

Memorandum

To: Mathew Wiley
CC: The Miller Hull Partnership LLP c/o April Ng
Site: Wiley Residence Remodel
Address: 6838 96th Ave SE, Mercer Island
Re: Assessment of Impacts to Tree 344 from Soldier Pile Wall Installation in Driveway
Date: January 10, 2024
Project Arborist: Connor McDermott,
ISA Certified Arborist PN- 8704A
ISA Qualified Tree Risk Assessor
Referenced Documents: Arborist Report (Tree Solutions Inc, 05/12/2022)
Grading Plan C200A (LPD Engineering, February 24, 2023)
Foundation Details (PCS Structural Solutions, February 24, 2023)
Garage Shoring and Wall Elevation Details S420 (PCS Structural Solutions, December 8, 2023)

I was asked by the project team to assess revisions to the construction of a retaining wall within the recommended limits of disturbance (RLOD) of tree 344. I was to produce a memo of my findings following a corrections response of the revised plan set from the City of Mercer Island.

Tree 344 is an exceptional western redcedar that measured 49.7-inch diameter at standard height and had a RLOD of 33 feet. The approved construction plans called for the construction of a concrete retaining wall south of the existing driveway and north of tree 344 (Figure 1). The foundation of the concrete retaining wall had a four foot wide footing that required encroachment into the minimum limits of disturbance (MLOD) of tree 344 and up to 15 feet from the base of the tree (Figure 2).

Due to these impacts, the project team developed an alternative solution to install the retaining wall by utilizing soldier piles. Based on my discussion with the project team, this approach would reduce the encroachment into the RLOD of tree 344 by three or more feet and could be installed from the existing driveway utilizing an auger.

Based on my assessment of the plans available, the impacts to tree 344 are limited from the construction of the soldier pile wall and installation of the wall will not require encroachment into the MLOD of the tree.

I believe the long term health of tree 344 will not be impacted if excavation within undisturbed soils is limited to the placement of beams for the piles. I recommend the location of the piles are first ground

with a grinding or reciprocating attachment head on the auger for the initial four feet to cleanly cut any roots in the vicinity. No machinery or materials should be stored on top of undisturbed soils within the RLOD of the tree. I recommend the installation of the piles within the RLOD of tree 344 are monitored by the project arborist to guide installation and determine rooting impacts.

Respectfully Submitted,

Connor McDermott,
Consulting Arborist

Appendix A **Glossary**

DBH or DSH: diameter at breast or standard height; the diameter of the trunk measured 54 inches (4.5 feet) above grade (Council of Tree and Landscape Appraisers 2019)

exceptional tree: a tree measuring 36 inches DSH or greater or with a diameter that is equal to or greater than the diameter listed in the Exceptional Tree Table (MICC 19.16.010)

ISA: International Society of Arboriculture

large tree (regulated): A tree measuring 10 inches or greater DSH (MICC 19.16.010)

MLOD (Minimum Limits of Disturbance) Minimum Limits of Disturbance represents a distance five (5) times that of the trunk and is the minimum distance from a trunk that a structural root can be cut to maintain tree stability.

RLOD (Recommend Limits of Disturbance): As outlined in ISA Best Management Practices: Managing Trees During Construction, this is calculated as a radial distance 8 times the trunk diameter. Some cases require 12 times the trunk diameter. For the purpose of this report, this represents the critical root zone (CRZ).

Appendix B Figures

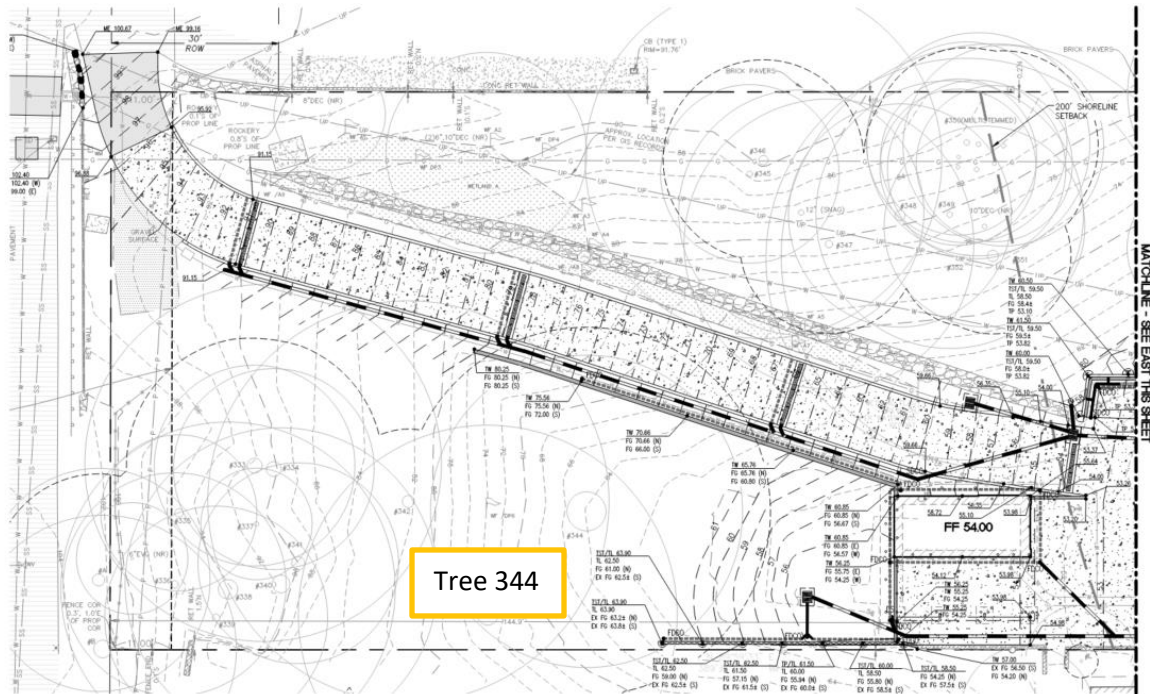


Figure 1. Snip of the approved grading plan with Tree 344 indicated and the location of the retaining wall shown (Grading Plan C200A, LPD Engineering, 02/24/2023).

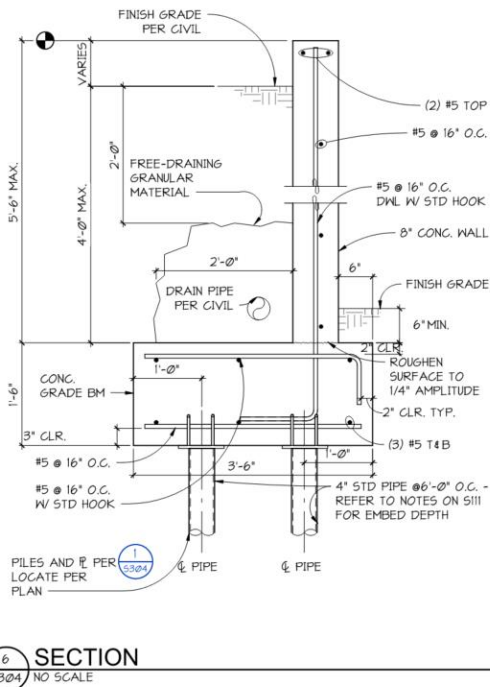


Figure 2. Snip of the concrete footing for the wall. The footing is four feet long and would require encroachment into the MLOD of tree 344 (Foundation Details, PCS Structural Solutions, 02/24/2023)

Appendix C Assumptions & Limiting Conditions

- 1 Consultant assumes that the site and its use do not violate, and is in compliance with, all applicable codes, ordinances, statutes or regulations.
- 2 The consultant may provide a report or recommendation based on published municipal regulations. The consultant assumes that the municipal regulations published on the date of the report are current municipal regulations and assumes no obligation related to unpublished city regulation information.
- 3 Any report by the consultant and any values expressed therein represent the opinion of the consultant, and the consultant's fee is in no way contingent upon the reporting of a specific value, a stipulated result, the occurrence of a subsequent event, or upon any finding to be reported.
- 4 All photographs included in this report were taken by Tree Solutions, Inc. during the documented site visit, unless otherwise noted. Sketches, drawings and photographs (included in, and attached to, this report) are intended as visual aids and are not necessarily to scale. They should not be construed as engineering drawings, architectural reports or surveys. The reproduction of any information generated by architects, engineers or other consultants and any sketches, drawings or photographs is for the express purpose of coordination and ease of reference only. Inclusion of such information on any drawings or other documents does not constitute a representation by the consultant as to the sufficiency or accuracy of the information.
- 5 Unless otherwise agreed, (1) information contained in any report by consultant covers only the items examined and reflects the condition of those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, climbing, or coring.
- 6 These findings are based on the observations and opinions of the authoring arborist, and do not provide guarantees regarding the future performance, health, vigor, structural stability or safety of the plants described and assessed.
- 7 Measurements are subject to typical margins of error, considering the oval or asymmetrical cross-section of most trunks and canopies.
- 8 Tree Solutions did not review any reports or perform any tests related to the soil located on the subject property unless outlined in the scope of services. Tree Solutions staff are not and do not claim to be soils experts. An independent inventory and evaluation of the site's soil should be obtained by a qualified professional if an additional understanding of the site's characteristics is needed to make an informed decision.
- 9 Our assessments are made in conformity with acceptable evaluation/diagnostic reporting techniques and procedures, as recommended by the International Society of Arboriculture.