



VOLUME III - APPENDICES

1627 MASS AVE
CAMBRIDGE, MA
10/26/23



VOLUME III - APPENDICES

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Article 22 Compliance:

To comply with the City of Cambridge's Article 22 Sustainable Design and Development Policy, the 1627 Mass Ave Project will be designed and constructed in accordance with Enterprise Green Communities (EGC) Certification. This certification offers numerous benefits, including an emphasis on environmental sustainability, efficient usage of water and energy, and a focus on the well-being and health of the residents. 1627 Mass Ave is a unique example of how developers and architects can maximize sustainability in both new construction and the existing building stock. In addition to meeting the EGC standard, the existing mansion on the site will include upgrades to the existing building envelope that will dramatically improve its performance and allow for the building to be all-electric. The new construction building will meet EGC standards and be Passive House Certified meaning low heating and cooling loads, which become a path to using net zero energy. With the installation of solar PV on the roof of the new building, its energy needs can be partially offset with renewable energy. High-performance envelopes also mean higher comfort and better indoor air quality for the residents, which will be further enhanced through rigorous review of the materials employed.

Stormwater Control Standards

Full Civil Stormwater Narrative is attached. The project's civil engineer has reviewed the current design with Kara Falise of the Cambridge DPW and will continue to touch base with DPW staff as construction drawings are advanced.

Flood Plain Overlay District (Section 22.70 of the CZO)

This Section 22.70 does not apply to this Proposal as 1627 Massachusetts Avenue / 4 Mellen Street are not located within a Flood Plain Overlay District. Please see page pg. 15 for a map of the project area in the City of Cambridge's Flood Viewer.

Flood Resilience (Section 22.80 of the CZO; Adopted 2/27/2023)

It is HRI's understanding that Section 22.80 of the CZO does not apply as the regulations have yet to be promulgated prior to the filing of this application for a permit under the Affordable Housing Overlay. In addition, the project parcel has no predicted future flood elevations (please see pg. 15 for a map of the project area from the City of Cambridge's Flood Viewer). HRI believes this is one of many reasons that this parcel is a great fit for sustainable affordable housing.

Green Factor Standards (Section 22.90 of the CZO; Adopted 2/27/2023)

This project will meet the Green Factor Standards requirements and the Cool Factor Score by preserving the existing healthy tree canopy, lawn, and hedge; renovating the existing plant beds with native and/or drought tolerant plantings; adding shrubs, perennials, and groundcover to the Mellen Street entrance; and planting shade tolerant groundcover to the setbacks of the new construction building



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June 30, 2023

Quetti Project #191

Kara Falise
Cambridge DPW
147 Hampshire Street
Cambridge, MA 02139

**1627 Massachusetts Avenue, Cambridge, MA - Civil Engineering Narrative
(Entering CD Phase)**

Dear Kara,

Quetti Design LLC (Quetti Design Group) has completed a preliminary stormwater design and narrative for the proposed affordable housing development located at 1627 Massachusetts Avenue in Cambridge. The Project is currently about to enter the Construction Document Phase, and an updated stormwater mitigation narrative will be resubmitted to the DPW for final approval.

Project Overview

The current site contains a historic 3-story building which was previously used as Lesley University's Admissions and Visitor Services Center and has a parking lot with 21 parking spaces. The proposed improvements include a new affordable housing building, utility upgrades, trash area, transformer, accessible pathway from Massachusetts Avenue, sitting area by the building entrance along Mellen Street. The Project's stormwater management improvements have been designed to meet the standards for the City of Cambridge's Stormwater Control Permit to the extent practicable.

Public Right-of-Way Surface Improvements

Massachusetts Avenue

No improvements are currently proposed within the public right-of-way along Massachusetts Avenue, except the sidewalk at the intersection due to the surface replacements required for the new electrical service to the site. It is our understanding that as part of the City of Cambridge's MassAve4 Bike Improvements Project, the existing parking spaces along Massachusetts Avenue will be removed and replaced with a 6.5-foot bike lane and a 4-foot buffer for the two northbound traffic lanes. The design and scope of the MassAve4 Bike Improvements Project is by others.

Mellen Street

The southern sidewalk will be replaced along Mellen Street to provide ADA compliant cross slopes below 1.5%. The Project is proposing to close the existing curb cut and provide a loading area for the future residents. Based on past discussions with the City of Cambridge, the decision to allow the closing of the curb cut will not be determined until later in the Project. Due to the number of new utility connections in Mellen Street, the DPW has requested the street be milled and overlaid from curb to curb, extending 10 feet from the nearest sawcut to the east and west. The limits of mill and overlay can be found on Sheet C-300 – Public Sidewalk Layout & Grading Plan.

Sewer Improvements

The existing sewer lateral will be cut and capped, and a new SDR 35 PVC sewer service will connect to the 10-inch sewer main in Mellen Street. Based on our analysis of existing record plans, it is believed that the 10-inch sewer main to the west of the manhole in Mellen Street was abandoned, potentially due to the construction of the Red Line tunnel below Massachusetts Avenue. Refer to **Attachment A** later in this report for the referenced record plan.

Water and Fire Protection Improvements

In Massachusetts Avenue, there is 12-inch cast iron water main below the southbound lanes. Below the northbound lanes, there is a 20-inch water main and 48-inch MWRA water main. There is a fire hydrant located along Massachusetts Avenue near the intersection of Massachusetts Avenue and Mellen Street. There are no existing or proposed connections to the mains in Massachusetts Avenue.

In Mellen Street, there is a 6-inch cast iron water main. The existing domestic water service will be cut and capped. The Project is proposing new domestic water and fire protection services connections to the main in Mellen Street. A hydrant flow test was performed on June 23, 2023, and the results have been sent to the MEP engineer to confirm the sizes of the proposed connections. If the size of the services need to be revised, they will be reflected on future submission.

Stormwater Management

The Site runoff was analyzed using two design points. Design Point #1 is the catch basin at the corner of Massachusetts Avenue and Mellen Street. Design Point #2 is the catch basin in Mellen Street, approximately 200 feet to the east of the Project. The proposed stormwater management system which will be described later in this narrative, uses an outlet control structure to mitigate the rate and volume of runoff from the system before discharging the water to the existing 15-inch drain main in Mellen Street. Based on our analysis of existing record plans, it is believed that the 15-inch drain main to the west of the manhole in Mellen Street was abandoned, potentially due to the construction of the Red Line tunnel below Massachusetts Avenue. Refer to **Attachment A** later in this report for the referenced record plan.

The City of Cambridge’s Flood Viewer 2022 indicates areas that are impacted by sea level rise, storm surge flooding, and precipitation flooding for present day and the 2070 storm events. The 1627 Massachusetts Ave site is not located in an area impacted by those flooding events. Refer to **Attachment B** for additional information.

The Project will result in a decrease of impervious area due to the new construction. The change in land use conditions from existing to proposed is summarized in **Tables 1-3** on the following page. Refer to the plan set and HydroCAD calculations for additional information. The existing drainage boundaries can be found on sheet C-100, and the proposed drainage boundaries on sheet C-300.

Table 1: Design Point #1 (Massachusetts Avenue) – Drainage Area Summary

Description	Drainage Area (SF)	Roof (SF)	Site Impervious (SF)	Total Impervious (SF)	Pervious (SF)
Existing	3,516	717	259	976	2,540
Proposed	2,152	0	338	338	1,814
Change	(1,364)	(717)	79	(638)	(726)

Table 2: Design Point #2 (Mellen Street) – Drainage Area Summary

Description	Drainage Area (SF)	Roof (SF)	Site Impervious (SF)	Total Impervious (SF)	Pervious (SF)
Existing	10,949	1,715	7,258	8,973	1,976
Proposed	12,313	7,490	1,451	8,941	3,372
Change	1,364	5,775	(5,807)	(32)	1,396

Table 3: Total Site Land Use Summary

Description	Drainage Area (SF)	Roof (SF)	Site Impervious (SF)	Total Impervious (SF)	Pervious (SF)
Existing	14,465	2,432	7,517	9,949	4,516
Proposed	14,465	7,490	1,789	9,279	5,186
Change	0	5,058	(5,728)	(670)	670

Soil Information

Boring logs were performed by McPhail Associates, who prepared a Foundation Engineering Report dated September 22, 2022. This report has been included in this submission as **Attachment C**. Borings #1 and #2 were performed in the general vicinity of the proposed infiltration system. The approximate locations of the borings can also be found on sheet C-100. The report states that groundwater was observed between elevations 18.3 and 24.0. Also included in the report is a description of the test pit (TP-1) adjacent to the existing building, which indicates a bottom of footing elevation of 33.3, with glacial outwash below (sand, trace silt and gravel).

B-1 indicated that fill was present down to elevation 29.1, which transitioned to a silty sand down to elevation 26.1, which corresponds to sandy loam on the soil texture triangle. B-2 indicated fill was present to elevation 31.3, which transitioned to a silty sand down to elevation 22.3. McPhail noted that at elevation 27.3 there were signs of oxidation, and the samples were moist, which are an indication of groundwater or a perched water table. Therefore, the bottom of stone elevation of 29.3 was used to provide 2 feet of vertical separation between the bottom of the system and the estimated seasonal high groundwater table. Since urban fill was present on-site, the curve number for HSG D was used for the existing and proposed condition.

B-3 was performed at the rear of the parking lot, which indicated fill was present down to elevation 31.1, which transitioned to a siltier soil. Therefore, due to a presence of soil with poor infiltration rates, it was determined that that the south side of the site was not a feasible location to place a stormwater infiltration system. An additional constraint on the south side of the site are the trees along the southern property line, which could impact the critical root zones.

Proposed Stormwater Management Approach

Design Point #1 – Catch Basin in Massachusetts Avenue

The existing and proposed drainage areas to Massachusetts Avenue can be found in **Table 1** on the previous page. In the existing condition, three of the building's downspouts discharge to grade and the runoff from the lawn area sheet flows into Massachusetts Avenue to the catch basin in Massachusetts Avenue. Refer to **Sheet C-100** for the approximate drainage boundary in the existing condition. In the proposed condition, the downspouts will be routed to the sub-surface infiltration system described later in this narrative, that overflows to the drain main in Mellen Street (Design Point #2). Refer to **Sheet C-300** for the approximate drainage boundaries in the proposed condition.

The total drainage area and impervious area towards Design Point #1 will be reduced, as indicated in **Table 1**. Refer to the existing and proposed rate and volume reductions for this design point on the following page in **Table 4**, which are based off the City of Cambridge's 2070 rainfall values. The City of Cambridge's requirement to provide a 25-year to 2-year rate reduction has not been achieved for Design Point #1, but there is a proposed reduction of approximately 40% for the four storm events analyzed. Calculations for the reduction in phosphorus have also been provided on the following page. Existing and proposed HydroCAD calculations can be found later in this report in **Attachments D and E**.

No stormwater management systems were proposed for Design Point #1 since there was a reduction of impervious area and other reasons. The developer has had conversations with the Cambridge Historical Commission, who requested minimal excavation within the front yard. Also, on the south side of the site, there are trees ranging in diameter from 20 to 32 inches and the project’s arborist recommended not putting a system in the vicinity if possible. Lastly, the front yard of the existing building is located within the 30-foot MBTA Zone-of-Influence since the approximate limits of the MBTA Red Line Tunnel are +/- 6 feet from the property line.

Table 4: Design Point #1 (DP-1) – Massachusetts Avenue – Stormwater Runoff

2-Year Storm (3.65")			
Existing Rate (CFS)	Post Rate (CFS)	Pre Volume (CF)	Post Volume (CF)
0.20	0.12	629	356
10-Year Storm (6.40")			
Existing Rate (CFS)	Post Rate (CFS)	Pre Volume (CF)	Post Volume (CF)
0.43	0.25	1,370	801
25-Year Storm (8.22")			
Existing Rate (CFS)	Post Rate (CFS)	Pre Volume (CF)	Post Volume (CF)
0.59	0.35	1,881	1,110
100-Year Storm (11.70")			
Existing Rate (CFS)	Post Rate (CFS)	Pre Volume (CF)	Post Volume (CF)
0.87	0.53	2,875	1,714

Refer to the phosphorous reduction calculations for Design Point #1 on the following page.

Phosphorous (P) Calculations – Design Point 1

P Load Export Rate	
High Density Residential – Impervious	2.32 lbs/ac/year
DevPERV – HSG D	0.37 lbs/ac/year

Baseline P Load

Existing:

$$(2.32 \text{ lbs/ac/year}) * (976 \text{ SF} / 43,560) \text{ (Impervious)} + (0.37 \text{ lbs/ac/year}) * (2,540 \text{ SF} / 43,560) \text{ (Pervious)} = \mathbf{0.074 \text{ lbs/P/year}}$$

Proposed (Uncaptured):

$$(2.32 \text{ lbs/ac/year}) * (338 \text{ SF} / 43,560) \text{ (Impervious)} + (0.37 \text{ lbs/ac/year}) * (1,814 \text{ SF} / 43,560) \text{ (Pervious)} = \mathbf{0.033 \text{ lbs/P/year}}$$

P Reduction: $0.074 \text{ lbs/ac/year} - 0.033 \text{ lbs/ac/year} = \mathbf{0.041 \text{ lbs/P/year Reduction}}$

100% P Reduction Requirement (over Proposed Impervious):

$$(2.32 \text{ lbs/ac/year}) * (338 \text{ SF} / 43,560) \text{ (Impervious)} = 0.018 \text{ lbs/P/year}$$

Required P Reduction = 0.018 lbs/P/year < 0.041 lbs/P/year Reduction Provided = Standard Met

Design Point #2 – Mellen Street

The existing and proposed drainage areas to Mellen Street can be found in **Table 2** earlier in this narrative. In the existing condition, the parking lot and seven of the building’s downspouts discharge to grade and sheet flows into Mellen Street, and is collected by a catch basin in Mellen Street approximately 200 feet to the east of the site. Refer to **Sheet C-100** for the approximate drainage boundary in the existing condition.

In the proposed condition, all the roof areas will be routed to a sub-surface infiltration system consisting of precast Shea galleys and crushed stone. Refer to **Sheet C-300** for the approximate drainage boundaries in the proposed condition. The infiltration system will store and infiltrate the runoff, and during higher intensity storm events an outlet control structure will manage the rates and volumes of runoff before overflowing to the 15-inch drain main in Mellen Street. The system has been designed to reduce the post-construction runoff rates and volumes below the existing condition. The drainage area towards Design Point #2 will increase but the amount of impervious area will be reduced, as indicated in **Table 1** found earlier in this report. The proposed runoff calculation includes the uncaptured site areas sheet flowing off the site into Mellen Street.

The City of Cambridge’s requirement to provide a 25-year to 2-year rate reduction and Phosphorus requirements have been met for this Design Point, using Cambridge’s 2070 rainfall

events. The bottom of stone elevations provides two feet of separation from the estimated seasonal high groundwater elevation and is described in more detail in the **Soil Information** section earlier in this narrative. A Rawl's infiltration rate of 1.02 inches per hour was used, which is the design rate for sandy loam which was determined from the Foundation Engineering Report in **Attachment C**. Calculations for the reduction in phosphorus have been provided for both options. Existing and Proposed HydroCAD calculations for both options can be found later in this report in **Attachments F and G**.

The infiltration system design consisting of 5 Shea galleys with a varying heights, which was designed to meet the 25-year to 2-year runoff rate requirement. Refer to **Table 5** on the following page and the HydroCAD calculations provided in **Attachments F and G**. The system is designed to store and infiltrate the water from the one-inch storm event before overflowing to Mellen Street within the required 72-hour drawdown period required by the Massachusetts Stormwater Handbook. Calculations demonstrating this has been met can be found on the following page.

From the City of Cambridge's June 2021 Supplemental Directive to the Wastewater and Stormwater Management Guidance dated May 2008, one inch of storage is required over the total site area. The system has been designed to store the one-inch rainfall event without overflow. Additionally, Standard 3 of the MA Stormwater Handbook has a volume to recharge requirement based on the total impervious area and hydrologic soil group. Although the site was modeled as HSG D due to the presence of urban fill, the volume to recharge calculation assumes HSG B since it was the hydrologic soil group used for the Rawl's rate for infiltration (sandy loam with a rate of 1.02 inches per hour). Refer to the storage volume and phosphorus reduction calculations on the following pages.

Storage Calculations

Total Site Area = 14,465 SF x (1 inch) x (1 FT / 12 inches) = 1,205 CF of Storage

Storage Provided = 2,024 CF (See HydroCAD Calculations in **Attachment G**)

Storage Provided = 2,024 CF > 1,205 CF = Required Storage

Volume to Recharge (HSG B - Stormwater Handbook) = 0.35 inches x Total Impervious Area
Note: HSG B Volume to Recharge was assumed due to Rawl's Rate for HSG B used for design

0.35 inch x 9,279 SF x (1 FT / 12 inch) = 271 CF

Volume (Below Overflow El = 30.45) = 279 CF (Estimated, see HydroCAD)

No system overflow occurs during the 1-inch storm event to system (505 CF, See HydroCAD)

Recharge Volume Provided = 279 CF > 271 CF = Volume to Recharge (HSG B)

72-Hour Drawdown Calculations

$$\text{Time}_{\text{drawdown}} = Rv / (K \times \text{Bottom Area}) = 72 \text{ Hour Max}$$

$$Rv = \text{Storage Volume} = \text{Volume Below Overflow} = 279 \text{ CF}$$

$$K = \text{Saturated Hydraulic Conductivity for "Static" and "Simple Dynamic" Methods} = \text{Rawls Rate} (1.02 \text{ in/hr})$$

$$\text{Bottom Area} = \text{Bottom Area of Recharge Structure (4 galleys)} = (56.00 \text{ FT} \times 8.00 \text{ FT}) = 448.0 \text{ SF}$$

$$\text{Time}_{\text{drawdown}} = 279 \text{ CF} / (1.02 \text{ in/hr})(1 \text{ ft} / 12 \text{ in})(448.0 \text{ SF}) = 7.3 \text{ hours}$$

Table 5: Design Point #2 (DP-2) – Mellen Street – Stormwater Runoff

2-Year Storm (3.65")			
Existing Rate (CFS)	Post Rate (CFS)	Pre Volume (CF)	Post Volume (CF)
0.85	0.36	2,814	2,001
10-Year Storm (6.40")			
Existing Rate (CFS)	Post Rate (CFS)	Pre Volume (CF)	Post Volume (CF)
1.55	0.62	5,296	4,608
25-Year Storm (8.22")			
Existing Rate (CFS)	Post Rate (CFS)	Pre Volume (CF)	Post Volume (CF)
2.01	0.83	6,947	6,408
100-Year Storm (11.70")			
Existing Rate (CFS)	Post Rate (CFS)	Pre Volume (CF)	Post Volume (CF)
2.87	2.80	10,112	9,904

Refer to the phosphorous reduction calculations for Design Point #2 on the following page.

Phosphorous (P) Calculations – Design Point 2

P Load Export Rate	
High Density Residential – Impervious	2.32 lbs/ac/year
DevPERV – HSG D	0.37 lbs/ac/year

Baseline P Load

Existing: $(2.32 \text{ lbs/ac/year}) * (8,973 \text{ SF} / 43,560) \text{ (Impervious)} + (0.37 \text{ lbs/ac/year}) * (1,976 \text{ SF} / 43,560) \text{ (Pervious)} = 0.495 \text{ lbs/P/year}$

Proposed (Uncaptured): $(2.32 \text{ lbs/ac/year}) * (8,941 \text{ SF} / 43,560) \text{ (Impervious)} + (0.37 \text{ lbs/ac/year}) * (3,372 \text{ SF} / 43,560) \text{ (Pervious)} = 0.505 \text{ lbs/P/year}$

P Increase: $0.505 \text{ lbs/ac/year} - 0.495 \text{ lbs/ac/year} = 0.010 \text{ lbs/P/year Increase}$

65% P Reduction Requirement (over Proposed Impervious):

$0.65 * (2.32 \text{ lbs/ac/year}) * (8,941 \text{ SF} / 43,560) \text{ (Impervious)} = 0.310 \text{ lbs/P/year}$

BMP Reduction

BMP Storage Volume = 279 CF (below overflow)

Captured: $(2.32 \text{ lbs/ac/year}) * ((7,490 \text{ SF (Roof)} + 1,167 \text{ SF (Site Impervious)}) / 43,560) + (0.37 \text{ lbs/ac/year}) * (967 \text{ SF} / 43,560) \text{ (Pervious)} = 0.469 \text{ lbs/P/year}$

BMP Pollutant Removal: Infiltration Trench, Rawl's: 1.02 in/hr, Runoff Depth: 1.0 in = 96% Reduction

BMP Reduction = $0.469 \text{ lbs/P/year} \times 96\% \text{ Reduction} = 0.450 \text{ lbs/P/year}$

Total Reduction: $0.450 \text{ lbs/P/year (BMP)} - 0.010 \text{ lbs/P/year (Land Cover)} = 0.440 \text{ lbs/P/year}$

Provided P Reduction = $0.440 \text{ lb/P/year} > 0.307 \text{ lb/P/year} = \text{Required P Reduction} = \text{Standard Met}$

June 30, 2023

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Thank you for reviewing this Civil Narrative. The Project is currently in the Construction Document Phase, and an updated narrative will be resubmitted to the DPW for final approval.

If you have any questions or comments, please don't hesitate to give me a call to discuss.

Best,

Quetti Design Group



Kevin Quetti, PE
Principal Engineer

Enclosures:

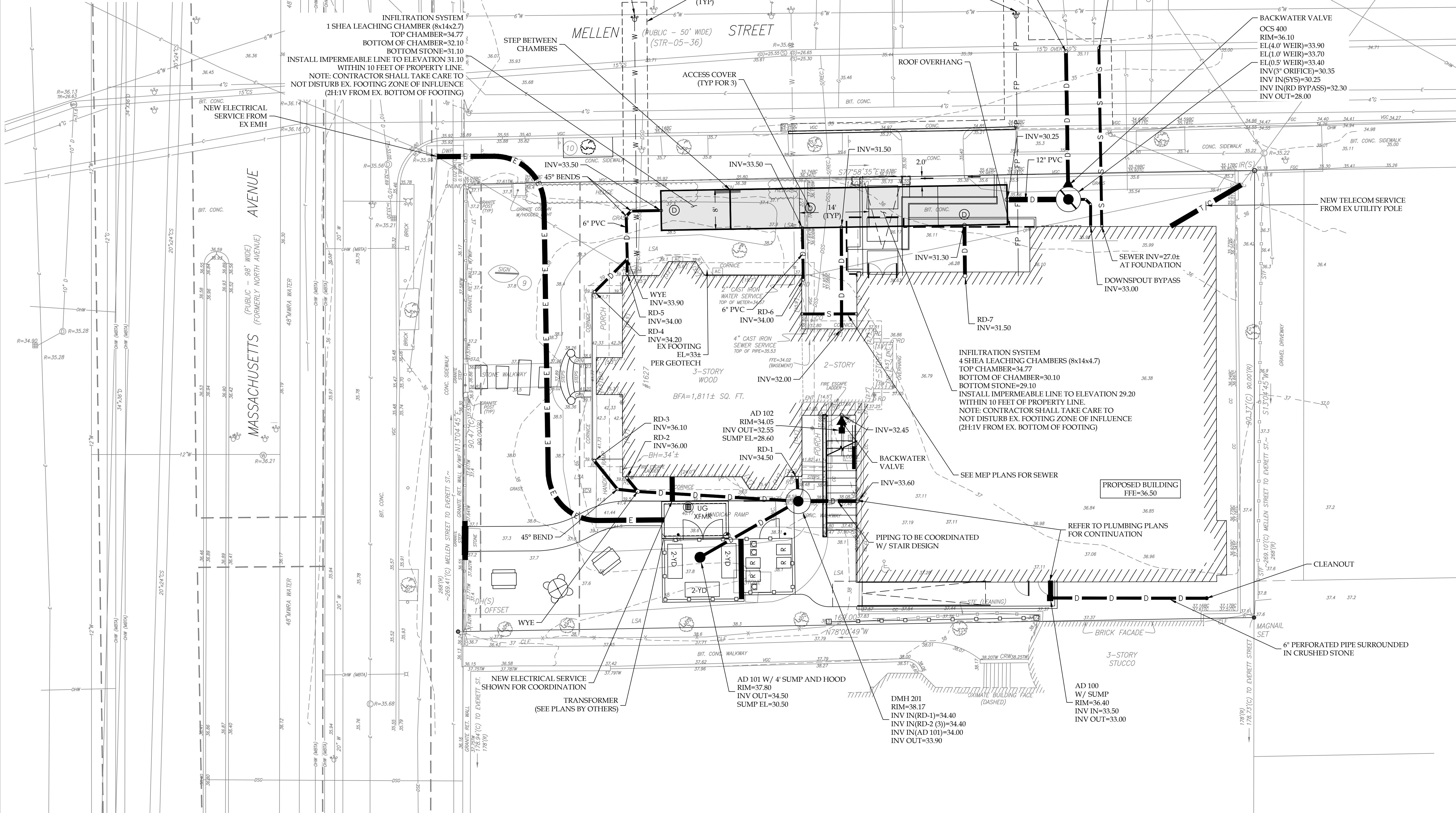
- 1) Proposed Site Plan Set for New Construction prepared by Quetti Design Group, dated June 30, 2023
- 2) Attachment A – Record Plan Indicated Abandoned Sewer
- 3) Attachment B - City of Cambridge Flood Viewer
- 4) Attachment C - Foundation Engineering Report
- 5) Attachment D – Existing HydroCAD Calculations – Design Point #1 – Massachusetts Avenue
- 6) Attachment E – Proposed HydroCAD Calculations – Design Point #1 – Massachusetts Avenue
- 7) Attachment F -Existing HydroCAD Calculations – Design Point #2 – Mellen Street
- 8) Attachment G – Proposed HydroCAD Calculations – Design Point #2 – Mellen Street

DESIGN POINT #1 (MASS AVE)	EXISTING	PROPOSED	CHANGE
TOTAL AREA	3,516	2,154	(1,362)
ROOF AREA	717	0	(717)
SITE IMPERVIOUS	259	356	97
TOTAL IMPERVIOUS	976	356	(620)
LAWN (HSG D)*	2,540	1,798	(742)

DESIGN POINT #2 (MELLEN ST)	EXISTING	PROPOSED	CHANGE
TOTAL AREA	10,949	12,311	1,362
ROOF AREA	1,715	7,645	5,930
SITE IMPERVIOUS	7,258	1,397	(5,861)
TOTAL IMPERVIOUS	8,973	9,042	69
LAWN (HSG D)*	1,976	3,269	1,293

TOTAL SITE	EXISTING	PROPOSED	CHANGE
TOTAL AREA	14,465	14,465	0
ROOF AREA	2,432	7,645	5,213
SITE IMPERVIOUS	7,517	1,753	(5,764)
TOTAL IMPERVIOUS	9,949	9,398	(551)
LAWN (HSG D)*	4,516	5,067	551

*ASSUMED FOR URBAN FILL
REFER TO THE HYDROCAD CALCULATIONS AND STORMWATER NARRATIVE FOR ADDITIONAL INFORMATION



- NOTES:
- REFER TO ADDITIONAL NOTES AND ABBREVIATIONS ON SHEET C-000, THE SITE DEMOLITION PLAN ON SHEET C-100 FOR SCOPE OF SITE DEMOLITION AND SEDIMENT AND EROSION CONTROL MEASURES, SHEET C-201 FOR UTILITY PROFILES, SHEET C-300 FOR SURFACE IMPROVEMENTS WITHIN THE PUBLIC RIGHT-OF-WAY, AND THE DETAIL SHEETS FOR ADDITIONAL INFORMATION.
 - REFER TO MEP AND LANDSCAPE ARCHITECT PLANS FOR ADDITIONAL SITE INFORMATION.
 - CONTRACTOR TO COORDINATE WITH THE CITY FOR PERMITTING. THIS PLAN DOES NOT CONSTITUTE A PERMIT.
 - IF CONDITIONS DO NOT MATCH INFORMATION (EX. LEDGE, GW ELEVATIONS, SURVEY DISCREPANCIES, ETC.) CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY.
 - CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER. ANY DEVIATIONS TO THIS PLAN.
 - THIS PLAN MAY NOT SHOW UTILITIES THAT NEED TO BE TERMINATED PRIOR TO DEMOLISHING THE STRUCTURE(S) SUCH AS GAS, ELECTRIC, COMMUNICATIONS AND OTHERS. CONTRACTOR TO VERIFY ALL UTILITIES HAVE BEEN TERMINATED IN ACCORDANCE WITH EACH UTILITY PROVIDER'S STANDARDS PRIOR TO DEMOLISHING THE STRUCTURE(S).
 - THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF THERE ARE ANY DISCREPANCIES OCCUR BETWEEN THE SITE DEMOLITION AND PROPOSED SITE PLANS.
 - REFER TO THE MANUFACTURER'S SPECIFICATIONS FOR INSTALLATION OF THE SUBSURFACE INFILTRATION SYSTEM.
 - FOOTINGS SHOWN FOR GENERAL COORDINATION PURPOSES ONLY. ALL DIMENSIONS SHOWN FROM FOOTINGS ARE APPROXIMATE AND THE CONTRACTOR SHALL VERIFY IN THE FIELD AND REPORT DISCREPANCIES TO ENGINEER. REFER TO STRUCTURAL AND/OR GEOTECHNICAL PLANS.

1627 MASS AVE
1627 MASSACHUSETTS AVENUE, CAMBRIDGE MA
HRI 1627 MASS AVE LLC C/O HRI

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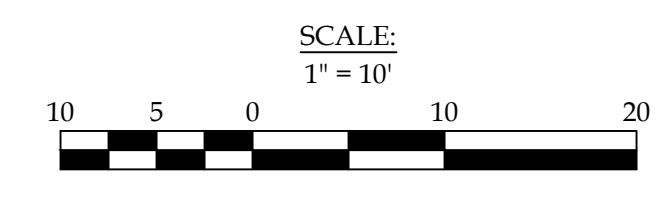
STAMP
KEY PLAN

MARK	DATE	DESCRIPTION
	SEP 22 2023	PLANNING BOARD
	JUNE 30 2023	DPW SUBMISSION 2
	MARCH 2023	DD SET
	OCT 6 2022	SCHEMATIC DESIGN

PROJECT NUMBER: 222037 (QUETTI #191)
DRAWN BY: KAQ
CHECKED BY: KAQ

SHEET TITLE
SITE UTILITY PLAN

C-200



Cambridge FloodViewer Pilot

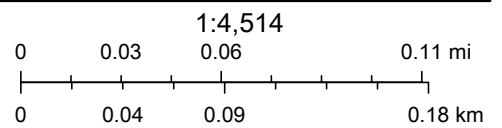


**1627 Mass Ave/
4 Mellen Street
Project Parcel**

6/5/2023, 10:08:40 AM

- 2070 - 1% - SLR/SS Flooding Extent
- 2070 - 1% - Extent of Flooding
- 2070 - 10% - SLR/SS Flooding Extent
- 2070 - 10% - Extent of Flooding
- 2030 - 1% - Extent of Flooding
- 2030 - 10% - Extent of Flooding

- Present Day - 1% - Extent of Flooding



City of Boston, City of Cambridge, MassGIS, Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, EPA, City of Cambridge GIS



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treespecialists.com

Date November 8, 2022
To Eleni Macrakis - HRI
From Dave Ropes - Tree Specialists Inc.
Project 1627 Mass Ave., Cambridge MA

Dear Eleni,

As requested, I have developed the attached *Tree Study* for the project at 1627 Massachusetts Avenue, Cambridge. Even though the project is exempt from the mitigation aspects of the *Cambridge Tree Protection Ordinance*, I followed the format that they request from all projects that affect trees within the city, including:

- A *Tree Survey*, showing the location, type, trunk diameter in inches (DBH), and estimated height of all significant trees on the lot that would potentially be impacted by the proposed site work.
- A *Tree Preservation Plan*, to define and describe tree protection practices to be implemented prior to and during site work, to support the survival of all trees to be retained.

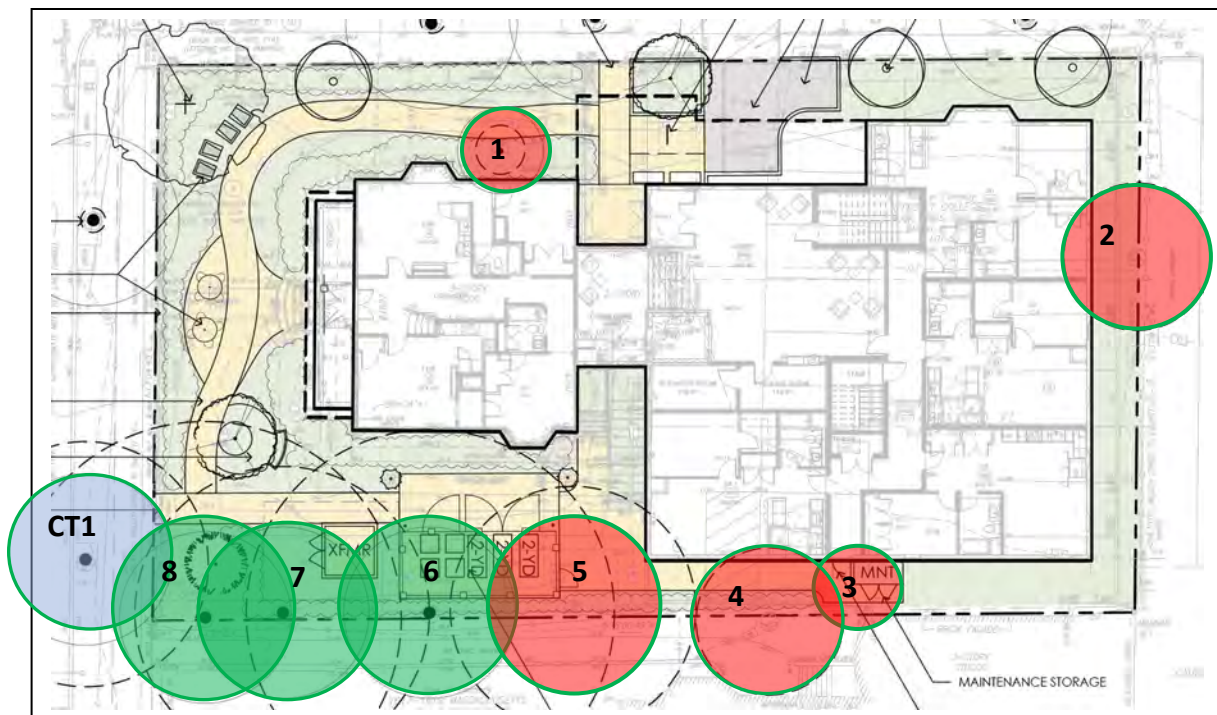
Assumptions and Limitations

The survey and recommendations are based on a single visit to the site, on October 20, 2022. The survey was a limited *visual assessment* of the trees' vigor and structural condition, made from the ground. No aerial inspection, tissue analysis, sub-surface assessment, or advanced decay detection techniques were applied. This was not a formal tree risk analysis, and Tree Specialists makes no guarantee concerning the structural stability of the trees that were examined.

While all trees possess some risk of failure, one tree - #5 on the attached survey – has obvious and significant structural decay that would be expected to increase the risk of tree failure. This tree should be removed as soon as possible to reduce risk to persons and property in its vicinity.

Tree Survey

Tree #	Common Name	DBH	Estimated height	Comments
1	Serviceberry	< 6"	20'	To be removed
2	Sycamore maple	12.5"	45'	To be removed
3	American elm	< 6"	15'	"Line tree" - poor condition – disease prone
4	American elm	15"	55'	"Line tree" - poor condition – disease prone
5	Norway maple	20.5"	60'	Significant decay, defects – high failure risk
6	Red oak	28"	70'	Good condition, some large dead branches
7	Red oak	26.5"	75'	Good condition, some large dead branches
8	Red oak	33"	80'	Good condition, some large dead branches
CT 1	Silver maple	20	55'	City tree - poor condition, decay in stem.



Summary Tree Notes

Of the (9) trees included in the survey, (4) are recommended to be removed due to infrastructure conflicts, and (1) due to significant structural decay that increases the risk of failure beyond what should be considered acceptable for the setting. The city tree (CT1) is in very poor condition, which is important to note before site work is underway.

The (3) large Red oaks are standouts, and are very valuable for all of the typical reasons that make large trees an asset in the urban landscape. They are in good health and structural condition, though they are encroaching a bit on the existing building and also on the abutting structure.

Normal *maintenance pruning*, including *crown reduction*, will address this issue specifically, and will also reduce risk of limb shedding in the future.

Tree Preservation Plan

Tree preservation strategies for minimizing plant stress throughout all phases of the project shall include:

Design phase – Determining the *Critical Root Zone* (CRZ)

The crux of tree preservation strategy is establishing the CRZ and avoiding disturbance within it. The CRZ is defined differently in different publications, but it is most often described by an area that is roughly equivalent to the spread of the foliar canopy. That sounds great, but unfortunately, is not practical in most urban development situations. In my opinion, the CRZ is more conceptual than formulaic. Many trees survive soil and root disturbance within close physical proximity, but it depends on the structure of the root system and the manner in which the work is performed.

The best way to define the CRZ for a particular tree or trees is to perform exploratory excavation utilizing a compressed air tool (“airspade”). Root system structure depends on species but also on soil depth and structure. Oaks can often be deeply rooted, and careful shallow excavation can be performed with minimal damage to the larger conductive and structural roots. Knowing the soil structure and the depth and size of the root structures within an area of proposed re-grading or trenching can inform the design process about the need for an alternative approach.

- When possible, consider relocation of hardscape and/or sub-surface infrastructure away from trees designated for preservation.
- Carefully consider alternative paving materials and methods to reduce damage to tree roots, especially within the Critical Root Zone.
- When encroachment within the CRZ is required, it can be done carefully, utilizing air-excavation tools to minimize root injury.

Pre-construction phase

Pruning

- *Crown Cleaning* to remove dead/declining limbs establishes a baseline for the trees’ condition prior to construction.
- *Crown Raising* or *Crown Reducing* limbs will provide needed for building clearance, clearance for site work, and will reduce the likelihood of limb shedding in the future.
- This work will also give a qualified arborist the opportunity to inspect the upper canopy for any hidden defects, prior to starting site work underneath to canopy.

Removal

- All tree removals should be part of the *pre-construction* phase. Removal for the high risk tree - #5 on the survey – should be arranged as soon as possible.
- If stumps that are proximate to trees being retained are to be removed, they should be shallow-ground with a stump grinder, and not pulled with an excavator. Pulling stumps can cause significant damage to adjacent tree’s root systems, which are often intertwined.

Plant Health Care

- Soil testing will provide mineral content, pH, and soil structure data.
- The trees should be monitored during the growing season, and any significant pests should be identified and treated appropriately.
- The trees' *root zone* should be treated with a liquid *bio-stimulant*. This product contains food materials and organic matter to improve soil structure and fertility.
- Apply a *soil surfactant* before the onset of hot summer weather. This product increases the water penetration and holding capacity of soils, which will help retain good soil moisture levels.
- Mulching the soil surface is a standard tree protection recommendation, but these trees are in a protected setting, and in my opinion the above treatments are a good alternative for trees where turf cover is preferable for the finished landscape.

Construction phase

Prior to locating materials or excavation equipment on the site, a *Tree Protection Zone (TPZ)* shall be established to prevent equipment from encroaching any closer to the trees than is necessary to complete the project.

- The TPZ should be fenced with rigid metal fencing, not plastic.
- If fencing off the TPZ is practical and equipment will be operated within "striking distance" of the tree trunks, they should be wrapped. This can be the standard 2x4's placed vertically around the circumference of the trunks, and secured with strapping of some sort. This doesn't provide substantial protection, but it does increase awareness on the part of machine operators working in close proximity to the trees.

Pre-emptive root pruning

- Excavation equipment does not cut roots, it fractures them. This can cause severe injury, often extending well beyond the *limit of construction*. Use air excavation tools to expose sizable roots, and make the cuts with hand tools. For longer stretches and smaller diameter roots, a stump grinder can be used as a root pruning device to "pre-cut" the boundary of the trench, going back an additional 5-6" as needed to protect the cut ends from disturbance during subsequent excavation. Backfill the trench immediately with the displaced soil to reduce drying of the cut ends.

Irrigation

- During the warmer summer months, the trees will require supplemental irrigation to help offset the lost absorptive capacity of the severed roots. Trees should receive at least 1 inch of water per week.

Pest monitoring and management

- The trees should be monitored during the growing season, and any significant pests should be identified and treated appropriately.

Post construction

Ongoing monitoring and care

The trees should receive a similar program of care during the subsequent 2 growing seasons, including pest monitoring and management, bio-stimulant applications, and supplemental irrigation during drought periods. Trees can take many years to fully recover from construction stress and injury, but supplemental care is especially critical during the first couple of growing seasons after the event.

Considering the value of these trees, and the contribution they make to the property and surrounding community, they are well worth the effort. If you have any questions or comments regarding my recommendations, please feel free to communicate.

Regards,



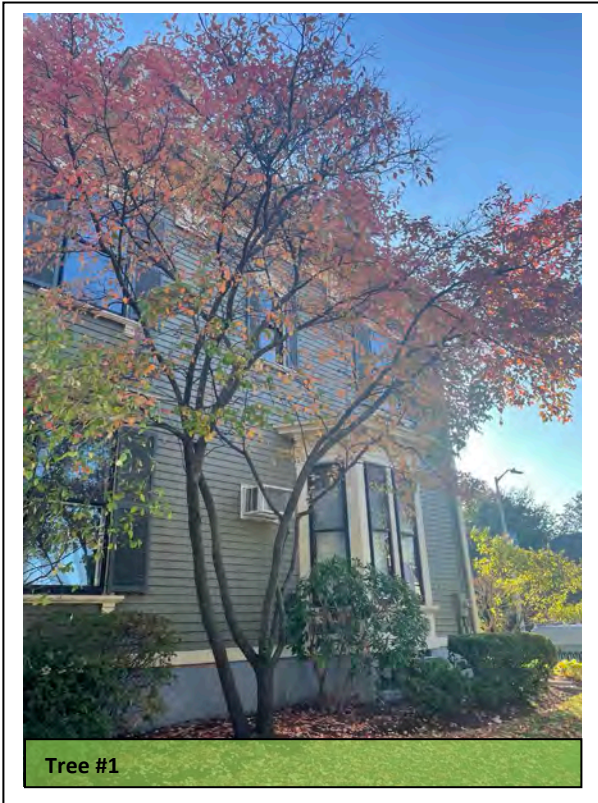
David T. Ropes

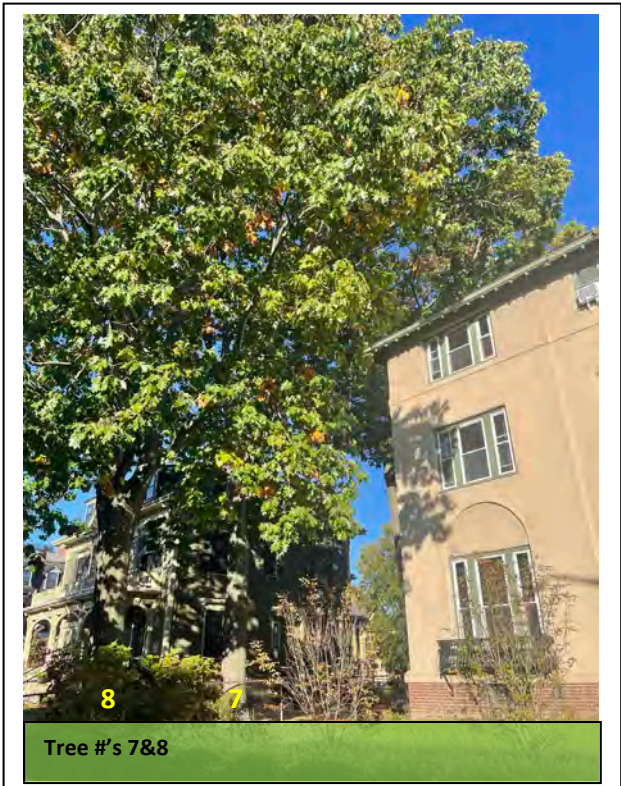
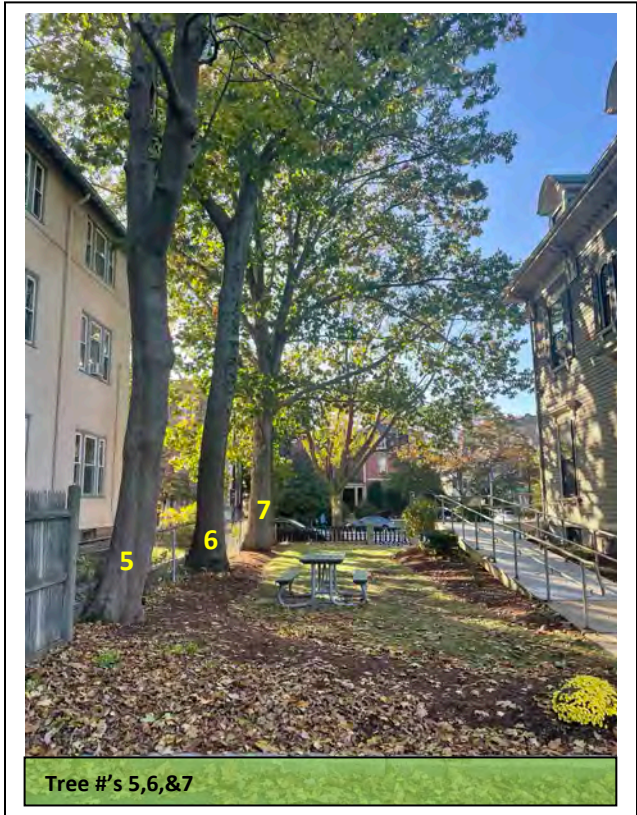
MAA Certified Arborist #1534

ISA Certified Arborist #NE-0215

ISA Qualified Tree Risk Assessor

Member of the American Society of Consulting Arborists





MEMORANDUM

TO: Ms. Jane Carbone
Homeowners Rehab Inc.
280 Franklin Street
Cambridge, MA 02139

FROM: Scott W. Thornton, P.E.
Vanasse & Associates, Inc.
35 New England Business Center Drive
Suite 140
Andover, MA 01810
(978) 474-8800

DATE: January 12, 2023

RE: 9513

SUBJECT: Parking Study – Proposed Residential Development at 1627 Massachusetts Avenue
Cambridge, Massachusetts

INTRODUCTION

Vanasse & Associates, Inc. (VAI) was retained by Homeowners Rehab Inc. (HRI, the “Applicant”) to conduct a review of transportation and parking conditions associated with the development of a former Lesley University campus building into a residential apartment building (the “Project”), located at 1627 Massachusetts Avenue on the southeast corner of the Massachusetts Avenue/Mellen Street intersection in Cambridge, Massachusetts. The Project consists of the renovation of the existing three-story mansion and construction of a residential building on an existing parking lot to provide approximately 30 residential apartment units that will be 100 percent affordable. The Project will be developed under the Affordable Housing Overlay (AHO) of the Cambridge Zoning Ordinance, which allows for the development of housing without provision for vehicle parking. Bicycle parking will be provided on site, with 32 long-term (indoor) bike parking spaces and approximately 3 short-term (outdoor) bike spaces near the Mellen Street building entrance. Loading is proposed to be provided via existing on-street loading zones. The Project is shown on Figure 1.

Permitting under the AHO allows the creation of residential development without the need to provide off-street parking spaces. This furthers the goal of the city to encourage the use of non-vehicular transportation such as public transit, bicycling and pedestrian modes. The Project’s location adjacent to Massachusetts Avenue with separated bicycle lanes and public transit services are expected to address transportation needs of the new residents. Any additional parking demand can be met by on-street parking availability, which was determined through a utilization study and approximates between 55 and 79 parking spaces on street segments within 500 feet of the Project during peak demand times. Our findings are provided below.

TRANSPORTATION FACILITIES

Pedestrian and Bicycle Facilities

The Project is located in an area where facilities supporting all transportation modes available in the city are present. Three bus routes service Massachusetts Avenue with a stop located one block north of the site at the Wendell Street intersection with Massachusetts Avenue. In addition, the Harvard Red Line subway





Figure 1
Site Location Map

stop is located within ½ mile of the Project site. Public transit facilities are described in Tables 1 and 2.

**Table 1
MBTA BUS SERVICE SUMMARY^a**

Route	Service	Stop Closest to Site	Distance from Site	Distance Walking	Frequency
77	Arlington Heights - Harvard	Mass Ave at Porter Road opposite Beech Street	One block north	300 feet	<i>Weekday</i> - 13 to 15 minutes <i>Saturday</i> - 18 minutes
83	Rindge Avenue - Central Square, Cambridge	Mass Ave at Porter Road opposite Beech Street	One block north	300 feet	<i>Weekday</i> - 15 to 20 minutes <i>Saturday</i> - 20 to 60 minutes
96	Medford Square - Harvard	Mass Ave at Porter Road opposite Beech Street	One block north	300 feet	<i>Weekday</i> - 20 to 60 minutes <i>Saturday</i> - 30 to 60 minutes

^aBased on MBTA Transit Near Me website.

**Table 2
MBTA SUBWAY SERVICE SUMMARY^a**

Line	Stop Closest to Site	Distance from Site	Distance Walking	Frequency
MBTA Red Line Braintree/Alewife	Harvard Square	0.5 Miles South	10 minutes	9-16 minutes

^aBased on MBTA Transit Near Me website.

Pedestrian and Bicycle Facilities

The Project is located in a pedestrian-friendly area with sidewalks provided along both sides of all streets with painted crosswalks provided at the intersections. Approximately 10 public bike racks are available within a 500-foot radius of the site. Nine of these are Dero post and ring accommodating 2 bikes per rack with the other a “bike cage” design accommodating approximately 12 bikes in front of Cambridge Common. In total, public bike storage capacity exists for approximately 30 bicycles.

In addition, a BLUEbikes station is located just off Massachusetts Avenue by the Harvard Law School approximately 700 feet from the site. This station provides 19 bikes for use by members.

PROJECT TRANSPORTATION CHARACTERISTICS

Estimates of the Project traffic generation and parking demand were developed in order to identify the potential demand for parking. In general, constraining the parking supply as a matter of development has the effect of discouraging prospective residents with personal vehicles from considering a development. Conversely, providing affordable housing adjacent to robust public transit service and near expanded bicycle facilities encourages prospective residents who rely on these alternative transportation modes.



The Project entails construction of 30 residential apartment units. In order to develop the anticipated traffic characteristics of the Project, trip-generation statistics published by Institute of Transportation Engineers (ITE) ¹ were reviewed. ITE Land Use Code (LUC) 223, *Affordable Housing* data were used to develop the traffic characteristics of the proposal. Trip generation calculations were performed for a typical weekday, as well as the weekday morning and weekday evening peak hours, the critical time periods for project-related traffic activity. These calculations are summarized in Table 3 below.

Table 3
TRIP GENERATION SUMMARY

Time Period/Direction	Vehicle Trips (30 Units) ^a
Weekday Daily	116
<i>Weekday Morning Peak Hour:</i>	
Entering	5
<u>Exiting</u>	<u>12</u>
Total	17
<i>Weekday Evening Peak Hour:</i>	
Entering	7
<u>Exiting</u>	<u>4</u>
Total	11

^aBased on ITE LUC 223, *Affordable Housing*.

Table 3 indicates a relatively modest vehicle trip potential is typical for affordable housing developments. To further refine the trip data, a review of census data for the census tract the site is located in was also conducted. This data is available through the U.S. Census website and provides data indicating vehicle ownership in this census tract as well as the transportation mode split that area residents have reported on census forms. Table 4 provides a summary of the census data.

¹*Trip Generation*, 11th Edition; Institute of Transportation Engineers; Washington, DC; 2021.



Table 4
MODE SPLIT SUMMARY

Mode	Response, percent
Public Transportation	22
Drive Alone	18
Rideshare/Carpool	3
Walking	30
Bicycle	6
<u>Worked from home</u>	<u>21</u>
Total	100

^aBased on the United States Census Bureau for Census Tract 3536, American Community Survey 2021 5-year estimates.

The data shown in Table 3 and Table 4 indicates that adjustments to vehicle trips using census data could result in peak hour vehicle trip generation approximating between 2 and 4 vehicle trips during the respective weekday morning and weekday evening peak hours (applying vehicle modes of drive alone and carpool to hourly trips). On a daily basis, the census data would indicate a demand for approximately 24 daily vehicle trips equating to 12 vehicles and therefore 12 parking spaces. However, with zero parking provided as under both the AHO and the recent City Council decision removing parking minimums for developments, this project may have even lower parking demands.

PARKING CONDITIONS

Accordingly, a review of parking conditions in the area proximate to the Project was conducted to identify parking availability in the area during periods of peak residential demand. Parking counts were conducted on adjacent streets within a 500-foot radius from the Project site. To capture the maximum residential parking utilization rates, counts were conducted at 4:00 AM, 12:00 PM, and at 10:00 PM on Wednesday November 16, 2022. Parking inventory data is shown on Figure 2. In this manner, the availability of on-street parking spaces during the peak utilization periods for the residential land uses in the area was determined. The results are shown in Table 5.



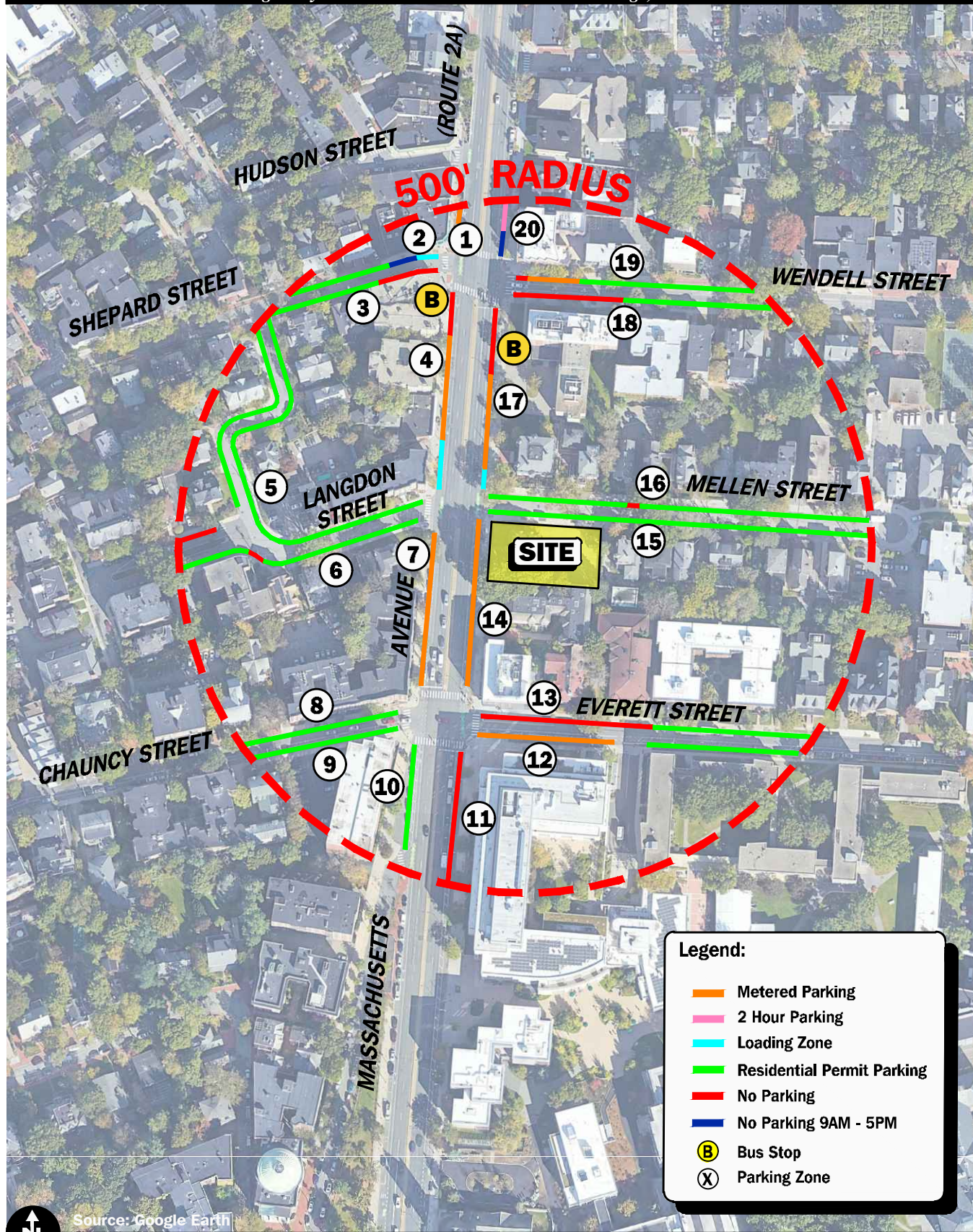


Figure 2
Parking Inventory



Table 5
SUMMARY OF PARKING OBSERVATIONS^a

Zone No.	Available Spaces ^b	Observed Utilization			Space Availability		
		4:00 AM Count	12:00 PM Count	10:00 PM Count	4:00 AM Spaces	12:00 PM Spaces	10:00 PM Spaces
1	3 (3)	0	3	2	3	0	1
2	7	2	3	4	5	4	3
3	8	8	8	8	0	0	0
4	9 (7)	3	3	2	6	6	7
5	26	26	17	24	0	9	2
6	11	11	10	11	0	1	0
7	10 (10)	5	8	7	5	2	3
8	8	8	8	8	0	0	0
9	7	4	6	6	3	1	1
10	7	7	6	6	0	1	1
11	0	0	0	0	0	0	0
12	21 (6)	15	21	14	6	0	7
13	14	13	13	12	1	1	2
14	9 (9)	1	5	2	8	4	7
15	23	14	15	18	9	8	5
16	23	13	16	14	10	7	9
17	5 (4)	1	1	0	4	4	5
18	24	16	12	24	8	12	0
19	28 (4)	19	17	28	9	11	0
20	2	0	1	0	2	1	2
Totals	245	166	173	190	79	72	55

^aBased on observations conducted by VAI in November 2022.

^bValues in parentheses indicate numbers of metered spaces.

As shown in Table 5, there are a maximum of 245 on-street parking spaces available on the 20 street segments within 500 feet of the Project location. Table 5 also indicates a minimum availability of 55 spaces at 10:00 PM and a maximum availability of 79 spaces at 4:00 AM. The majority of these spaces are Residential Permit Parking (RPP) only. Since the demand calculated previously resulted in 12 spaces, it is anticipated that the residents desiring to park on-street can do so without a substantial impact on the available on-street parking supply.

LOADING DEMAND

Loading and deliveries are expected to occur through an existing on-street loading space on Massachusetts Avenue at the intersection with Mellen Street. The Applicant is aware that the loading space is not for the exclusive use of the Project and is also aware that the Director of the Traffic, Parking, and Transportation



Department has ultimate authority over on-street loading zones. On-street loading zones can accommodate passenger pick-up and drop-off as well as short-term loading.

It is anticipated that deliveries will occur on a daily basis for some items such as mail and courier/parcel delivery between two and three times each week. Trash will be contained in a series of containers located at the southwest corner of the building and will be wheeled to Massachusetts Avenue for pick up.

CONCLUSION

As requested, VAI reviewed transportation and parking characteristics for the proposed residential development to be permitted under the AHO and to be located at 1627 Massachusetts Avenue. Census data indicates a relatively low (20 percent) mode split for vehicle usage, with high percentages of walking (30 percent), public transportation (22 percent), and working from home (21 percent) for the census tract the Project is located in. The use of the mode split data and trip generation calculations indicate a potential need for 12 parking spaces with an otherwise unconstrained parking condition. However, as permitted under the AHO and recent City Council decision removing parking minimums, the Project will constrain parking supply and not provide any vehicle parking on site although approximately 35 bike parking spaces will be provided. Furthermore, parking counts conducted within a 500-foot radius of the site indicated a minimum of 55 parking spaces available for resident use during times of peak residential demand; therefore, sufficient on-street supply exists for residents and in some areas for non-residents. The Project's location adjacent to Massachusetts Avenue with separated bicycle lanes and public transit services are expected to address transportation needs of the new residents. This indicates that adequate on-street parking is available to satisfy the parking demands of the area and the Project.

cc: File



PRELIMINARY LANDMARK DESIGNATION REPORT

Charles Hicks Saunders House

1627 Massachusetts Avenue, Cambridge, Mass.



The Charles Hicks Saunders house at 1627 Massachusetts Avenue, constructed in 1862, is one of Cambridge's most important examples of Second Empire domestic architecture. It is also significant for its association with Charles Saunders, Mayor of Cambridge in 1868-69. The property was recorded by the Historic American Buildings Survey in 1964 and individually listed on the National Register of Historic Places in 1982.

The Historical Commission initiated a designation study of the Saunders house in October 2021 in response to reports that owner Lesley University intended to sell it and seven houses on Mellen Street. The property's 14,400 square foot lot meant redevelopment proposals were inevitable, and the Commission acted quickly to ensure preservation of the house and appropriate design for new construction on the site.

Designation of the property by the City Council as a Cambridge Landmark will protect the entire premises, including the planned addition, from inappropriate alterations, and will guide future changes while respecting the distinct architectural and historic character of the landmark.

Charles Sullivan and Sarah Burks
Cambridge Historical Commission
March 24, 2023

Introduction

The Charles Hicks Saunders house at 1627 Massachusetts Avenue was constructed by a merchant and future mayor of Cambridge in 1862-63. It was recorded by the Historic American Buildings Survey in 1964 and individually listed on the National Register of Historic Places in 1982 as an important example of the Second Empire style and because of its associations with the Saunders family.

Preservation of the remaining North Avenue mansions has been a priority of the Cambridge Historical Commission since the late 1970s, when the demolition of the first Nathaniel Sawin house and The Greycroft at the corner of Chauncy Street caused the City Council to adopt the first demolition delay ordinance in Massachusetts. The generous zoning and large size of the lot places the Saunders house at risk, although the same factors would also make possible the accommodation of new housing in an addition or in a separate building.

Lesley University announced the pending sale of the Saunders house along with seven nearby houses on Mellen Street in September 2021. At the October 7, 2021 hearing of the Historical Commission the Executive Director advised that the Saunders property was particularly vulnerable to redevelopment because of its large size and favorable C-2A zoning. The existing house took up only about half the lot, while the remainder was a parking lot. Initiation of a landmark designation study might discourage redevelopment of the entire site and preserve it for sympathetic reuse, such as for an affordable housing project similar to Frost Terrace at 1789-1791 Massachusetts Avenue. The Commission voted to initiate a landmark designation study, but since no public notice had been given the staff scheduled a public hearing for a subsequent meeting so the owner and the public could receive adequate notice.

On November 10, 2021 the Commission held a public hearing on the proposed designation study. Lesley University, which was still the owner, did not object and the Commission voted unanimously to confirm the October 7 vote that initiated the study. The effect of the Commission's vote was to protect the building from inappropriate alterations for up to one year, or until October 6, 2022, while the Commission formulated a recommendation to the City Council.

In early November 2021 a representative of Homeowners Rehab, Inc., a non-profit affordable housing agency, informed CHC staff that HRI was exploring the possibility of acquiring the property. CHC staff responded that the Commission had acknowledged the suitability of the site for affordable housing construction, as long as the house was protected. HRI closed on the property at the end of March 2022, and began design development discussions with Icon Architecture and CHC staff.

Commission staff advised HRI that a schematic design for new construction and renovation of the house could be incorporated into the Commission's landmark designation report, giving assurance to HRI and other city boards that development for affordable housing could proceed. HRI agreed with this approach but needed more time for community consultation and design development. With HRI's consent to CHC's continued jurisdiction, on September 8, 2022 the Commission voted to extend the study period for an additional nine months, or until May 8, 2023.

In January and February 2023 CHC and Community Development Department staff engaged with HRI and their architects in an informal design review exercise. In the meantime, HRI engaged the public, most recently on March 15, 2023. CHC staff agreed that the proposed design was

sufficiently well-developed and recommended that HRI apply for a conditional Certificate of Appropriateness for consideration at the same March 30, 2023 hearing at which this landmark designation study will be considered. If the Commission grants the Certificate of Appropriateness it will be incorporated into the recommendations that are forwarded to the City Council. HRI will then proceed to other city boards and commissions and would return for final approval once the design has been finalized.



1627 Massachusetts Avenue. Photo 2009.

I. Location and Zoning Considerations

The property at 1627 Massachusetts Avenue consists of a 14,400 square foot lot on the south corner of Mellen Street (Assessors map 157/1) with an assessed value of \$3.4 million. The lot has 90' of frontage on the avenue and 160' on Mellen Street. The zoning is C-2A, a multi-family residential district with a height limit of 60' and an FAR of 2.5. At an allowed maximum of 145 dwelling units per acre, the lot could theoretically accommodate 48 units. Slightly more than half



Cambridge Assessors



NearMap.com, 2021

of the lot is currently paved and used for parking. Preservation of the Saunders house as a landmark would not preclude appropriate development of the parking lot for housing, either in a separate building or as an addition to the house, as recently seen at 1791 Massachusetts Avenue. The sale of 7, 9, 11, 13 and 17-21 Mellen Street, all of which are regarded as significant, threatens the context of the Saunders house, but these can be protected through demolition delay if necessary.

II. Ownership and Occupancy

As described below, the Saunders house was a rooming house or dormitory until Lesley University acquired it in 1976. At first Lesley used the house for graduate school offices, but after about 1986 it served as the admissions office. The removal of kitchens and bathrooms associated with its conversion to office use restored the original configuration of the rooms. Lesley University sold the property to Homeowners Rehab, Inc. in 2022. The house is currently vacant.

Area Description

The urban context of the Saunders house was described in *Building Old Cambridge: Architecture and Development*, by Susan Maycock and Charles Sullivan (MIT Press, 2016).

Massachusetts Avenue above Cambridge Common was laid out in the early 17th century as the “Highway to Menotomy.” The road went along the Lower Common, passed the gallows, swung westward around the foot of Avon Hill, and crossed Poverty Plain on its way to Concord, which was settled in 1635. ... After 1841 it was called North Avenue. In 1894 when the Harvard Bridge was completed, all the old streets that made up the new cross-town thoroughfare were renamed Massachusetts Avenue.

The great width of the right-of-way, 33 yards (99 feet), had its roots in early English

practice and allowed the traveler to pick the path of least resistance across the ungraded terrain. ... For two centuries it was used mainly by residents of outlying towns to bring their produce to market or to reach the county seat, but when the Charlestown Branch Railroad opened a station at Porter Square in 1842 Boston was suddenly only twenty minutes away. North Avenue became the city's most desirable address for commuting businessmen, but in the 20th century apartments and stores displaced almost all their monumental Mansard, Queen Anne, and Colonial Revival houses. The avenue now displays little of the character that made it desirable in earlier times.

In the 17th century there were several farmhouses on the east side of the highway, but the common land opposite was not settled for many years after it was distributed in 1724. ... By the 1840s there were only remnants of the agricultural period: ancient houses, barns in "tumble down condition," stone walls, old foundations, remnants of tanneries, and "ten-footers," the one-room shacks of the poorest families. ...

The first significant development in the 19th century began on the west side of the avenue near the Common, where Oliver Hastings built three houses in 1831–33 for professors Convers Francis, Levi Hedge, and John S. Popkin. The Greek Revival was in vogue when railroad service began in 1842, and the first suburban houses near Porter's Station were in this style; one survives at 2A Forest Street. William A. Saunders (1818–1899), the oldest son of William Saunders, the housewright, built a flashy Greek Revival opposite Linnaean Street in 1843. ... The Saunders house was moved to 6 Prentiss Street in 1925 and became a bed-and-breakfast, the Mary Prentiss Inn.

When the horsecar line opened in 1856 there were still only about twenty-five houses along the avenue, clustered in the first block north of Waterhouse Street and at the north end near the station. ... Michael Norton, a masonry contractor, built an elaborate Mansard in 1861 that established this as the preferred style for decades to come.



North Avenue in 1854



Massachusetts Avenue looking north from the Little Common about 1875. From the left are John Worcester's house at 1600 (1865; demolished 1979), the Michael Norton house (with a cupola) at 1610 (1860; demolished 1925), and the Nathaniel Sawin house at 1626 (1868).

Nathaniel Sawin, a produce dealer in Boston, built a handsome Mansard on the south corner of Chauncy Street in 1865, replacing a gambrel built by John Wyeth about 1724. Three years later he sold it to marketman John E. Worcester and built a new house at 1626 Massachusetts Avenue that was designated a Cambridge landmark in 1981. James Huntington's ca. 1869 Mansard at 1640 Massachusetts Avenue survives behind a block of stores erected in 1923. In 1862 Charles Hicks Saunders, a Boston hardware merchant and another son of the well-known housewright, began a spacious house on the corner of Mellen Street that exemplified the continuing fashion for ambitious Second Empire mansions. Mansards built in 1864 by Abijah Hildreth, the president of the Cambridge Gas Company, and in 1869 by William Wentworth, a marble manufacturer in Boston, disappeared in the mid-20th century.

North Avenue reached its zenith just as it was renamed Massachusetts Avenue in 1894. Some of the finest homes in the city lined the broad sidewalks, but the great breadth of the street made it irresistible as a traffic artery. Harvard Square was a major transfer point for street railway passengers, and North Avenue was the most direct route to the emerging suburbs beyond Porter Square. Brattle Street residents were able to force the West End Street Railway to take up its tracks and build on other streets, but North Avenue people could not prevent the introduction of noisy electric streetcars in 1889. The completion of the Cambridge Subway in 1912 sparked a boom in apartment houses, which brought retail stores in their wake. Proliferating trucks and automobiles created traffic conditions incompatible with a residential neighborhood. In the span of two decades Massachusetts Avenue north of Shepard Street was transformed into a seedy commercial strip.

The change began in 1898, when Canadian-born businessman William G. MacLeod built the city's first luxury apartment houses, the Montrose and the Dunvegan, on an empty lot at the corner of Shepard Street. Subsequent buildings invariably displaced single-family houses. The next to go up was Benlumay Court (1909), a Mission-style structure with 21 apartments near the corner of Everett Street. Across the street, the Georgian Revival Bay State (1915), a 38-unit building, resembled the private dormitories of the Gold Coast. Gradually the buildings became larger, as at Linnaean Hall

(1914, 36 units), the Newport Apartments (1916, 80 units), the Lancaster (1924, 56 units), Chauncy Hall (1925, 80 units), and Oxford Court (1926, 101 units). In 1925 the *Chronicle* noted “the passing of many fine residences,” and described ten that had been lost recently (Aug. 8).

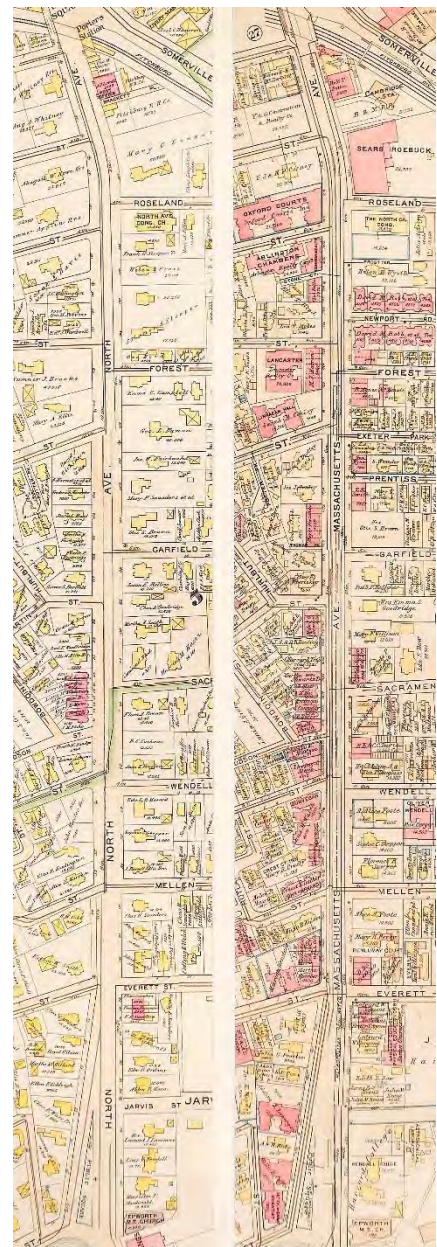


The Montrose and The Dunvegan, 1648 and 1654 Massachusetts Avenue (1898)

Stores first appeared on the avenue in 1910, when Dr. George True, who gave up dentistry for real estate, planned to build some on the corner of Sacramento Street. The *Chronicle* anticipated the commotion: “These stores will be the first ones to be located between Porter’s station and Harvard square and while there is an unquestionable demand for them, their presence will not be relished by those who desire to keep the neighborhood a residential one exclusively” (Apr. 2, 1910). Neighbors successfully appealed to the Supreme Judicial Court to enforce the 20-foot setback and residential restrictions in the subdivision deed of 1853, and Dr. True built the apartment houses at 1675-79 Massachusetts Avenue instead.

While the court was upholding residential use on the east side of Massachusetts Avenue, Somerville druggist Adam McColgan was breaking ground for stores on the corner of Hudson Street, where there were no restrictions. Only one other retail block – 1607-1615 Massachusetts Avenue, at the corner of Everett Street – was erected before World War I, but commercial construction overwhelmed the avenue in the 1920s. In 1926, the *Chronicle* counted 106 stores between Everett Street and the railroad bridge. ...

The zoning map drawn by the Planning Board in 1922 placed the entire avenue in a residential district. When enacted two years later, the ordinance included a business district from Shepard and Wendell streets to Porter Square and allowed 100-foot-high buildings everywhere. The depth of this high-density corridor was quite narrow, however, and apart from the Sears, Roebuck store built in 1928 only projects that could



Massachusetts Avenue in 1894 and 1930

obtain variances to build in the adjoining 40-foot districts went up before the code was rewritten in 1962.

After 1958 the Massachusetts Department of Public Works began to rebuild the avenue from Harvard Square to the Arlington line. A concrete median replaced the street-car tracks and safety islands, and every tree was removed as the sidewalks were narrowed from 17 feet to 11. Traffic flow improved at the expense of public transportation and pedestrian amenities.

Developers returned in 1960, when a 137-room Holiday Inn replaced two Mansards between Mellen and Wendell streets. In 1968 Harvard took down two houses south of Jarvis Street to build Roscoe Pound Hall and put up a garage on the corner of Everett Street in place of buildings once occupied by the Sargent School of Physical Education. Despite considerable opposition, The Greycroft and the Nathaniel Sawin house were replaced with condominiums in 1979–80. Two years later, the consequent enactment of preservation ordinances helped prevent the Park Street Church from razing the Sawin house on the corner of Langdon Street.

In 2007 the Harvard Law School began a long-anticipated redevelopment of the northwest corner of its campus. Wasserstein Hall might have swept away the last houses on this part of the avenue, but Harvard created a perfect site for them on the former Holiday Inn parking lot [across Mellen Street from the Charles Hicks Saunders house].



The former Holiday Inn (1960) and the Alden Keen (1876) and the D. Gilbert Dexter houses (1875) at their new location on the corner of Mellen Street opposite the Charles Hicks Saunders house. Photo 2009

Today the Charles Hicks Saunders house is at the center of the most significant remaining group of North Avenue mansions. Across the avenue, the Nathaniel Sawin house at 1626 Massachusetts Avenue on the corner of Langdon Street was designated a Cambridge Landmark in 1981. In 2007 the Harvard Law School relocated the Alden Keen (1876) and the D. Gilbert Dexter houses (1875) to the corner of Mellen Street, which had previously been occupied by the parking lot of the former Holiday Inn. To the east, Mellen Street displays a number of late 19th-century houses that have been preserved in near-original condition by Lesley University.

III. Architectural Description



Charles Hicks Saunders house, 1627 Massachusetts Avenue. Historic American Buildings Survey, 1964

The Charles Hicks Saunders house was described in *Building Old Cambridge: Architecture and Development* (pp. 510-511):

One of the finest surviving examples of [the Second Empire] type is 1627 Massachusetts Avenue, now owned by Lesley University. Built for Charles Hicks Saunders, a Boston hardware merchant elected mayor of Cambridge in 1868, this house set a new standard for ambitious Mansard mansions on the avenue.

Joseph H. Littlefield (1830–1904), a Maine native, was listed as a builder in Cambridge directories from 1850 to 1864 and as an architect in Boston from 1872 to 1876. His most important commission in Cambridge was the 1874 City Building in Brattle Square. The house he built for Saunders followed the familiar three-bay center entrance plan with an unusual level of decorative detail for the early 1860s, including at least five patterns of complex brackets and dentils. A three-bay porch with chamfered posts and segmental arched struts led to double entrance doors with decorative cut and etched glass panels. Because of the prominent corner site, ornament continued on the side elevations with bay windows and dormers with elaborate scrollwork. The interior was richly appointed with a gracefully curving staircase and eight-sided newel, wide plaster cornices and ceiling medallions, white marble parlor mantels, and a parquet floor. The excellent 19th-century cast iron fence with granite posts and base is a rare survivor.



South elevation, from the southeast. HABS photo, 1964.



Detail of bay window. HABS photo, 1964.



Detail of cornice and dormers. HABS photo, 1964.



Cast iron fence and gate at Massachusetts Avenue. HABS photo, 1964.



Cast iron fence at Massachusetts Avenue. HABS photo, 1964.



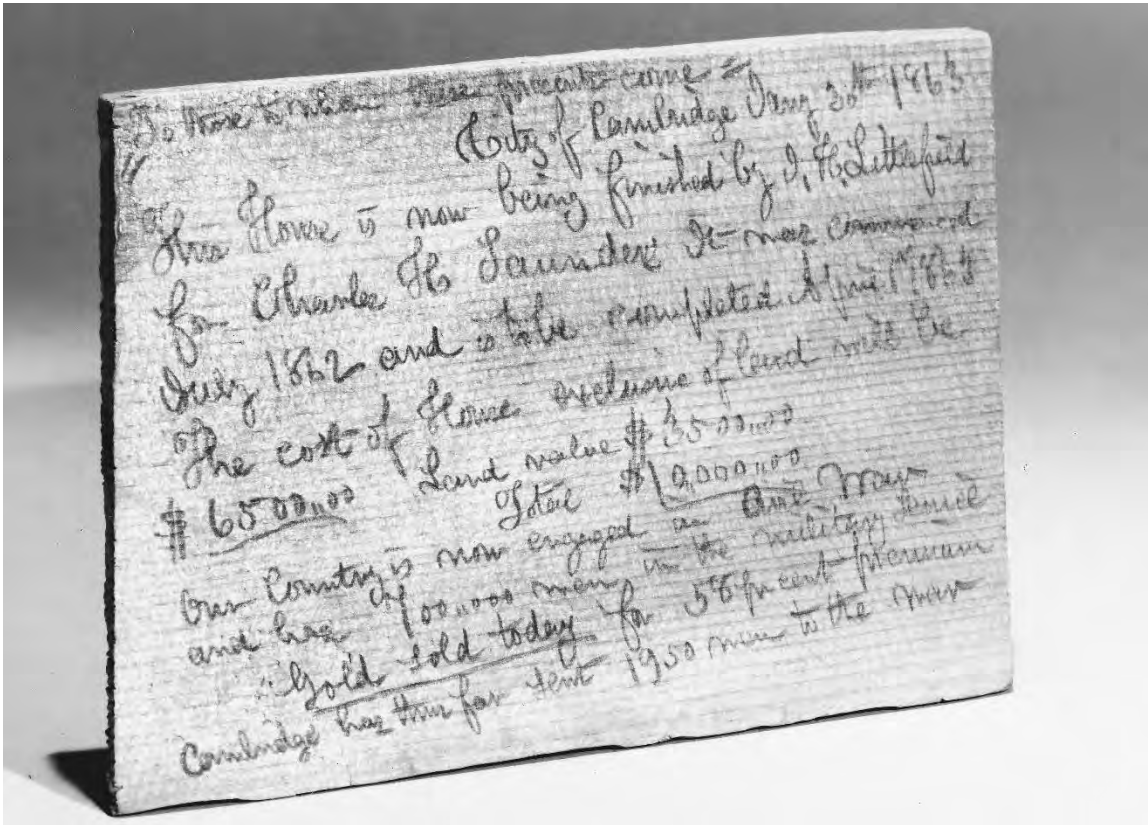
Entry hall and staircase. HABS photo, 1964



South parlor, detail of fireplace wall. HABS photo, 1964.

One significant historical feature of the house was an inscription found during renovations in the mid-1970s. One of the builders or perhaps Saunders himself had penciled an unusual record of its history on a shingle found inside a door jamb:

This House is now being finished by J.H. Littlefield for Charles H. Saunders. It was commenced July 1862 and is to be completed April 1 1863. The cost of the House exclusive of the land will be \$6500.00, Land value \$3500.00, Total \$10,000. Our country is now engaged in Civil War and has 700,000 men in the military service. ... Cambridge has thus far sent 1950 men to the war. Jan. 20, 1863.



Inscribed shingle dated January 20, 1863, found in a door jamb during renovations ca. 1976. Present location unknown.

Adaptive Reuse as Affordable Housing

In March 2022 the Saunders property was purchased by Homeowners Rehab, Inc. with the intent of developing affordable housing on the site under the authority of the Affordable Housing Overlay amendment to the Cambridge Zoning Code.

As described by the Community Development Department website,

Adopted by the City Council in October 2020, the 100%-Affordable Housing Overlay (AHO) is designed to help affordable housing developers create new, permanently affordable homes more quickly, more cost effectively, and in areas of the city where there are currently fewer affordable housing opportunities. The AHO allows the creation of new, permanently affordable housing that is denser than what might be allowed under base zoning, and creates a new review process through which new affordable housing can be approved more efficiently.

Guidelines for AHO projects published by the Community Development Department address site considerations, building design, and sustainability.¹ The Planning Board must hold a public design consultation and make a report to the developer and Cambridge Affordable Housing Trust regarding AHO projects, but its recommendations are not binding on the applicant. Currently the Historical Commission does have binding review of AHO projects, but this may be subject to reconsideration by the City Council.

CHC and CDD staff have conducted an informal review of the proposed project, which would “repurpose the Saunders House into four affordable rental apartment homes as part of an overall site development that would also add a new construction six story building with twenty-five units to the rear of the Saunders House where there is currently surface parking. This would result in a twenty-nine unit, 100% affordable rental housing development.” The current proposal is the result of staff review.



Perspective view from the northwest.

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¹ Cambridge Community Development Department, Design Guidelines For Affordable Housing Overlay, 28 July 2020 (https://www.cambridgema.gov/-/media/Files/CDD/Housing/Overlay/zngamend_aho_designguidelines_20200728v2.pdf)



Site plan

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Perspective view from the northeast

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West elevation

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North elevation

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IV. History and Significance

Master housewright William Saunders (1787–1861) was one of the most prominent builders of his day. He established a family dynasty that dominated politics and real estate development in Old Cambridge from the 1830s through the 1870s. Saunders arrived in Cambridge from Quincy in 1801 at age 14 or 15 and soon became known as a creative practitioner of the Federal and Greek Revival styles. Among his early works were his own 1821 house at 0 Garden Street, which is the present Christ Church rectory, and the Greek Revival house next door that he built for Sarah Howe in 1838. Saunders was a selectman under town government and then an alderman after the establishment of city government in 1846. All five of Saunders' sons established themselves as merchants in Boston and Cambridge; three served as elected officials, and two built impressive houses on Massachusetts Avenue.

William Saunders' sons were William Augustus (1818-1899), a builder and Alderman, Charles Hicks (1821-1901), a hardware merchant in Boston and Mayor of Cambridge in 1868-69, George Savil (1823-1909), a merchant and President of the Common Council, Francis (1826-1911), a merchant in Harvard Square, and Horace (1830-1902), a dealer in real estate. A daughter, Sarah Ann, died in 1893. The sons were also builders and speculators in real estate, working together or individually throughout Old Cambridge. William A. Saunders, an antiquarian in his spare time, was responsible for almost the entire development of Frost, Forest, and upper Oxford streets, and is credited with over 45 houses there. Horace mostly worked on the west side of North Avenue, with over 35 houses to his credit between 1835 and 1875. Charles, who was probably preoccupied with his business in Boston, built 14 houses on Avon, Follen, Mellen, and Shepard streets between 1844 and 1882.

Charles Hicks Saunders prepared for college at Cambridge's Hopkins Classical School, but instead worked for a bank in Boston before entering the hardware business. He continued in this work until he retired in 1863 at age 42, after which he engaged in real estate development and local politics. He served on the Common Council in 1853-54 and on the Common Council in 1861-62. He was an Assessor in 1864-67, and was elected mayor in 1868 and 1869, running unopposed with the support of four political parties.

Among Saunders' accomplishments as mayor were the requirement that police officers wear uniforms and the construction of a fire alarm telegraph system. He directed the beautification of what is now Sennott Park and the construction of brick sidewalks from Harvard Square to Boston. One of his final acts was to lay the cornerstone of the Soldiers Monument on Cambridge Common. Later in life Saunders served as chair of the city's investment commission, a trustee of the Cambridge Savings Bank, a director of the Cambridge Gas-Light Company, and a member of several historical and fraternal organizations. He is also said to have written the inscriptions on the granite historical tablets erected by the city.



1627 Massachusetts Avenue in the rooming house era. Dan Reiff photo, 1969

After Saunders' death in 1901, 1627 Massachusetts Avenue passed to his wife, Mary Brooks Saunders, a Concord Academy graduate, one of whose instructors had been Henry David Thoreau. Mrs. Saunders died in 1919, and in 1926 her daughter Caroline sold the property to Edwin Foote, who with his wife Alice, boarded students from the Sargent School of Physical Education in their home at 1653 Massachusetts Avenue. The Footes invested \$2,500 in improvements and opened 1627 Massachusetts Avenue as a private dormitory in 1927. This arrangement probably ended in 1931 when the Sargent School opened its own dormitory nearby, and the property continued as a rooming house under several subsequent owners. The Weston School of Theology occupied the building from 1972-74, and probably until Lesley purchased it in 1976.

V. Relationship of Property to Criteria

The purpose of landmark designation is described in Ch. 2.78.140 of the City Code, which was enacted in 1983:

... to preserve, conserve and protect the beauty and heritage of the City and to improve the quality of its environment through identification, conservation and maintenance of neighborhoods, sites and structures which constitute or reflect distinctive features of the architectural, cultural, political, economic or social history of the City; to resist and restrain environmental influences adverse to this purpose; to foster appropriate use and wider public knowledge and appreciation of such neighborhoods, areas, or structures; and by furthering these purposes to promote the public welfare by making the city a more desirable place in which to live and work.

The enabling ordinance states:

The Historical Commission by majority vote may recommend for designation as a landmark any property within the City being or containing a place, structure, feature or object which it determines to be either (1) importantly associated with one or more historic persons or events, or with the broad architectural, aesthetic, cultural, political, economic or

social history of the City or the Commonwealth or (2) historically or architecturally significant (in terms of its period, style, method of construction or association with a famous architect or builder) either by itself or in the context of a group of structures ... (Chapter 2.78.180.A)

The Charles Hicks Saunders House meets criterion (1) for its associations with the architectural, aesthetic and economic history of Cambridge, and criterion (2) as “architecturally significant (in terms of period, style, method of construction or association with a famous architect or builder).”

VII. Proposed Standards and Guidelines for Review of Alterations and Additions

Under the neighborhood conservation district and landmark designation ordinance, Ch. 2.78, Art. III, the Historical Commission is charged with reviewing all construction, demolition or alterations that affects the exterior architectural features (other than color) of a designated landmark. This section of the report describes exterior architectural features that are among the characteristics that led to consideration of the property as a landmark. Except as the Order designating or amending the landmark may otherwise provide, the exterior architectural features described in this report should be preserved and/or enhanced in any proposed alteration or construction that affects those features of the landmark.

The Standards described below represent current best practices in historic preservation and are generally applicable to any designated property. The following Guidelines are to be consulted during consideration of applications for Certificates of Appropriateness for alterations to the landmark described in this report. The standards and guidelines are not intended to be prescriptive or comprehensive; the Commission must use its collective judgement in determining the appropriateness of any proposed project.

In this context the verb **should** indicates a recommended course of action; the verbs **shall or must** indicates those actions which are specifically required to preserve and protect significant architectural elements.

A. General Standards²

Subject to review and approval of alterations to exterior architectural features under the terms of this report, the following standards shall apply:

1. The historic character of a property must be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property must be avoided.
2. Changes and additions to the landmark which have taken place over time are evidence of the history of the property and its context. These changes may have acquired significance in their own right and, if so, that significance should be recognized and respected.
3. Significant historic and architectural features of the landmark, including but not limited to those identified in this report, should be preserved if practicable in a manner consistent with these standards.

² This section was adopted as a general standard by the Historical Commission on January 6, 2022.

4. Deteriorated architectural features should be repaired rather than replaced. Where the severity of deterioration requires replacement, the new feature must match the old in design, color, texture, and other visual qualities and, where possible, materials.
5. The use of synthetic replacement materials is discouraged, except when substituted for perishable features exposed to the weather or when necessary to accommodate the effects of climate change.³
6. Chemical and/or physical treatments (such as sandblasting) must not be used in a manner that damages historic materials. The surface cleaning of structures must be undertaken using the gentlest means possible and the results should preserve the patina that characterizes the age of the structure. Applications of paint or masonry preservative solutions will be reviewed on a case-by-case basis; painting masonry surfaces will be considered only when there is documentary evidence that this treatment was used at some point in the history of the property.
7. Architectural (building façade) lighting, streetscape lighting, and signage lighting, when allowed by a Certificate of Appropriateness, should reinforce definitive characteristics of historic and contemporary architecture as well as create high quality 24-hour streetscapes. To achieve these goals, projects should minimize brightness, and light trespass, monitor light color (temperature Kelvin), and focus lighting on significant features.
8. Significant archeological resources affected by a project should be protected and preserved. If such resources must be disturbed, mitigation measures must be undertaken.
9. Alterations or additions that may be needed to assure the continued use of the historic structure or site or that expand the volume or footprint of the structure should not radically change, obscure or destroy character defining spaces, materials, features or finishes. New additions should be considered only after it has been determined that project requirements cannot be successfully met by altering non-character-defining interior spaces.
10. Additions should reflect an explicit understanding of the architectural character of the historic building and its context. Additions should be designed in a manner that makes clear what is historic and what is new, but should not arbitrarily impose contrasting materials, scales, or design vocabularies. Design of the new work may be contemporary or may reference design motifs from the historic building. Regardless of the design approach, the result should appear as a harmonious whole.
 - a. Additions should respect the essential form of the historic building and be clearly recessive or subsidiary to the original structure in location, massing, materials, finishes, and textures. Additions are best located at the rear and/or on an inconspicuous side of a historic building and limited in size and scale in relationship to the historic building.

³ See *Cambridge Historical Commission Practices in Reviewing Synthetic Trim and Gutters*, June 26, 2018

- b. Additions should be considered in terms of their effect on the context of the site. Additions can contribute variety and interest in complex urban environments but should not dominate or distract from significant nearby structures.
- c. Additions should not compromise the historic aspects, architectural significance, or the distinct character of the landmark, neighborhood, and environment.
- d. Additions should be clearly differentiated from the historic building but still compatible in terms of mass, materials, relationship of solids to voids, and color.
- e. Additions should cause the least possible loss of historic materials so that character-defining features are not obscured, damaged, or destroyed.
- f. Rooftop additions should be set well back from historic facades so that the historic structure retains its integrity of form and mass. Additional stories, when required for the new use, should be set back from the wall plane and be as inconspicuous as possible when viewed from the street. Designers should be cognizant of distant views and neighborhood context, and take advantage of existing parapets to conceal rooftop structures.
- g. Additions such as balconies and greenhouses should be placed on non-character-defining elevations and limited in size and scale in relationship to the historic building.
- h. Additions should be designed in such a way that if they were to be removed in the future the essential form and integrity of the landmark would be unimpaired.

11. New construction on a designated property shall conform to the guidelines for alterations, where applicable.

12. Demolition of a designated structure can be allowed only as a last resort after all practicable measures have been taken to ensure preservation, or unless required to comply with requirements certified by a duly authorized public officer to be necessary for public safety because of an unsafe or dangerous condition.

B. Guidelines for Review of Alterations at 1627 Massachusetts Avenue

1. Architectural Character

The Charles Hicks Saunders House is a Second Empire structure characterized by a concave Mansard roof interrupted by a split gable and barrel-roofed dormers. There is a copper skylight at the peak of the upper roof. The deeply overhanging cornice is supported by heavy paired brackets and smaller modillions. The three-bay facade features a bay window on the second floor and a one story loggia. Double-hung windows and shutters appear to be mostly original. A two-story ell is distinctly secondary to the overall composition and bears few of the details of the main house. The massing, character, and details of the main house must be respected; the ell may be considered to have much less significance..

2. Site Development.

The current building footprint allows generous and well-landscaped setbacks on the west, south, and north; these must be preserved. Behind the building a 22-car asphalt parking lot covers most

of the lot. The east façade and the ell display a functional character very different from the other facades. Subject to zoning constraints and the Certificate of Appropriateness process, new construction on the parking lot could be allowed even if it requires removal of the present ell. The cast iron fence and granite curb on Massachusetts Avenue should be preserved, but the lantern feature added by Lesley University is not significant and may be removed.

2. Alterations

All publicly-visible exterior alterations are subject to the Certificate of Appropriateness process.

a. Exterior surfaces

Original exterior materials on the west, south, and north facades must be preserved insofar as practicable. Repairs should be incremental and executed with materials and surfaces matching the original.

b. Fenestration

Most if not all historic window openings appear to retain their original windows and sash. Original sash should be evaluated for restoration and retrofitted with thermal glazing while maintaining operability if possible. Replacement windows, if allowed, should replicate historic patterns and details as closely as practicable while achieving energy efficiency goals.

c. Exterior features

Some exterior features, such as the porch skirt boards, post bases, railings and balustrades, are no longer viable. In conformance with past practice, replacement of features exposed to the weather may be made with approved artificial materials. All replacement elements must match originals in dimensions and appearance.

d. Roof

The concave Mansard is roofed with purple slates that appear to be mostly original. The upper hip roof is also slate. Both upper and lower roofs show multi-colored replacement slates. The dormers are roofed with soldered copper sheets which have patinated to a bright green.

The Mansard portion of the roof should be repaired or replaced with new slates matching the original in color, size, and shape. The dormers, if re-roofed, should be done with bright copper and allowed to weather. The upper roof, which is visible only at a great distance, may be re-roofed with an alternate material. The skylight, if replaced, should match the original in general appearance. Rooftop equipment, if required, should be grouped on the rear slope of the upper roof to minimize visual intrusion. Solar panels, if any, should be mounted close to the upper roof and not less than 18" from the hips, cornice and peak.

e. Accessibility; front porch

The current access ramp will become redundant and may be removed. Porch railings are of recent construction, and if surrounding grades can be altered to bring the height of the porch floor to 30" or less may be removed. The current vestibule enclosing the front door is also of recent construction and may be removed.

f. Interior features

Although interior features are not subject to the jurisdiction of the Historical Commission, the owner should be encouraged to preserve the skylit main staircase and halls up to the third floor and any original window and door trim and mantels. The Civil War-era inscription should be preserved if encountered during the renovation. Allow photographic documentation when significant interior features will be lost.

g. Architectural lighting

Architectural lighting should conform to the general standards for review.

3. Additions

The nature of the Charles Hicks Saunders house site is such that additions can only take place at the back of the site. Evaluation of a proposed addition should consider the architectural character of the building and its immediate surroundings, including the 80' high apartment buildings across Massachusetts Avenue at the corner of Shepard Street and the former Holiday Inn nearby as well as the preserved houses at 1626 and 1637 Massachusetts Avenue and on Mellen Street. The broad public interest in supporting affordable housing should also be taken into account, and the Frost Terrace project considered as a precedent.

**Proposed Order Designating the Charles Hicks Saunders House
at 1627 Massachusetts Avenue as a Cambridge Landmark**

ORDERED,

That the Charles Hicks Saunders House at 1627 Massachusetts Avenue be designated as a protected landmark pursuant to Chapter 2.78, Article III, Section 2.78.180 of the Code of the City of Cambridge, as recommended by vote of the Cambridge Historical Commission on xxxxxx, 2023. The premises so designated is defined as parcel 1 on assessor's map 157 and the structures thereon.

This designation is justified by the associations of the building with the architectural, aesthetic and economic history of Cambridge, and by its architectural significance as a well-preserved example of the Second Empire style.

The effect of this designation shall be that review by the Cambridge Historical Commission and the issuance of a Certificate of Appropriateness, Hardship or Non-Applicability shall be required before any construction activity can take place on the designated premises or any action can be taken affecting the appearance of the premises, that would in either case be visible from a public way. In making determinations, the Commission shall be guided by the provisions of the Final Landmark Designation Report dated xxxxxxxx xx, 2023 with respect to the designated premises, and by the applicable sections of Chapter 2.78, Article III, of the Cambridge Municipal Code.

This designation incorporates the conditional Certificate of Appropriateness granted by the Cambridge Historical Commission on xxxxxxxx for renovation and construction of an addition as indicated on drawings by Icon Architecture dated xxxxxxxxxx.

[attach Certificate of Appropriateness]