TREES, BUGS, DIRT

LANDSCAPE CONSULTING & TRAINING

UPDATED ARBORIST REPORT

Clayton Community Church

1027 Pine Hollow Court, Clayton CA

December 15, 2020

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EXECUTIVE SUMMARY

Fifty nine (59) live trees within and next to the proposed development are evaluated in this report. One tree (#0345) has its trunk offsite. Twelve genera and species of trees were identified. Construction tolerance based on genus & species of trees on site is either poor or moderate. Health, structure, form and condition ranges from dead to good, averaging poor. Thirty two trees (including six that disappeared) were damaged by a fire that occurred on site. Construction related items that will impact the trees include paving, drain lines, retaining walls, a fire hydrant, parking, structures, demolition, and grading. Trunk distances from these items ranges from 0 to 130 feet, averaging 14.4 feet. Negative impacts include whole tree destruction, reduced health, increased failure, destabilization, root damages, and resprouting. Consequences of construction on these 59 trees would include loss (35 trees), survival (13 trees), possible survival (5 trees), survival with increased risk(4 trees), and survival with a shorter life (two trees). **I recommend preserving eleven (11) trees on & adjacent to the site, removing forty eight (48) trees due to their health, structure, form, condition, and species. For each tree preserved establish a fenced tree preservation zone (TPZ) as far away from its trunk as possible. Prune as needed prior to construction to raise tree crowns and prevent branch damage. In between construction & TPZ excavate with an air spade & prune roots. Set up a temporary irrigation system for each tree. Install and maintain wood chip mulch within each TPZ.**

INTRODUCTION

PURPOSE AND USE

This report is intended to provide information for the Client and the City of Clayton as part of a development and tree removal permit process.

ASSIGNMENT

I was hired by Vander Heyden Architects, Inc. (Client), to measure, map, tag, digitally image, inventory & re-evaluate trees at the proposed site of Clayton Community Church, and to provide an Arborist Report that includes a summary of my observations, a tree location map, and other relevant information. Only trees within the area to be developed, and directly next to proposed development are evaluated. Data from the previous arborist report (Forestree, 2016) was used as a baseline for this report.

LIMITS OF ASSIGNMENT

- Most trunk & dripline measurements used are from the previous report on the trees
- Trees were not evaluated below ground or aerially, nor were invasive methods used to assess tree health
- Design modifications are not provided
- Landscape & other plans not listed are not analyzed in terms of impacts on trees

BACKGROUND

Clayton Community Church is proposing to build a new church on a lot with trees that are protected in the City of Clayton. A previous arborist report required updating due to a fire that damaged some of the trees, missing data, missing trees, and other issues.

OBSERVATIONS

LOCATION
1027 Pine Hollow Court, above High Street, in Clayton CA.

SETTING
The site includes an occupied dwelling, a storage shed, and another outbuilding. Topography is relatively flat from Pine Hollow Court past the dwelling, then slopes sharply downhill towards High Street. Mowed grasses and weeds dominate the level area, with part of that area burned recently, and one large shrub left in place, with trees, grasses and herbaceous plants covering the ground. Trees line the southern property line, and are scattered around the main dwelling structure. Remnants of a walnut (*Juglans spp*.) orchard exists in the level area to the north of the dwelling, and below the dwelling & the level area on a slope. Soils on site are mapped as Perkins series, a very deep, well drained soil. Perkins soils typically are loam textured on top of clay loam. Most roots are found in the top two feet of this type of soil.

METHODS
On November 23 & December 12, 2020 I identified tree species, remeasured several **trunk circumferences** at 4.5 feet above grade, tagged trunks, with numbered tags, located trees visually on a site plan, digitally imaged trees and assessed their **health, structural quality** and **form**. One tree with its trunk not located on the site (#345) was also evaluated. In the office I analyzed tree condition, identified protected trees, and assessed potential impacts from proposed development using the grading & drainage, stormwater control, and utility plans that were submitted to the city.

References
- City of Clayton Municipal Code, Chapter 15.70 Tree Protection Ordinance
- Arborist Report & Tree Survey, Date Not Provided, The Forestree Company
- US Soil Survey, Standard Soil Series Descriptions, Oregon State University
- Grading and Drainage Plan, C-3, Planning Dept. Submittal, 11/30, 2020
- Stormwater Control Plan, C-4, Planning Dept. Submittal, 11/30, 2020
- Utility Plan, C-5, Planning Dept. Submittal, 11/30, 2020
- Guide for Plant Appraisal, 10th Edition, second printing, 2019. International Society of Arboriculture
- Arborist Report and Tree Survey (2016), *field work completed in 2016*. The Forestree Company

Condition
A weighted average of condition, structure, and form was calculated, with health and structure representing 40% of the value (for each factor), and form equal to 20%. I then translated the percentages into qualitative terms using the condition rating system recommended in the latest Guide for Plant Appraisal as follows; very poor (6-20%), poor (21-40%), fair (41-60%), good (61-80%), and excellent (81-100%).

Health Structure & Form Evaluation Standards
+numerical rating system; zero (dead), one (very poor), two (poor), three (fair), four (good) and five (excellent)
+ form assessed by rating specimens on their deviance from the norm for the species in this region, visual qualities such as attractiveness, and engineering functions such as screening, shading and creating views
+qualitative descriptions and items assessed for health & structure include
- rooting zone - bare, mulched, limited space, weeds, competing vegetation, moisture, debris
- root crown region (trunk & root junction) - buried, clear, pests, diseases, wet, wounds, cavities
- trunk - taper, lack of taper, wounds, lean, growth cracks, stress cracks, pests, diseases, wounds
- scaffold (large, major) branches - taper, distribution of branches, strength of branch connections, wounds, pests
- smaller branches - distribution, size, amount, strength of connections, pests, diseases
- twigs - annual growth, color, size, distribution, dead/live
- foliage - color, size, distribution, pests, diseases, leaf fall

DATA SUMMARY - See Appendix A for data set
- 59 live trees
- 64 trees were evaluated, five are dead, *six evaluated in the previous arborist report are missing due to recent fire*
- 11 species identified, one identified to genus (plum - *Prunus*)

ANALYSIS - See Appendix B for data set
- health, structure, form, and condition ranged from dead to good, averaging fair
- 56 of the 59 live trees on site are protected in Clayton, excepting #337, #346 (tree of heaven, *Ailanthus altissima*), and #385 (Monterey pine, *Pinus radiata*).

CONSTRUCTION IMPACTS & CONSEQUENCES - See Appendix C for complete data set
- items that will negatively impact trees on this site include paving, drain lines, retaining walls, a fire hydrant, parking, structures, demolition, and grading
- distances of items from tree trunks ranges from 0 to 130 feet, averaging 14.4 feet
- impacts from construction include whole trees destroyed, reduced health, increased failures, destabilization of trees, root damage, and resprouting
- consequences of negative construction impacts on 59 live trees includes
    - loss - 35 trees (34 protected, 1 not protected)
    - survive with no direct negative impacts - 13 (11 protected, 2 not protected)
    - might not survive - 5 trees
    - survive with increased risk - 4 trees
    - survive with a shorter life - 2 trees

RECOMMENDATIONS - See Appendix D for data set

- preserve eleven trees, ten are protected trees, one is an unprotected Monterey pine tree
- remove fifty one trees, forty nine are protected, two are unprotected tree of heaven
    - because of health, structure, form, and condition
    - two because they are weeds, and not protected in Clayton = tree of heaven

TREE PRESERVATION PROGRAM

TREE PROTECTION ZONES

I have assigned each tree to be preserved an individual radius based on its size, health, and species. This is the radial distance from each trunk that should be protected from all activity prior to and during construction. Work within a TPZ should be supervised by a consulting arborist. No foot or vehicle traffic should be allowed within a TPZ without mitigation to minimize damages to the tree.

FENCING

I recommend that protective fencing be installed outside the edge of each TPZ, in between proposed construction & the tree trunk.

IRRIGATION

Because of the drought I recommend that a temporary irrigation system be set up for each tree. Concentric rings of inline drip irrigation lines are recommended at least five feet from each preserved tree's trunk, out as close to the dripline is possible. Monthly irrigation to the depth of 6-7" is recommended to supplement rainfall as needed.

MULCH

Protected soils within each TPZ should be enhanced by installing & maintaining at least two inches of wood chip mulch throughout the life of the project. Mulch will conserve soil moisture, protect tree roots and help maintain tree health.

AIR SPADE EXCAVATION

Where construction or demolition occurs within tree protection zones including demolition, trenching, grading, drainage, and any other activity that may damage tree roots, air spade trenching is used to expose roots prior to pruning without damaging them. Soil must be sufficiently moist to allow excavation to the full depth of the roots, which may range up to several feet on this site.

ROOT PRUNING

All roots exposed by air spade excavation should be sharply cut, covered temporarily with wet burlap until soil can be backfilled on top of them, after removing the burlap. Work within five feet of the trunk may cause destabilization of the tree, and/or severe health damage, and should only be done under the supervision of the consulting arborist.

CLEARANCE PRUNING

Where branches interfere with construction, they should be professionally pruned or tied back prior to construction. Crown damage to be minimized either by pruning or tying branches back temporarily.

APPENDIX A - DATA; ***MEASUREMENTS IN BLUE ARE FROM THE 2016 REPORT***

tag #+ O	*Old #*	Name	*Genus species*	Trunk Diameter (inches)	*cumulative trunk diameter*	Dripline (N,S,E,W) feet	*Notes*
337	*0*	tree of heaven	*Ailanthus altissima*	8.0	*8.0*	6,7,12,12	*soil disturbed*
338	*0*	Ca black walnut	*Juglans hindsii*	12.1	*12.1*	6,5,10,7	*trunk burnt, most foliage dead*
339	*1*	blue oak	*Quercia douglasii*	36.8	*36.8*	30-40-35-35	*Disturbed rooting zone, many large broken branches, cavities on major scaffolds, thin top, minimal lower & interior small branches*
340	*2*	Ca black walnut	*Juglans hindsii*	13.4	*13.4*	8-12-3-7	*Stump sprout*
341	*3*	Ca black walnut	*Juglans hindsii*	7.0	*7.0*	15-8-8-6	*Burned stump sprout, fresh burrowing ground squirrel at base, 40% branches & foliage burned*
342	*4*	Ca black walnut	*Juglans hindsii*	7, 7.5	*14.5*	12-16-12-9	*Burned foliage & branches, dead lower branches, fresh burrowing ground squirrel, mistletoe*
~~**343**~~	~~*0*~~	~~Ca black walnut~~	~~*Juglans hindsii*~~	~~11.75 (**5, 2.75,4**)~~	~~*11.8*~~	~~6,12,10,6~~	~~*Killed by fire*~~
344	*5*	Ca black walnut	*Juglans hindsii*	9.0	*9.0*	6-8-6-4	*Fire damaged trunk, branches & foliage, codominant resprouts with included bark*
345	*6*	blue oak	*Quercus douglasii*	30.0	*30.0*	25-25-25-30	*Limited & disturbed rooting zone, leaning trunk heaviest on south, thin top, few lower or interior small branches*
346	*7*	tree of heaven	*Ailanthus altissima*	7.6 (**2.5, 2.75, 3,5,3,2.5, 2,3**)	*7.6*	9-9-9-10	*Trunk wound & cavity, singed*
347	*11*	Ca black walnut	*Juglans hindsii*	10, 8	*18.0*	12-13-10-14	*Fire damaged, burrowing near trunk*

tag #+ O	*Old #*	Name	*Genus species*	Trunk Diameter (inches)	*cumulative trunk diameter*	Dripline (N,S,E,W) feet	*Notes*
348	*8*	Ca black walnut	*Juglans hindsii*	8, 8	*16.0*	6-10-12-9	*Fire damaged stump sprouts, trunk scorched, branches damaged*
349	*9*	Ca black walnut	*Juglans hindsii*	10, 8	*18.0*	10-12-12-12	*Heavy mistletoe infestation, trunk burned, recent burrowing at trunk, lower branches & foliage damaged*
~~**350**~~	~~*10*~~	~~Ca black walnut~~	~~*Juglans hindsii*~~	~~8, 7~~	~~*15.0*~~	~~6-15-10-10~~	~~*Fire burn kill*~~
~~**351**~~	~~*57*~~	~~Ca black walnut~~	~~*Juglans hindsii*~~	~~7, 6~~	~~*13.0*~~	~~7-6-8-9~~	~~*Fire burn kill*~~
352	*58*	Ca black walnut	*Juglans hindsii*	9, 7, 6, 5, 5	*32.0*	10-11-10-10	*Fire damaged, minimal sprouting, recent burrowing near trunk*
353	*55*	valley oak	*Quercus lobata*	11, 11	*22.0*	15-12-10-12	*Some rooting zone & small branches burned, generally stunted growth for species, not for location , trunk wound*
354	*59*	Ca black walnut	*Juglans hindsii*	13, 10, 10, 9, 8	*50.0*	10-12-10-10	*Trunk & branches burnt, mistletoe, some undamaged branches & foliage*
355	*60*	Ca black walnut	*Juglans hindsii*	7, 6, 5	*18.0*	8-10-7-9	*Fire damaged, mistletoe*
356	*61*	Ca black walnut	*Juglans hindsii*	10, 8	*18.0*	10-12-10-12	*Fire damaged*
357	*64*	Ca black walnut	*Juglans hindsii*	9, 7	*16.0*	10-12-10-12	*Fire damaged*
358	*65*	Ca black walnut	*Juglans hindsii*	7, 7, 6	*20.0*	10-10-9-10	*Fire damaged, rooting zone severely damaged, trunk damaged , some live crown*
359	*66*	Ca black walnut	*Juglans hindsii*	5, 5, 5	*15.0*	6-8-8-6	*Fire damaged*
360	*67*	Ca black walnut	*Juglans hindsii*	7, 6, 5, 5, 4	*27.0*	8-9-10-7	*Fire damaged*
361	*68*	Ca black walnut	*Juglans hindsii*	8, 6, 5, 5	*24.0*	8-8-10-6	*Fire damaged*

tag #+ O	*Old #*	Name	*Genus species*	Trunk Diameter (inches)	*cumulative trunk diameter*	Dripline (N,S,E,W) feet	*Notes*
362	*49*	Ca black walnut	*Juglans hindsii*	8, 7, 7, 5	*27.0*	12-15-12-8	*Trunk cavity, branch dieback, mistletoe*
363	*50*	Ca black walnut	*Juglans hindsii*	4, 3, 3	*10.0*	9-10-8-8	*Stunted , trunk & scaffold cavities , mistletoe*
364	*22*	Ca black walnut	*Juglans hindsii*	4, 3	*7.0*	8-8-8-10	*Trunk embedded in fence, trunk cavity, vigorous sprouts, burrowing around trunk*
365	*53*	Ca black walnut	*Juglans hindsii*	15, 15, 13	*43.0*	12-12-13-12	*Fire damaged, large broken branches May recover*
366	*21*	Ca black walnut	*Juglans hindsii*	6.0	*6.0*	3-5-4-6	*Top broken off, suppressed*
367	*20*	Italian stone pine	*Pinus pinea*	28.0	*28.0*	18-25-20-18	*Large trunk wounds, stubbed lower branches, broken branches , rooting zone disturbed*
368	*18*	Italian stone pine	*Pinus pinea*	39.0	*39.0*	37-24-18-27	*Codominant trunks with included bark, large torn scaffold, rooting zone parking & turning area*
369	*19*	Italian stone pine	*Pinus pinea*	22.0	*22.0*	0-0-0-14	*Topped, one scaffold, leaning trunk, broken stub*
370	*15*	Ca black walnut	*Juglans hindsii*	9.0	*9.0*	10-8-12-12	*Stunted, mistletoe, trunk leaning, root crown buried*
371	*14*	Ca black walnut	*Juglans hindsii*	10.0	*10.0*	3-7-6-12	*Very stunted, leaning trunk, mistletoe, trunk cavity*
372	*12*	Ca black walnut	*Juglans hindsii*	10.0	*10.0*	6-8-9-8	*Trunk cavities, minimal trunk taper, stunted*
373	*13*	Ca black walnut	*Juglans hindsii*	8, 8, 8, 8	*32.0*	15-7-10-15	*Mistletoe, large cavity on one trunk*
374	*17*	Ca black walnut	*Juglans hindsii*	8, 7	*15.0*	8-8-6-8	*Stunted, minimal structure , stubbed trunks*
375	*16*	valley oak	*Quercus lobata*	10.0	*10.0*	3-10-8-15	*Disturbed rooting zone, minimal trunk taper, trunk leaning*

tag #+ O	*Old #*	Name	*Genus species*	Trunk Diameter (inches)	*cumulative trunk diameter*	Dripline (N,S,E,W) feet	*Notes*
376	*23*	Ca black walnut	*Juglans hindsii*	8.0	*8.0*	6-4-8-6	*Disturbed rooting zone, trunk leaning, minimal structure, stunted , missed species id*
377	*28*	blue oak	*Quercus douglasii*	9, 8	*17.0*	12-10-10-8	*Limited rooting zone, codominant trunks with included bark, stunted*
378	*29*	valley oak	*Quercus lobata*	7.0	*7.0*	6-12-4-4	*Stunted, trunk wounds, leaning trunk*
379	*30*	valley oak	*Quercus lobata*	24.0	*24.0*	15-22-15-15	*Limited rooting zone, live crown ratio less than 59%, lower & interior branches removed*
380	*31*	plum	*Prunus spp.*	5, 4	*9.0*	5-8-0-6	*Stunted, broken branches, poorly pruned, sooty mold, scale, twig dieback*
381	*32*	Ca black walnut	*Juglans hindsii*	7.0	*7.0*	6-10-8-10	*Imbalanced, oddly shaped vigorous sprout*
382	*33*	almond	*Prunus dulcis*	4, 4, 3	*11.0*	4-10-6-8	*Suppressed*
383	*34*	Ca black walnut	*Juglans hindsii*	16.0	*16.0*	12-4-16-15	*Unbalanced leaning trunk, large wound on trunk, mistletoe*
~~**384**~~	~~*35*~~	~~plum~~	~~*Prunus spp.*~~	~~11.0~~	~~*11.0*~~	~~0-3-7-8~~	~~*Dead*~~
385	*38*	Monterey pine	*Pinus radiata*	28.0	*28.0*	18-15-17-18	*Suppressed by Italian stone pine on south*
386	*39*	valley oak	*Quercus lobata*	12.0	*12.0*	15-0-12-8	*Suppressed by valley oak & Monterey pine, trunk leaning , codominant scaffolds with included bark*
387	*40*	valley oak	*Quercus lobata*	18.0	*18.0*	15-4-18-18	*Unbalanced in row, codominant trunks with included bark, yellow jacket n at in ground active next to metal stake; branch flagged*
~~**388**~~	~~*36*~~	~~lime~~	~~*Citrus x latifolia*~~	~~9.0~~	~~*9.0*~~	~~7-5-9-4~~	~~*Dead*~~

tag #+ O	*Old #*	Name	*Genus species*	Trunk Diameter (inches)	*cumulative trunk diameter*	Dripline (N,S,E,W) feet	*Notes*
389	*37*	lemon	*Citrus x limon*	9, 9, 7	*25.0*	9-6-9-10	*Dying , codominant trunks with included bark, top dieback, bark damaged*
390	*41*	valley oak	*Quercus lobata*	14.0	*14.0*	14-15-9-15	*Twisted scaffolds*
391	*42*	Ca black walnut	*Juglans hindsii*	6, 5	*11.0*	9-9-3-3	*Minimal tree*
392	*43*	giant sequoia	*Sequiadendron giganteum*	25.0	*25.0*	6-10-10-10	*Codominant tree, large trunk wound*
393	*44*	valley oak	*Quercus lobata*	14.0	*14.0*	0-15-15-18	*Codominant tree, one sided*
394	*45*	plum	*Prunus spp.*	3, 3, 3	*9.0*	8-0-10-4	*Suppressed*
395	*46*	valley oak	*Quercus lobata*	16.0	*16.0*	17-20-5-18	*Grove tree, balanced in grove, limited rooting zone, driveway*
396	*47*	olive	*Olea europeae*	5, 4, 3	*10.0*	9-8-8-2	*Multiple trunks, intertwined with oaks, power line, power pole*
397	*48*	valley oak	*Quercus lobata*	14.0	*14.0*	8-6-10-20	*One sided pruned away from wires, unbalanced*
398	*25*	olive	*Olea europeae*	3, 2, 2	*7.0*	7-6-7-8	*Unbalanced, sprouting, limited rooting zone, shaded dieback*
399	*26*	olive	*Olea europeae*	12.0	*12.0*	6-10-8-10	*Crown raised to top30%, stunted, poorly pruned*
400	*27*	almond	*Prunus dulcis*	14, 12	*26.0*	8-15-0-15	*Stunted suppressed, disturbed rooting zone*

APPENDIX B - ANALYSIS

tag #+ O	Name	*health rating*	Health	*structure rating*	Structure	*Form rating*	Form	Weighted Average Condition	Condition %	Condition Rating
337	tree of heaven	*3*	fair	*3*	fair	*3*	fair	3	60%	**Fair**
338	Ca black walnut	*1*	very poor	*2*	poor	*1*	very poor	1.4	28%	**Poor**
339	blue oak	*3*	fair	*3*	fair	*4*	good	3.2	64%	**Good**
340	Ca black walnut	*2*	poor	*1*	very poor	*1*	very poor	1.4	28%	**Poor**
341	Ca black walnut	*2*	poor	*1*	very poor	*1*	very poor	1.4	28%	**Poor**
342	Ca black walnut	*1*	very poor	*1*	very poor	*1*	very poor	1	20%	**Very poor**
343	Ca black walnut	*0*	dead	*0*	dead	*0*	dead	0	0%	**dead**
344	Ca black walnut	*1*	very poor	*2*	poor	*1*	very poor	1.4	28%	**Poor**
345	blue oak	*3*	fair	*3*	fair	*4*	good	3.2	64%	**Good**
346	tree of heaven	*3*	fair	*4*	good	*4*	good	3.6	72%	**Good**
347	Ca black walnut	*1.5*	very poor-poor	*1*	very poor	*1*	very poor	1.2	24%	**Poor**
348	Ca black walnut	*1.5*	very poor-poor	*2*	poor	*2*	poor	1.8	36%	**Poor**

tag #+ O	Name	*health rating*	Health	*structure rating*	Structure	*Form rating*	Form	Weighted Average Condition	Condition %	Condition Rating
349	Ca black walnut	*2.5*	poor-fair	*2*	poor	*2*	poor	2.2	44%	**Fair**
350	Ca black walnut	*0*	dead	*0*	dead	*0*	dead	0	0%	**dead**
351	Ca black walnut	*0*	dead	*0*	dead	*0*	dead	0	0%	**dead**
352	Ca black walnut	*1*	very poor	*2*	poor	*1*	very poor	1.4	28%	**Poor**
353	valley oak	*3*	fair	*4*	good	*3.5*	fair-good	3.5	70%	**Good**
354	Ca black walnut	*2*	poor	*2*	poor	*2*	poor	2	40%	**Poor**
355	Ca black walnut	*1*	very poor	*1*	very poor	*1*	very poor	1	20%	**Very poor**
356	Ca black walnut	*1.5*	very poor-poor	*1*	very poor	*1*	very poor	1.2	24%	**Poor**
357	Ca black walnut	*1*	very poor	*1*	very poor	*1*	very poor	1	20%	**Very poor**
358	Ca black walnut	*1.5*	very poor-poor	*1*	very poor	*1*	very poor	1.2	24%	**Poor**
359	Ca black walnut	*1*	very poor	*1*	very poor	*1*	very poor	1	20%	**Very poor**

tag #+ O	Name	*health rating*	Health	*structure rating*	Structure	*Form rating*	Form	Weighted Average Condition	Condition %	Condition Rating
360	Ca black walnut	*1.5*	very poor-poor	*1.5*	very poor-poor	*1*	very poor	1.4	28%	**Poor**
361	Ca black walnut	*2*	poor	*2*	poor	*2*	poor	2	40%	**Poor**
362	Ca black walnut	*2*	poor	*2*	poor	*2*	poor	2	40%	**Poor**
363	Ca black walnut	*2.5*	poor-fair	*2*	poor	*2*	poor	2.2	44%	**Fair**
364	Ca black walnut	*3*	fair	*1*	very poor	*2*	poor	2	40%	**Poor**
365	Ca black walnut	*2*	poor	*3*	fair	*2.5*	poor-fair	2.5	50%	**Fair**
366	Ca black walnut	*2*	poor	*2*	poor	*1*	very poor	1.8	36%	**Poor**
367	Italian stone pine	*4*	good	*3*	fair	*3*	fair	3.4	68%	**Good**
368	Italian stone pine	*4*	good	*3*	fair	*4*	good	3.6	72%	**Good**
369	Italian stone pine	*3*	fair	*1*	very poor	*1*	very poor	1.8	36%	**Poor**
370	Ca black walnut	*2*	poor	*2*	poor	*2*	poor	2	40%	**Poor**

tag #+ O	Name	*health rating*	Health	*structure rating*	Structure	*Form rating*	Form	Weighted Average Condition	Condition %	Condition Rating
371	Ca black walnut	*1*	very poor	*1*	very poor	*1*	very poor	1	20%	**Very poor**
372	Ca black walnut	*2*	poor	*2*	poor	*2*	poor	2	40%	**Poor**
373	Ca black walnut	*3*	fair	*2*	poor	*3*	fair	2.6	52%	**Fair**
374	Ca black walnut	*2.5*	poor-fair	*2*	poor	*2*	poor	2.2	44%	**Fair**
375	valley oak	*3*	fair	*2*	poor	*2.5*	poor-fair	2.5	50%	**Fair**
376	Ca black walnut	*2*	poor	*2*	poor	*2*	poor	2	40%	**Poor**
377	blue oak	*2.5*	poor-fair	*2.5*	poor-fair	*3*	fair	2.6	52%	**Fair**
378	valley oak	*2*	poor	*2*	poor	*2*	poor	2	40%	**Poor**
379	valley oak	*3*	fair	*4*	good	*4*	good	3.6	72%	**Good**
380	plum	*2*	poor	*2*	poor	*2*	poor	2	40%	**Poor**
381	Ca black walnut	*2.5*	poor-fair	*2*	poor	*2*	poor	2.2	44%	**Fair**
382	almond	*2*	poor	*2*	poor	*2*	poor	2	40%	**Poor**
383	Ca black walnut	*2.5*	poor-fair	*2*	poor	*2.5*	poor-fair	2.3	46%	**Fair**
384	plum	*0*	dead	*0*	dead	*0*	dead	0	0%	**dead**

tag #+ O	Name	*health rating*	Health	*structure rating*	Structure	*Form rating*	Form	Weighted Average Condition	Condition %	Condition Rating
385	Monterey pine	*3*	fair	*4*	good	*3*	fair	3.4	68%	**Good**
386	valley oak	*3*	fair	*2*	poor	*2.5*	poor-fair	2.5	50%	**Fair**
387	valley oak	*4*	good	*3*	fair	*4*	good	3.6	72%	**Good**
388	lime	*0*	dead	*0*	dead	*0*	dead	0	0%	**dead**
389	lemon	*1*	very poor	*3*	fair	*2*	poor	2	40%	**Poor**
390	valley oak	*3*	fair	*3*	fair	*3*	fair	3	60%	**Fair**
391	Ca black walnut	*2*	poor	*1*	very poor	*1*	very poor	1.4	28%	**Poor**
392	giant sequoia	*3*	fair	*3*	fair	*3*	fair	3	60%	**Fair**
393	valley oak	*3*	fair	*3*	fair	*3*	fair	3	60%	**Fair**
394	plum	*2*	poor	*2*	poor	*2*	poor	2	40%	**Poor**
395	valley oak	*3*	fair	*3*	fair	*3*	fair	3	60%	**Fair**
396	olive	*4*	good	*2*	poor	*3*	fair	3	60%	**Fair**
397	valley oak	*3*	fair	*2*	poor	*3*	fair	2.6	52%	**Fair**
398	olive	*3*	fair	*3*	fair	*3*	fair	3	60%	**Fair**
399	olive	*3*	fair	*2*	poor	*2*	poor	2.4	48%	**Fair**
400	almond	*2*	poor	*2*	poor	*2*	poor	2	40%	**Poor**

APPENDIX C - CONSTRUCTION IMPACTS & CONSEQUENCES

# + O	Name	*cumulative trunk diameter*	Dripline (N,S,E,W) feet	Health	*construction tolerance*	CLOSEST ITEMS	TRUNK DISTANCE (FEET)	IMPACTS	CONSEQUENCES
337	tree of heaven	*8.0*	6,7,12,12	fair	*GOOD*	building	0	whole tree destroyed	**LOSS**
338	Ca black walnut	*12.1*	6,5,10,7	very poor	*POOR*	building	0	whole tree destroyed	**LOSS**
339	blue oak	*36.8*	30-40-35-35	fair	*POOR*	paving, drainline, retaining wall, fire hydrant	6.7	reduced health, more failures	**SURVIVE WITH INCREASED RISK**
340	Ca black walnut	*13.4*	8-12-3-7	poor	*POOR*	storm drain	8	reduced health, more failures	**SURVIVE WITH INCREASED RISK**
341	Ca black walnut	*7.0*	15-8-8-6	poor	*POOR*	parking	0	whole tree destroyed	**LOSS**
342	Ca black walnut	*14.5*	12-16-12-9	very poor	*POOR*	parking	0	whole tree destroyed	**LOSS**
344	Ca black walnut	*9.0*	6-8-6-4	very poor	*POOR*	retaining wall	0	whole tree destroyed	**LOSS**
345	blue oak	*30.0*	25-25-25-30	fair	*POOR*	drainline, retaining wall	3	destabilize tree, severe root damage	**MIGHT NOT SURVIVE**
346	tree of heaven	*7.6*	9-9-9-10	fair	*GOOD*	drainline	5	stimulate resprouts	**SURVIVE**
347	Ca black walnut	*18.0*	12-13-10-14	very poor-poor	*POOR*	structure	5	whole tree destroyed	**LOSS**

# + O	Name	*cumulative trunk diameter*	Dripline (N,S,E,W) feet	Health	*construction tolerance*	CLOSEST ITEMS	TRUNK DISTANCE (FEET)	IMPACTS	CONSEQUENCES
348	Ca black walnut	*16.0*	6-10-12-9	very poor-poor	*POOR*	structure	5	whole tree destroyed	**LOSS**
349	Ca black walnut	*18.0*	10-12-12-12	poor-fair	*POOR*	structure	5	whole tree destroyed	**LOSS**
352	Ca black walnut	*32.0*	10-11-10-10	very poor	*POOR*	retaining wall	4	whole tree destroyed	**LOSS**
353	valley oak	*22.0*	15-12-10-12	fair	*POOR*	retaining wall	2	whole tree destroyed	**LOSS**
354	Ca black walnut	*50.0*	10-12-10-10	poor	*POOR*	retaining wall	8	no visible impact	**SURVIVE**
355	Ca black walnut	*18.0*	8-10-7-9	very poor	*POOR*	storm drain dissipator	8	whole tree destroyed	**LOSS**
356	Ca black walnut	*18.0*	10-12-10-12	very poor-poor	*POOR*	storm drain	25	no visible impacts	**SURVIVE**
357	Ca black walnut	*16.0*	10-12-10-12	very poor	*POOR*	storm drain	75	no visible impacts	**SURVIVE**
358	Ca black walnut	*20.0*	10-10-9-10	very poor-poor	*POOR*	storm drain	130	no visible impacts	**SURVIVE**
359	Ca black walnut	*15.0*	6-8-8-6	very poor	*POOR*	storm drain	125	no visible impacts	**SURVIVE**
360	Ca black walnut	*27.0*	8-9-10-7	very poor-poor	*POOR*	storm drain	125	no visible impacts	**SURVIVE**

# + O	Name	*cumulative trunk diameter*	Dripline (N,S,E,W) feet	Health	*construction tolerance*	CLOSEST ITEMS	TRUNK DISTANCE (FEET)	IMPACTS	CONSE-QUENCES
361	Ca black walnut	*24.0*	8-8-10-6	poor	*POOR*	storm drain	130	no visible impacts	**SURVIVE**
362	Ca black walnut	*27.0*	12-15-12-8	poor	*POOR*	retaining wall	58	no visible impacts	**SURVIVE**
363	Ca black walnut	*10.0*	9-10-8-8	poor-fair	*POOR*	retaining wall	7	reduced health, more failures	**SURVIVE WITH INCREASED RISK**
364	Ca black walnut	*7.0*	8-8-8-10	fair	*POOR*	retaining wall	0	whole tree destroyed	**LOSS**
365	Ca black walnut	*43.0*	12-12-13-12	poor	*POOR*	retaining wall	16	no visible impact	**SURVIVE**
366	Ca black walnut	*6.0*	3-5-4-6	poor	*POOR*	parking	0	whole tree destroyed	**LOSS**
367	Italian stone pine	*28.0*	18-25-20-18	good	*MODER-ATE*	parking	0	whole tree destroyed	**LOSS**
368	Italian stone pine	*39.0*	37-24-18-27	good	*MODER-ATE*	parking	0	whole tree destroyed	**LOSS**
369	Italian stone pine	*22.0*	0-0-0-14	fair	*MODER-ATE*	parking	0	whole tree destroyed	**LOSS**
370	Ca black walnut	*9.0*	10-8-12-12	poor	*POOR*	parking	0	whole tree destroyed	**LOSS**
371	Ca black walnut	*10.0*	3-7-6-12	very poor	*POOR*	storm drain	0	whole tree destroyed	**LOSS**

# + O	Name	*cumulative trunk diameter*	Dripline (N,S,E,W) feet	Health	*construction tolerance*	CLOSEST ITEMS	TRUNK DISTANCE (FEET)	IMPACTS	CONSEQUENCES
372	Ca black walnut	*10.0*	6-8-9-8	poor	*POOR*	parking	0	whole tree destroyed	**LOSS**
373	Ca black walnut	*32.0*	15-7-10-15	fair	*POOR*	storm drain	0	whole tree destroyed	**LOSS**
374	Ca black walnut	*15.0*	8-8-6-8	poor-fair	*POOR*	parking	0	whole tree destroyed	**LOSS**
375	valley oak	*10.0*	3-10-8-15	fair	*MODERATE*	storm drain	0	whole tree destroyed	**LOSS**
376	Ca black walnut	*8.0*	6-4-8-6	poor	*POOR*	parking	0	whole tree destroyed	**LOSS**
377	blue oak	*17.0*	12-10-10-8	poor-fair	*POOR*	storm drain	0	whole tree destroyed	**LOSS**
378	valley oak	*7.0*	6-12-4-4	poor	*MODERATE*	parking	0	whole tree destroyed	**LOSS**
379	valley oak	*24.0*	15-22-15-15	fair	*MODERATE*	storm drain	0	whole tree destroyed	**LOSS**
380	plum	*9.0*	5-8-0-6	poor	*GOOD*	parking	0	whole tree destroyed	**LOSS**
381	Ca black walnut	*7.0*	6-10-8-10	poor-fair	*POOR*	storm drain	0	whole tree destroyed	**LOSS**
382	almond	*11.0*	4-10-6-8	poor	*MODERATE*	sidewalk	5	reduced health, more failures	**SURVIVE WITH INCREASED RISK**
383	Ca black walnut	*16.0*	12-4-16-15	poor-fair	*POOR*	parking	2	whole tree destroyed	**LOSS**

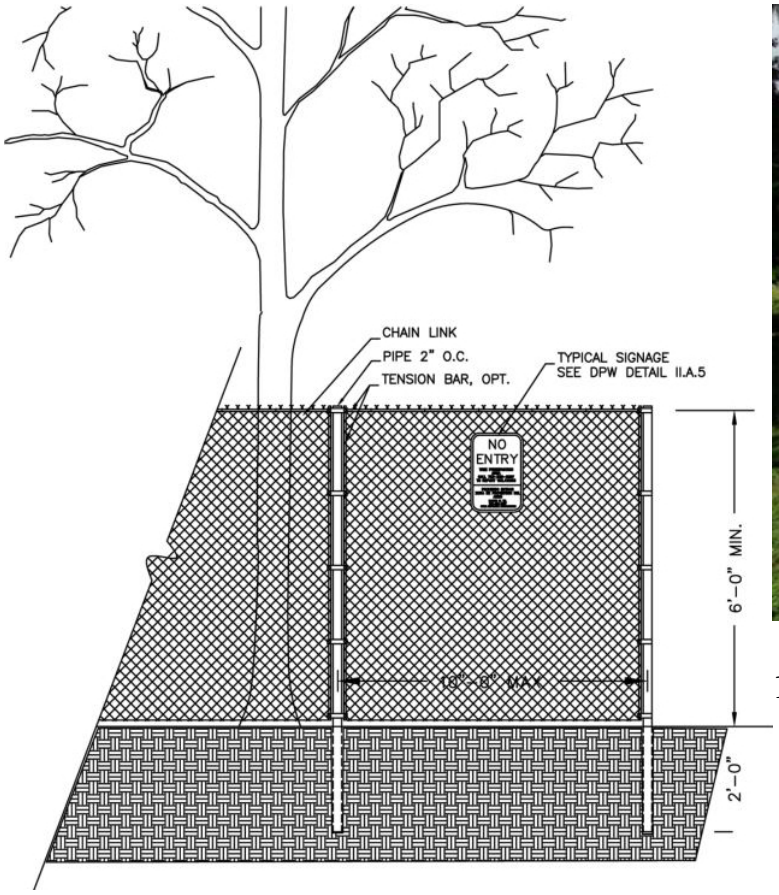
# + O	Name	*cumulative trunk diameter*	Dripline (N,S,E,W) feet	Health	*construction tolerance*	CLOSEST ITEMS	TRUNK DISTANCE (FEET)	IMPACTS	CONSEQUENCES
385	Monterey pine	*28.0*	18-15-17-18	fair	*MODERATE*	drainline parking	3.8	destabilize tree, severe root damage	**MIGHT NOT SURVIVE**
386	valley oak	*12.0*	15-0-12-8	fair	*MODERATE*	drainline, parking	2.8	destabilize tree, severe root damage	**MIGHT NOT SURVIVE**
387	valley oak	*18.0*	15-4-18-18	good	*MODERATE*	drainline, parking	1.5	destabilize tree, severe root damage	**MIGHT NOT SURVIVE**
389	lemon	*25.0*	9-6-9-10	very poor	*POOR*	parking	0	whole tree destroyed	**LOSS**
390	valley oak	*14.0*	14-15-9-15	fair	*MODERATE*	demolition	18	destabilize tree, severe root damage	**MIGHT NOT SURVIVE**
391	Ca black walnut	*11.0*	9-9-3-3	poor	*POOR*	parking	0	whole tree destroyed	**LOSS**
392	giant sequoia	*25.0*	6-10-10-10	fair	*MODERATE*	demolition, drainline	18	reduced health	**SURVIVE, SHORTER LIFE**
393	valley oak	*14.0*	0-15-15-18	fair	*MODERATE*	demolition, drainline	19	reduced health	**SURVIVE**
394	plum	*9.0*	8-0-10-4	poor	*GOOD*	drainline	2	whole tree destroyed	**LOSS**
395	valley oak	*16.0*	17-20-5-18	fair	*MODERATE*	grading	15	reduced health	**SURVIVE, SHORTER LIFE**

# + O	Name	*cumulative trunk diameter*	Dripline (N,S,E,W) feet	Health	*construction tolerance*	CLOSEST ITEMS	TRUNK DISTANCE (FEET)	IMPACTS	CONSEQUENCES
396	olive	*10.0*	9-8-8-2	good	*GOOD*	grading	16.7	reduced health	**SURVIVE**
397	valley oak	*14.0*	8-6-10-20	fair	*MODERATE*	grading	30	no visible impact	**SURVIVE**
398	olive	*7.0*	7-6-7-8	fair	*GOOD*	storm drain	0	whole tree destroyed	**LOSS**
399	olive	*12.0*	6-10-8-10	fair	*GOOD*	parking	0	whole tree destroyed	**LOSS**
400	almond	*26.0*	8-15-0-15	poor	*MODERATE*	parking	0	whole tree destroyed	**LOSS**

APPENDIX D - RECOMMENDATIONS

tag #+ O	Name	Trunk Diameter (inches)	Dripline (N,S,E,W) feet	Tree Protection Zone Radius (feet)	Air Spading +Root Pruning	Clearance Pruning
339	blue oak	36.8	30-40-35-35	25	YES	YES
345	blue oak	30.0	25-25-25-30	30	YES	YES
385	Monterey pine	28.0	18-15-17-18	20, *GROUP WITH #386 & 387*	YES	NO
386	valley oak	12.0	15-0-12-8	20, *GROUP WITH #385 & 387*	YES	YES
387	valley oak	18.0	15-4-18-18	20, *GROUP WITH #385 & 386*	YES	YES
390	valley oak	14.0	14-15-9-15	20	YES	NO
392	giant sequoia	25.0	6-10-10-10	20, *GROUP WITH #393*	YES	NO
393	valley oak	14.0	0-15-15-18	20, *GROUP WITH #392*	YES	NO
395	valley oak	16.0	17-20-5-18	20	YES	NO
396	olive	5, 4, 3	9-8-8-2	10	NO	YES
397	valley oak	14.0	8-6-10-20	20	NO	NO

APPENDIX E - PRESERVATION DETAILS



1. TREE PROTECTION ZONE (TPZ)

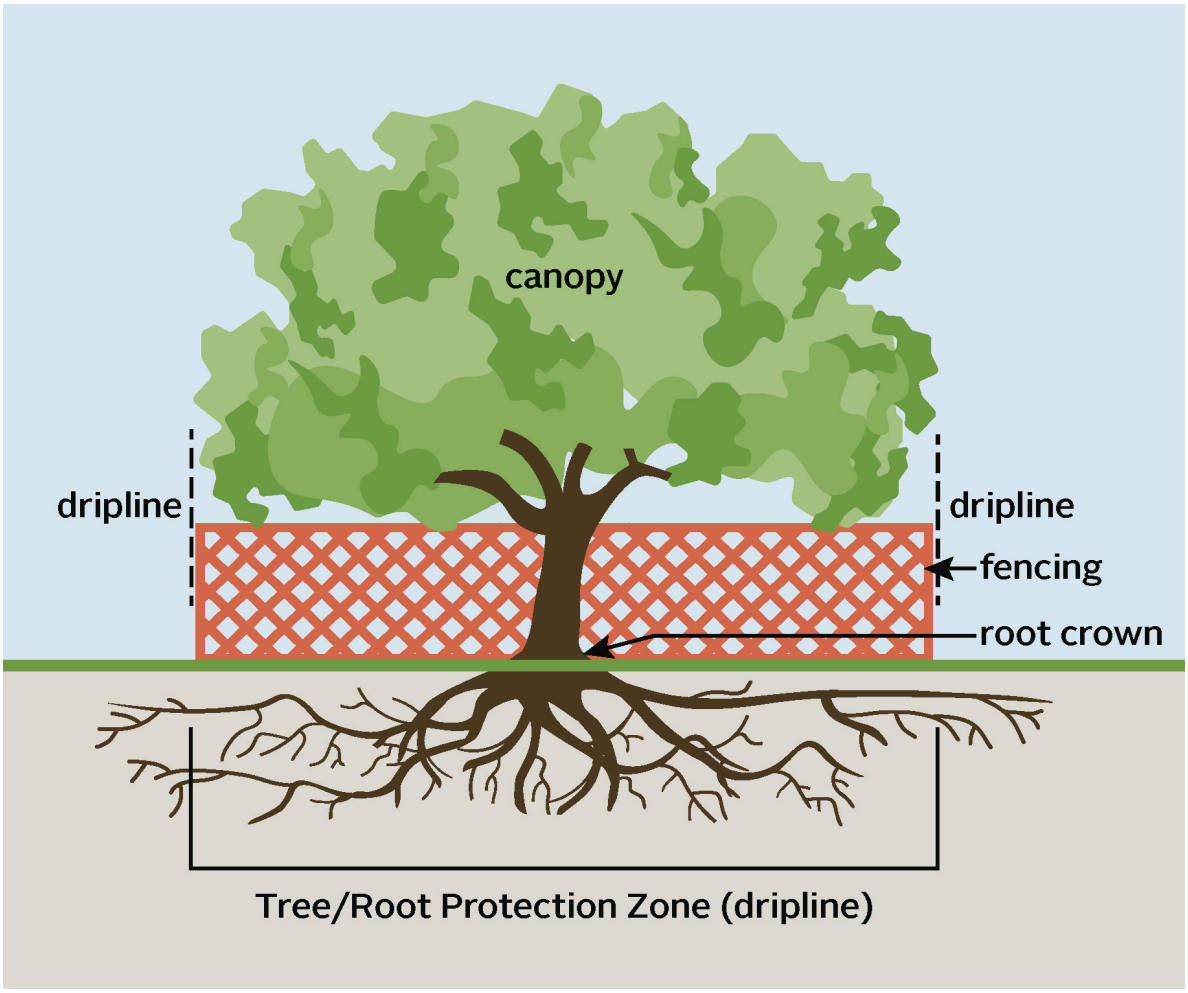
Permitted Within TPZ

- Mulching – should be used during construction to protect the soil from compaction, conserve soil moisture, and moderate soil temperature. Spread wood chips to a depth of 4 (four) inches, leaving the trunk clear of mulch.
- Irrigation, aeration, or other beneficial practices that have been specifically approved for use by the Project Consulting Arborist

Prohibited Within TPZ

- Storage of construction materials, debris, or excavated material.
- Parking vehicles or equipment.
- Foot traffic.
- Erection of sheds or structures.
- Drainage changes or impoundment of water.
- Cutting tree roots by utility trenching, foundation digging, placement of curbs, trenches and other miscellaneous excavation or other digging.
- Soil disturbance, soil compaction or grade change.
- Washout activities

2. FENCING DETAIL



SPECIFICATION

- Tree protection fence is recommended along the edge of all Tree Protection Zones
- Orange vinyl construction fencing, snow fencing or other similar fencing should be at least 4 feet high and supported at a maximum of 10 foot intervals by metal T-posts or approved methods sufficient enough to keep the fence upright and in place. T-posts shall be a minimum of 2 feet in the ground. Wooden stakes and rebar posts are not considered as an approved method sufficient enough to keep the fence upright and in place.
- Chain link fence shall be 6 feet tall with 2 inch mesh chain link fabric. 2 inch posts shall be tied with 6 gauge aluminum wire ties at 24 inch on center. Posts shall be a minimum of 2 feet in the ground and spaced at a maximum of 10 feet on center. Plastic zip-ties may not be used.

3. AIR SPADING & ROOT PRUNING

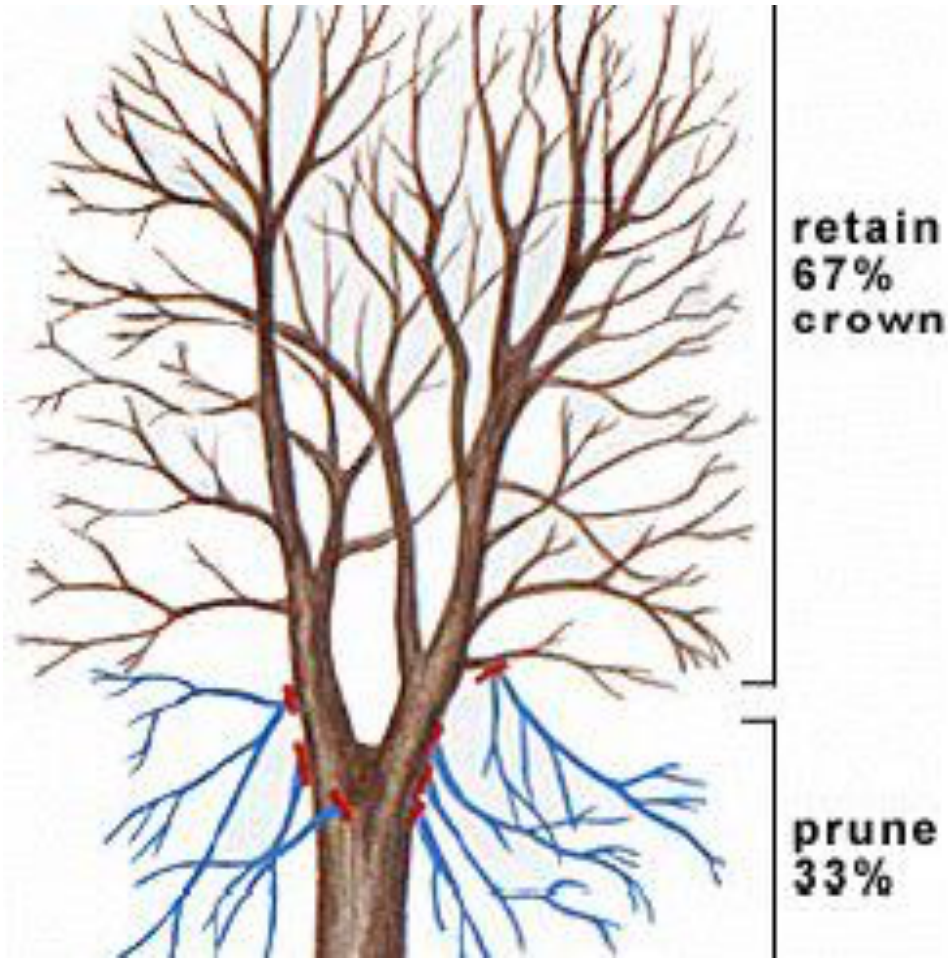
roots exposed by blowing away soil = air spading

ROOT EXPOSURE & PRUNING: Exposed & cut roots cleanly prior to work near tree to minimize damage to remaining roots and reduce the risk of causing disease, decay and instability.

SPECIFICATION

- Expose roots along outside edge of 5 foot fenceline setback with air spade or other tool that uses compressed air
- Sharply cut completely and cleanly through all roots
- Use reciprocating saw with sharp blades or circular saws of varying types and/or a rotary-type stump grinder
- Saw blades or grinder teeth should be sharpened prior to use, and sharpness maintained
- Unless immediately backfilled after pruning, as a temporary measure, place burlap material and/or spread mulch over exposed roots after cuts are made and before soil is replaced. Keep this material damp until backfilled to prevent the fine roots from drying and dying
- Since root pruning occurs along or behind the line of planned construction, it should be coordinated with the tree protection fencing

4. CROWN RAISING DETAIL



RAISE

"Pruning to provide vertical clearance." American National Standard ANSI A300 (Part 1)-2008.
Removal of the lower branches of a tree to provide clearance, fire safety or to increase aesthetic quality.

SPECIFICATIONS

- Clearance:
  - Three to six foot clearance from vegetated ground
  - Five to Six foot foot clearance from walls, gutters, roofs and lights
  - Fourteen foot clearance above all areas to be graded
- Size of cuts: small diameter cuts are preferred, in the range of one to three inches
- Type of cuts: thinning or proper reduction cuts only, unless approved ahead of time
- Balance: aesthetic and structural balance shall be maintained at all times

APPENDIX F - GLOSSARY

dripline - region underneath tree canopy

form - genetically determined appearance that includes spread, height & configuration

health - tree growth as expressed by foliage, twigs, branches & trunks including resistance to pests

root crown – region where trunk and root system meet, also called `buttress' or `butt'

rooting zone – area where roots are likely to survive, beginning at the trunk and extending up to three times the radius of a tree's dripline region

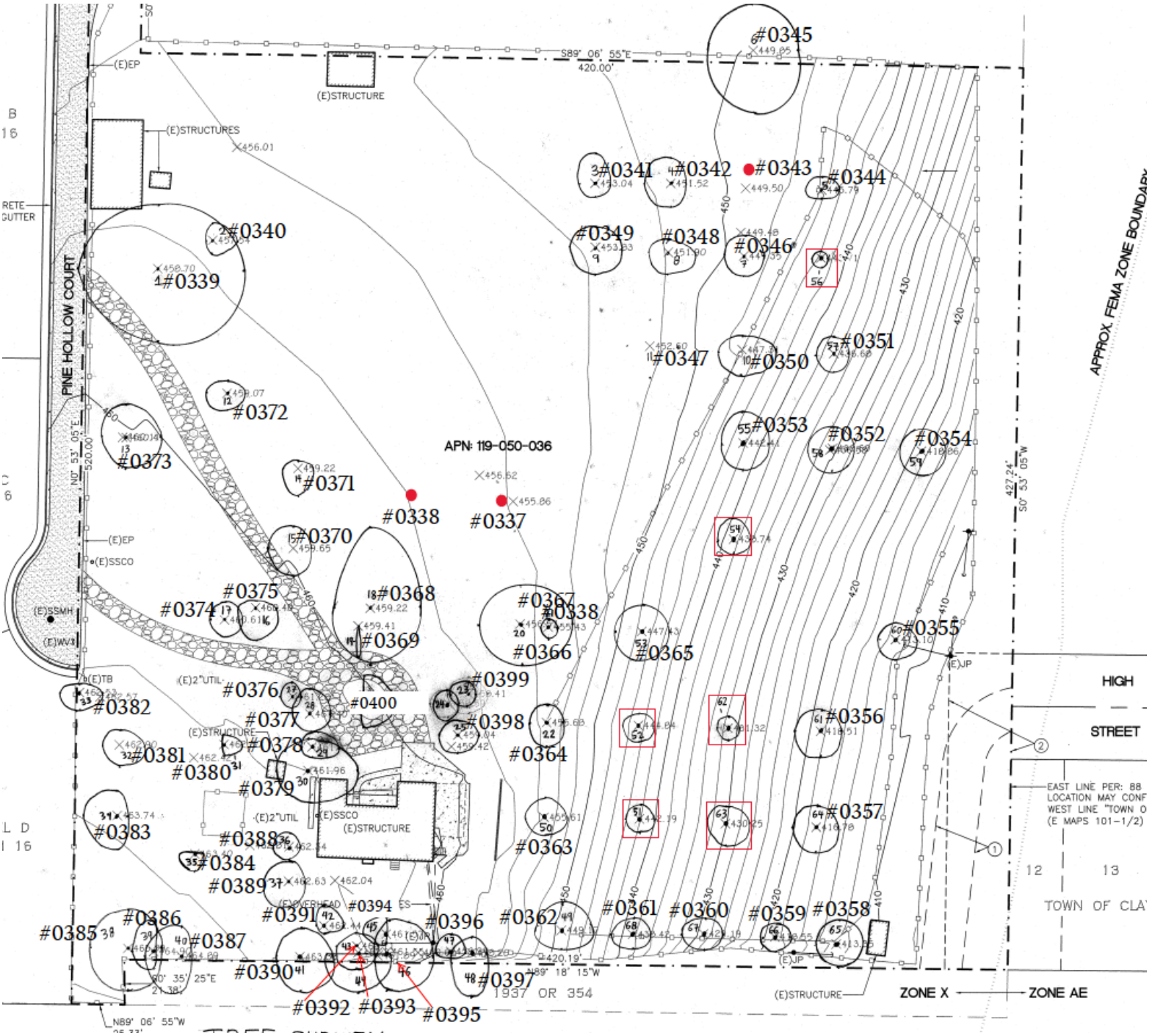
scaffold – large, structural branch

structure - physical and mechanical qualities of tree

trunk circumference – measurement of trunk, distance around

trunk diameter - trunk circumference divided by 3.14

APPENDIX G - TREE LOCATION MAP



APPENDIX H - CERTIFICATE OF PERFORMANCE

I, Michael Baefsky certify:

- That I have reviewed the The City of Clayton Municipal Code, Chapter 15.70 Tree Protection
- That I have evaluated the subject trees, and stated my findings accurately. The extent of the evaluation is stated in the attached report;
- That I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no personal interest or bias with respect to the parties involved;
- That the analysis, opinions, and conclusions stated herein are my own;
- That my analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted professional practices;
- That no one provided significant professional assistance to the consultant, except as indicated within the report;
- That my compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party.

I certify that I am Registered Consulting Arborist #456, a member of the American Society of Consulting Arborists, and am Certified Arborist & Qualified Risk Assessor #WE0222A, Agricultural Pest Control Advisor #074617, Qualified Applicator #99864, Licensed Landscape Contractor (inactive) #931410, and have been involved in the practice of Arboriculture, Integrated Pest Management, Plant Health Care and Ecological Soils Management, and the study of soils and horticulture for over thirty years.

Michael Baefsky