

Arborist Report

Subject:

Inventory and assessment of regulated and exceptional trees for proposed home renovation.

Prepared for:

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Prepared by:

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Site:

9640 SE 61st PL
Mercer Island, WA 98040
Parcel #4260000050

Site visit time/date:

11am/9-9-2024

Attachments:

- Site map
- Table of trees
- Tree photos
- Tree planting and protection details

Summary:

- Subject regulated tree #1, Blue Spruce was found to be damaging a wall and stairs and is unlikely to survive needed repairs. Removal is recommended and 2:1 replacement is required.
- Cabling and inspection of co-dominate attachment point is recommended for subject exceptional tree #2.
- Retain and monitor regulated trees #3-#5.
- Monitor N side of trunk, @base, of tree #3 for increased woodpecker activity.
- Due to proximity, tree protection measures for regulated trees #3-#5 are limited to laminated signage attached to tree trunks with tape.
- Only (1) non regulated tree (J. Maple near front door) was found to be of high quality and could be considered for transplanting.
- Retained trees are greater than required 30% retention of large trees.

Methodology:

- All subject trees were assessed using the ISA basic risk assessment method for a 1 year timeframe using basic hand tools, considering typical PNW weather with occasional high winds, heavy rain, ice and snow.
- All subject trees were assessed for potential effects from proposed home renovations.
- Diameter at Standard Height was measured at 4.5' above grade on upslope side of tree.
- Regulated trees are those >10" DSH
- Exceptional trees are those >36" DSH
- Critical root zone calculated using formula of 1' radius from trunk per 1" DSH or case by case basis for those trees with roots severely limited by adjacent foundations or retaining walls.

Qualifications:

- The author is an ISA certified Arborist with over 25 years experience in arboriculture and urban forestry. The author is Tree Risk Assessment Qualified with an associate science in natural resource management.

Table of Trees

#	Common Name	Latin Name	DSH	Critical root zone/Limits of disturbance	Condition	Viability	Action
1	Blue Spruce	Picea pungens	16"	Drip line of crown or wall edge/Remove if repairing stairs and wall	Healthy/Vigorous/ Roots limited by wall/ Roots damaging wall and steps	Good/Viable	Remove and replace if repairing stairs and wall
2	Douglas Fir	Pseudotsuga menziesii	42" Exceptional	1' radius from trunk per 1" DSH	Healthy/Vigorous/Co-dominate tops/ Exceptional	Good/Viable	Retain/ Inspect co-dominate attachment/ Cable co-dominate tops
3	Douglas Fir	Pseudotsuga menziesii	27"	House on S/ Wall on N/Drip line on E/Drip line on W	Healthy/Vigorous/Poor trunk taper on N side w. Woodpecker holes @base	Fair/Viable	Retain/ Monitor base for increased woodpecker activity
4	Douglas Fir	Pseudotsuga menziesii	22"	House on S/ Wall on N/Drip line on E/Drip line on W	Healthy/Vigorous/ Roots limited by wall to N and foundation of home to S	Good/Viable	Retain
5	Douglas Fir	Pseudotsuga menziesii	25"	House on S/ Wall on N/Drip line on E/Drip line on W	Healthy/Vigorous/ Roots limited by wall to N and foundation of home to S	Good/Viable	Retain



Site Map

Observations regarding regulated and exceptional trees:

- Tree #1-Noted as healthy and vigorous throughout crown trunk and roots. Roots noted as severely limited on the east by a 4' tall block retaining wall. Response growth in roots is 100% away from 4' wall, under an adjacent staircase and a 2' retaining wall, directly to the NW. Stairs to NW noted as damaged, lifted and repaired using spray foam to support stairs around roots, Roots have displaced all soil under 2 stairs in the middle of the staircase.
- Tree #2-Noted as healthy and vigorous throughout crown trunk and roots. Trunks noted as co-dominate @50'. Root collar noted as covered in English Ivy.
- Tree #3-Noted as vigorous throughout crown. Roots noted as severely limited on S by home foundation, within 3' of trunk. Roots limited to N by 8' high rock retaining wall. Trunk noted as having poor taper on N side with extreme response growth adjacent to area of poor taper. Multiple 1-2 inch diameter woodpecker holes noted in trunk, in area of poor taper. Hole depth is not into cambium layer at this time. Sounding of trunk yielded crisp tones.
- Tree #4-Noted as vigorous throughout crown. Roots noted as severely limited on S by home foundation, within 3' of trunk. Roots limited to N by 8' high rock retaining wall. No noted flaws in trunk or root collar.

- Tree #5-Noted as vigorous throughout crown. Roots noted as severely limited on S by home foundation, within 3' of trunk. Roots limited to N by 8' high rock retaining wall. No noted flaws in trunk or root collar.
- No neighbors trees noted as having crowns which overhang areas of disturbance.

Observations regarding non-regulated trees and shrubs:

- Small planting bed adjacent to front door of home-Small J. Maple and Mahonia noted as being of high quality and vigor. All others reported as poorly pruned.
- Planting bed east of driveway-All shrubs noted as topiary pruned and sheared and of poor specimen quality due to pruning history.
- Flowering cherry E of home-Crown noted as previously reduced for view. Roots limited by an adjacent retaining wall which is failing and to be replaced. Tortrix beetle frass noted on trunk.
- Japanese Maple to E of home-Crown noted as severely reduced for view with vigorous response growth. Roots limited by retaining wall to E, which is failing and to be replaced.
- Hedgerow on N property line-Noted as a mix of Cedar, Filbert, European Birch and Cherry which have been formally reduced on all sides and top to maintain view and property clearance. Trunks noted as covered in English Ivy. Cedar portion of hedge noted as overgrown on sides, overhanging neighbors home to N and in contact with deck on S.
- Juniper and azalea hedge W of home-Noted as moderately vigorous and topiary pruned. Site conditions noted as severely compacted soil with low organic content.

Conclusions/Recommendations regarding regulated and exceptional trees:

All tree protection measures shall be in place prior to beginning any needed demolition and remain in place for the duration of the project.

- Tree #1-It is my professional opinion that the subject Blue Spruce has caused the aforementioned damage to adjacent wall and stairs due to root growth and soil displacement and is unlikely to survive needed root pruning required to make repairs to adjacent wall and stairs. Replacement tree planting will be required at 2:1 ratio, for trees >10" up to 24", as part of development plan. No impact is expected on adjacent retained trees due to the removal of the subject spruce.
- Tree #2-Retain and monitor. Attachment point of co-dominate tops should be areal inspected by a certified arborist for signs of failure, decay or severely included bark. Cabling of co-dominate tops at 2/3 height of tree, from split is also recommended. Root collar should be kept free of English Ivy. With no crown overhanging proposed area of disturbance and no construction activity or traffic within critical root zone, no tree protection measures should be necessary.
- Tree #3-Retain, monitor trunk for increased woodpecker activity. While poor trunk taper may indicate internal decay, response growth was found to be excellent and likelihood of whole tree failure was found to be no greater than possible, within the specified timeframe. Due to extreme proximity to home with concrete walk between tree and home, tree protection measures will be limited to laminated signage stating "protected tree" attached to tree trunks with tape. No excavation nor storage of materials shall be allowed within critical root zones for the duration of project. Pruning should be limited to crown raising, if needed for second story renovation, and be performed by a certified arborist.
- Tree #4-Retain and monitor. Due to extreme proximity to home with concrete walk between tree and home, tree protection measures will be limited to laminated signage stating "protected tree" attached to tree trunks with tape. No excavation nor storage of materials shall be allowed within critical root zones for the duration of project. Pruning should be limited to crown raising, if needed for second story renovation, and be performed by a certified arborist.
- Tree #5-Retain and monitor. Due to extreme proximity to home with concrete walk between tree and home, tree protection measures will be limited to laminated signage "stating protected tree" attached to tree trunks with tape. No excavation nor storage of materials shall be allowed within critical root zones for the duration of project. Pruning should be limited to crown raising, if needed for second story renovation or power line clearance, and be performed by a certified arborist.

Conclusions/Recommendations regarding non-regulated trees and shrubs:

- Small planting bed adjacent to front door of home-Small Japanese Maple and Mahonia could be transplanted and re-purposed elsewhere in landscape.
- Planting bed east of driveway-Due to history of extreme topiary pruning, crown restoration to improve form is no longer a viable management option for any trees or shrubs within the subject bed. Removal and replacement with site appropriate species, of all within the subject bed is recommended.
- Flowering cherry E of home-Due to proximity of wall being demolished, history of crown reduction pruning and high propensity for disease and infestation, the subject cherry is unlikely to survive demolition, is too large for transplanting and has a low likelihood of becoming a specimen quality tree. Removal and replacement is recommended. Tree replacement ratio for removed trees <10" DSH is 1:1.
- Japanese Maple to E of home-Due to proximity of wall being demolished, the subject J. Maple is unlikely to survive wall demolition. Due to history of crown reduction pruning, major crown restoration pruning, over many years, would be required to improve crown form to a semi-natural state. Due to size and location, transplanting would likely be costly and survival would not be guaranteed. Removal and replacement is recommended. Tree replacement ratio for removed trees <10" DSH is 1:1.
- Hedgerow on N property line-While species within the subject hedgerow have performed adequately, the species within the hedge are not species which are generally used in hedges and generally do not perform well when being repeatedly reduced. At some point it is highly likely that the required reduction for view maintenance and clearance of neighbors property/deck will leave some or all of the trees within the subject hedge non-viable. In the future, if trees become non-viable, removal and replacement with more site appropriate trees, fencing or trees which are better suited for reduction pruning, may be required.
- Juniper and azalea hedge W of home-Due to extremely poor cultural conditions, it is unlikely that the hedgerow to the west of the home will ever increase in vigor. Removal and replacement, along with major cultural improvements including soil amendments and de-compaction is recommended.

Replacement trees:

- In Mercer Island, when replacing trees, the City arborist prioritizes native Pacific Northwest species, but will defer to the property owner's choice unless the selected species is deemed unlikely to survive, a danger, or a nuisance, or would threaten utilities or critical tree areas.
- Replacement trees should be 6' in height or 2" caliper.



Subject tree #1 has caused significant damage to stairs and wall to NW due to soil displacement from root growth.



Large exposed roots would need to be cut to repair stairs, leaving tree #1 non-viable and non-wind firm.



Significant damage from tree #1 to adjacent block retaining wall. Cutting of the offending root would leave the tree non-viable and non-wind firm.



Tree #2 was found to be healthy and vigorous and well outside of the proposed area of activity. Inspection of the co-dominate attachment point and cabling is recommended, by a certified arborist.



Trees 3-5 all grow in extreme proximity to home which will limit tree protection measures to signage on trunks. Poor trunk taper was noted on tree #3.

Area of poor trunk taper on #3 was found to contain multiple woodpecker holes. Woodpecker feeding indicates insect presence and can be an indicator of interior decay. Holes were found to not be into cambium layer and response growth is excellent at this time. Retain and monitor



Only the J. Maple and Mahonia shrub were found to be worth saving in front bed.

All trees/shrubs in bed to E of drive have been topiary pruned and could be replaced with more site appropriate trees/shrubs.



Non-regulated Fl.Cherry and J. Maple to E of house have been poorly pruned and are site inappropriate for view. Removal and replacement is recommended.



Extreme proximity to walls needing to be repaired of non-regulated Fl. Cherry make likelihood of survival low. Removal and replacement is recommended.



Tortrix beetle frass noted on trunk of Fl. Cherry.



J. Maple to the E of home has been severely headed. Crown restoration would take many pruning cycles and block view at a natural height.



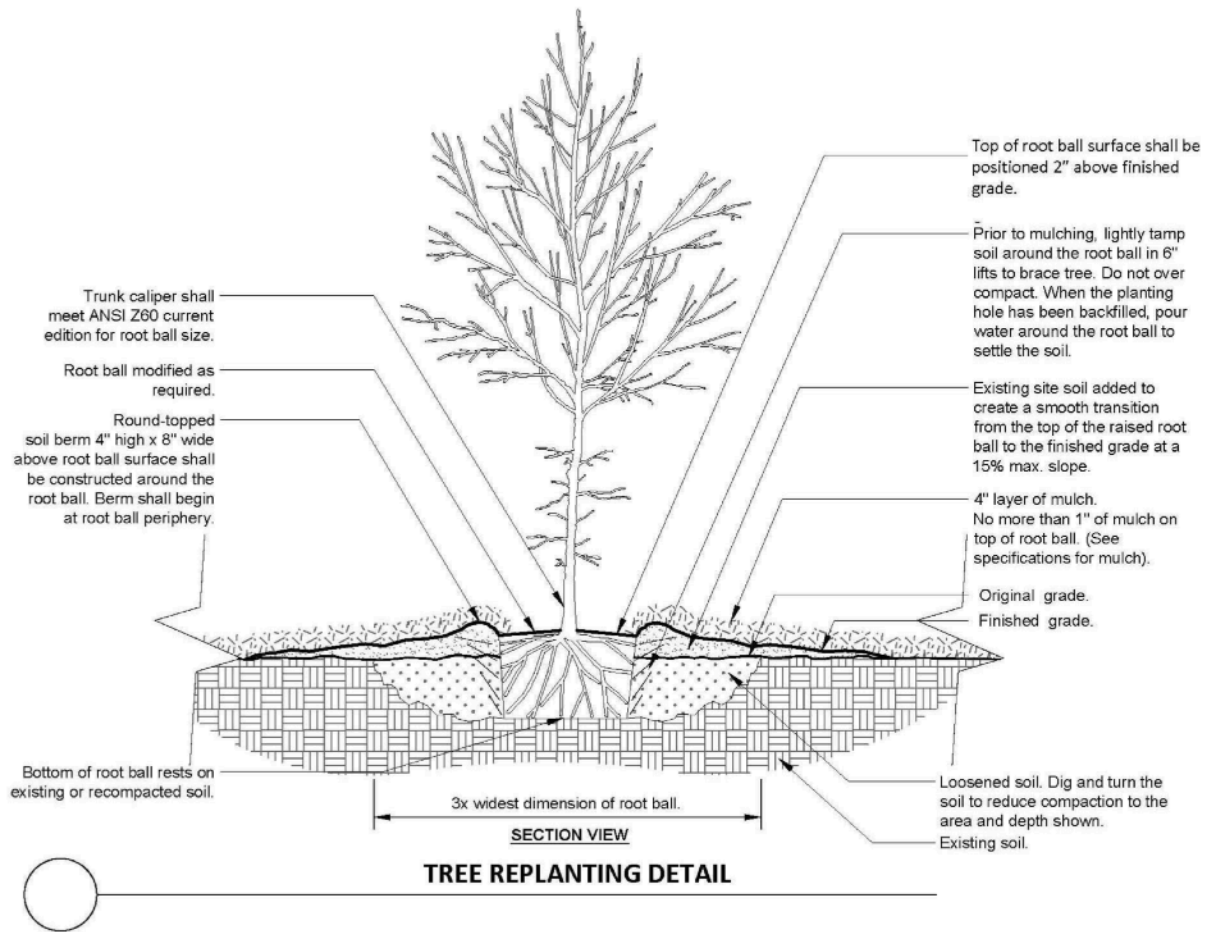
Cedar portion of hedge on N property line noted as overgrown on sides. Cutting back may leave trees non-viable. Eventual removal and replacement with more site appropriate species.



Site conditions to W of home are noted as very poor and require amendments if plants are to thrive in this site.



Hedge on N property line is mixed species, all of which are not generally recommended to be used in a privacy hedge which requires repeated reduction. A more appropriate species might be Yew, shore pine or Portuguese laurel.



TREE PROTECTION AREA (TPZ)

KEEP OUT!

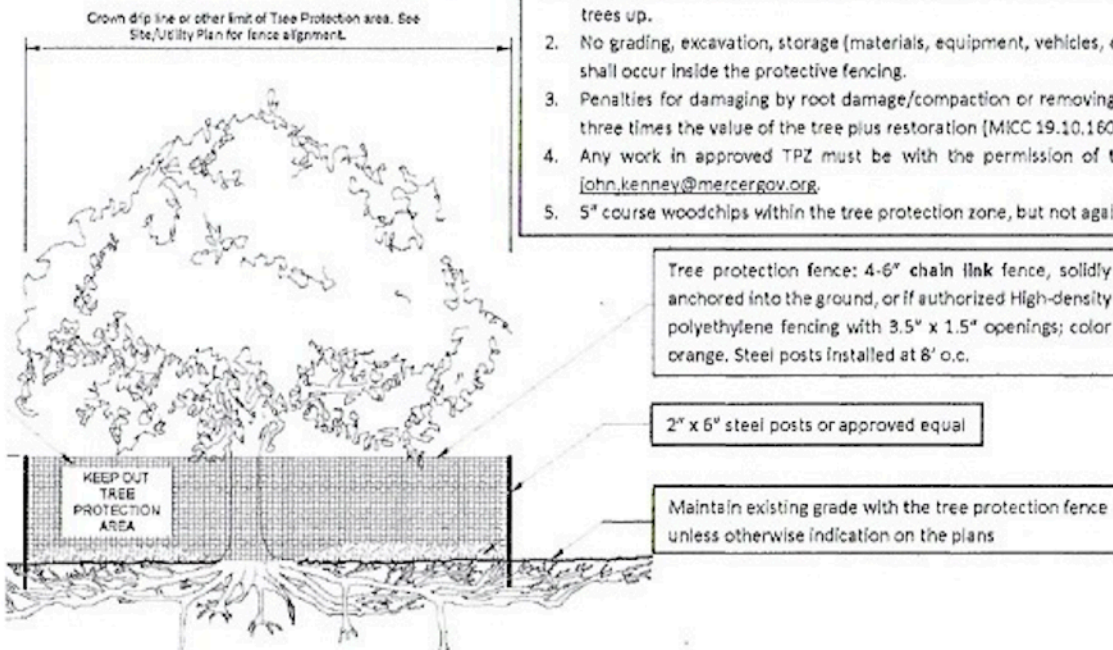
DO NOT REMOVE OR ADJUST THE APPROVED LOCATION OF THIS TREE PROTECTION AREA

Trees enclosed by this fence are protected and are subject to the conditions of the tree permit. Violation of tree conditions may lead to:

1. Correction Notices or Stop Work Orders until compliance is achieved
2. RE Inspection Fees/financial penalties
3. Arborist reports recommending mitigation

Notes

1. No pruning shall be performed unless under the direction of the Project Arborist. Including limbing trees up.
2. No grading, excavation, storage (materials, equipment, vehicles, etc.), or other unpermitted activity shall occur inside the protective fencing.
3. Penalties for damaging by root damage/compaction or removing a saved tree may be a fine up to three times the value of the tree plus restoration [MICC 19.10.160].
4. Any work in approved TPZ must be with the permission of the City Arborist (206) 275-7713, john.kenney@mercergov.org.
5. 5" course woodchips within the tree protection zone, but not against the tree trunk.



Any Work in the protected area must be with the permission of the City Arborist john.kenney@mercergov.org

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING# 20181107000788)
LOT 6 OF LELAND ADDITION, AS PER PLAT RECORDED IN VOLUME 82 OF PLATS, PAGE 19, RECORDS OF KING COUNTY AUDITOR;
SITUATE IN THE CITY OF MERCER ISLAND, COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARINGS

ACCEPTED THE BEARING OF N 77°58'33" E BETWEEN EXISTING PROPERTY CORNERS FOUND (AS SHOWN), PER PLAT.

REFERENCES

- R1. LELAND ADDITION, VOL. 82 OF PLATS, PG. 19, RECORDS OF KING COUNTY, WASHINGTON.
R2. RECORD OF SURVEY, VOL. 200, PG. 132, RECORDS OF KING COUNTY, WASHINGTON.

VERTICAL DATUM

NAVD 88 PER CITY OF MERCER ISLAND BENCHMARK NO. 2416
DESCRIPTION: 4"x4" CONC W/ 3/8" COPPER PIN
LOCATION: 100'E OF E MERCER WAY, EAST BAY, OPP HSE #6202
ELEVATION: 138.867'
SITE TEMP. BENCHMARK
DESCRIPTION: PK NAIL W/ RED WASHER
LOCATION: SET IN ASPHALT DRIVE, 30' SW OF SW PROP CORNER
ELEVATION: 78.32'

SURVEYOR'S NOTES

- 1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN FEBRUARY OF 2024. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
2. ALL MONUMENTS SHOWN HEREON WERE LOCATED DURING THE COURSE OF THIS SURVEY UNLESS OTHERWISE NOTED.
3. THE TYPES AND LOCATIONS OF ANY UTILITIES SHOWN ON THIS DRAWING ARE BASED ON INFORMATION PROVIDED TO US, BY OTHERS OR GENERAL INFORMATION READILY AVAILABLE IN THE PUBLIC DOMAIN INCLUDING, AS APPLICABLE, IDENTIFYING MARKINGS PLACED BY UTILITY LOCATE SERVICES AND OBSERVED BY TERRANE IN THE FIELD. AS SUCH, THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY AND SHOULD NOT BE RELIED ON FOR DESIGN OR CONSTRUCTION PURPOSES; TERRANE IS NOT RESPONSIBLE OR LIABLE FOR THE ACCURACY OR COMPLETENESS OF THIS UTILITY INFORMATION. FOR THE ACCURATE LOCATION AND TYPE OF UTILITIES NECESSARY FOR DESIGN AND CONSTRUCTION, PLEASE CONTACT THE SITE OWNER AND THE LOCAL UTILITY LOCATE SERVICE (800-424-5555).
4. SUBJECT PROPERTY TAX PARCEL NO. 426000-0060
5. SUBJECT PROPERTY AREA (UPLAND) PER THIS SURVEY IS 14,731 ±S.F. (0.34 ACRES)
6. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST THAT ARE NOT SHOWN HEREON.
7. EXISTING STRUCTURE(S) LOCATION AND DIMENSIONS ARE MEASURED FROM THE FACE OF THE SIDING UNLESS OTHERWISE NOTED.
8. FIELD DATA FOR THIS SURVEY WAS OBTAINED BY DIRECT FIELD MEASUREMENTS WITH A CALIBRATED ELECTRONIC 3-SECOND TOTAL STATION AND/OR SURVEY GRADE GPS OBSERVATIONS. ALL ANGULAR AND LINEAR RELATIONSHIPS ARE ACCURATE AND MEET THE STANDARDS SET BY WAC 352-130-090.

LEGEND

Legend table with symbols for area drain, asphalt surface, benchmark, bollard, building, centerline row, column, concrete surface, deck, electrical vent, fence line (steel), fence line (wood), fire hydrant, flagstone surface, gas line, gas meter, guy anchor, heat exchanger, hedge foliage line, inlet (type 1, solid), hub (set), luminaire, nail as noted, ohp transmission elevation, paver surface, post, power hand hole, power meter, power (overhead), power (underground), power pole, rebar / iron pipe (found), retaining wall, rockery, sewer manhole, steep slope area, telephone hand hole, telephone sentry, tree (as noted), water line, water meter, utilities easement per plat.

VICINITY MAP

N.T.S.



TOPOGRAPHIC & BOUNDARY SURVEY

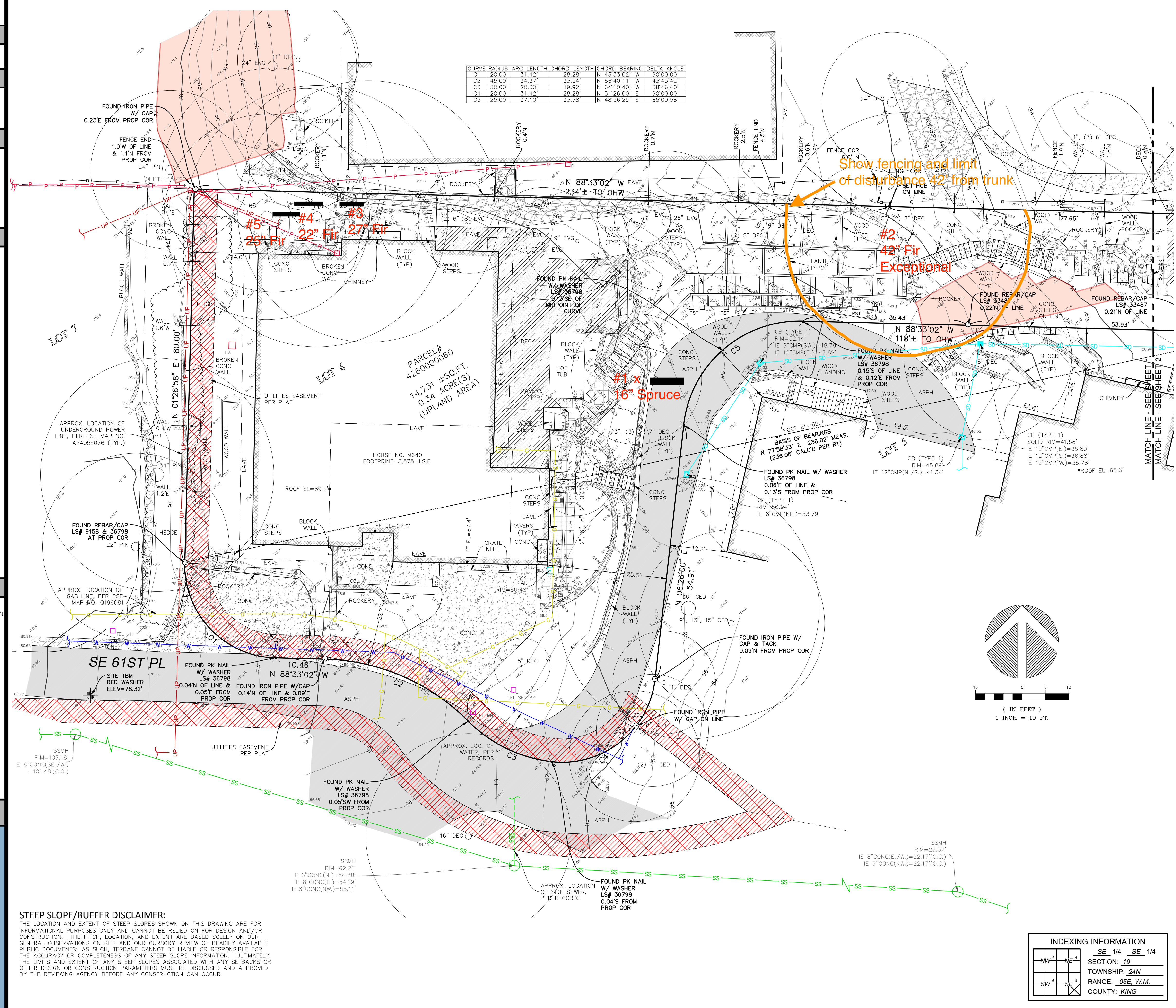


Table with columns: CURVE, RADIUS, ARC LENGTH, CHORD LENGTH, CHORD BEARING, DELTA ANGLE. Contains data for curves C1 through C5.

Show fencing and limit of disturbance 42' from trunk

#2 42' Fir Exceptional

#1 x 16' Spruce

STEEP SLOPE/BUFFER DISCLAIMER: THE LOCATION AND EXTENT OF STEEP SLOPES SHOWN ON THIS DRAWING ARE FOR INFORMATIONAL PURPOSES ONLY AND CANNOT BE RELIED ON FOR DESIGN AND/OR CONSTRUCTION. THE PITCH, LOCATION, AND EXTENT ARE BASED SOLELY ON OUR GENERAL OBSERVATIONS ON SITE AND OUR CURSORY REVIEW OF READILY AVAILABLE PUBLIC DOCUMENTS. AS SUCH, TERRANE CANNOT BE LIABLE OR RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY STEEP SLOPE INFORMATION. ULTIMATELY, THE LIMITS AND EXTENT OF ANY STEEP SLOPES ASSOCIATED WITH ANY SETBACKS OR OTHER DESIGN OR CONSTRUCTION PARAMETERS MUST BE DISCUSSED AND APPROVED BY THE REVIEWING AGENCY BEFORE ANY CONSTRUCTION CAN OCCUR.

INDEXING INFORMATION table with grid cells for NW, NE, SW, SE and section, township, range, county information.

Vertical sidebar containing: terrane.net logo, TOPOGRAPHIC & BOUNDARY SURVEY title, FAUSER RESIDENCE, 9640 SE 61ST PL, MERCER ISLAND, WA 98040, TERRANE logo, address and contact info, job number, date, draft, checked, scale, revision history, sheet number, and page 1 of 2.