

TECHNICAL MEMORANDUM

November 6, 2018

To:	Mr. Buff Nelson, Estate of Barbara J. Nelson
From:	Richard W. Lundquist, M.S., Wildlife Biologist Raedeke Associates, Inc.
RE:	Gunshy Manor – NE Union Hill Road Sight Distance Clearing Update – Mitigation (R.A.I. No. 2014-061-009)

The purpose of this memorandum is to outline revised mitigation measures for proposed clearing of native forest vegetation within the right-of-way of NE Union Hill Road, located the east of the Gunshy Manor Farm property's north driveway entrance and exit at 20005 NE Union Hill Road in unincorporated King County. The proposed clearing has been revised to correspond to required sight distance from a new driveway west of the existing driveway for the Gunshy Manor Farm property. The proposed driveway is located approximately 200 feet west of the existing north driveway entrance. This memo also addresses comments from King County Department of Permitting and Environmental Review (DPER) staff upon review of our previous Critical Area Report for the project (Raedeke Associates, Inc. 2016) and existing site conditions.

The project area lies within a portion of the NE Union Hill Road right-of-way that abuts portions of the north and northeast edges of Tax Parcel No.s 0825069013 and 0825069067, which are the northernmost parcels of Gunshy Manor. This places the project area in Section 8, Township 25 North, Range 6 East, W.M. The Sight Distance Exhibit prepared by ESM Consulting Engineers, LLC, received on July 16, 2018, shows the project area for proposed sight distance clearing.

PROJECT DESCRIPTION

The project involves clearing of existing native forest vegetation within the right-of-way to improve entering and stopping sight distance visibility from the existing driveway. The goal of the proposed removal of vegetation is sight distance improvement to meet applicable sight distance standards set forth in King County's 2016 Road Design and Construction Standards in order to reduce traffic accident risks along and in the vicinity of

NE Union Hill Road's substandard curve that lies to the east of the above-mentioned Gunshy Manor driveway. Transpo Group (2018) has determined the geometric extent of the view corridor needed to meet King County sight distance standards, standards for "entering sight distance" and "stopping sight distance" that are currently not met due to the existing vegetative conditions of the view corridor between the north end of the Gunshy Manor Farm north driveway and NE Union Hill Road to the east and southeast of the driveway's intersection with that road.

The project area is primarily within the heavily vegetated forest area that lies within the King County right-of-way, immediately south and southwest of a sharp curve in NE Union Hill Road to the east of the Gunshy Manor Farm's north parcel driveway entrance and exit. More specifically, the project area, which lies to the northwest of a proposed "entering sight distance line" (the line labeled on the Buffer Mitigation Plan Sheet 1 as the "45 MPH ESD LINE") to the south and southwest edge of NE Union Hill Road, is roughly triangular in shape. The project area has a maximum width of up to 50 feet from the southwest edge of the roadway to the entering sight distance line. The length of the portion of the entering sight distance line that defines the south edge of the project area is approximately 430 feet long, 370 of which is within the buffer of Martin Creek.

All of the project area lies within the NE Union Hill Road right-of-way, and almost all of it lies within the 165-foot-wide buffer of a portion of the stream (Martin Creek) that traverses the site. The project site, including the stream and associated buffer, is discussed in more detail in our Critical Areas Report (Raedeke Associates, Inc. 2016).

For purposes of this evaluation, we assume as a "worst-case" scenario that vegetation removal for the sight distance improvement project will involve cutting most of the overstory trees within the project area to meet King County sight distance standards. Several of the larger trees, as identified on the Buffer Mitigation Plan Sheet 1, would be retained, with lower limbs pruned as needed to provide sight lines. Also as part of that worst case scenario, we assume the following:

- (1) The project will include cutting, trimming, or pruning of all shrubs and all other low understory vegetation within the project area down to a level that is approximately one foot below the level of all applicable sight lines, as needed, to meet King County sight distance standards;
- (2) Concerning overstory trees that will be cut down, (a) the stumps and roots will be left in place and (b) up to six of the resulting logs (minimum 20 feet long and 12 inches diameter at the large end) will be placed on the forest floor and left within the project area to avoid or minimize soil disturbance and provide wildlife habitat features;

- (3) To the extent that particular specimens of shrubs and other understory vegetation within the project area are found not to exceed a level that is one foot below the level of the required sight lines, such shrubs and other low understory vegetation would be retained; and
- (4) No soil disturbance, grinding of stumps, or placement of wood chips would occur within or immediately adjacent to the OHWM line on each side of Martin Creek, so as to avoid the need for state or federal permits authorizing the disposal of dredge or fill material within waters of the state or waters of the U.S.

MITIGATION

Compensatory mitigation for the impacts to the buffer vegetation of Martin Creek includes two components: (1) plantings within the buffer and along the stream channel to restore areas disturbed during removal and pruning of trees and shrubs, including areas where invasive species are to be removed, as needed, and (2) replacement of “significant” trees, as defined by King County (2016) code, that are to be removed within the stream buffer. With the avoidance and minimization measures as outlined in the Critical Areas Report (Raedeke Associates, Inc. 2016), actual vegetation removal (cutting, trimming, pruning, and limbing) may prove to be less extensive than under the assumed worst-case scenario described above and in the Critical Areas Report. If the actual vegetation removal proves to be less extensive than assumed, the final mitigation plan may be revised accordingly in consultation with King County DPER after the vegetation removal has been completed and before the final mitigation plan is fully implemented.

Buffer Disturbance

The attached Buffer Mitigation plans (Sheets 1 through 3) outline the proposed planting plans (revised from the March 2017 submittal) to re-vegetate or enhance the buffer areas following tree and shrub removal and pruning. The planting plan assumes disturbance could occur anywhere within the shaded sight distance area as shown on Sheet 1. The plan specifies planting of low ground cover plants at an approximate average spacing of 8 feet, recognizing that planting densities may vary across the site based on extent of disturbance and density of retained existing ground cover. Ground cover plants include salal (*Gaultheria shallon*), holly-leaved Oregon grape (*Mahonia aquifolium*), pineland swordfern (*Polystichum munitum*), and common snowberry (*Symphoricarpos albus*). The plan also includes planting of shrubs along a small portion of the northwest side of Martin Creek to provide additional shading and vegetative cover, at a standard spacing of 5 feet. These shrubs include clustered rose (*Rosa pisocarpa*), western thimbleberry (*Rubus parviflorus*), and salmon raspberry (*Rubus spectabilis*). Sheet 3 of the attached plans outline details regarding general notes and conditions, as well as monitoring and maintenance.

The plan includes leaving up to three logs within the sight distance area from the trees that are cut down. The trees would be dropped in place in a naturalistic pattern and trimmed of branches that may interfere with the sight lines. Branches trimmed off would be removed from the site. The downed trees would be cut into lengths so the remaining logs are at least 20 feet long and 12 inches diameter at the large end.

Monitoring Plan

This plan includes a systematic monitoring program of the riparian and buffer mitigation areas to evaluate the success of the mitigation effort. The results of the monitoring will be used to develop any needed modifications and/or alterations of the site in subsequent years. The purposes of the monitoring program are: (1) to document physical and biological characteristics of the mitigation area, and (2) to ensure that the goals and objectives comply with permit specifications. The monitoring process would consist of three distinct phases: (1) construction monitoring; (2) compliance monitoring; and (3) long-term monitoring. The “time-zero” or baseline composition, structure, and cover abundance would be documented during the compliance monitoring phase. The long-term monitoring program would document the survival of planted vegetation and rates of colonization by other plants (i.e., in planted areas) over a three-year period after installation of the riparian and buffer mitigation has been completed. These phases are outlined in detail on Sheet 3 of the plan.

Performance Standards

Specific performance standards to be used in the three-year long-term monitoring are the following:

- 100% survival of all planted vegetation (shrubs and groundcovers) in the riparian and buffer mitigation and tree replacement areas following completion of the first year after planting. All plantings that do not survive during the first year must be replaced with the same or similar species and specifications. Upon installation of replacement plantings at the conclusion of the first year, the 100% survival performance standard will be considered to be met;
- 85% survival of all planted vegetation (shrubs, and groundcovers) in the enhanced buffer and tree replacement areas following completion of each year after planting. Sufficient plantings will be replaced, as necessary, with the same or similar species and specifications in order to meet the 85% survival standard;
- There will be no more than 10% cover by Himalayan blackberry or other invasive plant species, as identified by the project biologist at any time during the three-year monitoring period within the area of buffer mitigation and tree replacement.

Contingency Plan

Contingency plans are needed if post-mitigation monitoring shows that objectives and performance standards have not been met. It should be noted, however, that it is not possible to develop a detailed contingency plan until the specific problems that need to be addressed are known. It would be unproductive to try to anticipate all possible problems and their solutions at this time.

Common problems, both human and natural, that might arise can be identified and general recommendations for remedy proposed. For example, after the second year, plant communities within the restored and enhanced areas may not be established at acceptable levels. It may be necessary to replant with new or different stock, provide additional watering or irrigation during critical seasons, or augment the soil.

If monitoring reveals a significant deviation from predicted impact or a failure of mitigation requirements, the applicant shall implement an approved contingency plan. The contingency plan constitutes new mitigation and is subject to all mitigation requirements, including a monitoring plan and financial guarantee.

Replacement of Significant Trees

The proposed plan specifies retention of two large western red cedars (*Thuja plicata*) in the sight distance area, and one smaller cedar (indicated in green on Sheet 1 of the attached Buffer Mitigation Plan). A line of fir trees that were previously planted along within the right-of-way between the existing and proposed driveway may be retained and lower limbs pruned, pending review by King County Department of Transportation. For purposes of the current plan, it is assumed the rest of the trees mapped in the sight distance area, totaling approximately 13 trees, including 3 trees along the east side of the driveway, would be removed. Of these, 11 trees to be removed from within the stream buffer area meet King County's (2016) definition as "significant trees," which include conifers at least 8 inches diameter at breast height (dbh, measured at 4.5 feet above the ground) and deciduous trees at least 12 inches dbh. We anticipate that the tree removal process would occur in stages in coordination with King County Department of Transportation staff, and more significant trees may be able to be retained, with lower limbs removed to provide adequate sight lines.

King County typically requires replacement of significant trees removed from critical area buffers at a 3:1 ratio (Ms. Laura Casey, King County DPER, pers. comm., March 22, 2017). Thus, with 11 significant trees to be removed from the buffer, 33 replacement trees are required as compensation. The property owner proposes to plant the replacement trees along the south side of Farm Ditch 3, a Type F water (Talasaea Consultants, Inc. 2016) along the Gunshy Farm property boundary southwest of the sight distance clearing area (see Sheet 2 of the attached buffer mitigation plans). The proposed plantings would consist of a mixture of Douglas fir and western red cedar (aka western red arborvitae). These trees would be planted at the same time as the low cover plantings in the sight

distance area, and survival would be monitored along with the low cover plantings, as outlined above.

LIMITATIONS

We have prepared this document for the exclusive use of The Estate of Barbara J. Nelson and its consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from The Estate of Barbara J. Nelson.

The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such agency determinations. Therefore, the conclusions of this document should be reviewed by the appropriate regulatory agencies prior to any detailed site planning or construction activities.

We warrant that the work performed conforms to standards generally accepted in our field, and has been prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

Thank you for the opportunity to provide this information. If you have any questions or need additional information, please do not hesitate to contact me or Chris Wright at (206) 525-8122 or via email at rwlundquist@raedeke.com or cwright@raedeke.com.

LITERATURE CITED

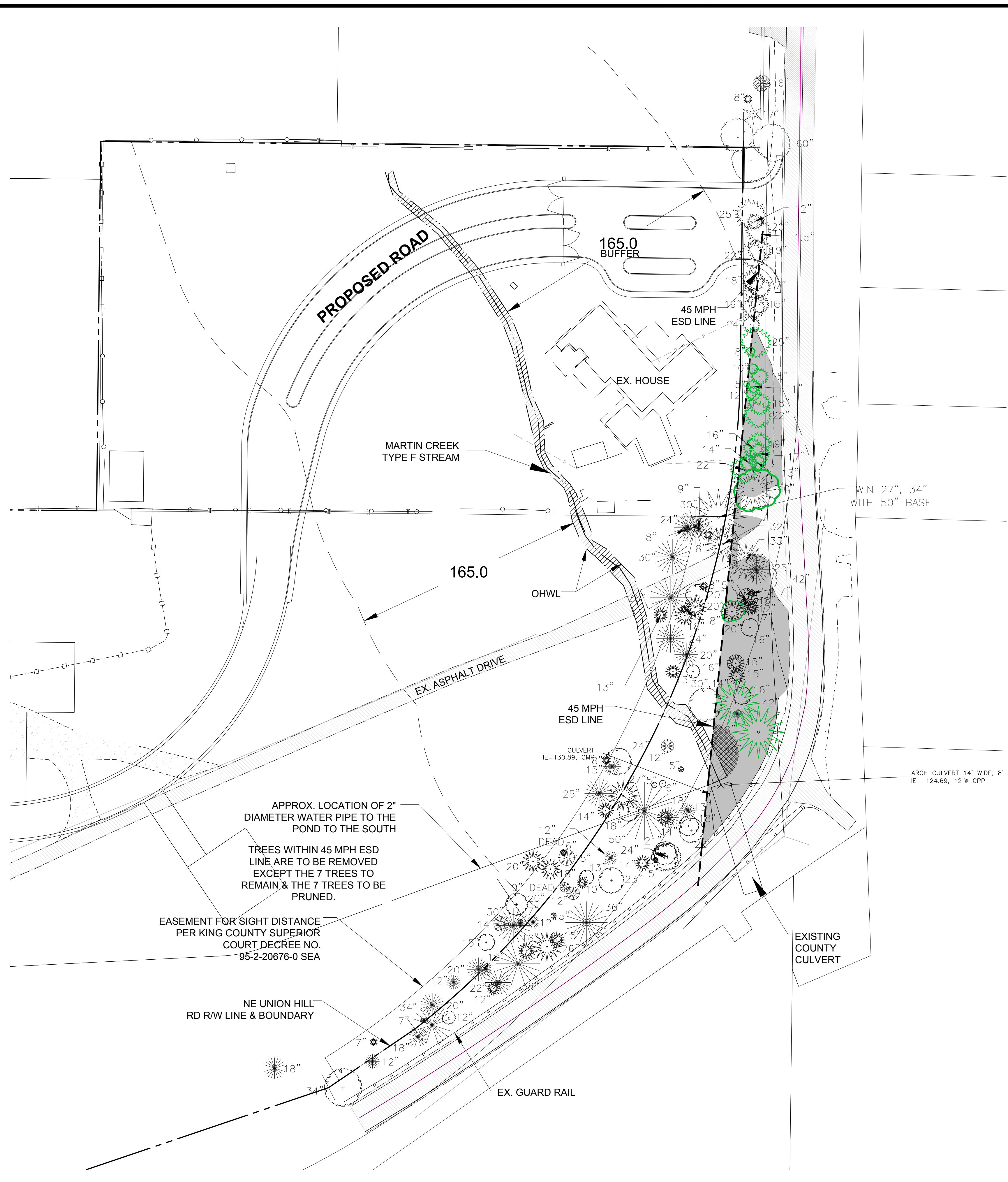
King County. 2016. Title 21A: Zoning. King County Code. Updated October 17, 2016. http://www.kingcounty.gov/council/legislation/kc_code/24_30_Title_21A.aspx. Accessed March 3, 2017.

Raedeke Associates, Inc. 2016. Critical Areas Report for NE Union Hill Road Sight Distance Improvement Project to the East and Southeast of Gunshy Manor Farm's North Driveway Located at 20005 NE Union Hill Road, King County, Washington. August 22, 2016 report to The Estate of Barbara J. Nelson, Redmond, Washington.

Talasaesa Consultants, Inc. 2016. Critical areas report – update, Gunshy Manor, King County, Washington. December 1, 2014 report, revised April 6, 2016, to The Estate of Barbara J. Nelson, Redmond, Washington.

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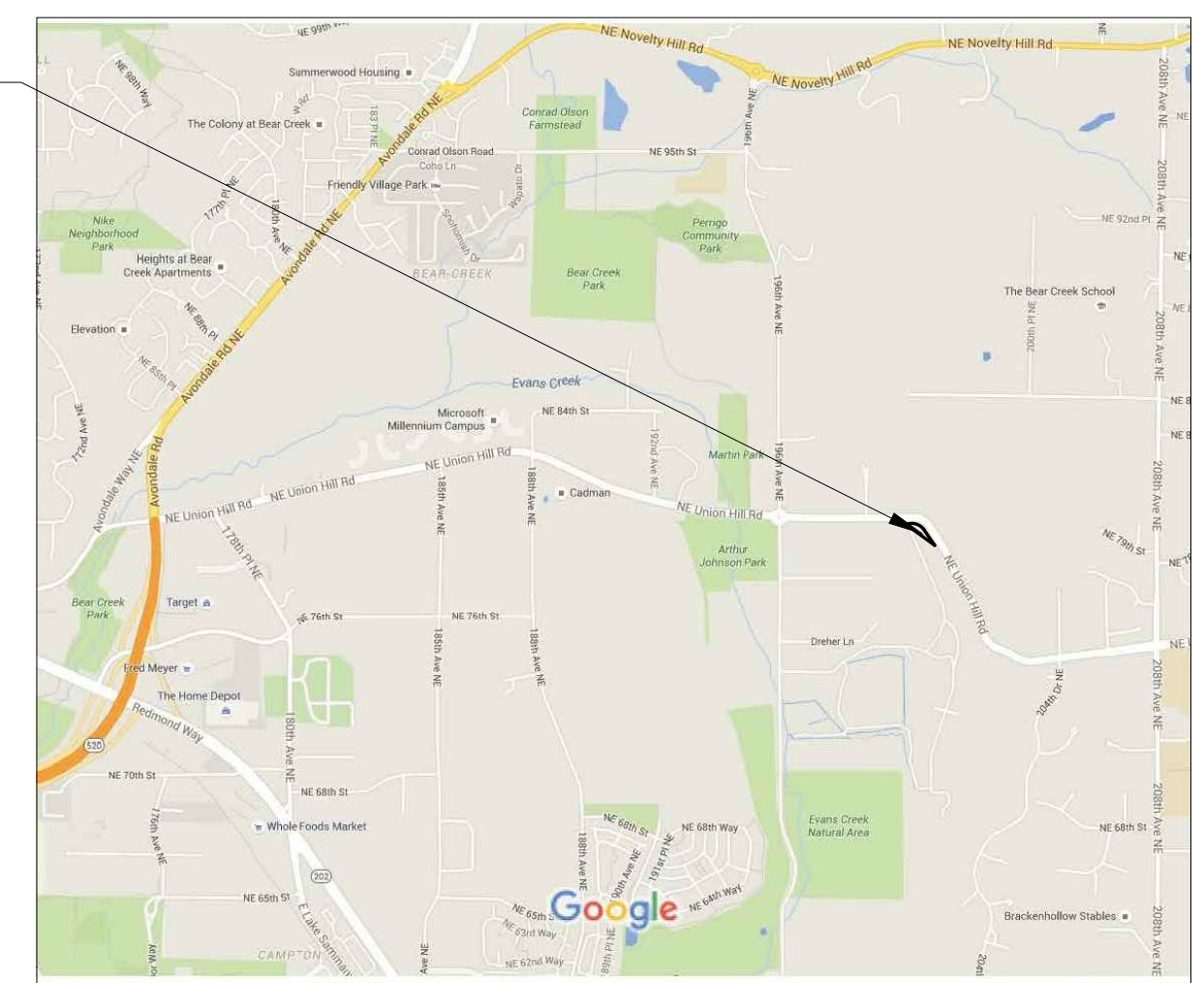
Transpo Group. 2018. Memorandum regarding Gunshy Manor Driveway/NE Union Hill Road Sight Distance Evaluation, dated January 17, 2018, to Rick Brater, PE – King County Department of Transportation, and Randy Sandin – King County DPER.



- LEGEND**
- EXISTING CONTOURS
 - MARTIN CREEK OHWL
 - MARTIN CREEK BUFFER
 - TREE REMOVAL AREA & BUFFER ENHANCEMENT 10,550 SF
 - RIPARIAN ENHANCEMENT 460 SF

- TREE LEGEND**
- TREE - FIR
 - TREE - MAPLE
 - TREE - CEDAR
 - TREE - ALDER
 - TREE - VINE MAPLE
 - TREE TO REMAIN
 - TREE TO BE PRUNED

PROJECT LOCATION



PLANT SCHEDULE FOR BUFFER ENHANCEMENT

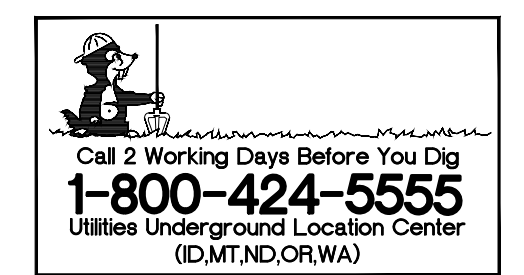
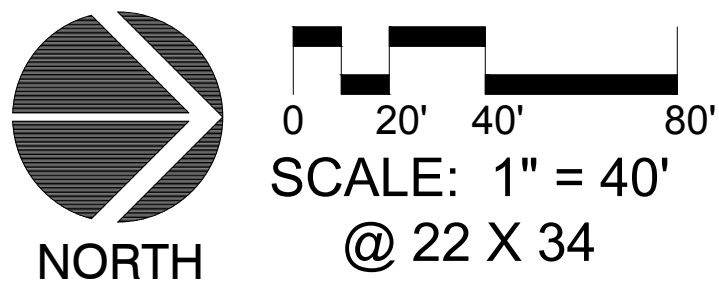
SCIENTIFIC NAME	COMMON NAME	MIN. SIZE (container)	REMARKS	SPACING	QTY.
<i>Gaultheria shallon</i>	Salal	1 gal.	Full & Bushy	8' O.C.	40
<i>Mahonia aquifolium</i>	Hollyleaved Oregon grape	1 gal.	Full & Bushy	8' O.C.	40
<i>Polystichum munitum</i>	Pineland Swordfern	1 gal.	Full & Bushy	8' O.C.	45
<i>Symphoricarpos albus</i>	Common Snowberry	1 gal.	Full & Bushy	8' O.C.	40

PLANT SCHEDULE FOR RIPARIAN ENHANCEMENT

SCIENTIFIC NAME	COMMON NAME	MIN. SIZE (container)	REMARKS	SPACING	QTY.
<i>Rosa pisocarpa</i>	Clustered Rose	1 gal.	Full & Bushy	5' O.C.	9
<i>Rubus parviflorus</i>	Western Thimbleberry	1 gal.	Full & Bushy	5' O.C.	9

PLANTS TO BE INSTALLED IN THE ENHANCEMENT AREAS WILL NEED TO BE FLAGGED WITH RIBBON FOR IDENTIFICATION.

NOTE: UP TO 3 TREES WILL BE FELLED IN THE TREE REMOVAL AREA AND LEFT AS LARGE WOODY DEBRIS. DOWNED TREES TO BE TRIMMED OR CUT TO REMAIN AS LOGS AT LEAST 20 FT. LONG AND 12 IN. IN DIAMETER AT LARGE END. TREES AND LOCATIONS TO BE DETERMINED IN THE FIELD.



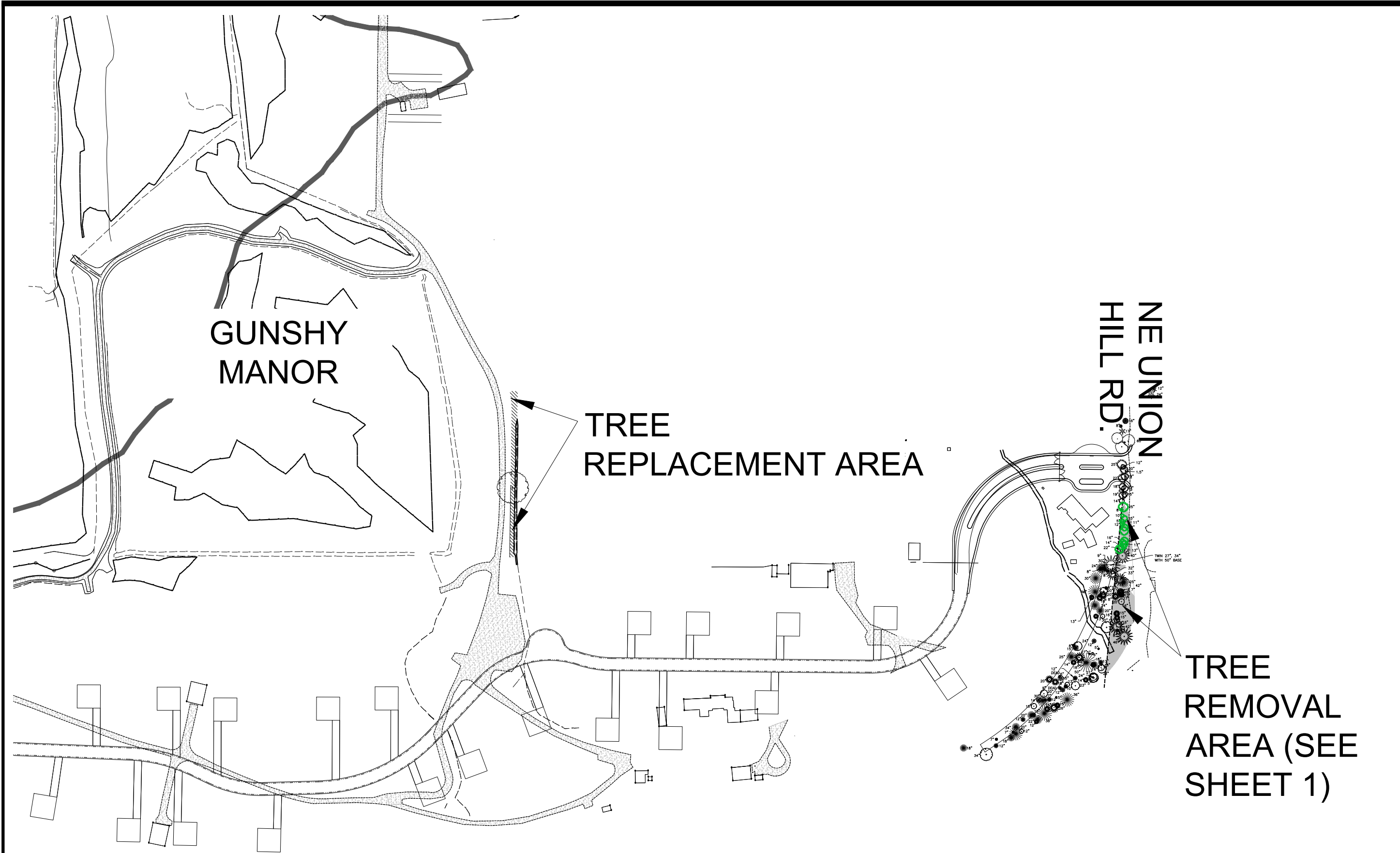
SURVEY & SIGHT TRIANGLES
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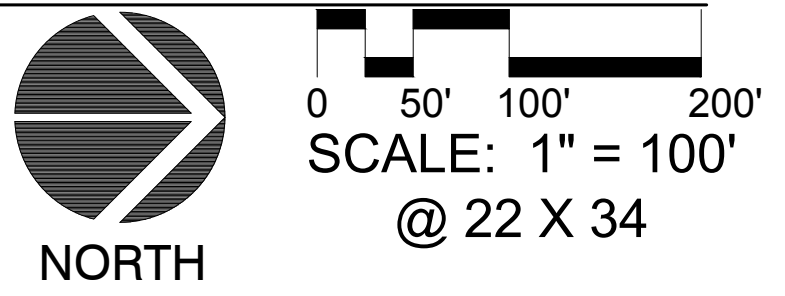
Date	By	Revision Description
8/9/18	AC	REVISED SIGHT LINE AREA
10/18	AC	REVISED TREE SURVEY & LAYOUT

RAI #	Date	Scale	Project	Drawn By	Approved By
2014-061	09/27/17	AS NOTED	RAI	AC	RAI

**RIPARIAN & BUFFER MITIGATION PLAN
PLANTING PLAN**
GUNSHY MANOR
NE UNION HILL RD. SITE DISTANCE IMPROVEMENT
KING COUNTY, WA

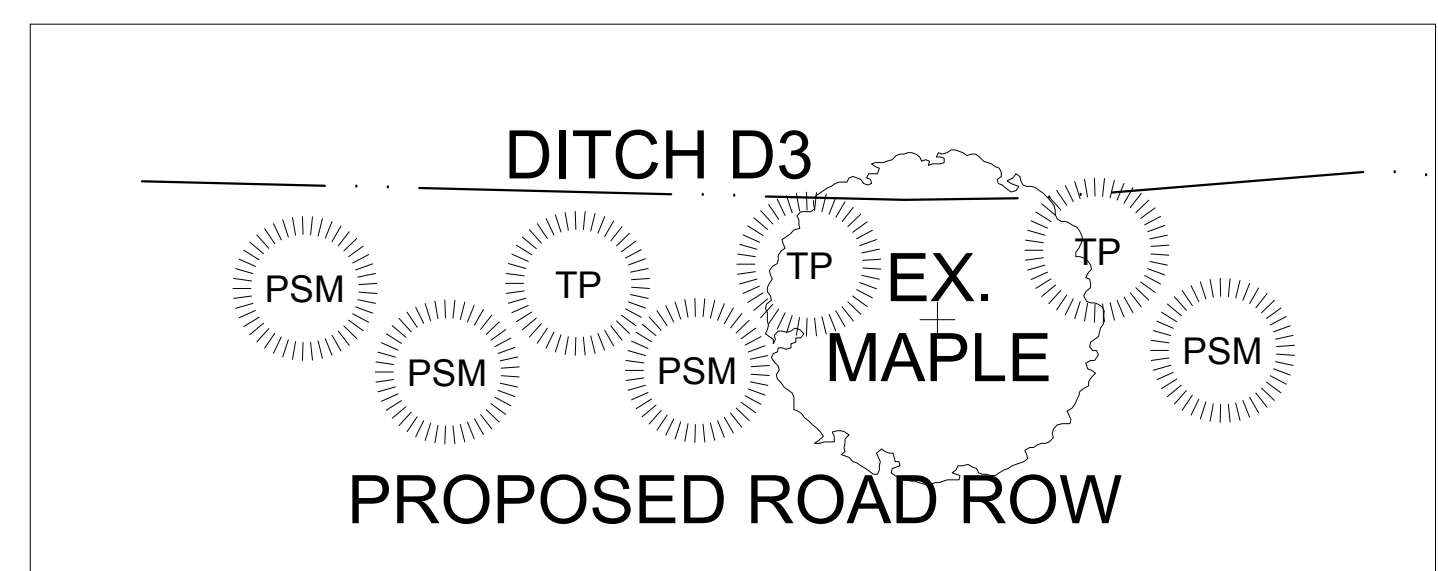


LOCATIONS OF TREE MITIGATION



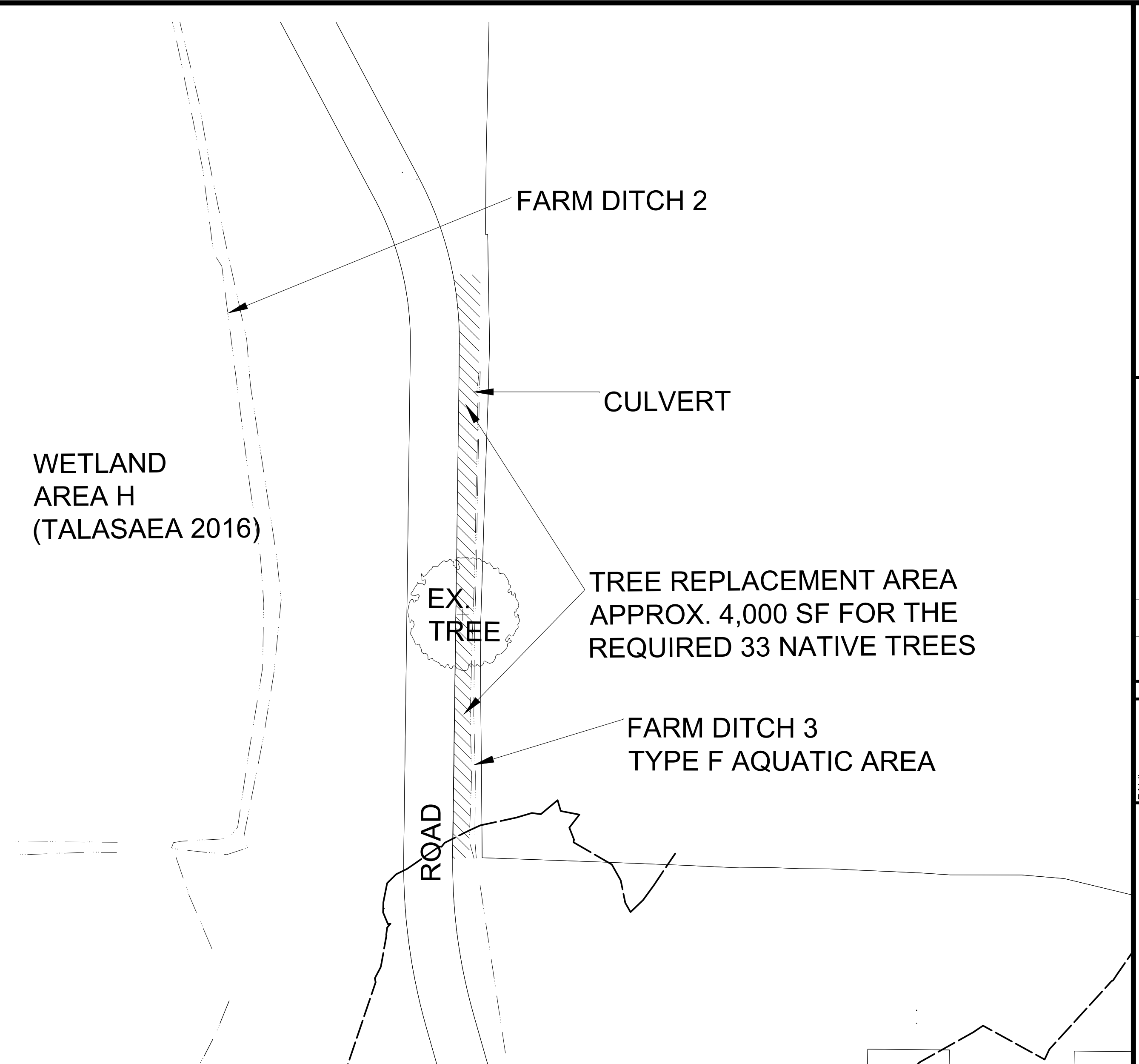
TREE REPLACEMENT LEGEND

SYMBOL	SCIENTIFIC NAME	COMMON NAME	MIN. SIZE	REMARKS	SPACING
	<i>Pseudotsuga menziesii</i>	Douglas Fir	4' tall	20	APPROX. 10' O.C.
	<i>Thuja plicata</i>	Western red Arborvitae	4' tall	13	APPROX. 10' O.C.

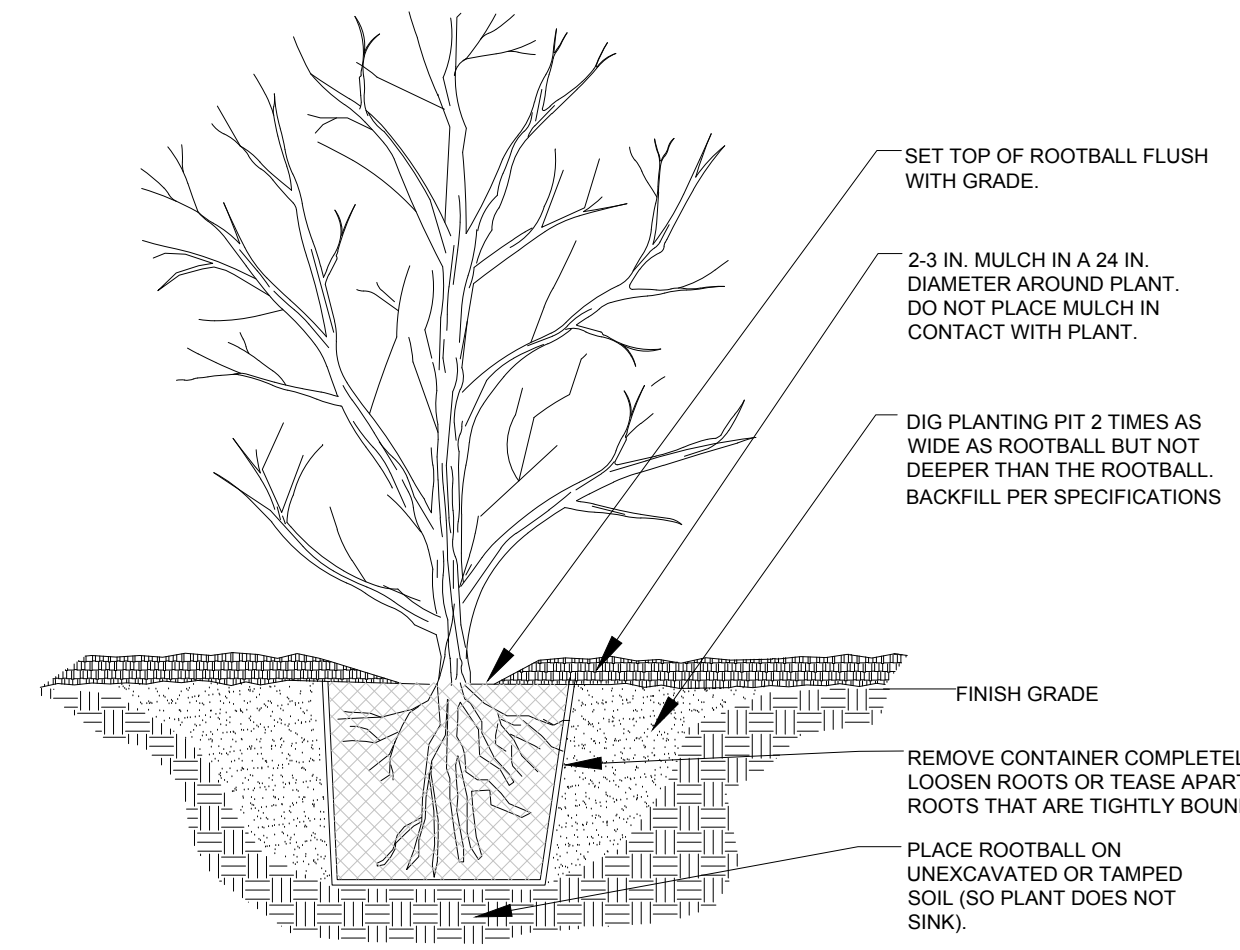
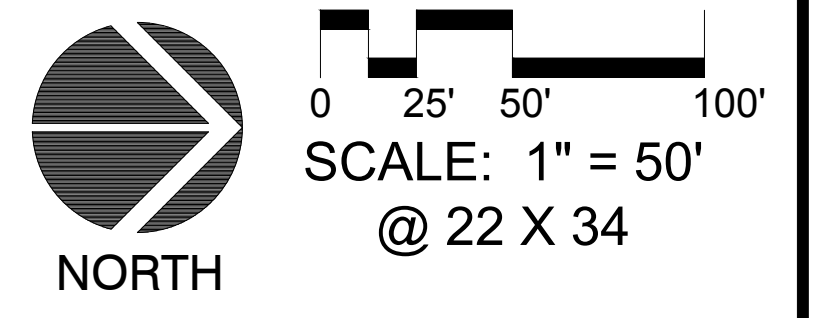


TREE PLACEMENT DIAGRAM

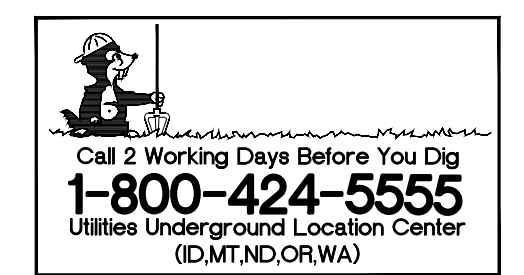
1. REMOVE SOD FROM WITHIN THE TREE PLANTING AREA & AMEND EXISTING SOIL WITH 2 TO 3 INCHES OF COMPOST.
2. PLACE THE TREES APPROX. 10 FEET FROM THE GRAVEL ROAD AT APPROX. 10 FEET O.C.
3. CEDAR TREES (*THUJA PLICATA*) SHOULD BE PLACED CLOSER TO THE DITCH AND UNDER THE SHADE OF THE EXISTING CANOPY.
4. VOLE PROTECTION SHOULD BE PLACED AROUND THE BOTTOM OF EACH TREE.
5. MULCH THE ENTIRETY OF THE TREE PLANTING AREA.



TREE REPLACEMENT AREA



1 CONTAINER TREE OR SHRUB PLANTING DETAIL



SURVEY & SIGHT TRIANGLES
ESM CONSULTING ENGINEERS
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(253) 838-6113

TRANSCO GROUP
KIRKLAND, WA 98034
(425) 821-3665

Date	By	Revision Description
8/9/18	AC	REVISED SIGHT LINE AREA
10/18	AC	REVISED TREE SURVEY & LAYOUT

RAI #	Date	Scale	Project	Drawn By	Approved By
2014-061	09/27/17	AS NOTED	RI	AC	RL

GENERAL NOTES AND CONDITIONS

1.0 GENERAL CONDITIONS

1.1 GENERAL DESCRIPTION

FURNISH ALL MATERIALS, TOOLS, EQUIPMENT, AND LABOR NECESSARY FOR THE COMPLETION OF SITE PREPARATION AND PLANTING, AS INDICATED ON DRAWINGS AND SPECIFIED HEREINAFTER. WORK INCLUDES REMOVAL OF INVASIVE PLANT SPECIES BY HAND METHODS, PLANTING, MULCHING, AND GUARANTEE OF PLANTED AREAS AS SPECIFIED HEREIN.

1.2 CONSTRUCTION OBSERVATION / QUALITY ASSURANCE / GUARANTEE

THE PROJECT BIOLOGIST / ARCHITECT SHALL BE INVOLVED DURING THE FOLLOWING PHASES OF CONSTRUCTION: (1) ON-SITE MEETING PRIOR TO COMMENCEMENT OF WORK (PRE-CONSTRUCTION MEETING), FLAG CONSTRUCTION LIMITS FOR GARBAGE, DEBRIS, AND HARD SURFACE REMOVAL; (2) APPROVAL OF INVASIVE SPECIES REMOVAL COMPLETION; (3) (3) APPROVAL OF PLANTS, PLANTING LOCATIONS AND TECHNIQUES; AND (4) FINAL INSPECTION. PRIOR NOTICE OF 48 HOURS TO THE PROJECT BIOLOGIST FOR THE ABOVE ACTIVITIES IS REQUIRED.

APPROVAL BY THE PROJECT BIOLOGIST MUST BE RECEIVED PRIOR TO PLANT SUBSTITUTIONS. THESE MAY BE PERMITTED BASED ON PLANT AVAILABILITY.

ALL PLANT MATERIAL SHALL BE GUARANTEED FOR ONE FULL YEAR FROM THE DATE OF ACCEPTANCE OF THE WORK BY THE PROJECT BIOLOGIST. ANY DEAD PLANTED MATERIAL, WITHIN A PERIOD OF ONE YEAR FROM ACCEPTANCE OF THE WORK, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR SHALL FURNISH CERTIFICATES OF INSPECTION AND COMPLIANCE TO THE PROJECT BIOLOGIST AS REQUIRED BY FEDERAL AND STATE LAWS AND REGULATIONS FOR ALL PLANT MATERIALS AND FERTILIZERS USED IN THE PROJECT.

1.3 SITE CONDITIONS / DAMAGE / CLEANUP

THE PROJECT BIOLOGIST SHALL BE NOTIFIED IMMEDIATELY IF SITE CONDITIONS DIFFER FROM THOSE SHOWN IN THE PLANS. CARE SHALL BE TAKEN TO PROTECT THE STREAM DURING CONSTRUCTION ACTIVITIES. THE MITIGATION PLANTING AREA SHALL BE CLEARLY MARKED BY CONTRACTOR AND APPROVED BY THE PROJECT BIOLOGIST PRIOR TO THE INITIATION OF CONSTRUCTION ACTIVITIES.

ANY ITEMS NOT SHOWN IN THE PLANS, SUCH AS EXISTING BUILDINGS, EQUIPMENT, UNDERGROUND UTILITIES, WALKS, AND/OR ROADS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AND/OR REPAIRED AT THE CONTRACTOR'S EXPENSE, IN A MANNER SATISFACTORY TO THE OWNER/CONSTRUCTION SITE SUPERINTENDANT BEFORE FINAL PAYMENT WILL BE MADE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING PLANTED AREAS FREE OF DEBRIS. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL SURPLUS MATERIAL, EQUIPMENT, AND DEBRIS FROM THE SITES. ALL PLANTED AREAS SHALL BE RAKE-CLEAN PRIOR TO MULCHING.

1.4 SCHEDULE

ALL GRADING AND OTHER SOIL DISTURBING ACTIVITIES WITHIN THE MITIGATION AREAS, INCLUDING BUT NOT LIMITED TO REMOVAL OF ASPHALT AND OTHER HARDENED SURFACES OR REMOVAL OF INVASIVE SPECIES, SHALL OCCUR BETWEEN MARCH 1 AND OCTOBER 30 UNLESS OTHERWISE APPROVED BY THE PROJECT BIOLOGIST OR UNLESS OTHERWISE REQUIRED BY STATE OR FEDERAL AGENCIES FOR PERMITS THAT MAY BE REQUIRED FOR PROJECT IMPLEMENTATION.

ALL WORK IN SATURATED SOILS AT ANY TIME OF THE YEAR OR DURING INCLEMENT WEATHER IS NOT ALLOWED WITHOUT APPROVAL BY THE PROJECT BIOLOGIST PRIOR TO EXECUTION, AND MAY REQUIRE USE OF TECHNIQUES AND EQUIPMENT DESIGNED TO MINIMIZE IMPACTS TO SATURATED SOILS OR ADJACENT AREAS OF STANDING WATER.

PLANTING OF WOODY MATERIAL SHOULD OCCUR BETWEEN OCTOBER 1 AND MARCH 1 TO TAKE ADVANTAGE OF SEASONAL RAINS AND GREATER AVAILABILITY OF PLANT MATERIAL. PLANTING DURING ABNORMALLY HOT, DRY, OR FREEZING WEATHER, OR AT TIMES OTHER THAN AS NOTED IS NOT ALLOWED WITHOUT PRIOR AUTHORIZATION BY THE PROJECT BIOLOGIST PRIOR TO IMPLEMENTATION AND MAY REQUIRE PLANT SUBSTITUTIONS AND SUPPLEMENTAL IRRIGATION.

2.0 PRODUCTS

2.1 TOPSOIL- IMPORTED

IF NEEDED, THE IMPORTED TOPSOIL SHALL BE FRIABLE SURFACE SOIL FROM THE A HORIZON AS DETERMINED BY THE US AGRICULTURE SOIL CONSERVATION SERVICE SOIL SURVEY. TOPSOIL SHALL BE FREE FROM: MATERIALS TOXIC TO PLANT GROWTH, NOXIOUS WEED SEEDS, RHIZOMES, ROOTS, SUBSOIL, STONES AND OTHER DEBRIS. ALL TOPSOIL SHALL PASS THROUGH A 1" SCREEN. TOPSOIL SHALL CONSIST OF A SANDY CLAY LOAM, SANDY LOAM, LOAM, CLAY LOAM, SILTY LOAM SOIL. MAXIMUM PERCENTAGES ALLOWED IN THE SOIL IS 50% SAND AND/ OR 20% CLAY. TOPSOIL SHALL BE AMENDED WITH COMPOST IF MORE ORGANIC CONTENT IS NEEDED AS DETERMINED BY THE PROJECT BIOLOGIST. CONTRACTOR SHALL PROVIDE THE PROJECT BIOLOGIST WITH A ONE POUND SAMPLE OF TOPSOIL FOR APPROVAL PRIOR TO DELIVERY TO SITE.

2.2 ORGANIC COMPOST

A WELL-DECOMPOSED, HUMUS-LIKE MATERIAL DERIVED FROM THE DECOMPOSITION OF GRASS CLIPPINGS LEAVES, BRANCHES, WOOD, AND OTHER ORGANIC MATERIALS. COMPOST SHALL BE PRODUCED AT A PERMITTED SOLID WASTE COMPOSTING FACILITY (HEALTH PERMIT, WDOE STORMWATER PERMIT, PSAPCA FACILITY, AND EQUIPMENT REGISTRATION). COMPOST MUST MEET THE DEFINITION OF "COMPOSTED MATERIALS" IN WAC 173-350-220. THIS CODE IS AVAILABLE ON-LINE AT:

HTTP://WWW.ECY.WA.GOV/PROGRAMS/SWFA/FACILITIES//350.HTML

THE SOIL AMENDMENT MUST ALSO MEET THE FOLLOWING SPECIFICATIONS:

- SCREEN SIZE (APPROX. PARTICLE SIZE): 3/4-INCH MAXIMUM
- MATURITY: GREATER THAN 80%
- MATURITY MEASURE (C/N RATIO): 35:1 MAXIMUM
- ORGANIC MATTER CONTENT BY DRY WEIGHT: 35% TO 80%
- MEETS CONTAMINANT STANDARDS FOR GRADE A COMPOST

2.3 PLANT MATERIALS

ALL PLANT MATERIAL SHALL BE LOCALLY GROWN AND BE OF ACCEPTED SIZE STANDARDS AS SPECIFIED IN "AMERICAN STANDARD FOR NURSERY STOCK - 2004" PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (ANSI Z60.1-2004V). ROOTED PLANTS SHALL BE FIRST QUALITY, WELL-FOLIATED, WITH WELL-DEVELOPED ROOT SYSTEMS, AND NORMAL WELL-SHAPED TRUNKS, LIMBS, STEMS, AND LEADS. THE PROJECT BIOLOGIST/INSPECTOR SHALL INSPECT FOR QUALITY CONFORMANCE. ALL ROOTED PLANT MATERIAL SHALL BE LABELED BY GENUS AND SPECIES. PLANTS DEEMED UNSUITABLE SHALL BE REJECTED BEFORE OR AFTER DELIVERY. ALL PLANT MATERIAL SHALL BE FREE FROM DAMAGE, DISEASE, INSECTS, INSECT EGGS AND LARVAE. BARE ROOT MATERIAL MAY BE USED IF PLANT MATERIAL IS INSTALLED BETWEEN FEBRUARY- MARCH. CONTACT PROJECT BIOLOGIST FOR PLANTING DETAILS FOR BARE ROOT MATERIAL.

2.4 BARK & STRAW MULCH

BARK MULCH SHALL CONSIST OF GROUND FIR OR HEMLOCK BARK OF UNIFORM COLOR, FREE FROM WEED, SEEDS, SAWDUST, AND SPLINTERS AND SHALL NOT CONTAIN SALTS, OR OTHER COMPONENTS DETRIMENTAL TO PLANT LIFE. SIZE RANGE OF MULCH SHALL BE FROM 1/2" TO 1-1/4" WITH MAXIMUM OF 20% PASSING A 1/2" SCREEN. STRAW MULCH WILL CONSIST OF STRAW FREE FROM WEED SEEDS.

3.0 EXECUTION

3.1 GARBAGE, DEBRIS, AND HARD SURFACE REMOVAL

REMOVE ALL GARBAGE AND OTHER DEBRIS FROM THE MITIGATION AREAS. REMOVE ALL HARD SURFACES SUCH AS GRAVEL, CONCRETE, AND ASPHALT WITHIN THE PROJECT AREA AS NEEDED. DISPOSE OF ALL DEBRIS OFF-SITE AT AN APPROVED CITY, COUNTY, OR OTHER WASTE DISPOSAL FACILITY.

3.2 INVASIVE SPECIES REMOVAL

WALK MITIGATION SITE WITH THE PROJECT BIOLOGIST TO IDENTIFY LIMITS OF INVASIVE SPECIES REMOVAL. INVASIVE SPECIES REMOVAL MAY EXTEND BEYOND THE PLANTING AREA TO REMOVE SEED SOURCES THAT WOULD NEGATIVELY IMPACT THE BUFFER RESTORATION AREA. INVASIVE SPECIES INCLUDE HIMALAYAN BLACKBERRY, ENGLISH LAUREL, ENGLISH HOLLY, REED CANARYGRASS, AND OTHER INVASIVE SPECIES IDENTIFIED BY THE PROJECT BIOLOGIST. INVASIVE SPECIES WILL BE REMOVED BY GRUBBING OUT ROOT MASS. ALL NON-NATIVE, INVASIVE SPECIES INCLUDING ALL PLANT PARTS MUST BE REMOVED FROM PROJECT SITE AND DISPOSED AT A FACILITY THAT ACCEPTS YARD WASTE.

3.3 SOD REMOVAL & COMPOST APPLICATION IN TREE REPLACEMENT AREA

REMOVE SOD USING A SOD CUTTER FROM WITHIN THE ENTIRETY OF THE TREE REPLACEMENT AREA. ONCE THE SOD IS REMOVED AMEND THE EXISTING SOIL WITH 2 TO 3 INCHES OF COMPOST.

3.4 PLANT INSTALLATION

PLANTING SHALL OCCUR ACCORDING TO PREVIOUSLY DEFINED SCHEDULE. PLANTS SHALL BE INSTALLED IN COMPLIANCE WITH DETAILS IN THE PLANS. THE PROJECT BIOLOGIST WILL EVALUATE IF ADDITIONAL SOIL AMENDMENTS ARE REQUIRED FOR PLANTING HOLES. SEE DETAILS PROVIDED IN THE PLANS.

IF CONTAINER STOCK APPEARS TO BE ROOTBOUND, SLASH ROOTS VERTICALLY WITH A SHARP KNIFE ALONG OUTSIDE OF BALL IN THREE (3) PLACES MINIMUM BEFORE PLANTING. SOAK DRIED ROOTBALLS IMMEDIATELY PRIOR TO AND AFTER PLANTING. CLEANLY PRUNE BROKEN ROOTS ONE-HALF-INCH OR GREATER IN DIAMETER.

PLANTS SHALL BE INSTALLED SO FINISH GRADE IS LEVEL WITH THE TOP OF ROOT BALL. PLANTS SHALL BE BACKFILLED AND WATER-SETTLED. NO COMPACTION OF BACKFILL IS TO OCCUR AROUND PLANT. ALL PLANTS SHALL BE WATERED THOROUGHLY IMMEDIATELY FOLLOWING INSTALLATION.

PLANTING LOCATIONS INDICATED ON THE PLAN ARE BASED ON ANTICIPATED SITE CONDITIONS. NO TREES OR SHRUBS SHALL BE PLANTED IN STANDING WATER.

3.5 MULCHING

IMMEDIATELY AFTER COMPLETION OF PLANTING, BARK MULCH THE INDIVIDUAL PLANTS IN THE RIPARIAN AND BUFFER MITIGATION AREAS. BARK MULCH THE ENTIRETY OF THE TREE REPLACEMENT AREA.

4.0 IRRIGATION

SUPPLEMENTAL WATER FOR ALL SHRUB PLANTINGS SHALL BE PROVIDED BY CONTRACTOR DURING THE FIRST TWO GROWING SEASON AFTER INSTALLATION TO ENSURE SURVIVAL OF PLANT MATERIAL. HAND WATERING OR A TEMPORARY IRRIGATION SYSTEM MAY BE USED.

5.0 PLANT ACCEPTANCE AND GUARANTEE PERIOD

FOLLOWING COMPLETION OF THE INSTALLATION OF THE BUFFER RESTORATION BY CONTRACTOR AND FINAL APPROVAL BY THE PROJECT BIOLOGIST, THE LANDSCAPE PLANTING WARRANTY PROVIDED BY CONTRACTOR SHALL BE IN EFFECT. FROM THIS DATE FORWARD, FOR A PERIOD OF ONE YEAR, A 100% SURVIVORSHIP OF NEWLY INSTALLED PLANT MATERIAL IS REQUIRED UNDER THIS GUARANTEE. IF MORTALITY OCCURS DURING THIS PERIOD, THE PROJECT BIOLOGIST WILL SPECIFY WHICH PLANTS WILL BE REPLACED BY CONTRACTOR TO ACHIEVE A 100% SURVIVAL RATE. SPECIFIED PLANTS SHALL BE REPLACED WITH PLANTS OF SPECIES, SIZES, AND CONDITIONS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE PROJECT BIOLOGIST IN WRITING. ALL MAINTENANCE OF PLANTED AREAS DURING THE GUARANTEE PERIOD SHALL BE BY THE CONTRACTOR AND SHALL INCLUDE ITEMS AS INDICATED TO FULLY ESTABLISH ALL PLANTED AREAS TO A HEALTHY, VIGOROUS STATE.

AT THE END OF THE ONE-YEAR WARRANTY PERIOD, AND FOLLOWING REPLACEMENT OF ANY DEAD OR DEFECTIVE PLANT MATERIAL BY THE CONTRACTOR, THE PROJECT BIOLOGIST WILL CERTIFY IN WRITING THE PLANT MATERIAL IS SUITABLE AND HAS BEEN ACCEPTED AND THAT THE ONE-YEAR WARRANTY IS NO LONGER IN EFFECT.

MONITORING NOTES & MAINTENANCE PLAN

1.0 MONITORING PROGRAM

THIS PLAN INCLUDES A SYSTEMATIC MONITORING PROGRAM OF THE RIPARIAN AND BUFFER ENHANCEMENT AREAS TO EVALUATE THE SUCCESS OF THE MITIGATION EFFORT. THE RESULTS OF THE MONITORING WILL BE USED TO DEVELOP ANY NEEDED MODIFICATIONS AND/OR ALTERATIONS OF THE SITE IN SUBSEQUENT YEARS.

THE PURPOSES OF THE MONITORING PROGRAM ARE: (1) TO DOCUMENT PHYSICAL AND BIOLOGICAL CHARACTERISTICS OF THE MITIGATION AREA, AND (2) TO ENSURE THAT THE GOALS AND OBJECTIVES COMPLY WITH PERMIT SPECIFICATIONS.

THE MONITORING PROCESS WOULD CONSIST OF THREE DISTINCT PHASES: (1) CONSTRUCTION MONITORING; (2) COMPLIANCE MONITORING; AND (3) LONG-TERM MONITORING. THE "TIME-ZERO" OR BASELINE COMPOSITION, STRUCTURE, AND COVER ABUNDANCE WOULD BE DOCUMENTED DURING THE COMPLIANCE MONITORING PHASE. THE LONG-TERM MONITORING PROGRAM WOULD DOCUMENT THE SURVIVAL OF PLANTED VEGETATION AND RATES OF COLONIZATION BY OTHER PLANTS (I.E., IN PLANTED AREAS) OVER A THREE-YEAR PERIOD AFTER INSTALLATION OF THE RIPARIAN AND BUFFER ENHANCEMENT HAS BEEN COMPLETED.

THE FOLLOWING SECTIONS DESCRIBE THE ELEMENTS OF AN EFFECTIVE MONITORING PROGRAM.

1.1 CONSTRUCTION MONITORING

THE PROJECT BIOLOGIST WOULD BE PRESENT ON-SITE DURING THE VARIOUS STAGES OF CONSTRUCTION IN ORDER TO: (1) DEMARK THE LIMITS OF THE AREAS TO BE RESTORED; (2) REVIEW THE REMOVAL OF HARD SURFACES AND THE DECOMPACTION OF THOSE AREAS (3) REVIEW AND APPROVE THE PLANT MATERIALS AND RECOMMEND THEIR FINAL PLACEMENT BEFORE PLANTING; (4) ENSURE THAT CONSTRUCTION ACTIVITIES ARE CONDUCTED PER THE APPROVED PLAN; AND (5) RESOLVE PROBLEMS THAT ARISE DURING CONSTRUCTION, THUS LESSENING PROBLEMS THAT MIGHT OCCUR LATER DURING THE LONG-TERM MONITORING PHASE.

1.2 COMPLIANCE MONITORING

COMPLIANCE MONITORING CONSISTS OF EVALUATING THE RESTORATION AREAS IMMEDIATELY AFTER ALL FEATURES OF THE MITIGATION PLAN HAVE BEEN INSTALLED BY THE CONTRACTOR. THE OBJECTIVES WOULD BE TO CERTIFY THAT ALL DESIGN FEATURES, AS AGREED TO IN THE PLANTING PLAN, HAVE BEEN CORRECTLY AND FULLY IMPLEMENTED, AND THAT ANY CHANGES MADE IN THE FIELD ARE CONSISTENT WITH THE INTENT OF THE DESIGN. EVALUATION OF THE PLANTING AREAS AFTER IMPLEMENTATION WOULD BE DONE BY THE BIOLOGIST USING EVALUATION STANDARDS AND CRITERIA DISCUSSED IN SECTION 2.0.

THE COMPLIANCE MONITORING PHASE WOULD CONCLUDE WITH THE PREPARATION OF A BRIEF COMPLIANCE REPORT BY THE BIOLOGIST. THE REPORT WOULD VERIFY THAT ALL DESIGN FEATURES HAVE BEEN CORRECTLY, FULLY, AND SUCCESSFULLY INCORPORATED.

SUBSTANTIVE CHANGES MADE IN THE PLANTING PLANS WOULD BE NOTED IN THE COMPLIANCE REPORT AND ON THE DRAWINGS FOR USE DURING THE LONG-TERM MONITORING PHASE. DOCUMENTATION OF PLAN CHANGES SHOULD INCLUDE WHAT WAS DONE, WHERE, WHY, AT WHOSE REQUEST, AND THE RESULT OF THE CHANGE. LOCATIONS OF MONITORING STATIONS ESTABLISHED FOR THE COMPLIANCE MONITORING WOULD BE IDENTIFIED ON THE AS-BUILT PLANS.

THE PLANTING PLANS, WITH THE COMPLIANCE REPORT, WOULD DOCUMENT "AS-BUILT" CONDITIONS AT THE TIME OF CONSTRUCTION COMPLIANCE. A QUANTITATIVE ASSESSMENT OF THE PLANTS ESTABLISHED IN THE BUFFER RESTORATION AREA WOULD BE RECORDED AT REPRESENTATIVE SAMPLE PLOTS FOR BASELINE DATA. THIS INFORMATION WOULD BE USED TO DOCUMENT "TIME-ZERO" CONDITIONS FROM WHICH THE LONG-TERM MONITORING PERIOD WOULD BEGIN. THE COMPLIANCE REPORT AND AS-BUILT DRAWINGS WOULD BE SUBMITTED TO KING COUNTY.

1.3 LONG-TERM MONITORING

LONG-TERM MONITORING WOULD BE CONDUCTED OVER THREE GROWING SEASONS FOLLOWING APPROVAL OF THE COMPLIANCE REPORT AND AS-BUILT PLAN BY THE CITY. LONG-TERM MONITORING WOULD EVALUATE THE ESTABLISHMENT AND MAINTENANCE OF THE PLANT COMMUNITY IN THE RESTORED BUFFER AND THE TREES TO DETERMINE IF THE GOALS AND OBJECTIVES OF THE MITIGATION PLAN HAVE BEEN MET.

PLANT SPECIES WOULD BE IDENTIFIED AND PLANT COUNTS WOULD BE MADE DURING THE EACH YEAR OF THE LONG-TERM MONITORING IN ORDER TO DOCUMENT THE PERCENT SURVIVAL OF EACH PLANTED SPECIES. PLANT IDENTIFICATIONS WOULD BE MADE ACCORDING TO STANDARD TAXONOMIC PROCEDURES DESCRIBED IN HITCHCOCK AND CRONQUIST (1976), WITH NOMENCLATURE AS UPDATED BY THE U.S. ARMY CORPS OF ENGINEERS NATIONAL WETLAND PLANT LIST (LICHVAR AND KARTESZ 2009), SIGNS OF PLANTING STRESS OR DAMAGE, PRESENCE OF INVASIVE SPECIES, AS WELL AS SIGNS OF VIGOR, AND RATES OF COLONIZATION BY OTHER PLANTS (I.E., IN BARE SOIL AREAS) WOULD BE DOCUMENTED DURING EACH YEAR OF THE LONG-TERM MONITORING.

PHOTOS WOULD BE TAKEN ANNUALLY TO PROVIDE PHYSICAL DOCUMENTATION OF THE CONDITION OF THE MITIGATION AREAS. PHOTOGRAPHS WOULD BE TAKEN FROM ALL LOCATIONS ESTABLISHED DURING THE COMPLIANCE MONITORING SITE VISIT AND EACH YEAR THEREAFTER OF THE MONITORING PERIOD FROM THE ESTABLISHED LOCATION POINTS.

1.4 MONITORING AND REPORTING SCHEDULE AND CONTENTS

FORMAL MONITORING OF THE RIPARIAN AND BUFFER ENHANCEMENT AREA AND THE REPLACEMENT TREES WOULD OCCUR AFTER THE SEASON'S GROWTH IS VIRTUALLY COMPLETE (RECOMMENDED DURING AUGUST OR SEPTEMBER). IN ADDITION, SPRING SITE CHECKS WOULD BE CONDUCTED DURING EACH YEAR OF THE THREE-YEAR LONG-TERM MONITORING PERIOD TO ASSESS SITE PROGRESS AND TO DETERMINE WHETHER SITE MAINTENANCE IS NEEDED.

MONITORING REPORTS WOULD BE PREPARED FOLLOWING THE COMPLETION OF THE GROWING SEASON OF EACH YEAR OF THE THREE-YEAR LONG-TERM MONITORING PERIOD FOR SUBMITTAL TO KING COUNTY. THE LONG-TERM MONITORING PERIOD WILL COMMENCE FOLLOWING ACCEPTANCE OF THE COMPLIANCE REPORT AND "AS-BUILT" DRAWINGS BY KING COUNTY.

MONITORING REPORTS WOULD BE SUBMITTED FOR REVIEW AND APPROVAL BY KING COUNTY AS SOON AS POSSIBLE AFTER THE MONITORING HAS BEEN COMPLETED, WITH A TARGET DATE OF DECEMBER 31 OF EACH MONITORING YEAR. THE REPORT WOULD DOCUMENT CONDITIONS WITHIN THE RESTORED AREAS AND MAKE RECOMMENDATIONS FOR CORRECTING ANY PROBLEMS ENCOUNTERED.

2.0 PERFORMANCE STANDARDS

SPECIFIC PERFORMANCE STANDARDS TO BE USED IN THE THREE-YEAR LONG-TERM MONITORING ARE THE FOLLOWING:

- 100% SURVIVAL OF ALL PLANTED VEGETATION (TREES, SHRUBS AND GROUNDCOVERS) IN THE RIPARIAN AND BUFFER MITIGATION AREAS AND THE TREE REPLACEMENT AREA FOLLOWING COMPLETION OF THE FIRST YEAR AFTER PLANTING. ALL PLANTINGS THAT DO NOT SURVIVE DURING THE FIRST YEAR MUST BE REPLACED WITH THE SAME OR SIMILAR SPECIES AND SPECIFICATIONS. UPON INSTALLATION OF REPLACEMENT PLANTINGS AT THE CONCLUSION OF THE FIRST YEAR, THE 100% SURVIVAL PERFORMANCE STANDARD WILL BE CONSIDERED TO BE MET;

- 85% SURVIVAL OF ALL PLANTED VEGETATION (TREES, SHRUBS, AND GROUNDCOVERS) IN THE BUFFER MITIGATION AND THE TREE REPLACEMENT AREAS FOLLOWING COMPLETION OF EACH YEAR AFTER PLANTING. SUFFICIENT PLANTINGS WILL BE REPLACED, AS NECESSARY, WITH THE SAME OR SIMILAR SPECIES AND SPECIFICATIONS IN ORDER TO MEET THE 85% SURVIVAL STANDARD.

- THERE WILL BE NO MORE THAN 10% COVER BY HIMALAYAN BLACKBERRY OR OTHER INVASIVE PLANT SPECIES, AS IDENTIFIED BY THE PROJECT BIOLOGIST AT ANY TIME DURING THE THREE-YEAR MONITORING PERIOD WITHIN THE AREA OF BUFFER ENHANCEMENT.

3.0 CONTINGENCY PLAN

CONTINGENCY PLANS ARE NEEDED IF POST-MITIGATION MONITORING SHOWS THAT OBJECTIVES AND PERFORMANCE STANDARDS HAVE NOT BEEN MET. IT SHOULD BE NOTED, HOWEVER, THAT IT IS NOT POSSIBLE TO DEVELOP A DETAILED CONTINGENCY PLAN UNTIL THE SPECIFIC PROBLEMS THAT NEED TO BE ADDRESSED ARE KNOWN. IT WOULD BE UNPRODUCTIVE TO TRY TO ANTICIPATE ALL POSSIBLE PROBLEMS AND THEIR SOLUTIONS AT THIS TIME.

COMMON PROBLEMS, BOTH HUMAN AND NATURAL, THAT MIGHT ARISE CAN BE IDENTIFIED AND GENERAL RECOMMENDATIONS FOR REMEDY PROPOSED. FOR EXAMPLE, AFTER THE SECOND YEAR, PLANT COMMUNITIES WITHIN THE RESTORED AND ENHANCED AREAS MAY NOT BE ESTABLISHED AT ACCEPTABLE LEVELS. IT MAY BE NECESSARY TO REPLANT WITH NEW OR DIFFERENT STOCK, PROVIDE ADDITIONAL WATERING OR IRRIGATION DURING CRITICAL SEASONS OR AUGMENT THE SOIL.

IF MONITORING REVEALS A SIGNIFICANT DEVIATION FROM PREDICTED IMPACT OR A FAILURE OF MITIGATION REQUIREMENTS, THE APPLICANT SHALL IMPLEMENT AN APPROVED CONTINGENCY PLAN. THE CONTINGENCY PLAN CONSTITUTES NEW MITIGATION AND IS SUBJECT TO ALL MITIGATION INCLUDING A MONITORING PLAN AND FINANCIAL GUARANTEE REQUIREMENTS.

3.0 MAINTENANCE

3.1 IRRIGATION

SUPPLEMENTAL WATER WILL BE PROVIDED TO ALL TREE AND SHRUB PLANTINGS DURING THE FIRST TWO GROWING SEASONS FOLLOWING INSTALLATION. HAND WATERING OR A TEMPORARY IRRIGATION SYSTEM MAY BE USED. IRRIGATION WILL OCCUR FROM JUNE 1 THROUGH OCTOBER 30 OR OTHER PERIODS OF HOT, DRY WEATHER AND WILL DELIVER APPROXIMATELY 1 INCH OF WATER PER WEEK THROUGHOUT THE RESTORATION AREAS. IF WATERED BY HAND, THEN THE MINIMUM WATERING REQUIREMENTS WILL BE 1 TO 3 GALLONS OF WATER FOR SMALL SHRUBS AND 3 TO 5 GALLONS PER WEEK FOR SAPLING TREES AND LARGE SHRUBS. THESE MINIMUM REQUIREMENTS ARE GUIDELINES THAT MAY VARY DEPENDING ON PLANT LOCATION, EXPOSURE, SOIL CONDITION, AND PRESENCE OF EXISTING VEGETATION.

3.2 SITE MAINTENANCE

THE ENHANCED BUFFER, RIPARIAN AREA & REPLACEMENT TREE AREA ARE DESIGNED TO BE SELF-SUSTAINING. TO ENSURE THE SUCCESS OF THE PLANTINGS, ADDITIONAL REPLANTING AND CONTROL OF UNDESIRABLE PLANT SPECIES MAY BE NECESSARY AFTER INITIAL INSTALLATION. THIS MAINTENANCE PLAN INCLUDES ALL ACTIONS REQUIRED TO MAINTAIN PLANTS, CONTROL COMPETITION WITH GRASSES AND WEEDS, AND LIMIT DIE-BACK OR MORTALITY DUE TO INADEQUATE SOIL MOISTURE TO WITHIN PERFORMANCE STANDARDS SPECIFIED ABOVE.

UPON COMPLETION OF THE REMOVAL OF ALL NON-CONFORMING STRUCTURES AND INSTALLATION OF THE RESTORATION PLANTINGS, MULCH AND ALL OTHER ITEMS SPECIFIED BY THE ENHANCEMENT PLAN, ALL SURPLUS MATERIAL, EQUIPMENT, AND DEBRIS SHALL BE REMOVED FROM THE MITIGATION SITE. ALL SILT FENCES WILL BE REMOVED FROM WITHIN THE ENHANCED/RESTORED BUFFER WHEN THE ADJACENT HERBACEOUS VEGETATION IS ONE FOOT IN HEIGHT OR AS APPROVED BY THE PROJECT BIOLOGIST AND OR KING COUNTY.

THE SITE MAINTENANCE PROGRAM WOULD COMMENCE UPON APPROVAL OF THE COMPLIANCE REPORT AND AS-BUILT PLAN BY THE COUNTY. THE SITES WOULD BE REGULARLY MAINTAINED FOR THE DURATION OF THE LONG-TERM MONITORING PERIOD. THE PROJECT BIOLOGIST WOULD INSPECT THE SITE DURING SPRING (MARCH-APRIL) DURING EACH YEAR OF THE LONG-TERM MONITORING PERIOD TO IDENTIFY ANY DEVELOPING PROBLEMS WITHIN THE MITIGATION SITE. ITEMS TO BE EVALUATED WITHIN THE RESTORATION AREAS INCLUDE IRRIGATION SYSTEM OPERABILITY (IF APPLICABLE), PRESENCE OF INVASIVE SPECIES, PLANT HEALTH, ANIMAL DAMAGE TO PLANTINGS, AND PRESENCE OF TRASH.

THE PROJECT BIOLOGIST WOULD SUBMIT A WRITTEN SUMMARY OF HIS/HER FINDINGS ALONG WITH MAINTENANCE RECOMMENDATIONS TO THE PROJECT PROPONENT WITHIN 10 DAYS AFTER COMPLETION OF HIS/HER INSPECTION. MAINTENANCE RECOMMENDATIONS WOULD BE IMPLEMENTED BY THE PROJECT PROPONENT WITHIN 30 DAYS OF RECEIPT FROM THE PROJECT BIOLOGIST.

INVASIVE SPECIES WOULD BE CONTROLLED BY METHODS THAT DO NOT COMPROMISE THE ESTABLISHED VEGETATION OR THE REST OF THE RESTORATION PLANTINGS. UNLESS OTHERWISE AUTHORIZED BY THE PROJECT BIOLOGIST, REMOVAL OF INVASIVE SPECIES WILL BE DONE BY HAND, WITH HAND PULLING OF ALL WEEDS WITHIN THE DRIP RING OF ANY INSTALLED SHRUB OR TREE. NO WEED-WHIPPIING WITH MECHANIZED LINE TRIMMERS WILL BE ALLOWED BETWEEN WOODY PLANTS WITHIN CLUSTER OR CLUMPED PLANTINGS.

4.0 PROJECT ACCEPTANCE

AFTER COMPLETION OF THE THREE-YEAR MONITORING PERIOD AND CONFIRMATION BY KING COUNTY THAT THE BUFFER ENHANCEMENT & REPLACEMENT TREES HAVE SUCCESSFULLY MET THE PERFORMANCE STANDARDS, KING COUNTY SHALL PROVIDE WRITTEN ACCEPTANCE AND APPROVAL OF THE MITIGATION SITES AND RELEASE ALL BONDS IN PLACE AS GUARANTEE OF MITIGATION SITE CONSTRUCTION AND PERFORMANCE.



Revision Description	By	Date
REVISED SIGHT LINE AREA	AC	8/9/18
REVISED TREE SURVEY & LAYOUT	AC	10/18

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Date:	09/27/2017
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Project	
Manager: RL	
Drawn By:	
AC	
Revised	
By: RL	

RIPARIAN & BUFFER MITIGATION PLAN
GENERAL, MAINTENANCE, & MONITORING NOTES
 GUNSHY MANOR
NE UNION HILL RD. SITE DISTANCE IMPROVEMENT
 KING COUNTY, WA

SHEET
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 OF
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