2072 MASSACHUSETTS AVENUE, CAMBRIDGE

APPENDICES
SEPTEMBER 4, 2025

Location

2072 Massachusetts Avenue
Cambridge, MA 02140

Applicant

CC HRE 2072 Mass Ave LLC and CC HRE 2072 Mass Ave Tenant LLC
831 Beacon Street #164
Newton Centre, MA 02459

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GREEN BUILDING

2072 Massachusetts Avenue

Green Building Intent

9/4/25

The 2072 Massachusetts Avenue project will use Phius CORE 2021 as its Green Building Rating System to comply with the City of Cambridge's Article 22 Sustainable Design and Development requirements. The Phius CORE building design will feature a high performance facade, passive heating and cooling strategies, efficient all electric building systems, low flow plumbing fixtures, and low/no VOC interior finishes for high quality indoor air conditions. The project will be solar ready and will eliminate the use of fossil fuels for operational energy. 2072 Mass Ave will be Enterprise Green Communities Certified and will also achieve the following 3rd party certifications by way of Phius CORE:

EnergyStar Multifamily New Construction - the project will minimize duct leakage and ensure that ventilation rates meet ASHRAE flow minimums

DOE Zero Energy Ready Home - the project will use WaterSense compliant plumbing fixtures, reduce plumbing lengths to minimize hot water demands, install EnergyStar appliances, and use LED lights for all fixtures

EPA Indoor airPlus - the project will specify and implement low VOC interior materials, manage radon (passively or actively), and ensure that moisture control and ventilation are appropriately designed to achieve high indoor air quality

The project team will include a Certified Passive House Consultant and a Phius Certified Verifier to ensure that the design meets all Phius CORE criteria in both design and construction through energy modeling and on-site verification. The design team will use life cycle analysis tools to ensure that material selection minimizes the embodied carbon of the building.

The team will issue the Green Building Requirements Checklist and the Net Zero Narrative required in Second AHO Design Review.

TREE PROTECTION PLAN

Plant Healthcare Consultants, Inc.
American Society of Consulting Arborist ▪ International Society of Arboriculture
Massachusetts Arborist Association ▪ Massachusetts Tree Wardens and Foresters Association
TREE INVENTORIES ▪ APPRAISALS ▪ DIAGNOSIS ▪ TREE RISK ASSESSMENTS

Tree Protection Plan
2072 Massachusetts Avenue
Cambridge, MA 02140

Prepared for:

CC HRE 2072 MASS AVE LLC
c/o Capstone Communities LLC
831 Beacon Street #164
Newton Centre, MA 02459

Prepared by:

Daniel E. Cathcart
Registered Consulting Arborist
Plant Healthcare Consultants, Inc.
27 Kenilworth Road
Milton, MA 02186

July 16, 2025

Daniel E. Cathcart
Plant Healthcare Consultants, Inc.
27 Kenilworth Road, Milton, MA 02186 ▪ Phone (617) 237-7695
dan.cathcart@gmail.com ▪ www.treeconsultant.com

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Summary

I was retained by CC HRE 2072 MASS AVE LLC to perform an evaluation of a *Tilia cordata* (Littleleaf linden) on the property line between 2050 and 2072 Massachusetts Avenue, Cambridge, MA. The focus of the evaluation was to assess the health and condition of the tree and, if preservation is an option, develop a Tree Protection Plan.

It is my opinion that the tree can be preserved and the specifications for the Tree Protection Plan are included in this report.

Introduction

Background & History

CC HRE 2072 MASS AVE LLC has acquired 2072 Mass Avenue, Cambridge, MA an ~8,500 sq ft property on the corners of Mass Ave and Walden Street. CC HRE 2072 MASS AVE LLC plans to renovate the property. There is one mature tree on the property line between 2072 and 2050 Mass Ave, a 12" diameter at breast height (DBH) Littleleaf linden. CC HRE 2072 MASS AVE LLC's goal is to preserve this tree.

On October 20, 2020, Jason Korb, of CC HRE 2072 MASS AVE LLC, contacted my office inquiring to retain consulting arborists in regard to a redevelopment project in Cambridge, MA. Mr. Korb informed me that there was a tree on the property line between the property he was redeveloping at 2072 Mass Ave. and the abutter at 2050 Mass Ave. He expressed a desire to preserve the tree and requested specification for a Tree Protection Plan.

I agreed to assist on the project. A site visit was scheduled for October 23, 2020, at 10:00 am.

The project was put on hold at that time.

On June 25, 2025, I was contacted by Mr. Korb and advised that the project was proceeding with changes, and I was asked to revise my original report to accommodate those changes.

Assignment

The scope of the assignment is to assist CC HRE 2072 MASS AVE LLC in creating a Tree Protection Plan for the Littleleaf linden. This plan will have recommendations and specifications to provide the tree with the best chance of surviving the construction project.

Limits of Assignment

The recommendations and conclusions provided in this report are based on my visual observations only. I did not examine the plant's interiors, nor did I collect soil or plant tissue samples for laboratory testing.

Purpose and Use of Report

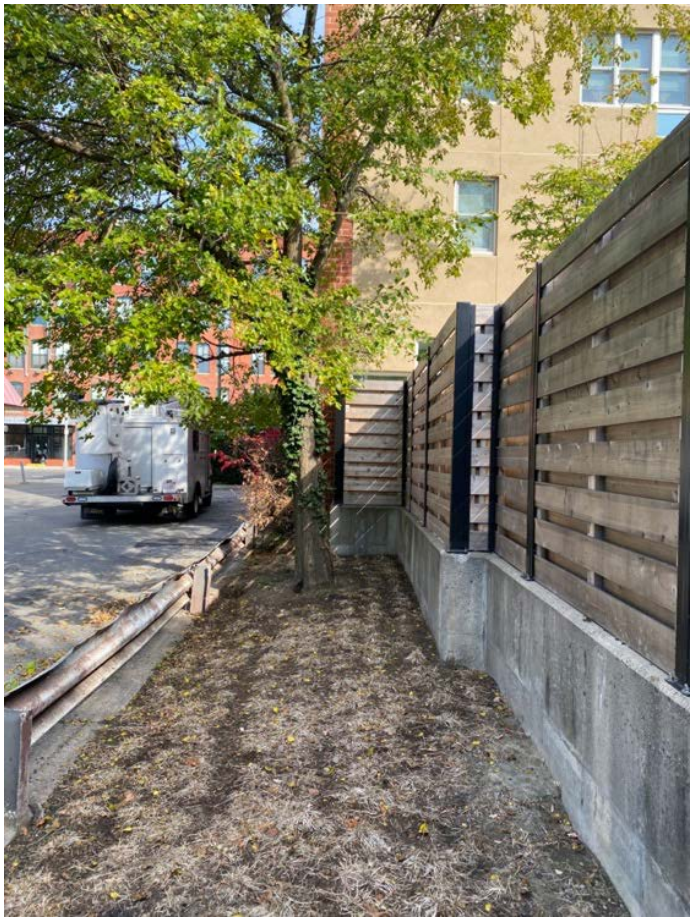
This report is intended to provide CC HRE 2072 MASS AVE LLC with as much information regarding the tree at 2072 Mass Ave. It will outline the tree protection plan, tree management plan and provide recommendations and specifications for care of the tree in all phases of the site development.

This report is the property of CC HRE 2072 MASS AVE LLC and can be used and shared as they see fit.

Observations

On October 23, 2020, at approximately 10:00 am I visited the site and inspected the Littleleaf linden. At this visit I observed the tree and its surroundings and took measurements and photographs. I also examined the construction plans for the site to determine impact in regard to the tree.

I identified the tree as a 12" DBH *Tilia cordata*, Littleleaf linden. It is located on the south property line of 2070 Mass Ave that abuts 2050 Mass Ave. It is growing in a strip of land approximately 10' x 55' running in roughly an east-west orientation.



Planting Strip October 23, 2020

The tree appears to be in good health and has established itself well in this area.

October 23, 2020

Due to the fact that the roots zone is confined by a retaining wall to the south and the paved parking area to the north, the majority, if not all, of the viable roots of the tree are located in the planting strip. As such, if this area is to be protected and proper steps taken, the root system should remain viable and sustain the tree through construction.

I also reviewed the attached the proposed building plans, (See pages #12 & #13). The revised plan does not call for excavation of the critical root zone, this modification to the plans will decrease the impact on the tree even more and increase the tree's likelihood of surviving the contraction project.

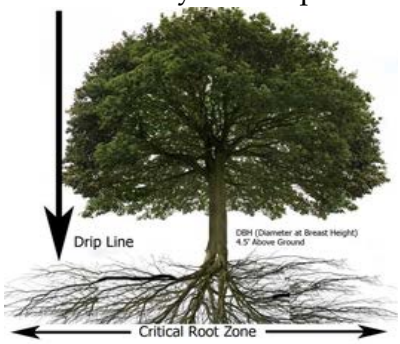
A photograph of the tree in its current condition, provided by the client, is included in Appendix B – Photographs, page 14.

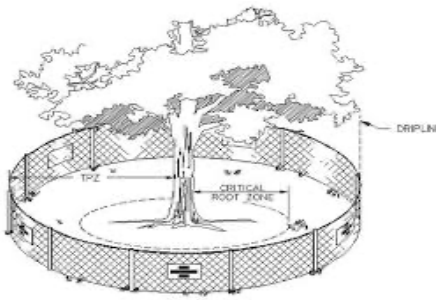
Discussion

Tree Projection Zone

A Tree Preservation Plan has several components, all focusing on giving the tree the best chance for surviving the construction project. The majority of the components involve protection the Critical Root Zone (CRZ). The CRZ is the minimum area beneath the canopy of a tree which must be left undisturbed in order to preserve a sufficient root mass to give a tree a reasonable chance of survival. The CRZ should be defined, at a minimum, of the tree's dripline, the area represented by the outer canopy of the tree. This is crucial because the absorbing roots, the roots that take in water and nutrients, must be undisturbed or the tree will suffer stress and may decline and even die. The Tree Protection Plan includes the establishment of a Tree Protection Zone (TPZ), ideally, the TPZ must include the CRZ.

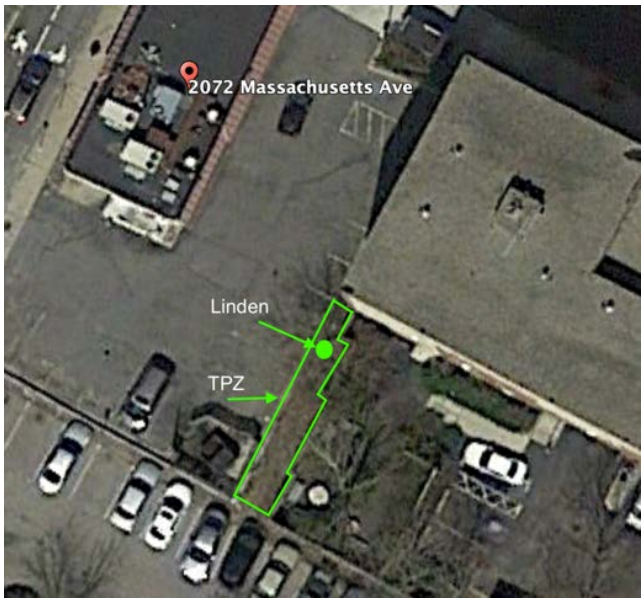
The larger the TPZ the better as the root zone of a tree could extend as much as two or three times the width of the canopy. This is an area that is enclosed by a semi-permanent fence with appropriate signage. Within the CRZ, trenching, pavement, soil compaction, mechanical injury, storing of materials and spoils and any change in grade should be avoided.





Ideal Tree Protection Zone

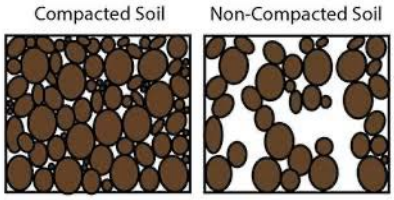
In this case the CRZ has been encroached upon by the pavement and retaining wall and the tree has adjusted its root growth accordingly by concentrating its root into the planting strip. As a result of the trees natural compensation to its environment a modified TPZ should be made to include as much of the planting strip as possible.



Proposed TPZ

Soil Compaction

All protected trees in the construction zone are subject to soil compaction from heavy vehicles, and any heavy debris placed in the Critical Root Zone (CRZ). Soil compaction occurs when the pore space between soil particles is greatly reduced. This causes the reduction of oxygen available to the roots and can lead to decline in trees. Use of equipment, grading, digging, and heavily used walking paths can cause soil compaction in a construction area. Use protective fencing, mulching within the protective fencing, and limiting the amount of access routes will minimize soil compaction.



As the root system of trees is far more extensive than just the dripline, in this case in the entire planting strip, all equipment and materials should be kept out of the TPZ.

Mechanical Injury

There will be heavy equipment and vehicles used near the trees that are to be protected. Wounds to the tree's branches and trunk, caused by mechanical damage, may reduce tree stability by decreasing the wood strength, the internal movement of water and nutrients, and the ability to compartmentalize against decay. Enclosing the Critical Root Zone with protective fencing will prevent damage from construction equipment.

Change in Grade

Lowering or rising of the grade within the root zone can damage or kill a tree. The normal exchange of moisture and gases within the root zone is disrupted with the change in grade. The original grade should be maintained as far out from the trunk as possible. As little as four inches of soil placed over the root system can kill some species of trees. The change in grade can have either immediate or long-term adverse effects on the tree. If grade change is required use of retaining walls or soil cuts can improve the tree's tolerance to the grade change.

Excavation & Trenching

This project will require no excavation for foundations in the TPZ. Excavation & trenching within the CRZ can damage the root system of a tree. If the job parameters change, but care should be taken to excavate as little of the area adjacent to the tree as possible.

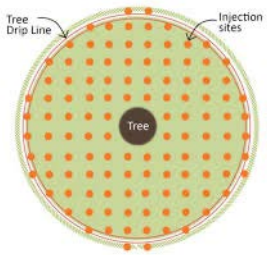
Irrigation

Irrigation should be provided within the CRZ as needed. A deep watering of the trees should take place before construction begins. During construction, the soil in the CRZ should be watered regularly and deeply so water penetrates the root area at least six to eight inches deep. A watering schedule will vary with climatic conditions, but a rule of thumb is 1" of water weekly during construction.

Soil Treatment

I am prescribing a non-nitrogen fertilizer that is high in phosphorus and potassium (0-20-20 fertilizer analysis) to promote root development. I recommend a fertilization in the spring. Applying the fertilizer in the early spring will prepare the trees for a flush of root development. Root development is most critical for the trees to prepare themselves for construction impact. The healthier and abundant the root system the more water and nutrients the tree can take in which is the best defense against stress.

The fertilizer shall be applied in a water solution, injected directly into the CRZ, in this case the entire TPZ, by means of an application needle under pressure. Injections should be made about every foot in a grid-like pattern.



Plant Healthcare

At this stage there does not appear to any major pest concerns on the trees. This will be monitored regularly (monthly) to see if conditions change. If there is a need to address insect, mite or disease pest a proper course of action will be prescribed at that time.

All plant healthcare treatments shall be performed by a certified arborist who is also a licensed pesticide applicator and supervised by an ISA Board Certified Master Arborist.

Conclusion

Based on my education, training and experience it is my professional opinion that taking this proactive approach to tree preservation will provide the Littleleaf linden at 2072 Massachusetts Avenue the best chance of surviving the construction. Setting up tree protection zones around the tree to retain, managing the flow and access of heavy equipment, performing required tree work prior to commencing construction and regular monitoring of the work site to ensure all practices are adhered to should make for a successful worksite.

Recommendations

Pre-Construction

Prior to construction the Tree Protection Zone should be established. A six-foot chain-link fence (or suitable alternative, i.e. snow fence), with signage designating a Tree Protection Zone, Keep Out, should be erected around all the protected tree and encompass the modified Critical Root Zone as explained above. Once installed this fence should not be moved nor the CRZ disturbed for the duration of the construction project.

The access way for heavy equipment should be established, as well as where equipment and materials will be stored. This should be as far away as possible from all protected trees and their root systems. No equipment or material may be stored on the root systems of the protected trees.

Construction

During the construction Phase of the project monitoring of the site is crucial. An ISA Board Certified Master Arborist should inspect the site monthly. The purpose of those visits is to ensure that the Tree Preservation Plan is being adhered to, adequate watering is taking place, trenching and excavations are following plan, inspect the trees for pest issues and make observations regarding any changes to the trees on the site.

Post-Construction

Monitoring after the construction is completed is very important to the long-term health of the trees. For a period of one growing season (starting the April following construction completion through that September) monthly monitoring will continue as during the construction period.

Daniel E. Cathcart
Plant Healthcare Consultants, Inc.
27 Kenilworth Road, Milton, MA 02186 ▪ Phone (617) 237-7695
dan.cathcart@gmail.com ▪ www.treeconsultant.com

Glossary of Terms

ASCA	American Society of Consulting Arborists, professional association of arborist specializing in arboricultural consulting
Branch Union	The structural union of a lateral branch to the tree stem.
Canopy	The part of the crown composed of leaves and small twigs.
Certified Arborist	A professional arborist possessing current certification issued by the Massachusetts Arborists Association (MAA) and/or the International Society of Arboriculture (ISA)
Clinometer	A device used to measure the height of an object
Co-dominant	Stems or branches, equal in size and relative importance usually associated with either the trunk/stems or scaffold limbs/ branches in the crown.
Crown	The upper part of a tree, measured from the lowest branch, including all the branches and foliage
DBH	Stands for Diameter Breast Height. The diameter of a tree measured at 4.5 feet above the ground.
Dripline	Perimeter of the area under a tree including the branches and leaves
Establishment	The process of a tree becoming acclimated to a new environment, usually correlating the new root development that can sustain normal biological functions of the tree
Included Bark	An inherent weak point where two or more stems grow independently pressing on one another
ISA	International Society of Arborists, a global, professional association of arborist
Level II Tree Risk Assessment	A visual assessment only. The tree is inspected from the ground only and diagnostic tools used
Parity	The time, usually in years, that it takes for a replacement tree to provide similar attributes and benefits of a removed tree
Pruning	Systematic removal of branches of a plant usually a woody perennial
RCA	Registered Consulting Arborist, a credential issued by ASCA to an arborist that has demonstrated higher skills in certain technical areas related to trees and tree care, providing objective, independent opinions, with training for higher communication, presentation, and/or report writing skills.

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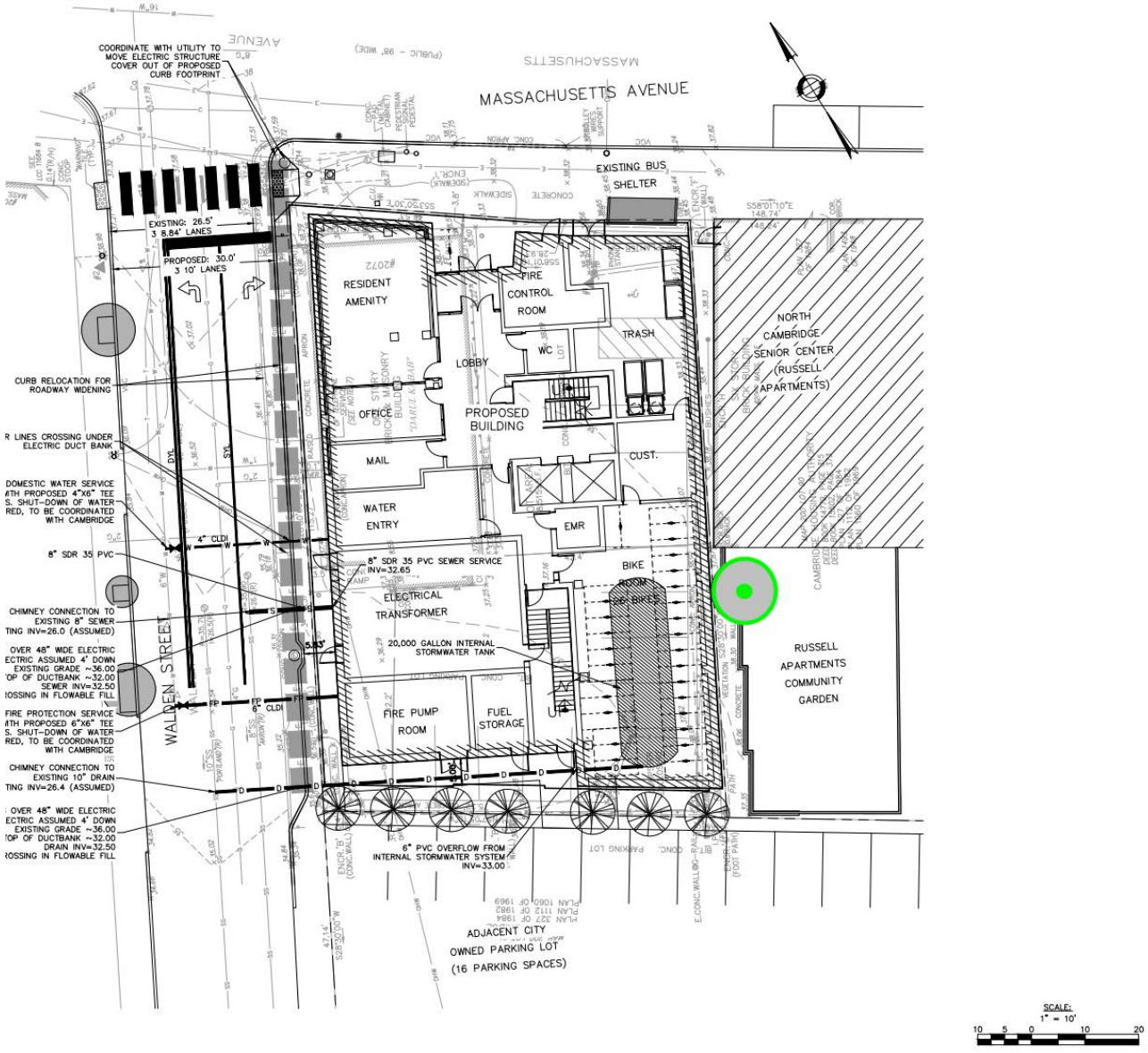
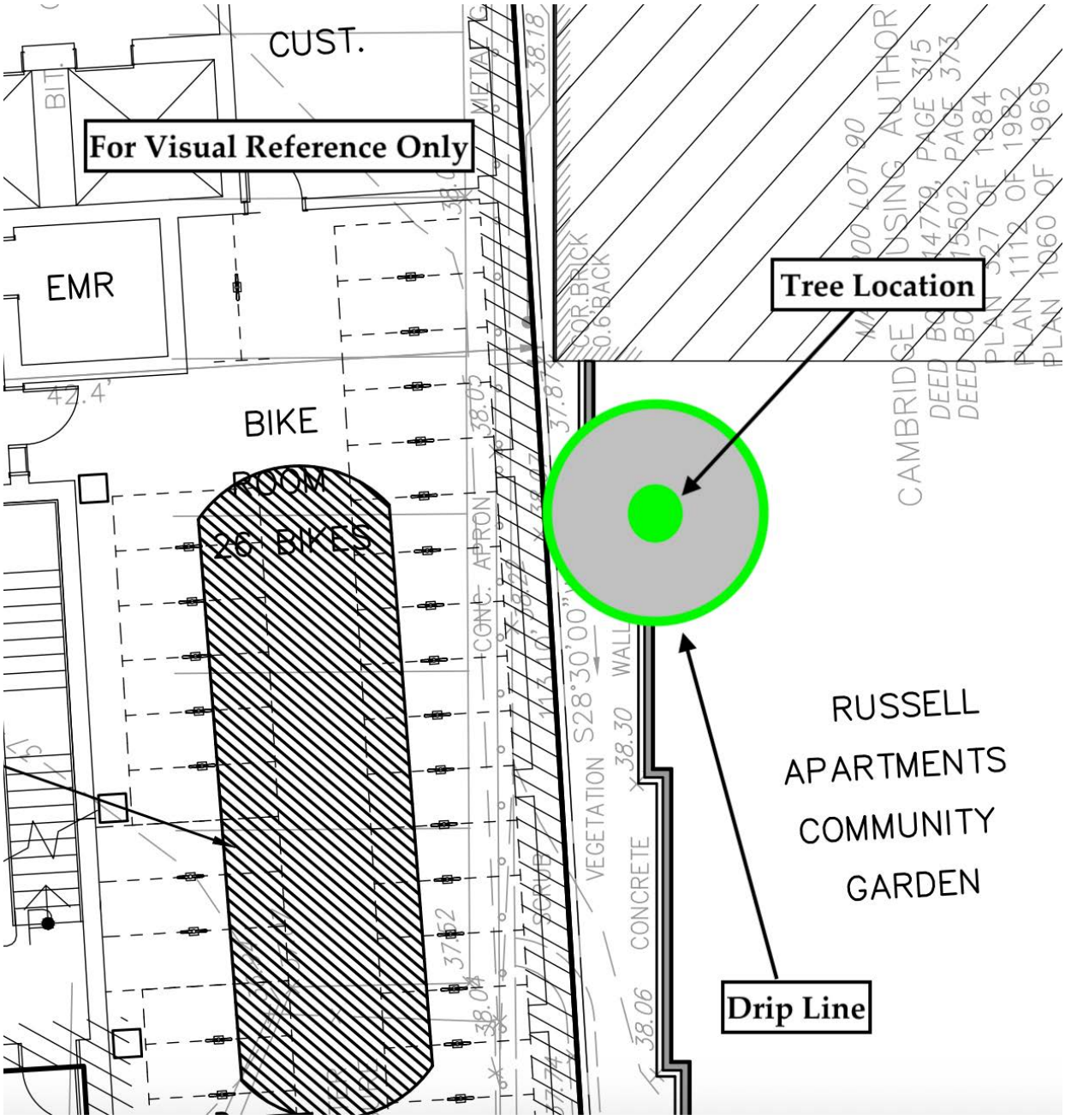
Appendix A – Site




For Visual Reference Only
Tree Location
Drip Line
CUST.
EMR
BIKE
ROOM
26 BIKES
RUSSELL
APARTMENTS
COMMUNITY
GARDEN
CONC. APRON
VEGETATION
CONCRETE
WALL
CAMBRIDGE

Appendix B – Photographs

Photograph of subject tree. Taken by client on June 24, 2025

Appendix C - Assumptions and Limiting Conditions

1. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations.
2. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant can neither guarantee nor be responsible for the accuracy of information provided by others.
3. The consultant shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.
4. Unless required by law, otherwise, possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant.
5. Unless required by law, neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant-particularly as to value conclusions, identity of the consultant, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant as stated in his qualifications.
6. This report expressed herein represent the opinion of the consultant, and the consultant's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.
7. Sketches, drawings, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys unless expressed otherwise. The reproduction of any information generated by architects, engineers, or other consultants on any sketches, drawings, or photographs is for the express purpose of coordination and ease of reference only. Inclusion of said information on any drawings or other documents does not constitute a representation by *Plant Healthcare Consultants, Inc.* as to the sufficiency or accuracy of said information.
8. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring unless otherwise specified. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

Appendix D - Certification of Performance

Plant Healthcare Consultants, Inc. certify that:

1. We have personally inspected the tree and property referred to in this report and have stated our findings accurately.
2. We have no current or prospective interest in the trees or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved.
3. The analysis, opinions and conclusions stated herein are our own and are based on current scientific procedures and facts.
4. Our analysis, opinions and conclusions were developed, and this report has been prepared according to commonly accepted arboricultural practices.
5. No one provided significant professional assistance to us, except as indicated within the report.
6. Our compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party or upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

We further certify that Plant Healthcare Consultants, Inc. is a member in good standing of the Massachusetts Arborist Association, American Society of Consulting Arborists, the International Society of Arboriculture and Massachusetts Tree Wardens and Foresters Association. We have been involved in the field of Arboriculture for over 30 years.

Daniel E. Cathcart

ASCA Registered Consulting Arborist® #766
ASCA Tree and Plant Appraisal Qualified
ISA Board Certified Master Arborist® #TX-1357BM
ISA Certified Urban Forest Professional
ISA Tree Risk Assessment Qualified
Massachusetts Certified Arborist #41801
Massachusetts Qualified Tree Warden #1097
Rhode Island Licensed Arborist #1307

DRAINAGE APPROACH

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MEMORANDUM

TO: CC HRE 2072 Mass Ave LLC

FROM: Michelle Callahan, PE, LEED AP

DATE: 07/14/2025

RE: 2072 Massachusetts Avenue Affordable Housing Project – Drainage Approach

This memorandum is being provided as a summary of the drainage approach for the affordable housing project located at 2072 Massachusetts Avenue in Cambridge. The site is at the corner of Walden Street and Massachusetts Avenue and currently houses a one-story brick building and a surrounding parking lot. The site is majority impervious and existing stormwater runoff sheet flows into closed drainage in the surrounding streets. The current site has no peak rate or water quality mitigation.

The proposed project involves the demolition of the existing site and construction of a new multi-story affordable housing building. The new building takes up a majority of the lot and has minimal surrounding site. The curbline on Walden Street will be adjusted to create three 10-ft travel lanes, and the sidewalk will be redone. Due to underground duct banks, trees or planting in the public right of way are not feasible; however, at grade planters are proposed which will provide some water quality and quantity benefits. Additionally, a green roof has been incorporated into the design. In addition to the added landscaping, the project will provide a new stormwater management system to meet the City of Cambridge Standards.

These stormwater standards require the design to use the 2070 projected rainfall events for Cambridge and require that the post-construction 2070 25-year storm event peak runoff rate from the site matches the existing 2070 2-year storm event peak runoff. (25-to-2 rate reduction). The peak runoff rates based on the existing cover are as follows:

2070 Storm Event	Rainfall (inches)	Runoff (cfs)
2-year	3.65	**0.68***
10-year	6.40	1.20
25-year	8.22	1.54
100-year	11.70	2.19

The proposed stormwater management system will reduce peak rates in the post-construction condition such that the peak rate in the 25-year 2070 storm will be equal to or less than 0.68 cfs. Because there is limited space on the site, the proposed stormwater management system will be located underneath the building footprint. This system will comprise of either an underground tank with a pump to dose flow leaving the storage area, or an underground pipe in stone system. Water quality requirements will be met by land conversion credits, water quality units, and/or infiltration where feasible. Overflow from the system will tie into existing drainage infrastructure in Walden Street.

COOL SCORE

City of Cambridge — Cool Score Sheet — 4/7/2025

Project Address	Special Permit Number	Total Lot Area (SF)
2072 Massachusetts Avenue	PB-XXX	8,515
Applicant Name	**Phone Number**	**Open Space Requirement (%)**
CC HRE 2072 Mass Ave LLC and CC HRE Mass Ave Tenant LLC	617-513-6320	20%
Applicant Contact / Address	**Email Address**	**Zoning District**
Jason Korb / 831 Beacon St #164, Newton Centre, MA 02459	jkorb@capstonecommunities.c	BA-2 / ResC-1
Project Description		**Result**
12 story affordable multifamily development		**Pass**

Enter minimum required open space ratio. If the ratio is less than 20%, enter 20 here.

When entering strategies that are within 20' of the street (including sidewalks), do

		Outside 20' of Street	Value Factor		Within 20' of Street	Value Factor	Contributing Area
Trees							
Enter the number of trees in each category. Count each tree only once on this form.	**Preserved Existing Trees**						
A1	Understory tree currently <10' canopy spread	0	0.80	+	0	1.60	-
A2	Understory tree currently >10' canopy spread	0	1.00	+	0	2.00	-
3	Canopy tree currently <15' canopy spread	0	0.80	+	0	1.60	-
4	Canopy tree currently between 15' and 25' canopy spread	0	1.00	+	0	2.00	-
5	Canopy tree currently >25' canopy spread	0	1.20	+	0	2.40	-
	New or Transplanted Trees						
6	Understory tree	5	0.60	+	2	1.20	810
7	Canopy tree	0	0.70	+	0	1.40	-
Planting Areas							
Enter area in square feet of each component in the box provided							
B1	Lawn Area	0	0.30	+	0	0.60	-
B2	Low Planting Area	0	0.40	+	130	0.80	104
B3	High Planting Area	395	0.50	+	433	1.00	631
Green Roofs & Facades							
For definitions, see reference document.							
C1	Green Façade	0	0.10	+	0	0.20	-
C2	Living Wall	0	0.30	+	0	0.60	-
C3	Green Roof Area	0	0.30	+	0	0.60	-
C4	Short Intensive Green Roof Area	0	0.50	+	0	1.00	-
C5	Intensive Green Roof Area	0	0.60	+	0	1.20	-
Paving & Structures							
D1	Low Slope Roof	0	N/A				
D2	High-SRI Paving	0	0.1				-
D3	Shaded Area	0	0.2	+	495	0.40	198

High-SRI Paving areas within 20' of a Street do not count towards the Cool Score

Project Summary			
Portion of lot area utilizing green strategies	18%	**Total Contributing Area**	**1,743**
Portion of score from green strategies	89%	**Total Area Goal**	**1,703**
Portion of score from trees	46%	**COOL FACTOR SCORE**	**1.02**
Portion of score contributing to public realm cooling	63%		

If your project scores 1 or above, you have successfully met the requirements of the Cool

UTILITY SURVEYS

Summary of Underground Utility Locating

Prepared For: Capstone Communities

Prepared By:
Sean Parker
Sean.Parker@gprsinc.com
Project Manager -Boston
617-372-6695

Capstone Communities
Attn: Jenny Tamarkin
Site: 2072 Massachusetts Ave
Cambridge, MA

We appreciate the opportunity to provide this report for our work completed on November 2, 2020.

PURPOSE

The purpose of the project was to search for underground utilities within the project boundaries provided by the client. The scope of work consisted of 1 sidewalk and 2 electrical manholes/vaults. The client was concerned with the depth of the primary electrical lines running up and down the sidewalk adjacent to the building.

EQUIPMENT

- **Underground Scanning GPR Antenna**. The antenna with frequencies ranging from 250 MHz-450 MHz is mounted in a stroller frame which rolls over the surface. The surface needs to be reasonably smooth and unobstructed in order to obtain readable scans. Obstructions such as curbs, landscaping, and vegetation will limit the feasibility of GPR. The data is displayed on a screen and marked in the field in real time. The total depth achieved can be as much as 8' or more with this antenna but can vary widely depending on the types of materials being scanned through. Some soil types such as clay may limit maximum depths to 3' or less. As depth increases, targets must be larger in order to be detected and non-metallic targets can be especially difficult to locate. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors. For more information, please visit: Link
- **Electromagnetic Pipe Locator**. The EM locator can passively detect the electromagnetic fields from live AC power or from radio signals travelling along some conductive utilities. It can also be used in conjunction with a transmitter to connect directly to accessible, metallic pipes or tracer wires. A current is sent through the pipe or tracer wire at a specific frequency and the resulting EM field can then be detected by the receiver. A utility's ability to be located depends on a variety of factors including access to the utility, conductivity, grounding, interference from other fields, and many others. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors. For more information, please visit: Link
- **GPS**. This handheld GPS unit offers accuracy down to 4 inches; however, the accuracy will depend on the satellite environment and obstructions and should not be considered to be survey-grade. Features can be collected as points, lines, or areas and then exported into Google Earth or overlaid on a CAD drawing. For more information, please visit: Link

PROCESS

The process typically begins with using the EM pipe locator to locate pipes or utilities throughout the scan area. First, the transmitter is used to connect to and trace any visible risers, tracer wires, or accessible, conductive utilities provided that there is an exposed, metallic surface. The areas are then swept with the receiver to detect live power or radio frequency signals. Locations and depths are painted or flagged on the surface. Depths cannot always be provided depending on the location method and can be prone to error.

Initial GPR scans were then collected in order to evaluate the data and calibrate the equipment. Based on these findings, a scanning strategy is formed, typically consisting of scanning the entire area in a grid with 5x5' scan spacing in order to locate any potential utilities that were not found with the pipe locator. The GPR data is viewed in real time and anomalies in the data are located and marked on the surface along with their depths using spray paint, pin flags, etc.

LIMITATIONS

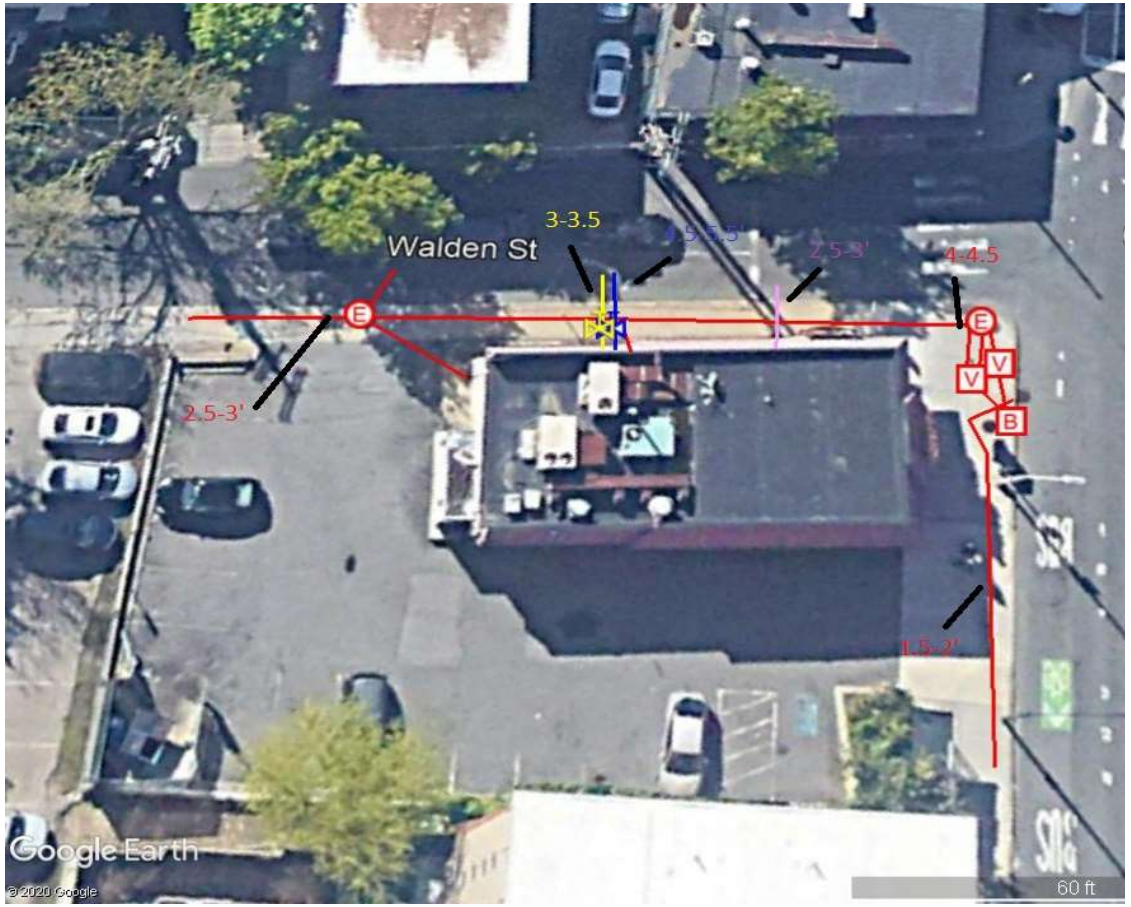
Please keep in mind that there are limitations to any subsurface investigation. The equipment may not achieve maximum effectiveness due to soil conditions, above ground obstructions, reinforced concrete, and a variety of other factors. No subsurface investigation or equipment can provide a complete image of what lies below. Our results should always be used in conjunction with as many methods as possible including consulting existing plans and drawings, exploratory excavation or potholing, visual inspection of above-ground features, and utilization of services such as One Call/811. Depths are dependent on the dielectric of the materials being scanned so depth accuracy can vary throughout a site. Relevant scan examples were saved and will be provided in this report.

FINDINGS

The subsurface conditions at the time of the scanning allowed for maximum GPR depth penetration of 4-5 feet in most areas. Multiple utilities were able to be located such as gas, water, unknown, signal controls and possible secondary lines feeding street lamps using either the GPR or EM pipe locator. Some utilities were not able to be located such as the sanitary line. GPR data did not allow for depth information and exploring manholes located on Walden St did not show any laterals, estimated depth entering the sanitary main would be 7-9 feet.

The primary electrical line was estimated at 3.5-4.5 feet for most of the investigation, one manhole it was measured at 2.5-3 feet from the surface, and after passing through the service utilities it measured 5 feet at the manhole on the corner or Walden and Mass Ave. GPR depths in the middle sections estimated at lines at 3.5-4.5 feet.

The following pages will provide further explanation of the findings.



BRUNER / COTT ARCHITECTS
225 Friend St., #701
Boston, MA 02114
617.492.8400
www.brunercott.com

Terms and Conditions

GPRS does not provide land survey or civil engineering data collection or documentation. This is provided as a reference map of the field markings and is not survey-grade.

LEGEND

	ELECTRIC		SANITARY
	WATER		STORM
	COMM		UNKNOWN
	GAS		

2072 Massachusetts Ave
Cambridge, MA

Prepared by:
GPRS

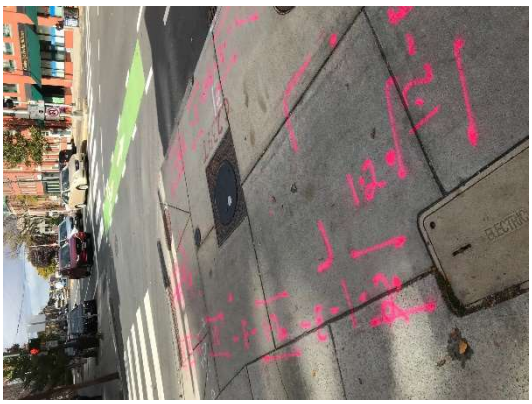
Secondary electrical line to the building exits at 1.5-2 feet and enters the building under the concrete ramp area.

Primary electrical line exits this manhole at 2.5-3 feet from the surface and travels up the sidewalk at a depth of 3.5-4.5 feet.

Water service 4.5-5.5 feet from the surface, valve located on the sidewalk, gas line 3-3.5 deep, valve located on the sidewalk. Electrical line 4-4.5 in this section.

Manhole located on the corner of Walden and Mass Ave, enters the vault at 5-5.5 feet with multiple lines running to adjacent handholes and vaults 2-3 feet from the surface and 1-2 feet.

Possible signal control or site lighting located 1-2 feet from the surface, extending in both directions down Mass Ave.



Electrical handhole located on the bottom right, potential signal or site lighting controls – electrical was being feed from a black transformer located on the sidewalk.

CLOSING

GPRS, Inc. has been in business since 2001, specializing in underground storage tank location, concrete scanning, utility locating, and shallow void detection for projects throughout the United States. I encourage you to visit our website (www.gprsinc.com) and contact any of the numerous references listed.

GPRS appreciates the opportunity to offer our services, and we look forward to continuing to work with you on future projects. Please feel free to contact us for additional information or with any questions you may have regarding this report.

Thank you,

Sean Parker
Project Manager —Boston

Direct: 617-372-6695

Sean Parker

www.gprsinc.com

JOB SUMMARY REPORT

Order Number:	Work Order #717710	**Job Date:**	Oct 18, 2024 11:45:00 AM
Customer:	70808 CAPSTONE COMMUNITIES LLC	**Billing Address:**	CAPSTONE COMMUNITIES LLC 1087 BEACON STREET SUITE 302 NEWTON MA 02459 United States

JOB DETAILS

Jobsite Location	2072 MASS AVE, CAMBRIDGE, Massachusetts, '02163
Work Order Number	Work Order #717710
Job Number	
PO Number	2072 Mass Ave
GPRS Project Manager:	Stephen Layon

Thank you for using GPRS on your project. We appreciate the opportunity to work with you. If you have questions regarding the results of this scanning, please contact the lead GPRS project manager on this project.

EQUIPMENT USED

The following equipment was used on this project:

- **Underground GPR Antenna:** This GPR Antenna uses frequencies ranging from 250 MHz to 450 MHz and is mounted in a stroller frame that rolls over the surface. Data is displayed on a screen and marked in the field in real time. The surface needs to be reasonably smooth and unobstructed to obtain readable scans. Obstructions such as curbs, landscaping, and vegetation will limit the efficacy of GPR. The total effective scan depth can be as much as 8’ or more with this antenna but can vary widely depending on the soil conditions and composition. Some soil types, such as clay, may limit maximum depths to 3’ or less. As depth increases, targets must be larger to be detected, and non-metallic targets can be challenging to locate. The depths provided should always be treated as estimates as their accuracy can be affected by multiple factors. For more information, please visit: Link
- **EM Pipe Locator:** Electromagnetic Pipe and Cable Locator. Detects electromagnetic fields. Used to actively trace conductive pipes and tracer wires, or passively detect power and radio signals traveling along conductive pipes and utilities. For more information, please visit: Link

JOB SUMMARY REPORT

WORK PERFORMED

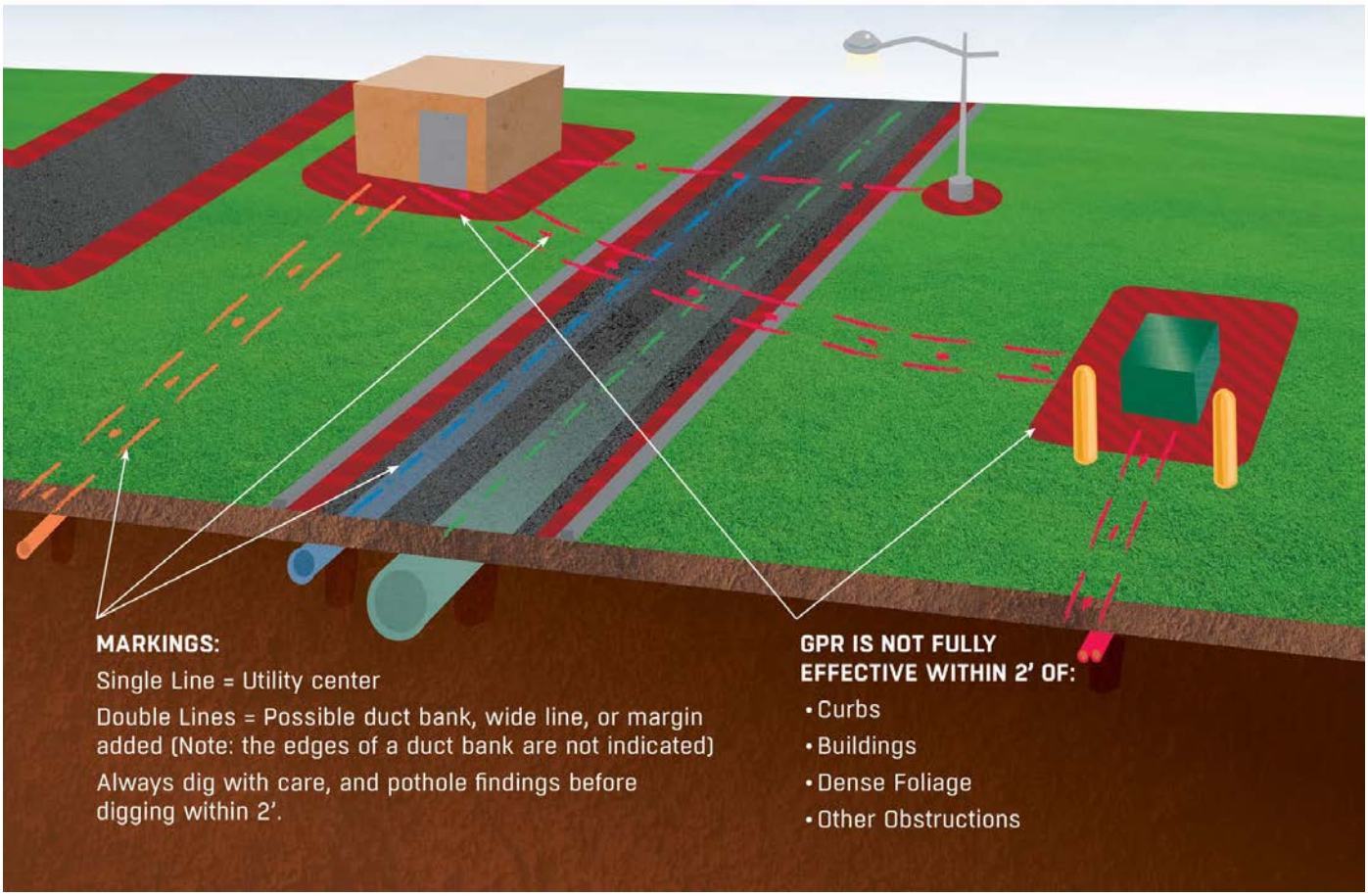
UNDERGROUND UTILITY	
Client Provided Drawings	Yes
Client completed 811 locate request	Yes
Scope of Work	GPRS is tasked with trying to measure the width of the dict bank in question. Client understands the limitations of the technology but elected to do it anyway.
Trenching / Linear Scan (ft)	100
Approximate GPR Effective Depth (ft)	4
Utilities Located	- Electric
Utilities NOT Located	- Communication - Natural Gas - Water - Storm Sewer - Sanitary Sewer
Details on Non-locatable Utilities	Not part of the requested scope.
Limitations Encountered	- Surface obstructions - Soil conditions not suitable for GPR at time of scanning
Obstructions Encountered	Curbing and side of the building.
Marking Medium	- Spray Paint
Results Notes	GPR penetration fluctuated, (0-1') along Mass ave and (3-4') along Walden St. - The duct bank along Walden street was able to be scanned and measured. However, we could not identify/locate the duct bank along Mass ave with GPR. Walden Street Duct; -Depth (4-5') -Width (~48") - We were able to take measurements in three areas along Walden street. We could not take accurate measurements on the part of the side walk that abuts the restaurant. Due to the limited space between the edge of the curb and side of the building.

JOB SUMMARY REPORT

SUPPLEMENTAL INFORMATION

COMMON UTILITY LOCATING LIMITATIONS

There are many limitations to locating utilities, due to a variety of factors, with several more common examples illustrated here.



JOB SUMMARY REPORT

JOBSITE IMAGES

Jobsite Photo #1

Jobsite Photo #2

JOB SUMMARY REPORT

Jobsite Photo #3

CONTACT / SIGNATURE INFORMATION

Contact Information

Contact Name	Jason Korb	**Email**	jkorb@capstonecommunities.com

TERMS & CONDITIONS

http://www.gprsinc.com/termsandconditions.html

CAMBRIDGE DAY ARTICLE + COMMENTS

Twelve-story affordable housing project moves toward 2027 construction in North Cambridge

By Gandharvika Gopal
Tuesday, July 1, 2025

A rendering of the housing project proposed for 2072 Massachusetts Ave. in North Cambridge.

An all-affordable apartment building is moving forward at 2072 Massachusetts Ave. under zoning changes made since its first version was withdrawn in August 2021 – then as high as nine stories with 49 homes, now 12 stories with 73 homes that would become available within four years.

The project awaits additional funding from the Cambridge Affordable Housing Trust and an official zoning certification from the city.

The proposal is at Massachusetts Avenue and Walden Street near Porter Square in North Cambridge, replacing the Darul Kabab restaurant and parking lot. The proposed building features a rooftop garden, bike parking and recreation spaces, some that may be open to nonresidents along with tenants. Developers plan to use low-carbon materials and all electric energy.

The development team of Capstone Communities, Hope Real Estate Enterprises and MPZ Development presented updated plans and addressed neighbors' concerns at a community meeting May 29, explaining that changes to the Affordable Housing Overlay zoning allow 100 percent affordable housing buildings to reach 12 stories along major Cambridge corridors.

"We're back here with a new design, a new concept, but the mission remains the same, which is to provide really high-quality affordable housing to folks that really need it," Jason Korb of Capstone Communities said at the meeting.

Height concerns

Some residents pushed back on the building's design and height as inappropriate for the area, as well as its lack of parking. Others applauded the project as a necessary addition to the community.

"This sounds like you're just trying to maximize your potential revenue with a 12-story building whose height is two and a half times the Russell Senior Center," one person said, referring to the structure next door at 2050 Massachusetts Ave. to call the proposed building "just very out of place."

Some speakers suggested a decrease in the number of apartments to between 30 and 45 units. Developers pushed back. "From an urban planning standpoint and urban design standpoint, based on all those facts and circumstances, it's appropriate," Korb said of the size of the project. He described the project as a directive from the city to increase affordable family housing.

Other neighbors noted the benefits of large development projects that bring more people to the area and encourage local commerce. "We are going to have a much more tall and variant kind of neighborhood," one said. "There'll be more vibrancy."

Mixed reviews on design

Developers introduced detailed design plans incorporating feedback from an earlier community meeting and the city's urban design staff. They are prioritizing large windows, wood materials, warm neutral colors and a contemporary aesthetic. "We're setting out to design an elegant, light and airy building that looks forward," said Jason Forney, lead architect for the project with Bruner/Cott Architects.

As is often heard in new-development meetings, neighbors are concerned with the modern look and size of the building. "Architecturally it's not attractive to me. I think that it doesn't fit in with the historic nature of Cambridge," said Pamela Winters, who formerly served on the Cambridge Planning Board. Others called the design "industrial" and "too geometric."

Developers said they are open to input on colors, textures and materials, though some at the meeting praised the proposed look – and the use of mass timber, a wood construction product created by laminating timber together to create larger beams and increase durability.

Parking and accessibility

In accordance with zoning policies, the developers are not required to provide parking. Because they are building in a transit-friendly location near Porter Square, developers estimate half of building residents will have cars, adding approximately 35 vehicles to the neighborhood. A traffic study found sufficient on-street parking within a quarter- to a half-mile radius of the site, the team said.

This raised another concern for neighbors: The Russell apartments next door, home to disabled and elderly residents who could be affected by limited parking and increased traffic.

Developers say they will widen Walden Street and move part of the sidewalk onto the 2072 Mass. Ave. property to help ease traffic impacts. The building's main entrance has been moved to Massachusetts Avenue from Walden Street, a change inspired by feedback from earlier community meetings.

"I just wanted to thank you for being responsive, and to say that I think this is going to be really great for Porter Square," said the resident who initially proposed the idea. "I'm excited about the project."

Affordable housing

The current development plans meet the minimum state guidelines for housing for families in the "extremely low income" tier, determined as earning 30 percent of the median income for the area. This includes an income range of $39,000 for two household members and up to $53,000 for a family of five. (Overall, 71 percent of the project's units have two or three bedrooms meant to be useful for families.)

Twelve of the 73 units at 2072 Massachusetts Ave. will be for families in that bracket. "We would really like to make a concerted effort to add many more," Korb said.

The property would be managed by Peabody Properties, which provides resident services such as home care visits and wellness programs. "We have had residents that have struggled, and we don't want that, we want them to succeed," Korb said.

Process and timeline

Though the project is designed to be built "as of right" – permitted under existing zoning regulations – developers say it awaits an official city approval as meeting affordable housing guidelines. The team also anticipates a hearing with the Cambridge Affordable Housing Trust for an addition of approximately $14 million. The total project is estimated at $70 million, primarily sourced through public funding from a federal loan and through the Low-Income Housing Tax Credit.

The development team plans to submit applications "detailing specific parts of the project and compiling information" to the Community Development Department and Affordable Housing Trust by the end of July, Hope said Monday.

Since the May meeting, developers met with Russell apartment residents and the Porter Square Neighborhood Association to continue outreach. They answered further questions about the corner where it meets the Russell building, which has

raised concerns about accessibility for the senior residents. They also addressed worries over the construction process and talked about “ways we could increase communication and what things might be able to support them during that time,” Hope said in a phone call.

Construction would begin in mid-2027 at the earliest, and residents could move in around mid-2029. Hope said the team is in contact with neighbors but does not plan on further community meetings as the development continues. The Community Development Department meeting to certify the development will be open to public comment.

Previous story

Height at 2072 Mass. Ave. project again rejected by zoning board; project to return in September

May 21, 2021

Development, North Cambridge, affordable housing, business, housing, zoning

15 Comments

1.

cwec on Tuesday, July 1, 2025 at 4:07 pm

This is great news! Too bad it’s taken this long to come this far, but still a good step forward

2.

bahmutov on Tuesday, July 1, 2025 at 4:25 pm

Congratulations to the development company and 73 families that will be able to live in the new apartments. Great and much needed addition to our Cambridge housing stock.

3.

CambResident on Tuesday, July 1, 2025 at 5:59 pm

Fantastic news. This is the type of development our city should focus on: high density, major corridors, near public transportation, affordability-

focused... Never made sense to me why we have wasted so much time on trying to torch the neighborhoods... Fingers crossed this gets done!

4.

AvgJoe on Tuesday, July 1, 2025 at 6:43 pm

This is a vital project that directly addresses Cambridge's acute affordable housing crisis, adding 73 affordable homes—including 12 deeply affordable units—to a severely undersupplied market.

Opposition based on vague claims about "neighborhood character" or being "out of place" is subjective and can be used to block any project.

Parking complaints are similarly misplaced. People need homes more than free public land to store private vehicles. The site's proximity to Porter Square supports a car-light lifestyle and aligns with city policy for transit-rich corridors. Subsidizing parking would only encourage more driving, traffic, and pollution.

This is a necessary and thoughtful step toward addressing Cambridge's housing needs, climate goals, and equity commitments. Delaying or downsizing it would mean fewer families housed and a missed opportunity for sustainable, inclusive development.

5.

cportus on Tuesday, July 1, 2025 at 10:07 pm

Does anyone know why it would take another 2 years to start construction? That seems so long

6.

concerned43 on Wednesday, July 2, 2025 at 10:17 am

Because of the cost of housing, Cambridge firefighters can't afford to live here. Why doesn't the city subsidize their rent and the rent of those who also work for the city?

We need the economic middle class families to remain (and come back) to Cambridge, if we are going to continue to have a diverse city.

The city should be willing to use it’s funds for these people.

7.

concerned43 on Wednesday, July 2, 2025 at 1:42 pm

its, not tis or it’s :)

8.

Poor Bono Publico on Thursday, July 3, 2025 at 2:42 pm

Poor Bono Publicoon Wednesday, July 2, 2025 at 2:19 am
Your comment is awaiting moderation.

[???]

As is often the case, the renderings for this project underestimate the true impact of this 12-story building in terms of height and scale. There are no images whatsoever showing the impact of a large “wall” immediately adjacent to the Russell Apartments Garden, which will overwhelm this otherwise lovely amenity for those living in the *already existing* affordable housing next door. Must we destroy existing affordable housing in Cambridge for an oversized project only 12 of whose units are for lower income residents, and 30 percent of whose “qualified applicants” will not even have to either “live or work” (currently) in Cambridge? Some asked if units in a building of this size could truly be considered appropriate for actual “families.” Smaller unit sizes would make much better sense here. “Pack’em and stack’em” is neither good design nor good planning.

9.

L-in-WeHa on Thursday, July 3, 2025 at 3:12 pm

This is amazing. I’m so glad housing projects can finally move forward in Cambridge.

Progress at last!

10.

Frank on Saturday, July 5, 2025 at 1:45 pm

Great to see zoning reform working and Cambridge building the affordable housing we so badly need.

So much for the fearmongering that reform would lead to a wave of McMansions—nothing but hyperbolic nonsense.

And now we're supposed to believe a "wall" will somehow "destroy" the affordable housing next door? This kind of histrionics only weakens NIMBY arguments. Families shouldn't have homes because a wall might shade a garden?

Don't dismiss the project because it includes "only" 12 affordable units. That's 12 families who will finally have a place they can afford. And market-rate housing helps too—by boosting supply, it puts downward pressure on prices.

It is great to see progress and to see zoning reform working as planned, and not as opponents predicted.

11.

maggieb on Monday, July 7, 2025 at 9:52 am

FYI. Cambridge has no vouchers to give out for this project. The Developers will have to rely on the state for any "deeply affordable " vouchers. All levels of affordable housing are needed for our city but I wouldn't be so quick to think folks on CHA housing lists will be able to get in. There is a minimum income requirement unless vouchers come through.

12.

Hockey Puck on Monday, July 7, 2025 at 10:16 am

First, let's see if the numbers actually work, and the developers can get a construction loan. With higher interest rates and construction costs, they'll need to prove financial viability. I'm rooting for them, but it's not a sure thing.

Second, the project will need support from the Affordable Housing Trust, on below-market terms. At the end of the day, this project–and others like it–will need a significant amount of public-sector financial support to be

viable, even with more favorable zoning terms. The public debate has tended to focus on zoning, but financial support is equally important.

13.

concerned43 on Monday, July 7, 2025 at 12:16 pm

@ Hockey Puck

What is the public-sector financial support that you are referring to ?

14.

Hockey Puck on Monday, July 7, 2025 at 7:02 pm

Fair question. I was referring to the Affordable Housing Trust. My understanding (subject to correction) is that it is administered by the City.

15.

pete on Thursday, July 10, 2025 at 10:53 pm

the white grid emphasizes the big glass windows. I don’t know about you, but I have lived in an apt that reminds me of a hotel with very little privacy. And I don’t want to see actual living spaces and activities from the sidewalk. Glass is not the great think people think it is.