Natural Path Urban Forestry Consultants

Providing customized forest management for urban and rural communities

January 26, 2018

Mr. Daniel C. Hill
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Cambridge, MA 02141

Subject: Review of Proposed Tree Protection Plan – Babcock Place Development

The following narrative is a review of a Babcock Place Tree Protection Plan Landscape Plan Assessment dated January 16, 2018 and submitted by Howard Gaffin. As a preliminary matter, I am pleased to see that based on the Developer's current proposed plans, the setbacks allow for the potential of proper tree protection for many of the trees of which the abutters were initially concerned. There are however, some remaining issues which must be addressed, as I have outlined below.

1. Number of Trees – Mr. Gaffin incorrectly identifies the number of trees on abutting properties that can potentially be affected by the proposed development. He identifies five, but fails to address all of the trees highlighted by the abutters, one of which remains at a particular high risk of damage from construction activities. Specifically, Tree 9931 has a RPZ of 42 feet, and is located just 1.5 feet off the property line. Also of concern is Tree 9908 which has a RPZ of 36 feet and is located 12.6 feet from the property line. Based on the current site plans, I have revised Table 1 from my prior reports (below) to include only the trees for which I have the greatest outstanding concerns. I have also included a column providing the distance of each tree to the property line.

   It is necessary that the Town, the Developer and abutting property owners are aware of the full range of trees that could potentially be damaged from the proposed project. Harm to trees can originate from direct and indirect causes and may only become visually apparent long after construction has been completed. Physical damage to roots, but additionally, changes in soil hydrology, soil composition, and compaction can affect trees near the construction area.

   As such, while my primary focus thus far has been on trees whose root protection zones will be directly impacted by construction, several of the trees I identified in my original report, located near the property line, are still at risk of significant damage. This potential exists not necessarily from physical damage to the tree's roots but from potential changes in soil moisture, texture and chemical composition due to construction activities, as discussed above. Therefore, any tree protection specifications must address these concerns.

2. Species Tolerance to Construction – The numerous references available on tree species tolerances typically assign either one of three tolerances (poor, moderate and good) or a range between two tolerances. It is very much a subjective assignment. Mr. Gaffin provides tolerance ranges for each species represented, but preferences the higher tolerances in all of his

calculations. If preservation is the goal, a conservative assignment of tolerances is necessary due to the highly subjective nature of the tolerance assignment and the numerous variables that can affect tree survivability.

3. Tree Protection Zone – As noted in my initial report, references vary on the size of the tree protection zone. I chose the mid range TPZ (also known as Root Protection Zone, as I refer to it in my prior reports), that is a distance of 1.5 feet per diameter inch. Mr. Gaffin chose the minimal TPZ for his calculations.

4. Root Excavation – As was also noted in my initial report, a tree's current form and condition are a function of its adaption to the site in which it has always existed. Mr. Gaffin observed that in areas 2 and 3 (as designated by Mr. Gaffin) there are only "a few large roots that would likely extend into the asphalt" downplaying the need to take measures to protect these trees ("following industry guidelines will be more than sufficient."). However, the minimal amount of roots identified in the excavation holes actually underscores the importance of protecting these roots. This observation suggests that a more expansive TPZ is needed rather than the bare minimum that Mr. Gaffin suggests, and likely greater than the mid-range estimate I relied upon. Further, it should be noted that Mr. Gaffin failed to perform any excavation in the vicinity of Tree 9931, the 28" tree with a RPZ that extends well into the footprint of the building.

TABLE 1

Number	Tag #	Species	Diam*	Distance to Property line**	RPZ***
1	9907	Maple, Silver	22"	9.2'	33'
2	9908	Elm, American	24"	12.6'	36'
7	9913	Maple, Norway	18"	9.6'	27'
9	9915	Maple, Norway	12"	0.9'	18'
15	9921	Oak, Red	16"	2.2'	24'
25	9931	Maple, Red	28"	1.5	42'

* The diameter of each tree was measured in inches at Diameter Breast Height (DBH), a standard measuring height of 4.5 feet. Recent nursery stock was measured at the caliper height of six-inches above the ground.

** As tree trunks are not symmetrical, the distances to property line are +/- 0.2 feet.

*** The dimension provided for the Root Protection Zone (RPZ) of each tree is a radius in feet of a circle equal to 1.5 feet times the diameter of the tree. A minimum of three feet was assigned to the smallest trees.

NOTES

-- SURVEY BASED ON LAND COURT PLAN #9620a, SEPT 1994. THE CURRENT SURVEY BY THIS FIRM WAS CONDUCTED IN AUGUST & NOVEMBER 2017 FOR THE PURPOSE OF LOCATING CERTAIN EXISTING FEATURES IN THE REAR OF #117 - 123 STEDMAN ST.

-- TREE NUMBERS SHOWN ARE FROM TAGGING BY "NATURAL PATH URBAN FORESTRY CONSULTANTS" (SEE REPORT BY SAME DATED 11/20/17); SIMILARLY, RPZ RADIUSES ARE FROM SAID REPORT.

PATRICK C. GARNER CO., INC.

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