

325 Binney Street

Application for Special Permit

Appendix: Tree Study

Applicant: Alexandria Real Estate Equities, Inc.
400 Technology Square, Suite 101
Cambridge, MA 02139

Date: October 2, 2020



2 October 2020

Mr. David Lefcourt
City Arborist
City of Cambridge
Department of Public Works
Hampshire Street
Cambridge, MA 02140
dlefcourt@cambridgema.gov

Re: **325 Binney - Tree Study Rev 1**
Cambridge, Massachusetts

Dear David:

Per your recent discussion with Terry Tolosko (Bristol Engineering), we are submitting an updated Tree Survey for the 325 Binney project to reflect the inadvertent removal of existing trees in August 2020. We greatly regret that the landscaper hired to perform maintenance at the site exceeded the scope of authorized work. Despite this misstep, we strongly believe that the end product will be a far better solution. As you know, the inadvertently removed trees were primarily 'pioneer/volunteer' species which were growing in poor locations along buildings and entwined in fencing. (We also discovered another Pin Oak that was hiding behind some of the other trees that is visible now that things are clearer.)

Please note, this updated submission not only replaces those lost trees but also maintains the same quantity (slightly greater) of new tree DBH as the special permit above and beyond the replacement of removed trees. Essentially, the same amount of DBH with a far superior selection of species and placement.

As required, this memorandum and attached documentation comprise the Tree Study which we are submitting to you as City of Cambridge Arborist for your review.

Please find attached the following:

- a. Original Tree Condition Assessment from Bartlett Tree Expert, certified arborist with redlines illustrating the trees removed in August 2020.

- b. Updated Tree Condition Assessment from Bartlett Tree Expert, certified arborist – October 2020
- c. Original Existing Conditions Tree Removal and Protection Plan
- d. Updated Existing Conditions Tree Removal and Protection Plan October 2020 (noting the removed trees)
- e. Updated Overall Proposed Tree Plan

The Assessment(s) identifies the existing trees on site, the size of each tree, and the condition of each tree.

The Existing Conditions Tree Removal and Protection Plan(s) identifies each existing tree ; each number corresponds to the chart in the Tree Condition Assessment; trees to be removed, trees to be protected; and location of protective measures.

The Overall Proposed Tree Plan identifies both proposed trees and existing trees to remain including calculations regarding DBH.

In summary the UPDATED project consists of the following:

1. Existing Trees:

There are 21 existing trees on site- (17 of which are Significant trees). DBH of all existing trees totals 222" DBH and DBH of only the Significant trees totals 195" DBH.

2. Tree Removal:

13 of the 21 existing trees within the Limit of Work were removed and of the removals there are only 11 trees of significance (over 8" DBH) for a total of 132" DBH of Significant Tree Removal.

3. Proposed Trees:

We are proposing 120 new trees on the Project Site:

- a. 53 deciduous canopy trees at 3.5" DBH = 185.5" DBH
- b. 28 trees at 1.5" DBH ornamental flowering trees = 42" DBH
- c. 47 evergreen trees at 2.5" DBH = 117.5"DBH

Total of 345" DBH of new trees.

We are also proposing 13 new trees at 3 ½" DBH on the streetscape, however these are not included in the tree calculations on the Project Site.

Therefore, the net total DBH on the Project Site for new trees proposed less existing Significant Trees being removed = 213" DBH (This is in addition to the existing 63" DBH of Significant Trees to Remain).

We therefore submit that the project is in full compliance with the City of Cambridge Tree Protection Ordinance and the purposes expressed in Section 8.66.020 of the City Ordinances. Pursuant to Section 8.66.050, we ask that you refer the Tree Study with your certification and approval to the Planning Board as submitted.

Sincerely,

Halvorson Tighe & Bond Studio

A handwritten signature in black ink, consisting of a large, stylized initial 'R' followed by the name 'ADAMS.' in a smaller, more legible script.

Robert Adams
Principal



325 Binney St, Cambridge: Tree Review

Halvorson
 Tighe & Bond Studio
 25 Kingston St- 5th Floor
 Boston, MA 02111

Andrew Balon
 Bartlett Tree Experts
 50 Bear Hill Rd
 Waltham, MA 02451

RE: 325 Binney St, Cambridge- Tree Review

On October 1 2020, the Bartlett Tree Experts reevaluated the overall viability of existing trees throughout 325 Binney, St. Trees were evaluated and information collected included: overall condition (see below), estimated DBH, genus and species. The service was conducted to assist the Client (and/or Owner) with its tree care needs. This service did not include a tree risk assessment. As such, no trees were assessed for risk in accordance with industry standards, nor were there any tree risk ratings or risk mitigation recommendations provided with the below report.

Condition Definitions:

- 1) Good: Tree Health and condition are acceptable.
- 2) Fair: Parts of the canopy display undesirable leaf color, inappropriate leaf size, and inadequate new growth.
- 3) Poor: Most of the canopy displays dieback and undesirable leaf color, inappropriate leaf size or inadequate new growth.
- 4) Dead:

Genus	Species	Common Name	DBH	Condition	General Location
Ailanthus	altissima	Tree of Heaven	18'' (multi-stem)	Fair	North Fence line
Ailanthus	altissima	Tree of Heaven	6''	Fair	North Fence line
Robinia	pseudoacacia	Black locust	13''	Fair	North Fence line
Pyrus	Calleryana	Flowering Pear	Multi-Stem: 8'', 6''	Fair	North Fence Line
Quercus	Palustris	Pin oak	8''	Fair	North Fence Line
Quercus	palustris	Pin Oak	8''	Fair	West Side by Fence line
Populus	Deltoides	Cottonwood	Multi-Stem, 8'', 3'', 3''	Fair	West Side By Fence Line
Quercus	Palustris	Pin Oak	7''	Fair	West Side By Fence line
Ulmus	Americana	American Elm	Multi-stem (7'',7'')	Dead	West Side by Fence Line

325 Binney St, Cambridge: Tree Review



North Section of Site



Oak and Cottonwood located by the West of site by fenc line



325 Binney St, Cambridge: Tree Review

Recommended Tree Protection:

Note: Tree protection can be limited to protective fencing around the critical root system if no construction activities are anticipated to be within 20' of trees. If limits of work encroach upon the root system with the critical root zone, a certified arborist should be contacted. Remedial recommendations to be provided onsite.

- Tree Fencing should be placed at 1' per DBH. (I.e. 8" Tree to have 8' of protective fencing)

A site visit can be scheduled at any point to review trees on site.

Thank you,

Andrew Balon
Bartlett Tree Experts
50 Bear Hill Rd, Waltham MA 02451
Commerical Arborist-New England
E: Abalon@bartlett.com
C: 401.617.1480
ISA Certified Arborist- NE-7015
Tree Risk Assesment Qualified



325 Binney St, Cambridge: Tree Review

Halvorson
 Tighe & Bond Studio
 25 Kingston St- 5th Floor
 Boston, MA 02111

Andrew Balon
 Bartlett Tree Experts
 50 Bear Hill Rd
 Waltham, MA 02451

RE: 325 Binney St, Cambridge- Tree Review

On June 8th 2020, the Bartlett Tree Experts evaluated the overall viability of existing trees throughout 325 Binney, St. Trees were evaluated and information collected included: overall condition (see below), estimated DBH, genus and species. The service was conducted to assist the Client (and/or Owner) with its tree care needs. This service did not include a tree risk assessment. As such, no trees were assessed for risk in accordance with industry standards, nor were there any tree risk ratings or risk mitigation recommendations provided with the below report.

Condition Definitions:

- 1) Good: Tree Health and condition are acceptable.
- 2) Fair: Parts of the canopy display undesirable leaf color, inappropriate leaf size, and inadequate new growth.
- 3) Poor: Most of the canopy displays dieback and undesirable leaf color, inappropriate leaf size or inadequate new growth.
- 4) Dead:

Genus	Species	Common Name	DBH	Condition	General Location
Ailanthus	altissima	Tree of Heaven	8"	Fair	North Fence line
Ailanthus	altissima	Tree of Heaven	6"	Fair	North Fence line
Ailanthus	altissima	Tree of Heaven	8"	Fair	North Fence line
Ailanthus	altissima	Tree of Heaven	7"	Fair	North Fence line
Ulmus	americana	American Elm	8"	Fair	North Fence line
Robinia	pseudoacacia	Black locust	13"	Fair	North Fence line
Robinia	pseudoacacia	Black Locust	14"	Fair	North Fence Line
Ailianthus	Altissima	Tree of Heaven	14"	Fair	North Fence Line

325 Binney St, Cambridge: Tree Review

Pyrus	Calleryana	Flowering Pear	Multi-Stem: 8", 6"	Fair	North Fence Line
Robinia	pseudoacacia	Black Locust	10"	Fair	North Fence Line
Robinia	pseudoacacia	Black Locust	10"	Fair	North Fence Line
Robinia	pseudoacacia	Black Locust	9"	Fair	North Fence Line
Robinia	pseudoacacia	Black Locust	17"	Fair	North Fence Line
Robinia	pseudoacacia	Black Locust	7"	Fair	North Fence Line
Populus	Deltoides	Cottonwood	13"	Good	East Along Building
Quercus	palustris	Pin Oak	8"	Fair	West Side by Fence line
Populus	Deltoides	Cottonwood	Multi-Stem, 8", 3", 3"	Fair	West Side By Fence Line
Quercus	Palustris	Pin Oak	7"	Fair	West Side By Fence line
Ailanthus	Altissima	Tree of Heaven	17"	Fair	East Corner By Utility Building
Acer	plananoides	Norway Maple	12"	Fair	East Corner By Utility Building



North Section of Site

325 Binney St, Cambridge: Tree Review



Cottonwood Located at the east side of site along building

325 Binney St, Cambridge: Tree Review



Oak and Cottonwood located by the West of site by fenc line

325 Binney St, Cambridge: Tree Review



Norway maple and Tree of Heaven by Utility building

325 Binney St, Cambridge: Tree Review

Recommended Tree Protection:

Note: Tree protection can be limited to protective fencing around the critical root system if no construction activities are anticipated to be within 20' of trees. If limits of work encroach upon the critical root zone, a certified arborist should be contacted. Remedial recommendations to be provided onsite.

- Tree Fencing should be placed at 1' per DBH. (I.e. 8" Tree to have 8' of protective fencing)

A site visit can be scheduled at any point to review trees on site.

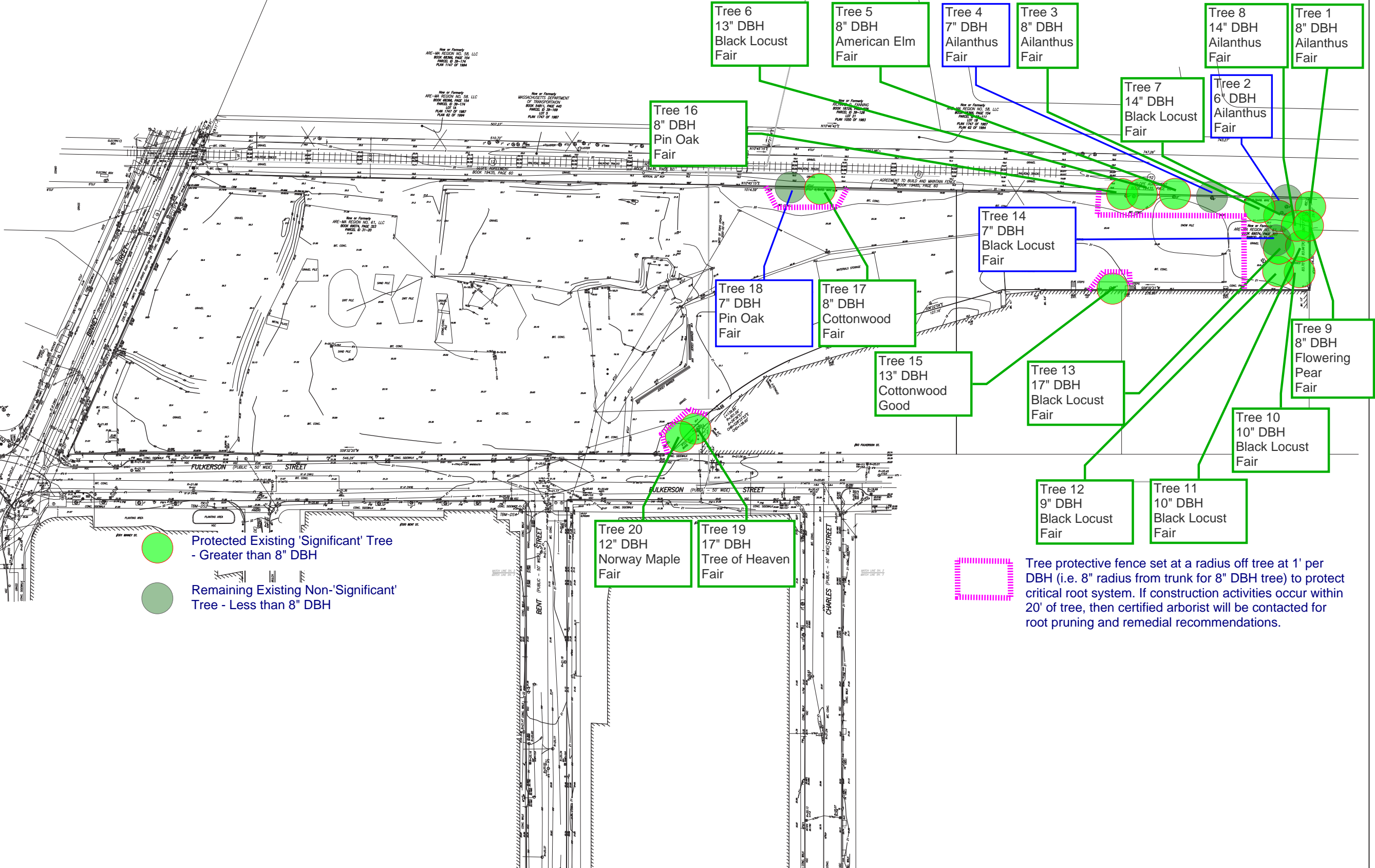
Thank you,

Andrew Balon
Bartlett Tree Experts
50 Bear Hill Rd, Waltham MA 02451
Commerical Arborist-New England
E: Abalon@bartlett.com
C: 401.617.1480
ISA Certified Arborist- NE-7015
Tree Risk Assesment Qualified

Tree Removal and Protection Plan - Special Permit

July 2020

- NOTES:
- 1) BENCH MARK INFORMATION:
 TEMPORARY BENCH MARKS SET:
 TM-001: 1" CHAIN ON SOUTHWEST CORNER BELT ON LIGHT POLE AT INTERSECTION CORNER OF BINNEY STREET AND FULKERSON STREET, AS SHOWN ON SHEET 1.
 TM-002: 1" CHAIN ON SOUTHWEST CORNER BELT ON LIGHT POLE AT INTERSECTION CORNER OF BINNEY STREET AND FULKERSON STREET, AS SHOWN ON SHEET 1.
 TM-003: 1" CHAIN SET 1" UP ON THE INSIDE FACE OF A UTILITY POLE ON THE EAST SIDE OF FULKERSON STREET APPROXIMATELY 110' NORTH OF BINNEY STREET, AS SHOWN ON SHEET 1.
 TM-004: TOP OF THE NORTHEAST CORNER OF THE CONCRETE TRANSFORMER AND LOCATED ALONG THE FRONT OF THE BUILDING BETWEEN THE OVERHEAD CABLES AS SHOWN ON SHEET 1.
 TM-005: TOP OUTSIDE CORNER OF VERTICAL CURB AT THE BACK OF SIDEWALK ON THE SOUTHWEST SIDE OF BINNEY STREET AT THE INTERSECTION OF FULKERSON STREET, AS SHOWN ON SHEET 1.
 ELEVATIONS REFER TO CAMBRIDGE CITY BASE.
 - 2) CONFORM WITH THE CITY OF CAMBRIDGE TREE PROTECTION BY-LAW (ARTICLE 12) OF THE CAMBRIDGE CITY CHARTER.
 - 3) BY SHOWN PLANTING ONLY THE PLANTS SHOWN HEREIN ARE WITHIN A ZONE "A" (UNIMPAVED AREA OUTSIDE OF THE CURB) AND SHALL BE PLANTED WITHIN THE ZONE "A" AREA. THE PLANTING SHALL BE PLANTED WITHIN THE ZONE "A" AREA. THE PLANTING SHALL BE PLANTED WITHIN THE ZONE "A" AREA. THE PLANTING SHALL BE PLANTED WITHIN THE ZONE "A" AREA.
 - 4) UTILITY INFORMATION SHOWN IS BASED ON A FIELD SURVEY AND PLANS OF RECORD. THE LOCATION OF UTILITIES SHOWN ARE APPROXIMATE AND SHOULD BE VERIFIED BY THE USER. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF UTILITIES. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF UTILITIES. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF UTILITIES.
 - 5) THIS DOCUMENT IS AN INSTRUMENT OF SERVICE OF FULCRUM LAND SURVEYORS ISSUED TO OUR CLIENT FOR PURPOSES RELATED DIRECTLY AND SOLELY TO THE PROJECT. ANY USE OR REUSE OF THIS DOCUMENT FOR ANY REASON BY ANY PARTY FOR PURPOSES UNRELATED DIRECTLY AND SOLELY TO THE PROJECT SHALL BE AT THE USER'S OWN RISK AND LIABILITY, INCLUDING LIABILITY FOR VIOLATION OF ANY APPLICABLE LAWS, RULES, ORDINANCES OR REGULATIONS.

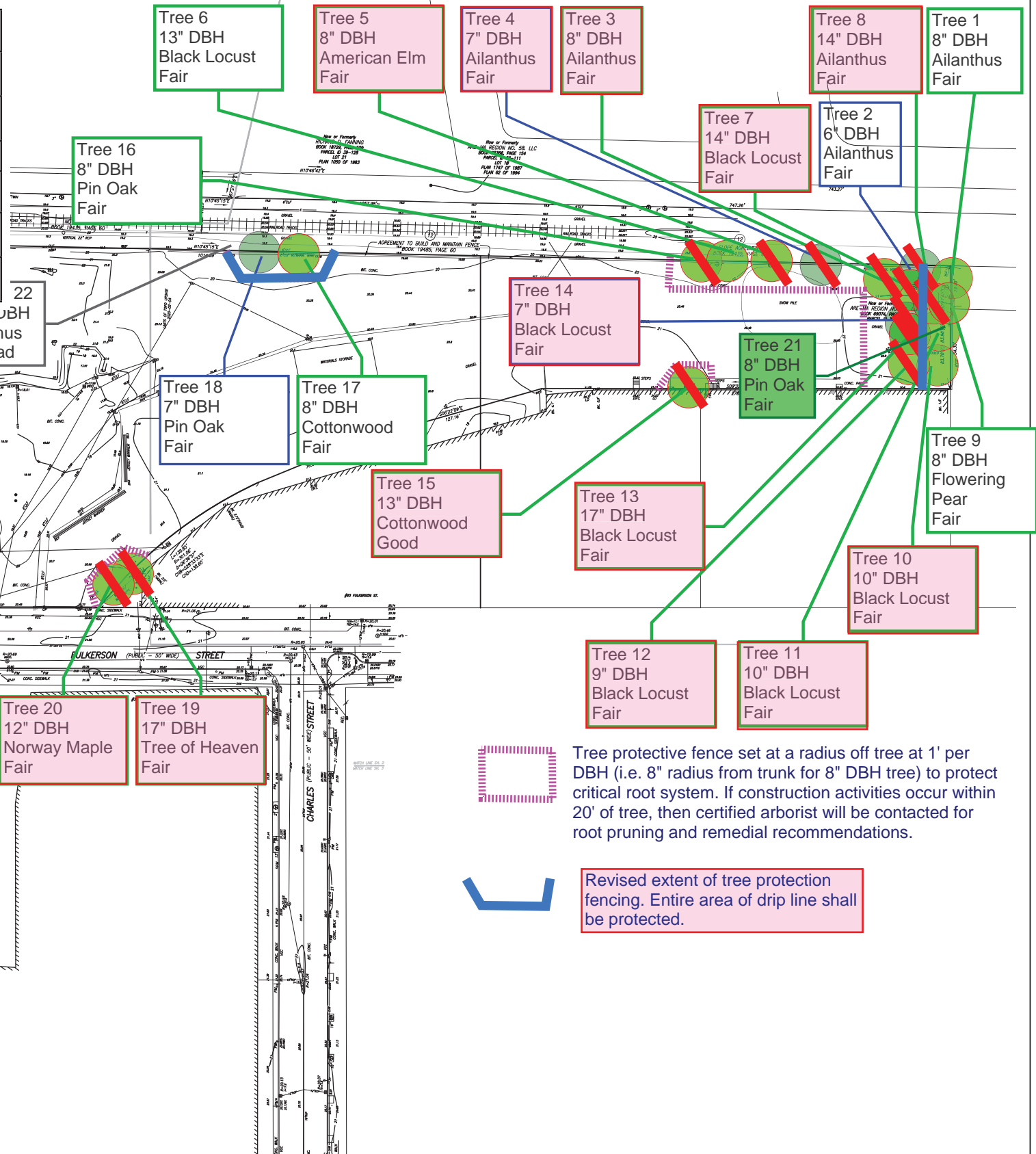


- Protected Existing 'Significant' Tree - Greater than 8" DBH
- Remaining Existing Non-'Significant' Tree - Less than 8" DBH

Tree protective fence set at a radius off tree at 1' per DBH (i.e. 8" radius from trunk for 8" DBH tree) to protect critical root system. If construction activities occur within 20' of tree, then certified arborist will be contacted for root pruning and remedial recommendations.




Updated Tree Removal and Protection Plan - October 1, 2020


Description	Trees (# of Trees)	Trees (DBH)
Non-significant Trees existing	4	27"
Non-significant Trees removed 8/2020	2	(14")
Significant Trees existing	17	195"
Significant Trees removed 8/2020	11	(132")
Significant Tree remaining	6	63"




NOTES:

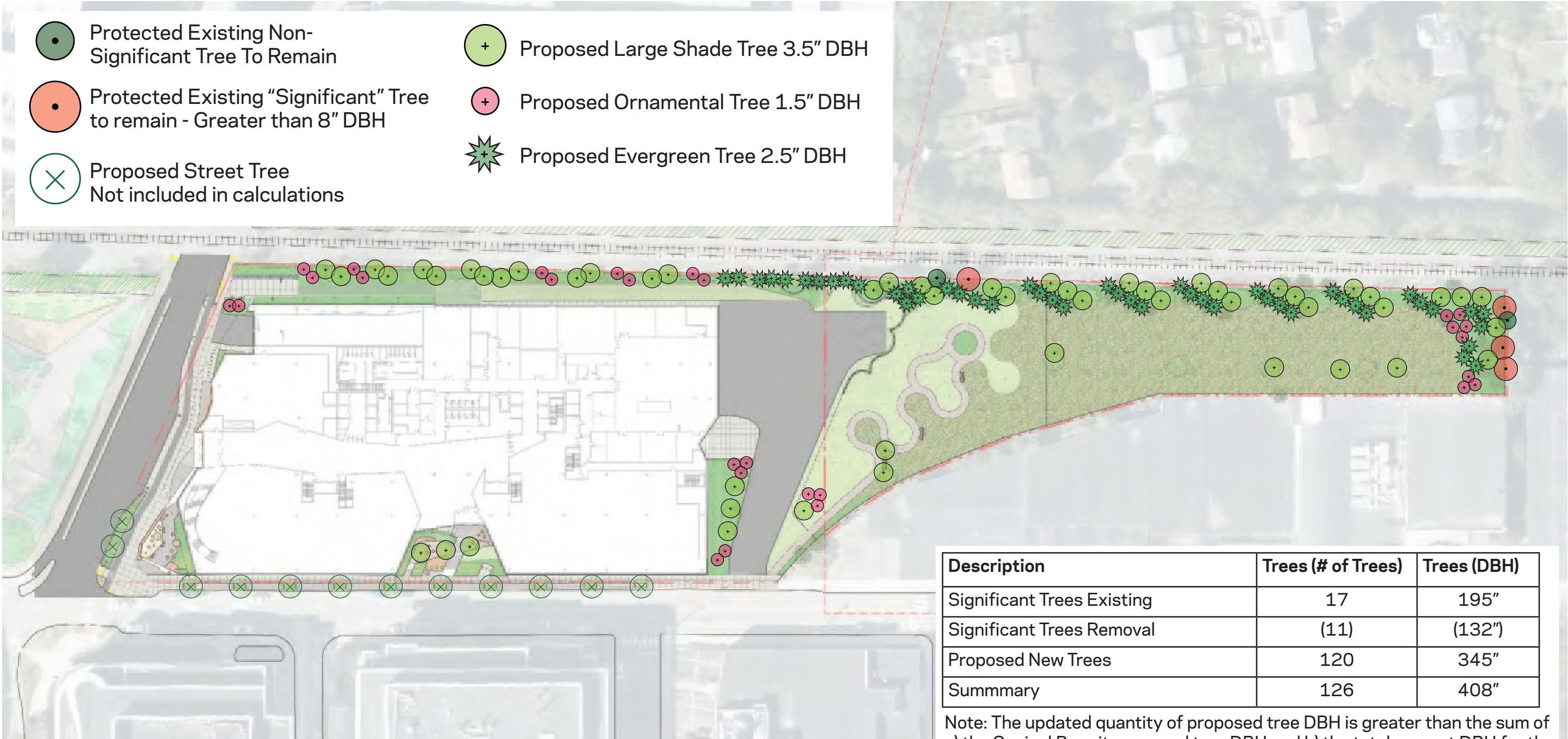
- 1) BENCH MARK INFORMATION:
 TEMPORARY BENCH MARK SET:
 TM-001: 1" PIN ON SOUTHWEST CORNER BOLT ON LIGHT POLE AT EASTWEST CORNER OF THE INTERSECTION OF BINNEY STREET AND FULKERSON STREET AS SHOWN ON SHEET 1.
 TM-002: PLAT SPINE SET 1" UP ON THE BACKFACE OF A UTILITY POLE ON THE EAST SIDE OF FULKERSON STREET APPROXIMATELY 170' NORTH OF BINNEY STREET AS SHOWN ON SHEET 1.
 TM-003: TOP OF THE NORTHEAST CORNER OF THE CONCRETE TRANSFORMER PAD LOCATED ALONG THE FRONT OF THE BUILDING BETWEEN THE DEWEARD STORIES AS SHOWN ON SHEET 1.
 TM-004: TOP OUTSIDE CORNER OF VERTICAL CURVE AT THE BACK OF SIGNAGE ON THE SOUTHWESTERN SIDE OF BINNEY STREET AT THE INTERSECTION OF FULKERSON STREET AS SHOWN ON SHEET 1.
 ELEVATIONS REFER TO CAMBRIDGE CITY GRID.
- 2) CONTROL POINTS: POINTS ONE (1) TO FIVE (5).
 BY GRAPHIC PLATTING ONLY THE POINTS SHOWN HEREIN ARE WITHIN A ZONE "X" (UNZONED) AN AREA OUTSIDE OF THE U.S. ANNUAL CHANCE FLOOD AS SHOWN ON THE FLOODING EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) FOR WINDSOR COUNTY, MASSACHUSETTS, MAP NUMBER 250700202E, CITY OF CAMBRIDGE COMMUNITY NUMBER 250700, PARCEL NUMBER 0025, HAVING AN EFFECTIVE DATE OF JUNE 4, 2010.
- 3) UTILITY INFORMATION SHOWN IS BASED ON BOTH A FIELD SURVEY AND PLANS OF RECORD. THE LOCATION OF UNIDENTIFIED PIPES AND CONDUITS HAS BEEN DETERMINED FROM THE AVAILABLE RECORDS. PLANS AND RECORDS SHOULD BE CONSULTED FOR THE LOCATION OF UNIDENTIFIED PIPES AND CONDUITS. SINCE SURFACE UTILITIES CANNOT BE EXACTLY LOCATED, THE PLANNING ENGINEER HAS ASSUMED THE LOCATION OF UNIDENTIFIED UTILITIES SHOULD BE DETERMINED IN THE FIELD. CALL 811 TO LOCATE UTILITIES. CALL 311 FOR PUBLIC WORKS INFORMATION.
- 4) THIS DOCUMENT IS AN INSTRUMENT OF SERVICE OF FULFILLING LAND SURVEYORS ISSUED TO OUR CLIENT FOR PURPOSES RELATED DIRECTLY AND SOLELY TO THE LAND SURVEYING SCOPE OF SERVICES UNDER CONTRACT TO OUR CLIENT FOR THIS PROJECT. ANY USE OR REUSE OF THIS DOCUMENT FOR ANY REASON BY ANY PARTY FOR PURPOSES UNRELATED DIRECTLY AND SOLELY TO OUR CONTRACT SHALL BE AT THE USER'S RISK AND EXCLUDES LIABILITY, INCLUDING LIABILITY FOR VIOLATION OF CONTRACT LAWS, WHICH WOULD CONSTITUTE A BREACH OF FULFILLING LAND SURVEYORS.

-  Protected Existing 'Significant' Tree - Greater than 8" DBH
-  Remaining Existing Non-'Significant' Tree - Less than 8" DBH
-  Existing trees removed on August 2020

 Tree protective fence set at a radius off tree at 1' per DBH (i.e. 8" radius from trunk for 8" DBH tree) to protect critical root system. If construction activities occur within 20' of tree, then certified arborist will be contacted for root pruning and remedial recommendations.

 Revised extent of tree protection fencing. Entire area of drip line shall be protected.

Updated Proposed Tree Plan - October 1, 2020



Description	Trees (# of Trees)	Trees (DBH)
Significant Trees Existing	17	195"
Significant Trees Removal	(11)	(132")
Proposed New Trees	120	345"
Summary	126	408"

Note: The updated quantity of proposed tree DBH is greater than the sum of a) the Speical Permit proposed tree DBH and b) the total amount DBH for the trees removed in August 2020.

