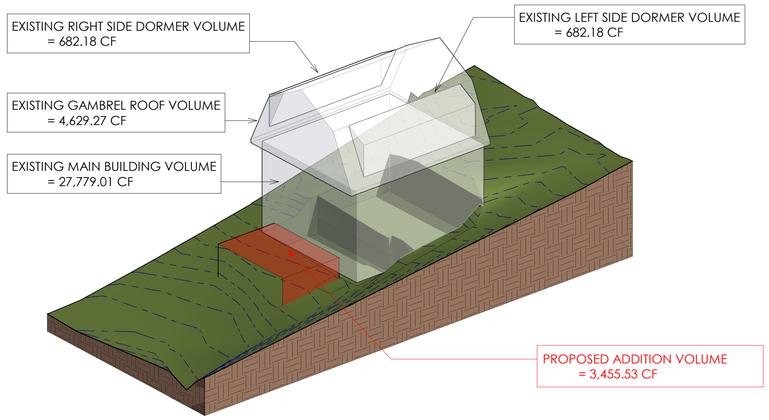
PROPOSED GRADE PLAN ELEVATION:
= (83.9' + 93.7' + 93.4' + 84.4') +
(81.8' + 80.3' + 80.2' + 82.8') / 8
= 355.4' + 325.1' / 8
= 85.06'



GRADE PLANE CALCULATION DIAGRAM

3/16" = 1'-0"

0' 2' 4' 8' 16'



3D VOLUME CALCULATION DIAGRAM

EX. & PROPOSED BUILDING VOLUME TOTALS			
Volume Description	Volume Type	Gross Volume	% Volume Increase
GAMBREL ROOF VOLUME	EXISTING	19077.75 CF	
RIGHT SIDE DORMER VOLUME	EXISTING	682.18 CF	
LEFT SIDE DORMER	EXISTING	682.18 CF	
MAIN BUILDING VOLUME	EXISTING	27779.01 CF	
TOTAL EXISTING BUILDING VOLUME		48221.11 CF	
SUNROOM ADDITION	PROPOSED	3306.11 CF	=7.16% INCREASE IN TOTAL BUILDING VOLUME
VOLUME ADDED		3306.11 CF	
TOTAL PROPOSED BUILDING VOLUME		51527.23 CF	

GRADE PLANE & VOLUME CALCS.
BOARD OF ZONING APPEALS SET

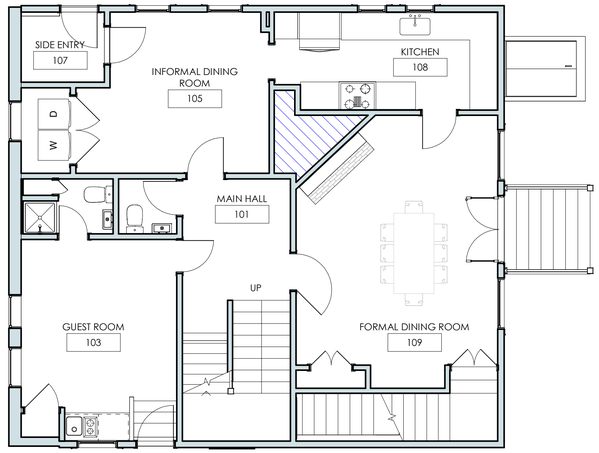
50 CONCORD AVENUE, CAMBRIDGE MA

KBA
KELLY BOUCHER ARCHITECTURE
kelly@boucherarchitecture.com
phone: (617) 827.3527

Date 05.19.23

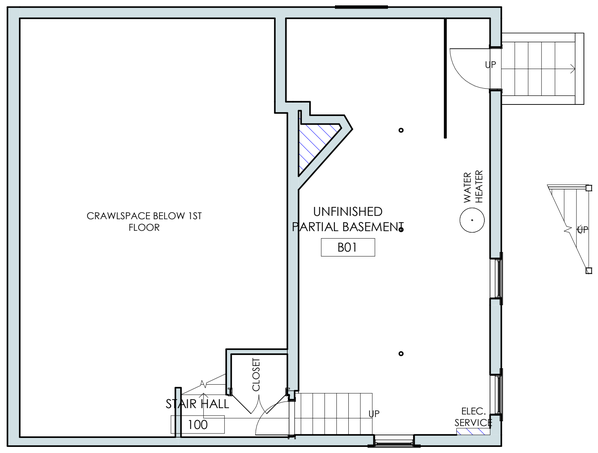
Sheet BZA-04

5/19/2023 11:19:13 AM



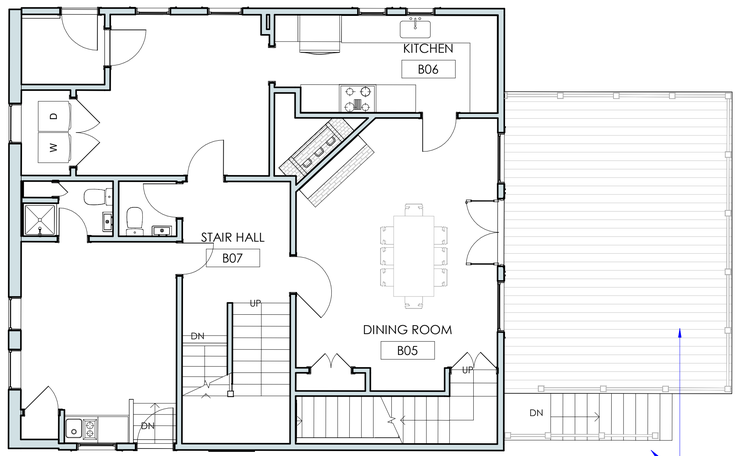
EXISTING 1ST FL PLAN

3/16" = 1'-0"



EXISTING GARDEN LEVEL PLAN

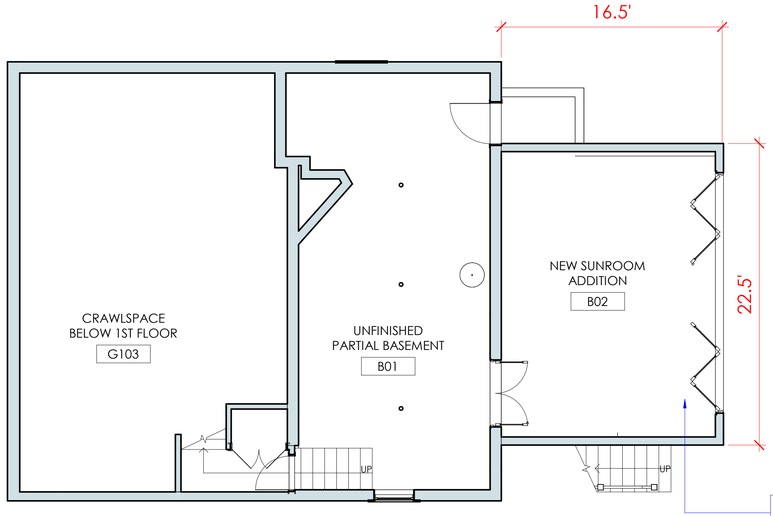
3/16" = 1'-0"



PROPOSED ROOF DECK & STAIR TO YARD FROM 1ST FLOOR

PROPOSED 1ST FL PLAN

3/16" = 1'-0"



PROPOSED GARDEN LEVEL ADDITION
+ 373 SF

PROPOSED GARDEN LEVEL PLAN

3/16" = 1'-0"

0' 2' 4' 8' 16'

EXSITING & PROPOSED PLANS
BOARD OF ZONING APPEALS SET

50 CONCORD AVENUE, CAMBRIDGE MA

KBA
KELLY BOUCHER ARCHITECTURE
kelly@boucherarchitecture.com
phone: (617) 827.3527

Date 05.19.23

Sheet BZA-05

5/19/2023 11:19:14 AM

EXIST. LEFT ELEV

3/16" = 1'-0"

EXISTING FRONT ELEVATION

3/16" = 1'-0"

PROP. LEFT ELEV

3/16" = 1'-0"

PROPOSED FRONT ELEVATION

3/16" = 1'-0"

0' 2' 4' 8' 16'

EXIST & PROPOSED ELEVATIONS
BOARD OF ZONING APPEALS SET

50 CONCORD AVENUE, CAMBRIDGE MA

KBA
KELLY BOUCHER ARCHITECTURE
kelly@boucherarchitecture.com
phone: (617) 827.3527

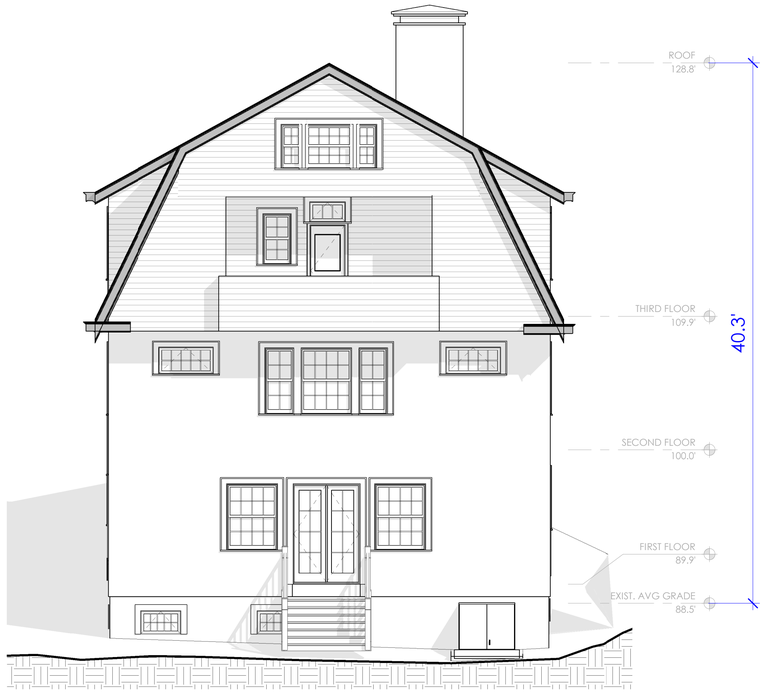
Date 05.19.23

Sheet BZA-06

5/19/2023 11:19:23 AM

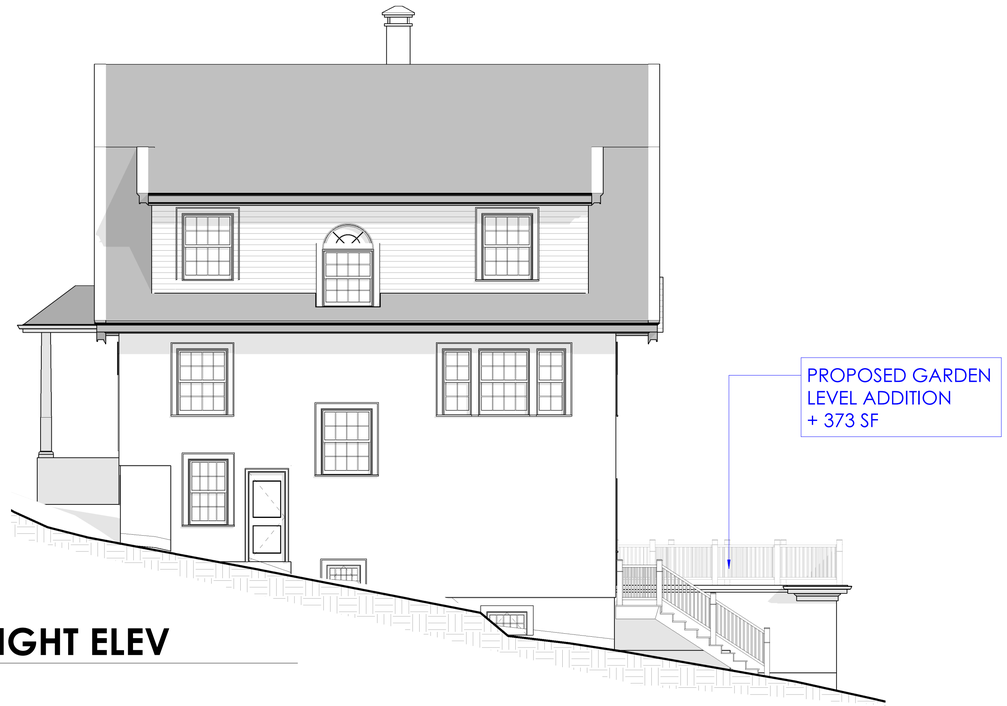
EXIST. RIGHT ELEV

3/16" = 1'-0"



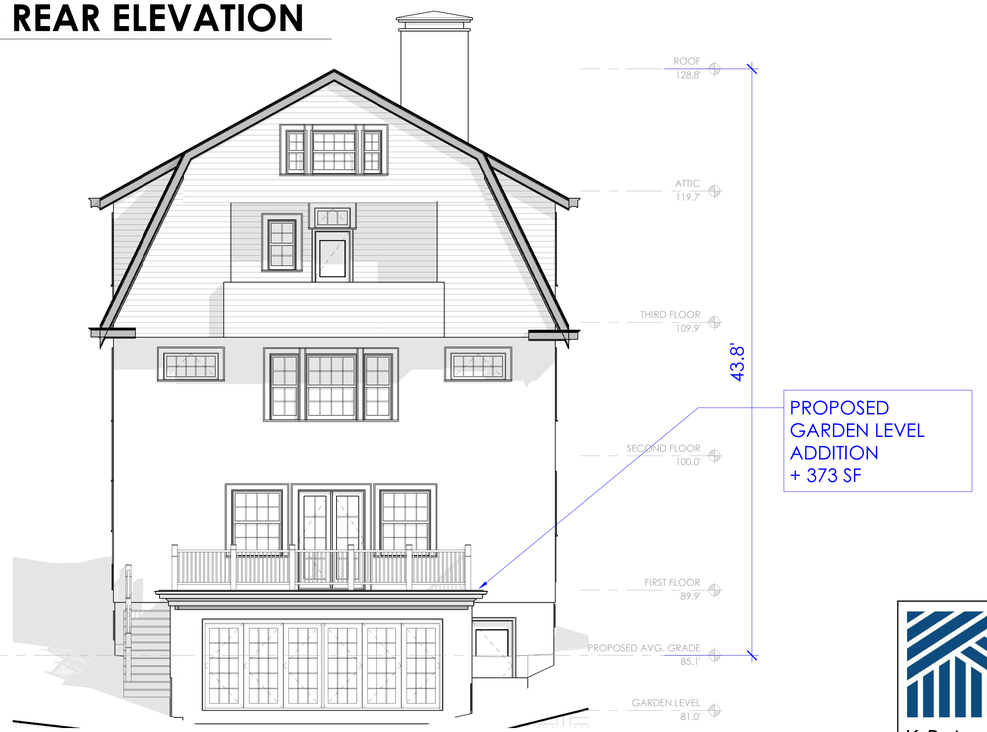
EXISTING REAR ELEVATION

3/16" = 1'-0"



PROP. RIGHT ELEV

3/16" = 1'-0"



PROPOSED REAR ELEV.

3/16" = 1'-0"

EXIST & PROPOSED ELEVATIONS

BOARD OF ZONING APPEALS SET

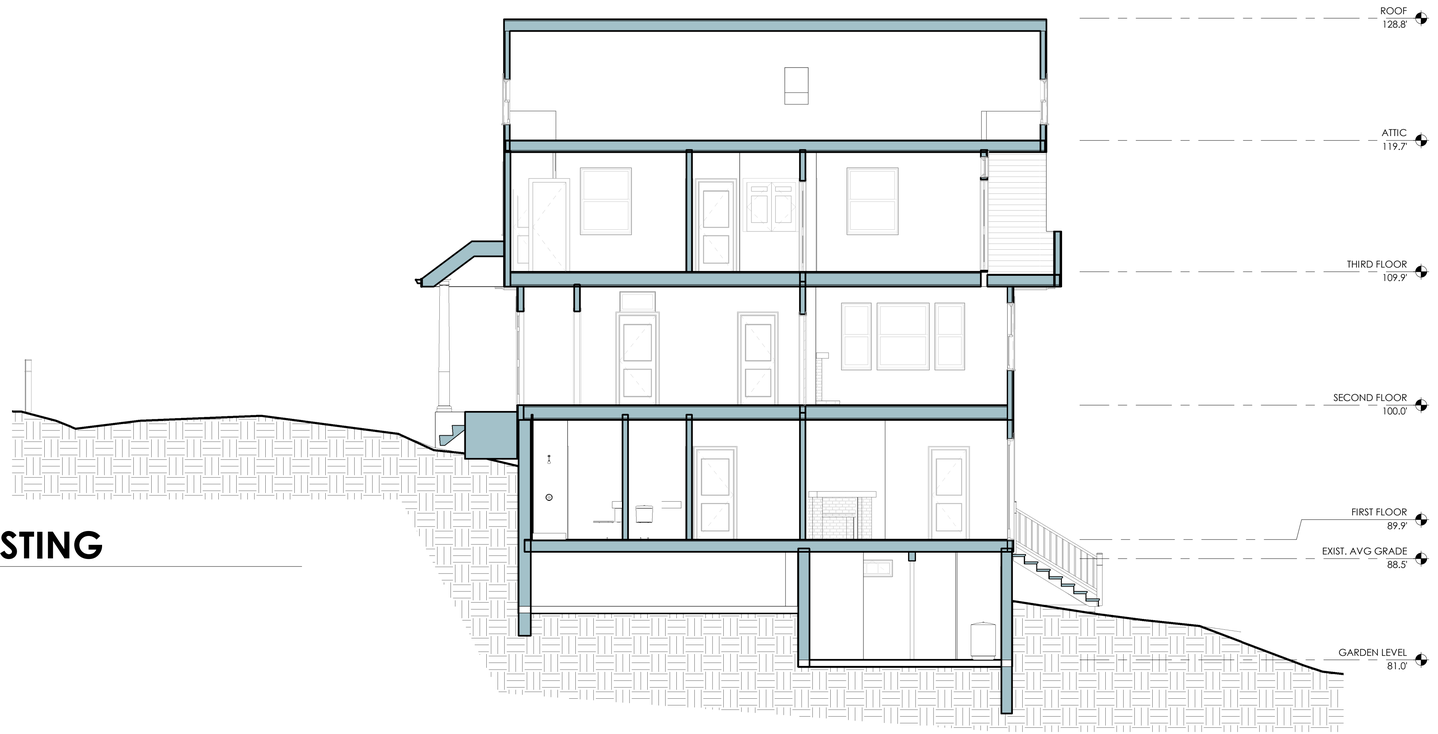
KBA
KELLY BOUCHER ARCHITECTURE
kelly@boucherarchitecture.com
phone: (617) 827.3527

Date
05.19.23

Sheet
BZA-07

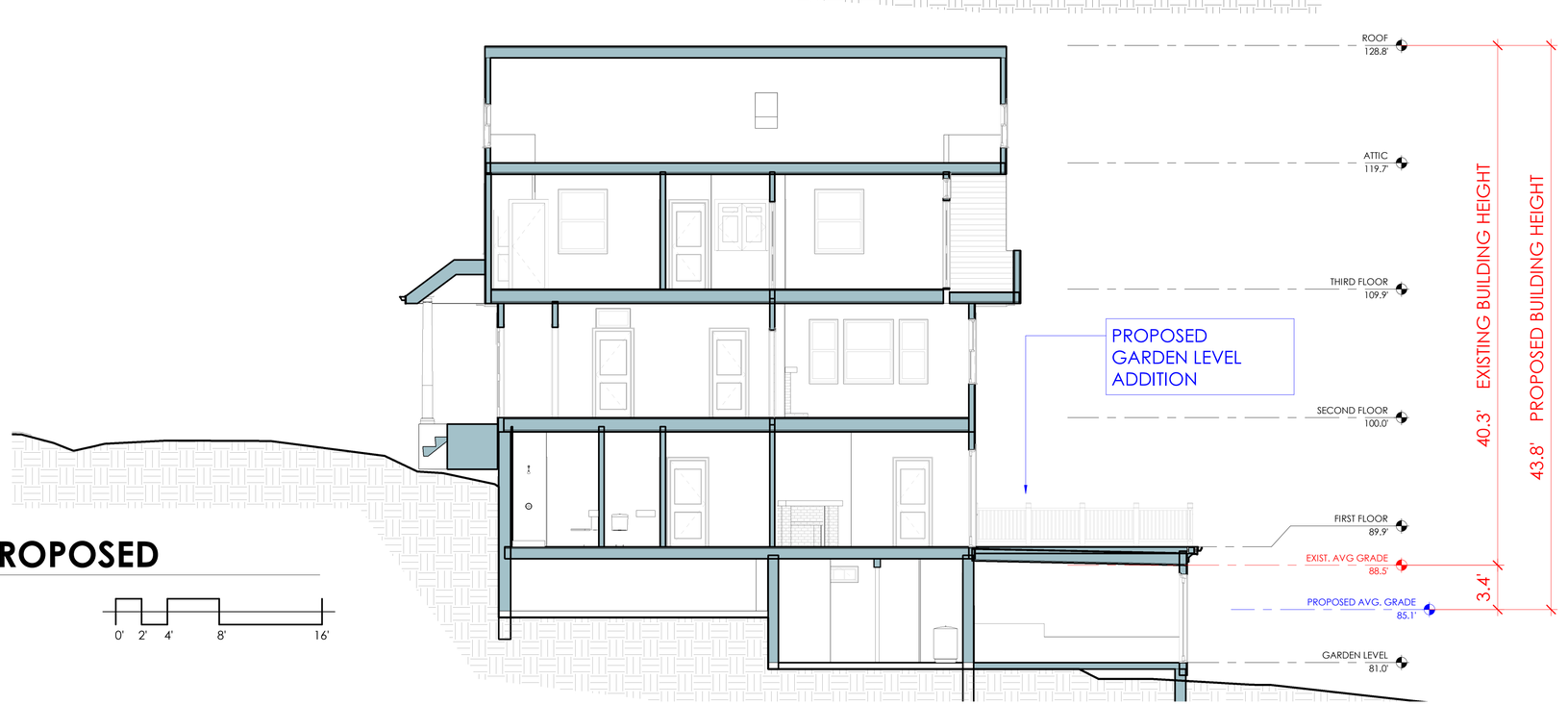
50 CONCORD AVENUE, CAMBRIDGE MA

5/19/2023 11:19:34 AM



SITE SECTION - EXISTING

3/16" = 1'-0"



SITE SECTION - PROPOSED

3/16" = 1'-0"

0' 2' 4' 8' 16'

EXISTING AND PROPOSED SECTIONS

BOARD OF ZONING APPEALS SET

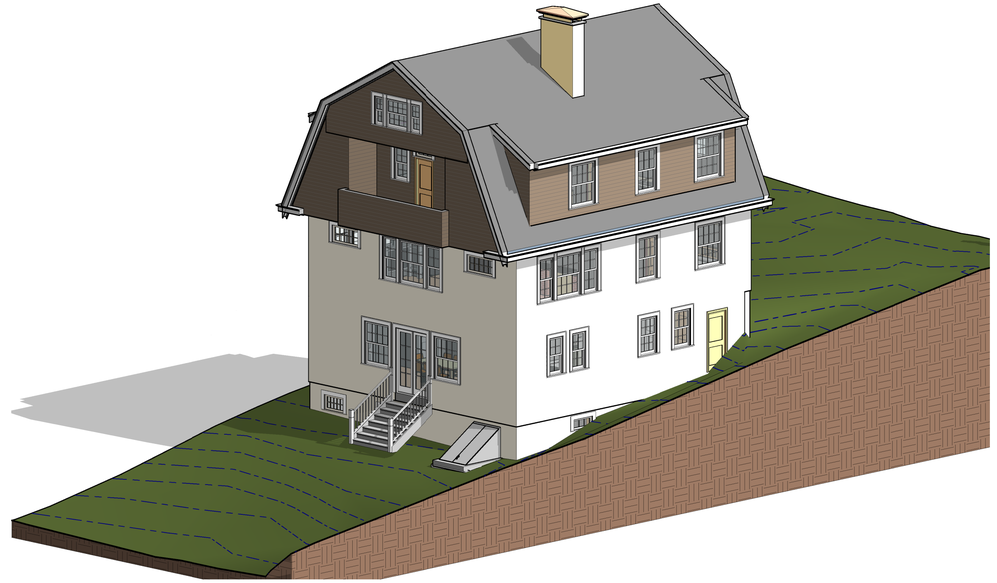
50 CONCORD AVENUE, CAMBRIDGE MA

KBA
KELLY BOUCHER ARCHITECTURE
kelly@boucherarchitecture.com
phone: (617) 827.3527

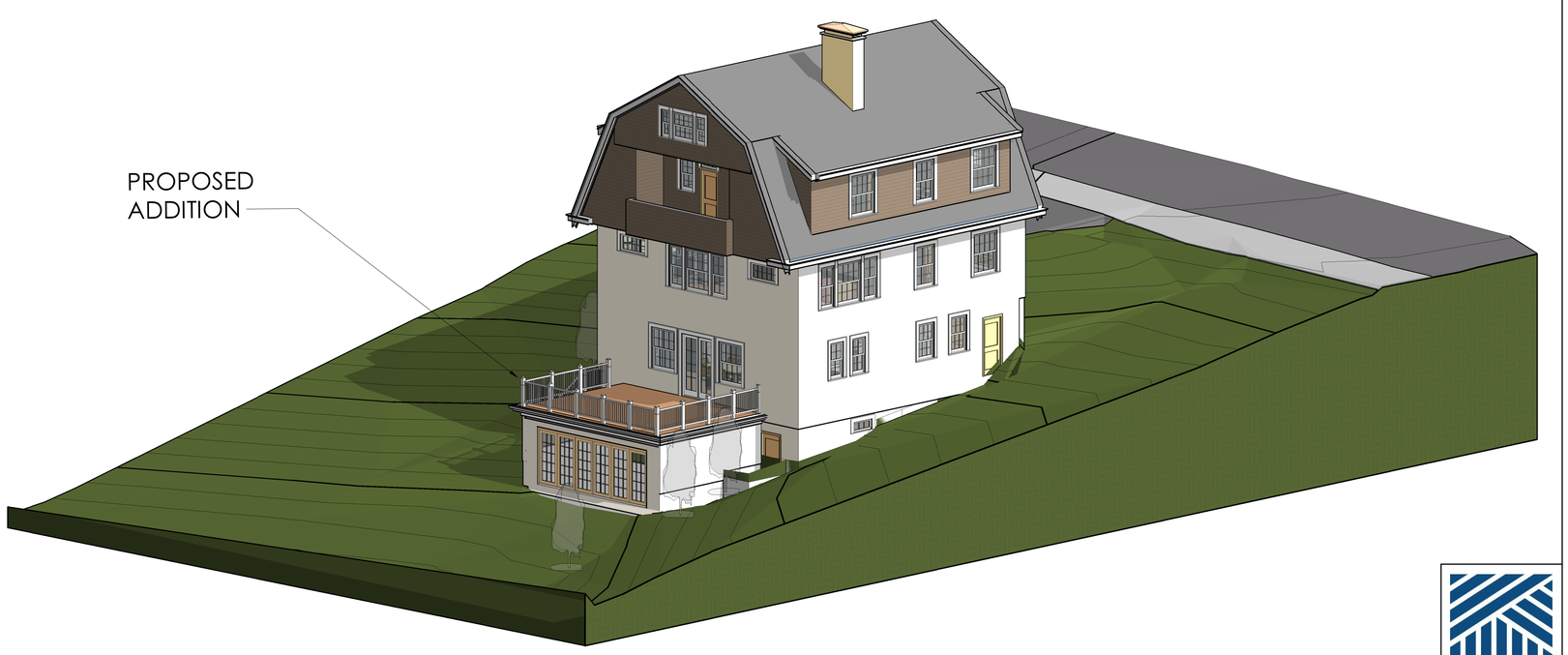
Date 05.19.23

Sheet BZA-08

5/19/2023 11:19:40 AM



EXISTING REAR VIEW



REAR VIEW INDICATING REQUESTED ADDITION

PHOTOS AND 3D VIEWS
BOARD OF ZONING APPEALS SET

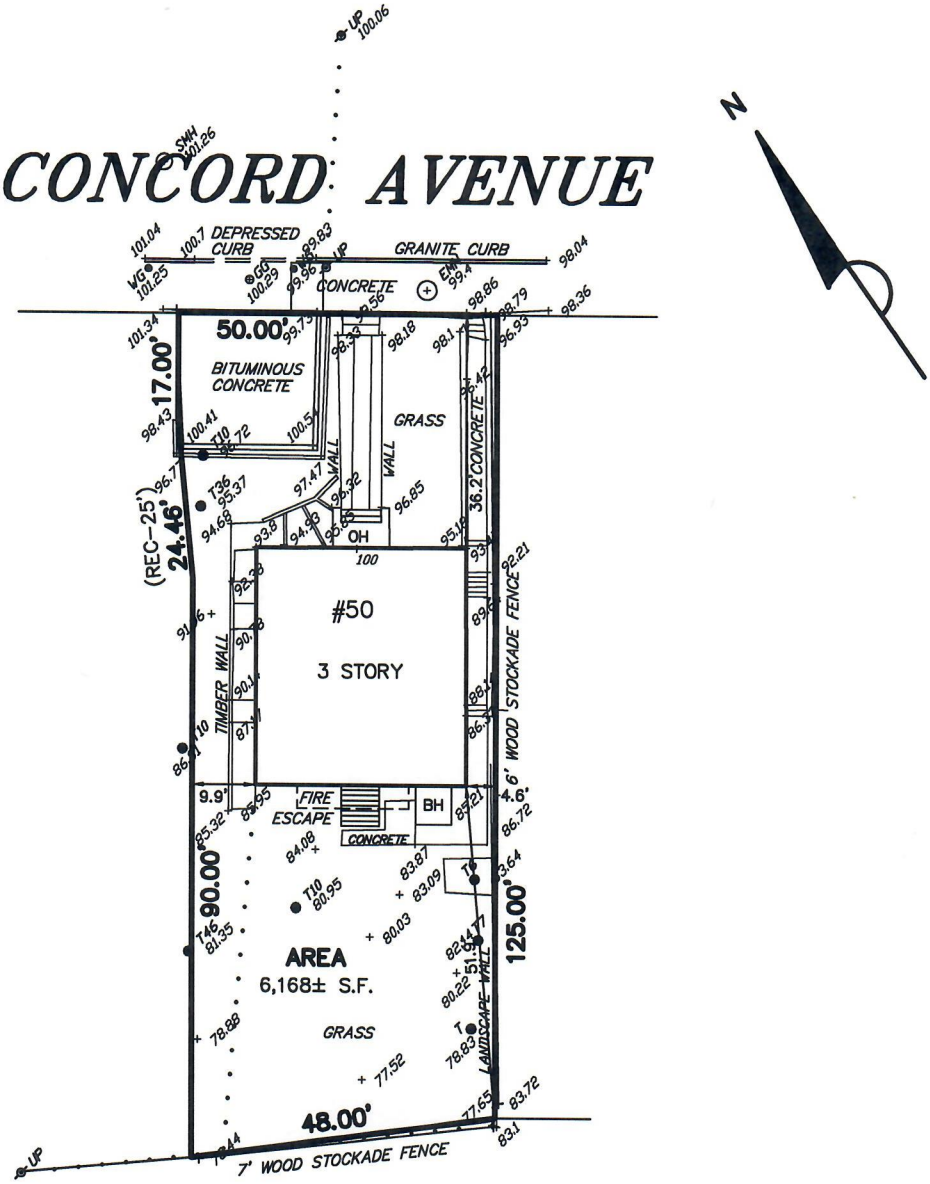
50 CONCORD AVENUE, CAMBRIDGE MA

KBA
KELLY BOUCHER ARCHITECTURE
kelly@boucherarchitecture.com
phone: (617) 827.3527

Date
05.19.23

Sheet
BZA-09

5/19/2023 11:19:43 AM



OWNER: TRUSTEE OF THE MARION R. FREMONT–SMITH TRUST

I HEREBY CERTIFY THAT THE BUILDING IS LOCATED AS SHOWN.

COMMONWEALTH OF MASSACHUSETTS
SCOTT C. LYNCH
NO. 51636
PROFESSIONAL LAND SURVEYOR

5/20/2022

SCOTT LYNCH, PLS **DATE**

THIS PLAN MAY HAVE BEEN ALTERED IF THE SIGNATURE IS NOT SIGNED IN BLUE.

CERTIFIED PLOT PLAN
#50 CONCORD AVENUE
IN
CAMBRIDGE, MA
(MIDDLESEX COUNTY)

SCALE: 1"= 30' **DATE: 5/20/2022**

0 30 60 90 ft

ROBER SURVEY
1072A MASSACHUSETTS AVENUE
ARLINGTON, MA 02476
(781) 648–5533

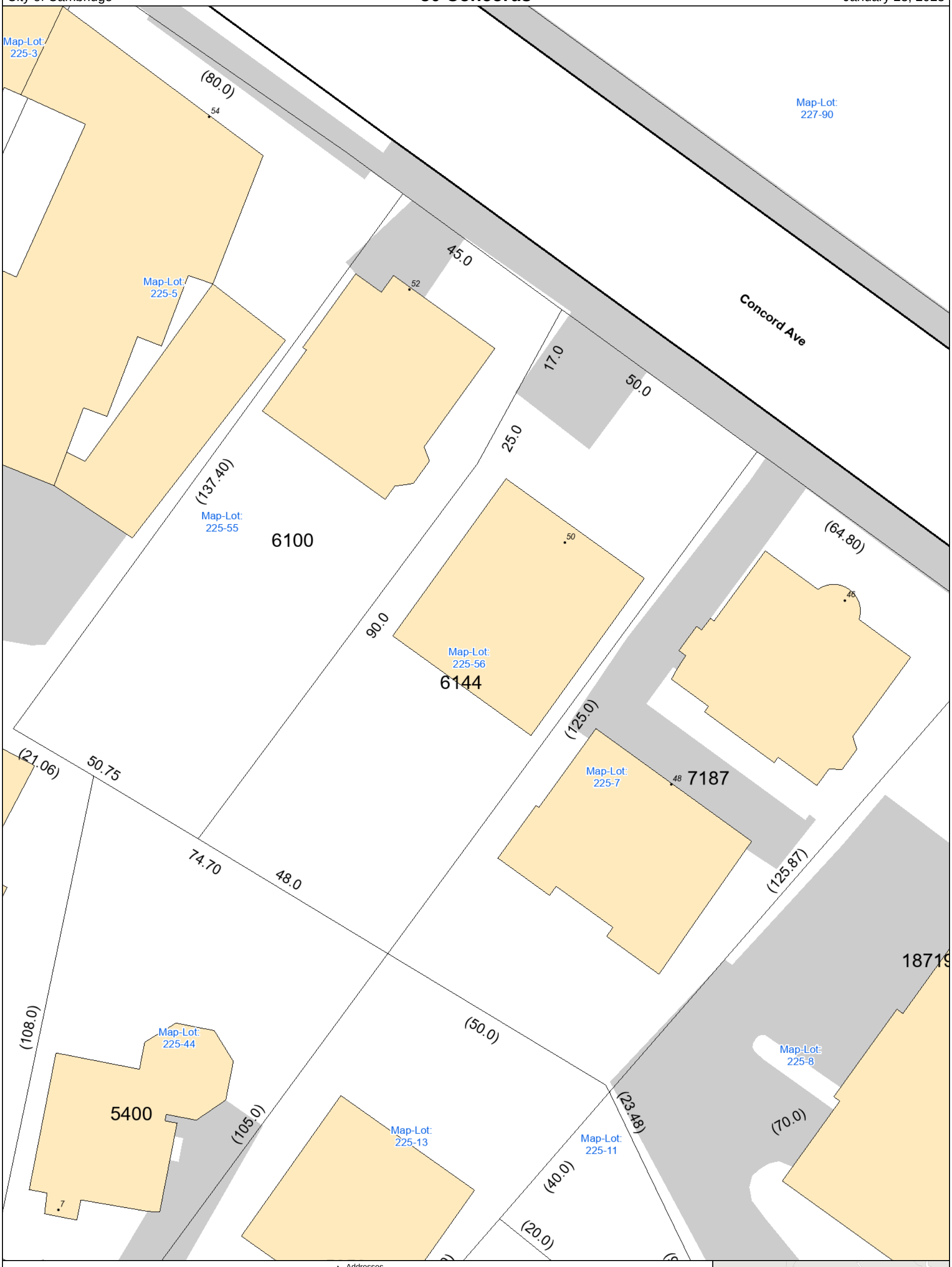
7065CP1.DWG

50 Concord Ave
BZA-223469

City of Cambridge

50 Concords

January 23, 2023



City of Cambridge
Massachusetts

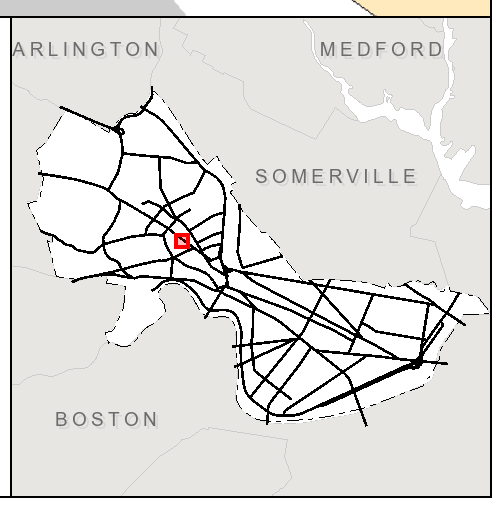
1" = 20 ft

www.cambridgema.gov/gis

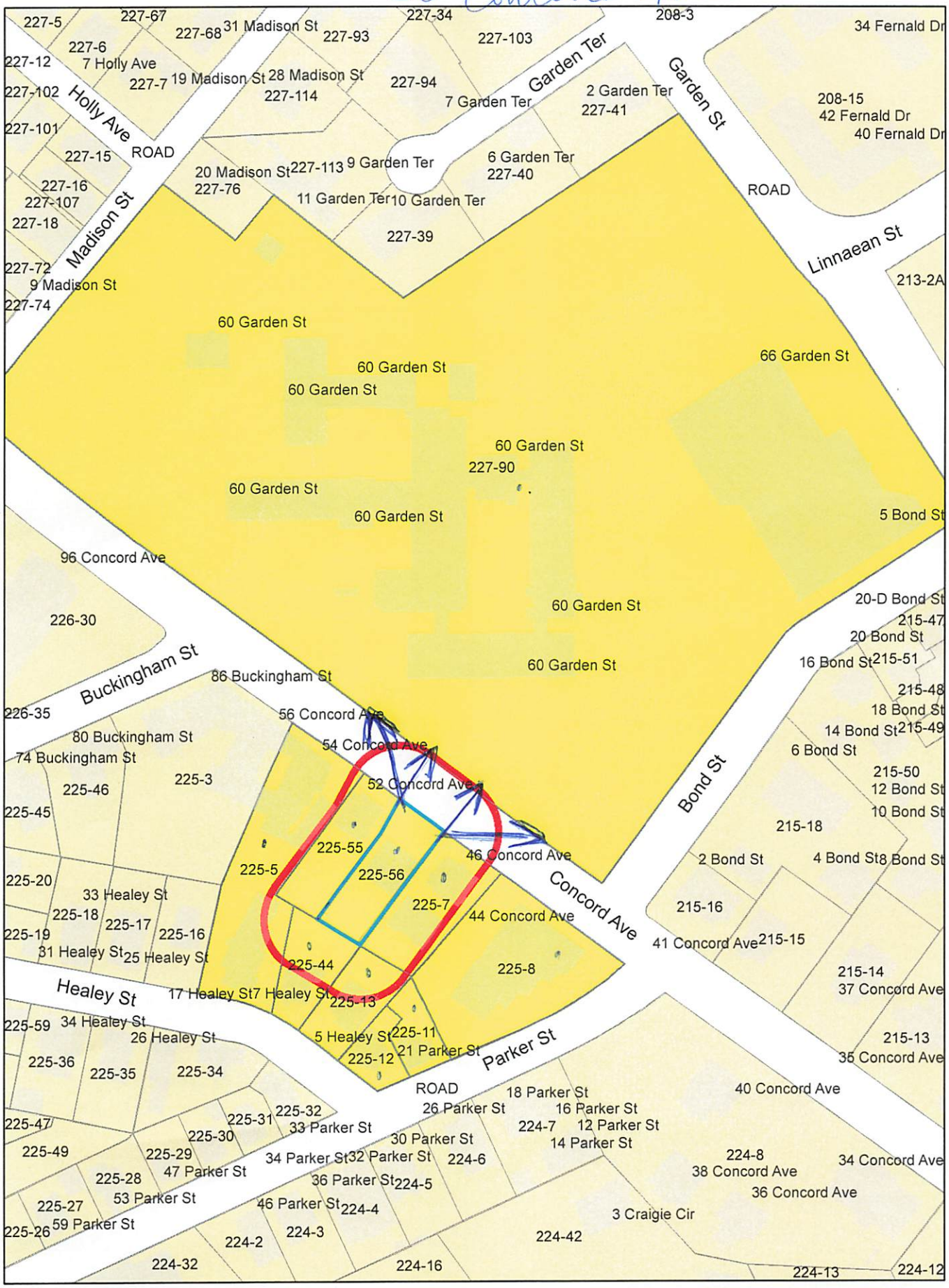
- Addresses
- Rail
- Building Footprints
- Parcels

Paved Surfaces

- Paved Roads
- Bridges
- Unpaved Roads
- Unpaved Parking
- Sidewalks
- Driveways
- Alleys
- Other Paved Surface
- Public Footpath



50 Concord Ave



50 Concord Ave

Petitioner

225-5
BAWA, TSHERING
TR. THE 17 HEALEY ST., #202 REALTY TR
11 RICHMOND RD
BELMONT, MA 02478

225-5
MARKAND, ATUL & ALLA TERENTIEVA
C/O OXFORD ST REALTY INC
1644 MASS AVE
CAMBRIDGE, MA 02138

CATHY CHEN
50 CONCORD AVE
CAMBRIDGE, MA 02138

225-5
GREEN, JOSEPH B.
14 CRAIGIE ST.
CAMBRIDGE, MA 02138

225-5
VANNICELLI, MARSHA
11 HURON AVE
CAMBRIDGE, MA 02138

225-5
TERENTIEVA, ALLA
54 CONCORD AVE. UNIT#301
CAMBRIDGE, MA 02138

225-5
AGARWAL, RAJENDRA
54 CONCORD AVE., #302
CAMBRIDGE, MA 02138

225-5
TREADWELL, GAYLE A.
54 CONCORD AVE #401
CAMBRIDGE, MA 02138

225-5
CESARI, ROBERT A., JR.
54 CONCORD AVE., UNIT #54402
CAMBRIDGE, MA 02138

225-8
UMANZIO, CLAIRE-FRANCES
44 CONCORD AVE #104
CAMBRIDGE, MA 02138

225-8
RABINOWITZ, STANLEY J.
44 CONCORD AVE., #202
CAMBRIDGE, MA 02138

225-8
ALBA DEL RIO, BEATRIZ
44 CONCORD AVE., #205
CAMBRIDGE, MA 02138

225-11
SIMITS, MATTHEW J. & LAURIE R. PESSAH
21 PARKER ST
CAMBRIDGE, MA 02138

225-5
GENG, HONG
54 CONCORD AVE, UNIT #403
CAMBRIDGE, MA 02138

225-8
PARATORE, JOSEPH D. &
CORDULA PARATORE TRUSTEES
142 CHILTON ST
BELMONT, MA 02178

225-8
ALSTER, NORMAN & KRISTINE ALSTER
29 GURNEY ST
CAMBRIDGE, MA 02138

225-8
POPPER, CHARLES
44 CONCORD AVE #206
CAMBRIDGE, MA 02138

225-8
COLEMAN, K. ANN
44 CONCORD AVE., UNIT #306
CAMBRIDGE, MA 02138

225-8
MORGAN, DAVID GLYN & MARGARITA ESTEVEZ
136 GONESEE ST. APT 501
SYRACUSE, NY 13202

225-12
CRANNA, JUDITH
3 HEALEY ST.
CAMBRIDGE, MA 02138-2221

225-5
PITTMAN, RISA DIANNE
17 HEALEY #103
CAMBRIDGE, MA 02138

225-8
CHEN, BO & XINTAO WEI
44 CONCORD AVE. UNIT#102
CAMBRIDGE, MA 02138

225-8
JOSEPH, ELAINE M.
44 CONCORD AVE., #105
CAMBRIDGE, MA 02138

225-8
POLLALIS, SPIRO
44 CONCORD AVE. #106
CAMBRIDGE, MA 02138

225-8
FURLONG, INGRID B.
THE JULIE ATWOOD DRAKE 1999 TRUST
1405 VEGAS VERDES # 215
SANTA FE, NM 87507

225-8
POLLALIS, SPIRO
44 CONCORD AVENUE UNIT #106
CAMBRIDGE, MA 02138

225-8
DAVIES, MARK I. & MONIQUE V. DAVIES
44 CONCORD AVE. UNIT#401
CAMBRIDGE, MA 02138

225-8
COXE PROPERTIES, LLC
9662 MCCLANAHAN RD.
GREENCASTLE, PA 17225

225-5
RICCARDI, PAT J. JR.
17 HEALEY ST UNIT 102
CAMBRIDGE, MA 02138

225-5
SUCHMAN, SARA
51A THAYER RIDGE ROAD
BRATTLEBORO, VT 05301

50 Concord Ave

225-5
JANOWSKA, STANISLAWA E.
17 HEALEY ST., #303
CAMBRIDGE, MA 02138

225-5
YOON, SUTHICHAI, NANTAWAN YOON,
241 S.ARDMORE RD.
BEXLEY, OH 43209

225-8
FREITAS, TIMOTHY
44 CONCORD AVE UNIT 403
CAMBRIDGE, MA 02138

225-55
AZUMA, SELOM H & EMILY L. AARONSON
52 CONCORD AVE
CAMBRIDGE, MA 02138

227-90
PRESIDENT & FELLOWS OF HARVARD COLLEGE
C/O HARVARD REAL ESTATE, INC.
HOLYOKE CENTER,ROOM 1000
1350 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138-3895

225-7
HSIEH, TSUNG-HAN
48 CONCORD AVE #48/1
CAMBRIDGE, MA 02138

225-7
NATARAJAN, PRIYAMVADA
46 CONCORD AVE UNIT 2
CAMBRIDGE, MA 02138

225-7
RAMIREZ, VLADIMIR
46-48 CONCORD AVE., #46/1
CAMBRIDGE, MA 02138

225-7
JEM REALTY, LLC
P.O. BX 2112
NEW CASTLE, NH 03854

225-8
RAMIREZ, VLADIMIR
44 CONCORD AVE #100
CAMBRIDGE, MA 02138

225-8
JUNGHAHN LISA & LARA KHOURI
TRS L & L FAMILY TRUST
1253 11TH ST - UNIT 3
SANTA MONICA, CA 90401

225-5
ZORN CHRISTIAN E & TOQUYEN ZORN
54 CONCORD AVE UNIT 102
CAMBRIDGE, MA 02138

225-8
SINGH SWETA
398 N AVE
WESTON, MA 02493

225-5
SELLING AVIVA
17 HEALEY ST - UNIT 101
CAMBRIDGE, MA 02138

225-8
PIANA, FRANCESCA,
TRS THE FRANCESCA PIANA TRT
114 PLEASANT ST UNIT #202
ARLINGTON , MA 02476

225-44
MCELROY, DAVID J. ,
TRS THE DAVID J. MCELROY REV TRUST
7 HEALEY ST
CAMBRIDGE, MA 02138

225-56
FREMONT-SMITH, MARION R.,
TRS THE MARION R. FREMONT-SMITH TR
50 CONCORD AVE
CAMBRIDGE, MA 02138

225-8
CHUANG DANIEL B & KATHY CHUANG
611 GREEN ST - UNIT T611
CAMBRIDGE, MA 02138

225-13
MILLER BRADLEY P LINDSAY L PITT TRS
5 HEALEY ST
CAMBRIDGE, MA 02138

225-8
SULLO, RICHARD A & ALICE K. SULLO TRS
44 CONCORD AVE - UNIT 302
CAMBRIDGE, MA 02138

225-5
SMITH, RITA & MICHAEL SMITH
54 CONCORD AVE - UNIT 103
CAMBRIDGE, MA 02138

225-5
EPPERLY, MANUEL III GABRIELLE EPPERLY
54 CONCORD AVE - UNIT 54-303
CAMBRIDGE, MA 02138

225-8
JIANG, BO
44 CONCORD AVE - UNIT 304
CAMBRIDGE, MA 02138

225-8
JACOB, EMIL & PAULA MATCOVICI
44 CONCORD AVE - UNIT 103
CAMBRIDGE, MA 02138

225-8
SAIA, ANTHONY J. & KATHLEEN V S. SAIA
44 CONCORD AVE - UNIT 101
CAMBRIDGE, MA 02138

225-5
LOBRON, CHARLES M.
54 CONCORD AVE.,UNIT #101
CAMBRIDGE, MA 02138

KELLY BOUCHER
54 HARVARD STREET
BROOKLINE, MA 02445

City of Cambridge

MASSACHUSETTS

BOARD OF ZONING APPEAL

831 Mass Avenue, Cambridge, MA.
(617) 349-6100

2023 JUN 29 PM 12:04
OFFICE OF THE CITY CLERK
CAMBRIDGE, MASSACHUSETTS

Board of Zoning Appeal Waiver Form

The Board of Zoning Appeal
831 Mass Avenue
Cambridge, MA 02139

RE: Case # BZA-223469.

Address: 50 Concord Ave.

□ *Owner,* □ *Petitioner, or* ☒ *Representative:* Kelly Barclay, AIA,
(Print Name)

hereby waives the required time limits for holding a public hearing as required by Section 9 or Section 15 of the Zoning Act of the Commonwealth of Massachusetts, Massachusetts General Laws, Chapter 40A. The □ *Owner,* □ *Petitioner, or* □ *Representative further hereby waives the Petitioner's and/or Owner's right to a Decision by the Board of Zoning Appeal on the above referenced case within the time period as required by Section 9 or Section 15 of the Zoning Act of the Commonwealth of Massachusetts, Massachusetts General Laws, Chapter 40A, and/or Section 6409 of the federal Middle Class Tax Relief and Job Creation Act of 2012, codified as 47 U.S.C. §1455(a), or any other relevant state or federal regulation or law.*

Date: 6/28/23

Signature

Pacheco, Maria

From: Sara Suchman <spsuch@gmail.com>
Sent: Tuesday, June 27, 2023 2:33 PM
To: Pacheco, Maria
Subject: CASE NO. BZA-223469
Attachments: IMG_0862.mov

Dear Ms. Pacheco,

I am an owner at 17 Healey Street and am very concerned about possible water and moisture issues resulting from the proposed addition at 50 Concord Avenue. Healey Street is already downgrade from the houses on Concord Avenue. The ground floor of 17 Healey suffers from humidity and occasional mold caused, I've assumed, by the water table. 50 Concord, as you can see in the attached video, already pools water on the land abutting the Healey Street homes. An additional loss of land will increase this.

I understand the need for more space, ADUs, etc. (if that is even what this addition is). But, unless there is a way to address and mitigate the water run-off, I sincerely hope that the Board will not approve the appeal of **CASE NO. BZA-223469,** otherwise the housing that already exists on Healey Street will be put at risk.

Thank you,

Sara Suchman
17 Healey Street, E#203
Cambridge, MA 02138
203-241-1432 (cell)

26 June 2023

Board of Zoning Appeal
831 Massachusetts Avenue
Cambridge, MA 02138

Dear Members of the Board,

We are submitting this letter to share our concerns with BZA Case No. 223469, 50 Concord Avenue, submitted by Cathy Chen.

While we understand and appreciate the petitioner's desire to improve their property, the project as described to us exacerbates existing non-conformities and alters the topology of an area that already has demonstrated drainage challenges.

Zoning rules show that this building already exceeds GFA and FAR. Not conforming with ordinance requirements could set a precedent for other buildings in the neighborhood. The Petitioner shared the drawing in Image 1 with us with on June 17, 2023; that drawing shows a patio or deck off the rear addition and parking in front of the house, two details that are absent from the plans submitted to the city on May 23, 2023. Should the project be approved as submitted to the city, we worry about the cascading effects of potential future work at 50 Concord. In BZA-02 and BZA-05 the schematic shows doors off of the sunroom, not windows, which would seem to require a landing. Should the project be approved, would the property owners have the right to add a 10 foot deck or some type of hardscape off the addition, creating additional water problems in the area? What would prevent future development of the building, such as building up on the proposed addition or adding more parking in the front yard?

Additionally, we are deeply concerned about changes to the local topology, ground permeability, drainage, and vegetation. The property is on a steep grade, with the bottom of the grade acting as a sink that has been known for ponding. Other properties in the area that share this topological zone would see more flooding given the plan for more foundation, more fill, and less vegetation. Although the plan calculations show a nominal net increase in permeable area, it is not clear from the plans what the existing condition is of any added areas of permeability, nor whether the expanded areas are in locations that would ameliorate the removal of permeable area further down the slope. Moreover, since the existing structure is three stories plus a basement, the changes in already non-conforming GFA and FAR on a percentage basis mask the massive impact at ground level.

We have included a photograph (Image 2) of the backyard of 50 Concord after rain in September 2021, showing substantial water ponding. Reduced permeability in the back yard, or a change to the landscape's topology would result in this pond expanding or shifting to other (our) properties, leading to increased damp and water incursion in our homes. We have also posted a video showing the water condition: https://tinyurl.com/50concord

Specifically to 7 Healey, there are concerns regarding privacy and light infringement. Since 50 Concord is at a higher elevation, the basement addition would face our living room. A great appeal to 7 Healey is the green, private open space in the back yard; the existing zoning gave comfort that the 50 Concord structure would not be expanded as a single-family residence since it already exceeds GFA and FAR.

In conclusion, further expanding the already significant GFA and FAR while upsetting the area's already known, problematic topology and drainage is a detriment to other properties in the area.

26 June 2023

Respectfully,

Lindsay Pitt and Brad Miller
5 Healey Street

Mary and David McElroy
7 Healey Street

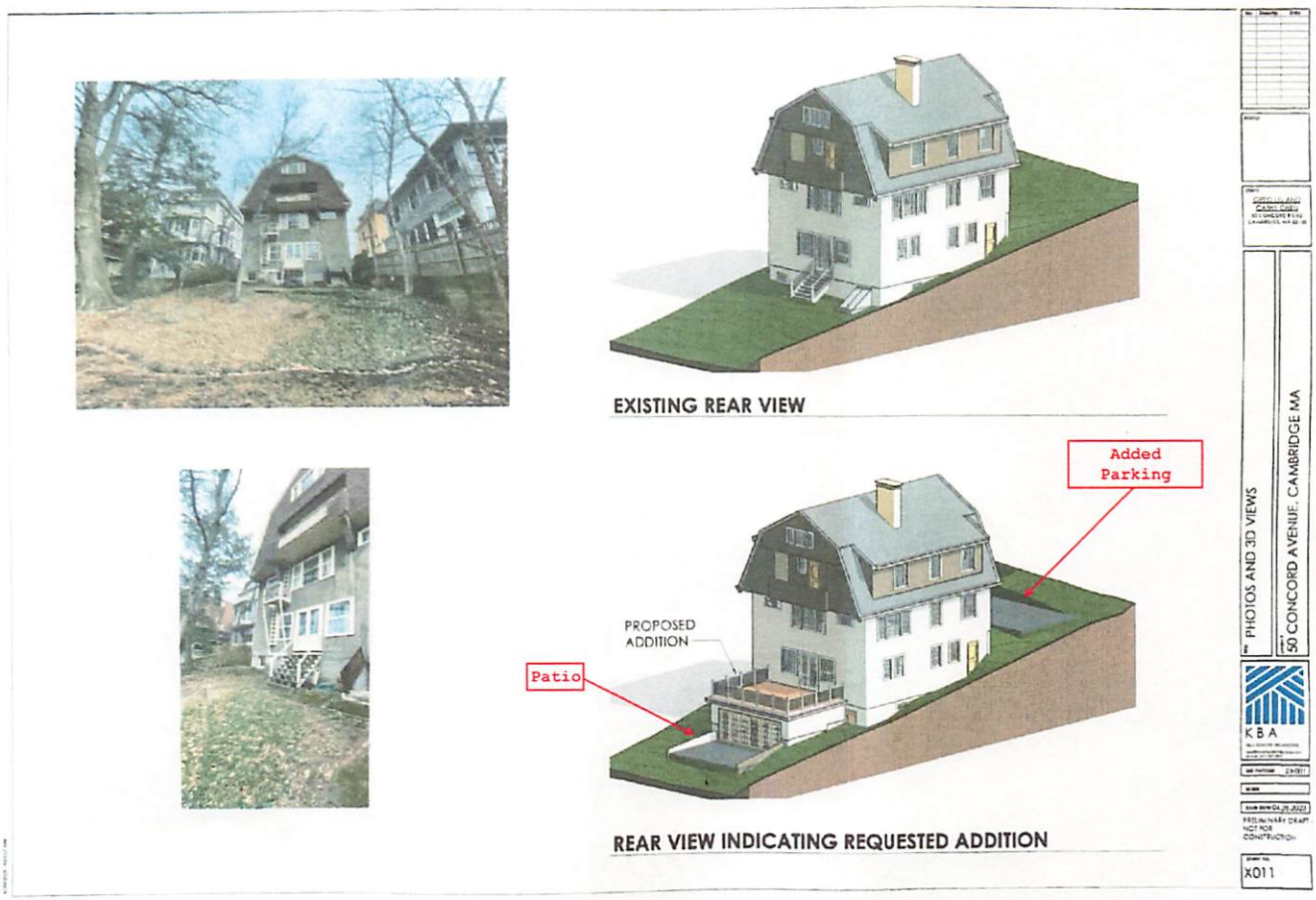


Image 1. Shows desired addition with patio and parking not shown in the submission to the city. Image provided by Cathy Chen on June 17, 2023. We added the red markup to highlight alterations not shown in the BZA application.

26 June 2023

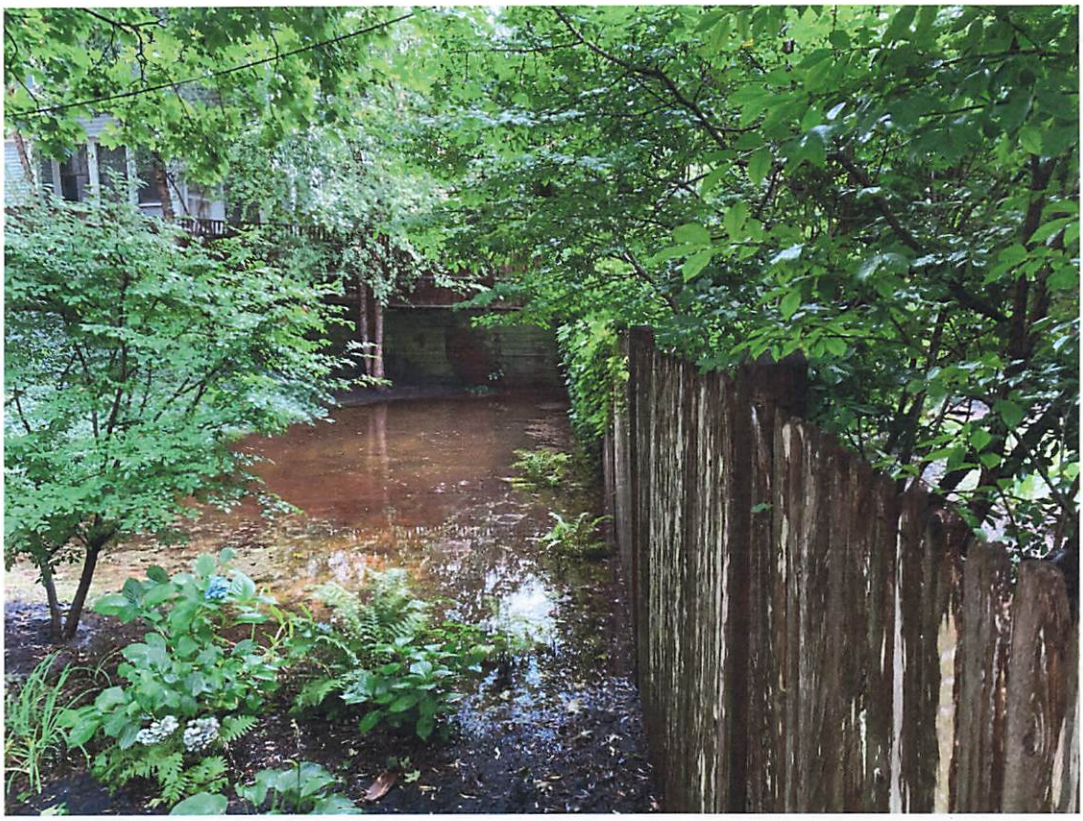


Image 2. Backyard of 50 Concord after heavy rain in September 2021.

Pacheco, Maria

From: Charles Lobron <cmlobron@gmail.com>
Sent: Thursday, June 29, 2023 8:12 AM
To: Pacheco, Maria
Subject: Case No: BZA-223469

Hello,
I live at 54 Concord Ave, Concord Arms Condominium which has two buildings: mine and 17 Healey St. The latter has endured groundwater flooding. If the proposed construction at 50 Concord Ave causes more groundwater to flow into the low ground on the Healey St building it could cause extreme costs to our Association. Please insist a study be conducted of the effects of this construction on storm water flow before you approve the permit. Thanks in advance.

Charles Lobron
54 Concord Ave #101
Cambridge, MA 02138

Natola, Stephen

From: Pacheco, Maria
Sent: Thursday, June 29, 2023 10:35 AM
To: Natola, Stephen
Subject: FW: Comments for BZA 6/29 remote hearing

Please print for 50 concord ave tonight.

Thanks

From: Gayle Treadwell <gayle@treadwell.biz>
Sent: Wednesday, June 28, 2023 5:31 PM
To: Pacheco, Maria <mpacheco@cambridgema.gov>
Subject: Comments for BZA 6/29 remote hearing

Re: Case No: BZA-223469, 50 Concord Ave, special permit for new basement level addition

To the BZA: I would like to take this opportunity to comment on the above application for a special permit. The properties between #44 and #56 Concord Avenue sit on sloping land that runs between Buckingham Street and Parker Street and levels off at Healey Street. During heavy rainstorms, stormwater running down Observatory Hill runs through this section of Concord Avenue and often pools on Healey Street toward the Parker Street intersection and on the land of Healey Street homeowners on the odd side of the street. Some of these homes currently need to use sump pumps in inclement weather. Due to climate change, our rain storms are predicted to get significantly heavier, threatening to deposit ever more standing water in this neighborhood.

I do not know what effect an addition to this home's foundation will have on stormwater drainage in the neighborhood, but I strongly urge the BZA to review this issue or at least to require the homeowners to incorporate stormwater flow mitigation in their plan before this permit is approved. Thank you.

Gayle A. Treadwell
54 Concord Ave, #401
Cambridge

City of Cambridge

MASSACHUSETTS

BOARD OF ZONING APPEAL

831 Mass Avenue, Cambridge, MA.
(617) 349-6100

BZA

POSTING NOTICE – PICK UP SHEET

The undersigned picked up the notice board for the Board of Zoning Appeals Hearing.

Name: Cathy Chen (Print) **Date:** June 13, 2023

Address: 50 Concord Ave

Case No. BZA-223469

Hearing Date: 6/29/23

Thank you,
Bza Members

Pacheco, Maria

From: kelly@boucherarchitecture.com
Sent: Wednesday, June 28, 2023 2:37 PM
To: Pacheco, Maria; 'Xiaoyu Liu'; 'cathy chen'; Ratay, Olivia
Subject: 50 Concord Av BZA Hearing Continuance Request

Maria,

After reviewing the abutter letters filed regarding our pending BZA hearing tomorrow at 50 Concord Avenue, we would respectfully request a continuance to allow more time to meet with the neighbors to address some of their concerns prior to presenting to the Board.

Please let me know if there is any additional paperwork needed to continue our hearing.

Thanks,
Kelly Boucher, AIA
KBA | www.boucherarchitecture.com | 617.827.3527

July 25, 2023

Cambridge Board of Zoning Appeal
831 Massachusetts Avenue
Cambridge, MA 02139

RE: 50 Concord Avenue
Case # BZA-223469

Dear Chair and members of the BZA,

We are requesting to continue our case scheduled for Thursday July 27, 2023.

In order to provide some clarity for the abutters, we have engaged a civil engineer to perform drainage calculations. The engineering work is still ongoing and we anticipate will be completed next week. A continuance will allow time to receive and review the drainage report and coordinate with our neighbors before coming before the board for consideration.

Respectfully submitted,

Kelly Boucher, Architect for 50 Concord Avenue
KBA | 54 Harvard Street Brookline, MA 02445
kelly@boucherarchitecture.com

CC: Homeowner
Cathy Chen 50 Concord Ave, Cambridge, MA 02138
catlchen@yahoo.com xgliu_2000@yahoo.com

* * * * *

(9:12 p.m.)

Sitting Members: Jim Monteverde, Wendy Leiserson, Carol Agate, Virginia Keesler, and Steven Ng.

JIM MONTEVERDE: The next case is 223469 -- 50 Concord Avenue. Is there anyone here who wishes to speak on this case?

KELLY BOUCHER: I wish to request a continuance for the case on 50 Concord Avenue, to give the homeowners more time to respond to some of late filed neighbor letters that were submitted not in support earlier this week. So we're requesting a continuance.

JIM MONTEVERDE: Okay. And the date we have? July 27? Let's see. We already had a July 27 date that worked for the Board members.

CAROL AGATE: I had a --

JIM MONTEVERDE: Oh, I'm sorry.

CAROL AGATE: -- problem with July 27.

JIM MONTEVERDE: This group --

CAROL AGATE: But if I can come for just that one, I can do that, but I would not be able to do --

JIM MONTEVERDE: That'll be fine. It will be a

continued case. We can do that. All right?

CAROL AGATE: Can we put them to September? That was the next date that was available, since we don't have any August dates.

JIM MONTEVERDE: Oh, sorry so the July 27 as a continued case doesn't work for you, Carol?

CAROL AGATE: If I come for just that.

JIM MONTEVERDE: Yeah.

CAROL AGATE: Yes.

JIM MONTEVERDE: We can do that.

CAROL AGATE: Um --

JIM MONTEVERDE: Just for you. We can do that.

KELLY BOUCHER: If the case has not been heard yet, does it still need the same group of Board members?

JIM MONTEVERDE: No, that's true. We just need five. So does -- do the other four members, are they available for the twenty-seventh, just to get a head count?

WENDY LEISERSON: Yes.

JIM MONTEVERDE: Okay.

VIRGINIA KEESLER: Available.

JIM MONTEVERDE: Okay. And, as the proponent said, it doesn't need to be the same five people, since it's

been -- since it's a continued case. All right. Let's say July 27, and for a continued case --

Let me make a motion, then, to continue the matter to July 27, 2023, on the condition that the petitioner change the posting sign to reflect the new date of July 27, 2023 and the new time of 6:00 p.m.

Also, in furtherance that the petitioner sign a waiver of the statutory requirement for a hearing. Said waiver can be obtained from Maria Pacheco or Olivia Ratay at the Inspectional Services Department. I ask that you sign it and return it to us by a week from this coming Monday.

KELLY BOUCHER: Yep. I --

JIM MONTEVERDE: Failure to do so --

KELLY BOUCHER: -- actually signed that and forwarded it to Maria yesterday.

JIM MONTEVERDE: Oh, okay.

KELLY BOUCHER: So that should be there.

JIM MONTEVERDE: So we can skip that. Also, if there are any new submittals or changes to the drawings, that those be in the file by 5:00 p.m. on the Monday prior to the July 27, 2023, hearing.

And also, if there are any changes to the

dimensional form and potentially the supporting statements, they also be changed and submitted along with the new documents.

On the motion, then, to continue this matter until July 27, Wendy?

WENDY LEISERSON: In favor.

JIM MONTEVERDE: Virginia?

VIRGINIA KEESLER: In favor.

JIM MONTEVERDE: Carol?

CAROL AGATE: In favor.

JIM MONTEVERDE: Steven?

STEVEN NG: In favor.

JIM MONTEVERDE: And Jim Monteverde in favor. And this will be a case not heard.

KELLY BOUCHER: Thank you.

JIM MONTEVERDE: All right.

* * * * *

(6:53 p.m.

Sitting Members: Jim Monteverde, Steven Ng, Daniel Hidalgo, Bill Boehm, and Virginia Keesler

JIM MONTEVERDE: So the next case is BZA Case 223469 -- 50 Concord Avenue. And Sitting on this case are Steven, Daniel, Bill, Virginia, and myself. And I think we're all present. And this one is a special permit.

Is there a proponent wishing to be heard on?

STEPHEN NATOLA: Jim, let me just pull everything up.

JIM MONTEVERDE: To be heard? Yep. Oh. Requesting a continuance. We'll be in bed by eight o'clock tonight if this continues. Okay, requesting a continuance.

And Stephen, I think you said the next -- let's see -- [reading aloud] So they're not saying how much time they want. We want to put them in for September 14. We had two slots there.

STEPHEN NATOLA: September 14 has one, two, three -- seven --

JIM MONTEVERDE: Cases?

STEPHEN NATOLA: -- cases, yeah.

JIM MONTEVERDE: Oh. How about the twenty-eighth?

STEPHEN NATOLA: The twenty-eighth is wide open.

JIM MONTEVERDE: Okay. And this is a case not heard, so it can be any five of us. Okay. Let me give my continuance spiel. Where did it go? Oh, here it is.

Well, let me make a motion, then, to continue this matter to September 28, 2023 on the condition that the petitioner change the posting sign to reflect the new date of September 28, 2023 and the time at 6:00 p.m.

Also in furtherance that the petitioner sign a waiver of the statutory requirement for a hearing. Said waiver can be obtained from Maria Pacheco or Olivia Ratay at the Inspectional Services Department.

I ask that you sign it and return it to us by a week from this coming Monday. Failure to do so will de facto cause this Board to give an adverse ruling on this particular case.

Also that if there are any new submittals or changes to the drawings, changes to any dimensional forms or potentially any supporting statements, they also be changed and submitted along with the new documents, and they be in our file by 5:00 p.m. on the Monday prior to the September

28, 2023 hearing.

On the motion, then, to continue this matter until September 28, 2023, Virginia?

VIRGINIA KEESLER: In favor.

JIM MONTEVERDE: Bill?

BILL BOEHM: In favor.

JIM MONTEVERDE: Thank you. Daniel?

DANIEL HIDALGO: In favor.

JIM MONTEVERDE: Steven?

STEVEN NG: In favor.

JIM MONTEVERDE: And Jim Monteverde in favor.

[All vote YES]

JIM MONTEVERDE: That is agreed. And then -- thank you, Stephen.

September 12, 2023

Cambridge Board of Zoning Appeal
831 Massachusetts Avenue
Cambridge, MA 02139

RE: 50 Concord Avenue
Case # BZA-223469

Dear Chair and members of the BZA,

Before our initial hearing date, we received feedback from some abutters that they were concerned about the impact of the project on stormwater control on site and how it would affect runoff and drainage for the homeowners who are down slope of Concord Avenue on Healey Street.

In order address to this concern, the homeowners engaged civil engineers Land Planning, Inc to prepare a stormwater report and a stormwater control plan that includes a 23'x6' below grade infiltration system to retain water on our site, mitigate sheet drainage towards Healey Street and create an overall improvement in site drainage that is better after the addition than the current existing conditions.

We hope the board will consider the attached engineers' stormwater report and control plan as part of the application and determine that it demonstrates that the desirable relief may be granted without substantial detriment to the public good in terms of stormwater control on our site in relation to our rear & downslope abutting neighbors.

Respectfully submitted,

Kelly Boucher, Architect for 50 Concord Avenue
KBA | 54 Harvard Street Brookline, MA 02445
kelly@boucherarchitecture.com

CC: Homeowner
Cathy Chen 50 Concord Ave, Cambridge, MA 02138
catlchen@yahoo.com xgliu_2000@yahoo.com

Utility Notes

1. Place 4" Loam and seed all disturbed areas of the project not otherwise improved.

2. All underground utility locations shown are based on field evidence and records provided to Land Planning, Inc.. These locations should be considered approximate. Other utilities may exist which are not evident or for which record information was not found. The contractor must contact all utility companies and "Dig Safe" before excavation begins. We assume no responsibility for damages incurred as a result of utilities omitted or inaccurately shown.

3. It is the responsibility of the contractor to review all of the drawings and specifications associated with this project work and project scope prior to the initiation of construction. Should the contractor find a conflict with the documents, relative to the specifications or applicable codes, it is the contractor's responsibility to notify the project engineer of record in writing prior to the start of construction. Failure by the contractor to notify the project engineer shall constitute acceptance of full responsibility by the contractor to complete the scope of work as defined by the drawings and in full conformance with local regulations and codes.

4. All work shall conform to City of Cambridge requirements and Massachusetts Highway Department construction standards as applicable.

General Notes

1. All elevations refer to NAVD 1988 datum.

2. No portion of the site is located within the limits of the 100 yr flood zone as shown on the FIRM Map #25017C0419E dated 06/4/10

3. No resource areas as defined by 310 CMR 10 exist on site. No construction activities are within a resource area or buffer zone.

Erosion & Sediment Control Notes

1. Sediment barriers are to be installed where shown on this plan. The contractor and the owner are responsible for the proper maintenance of the sediment barriers and to identify and correct all sources of erosion. Extra sediment barrier materials are to be stored on site in order to quickly repair erosion prone areas. Periodic maintenance of the erosion control structures is required in order to insure the proper protection of the resource areas.

2. Rough grading and pavement construction are to be confined to areas as shown on these plans. Any stockpiled material that is subject to erosion shall be protected at its base on the down-slope side with a silt fence.

3. Temporary stabilization of disturbed areas is required to limit erosion toward abutting properties and public ways. All graded slopes are to be stabilized on a daily basis with special care taken to avoid routing rainfall through gullies toward the resource areas. Areas of erosion are to be repaired on a daily basis.

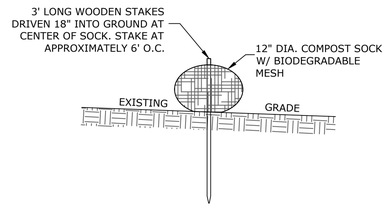
4. The contractor is to use proper judgment relative to construction practices during adverse weather conditions or periods of high groundwater. No work is to be performed near the wetland areas during periods of heavy rainfall. Inspection is required after more than 1/2" of rainfall in 24 hours.

5. All graded areas are to be loamed and seeded as soon as possible in order to insure the rapid stabilization of the erosion prone areas. A grass seed mixture of 20% Red Top, 60% Chewings Fescue and 20% Kentucky Bluegrass is recommended. "Hydroseed" with high fiber content.

6. The Sediment barriers shall remain in place until all upgradient areas have been stabilized.

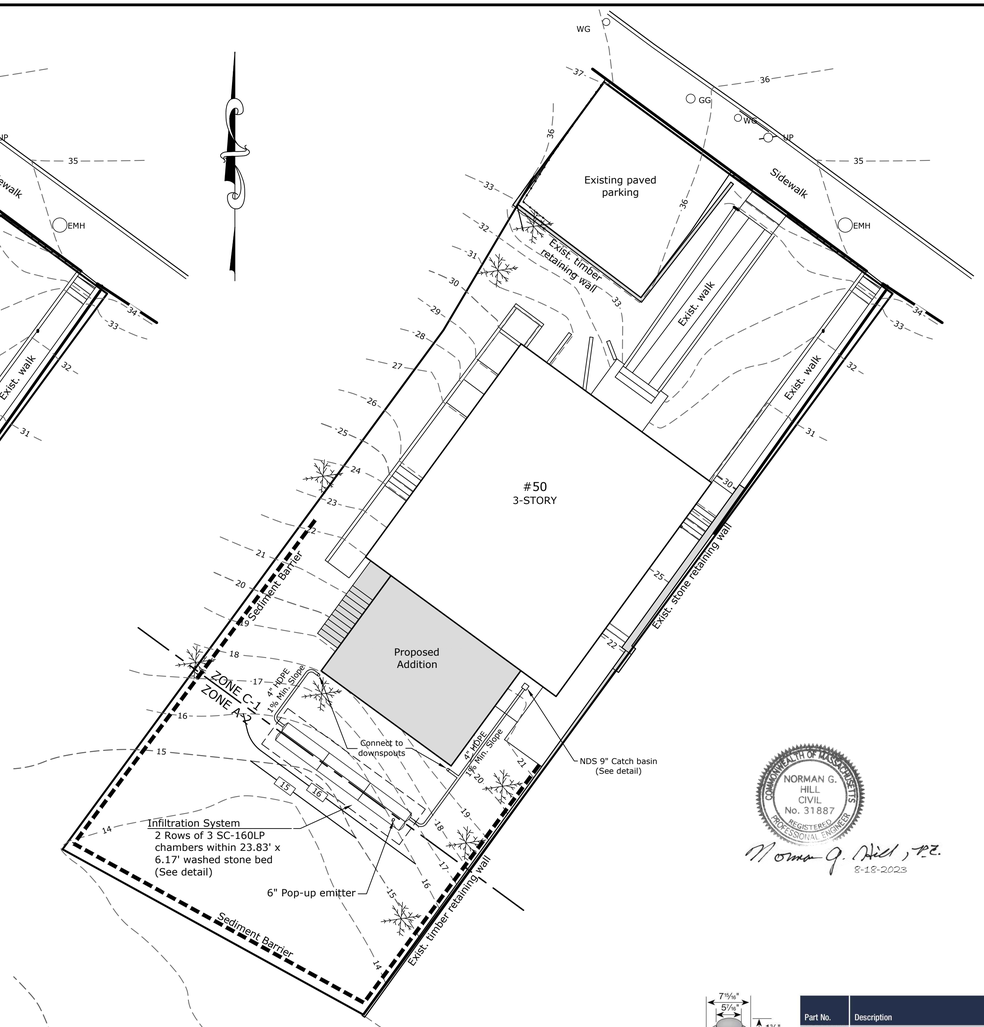
7. During periods of heavy rainfall, it will be expected to experience erosion of the unstabilized slopes. Immediate attention to the maintenance of these eroded areas will further insure the successful stabilization of the exposed slopes while limiting the impacts to nearby resource areas.

8. See the Construction Stormwater Pollution Prevention Plan for additional practices and controls.

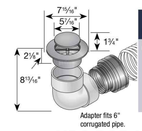


SEDIMENT BARRIER - COMPOST SOCK DETAIL
Not to Scale

EXISTING CONDITIONS PLAN
Scale: 1" = 10'

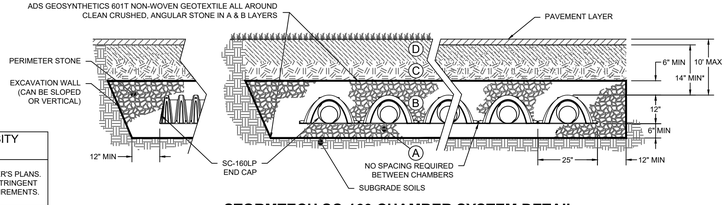


SITE IMPROVEMENTS PLAN
Scale: 1" = 10'



Part No.	Description
624	6" Pop-up Emitter with Elbow and Corrugated Pipe Adapter

NDS POP-UP EMITTER DETAIL
(not to scale)



STORMTECH SC-160 CHAMBER SYSTEM DETAIL
(not to scale)
Infiltration System

SC-160 Chamber Infiltration System									
Infiltration System	Field Dimensions			Elevations					
	Rows x Units per Row	Field Length	Field Width	Bottom of Stone	Bottom of Chamber	Top of Chamber	Top of Stone	Inlet Pipes	Inlet Invert
	2 Rows of 3 Units	23.83'	6.17'	13.00	13.50	14.50	15.00	4" HDPE (from roof)	13.50

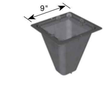
NOTES:
1. CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
5. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
6. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145' A-1, A-2-4, A-3 OR AASHTO M43' 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs. DYNAMIC FORCE NOT TO EXCEED 20,000 lbs.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43' 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43' 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

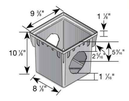
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.

ACCEPTABLE FILL MATERIALS: STORMTECH CHAMBER SYSTEMS

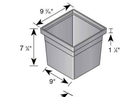
9" Catch Basin Series



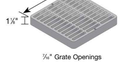
Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
900FF	9" Catch Basin Filter	Blue Frame/ Black Bag	8	0.06	10ND	Polypropylene Frame Fabric is non-woven geotextile 956 PM/SF.
	Compatible with these basins: 900, 900-4 and 916 NDS Catch Basins, Risers and Kits					



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
900BLKIT	9" x 9" Catch Basin Kit	Black Grate	4	4.90	10ND	9" x 9" tapered Catch Basin. Polypropylene.
900GRKIT	9" x 9" Catch Basin Kit	Green Grate	4	4.90	10ND	
900KITDISP	9" x 9" Catch Basin Kit	Black Grate	8	39.2	10ND	Kits include 2-opening Catch Basin, Grate, Screws, 2 Outlets and 1 Plug.
900	9" x 9" Catch Basin 2-opening	Black	4	2.18	10ND	
900-4	9" x 9" Catch Basin 4-opening	Black	4	2.00	10ND	DISP includes display box.
	Requires either #1206, #1242, #1243, #1245 or #1266 Universal Outlet to connect pipe to basin. (see page 35)					



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Product Class	Specifications
916	9" x 9" Catch Basin Riser	Black	4	1.75	10ND	6" Riser for 9" x 9 Catch Basin. Styrene.
	Use with 9" x 9" Catch Basin Series. Stacks on top of 9" catch basins to add up to 6" to top of basin. Can be cut to size.					



Part No.	Description	Color	Pkg. Qty.	Wt. Ea. lbs.	Product Class	Specifications
930B	9" Square Brass Grate	Brass	1	5.11	15BR	Open surface area 34.00 square inches. 104.01 GPM. Includes SS Screws.
	(see page 79) ADA Compliant.					

¼" Grate Openings

NDS CATCH BASIN DETAIL
(not to scale)

COMMONWEALTH OF MASSACHUSETTS
NORMAN G. HILL
CIVIL
No. 31887
REGISTERED PROFESSIONAL ENGINEER

8-18-2023

Stormwater Control Plan

ADDITION TO SINGLE FAMILY RESIDENCE

50 Concord Ave
Cambridge, MA

Owned By
Cathy Ling-Wei Chen
50 Concord Ave.
Cambridge, MA 02138

Scale: 1" = 10'
August 18, 2023

GRAPHIC SCALE
10 0 5 10 20
(IN FEET)
1 inch = 10 ft.

811 DigSafe MA-ME-NH-RI-VT

LEGEND

SW	STONE WALL
IPF	IRON PIN FOUND
DHF	DRILL HOLE FOUND
	BOUND TO BE SET
	BOUND FOUND
	DRAIN MANHOLE
	CATCH BASIN
	UTILITY POLE
100	EXISTING CONTOUR
100	PROPOSED CONTOUR
581x5	PROPOSED SPOT GRADE
	LIGHT - WALL MOUNTED
	LIGHT - POLE MOUNTED
	SIGN
ETC	ELECT., TEL. & CABLE
W	WATER LINE
S	SEWER LINE
G	GAS LINE
OHW	OVERHEAD WIRE
	FENCE
	GUARD RAIL
x WF-#	WETLAND FLAG

Land Planning, Inc.
Civil Engineers • Land Surveyors
Environmental Consultants

Bellingham
167 Hartord Ave.
Bellingham, MA 02019
508-966-4130

North Grafton
214 Worcester St.
N. Grafton, MA 01536
508-839-9526

Hanson
1115 Main Street
Hanson, MA 02341
781-294-4144

www.landplanninginc.com

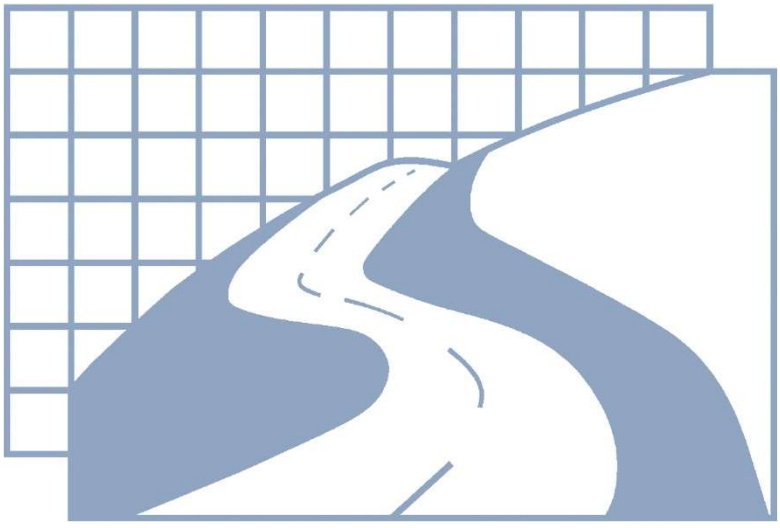
Scale: 1" = 10'
Date: Aug. 18, 2023
Job No.: G23113
Sheet No.: C-01

Land Planning, Inc.
Civil Engineers • Land Surveyors
Environmental Consultants

STORMWATER REPORT

Addition to Residence

50 Concord Avenue
Cambridge, Massachusetts



Prepared for:

Cathy Ling-Wei Chen
50 Concord Avenue
Cambridge, MA 02138

Prepared by:

Land Planning, Inc.
214 Worcester Street
N. Grafton, MA 01536

COMMONWEALTH OF MASSACHUSETTS
NORMAN G. HILL
CIVIL
No. 31887
REGISTERED PROFESSIONAL ENGINEER

Norman G. Hill, P.E.
8-18-2023

August 18, 2023

Drainage Analysis

Located at
50 Concord Ave
Cambridge, MA

By
Land Planning, Inc.
214 Worcester Street
Grafton, MA 01536

August 18, 2023

1.0 INTRODUCTION

Land Planning Inc. has evaluated the hydrologic impacts for the proposed 373 ft² addition to the single-family residence located at 50 Concord Avenue, Cambridge. Included in this report are the methods taken to mitigate any additional runoff from the area altered by construction of this project. The supporting hydrologic calculations are at the end of this report.

2.0 EXISTING CONDITIONS

The project site is a 0.14-acre property located at 50 Concord Ave, Cambridge Massachusetts. The site is currently developed with an existing single-family home, driveway, and landscaping.

The soil on site is classified as Urban Land by the NRCS. No details for soil, including hydrologic group are provide for this land type. However, 3 test pits were excavated and logged by Land Planning, Inc. on July 12, 2023. These soil tests indicate that the native soil is loamy sand.

3.0 PROPOSED CONDITIONS

A 373 ft² addition is proposed at the rear (south side) of the existing house. The roof of the addition will serve as a deck at the first floor level. The existing bulkhead will be replaced with a door to the basement. Disturbed areas adjacent to the building will be vegetated landscape and turf grass.

The proposed improvements will result in a 362 ft² net increase in the property's impervious surface coverage.

4.0 DESIGN CRITERIA AND METHODOLOGY

4.1 Hydrologic Model

Used in the preparation of this hydrologic model were the following:
Soil Conservation Service (SCS) Technical Release 55 (for Times of Concentration and Curve Numbers); USDA Web Soil Survey; Topographic Survey completed by Land Planning, Inc., and HydroCAD software. This report was prepared in accordance with the requirements of Volume 3, Chapter 1 of the Massachusetts Stormwater Handbook.

4.2 Design Storms and Rainfall Depth

The drainage system was analyzed for the 1, 2, 10, and 100-year storms to determine the increase in runoff for the site. The following are the rainfall intensities used for each storm event:

Storm Events	
Storm Event	**24 Hour Rainfall (Inches)**
2 year	3.25
10 year	4.90
100 year	8.90
25 year 2070	8.22

5.0 SUMMARY:

Hydrologic Analysis Summary						
Area	**2-Yr**		**10-Yr**		**100-Yr**	
	Pre	**Post**	**Pre**	**Post**	**Pre**	**Post**
1	0.01 cfs	0 cfs	0.01 cfs	0 cfs	0.03 cfs	0.01 cfs

Runoff Volume Stored by Infiltration System	
25-Yr 2070	
Existing 2-Yr	**Post 25-Yr 2070**
19 ft^3	292 ft^3
273 ft^3 Net volume to retain	
263 ft^3 infiltrated + 66 ft^3 capacity = 329 ft^3	

6.0 CONCLUSION:

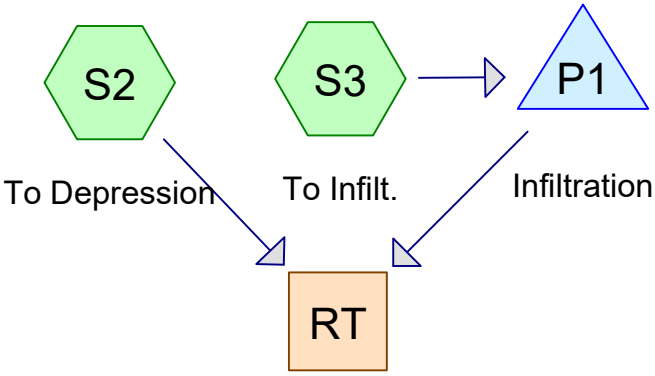
The proposed subsurface infiltration system will provide runoff rates that are less than predevelopment levels. The infiltration system is of sufficient capacity to store and infiltrate runoff for storm runoff in excess of that produced by the 2070 estimated 25 year event.

Pre & Post Development Drainage Analysis

Predevelopment

Predevelopment

Postdevelopment



Post Total

Subcat Reach Pond Link

Routing Diagram for 50 Concord Ave Drainage
Prepared by Land Planning, Inc., Printed 8/21/2023

50 Concord Ave Drainage

Type III 24-hr 2yr 2023 Rainfall=3.25"

Prepared by Land Planning, Inc.

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S1: Predevelopment Runoff Area=438 sf 17.35% Impervious Runoff Depth>0.52"
Tc=6.0 min UI Adjusted CN=WQ Runoff=0.01 cfs 19 cf

Subcatchment S2: To Depression Runoff Area=43 sf 100.00% Impervious Runoff Depth>3.02"
Tc=6.0 min CN=98 Runoff=0.00 cfs 11 cf

Subcatchment S3: To Infilt. Runoff Area=395 sf 100.00% Impervious Runoff Depth>3.02"
Tc=6.0 min CN=98 Runoff=0.03 cfs 99 cf

Reach RT: Post Total Inflow=0.00 cfs 11 cf
Outflow=0.00 cfs 11 cf

Pond P1: Infiltration Peak Elev=13.29' Storage=17 cf Inflow=0.03 cfs 99 cf
Discarded=0.01 cfs 99 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 99 cf

Total Runoff Area = 876 sf Runoff Volume = 129 cf Average Runoff Depth = 1.77"
41.32% Pervious = 362 sf 58.68% Impervious = 514 sf

Summary for Subcatchment S1: Predevelopment

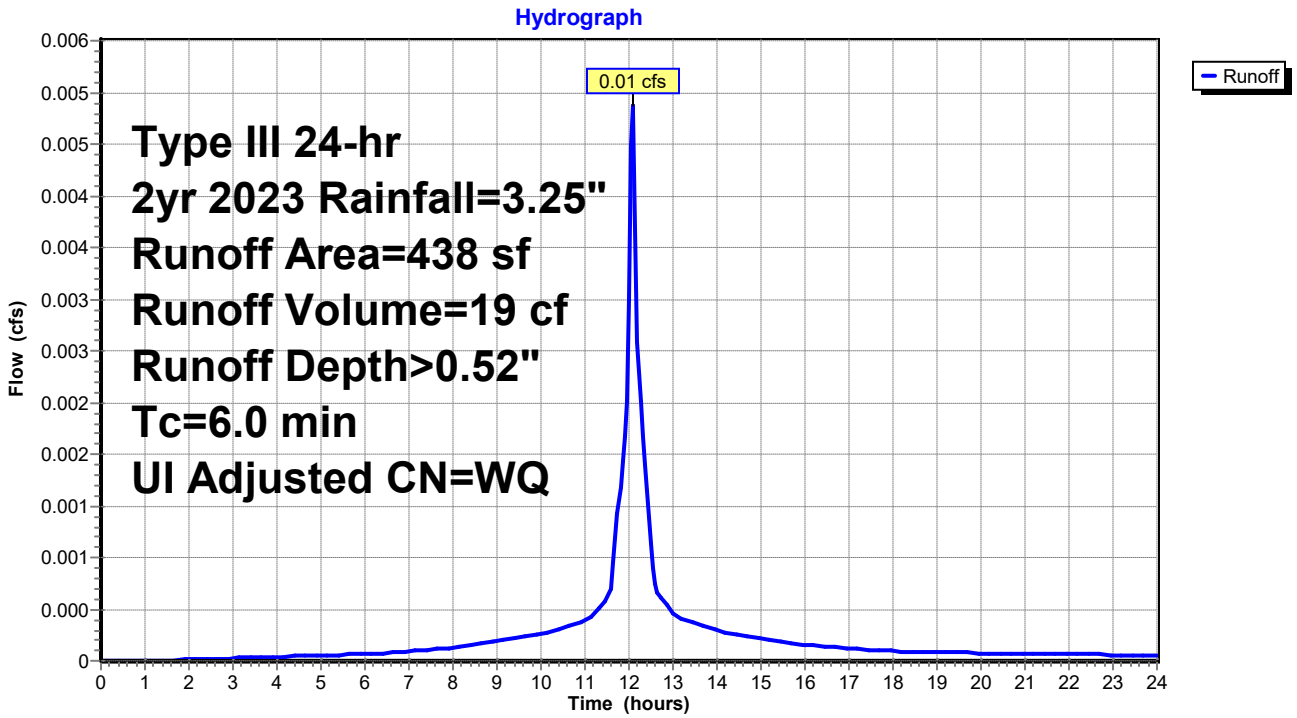
Runoff = 0.01 cfs @ 12.09 hrs, Volume= 19 cf, Depth> 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr 2023 Rainfall=3.25"

Area (sf)	CN	Adj	Description
76	98	98	Unconnected pavement, HSG A
362	39	39	>75% Grass cover, Good, HSG A
438			Weighted Average
362			82.65% Pervious Area
76			17.35% Impervious Area
76			100.00% Unconnected

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

Subcatchment S1: Predevelopment



Summary for Subcatchment S2: To Depression

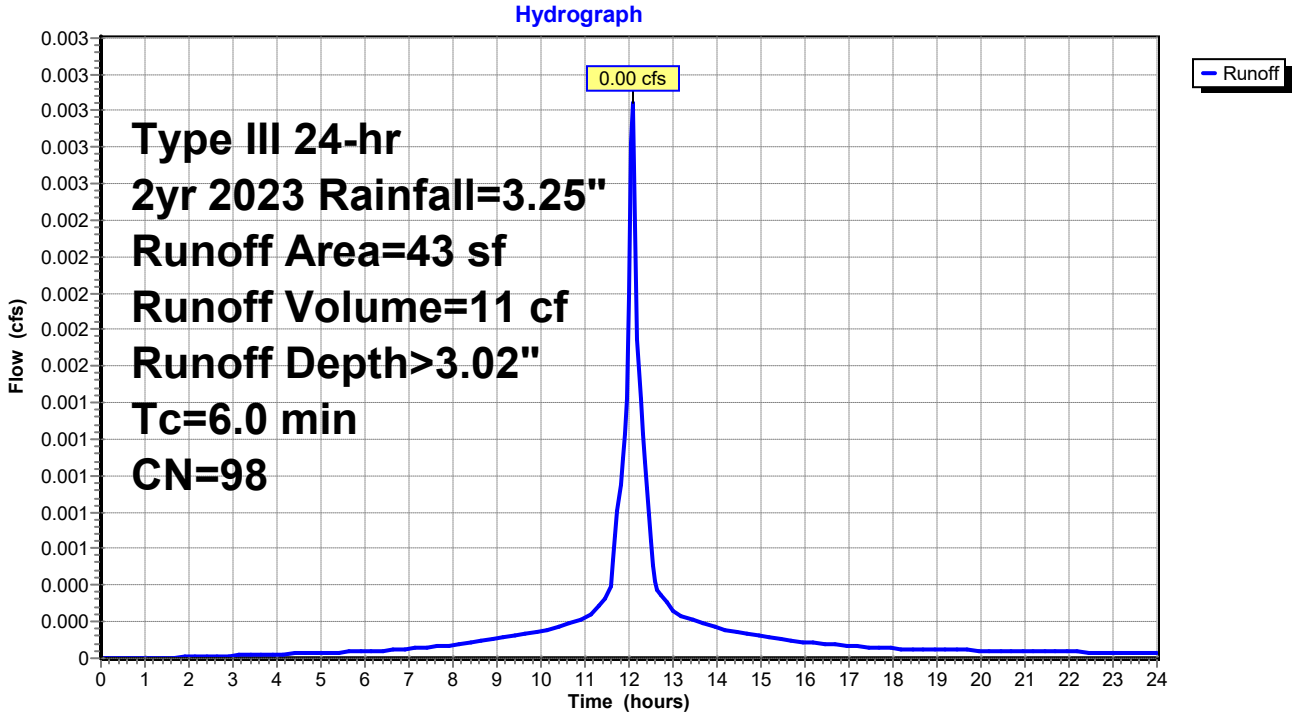
Runoff = 0.00 cfs @ 12.09 hrs, Volume= 11 cf, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr 2023 Rainfall=3.25"

Area (sf)	CN	Description
43	98	Unconnected pavement, HSG A
43		100.00% Impervious Area
43		100.00% Unconnected

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

Subcatchment S2: To Depression



Summary for Subcatchment S3: To Infilt.

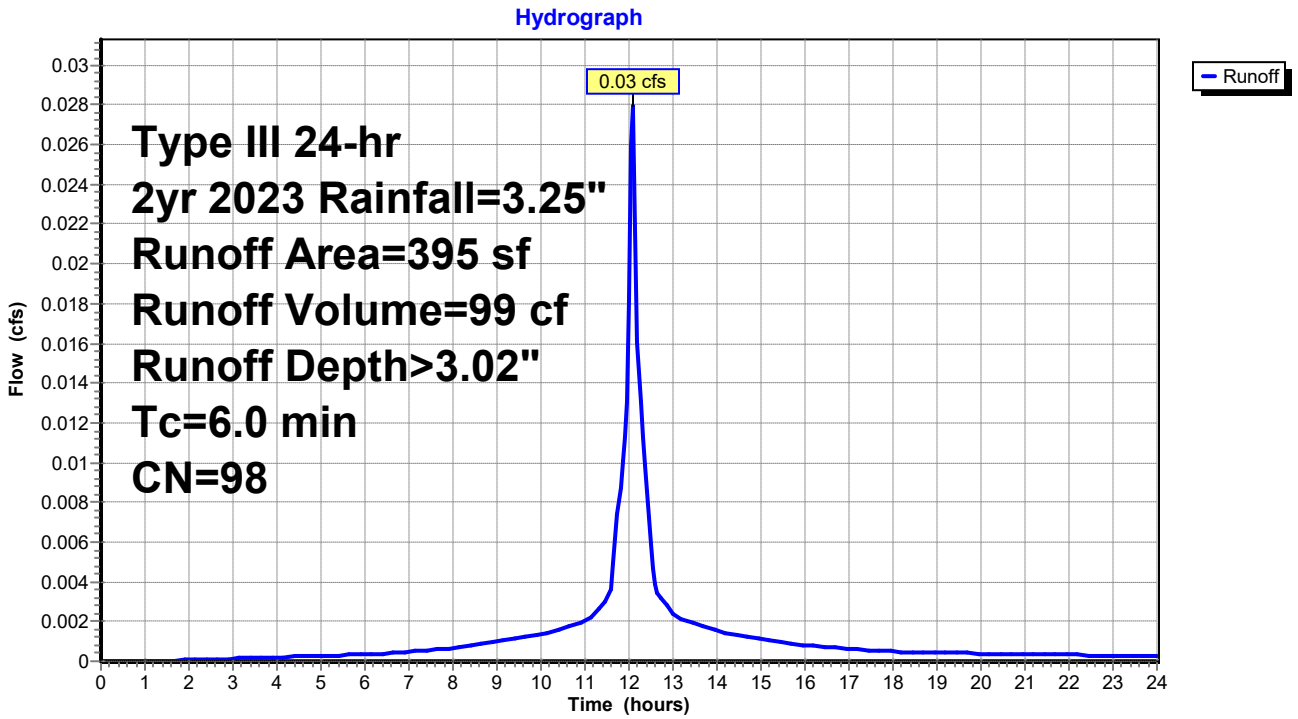
Runoff = 0.03 cfs @ 12.09 hrs, Volume= 99 cf, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 2yr 2023 Rainfall=3.25"

Area (sf)	CN	Description
395	98	Unconnected pavement, HSG A
395		100.00% Impervious Area
395		100.00% Unconnected

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

Subcatchment S3: To Infilt.

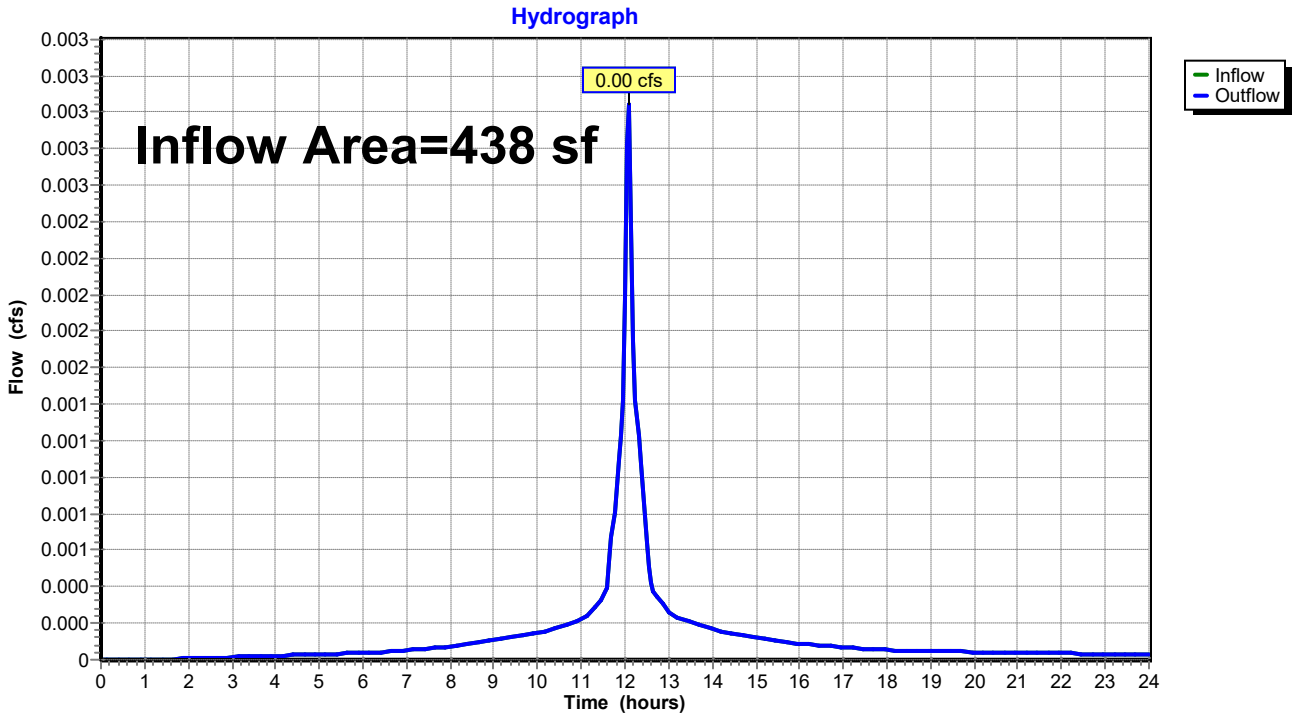


Summary for Reach RT: Post Total

Inflow Area = 438 sf,100.00% Impervious, Inflow Depth > 0.30" for 2yr 2023 event
Inflow = 0.00 cfs @ 12.09 hrs, Volume= 11 cf
Outflow = 0.00 cfs @ 12.09 hrs, Volume= 11 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach RT: Post Total



Summary for Pond P1: Infiltration

Inflow Area = 395 sf,100.00% Impervious, Inflow Depth > 3.02" for 2yr 2023 event
Inflow = 0.03 cfs @ 12.09 hrs, Volume= 99 cf
Outflow = 0.01 cfs @ 12.38 hrs, Volume= 99 cf, Atten= 68%, Lag= 17.8 min
Discarded = 0.01 cfs @ 12.38 hrs, Volume= 99 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 13.29' @ 12.38 hrs Surf.Area= 147 sf Storage= 17 cf

Plug-Flow detention time= 10.9 min calculated for 99 cf (100% of inflow)
Center-of-Mass det. time= 10.4 min (766.1 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1A	13.00'	101 cf	**6.17'W x 23.83'L x 2.00'H Field A** 294 cf Overall - 41 cf Embedded = 253 cf x 40.0% Voids
#2A	13.50'	41 cf	**ADS_StormTech SC-160LP +Cap** x 6 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 2 Rows of 3 Chambers
#3	13.50'	0 cf	**0.33'D x 3.00'H Vertical Cone/Cylinder**
		142 cf	Total Available Storage

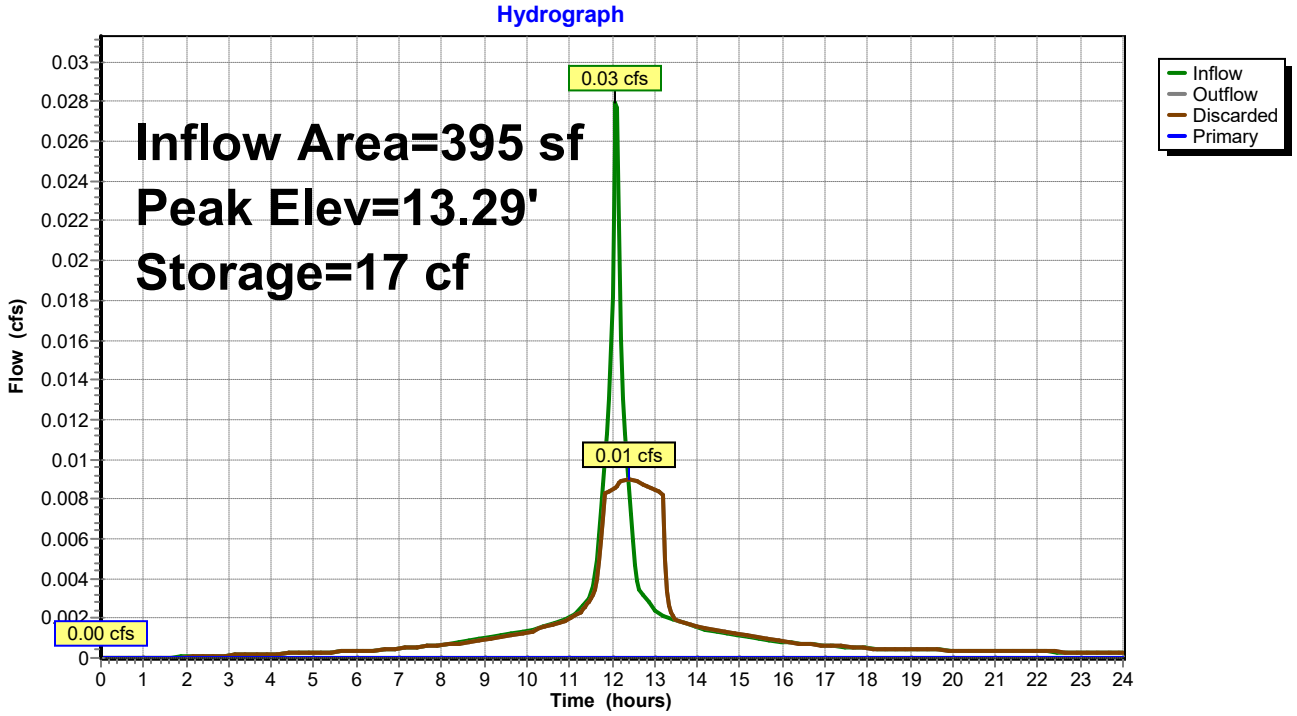
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 10.00'
#2	Primary	16.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.01 cfs @ 12.38 hrs HW=13.29' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond P1: Infiltration



50 Concord Ave Drainage

Type III 24-hr 10yr 2023 Rainfall=4.90"

Prepared by Land Planning, Inc.

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S1: Predevelopment Runoff Area=438 sf 17.35% Impervious Runoff Depth>0.96"
Tc=6.0 min UI Adjusted CN=WQ Runoff=0.01 cfs 35 cf

Subcatchment S2: To Depression Runoff Area=43 sf 100.00% Impervious Runoff Depth>4.66"
Tc=6.0 min CN=98 Runoff=0.00 cfs 17 cf

Subcatchment S3: To Infilt. Runoff Area=395 sf 100.00% Impervious Runoff Depth>4.66"
Tc=6.0 min CN=98 Runoff=0.04 cfs 153 cf

Reach RT: Post Total Inflow=0.00 cfs 17 cf
Outflow=0.00 cfs 17 cf

Pond P1: Infiltration Peak Elev=13.56' Storage=35 cf Inflow=0.04 cfs 153 cf
Discarded=0.01 cfs 153 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 153 cf

Total Runoff Area = 876 sf Runoff Volume = 205 cf Average Runoff Depth = 2.81"
41.32% Pervious = 362 sf 58.68% Impervious = 514 sf

Summary for Subcatchment S1: Predevelopment

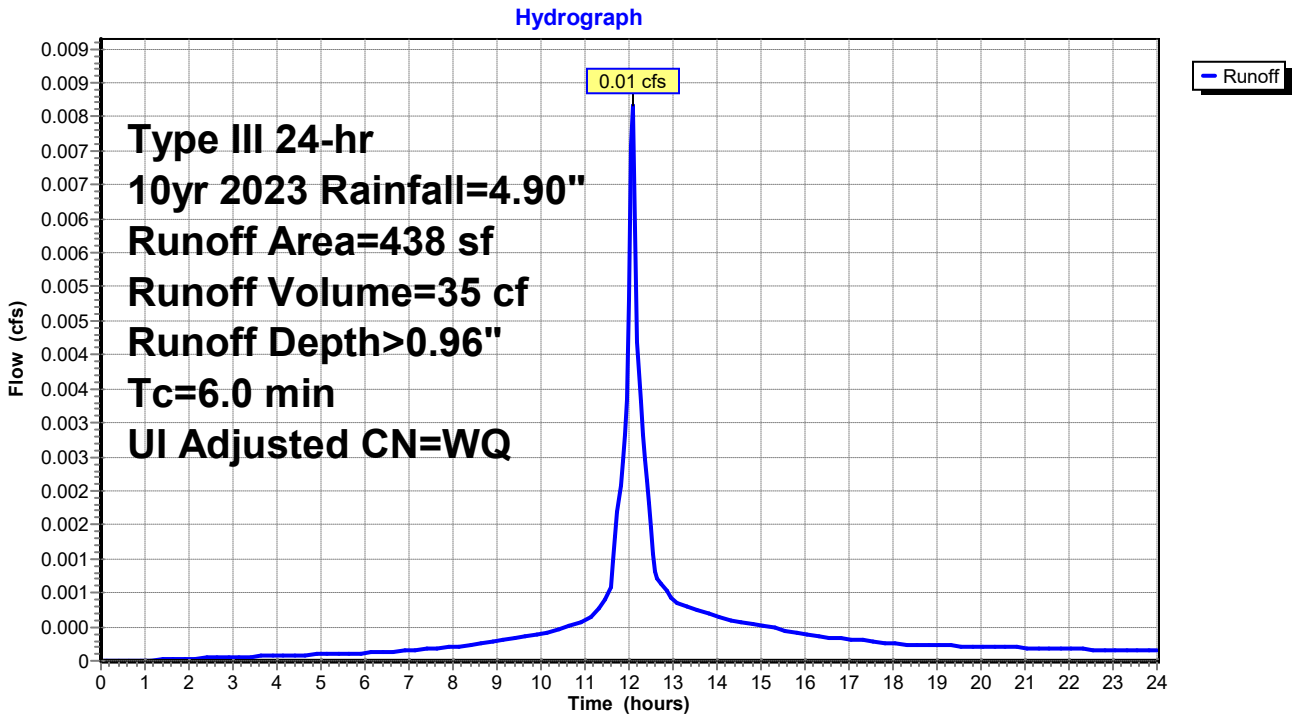
Runoff = 0.01 cfs @ 12.09 hrs, Volume= 35 cf, Depth> 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr 2023 Rainfall=4.90"

Area (sf)	CN	Adj	Description
76	98	98	Unconnected pavement, HSG A
362	39	39	>75% Grass cover, Good, HSG A
438			Weighted Average
362			82.65% Pervious Area
76			17.35% Impervious Area
76			100.00% Unconnected

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

Subcatchment S1: Predevelopment



Summary for Subcatchment S2: To Depression

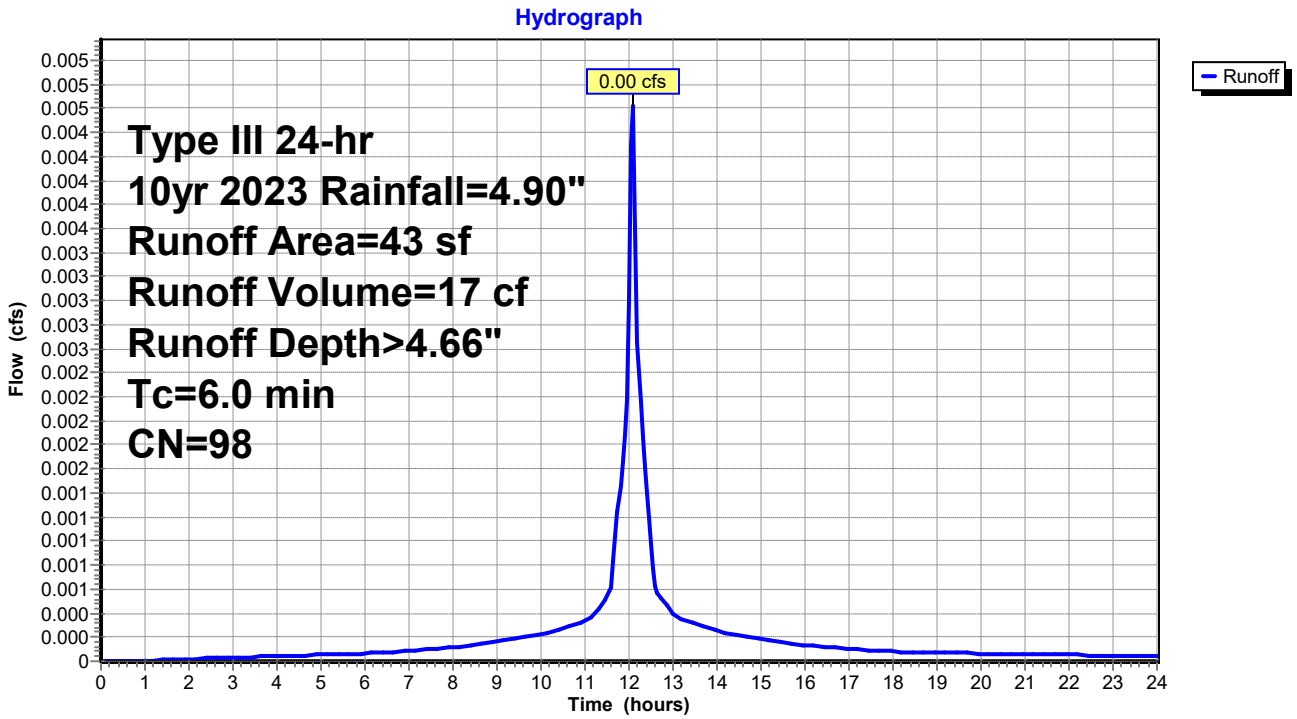
Runoff = 0.00 cfs @ 12.09 hrs, Volume= 17 cf, Depth> 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr 2023 Rainfall=4.90"

Area (sf)	CN	Description
43	98	Unconnected pavement, HSG A
43		100.00% Impervious Area
43		100.00% Unconnected

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

Subcatchment S2: To Depression



Summary for Subcatchment S3: To Infilt.

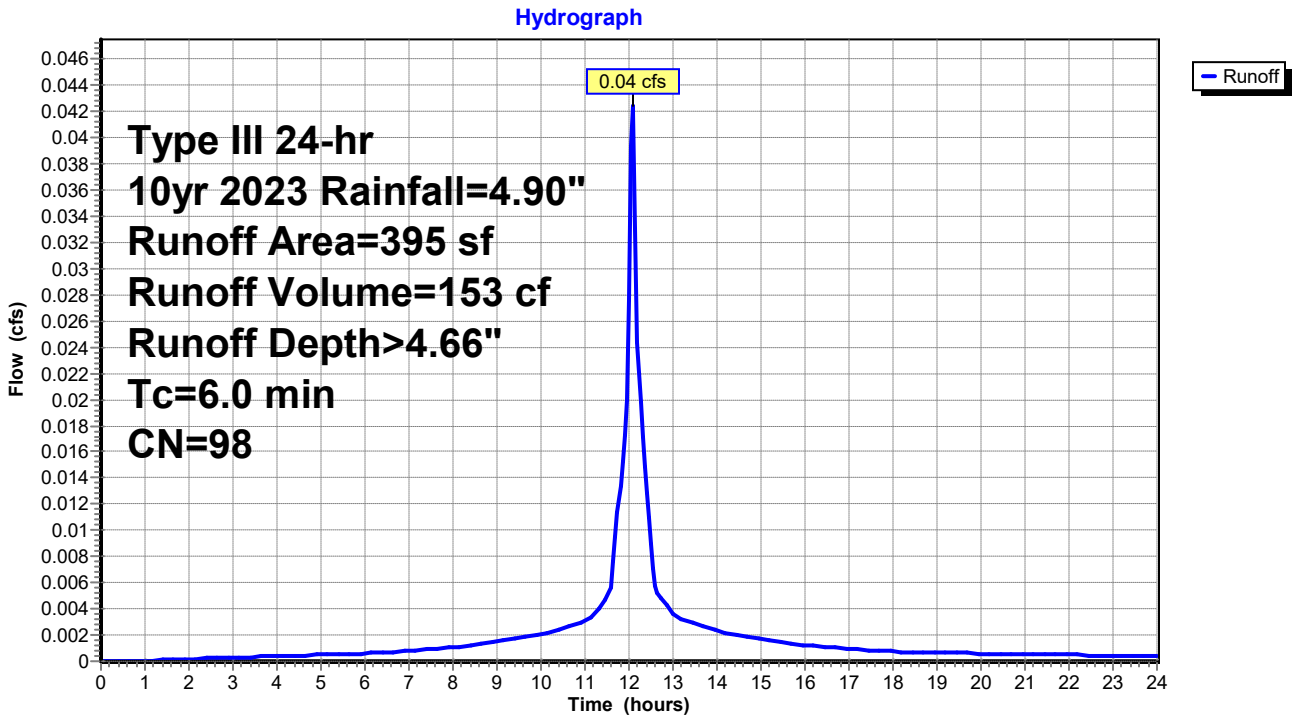
Runoff = 0.04 cfs @ 12.09 hrs, Volume= 153 cf, Depth> 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10yr 2023 Rainfall=4.90"

Area (sf)	CN	Description
395	98	Unconnected pavement, HSG A
395		100.00% Impervious Area
395		100.00% Unconnected

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

Subcatchment S3: To Infilt.

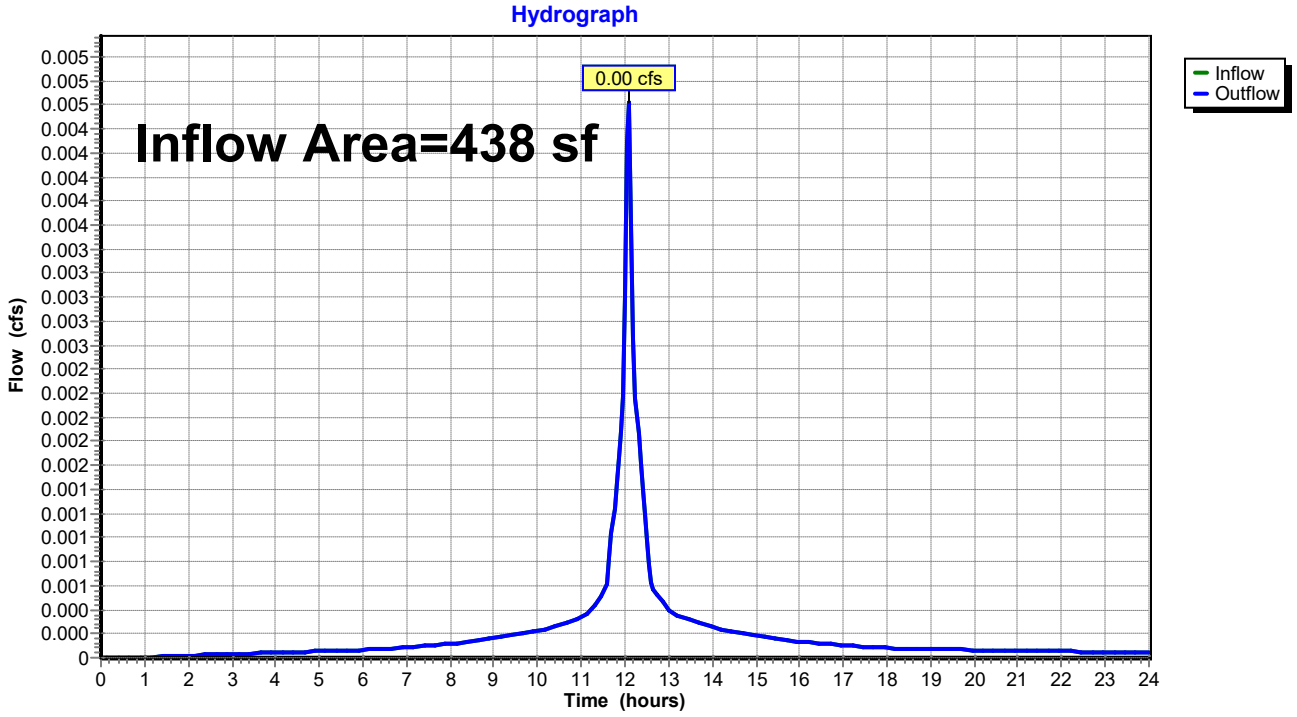


Summary for Reach RT: Post Total

Inflow Area = 438 sf,100.00% Impervious, Inflow Depth > 0.46" for 10yr 2023 event
Inflow = 0.00 cfs @ 12.09 hrs, Volume= 17 cf
Outflow = 0.00 cfs @ 12.09 hrs, Volume= 17 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach RT: Post Total



Summary for Pond P1: Infiltration

Inflow Area = 395 sf,100.00% Impervious, Inflow Depth > 4.66" for 10yr 2023 event
Inflow = 0.04 cfs @ 12.09 hrs, Volume= 153 cf
Outflow = 0.01 cfs @ 12.48 hrs, Volume= 153 cf, Atten= 77%, Lag= 23.7 min
Discarded = 0.01 cfs @ 12.48 hrs, Volume= 153 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 13.56' @ 12.48 hrs Surf.Area= 147 sf Storage= 35 cf

Plug-Flow detention time= 20.5 min calculated for 153 cf (100% of inflow)
Center-of-Mass det. time= 20.1 min (768.0 - 747.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	13.00'	101 cf	**6.17'W x 23.83'L x 2.00'H Field A** 294 cf Overall - 41 cf Embedded = 253 cf x 40.0% Voids
#2A	13.50'	41 cf	**ADS_StormTech SC-160LP +Cap** x 6 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 2 Rows of 3 Chambers
#3	13.50'	0 cf	**0.33'D x 3.00'H Vertical Cone/Cylinder**
		142 cf	Total Available Storage

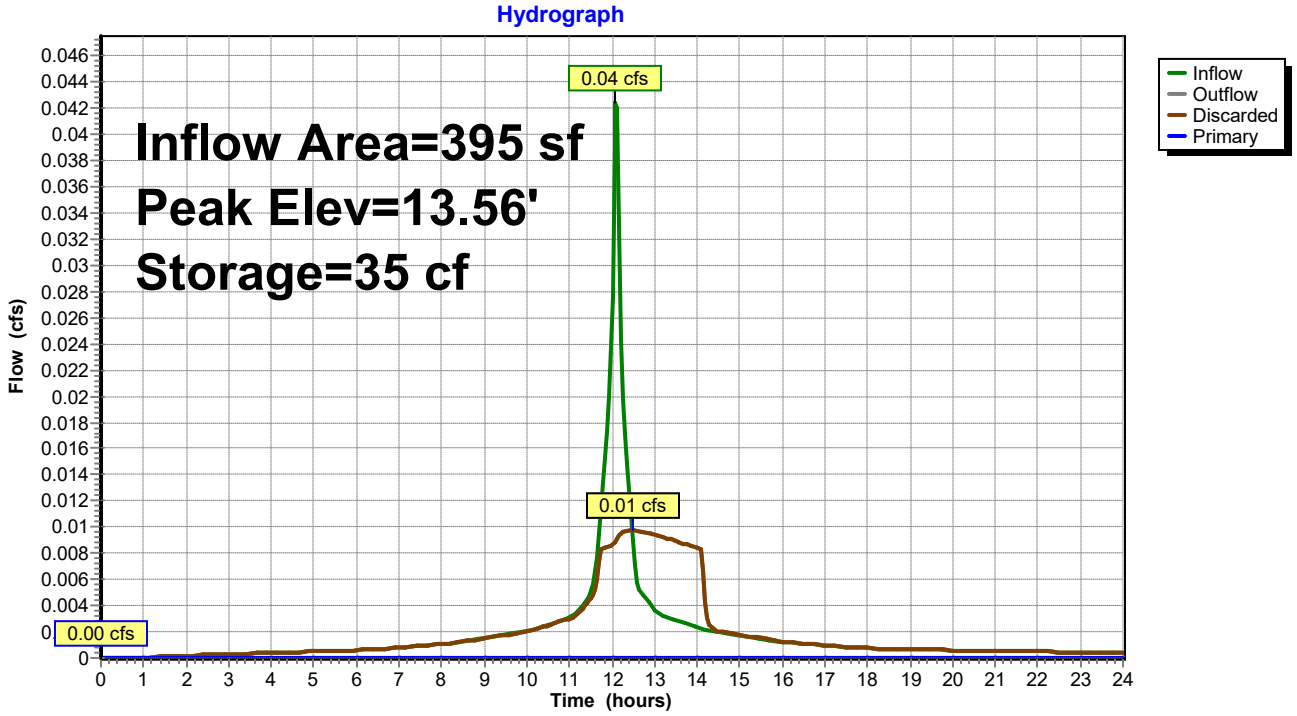
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 10.00'
#2	Primary	16.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.01 cfs @ 12.48 hrs HW=13.56' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond P1: Infiltration



50 Concord Ave Drainage

Type III 24-hr 100yr 2023 Rainfall=8.90"

Prepared by Land Planning, Inc.

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S1: Predevelopment Runoff Area=438 sf 17.35% Impervious Runoff Depth>2.79"
Tc=6.0 min UI Adjusted CN=WQ Runoff=0.03 cfs 102 cf

Subcatchment S2: To Depression Runoff Area=43 sf 100.00% Impervious Runoff Depth>8.65"
Tc=6.0 min CN=98 Runoff=0.01 cfs 31 cf

Subcatchment S3: To Infilt. Runoff Area=395 sf 100.00% Impervious Runoff Depth>8.65"
Tc=6.0 min CN=98 Runoff=0.08 cfs 285 cf

Reach RT: Post Total Inflow=0.01 cfs 31 cf
Outflow=0.01 cfs 31 cf

Pond P1: Infiltration Peak Elev=14.10' Storage=85 cf Inflow=0.08 cfs 285 cf
Discarded=0.01 cfs 285 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 285 cf

Total Runoff Area = 876 sf Runoff Volume = 418 cf Average Runoff Depth = 5.72"
41.32% Pervious = 362 sf 58.68% Impervious = 514 sf

Summary for Subcatchment S1: Predevelopment

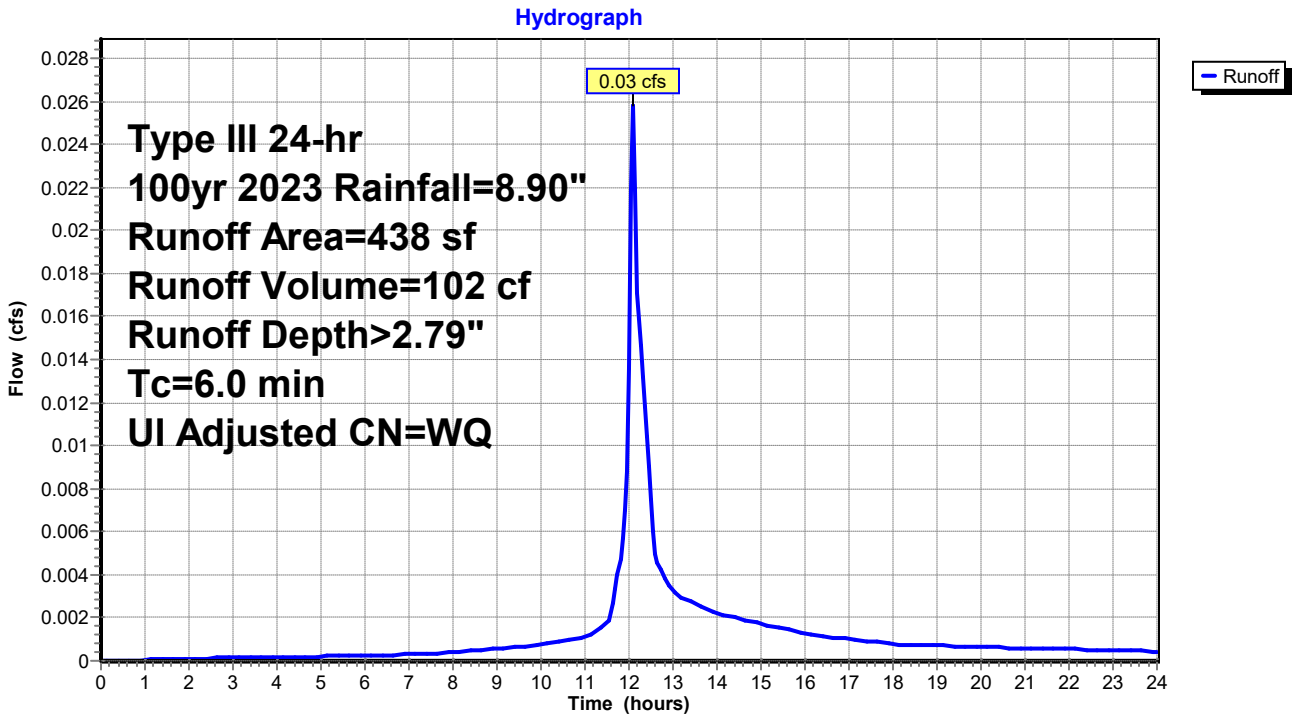
Runoff = 0.03 cfs @ 12.10 hrs, Volume= 102 cf, Depth> 2.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr 2023 Rainfall=8.90"

Area (sf)	CN	Adj	Description
76	98	98	Unconnected pavement, HSG A
362	39	39	>75% Grass cover, Good, HSG A
438			Weighted Average
362			82.65% Pervious Area
76			17.35% Impervious Area
76			100.00% Unconnected

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

Subcatchment S1: Predevelopment



Summary for Subcatchment S2: To Depression

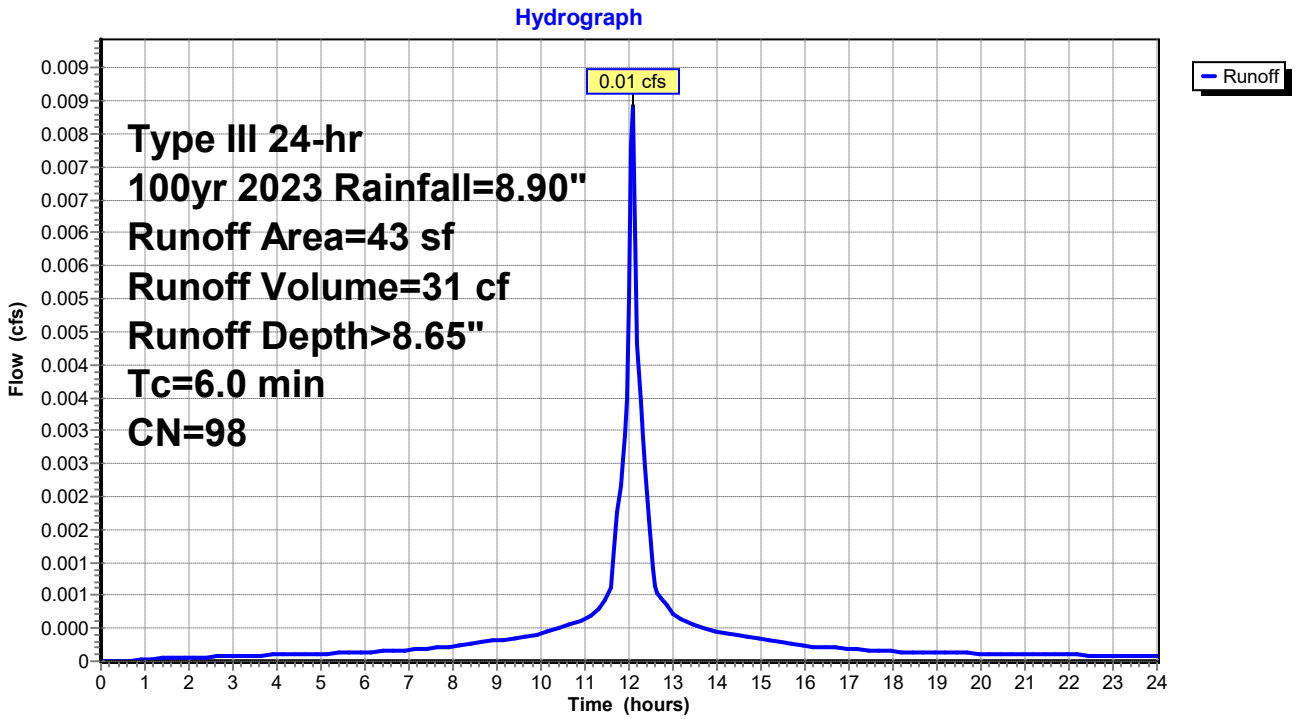
Runoff = 0.01 cfs @ 12.09 hrs, Volume= 31 cf, Depth> 8.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr 2023 Rainfall=8.90"

Area (sf)	CN	Description
43	98	Unconnected pavement, HSG A
43		100.00% Impervious Area
43		100.00% Unconnected

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

Subcatchment S2: To Depression



Summary for Subcatchment S3: To Infilt.

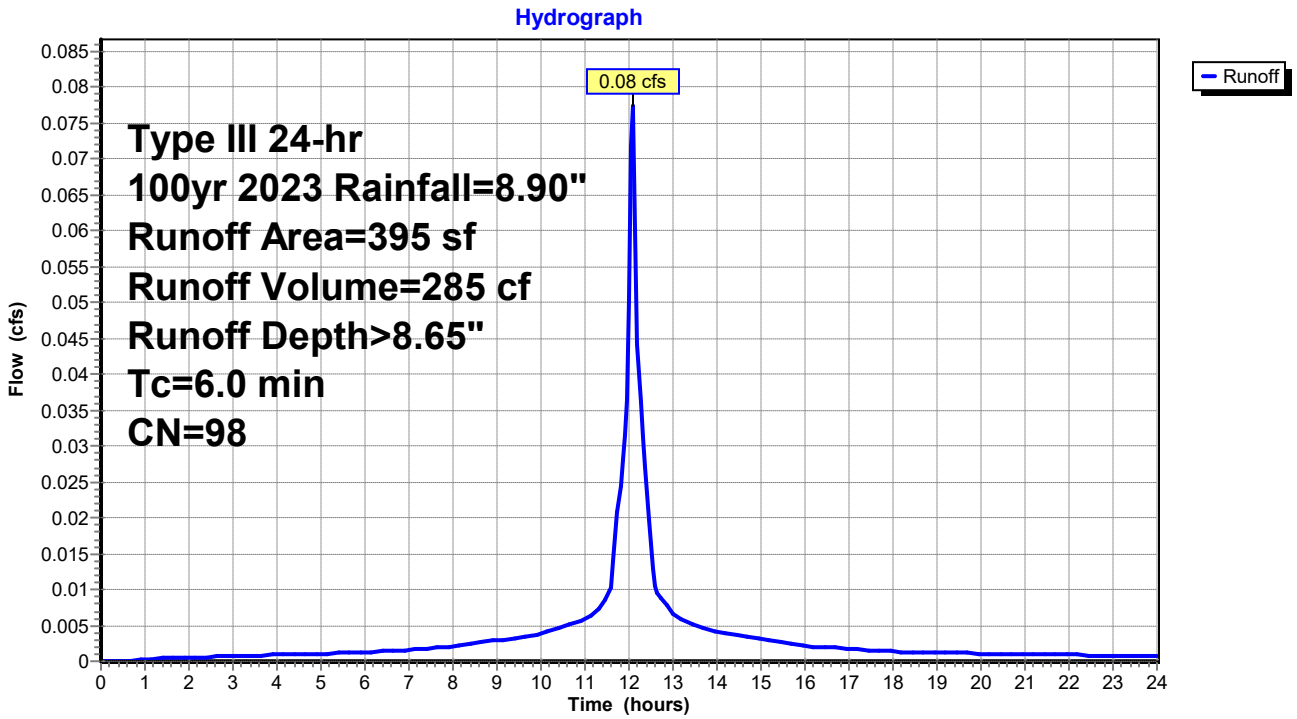
Runoff = 0.08 cfs @ 12.09 hrs, Volume= 285 cf, Depth> 8.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 100yr 2023 Rainfall=8.90"

Area (sf)	CN	Description
395	98	Unconnected pavement, HSG A
395		100.00% Impervious Area
395		100.00% Unconnected

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

Subcatchment S3: To Infilt.

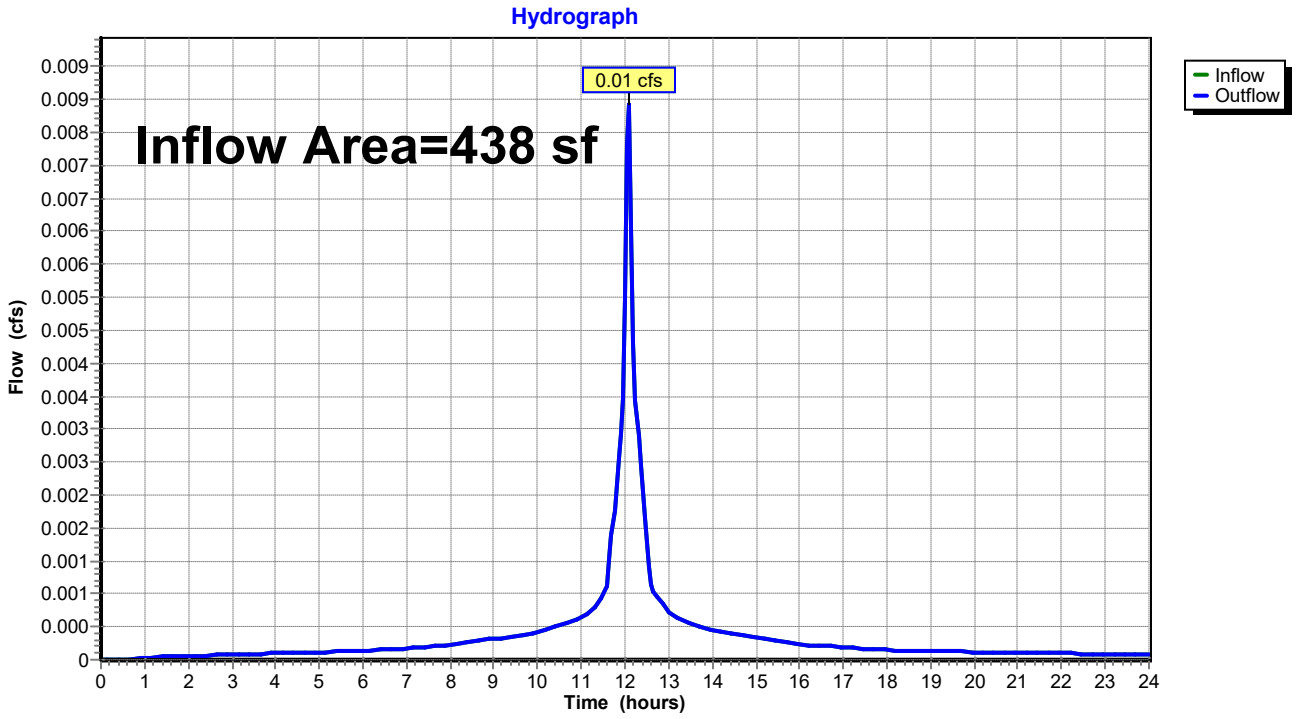


Summary for Reach RT: Post Total

Inflow Area = 438 sf,100.00% Impervious, Inflow Depth > 0.85" for 100yr 2023 event
Inflow = 0.01 cfs @ 12.09 hrs, Volume= 31 cf
Outflow = 0.01 cfs @ 12.09 hrs, Volume= 31 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach RT: Post Total



Summary for Pond P1: Infiltration

Inflow Area = 395 sf,100.00% Impervious, Inflow Depth > 8.65" for 100yr 2023 event
Inflow = 0.08 cfs @ 12.09 hrs, Volume= 285 cf
Outflow = 0.01 cfs @ 12.59 hrs, Volume= 285 cf, Atten= 86%, Lag= 30.2 min
Discarded = 0.01 cfs @ 12.59 hrs, Volume= 285 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 14.10' @ 12.59 hrs Surf.Area= 147 sf Storage= 85 cf

Plug-Flow detention time= 49.4 min calculated for 284 cf (100% of inflow)
Center-of-Mass det. time= 48.8 min (788.4 - 739.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	13.00'	101 cf	**6.17'W x 23.83'L x 2.00'H Field A** 294 cf Overall - 41 cf Embedded = 253 cf x 40.0% Voids
#2A	13.50'	41 cf	**ADS_StormTech SC-160LP +Cap** x 6 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 2 Rows of 3 Chambers
#3	13.50'	0 cf	**0.33'D x 3.00'H Vertical Cone/Cylinder**
		142 cf	Total Available Storage

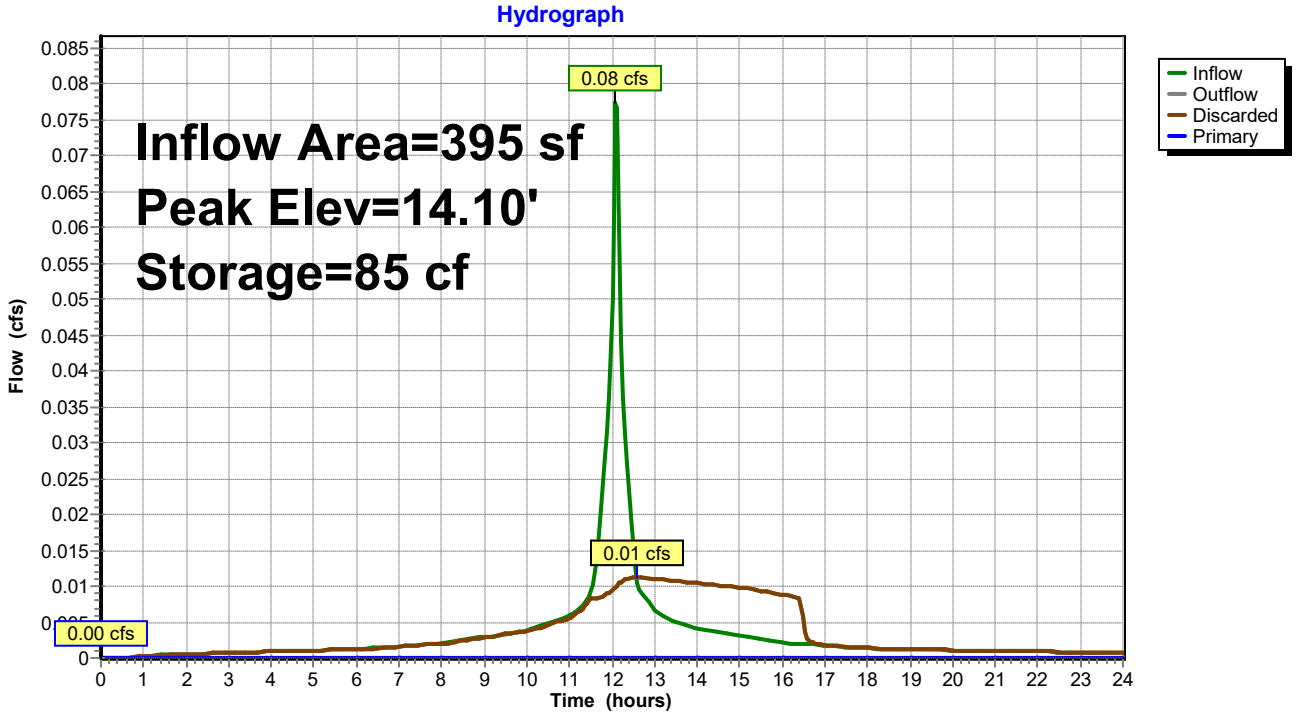
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 10.00'
#2	Primary	16.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.01 cfs @ 12.59 hrs HW=14.10' (Free Discharge)
1=Exfiltration (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.00' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond P1: Infiltration

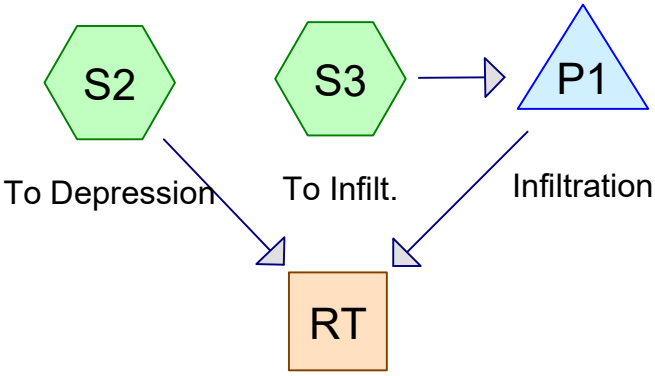


25 Year, 2070 Event Analysis

Predevelopment

Predevelopment

Postdevelopment



Post Total

Subcat Reach Pond Link

Routing Diagram for 50 Concord Ave Drainage
Prepared by Land Planning, Inc., Printed 8/21/2023

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment S1: Predevelopment Runoff Area=438 sf 17.35% Impervious Runoff Depth>2.42"
Tc=6.0 min UI Adjusted CN=WQ Runoff=0.02 cfs 88 cf

Subcatchment S2: To Depression Runoff Area=43 sf 100.00% Impervious Runoff Depth>7.98"
Tc=6.0 min CN=98 Runoff=0.01 cfs 29 cf

Subcatchment S3: To Infilt. Runoff Area=395 sf 100.00% Impervious Runoff Depth>7.98"
Tc=6.0 min CN=98 Runoff=0.07 cfs 263 cf

Reach RT: Post Total Inflow=0.01 cfs 29 cf
Outflow=0.01 cfs 29 cf

Pond P1: Infiltration Peak Elev=14.00' Storage=76 cf Inflow=0.07 cfs 263 cf
Discarded=0.01 cfs 262 cf Primary=0.00 cfs 0 cf Outflow=0.01 cfs 262 cf

Total Runoff Area = 876 sf Runoff Volume = 379 cf Average Runoff Depth = 5.20"
41.32% Pervious = 362 sf 58.68% Impervious = 514 sf

Summary for Subcatchment S1: Predevelopment

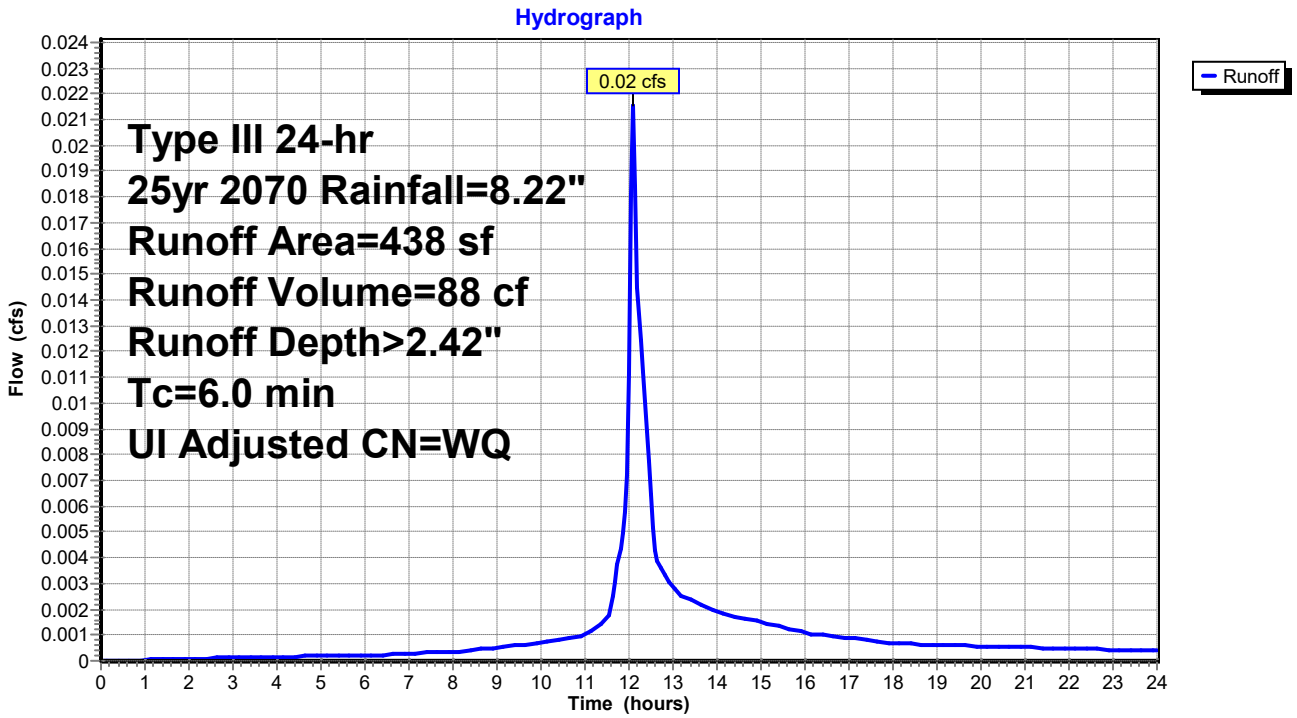
Runoff = 0.02 cfs @ 12.10 hrs, Volume= 88 cf, Depth> 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr 2070 Rainfall=8.22"

Area (sf)	CN	Adj	Description
76	98	98	Unconnected pavement, HSG A
362	39	39	>75% Grass cover, Good, HSG A
438			Weighted Average
362			82.65% Pervious Area
76			17.35% Impervious Area
76			100.00% Unconnected

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

Subcatchment S1: Predevelopment



Summary for Subcatchment S2: To Depression

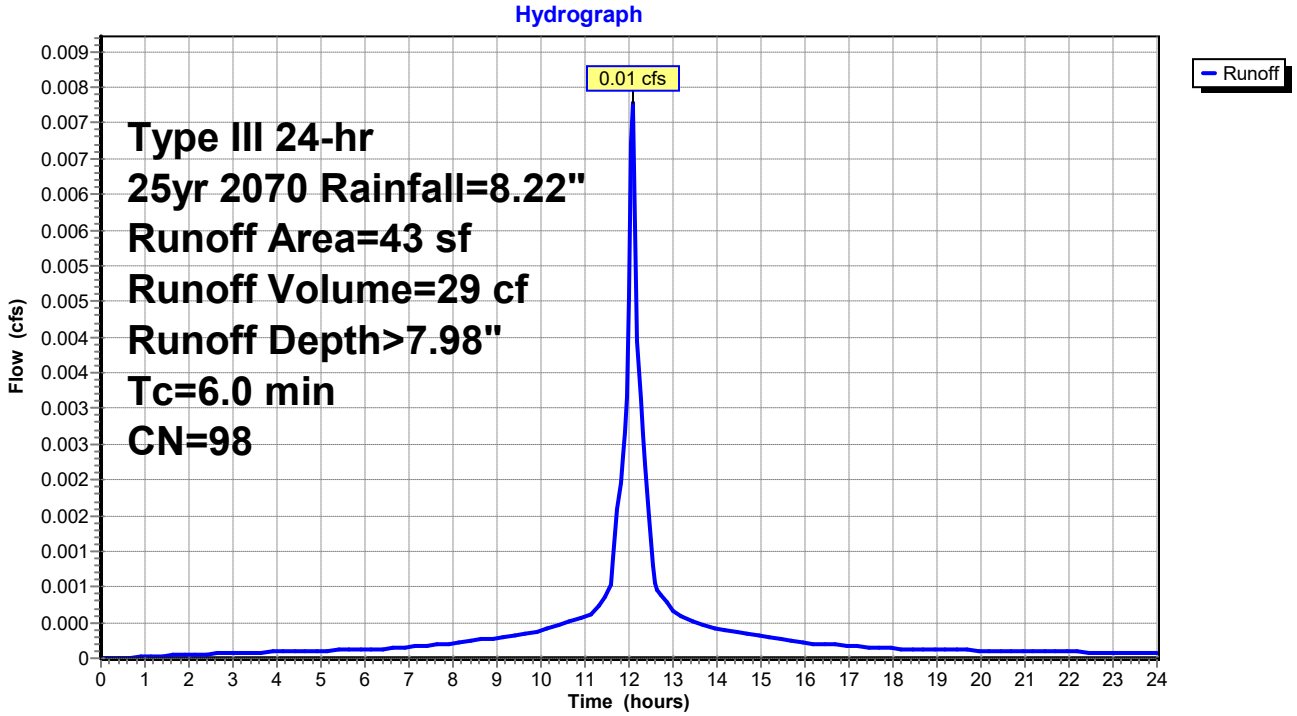
Runoff = 0.01 cfs @ 12.09 hrs, Volume= 29 cf, Depth> 7.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr 2070 Rainfall=8.22"

Area (sf)	CN	Description
43	98	Unconnected pavement, HSG A
43		100.00% Impervious Area
43		100.00% Unconnected

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

Subcatchment S2: To Depression



Summary for Subcatchment S3: To Infilt.

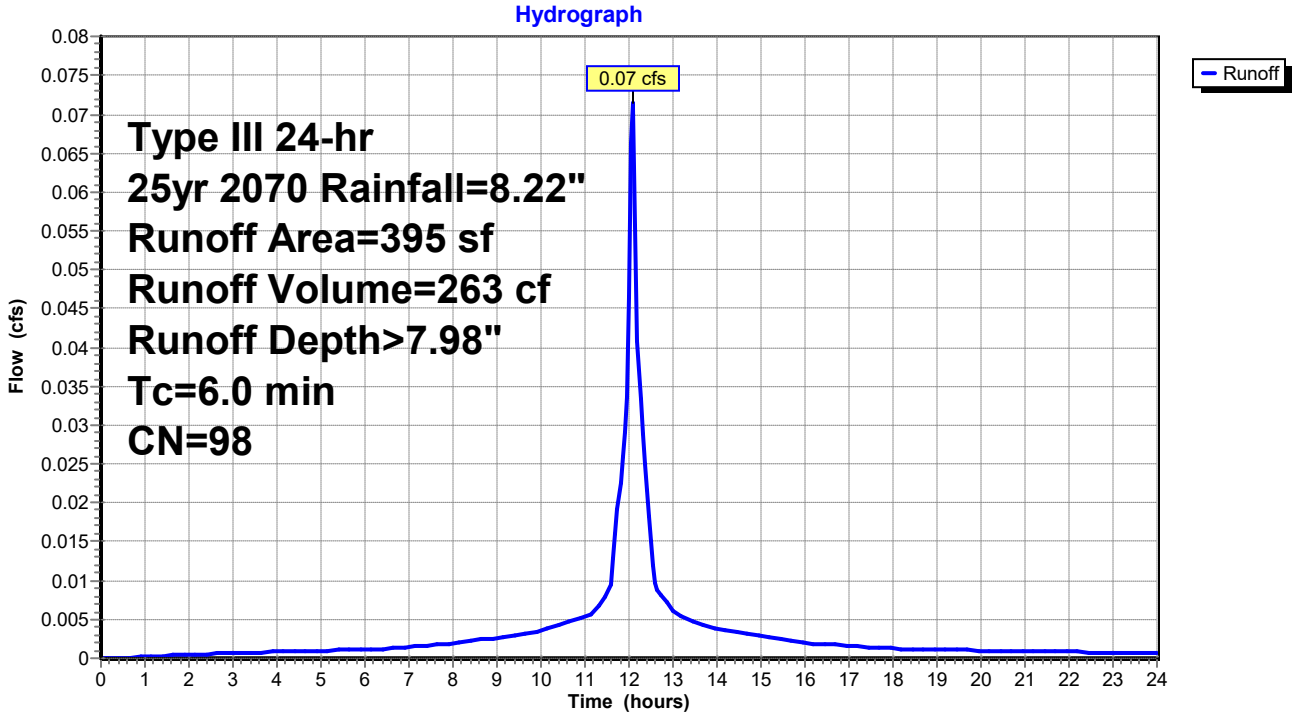
Runoff = 0.07 cfs @ 12.09 hrs, Volume= 263 cf, Depth> 7.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25yr 2070 Rainfall=8.22"

Area (sf)	CN	Description
395	98	Unconnected pavement, HSG A
395		100.00% Impervious Area
395		100.00% Unconnected

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

Subcatchment S3: To Infilt.

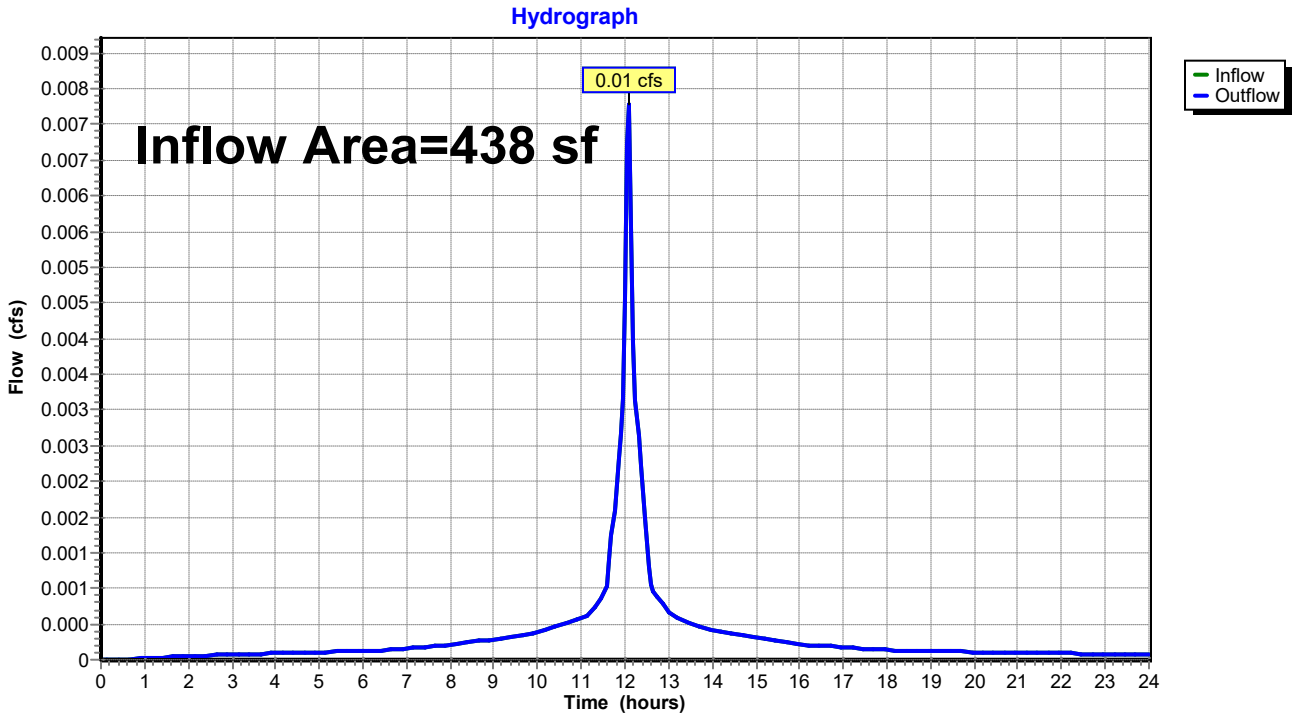


Summary for Reach RT: Post Total

Inflow Area = 438 sf,100.00% Impervious, Inflow Depth > 0.78" for 25yr 2070 event
Inflow = 0.01 cfs @ 12.09 hrs, Volume= 29 cf
Outflow = 0.01 cfs @ 12.09 hrs, Volume= 29 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach RT: Post Total



Summary for Pond P1: Infiltration

Inflow Area = 395 sf,100.00% Impervious, Inflow Depth > 7.98" for 25yr 2070 event
Inflow = 0.07 cfs @ 12.09 hrs, Volume= 263 cf
Outflow = 0.01 cfs @ 12.57 hrs, Volume= 262 cf, Atten= 85%, Lag= 29.2 min
Discarded = 0.01 cfs @ 12.57 hrs, Volume= 262 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 14.00' @ 12.57 hrs Surf.Area= 147 sf Storage= 76 cf

Plug-Flow detention time= 44.3 min calculated for 262 cf (100% of inflow)
Center-of-Mass det. time= 43.7 min (784.2 - 740.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	13.00'	101 cf	**6.17'W x 23.83'L x 2.00'H Field A** 294 cf Overall - 41 cf Embedded = 253 cf x 40.0% Voids
#2A	13.50'	41 cf	**ADS_StormTech SC-160LP +Cap** x 6 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 2 Rows of 3 Chambers
#3	13.50'	0 cf	**0.33'D x 3.00'H Vertical Cone/Cylinder**
		142 cf	Total Available Storage

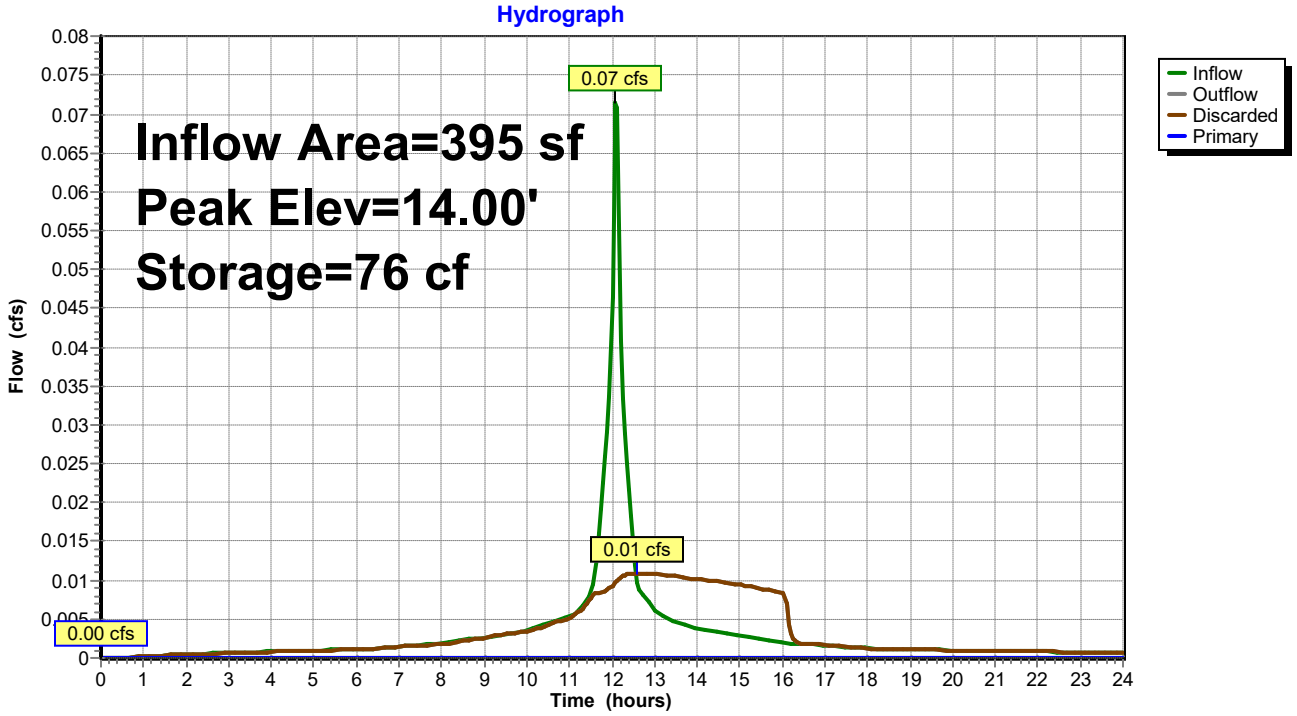
Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.00'	**2.410 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 10.00'
#2	Primary	16.00'	**4.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.01 cfs @ 12.57 hrs HW=14.00' (Free Discharge)
1=Exfiltration (Controls 0.01 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=13.00' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond P1: Infiltration



June 15, 2023

Members of the Board of Zoning Appeals
831 Mass Avenue
Cambridge, MA

Dear Members,

We are writing you to inform you that due to another commitment we will be unable to attend the public hearing on June 29, 2023 on the special permit petition submitted by Cathy Chen of 50 Concord Ave.

We are the owners of 52 Concord Ave. As a direct abutter of 50 Concord Ave, we would like to state our support in granting the special permit requested by Cathy Chen for her proposed project.

Sincerely,

Emily Aaronson

Selom Azuma