



**CITY OF KIRKLAND**  
**Planning and Building Department**  
123 Fifth Avenue, Kirkland, WA 98033  
425.587.3225 - [www.kirklandwa.gov](http://www.kirklandwa.gov)

## CITY OF KIRKLAND NOTICE OF DECISION

**JANUARY 19, 2016**

**Permit application:** HBG Market Short Plat, File No. [SUB15-01895](#)

**Location:** [1932 Market Street](#) (see Attachment 1)

**Applicant:** Charles Perrenoud

**Project description:** Subdivide one parcel of 0.41 acres into two separate parcels in the RS 7.2 Zone (see Attachment 2).

**Decisions Included:** Short Plat (Process I)

**Project Planner:** Scott Guter

**SEPA Determination:** Exempt

**Department Decision:** **Approval with Conditions**

Eric Shields, Director  
Planning and Building Department

Decision Date:	January 13, 2016
Appeal Deadline:	February 2, 2016

Affected property owners may request a change in valuation for property tax purposes notwithstanding any program of revaluation.

**How to Appeal:** *Only the applicant or those persons who previously submitted written comments or information to the Planning Director are entitled to appeal this decision.* A party who signed a petition may not appeal unless such a party also submitted independent written comments or information. An appeal must be in writing and delivered, along with fees set by ordinance, to the Planning Department by **5:00 p.m., February 2, 2016**. For information about how to appeal, contact the Planning Department at (425)587-3225. An appeal of this project decision would be heard by the City's Hearing Examiner.

**Comment to City Council:** If you do not file an appeal, but would like to express concerns about policies or regulations used in making this decision or about the decision making process, you may submit comments to [citycouncil@kirklandwa.gov](mailto:citycouncil@kirklandwa.gov). Expressing your concerns in this way will not affect the decision on this application, but will enable the City Council to consider changes to policies, regulations or procedures that could affect future applications.

## **CONDITIONS OF APPROVAL**

1. This application is subject to the applicable requirements contained in the Kirkland Municipal Code, Zoning Code, and Building and Fire Code. Attachment 3, Development Standards, is provided in this report to familiarize the applicant with some of these development regulations. This attachment references current regulations and does not include all of the additional regulations. It is the responsibility of the applicant to ensure compliance with the various provisions contained in these ordinances. When a condition of approval conflicts with a development regulation in Attachment 3, the condition of approval shall be followed (see Conclusion IV.B).
2. Prior to recording the short plat, the applicant shall receive approval for a demolition permit application and complete the removal of the existing single-family residence and shed (see Section I.A).

**I. SITE AND NEIGHBORHOOD CONTEXT**

Zoning District	RS 7.2
Shoreline Designation	Not Applicable
Comprehensive Plan Designation	LDR 6 – Low Density Residential, Six dwelling units per acre.
Property Size	18,000 square feet (0.41 acres)
Current Land Use	Single-Family Residential (see Attachment 4)  <u>Staff Analysis:</u> The subject property contains a single-family residence and shed. The location of the existing home would not comply with the side and rear setbacks required from the proposed property line and access easement. The shed currently does not conform to the side yard setback requirement and would block access to the proposed Lot B. The existing home and shed should be removed prior to the recording of the short plat.
Proposed Lot Sizes	Lot A: 8,655 sq. ft. Lot B: 9,345 sq. ft.
Lot Size Compliance	All lots meet the minimum lot size requirement for the zone
Terrain	The subject property ascends approximately 22 feet over 209 feet (4.6 percent) from the northwest property corner towards the southeast property corner
Trees	There are 10 significant trees on the site and 7 significant trees located off site that may be affected by the proposed development. Attachment 5 shows the location, tree number, and general health of the trees, as assessed by the applicant’s arborist. The applicant is proposing a phased tree retention review pursuant to KZC 95.30.6.a. See Attachment 3, Development Standards, for information on the City’s review of the arborist report as well as tree preservation requirements.
Access	Access to proposed Lots A and B is taken from Market Street located within a joint access easement along the north property line.
Neighboring Zoning and Development	
• North	RS 7.2, Single Family
• South	RS 7.2, Single Family
• East	RS 7.2, Single Family

• West	RS 7.2, Single Family
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**II. PUBLIC NOTICE AND COMMENT**

**A.** The public comment period for this application ran from October 22, 2015 to November 9, 2015. No public comments were received.

**III. CRITERIA FOR SHORT PLAT APPROVAL**

**A.** Facts: Municipal Code section 22.20.140 states that the Planning Director may approve a short subdivision only if:

1. There are adequate provisions for open spaces, drainage ways, rights-of-way, easements, water supplies, sanitary waste, power service, parks, playgrounds, and schools; and
2. It will serve the public use and interest and is consistent with the public health, safety, and welfare. The Planning Director shall be guided by the policy and standards and may exercise the powers and authority set forth in RCW 58.17.

Zoning Code section 145.45 states that the Planning Director may approve a short subdivision only if:

3. It is consistent with all applicable development regulations and, to the extent there is no applicable development regulation, the Comprehensive Plan; and
4. It is consistent with the public health, safety, and welfare.

**B.** Conclusions: The proposal complies with Municipal Code section 22.20.140 and Zoning Code section 145.45. It is consistent with the Comprehensive Plan. With the recommended conditions of approval, it is consistent with the Zoning Code and Subdivision regulations and there are adequate provisions for open spaces, drainage ways, rights-of-way, easements, water supplies, sanitary waste, power service, parks, playgrounds, and schools. It will serve the public use and interest and is consistent with the public health, safety, and welfare because it will add housing stock to the City of Kirkland in a manner that is consistent with applicable development regulations.

**IV. DEVELOPMENT REGULATIONS**

The following is a review, in a checklist format, of compliance with the design requirements for subdivisions found in KMC 22.28. All lots comply with the minimum lots sizes for this zone.

Not Applicable	Complies as proposed	Complies as conditioned	Code Section
			<b>KMC 22.28.050 – Lots - Dimensions</b>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lots are shaped for reasonable use and development
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Minimum lot width is 15' where abutting right-of-way, access easement, or tract
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	For lots smaller than 5,000 square feet in low density zones:  <input type="checkbox"/> All lots are at least 50' wide at back of required front yard; OR

			<input type="checkbox"/> Excepted are: <input type="checkbox"/> Flag lots or <input type="checkbox"/> Lots where a covenant will be submitted prior to short plat recording requiring garage to be located at rear of lot
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**VI. SUBSEQUENT MODIFICATIONS**

Modifications to the approval may be requested and reviewed pursuant to the applicable modification procedures and criteria in effect at the time of the requested modification.

**SHORT PLAT DOCUMENTS – RECORDATION – TIME LIMIT (KMC 22.20.370)**

**VII.** The short plat must be recorded with King County within five (5) years of the date of approval or the decision becomes void; provided, however, that in the event judicial review is initiated, the running of the five (5) years is tolled for any period of time during which a court order in said judicial review proceeding prohibits the recording of the short plat.

**VIII. APPENDICES**

Attachments 1 through 4 are attached.

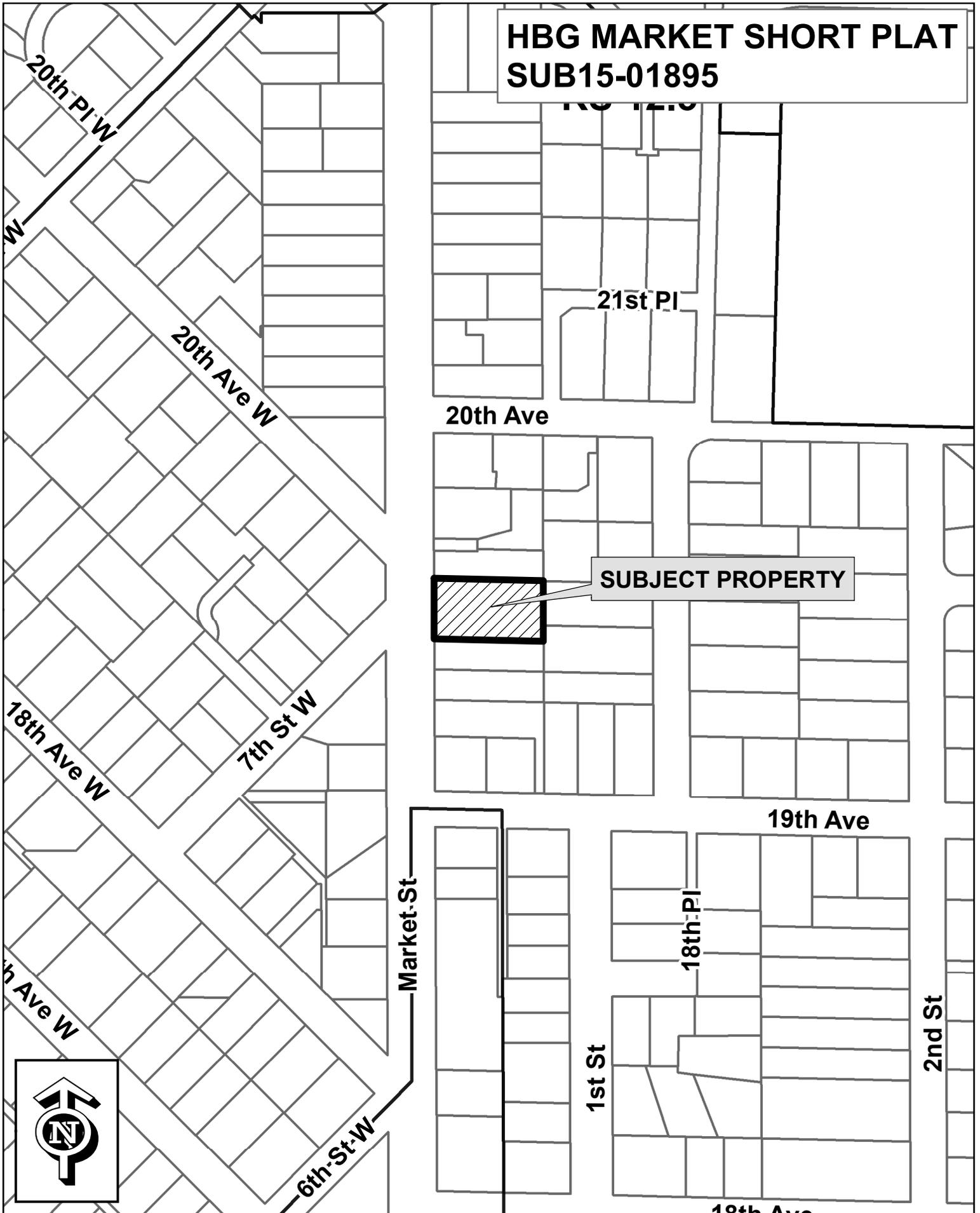
1. Vicinity Map
2. Proposed Plan
3. Development Standards
4. Preliminary Civil Plans
5. Arborist Report

**IX. PARTIES OF RECORD**

Applicant: Charles Perrenoud, 1122 6<sup>th</sup> Avenue, Edmonds WA 98020  
Planning and Building Department  
Department of Public Works



# HBG MARKET SHORT PLAT SUB15-01895





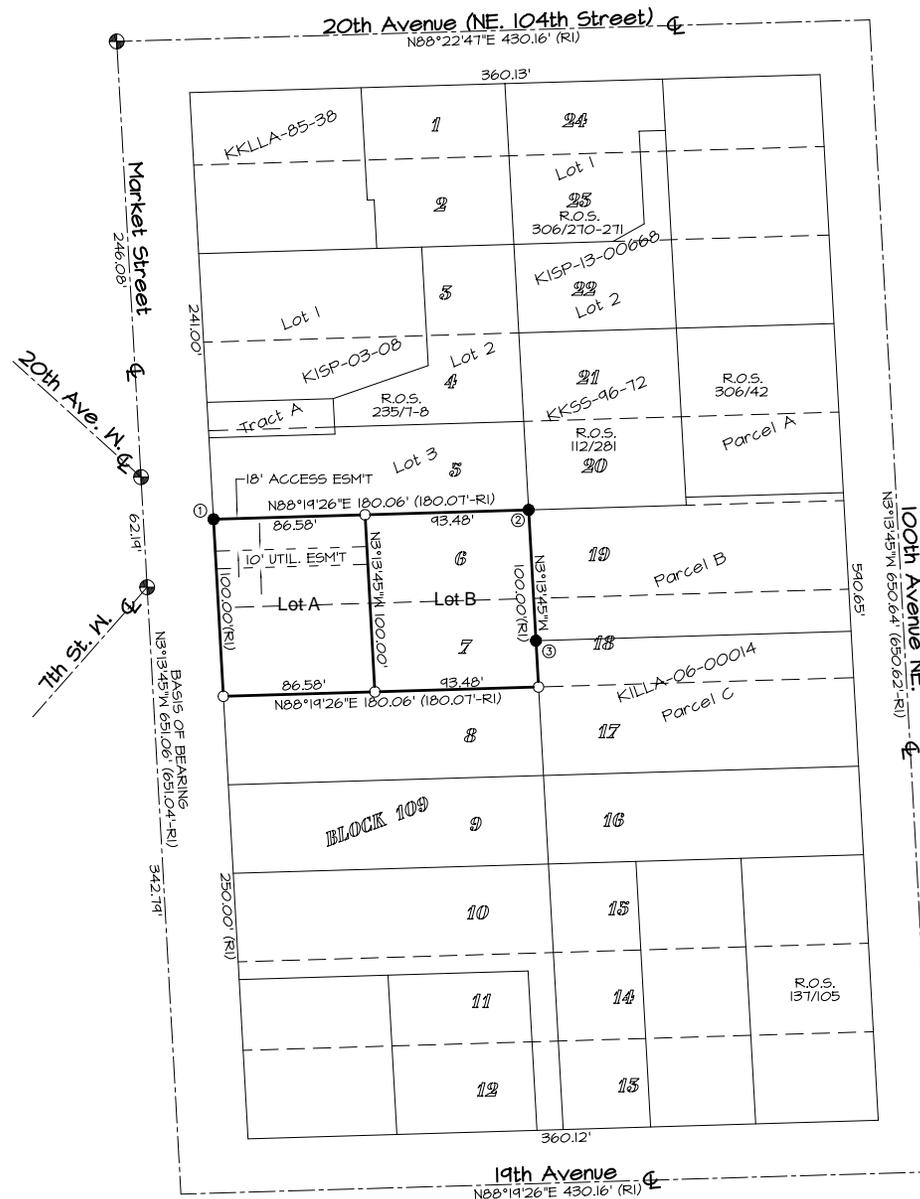


# Highland Builders Short Plat

A PORTION OF THE SE1/4, SE1/4, SEC.31,T.25N, R.5E., W.M.  
CITY OF KIRKLAND, KING COUNTY, WASHINGTON

# Short Plat City of Kirkland

FILE NO: SUB15-00XXX



**NOTES**

1. Required minimums for accuracy and precision of measurement as specified by WAC 332-130-090 were exceeded during the commission of this survey.
2. In accordance with WAC 332-130-100, this survey was conducted using field traverse procedures with a SOKKIA SRX105 total station.
3. The basis of bearing (meridian) is the centerline of Market Street according to the plat of Burke & Farrar's Kirkland Addition to the City of Seattle Division No. 21 - Volume 21 of Plats, Page 90, monumented as shown.
4. The dimensions of Block 109 is according to reference R6.

**LEGEND**

- ⊕ CASED CONCRETE MONUMENT W/ PUNCHED 3" BRASS CAP (OCCUPIED 4/15)
- SET #4 REBAR/CAP 'M.S. WEBB PLS 16230' (UNLESS OTHERWISE NOTED)
- EXISTING AS DESCRIBED
- § LOT NUMBER IN BLOCK 109 - BURKE & FARRAR'S KIRKLAND ADDITION TO THE CITY OF SEATTLE DIVISION NO. 21 - VOL.21/Pg.90
- R.O.S. RECORD OF SURVEY
- XX/XX VOL./Pg.

**REFERENCES**

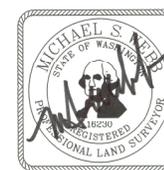
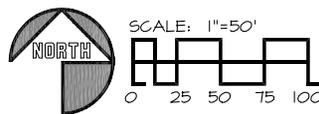
- R1 - Plat of BURKE & FARRAR'S KIRKLAND ADDITION TO THE CITY OF SEATTLE DIV. NO. 21 - VOL.21/Pg.90
- R2 - Record of Survey - Vol.112/Pg.281
- R3 - Record of Survey - Vol.137/Pg.105
- R4 - Record of Survey - Vol.1235/Pgs.7-8
- R5 - Record of Survey - Vol.306/Pg.42
- R6 - Record of Survey - Vol.306/Pgs.270-271

**LOT AREAS**

Lot A = 8,655 Sq. Ft.  
Lot B = 9,345 Sq. Ft.

**CORNER DESCRIPTIONS**

- ① TACK IN LEAD PLUG W/ ID WASHER "HART 8409" ON TOP OF ROCKERY 0.05'N & 0.06'W OF LOT CORNER
- ② #4 REBAR/CAP "HART 8409" AT CORNER LOCATION
- ③ #4 REBAR/CAP "HART 8409" 0.15'W & 0.08'S OF CORNER LOCATION



 <b>362 Buck Loop Road Sequim, Washington 98382 Phone: (360) 681-4858</b>		
DWN. BY	DATE	JOB NO.
MSW	AUG. 18, 2015	2015-024
CHKD. BY	SCALE	PAGE
MSW	SCALE: 1"=50'	2 of 2



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## SHORT PLAT DEVELOPMENT STANDARDS LIST

**File:** HBG Market Short Plat (SUB15-01895)

*This application must comply with all applicable standards. The listing below outlines those standards in a typical development sequence.*

*KMC refers to Kirkland Municipal Code, KZC refers to Kirkland Zoning Code*

### TREE PLAN SUMMARY

#### **KMC 22.28.210 & KZC 95.30 Significant Trees.**

A Tree Retention Plan was submitted with the short plat. During the review of the short plat, all proposed improvements were unknown. Therefore KZC Section 95.30 (6)(a) – Phased Review applies in regards to tree retention. There are 10 significant trees on the site, of which 7 are viable. These trees have been assessed by staff and the City’s Arborist. They are identified by number in the following chart.

<b>Significant Trees:</b>	<b>High Retention Value</b>	<b>Moderate Retention Value</b>	<b>Low Retention Value</b> (V) – viable (NV) – not viable
936			Not viable
938		<b>X</b>	
941	<b>X</b>		
943	<b>X</b>		
944	<b>X</b>		
945	<b>X</b>		
948			viable
949	<b>X</b>		

The arborist report is accurate. High retention value trees are #941, 943, 944, 945 and 949. I will note that tree #941 appear to be located on lot B. Tree #938 is the only moderate retention value tree. Trees #936 and 948 are low retention value trees because of injury as well as other complications. Tree #936 is a not viable low retention value tree because there was recent trenching through its root zone approximately 10 feet south of its trunk which appears to be associated with a drainage line or sewer line. It is also has a significant amount of die-back in the canopy, which is unusual for a typically vigorous silver maple. Tree #948 is rated viable low retention value tree because of a basal wound around more than half its circumference and approximately 30 inches long and because it is suppressed between tree #949, a ~28” DBH big leaf maple, a ~14” DBH atlas cedar and a ~14” western red cedar. I recommend removing tree #948 to reduce risk and allow for tree #949 to develop a full canopy.

Neighbor's trees: no concerns at this time. I appreciate the utilities being indicated for installation along the south side of the easement, as far away from trees #950 through 954 as possible.

ROW trees: no concerns at this time.

No trees are to be removed with an approved short plat or subdivision permit. Based on the approved Tree Retention Plan, the applicant shall retain and protect all viable trees throughout the development of each single family lot except for those trees allowed to be removed for the installation of the plat infrastructure improvements with an approved Land Surface Modification permit. Subsequent approval for tree removal is granted for the construction of the house and other associated site improvements with a required Building Permit. The Planning Official is authorized to require site plan alterations to retain High Retention value trees at each stage of the project. In addition to retaining viable trees, new trees may be required to meet the minimum tree density per KZC Section 95.33.

#### **PRIOR TO RECORDING**

**KMC 22.20.362 Short Plat - Title Report.** The applicant shall submit a title company certification which is not more than 30 calendar days old verifying ownership of the subject property on the date that the property owner(s) (as indicated in the report) sign(s) the short plat documents; containing a legal description of the entire parcel to be subdivided; describing any easements or restrictions affecting the property with a description, purpose and reference by auditor's file number and/or recording number; any encumbrances on the property; and any delinquent taxes or assessments on the property.

**KMC 22.20.366 Short Plat - Lot Corners.** The exterior short plat boundary and all interior lot corners shall be set by a registered land surveyor. If the applicant submits a bond for construction of short plat improvements and installation of permanent interior lot corners, the City may allow installation of temporary interior lot corners until the short plat improvements are completed.

**KMC 22.20.390 Short Plat - Improvements.** The owner shall complete or bond all required right-of-way, easement, utility and other similar improvements.

**KMC 22.28.110-130 Vehicular Access Easements.** Municipal Code sections 22.28.110 and 22.28.130 establish that if vehicular access within the plat is provided by means other than rights-of-way, the plat must establish easements or tracts, compliant with Zoning Code Section 105.10, which will provide the legal right of access to each of the lots served.

**KMC 22.32.010 Utility System Improvements.** All utility system improvements must be designed and installed in accordance with all standards of the applicable serving utility.

**KMC 22.32.020 Water System.** The applicant shall install a system to provide potable water, adequate fire flow and all required fire-fighting infrastructure and appurtenances to each lot created.

**KMC 22.32.030 Stormwater Control System.** The applicant shall comply with the construction phase and permanent stormwater control requirements of the Municipal Code.

**KMC 22.32.040 Sanitary Sewer System.** The developer shall install a sanitary sewer system to serve each lot created.

**KMC 22.32.050 Transmission Line Undergrounding.** The applicant shall comply with the utility lines and appurtenances requirements of the Zoning Code.

**KMC 22.32.080 Performance Bonds.** In lieu of installing all required improvements and components as part of a plat or short plat, the applicant may propose to post a bond, or submit evidence that an adequate security device has been submitted and accepted by the service provider (City of Kirkland and/or Northshore Utility District), for a period of one year to ensure

completion of these requirements within one year of plat/short plat approval.

**LAND SURFACE MODIFICATION AND/OR BUILDING PERMIT REQUIREMENTS**

**KMC 27.06.030 Park Impact Fees.** New residential units are required to pay park impact fees prior to issuance of a building permit. Please see KMC 27.06 for the current rate. Exemptions and/or credits may apply pursuant to KMC 27.06.050 and KMC 27.06.060. If a property contains an existing unit to be removed, a "credit" for that unit shall apply to the first building permit of the subdivision.

**KZC 20.10-60.187 Required Yards for Multi-family Development:** The side yard may be reduced to zero feet if the side of the dwelling unit is attached to a dwelling unit on an adjoining lot. If one side of a dwelling unit is so attached and the opposite side is not, the side that is not attached must provide a minimum side yard of five feet. The rear yard may be reduced to zero feet if the rear of the dwelling unit is attached to a dwelling unit on an adjoining lot.

**KZC 95.35.2.b.(3)(b)i Tree Protection Techniques.** A description and location of tree protection measures during construction for trees to be retained must be shown on demolition and grading plans.

**KZC 95.34 Tree Protection.** Prior to development activity or initiating tree removal on the site, vegetated areas and individual trees to be preserved shall be protected from potentially damaging activities. Protection measures for trees to be retained shall include (1) placing no construction material or equipment within the protected area of any tree to be retained; (2) providing a visible temporary protective chain link fence at least 4 feet in height around the protected area of retained trees or groups of trees until the Planning Official authorizes their removal; (3) installing visible signs spaced no further apart than 15 feet along the protective fence stating "Tree Protection Area, Entrance Prohibited" with the City code enforcement phone number; (4) prohibiting excavation or compaction of earth or other damaging activities within the barriers unless approved by the Planning Official and supervised by a qualified professional; and (5) ensuring that approved landscaping in a protected zone shall be done with light machinery or by hand.

**KZC 95.45 Tree Installation Standards.** All supplemental trees to be planted shall conform to the Kirkland Plant List. All installation standards shall conform to Kirkland Zoning Code Section 95.45.

**KZC 110.60.5 Street Trees.** All trees planted in the right-of-way must be approved as to species by the City. All trees must be two inches in diameter at the time of planting as measured using the standards of the American Association of Nurserymen with a canopy that starts at least six feet above finished grade and does not obstruct any adjoining sidewalks or driving lanes.

**KZC 95.52 Prohibited Vegetation.** Plants listed as prohibited in the Kirkland Plant List shall not be planted in the City.

**KZC 105.10 Vehicular Access Easements or Tracts.** The access easement or tract shall be 15 feet wide and contain a paved surface 10 feet in width. The access easement or tract shall be screened from the adjacent property to the north with a minimum five-foot high sight-obscuring fence; or vegetation that will provide comparable screening to a five-foot fence within two years of planting; along the entire easement or tract outside the required front yard.

**105.10.2 Pavement Setbacks.** The paved surface in an access easement or tract shall be set back at least 5 feet from any adjacent property which does not receive access from that easement or tract. An access easement or tract that has a paved area greater than 10 feet in width must be screened from any adjacent property that does not receive access from it. Screening standards are outlined in this section.

**KZC 105.47 Required Parking Pad.** Except for garages accessed from an alley, garages serving detached dwelling units in low density zones shall provide a minimum 20-foot by 20-

foot parking pad between the garage and the access easement, tract, or right-of-way providing access to the garage.

**KZC 115.25 Work Hours.** It is a violation of this Code to engage in any development activity or to operate any heavy equipment before 7:00 am. or after 8:00 pm Monday through Friday, or before 9:00 am or after 6:00 pm Saturday. No development activity or use of heavy equipment may occur on Sundays or on the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas Day. The applicant will be required to comply with these regulations and any violation of this section will result in enforcement action, unless written permission is obtained from the Planning Official.

**KZC 115.40 Fence Location.** Fences over 6 feet in height may not be located in a required setback yard. A detached dwelling unit abutting a neighborhood access or collector street may not have a fence over 3.5 feet in height within the required front yard. No fence may be placed within a high waterline setback yard or within any portion of a north or south property line yard, which is coincident with the high waterline setback yard.

**KZC 115.42 Floor Area Ratio (F.A.R.) Limits.** Floor area for detached dwelling units is limited to a maximum floor area ratio in low density residential zones. See Use Zone charts for the maximum percentages allowed. This regulation does not apply within the disapproval jurisdiction of the Houghton Community Council.

**KZC 115.43 Garage Requirements for Detached Dwelling Units in Low Density Zones.** Detached dwelling units served by an open public alley, or an easement or tract serving as an alley, shall enter all garages from that alley. Whenever practicable, garage doors shall not be placed on the front façade of the house. Side-entry garages shall minimize blank walls. For garages with garage doors on the front façade, increased setbacks apply, and the garage width shall not exceed 50% of the total width of the front façade. These regulations do not apply within the disapproval jurisdiction of the Houghton Community Council. Section 115.43 lists other exceptions to these requirements.

**KZC 115.75.2 Fill Material.** All materials used as fill must be non-dissolving and non-decomposing. Fill material must not contain organic or inorganic material that would be detrimental to the water quality, or existing habitat, or create any other significant adverse impacts to the environment.

**KZC 115.90 Calculating Lot Coverage.** The total area of all structures and pavement and any other impervious surface on the subject property is limited to a maximum percentage of total lot area. See the Use Zone charts for maximum lot coverage percentages allowed. Section 115.90 lists exceptions to total lot coverage calculations See Section 115.90 for a more detailed explanation of these exceptions.

**KZC 115.95 Noise Standards.** The City of Kirkland adopts by reference the Maximum Environmental Noise Levels established pursuant to the Noise Control Act of 1974, RCW 70.107. See Chapter 173-60 WAC. Any noise, which injures, endangers the comfort, repose, health or safety of persons, or in any way renders persons insecure in life, or in the use of property is a violation of this Code.

**KZC 115.115 Required Setback Yards.** This section establishes what structures, improvements and activities may be within required setback yards as established for each use in each zone.

**KZC 115.115.3.g Rockerries and Retaining Walls.** Rockeries and retaining walls are limited to a maximum height of four feet in a required yard unless certain modification criteria in this section are met. The combined height of fences and retaining walls within five feet of each other in a required yard is limited to a maximum height of 6 feet, unless certain modification criteria in this section are met.

**KZC 115.115.3.n Covered Entry Porches.** In residential zones, covered entry porches on dwelling units may be located within 13 feet of the front property line if certain criteria in this section are met. This incentive is not effective within the disapproval jurisdiction of the Houghton Community Council.

**KZC 115.115.3.o Garage Setbacks.** In low density residential zones, garages meeting certain criteria in this section can be placed closer to the rear property line than is normally allowed in those zones.

**KZC 115.115.3.p HVAC and Similar Equipment:** These may be placed no closer than five feet of a side or rear property line, and shall not be located within a required front yard; provided, that HVAC equipment may be located in a storage shed approved pursuant to subsection (3)(m) of this section or a garage approved pursuant to subsection (3)(o)(2) of this section. All HVAC equipment shall be baffled, shielded, enclosed, or placed on the property in a manner that will ensure compliance with the noise provisions of KZC 115.95.

**KZC 115.115.5.a Driveway Width and Setbacks.** For a detached dwelling unit, a driveway and/or parking area shall not exceed 20 feet in width in any required front yard, and shall be separated from other hard surfaced areas located in the front yard by a 5-foot wide landscape strip. Driveways shall not be closer than 5 feet to any side property line unless certain standards are met.

**KZC 115.135 Sight Distance at Intersection.** Areas around all intersections, including the entrance of driveways onto streets, must be kept clear of sight obstruction as described in this section.

**KZC 145.22.2 Public Notice Signs.** Within seven (7) calendar days after the end of the 21-day period following the City's final decision on the permit, the applicant shall remove all public notice signs.

<b>PRIOR TO OCCUPANCY</b>
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**KZC 95.50.2.b Tree Maintenance.** For detached dwelling units, the applicant shall submit a 5-year tree maintenance agreement to the Planning Department to maintain all pre-existing trees designated for preservation and any supplemental trees required to be planted.

**KZC 110.60.6 Mailboxes.** Mailboxes shall be installed in the development in a location approved by the Postal Service and the Planning Official. The applicant shall, to the maximum extent possible, group mailboxes for units or uses in the development.

**KZC 110.75 Bonds.** The City may require or permit a bond to ensure compliance with any of the requirements of the Required Public Improvements chapter.



## DEVELOPMENT STANDARDS SUB15-01895

### BUILDING DEPARTMENT

Contact: Darrell Harmon – dharmon@kirklandwa.gov

1. Prior to issuance of Building, Demolition or Landsurface Modification permit applicant must submit a proposed rat baiting program for review and approval. Kirkland Municipal Ordinance 9.04.040
2. A demolition permit is required for removal of existing structures prior to recording.
3. Plumbing meter and service line shall be sized in accordance with the current UPC. We are currently using the 2012 edition.
4. Building permits must comply with the International Building, Residential and Mechanical Codes and the Uniform Plumbing Code as adopted and amended by the State of Washington and the City of Kirkland. Kirkland currently has adopted the 2012 editions.
5. Structures must comply with International Energy Conservation Code as adopted and amended by the State of Washington. We are currently using the 2012 edition.
6. Kirkland reviews, issues and inspects all electrical permits in the city. Kirkland currently uses the 2014 Washington Cities Electrical Code chapters 1 and 3 as published by WABO.
7. Structures must be designed for seismic design category D, wind speed of 85 miles per hour and exposure B.

### FIRE DEPARTMENT

#### FIRE DEPARTMENT COMMENTS

Contact: Grace Steuart at 425-587-3660; or gsteuart@kirklandwa.gov

#### NO COMMENT

The Fire Department has no specific comments or conditions on this shortplat.

#### ACCESS

The furthest setback of the back lot is close enough to the ROW that there are no additional requirements for fire department access.

#### HYDRANTS AND FIRE FLOW

Existing hydrants in the area are adequate to provide coverage for the proposed project. The 2 closest hydrants are already equipped with a 5" Storz fitting.

Fire flow in the area is approximately 2000 gpm, which is adequate for development.

#### SPRINKLER THRESHOLD

Per Kirkland Municipal Code, all new buildings which are 5,000 gross square feet or larger require fire sprinklers. Included are single family homes, duplexes, and zero lot line townhouses where the aggregate area of all connected townhouses is greater than 5,000 square feet.; garages, porches, covered decks, etc, are included in the gross square footage. (This comment is included in the shortplat conditions for informational purposes only.)

### PUBLIC WORKS DEPARTMENT

Permit #:SUB15-01895

Project Name: HBG 2 lots on Market St

Project Address: 1932 Market St  
Date: October 1st 2015

## PUBLIC WORKS CONDITIONS

### Building and Land Surface Modification (Grading) Permit Process:

Philip Vartanian, Development Engineer  
Phone: 425-587-3856 Fax: 425-587-3807  
E-mail: pvartanian@kirklandwa.gov

### General Conditions:

1. All public improvements associated with this project including street and utility improvements, must meet the City of Kirkland Public Works Pre-Approved Plans and Policies Manual. A Public Works Pre-Approved Plans and Policies manual can be purchased from the Public Works Department, or it may be retrieved from the Public Works Department's page at the City of Kirkland's web site at [www.kirklandwa.gov](http://www.kirklandwa.gov).
2. This project will be subject to Public Works Permit and Connection Fees. It is the applicant's responsibility to contact the Public Works Department by phone or in person to determine the fees. The fees can also be review the City of Kirkland web site at [www.kirklandwa.gov](http://www.kirklandwa.gov) The applicant should anticipate the following fees:
  - o Water, Sewer, and Surface Water Connection Fees (paid with the issuance of a Building Permit)
  - o Side Sewer Inspection Fee (paid with the issuance of a Building Permit)
  - o Septic Tank Abandonment Inspection Fee
  - o Water Meter Fee (paid with the issuance of a Building Permit)
  - o Right-of-way Fee
  - o Review and Inspection Fee (for utilities and street improvements).
  - o Building Permits associated with this proposed project will be subject to the traffic, park, and school impact fees per Chapter 27 of the Kirkland Municipal Code. The impact fees shall be paid prior to issuance of the Building Permit(s). Any existing buildings within this project which are demolished will receive a Traffic Impact Fee credit, Park Impact Fee Credit and School Impact Fee Credit. This credit will be applied to the first Building Permits that are applied for within the project. The credit amount for each demolished building will be equal to the most currently adopted Fee schedule.
3. All street and utility improvements shall be permitted by obtaining a Land Surface Modification (LSM) Permit.
4. Submittal of Building Permits within a subdivision prior to recording:
  - Submittal of a Building Permit with an existing parcel number prior to subdivision recording: A Building Permit can be submitted prior to recording of the subdivision for each existing parcel number in the subject project, however in order for the Building Permit to be deemed a complete application, all of the utility and street improvements for the new home must be submitted with application. However, the Building Permit will not be eligible for issuance until after the Land Surface Modification Permit is submitted, reviewed, and approved to ensure the comprehensive storm water design required by the subdivision approval is reviewed and approved, and then shown correctly on the Building Permit plans to match the Land Surface Modification Permit.
  - Submittal of Building Permits within an Integrated Development Plan (IDP): If this subdivision is using the IDP process, the Building Permits for the new homes can only be applied for after the Land Surface Modification Permit has been submitted, reviewed, and approved.
  - Submittal of a Building Permit within a standard subdivision (non IDP): If this subdivision is not using the IDP process, the Building Permits for the new houses can be applied for after the subdivision is recorded and the Land Surface Modification permit has been submitted, reviewed, and approved.
  - Review of Expedited or Green Building Permits: A new single family home Building Permit within a subdivision can only be review on an expedited or green building fast track if submitted electronically through MBP and the Land Surface Modification permit has been submitted, reviewed, and approved.
  - Review of detached multi-family building permits: Detached multi-family building permits can only be applied for after the Land Surface Modification permit submitted, reviewed, and approved.
5. Subdivision Performance and Maintenance Securities:
  - The subdivision can be recorded in advance of installing all the required street and utility improvements by posting a performance security equal to 130% of the value of work. This security amount will be determined by using the City of Kirkland's Improvement Evaluation Packet. Contact the Development Engineer assigned to this project to assist with this process.
  - If the Developer will be installing the improvements prior to recording of the subdivision, there is a standard right of way

restoration security ranging from \$10,000.00 to 30,000.00 (value determined based on amount of right-of-way disruption). This security will be held until the project has been completed.

- Once the subdivision has been completed there will be a condition of the permit to establish a two year Maintenance security.
  - If a recording Performance Security has not yet been posted, then prior to issuance of the LSM Permit a standard right of way restoration security ranging from \$10,000.00 to 30,000.00 (value determined based on amount of ROW disruption) shall be posted with Public Works Department. This security will be held until the project has been completed
6. All civil engineering plans which are submitted in conjunction with a building, grading, or right-of-way permit must conform to the Public Works Policy titled ENGINEERING PLAN REQUIREMENTS. This policy is contained in the Public Works Pre-Approved Plans and Policies manual.
  7. All street improvements and underground utility improvements (storm, sewer, and water) must be designed by a Washington State Licensed Engineer; all drawings shall bear the engineers stamp.
  8. All plans submitted in conjunction with a building, grading or right-of-way permit must have elevations which are based on the King County datum only (NAVD 88).
  9. A completeness check meeting is required prior to submittal of any Building Permit applications.
  10. All subdivision recording documents shall include the following language:
    - o Utility Maintenance: Each property owner shall be responsible for maintenance of the sanitary sewer, storm water stub, rain garden, permeable pavement, or any infiltration facilities (known as Low Impact Development) from the point of use on their own property to the point of connection in the City sanitary sewer main or storm water main. Any portion of a sanitary sewer, surface water stub, rain garden, permeable pavement, or any infiltration facilities, which jointly serves more than one property, shall be jointly maintained and repaired by the property owners sharing such stub. The joint use and maintenance shall "run with the land" and will be binding on all property owners within this subdivision, including their heirs, successors and assigns.

- o Public Right-of-way Sidewalk and Vegetation Maintenance: Each property owner shall be responsible for keeping the sidewalk abutting the subject property clean and litter free. The property owner shall also be responsible for the maintenance of the vegetation within the abutting landscape strip. The maintenance shall "run with the land" and will be binding on all property owners within this subdivision, including their heirs, successors and assigns.

If the lots have on-site private storm water facilities, include this language on the subdivision recording document:

- o Maintenance of On-site Private Stormwater Facilities: Each Lot within the Subdivision has a stormwater facility (infiltration trench, dry wells, dispersion systems, rain garden, and permeable pavement) which is designed to aid storm water flow control for the development. The stormwater facility within the property shall be owned, operated and maintained by the Owner. The City of Kirkland shall have the right to ingress and egress the Property for inspection of and to reasonable monitoring of the performance, operational flows, or defects of the stormwater/flow control facility.

If the City of Kirkland determines related maintenance or repair work of the stormwater facility is required, the City of Kirkland shall give notice to the Owner of the specific maintenance and/or repair work required. If the above required maintenance or repair is not completed within the time set by the City of Kirkland, the City of Kirkland may perform the required maintenance or repair, or contract with a private company capable of performing the stormwater facility maintenance or repair and the Owner will be required to reimburse the City for any such work performed.

The Owner is required to obtain written approval from the City of Kirkland prior to replacing, altering, modifying or maintaining the storm water facility.

If the project contains LID storm improvements that will be installed as a condition of the new home Building Permit, then include this condition on the Short Plat recording documents:

- o Installation of Low Impact Development (LID) storm drainage improvements with Building Permits: All LID storm drainage features depicted on Sheet \_\_\_\_ of \_\_\_\_ of issued permit LSM1X-0XXXX shall be installed in conjunction with the construction of each new home on lots X to X. The LID improvements include, but are not limited to the rain gardens and the pervious driveways. The Building Permit for the new signal family home on lots X to X will not receive a final inspection until said LID improvements are installed. The pervious access road/Tract serving lots X and X shall be constructed or secured by a performance bond prior to recording of the short plat

#### Sanitary Sewer Conditions:

1. The existing sanitary sewer main within the public right-of-way along the front of the property is adequate to serve all the lots within the proposed project.
2. Provide a 6-inch minimum side sewer stub to each lot.
3. All side sewer stubs serving the property shall be PVC type pipe per Public Works Pre-approved Plans Sanitary Sewer Design Criteria. Any side sewer not meeting this standard shall be removed and replaced.

Water System Conditions:

1. The existing water main in the public right-of-way along the front of the subject property is adequate to serve this proposed development.
2. Provide a separate 1" minimum water service from the water main to the meter for each lot; City of Kirkland will set the water meter. The water size is determined when the Building Permit is submitted and is sized per the Uniform Plumbing Code. A ¾" meter is the typical size for new single-family home.
3. The existing water service shall be abandoned unless otherwise approved by the Development Engineer or Construction Inspector.

Surface Water Conditions:

1. Provide temporary and permanent storm water control per the 2009 King County Surface Water Design Manual and the Kirkland Addendum (Policy D-10). See Policies D-3 in the PW Pre-Approved Plans for drainage review information, or contact city of Kirkland Surface Water staff at (425) 587-3800 for help in determining drainage review requirements.

Summarized below are the levels of drainage review based on site and project characteristics:

- Full Drainage Review
  - A full drainage review is required for any proposed project, new or redevelopment, that will:
  - Adds 5,000ft<sup>2</sup> or more of new impervious surface area or 10,000ft<sup>2</sup> or more of new plus replaced impervious surface area,
  - Propose 7,000ft<sup>2</sup> or more of new pervious surface or,
  - Be a redevelopment project on a single or multiple parcel site in which the total of new plus replaced impervious surface area is 5,000ft<sup>2</sup> or more and whose valuation of proposed improvements (including interior improvements but excluding required mitigation and frontage improvements) exceeds 50% of the assessed value of the existing site improvements.
- 2. A drainage report (Technical Information Report) must be submitted with LSM Permit with following information:
  - The proposed short plat will trigger a Full Drainage Review.
  - Provide full downstream analysis meeting the requirements of the KCSWDM.
  - Provide Storm Drainage LID per Policy L-1.
- 3. Evaluate the feasibility and applicability of dispersion, infiltration, and other stormwater low impact development facilities on-site (per section 5.2 in the 2009 King County Surface Water Design Manual). If feasible, stormwater low impact development facilities are required. See PW Pre-Approved Plan Policy L-1 or L-2 (depending on drainage review) for more information on this requirement.
- 4. Amended soil per Ecology BMP T5.13 is recommended for all landscaped areas.
- 5. If a storm water detention system is required, it shall be designed to Level II standards. Historic (forested) conditions shall be used as the pre-developed modeling condition.
- 6. Provide a level one off-site analysis (based on the King County Surface Water Design Manual, core requirement #2).
- 7. Provide an erosion control report and plan with Building or Land Surface Modification Permit application. The plan shall be in accordance with the 2009 King County Surface Water Design Manual.
- 8. Construction drainage control shall be maintained by the developer and will be subject to periodic inspections. During the period from May 1 and September 30, all denuded soils must be covered within 7 days; between October 1 and April 30, all denuded soils must be covered within 12 hours. Additional erosion control measures may be required based on site and weather conditions. Exposed soils shall be stabilized at the end of the workday prior to a weekend, holiday, or predicted rain event.
- 9. Provide a separate storm drainage connection for each lot. All roof and driveway drainage must be tight-lined to the storm drainage system or utilize low impact development techniques. The tight line connections shall be installed with the individual new houses.

Street and Pedestrian Improvement Conditions:

1. The subject property abuts Market St. This street is an Arterial type street. Zoning Code sections 110.10 and 110.25 require the applicant to make half-street improvements in rights-of-way abutting the subject property. Section 110.30-110.50 establishes that this street must be improved with the following:

- A. Remove and replace existing driveway, curb and gutter.
- B. Provide a 20' driveway cut.
- C. Market Street has a utility vault at the frontage of the property under the sidewalk slab, all utility must go under the

existing vault.

2. Provide onsite vehicular turn-around for each lot.
3. When three or more utility trench crossings occur within 150 lineal ft. of street length or where utility trenches parallel the street centerline, the street shall be overlaid with new asphalt or the existing asphalt shall be removed and replaced.
  - Existing streets with 4-inches or more of existing asphalt shall receive a 2-inch (minimum thickness) asphalt overlay. Grinding of the existing asphalt to blend in the overlay will be required along all match lines.
  - Existing streets with 3-inches or less of existing asphalt shall have the existing asphalt removed and replaced with an asphalt thickness equal or greater than the existing asphalt provided however that no asphalt shall be less than 2-inches thick and the subgrade shall be compacted to 95% density.
4. Per the Public Works Policy R-4 for Driveway requirements.
5. The driveway for each lot shall be long enough so that parked cars do not extend into the access easement or right-of-way (20 ft. min.) Provide min20'x20' onsite parking pad for each lot.
6. All street and driveway intersections shall not have any visual obstructions within the sight distance triangle. See Public Works Pre-approved Policy R.13 for the sight distance criteria and specifications.
7. It shall be the responsibility of the applicant to relocate any above-ground or below-ground utilities which conflict with the project associated street or utility improvements.
8. A striping plan for the street must be submitted with the building or grading permit.





**Gilles Consulting**

— Brian K. Gilles —

4 2 5 - 8 2 2 - 4 9 9 4

## Evaluation of Trees AT

1932 Market Street  
Kirkland, WA

**August 26, 2015**

### PREPARED FOR:

**Highland Builders/BDR Construction**  
**Greg Heiser**  
7683 SE 27<sup>th</sup> Street  
# 353  
Mercer Island, WA 98040

### PREPARED BY:

#### **GILLES CONSULTING**

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## EXECUTIVE SUMMARY

A total of 19 trees were shown on the survey. Two trees, numbers 937 and 940 are no longer present. The remaining trees can be summarized as follows:

<b>PROPERTY SUMMARY</b>		
<b># of Trees</b>	<b>Property</b>	<b>% of Total</b>
7	Off Property	41.2%
0	Right-of-Way	0.0%
10	Subject Property	58.8%
<b>17</b>	<b>Total # of Trees</b>	<b>100.0%</b>

<b>SIGNIFICANCE SUMMARY</b>		
<b># of Trees</b>	<b>Status</b>	<b>% of Total</b>
2	Non-Significant	11.8%
15	Significant	88.2%
<b>17</b>	<b>Total # of Trees</b>	<b>100.0%</b>

<b>VIABILITY SUMMARY</b>		
<b># of Trees</b>	<b>Viability</b>	<b>% of Total</b>
4	Non-Viable	23.5%
13	Viable	76.5%
<b>17</b>	<b>Total # of Trees</b>	<b>100.0%</b>

<b>RECOMMENDATION SUMMARY</b>		
<b># of Trees</b>	<b>Recommendation</b>	<b>% of Total</b>
4	Remove for Safety	23.5%
13	Potential to Retain w/ Tree Protection Measures	76.5%
<b>17</b>	<b>Total # of Trees</b>	<b>100.0%</b>

## ASSIGNMENT

Greg Heiser, of the Highland Builders Group, contracted with Gilles Consulting to evaluate the trees at 1932 Market Street in Kirkland, Washington. The property is being re-developed and the City of Kirkland requires an extensive analysis of the trees as part

of the permit process. This report provides the analysis. The information in this report can be utilized to create a Tree Plan as required by Chapter 95 of the Kirkland Code.

## **METHODOLOGY**

To evaluate the trees and to prepare the report, I drew upon my 30+ years of experience in the field of arboriculture and my formal education in natural resources management, dendrology, forest ecology, plant identification, and plant physiology. I also followed the protocol of the International Society of Arboriculture (ISA) for Visual Assessment (VA) that includes looking at the overall health of the trees as well as the site conditions. This is a scientifically based process to look at the entire site, surrounding land and soil, as well as a complete look at the trees themselves.

In examining each tree, I looked at such factors as: size, vigor, canopy and foliage condition, density of needles, injury, insect activity, root damage and root collar health, crown health, evidence of disease-causing bacteria, fungi or virus, dead wood and hanging limbs.

### Tree Tags

The trees were tagged and numbered 936 through 954. The tags are made of shiny aluminum approximately one inch by three inches in size and are attached to the tree with staples and a one foot strip of brightly colored survey tape. The tags were placed as high as possible to minimize their removal and were generally placed on the backsides of the trees as inconspicuously as possible. Please refer to Attachment 1, Site Plan for an orientation to the site and the approximate location of the trees.

### Missing Trees

There were a few trees that were not included on the survey. They were labeled with the next number in the sequence and then their approximate location was indicated on the included site plan. These trees may need to be surveyed to determine their exact location in relation to the proposed site improvements and their retainability.

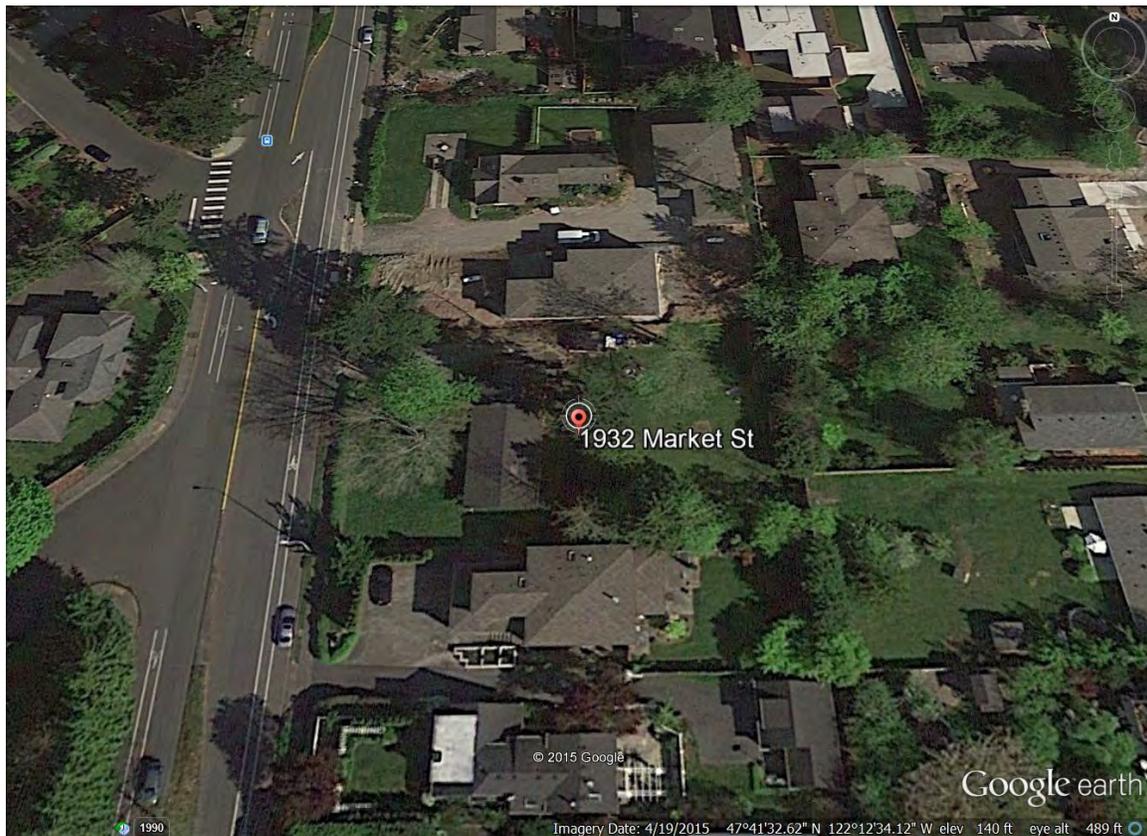
## **OBSERVATIONS**

The subject property is located in the Market Neighborhood of west Kirkland right on Market Street. The property is currently improved with a wood structure single-family home, driveway, walkways, patio, planter beds, and lawns. The property has a gentle slope up from the sidewalk at the northwest property corner to the southeast property corner of approximately 22 feet. The existing trees are scattered randomly about the property.

In an effort to present the information and conclusions for each tree in a manner that is clear and easy to understand, as well as to save paper, I have included a detailed spreadsheet, Attachment 2, Tree Inventory/Condition Spreadsheet. All the same

information from the ISA Tree Hazard Form is included in this spreadsheet and the attached glossary. The descriptions on the spreadsheet were left brief in order to include as much pertinent information as possible and to make the report manageable. The attached glossary provides a detailed description of the terms used in the spreadsheet and in this report. It can be found in Attachment 3, Glossary. A brief review of these terms and descriptions will enable the reader to rapidly move through the spreadsheet and better understand the information.

Photo # 1: A Google Earth image of the subject property and surrounding neighborhood dated 4/19/15.



## **DISCUSSION AND CONCLUSIONS**

The project is to remove the existing improvements, short plat the property into two lots, and build two new homes.

### Right-of-Way Trees

There are no right-of-way trees impacted by this project.

### Trees on Adjacent Properties

There are seven trees on adjacent properties with canopies that extend over the subject property.

- Trees # 946 and 947 are just east of the east property line.
  - Their canopies overhang the subject property by two to three feet.
  - They can be adequately protected by the minimum “limits of disturbance” fencing on the yard setback.

Photo # 2: Looking north east at the back yard. Trees # 946 & 947 on the adjacent property are located here. These two trees can be adequately protected with a fence 5 feet west of the east property line.



- Trees 950 through 954 are a row of 5 Douglas Fir trees north of the north property line near the northwest property corner.
  - Their bases are very close to the property line.
  - Their canopies overhang the subject property for a significant portion of their driplines.
  - The critical root zones have been impacted by the re-development of the adjacent property at 1936 Market Street.
  - The trees have adapted well to the gravel drive over their critical roots on the south side—that is the driveway for the subject property.
  - They can be adequately protected with a tree protection fence at the edge of the existing gravel driveway.

Photo # 3: Looking from the sidewalk northeast at the row of Douglas Fir trees on the adjacent property to the north. The trees appear to have adapted well to the existing driveway on the subject property. The redevelopment of the adjacent property, specifically the construction of a new house north of the row of trees may have negative consequences for the row of trees.



### Trees on the Subject Property

There are 10 trees on the subject property now.

- Viability:
  - Four of the 10 are in Poor Condition. They are *Non-Viable*.
    - They are trees # 936, 938, 942, & 948.
    - They should be removed for safety.
  - The remaining 6 trees are *Viable* with Current Health Ratings of Fair, Good, Very Good, or Excellent.
  - They all have the potential to be retained if design, construction methodologies, topography, and permit requirements allow.
- Significance:
  - There are two trees that are *Non-Significant*, that is; they are less than 6.0 inches in diameter measured at the standard 4.5 feet above the average ground level.
  - Tree # 939 is a Fruiting Cherry that is in Good Condition.
    - However, given its location, near the center of the back yard, I doubt it can be retained.

- Tree # 945 is an Italian Plum that is in Fair Condition.
  - Given its location, near the southeast property corner, it has the potential to be retained.

#### Minimum Tree Density Calculations

The City of Kirkland's Tree Code now requires that each lot have a minimum density of at least 30 tree credits per acre. The density may consist of existing trees, supplemental trees, or a combination of existing and supplemental trees. The tree credits are calculated, as indicated below, by dividing the size of the individual lot by the square footage in an acre and multiplying by 30:  $\text{lot area in square feet} / 43,560 \text{ square feet} \times 30$  (rounded to the nearest whole #) = the number of tree credits required for each lot.

In this case, the lot is 100 feet wide by 180.06 feet long. So the calculation is as follows:

$$18,006 / 43,560 \times 30 = 12.4 \text{ or } 12 \text{ minimum tree credits}$$

Please refer to Chapter 95, Tree Management and Required Landscaping, Section 95.35.5 and Table 95.35.1 of the Kirkland Municipal Code to see how tree credits are assigned and for more information. Please be aware that the City can require the retention of additional trees above the minimum. This applies especially trees in excellent or very good condition located in the building setbacks or trees in a grove—even a grove that extend across property lines.

The information from this report will need to be transferred to a *Tree Plan* as required in Kirkland Code section *95.35.2.B Tree Plan Requirements*.

#### Tree Protection Measures

In order for trees to survive the stresses placed upon them in the construction process, tree protection must be planned in advance of equipment arrival on site. If tree protection is not planned integral with the design and layout of the project, the trees will suffer needlessly and possibly die. With proper preparation, often costing little or nothing extra to the project budget, trees can survive and thrive after construction. This is critical for tree survival because damage prevention is the single most effective treatment for trees on construction sites. Once trees are damaged, the treatment options available are limited.

The minimum Tree Protection Measures in *Attachment 4, Tree Protection Measures* are on three separate sheets that can be copied and introduced into all relevant documents such as site plans, permit applications and conditions of approval, and bid documents so that everyone involved is aware of the requirements. These Tree Protection Measures are intended to be generic in nature. They will need to be adjusted to the specific circumstances of your site that takes into account the location of improvements and the locations of the trees.

## **WAIVER OF LIABILITY**

There are many conditions affecting a tree's health and stability, which may be present and cannot be ascertained, such as, root rot, previous or unexposed construction damage, internal cracks, stem rot and more which may be hidden. Changes in circumstances and conditions can also cause a rapid deterioration of a tree's health and stability. Adverse weather conditions can dramatically affect the health and safety of a tree in a very short amount of time. While I have used every reasonable means to examine these trees, this evaluation represents my opinion of the tree health at this point in time. These findings do not guarantee future safety nor are they predictions of future events.

The tree evaluation consists of an external visual inspection of an individual tree's root flare, trunk, and canopy from the ground only unless otherwise specified. The inspection may also consist of taking trunk or root soundings for sound comparisons to aid the evaluator in determining the possible extent of decay within a tree. Soundings are only an aid to the evaluation process and do not replace the use of other more sophisticated diagnostic tools for determining the extent of decay within a tree.

As conditions change, it is the responsibility of the property owners to schedule additional site visits by the necessary professionals to ensure that the long-term success of the project is ensured. It is the responsibility of the property owner to obtain all required permits from city, county, state, or federal agencies. It is the responsibility of the property owner to comply with all applicable laws, regulations, and permit conditions. If there is a homeowners association, it is the responsibility of the property owner to comply with all Codes, Covenants, and Restrictions (CC&R's) that apply to tree pruning and tree removal.

This tree evaluation is to be used to inform and guide the client in the management of their trees. This in no way implies that the evaluator is responsible for performing recommended actions or using other methods or tools to further determine the extent of internal tree problems without written authorization from the client. Furthermore, the evaluator in no way holds that the opinions and recommendations are the only actions required to insure that the tree will not fail. A second opinion is recommended. The client shall hold the evaluator harmless for any and all injuries or damages incurred if the evaluator's recommendations are not followed or for acts of nature beyond the evaluator's reasonable expectations, such as severe winds, excessive rains, heavy snow loads, etc.

This report and all attachments, enclosures, and references, are confidential and are for the use of the client concerned. They may not be reproduced, used in any way, or disseminated in any form without the prior consent of the client concerned and Gilles Consulting.

Evaluation of Trees at 1932 Market Street, Kirkland, WA

Gilles Consulting

August 26, 2015

Page 10 of 29

Thank you for calling Gilles Consulting for your arboricultural needs.

Sincerely,



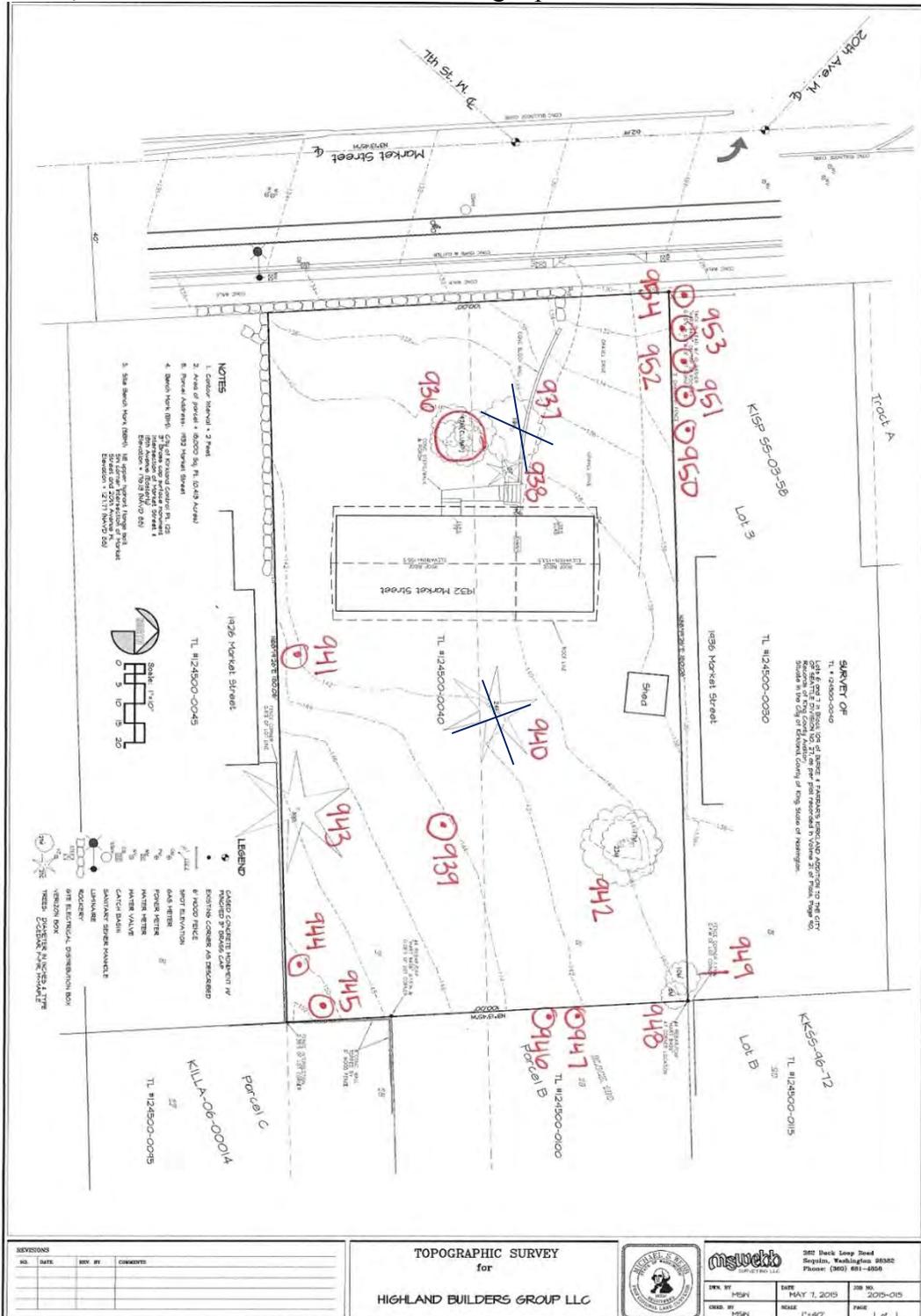
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ASCA Registered Consulting Arborist # RCA-418  
ISA TRAQ Qualified  
ISA TRAQ Certified Instructor

# ATTACHMENTS

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**ATTACHMENT 1 - SITE SURVEY W/TREE #'S**

✗ Means trees 937 and 940 are no longer present.



**ATTACHMENT 2 - TREE INVENTORY/CONDITIONS SPREADSHEET**

ABBREVIATED LEGEND--SEE GLOSSARY IN REPORT ATTACHMENTS FOR GREATER DETAIL	
#1 <b>Property:</b> Where the tree is: on or off the Subject Property, or a Right-of-Way tree.	#8 <b>Limits of Disturbance:</b> The boundary between the area of minimum protection around a tree and the allowable site disturbance as determined by a qualified professional.
#2 <b>Tree Location:</b> Relative placement of the tree on the Subject Property.	#9 <b>LCR:</b> <i>Live Crown Ratio</i> - the amount of live canopy expressed as a % of the entire tree height
#3 <b>Tree #:</b> The unique tag number of each tree.	#10 <b>Symmetry:</b> General shape of canopy and weight distribution of the tree around the trunk.
#4 <b>Species:</b>	#11 <b>Foliage:</b> General description of foliage density that indicates tree health and vigor.
BLW/Am <i>Big Leaf Maple, Acer macrophyllum</i>	#12 <b>Crown Condition:</b> The most important external indication of tree health and vigor.
CBS/Pp <i>Colorado Blue Spruce, Picea pungens</i>	#13 <b>Trunk:</b> Description of trunk condition or abnormalities if any.
DF/Pm <i>Douglas Fir, Pseudotsuga menziesii</i>	#14 <b>Root Collar:</b> The base of the tree where the trunk flares into the roots--defects are noted here.
FrCh/Psp <i>Fruiting Cherry, Prunus sp.</i>	#15 <b>Roots:</b> Root problems are noted here.
IP/Psp <i>Italian Plum, Prunus sp.</i>	#16 <b>Comments:</b> Additional observations about the tree's condition.
OAFI <i>Oregon Ash, Fraxinus latifolia</i>	#17 <b>Significance:</b> A "Significant" tree is at least 6" in diameter measured at DBH.
SM/As <i>Silver Maple, Acer saccharinum</i>	#18 <b>Current Health Rating:</b> A ranging from dead, dying, poor, fair, good, very good, to excellent.
WRWC/Tp <i>Western Red Cedar, Thuja plicata</i>	#19 <b>Viability:</b> A significant tree in good health with a low risk of failure due to structural defects, is relatively wind firm if isolated or remains as part of a grove, and is a species that is suitable for its location
#5 <b>DBH:</b> Trunk diameter @ 4.5' above average ground level.	#20 <b>Recommendation:</b> Whether or not the tree is of sufficient health, vigor, and structure to consider retaining.
#6 <b>Tree Credit:</b> This is based upon Table 95.35.1, P 12, Chapter 95 of the KMC.	
#7 <b>Drip Line:</b> The radius, the distance from the trunk to the furthest branch tips.	

Trees highlighted in red in are **Non-Viable trees.**

1	2	3	4	5	6	7	8 -- LIMITS OF DISTURBANCE				9	10	11	12	13	14	15	16	17	18	19	20
PROPERTY	TREE LOCATION	TREE #	SPECIES	DBH	TREE CREDIT	DRIP LINE	North	South	East	West	LCR	SYMMETRY	FOLIAGE	CROWN CONDITION	TRUNK	ROOT COLLAR	ROOTS	COMMENTS	SIGNIFICANCE	CURRENT HEALTH RATING	VIABILITY	RECOMMENDATION
Subject property	Front yard	936	SM/As	39.0"	0 0	30	NA	NA	NA	NA	90 %	Maj. Asym	Sparse	Weak	Forked at 3.5'	Base rot	Rot, surface	Trunk diameters are 21.9, 17.3 and 27.2 inches which equals a single trunk of 39.0 inches. There is mower damage and decay in the surface roots. Fungal fruiting bodies, rot pockets in branch collar wounds and dead branches in the canopy.	Significant	Poor	Non-viable	Remove for safety
Subject property	Front yard	937	Tree No longer present																			
Subject property	Front yard	938	CBS/Pp	7.5"	0 0	12	NA	NA	NA	NA	40 %	Min. Asym	Sparse	Weak	Straight	NAD	Restricted	Growing in the corner at the steps and retaining wall. Bark beetle infestation.	Significant	Poor	Non-viable	Remove for safety

1	2	3	4	5	6	7	8 -- LIMITS OF DISTURBANCE				9	10	11	12	13	14	15	16	17	18	19	20
PROPERTY	TREE LOCATION	TREE #	SPECIES	DBH	TREE CREDIT	DRIP LINE	North	South	East	West	LCR	SYMMETRY	FOLIAGE	CROWN CONDITION	TRUNK	ROOT COLLAR	ROOTS	COMMENTS	SIGNIFICANCE	CURRENT HEALTH RATING	VIABILITY	RECOMMENDATION
Subject property	Back yard	939	FrCh/Psp	5.4"	0.5	13'	13'	13'	13'	65%	Min. Asym.	Average	Average	Serpentine	Bowed	NAD		Not Significant	Good	Viable	Potential to retain with Tree Protection Measures	
Subject property	Back yard	940				Tree No longer present																
Subject property	Back yard	941	OA/Fl	10.6"	1.0	20'	20'	20'	20'	85%	Gen. sym.	Average	Healthy	Serpentine	NAD	Restricted		The new house is approximately 12 feet to the south. Some foliar blight. English ivy up 36 feet.	Significant	Fair	Viable	Potential to retain with Tree Protection Measures
Subject property	Back yard	942	BLM/Am	30.9"	0.0	26'	26'	26'	26'	90%	Maj. Asym.	Average	Average	Forked at 21'. Center rot	Base rot	Probable root rot		Trunk diameters are 24.3 and 19.1 inches which equal a single trunk of 30.9 inches. Hypoxylon. Rot pockets in branch collar wounds. Dead branches in canopy.	Significant	Poor	Non-viable	Remove for safety
Subject property	Back yard	943	WRC/Tp	30.6"	1.1	24'	24'	24'	To west property line fence	99%	Gen. sym.	Dense	Healthy	Straight	NAD	NAD		Tag is tied to a twig on the south side at approximately 6 feet high.	Significant	Excellent	Viable	Potential to retain with Tree Protection Measures
Subject property	Back yard	944	IP/Psp	8.5"	1.0	16'	To south property line fence	To east property line fence	16'	55%	Gen. sym.	Dense	Healthy	Forked at base, serpentine	NAD	NAD		Trunk diameters are 7.2 and 4.5 inches which equal a single trunk of 8.5 inches.	Significant	Good	Viable	Potential to retain with Tree Protection Measures
Subject property	Back yard	945	IP/Psp	5.7"	0.5	12'	To south property line fence	To east property line fence	12'	40%	Maj. Asym.	Dense	Average	Serpentine	NAD	NAD			Not Significant	Fair	Viable	Potential to retain with Tree Protection Measures

1	2	3	4	5	6	7	8 -- LIMITS OF DISTURBANCE				9	10	11	12	13	14	15	16	17	18	19	20
PROPERTY	TREE LOCATION	TREE #	SPECIES	DBH	TREE CREDIT	DRIP LINE	North	South	East	West	LCR	SYMMETRY	FOLIAGE	CROWN CONDITION	TRUNK	ROOT COLLAR	ROOTS	COMMENTS	SIGNIFICANCE	CURRENT HEALTH RATING	VIABILITY	RECOMMENDATION
Off property	East of property	946	DF/Pm	12.2"	0 . 0	14 .	14'	14'	14'	14'	75 %	Gen. sym.	Dense	Average	Serpentine	NAD	NAD		Significant	Very good	Viable	Potential to retain with Tree Protection Measures
Off property	East of property	947	DF/Pm	8.8"	0 . 0	12 .	12'	12'	12'	12'	75 %	Gen. sym.	Dense	Healthy	Serpentine	NAD	NAD		Significant	Very good	Viable	Potential to retain with Tree Protection Measures
Subject property	Back yard	948	BLM/Am	10.7"	0 . 0	14 .	NA	NA	NA	NA	25 %	Maj. Asym .	Thin	Weak	Center rot	Base rot	Probable root rot	Rot pockets in branch collar wounds. Hypoxylon.	Significant	Dying	Non-viable	Remove for safety
Subject property	Back yard	949	BLM/Am	11.8"	1 . 0	16 .	To the north property line	16'	To east property line fence	16'	60 %	Maj. Asym .	Average	Average	Kinked at 5', leans north east	Exposed	NAD		Significant	Fair	Viable	Potential to retain with Tree Protection Measures
Off property	North of property	950	DF/Pm	13.4"	0 . 0	8'	To the north property line	To the gravel driveway	8'	8'	35 %	Maj. Asym .	Average	Broken Out	Straight	NAD	NAD	The base is approximately 2-4 feet north of the north property line fence. The tag is tied to the north property line chain link fence. Tree is also tagged 25.	Significant	Fair	Viable	Potential to retain with Tree Protection Measures
Off property	North of property	951	DF/Pm	13.5"	0 . 0	12 .	To the north property line	To the gravel driveway	12'	12'	65 %	Maj. Asym .	Average	Broken Out	Slight lean north	Exposed	NAD	The base is approximately 2-4 feet north of the north property line fence. The tag is tied to the north property line chain link fence. Tree is also tagged 26.	Significant	Fair	Viable	Potential to retain with Tree Protection Measures

1	2	3	4	5	6	7	8 -- LIMITS OF DISTURBANCE				9	10	11	12	13	14	15	16	17	18	19	20
PROPERTY	TREE LOCATION	TREE #	SPECIES	DBH	TREE CREDIT	DRIP LINE	North	South	East	West	LCR	SYMMETRY	FOLIAGE	CROWN CONDITION	TRUNK	ROOT COLLAR	ROOTS	COMMENTS	SIGNIFICANCE	CURRENT HEALTH RATING	VIABILITY	RECOMMENDATION
Off property	North of property	952	DF/Pm	17.3"	0.0	16'	To the north property line	To the gravel driveway	16'	16'	70%	Min. Asym.	Average	Average	Slight bow	Exposed	NAD	The base is approximately 2-4 feet north of the north property line fence. The tag is tied to the north property line chain link fence. Tree is also tagged 27.	Significant	Fair	Viable	Potential to retain with Tree Protection Measures
Off property	North of property	953	DF/Pm	15.3"	0.0	12'	To the north property line	To the gravel driveway	12'	12'	60%	Maj. Asym.	Average	Average	Straight	NAD	NAD	The base is approximately 2-4 feet north of the north property line fence. The tag is tied to the north property line chain link fence. Tree is also tagged 28.	Significant	Fair	Viable	Potential to retain with Tree Protection Measures
Off property	North of property	954	DF/Pm	26.1"	0.0	20'	To the north property line	To the gravel driveway	20'	To road shoulder	85%	Maj. Asym.	Dense	Healthy	Forked at 26'	NAD	Surface	The base is approximately 2-4 feet north of the north property line fence. The tag is tied to the north property line chain link fence. Tree is also tagged 29.	Significant	Fair	Viable	Potential to retain with Tree Protection Measures
					15.0	Total tree credits on the property at this time.																

## ATTACHMENT 3 - GLOSSARY

### Terms Used in This Report, on the Tree Condition / Inventory Spreadsheet, and Their Significance

In an effort to clearly present the information for each tree in a manner that facilitates the reader's ability to understand the conclusions I have drawn for each tree, I have collected the information in a spreadsheet format. This spreadsheet was developed by Gilles Consulting based upon the *Tree Risk Assessment in Urban Areas and the Urban/Rural Interface* course manual and the *Tree Risk Assessment Form*, both sponsored by the Pacific Northwest Chapter of the International Society of Arboriculture, and the *Hazard Tree Evaluation Form* from the book, *The Evaluation of Hazard Trees in Urban Areas*, by Matheny and Clarke. The descriptions were left brief on the spreadsheet in an effort to include as much pertinent information as possible, to make the report manageable, and to avoid boring the reader with infinite levels of detail. However, a review of these terms and descriptions will allow the reader to rapidly move through the report and understand the information.

- 1) **PROPERTY**—Whether the tree is on or off the Subject Property, or a Right-of-Way tree.
- 2) **TREE LOCATION**—Relative placement of the tree.
- 3) **TREE #**—the unique tag number of each tree.
- 4) **SPECIES**—this describes the species of each tree with both most readily accepted common name and the officially accepted scientific name.
- 5) **DBH**—Diameter Breast Height. This is the standard measurement of trees taken at 4.5 feet above the average ground level of the tree base.
  - i) Occasionally it is not practical to measure a tree at 4.5 feet above the ground. The most representative area of the trunk near 4.5 feet is then measured and noted on the spreadsheet. For instance, a tree that forks at 4.5 feet can have an unusually large swelling at that point. The measurement is taken below the swelling and noted, e.g. '28.4" at 36"'.
    - (1) Every effort is made to distinguish between a single tree with multiple stems and several trees growing close together at the bases.
  - ii) Trees with multiple stems are listed as a "clump of x," with x being the number of trunks in the clump. Measurements may be given as an average of all the trunks, or individual measurements for each trunk may be listed.
- 6) **TREE CREDIT**—Tree Credit based on Trunk Diameter
- 7) **DRIP LINE**— the radius, the distance from the trunk to the furthest branch tips.
- 8) **LIMITS OF DISTURBANCE**— The boundary between the area of minimum protection around a tree and the allowable site disturbance as determined by a qualified professional. Distances from the center of the trunk were derived on a case by case basis looking at the unique circumstances of each property and each tree on that property.

- 9) **% LCR**—Percentage of Live Crown Ratio. The relative proportion of green crown to overall tree height. This is an important indication of a tree's health. If a tree has a high percentage of Live Crown Ratio, it is likely producing enough photosynthetic activity to support the tree. If a tree has less than 30% to 40% LCR, it can create a shortage of needed energy and can indicate poor health and vigor.
- 10) **SYMMETRY**—is the description of the form of the canopy, i.e., the balance or overall shape of the canopy and crown. This is the place I list any major defects in the canopy shape, e.g. does the tree have all its foliage on one side or in one unusual area? Symmetry can be important if there are additional defects in the tree such as rot pockets, cracks, loose roots, weak crown, etc. Symmetry is generally categorized as Generally Symmetrical, Minor Asymmetry or Major Asymmetry:
- i) **Gen. Sym.**—Generally Symmetrical. The canopy/foliage is generally even on all sides with spacing of scaffold branches typical for the species, both vertically and radially.
  - ii) **Min. Asym.**—Minor Asymmetry. The canopy/foliage has a slightly irregular shape with more weight on one side, but appears to be no problem for the tree.
  - iii) **Maj. Asym.**—Major Asymmetry. The canopy/foliage has a highly irregular shape for the species with the majority of the weight on one side of the tree. This can have a significant impact on the tree's stability, health and hazard potential—especially if other defects are noted such as cracks, rot, or root defects.
- 11) **FOLIAGE/BRANCH**—describes the foliage of the tree in relation to a perfect specimen of that particular species. First the branch growth and foliage density is described, and then any signs or symptoms of stress and/or disease are noted. The condition of the foliage, or the branches and buds for deciduous trees in the dormant season, are important indications of a tree's health and vigor.
- i) For Deciduous trees in the dormant season:
    - (1) The structure of the deciduous tree is visible.
    - (2) The quantity and quality of buds indicates health, and is described as good bud set, average bud set, or poor bud set. These are abbreviated in the spreadsheet as: gbs, abs, or pbs.
    - (3) The amount of annual shoot elongation is visible and is another major indication of tree health and vigor. This is described as:
      - a) Excellent, Good, Average, or Short Shoot Elongation. These are abbreviated in the spreadsheet as ESE, GSE, ASE, or SSE.
  - ii) For evergreen trees year round and deciduous trees in leaf, the color and density of the foliage indicates if the tree is healthy or stressed, or if an insect infestation, a bacterial, fungal, or viral infection is present. Foliage is categorized on a scale from:
    - (1) **Dense**—extremely thick foliage, an indication of healthy vigorous growth,
    - (2) **Good**—thick foliage, thicker than average for the species,
    - (3) **Normal/Average**—thick foliage, average for the species, an indication of healthy growth,

- (4) Thin or Thinning—needles and leaves becoming less dense so that sunlight readily passes through; an indication that the tree is under serious stress that could impact the long-term survivability and safety of the tree,
  - (5) Sparse—few leaves or needles on the twigs, an indication that the tree is under extreme stress and could indicate the future death of the tree,
  - (6) Necrosis—the presence of dead twigs and branchlets. This is another significant indication of tree health. A few dead twigs and branches are reasonably typical in most trees of size. However, if there are dead twigs and branchlets all over a certain portion of the tree, or all over the tree, these are indications of stress or attack that can have an impact on the tree's long-term health.
  - (7) Hangers—a term to describe a large branch or limb that has broken off but is still hanging up in the tree. These can be particularly dangerous in adverse weather conditions.
- 12) **CROWN CONDITION**—the crown is uppermost portion of the tree, generally considered the top 10 to 20% of the canopy or that part of the canopy above the main trunk in deciduous trees and above the secondary bark in evergreen trees.
- i) The condition of the tree's crown is a reflection of the overall health and vigor of the entire tree. The crown is one of the first places a tree will demonstrate stress and pathogenic attack such as root rot.
  - ii) If the **Crown Condition** is healthy and strong, this is a good sign. If the crown condition is weak, broken out, or shows other signs of decline, it is an indication that the tree is under stress. It is such an important indication of health and vigor that this is the first place a trained forester or arborist looks to begin the evaluation of a tree. Current research reveals that, by the time trees with root rot show significant signs of decline in the crown, fully 50% or more of the roots have already rotted away. **Crown Condition** can be described as:
    - (1) Healthy Crown—exceptional growth for the species.
    - (2) Average Crown—typical for the species.
    - (3) Weak Crown—thin spindly growth with thin or sparse needles.
    - (4) Flagging Crown—describes a tree crown that is weak and unable to grow straight up.
    - (5) Dying Crown—describes obvious decline that is nearing death.
    - (6) Dead Crown—the crown has died due to pathological or physical injury. The tree is considered to have significant stress and/or weakness if the crown is dead.
    - (7) Broken out—a formerly weak crown condition that has been broken off by adverse weather conditions or other mechanical means.
    - (8) Regenerated or Regenerating—formerly broken out crowns that are now growing back. Regenerating crowns may appear healthy, average, or weak and indicate current health of the tree.
    - (9) Suppressed—a term used to describe poor condition of an entire tree or just the crown. Suppressed crowns are those that are entirely below

the general level of the canopy of surrounding trees which receive no direct sunlight. They are generally in poor health and vigor. Suppressed trees are generally trees that are smaller and growing in the shade of larger trees around them. They generally have thin or sparse needles, weak or missing crowns, and are prone to insect attack as well as bacterial and fungal infections.

- 13) **TRUNK**—this is the area to note any defects that can have an impact on the tree's stability or hazard potential. Typical things noted are:
- i) **FORKED**—bifurcation of branches or trunks that often occur at a narrow angle.
  - ii) **INCLUDED BARK**—a pattern of development at branch or trunk junctions where bark is turned inward rather than pushed out. This can be a serious structural defect in a tree that can and often does lead to failure of one or more of the branches or trunks, especially during severe, adverse weather conditions.
  - iii) **EPICORMIC GROWTH**—this is generally seen as dense thick growth near the trunk of a tree. Although this looks like a healthy condition, it is, in fact the opposite. Trees with Epicormic Growth have used their reserve stores of energy in a last ditch effort to produce enough additional photosynthetic surface area to produce more sugars, starches and carbohydrates to support the continued growth of the tree. Generally speaking, when conifers in the Pacific Northwest exhibit heavy amounts of Epicormic Growth, they are not producing enough food to support their current mass and are already in serious decline.
  - iv) **INTERNAL STRUCTURAL WEAKNESS**—a physical characteristic of the tree trunk, such as a **kink, crack, rot pocket, or rot column** that predisposes the tree trunk to failure at the point of greatest weakness.
  - v) **BOWED**—a gradual curve of the trunk. This can indicate an Internal Structural Weakness or an overall weak tree. It can also indicate slow movement of soils or historic damage of the tree that has been corrected by the curved growth.
  - vi) **KINKED**—a sharp angle in the tree trunk that indicates that the normal growth pattern is disrupted. Generally this means that the internal fibers and annual rings are weaker than straight trunks and prone to failure, especially in adverse weather conditions.
  - vii) **GROUND FLOWER**—an area of deformed bark near the base of a tree trunk that indicates long-term root rot.
- 14) **ROOT COLLAR**—this is the area where the trunk enters the soil and the buttress roots flare out away from the trunk into the soil. It is here that signs of rot, decay, insect infestation, or fungal or bacterial infection are noted. **NAD** stands for **No Apparent Defects**.
- 15) **ROOTS**—any abnormalities such as girdling roots, roots that wrap around the tree itself that strangle the cambium layer and kill the tree, are noted here.

- 16) **COMMENTS**—this is the area to note any additional information that would not fit in the previous boxes or attributes about the tree that have bearing on the health and structure of the tree.
- 17) **SIGNIFICANCE**—a “significant” tree is at least 6” in diameter measured at 4.5’ above the average ground level.
- 18) **CURRENT HEALTH RATING**— a description of general health ranging from dead, dying, poor, senescent, suppressed, fair, good, very good, to excellent.
- 19) **VIABILITY**— a significant tree that is in good health with a low risk of failure due to structural defects, is relatively wind firm if isolated or remains as part of a grove, and is a species that is suitable for its location.
- (1) Please note that many trees may be listed as “Non-Viable” due to poor health, poor structure, or the tree may be below the size threshold for a “Viable Tree.” However, it is worth examining the Non-Viable Trees to determine if any or all of them can be left on the property. They can add significant benefit to the landscape and contribute to wildlife habitat.
- 20) **RECOMMENDATION**— this is an estimate of whether or not the tree is of sufficient health, vigor, and structure that it is worth retaining. Specific recommendations for each tree are included in this column. They may include anything from pruning dead wood, mulching, aerating, injecting tree-based fertilizer into the root system, shortening into a habitat tree or wildlife snag, or to completely removing the tree.
- i) **Monitor:** “Monitor” is a specific recommendation that the tree be re-evaluated on a routine basis to determine if there are any significant changes in health or structural stability. “Monitor annually” (or bi-annually, tri-annually, etc.)” means the tree should be looked at once every year (or every 2 or 3 years, etc.) This yearly monitoring can be a quick look at the trees to see if there are any significant changes. Significant changes such as storm damage, loss of crown, partial failure of one or more roots, etc. require that a full evaluation be done of the tree at that time.
- ii) **Potential to retain with tree protection measures:** means that the tree appears to have the internal resources, the health and vigor, structural stability, and the wind firmness to be able to withstand the stresses of construction if development requirements and construction requirements allow.
- iii) **Habitat or Remove:** means that the tree has a high potential to fail and cause either personal injury or property damage—in other words the tree has been declared a hazard tree and should be dealt with prior to the next large storm. If it is at all possible the recommendation is to leave some of the trunk standing for wildlife habitat and some of the trunk on the ground as a nurse log. The height of the standing habitat tree depends upon the size of the tree, the condition of the tree, and the distance to a probable target. It should be short enough so that when it does fail years in the future it will not cause personal injury or property damage. Nurse logs can be laid horizontally across the slope to aid with erosion control and to provide microenvironments for

new plantings. The nurse logs meaning to be steak to prevent their movement and potential harm to people. If for some reason this is not possible that should be removed for safety.

**NOTE: TREES WITH THE SAME DESCRIPTION AND DIFFERENT RATINGS:**

Two trees may have the same descriptions in the matrix boxes, one may be marked “Significant,” while another may be marked “Non-Significant.” The difference is in the degree of the description, i.e., “early necrosis” versus “advanced necrosis” for instance. Another example is “center rot” or “base rot”. In a Western Red Cedar tree, the presence of low or even moderate rot is not significant and does not diminish the strength of the tree. However, low levels of rot in the base of a Douglas Fir tree, in an area known to have virulent pathogens present, is highly significant and predisposes that tree to windthrow.

#### **ATTACHMENT 4 - TREE PROTECTION MEASURES**

In order for trees to survive the stresses placed upon them in the construction process, tree protection must be planned in advance of equipment arrival on site. If tree protection is not planned integral with the design and layout of the project, the trees will suffer needlessly and will possibly die. With proper preparation, often costing little, or nothing extra to the project budget, trees can survive and thrive after construction. This is critical for tree survival because damage prevention is the single most effective treatment for trees on construction sites. Once trees are damaged, the treatment options available are limited.

The following minimum Tree Protection Measures are included on three separate sheets so that they can be copied and introduced into all relevant documents such as site plans, permit applications and conditions of approval, and bid documents so that everyone involved is aware of the requirements. These Tree Protection Measures are intended to be generic in nature. They will need to be adjusted to the specific circumstances of your site that takes into account the location of improvements and the locations of the trees.

## **TREE PROTECTION MEASURES:**

1. Tree Protection Fences will need to be placed around each tree or group of trees to be retained.
  - a. Tree Protection Fences are to be placed according to the attached drawing and as noted in the attached Tree Inventory/Conditions Spreadsheet, Column 6 - Limits of Disturbance.
  - b. Tree Protection Fences must be inspected prior to the beginning of any construction work/activities.
  - c. Nothing must be parked or stored within the Tree Protection Fences—no equipment, vehicles, soil, debris, or construction supplies of any sorts.
2. Cement trucks must not be allowed to deposit waste or wash out materials from their trucks within the Tree Protection Fences.
3. The Tree Protection Fences need to be clearly marked with the following or similar text in four inch or larger letters:

### **TREE PROTECTION AREA, ENTRANCE PROHIBITED**

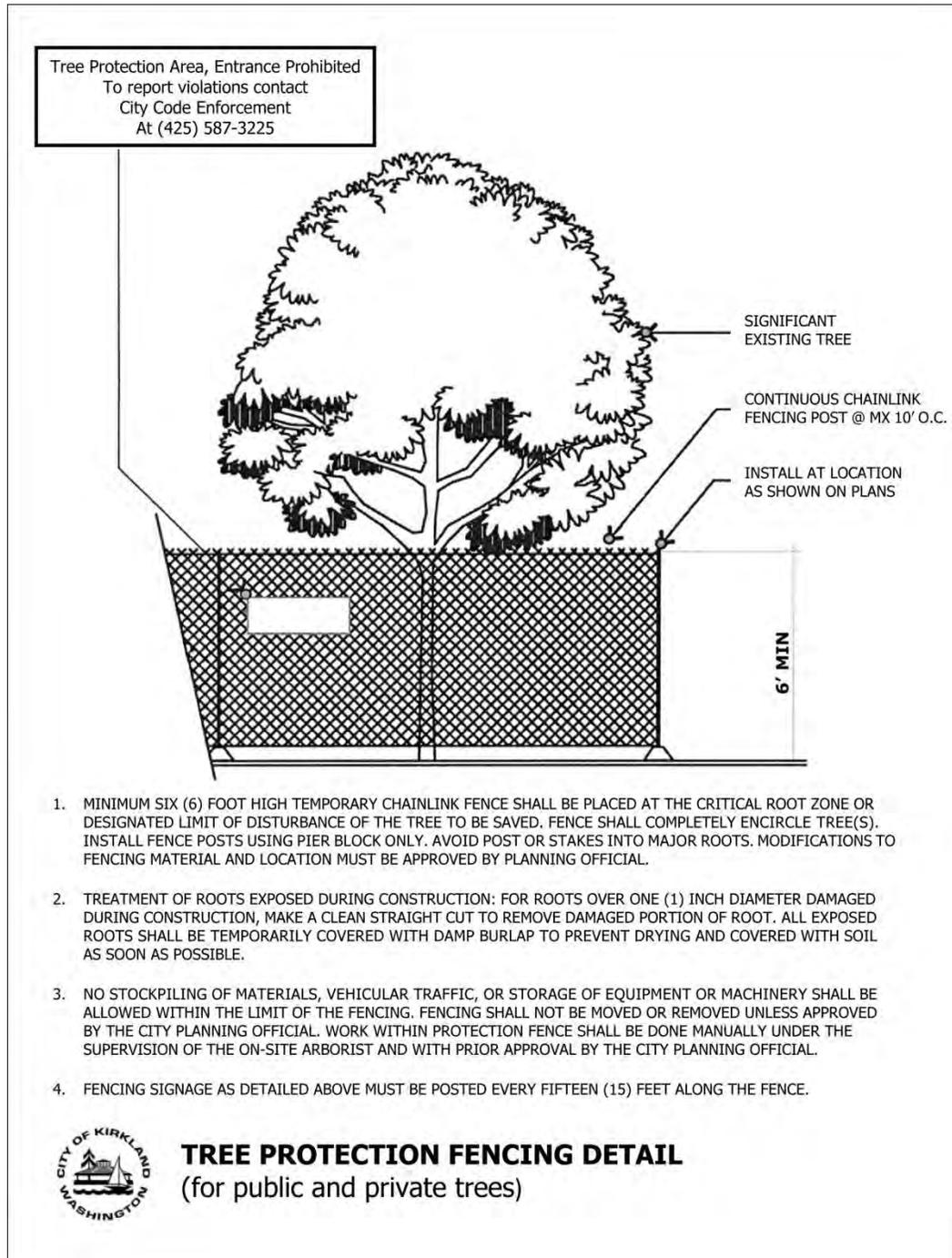
**To report violations contact**

**City Code Enforcement at**

**425-587-3225**

4. The area within the Tree Protection Fencing must be covered with wood chips, hog fuel, or similar materials to a depth of 8 to 10 inches. The materials should be placed prior to beginning construction and remain until the Tree Protection Fencing is taken down.
5. When excavation occurs near trees that are scheduled for retention, the following procedure must be followed to protect the long term survivability of the tree:
  - a. An International Society of Arboriculture, (ISA) Certified Arborist must be working with all equipment operators.
    - i. The Certified Arborist should be outfitted with a shovel, hand pruners, a pair of loppers, a handsaw, and a power saw (a “sawsall” is recommended).
  - b. The hoe must be placed to “comb” the material directly away from the trunk as opposed to cutting across the roots.
    - i. Combing is the gradual excavation of the ground cover plants and soil in depths that only extend as deep as the tines of the hoe.
  - c. When any roots of one inch diameter or greater, of the tree to be retained, is struck by the equipment, the Certified Arborist should stop the equipment operator.
  - d. The Certified Arborist should then excavate around the tree root by hand/shovel and cleanly cut the tree root.





# **TREE PROTECTION AREA**

**Entrance Prohibited**  
**To report violations contact**

**City Code Enforcement**

**At (425) 587-3225**



## ATTACHMENT 5 - REFERENCES

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9. Sinclair, Wayne A., Lyon, Howard H., and Johnson, Warren T. *Diseases of Trees and Shrubs*. Ithaca, New York: Cornell University Press, 1987.
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# Gilles Consulting

— Brian K. Gilles —

4 2 5 - 8 2 2 - 4 9 9 4

September 2, 2015

Highland Builders/BDR Construction

Attn: Greg Heiser

7683 SE 27<sup>th</sup> Street

# 353

Mercer Island, WA 98040

**Subject: Review of Proposed Tree Protection Fencing at 1932 Market Street, Kirkland, WA**

Dear Mr. Heiser:

As you requested, I have reviewed the proposed *Tree Protection Fencing* diagram/site plan that you sent to me on Friday, August 28, 2015. You requested that I review the placement of the fencing to determine whether or not it meets the requirements of the Kirkland Code and will in fact the location of the fencing likely result in the preservation of the trees. (Please refer to *Attachment 1, Tree Protection Fencing Plan* for an orientation to the site and the location of the fences in relation to the trees.)

*After reviewing the Fencing Plan, it is my judgment that the plan does in fact meet the needs of the Code and will support long-term tree survival.*

It should be noted that there are a few encroachments into the driplines of the trees but I judge them to be negligible and manageable. They are:

- The dripline of tree # 941 is 20 feet.
  - The *Tree Protection Fence* as shown will slightly encroach into the dripline for the southeast corner of the patio. This will be an encroachment of approximately 3 to 5 feet totaling less than a 5% dripline encroachment.
  - The tree will easily tolerate this encroachment as long as the excavation techniques outlined in the main tree report are followed.
  - I have included those *Tree Protection Measures* below as *Attachment 2* for convenience.
- The dripline of tree # 944 is 16 feet.
  - The *Tree Protection Fence* as shown will slightly encroach into the dripline for the southeast corner of the patio. This will be an encroachment of approximately 4 feet along the north side of the dripline totaling approximately 10% of the dripline.



fax: 425-822-6314

email: [bkgilles@comcast.net](mailto:bkgilles@comcast.net)

P.O. Box 2366 Kirkland, WA 98083

- The tree will easily tolerate this encroachment as long as the excavation techniques outlined in the main tree report are followed.
- I have included those *Tree Protection Measures* below as *Attachment 2* for convenience.
- The driplines of trees 950 – 954 range from 8 to 20 feet.
  - The *Tree Protection Fence* as shown will significantly encroach into the driplines of this row of Douglas Fir trees for the construction of the driveway. This will be an encroachment of approximately 0 to 10 feet.
  - Given that the trees have adapted to the existing driveway in the same place, I judge that the trees will easily tolerate this encroachment as long as the excavation techniques outlined in the main tree report are followed.
  - I have included those *Tree Protection Measures* below as *Attachment 2* for convenience.

**SUMMARY STATEMENT:** *After reviewing the proposed Fencing Plan, it is my judgment that the plan is consistent with the information in my tree report and is consistent with the meetings we had on site to discuss the conflicting demands required to build. It is my judgment that this proposed Tree Protection Fence Plan does in fact meet the needs of the Code and will support long-term tree survival.*

#### **WAIVER OF LIABILITY**

There are many conditions affecting a tree's health and stability, which may be present and cannot be ascertained, such as, root rot, previous or unexposed construction damage, internal cracks, stem rot and more which may be hidden. Changes in circumstances and conditions can also cause a rapid deterioration of a tree's health and stability. Adverse weather conditions can dramatically affect the health and safety of a tree in a very short amount of time. While I have used every reasonable means to examine these trees, this evaluation represents my opinion of the tree health at this point in time. These findings do not guarantee future safety nor are they predictions of future events.

The tree evaluation consists of an external visual inspection of an individual tree's root flare, trunk, and canopy from the ground only unless otherwise specified. The inspection may also consist of taking trunk or root soundings for sound comparisons to aid the evaluator in determining the possible extent of decay within a tree. Soundings are only an aid to the evaluation process and do not replace the use of other more sophisticated diagnostic tools for determining the extent of decay within a tree.

As conditions change, it is the responsibility of the property owners to schedule additional site visits by the necessary professionals to ensure that the long-term success of the project is ensured. It is the responsibility of the property owner to obtain all required permits from city, county, state, or federal agencies. It is the responsibility of the property owner to comply with all applicable laws, regulations, and permit

Evaluation of Proposed Tree Protection Fencing  
At 1932 Market Street, Kirkland, WA  
Gilles Consulting  
September 2, 2015  
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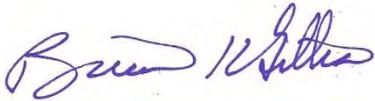
conditions. If there is a homeowners association, it is the responsibility of the property owner to comply with all Codes, Covenants, and Restrictions (CC&R's) that apply to tree pruning and tree removal.

This tree evaluation is to be used to inform and guide the client in the management of their trees. This in no way implies that the evaluator is responsible for performing recommended actions or using other methods or tools to further determine the extent of internal tree problems without written authorization from the client. Furthermore, the evaluator in no way holds that the opinions and recommendations are the only actions required to insure that the tree will not fail. The client shall hold the evaluator harmless for any and all injuries or damages incurred if the evaluator's recommendations are not followed or for acts of nature beyond the evaluator's reasonable expectations, such as severe winds, excessive rains, heavy snow loads, etc.

This report and all attachments, enclosures, and references, are confidential and are for the use of the client concerned. They may not be reproduced, used in any way, or disseminated in any form without the prior consent of the client concerned and Gilles Consulting.

Thank you for calling Gilles Consulting for your arboricultural needs.

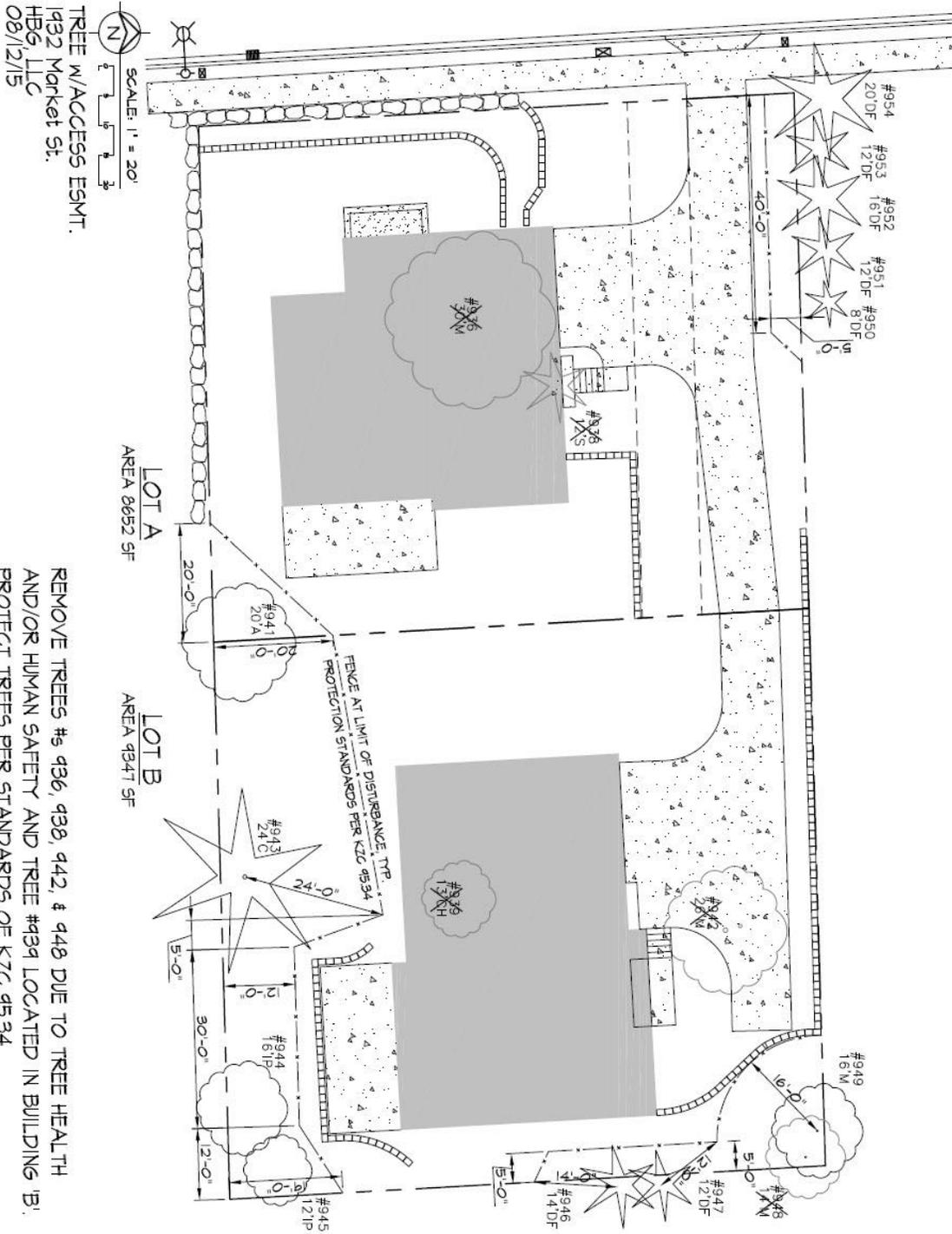
Sincerely,



Brian K. Gilles, Consulting Arborist  
ISA Certified Arborist # PN-0260  
ASCA Registered Consulting Arborist # RCA-418A  
PNW-ISA Certified Tree Risk Assessor #148



**ATTACHMENT 1, PROPOSED TREE PROTECTION FENCE EXHIBIT**



## **ATTACHMENT 1 - TREE PROTECTION MEASURES**

In order for trees to survive the stresses placed upon them in the construction process, tree protection must be planned in advance of equipment arrival on site. If tree protection is not planned integral with the design and layout of the project, the trees will suffer needlessly and will possibly die. With proper preparation, often costing little, or nothing extra to the project budget, trees can survive and thrive after construction. This is critical for tree survival because damage prevention is the single most effective treatment for trees on construction sites. Once trees are damaged, the treatment options available are limited.

The following minimum Tree Protection Measures are included on three separate sheets so that they can be copied and introduced into all relevant documents such as site plans, permit applications and conditions of approval, and bid documents so that everyone involved is aware of the requirements. These Tree Protection Measures are intended to be generic in nature. They will need to be adjusted to the specific circumstances of your site that takes into account the location of improvements and the locations of the trees.

## **TREE PROTECTION MEASURES:**

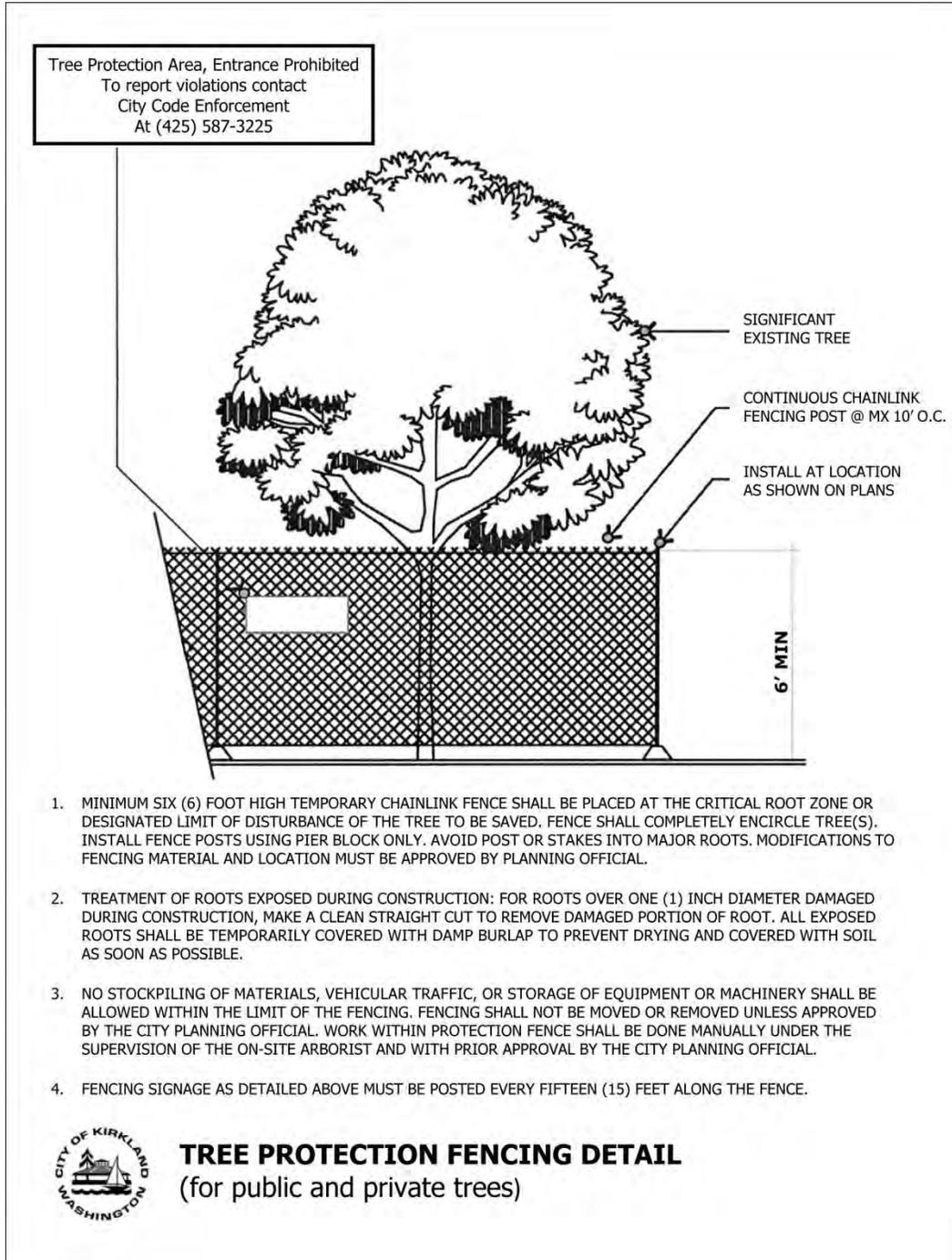
1. Tree Protection Fences will need to be placed around each tree or group of trees to be retained.
  - a. Tree Protection Fences are to be placed according to the attached drawing and as noted in the attached Tree Inventory/Conditions Spreadsheet, Column 6 - Limits of Disturbance.
  - b. Tree Protection Fences must be inspected prior to the beginning of any construction work/activities.
  - c. Nothing must be parked or stored within the Tree Protection Fences—no equipment, vehicles, soil, debris, or construction supplies of any sorts.
2. Cement trucks must not be allowed to deposit waste or wash out materials from their trucks within the Tree Protection Fences.
3. The Tree Protection Fences need to be clearly marked with the following or similar text in four inch or larger letters:

### **TREE PROTECTION AREA, ENTRANCE PROHIBITED**

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City Code Enforcement at  
425-587-3225**

4. The area within the Tree Protection Fencing must be covered with wood chips, hog fuel, or similar materials to a depth of 8 to 10 inches. The materials should be placed prior to beginning construction and remain until the Tree Protection Fencing is taken down.
5. When excavation occurs near trees that are scheduled for retention, the following procedure must be followed to protect the long term survivability of the tree:
  - a. An International Society of Arboriculture, (ISA) Certified Arborist must be working with all equipment operators.
    - i. The Certified Arborist should be outfitted with a shovel, hand pruners, a pair of loppers, a handsaw, and a power saw (a “sawsall” is recommended).
  - b. The hoe must be placed to “comb” the material directly away from the trunk as opposed to cutting across the roots.
    - i. Combing is the gradual excavation of the ground cover plants and soil in depths that only extend as deep as the tines of the hoe.
  - c. When any roots of one inch diameter or greater, of the tree to be retained, is struck by the equipment, the Certified Arborist should stop the equipment operator.
  - d. The Certified Arborist should then excavate around the tree root by hand/shovel and cleanly cut the tree root.

- i. The Certified Arborist should then instruct the equipment operator to continue.
6. Putting Utilities Under the Root Zone:
  - a. Boring under the root systems of trees (and other vegetation) shall be done under the supervision of an ISA Certified Arborist. This is to be accomplished by excavating a limited trench or pit on each side of the critical root zone of the tree and then hand digging or pushing the pipe through the soil under the tree. The closest pit walls shall be a minimum of 7 feet from the center of the tree and shall be sufficient depth to lay the pipe at the grade as shown on the plan and profile.
  - b. Tunneling under the roots of trees shall be done under the supervision of an ISA Certified Arborist in an open trench by carefully excavating and hand digging around areas where large roots are exposed. No roots 1 inch in diameter or larger shall be cut.
  - c. The contractor shall verify the vertical and horizontal location of existing utilities to avoid conflicts and maintain minimum clearances; adjustment shall be made to the grade of the new utility as required.
7. Watering:
  - a. The trees will require significant watering throughout the summer and early fall in order to survive long-term. An easy and economical watering can be done using soaker hoses placed three feet from the trunk of the tree and spiraled around the tree. One 75-foot soaker hose per tree is adequate. It is best to place the soakers using landscape staples, (available from HD Fowler in Bellevue for pennies apiece) then cover the area with two to three inches composed materials. The composted material will act as a mulch to minimize evaporation and will also stimulate the microbial activity of the soil which is another benefit to the health of the tree.
  - b. Water the tree to a depth of 18 to 20 inches. I recommended leaving the water on the soaker hoses for six to eight hours and then digging down to determine how deep your water is penetrating. Then adjust accordingly. It may take a good two days of watering to reach the proper depth.
  - c. Once the water reaches the proper depth, turn off the hoses for four weeks and then water again. Water more often when temperatures increase— every three weeks when temperatures exceed 80 degrees and every two weeks when temperatures exceed 90 degrees. This drying out of the soil in between watering is important to prevent soil pathogens from attacking the trees.



**TREE PROTECTION AREA**

**Entrance Prohibited**

**To report violations contact**

**City Code Enforcement**

**At (425) 587-3225**