

Appendix K

Arborist Report on Copper Beech Tree



November 14, 2013

Ann Cutignola  
Tim Miller Associates, Inc.  
10 North Street  
Cold Spring, NY 10516

**Re: Tree assessment and protection plan for a copper beech located on the Butterfield Redevelopment site in Cold Spring, NY**

Dear Ms. Cutignola:

On October 31, 2013, I met you at the former Butterfield Hospital site at the corner of Paulding Avenue and Route 9D in the Village of Cold Spring, NY. A company is planning to build three residential houses, three senior housing buildings, as well as office/retail space on this site. There is one historic tree located at the site that will be impacted by the construction of some these buildings. I was retained to: perform an ANSI A300 Level 2 visual risk and health assessment of the tree, review the current site plans, and create a protection plan to preserve the tree, if possible, during construction.

I made the following observations during the site visit :

Tree 1: 53" diameter at breast height (dbh, diameter 4.5' above grade) European copper beech (*Fagus sylvatica* 'Atropunicea')

This tree is located in the vicinity of residential lot 2, senior housing building 5, and the resident community center on the site plan. I measured the distance from the base of the tree to corner of senior building 5 at 27.5 feet; to the corner of Lot 2 at 46 feet; and to senior building 6 at 61 feet. It is approximately 60' tall and is in good biological health. However, there is evidence of decay along the trunk and root zone (see Photos 1 through 4 at the end of this letter). There was one large limb in the canopy with dead, peeling bark (photo 5).

In addition to the damage to the tree parts above ground, root systems are most often impacted during construction activities. The vast majority of any tree's root system is located in the top 6-12 inches of soil, which means that any construction activity can have a major impact. Excessive grade change, soil compaction, and direct damage to roots during excavation will change air, water, and nutrient availability for trees. Tree roots require both air and water, in the proper proportions, to function properly. Many tree functions depend on a healthy root system. Damage to tree root systems is very difficult to remediate and every attempt should be made to protect them from damage before construction begins.

A tree protection zone (TPZ) should be established to reduce access to the critical root zone (CRZ) of trees that will remain after construction. The TPZ should be fenced using materials that are not easily damaged or removed. Frequent inspections should also occur to ensure that the TPZ is in place and that construction activity is not occurring in this protected area. Applications of root biostimulants and tree growth regulators can help to prepare trees for the stresses they will encounter during construction and aid in recovery from root damage by promoting increased root growth. Root pruning should occur before excavation will take place within the critical root zone. This will prevent random root damage that can cause tree mortality long after the damage occurs.



Based on my assessment of the tree and my review of the current site plan, I recommend the following actions be taken:

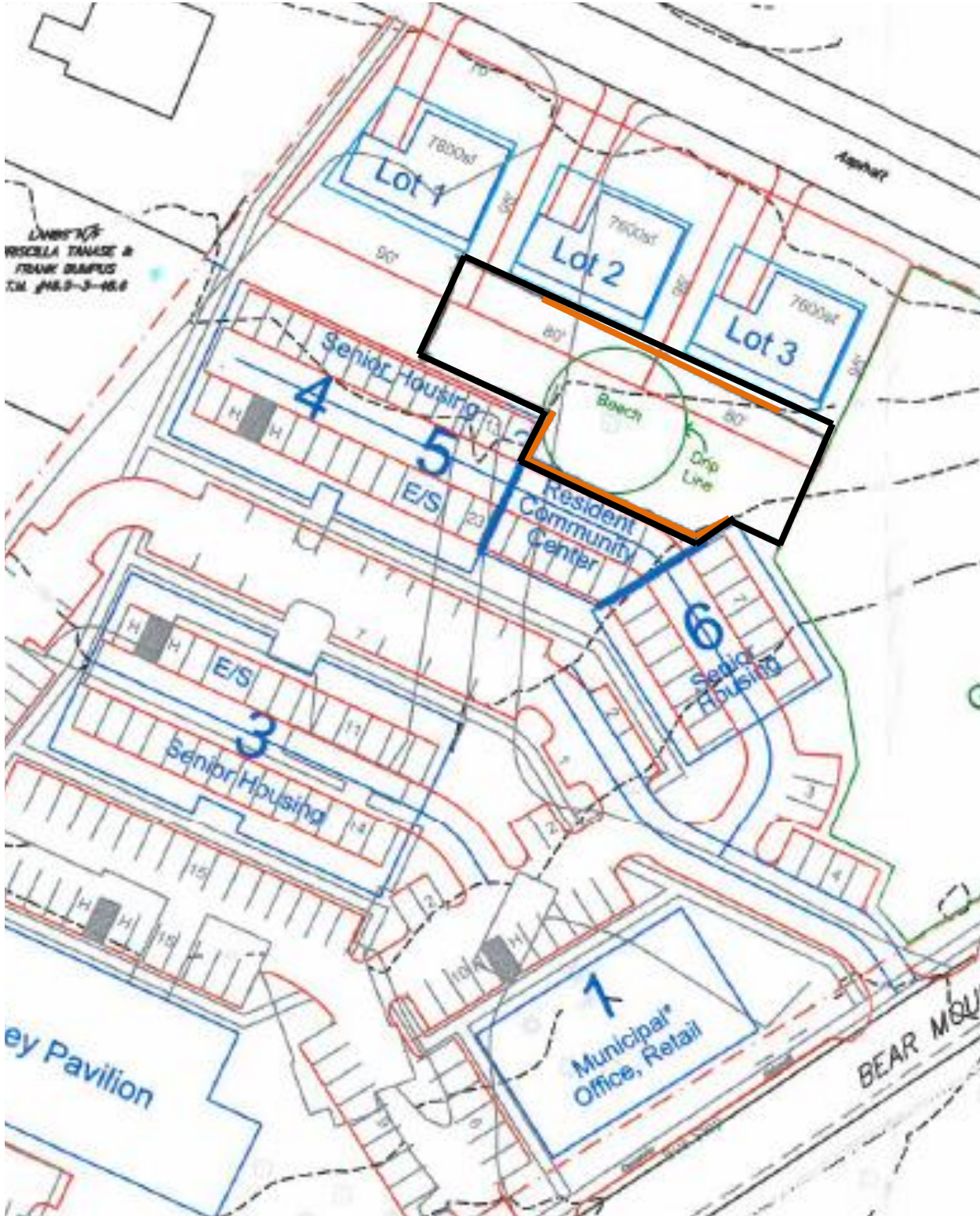
- 1- Prior to any excavation, the limit of disturbance (LOD) adjacent to the tree should be excavated with an AirSpade®. Roots greater than 1" in diameter should be pruned by hand at the LOD by an ISA Certified Arborist. I included a marked up site plan at the end of this letter that shows the approximate locations in need of air excavation and root pruning.
  - a. The Arborist must assess whether the number and size of roots to be removed will impact the structural stability of the tree. This is a concern due to the size of the tree and its proximity to the LOD. The side of most concern is the western, where the proposed corner of building 5 is 27.5 feet from the base of the tree. In order to excavate for this corner, the LOD will be 5-10 feet closer to the tree than the building corner. Effort should be made to shift this building in order to allow for protection of more of the CRZ in this area.
- 2- A tree protection zone (TPZ) shall be established and enforced to prevent soil compaction, grade change, and root damage. I recommend 6' tall chain link fence be used to outline the TPZ. The approximate outline for the proposed TPZ is shown on the marked up site plan at the end of this letter.
- 3- Ongoing (every-other-month) monitoring of the tree protection implementation and tree condition and health by a qualified arborist throughout construction activity should occur. Recommendations for supplemental fertilization or biostimulant application, supplemental irrigation, additional pruning, etc. may be made at this time.
- 4- After root pruning is performed (assuming tree is retained onsite), the following treatments should be made as soon as feasible:
  - a. Apply plant growth regulator (with the active ingredient Paclobutrazol). This product will reduce top end growth which results in the tree utilizing increased energy for root growth and maintenance of its existing canopy.
    - i. This application cannot be made when the ground is frozen. Therefore, if root pruning and construction begins in the winter, this application should be made in early Spring after ground thaw.
  - b. Install a 2-4" layer of organic mulch over as much of the root zone as practical. This will help to retain moisture, maintain soil temperatures, and reduce/alleviate soil compaction.
- 5- The following pruning must occur prior to opening the site to the public:
  - a. Crown clean all deadwood 1" and greater for safety, including large limb shown in Photo 5.

If you have any questions, comments, or concerns, please feel free to contact me directly.

Sincerely,

Matt Weibel  
Registered Consulting Arborist #534  
ISA Certified Arborist #NJ-1065A  
ISA Tree Risk Assessment Qualified  
SavATree Consulting Group  
550 Bedford Road  
Bedford Hills, NY 10507

**Site Plan**



Edited site plan showing the areas that will require air excavation and root pruning (orange lines) and entire tree protection zone that extends 79.5 feet to the west and east of the tree (black outline).



**Photo 1**



**Photo 2**



**Photo 3**



Taken 10/31/13, these photos show decay in two structural roots and the trunk of the tree. Sounding these areas with a mallet did not indicate significant internal decay. These defects are located on the western side of the tree.



**Photo 4**



Area of external decay located approximately 6' from the base of the tree on the south side of the tree.

**Photo 5**



This photo shows the large, declining limb with peeling bark. This limb should be pruned out before the site is open to pedestrians.