

## Memorandum - Final

To: Neil Jensen – City of Shoreline c/o Darren Murata - DOWL  
Site: 20<sup>th</sup> Ave NW Sidewalk Project  
Re: August 2, 2023 Site Meeting  
Date: August 11, 2023  
Project Arborist: Tyler Bunton  
ISA Certified Arborist PN-8715A  
ISA Qualified Tree Risk Assessor  
Attached: Table of Trees  
Tree Site Map

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This memorandum documents my site meeting with Neil Jensen of the City of Shoreline and the property owners of 19308 20<sup>th</sup> Ave NW, Shoreline, WA on August 2, 2023. At this meeting we discussed the planned work within the right-of-way adjacent to their property on 20<sup>th</sup> Ave NW. I have attached the table of trees for this project and our most recently review annotated plans which show the locations of the trees for reference.

As of August 2, 2023 two holes have been dug within the recommended tree protection zones of trees X and 239 without a Tree Solutions Inc. arborist monitoring. There is also additional work planned within the recommended tree protection zones of these trees including installation of a fire hydrant approximately 19 feet south-southwest of tree X and a valley drain along the road edge west of the trees.

To minimize disturbance to tree X I recommend installing the fire hydrant at another location on the site. If the hydrant must be placed in this location the excavation should occur according to the existing project specifications.

I observed that the soil around trees 238, 239, and X is sandy which typically results in more deeply rooted trees. I also did not observe any lifting of the asphalt road adjacent to trees 238, 239, and X which indicates that it is unlikely there are large roots directly below the surface of the road.

Within the recommended tree protection zones the asphalt should be removed carefully with an excavator with a flat front bucket to minimize the amount of disturbance to the soil below the road. After the asphalt is removed the remainder of excavation should occur according to the project specifications.

If pneumatic air excavation occurs when the soil is dry water must be available on-site to wet the soil and minimize dust production.

## Appendix A 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.

DSH (Diameter at Standard Height) is measured 4.5 feet above grade.

DSH for multi-stem trees are noted as a single stem equivalent, which is calculated by averaging all stem measurements when having multiple stems is typical of the species.

DSH for multi-stem trees for species where multi-stems are atypical, a single stem equivalent is calculated using the method defined in the Guide for Plant Appraisal, 10th Edition.

Letters are used to identify trees on neighboring property with overhanging canopies.

Dripline is measured from the center of the tree to the outermost extent of the canopy.

Landmark trees are highlighted green

Recommended TPZ (Tree Protection Zone)/Critical Root Zone for each tree is based on species, condition, size, existing site conditions and ISA Best Management Practices:

Mangaing Trees During Construction. TPZ criteria used is noted in the adjacent column.

Trees tagged at base opposite street where possible

Dripline Radius (feet)

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	Dripline Radius (feet)				Tree Stand	Proposed Action	Recommended TPZ (feet)	TPZ Criteria	Notes
							N	E	S	W					
229	<i>Arbutus menziesii</i>	Pacific madrone	29.6	12.3,20,18	Fair	Good	2.2	14.7	28.2	15.7	Stand	Retain	20	8 x DSH	multiple old pruning wounds with response, small wounds at base, pavement over roots on south side, canopy fair, old wounds and tear outs on east stem; species highly sensitive to disturbance
230	<i>Pseudotsuga menziesii</i>	Douglas-fir	25.5		Good	Good	15.6	18.6	20.6	14.6	Stand	Retain	17	8 x DSH	corrected lean, heavy ivy on base, canopy a bit asymmetric to west
231	<i>Pseudotsuga menziesii</i>	Douglas-fir	24.3		Good	Good	18.0	21.0	17.0	14.5	Stand	Retain	16	8 x DSH	some small diameter deadwood in canopy, heavy ivy at base, no parking sign attached to trunk, some small broken branches in canopy, limbed up
232	<i>Castanea mollissima</i>	Chinese chestnut	19.3	8.2,7.1,10.5,9,8	Good	Fair to Poor	17.8	17.8	17.8	17.8	Stand	Retain	13	8 x DSH	repeatedly topped for line clearance, multistemmed at base, previously removed codominant stems at base
233	<i>Castanea mollissima</i>	Chinese chestnut	11.5		Good	Fair	15.5	15.5	15.5	15.5	Stand	Retain	8	8 x DSH	topped for line clearance
234	<i>Pseudotsuga menziesii</i>	Douglas-fir	11.3		Good	Fair	10.5	13.0	10.5	9.5	Stand	Retain	8	8 x DSH	possibly armillaria present, pitch flow through bark, topped for line clearance

**Table of Trees**  
20th Ave NW Sidewalk Project  
Shoreline, WA 98177

Arborist: AS, TB  
Date of Inventory: 2/15/2022  
Table Prepared: 2/25/2022

Tree ID	Scientific Name	Common Name	DSH (inches)	DSH Multistem	Health Condition	Structural Condition	N	E	S	W	Tree Stand	Proposed Action	Recommended TPZ (feet)	TPZ Criteria	Notes
235	<i>Castanea mollissima</i>	Chinese chestnut	7.0		Good	Good to Fair	11.3	13.3	6.3	8.3	Stand	Retain	5	8 x DSH	small topping cuts for line clearance, laurel at base
236	<i>Prunus serrulata</i>	Flowering cherry	14.0		Fair	Fair	7.6	14.6	14.1	11.6	-	Retain	9	8 x DSH	measured narrowest point below union, topping cuts, gummosis
237	<i>Pseudotsuga menziesii</i>	Douglas-fir	34.1		Good	Good	20.9	23.4	25.4	21.9	Stand	Retain	23	8 x DSH	
238	<i>Arbutus menziesii</i>	Pacific madrone	45.6	34,30.4	Good	Good	36.9	31.9	27.9	38.9	Stand	Retain	30	8 x DSH	large wounds at base west side
239	<i>Pseudotsuga menziesii</i>	Douglas-fir	36.8		Good	Good	30.5	31.5	35.5	29.5	Stand	Retain	25	8 x DSH	pitching on east side, possibly small crack
A	<i>Crataegus monogyna</i>	Common hawthorn	10.0		Good	Good	6.9	4.9	6.9	6.4	-	Retain	7	8 x DSH	confirm ID when in leaf. canopy overhangs by 4 feet, base is 3 feet west of fence
B	<i>Pseudotsuga menziesii</i>	Douglas-fir	8.0		Good	Good	7.3	7.3	7.3	7.3	-	Retain	5	8 x DSH	4.5 feet off the fence
C	<i>Thuja plicata</i>	Western redcedar	34.0		Good	Good	17.4	17.4	17.4	17.4	-	Retain	23	8 x DSH	some pruning for line clearance
D	<i>Cedrus deodara</i>	Deodar cedar	34.0		Good	Good	24.4	24.4	24.4	24.4	-	Retain	23	8 x DSH	surface roots in ROW, heavy ivy at base and growing up trunk, previously trimmed for line clearance
E	<i>Prunus cerasifera</i>	Cherry plum	14.0		Good	Good	25.6	25.6	25.6	25.6	-	Retain	14	12 x DSH	narrowest point below union, may need clearance pruning
F	<i>Pseudotsuga menziesii</i>	Douglas-fir	9.0		Good	Fair	10.4	16.9	10.4	10.4	Stand	Retain	6	8 x DSH	pruned for line clearance
G	<i>Picea sitchensis</i>	Sitka spruce	16.0		Fair	Fair	16.7	16.7	16.7	16.7	Stand	Retain	11	8 x DSH	canopy a bit sparse, multiple codominant leaders, limbed up a fair bit. 15 feet off row

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H	<i>Pseudotsuga menziesii</i>	Douglas-fir	28.0		Good	Good to Fair	23.2	24.2	24.2	24.2	-	Retain	19	8 x DSH	fairly recent significant soil disturbance on west northwest side for construction on private property
I	<i>Cercis canadensis</i>	Redbud	7.5	7,8	Good	Good	10.3	12.3	15.3	8.3	Stand	Retain	10	Dripline; protect as group	
J	<i>Cercidiphyllum japonicum</i>	Katsura tree	8.0		Good	Good	9.8	11.3	10.3	10.3	Stand	Retain	10	Dripline; protect as group	
K	<i>Cercidiphyllum japonicum</i>	Katsura tree	6.0		Good	Good	12.3	7.8	10.3	7.8	Stand	Retain	10	Dripline; protect as group	
L	<i>Prunus serrulata</i>	Flowering cherry	11.0		Good	Good	11.0	11.5	11.5	13.5	-	Retain	11	Dripline	
M	<i>Acer palmatum</i>	Japanese maple	5.4	6,6,6,5,4	Good	Good	15.2	11.7	10.2	13.2	-	Retain	10	Dripline	stubs cuts over ROW for clearance
N	<i>Pseudotsuga menziesii</i>	Douglas-fir	36.0		Good	Good	23.0	20.5	30.5	21.5	-	Retain	24	8 x DSH	base right off row, old pruning wounds from clearance pruning are fully occluded
O	<i>Pseudotsuga menziesii</i>	Douglas-fir	30.0		Good	Good	26.3	26.3	22.3	22.3	-	Retain	20	8 x DSH	O through U growing as grove off site, all similar aged all previously topped, reiterated
P	<i>Pseudotsuga menziesii</i>	Douglas-fir	16.0		Good	Good	18.7	23.7	18.7	18.7	Stand	Retain	11	8 x DSH	
Q	<i>Pseudotsuga menziesii</i>	Douglas-fir	25.0		Good	Good	23.0	23.0	23.0	23.0	Stand	Retain	17	8 x DSH	
R	<i>Pseudotsuga menziesii</i>	Douglas-fir	12.0		Good	Good	33.5	33.5	33.5	33.5	Stand	Retain	8	8 x DSH	phototropic corrected lean
S	<i>Pseudotsuga menziesii</i>	Douglas-fir	26.0		Good	Good	20.1	20.6	20.1	20.1	Stand	Retain	17	8 x DSH	
T	<i>Pseudotsuga menziesii</i>	Douglas-fir	23.0		Good	Good	20.0	20.0	20.0	20.0	Stand	Retain	15	8 x DSH	
U	<i>Pseudotsuga menziesii</i>	Douglas-fir	18.0		Good	Good	20.8	22.8	0.8	0.8	Stand	Retain	12	8 x DSH	

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V	<i>Pseudotsuga menziesii</i>	Douglas-fir	46.0		Good	Good	19.9	26.9	26.9	24.9	Stand	Retain	31	8 x DSH	possibly previously lost top, base growing over rockery
W	<i>Cornus mas</i>	Cornelian cherry dogwood	6.0		Good	Good	14.3	15.3	16.3	16.3	Stand	Retain	15	Dripline	4 feet off rockery
X	<i>Castanea mollissima</i>	Chinese chestnut	41.3		Good	Good	18.7	26.7	24.7	16.7	Stand	Retain	28	8 x DSH	10 feet from back of asphalt to face of root flare
Y	<i>Castanea sativa</i>	European chestnut	43.0		Good	Fair	29.8	21.8	21.8	30.8	Stand	Retain	29	8 x DSH	previously topped and reiterated, vigorous growth, most cuts have good response, back of asphalt 10 feet from face of root flare
Z	<i>Sorbus aucuparia</i>	European mountain ash	7.3	8,7,8,6	Fair	Fair	13.3	18.3	12.3	6.3	-	Retain	5	8 x DSH	multiple old pruning wounds, topping cuts
AA	<i>Acer rubrum</i>	Red maple	10.0		Good	Good	15.4	17.4	17.4	16.4	-	Retain	7	8 x DSH	some small stub cuts for ROW clearance
BB	<i>Acer rubrum</i>	Red maple	11.0		Good	Good	15.5	14.5	7.5	15.5	-	Retain	7	8 x DSH	
CC	<i>Acer rubrum</i>	Red maple	12.0		Good	Good	10.5	12.5	15.5	15.0	-	Retain	8	8 x DSH	measured narrowest point below union
DD	<i>Pseudotsuga menziesii</i>	Douglas-fir	20.0		Good	Good	18.8	8.8	20.8	25.8	Stand	Retain	13	8 x DSH	DD, EE, FF growing as group, heavy ivy at base, growing up trunks, multiple stub cuts from pruning for sidewalk clearance
EE	<i>Pseudotsuga menziesii</i>	Douglas-fir	23.0		Good	Good	23.0	16.0	18.0	13.0	Stand	Retain	15	8 x DSH	"
FF	<i>Arbutus menziesii</i>	Pacific madrone	30.0		Fair	Good	13.3	11.3	18.3	28.3	Stand	Retain	20	8 x DSH	"
GG	<i>Pseudotsuga menziesii</i>	Douglas-fir	26.0		Good	Good	19.1	13.1	13.1	19.1	Stand	Retain	17	8 x DSH	very heavy ivy
HH	<i>Pseudotsuga menziesii</i>	Douglas-fir	8.0		Fair	Fair	7.3	7.3	2.3	6.3	Stand	Retain	7	Dripline	suppressed by ivy and adjacent firs

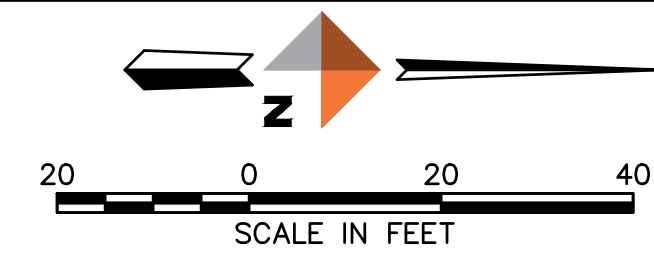
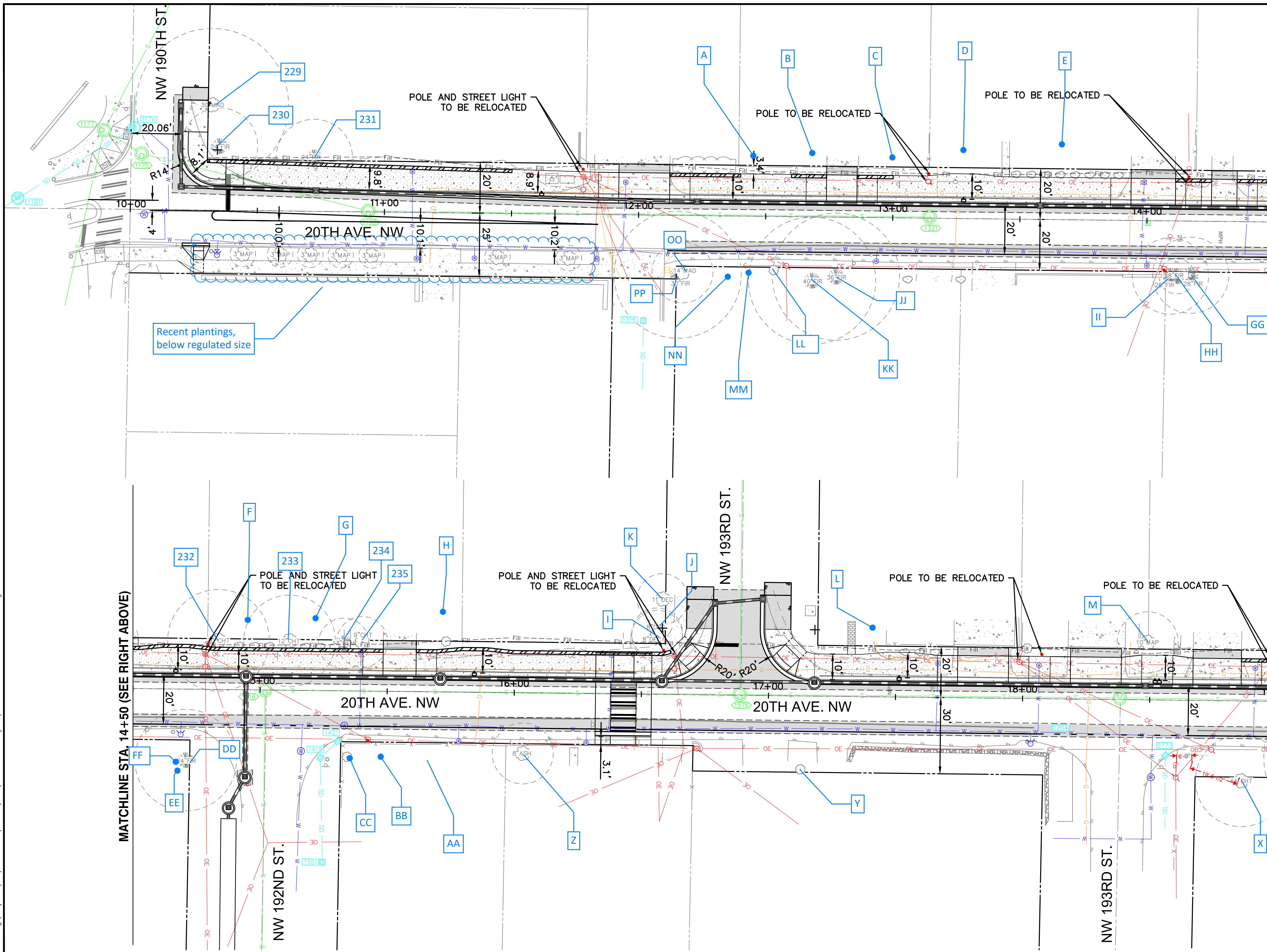
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20th Ave NW Sidewalk Project  
Shoreline, WA 98177

Arborist: AS, TB  
Date of Inventory: 2/15/2022  
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II	<i>Pseudotsuga menziesii</i>	Douglas-fir	28.0		Good	Fair	12.2	11.2	20.2	16.2	Stand	Retain	19	8 x DSH	heavy ivy, shared canopy with adjacent fir
JJ	<i>Pseudotsuga menziesii</i>	Douglas-fir	32.0		Good	Good	26.3	27.3	19.3	25.3	Stand	Retain	21	8 x DSH	base and surface roots 2 feet from back of asphalt
KK	<i>Pseudotsuga menziesii</i>	Douglas-fir	39.0		Good	Good	12.6	26.6	14.6	29.6	Stand	Retain	26	8 x DSH	4.5 feet from back of asphalt
LL	<i>Pseudotsuga menziesii</i>	Douglas-fir	8.0		Good	Good	14.3	7.3	11.3	14.3	Stand	Retain	11	Dripline; protect as group	
MM	<i>Pseudotsuga menziesii</i>	Douglas-fir	7.0		Good	Good	12.3	10.3	7.3	12.3	Stand	Retain	11	Dripline; protect as group	
NN	<i>Pseudotsuga menziesii</i>	Douglas-fir	11.0		Good	Good	13.5	10.5	10.5	13.5	Stand	Retain	11	Dripline; protect as group	
OO	<i>Arbutus menziesii</i>	Pacific madrone	10.7		Fair	Poor	0.4	0.4	11.4	16.9	Stand	Retain	18	Protect as group with PP	growing atop root flare of PP; include in tree protection for tree PP
PP	<i>Pseudotsuga menziesii</i>	Douglas-fir	27.0		Good	Good	11.1	19.1	21.1	18.1	Stand	Retain	18	8 x DSH	tree protection will include tree OO



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**LEGEND**

- EXISTING STORM
- EXISTING WATER
- EXISTING GAS
- EXISTING COMMUNICATIONS
- EXISTING OVERHEAD POWER
- EXISTING SANITARY SEWER
- EXISTING STORM STRUCTURES
- EXISTING WATER FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER MH
- EXISTING WATER METER
- EXISTING SEWER STRUCTURES
- EXISTING LIGHT POLE
- EXISTING POWER POLE
- EXISTING WIRE ANCHOR
- EXISTING RIGHT OF WAY
- PROPOSED STORM PIPE
- PROPOSED STORM STRUCTURE
- PROPOSED DITCH
- PROPOSED RETAINING WALL (0"-18")
- PROPOSED RETAINING WALL (18"-36")
- PROPOSED SAWCUT
- PROPOSED PERVIOUS CONC SIDEWALK
- PROPOSED CONC SIDEWALK
- PROPOSED ASPHALT PAVEMENT
- PROPOSED POWER POLE
- PROPOSED MAILBOX

MATCHLINE STA. 14+50 (SEE LEFT BELOW)

MATCHLINE STA. 19+00 (SEE NEXT SHEET)

Tree Solutions Inc.  
Arborist: A. Starbird, T. Bunton  
206-528-4670

Tree Inventory Date:  
02/15/2022

Regulated trees on the site are identified with a number. This number corresponds with the metal tree tag unless otherwise noted.

Inventory also includes all regulated off-site trees that had overhanging canopies or that were likely to be impacted by site work. Off-site trees are identified by a letter unless otherwise noted.

Dripline measurements, species, and other tree specifics are listed in the tree table produced by Tree Solutions Inc.

Survey and site plans should be updated to include tree identifiers and accurate dripline data prior to any design related to tree protection.

Below regulated size: NR  
Not on survey\*:

*\*Tree locations added to the survey are approximate and should be confirmed and added to the survey.*

MARK	REVISION DESCRIPTION	BY	APP.	DATE



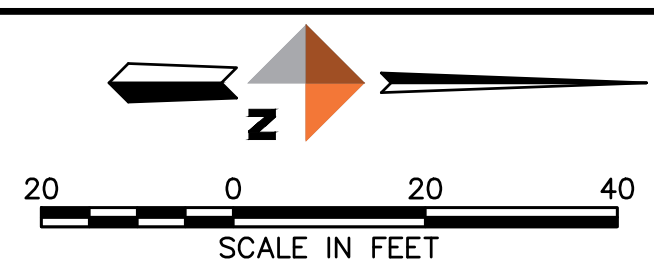
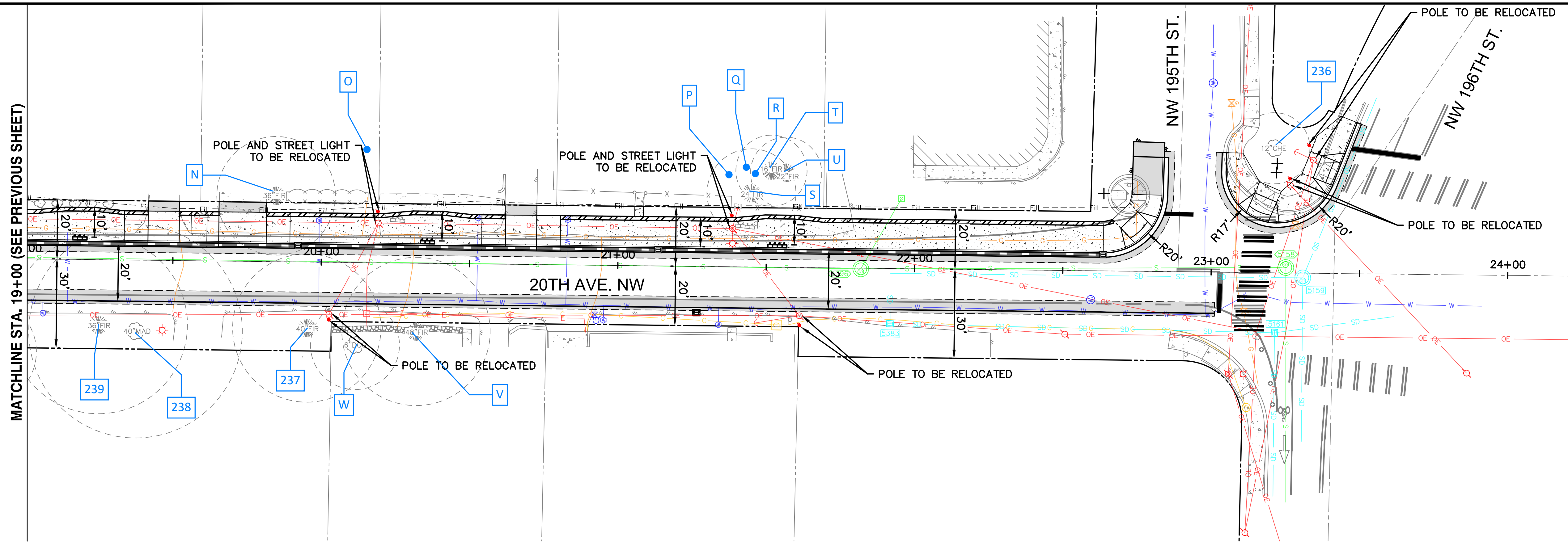
DRAWN BY RT  
DESIGN BY KE  
CHECK BY DM  
PROJ MGR DM

**CITY OF SHORELINE**  
20TH AVENUE NW  
(NW 190TH ST-NW 195TH ST)  
NEW SIDEWALK PROJECT  
ALTERNATIVE 1B

DRAWING NO. \_\_\_\_\_  
PROJECT NO. 9967  
FED AID NO. \_\_\_\_\_  
DATE: 2/4/2022  
SHEET NO. 1 OF 22



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- LEGEND**
- EXISTING STORM
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  - PROPOSED POWER POLE
  - PROPOSED MAILBOX

MARK	REVISION DESCRIPTION	BY	APP.	DATE



DRAWN BY RT  
 DESIGN BY KE  
 CHECK BY DM  
 PROJ MGR DM

**CITY OF SHORELINE**  
 20TH AVENUE NW  
 (NW 190TH ST-NW 195TH ST)  
 NEW SIDEWALK PROJECT  
**ALTERNATIVE 1B**

DRAWING NO. \_\_\_\_\_  
 PROJECT NO. 9967  
 FED AID NO. \_\_\_\_\_  
 DATE: 2/4/2022  
 SHEET NO. **2** OF 22