

Project Brief

Location / Zone / Ward: 312R Beacon Street / RC / 2
Relief requested Special Permit (>4 dwelling units on one lot)
Construction type: Conversion of single family structure to 2-family structure
Dimensional requirements: All comply
Parking Requirements: Complies

Owners/Applicants

- 1. Bob Gillig: Registered Architect (MA and KY)
Net Zero certified (NESEA)
Boston Architectural College: Director of Advanced Studios and Building Technologies
- 2. Christine Cuttitta: Registered Architect (MA)
Boston Architectural College: Adjunct Professor
- 3. We've lived in a 4-block radius of this location since 1993
- 4. 4 neighborhood meetings
- 5. Website with shadow studies and massing drawings: <https://gospecs.wixsite.com/25-harris-shadow>

Proposed Green Building Practices

- 1. BUILDING RESILIENCY: New unit will attain Energy Star/Building America Net Zero Ready status.
Possible Passive House certification.
Modular construction
No Natural gas in new unit: Split system Heat pump Heating and Cooling (230% efficiency);
Energy recovery ventilation (89+% efficiency)
Induction, convection cooking
Instant-on electric water heating

Possible geothermal heating in basement

Thermal exposure of existing single-family reduced by 29% because of shared party wall,
reducing heating energy demand by the same amount.
1160 Therms used in last 12 months = 6.148 tons CO2

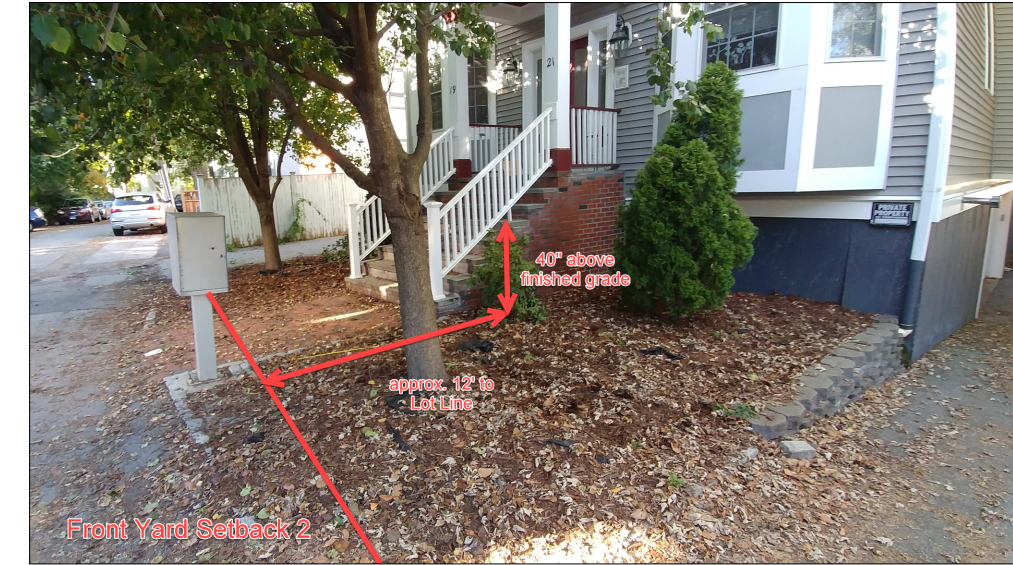
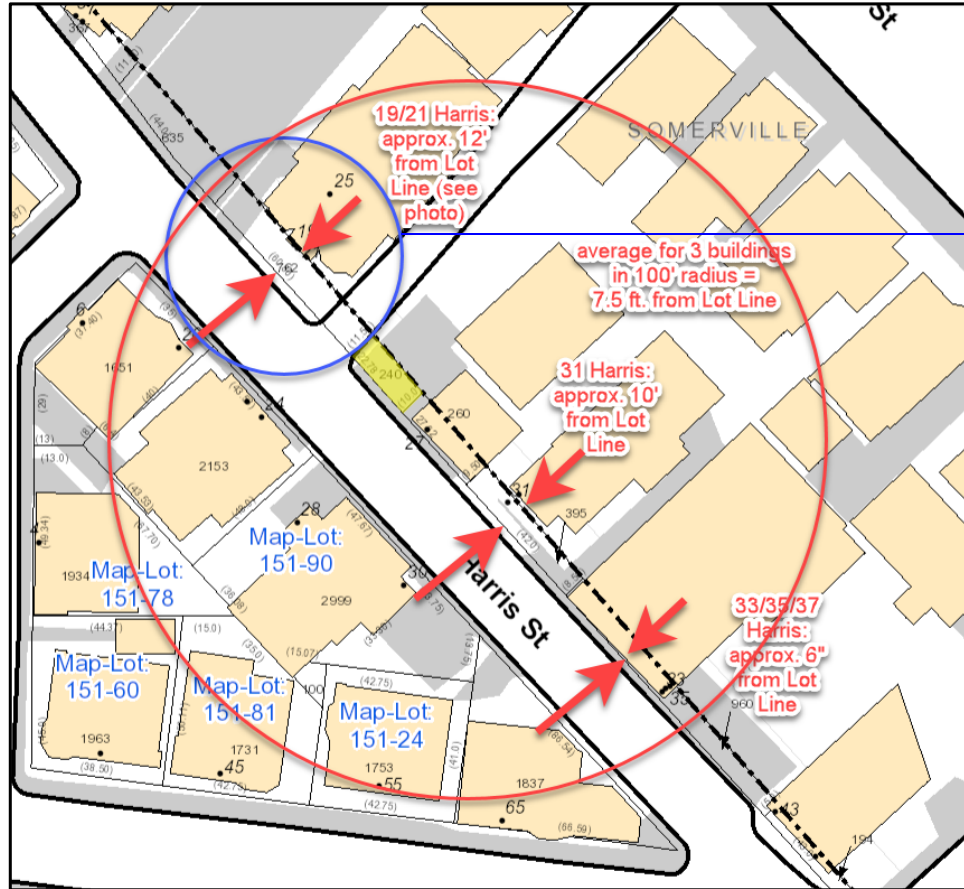
Annual projected carbon reduction = .29 x 6.148 = 1.783 tons CO2 [178,292 BTUs]
- 2. GRID RESILIENCY: Existing single family building has 6kw PV system currently;
New structure can likely have 3-4k PV.
Battery storage for grid resiliency (Powerwall, etc.), both buildings.
- 3. WATER RESILIENCY: Runoff control + Graywater storage and reuse.
Shower energy recovery
- 4. FOOD RESILIENCY: Roof farm: 137 linear ft. of growing beds in Somerville.

Neighborhood Impact

- 1. Removal of non-conforming 'eyesore' garage
- 2. Conversion to 2-family is consistent in size and density (87% of buildings on Harris Street are multi-family / 53% are 3-story buildings).
- 3. Proposal proximity to street (4'-5" from lot line for main facade) is consistent with existing neighborhood (Average setback from lot line on Harris Street = 4'-3")
- 4. Proposal appropriately adds density within walking distance of the Porter Square 'T', and numerous MBTA bus stops.

(c) 04/12/2019 Robert Gillig, RA

Project Description
Green Initiatives

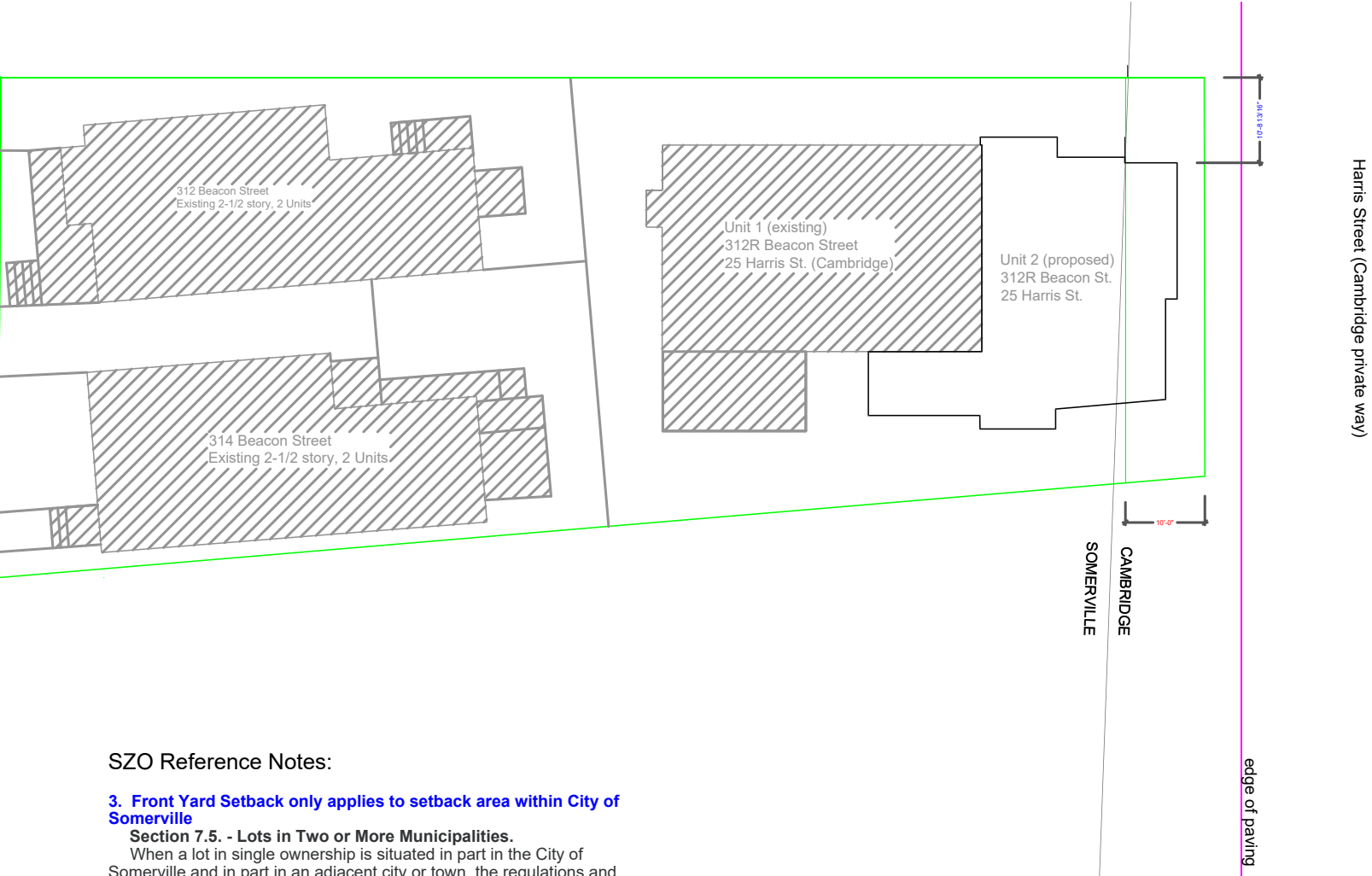


SZO REFERENCE:

8.6.5. Front yard: If the average front yard depth of two (2) or more existing buildings on each side of a lot within one hundred (100) feet and within the district and same block, uninterrupted by an intersection, is less than the required front yard, the average of such existing front yard depths may be the required front yard depth for buildings of three (3) stories or less, but in no case may the front yard depth be less than ten (10) feet.

SZO REQUIRED (RC ZONE): 10 feet min.

Calculation of Front Yard Setback



SZO Reference Notes:

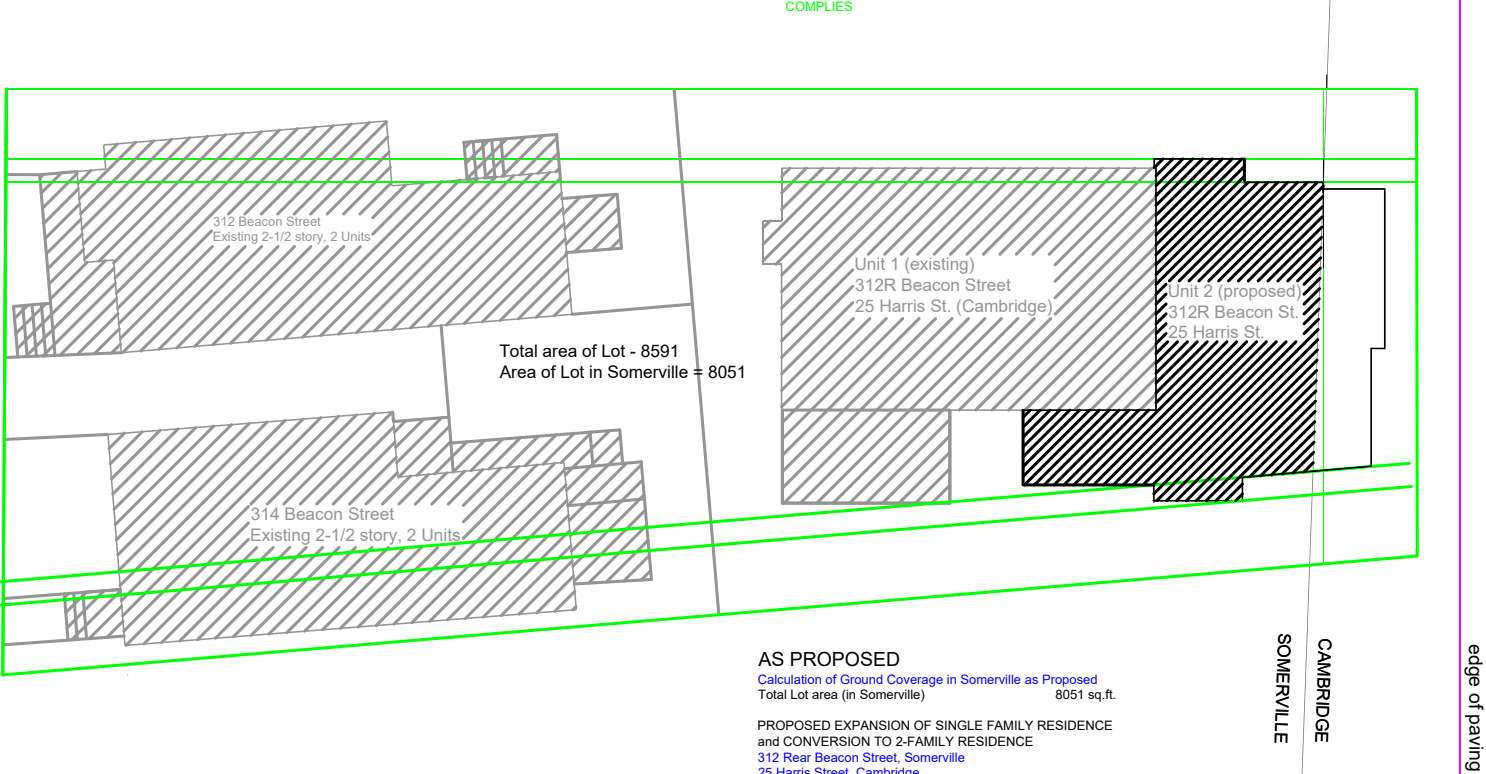
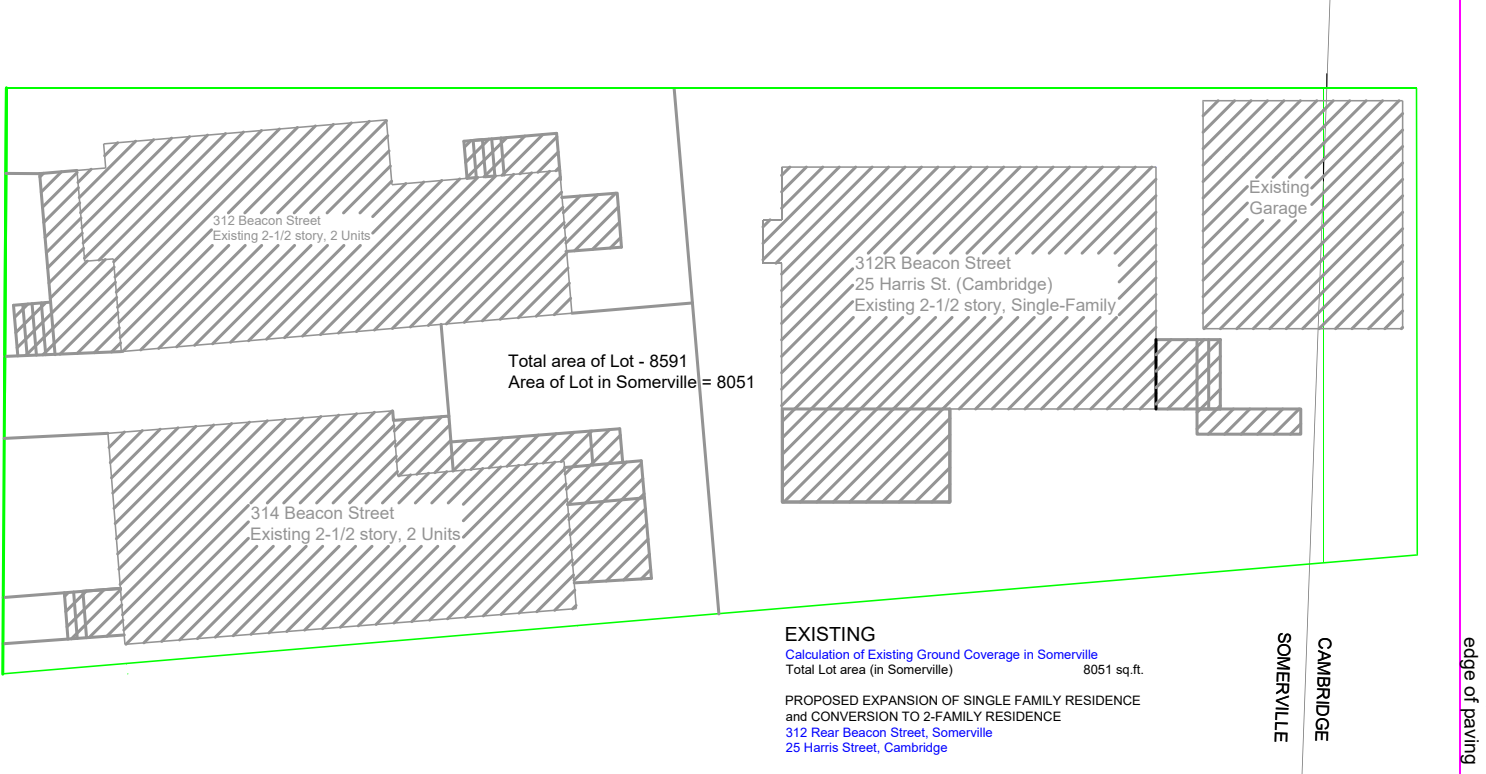
3. Front Yard Setback only applies to setback area within City of Somerville

Section 7.5. - Lots in Two or More Municipalities.
When a lot in single ownership is situated in part in the City of Somerville and in part in an adjacent city or town, the regulations and restrictions of this Ordinance shall be applied to that portion of such lot as lies in the City of Somerville in the same manner as if the entire lot was situated therein.

The Front Yard setback line only lies in Somerville to a calculated distance of 10'-8 13/16" from the South side lot line.

Extent of Front Yard setback in Somerville

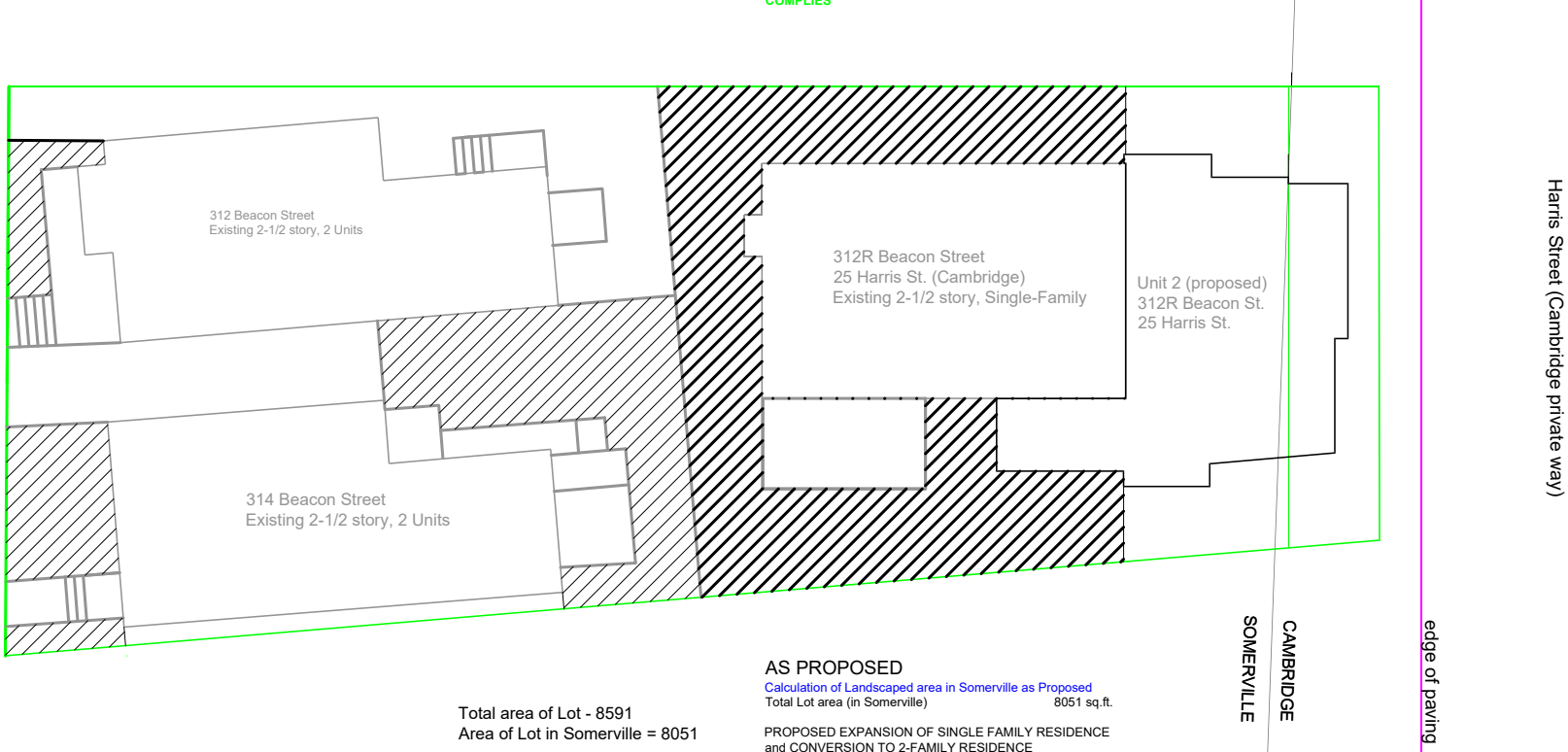
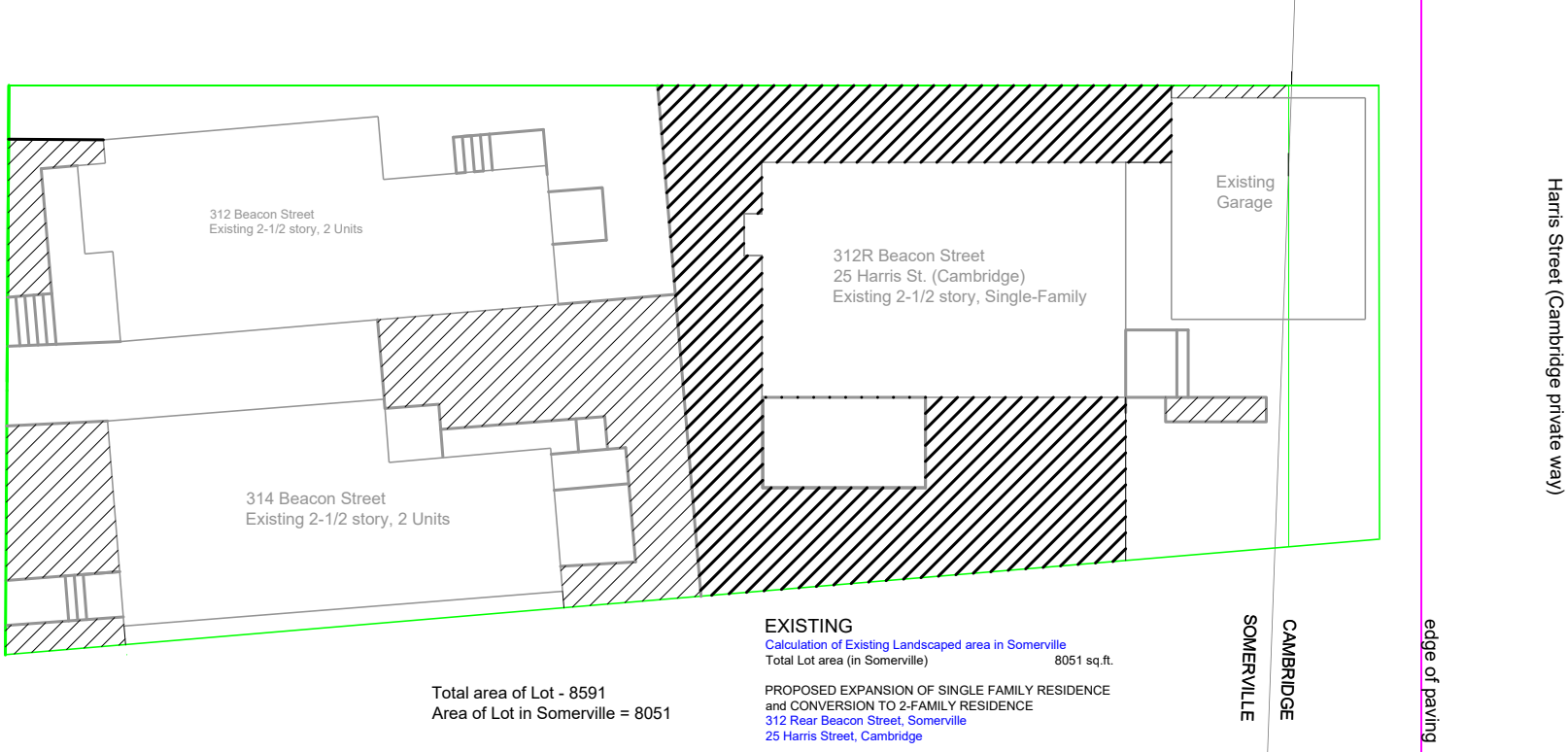
Ground Coverage Ratio Calculations



SZO REFERENCE:
2.2.64. Ground Coverage Ratio. The percentage of lot area included within the outside lines of the exterior walls of all buildings located on the lot, except garages and carports in districts RA and RB, but including the area of porches, decks, breezeways, balconies and bay windows, patios, except patios not more than six (6) inches above grade.

SZO REQUIRED (RC ZONE): 70% max.

Landscaped area Calculations



SZO REFERENCE:
2.2.82. Landscaped Area, Minimum. The percentage of lot area that shall be maintained as space with landscaping, which space shall not include lot area used for parking, loading, access drives, or other hard surfaced areas, except in accordance with Article 10.

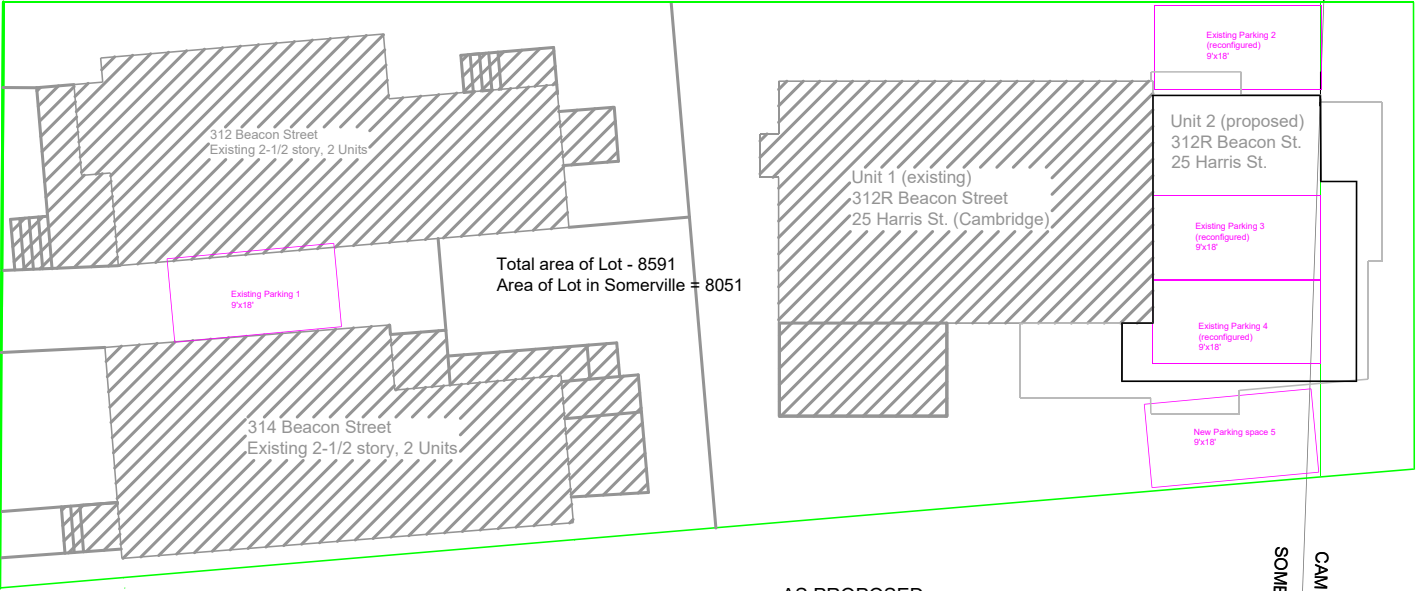
SZO REQUIRED (RC ZONE): 25% min.



EXISTING
Parking per Special Permit of 2006 (4 spaces)

PROPOSED EXPANSION OF SINGLE FAMILY RESIDENCE
and CONVERSION TO 2-FAMILY RESIDENCE
312 Rear Beacon Street, Somerville
25 Harris Street, Cambridge

scale: 1/8" = 1'-0"



AS PROPOSED
Parking as Proposed adds one space (5 spaces total)

PROPOSED EXPANSION OF SINGLE FAMILY RESIDENCE
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312 Rear Beacon Street, Somerville
25 Harris Street, Cambridge

scale: 1/8" = 1'-0"

Harris Street (Cambridge private way)

edge of paving

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edge of paving

SOMERVILLE
CAMBRIDGE

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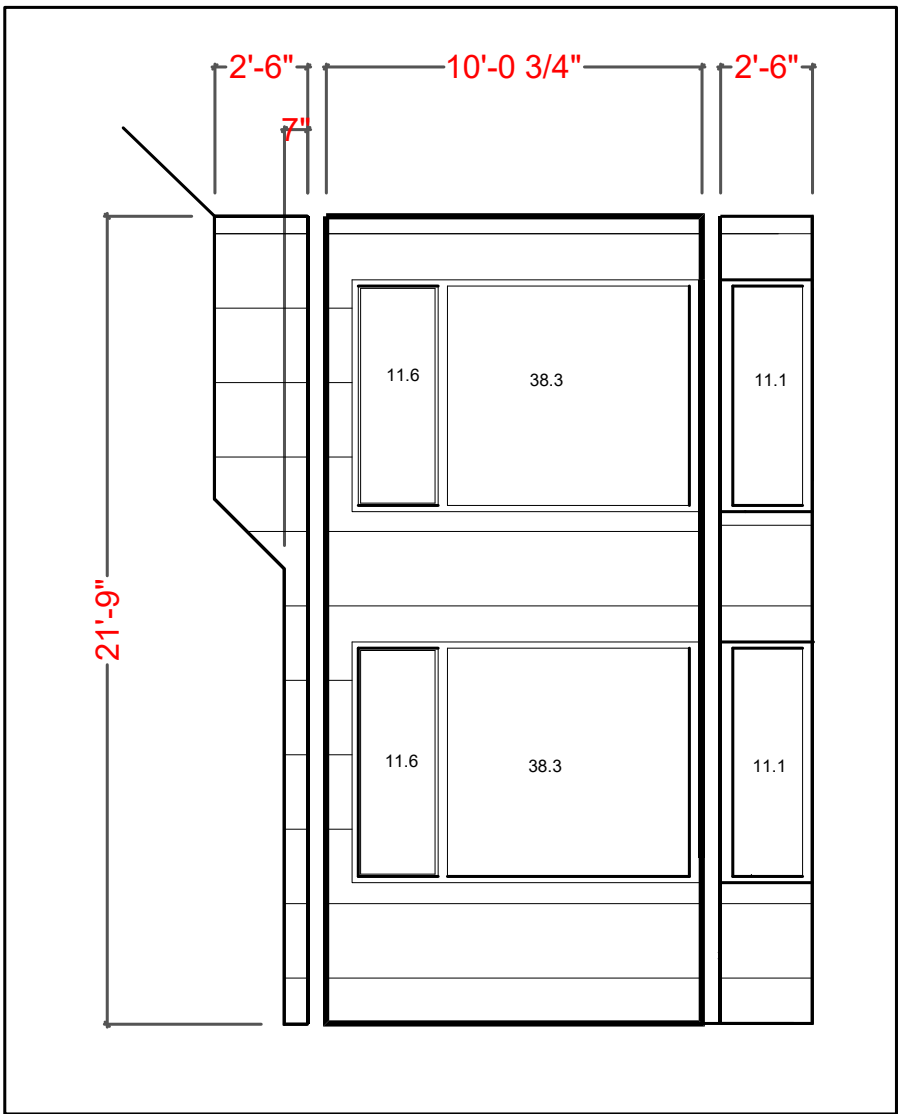
Parking

SZO Reference Notes:

- 1. Parking complies with the SZO for conversion of a 1-Family dwelling to a 2-Family dwelling.**
- 9.5.2.a.** Existing 1 and 2 family residences converting to 2 or 3 family residences shall provide one (1) parking space per additional (e.g. newly created) dwelling unit.
- 2. The new addition adds 1 additional space to the site vs. the 2006 Special Permit site plan.**
- 3. The existing building is deeded in Cambridge and the new unit will be also.**
There is NO impact on parking in the City of Somerville as neither unit will be eligible for Somerville Resident Parking or Visitor permits, and Harris Street is entirely in Cambridge so all service vehicles, visitor vehicles, etc. will park in Cambridge.

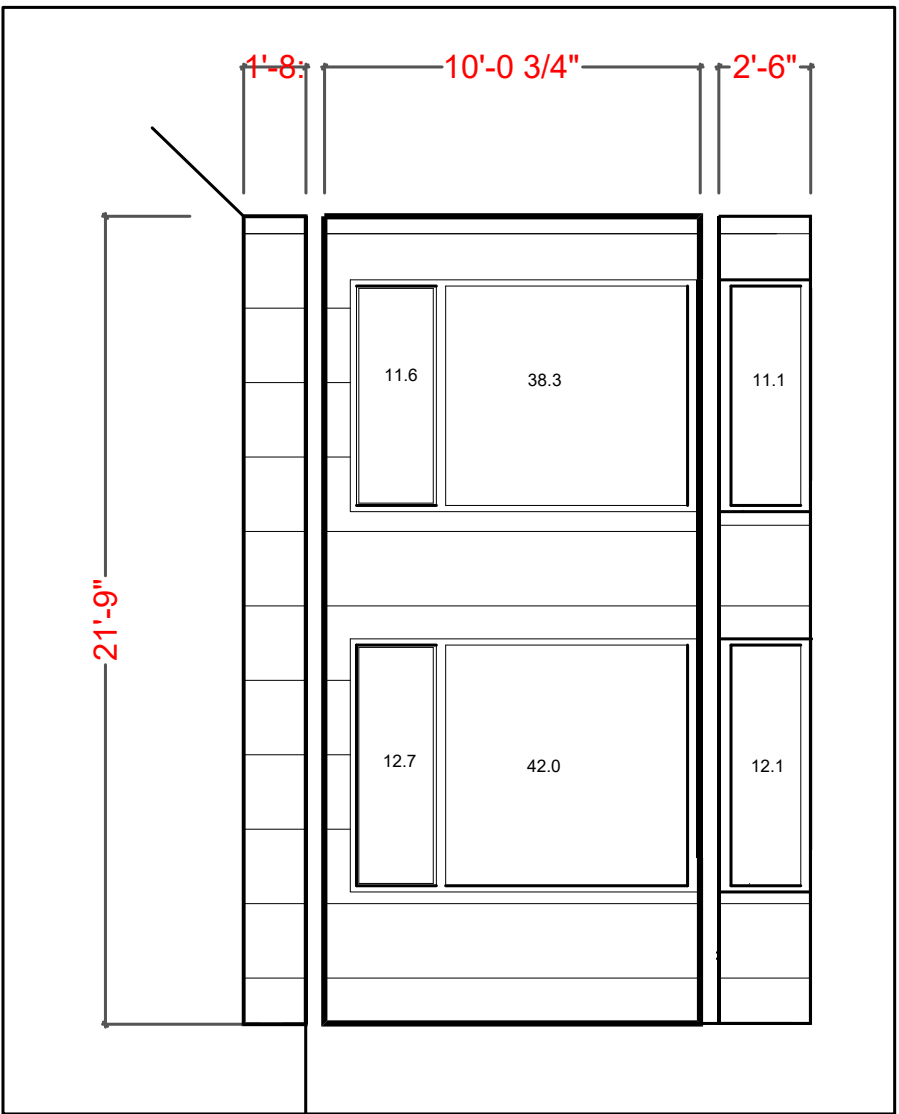


Example of Oriel Window
Venice, Italy



Proposed
South Elevation Oriel Window

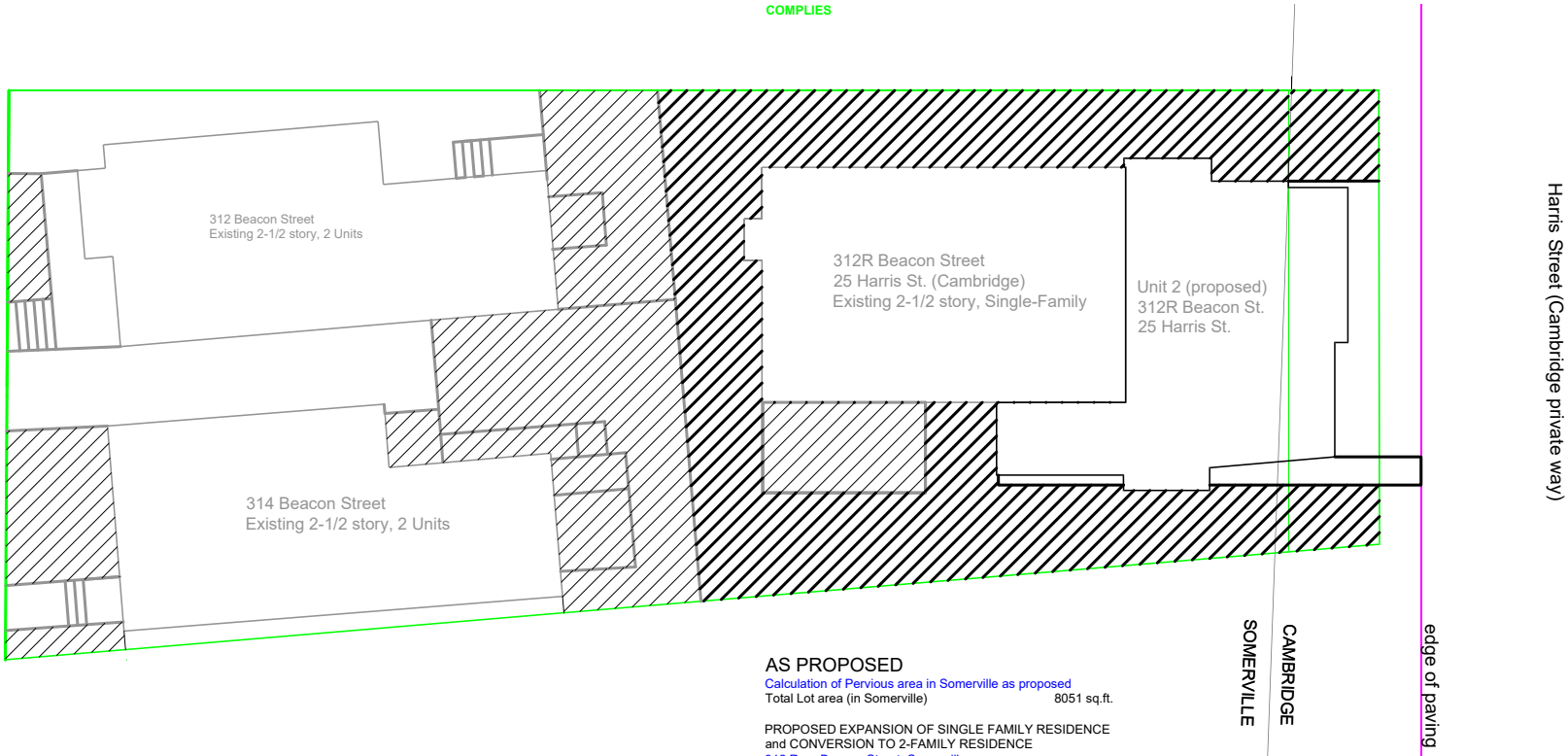
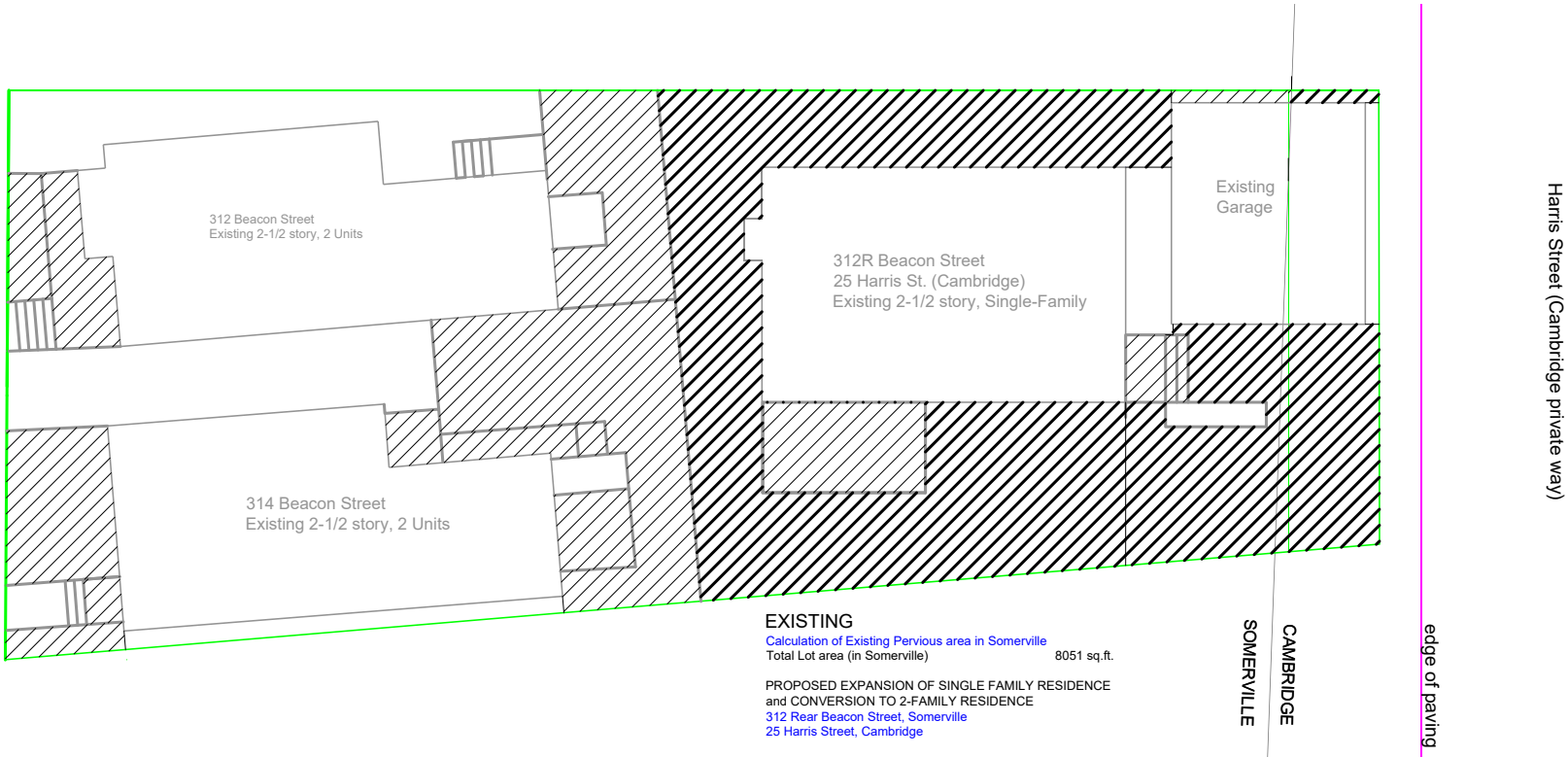
Total exterior area = 302.7 sq.ft.
Minimum glazed area = 121.1 sq.ft.
Total Proposed glazed area = 122.0 sq.ft.
Glazed area of Total = 42%;
COMPLIES



Proposed
North Elevation Oriel Window

Total exterior area = 318.2 sq.ft.
Minimum (40%) glazed area = 127.3 sq.ft.
Total Proposed glazed area = 127.8 sq.ft.
Glazed area of Total = 41%;
COMPLIES

SZO REFERENCE:
2.2.112. Oriel Window. A window projected beyond and suspended from the wall of the building and cantilevered therefrom. For purposes of this Ordinance, said projection must have a minimum of forty percent (40%) of its wall surface area covered by glazing to be considered an oriel window.



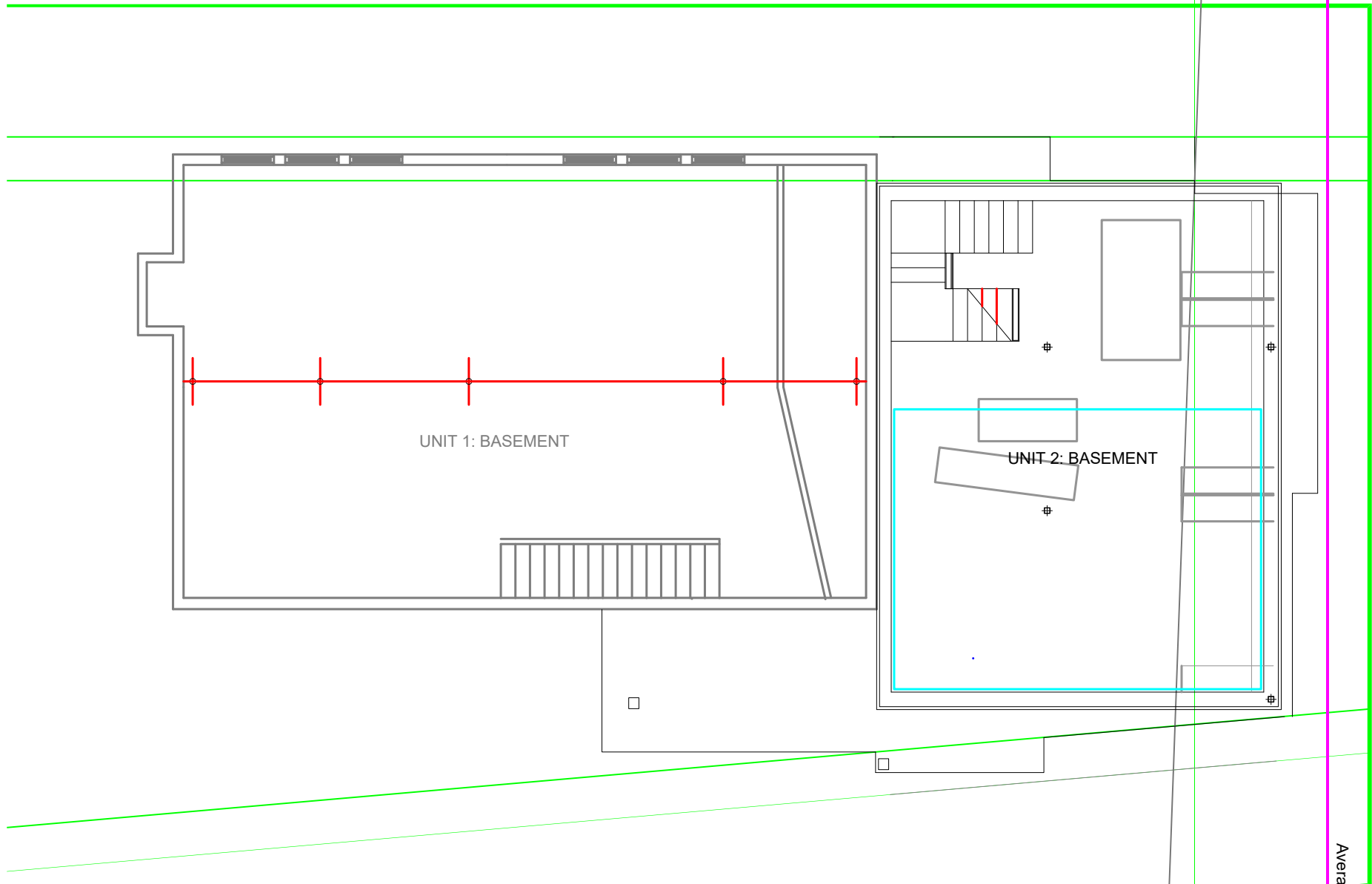
SZO REFERENCE:
2.1.122.a. Pervious Area: The area of a lot covered by surfaces or materials that allows for the movement or passage of water into soils below. Pervious areas include, but are not limited to, areas of a lot covered by soil/mulch, vegetative matter, permeable pavers, green roofs, or other materials that allow for the passage of water.

SZO REQUIRED (RC ZONE): 30% min.

Pervious area Calculations

ZONING DIMENSIONAL TABLE				
RC ZONE				
ALLOWED / REQUIRED		EXISTING	PROPOSED	SZO COMPLIANCE
USE	RESIDENTIAL 1- and 2-Family Dwelling Units 3-Family Dwelling Units Townhouses: 2 Units, 3 Units 4 DU Max./ Lot	RESIDENTIAL (2) Two 2-Family Dwellings (312 / 314 Beacon Street) (1) One 1-Family Dwelling (312 Rear Beacon Street)	RESIDENTIAL (3) Three 2-Family Dwellings	Special Permit required for additional residence
MIN. LOT SIZE	7,500 sq.ft.	8,591 sq.ft. Somerville 8062 Cambridge 529	same	COMPLIES
MIN. LOT / DWELLING UNIT	875 sq.ft.	1,718 sq.ft. Total / DU	1,431 sq.ft. Total / DU	COMPLIES
MAX.GROUND COVERAGE	70 % (6012 sq.ft.)	312 Beacon 1115 sq.ft. 314 Beacon 1175 312R Beacon Dwelling 1255 Garage 525 Total 4,070 sq.ft.	312 Beacon same 314 Beacon same 312R Beacon Dwelling 1808 Garage 0 Total 4,098 sq.ft.	COMPLIES (53% Coverage)
LANDSCAPED AREA	25 % (2,147 sq.ft.)	3669 sq.ft.	3641 sq.ft	COMPLIES (40% Landscaped)
MAX. FLOOR AREA RATIO (FAR)	2.0 (16124 sq.ft.) 312 Beacon #1 312 Beacon #2 314 Beacon #1 314 Beacon #2 312R Beacon Above grade Basement Proposed Addition Total Floor Area for FAR	717 1191 816 1331 2795 700 7750	same same same same same same 2550 10502	COMPLIES (1.23)
MIN. YARD SETBACKS				ALL COMPLY
FRONT	15 ft. or avg.depth (10 ft. min.)	15'	10 ft. (avg. depth = 6.5')	COMPLIES
LEFT / RIGHT	Sum of 20 ft. (Addition = 3 stories)	17'-6" total	20'-0"	COMPLIES
REAR	20 ft. min.	20'	same	COMPLIES
FRONTAGE	50 ft.	63.00'	same	COMPLIES
HEIGHT	40 ft.	34.55 ft.	40 ft. (to top of structure)	COMPLIES
30%	4075 sq.ft.	3711 sq.ft.	COMPLIES (43% Pervious)	
PARKING REQUIREMENTS (All parking regulated by Cambridge)	N/A	4	5	COMPLIES

Dimensional Calculations



Basement Level

PROPOSED EXPANSION OF SINGLE FAMILY RESIDENCE
and CONVERSION TO 2-FAMILY RESIDENCE

312 Rear Beacon Street, Somerville

25 Harris Street, Cambridge

Unit 1: 865 net occupiable sq.ft. in Somerville

Unit 2: 600 net occupiable overall / 479 net. sq.ft. in Somerville

scale: 1/8" = 1'-0"

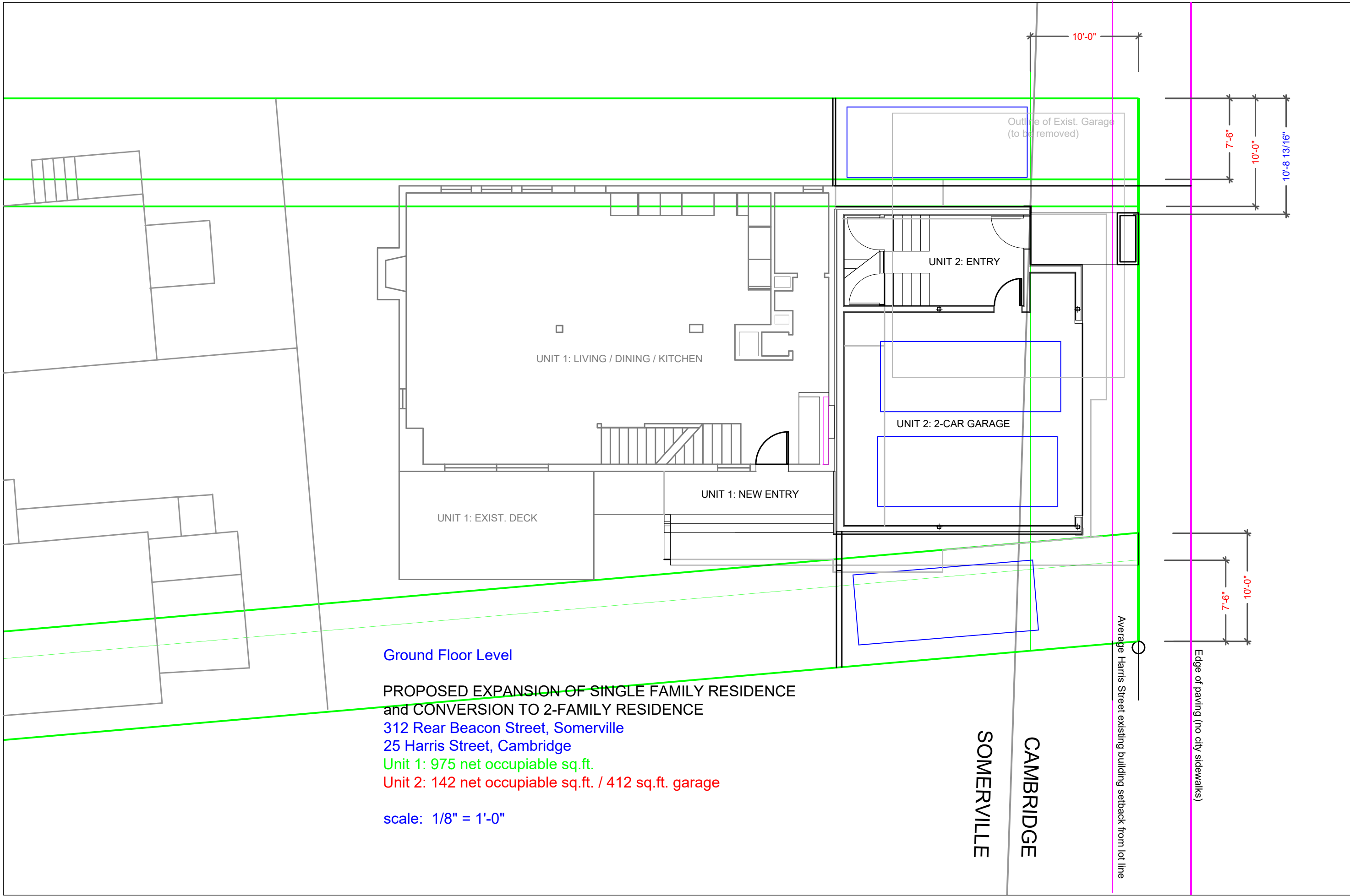
SOMERVILLE

CAMBRIDGE

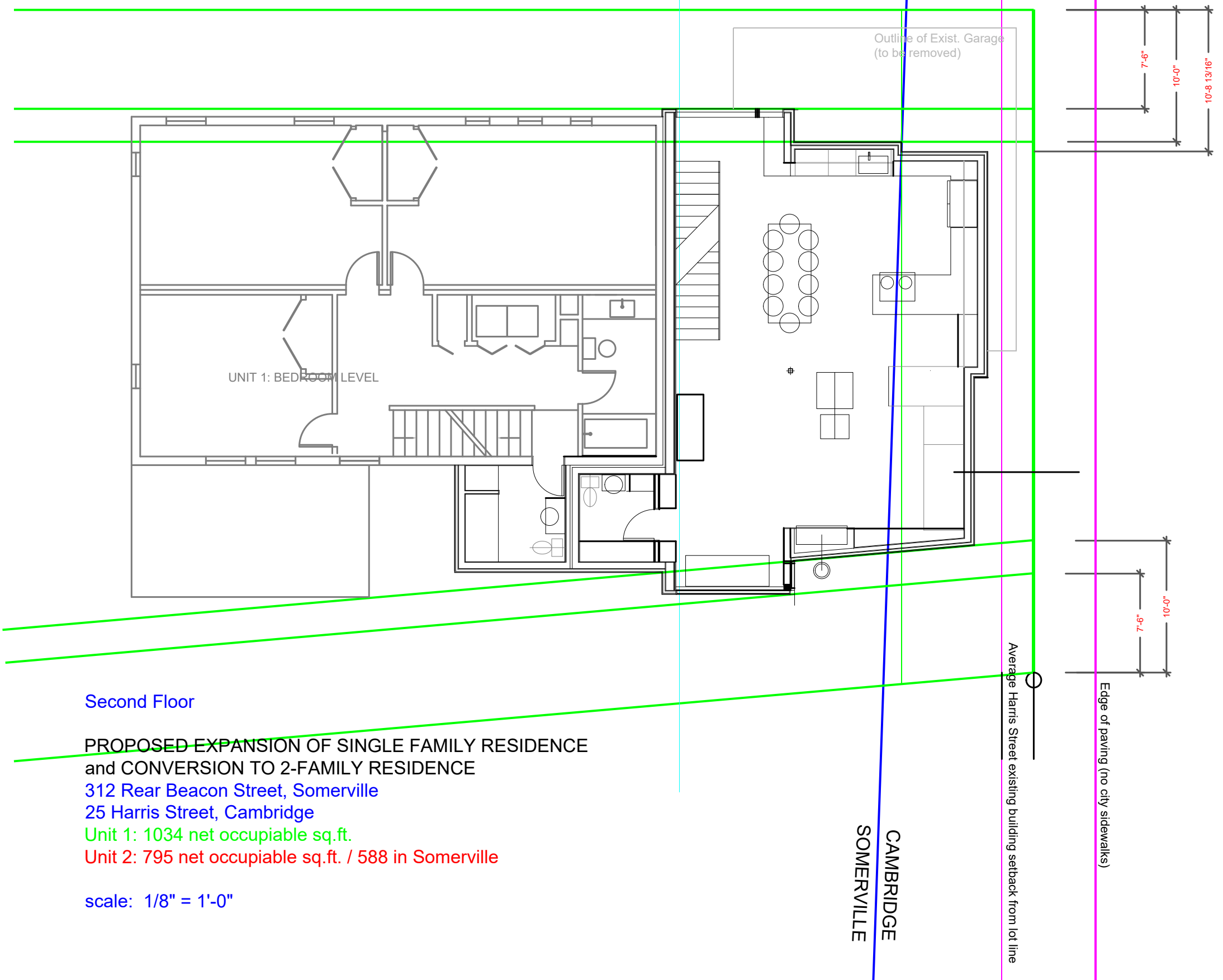
Average Harris Street existing building setback from lot line

Edge of paving (no city sidewalks)

Unit 2: Proposed Basement Plan



Unit 2: Proposed Ground Floor Plan

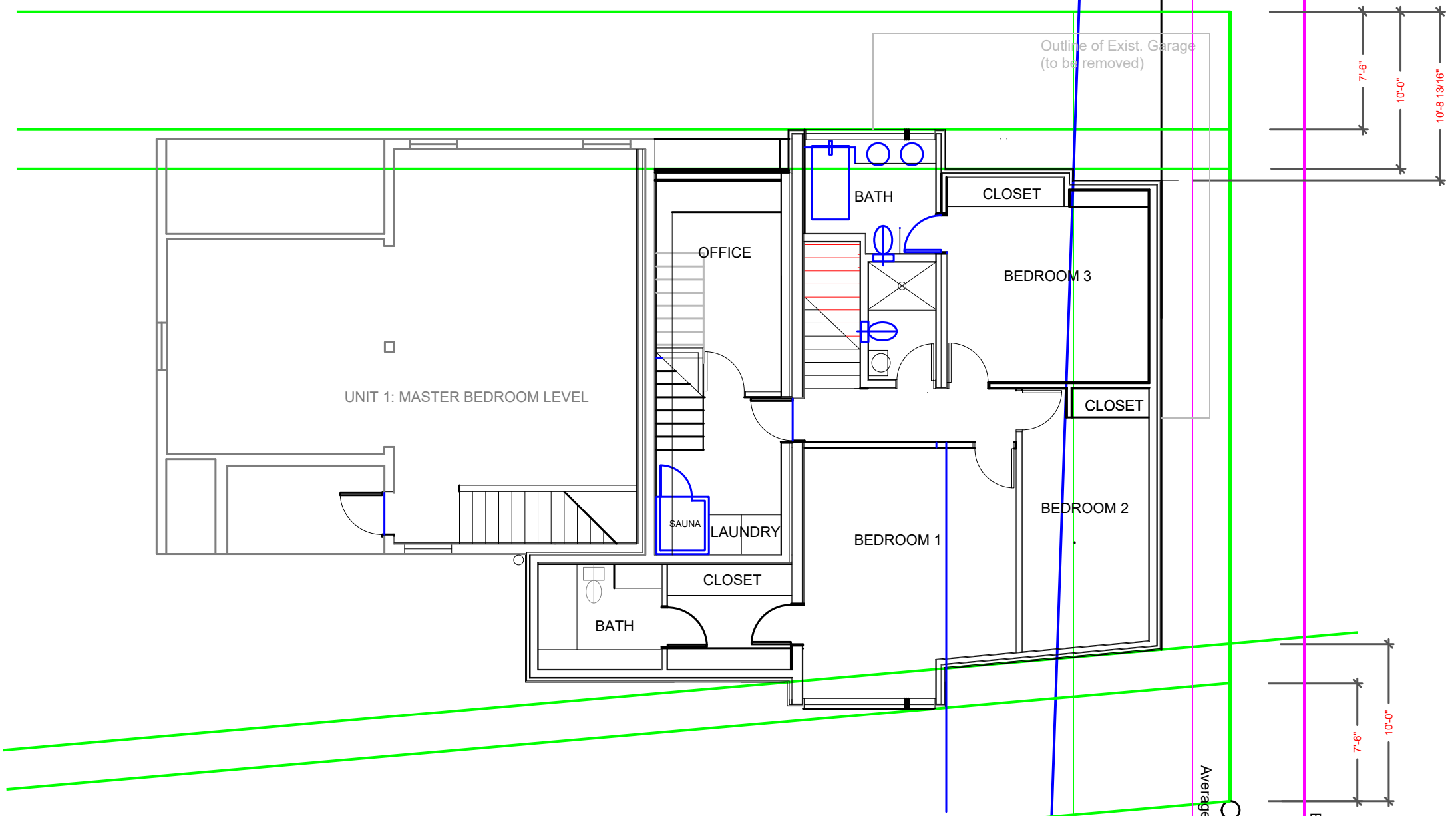


Second Floor

PROPOSED EXPANSION OF SINGLE FAMILY RESIDENCE
and CONVERSION TO 2-FAMILY RESIDENCE
312 Rear Beacon Street, Somerville
25 Harris Street, Cambridge
Unit 1: 1034 net occupiable sq.ft.
Unit 2: 795 net occupiable sq.ft. / 588 in Somerville

scale: 1/8" = 1'-0"

Unit 2: Proposed Second Floor Plan



Third Floor

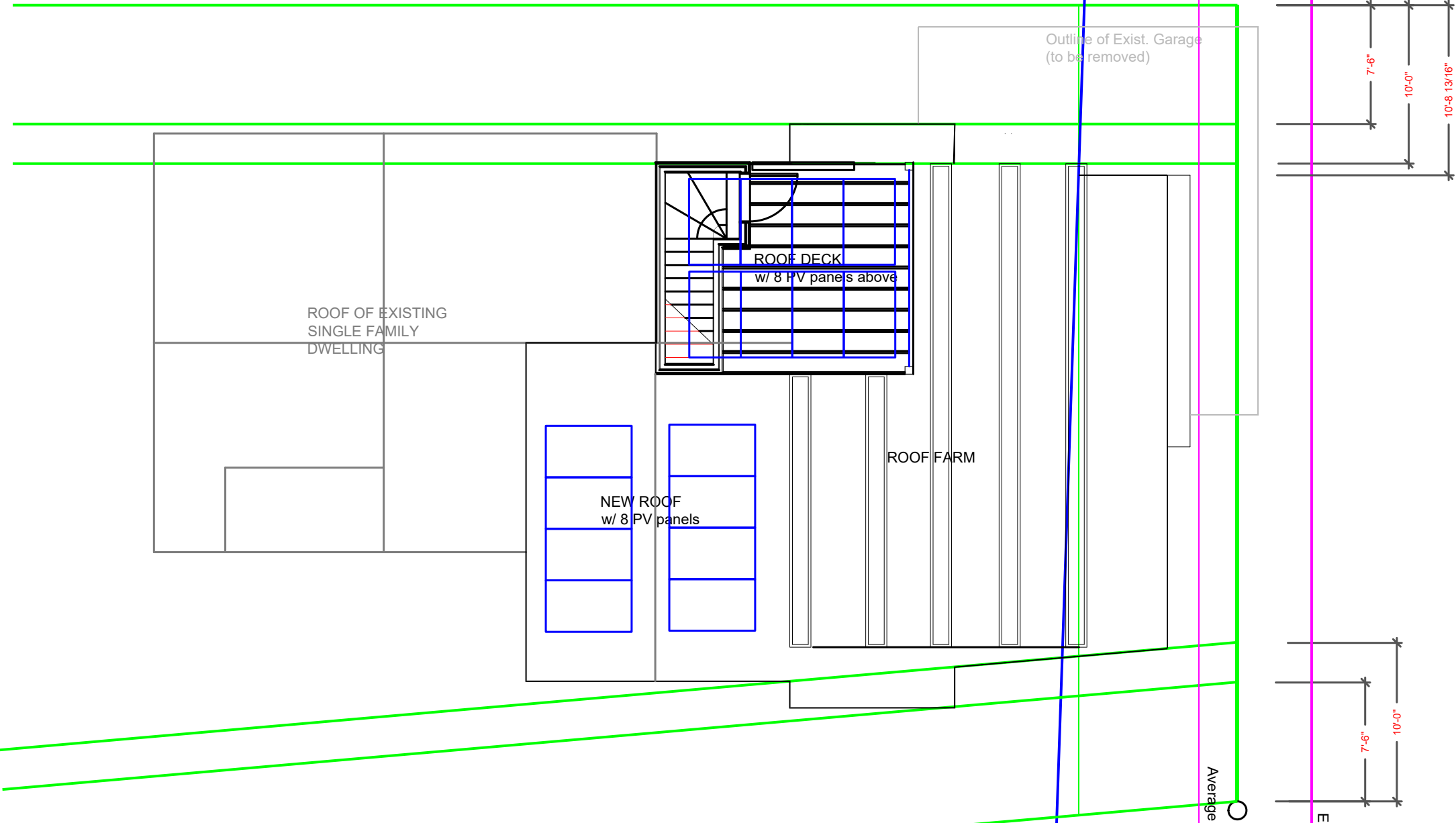
PROPOSED EXPANSION OF SINGLE FAMILY RESIDENCE
and CONVERSION TO 2-FAMILY RESIDENCE
312 Rear Beacon Street, Somerville
25 Harris Street, Cambridge
Unit 1: 581 net occupiable sq.ft.
Unit 2: 1050 net occupiable sq.ft. / 994 in Somerville
scale: 1/8" = 1'-0"

SOMERVILLE
CAMBRIDGE

Average Harris Street existing building setback from lot line

Edge of paving (no city sidewalks)

Unit 2: Proposed Third Floor Plan



Roof Deck

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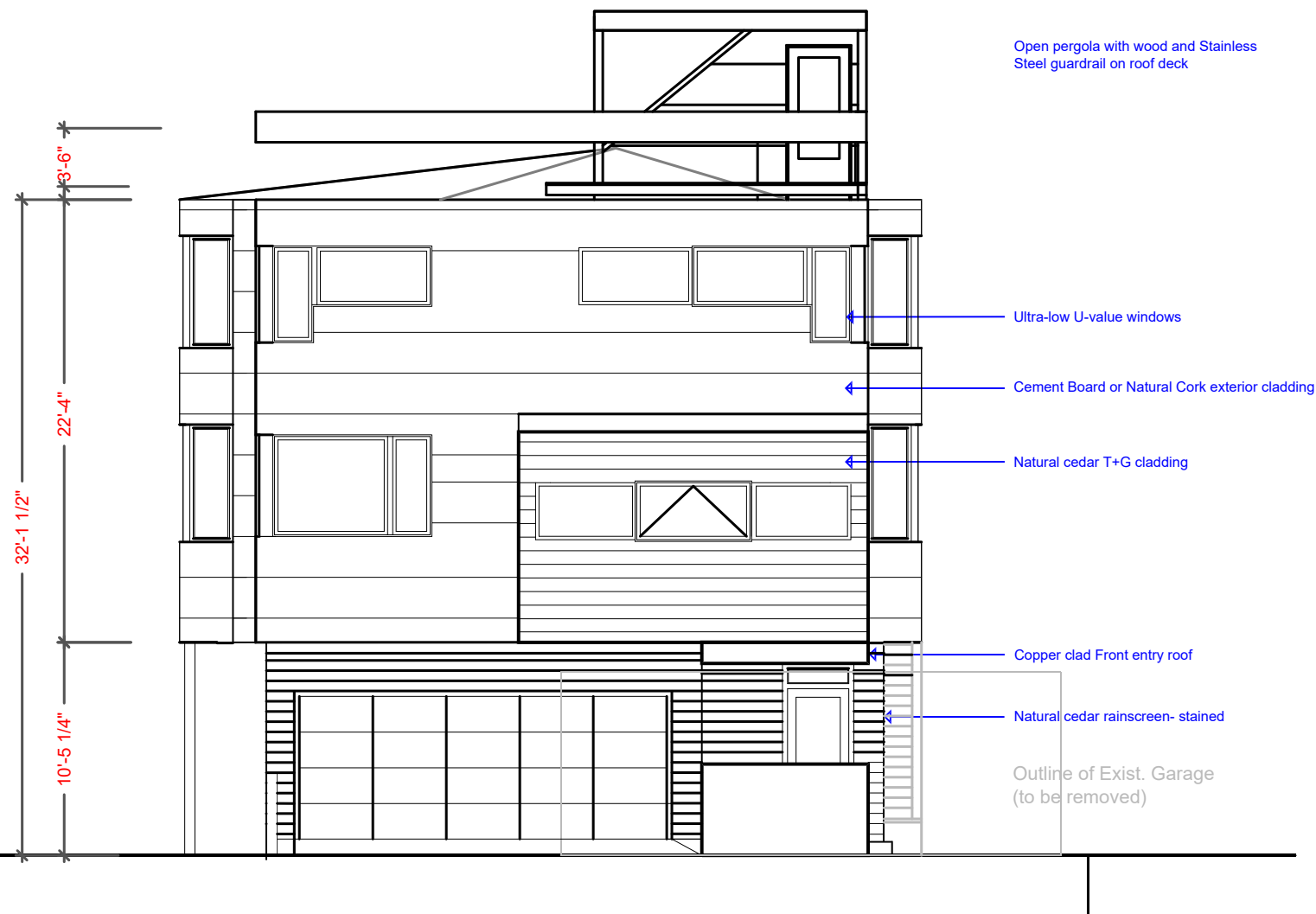
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SOMERVILLE
CAMBRIDGE

Average Harris Street existing building setback from lot line

Edge of paving (no city sidewalks)

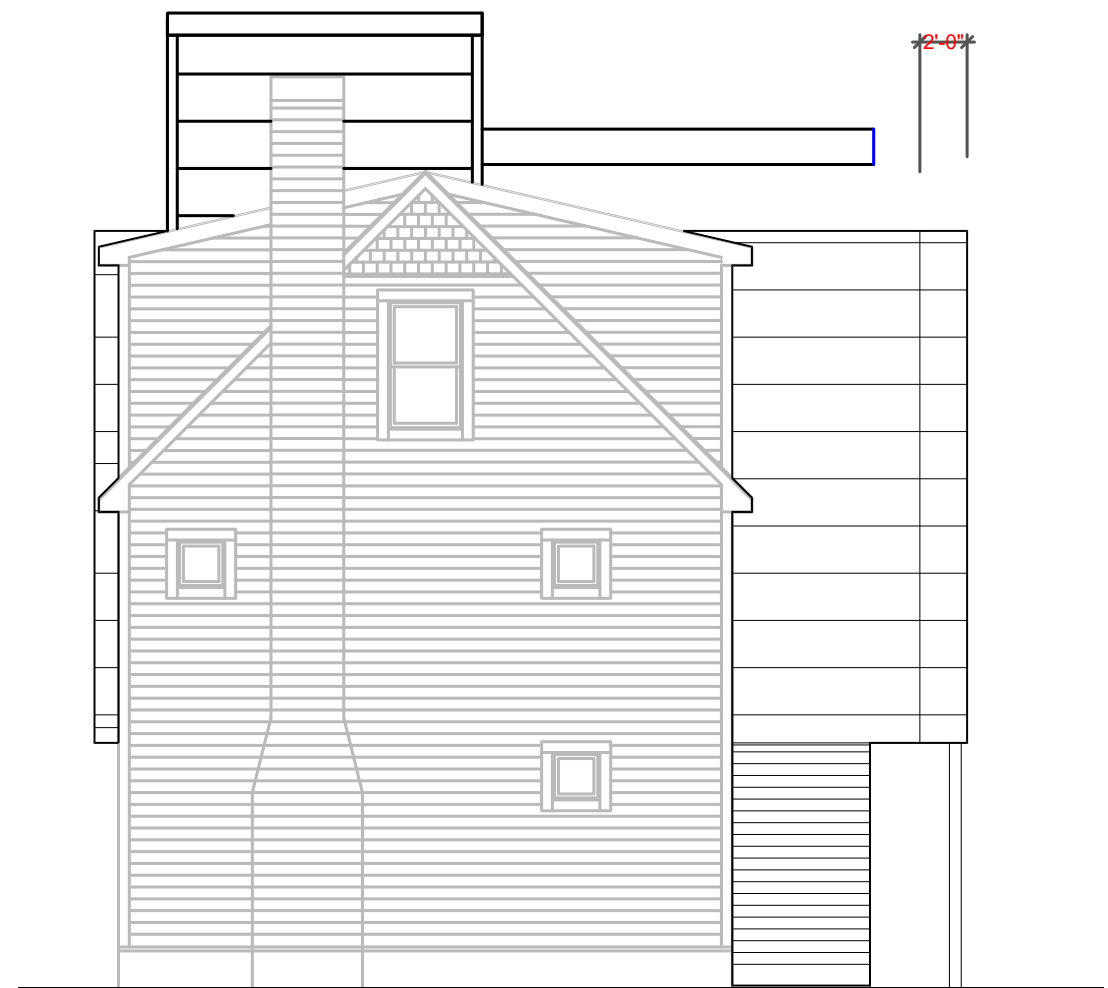
Unit 2: Proposed Roof Plan



West Elevation

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25 Harris Street, Cambridge

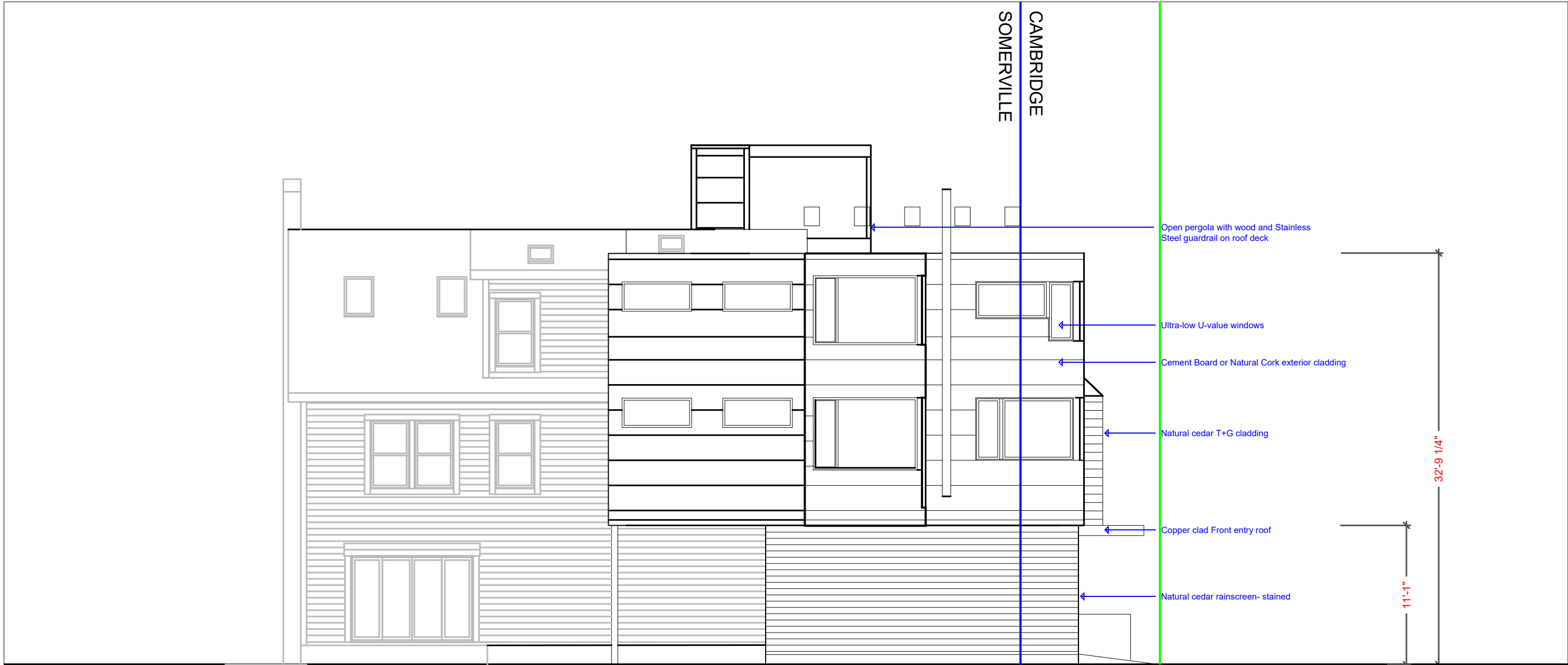
scale: 1/8" = 1'-0"



East Elevation

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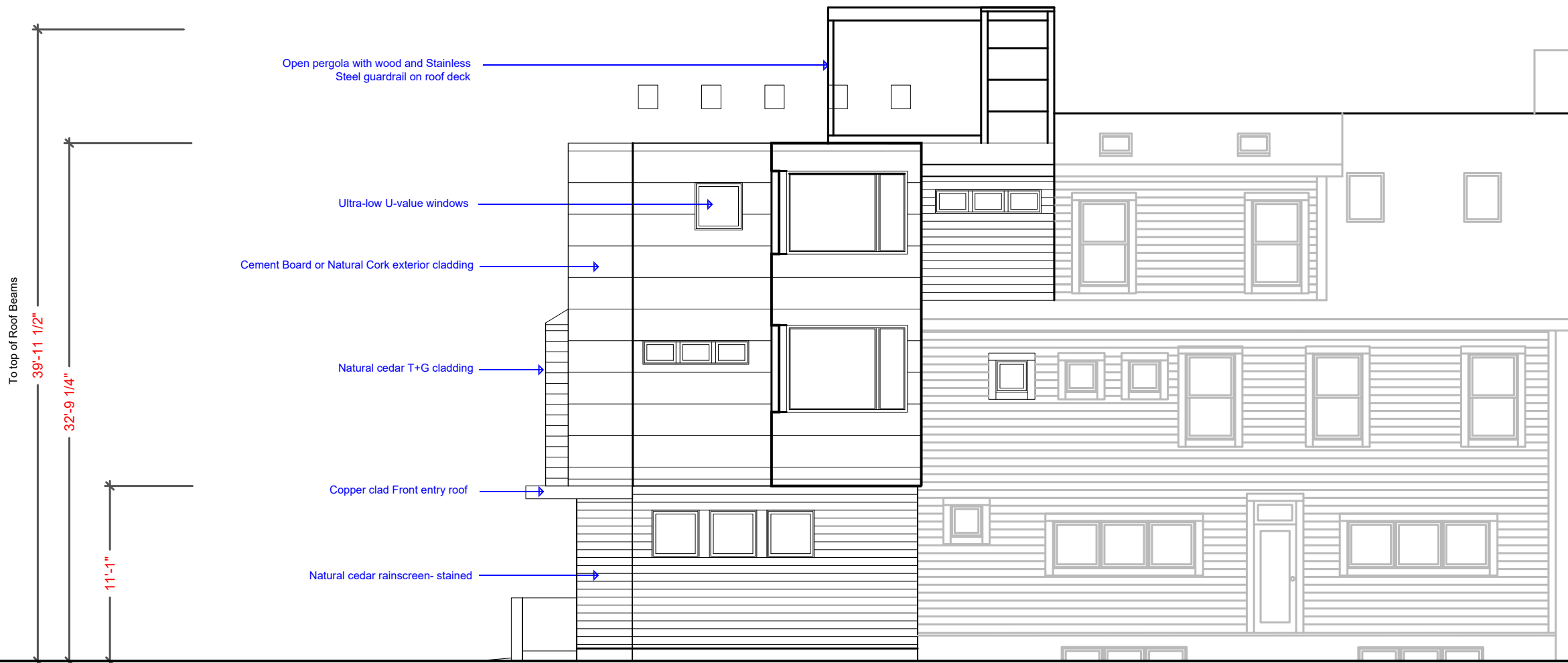


North Elevation

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and CONVERSION TO 2-FAMILY RESIDENCE
312 Rear Beacon Street, Somerville
25 Harris Street, Cambridge

scale: 1/8" = 1'-0"

North Elevation



South Elevation

PROPOSED EXPANSION OF SINGLE FAMILY RESIDENCE
and CONVERSION TO 2-FAMILY RESIDENCE
312 Rear Beacon Street, Somerville
25 Harris Street, Cambridge

scale: 1/8" = 1'-0"

South Elevation