



# Albion Playground Work Plan

## Somerville, MA

April 2021

Prepared for:

City of Somerville, MA  
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Somerville, MA 02143

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# Purpose

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In an effort to promote the health of existing trees within Albion Playground, all trees and soils within the park were assessed and the following maintenance recommendations are provided.

## Key Recommendations

- Nine Trees recommended for pruning
- Mulching recommended for 42 trees
- Soil Amendments recommended for four trees
- Root Pruning recommended for one tree

## Pruning

All pruning activities shall adhere to the following specifications:

1. All pruning work will conform to the latest revision of the American National Standards Institute (ANSI): Standard A300, developed by the Tree Care Industry Association.
2. Tree pruning work may include any or all of the following:
  - a. **Young Tree Training:** pruning of young trees to correct or eliminate wrack, interfering, or objectionable branches to improve structure. These trees can be up to 20 feet tall and can be worked with a pole pruner by a person standing on the ground.
  - b. **Crown Cleaning:** selective removal of dead, dying, damaged, diseased, and broken branches from the tree crown. Shall include removal of all deadwood >2" diameter.
  - c. **Canopy Thinning:** selective removal of live branches to provide light or air penetration through the tree or to lighten the weight of the remaining branches.
  - d. **Clearance Pruning:** The heading back or removal of specific limbs to provide clearance from buildings, wires, lights, etc.
  - e. **Crown Raising:** selective removal of lower branches from a tree crown to provide clearance. Trees impeding vehicle or pedestrian traffic should be raised up at least 13 feet over streets and 8 feet over sidewalks. Tree obstructing control devices should be trimmed for adequate visibility.
  - f. **Structural Pruning:** pruning to develop strong tree structure. This includes maintaining a dominant leader by reducing the length or removing any competing leaders, suppressing growth on branches with bark inclusions, ensuring appropriate spacing of main branches along a dominant trunk, and keeping all branches less than one-half the trunk diameter.
  - g. **Aesthetic pruning:** selective removal of downward growing limbs, limbs growing backwards toward the trunk, and other limbs that are making the tree unsightly.
  - h. **Pruning of crossing or rubbing limbs.**
  - i. **Utility Pruning:** Pruning of limbs growing into power lines. This type of pruning requires assistance from a utility company.
3. All pruning cuts shall be made as close as possible to the trunk or parent limb, without cutting into the branch collar or leaving a protruding stub. Bark at the edge of all pruning cuts should remain firmly attached. Sharp tools shall be used so that clean cuts will be made at all times.

4. All branches too large to support with one hand shall be precut to avoid splitting or tearing of the bark. Where necessary, ropes or other equipment should be used to lower branches or stubs to the ground.
5. Treatment of cuts and wounds with wound dressing or paints is prohibited.
6. Equipment that will damage the bark and cambium layer shall NOT be used on or in the trees. For example, the use of climbing spurs (hooks or irons) is not an acceptable work practice for pruning operations on live trees.
7. All cut limbs shall be removed from the crown upon completion of the pruning. Clean-up of branches, logs, or any other debris resulting from any tree pruning shall be promptly and properly accomplished.
8. The work area shall be kept safe at all times until the clean-up operation is completed. Under no condition shall the accumulation of brush, branches, logs, or other debris be allowed upon a public property in such a manner as to result in public hazard.

The following trees are recommended for Structural Pruning:

#40700 and #40761 - 8" red maple and 9" red maple. Both trees are in Fair condition. These trees have developed codominant leaders. The leader least likely to take over apical dominance should be subordinated.



#40700



#40761



#40712, #40760, #40691 - 5", 10", 8" red maples, respectively. These trees are in fair condition. They are in danger of developing codominant leaders. However the leaders are still small enough that one can be reduced in order to encourage a strong single leader growth habit.



#40712



#40760



#40691

The following trees are recommended for Structural Pruning and Clearance Pruning:

#40756 - 8" red maple - Fair condition. This tree requires structural pruning to encourage a strong single leader growth habit. Additionally some of the limbs are growing into the adjacent pergola and should be reduced.



The following trees are recommended for Clearance Pruning:

#40662 - 4" ginkgo biloba - Good condition. Some branches are starting to block the lamppost next to the tree and should be trimmed back.





#40762 - 6" ginkgo biloba - Good condition. Some branches are starting to block the lamppost next to the tree and should be trimmed back.



#40687 - 6" red maple - Good condition. Branches are growing into the fence and should be trimmed back.



#40718, #40655, #40659, #40664, #40665, #40674, #40680 - 4", 3", 4", 4", 4", 3", 4" European hornbeam, respectively - Good condition. Branches are growing into the fence and should be trimmed back. Vines should also be removed where present (particularly in #40680).



#40692 - 17" honeylocust - Fair condition. Some branches are growing close to telecommunication wires and should be trimmed back.





The following trees are recommended for Crown Reduction:

#40717 - 5" red maple - Fair condition. Tree is growing up into the white pine located on the neighboring property. Proper crown reduction could help this tree form a growing habit suitable for its location.



The following trees are recommended for Crown Cleaning:

#40699 - 4" honeylocust - Fair condition.

#40661 - 17" honeylocust - Fair condition. One limb is growing into the canopy of the cherry next to it and should be pruned back.

#40667 - 17" honeylocust - Fair condition.

The following trees are recommended for Pruning of Crossing/Rubbing Branches:

#40723 - 5" red maple. Fair condition.



The following trees are recommended for Utility Pruning:

#40685, #40677, #40673 - 11", 12", 12" honeylocust, respectively. Fair condition. Limbs from these trees are growing into overhead utility lines and need to be pruned back.



The following trees are recommended for Aesthetic Pruning:

#40701 - 6" red maple. Good condition

#40656 - 6" cherry spp. Good condition

#40666 - 7" cherry spp. Good condition

#40765 - 5" ginkgo biloba. Good condition

The following trees are recommended for Young Tree Training:

#40763 - 3" ginkgo biloba. Good condition

#40709 - 3" Japanese lilac. Good condition. Tree stakes should be removed.

#40672 - 4" cherry spp. Good condition. Tree stakes should be removed.



## Root Pruning

Root pruning shall adhere to the following specifications:

1. Pruning of girdling or circling roots that have the potential to become girdling may be considered. Only roots less than two (<2) inches in diameter should be cut. Cutting larger roots is only possible after explicit approval from the City Urban Forester.
2. The removal of any girdling root will be completed in a manner that will minimize injury to the trunk cambium located beneath the root.
  - a. First, soil will be excavated from around the girdling root, uncovering the entire length to be removed. Using a chisel or saw, roots will be cut at a point 6"-12" out from the trunk. The final cut will be made where the root attaches to the trunk. This prevents the root from being pulled violently away from the embedded area, causing extensive cambium injury if the root happens to be under tension. It is important to note that occasionally it is best to leave the girdled root where it is after it has been cut as the trunk cambium would be damaged severely by gouging out the deeply embedded roots. Roots will be detached and removed if they are not embedded very deeply or roots will be allowed to decay away over time.
3. All root pruning will be completed with sharp, clean tools.
4. Structural roots will NEVER be pruned.

#40667 - 17" honeylocust. Fair condition. This tree is recommended for root pruning. Several small roots have the potential to eventually girdle this tree.

## Mulching

Mulching is recommended for all trees in Albion Playground. Mulch shall be applied according to the following procedures:

1. Mulch shall be applied to trees for moisture retention in soil abatement of dust and weeds, and for nutrient enrichment of the soil.
2. Mulched area shall be six feet in diameter around the trunk of the tree unless otherwise specified by the City Urban Forester. A three inch layer of mulch (after settlement) will be applied around the tree, tapering towards the trunk. Mulch shall NOT come in contact with the trunk of the plant or the root flare. No mulch shall be placed within 2 to 3 inches of the trunk. "Volcano" mulching is strictly prohibited.
3. Mulch shall be high quality, premium course-grade bark mulch, 15 mm minimum length, consisting of clean organic plant material. Mulch shall conform to the following:
  - a. Must be uniform, natural wood color, without dyes, which shall not exhibit a noticeable degree of color change characteristic when wet.
  - b. Must not have an unpleasant odor.
  - c. Must be free of dirt, insects, disease, and extraneous debris that would be harmful to the trees being planted.
  - d. pH: between 4.0 and 8.0
  - e. Particle size: 100% passing through a 50 mm (2 inch) screen
  - f. Soluble salt content: less than 4.0 mmhos/cm

## **Soil Recommendations**

Three soil samples were taken at Albion Playground. One was taken in the planting beds. One was taken in the tree pits. One was taken along the North and West fence area. The following recommendations are given:

1. The soil pH of the planting bed sample was determined to be 6.1 and is considered outside of the desirable range (too acidic). Soil aeration and the incorporation of dolomitic lime is recommended for the planting beds within Albion Playground. This will help correct soil pH by adding magnesium. Phosphorus and Nitrogen levels were in the Medium range and the addition of Arbor Green Pro fertilizer is recommended to maintain optimum levels of soil nutrients. The texture of the tree pit sample was determined to be sandy loam.
2. The soil pH of the tree pit sample was determined to be 6.0 and is considered outside of the desirable range (too acidic). Soil aeration and the incorporation of dolomitic lime is recommended for the tree pits within Albion Playground. This will help correct soil pH by adding magnesium. Phosphorus and Nitrogen levels were in the Medium range and the addition of Arbor Green Pro fertilizer is recommended to maintain optimum levels of soil nutrients. The texture of the tree pit sample was determined to be sandy loam.
3. The soil pH of the fence line sample was determined to be 5.8 and is considered outside of the desirable range (too acidic). Soil aeration and the incorporation of dolomitic lime is recommended along the North and West fence line within Albion Playground. This will help correct soil pH by adding magnesium. Phosphorus and Nitrogen levels were in the Medium range and the addition of Arbor Green Pro fertilizer is recommended to maintain optimum levels of soil nutrients. The texture of the tree pit sample was determined to be sandy clay loam.

## **Additional Skilled Arborist Work**

#40687 - 6" red maple - Good condition. Gardeners have been complaining that roots from this tree are interfering with garden plots. These roots will be excavated and if feeder roots can be pruned without detriment to the health of the tree, they will be pruned. A plastic root barrier will be installed in order to prevent roots from disturbing garden plots in the future.

## **Park Closure, Traffic Management, and Sequence of Events**

Work will likely take two to three days and will require the park to be closed during operations. Police detail will not be required for this work. However, pedestrian/bicycle traffic and parking will need to be restricted in front of the park during operations.

Tree pruning will take place first, followed by cabling operations. Once the tree work is complete, compacted soil will be aerated, root pruning will take place, and soil amendments and fertilizer will be incorporated to the soil. Finally, mulch will be added to all trees.



## Crew and Equipment

Access to the park will be via Albion St. Work crew will consist of 3 individuals and will require the following heavy equipment:

- Bucket Truck
- Chipper

All wood material removed from trees will be chipped on site and removed. All effort will be made to protect city and playground infrastructure. All playground equipment will be protected with plywood and moving blankets to prevent damage.

## Maintenance Schedule

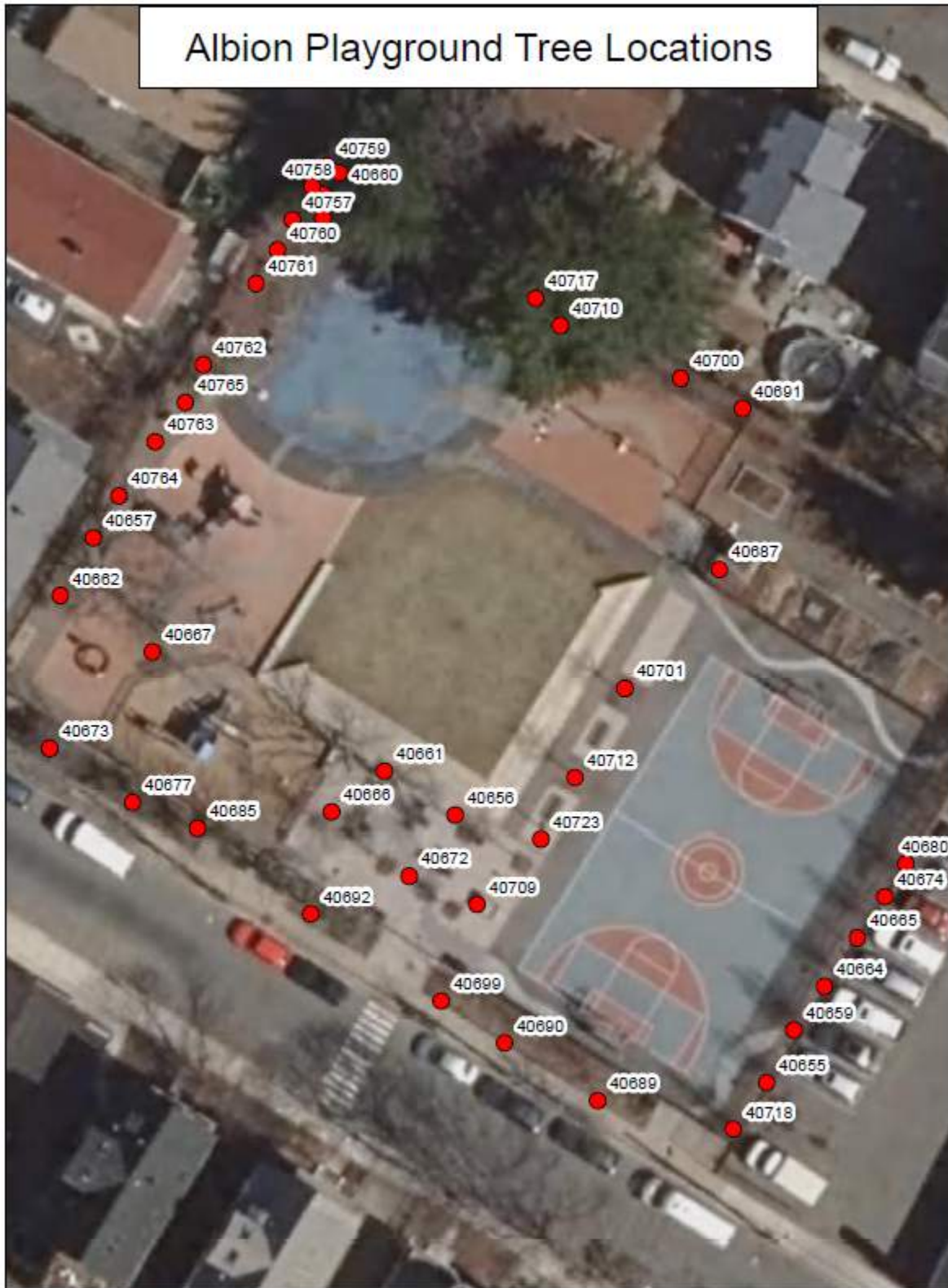
Tree Number	Species	DBH	Maintenance Recommendation	Priority
40685	honeylocust	11	Utility Pruning	High
40677	honeylocust	12	Utility Pruning	High
40673	honeylocust	12	Utility Pruning	High
40692	honeylocust	17	Clearance Pruning	Medium
40762	ginkgo biloba	6	Clearance Pruning	Medium
40662	ginkgo biloba	4	Clearance Pruning	Medium
40756	red maple	8	Structural and Clearance Pruning	Medium
40700	red maple	8	Structural Pruning	Medium
40761	red maple	9	Structural Pruning	Medium
40687	red maple	6	Clearance Pruning	Low
40718	European hornbeam	4	Clearance Pruning	Low
40655	European hornbeam	3	Clearance Pruning	Low
40659	European hornbeam	4	Clearance Pruning	Low
40664	European hornbeam	4	Clearance Pruning	Low
40665	European hornbeam	4	Clearance Pruning	Low
40674	European	3	Clearance Pruning	Low

	hornbeam			
40680	European hornbeam	4	Clearance Pruning	Low
40712	red maple	5	Structural Pruning	Low
40691	red maple	8	Structural Pruning	Low
40760	red maple	10	Structural Pruning	Low
40717	red maple	5	Crown Reduction	Low
40699	honeylocust	4	Crown Cleaning	Low
40661	honeylocust	17	Crown Cleaning	Low
40667	honeylocust	17	Crown Cleaning	Low
40723	red maple	5	Pruning of Crossing/Rubbing Branches	Low
40701	red maple	6	Aesthetic Pruning	Low
40656	cherry spp.	6	Aesthetic Pruning	Low
40666	cherry spp.	7	Aesthetic Pruning	Low
40765	ginkgo biloba	5	Aesthetic Pruning	Low
40763	ginkgo biloba	3	Young Tree Training	Low
40709	Japanese lilac	3	Young Tree Training	Low
40762	cherry spp.	4	Young Tree Training	Low
40667	honeylocust	17	Root Pruning	Medium
41 Trees			Lime and Fertilizer soil amendments	Low
41 Trees			Mulch	Low
			Posting of No Parking Signs	
				<b>Total:</b>
40687	red maple	6"	Additional Skilled Arborist Work	Low



# APPENDIX I

## Tree Location Map



Ortho Imagery from MASS GIS.

# APPENDIX II

## Soil Test Results

Planting Bed Sample

### Turf and Ornamental Soil Analysis Report

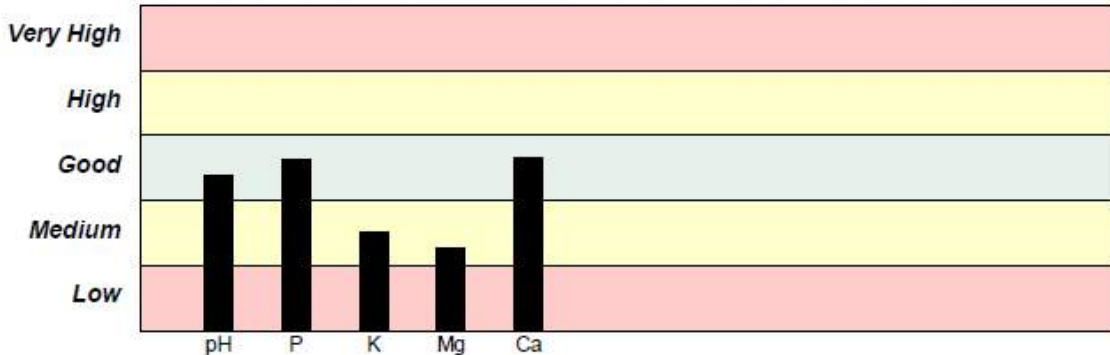
*Spectrum Analytic*  
 1087 Jamison Road NW  
 Washington Court House, OH 43160-8748  
 www.spectrumanalytic.com

**THE DAVEY TREE EXPERT CO-SOIL LAB**  
 PO BOX 5193  
 KENT, OH 44240

Prepared For
SOMMERVILLE-104550 SOMMERVILLE, MA

Sample Information			
Sample	174	Sampled	03-23-2021
Lab Number	G19930	Tested	03-26-2021

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	6.1	5.8-6.6	Clay	% 12	
Buffer pH	6.9		Sand	% 76	
Organic Matter	% 5.1		Silt	% 12	
CEC	5.9		Texture	Sandy Loam	
K Saturation	% 3.5	2.0-4.0			
Mg Saturation	% 10.5	10-20			
Ca Saturation	% 65.7	50-70			
K/Mg Ratio	1.1				
Ca/Mg Ratio	12.2				
Phosphorus	m3-ppm 74	60-80			
Potassium	m3-ppm 95	120-210			
Magnesium	m3-ppm 85	140-270			
Calcium	m3-ppm 1036	700-1200			



Recommendations		Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)										
Yr	Crop	CaCO3	N	P2O5	K2O	Mg	S	B	Cu	Fe	Mn	Zn
21	Trees, Deciduous-Undefined	15D	3.0	0.6	2.7	0.3						

Lime expressed in 100% pure CaCO3. Adjust accordingly. D=Dolomitic. C=Calcitic.

**Trees, Deciduous-Undefined:** Limit N to 1 lb./1000 sq. ft. within dripline in year 1. Split N 50% early spring and 50% late summer. Fertilized area under tree starts 2 ft. from trunk, to 3 ft. outside of dripline. Adjust future fertilizer rates based on annual leaf analysis.

Tree Pit Sample

Turf and Ornamental Soil Analysis Report

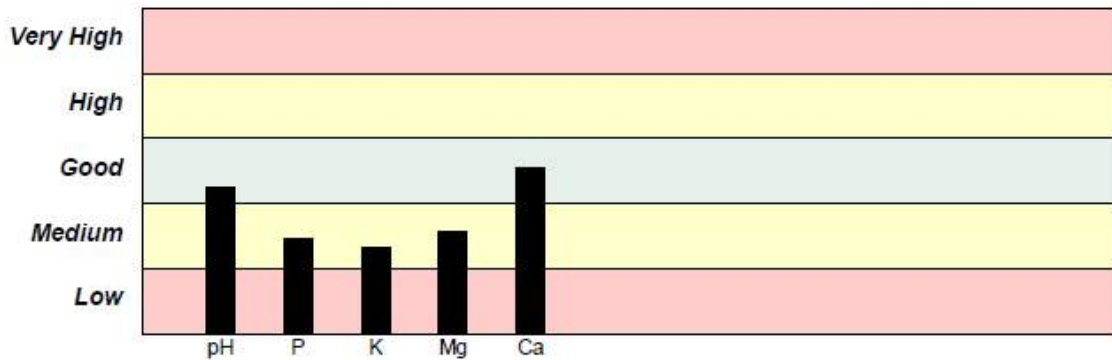
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 www.spectrumanalytic.com

**THE DAVEY TREE EXPERT CO-SOIL LAB**  
 PO BOX 5193  
 KENT, OH 44240

Prepared For
SOMMERVILLE-104550 SOMMERVILLE, MA

Sample Information			
Sample	173	Sampled	03-23-2021
Lab Number	G19929	Tested	03-26-2021

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	6.0	5.8-6.6	Clay	% 12	
Buffer pH	6.8		Sand	% 76	
Organic Matter	% 5.1		Silt	% 12	
CEC	8.4		Texture	Sandy Loam	
K Saturation	% 2.4	2.0-4.0			
Mg Saturation	% 10.2	10-20			
Ca Saturation	% 58.9	50-70			
K/Mg Ratio	0.8				
Ca/Mg Ratio	11.3				
Phosphorus	m3-ppm 38	50-80			
Potassium	m3-ppm 93	140-230			
Magnesium	m3-ppm 117	150-290			
Calcium	m3-ppm 1322	900-1600			



Recommendations		Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)										
Yr	Crop	CaCO3	N	P2O5	K2O	Mg	S	B	Cu	Fe	Mn	Zn
21	Trees, Deciduous-Undefined	29D	3.0	1.4	2.8	0.3						

Lime expressed in 100% pure CaCO3. Adjust accordingly. D=Dolomitic. C=Calcitic.

**Trees, Deciduous-Undefined:** Limit N to 1 lb./1000 sq. ft. within dripline in year 1. Split N 50% early spring and 50% late summer. Fertilized area under tree starts 2 ft. from trunk, to 3 ft. outside of dripline. Adjust future fertilizer rates based on annual leaf analysis.

Analyzed by Spectrum Analytic Inc.  
 www.spectrumanalytic.com

HID:0561-0939-2671-0006



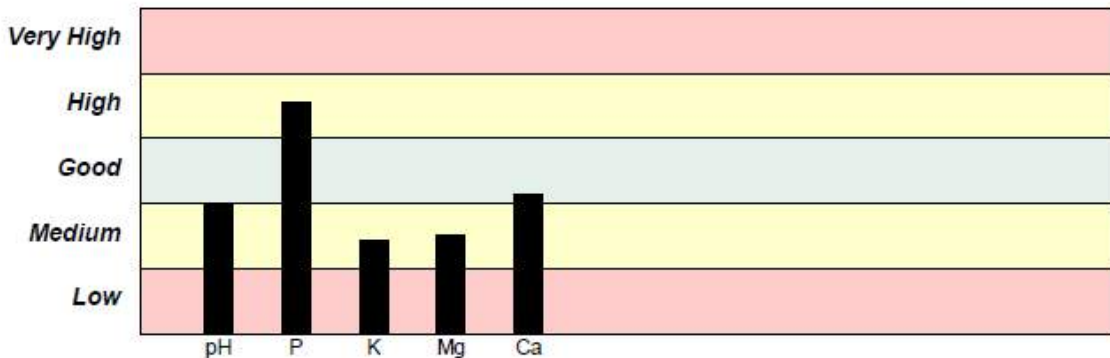
Turf and Ornamental Soil Analysis Report

*Spectrum Analytic*  
 1087 Jamison Road NW  
 Washington Court House, OH 43160-8748  
 www.spectrumanalytic.com

**THE DAVEY TREE EXPERT CO-SOIL LAB**  
 PO BOX 5193  
 KENT, OH 44240

Prepared For		Sample Information			
SOMMERVILLE-104550 SOMMERVILLE, MA		Sample	172	Sampled	03-23-2021
		Lab Number	G19928	Tested	03-26-2021

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	5.8	5.8-6.6	Clay	% 22	
Buffer pH	6.8		Sand	% 68	
Organic Matter	% 3.3		Silt	% 10	
CEC	6.9		Texture	Sandy Clay	Loam
K Saturation	% 2.9	2.0-4.0			
Mg Saturation	% 11.4	10-20			
Ca Saturation	% 50.9	50-70			
K/Mg Ratio	0.9				
Ca/Mg Ratio	8.7				
Phosphorus	m3-ppm 122	50-80			
Potassium	m3-ppm 94	130-220			
Magnesium	m3-ppm 108	140-280			
Calcium	m3-ppm 940	800-1400			



Recommendations		Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)										
Yr	Crop	CaCO3	N	P2O5	K2O	Mg	S	B	Cu	Fe	Mn	Zn
21	Trees, Deciduous-Undefined	43D	3.0	0.0	2.8	0.3						

Lime expressed in 100% pure CaCO3. Adjust accordingly. D=Dolomitic. C=Calcitic.

**Trees, Deciduous-Undefined:** Limit N to 1 lb./1000 sq. ft. within dripline in year 1. Split N 50% early spring and 50% late summer. Fertilized area under tree starts 2 ft. from trunk, to 3 ft. outside of dripline. Adjust future fertilizer rates based on annual leaf analysis.

## APPENDIX III

### Tree Condition Definitions

**Condition:** Condition indicates the current state of a tree's health and structural soundness. As adapted from the Council of Tree and Landscape Appraiser's "Guide for Plant Appraisal", condition is determined through a visual evaluation of the roots, trunk, and scaffold branches, as well as branches, twigs, foliage and buds. The overall health of any given tree is essentially the sum of the condition for all of these woody and vegetative components. The Council's condition rating system returns a numerical value (1-4) that can then be characterized as "Dead", "Poor", "Fair", and "Good", respectively, as represented in i-Tree Streets v5. General characteristics of overall health are provided below; however, it is important to remember that these ratings account for the sum of a tree's parts. Also, condition may change at any time for any number of factors including exacerbation of known and unknown defects, introduction or advancement of insects and disease, environmental stress, and adverse site factors, among others.

#### **Good**

The tree has no major structural problems, no significant mechanical damage, no insect or disease issues of concern, and minimal to no signs of stress.

#### **Fair**

The tree may exhibit minor structural problems; mechanical damage that decreases the stability of a tree's roots, trunk, or scaffold branches; presence of and/or damage from harmful insects and diseases; and general signs of stress such as wilting or minor twig dieback.

#### **Poor**

The tree may have major structural defects, extensive wounds or decay (localized or widespread), mechanical damage that increases the likelihood of failure, significant crown dieback, and insect or disease issues that result in a noticeable decline in tree health.

#### **Dead**

Trees in this category are dead.