Salish Restoration Associates

Benjamin Mark
PN-6976a

ARBORIST REPORT

For:

WEAVER CONSTRUCTION CO.

TODA Project

2262 78th Ave. SE. Mercer Island, WA

November 26th, 2024

UPDATED May 20, 2025

SALISH RESTORATION ASSOCIATES LLC
Phone: 206.617.7661 | www.SalishForest.com

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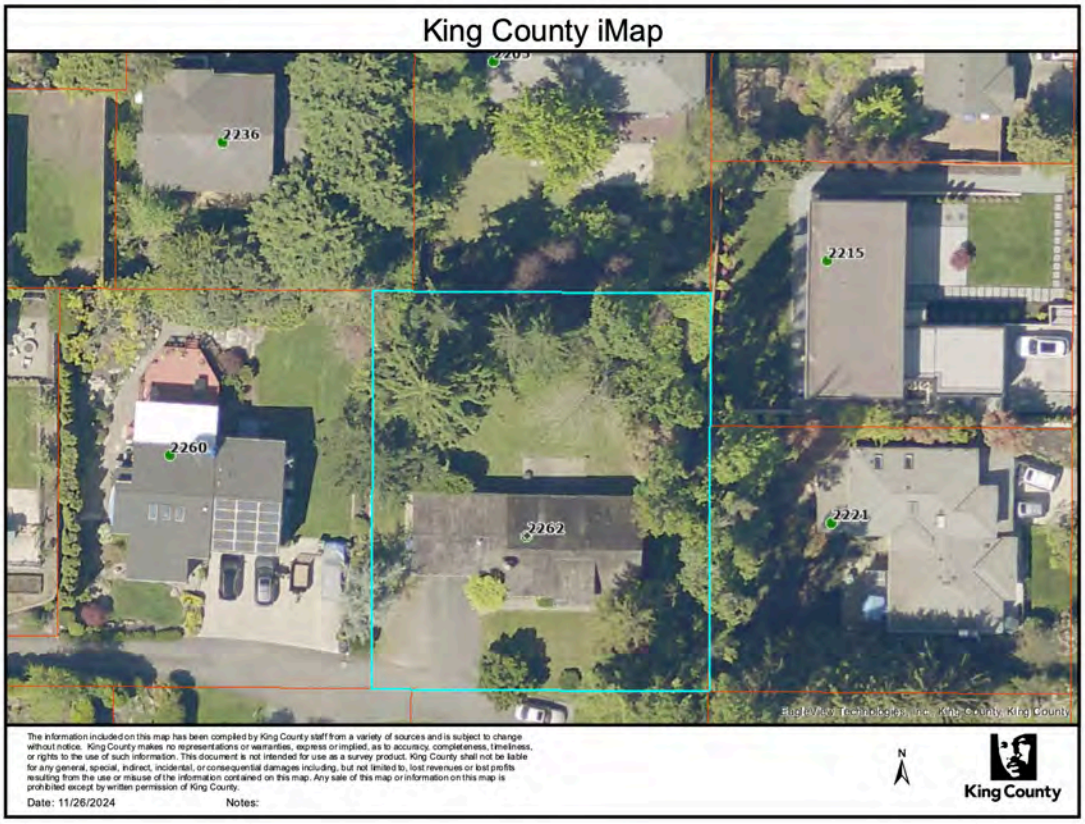
1. Introduction

Salish Restoration Associates was contacted by Weaver Construction Co. and asked to compile an Arborist Report for a development project on King County Parcel #531510-1697 located at 2262 78th Ave. SE. Mercer Island, WA.

Our assignment is to prepare a written report on current tree conditions which is to be filed with the preliminary permit application for redevelopment of the subject parcel and identify the potential for tree retention in the proposed layout.

This report encompasses all criteria set forth under the City of Mercer Island's tree regulations (Chapter 19.10 of the Mercer Island City Code).

Dates of Field Examination: November 19th, 2024 & May 9th, 2025



2. Description

The City of Mercer Island defines a 'Large (Regulated) Tree' as any tree with a trunk diameter at 4.5 feet above grade (DBH) of ten inches or more, or any tree that meets the definition of an 'Exceptional' tree. A total of 14 large trees were located on the property when observed on November 19th 2024. Following the site visit, an abnormally powerful storm swept through the area with wind speeds up to 80 miles per hour which caused significant damage throughout the Puget Sound region. One of the documented trees (#109) on the property was uprooted in the storm, narrowly missing the house.

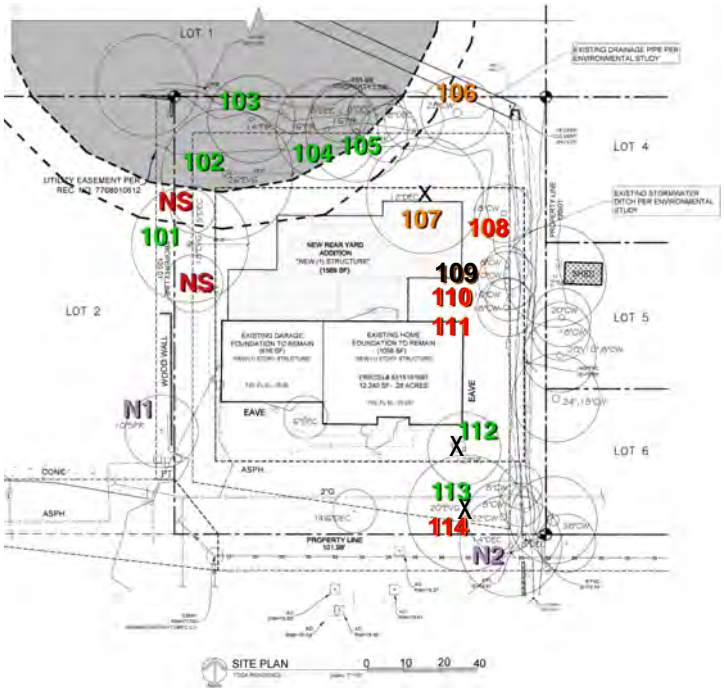
Trees #108, 110, 111 and #114 are in poor condition and pose a high likelihood of failure due to structural defects. Removal of these trees is recommended as they pose threats to safety and will not contribute to the site in the long-term.

The City of Mercer Island defines a 'Grove' as a group of eight or more trees ten inches or larger DBH that form a continuous canopy. In accordance with MICC 19.16.010, trees #101 - #105 are included in a grove extending into neighboring properties. The City may prioritize the retention of Exceptional trees and limit their removal.

The site plan shows three regulated trees (#107, 112, 113) are conflicting with proposed improvements and will need to be removed to accomplish this work. The remaining six viable regulated trees are planned to be retained. There are two regulated trees located on the adjacent parcels to the west and south that have canopies overhanging the subject property. These trees must be protected throughout development activity on the site.

The parcel is generally flat with a slope on the north side dropping in elevation to a creek beyond the property boundary. A critical area buffer extends over the northwest property corner, and Trees #102, 103, 104 and 105 are inside the buffer. An open drainage ditch is found along the east property line with several poplar trees along both sides of the drainage.

MICC tree regulations allow removal of trees associated with property development when done in a way that minimizes tree removal and retains at least 30% of the regulated trees on site. Large and exceptional trees are prioritized for retention.



3. Methodology

The trees in this report were inspected on November 19th, 2024. A follow-up site visit took place on May 9th, 2025. Each tree's diameter was measured at 4.5 feet above grade with diameter tape. The inspection procedure involved evaluating several factors related to the health and stability of trees on the site.

The crown of each tree was inspected for vigor. This includes examining the foliage, buds, and branches for color, density, form, annual shoot growth, limb dieback, or disease. The live crown ratio (LCR) was estimated for coniferous species and scored accordingly.

The trunk of each tree was inspected for defects such as cavities, wounds, or fungal fruiting bodies (conks or mushrooms). Other defects inspected for include seams, insects, bleeding, callus development, broken or dead tops, cracks, and unnatural leans. Structural defects such as crooks, forks with V-shaped crotches, multiple attachments, or excessive sweep were also noted.

The root collar and surface roots were inspected for decay, insects, or damage, and inspected for signs they have been injured, undermined, or exposed, or if the original grade had been altered.

Each observed tree was assigned a numbered aluminum tag which corresponds with the numbers on the Tree Summary Table and Tree Locator Map. The Tree Locator Map indicates the location of each regulated tree with its dripline and limits of disturbance delineated, and the Tree Summary Table provides specific information on tree sizes and dripline measurements, as well as their condition and any relevant observations made during the inspection.

The four condition categories are described below:

Excellent – free of structural defects, no disease or pest problems, no root issues, excellent structure/form with uniform crown or canopy, foliage of normal color and density, above average vigor, it will be wind firm if isolated, suitable for its location.

Good – free of significant structural defects, no disease concerns, minor pest issues, no significant root issues, good structure/form with uniform crown or canopy, foliage of normal color and density, average or normal vigor, will be wind firm if isolated or left as part of a grouping or grove of trees, suitable for its location.

Fair – minor to moderate structural defects not expected to contribute to a failure in near future, no disease concerns, moderate pest issues, no significant root issues, asymmetric or unbalanced crown or canopy, average or normal vigor, foliage of normal color, moderate foliage density, will be wind firm if left as part of a grouping or grove of trees, cannot be isolated, suitable for its location.

Poor – major structural defects expected to cause a failure in near future, disease or significant pest concerns, decline due to old age, significant root issues, asymmetric or unbalanced crown or canopy, sparse or abnormally small foliage, poor vigor, not suitable for its location.

4. Observations

Site Trees

Tree #101 is a Douglas-fir (*Pseudotsuga menziesii*) with a DBH of 21 inches and an average canopy radius of 17.5 feet. Its health and structural condition are good, and it is deemed viable. This tree was limbed up to 27 feet. Its lower trunk has a slight phototropic lean to the west which is corrected in the upper crown. Its canopy is full and shows good vigor. The corner of the proposed addition to the existing house is eight feet inside of its dripline.

PHOTO 1: Tree 101 viewed from the east. Note removed lower branches

Tree #102 is a Deodar cedar (*Cedrus deodara*) with a DBH of 31 inches and an average canopy radius of 22 feet. Its health and structural condition are good, and it is deemed viable. This tree is located within a critical area buffer. English ivy that was covering its lower trunk has been removed. Long over-extended branches are reaching 26 feet to the east. The canopy has been raised with stubbed branches remaining. When Tree #109 fell, it snapped several lower branches of this tree.

PHOTO 2: Tree 102 viewed from the east. Note long branches extending the east over the lawn.

PHOTO 3: Tree #109 viewed on the ground in the orientation it fell post cleanup.

Trees #103, 104, and 105 are Douglas-fir with DBH of 15, 16, and 17 inches and an average canopy radius of 14.5 feet. Each are viable with good health and structural condition. These trees are growing at the top of a slope and within a critical area buffer with ivy climbing into their lower canopies.

PHOTO 4: Trees #103,104,105 viewed from the south

Tree #106 is a Black cottonwood (*Populus trichocarpa*) with a DBH of 33 inches and an average canopy radius of 13.5 feet. Its health and structural condition are fair, and it is deemed viable. This tree is outside of the critical area buffer. It has a slight lean to the southwest, and English ivy on the trunk. Some dead branches were observed in its canopy.

PHOTO 5: Tree #106 viewed from the southwest.

Tree #107 is an Empress tree (*Paulownia tomentosa*) with a DBH of 13 inches and an average canopy radius of 19.5 feet. This viable tree is outside of the critical area buffer and its health and structural condition are fair. Its canopy is off-balance to the southwest, and ivy is climbing its trunk into lower canopy. The site plan shows this tree will need to be removed as it is within the clearing limits north of the proposed addition.

PHOTO 6: Tree #107 viewed from the southwest. Note dense ivy on its lower trunk.

Trees #108-111 comprise a row of Lombardy poplar (*Populus nigra 'Italica'*) with DBH measurements of 12-23 inches. These have narrow crowns typical of the species with an average canopy radius of 10 feet. Their health and structural condition are poor. Many dead branches are collected in their crowns, and large roots extend to the east into an open drainage ditch. Several trees of the same species are growing on the adjacent property to the east.

PHOTO 7: Trees #108-111 viewed from the west in November 2024. Tree #109 has since fallen.

PHOTO 8: Fallen Tree #109 in May 2025. Note small root plate.

Tree #109 was uprooted in a severe windstorm in November 2024. When it fell, it damaged the grade along the drainage ditch and exposed more of the root systems of adjacent trees #108 and 110 to the flowing water. This is likely to further degrade their health and structural stability. These overmature trees are now functionally non-viable.

PHOTO 9: Fallen Tree #109 in May 2025. Note flowing water undermining adjacent trees.

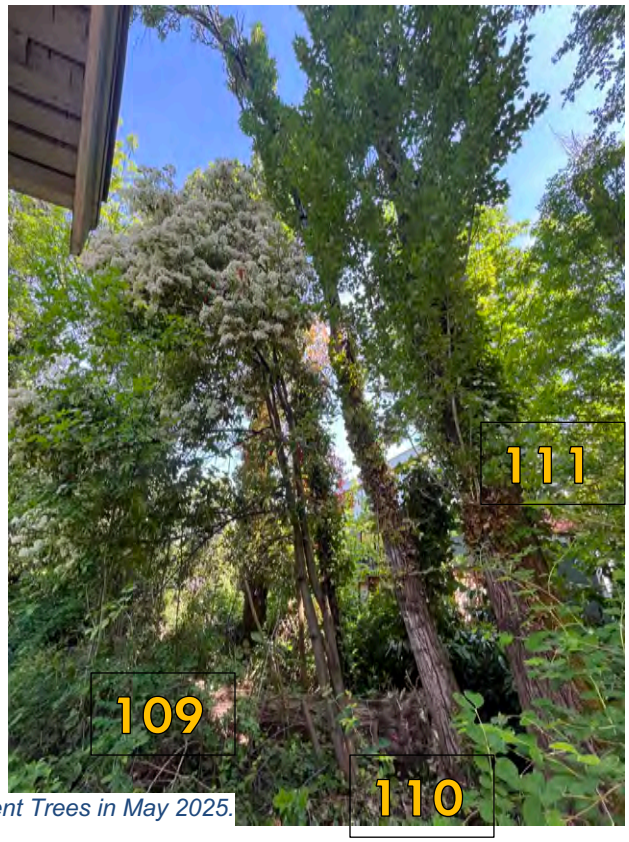
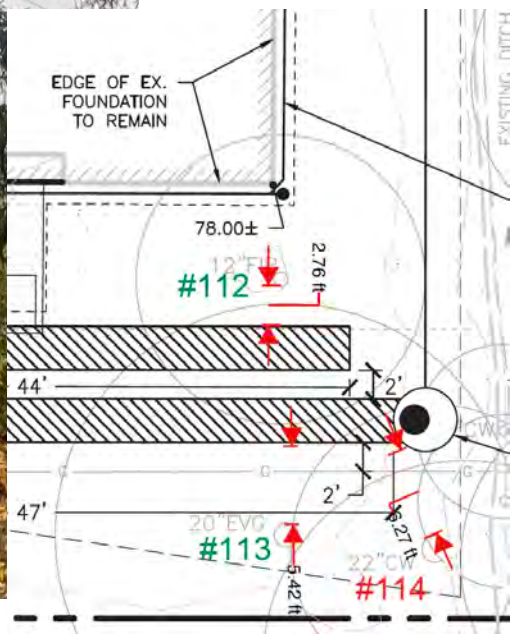


PHOTO 10: Fallen Tree #109 and adjacent Trees in May 2025.

Tree #112 is a Norway spruce *(Picea abies)* with a DBH of 13 inches. It has an average canopy radius of 14 feet and is in good health and structural condition. This tree is in the front yard and overhangs the southeast corner of the existing house. The drainage and grading plan shows a trench is to be excavated three feet south of its trunk for installation of a detention pipe. Large structural roots are likely to be severed in this area which would destabilize this tree.

PHOTO 11: Tree #112 viewed from the west. Note its proximity to the existing home.



Tree #113 is a deodar cedar *(Cedrus deodara)* with a DBH of 21 inches and an average canopy radius of 14.25 feet. Its health and structural condition are good, and it is deemed viable. This tree leans to the south with an off-balance canopy in the direction of the lean. The drainage and grading plan shows a trench is to be excavated five feet north of its trunk for installation of a detention pipe. Large structural roots are likely to be severed in this area which would destabilize this tree.

PHOTO 11: Tree #113 viewed from the west. Note lean and off-balance canopy.

Tree #114 is an overmature black cottonwood with a DBH of 21 inches, and an average canopy radius of nine feet. Its health and structural condition are poor. Ivy is climbing its trunk and its canopy is off-balance to the south.

PHOTO 3: Tree 114 located near the southeast property corner. Note off-balance canopy.

Neighboring Trees

Tree #N1 is a blue Atlas cedar (*Cedrus atlantica 'Glauca'*) with a DBH of 10.5 inches growing near the west property line. Its canopy extends 12 feet over the subject property. It is in good health and structural condition. It was topped in the past at approximately 25 feet and has regrown codominant leaders from that point.

Tree #N2 is a black cottonwood with a DBH of 16 inches growing near the southeast property corner. Its canopy extends five feet over the subject property. It is in fair health and structural condition. Its canopy is very thin and its roots extend into the drainage ditch to the east.

5. Discussion

The International Society of Arboriculture (ISA) definition of 'Critical Root Zone' (CRZ) is an area equal to a one-foot radius from the base of the tree trunk for each inch of diameter at 4.5 feet above grade (DBH). For example, Tree #102 has a 31-inch DBH, so its CRZ radius is 31 feet. In this example, the total CRZ including the trunk, would be approximately 64.5 feet in diameter. This is a baseline for determining appropriate 'Tree Protection Zones' (TPZ) for some retained trees, but the 'Limit of Disturbance' (LOD) may vary from the CRZ. The LOD measurement is the distance from the trunk face that impacts might occur without compromising the health or structural stability of the tree. This measurement may not be equal to the CRZ, or symmetrical in each direction. LOD is determined by species, age, condition, existing improvements, and the anticipated overall impact on the subject tree. The LOD and dripline measurements are shown on the Tree Locator Map.

The site plan shows Trees #107, 112 and 113 conflict with the proposed site improvements and will need to be removed to accomplish the development goals.

Trees #108, 110, 111, and 114 are in a state of decline. Flowing water in the drainage ditch to the east was observed undermining their root systems. These trees are not included in the tree retention calculation as they are in poor condition and unlikely to contribute to the site in the long term. Removal, or pollarding these four trees to retain as wildlife habitat snags is recommended.

The site plan shows the driplines of Trees #101 and 102 overhang a planned covered patio on the west side of the house addition. The finished grade of the patio is approximately 18 inches above the current grade in this area. Tree #101will have approximately 22% of its dripline covered by the patio, and Tree #102 will have approximately 14% of its dripline covered by the patio. These trees are likely to remain viable if all tree protection measures outlined below are followed.

All other regulated and neighboring trees are to be protected throughout the construction period.

The current site plan is in compliance with minimum tree retention requirements per MICC 19.10.060.

6. Tree Protection Measures

The following guidelines are recommended to ensure that the designated areas set aside for the preserved trees are protected and construction impacts are kept to a minimum. Tree protection should adhere to best management practices for tree and soil protection during development activity.

1. Tree protection fencing shall be erected around retained trees and positioned no closer than the LOD as shown on the Tree Locator Map prior to moving any heavy equipment on site. Doing this will set clearing limits and avoid compaction of soils within the LOD of retained trees.

2. Excavation limits should be laid out in paint on the ground to avoid over excavating.

3. Work within the drip line of retained trees should be monitored by the project arborist so necessary precautions can be taken to decrease impacts to tree parts and the arborist can determine if the retained trees are likely to remain viable.

4. When excavation must occur within the drip line of retained trees, a hand shovel should be used when roots larger than one inch in diameter are encountered. To establish sub grade for foundations, curbs and pavement sections within the CRZ, soil should be removed parallel to the roots and not at perpendicular angles to avoid breaking and tearing roots that lead back to the trunk within the LOD. Any roots damaged during these excavations should be exposed to sound tissue and cut cleanly with a saw.

5. Areas excavated within the drip line of retained trees should be thoroughly irrigated daily during dry periods.

6. Large equipment and storage of materials must be kept outside of the drip lines of retained trees at all times. Preparations for final landscaping must be accomplished by hand within the driplines of retained trees.

7. Recommendations

- **Check Critical Area buffers before removing any trees.** Obtain all necessary permits from the City of Mercer Island prior to carrying out work that may impact the site trees and comply with all applicable federal and state laws, rules and regulations.
- Avoid changing the grade within the CRZ of retained trees. If this is unavoidable, follow all tree protection measures outlined above. It is possible to work within the CRZ, up to the LOD with written provisions specific to the site.
- Adhere to tree protection measures outlined in this report for all retained trees.
- Have retained trees near improvements re-assessed for health and structure once development work has been completed.
- Create a finalized site development plan that shows the location of all improvements and tree protection for preserved trees.

8. Tree Removal Per MICC 19.10.060

19.10.060 Tree removal – Associated with a development proposal.

A. Single-Family Zoning Designations.

1. In the R-8.4, R-9.6, R-12, and R-15 zoning designations, tree retention is required for the following development proposals:

   a. An addition or remodel to an existing single-family dwelling that will result in the addition of more than 500 square feet of gross floor area on a lot with a net lot area of 6,000 square feet or more;
   b. A new single-family dwelling on a lot with a net lot area of 6,000 square feet or more;
   c. A subdivision or short subdivision.

2. Retention Requirement. Development proposals specified under subsection (A)(1) of this section shall retain trees as follows:

   a. A minimum of 30 percent of trees with a diameter of 10 inches or greater, or that otherwise meet the definition of large tree, shall be retained over a rolling five-year period.
   b. In addition to the retention required in subsection (A)(2)(a) of this section, the development proposal shall be designed to further minimize the removal of large trees and maximize on-site tree retention as follows:

      i. Site improvements, including but not limited to new single-family homes, additions to a single-family home, appurtenances, accessory structures, utilities, and driveways, shall be designed and located to minimize tree removal during and following construction.
      ii. The following trees shall be prioritized for retention:
         (a) Exceptional trees;
         (b) Trees with a diameter of more than 24 inches;
         (c) Trees that have a greater likelihood of longevity; and
         (d) Trees that are part of a healthy grove.
      iii. Trees shall not be removed outside the area of land disturbance except where necessary to install site improvements (e.g., driveways, utilities, etc.).
      iv. Tree removal for the purposes of site landscaping should be limited to those trees that will pose a future safety hazard to existing or proposed site improvements.

   c. Provide tree replacement pursuant to MICC 19.10.070.

3. Retention of Exceptional trees. Development proposals specified under subsection (A)(1) of this section shall retain exceptional trees with a diameter of 24 inches or more. Exceptional trees with a diameter of 24 inches or more that are retained shall be credited towards compliance with the retention requirements of subsection (A)(2) of this section. Removal of exceptional trees with a diameter of 24 inches or more, shall be limited to the following circumstances:

   a. Retention of an exceptional tree(s) with a diameter of 24 inches or more will result in an unavoidable hazardous situation; or

b. Retention of an exceptional tree(s) with a diameter of 24 inches or more will limit the constructable gross floor area to less than 85 percent of the maximum gross floor area allowed under Chapter 19.02 MICC; or
c. Retention of an exceptional tree(s) with a diameter of 24 inches or more will prevent creation of a residential lot through a subdivision or short subdivision that is otherwise allowed by this title.

4. Calculation of Rolling Five-Year Period. For the purposes of this section, the rolling five-year period begins five years prior to the date of application for a development approval that is subject to tree retention.

5. Compliance Required. Development proposals on lots that have removed more than 70 percent of large trees within the rolling five-year period, such that the 30 percent tree retention requirement under subsection (A)(2) of this section cannot be met, shall not receive approval unless and until compliance has been achieved. For example, a lot that has removed all of the trees in year "one" may not receive a preliminary subdivision approval in year "four." However, the preliminary subdivision approval may be granted in year "six," such that the rolling five-year period does not include the tree removal in year "one."

9. Tree Replacement Per MICC 19.10.070

The following are required replacement ratios for any regulated trees that are removed per MICC 19.10.070.

> The site plan shows Trees #107 (13-inch DBH), #112 (13-inch DBH), & #113 (21-inch DBH) are in conflict with the proposed site improvements and will need to be removed to accomplish the development goals. All other regulated and neighboring trees are to be protected throughout the construction period.

The following guidance includes tree species selection, location, planting technique, and maintenance instructions to ensure establishment of the supplemental trees. All guidelines outlined below adhere to ANSI A300 (Part 6) planting standards.

> **Site Requirements**
> According to MICC 19.10.070, the following conditions must be met for tree replacement:

1. **Replacement Ratio Based on Removed Tree DBH (Diameter at 4.5 Feet Above Grade)**:
   - Less than 10 inches: one tree
   - 10 inches up to 24 inches: two trees
   - 24 inches up to 36 inches: three trees
   - More than 36 inches and any exceptional tree(s): six trees

2. **Location Priority**:
   - On-site replacement adjacent to or within critical tree areas.
   - On-site replacement outside of critical tree areas adjacent to other retained trees.
   - On-site replacement outside of critical tree areas.
   - Off-site in adjacent public right-of-way (if authorized by the city).

3. **Species and Size**:
    - Coniferous trees: at least six feet tall.
    - Deciduous trees: at least one and one-half inches in caliper.
    - Smaller trees can be authorized if demonstrated to be more suited to the site conditions.

4. **Timing**:
    - Planting should occur in the wet season (October 1 through April 1).

5. **Maintenance**:
    - Replacement trees must be maintained in a healthy condition for five years.

6. **Fee-in-lieu**:
    - If there is insufficient area to replant, a fee may be paid instead.

Replacement Proposal

Tree Inventory:

6x six-foot-tall Douglas-fir or western red cedar. We recommend planting smaller specimens as these will establish more readily than larger trees, and excavation for their installation is less likely to erode the slope.

Replacement Tree Locations:

- Trees should be planted on more gradual contours of the critical area buffer and where openings in the canopy will allow the replacement trees to mature with minimal competition from more established dominant trees.
- Replacement trees must be kept clear of invasive species until they are well established. English ivy and Himalayan blackberry are found in the area and if left unmanaged these can outcompete and overtop replanted trees. Monitoring and management of invasive plant species is recommended to limit their spread on the site.

Planting and Maintenance Instructions

Planting:

- Dig a hole twice the width of the root ball and slightly shallower than the root ball height.
- Place the tree in the hole, ensuring the top of the root ball is level with or slightly above ground level.
- Backfill with native soil and water thoroughly.

Mulching:

- Apply a 4-inch layer of arborist chip mulch around each tree, keeping it away from the trunk.
- Mulching helps retain moisture, suppress weeds, and improve soil conditions.

Irrigation:

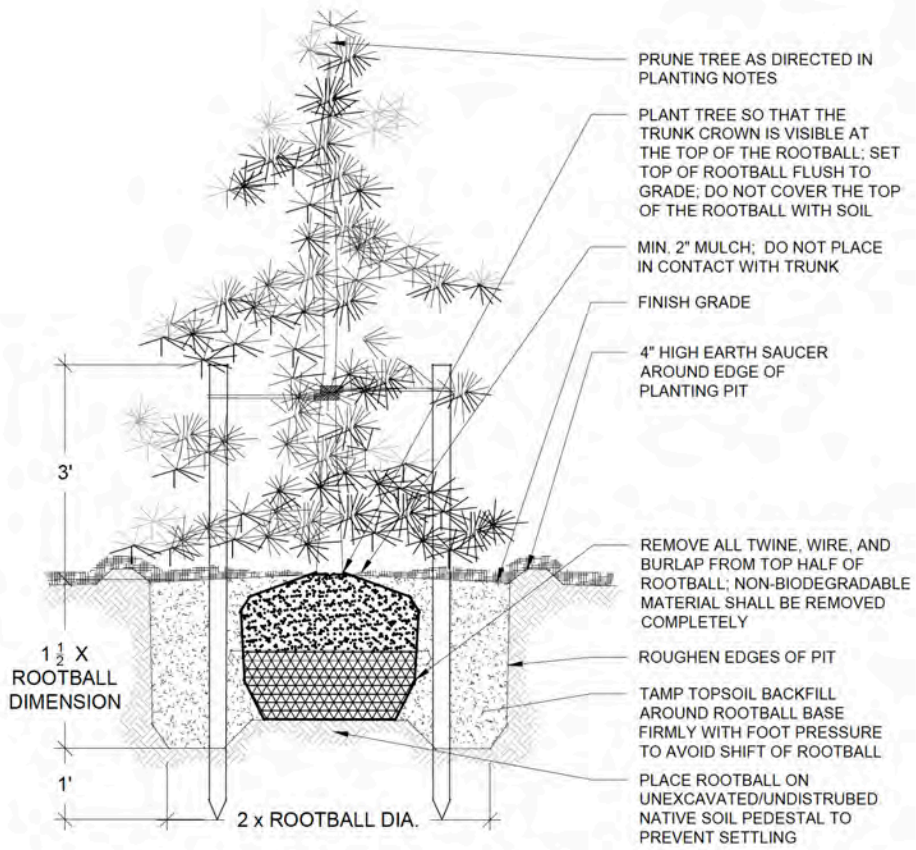
- Use Treegator bags or similar above-ground temporary irrigation systems during the dry summer months (June through September). These allow slow percolation of water to reduce or eliminate excess run-off which can cause slope erosion.
- Irrigate for two summers to ensure establishment, then evaluate for continued need.

Monitoring and Replacement:

- The applicant shall maintain all replacement trees in a healthy condition for a period of five years after planting. The applicant shall be obligated to replant any replacement tree that dies, becomes diseased, or is removed during this five-year time period.

Desired Future Condition

If the site is prepared correctly and restoration planting is carried out as prescribed above, the areas should need little follow up maintenance for the next several years. After five years, trees should have attained heights of 10 to 12 feet, and more natural regeneration of native tree or shrub species should be found in the restoration zone. Follow up maintenance will primarily involve the removal of invasive species.



DETAIL: PLANTING CONIFER TREE

NOT TO SCALE

10. Limiting Conditions

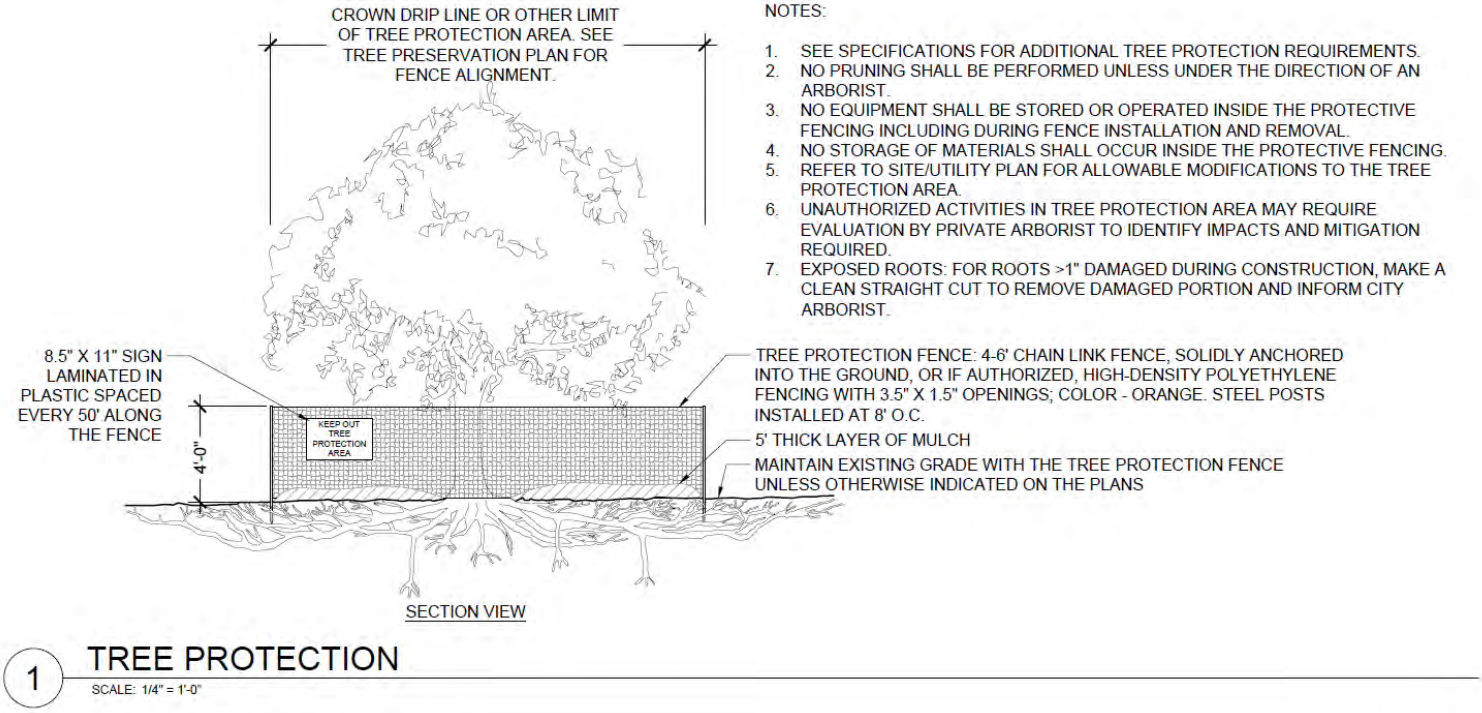
There is no warranty suggested for any of the trees subject to this report. Weather, latent tree conditions, and future human-caused activities could cause physiologic changes and deteriorating tree conditions. Over time, deteriorating tree conditions may appear and there may be conditions that are not now visible which could cause tree failure. This report or the verbal comments made at the site in no way warrant any tree's structural stability or long-term condition, but represent my opinion based on the observations made.

Nearly all trees in any condition standing within reach of improvements or human use areas represent hazards that could lead to damage or injury.

Please call if you have any questions or if we can be of further assistance.

Benjamin Mark
ISA Certified Arborist #PN-6976A
ISA Tree Risk Assessment Qualified (TRAQ)

Tree Fencing Details



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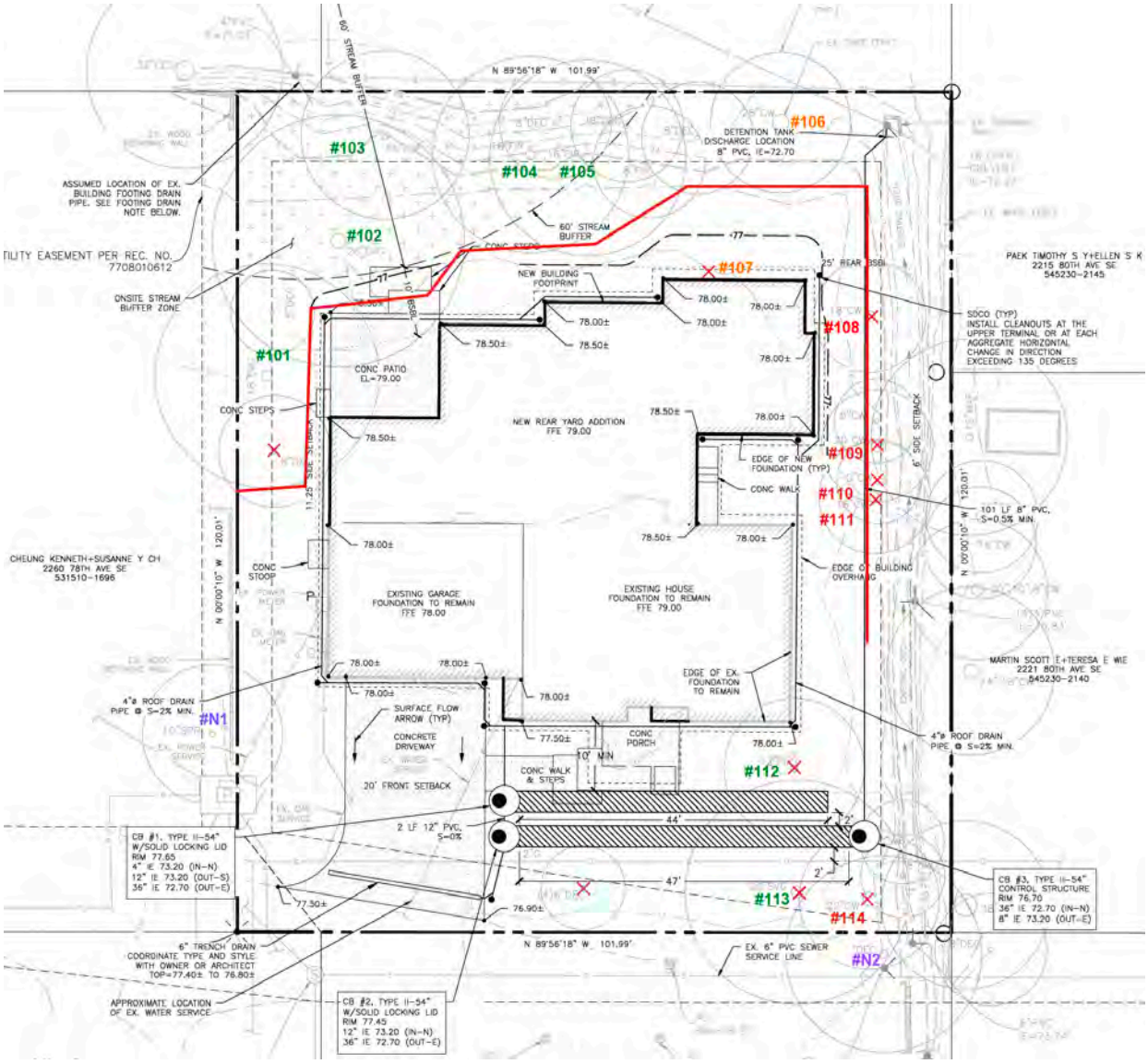
Tree Locator Map



LEGEND

#GOOD CONDITION TREE

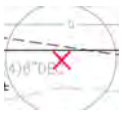
#FAIR CONDITION TREE

#NON-SIGNIFICANT TREE

#NEIGHBORING TREE

LIMIT OF DISTURBANCE

TREE TO BE REMOVED



Salish Restoration Associates

Tree Summary Table
TODA Residence
2262 78th AVE SE
Mercer Island, WA

Salish Restoration Associates
Date: 11/19/2024 , 5/9/2025
Inspector: Benjamin Mark

Regulated (large) trees: Greater than 10" DBH.
Exceptional trees: per attached list.
Neighboring trees: measurements from fence line.
No ISA TRAQ risk assessment protocols were applied to any tree.

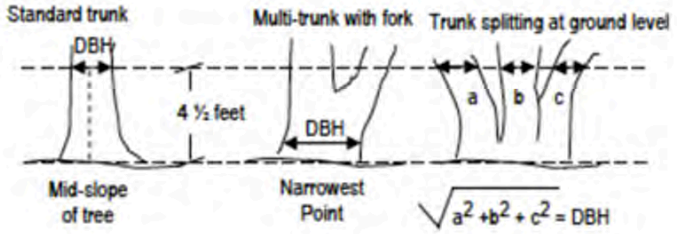
ON-SITE TREES

ID #	Common Name	Genus species	DBH Inches (Multistem Calculation)	Conifer, Deciduous, BLE	Canopy radius NESW	Health Condition	Structural Condition	Combined Viability	Buffer	Proposed Action Remove/Retain	Comments
101	Douglas fir	*Pseudotsuga menzeisii*	21	Conifer	15, 14, 21, 20	Good	Good	Viable	No	Retain	Limbed up to 27 feet. Slight lean to the west. Lean has corrected canopy looks good. Corner of proposed house is 8 feet inside of the dripline.
102	Deodar cedar	*Cedrus deodara*	31	Conifer	16, 26, 30, 16	Good	Good	Viable	Yes	Retain	Ivy on lower stem. Long over extended branches to the east. Some lower branches stub cut. Good health condition. SOME LOWER BRANCHES BROKEN BY #109
103	Douglas fir	*Pseudotsuga menzeisii*	16	Conifer	15, 12, 16, 15	Good	Good	Viable	Yes	Retain	Ivy on lower trunk. Trunk sweeps to the north. Growing at top of slope.
104	Douglas fir	*Pseudotsuga menzeisii*	15	Conifer	10, 15, 12, 15	Good	Good	Viable	Yes	Retain	Ivy on lower trunk somewhat suppressed by trees to the south
105	Douglas fir	*Pseudotsuga menzeisii*	17	Conifer	10, 13, 14, 14	Good	Good	Viable	Yes	Retain	Ivy on lower trunk. Growing at top of slope covered in ivy. healthy.
106	Black cottonwood	*Populous trichocarpa*	33	Deciduous	14, 10, 15, 15	Fair	Fair	Viable	No	Retain	Slight lean to the south west. Ivy on trunk. Canopy has some dead material.
107	Empress tree	*Paulownia tomentosa*	13	Deciduous	15, 20, 20, 23	Fair	Fair	Viable	No	Remove	Canopy off-balance to the south west. Ivy on trunk into lower canopy.
108	Lombardy poplar	*Populus nigra 'Italica'*	23	Deciduous	10, 10, 10, 10	POOR	POOR	NON-VIABLE	No	Remove	Small diameter crown. Some dead material collected in crown. Roots extend to the east into drainage ditch.
~~109~~	Lombardy poplar	*Populus nigra 'Italica'*	21	Deciduous	10, 10, 10, 10	DEAD	DEAD	DEAD	No	FALLEN	**FALLEN IN WINDSTORM - NOVEMBER 2024**
110	Lombardy poplar	*Populus nigra 'Italica'*	12	Deciduous	6, 8, 6, 8	POOR	POOR	NON-VIABLE	No	Remove	Lower trunk curved east and west along its height.
111	Lombardy poplar	*Populus nigra 'Italica'*	22	Deciduous	10, 10, 15, 10	POOR	POOR	NON-VIABLE	No	Remove	Eastern most of row along drainage ditch
112	Norway spruce	*Picea abies*	13	Conifer	13, 15, 16, 12	Good	Good	Viable	No	Remove	Overhangs south east corner of house
113	Deodar cedar	*Cedrus deodara*	21	Conifer	10, 10, 20, 17	Good	Good	Viable	No	Remove	Leans to the south, canopy off balance to the south
114	Black cottonwood	*Populous trichocarpa*	21	Deciduous	6, 12, 8, 8	Fair	POOR	Viable	No	Remove	Canopy off-balance to the south

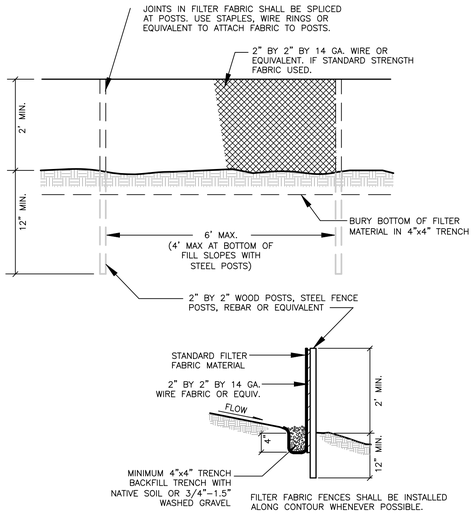
NEIGHBORING TREES

ID #	Common Name	Genus species	DBH Inches (Multistem Calculation)	Conifer, Deciduous, BLE	Canopy radius NESW	Health Condition	Structural Condition	Combined Viability	Buffer	Proposed Action Remove/Retain	Comments
N1	Blue Atlas cedar	*Cedrus atlantica 'Glauca'*	10.5	Conifer	14,12,14	Good	Good	Viable	No	Retain	Top removed at approximately 25 feet on West property line. Good condition.
N2	Black cottonwood	*Populous trichocarpa*	16	Deciduous	5	Fair	Fair	Viable	No	Retain	Very thin. Roots into drainage ditch

Diameter Breast Height Diagrams



A PORTION OF THE SE QUARTER OF SECTION 01, TOWNSHIP 24 N., RANGE 04 E., W.M.



TYPICAL FILTER FENCE DETAIL

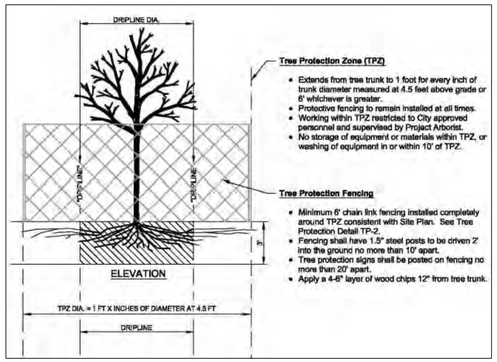
NOT TO SCALE

EROSION CONTROL NOTES

1. PROVIDE AND MAINTAIN TEMPORARY SEDIMENTATION COLLECTION FACILITIES TO ENSURE THAT SEDIMENT OR OTHER HAZARDOUS MATERIALS DO NOT ENTER THE STORM DRAINAGE SYSTEM IN ACCORDANCE WITH THE SITE'S APPROVED CSWPPP.
2. EXPOSED SOILS SHALL BE WORKED DURING THE WEEK UNTIL THEY HAVE BEEN STABILIZED. SOIL STOCKPILES SHOULD BE SHOWN WITHIN THE DISTURBED AREA SHOWN ON THE SITE PLAN. SOIL EXCAVATED FOR THE FOUNDATION SHALL BE BACKFILLED AGAINST THE FOUNDATION AND GRADED TO DRAIN AWAY FROM THE BUILDING. NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN 7 DAYS FROM MAY 1 TO SEPTEMBER 30 OR MORE THAN 2 DAYS FROM OCTOBER 1 TO APRIL 30. ONCE THE DISTURBED LANDSCAPE AREAS ARE GRADED, THE GRASS AREAS ARE TO BE AMENDED PER THE SOIL AMENDMENT NOTES ON SHEET C2. ALL STOCKPILES SHOULD BE COVERED WITH PLASTIC OR BURLAP IF LEFT UNWORKED.
3. ANY AND ALL POLLUTANTS, CHEMICALS, LIQUID PRODUCTS, AND OTHER MATERIALS THAT HAVE THE POTENTIAL TO POSE A THREAT TO HUMAN HEALTH OR THE ENVIRONMENT SHALL BE COVERED, CONTAINED, AND PROTECTED FROM VANDALISM. ALL SUCH PRODUCTS SHALL BE KEPT UNDER COVER IN A SECURE LOCATION ON SITE. CONCRETE HANDLING (BMP C151), SAWCUTTING (BMP C152), MATERIAL DELIVERY, STORAGE, AND CONTAINMENT (BMP C153), AND CONCRETE WASHOUT AREAS (BMP C154) SHOULD FOLLOW BEST MANAGEMENT PRACTICES AS PROVIDED IN VOLUME II OF THE 2014 SURFACE WATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON.
4. BEST MANAGEMENT PRACTICES OR BMPs SHALL BE INSPECTED AND MAINTAINED DURING CONSTRUCTION AND REMOVED WITHIN 30 DAYS AFTER THE CITY INSPECTOR OR ENGINEER DETERMINES THAT THE SITE IS STABILIZED, PROVIDED THAT THEY MAY BE REMOVED WHEN THEY ARE NO LONGER NEEDED.

SUGGESTED SWPPP SEQUENACE

1. MARK CLEARING LIMITS, CRITICAL AREAS, AND BUFFER. THE PERIMETER OF THE AREA TO BE CLEARED SHALL BE MARKED PRIOR TO CLEARING OPERATION WITH VISIBLE FLAGGING, ORANGE PLASTIC BARRIER FENCING AND/OR ORANGE SILT FENCING AS SHOWN ON THE SWPPP SITE MAP. VEHICLE ARE ONLY ALLOWED IN THE AREAS TO BE GRADED, SO NO COMPACTION OF THE UNDEVELOPED AREAS WILL OCCUR.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE WHERE NECESSARY
3. INSTALL PROTECTION FOR EXISTING DRAINAGE SYSTEMS AND PERMANENT DRAIN INLETS
4. ESTABLISH STAGING AREAS FOR STORAGE AND HANDLING POLLUTED MATERIAL AND BMPs
5. INSTALL SEDIMENT CONTROL BMPs
6. GRADE AND INSTALL STABILIZATION MEASURES FOR DISTURBED AREAS
7. MAINTAIN BMPS UNTIL SITE STABILIZATION, AT WHICH TIME THEY MAY BE REMOVED



TREE PROTECTION DETAIL

NOT TO SCALE

LEGEND

#GOOD CONDITION TREE

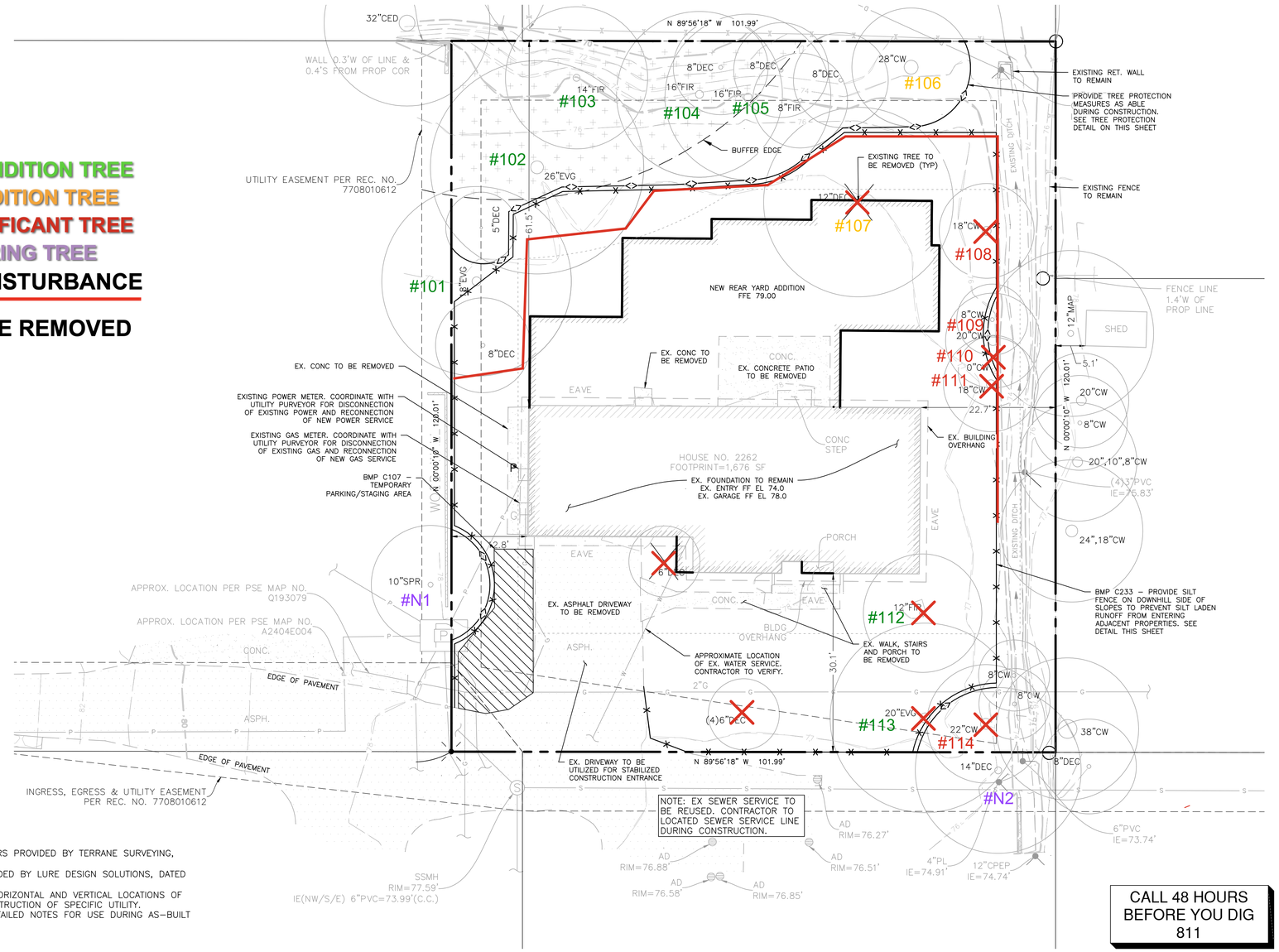
#FAIR CONDITION TREE

#NON-SIGNIFICANT TREE

#NEIGHBORING TREE

LIMIT OF DISTURBANCE

TREE TO BE REMOVED



SCALE: 1" = 10'

10 10 0 10 20

CONTOUR INTERVAL = 2'

PERMANENT & TEMPORARY SEEDING

1. SEEDING MAY BE USED THROUGHOUT THE PROJECT ON DISTRUBED AREAS THAT HAVE REACHED FINAL GRADE OR THAT WILL REMAIN UNWORKED. SEED AND MULCH ALL DISTURBED AREAS NOT OTHERWISE VEGETATED OR STABILIZED.
2. SEED DURING SEASONS MOST CONDUCTED TO PLANT GROWTH. FOR WASHINGTON THIS IS BETWEEN APRIL 1 THROUGH JUNE 20 AND SEPTEMBER 1 THROUGH OCTOBER 1. SEEDING THAT OCCURS BETWEEN JULY 1 AND AUGUST 30 WILL REQUIRE IRRIGATION UNTIL 5 PERCENT GRASS COVER IS ESTABLISHED. SEEDING THAT OCCURS BETWEEN OCTOBER 1 AND MARCH 30 MAY REQUIRED MULCH OR PLASTIC COVER UNTIL 75 PERCENT GRASS COVER IS ESTABLISHED.
3. REFER TO BMP C120 IN THE STORMWATER MANUAL FOR WESTERN WASHINGTON: VOLUME II FOR FURTHER DETAILS.

MAPPING NOTES

1. SITE BOUNDARY AND CONTOURS PROVIDED BY TERRANE SURVEYING, MAPS DATED 02/02/24.
2. HOUSE & SITE LAYOUT PROVIDED BY LURE DESIGN SOLUTIONS, DATED 06/03/24.
3. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION OF SPECIFIC UTILITY.
4. CONTRACTOR SHALL KEEP DETAILED NOTES FOR USE DURING AS-BUILT DRAWING PREPARATION.

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NO.	DESCRIPTION/DATE	BY

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JOHN & JUNG TODA

TODA RESIDENCE

DEMO & TESC PLAN

CITY OF MERCER ISLAND, WASHINGTON

JOB NO.:	2429-001-024
DWG. NAME:	
DESIGNED BY:	DRD
DRAWN BY:	DRD
CHECKED BY:	
DATE:	05/15/2025
DATE OF PRINT:	

C1

1 OF 3 SHEETS

A PORTION OF A PORTION OF THE SE QUARTER OF SECTION 01, TOWNSHIP 24 N., RANGE 04 E., W.M.

LEGAL DESCRIPTION

LOT B, CITY OF MERCER ISLAND SHORT PLAT NO. MI-77-1-021, RECORDED UNDER RECORDING NO. 7708010612, RECORDS OF KING COUNTY, WASHINGTON;

TOGETHER WITH A NON-EXCLUSIVE EASEMENT FOR INGRESS AND EGRESS AS DELINEATED ON THE FACE OF SAID SHORT PLAT.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

SITE DATA

PARCEL NUMBER:	531510-1697
SITE ADDRESS:	2262 78TH AVE SE MERCER ISLAND, WA 98040
SITE AREA:	12,197 SF (RECORDED) 12,240 SF (SURVEYED)
ZONING:	R-8.4 (SINGLE FAMILY)

REQUIRED SETBACKS:

FRONT/GARAGE:	20 FT
BACK:	25 FT
INTERIOR:	10 FT EA (15 FT TOTAL)

ON-SITE IMPERVIOUS

NEW PLUS REPLACED

TRIBUTARY TO DETENTION TANK	
NEW SINGLE-FAMILY ROOFTOP	4,195 SF
EXPOSED DRIVEWAY	743 SF
TOTAL TO DETENTION TANK	4,938 SF

PROJECT IMPACTS

EXISTING (TO BE REMOVED)	
SINGLE-FAMILY ROOFTOP	1,968 SF
DRIVEWAY	781 SF
SIDEWALK/PATIO	347 SF
TOTAL	3,096 SF

NEW/REPLACED	
SINGLE-FAMILY ROOFTOP	4,195 SF
EXPOSED DRIVEWAY	743 SF
EXPOSED WALK/PATIO/STEPS	166 SF
TOTAL NEW/REPLACED	5,104 SF

FOOTING DRAIN NOTE

THE EXISTING FOOTING DRAIN WILL NOT BE ALTERED AND REMAIN IN PLACE. NO NEW CONNECTION FROM ANY SOURCES TO THE EXISTING FOOTING DRAIN ARE ALLOWED. IF THERE ARE ALTERATIONS OR CONNECTIONS TO THE EXISTING FOOTING DRAIN ARE NEEDED DURING THE CONSTRUCTION, THEN A NEW DESIGN FOR THE FOOTING DRAIN MUST BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.

SOIL QUALITY GUIDLINES

2019 SWMMWW, BMP T5.13

- SOIL RETENTION. RETAIN, IN A UNDISTURBED STATE THE DUFF LAYER AND NATIVE TOPSOIL TO THE MAXIMUM EXTENT PRACTICABLE. IN ANY AREAS REQUIRING GRADING REMOVE AND STOCK-PILE THE THE DUFF LAYER AND TOPSOIL, IF ANY, ON SITE IN A DESIGNATED, CONTROLLED AREA, NOT ADJACENT TO PUBLIC RESOURCES AND CRITICAL AREAS, TO BE REAPPLIED TO OTHER PORTIONS OF THE SIT WHERE FEASIBLE.

- SOIL QUALITY. ALL AREAS SUBJECT TO CLEARING AND GRADING THAT HAVE NOT BEEN COVERED BY IMPERVIOUS SURFACE, INCORPORATED INTO A DRAINAGE FACILITY OR ENGINEERED AS STRUCTURAL FILL OR SLOPE SHALL, AT PROJECT COMPLETION, DEMONSTRATE THE FOLLOWING:

  1. A TOPSOIL LAYER WITH A MINIMUM ORGANIC MATTER CONTENT OF 5-10% DRY WEIGHT IN PLANTING BEDS, AND 5% ORGANIC MATTER CONTENT IN TURF AREAS, AND A Ph FROM 6.0 TO 8.0 OR MATCHING THE pH OF THE UNDISTURBED SOIL. THE TOPSOIL LAYER SHALL A MINIMUM DEPTH OF EIGHT INCHES EXCEPT WHERE TREE ROOTS LIMIT THE DEPTH OF INCORPORATION OF AMENDMENTS NEEDED TO MEET THE CRITERIA. SUBSOILS BELOW THE TOPSOIL LAYER SHOULD BE SCARIFIED AT LEAST 4 INCHES WITH SOME INCORPORATION OF THE UPPER MATERIAL TO AVOID STRATIFIED LAYERS, WHERE FEASIBLE.

  2. MULCH PLANTING BEDS WITH 2 INCHES OF ORGANIC MATERIAL

  3. USE COMPOST AND OTHER MATERIALS THAT MEET THESE ORGANIC CONTENT REQUIREMENTS:
     A. THE ORGANIC CONTENT FOR "PRE-APPROVED" AMENDMENT RATES CAN ONLY BE MET USING COMPOST MEETING THE COMPOST SPECIFICATION FOR BIORETENTION WITH THE EXCEPTION THAT THE COMPOST MUST HAVE AN ORGANIC MATTER CONTENT OF 40 PERCENT TO 65 PERCENT, AND A CARBON TO NITROGEN RATIO BETWEEN 25:1. THE CARBON TO NITROGEN RATIO MAY BE AS HIGH AS 35:1 FOR PLANTING COMPOSED ENTIRELY OF PLANTS NATIVE TO THE PUGET SOUND LOWLANDS REGION.
     B. CALCULATED AMENDMENT RATES MAY BE ME THROUGH USE OF COMPOSTED MATERIALS AS DEFINED ABOVE, OR OTHER ORGANIC MATERIALS AMENDED TO MEET THE CARBON TO NITROGEN RATIO REQUIREMENTS, AND NOT EXCEEDING THE CONTAMINANT LIMITS IDENTIFIED IN TABLE 220-B, TESTING PARAMETERS, IN WAC 173-350-220

SOIL AMENDMENT OPTIONS

2019 SWMMWW, BMP T5.13

IMPLEMENTATION OPTIONS: THE SOIL QUALITY DESIGN GUIDELINES LISTED ON THIS SHEET CAN BE MET BY USING ONE OF THE METHODS LISTED BELOW:

OPTION 1: LEAVE UNDISTURBED NATIVE VEGETATION AND SOIL, AND PROTECT FROM COMPACTION DURING CONSTRUCTION.

OPTION 2: AMEND EXISTING SITE TOPSOIL OR SUBSOIL EITHER AT DEFAULT "PRE-APPROVED" RATES, OR AT CUSTOM CALCULATED RATES BASED ON TESTS OF THE SOIL AND AMENDMENT.

OPTION 3: STOCKPILE EXISTING TOPSOIL DURING GRADING, AND REPLACE IT PRIOR TO PLANTING. STOCKPILED TOPSOIL MUST ALSO BE AMENDED IF NEEDED TO MEET THE ORGANIC MATTER OR DEPTH REQUIREMENTS, EITHER AT A DEFAULT "PRE-APPROVED"RATE OR AT A CUSTOM CALCULATED RATE.

OPTION 4: IMPORT TOPSOIL MIX OF SUFFICIENT ORGANIC CONTENT AND DEPTH TO MEET THE REQUIREMENTS.

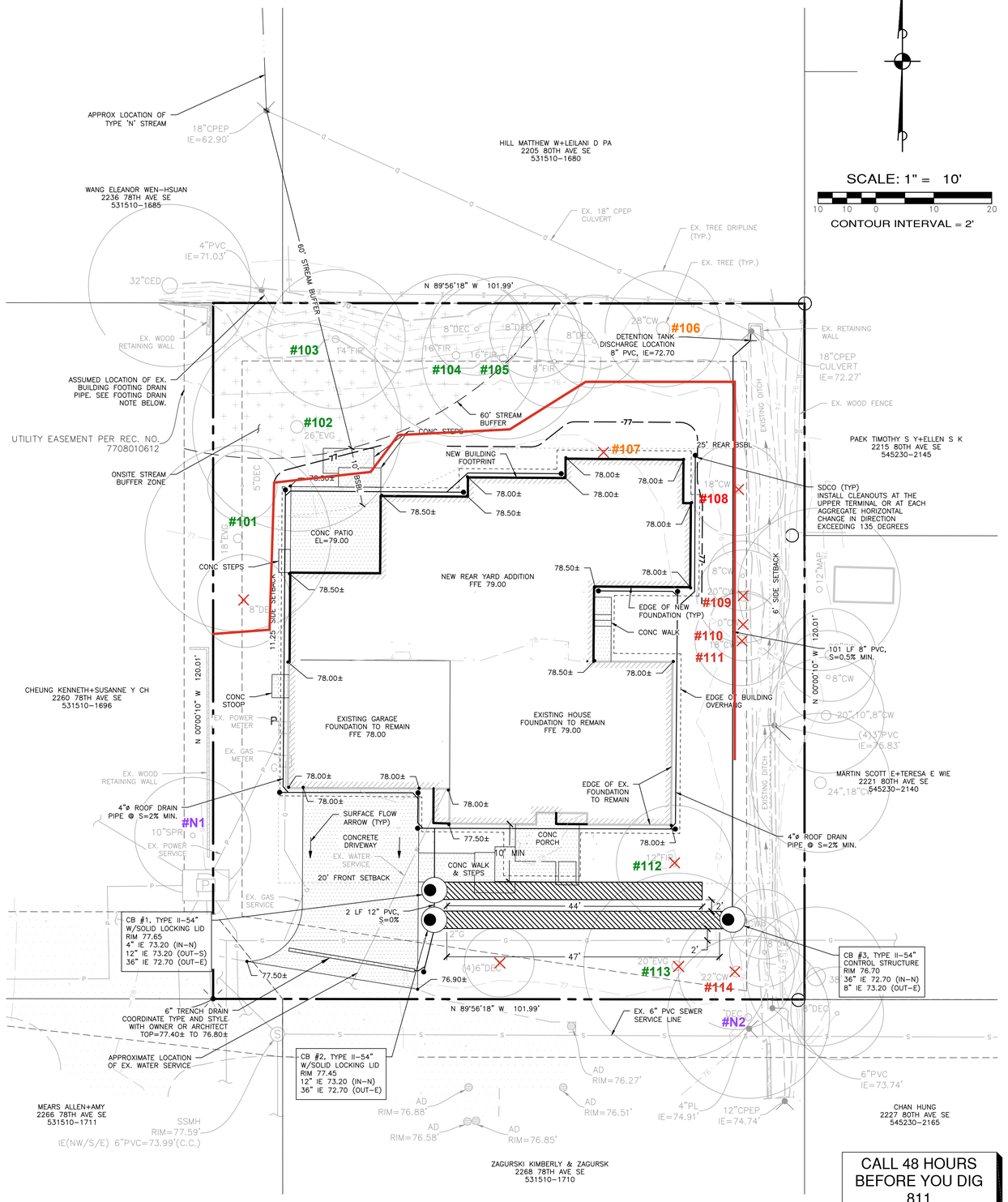
MORE THAN ONE METHOD MAY BE USED ON DIFFERENT PORTIONS OF THE SAME SITE. SOIL THAT ALREADY MEETS THE DEPTH AND ORGANIC MATTER QUALITY STANDARDS, AND IS NOT COMPACTED, DOES NOT NEED TO BE AMENDED.

POST CONSTRUCTION SOIL INSPECTION

THE LAWN AND LANDSCAPE AREAS ARE REQUIRED TO PROVIDE POST-CONSTRUCTION SOIL QUALITY AND DEPTH IN ACCORDANCE WITH BMP T5.13. THE PROJECT CIVIL ENGINEER MUST PROVIDE A LETTER OF CERTIFICATION TO ENSURE THAT THE LAWN AND LANDSCAPE AREAS ARE MEETING THE POST-CONSTRUCTION SOIL QUALITY AND DEPTH REQUIREMENTS SPECIFIED ON THE APPROVED PLAN SET PRIOR TO FINAL INSPECTION OF THE PROJECT.

UTILITY NOTE

CONNECT EX. SEWER AND WATER SERVICES TO NEW BUILDING.



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REVISIONS		
NO.	DESCRIPTION/DATE	BY

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Project Management

JOHN & JUNG TODA

TODA RESIDENCE

DRAINAGE & GRADING PLAN

CITY OF MERCER ISLAND, WASHINGTON

JOB NO.:	2429-001-024
DWG. NAME:	
DESIGNED BY:	DRD
DRAWN BY:	DRD
CHECKED BY:	
DATE:	05/15/2025
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C2

2 OF 3 SHEETS

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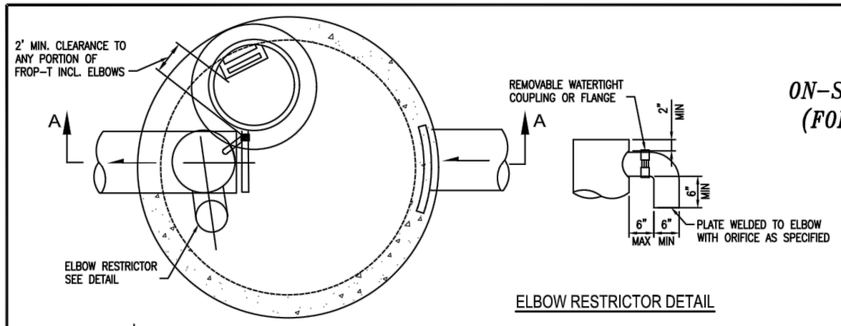
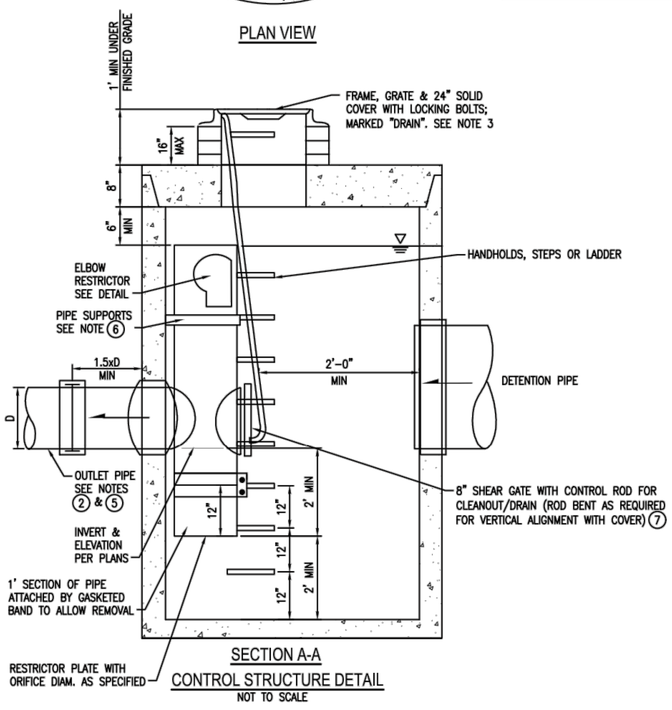
ATTACHMENT 1
CITY OF MERCER ISLAND
ON-SITE DETENTION SYSTEM WORKSHEET
(FOR NEW PLUS REPLACED IMPERVIOUS AREA OF 9,500 SF OR LESS)



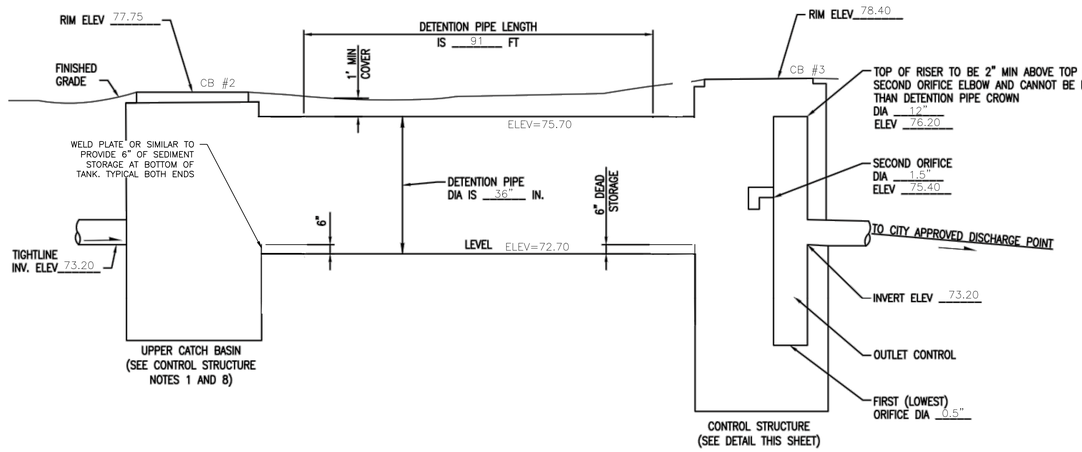
PLAN VIEW

ELBOW RESTRICTOR DETAIL

OWNER: JOHN & JUNG TODA	ADDRESS: 2262 78TH AVE SE	PREPARED BY: ESM CONSULTING ENGINEERS	
PERMIT #:	MERCER ISLAND, 98040	PHONE: (253) 838-6113	
		DATE: 05/15/2025	
NEW PLUS REPLACED IMPERVIOUS SURFACE AREA (SF): 4,938 (TRIBUTARY)	DETENTION PIPE DIA (INCH): 36	DETENTION PIPE LENGTH (FT): 91	ORIFICE #1 DIA 0.5 INCH, ELEV 71.20
SOIL TYPE: C	PIPE MATERIAL: CMP		ORIFICE #2 DIA 1.5 INCH, ELEV 75.40



SECTION A-A
CONTROL STRUCTURE DETAIL
NOT TO SCALE



ON-SITE DETENTION SYSTEM
NOT TO SCALE (ENGINEER TO FILL IN BLANKS)

CONTROL STRUCTURE NOTES:

1. USE A MINIMUM OF A 54 IN. DIAM. TYPE 2 CATCH BASIN. THE ACTUAL SIZE IS DEPENDENT ON CONNECTING PIPE MATERIAL AND DIAMETER.
2. OUTLET PIPE: MIN. 6 INCH.
3. METAL PARTS: CORROSION RESISTANT. NON-GALVANIZED PARTS PREFERRED. GALVANIZED PIPE PARTS TO HAVE ASPHALT TREATMENT 1.
4. FRAME AND LADDER OR STEPS OFFSET SO:
   A. CLEANOUT GATE IS VISIBLE FROM TOP;
   B. CLIMB-DOWN SPACE IS CLEAR OF RISER AND CLEANOUT GATE;
   C. FRAME IS CLEAR OF CURB.
5. IF METAL OUTLET PIPE CONNECTS TO CEMENT CONCRETE PIPE, OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4 IN.
6. PROVIDE AT LEAST ONE 3 X 0.090 GAUGE SUPPORT BRACKET ANCHORED TO CONCRETE WALL WITH 5/8 IN. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED SUPPORTS 2 IN. INTO CATCH BASIN WALL (MAXIMUM 3'-0" VERTICAL SPACING).
7. THE SHEAR GATE SHALL BE MADE OF ALUMINUM ALLOY IN ACCORDANCE WITH ASTM B 26M AND ASTM B 275, DESIGNATION ZG32A; OR CAST IRON IN ACCORDANCE WITH ASTM A 48, CLASS 30B.
   THE LIFT HANDLE SHALL BE MADE OF A SIMILAR METAL TO THE GATE (TO PREVENT GALVANIC CORROSION), IT MAY BE OF SOLID ROD OR HOLLOW TUBING, WITH ADJUSTABLE HOOK AS REQUIRED.
   A NEOPRENE RUBBER GASKET IS REQUIRED BETWEEN THE RISER MOUNTING FLANGE AND THE GATE FLANGE.
   INSTALL THE GATE SO THAT THE LEVEL-LINE MARK IS LEVEL WHEN THE GATE IS CLOSED.
   THE MATING SURFACES OF THE LID AND THE BODY SHALL BE MACHINED FOR PROPER FIT.
   ALL SHEAR GATE BOLTS SHALL BE STAINLESS STEEL.
8. THE UPPER CATCH BASIN IS REQUIRED IF THE LENGTH OF THE DETENTION PIPE IS GREATER THAN 50 FT.

ON-SITE DETENTION SYSTEM NOTES:

1. CALL DEVELOPMENT SERVICES (206-275-7605) 24 HOURS IN ADVANCE FOR A DETENTION SYSTEM INSPECTION BEFORE BACKFILLING AND FOR FINAL INSPECTIONS.
2. RESPONSIBILITY FOR OPERATION AND MAINTANANCE OF DRAINAGE SYSTEMS ON PRIVATE PROPERTY IS RESPONSIBILITY OF THE PROPERTY OWNER. MATERIAL ACCUMULATED IN THE STORAGE PIPE MUST BE REMOVED FROM CATCH BASINS TO ALLOW PROPER OPERATION. THE OUTLET CONTROL ORIFICE MUST BE KEPT OPEN AT ALL TIMES.
3. PIPE MATERIAL, JOINT, AND PROTECTIVE TREATMENT SHALL BE IN ACCORDANCE WITH SECTION 7.04 AND 9.05 OF THE WSDOT STANDARD SPECIFICATION FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, LATEST VERSION. SUCH MATERIALS INCLUDE THE FOLLOWING, LINED CORRUGATED POLYETHYLENE PIPE (LCPE), ALUMINIZED TYPE 2 CORRUGATED STEEL PIPE AND PIPE ARCH (MEETS AASHTO DESIGNATIONS M274 AND M36), CORRUGATED OR SPIRAL RIB ALUMINUM PIPE, OR REINFORCED CONCRETE PIPE. CORRUGATED STEEL PIPE IS NOT ALLOWED.
4. FOOTING DRAINS SHALL NOT BE CONNECTED TO THE DETENTION SYSTEM.

REVISIONS

NO.	DESCRIPTION/DATE	BY

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05/15/2025

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JOHN & JUNG TODA

TODA RESIDENCE

NOTES & DETAILS

CITY OF MERCER ISLAND, WASHINGTON

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DWG. NAME:	
DESIGNED BY:	DRD
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CHECKED BY:	
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3 OF 3 SHEETS

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