Deborah Ellis, MS

Consulting Arborist & Horticulturist

Service since 1984

ARBORIST REPORT

Tree Inventory & Descriptions

Dialysis Clinic

2121 Alexian Drive,
San Jose, California

Prepared for:

Steve Cox
HPC Architecture
2216 The Alameda,
Santa Clara, CA 95050

Prepared by:
Deborah Ellis, MS.
Consulting Arborist & Horticulturist
Registered Consulting Arborist #305, American Society of Consulting Arborists
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SEPTEMBER 23, 2015

Report History: This is my first report for this project.

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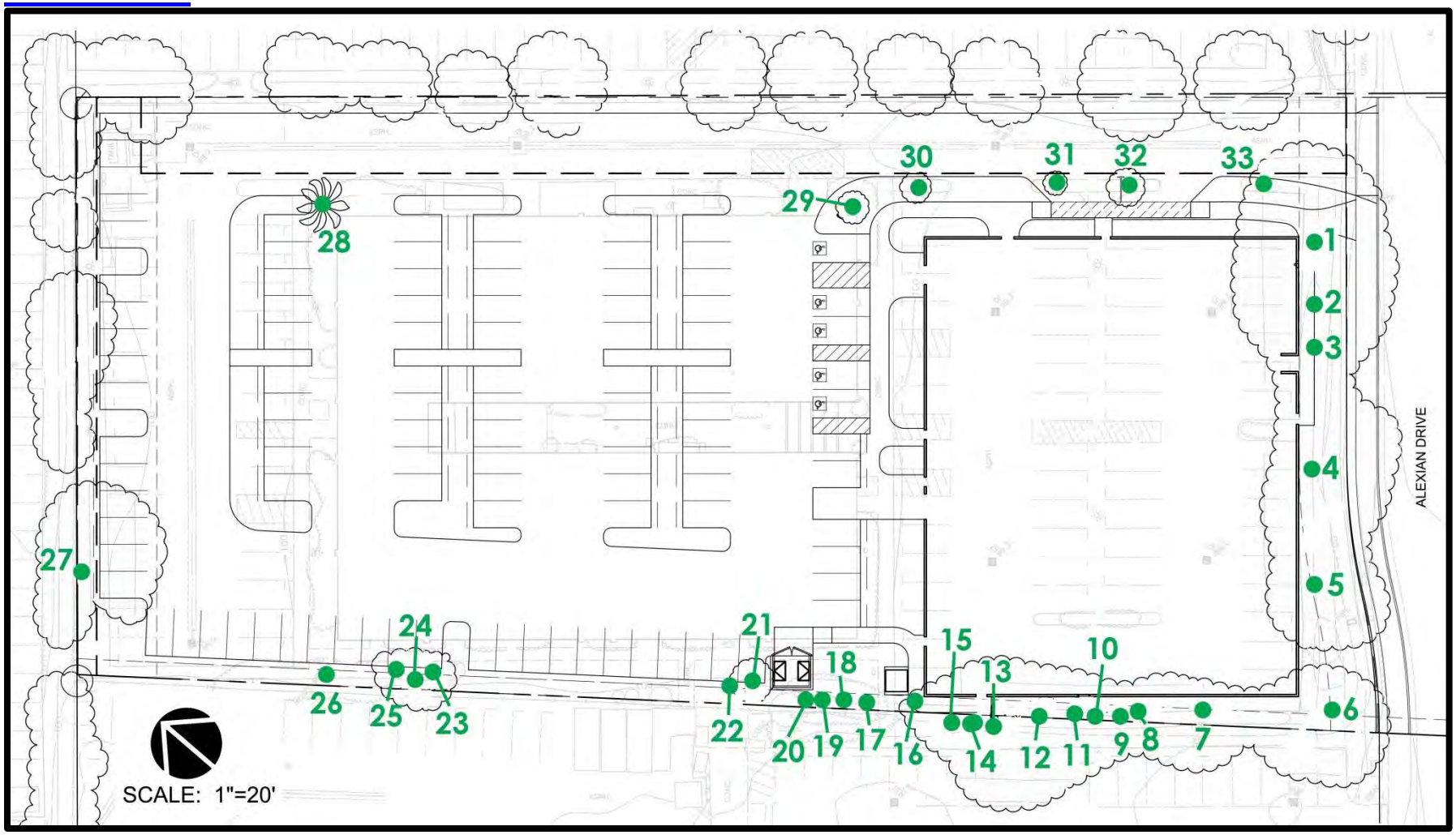
Cover photo: The front (southeast) perimeter of the project site along Alexian Avenue. **Red ironbark Eucalyptus #1 – 6** are labeled. All photos in this report were taken by D. Ellis on September 18, 2015.

PO Box 3714, Saratoga, CA 95070. 408-725-1357. decah@pacbell.net. http://www.decah.com.

TREE MAP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ALEXIAN DRIVE
SCALE: 1"=20'

SUMMARY

The existing medical building on the project site will be renovated. I understand that all existing trees on the project site will be removed. My assignment is to evaluate, record and describe the size and health of these trees, and to tag the trees with numbered metal tags to aid the project surveyors in locating and mapping the trees. Heritage-size trees (with trunk diameters of 18 inches or greater, measured at 2 feet above the ground) have been noted; 16 such trees are described (**#1-8, 10-15, 27 and 28**).

This report provides a description of each tree on the project site, as well as some of the trees on neighboring sites whose canopies overhang the project site. The Tree Map on the previous page shows the location of the trees, and the Tree Table beginning on page 4 includes all tree information. None of the trees that are described in this report are native to the immediate area, and all trees appear to have been planted as a part of the landscaping for the project site and neighboring properties.

Tree Protection Specifications for trees to remain on neighboring properties are attached as a separate document, dated September 23, 2015.

RECOMMENDATIONS

1) **Do not remove or prune to remove** more than 25% of the live branches of any protected tree until a valid tree removal permit has been obtained from the City of San Jose.

2) **Neighboring trees**: whose canopies overhang the project site and which will not be removed should receive tree protection in the same manner as any existing trees that would remain on the project site; for example, the general contractor shall fence off the dripline of these trees as much as possible prior to the beginning of demolition and construction in order to avoid damaging branches and compacting the soil beneath their canopies. If pruning is necessary in order to avoid branch breakage, the general contractor shall hire a qualified tree service[1] to perform the minimum necessary construction clearance pruning. Tree Protection Specifications for these trees are included as a separate document dated September 23, 2015. These Specifications should be included in the final project plan set and should replace any other tree information (for example the Tree Protection Notes included on the Tree Survey Plan I received. I have included a separate copy of the Tree Protection Specifications for your convenience.

[1] Terms highlighted at their first occurrence in this report are explained in the Glossary on page 17.

3) **I should review all site-based plans for this project.** I have only reviewed the Tree Survey Plan by Hill Associates, dated September 11, 2015. That plan was used for the Tree Map that is included in this report. Improvements on plans that were not reviewed or have been revised may cause additional trees (e.g. those on neighboring properties) to be impacted and/or removed. Plans reviewed by the arborist should be full-size, to-scale and with accurately located tree trunks and canopy driplines relative to proposed improvements. Scale should be 1:20 or 1:10.

4) **As a part of the design process, try to keep improvements (and any additional over-excavation or work area beyond the improvement) as far from tree trunks and canopies as possible.** *6xDBH*[2] or the dripline of the tree, whichever is greater, should be used as the minimum distance for any soil disturbance to the edge of the trunk. 3xDBH should be considered the absolute minimum distance from any disturbance to the tree trunk on one side of the trunk only, for root protection. Farther is better, of course. For disturbances on multiple sides of the trunk, then 6xDBH or greater should be used, and farther is also better here. Tree canopies must also be taken into consideration when designing around trees. Don't forget the minimum necessary working margin around improvements as you locate those improvements. Disturbance usually comes much closer to trees than the lines shown on the plans!

5) **Construction or landscaping work done underneath the dripline of existing trees should preferably be done by hand**, taking care to preserve existing roots in undamaged condition as much as possible and cutting roots cleanly by hand when first encountered, when those roots must be removed. A qualified consulting arborist (the project arborist) should be hired to monitor tree protection and supervise all work underneath the dripline of trees. This also applies to trees on neighboring properties whose canopies overhang the work site.

6) **Landscaping:** New landscaping and irrigation can be as much or more damaging to existing trees than any other type of construction. The same tree root protection distances recommended for general construction should also be observed for new landscaping. Within the root protection zone it is usually best to limit landscape changes to a 3 to 4-inch depth of coarse organic mulch such as wood or bark chips or tree trimming chippings spread over the soil surface. The environment around existing trees should be changed very carefully or not at all – please consult with me regarding changes in the landscape around existing trees and/or have me review the landscape and irrigation plans for this project.

7) **Trees to remain after adjacent trees are removed** should be re-evaluated by me or the project arborist after the surrounding trees have been taken out.

[2] See page 13 for an explanation of tree protection root distances.

8) **General Tree Maintenance:** Do no unnecessary pruning, fertilization or other tree work. Pre-construction pruning should be limited to the absolute minimum required for construction clearance. A qualified tree service should be hired to provide such pruning.

TREE TABLE

This Table is continued through page 5. Data fields in the Table are explained on pages 6 to 7.
** denotes Heritage size tree. + denotes tree not tagged in field.*

Tree #	*Species* & Common Name	Trunk Diam.	Size	CONDITION		Preservation Suitability	Notes
				Vigor	Structure		
*1	*Eucalyptus sideroxylon*, red ironbark	27	40*30	85	50	Fair	
*2	red ironbark	27	50*40	80	45	Fair/Poor	
*3	red ironbark	21	38*30	80	50	Fair	
*4	red ironbark	28	40*35	80	60	Fair	
*5	red ironbark	22	50*22	80	60	Fair	
*6	red ironbark	25	40*25	90	60	Fair	
*7	*Melaleuca linariifolia*, flaxleaf paperbark	25	20*20	60	60	Fair	
*8	flaxleaf paperbark	19	20*16	50	60	Fair/Poor	
9	flaxleaf paperbark	17	17*14	60	50	Fair/Poor	
*10	flaxleaf paperbark	25	17*18	60	50	Fair/Poor	
*11	*Pinus canariensis*, Canary Island pine	19	50*18	90	60	Fair/Good	
*12	Canary Island pine	20	60*20	80	60	Fair/Good	
*13	Canary Island pine	24	60*22	80	60	Fair/Good	
*14	flaxleaf paperbark	30	22*20	50	60	Fair/Poor	
*15	flaxleaf paperbark	19	22*16	70	60	Fair	

Tree #	*Species* & Common Name	Trunk Diam.	Size	CONDITION		Preservation Suitability	Notes
				Vigor	Structure		
+16	*Celtis australis*, European hackberry	2	10*4	60	50	Fair	Growing through shrubs, so cannot see lower trunk.
17	*Rhamnus alaternus*, Italian buckthorn	4	10*7	90	60	Fair	This species is generally grown as a shrub, but this plant has been trained to a single trunk tree form.
18	European hackberry	5	15*6	80	50	Fair/Poor	
19	*Prunus caroliniana*, Carolina laurel cherry	4	16*12	90	75	Good	
20	European hackberry	7	16*12	90	50	Fair/Poor	Trunk of this tree is 4 feet from previous tree #19.
21	Italian buckthorn	3,3	8+6	100	50	Fair/Poor	Pruned so that it looks like a lollipop.
22	Italian buckthorn	4,5	7*6	80	40	Fair/Poor	Same as previous, but worse.
23	European hackberry	4,4	8*4	80	40	Poor	
24	European hackberry	6,4	9*6	90	40	Fair/Poor	
25	European hackberry	4,4	14*9	70	60	Fair	
+26	Olea europaea, olive	3,4	8*16	85	50	Fair	Grown as a narrow sheared hedge which is entwined in a cyclone fence.
*27	olive	19	30*45	100	60	Fair	A beautiful, vigorous tree but it drops copious amounts of fruit over the parking lot.
*28	*Phoenix canariensis,* Canary Island palm	20	12*18	80	60	Fair	Four feet of clear trunk.
29	*Lagerstroemia* hybrid, crape myrtle	2	12*10	80	50	Fair/Good	
30	crape myrtle	3	15*12	85	50	Fair/Good	
31	crape myrtle	2	14*10	80	50	Fair/Good	
32	crape myrtle	3	16*10	80	60	Fair/Good	
33	crape myrtle	1	10*5	50	60	Fair/Poor	Too shaded by nearby large Eucalyptus to do well.

End of Table

EXPLANATION OF TREE TABLE DATA COLUMNS:

1) **Tree Number** (the field tag number of the existing tree). Each existing tree in the field is tagged with a 1.25 inch round aluminum number tag (exceptions noted in the Tree Table) that corresponds to its tree number referenced in the arborist report, Tree Map, Tree Protection Specifications and any other project plans where existing trees must be shown and referenced.

2) **Tree Name and Type:**
Species: The *Genus* and *species* of each tree. This is the unique scientific name of the plant, for example *Quercus agrifolia* where *Quercus* is the Genus and *agrifolia* is the species. The scientific names of plants can be changed from time to time, but those used in this report are from the most current edition of the *Sunset Western Garden Book* (2012) Sunset Publishing Corporation. The scientific name is presented at its first occurrence in the Tree Table, along with the regional common name. After that only the common name is used.

3) **Trunk diameter (at 2 feet above the ground).** This is the trunk diameter measurement height required by the City of San Jose, in lieu of *DBH* (DBH is "diameter at breast height", 4.5 feet above the ground). Trunk diameter is measured when possible, and estimated when it is not possible or safe to physically measure. For multi-trunk trees, trunk diameter is measured for the largest trunk and estimated for all smaller trunks.

4) **Size**: tree size is listed as height x width in feet, estimated and approximate and intended for comparison purposes.

5) **Condition Ratings**: Trees are rated for their *condition* on a scale of *zero to 100* with zero being a dead tree and 100 being a perfect tree (which is rare – like a supermodel in human terms). A 60 is "average" (not great but not terrible either). There are two components to tree condition – ***vigor*** and ***structure***, and each component is rated separately. Averaging the two components is not useful because a very low rating for either one could be a valid reason to remove a tree from a site -- even if the other component has a high rating. Numerically speaking for each separate component:

100 is equivalent to *Excellent* (an `A' academic grade), **80** is *Good* (B), **60** is *Fair* (C), **40** is *Poor* (D), **20** is *Unacceptable* (F) and **0** is *Dead*.

6) Relative to the scope of work for this report, tree *Condition* has been rated but not explained in detail and recommendations for the management of tree condition have not been included. The tree owner may contact Deborah Ellis for additional information on tree condition and specific recommendations for the general care of individual trees relative to their condition.

7) The *Condition* of the tree is considered relative to the tree species and present use of the site to provide an opinion on the tree's Preservation Suitability Rating (i.e. "Is this tree worth keeping on this site, in this location, as explained in Table 2 on the next page. This is based upon the scenario that the tree is given enough above and below-ground space to survive and live a long life on the site. Ratings such as "Fair/Good" and "Fair/Poor" are

intermediate in nature. The Preservation Suitability rating is not always the same as the Condition Rating because (for example) some trees with poor condition or structure can be significantly improved with just a small amount of work – and it would be worthwhile to keep the tree if this were done.

Table 2 Preservation Suitability Rating Explanation

Excellent	Such trees are rare but they have unusually good health and structure and provide multiple functional and aesthetic benefits to the environment and the users of the site. These are great trees with a minimum rating of "Good" for both vigor and structure. Equivalent to academic grade `A'.
Good	These trees may have some minor to moderate structural or condition flaws that can be improved with treatment. They are not perfect but they are in relatively good condition and provide at least one significant functional or aesthetic benefit to the environment and the users of the site. These are better than average trees equivalent to academic grade `B'.
Fair	These trees have moderate or greater health and/or structural defects that it may or may not be possible to improve with treatment. These are "average" trees – not great but not so terrible that they absolutely should be removed. The majority of trees on most sites tend to fall into this category. These trees will require more intensive management and monitoring, and may also have shorter life spans than trees in the "Good" category. Retention of trees with moderate suitability for preservation depends upon the degree of proposed site changes. Equivalent to academic grade `C'.
Poor	These trees have significant structural defects or poor health that cannot be reasonably improved with treatment. These trees can be expected to decline regardless of management. The tree species themselves may have characteristics that are undesirable in landscape settings or may be unsuitable for high use areas. I do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Equivalent to academic grade `D'.
None	These trees are dead and/or are not suitable for retention in their location due to risk or other issues. In certain settings however, (such as wilderness areas, dead trees are beneficial as food and shelter for certain animals and plants including decomposers. Equivalent to academic grade `F'.

INTRODUCTION

PURPOSE & USE OF REPORT

This survey and report was required by the city of San Jose as a part of the building permit process for this project. The purpose of the report is to identify and describe the existing trees on or adjacent to the project site that are within or close to proposed construction - - their size, condition and suitability for preservation. The audience for this report is the property owner, developer, project architects and contractors, and City of San Jose authorities concerned with tree preservation and tree removal. The goal of this report is to preserve existing trees on or adjacent to the project site that are in acceptable condition, are good species for the area, will fit in well with the proposed new use of the site and will be adequately protected during construction.

METHODOLOGY

I performed a brief evaluation of the subject trees from the ground on September 18, 2015. Tree characteristics such as form, weight distribution, foliage color and density, wounds and indicators of decay were noted. Surrounding site conditions were also observed. Evaluation procedures were taken from:

- American National Standard A-300 (Part 5) – 2012 for *Tree Care Operations – Tree, Shrub & Other Woody Plant Management – Standard Practices (Management of Trees, & Shrubs During Site Planning, Site Development and Construction*).
- International Society of Arboriculture, *Best Management Practices:*
  - *Managing Trees during Construction*. 2008
  - *Tree Inventories*. 2013

The above references serve as industry professional standards for tree evaluation and written findings and recommendations for trees on construction sites prior, during and after site development.

I measured the trunk diameter of each tree with a diameter tape at 2 feet above the ground, which is the required trunk diameter measurement height of the city of San Jose. Trunk diameter was rounded to the nearest inch. I estimated the tree's height and canopy spread. Tree *Condition* (structure and vigor) was evaluated and I also recorded additional notes for trees when significant. Tree species and condition considered in combination with the current use of the site yields the *Tree Preservation Suitability* rating. The more significant trees (or groups of trees) were photographed with a digital camera. Some of these photos are included in this report, but all photos are available from me by email if requested.

OBSERVATIONS

SITE CONDITIONS

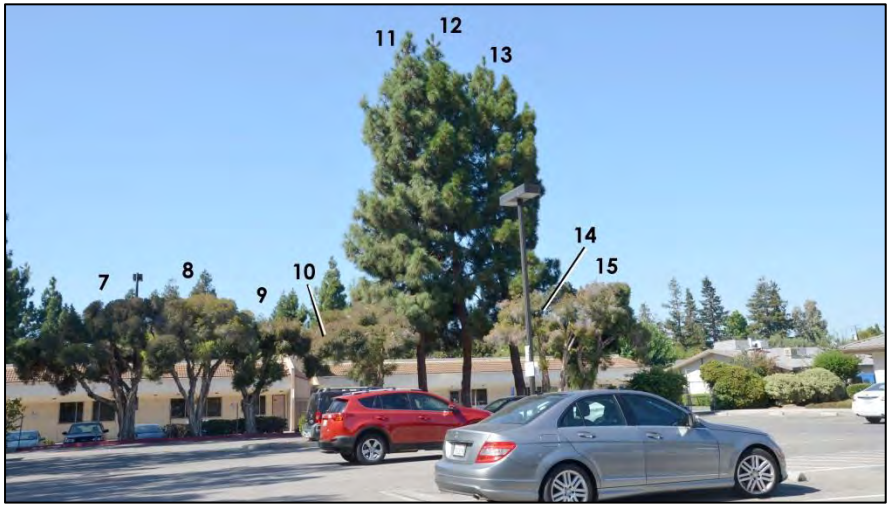
There is an existing medical building site, along with parking lot and perimeter and some interior landscaping. Landscaping is typical of the surrounding area. Site topography is predominantly level. Sun exposure for the trees varies from full to partly shaded, depending upon proximity to existing buildings and to other trees. Most of the trees mentioned in this report probably receive irrigation. None of the trees are native to the immediate area, and all trees appear to have been planted as a part of the landscaping for the project and neighboring sites. Landscape maintenance is of a "moderate" level.

TREES ON NEIGHBORING PROPERTIES

There are some trees on neighboring properties whose canopies overhang the site. Photos of these trees are included on pages 10 – 12. London plane trees (*Platanus* x *hispanica*) are behind a masonry wall along the east perimeter of the site. There are also some London plane trees along the North perimeter. Trees along the west perimeter have been included in this report.

APPENDIX
TREE PHOTOS

Upper photo: **red ironbark Eucalyptus #1 and 2** at left. At right are London plane trees on neighboring property to the northeast. Canopies of these trees overhang the masonry wall and the project site by up to 15 feet.



Lower photo: **flaxleaf paperbark trees #7-10 and 14-15**, with **Canary Island pines #11-13** in between.

Upper Left: **crape myrtle #33** in the foreground at left, with **Canary Island pines #11-13** in the background. At right **crape myrtles #30-32** are labeled.

Upper Right: the southwest side of the existing building, and the parking lot extending toward the rear of the site, viewed southwest to northeast. **Trees #16 – 24** are located in this area. These are small trees; many not located on the plan we received. **Tree #19** is a 4-inch diameter Carolina laurel cherry.

Lower Right: same as above, but viewed from northwest to southeast. **Tree #24** is a 4 + 4 inch diameter European hackberry.

Upper Left: rear (northwest) parking lot perimeter, with **olive #27** labeled. London plane trees on neighboring property are in the background.

Lower Left: looking toward Alexian Drive from the northwest perimeter of the site. **Crape myrtles #29 – 33** are labeled. Overhanging trees to the left are London planes on neighboring property, behind a masonry wall.

Right: **Canary island palm #28** at right, with northwest neighboring London plane trees behind the masonry wall.

TREE ROOT PROTECTION DISTANCES

No one can estimate and predict with absolute certainty how far a soil disturbance such as an excavation must be from the edge of the trunk of an individual tree to effect tree stability or health at a low, moderate or severe degree -- there are simply too many variable involved that we cannot see or anticipate. **3xDBH** however, is a reasonable "rule of thumb" minimum distance (in feet) any soil disturbance should be from the edge of the trunk on one side of the trunk. This is supported by several separate research studies including (Smiley, Fraedrich, & Hendrickson 2002, Bartlett Tree Research Laboratories). DBH is trunk "diameter at breast height" (4.5 feet above the ground). This distance is often used during the design and planning phases of a construction project in order to estimate root damage to a tree due to the proposed construction. It tends to correlate reasonably well with the *zone of rapid taper*, which is the area in which the large buttress roots (main support roots close to the trunk) rapidly decrease in diameter with increasing distance from the trunk. For example, using the 3X DBH guideline an excavation should be no closer than 4.5 feet from the trunk of an 18-inch DBH tree. For trees with multiple trunks, an adjusted DBH is often calculated using 100% of the largest trunk plus 50% of the remaining smaller trunks. Such distances are guidelines only, and should be increased for trees with heavy canopies, significant leans, decay, structural problems, etc. I will generally not recommend a root protection distance of less than 5 feet for any tree, even very small trees. It is also important to understand that in actual field conditions we often find that much less root damage occurs than was anticipated by the guidelines. 3xDBH may be more of an aid in preserving tree stability and not necessarily long-term tree health.

6 to 18 X DBH is the minimum distance which is recommended in the *ANSI (American National Standard) A300 (Part 5)-2012 Management of Trees & Shrubs During Site Planning, Site Development, & Construction*, and also in the companion publication from the International Society of Arboriculture, *Best Management Practices, Managing Trees During Construction*, 2008. When the 6 to 18 x DBH distance cannot be met, "appropriate mitigation or determination that the work will not impact tree health and stability shall be performed", according to the ANSI Standard. ANSI A300 (Part 8) – 2013 Root Management, states: "When roots are damaged within 6 times the trunk diameter (DBH) mitigation shall be recommended." For practical purposes I use the 6 x DBH distance as the minimal distance acceptable (in most circumstances) in order to maintain good tree health and structural stability. The 6 x DBH distance or greater should definitely be used when there are soil disturbances on more than one side of the trunk.

OTPZ (Optimum Tree Protection Zone): OTPZ is the distance in feet from the trunk of the tree, all around the tree, that construction or other disturbance should not encroach within. If this zone is respected, then chances of the tree surviving construction disturbance are very good. This method takes into account tree age and the particular species tolerance to root disturbance. Although there are no scientifically based methods to determine the minimum distance for construction (for example, root severance) from trees to assure their survival and stability, there are some guidelines that are often used in the arboricultural industry. The most current guideline comes from the text, *Trees & Development*, Matheny et al., International Society of Arboriculture, 1998. Due to the crowded, constrained nature of many building sites it is often not be possible to maintain the OPTZ distance recommended for many trees -- therefore I include the 3 and 6X DBH distances in my recommendations.

ASSUMPTIONS & LIMITATIONS

1. **Tree locations** were provided by an unknown party and are shown on the Tree Map on page 1 of this report. The tree map is a reduced partial copy of the Tree Survey Plan that I was given. Tree locations are assumed to be accurate but should be verified in the field.
2. **Some of the trees described in this report were not included on the Tree Survey Plan** (**trees #15-21 and 26**) and so we tentatively plotted the approximate locations of these trees on the *Tree Map*. These trees should be accurately surveyed in the field and plotted on the appropriate site-based plans.
3. **A Level 2 Basic Evaluation** of the subject trees described in this report was performed on August 5, 2015 for the purpose of this report. This is a brief visual evaluation of the tree from the ground, without climbing into the tree or performing detailed tests such as extensive digging, boring or removing samples. The tree is viewed by walking all around it, unless this is not possible. This type of evaluation is an initial screening of the tree after which the evaluator may recommend that additional, more detailed examination(s) be performed if deemed necessary. An assessment of tree risk was not performed during the evaluation.
4. **London plane trees on neighboring properties to the Northwest and Northeast were not evaluated.** They were only viewed cursorily from the project site. I did not enter the neighboring property to inspect these trees up close, and the trees have not been tagged.
5. **Some trees had their root collars and or lower trunks covered** with soil, vegetation or debris and were obstructed from view when I conducted my tree evaluation. If these trees may remain, the obstructions should be removed and I should re-examine these previously covered areas.
6. **Any information and descriptions provided to me for the purpose of my investigation in this case and the preparation of this report are assumed to be correct**. Any titles and ownerships to any property are assumed to be good and marketable. I assume no responsibility for legal matters in character nor do I render any opinion as to the quality of any title.
7. **The information contained in this report covers only those items that were examined** and reflects the condition of those items at the time of inspection.
8. **Loss or removal of any part of this report** invalidates the entire report.
9. **Possession of this report, or any copy thereof, does not imply right of publication** for use for any purpose by any person other than to whom this report is addressed without my written consent beforehand.
10. **This report and the ratings or values represented herein represent my opinion**. My fee is in no way contingent upon the reporting of a specified value or upon any finding or recommendation reported.
11. **This report has been prepared in conformity with generally acceptable appraisal/diagnostic/reporting methods and procedures** and is consistent with practices recommended by the International Society of Arboriculture and the American Society of Consulting Arborists.

12. **My evaluation of the trees that are the subject of this report is limited to visual examination of accessible items without dissection, excavation, probing or coring**. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.
13. **I take no responsibility for any defects in any tree's structure**. No tree described in this report has been climbed and examined from above the ground, and as such, structural defects that could only have been discovered have not been reported, unless otherwise stated. Structural defects may also be hidden within a tree, in any portion of a tree. Likewise, root collar excavations and evaluations have not been performed unless otherwise stated.
14. **The measures noted within this report are designed to assist in the protection and preservation of the trees mentioned herein**, should some or all of those trees remain, and to help in their short and long term health and longevity. This is not however; a guarantee that any of these trees may not suddenly or eventually decline, fail, or die, for whatever reason. Because a significant portion of a tree's roots are usually far beyond its dripline, even trees that are well protected during construction often decline, fail or die. Because there may be hidden defects within the root system, trunk or branches of trees, it is possible that trees with no obvious defects can be subject to failure without warning. The current state of arboricultural science does not guarantee the accurate detection and prediction of tree defects and the risks associated with trees. There will always be some level of risk associated with trees, particularly large trees. It is impossible to guarantee the safety of any tree. Trees are unpredictable.

****

I certify that the information contained in this report is correct to the best of my knowledge, and that this report was prepared in good faith. Thank you for the opportunity to provide service again. Please call me if you have questions or if I can be of further assistance.

Sincerely,

Deborah Ellis

Deborah Ellis, MS.
Consulting Arborist & Horticulturist
Certified Professional Horticulturist #30022
ASCA Registered Consulting Arborist #305
I.S.A. Board Certified Master Arborist WE-457B
I.S.A. Tree Risk Assessment Qualified

ENCLOSURES:

- Tree Protection Specifications for the Dialysis Clinic at 2121 Alexian Drive. D. Ellis, September 23, 2015.
- Tree Protection Sign Template (D. Ellis)

REFERENCES:

- *American National Standard A300 (Part 5)-2012 for Tree Care Operations – Tree, Shrub & Other Woody Plant Management – Standard Practices:*
  - (Part 5) – 2012 -- *Management of Trees & Shrubs During Site Planning, Site Development, & Construction*.
  - (Part 8) – 2013. *Root Management*.
  - (Part 9) – 2011. *Tree Risk Assessment. Tree Structure Assessment*.
- *Best Management Practices*, International Society of Arboriculture:
  - *Managing Trees during Construction*. *2008*
  - *Tree Inventories*. 2013.
- *The Guide for Plant Appraisal*, 9th edition, 2000, edited by the Council of Tree & Landscape Appraisers and published by the International Society of Arboriculture.
- *Species Classification & Group Assignment*. Western Chapter of the International Society of Arboriculture. 2004.

GLOSSARY

1. **Dripline**: the area under the total branch spread of the tree, all around the tree. Although tree roots may extend out 2 to 3 times the radius of the dripline, a great concentration of active roots is often in the soil directly beneath this area. The dripline is often used as an arbitrary "tree protection zone".
2. **Project Arborist. The arborist who is appointed to be in charge of arborist services for the project.** That arborist shall also be a *qualified consulting arborist* (either an International Society of Arboriculture (ISA) Board-Certified Master Arborist or an American Society of Consulting Arborists (ASCA) Registered Consulting Arborist) that has sufficient knowledge and experience to perform the specific work required. For most construction projects that work will include inspection and documentation of tree protection fencing and other tree protection procedures, and being available to assist with tree-related issues that come up during the project.
3. **Qualified Consulting Arborist:** must be either an International Society of Arboriculture (ISA) Board-Certified Master Arborist or an American Society of Consulting Arborists (ASCA) Registered Consulting Arborist that has sufficient knowledge and experience to perform the specific work required.
4. **Qualified Tree Service**: A tree service with a supervising arborist who has the minimum certification level of ISA (International Society of Arboriculture) Certified Arborist for at least 5 years, in a supervisory position on the job site during execution of the tree work. The tree service shall have a State of California Contractor's license for Tree Service (C61-D49) and provide proof of Workman's Compensation and General Liability Insurance. The person(s) performing the tree work must understand and adhere to the most current of the following arboricultural industry tree care standards:
   - Best Management Practices, Tree Pruning. International Society of Arboriculture, PO Box 3129, Champaign, IL 61826-3129. 217-355-9411
   - ANSI A300 Pruning Standards. Ibid. (Covers tree care methodology).
   - ANSI Z133.1 Safety Requirements for Arboricultural Operations. Ibid. (Covers safety).
5. **Root collar & root collar excavation and examination**: The *root collar* (junction between trunk and roots) is critical to whole-tree health and stability. A root collar excavation carefully uncovers this area (with hand digging tools, water or pressurized air). The area is then examined to assess its health and structural stability. Buttress roots may be traced outward from the trunk several feet. Decay assessment of the large roots close to the trunk (buttress roots) involves additional testing such as drilling to extract interior wood with a regular drill, or the use of a resistance-recording drill to check for changes in wood density within the root; as would be caused by decay or cavities. It is important to note that root decay often begins on the underside of roots, which is not detectable in a root collar excavation unless the entire circumference of the root is excavated and visible. Drill tests may detect such hidden decay. Note that it is not possible to uncover and evaluate the entire portion of the root system that is responsible for whole-tree stability. Decayed roots that are inaccessible (e.g. underneath the trunk) can be degraded to the extent that the whole tree may fail even though uncovered and examined roots in accessible locations appear to be sound.