

**WETLAND DELINEATION UPDATE
AND PRELIMINARY BUFFER
ENHANCEMENT PLAN**

**Toll 44th Street
Marysville, Washington**

June 10, 2022

RAEDEKE ASSOCIATES, INC.

Report To: Mr. David Morse
Toll Brothers, Inc.
9720 NE 120th Place, Suite 100
Kirkland, WA 98034

Title: Wetland Delineation Update and Preliminary Buffer
Enhancement Plan for
Toll 44th Street
Marysville, Washington

RAI Project Number: 2021-056-100

Prepared by: RAEDEKE ASSOCIATES, INC.
2111 N. Northgate Way Ste. 219
Seattle, Washington, 98133
(206) 525-8122

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Project Manager: Kolten T. Kusters, MS, PWS
Wetland Scientist

Project Personnel: Annamaria Clark, BS, PWS
Wetland Biologist

Anne Dowell, PLA
Landscape Architect

Courtney Straight, BS, WPIT
Wetland/Wildlife Biologist

Submitted by:



Signature

Kolten T. Kusters
Printed Name

Date: June 10, 2022

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1.0 INTRODUCTION

1.1 PURPOSE

Raedeke Associates, Inc. was retained by Toll Brothers to provide a critical areas investigation for the Toll 44th Street project site located in Marysville, Washington. As part of this assessment, we conducted a site visit to investigate the area for any wetlands, streams, or critical fish and wildlife habitat on or in vicinity of the project site. During our site visit, we identified and delineated two on-site wetlands in the western parcel of the project (Tax Parcel Nos. 30053500303600). We did not observe any other wetlands on or in vicinity of the project site.

The City of Marysville conveyed that a previous critical area report prepared by Wetland Resources, Inc. (WRI 2019) for the same property was previously submitted and approved in 2019 (Appendix B). That report was accepted by the City of Marysville and is still valid, therefore an updated Critical Area Report was not required, and the City instead requested a wetland technical memorandum be submitted for this project. Toll Brothers agreed to accept the wetland ratings determined by WRI in their 2019 report. Raedeke Associates, Inc. has provided an updated delineation, which was surveyed and utilized for development of the site plans.

In addition, Toll Brothers will enhance degraded areas of the Wetland 1 buffer in the vicinity of the current residence and driveway on Parcel No. 30053500303600. This report serves to fulfil the request for a wetland technical memorandum and provides a buffer enhancement plan per City of Marysville (2022; MMC 22E.010.100.3) requirements.

1.2 PROPERTY LOCATION

The Toll 44th Street Marysville project site consists of Snohomish County Tax Parcel Nos. 30053500303600 and -3700 which are partially developed lots with single-family residences at 7315 & 7417 44th Street NE in the City of Marysville, Washington (Figure 1) which places the project in a portion of Section 35, Township 30 North, Range 5 East, W.M.

The project site is bordered to the north, west, and east by private residential properties and to the south by 44th Street NE (aka Line Road). The properties are accessed from private driveways along 44th Street NE.

2.0 WETLANDS

2.1 DEFINITIONS AND METHODOLOGIES

Wetlands and streams are protected by federal law as well as by state and local regulations. Federal law (Section 404 of the Clean Water Act) prohibits the discharge of dredged or fill material into “Waters of the United States”, including certain wetlands, without a permit from the U.S. Army Corps of Engineers (COE 2021, 2022). The COE makes the final determination as to whether an area meets the definition of a wetland and whether the wetland is under their jurisdiction.

2.1.1 Wetlands

The COE wetland definition was used to determine if any portions of the project area could be classified as wetland. A wetland is defined as an area “inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (Federal Register 1986:41251).

We based our investigation upon the guidelines of the U. S. Army Corps of Engineers (COE) Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent amendments and clarifications provided by the COE (1991a, 1991b, 1992, 1994), as updated for this area by the regional supplement to the COE wetland delineation manual for the Western Mountains, Valleys, and Coast Region (COE 2010). The COE wetlands manual is required by state law (WAC 173-22-035, as revised) for all local jurisdictions.

Hydrophytic vegetation is defined as “macrophytic plant life growing in water, soil or substrate that is at least periodically deficient in oxygen as a result of excessive water content” (Environmental Laboratory 1987). The U.S. Army Corps of Engineers National Wetland Plant List wetland indicator status (WIS) ratings were used to make this determination (COE 2020). The WIS ratings “reflect the range of estimated probabilities (expressed as a frequency of occurrence) of a species occurring in wetland versus non-wetland across the entire distribution of the species” (Reed 1988:8). Plants are rated, from highest to lowest probability of occurrence in wetlands, as obligate (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and upland (UPL), respectively. In general, hydrophytic vegetation is present when the majority of the dominant species are rated OBL, FACW, and FAC.

A hydric soil is defined as “a soil that is formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part” (Federal Register 1995: 35681). The morphological characteristics of the soils in the study area were examined to determine whether any could be classified as hydric.

According to the 1987 methodology, wetland hydrology could be present if the soils were saturated (sufficient to produce anaerobic conditions) within the majority of the rooting zone (usually the upper 12 inches) for at least 5% of the growing season, which in this area is usually at least 2 weeks (COE 1991a). It should be noted, however, that areas having saturation to the surface between 5% and 12% of the growing season may or may not be wetland (COE 1991b). Depending on soil type and drainage characteristics, saturation to the surface would occur if water tables were shallower than about 12 inches below the soil surface during this time period. Positive indicators of wetland hydrology include direct observation of inundation or soil saturation, as well as indirect evidence such as driftlines, watermarks, surface encrustations, and drainage patterns (Environmental Laboratory 1987). Hydrology was further investigated by noting drainage patterns and surface water connections between wetlands and streams within and adjacent to the project area.

2.1.2 Ordinary High Water Mark Determination

We based our evaluation of the stream Ordinary High Water Mark (OHWM) on definitions provided under the Washington State Shoreline Management Act of 1971. The Washington State definition for the OHWM is as follows:

Ordinary high water mark or "OHWM" means the mark on the shores of all waters that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual and so long continued in ordinary years, as to mark upon the soil or vegetation a character distinct from that of the abutting upland, provided that in any area where the ordinary high water line cannot be found, the ordinary high water line adjoining saltwater shall be the line of mean higher high water, and the ordinary high water line adjoining freshwater shall be the elevation of the mean annual flood." ... (RCW 90.58.030(2)(b) and WAC173-22-030(5).

As outlined in the WDOE (2016) Shoreline Administrators Manual, the general guidelines for determining the OHWM include: (1) a clear vegetation mark; (2) wetland/upland edge; (3) elevation; (4) a combination of changes in vegetation, elevation, and landward limit of drift deposition; (5) soil surface changes from algae or sediment deposition to areas where soils show no sign of depositional processes; and/or (6) soil profile changes from wetter conditions (low chroma, high soil organic matter, and lack of mottling) to drier conditions (higher chroma, less organic matter, or brighter mottles).

2.2 FIELD SAMPLING PROCEDURES

We visited the site on May 27, September 30, and December 17 of 2021, as well as June 4, 2022 to investigate the project site and immediate vicinity for critical areas. During our site visits, we also collected information sufficient to describe the general site conditions.

Vegetation, soils, and hydrology were examined in representative portions of the study area according to the procedures described in the Regional Supplement (COE 2010). Plant communities were inventoried, classified, and described during our field investigation. We estimated the percent coverage of each species. Plant identifications were made according to standard taxonomic procedures described in Hitchcock and Cronquist (2018), with nomenclature as updated by the U.S. Army Corps of Engineers National Wetland Plant List (COE 2020). Wetland classification follows the USFWS wetland classification system (Cowardin et al. 1992). We determined the absence of a hydrophytic vegetation community using the procedure described in the Regional Supplement (COE 2010), which requires the use of the dominance test, unless positive indicators of hydric soils and wetland hydrology are also present, in which case the prevalence index or the use of other indicators of a hydrophytic vegetation community as described in the Regional Supplement (COE 2010) may also be required.

We excavated pits to at least 18 inches below the soil surface, where possible, in order to describe the soil and hydrologic conditions throughout the study area. We sampled soil at locations that corresponded with vegetation sampling areas and potential wetland areas. Soil colors were determined using the Munsell Soil Color Chart (Munsell Color 2009). We used the indicators described in the Regional Supplement (COE 2010) to determine the presence of hydric soils and wetland hydrology.

We identified two on-site wetlands and flagged the boundaries with pink and black striped flags. Sample plot locations were flagged with red and white striped flags.

3.0 RESULTS

We identified two on-site wetlands. Wetland 1 is located in a depression area along the western portion of Parcel No. 30053500303600. Wetland Y is located directly east of the gravel driveway on the same parcel. We did not identify stream channelization on-site. This is consistent with the findings in the previous Critical Area Report (WRI 2019) (Appendix B). As stated above, that report was previously reviewed and accepted by the City of Marysville and continues to be valid. Toll Brothers agreed to accept the wetland ratings and buffers determined by that report. WRI determined Wetland 1 (known as Wetland A in the WRI report) to be a Category I wetland receiving 125-foot-wide buffer and determined Wetland Y (known as Wetland B in the WRI report) to be a Category III wetland receiving a 75-foot-wide buffer.

Raedeke Associates, Inc. provided updated delineations for both wetlands. Overall, the updated delineation boundaries match closely to those shown in the WRI (2019) report. There is a small area south of the current residence which WRI mapped as wetland which we did not include within our Wetland 1 delineation boundary. This is an area of maintained yard with garden features. We collected data at three sample plots in this location and did not identify conditions meeting wetland criteria (Appendix A; Sample Plots 5-7).

Our updated delineations for Wetland 1 and Wetland Y were surveyed for Toll Brothers and utilized for site planning design of the current project (Figure 2). The buffers previously determined in the WRI 2019 report have been applied to the updated delineations.

4.0 REGULATORY CONSIDERATIONS

4.1 FEDERAL CLEAN WATER ACT (CWA)

Federal law (Section 404 of the CWA) generally prohibits the discharge of dredged or fill material into waters of the United States, including certain wetlands and streams, without a permit from the COE (2021, 2022). We caution that the placement of fill within wetlands or other “Waters of the U.S.” without authorization from the COE is not advised, as the COE makes the final determination regarding whether surface water features would be regulated as waters of the U.S., or whether any permits would be required for any proposed alteration (COE 2021, 2022). Therefore, we recommend requesting a jurisdictional determination from the COE prior to construction of activities that may impact wetlands or streams. A jurisdictional determination would also provide evaluation and confirmation of our wetland delineation by the COE.

In the state of Washington, before proceeding with work under a COE-authorized permit, Section 401 of the CWA requires that the applicant receive notification that the Water Quality Certification/Coastal Zone Management Consistency Response has been approved, conditioned, or waived by the Washington State Department of Ecology (WDOE). The purpose of the CWA Section 401 is to ensure that federally permitted activities comply with the federal Clean Water Act, state water quality laws, and any other appropriate state laws (such as the Water Resources Act and Hydraulic Code). In addition, if the COE-authorized permit is for actions within the 15 coastal counties, including Snohomish County, then the WDOE must confirm or deny that the proposed action complies with the Washington Coastal Zone Management Program.

4.2 WASHINGTON STATE HYDRAULIC CODE

Prior to construction or other work that will use, divert, obstruct, or change the natural flow or bed of any state waters, the work must be approved by the Washington Department of Fish and Wildlife (WDFW) that it meets requirements of the State Hydraulic Code (RCW 75.20.100-140). The WDFW-administered Hydraulic Project Approval (HPA) is intended to protect fish life from damage by construction and other activities in all marine and fresh waters of the state.

4.3 CITY OF MARYSVILLE

The City of Marysville (2022) code regulates wetlands, streams, and lakes as sensitive areas. Alterations of wetlands, streams, or lakes and their buffers are generally prohibited, except as allowed under certain conditions. All direct wetland, stream, or lake impacts must be mitigated through creation, restoration, or enhancement. All areas of critical area buffer identified as degraded and/or lacking minimal native vegetation cover must be improved through enhancement (MMC 22E.010.100(3)).

As discussed above, two wetlands were identified on site: Wetland 1 and Wetland Y. Toll agreed to apply the wetland buffers previously approved by the City of Marysville in

2019: Wetland 1 receives a 125 feet wide buffer and Wetland Y receives a 75-foot wide-buffer. The buffer for Wetland 1 extends beyond that of Wetland Y and consequentially the wetland buffer is shown on our figures and site plans as the contiguous 125-foot wetland buffer. Degraded areas within the buffer have been identified (as depicted on the Buffer Enhancement plan sheets) and total approximately 26,582 square feet.

5.0 IMPACTS

This discussion of project impacts is based on the proposed site plan prepared by D.R. Strong (2022; Appendix C). The proposed project involves development of a 35-lot residential subdivision, with associated roads, utilities, and stormwater facilities. The wetlands and required buffers would be retained within a separate open space tract totaling over 77,000 square feet.

5.1 DIRECT IMPACTS

The Toll 44th Street project does not propose any direct impacts to Wetland 1 or Wetland Y. As shown in the plan set (DR Strong 2022; Appendix C), the proposed residential development will be uphill to the east of the wetland buffer.

5.2 INDIRECT IMPACTS

The proposed project will provide continued hydrologic support to both on-site wetlands through the proposed stormwater plan. Stormwater runoff and sediment will be managed to protect water quality. The standard buffers of 125 feet for Wetland 1 and 75 feet for Wetland Y will be applied.

The project proposes road improvements adjacent to Wetland 1 and removal of the pre-existing gravel driveway prism which runs between Wetland 1 and Wetland Y. Indirect impacts to both wetlands will be avoided through use of BMPs and TESC measures, as required under the City's current stormwater manual. Any soil compaction within the buffer caused by machinery removal of the driveway or existing residential structure will need to be decompacted prior to installation of buffer enhancement.

6.0 MITIGATION

Mitigation has been defined by the State Environmental Policy Act (SEPA) (WAC 197-11-768; cf. Cooper 1987), and more recently in a Memorandum of Agreement between the Environmental Protection Agency and the U.S. Army Corps of Engineers (Anonymous 1989). In order of desirability, mitigation may include:

1. **Avoidance** - avoiding impacts by not taking action or parts of an action;
2. **Minimization** - minimizing impacts by limiting the degree or magnitude of the action and its implementation;
3. **Compensation** - which may involve:
 - a) repairing, rehabilitating, or restoring the affected environment;
 - b) replacing or creating substitute resources or environments; and
 - c) mitigation banking.

Similarly, the City of Marysville (2022; MMC 22E.010.110) states that mitigation actions by an applicant or property owner shall occur in the following priority sequence:

- (a) Avoiding the impact altogether by not taking a certain action or parts of actions;
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations;
- (e) Compensating for the impact by replacing or providing substitute resources or environments; and
- (f) Monitoring the impact and taking appropriate corrective measures.

Specifically, the project will meet the mitigation actions outlined in the City of Marysville code above by:

- The project will avoid direct impacts to the wetlands (Wetlands 1 and Y). The proposed residential development will be located uphill east of the standard 125 foot wetland buffer.
- 44th Street improvements located near Wetland 1 and Y will utilize appropriate BMPs and TESC control measures to avoid direct or indirect impacts to the wetlands.
- The project does not propose direct impacts to the wetland buffer. Appropriate BMPs and TESC control measures will be determined prior to ground clearing activities to protect the wetland buffer edge. Initial control measures may include survey staking of the wetland edge prior to ground clearing activities, wetland buffer signage, and installation of silt fencing adjacent to the buffer edge.
- As noted above, the project will enhance degraded areas of the wetland buffer (as depicted in the Buffer Enhancement plans) through plantings of native vegetation.

7.0 BUFFER ENHANCEMENT

7.1 DEGRADED BUFFER

The existing wetland buffer contains disturbed areas consisting of the current residence, driveway, maintained yard, livestock fowl pens and fenced runs, and areas dominated by invasives species, such as reed canary grass (*Phalaris arundinacea*) and Himalayan blackberry (*Rubus armeniacus*). These areas of the buffer are considered degraded and require buffer enhancement, per City of Marysville (2022) Municipal Code 22E.010.100. The approximate location and extent of the degraded portion of the buffer was field identified using a handheld GPS unit.

Portions of the wetland buffer to the north and east of the degraded areas are dominated by native mature trees and shrubs, including Douglas-fir (*Pseudotsuga menziesii*) and salmon raspberry (*Rubus spectabilis*). These undisturbed areas dominated by native vegetation providing adequate cover do not require enhancement.

7.2 PRELIMINARY BUFFER ENHANCEMENT PLAN

A preliminary buffer enhancement plan has been prepared for the degraded areas of the wetland buffer (Sheets 2-4; see Figures 3-5). The location and extent of the degraded portion of the buffer was field identified using a handheld GPS unit and approximate. The total enhancement area size is estimated at 26,582 square feet. Native trees and shrubs have been selected based on site conditions and surrounding native vegetation.

Buffer enhancement will not negatively impact wetland functions or values, as improvement of the pre-existing degraded areas will increase native plant cover and species richness within the buffer. Removal of the residence and livestock fowl will decrease disturbance within the buffer. Further details of mitigation goals and monitoring efforts are described in detail below.

7.3 GOALS AND OBJECTIVES

The overall criteria for the enhanced buffer would be based on the successful establishment of desired plant species. Objectives of the buffer enhancement plan consist of the following:

- 1) Enhance buffer functions through the installation of native trees, shrubs, and groundcovers; and
- 2) Remove invasive species identified by the project biologist from the areas of enhancement.

8.0 MONITORING PROGRAM

This plan includes a systematic monitoring program of the enhanced wetland buffer areas to evaluate the success of the 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 enhanced buffer, 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 five-year period after enhancement activities had been completed.

The following sections describe the elements of an effective monitoring program.

8.1 CONSTRUCTION MONITORING

We recommend an on-site pre-construction meeting of the personnel responsible for the design and those responsible for implementation of the enhancement plantings. The purpose of the meeting would be to review the intent of the mitigation plan, establish a pathway of communication during construction, agree upon the construction sequence, and address and resolve any questions.

The current location and extent of the degraded buffer area is based on handheld GPS points and is approximate. Therefore, following the removal of the driveway prism, residential structure, livestock fowl pens and fencing, and activities removing reed canary grass and Himalayan blackberry, the project biologist should delineate the final extent and location of degraded areas with flagging and/or staking so the boundary of the buffer enhancement area is clearly marked in the field.

The landscape architect and project biologist should be present on-site during the various stages of buffer enhancement installation. Their duties would be to: (1) inspect the plant materials and recommend their final placement before planting; (2) determine the correct type and application rate of amendments to the soil, if needed; (3) make adjustments in planting plans, as needed, in response to field conditions; (4) ensure that construction activities are conducted per the approved plan; and (5) resolve problems that arise during implementation, thus lessening problems that might occur later during the long-term monitoring phase.

The project biologist may also review whether BMPs and TESC control measures have been installed along wetland and buffer edges which are adjacent to proposed work activities, in order to support project efforts to avoid impacts.

8.2 COMPLIANCE MONITORING

Compliance monitoring consists of evaluating the enhancement area immediately after installation is completed. The objectives would be to determine whether 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 landscape architect and project biologist using evaluation standards and criteria discussed in the approved plan sheets.

Following the removal of the pre-existing residential structure, gravel driveway prism, and other structures on site, and after grading and planting of the buffer enhancement area is completed, fixed sample plots would be established within areas representative of the plant communities being sampled. These points may be located randomly or along specific transects, depending upon site conditions. The same points would be monitored each subsequent monitoring visit to the site during long-term monitoring. During compliance monitoring, a quantitative assessment of the plants established in the mitigation areas would be recorded in the sample plot for baseline data. Photos would be taken at fixed points at each sample plot and in representative portions of the mitigation site during each monitoring visit to provide physical documentation of the condition of the restored areas.

The compliance monitoring phase would conclude with the preparation of a compliance report from the project biologist. The report will document whether 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. Information on 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 created wetland and buffer 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 the City of Marysville.

8.3 LONG-TERM MONITORING

Long-term monitoring would begin only after acceptance of the compliance report and acknowledgment that the construction is complete by the City of Marysville. As required by the City, long-term monitoring would be conducted for a minimum of five growing seasons (MMC 22E.010.160(2)). Monitoring would evaluate the establishment and maintenance of the plant community in the buffer enhancement to determine the progress toward meeting the goals and objectives of the mitigation plan by the end of the monitoring period.

Photographs would be taken from all locations established during the compliance monitoring and thereafter each visit of the monitoring period from the established location points. At each sample station, plant species would be identified, the number of plants verified to document percent survival of planted species, and the overall native plant cover would be estimated. Plant identifications would be made according to standard taxonomic procedures as described in Hitchcock and Cronquist (2018), with nomenclature updated by the U.S. Army Corps of Engineers National Wetland Plant List (COE 2020). The plantings would be examined to document the survival rate of species planted; signs of stress, damage, or disease; as well as signs of vigor, and rates of colonization by desirable native volunteer plants. Also, presence and coverage of invasive plants will be documented.

Wildlife observations during monitoring would be recorded, with notes made regarding habitat use patterns and activities. Any evidence of breeding or nesting activities would be noted.

8.4 MONITORING AND REPORTING SCHEDULE

Monitoring would be conducted biannually (twice yearly) in the first, second, third, fourth and fifth year during the five-year monitoring period. Monitoring reports would be prepared for submittal to the City of Marysville at the end of each of the monitoring years. The monitoring report would document the changes occurring within the created areas and make recommendations for improving the degree of success or correcting any problems noted during monitoring. Monitoring reports would document how the mitigation is progressing toward meeting the goals, objectives and performance standards of the plan.

9.0 EVALUATION AND PERFORMANCE STANDARDS

The overall evaluation criteria would be successful establishment of diverse plant communities with the buffer enhancement area. Evaluation criteria for success of the mitigation plan should not be 100% survival of individual plant materials beyond the first year, but the establishment of desirable plant communities within the buffer. General evaluation criteria are as follows:

Year One: Evidence that the desired plant communities are developing with 100% survival of the installed planted trees and shrub species, as well as vegetative coverage (percent aerial cover) of the planted areas in herbaceous species and evidence of colonization of desirable volunteer species. At the end of the first growing season after installation is complete, the plantings should demonstrate good health and vigor, and aerial coverage of plants in all areas should be sufficient to control erosion. Any plant material that has not survived the first year because of transplant shock should be noted and replaced at this time. If plant mortality is a result of site conditions, appropriate measures should be taken to ensure plant survival.

Years Two through Four: Evidence that the desired plant communities continue to develop. Evidence of reproduction or new sprouting by the plantings, and expansion of the coverage of desirable plants colonizing the areas. Plant community structure, diversity, and wildlife habitat function should be greater than that documented during the first-year monitoring and should increase with each succeeding year.

Year Five: Evidence that the desired plant communities have developed, consistent with the performance standards, by the end of year five. Desirable plant species should out-competing undesirable plant species throughout the site. Undesirable plant species should represent less than 10% aerial cover within the plant communities.

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

- 100% survival of all planted shrubs and trees in wetland and buffer for one year after planting and at least 85% survival after three years.
- Coverage by tree and shrub species (volunteer and planted individuals) would be:
 - at least 15% after one year
 - at least 20% after two years
 - at least 30% after three years
 - at least 40% after four years, and
 - at least 50% after five years.
- Allow establishment of not more than 10% cover of non-native, invasive plant species within the created wetland or its buffer at any time during the five-year

monitoring period.

Monitoring of installed plantings in the first year would determine the survival of individual plants. The landscape contractor would replace dead and defective plants per the terms of the full one-year guarantee. In subsequent years, the monitoring within sample plots would evaluate percent survival and the development of cover and vegetative structure provided by trees, shrubs, and herbs.

Increases in species richness will be documented by comparing the number of species originally planted with the number of species observed during the monitoring period. A positive trend in the number of species observed over the monitoring period would indicate increased plant community richness.

10.0 LIMITATIONS

We have prepared this report for the exclusive use of Toll Brothers and their consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from Toll Brothers.

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 determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies.

We warrant that the work performed conforms to standards generally accepted in our field and 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.

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FIGURES

Approximate Project Location

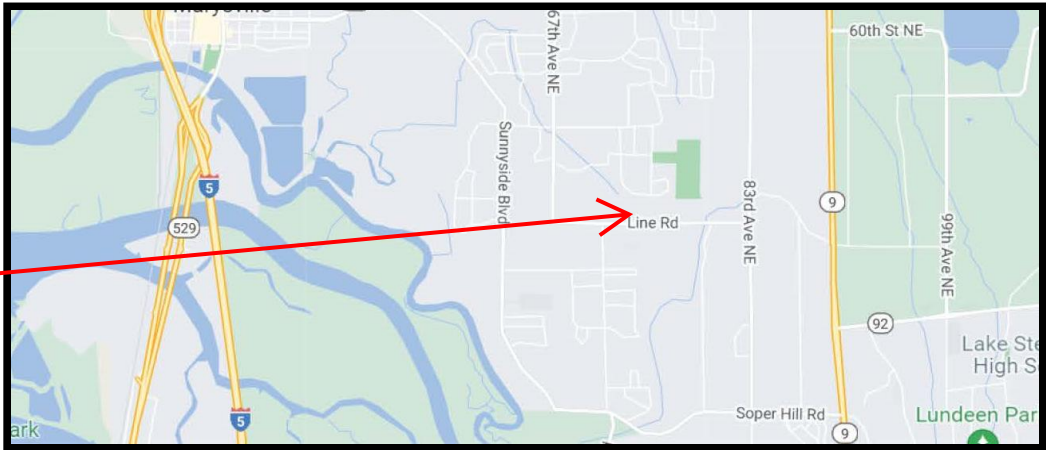


FIGURE 1 - Regional & Vicinity Map

Toll 44th Street, Marysville WA


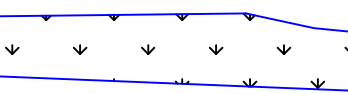


RAI PROJECT: 2021-056-100
PREPARED: June 2022



2111 N. Northgate Way,
Suite 219 Seattle, WA 98133



LEGEND

-  PROPERTY LINE
-  EXISTING WETLAND
-  125' WETLAND BUFFER
-  **SP 2** SAMPLE POINT

Raedeke Associates, Inc.
 2111 N. Northgate Way, Ste. 219
 Seattle, WA 98133

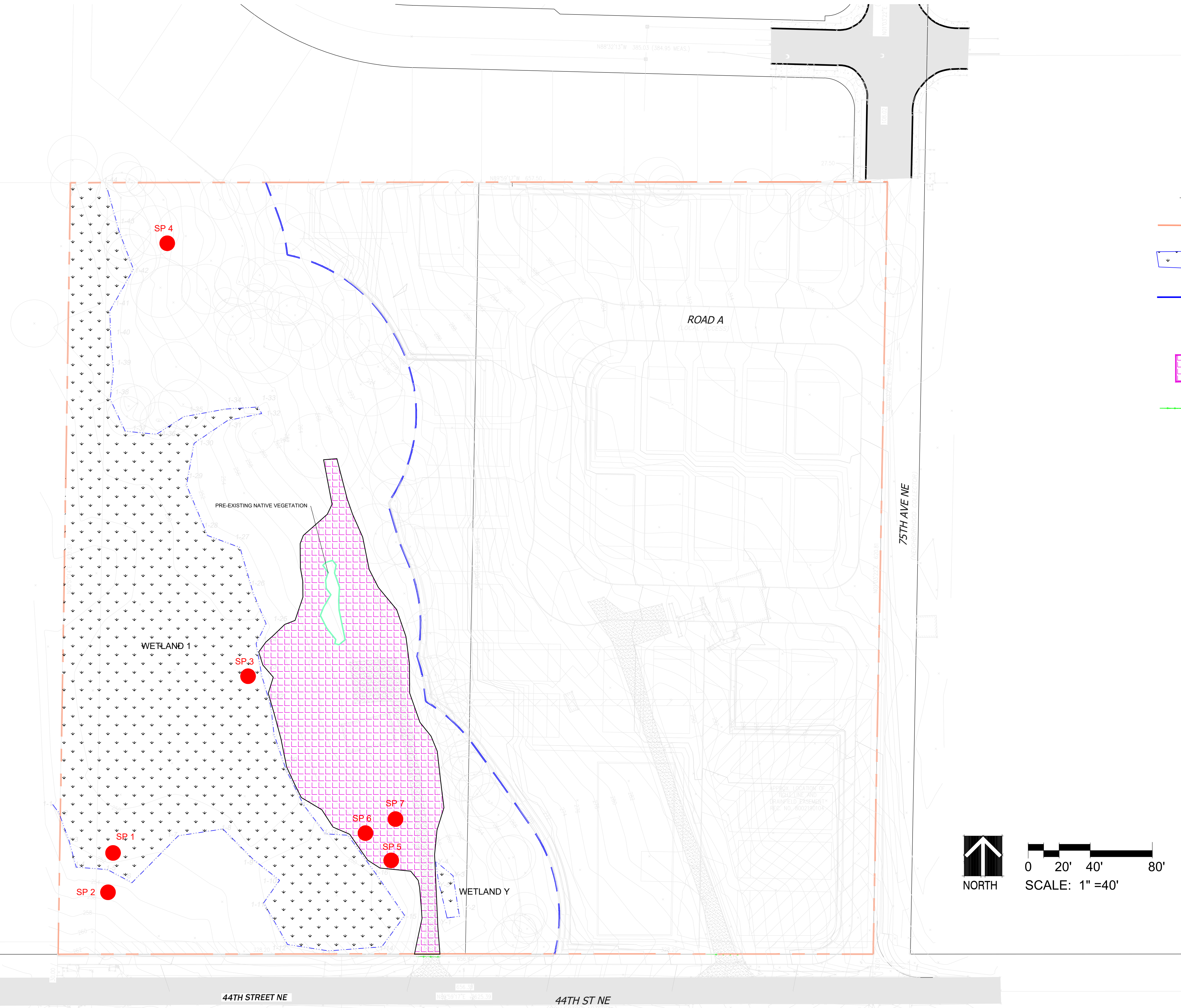
Date	By	Revision Description

RAI #	2021-056
Date:	6/6/2022
Scale:	1"=40'
Project Manager:	KK
Drawn By:	AD
Approved By:	KK

EXISTING CONDITIONS
 TOLL BROTHERS
 44TH STREET MARYSVILLE
 MARYSVILLE, WA

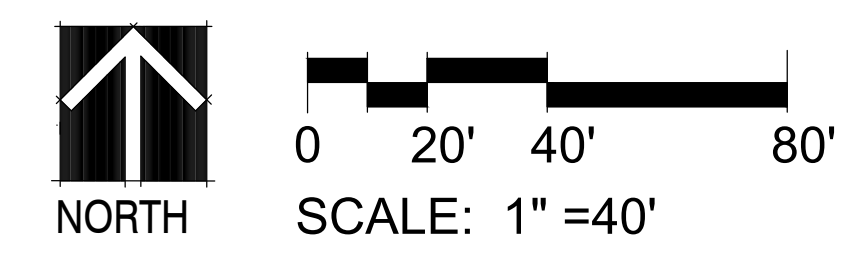
FIG 2
 SHEET
 1 OF 4


 Call 2 Working Days Before You Dig
 1-800-424-5555
 Utilities Underground Location Center
 (ID.MT.ND.OR.WA)



LEGEND

	PROPERTY LINE
	EXISTING WETLAND
	125' WETLAND BUFFER
	SAMPLE POINT
	BUFFER RESTORATION (26,582 SF)
	CRITICAL AREAS SIGN AND FENCE (SEE SHEET 3, DETAILS 3 AND 4)



Date	By	Revision Description

RAI #	2021-056
Date:	6/6/2022
Scale:	1"=40'
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Drawn By:	AD
Approved By:	KK

MITIGATION PLAN
TOLL BROTHERS
44TH STREET MARYSVILLE
MARYSVILLE, WA



FILE NAME: C:\2021\2021-056 Blue Fern Marysville\2021-056 44th St Marysville Mitigation Plan.dwg

BUFFER RESTORATION

TREES

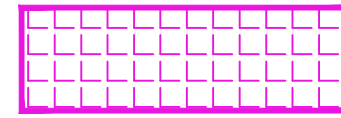
SCIENTIFIC NAME	COMMON NAME	WIS STATUS	MIN. SIZE	QTY.	SPACING	LOCATION
<i>Malus fusca</i>	Pacific crabapple	FACW	4' tall	44	10' O.C.	SUN
<i>Picea sitchensis</i>	Sitka spruce	FAC	4' tall	44	10' O.C.	SUN
<i>Pinus contorta</i> var. <i>contorta</i>	Beach pine	FAC	4' tall	44	10' O.C.	SUN
<i>Prunus emarginata</i>	Bittercherry	FACU	2 gal.	44	10' O.C.	SUN
<i>Pseudotsuga menziesii</i>	Douglas fir	FACU	4' tall	44	10' O.C.	SUN
<i>Thuja plicata</i>	Western red arborvitae	FAC	4' tall	44	10' O.C.	SHADE

SHRUBS

SCIENTIFIC NAME	COMMON NAME	FAC STATUS	MIN. SIZE (container)	QTY.	SPACING	LOCATION
<i>Acer circinatum</i>	Vine Maple	FAC	1 gal.	106	5' O.C.	SHADE
<i>Cornus alba</i>	Red osier dogwood	FACW	1 gal.	106	5' O.C.	EITHER
<i>Gaultheria shallon</i>	Salal	FACU	1 gal.	106	4' O.C.	SHADE
<i>Rubus spectabilis</i>	Salmonberry	FACU	1 gal.	106	5' O.C.	SUN
<i>Mahonia aquifolium</i>	Hollyleaved oregon grape	FACU	1 gal.	106	5' O.C.	SHADE
<i>Physocarpus capitatus</i>	Pacific ninebark	FAC	1 gal.	106	5' O.C.	SUN
<i>Rosa nutkana</i>	Nootka rose	FAC	1 gal.	106	5' O.C.	SUN
<i>Sambucus racemosa</i>	Red elder	FACU	1 gal.	106	5' O.C.	SUN
<i>Symphoricarpos albus</i>	Common snowberry	FACU	1 gal.	106	5' O.C.	SHADE
<i>Vaccinium ovatum</i>	Evergreen blueberry	FACU	1 gal.	106	5' O.C.	SHADE

HERBACEOUS

SCIENTIFIC NAME	COMMON NAME	FAC STATUS	MIN. SIZE (container)	QTY.	SPACING	LOCATION
<i>Polystichum munitum</i>	Pineland Swordfern	FACU	1 gal.	831	4' O.C.	SHADE



CONSTRUCTION SEQUENCE

- CONTRACTOR SCHEDULES AND ATTENDS A PRE-CONSTRUCTION MEETING WITH THE PROJECT BIOLOGIST, LANDSCAPE DESIGNER/ ARCHITECT AND CITY OF MARYSVILLE BIOLOGIST.
- CONTRACTOR WILL FLAG ALL THE LIMITS OF THE ENHANCEMENT AREAS FOR PROJECT BIOLOGIST APPROVAL. CONTRACTOR WILL WALK THE SITE WITH THE PROJECT BIOLOGIST TO CLARIFY LIMITS OF CONSTRUCTION AND THE WORK TO BE PERFORMED.
- CONTRACTOR WILL INSTALL TEMPORARY EROSION/SEDIMENT CONTROL MEASURES AS REQUIRED FOR PROJECT BIOLOGIST APPROVAL PRIOR TO THE COMMENCEMENT OF WORK.
- CONTRACTOR WILL REMOVE ALL GARBAGE, DEBRIS, HARD SURFACE MATERIAL, GRAVEL AND INVASIVE SPECIES FROM BUFFER ENHANCEMENT AREA AS DIRECTED BY THE PLANS AND PROJECT BIOLOGIST.
- CONTRACTOR WILL REMOVE SOD & AMEND EXISTING SOIL WITH COMPOST AS NECESSARY.
- PROJECT BIOLOGIST AND OWNER WILL FIELD LOCATE LARGE WOODY DEBRIS AND CONTRACTOR WILL PLACE LARGE WOODY DEBRIS.
- CONTRACTOR WILL LAY OUT NURSERY-GROWN PLANTS PER PLANS FOR APPROVAL BY THE PROJECT BIOLOGIST. FOLLOWING LAYOUT APPROVAL, CONTRACTOR TO INSTALL PLANTS, SEED AND MULCH AS DIRECTED BY PLANS.
- THE PROJECT BIOLOGIST WILL APPROVE PLANT INSTALLATION.
- CONTRACTOR SUBMITS AS-BUILT DRAWING AND COPIES OF INVOICES FOR ALL PLANT, SOIL AMENDMENT, AND MULCH MATERIALS USED TO THE PROJECT BIOLOGIST.
- PROJECT BIOLOGIST SUBMITS AS-BUILT REPORT TO THE CITY OF MARYSVILLE REVIEW AND APPROVAL.

GOALS AND OBJECTIVES

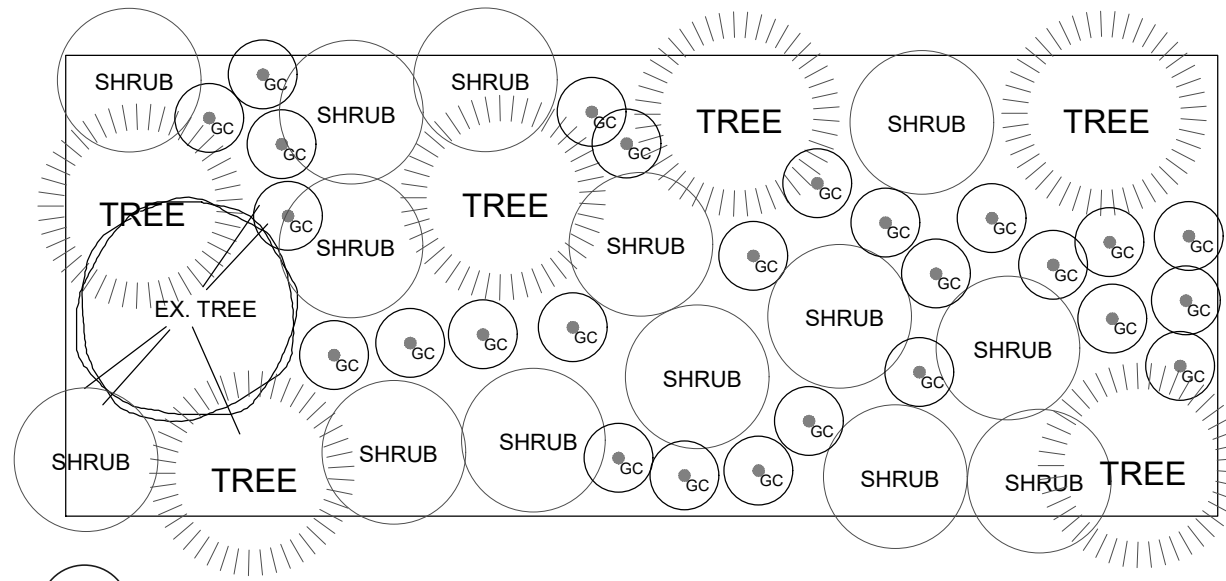
THE OVERALL CRITERIA FOR THE RESTORED BUFFER WOULD BE BASED ON THE SUCCESSFUL ESTABLISHMENT OF DESIRED PLANT SPECIES. OBJECTIVES OF THE BUFFER RESTORATION PLAN CONSIST OF THE FOLLOWING:

- ENHANCE BUFFER FUNCTIONS THROUGH THE INSTALLATION OF NATIVE TREES, SHRUBS, & GROUNDCOVERS.
- REMOVE INVASIVE SPECIES IDENTIFIED BY THE PROJECT BIOLOGIST FROM THE AREAS OF ENHANCEMENT.

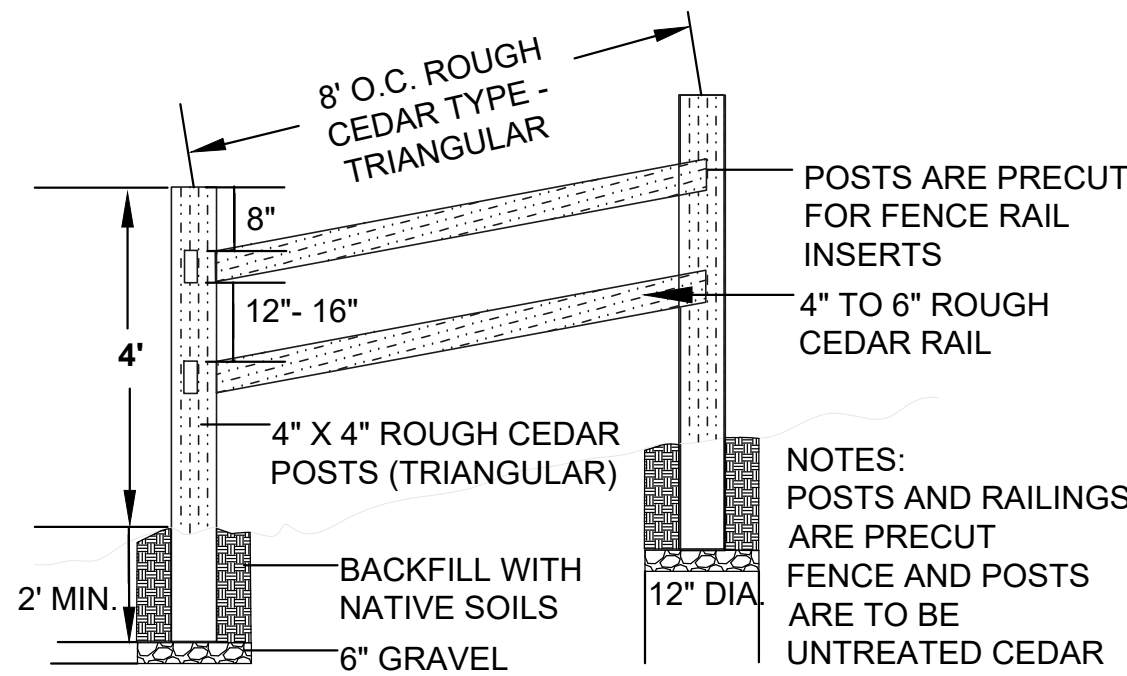
PERFORMANCE STANDARDS

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

- 100% SURVIVAL OF ALL INSTALLED SHRUBS, TREES, AND GROUND COVER FOR ONE YEAR AFTER PLANTING AND AT LEAST 85% SURVIVAL AFTER THREE YEARS.
- COVERAGE BY TREES AND SHRUBS (VOLUNTEER AND PLANTED INDIVIDUALS) WOULD BE AT LEAST 20% AFTER TWO YEARS AND 50% AFTER FIVE YEARS.
 - AT LEAST 15% AFTER ONE YEAR
 - AT LEAST 20% AFTER TWO YEARS
 - AT LEAST 30% AFTER THREE YEARS
 - AT LEAST 40% AFTER FOUR YEARS
 - AT LEAST 50% AFTER FIVE YEARS
- ALLOW ESTABLISHMENT OF NOT MORE THAN 10% COVER OF NON-NATIVE INVASIVE PLANT SPECIES WITHIN THE CREATED WETLAND OR ITS BUFFER AT ANY TIME DURING THE 5-YEAR MONITORING PERIOD.

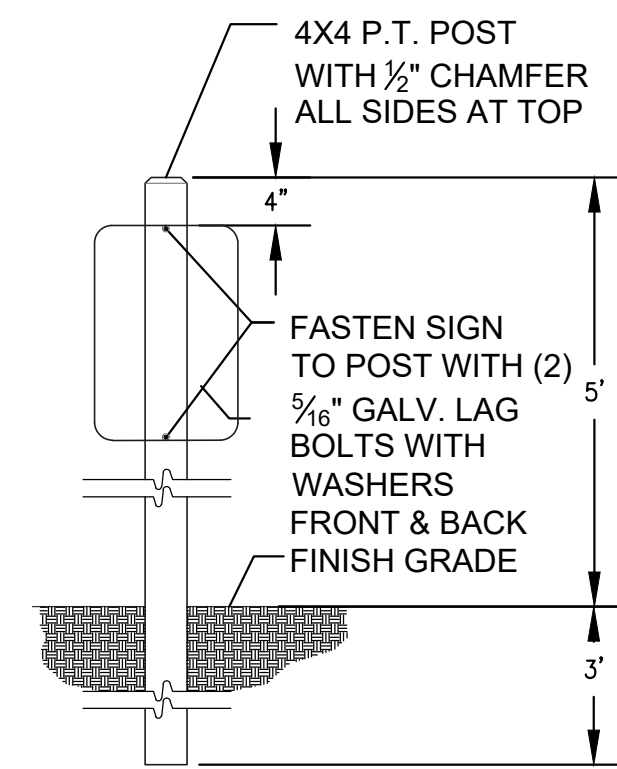


1 BUFFER RESTORATION AREA NATURALISTIC PLANT SPACING, TYP. NTS



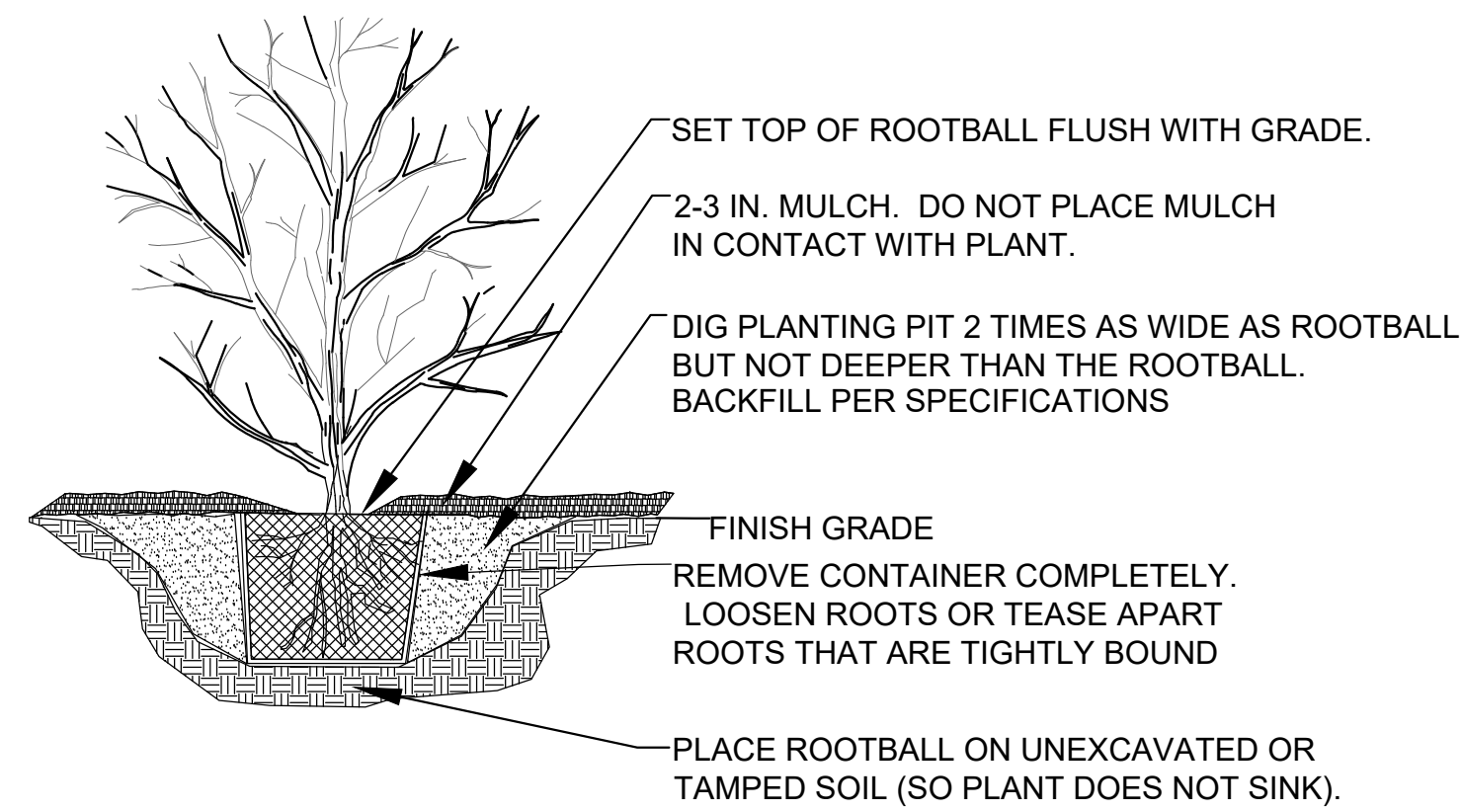
- A PERMANENT SPLIT RAIL, OPEN SLATTED WITH AT LEAST 18 INCHES BETWEEN EACH SLAT, WROUGHT IRON, CHAIN LINK, OR SIMILAR NONSOLID FENCE BETWEEN THREE (3) AND SIX (6) FEET IN HEIGHT MUST BE INSTALLED ALONG THE ENTIRE EDGE OF THE BUFFER;
- SOLID FENCING IS NOT PERMITTED;
- EXCEPT FOR SPLIT RAIL, A GATE IS REQUIRED FOR PEDESTRIAN ACCESS TO THE BUFFER;

2 NGPA SPLIT RAIL CEDAR FENCE OR SIMILAR NTS



- NOTES:**
- UPON COMPLETION OF THE PROJECT, PERMANENT SIGNAGE SHALL BE ATTACHED TO THE FENCE STATING THAT THE PROTECTED CRITICAL AREA AND BUFFER MUST NOT BE DISTURBED OTHER THAN NECESSARY FOR MAINTENANCE OF VEGETATION;
 - THE SIGNS MUST BE MAINTAINED AND REMAIN IN PERPETUITY;
 - SIGNAGE SHALL MEET THE ADMINISTRATIVE STANDARDS OF THE PLANNING AND BUILDING DEPARTMENT FOR DESIGN, NUMBER AND LOCATION;
 - THE PLANNING OFFICIAL SHALL INSPECT THE SIGNAGE PRIOR TO FINAL INSPECTION.

3 CRITICAL AREAS SIGN DETAIL NTS



4 CONTAINER TREE OR SHRUB PLANTING DETAIL NTS



Revision Description	By	Date

RAI #	2021-056
Date:	6/6/2022
Scale:	NTS
Project Manager:	CW
Drawn By:	AD
Approved By:	CW

PLANTING PLAN
TOLL BROTHERS
44TH STREET MARYSVILLE
MARYSVILLE, WA

FIG 4
 SHEET
3 of 4

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 HEREAFTER. 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) 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 OR PLANTED MATERIAL THAT IS NOT IN VIGOROUS CONDITION 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 WETLAND & UNDISTURBED BUFFER DURING CONSTRUCTION ACTIVITIES. THE MITIGATION PLANTING AREAS 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.

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 OR ONSITE SALVAGE

IMPORTED OR ONSITE SALVAGE 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.

2.5 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. MULCH MAY COME FROM EXISTING ON-SITE CONIFER TREES. DO NOT MULCH THE POPLAR TREES.

2.6 LARGE WOODY DEBRIS

LARGE WOODY DEBRIS SHALL COME FROM THE ON-SITE CONIFERS BEING FELLED. WOODY DEBRIS MUST BE AT LEAST 20 FEET LONG AND HAVE A CALIPER OF 18 INCHES.

3.0 EXECUTION

3.1 SILT FENCE & TREE PROTECTION INSTALLATION

INSTALLATION OF TREE PROTECTION AND A SILT FENCE CONSISTENT WITH BEST MANAGEMENT PRACTICES, AS REQUIRED BY THE JURISDICTION PRIOR TO REMOVAL OF ANY EXISTING NON-CONFORMING STRUCTURES, SITE GRADING, OR REMOVAL OF UNPERMITTED FILL WITHIN THE WETLAND BUFFER/RIPARIAN AREA, WOULD BE PROTECTED AS SHOWN ON THE TEMPORARY EROSION AND SEDIMENT CONTROL PLAN.

3.2 GARBAGE, DEBRIS, AND HARD SURFACE REMOVAL

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

3.3 INVASIVE SPECIES REMOVAL

WALK MITIGATION SITE WITH THE PROJECT BIOLOGIST TO IDENTIFY LIMITS OF INVASIVE SPECIES REMOVAL. INVASIVE SPECIES INCLUDE HIMALYAN 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.

3.4 COMPOST AMENDMENT

IN ALL DE-SODDED AREAS, 3 INCHES OF COMPOST SHALL BE SPREAD AND WORKED INTO THE UPPER 12 INCHES OF THE SOIL.

3.5 LARGE WOODY DEBRIS PLACEMENT

PROJECT BIOLOGIST AND OWNER TO FIELD LOCATE LARGE WOODY DEBRIS.

3.6 PLANT STORAGE

PLANTS STORED UNDER TEMPORARY CONDITIONS PRIOR TO INSTALLATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. PLANTS STORED ON THE PROJECT SHALL BE PROTECTED AT ALL TIMES FROM EXTREME WEATHER CONDITIONS BY INSULATING THE ROOTS, ROOT BALLS, OR CONTAINERS WITH SAWDUST, SOIL, COMPOST, BARK OR WOOD CHIPS, OR OTHER APPROVED MATERIAL AND SHALL BE KEPT MOIST AT ALL TIMES PRIOR TO PLANTING. CUTTINGS SHALL CONTINUALLY BE SHADED AND PROTECTED FROM WIND. CUTTINGS SHALL BE PROTECTED FROM DRYING AT ALL TIMES AND SHALL BE HEELED INTO MOIST SOIL OR OTHER INSULATING MATERIAL OR PLACED IN WATER IF NOT INSTALLED WITHIN 8 HOURS OF CUTTING. CUTTINGS TO BE STORED FOR LATER INSTALLATION SHALL BE BUNDLED, LAID HORIZONTALLY, AND COMPLETELY BURIED UNDER 6 INCHES OF WATER, MOIST SOIL OR PLACED IN COLD STORAGE AT A TEMPERATURE OF 34°F AND 90 PERCENT HUMIDITY. CUTTINGS THAT ARE NOT PLANTED WITHIN 24 HOURS OF CUTTING SHALL BE SOAKED IN WATER FOR 24 HOURS PRIOR TO PLANTING. EMERGENT PLANTS SHALL BE STORED IN STANDING WATER, NOT HIGHER THAN THE CONTAINER.

3.7 PLANT INSTALLATION.

PLANTING SHALL OCCUR ACCORDING TO PREVIOUSLY DEFINED SCHEDULE. PLANTS SHALL BE INSTALLED IN COMPLIANCE WITH DETAILS IN THE PLANS. 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 FIVE (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.

3.8 STRAW AND WOOD MULCHING

WITHIN THE BUFFER ENHANCEMENT AREA IMMEDIATELY AFTER COMPLETION OF PLANTING, BARK MULCH SHALL BE SPREAD EVENLY TO A DEPTH OF 3 INCHES WITHIN THE ENTIRETY OF THE PLANTED AREA.

3.9 NGPA SIGNS & FENCE

INSTALL NGPA SIGNS AND FENCE PER PLAN .

3.10 IRRIGATION

A TEMPORARY IRRIGATION SYSTEM SHALL BE INSTALLED BY THE CONTRACTOR. THE IRRIGATION SYSTEM SHALL PROVIDE AT LEAST 1" OF WATER PER WEEK TO THE PLANTED MITIGATION AREAS FOR TWO YEARS. WATER WILL BE PROVIDED FROM MAY THROUGH THE END OF SEPTEMBER, OR LONGER IF HOT, DRY WEATHER PERSISTS.

MONITORING NOTES & MAINTENANCE PLAN

1.0 MONITORING PROGRAM

THIS PLAN INCLUDES A SYSTEMATIC MONITORING PROGRAM OF THE RESTORED ENHANCED BUFFER 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 FIVE 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 FIVE-YEAR PERIOD AFTER INSTALLATION OF THE BUFFER RESTORATION 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, GOALS AND OBJECTIVES, AND PERFORMANCE STANDARDS ON PLANTING PLAN, SHEET 3.

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 THE CITY OF Marysville.

1.3 LONG-TERM MONITORING

LONG-TERM MONITORING WOULD BE CONDUCTED OVER FIVE 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 COMMUNITIES IN THE RESTORED WETLAND AND BUFFER TO DETERMINE IF THE GOALS AND OBJECTIVES OF THE MITIGATION PLAN HAVE BEEN MET.

1.4 OPTIONS FOR MONITORING WORK – THE APPLICANT MAY CHOOSE ONE OF THE FOLLOWING METHODS FOR WHO PERFORMS THE MONITORING WORK:

- a. CITY DOES WORK – IF THE CITY WILL OVERSEE THE MAINTENANCE AND MONITORING THROUGH THE CITY'S CONSULTANT, THE MONITORING FEE WILL BE BASED ON AN ACTUAL COST ESTIMATE OF THE WORK. THE APPLICANT SHALL SUBMIT A CASH PREPAYMENT FOR ALL WORK TO THE CITY PRIOR TO ISSUANCE OF THE DEVELOPMENT PERMIT.
- b. APPLICANT'S CONSULTANT DOES WORK

1) IF THE CITY WILL NOT PERFORM THE MONITORING, THE APPLICANT SHALL SUBMIT A SIGNED CONTRACT TO FUND A QUALIFIED CRITICAL AREA PROFESSIONAL, APPROVED BY THE CITY, TO MONITOR THE MAINTENANCE AND PERFORM THE MONITORING OVER THE LIFE OF THE PROGRAM. THE COST OF THE WORK MUST BE INCLUDED IN THE PERFORMANCE SECURITY UNDER K2C 90.165; AND

2) IN ADDITION, THE APPLICANT SHALL SUBMIT A CASH PREPAYMENT PRIOR TO FINAL INSPECTION OF THE DEVELOPMENT PERMIT FOR THE COST OF THE CITY TO DO PEER REVIEW OF THE MONITORING REPORTS

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 (2018), 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 RESTORED BUFFER 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 FIVE-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 FIVE-YEAR LONG-TERM MONITORING PERIOD FOR SUBMITTAL TO THE CITY OF Marysville. THE LONG-TERM MONITORING PERIOD WILL COMMENCE FOLLOWING ACCEPTANCE OF THE COMPLIANCE REPORT AND "AS-BUILT" DRAWINGS BY THE CITY OF Marysville.

MONITORING REPORTS WOULD BE SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY OF Marysville 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 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 CREATED, 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.

THE CONTINGENCY PLAN MAY REQUIRE EXTENSION OF THE MONITORING PHASE OF THE PROJECT, ESPECIALLY IF MAJOR CHANGES IN THE PLAN ARE REQUIRED. IF, AT THE END OF THE LONG-TERM MONITORING PERIOD, PERFORMANCE STANDARDS FOR YEAR FIVE HAVE NOT BEEN MET, IDENTIFIED PROBLEMS WILL BE ADDRESSED, AND ADDITIONAL MONITORING WILL BE CONDUCTED DURING AN ADDITIONAL MONITORING YEAR(S) AS RECOMMENDED BY THE PROJECT BIOLOGIST AND APPROVED BY THE CITY OF MARYSVILLE.

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 IS 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 FREE OF INSECTS AND DISEASE, CONTROL COMPETITION WITH GRASSES AND WEEDS, AND LIMIT DIE-BACK OR MORTALITY DUE TO INADEQUATE SOIL MOISTURE TO WITHIN PERFORMANCE STANDARDS SPECIFIED ON PREVIOUS SHEET.

UPON COMPLETION OF THE REMOVAL OF ALL NON-CONFORMING STRUCTURES AND UNPERMITTED FILL AND INSTALLATION OF THE PLANTINGS, MULCH AND ALL OTHER ITEMS SPECIFIED BY THE BUFFER 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 BUFFER WHEN THE ADJACENT HERBACEOUS VEGETATION IS ONE FOOT IN HEIGHT OR AS APPROVED BY THE PROJECT BIOLOGIST AND OR THE CITY OF Marysville.

THE SITE MAINTENANCE PROGRAM WOULD COMMENCE UPON APPROVAL OF THE COMPLIANCE REPORT AND AS-BUILT PLAN BY THE CITY. THE SITE 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-WHIPPING WITH MECHANIZED LINE TRIMMERS WILL BE ALLOWED BETWEEN WOODY PLANTS WITHIN CLUSTER OR CLUMPED PLANTINGS. NO PESTICIDES OR HERBICIDES SHOULD BE USED WITHIN THE BUFFER AREA WITHOUT PERMISSION FROM THE CITY OF Marysville.

3.3 MAINTENANCE WORK GUARANTEE

PRIOR TO FINAL INSPECTION OF THE VEGETATION AND ANY OTHER MITIGATING MEASURES REQUIRED IN THIS CHAPTER, THE APPLICANT SHALL SUBMIT A SIGNED CONTRACT WITH A LANDSCAPE MAINTENANCE COMPANY TO MAINTAIN THE INSTALLED IMPROVEMENTS OVER THE PERIOD OF THE MONITORING PROGRAM THAT INCLUDES THE REQUIRED MAINTENANCE TASKS AND SCHEDULE, EXCEPT FOR THE FOLLOWING:

4.0 PROJECT ACCEPTANCE

AFTER COMPLETION OF THE FIVE-YEAR MONITORING PERIOD AND CONFIRMATION BY THE CITY OF Marysville THAT THE BUFFER ENHANCEMENT HAS SUCCESSFULLY MET THE PERFORMANCE STANDARDS, THE CITY OF Marysville SHALL PROVIDE WRITTEN ACCEPTANCE AND APPROVAL OF THE BUFFER ENHANCEMENT AND RELEASE ALL BONDS IN PLACE AS GUARANTEE OF MITIGATION SITE CONSTRUCTION AND PERFORMANCE.



Revision Description

By

Date

RAI #

2021-056

Date:

8/8/2022

Scale:

N/T/S

Project

Manager/CW

Drawn By:

AD

Approved

By: GW

NOTES

TOLL BROTHERS
44TH STREET MARYSVILLE
MARYSVILLE, WA

FIG 5

SHEET

4 of 4

APPENDIX A

Field Survey Data

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Toll 44th City/County: Marysville Sampling Date: 9/30/2021
 Applicant/Owner: Toll Brothers State: WA Sampling Point: SP 1
 Investigator(s): K. Kusters and A. Clark Section, Township, Range: S35, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Convex Slope (%): 1 - 3
 Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 48.036129 Long: -122.131960 Datum: Unknown
 Soil Map Unit Name: Tokul Gravelly Medial Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Sample Plot 1 is located in Wet 1, in the southwest corner of the site.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>5 m</u>)				
1. <u>Populus balsamifera</u> (Balsam Poplar)	<u>30</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Alnus rubra</u> (Red Alder)	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. _____				
4. _____				
	<u>50</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>3 m</u>)				
1. <u>Rubus spectabilis</u> (Salmonberry)	<u>40</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. <u>Acer circinatum</u> (Vine Maple)	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
	<u>60</u>	= Total Cover		
Herb Stratum (Plot size: <u>1 m</u>)				
1. <u>Athyrium cyclosorum</u> (Western Lady Fern)	<u>30</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Equisetum arvense</u> (Field Horsetail)	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Ranunculus repens</u> (Creeping Buttercup)	<u>10</u>	<u>Y</u>	<u>FAC</u>	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	<u>50</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>3 m</u>)				
1. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____				
	<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>50</u>				

Remarks:

SOIL

Sampling Point: SP 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 4	10YR 2/2	100					Sandy Loam	
4 - 18+	10YR 4/1	80	10YR 4/6	10	C	M	Sandy Loam	
			10YR 4/4	10	C	M	Sandy Loam	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.								
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)						Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Redox (S5)			<input type="checkbox"/> 2 cm Muck (A10)		
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Stripped Matrix (S6)			<input type="checkbox"/> Red Parent Material (TF2)		
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)			<input type="checkbox"/> Very Shallow Dark Surface (TF12)		
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)			<input type="checkbox"/> Other (Explain in Remarks)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input checked="" type="checkbox"/> Depleted Matrix (F3)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)					
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> Sandy Gleyed Matrix (S4)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if present):						Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Type: _____								
Depth (inches): _____								
Remarks:								

HYDROLOGY

Wetland Hydrology Indicators:			
<u>Primary Indicators (minimum of one required: check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
Field Observations:			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Toll 44th City/County: Marysville Sampling Date: 9/30/2021
 Applicant/Owner: Toll Brothers State: WA Sampling Point: SP 2
 Investigator(s): K. Kusters and A. Clark Section, Township, Range: S35, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex Slope (%): 1 - 3
 Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 48.036129 Long: -122.131960 Datum: Unknown
 Soil Map Unit Name: Tokul Gravelly Medial Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Sample Plot 2 is located upland of Sample Plot 1, in the southwest corner of the site.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: 5 m)					
1. <u>Thuja plicata</u> (Western Arborvitae)	20	Y	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)	
2. <u>Alnus rubra</u> (Red Alder)	10	Y	FAC		
3. _____					
4. _____					
	30	= Total Cover			
Sapling/Shrub Stratum (Plot size: 3 m)					
1. <u>Rubus spectabilis</u> (Salmonberry)	60	Y	FAC	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
2. <u>Acer circinatum</u> (Vine Maple)	20	Y	FAC		
3. _____					
4. _____					
5. _____					
	80	= Total Cover			
Herb Stratum (Plot size: 1 m)					
1. <u>Polystichum munitum</u> (Pineland Sword Fern)	20	Y	FACU		
2. <u>Pteridium aquilinum</u> (Northern Bracken Fern)	10	Y	FACU		
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
	30	= Total Cover			
Woody Vine Stratum (Plot size: 3 m)					
1. _____					
2. _____					
	0	= Total Cover			
% Bare Ground in Herb Stratum <u>70</u>					

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 5 - Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

SOIL

Sampling Point: SP 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0 - 8	10YR 3/3	100					Sandy Loam		
8 - 16+	10YR 4/4	100					Sandy Loam		
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.									
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Redox Depressions (F8)						Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)			
Restrictive Layer (if present): Type: _____ Depth (inches): _____						Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Remarks:									

HYDROLOGY

Wetland Hydrology Indicators:										
Primary Indicators (minimum of one required; check all that apply)					Secondary Indicators (2 or more required)					
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Drainage Patterns (B10)
									<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
									<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)
									<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
									<input type="checkbox"/> Frost-Heave Hummocks (D7)	
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)					Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:										
Remarks: No indicators of wetland hydrology were observed.										

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Toll 44th City/County: Marysville Sampling Date: 9/30/2021
 Applicant/Owner: Toll Brothers State: WA Sampling Point: SP 3
 Investigator(s): K. Kusters and A. Clark Section, Township, Range: S35, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1 - 3
 Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 48.036129 Long: -122.131960 Datum: Unknown
 Soil Map Unit Name: Tokul Gravelly Medial Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Sample Plot 3 is located in Wet 1, near Flag 1-23.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>5 m</u>)				
1. <u>Alnus rubra</u> (Red Alder)	<u>30</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____	<u>30</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>3 m</u>)				
1. <u>Rubus spectabilis</u> (Salmonberry)	<u>60</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	<u>60</u>	= Total Cover		
Herb Stratum (Plot size: <u>1 m</u>)				
1. <u>Athyrium cyclosorum</u> (Western Lady Fern)	<u>30</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Lysichiton americanus</u> (Yellow-Skunk-Cabbage)	<u>20</u>	<u>Y</u>	<u>OBL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	<u>50</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>3 m</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>50</u>				

Remarks:

SOIL

Sampling Point: SP 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 12	10YR 2/1	100					Muck	
12 - 16+	10YR 5/2	90	10YR 4/4	10	C	M	Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input checked="" type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

2 cm Muck (A10)
 Red Parent Material (TF2)
 Very Shallow Dark Surface (TF12)
 Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required: check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>2</u>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>0</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Toll 44th City/County: Marysville Sampling Date: 9/30/2021
 Applicant/Owner: Toll Brothers State: WA Sampling Point: SP 4
 Investigator(s): K. Kusters and A. Clark Section, Township, Range: S35, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex Slope (%): 5 - 7
 Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 48.036129 Long: -122.131960 Datum: Unknown
 Soil Map Unit Name: Tokul Gravelly Medial Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Sample Plot 4 is located upland of Wet 1, east of the north delineation boundary.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>5 m</u>)				
1. <u>Thuja plicata (Western Arborvitae)</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____	<u>80</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>3 m</u>)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>120</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>3.33</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>1 m</u>)				
1. <u>Polystichum munitum (Pineland Sword Fern)</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: <u>3 m</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>60</u>				

Remarks:

SOIL

Sampling Point: SP 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0 - 6	10YR 3/2	100					Sandy Loam		
6 - 18+	10YR 4/4	100					Gr. S. Loam		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.
 ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
--	---

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)	<u>Secondary Indicators (2 or more required)</u> <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)
Field Observations:		
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: No indicators of wetland hydrology were observed.		

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Toll 44th City/County: Marysville Sampling Date: 6/4/2022
 Applicant/Owner: Toll Brothers State: WA Sampling Point: SP 5
 Investigator(s): A. Clark Section, Township, Range: S35, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 2 - 5
 Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 48.036129 Long: -122.131960 Datum: Unknown
 Soil Map Unit Name: Tokul Gravelly Medial Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Sample Plot 5 is located upland of Wet 1, north of Flag 1-16, near the edge of the brush and cleared yard.	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>5 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>3 m</u>)				
1. <u>Rubus spectabilis</u> (Salmon Raspberry)	<u>30</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Corylus cornuta</u> (Beaked Hazelnut)	<u>10</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Acer circinatum</u> (Vine Maple)	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. <u>Rubus armeniacus</u> (Himalayan Blackberry)	<u>5</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
	<u>50</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>1 m</u>)				
1. <u>Ranunculus repens</u> (Creeping Buttercup)	<u>40</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Athyrium cyclosorum</u> (Western Lady Fern)	<u>20</u>	<u>N</u>	<u>FAC</u>	
3. <u>Ranunculus acris</u> (Tall Buttercup)	<u>20</u>	<u>N</u>	<u>FAC</u>	
4. <u>Polystichum munitum</u> (Pineland Sword Fern)	<u>10</u>	<u>N</u>	<u>FACU</u>	
5. <u>Geum macrophyllum</u> (Large-Leaf Avens)	<u>5</u>	<u>N</u>	<u>FAC</u>	
6. <u>Rumex crispus</u> (Curly Dock)	<u>5</u>	<u>N</u>	<u>FAC</u>	
7. <u>Phalaris arundinacea</u> (Reed Canary Grass)	<u>2</u>	<u>N</u>	<u>FACW</u>	
8. <u>Equisetum telmateia</u> (Giant Horsetail)	<u>1</u>	<u>N</u>	<u>FACW</u>	
9. <u>Tellima grandiflora</u> (Fragrant Fringecup)	<u>1</u>	<u>N</u>	<u>FACU</u>	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>104</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>3 m</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
<u>% Bare Ground in Herb Stratum</u> <u>0</u>				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 FACU species _____ x 4 = _____
 UPL species _____ x 5 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 5 - Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

SOIL

Sampling Point: SP 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 11	10YR 3/2	100					Gr. S. Loam	
11 - 16+	10YR 4/2	90	10YR 4/4	10	C	M	Gr. S. Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (except MLRA 1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (LRR A)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)
- Raised Ant Mounds (D6) (LRR A)
- Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 16
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): 14

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Saturation and water table observed at too great a depth to meet hydrology indicator (A3) Saturation or (A2) High Water Table. It had rained earlier in the day.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Toll 44th City/County: Marysville Sampling Date: 6/4/2022
 Applicant/Owner: Toll Brothers State: WA Sampling Point: SP 6
 Investigator(s): A. Clark Section, Township, Range: S35, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 2 - 5
 Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 48.036129 Long: -122.131960 Datum: Unknown
 Soil Map Unit Name: Tokul Gravelly Medial Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Sample Plot 6 is located northeast and upland of Wet 1, upslope of Flags 1-16 and 1-17, near the edge of the brush and cleared yard.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>5 m</u>)					
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
	<u>0</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: <u>3 m</u>)					
1. <u>Corylus cornuta</u> (Beaked Hazelnut)	<u>40</u>	<u>Y</u>	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
2. <u>Rubus spectabilis</u> (Salmon Raspberry)	<u>20</u>	<u>Y</u>	<u>FAC</u>		
3. <u>Acer circinatum</u> (Vine Maple)	<u>5</u>	<u>N</u>	<u>FAC</u>		
4. <u>Rubus armeniacus</u> (Himalayan Blackberry)	<u>5</u>	<u>N</u>	<u>FAC</u>		
5. _____	_____	_____	_____		
	<u>70</u>	= Total Cover			
Herb Stratum (Plot size: <u>1 m</u>)					
1. <u>Ranunculus repens</u> (Creeping Buttercup)	<u>40</u>	<u>Y</u>	<u>FAC</u>		
2. <u>Athyrium cyclosorum</u> (Western Lady Fern)	<u>20</u>	<u>Y</u>	<u>FAC</u>		
3. <u>Epilobium ciliatum</u> (Fringed Willowherb)	<u>5</u>	<u>N</u>	<u>FACW</u>		
4. <u>Polystichum munitum</u> (Pineland Sword Fern)	<u>5</u>	<u>N</u>	<u>FACU</u>		
5. <u>Geum macrophyllum</u> (Large-Leaf Avens)	<u>5</u>	<u>N</u>	<u>FAC</u>		
6. <u>Phalaris arundinacea</u> (Reed Canary Grass)	<u>5</u>	<u>N</u>	<u>FACW</u>		
7. <u>Rumex crispus</u> (Curly Dock)	<u>2</u>	<u>N</u>	<u>FAC</u>		
8. <u>Equisetum telmateia</u> (Giant Horsetail)	<u>2</u>	<u>N</u>	<u>FACW</u>		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
	<u>84</u>	= Total Cover			
Woody Vine Stratum (Plot size: <u>3 m</u>)					
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. _____	_____	_____	_____		
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>16</u>					

Hydrophytic Vegetation Present? Yes No

Remarks:

SOIL

Sampling Point: SP 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 15+	10YR 3/3	100					Gr. S. Loam	with cobbles (3-4" diameter)

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

2 cm Muck (A10)
 Red Parent Material (TF2)
 Very Shallow Dark Surface (TF12)
 Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required: check all that apply)</u>	<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)

<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)	<p>Field Observations:</p> <p>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>14</u> _____</p> <p>Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>13</u> _____ (includes capillary fringe)</p> <p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Saturation and water table observed at too great a depth to meet hydrology indicator (A3) Saturation or (A2) High Water Table. It had rained earlier in the day.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Toll 44th City/County: Marysville Sampling Date: 6/4/2022
 Applicant/Owner: Toll Brothers State: WA Sampling Point: SP 7
 Investigator(s): A. Clark Section, Township, Range: S35, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 2 - 5
 Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 48.036129 Long: -122.131960 Datum: Unknown
 Soil Map Unit Name: Tokul Gravelly Medial Loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Sample Plot 7 is located approximately 40 feet south of the current residence and east of SP 6, in the cleared yard and adjacent to garden areas.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>5 m</u>)				
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>3 m</u>)				
1. <u>Populus balsamifera</u> (Balsam Poplar) saplings	3	Y	FAC	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. <u>Rubus armeniacus</u> (Himalayan Blackberry)	1	Y	FAC	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
4 = Total Cover				
Herb Stratum (Plot size: <u>1 m</u>)				
1. <u>Ranunculus repens</u> (Creeping Buttercup)	90	Y	FAC	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Rumex crispus</u> (Curly Dock)	5	N	FAC	
3. <u>Unknown 1</u>	3	NI	NA	
4. <u>Geum macrophyllum</u> (Large-Leaf Avens)	3	N	FAC	
5. <u>Epilobium ciliatum</u> (Fringed Willowherb)	3	N	FACW	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
101 = Total Cover				
Woody Vine Stratum (Plot size: <u>3 m</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
0 = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>				

Remarks:

SOIL

Sampling Point: SP 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 14+	10YR 3/3	100					Gr. S. Loam	with cobbles (1-3" diameter), charcoal & fire peds

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of wetland hydrology were observed to a depth of 14 inches below ground surface.

APPENDIX B

Critical Area Report for Adelfia (WRI)



CRITICAL AREA REPORT

FOR

ADELFA – 44TH ST NE

Wetland Resources, Inc. Project #18289

Prepared By

Wetland Resources, Inc.
9505 19th Avenue SE, Suite 106
Everett, WA 98208
(425) 337-3174

Prepared For

Adelfia, LLC
Attn: Chris Markezinis
1007 Stitch Road
Lake Stevens, WA 98258

March 1, 2019

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FIGURE 1: AERIAL VIEW OF THE SUBJECT SITE. (NOT TO SCALE)	1
FIGURE 2: VINCINTY MAP OF THE SUBJECT SITE. (NOT TO SCALE)	2

1.0 INTRODUCTION

Wetland Resources, Inc. investigated the subject properties on September 11, 2018 to locate and evaluate jurisdictional wetlands and streams on and within the vicinity of the properties located at 7315 and 7417 44th St NE, in the City of Marysville (Snohomish County tax parcels No. 30053500303600 and No. 30053500303700). Further located within a portion of Section 35, Township 30N, Range 5E, W.M. The subject site is developed, with two single-family residences and various outbuildings.

The purpose of this report is to characterize wetlands and streams on site and in the vicinity of the subject site, as required per Marysville Municipal Code (MMC) 22G.110.070. At this time, no development is proposed.



Figure 1: Aerial view of the subject site. (Not to scale)

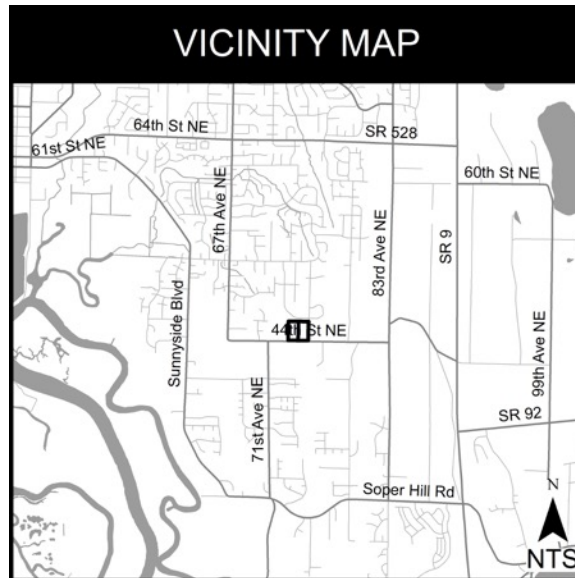


Figure 2: Vicinity map of the subject site. (Not to scale)

1.1 SITE DESCRIPTION

Access to the site is from the south, via 44th Street Northeast/Line Road. The subject parcels contain two residences and associated infrastructure including driveways and maintained lawns. The majority of the site is undeveloped and composed of forested vegetation. Surrounding land use consists of medium and high-density residential development and a recreational area (Deering Wild Flower Acres).

Vegetation within the naturally vegetated portions of the site includes a dense over story of Western red cedar (*Thuja plicata*), bigleaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), with an understory of vine maple (*Acer circinatum*), Himalayan blackberry (*Rubus armeniacus*), salmonberry (*Rubus spectabilis*), beaked hazelnut (*Corylus cornuta*), trailing blackberry (*Rubus ursinus*), sword fern (*Polystichum munitum*), lady fern (*Athyrium filix-femina*), spreading wood fern (*Dryopteris expansa*), and skunk cabbage (*Lysichiton americanus*). Topography of the site generally slopes towards the southwest. On-site soils are mapped as Tokul gravelly medial loam 0 to 8 and 8 to 15 percent slopes.

Two wetlands were identified on-site (Wetlands A and B). Under the 2014 Wetland Rating System for Western Washington, Wetland A is classified as a Category I wetland with a moderate habitat score of 7. Wetland B is classified as a Category III wetland with a moderate habitat score of 5. Pursuant to Marysville Municipal Code (MMC) 22E.010.100, Category I wetlands receive 125-foot standard buffers, while Category III wetlands receive 75-foot standard buffers.

1.2 PROJECT DESCRIPTION

The applicant is proposing a boundary line adjustment. No development or impacts to critical areas are proposed.

2.0 REVIEW OF EXISTING INFORMATION

Prior to conducting the site investigation, public resources were reviewed to gather background information on the subject property and the surrounding area in regards to critical areas. The following information was examined:

- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory depicts a riverine (unknown perennial, unconsolidated bottom, permanently flooded) system approximately 280 feet northwest of the subject property.
- USDA/Natural Resources Conservation Service (NRCS) Web Soil Survey maps the soils on-site as Tokul gravelly medial loam, 0 to 8 percent and 8 to 15 percent slopes.
- WDFW Priority Habitat and Species (PHS) Interactive Map shows a freshwater forested/shrub wetland approximately 530 feet south of the subject properties.
- Snohomish County PDS Map Portal depicts a remote sensing-based wetland on the subject property in the west. Additionally, a non-fish habitat seasonal stream is shown approximately 20 feet to the west. This stream contributes to a fish habitat stream that is a tributary to the Allen Creek associated estuary (which drains to Ebey Slough).
- WDNR Forest Practices Application Mapping Tool (FPAMT) depicts the same stream shown by Snohomish County PDS Map Portal.
- WDFW SalmonScope depicts the same stream presented by the aforementioned resources, but indicates that the stream just west of the site it is fish-bearing throughout, with documented presence of resident coastal cutthroat.
- City of Marysville Critical Areas Map shows the stream discussed above as a Type F stream. It also depicts a Category IV wetland on-site in the west.
- City of Marysville Salmonid Maps: The City of Marysville Salmonid Maps for Coho and Resident Cutthroat Distribution depicts these species presence within the stream west of the site, beginning west of 67th Ave NE.

3.0 WETLAND DETERMINATION

3.1 METHODOLOGY

Wetland boundaries in western Washington are determined using the routine determination approach described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (U.S. Army Corps of Engineers 2010). Under the routine methodology, the process for making a wetland determination is based on three steps:

- 1.) Examination of the site for hydrophytic vegetation (species present and percent cover);
- 2.) Examination of the site for hydric soils;

3.) Determining the presence of wetland hydrology

3.1.1 Vegetation Criteria

The Corps Manual and 2010 Regional Supplement define hydrophytic vegetation as “*the assemblage of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to influence plant occurrence.*” Field indicators are used to determine whether the hydrophytic vegetation criteria have been met. Examples of these indicators include, but are not limited to, the rapid test for hydrophytic vegetation, a dominance test result of greater than 50%, and/or a prevalence index score less than or equal to 3.0.

3.1.2 Soils Criteria and Mapped Description

The 2010 Regional Supplement (per the National Technical Committee for Hydric Soils) defines hydric soils as soils “*that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.*” Field indicators are used to determine whether a given soil meets the definition for hydric soils. Indicators are numerous and include, but are not limited to, presence of a histosol or histic epipedon, a sandy gleyed matrix, depleted matrix, and redoximorphic depressions.

Soils on the subject property are mapped in the NRCS Web Soil Survey as Tokul Gravelly Medial Loam, 0 to 8 and 8 to 15 percent slopes.

Tokul Gravelly Loam, 0 to 8 and 8 to 15 percent slopes, are described as moderately deep, moderately well drained soil on till plains. This soil formed in glacial till and volcanic ash. Typically, the surface is covered with a mat of leaves, twigs, and decomposed litter about two inches thick. The surface layer is dark brown gravelly loam about 4 inches thick. The subsoil is brown, strong brown, and dark yellowish brown gravelly loam about 18 inches thick. A hardpan is at a depth of about 31 inches. Permeability of this soil is moderate above the hardpan and very slow through it. Available water capacity is moderate. Included in this unit are areas of soils that have slopes of more than 8 percent, McKenna and Norma soils in depressional areas along drainageways on till plains, Terric Medisaprists in depressional areas on till plains, Winston and Pastik soils on terraces and outwash plains, and Ragnar soils on outwash plains. Included areas make up about 25 percent of the total acreage. McKenna and Norma soils are listed on the Hydric Soils List for Washington State.

3.1.3 Hydrology Criteria

The 2010 Regional Supplement defines wetland hydrology as “*areas that are inundated (flooded or ponded) or the water table is less than or equal to 12 inches below the soil surface for 14 or more consecutive days during the growing season at a minimum frequency of 5 years in 10.*” During the early growing season, wetland hydrology determinations are made based on physical observation of surface water, a high water table, or saturation in the upper 12 inches. Outside of the early growing season, wetland hydrology determinations are made based on physical evidence of recent inundation or saturation (i.e. water marks, surface soil cracks, water-stained leaves).

3.2 BOUNDARY DETERMINATION FINDINGS

3.2.1 Wetland A

HGM Class: Depressional

Cowardin Classification: Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded/Saturated

City of Marysville: Category I, 125-foot buffer

Wetland A is a large (approximately 10.3-acres), depressional wetland located on the western parcel (No. 30053500303600), extending off-site to the north and west. Vegetation within the on-site portion of Wetland A includes red alder (*Alnus rubra*; FAC), salmonberry (*Rubus spectabilis*; FAC), beaked hazelnut (*Corylus cornuta*; FACU), red osier dogwood (*Cornus sericea*; FACW), skunk cabbage (*Lysichiton americanus*; OBL), piggyback plant (*Tolmeia menziesii*; FAC), lady fern (*Athyrium filix-femina*; FAC), and spreading woodfern (*Dryopteris expansa*; FACW). Soils in the on-site portion of the wetland have a Munsell color of black (10YR 2/1) with a silty loam texture from 0 to 16 inches. It is assumed these soils meet hydric soil indicator A12, Thick Dark Surface, given the site geomorphology and the strong hydrophytic vegetative community. Soils were moist at the time of the site investigation and further met wetland hydrology indicators Geomorphic Position (D2) and FAC-Neutral Test (D5).

3.2.2 Wetland B

HGM Class: Depressional

Cowardin classification: Palustrine, Forested, Broad-leaved deciduous, Saturated

City of Marysville: Category III, 75-foot buffer

Wetland B is a small (220 square foot), depressional wetland located to the east of Wetland A. This wetland is approximately. Vegetation within the wetland includes red alder (*Alnus rubra*; FAC), Western red cedar (*Thuja plicata*; FAC), salmonberry (*Rubus spectabilis*; FAC), Himalayan blackberry (*Rubus armeniacus*; FAC), vine maple (*Acer circinatum*; FAC), knotweed (*Polygonum cuspidatum*; FACU), reed canary grass (*Phalaris arundinacea*; FACW), lady fern (*Athyrium filix-femina*; FAC), and sword fern (*Polystichum munitum*; FACU). Soils within the wetland are generally dark gray (10YR 4/1) with a sandy loam texture from 0 to 6 inches. From 6 to 14 inches below the soil surface, soils are grayish brown (10YR 5/2) with dark yellowish brown (10YR 3/6) redoximorphic features and a silty clay loam texture. At the time of the site investigation soils were moist and further met wetland hydrology indicators Geomorphic Position (D2) and FAC-Neutral Test (D5).

3.2.3 Non-wetland Areas

Vegetation within the non-wetland areas of the site includes Western red cedar (*Thuja plicata*, FAC), big leaf maple (*Acer macrophyllum*; FACU), red alder (*Alnus rubra*, FAC), vine maple (*Acer circinatum*; FAC), salmonberry (*Rubus spectabilis*; FAC), Himalayan blackberry (*Rubus armeniacus*; FAC), trailing black berry (*Rubus ursinus*; FACU), and sword fern (*Polystichum munitum*; FACU). Non-wetland soils on the site are generally dark brown (10YR 3/3) and a loam texture throughout the soil profile, sometimes with yellowish red (5YR 4/6) redoximorphic features in the sublayer. The soils in areas not mapped as wetlands were dry throughout the profile at the time of the site investigation.

4.0 FUNCTIONS & VALUES ASSESSMENT

The methodology for this functions and values assessment is based on professional opinion developed through past field analyses and interpretation. This assessment pertains specifically to the wetlands and buffer on site, but is characteristic of similar wetland and buffer systems found throughout western Washington. Because no wetland or buffer impacts are proposed, only the existing conditions of Wetland A, Wetland B, and buffer area will be discussed.

4.1 WETLAND A – EXISTING CONDITIONS

Wetland A is a large, depressionnal forested wetland, with a permanently flowing outlet. This wetland is primarily vegetated with native species and the vegetation is fairly dense, allowing the wetland to perform bio-filtration functions. Areas of seasonal ponding provide water quality improvement by increasing residence time and allowing particulates to settle. The subject property is located in an increasingly developed area, providing an opportunity for it to improve water quality. The depressionnal nature of this wetland allows it to store storm water and slowly release it, helping to moderate downstream flows and reduce potential flood damage. Wetland A is dominated by forested vegetation (with multiple strata) and two hydroperiods. This, in combination with multiple special habitat features (such as downed large woody debris, standing snags, undercut banks, and minimal invasive species), allows the wetland to provide a moderate level habitat function. Overall, this wetland provides a moderate to high level of functions and values. No impacts to Wetland A are proposed.

4.2 WETLAND B – EXISTING CONDITIONS

Wetland B is a small (220 square foot), forested wetland with no outlet, located immediately east of the driveway, separating it from Wetland A. Because this wetland is located in a depressionnal area with no outlet it is able to store water during storm events, helping to attenuate flooding down gradient, and allows particulates to settle. These features enable Wetland B to provide a moderate level of water quality and low level of hydrologic function. The wetland is dominated by forested vegetation (with multiple strata) and one hydroperiod. With no interspersions of habitats, no special habitat features, and limited priority habitats in close proximity, Wetland B provides a moderate level of habitat function. In terms of hydrologic and habitat function, the wetland is limited due its small size. Overall, Wetland B provides a low to moderate level of functions and values. No impacts to Wetland B are proposed.

4.3 WETLAND BUFFER – EXISTING CONDITIONS

The majority of the buffer on-site is forested, with multiple vegetative strata in the understory. A small portion of on-site buffer consists of maintained lawn, an existing building, and driveway. Unvegetated areas and mowed grasses provide a low level of stormwater moderation, potential to improve water quality, and habitat, as a lack of structural diversity limits opportunity for perching, refuge, and available food sources. Contrastingly, the forested areas moderate stormwater runoff, reducing soil erosion potential, and provide ample opportunities for perching, refuge, and native food sources. Vegetation in the understory is primarily a mix of native vegetation, with some patches of invasive Himalayan blackberry. The subject property is relatively undisturbed, but is located in an increasingly developed area. No impacts to wetland buffer are proposed.

5.0 USE OF THIS REPORT

This Critical Area Report is supplied to Adelfia LLC, as a means of determining on-site wetland conditions as required by the City of Marysville during the permitting process. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions.

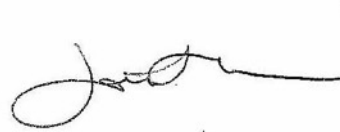
The laws applicable to wetlands are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report, and any implied representation or warranty is disclaimed.

Wetland Resources, Inc.



Tess Amen
Associate Ecologist



Joie Goodman
Associate Ecologist

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APPENDIX A

DEPARTMENT OF ECOLOGY
WETLAND RATING FORMS

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Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 18289 - Wetland A Date of site visit: 9-11-18

Rated by JG, AR Trained by Ecology? Yes No Date of training 9-15

HGM Class used for rating DEPRESSIONAL Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (figures can be combined).

Source of base aerial photo/map Snohomish County

OVERALL WETLAND CATEGORY 23 (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

Category I – Total score = 23 - 27

Category II – Total score = 20 - 22

Category III – Total score = 16 - 19

Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	
Landscape Potential	<input checked="" type="checkbox"/> M L	<input checked="" type="checkbox"/> M L	H <input checked="" type="checkbox"/> L	
Value	<input checked="" type="checkbox"/> M L	<input checked="" type="checkbox"/> M L	<input checked="" type="checkbox"/> M L	TOTAL
Score Based on Ratings	8	8	7	23

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H

8 = H,H,M

7 = H,H,L

7 = H,M,M

6 = H,M,L

6 = M,M,M

5 = H,L,L

5 = M,M,L

4 = M,L,L

3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	<input checked="" type="checkbox"/>

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	A1
Hydroperiods	D 1.4, H 1.2	A1
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	A1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	A1
Map of the contributing basin	D 4.3, D 5.3	A2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	A2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	A3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	A4

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number A

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – **Saltwater Tidal Fringe (Estuarine)**

YES – **Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

_The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

_At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

_The wetland is on a slope (*slope can be very gradual*),

_The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

_The water leaves the wetland **without being impounded**.

NO – go to 5

YES – The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

_The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

_The overbank flooding occurs at least once every 2 years.

Wetland name or number A **NO** – go to 6**YES** – The wetland class is **Riverine****NOTE:** The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7

YES – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
Slope + Riverine	<input type="checkbox"/>	Riverine
Slope + Depressional	<input checked="" type="checkbox"/>	Depressional
Slope + Lake Fringe	<input type="checkbox"/>	Lake Fringe
Depressional + Riverine along stream within boundary of depression	<input type="checkbox"/>	Depressional
Depressional + Lake Fringe	<input type="checkbox"/>	Depressional
Riverine + Lake Fringe	<input type="checkbox"/>	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	<input type="checkbox"/>	Treat as ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.

Wetland name or number A

DEPRESSIONAL AND FLATS WETLANDS		
Water Quality Functions - Indicators that the site functions to improve water quality		
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u> <input type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). <p style="text-align: right;">points = 3</p> <input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. <p style="text-align: right;">points = 2</p> <input checked="" type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing <p style="text-align: right;">points = 1</p> <input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. <p style="text-align: right;">points = 1</p>	1	
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 <input type="checkbox"/> No = 0	0	
D 1.3. <u>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</u> <input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area <p style="text-align: right;">points = 5</p> <input type="checkbox"/> Wetland has persistent, ungrazed, plants > ½ of area <p style="text-align: right;">points = 3</p> <input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area <p style="text-align: right;">points = 1</p> <input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area <p style="text-align: right;">points = 0</p>	5	
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i> <input checked="" type="checkbox"/> Area seasonally ponded is > ½ total area of wetland <p style="text-align: right;">points = 4</p> <input type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland <p style="text-align: right;">points = 2</p> <input type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland <p style="text-align: right;">points = 0</p>	4	
Total for D 1	Add the points in the boxes above	10

Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 2.3. Are there septic systems within 250 ft of the wetland?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 <input type="checkbox"/> No = 0	0
Total for D 2	Add the points in the boxes above	3

Rating of Landscape Potential If score is: 3 or 4 = H 1 or 2 = M 0 = L Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 <input type="checkbox"/> No = 0	0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 <input type="checkbox"/> No = 0	0
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	<input type="checkbox"/> Yes = 2 <input type="checkbox"/> No = 0	2
Total for D 3	Add the points in the boxes above	2

Rating of Value If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

--

Wetland name or number A**DEPRESSIONAL AND FLATS WETLANDS****Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
<input type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	0
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
<input checked="" type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	3
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
<input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
<input checked="" type="checkbox"/> The wetland is a "headwater" wetland	points = 3	
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water	points = 1	
<input type="checkbox"/> Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
<input checked="" type="checkbox"/> The area of the basin is less than 10 times the area of the unit	points = 5	5
<input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit	points = 3	
<input type="checkbox"/> The area of the basin is more than 100 times the area of the unit	points = 0	
<input type="checkbox"/> Entire wetland is in the Flats class	points = 5	
Total for D 4		8

Add the points in the boxes above

Rating of Site Potential If score is: 12-16 = H ✓ 6-11 = M 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
Total for D 5		3

Add the points in the boxes above

Rating of Landscape Potential If score is: ✓ 3 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
<input checked="" type="checkbox"/> • Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	2
<input type="checkbox"/> • Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin.	points = 1	
<input type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why _____	points = 0	
<input type="checkbox"/> There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
Yes = 2 <input type="checkbox"/> No = 0		0
Total for D 6		2

Add the points in the boxes above

Rating of Value If score is: ✓ 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number A**These questions apply to wetlands of all HGM classes.****HABITAT FUNCTIONS** - Indicators that site functions to provide important habitat**H 1.0. Does the site have the potential to provide habitat?**

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|--|--|----------|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 1 |
| <input type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|---|----------|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 1 |
| <input checked="" type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 type present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

H 1.3. Richness of plant species

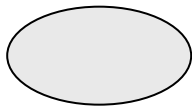
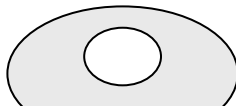
Count the number of plant species in the wetland that cover at least 10 ft².

*Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle***

- | | | |
|---|--|----------|
| If you counted: > 19 species | points = 2 | 2 |
| 5 - 19 species | points = 1 | |
| < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

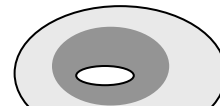
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*

None = 0 points

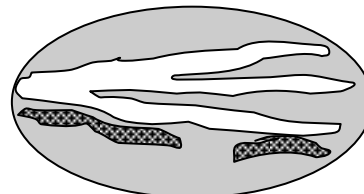
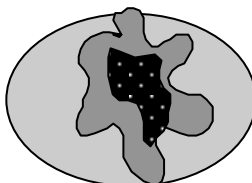
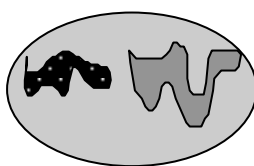
Low = 1 point



Moderate = 2 points

**0**

All three diagrams in this row are **HIGH** = 3points



Wetland name or number A

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).</p> <p><input checked="" type="checkbox"/> Standing snags (dbh > 4 in) within the wetland</p> <p><input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input checked="" type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>		4
Total for H 1	Add the points in the boxes above	8

Rating of Site Potential If score is: 15-18 = H 7-14 = M 0-6 = L

Record the rating on the first page

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: % undisturbed habitat <u>2</u> + [(% moderate and low intensity land uses)/2] <u>3</u> = <u>6</u> %</p> <p>If total accessible habitat is:</p> <p><input type="checkbox"/> > 1/3 (33.3%) of 1 km Polygon points = 3</p> <p><input type="checkbox"/> 20-33% of 1 km Polygon points = 2</p> <p><input type="checkbox"/> 10-19% of 1 km Polygon points = 1</p> <p><input checked="" type="checkbox"/> < 10% of 1 km Polygon points = 0</p>		0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: % undisturbed habitat <u>24</u> + [(% moderate and low intensity land uses)/2] <u>16</u> = <u>40</u> %</p> <p><input type="checkbox"/> Undisturbed habitat > 50% of Polygon points = 3</p> <p><input type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and > 3 patches points = 1</p> <p><input type="checkbox"/> Undisturbed habitat < 10% of 1 km Polygon points = 0</p>		1
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p><input type="checkbox"/> > 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity points = 0</p>		0
Total for H 2	Add the points in the boxes above	1

Rating of Landscape Potential If score is: 4-6 = H 1-3 = M < 1 = L

Record the rating on the first page

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>		
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: points = 2</p> <p><input checked="" type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p><input type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p><input type="checkbox"/> Site does not meet any of the criteria above points = 0</p>		2

Rating of Value If score is: 2 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number A

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number A**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt Yes –Go to SC 1.1 No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No - Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. I Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 2.2 No – Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = Category I No = Not a WHCV	Cat. I
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to SC 3.3 No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Is a Category I bog No – Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog	Cat. I

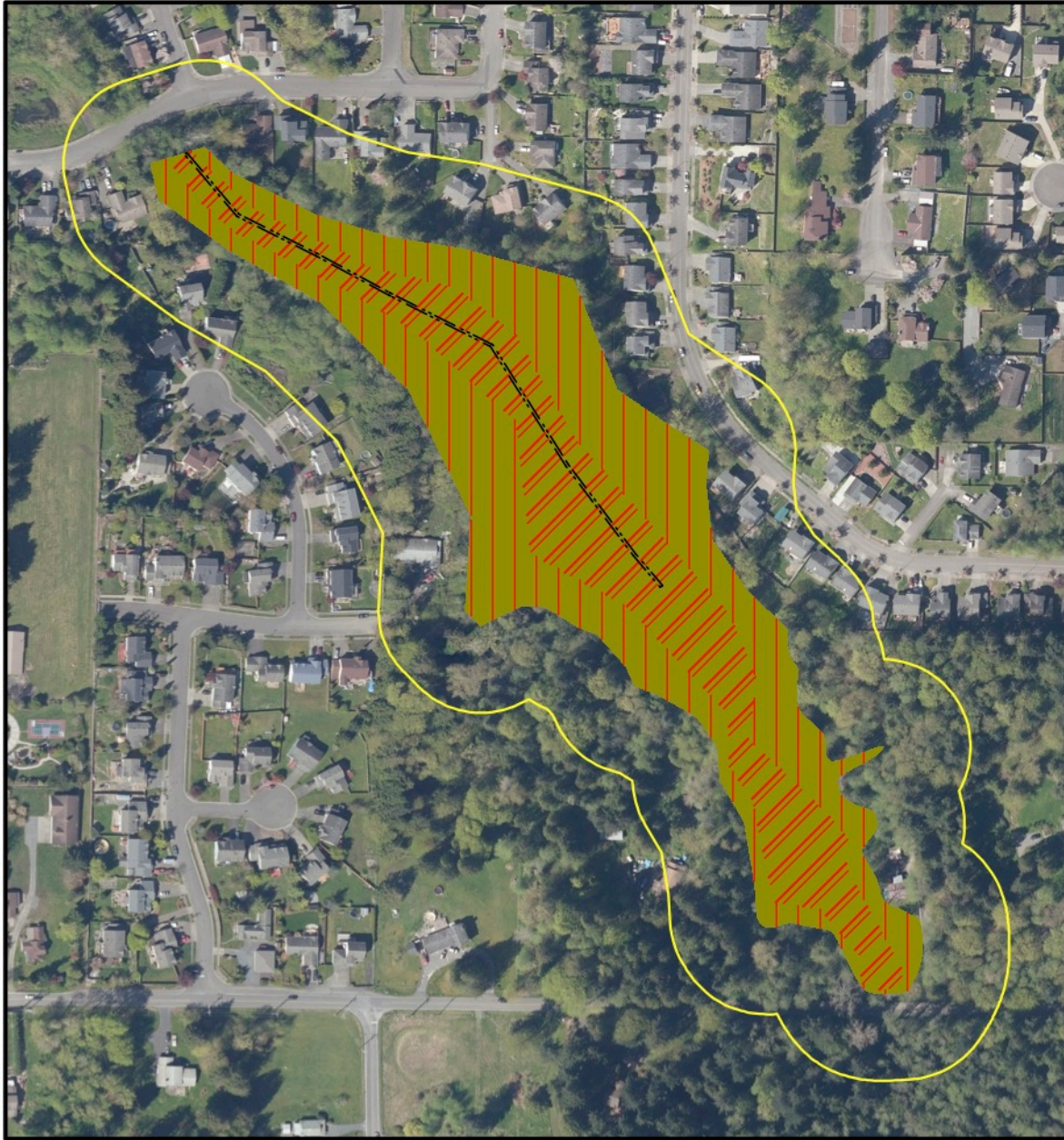
Wetland name or number A

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p style="text-align: right;">Yes = Category I No = Not a forested wetland for this section</p>	Cat. I
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</p> <p style="text-align: right;">Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p style="text-align: right;">Yes = Category I No = Category II</p>	Cat. I Cat. II
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p style="text-align: right;">Yes – Go to SC 6.1 No = not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No – Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV</p>	Cat I Cat. II Cat. III Cat. IV
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	N/A






Wetland name or number _____



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18289 ADELFA - MARYSVILLE
 WETLAND RATING FIGURE 1 - WETLAND A



LEGEND

-  FORESTED VEGETATION
-  SATURATED ONLY
-  SEASONALLY FLOODED
-  150' FROM WL BOUNDARY
-  INTERMITTENT STREAM


Scale 1" = 300'


 **Wetland Resources, Inc.**
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

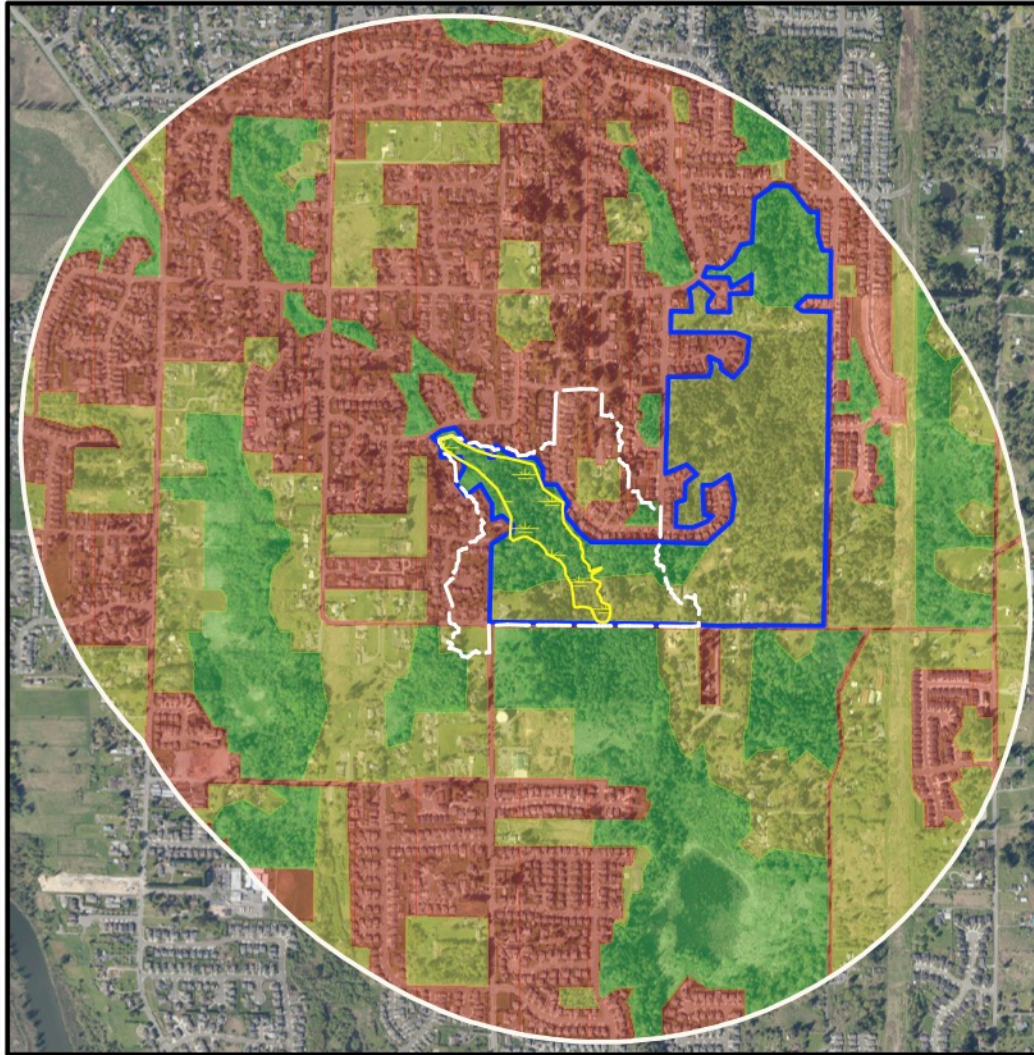
WETLAND RATING

Wetland A

Adelfia LLC
 Attn: Chris Markezinis
 1007 Stitch Rd
 Lake Stevens, WA 98270

Figure A-1
 WRI Job #18289
 Drawn by:AR

18289 ADELFA - MARYSVILLE
 WETLAND RATING FIGURE 2 - WETLAND A



**CONTRIBUTING BASIN
 AREA RELATIVE TO
 WETLAND UNIT IS 5:1**

LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN



Scale 1" = 1,500'



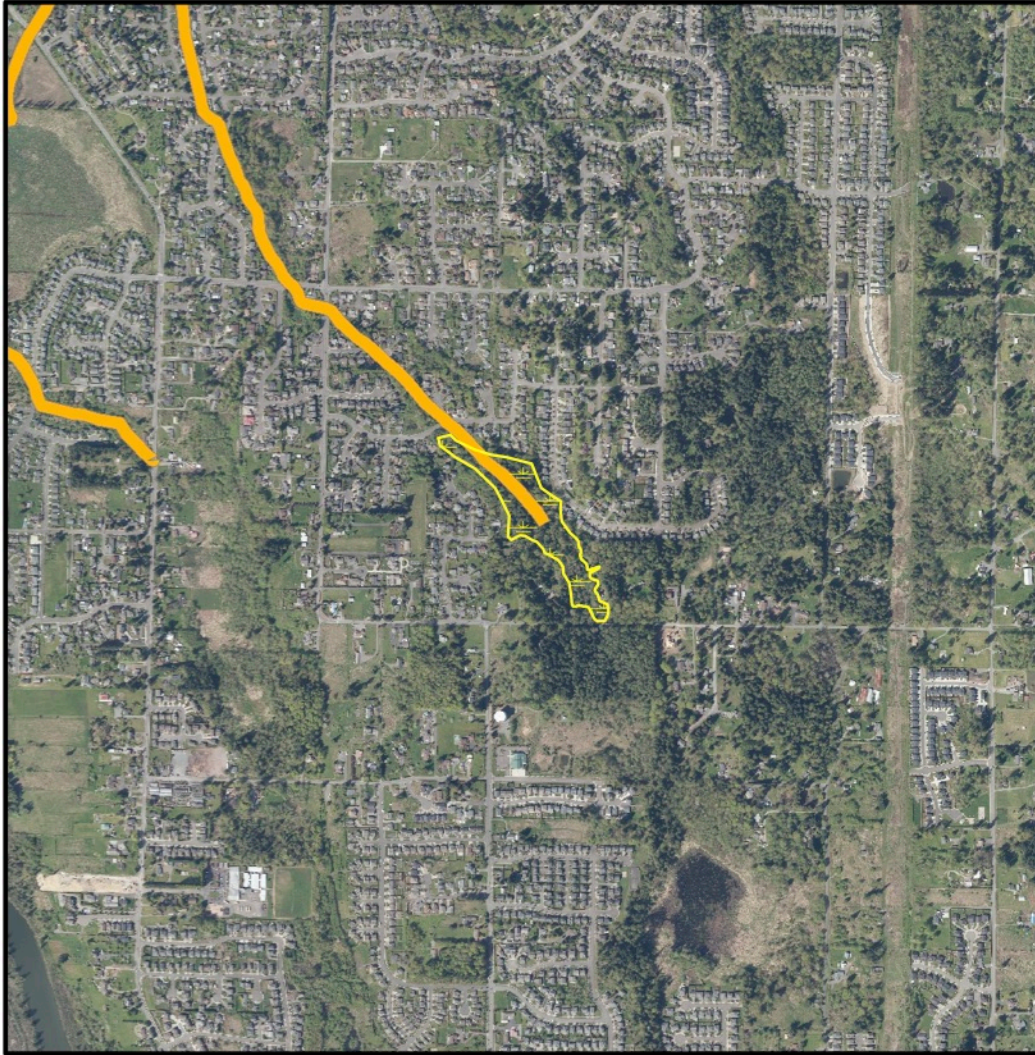
Wetland Resources, Inc.
 Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

**WETLAND RATING
 Wetland A**

Adelfia LLC
 Attn: Chris Markezinis
 1007 Stitch Rd
 Lake Stevens, WA 98270

Figure A-2
 WRI Job #18289
 Drawn by:AR

18289 ADELFA - MARYSVILLE
WETLAND RATING FIGURE 3 - WETLAND A



LEGEND



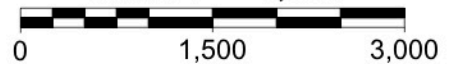
WETLAND



AQUATIC RESOURCES
ON THE 303(d) LIST



Scale 1" = 1,500'



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WETLAND RATING
Wetland A

Adelfia LLC
Attn: Chris Markezinis
1007 Stitch Rd
Lake Stevens, WA 98270
Figure A-3
WRI Job #18289
Drawn by:AR

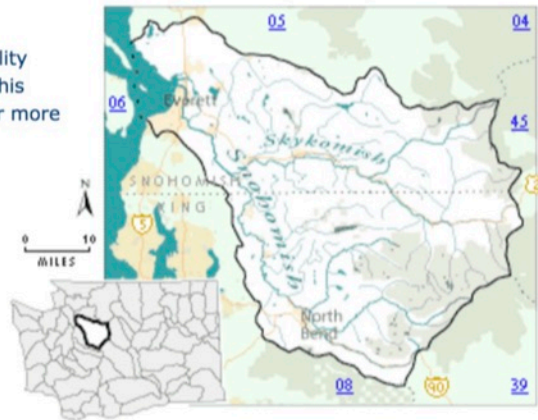
18289 ADELFA - MARYSVILLE
WETLAND RATING FIGURE 4 - WETLAND A

WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.

Counties

- [King](#)
- [Snohomish](#)



Waterbody Name	Pollutant(s)	Status**	TMDL Lead
Lake Loma	Total Phosphorus	Straight to implementation project under development	Tricia Shoblom 425-649-7288
Snohomish River	French Creek / Pilchuck River	Under development	Ralph Svrcek 425-649-7165
	<ul style="list-style-type: none"> • Dissolved Oxygen • Temperature 		
	Dioxin	EPA approved	Ralph Svrcek 425-649-7165
	Estuary	EPA approved	Ralph Svrcek 425-649-7165
	<ul style="list-style-type: none"> • Ammonia • BOD 		
Tributaries	EPA approved	Ralph Svrcek 425-649-7165	
<ul style="list-style-type: none"> • Fecal Coliform Tributaries: <ul style="list-style-type: none"> • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2} 			
Snoqualmie River	EPA approved	Ralph Svrcek 425-649-7165	
<ul style="list-style-type: none"> • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved Has an implementation plan		

** Status will be listed as one of the following: Approved by EPA, Under Development or Implementation

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**WETLAND RATING
Wetland A**

Adelfia LLC
 Attn: Chris Markezinis
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 Lake Stevens, WA 98270

Figure A-4
 WRI Job #18289
 Drawn by:AR

Wetland name or number B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): 18289 - Wetland B Date of site visit: 9-11-18
 Rated by JG, AR Trained by Ecology? Yes No Date of training 9-15
 HGM Class used for rating DEPRESSIONAL Wetland has multiple HGM classes? Y N

NOTE: Form is not complete without the figures requested (*figures can be combined*).
 Source of base aerial photo/map Snohomish County

OVERALL WETLAND CATEGORY III (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

- Category I – Total score = 23 - 27
- Category II – Total score = 20 - 22
- Category III – Total score = 16 - 19
- Category IV – Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
<i>Circle the appropriate ratings</i>				
Site Potential	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H M <input type="checkbox"/> L	H M <input type="checkbox"/> L	
Landscape Potential	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	
Value	<input checked="" type="checkbox"/> M L	H M <input type="checkbox"/> L	H <input type="checkbox"/> <input checked="" type="checkbox"/> L	TOTAL
Score Based on Ratings	7	4	5	16

Score for each function based on three ratings
(order of ratings is not important)

- 9 = H,H,H
- 8 = H,H,M
- 7 = H,H,L
- 7 = H,M,M
- 6 = H,M,L
- 6 = M,M,M
- 5 = H,L,L
- 5 = M,M,L
- 4 = M,L,L
- 3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	I II
Wetland of High Conservation Value	I
Bog	I
Mature Forest	I
Old Growth Forest	I
Coastal Lagoon	I II
Interdunal	I II III IV
None of the above	<input checked="" type="checkbox"/>

Wetland name or number B

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	B1
Hydroperiods	D 1.4, H 1.2	B1
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	B1
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	B1
Map of the contributing basin	D 4.3, D 5.3	B2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	B2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	B3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	B4

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to figure above</i>)	S 4.1	
Boundary of 150 ft buffer (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

Wetland name or number **B**_____

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO – go to 2

YES – the wetland class is **Tidal Fringe** – go to 1.1

- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO – **Saltwater Tidal Fringe (Estuarine)**

YES – **Freshwater Tidal Fringe**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO – go to 3

YES – The wetland class is **Flats**

*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

3. Does the entire wetland unit **meet all** of the following criteria?

_The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

_At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO – go to 4

YES – The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?

_The wetland is on a slope (*slope can be very gradual*),

_The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks,

_The water leaves the wetland **without being impounded**.

NO – go to 5

YES – The wetland class is **Slope**

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

5. Does the entire wetland unit **meet all** of the following criteria?

_The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

_The overbank flooding occurs at least once every 2 years.

Wetland name or number B **NO** – go to 6**YES** – The wetland class is **Riverine****NOTE:** The Riverine unit can contain depressions that are filled with water when the river is not flooding

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

NO – go to 7

YES – The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

NO – go to 8

YES – The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated		HGM class to use in rating
Slope + Riverine	<input type="checkbox"/>	Riverine
Slope + Depressional	<input type="checkbox"/>	Depressional
Slope + Lake Fringe	<input type="checkbox"/>	Lake Fringe
Depressional + Riverine along stream within boundary of depression	<input type="checkbox"/>	Depressional
Depressional + Lake Fringe	<input type="checkbox"/>	Depressional
Riverine + Lake Fringe	<input type="checkbox"/>	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	<input type="checkbox"/>	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

Wetland name or number B

DEPRESSIONAL AND FLATS WETLANDS			
Water Quality Functions - Indicators that the site functions to improve water quality			
D 1.0. Does the site have the potential to improve water quality?			
D 1.1. <u>Characteristics of surface water outflows from the wetland:</u>			
<input checked="" type="checkbox"/> Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3		3	
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2			
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1			
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1			
D 1.2. <u>The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions).</u> Yes = 4 <input type="checkbox"/> No = 0		0	
D 1.3. <u>Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):</u>			
<input checked="" type="checkbox"/> Wetland has persistent, ungrazed, plants > 95% of area points = 5		5	
<input type="checkbox"/> Wetland has persistent, ungrazed, plants > ½ of area points = 3			
<input type="checkbox"/> Wetland has persistent, ungrazed plants > 1/10 of area points = 1			
<input type="checkbox"/> Wetland has persistent, ungrazed plants < 1/10 of area points = 0			
D 1.4. <u>Characteristics of seasonal ponding or inundation:</u> <i>This is the area that is ponded for at least 2 months. See description in manual.</i>			
<input type="checkbox"/> Area seasonally ponded is > ½ total area of wetland points = 4		0	
<input type="checkbox"/> Area seasonally ponded is > ¼ total area of wetland points = 2			
<input checked="" type="checkbox"/> Area seasonally ponded is < ¼ total area of wetland points = 0			
Total for D 1		Add the points in the boxes above	8

Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L Record the rating on the first page

D 2.0. Does the landscape have the potential to support the water quality function of the site?			
D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 <input type="checkbox"/> No = 0	0	
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1	
D 2.3. Are there septic systems within 250 ft of the wetland?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1	
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source _____	Yes = 1 <input type="checkbox"/> No = 0	0	
Total for D 2		Add the points in the boxes above	2

Rating of Landscape Potential If score is: 3 or 4 = H 1 or 2 = M 0 = L Record the rating on the first page

D 3.0. Is the water quality improvement provided by the site valuable to society?			
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 <input type="checkbox"/> No = 0	0	
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 <input type="checkbox"/> No = 0	0	
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)?	<input type="checkbox"/> Yes = 2 <input type="checkbox"/> No = 0	2	
Total for D 3		Add the points in the boxes above	2

Rating of Value If score is: 2-4 = H 1 = M 0 = L Record the rating on the first page

--

Wetland name or number B**DEPRESSIONAL AND FLATS WETLANDS****Hydrologic Functions** - Indicators that the site functions to reduce flooding and stream degradation

D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
<input checked="" type="checkbox"/> Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4		4
<input type="checkbox"/> Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet points = 2		
<input type="checkbox"/> Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch points = 1		
<input type="checkbox"/> Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0		
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.		
<input type="checkbox"/> Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7		0
<input type="checkbox"/> Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5		
<input type="checkbox"/> Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3		
<input type="checkbox"/> The wetland is a "headwater" wetland points = 3		
<input type="checkbox"/> Wetland is flat but has small depressions on the surface that trap water points = 1		
<input checked="" type="checkbox"/> Marks of ponding less than 0.5 ft (6 in) points = 0		
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
<input type="checkbox"/> The area of the basin is less than 10 times the area of the unit points = 5		0
<input type="checkbox"/> The area of the basin is 10 to 100 times the area of the unit points = 3		
<input checked="" type="checkbox"/> The area of the basin is more than 100 times the area of the unit points = 0		
<input type="checkbox"/> Entire wetland is in the Flats class points = 5		
Total for D 4	Add the points in the boxes above	4

Rating of Site Potential If score is: 12-16 = H 6-11 = M 0-5 = L

Record the rating on the first page

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?		
D 5.1. Does the wetland receive stormwater discharges?	Yes = 1 <input type="checkbox"/> No = <input type="checkbox"/>	0
D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?	<input type="checkbox"/> Yes = 1 <input type="checkbox"/> No = 0	1
Total for D 5	Add the points in the boxes above	2

Rating of Landscape Potential If score is: 3 = H 1 or 2 = M 0 = L

Record the rating on the first page

D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met. The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		
<input type="checkbox"/> • Flooding occurs in a sub-basin that is immediately down-gradient of unit. points = 2		0
<input type="checkbox"/> • Surface flooding problems are in a sub-basin farther down-gradient. points = 1		
<input type="checkbox"/> Flooding from groundwater is an issue in the sub-basin. points = 1		
<input checked="" type="checkbox"/> The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why <u>DRIVEWAY IMPOUNDS WATER</u> points = 0		
<input type="checkbox"/> There are no problems with flooding downstream of the wetland. points = 0		
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		
	Yes = 2 <input type="checkbox"/> No = <input type="checkbox"/>	0
Total for D 6	Add the points in the boxes above	0

Rating of Value If score is: 2-4 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number B

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

H 1.0. Does the site have the potential to provide habitat?

H 1.1. Structure of plant community: *Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.*

- | | | |
|--|--|----------|
| <input type="checkbox"/> Aquatic bed | 4 structures or more: points = 4 | 1 |
| <input type="checkbox"/> Emergent | 3 structures: points = 2 | |
| <input type="checkbox"/> Scrub-shrub (areas where shrubs have > 30% cover) | 2 structures: points = 1 | |
| <input checked="" type="checkbox"/> Forested (areas where trees have > 30% cover) | 1 structure: points = 0 | |
| <i>If the unit has a Forested class, check if:</i> | | |
| <input checked="" type="checkbox"/> The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon | | |

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (*see text for descriptions of hydroperiods*).

- | | | |
|--|--|----------|
| <input type="checkbox"/> Permanently flooded or inundated | 4 or more types present: points = 3 | 0 |
| <input type="checkbox"/> Seasonally flooded or inundated | 3 types present: points = 2 | |
| <input type="checkbox"/> Occasionally flooded or inundated | 2 types present: points = 1 | |
| <input checked="" type="checkbox"/> Saturated only | 1 type present: points = 0 | |
| <input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland | | |
| <input type="checkbox"/> Lake Fringe wetland | 2 points | |
| <input type="checkbox"/> Freshwater tidal wetland | 2 points | |

H 1.3. Richness of plant species

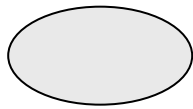
Count the number of plant species in the wetland that cover at least 10 ft².

Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle

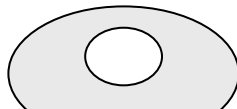
- | | | |
|--|--|----------|
| If you counted: > 19 species | points = 2 | 1 |
| 5 - 19 species | points = 1 | |
| < 5 species | points = 0 | |

H 1.4. Interspersion of habitats

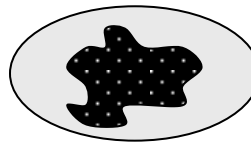
Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. *If you have four or more plant classes or three classes and open water, the rating is always high.*



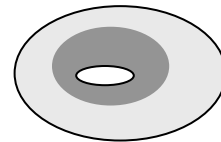
None = 0 points



Low = 1 point

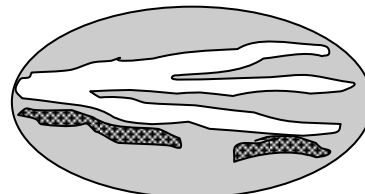
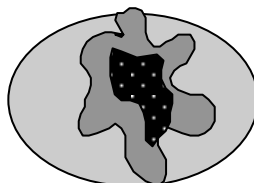
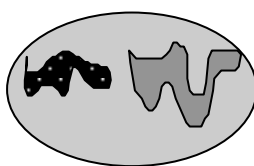


Moderate = 2 points



0

All three diagrams in this row are **HIGH** = 3points



Wetland name or number B

<p>H 1.5. Special habitat features:</p> <p>Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i></p> <p><input type="checkbox"/> Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).</p> <p><input type="checkbox"/> Standing snags (dbh > 4 in) within the wetland</p> <p><input type="checkbox"/> Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)</p> <p><input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>)</p> <p><input type="checkbox"/> At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>)</p> <p><input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in every stratum of plants (<i>see H 1.1 for list of strata</i>)</p>		0
Total for H 1	Add the points in the boxes above	2

Rating of Site Potential If score is: 15-18 = H 7-14 = M 0-6 = L

Record the rating on the first page

<p>H 2.0. Does the landscape have the potential to support the habitat functions of the site?</p>		
<p>H 2.1. Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>).</p> <p>Calculate: % undisturbed habitat <u>4</u> + [(% moderate and low intensity land uses)/2] <u>5</u> = <u>9</u> %</p> <p>If total accessible habitat is:</p> <p><input type="checkbox"/> > 1/3 (33.3%) of 1 km Polygon points = 3</p> <p><input type="checkbox"/> 20-33% of 1 km Polygon points = 2</p> <p><input type="checkbox"/> 10-19% of 1 km Polygon points = 1</p> <p><input checked="" type="checkbox"/> < 10% of 1 km Polygon points = 0</p>		0
<p>H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.</p> <p>Calculate: % undisturbed habitat <u>28</u> + [(% moderate and low intensity land uses)/2] <u>18</u> = <u>46</u> %</p> <p><input type="checkbox"/> Undisturbed habitat > 50% of Polygon points = 3</p> <p><input type="checkbox"/> Undisturbed habitat 10-50% and in 1-3 patches points = 2</p> <p><input checked="" type="checkbox"/> Undisturbed habitat 10-50% and > 3 patches points = 1</p> <p><input type="checkbox"/> Undisturbed habitat < 10% of 1 km Polygon points = 0</p>		1
<p>H 2.3. Land use intensity in 1 km Polygon: If</p> <p><input type="checkbox"/> > 50% of 1 km Polygon is high intensity land use points = (- 2)</p> <p><input checked="" type="checkbox"/> ≤ 50% of 1 km Polygon is high intensity points = 0</p>		0
Total for H 2	Add the points in the boxes above	1

Rating of Landscape Potential If score is: 4-6 = H 1-3 = M < 1 = L

Record the rating on the first page

<p>H 3.0. Is the habitat provided by the site valuable to society?</p>		
<p>H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i></p> <p>Site meets ANY of the following criteria: points = 2</p> <p><input type="checkbox"/> It has 3 or more priority habitats within 100 m (see next page)</p> <p><input type="checkbox"/> It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists)</p> <p><input type="checkbox"/> It is mapped as a location for an individual WDFW priority species</p> <p><input type="checkbox"/> It is a Wetland of High Conservation Value as determined by the Department of Natural Resources</p> <p><input type="checkbox"/> It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan</p> <p><input checked="" type="checkbox"/> Site has 1 or 2 priority habitats (listed on next page) within 100 m points = 1</p> <p><input type="checkbox"/> Site does not meet any of the criteria above points = 0</p>		1

Rating of Value If score is: 2 = H 1 = M 0 = L

Record the rating on the first page

Wetland name or number B

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. <http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here: <http://wdfw.wa.gov/conservation/phs/list/>)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

Wetland name or number B**CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS**

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? <input type="checkbox"/> The dominant water regime is tidal, <input type="checkbox"/> Vegetated, and <input type="checkbox"/> With a salinity greater than 0.5 ppt Yes –Go to SC 1.1 No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = Category I No - Go to SC 1.2	Cat. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? <input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) <input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland. <input type="checkbox"/> The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = Category I No = Category II	Cat. I Cat. II
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 2.2 No – Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes – Contact WNHP/WDNR and go to SC 2.4 No = Not a WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? Yes = Category I No = Not a WHCV	Cat. I
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to SC 3.3 No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = Is a Category I bog No – Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = Is a Category I bog No = Is not a bog	Cat. I

Wetland name or number B

<p>SC 4.0. Forested Wetlands</p> <p>Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i></p> <p><input type="checkbox"/> Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.</p> <p><input type="checkbox"/> Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).</p> <p style="text-align: right;">Yes = Category I No = Not a forested wetland for this section</p>	Cat. I
<p>SC 5.0. Wetlands in Coastal Lagoons</p> <p>Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?</p> <p><input type="checkbox"/> The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks</p> <p><input type="checkbox"/> The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (<i>needs to be measured near the bottom</i>)</p> <p style="text-align: right;">Yes – Go to SC 5.1 No = Not a wetland in a coastal lagoon</p> <p>SC 5.1. Does the wetland meet all of the following three conditions?</p> <p><input type="checkbox"/> The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).</p> <p><input type="checkbox"/> At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or unmowed grassland.</p> <p><input type="checkbox"/> The wetland is larger than 1/10 ac (4350 ft²)</p> <p style="text-align: right;">Yes = Category I No = Category II</p>	Cat. I Cat. II
<p>SC 6.0. Interdunal Wetlands</p> <p>Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i></p> <p>In practical terms that means the following geographic areas:</p> <p><input type="checkbox"/> Long Beach Peninsula: Lands west of SR 103</p> <p><input type="checkbox"/> Grayland-Westport: Lands west of SR 105</p> <p><input type="checkbox"/> Ocean Shores-Copalis: Lands west of SR 115 and SR 109</p> <p style="text-align: right;">Yes – Go to SC 6.1 No = not an interdunal wetland for rating</p> <p>SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = Category I No – Go to SC 6.2</p> <p>SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = Category II No – Go to SC 6.3</p> <p>SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = Category III No = Category IV</p>	Cat I Cat. II Cat. III Cat. IV
<p>Category of wetland based on Special Characteristics</p> <p>If you answered No for all types, enter "Not Applicable" on Summary Form</p>	N/A

Wetland name or number _____

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18289 ADELFA - MARYSVILLE
WETLAND RATING FIGURE 1 - WETLAND B



Scale 1" = 100'



LEGEND

-  SCRUB-SHRUB
-  SATURATED ONLY
-  150' FROM WL BOUNDARY

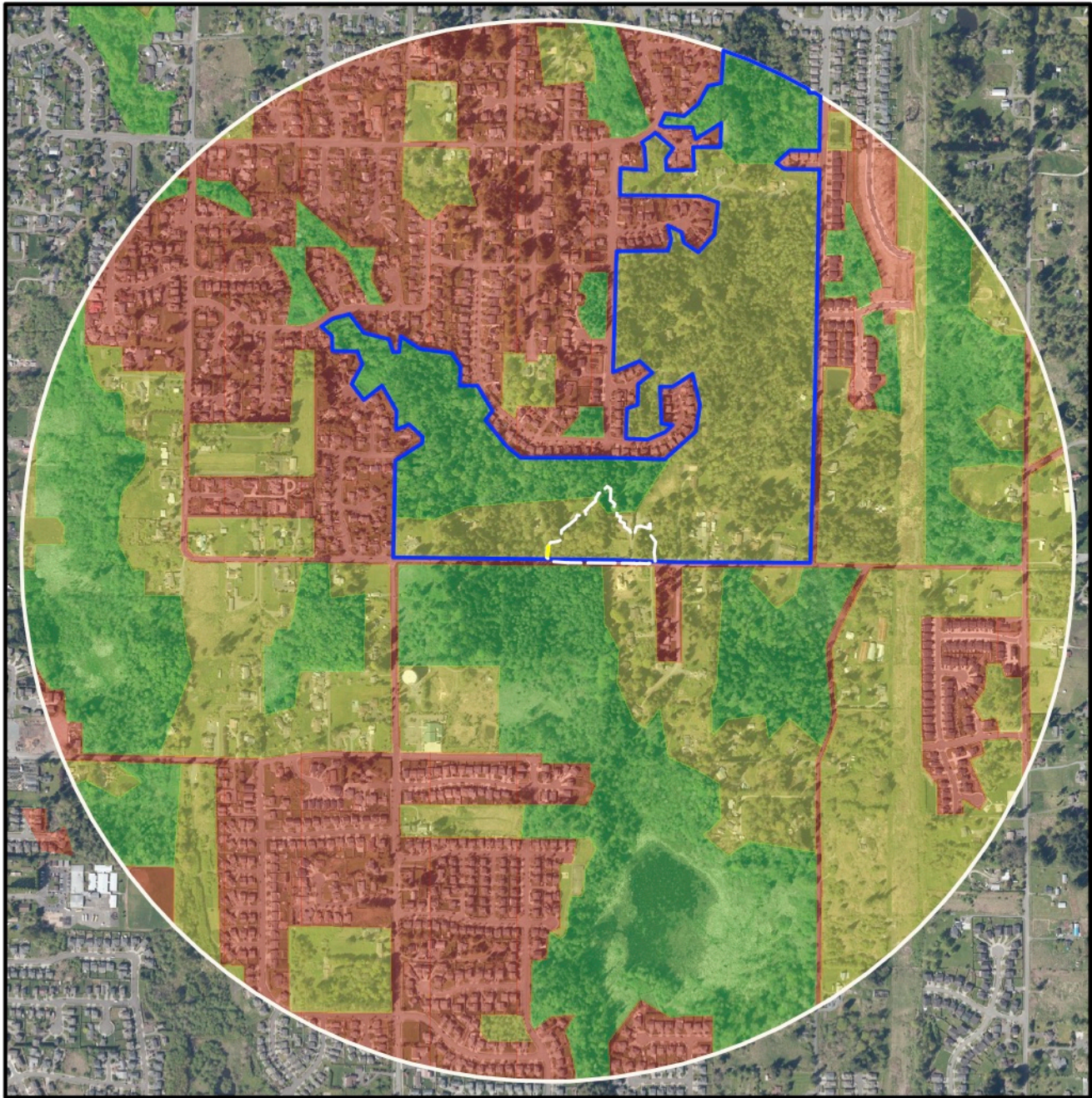
Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland B

Adelfia LLC
Attn: Chris Markezinis
1007 Stitch Rd
Lake Stevens, WA 98270

Figure B-1
WRI Job #18289
Drawn by:AR


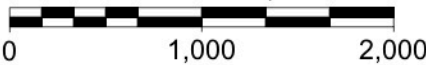
18289 ADELFA - MARYSVILLE
 WETLAND RATING FIGURE 2 - WETLAND B



**CONTRIBUTING BASIN
 AREA RELATIVE TO
 WETLAND UNIT IS 239:1**

LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN


Scale 1" = 1,000'


Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

**WETLAND RATING
 Wetland B**

Adelfia LLC
 Attn: Chris Markezinis
 1007 Stitch Rd
 Lake Stevens, WA 98270

Figure B-2
 WRI Job #18289
 Drawn by:AR

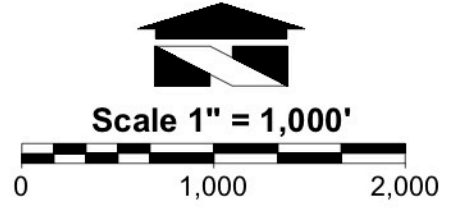
18289 ADELFA - MARYSVILLE
WETLAND RATING FIGURE 3 - WETLAND B



LEGEND

 WETLAND LOCATION

 AQUATIC RESOURCES ON THE 303(d) LIST



Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland B

Adelfia LLC
Attn: Chris Markezinis
1007 Stitch Rd
Lake Stevens, WA 98270

Figure B-3
WRI Job #18289
Drawn by:AR

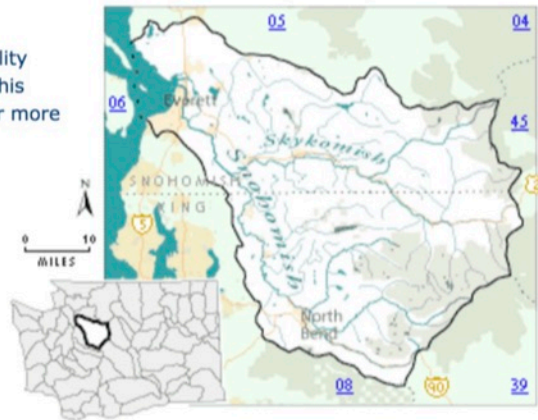
18289 ADELFA - MARYSVILLE
WETLAND RATING FIGURE 4 - WETLAND B

WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.

Counties

- [King](#)
- [Snohomish](#)



Waterbody Name	Pollutant(s)	Status**	TMDL Lead
Lake Loma	Total Phosphorus	Straight to implementation project under development	Tricia Shoblom 425-649-7288
Snohomish River	French Creek / Pilchuck River	Under development	Ralph Svricek 425-649-7165
	<ul style="list-style-type: none"> • Dissolved Oxygen • Temperature 		
	Dioxin	EPA approved	Ralph Svricek 425-649-7165
	Estuary	EPA approved	Ralph Svricek 425-649-7165
	<ul style="list-style-type: none"> • Ammonia • BOD 		
Tributaries	EPA approved	Ralph Svricek 425-649-7165	
<ul style="list-style-type: none"> • Fecal Coliform Tributaries: <ul style="list-style-type: none"> • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2} 			
Snoqualmie River	EPA approved	Ralph Svricek 425-649-7165	
<ul style="list-style-type: none"> • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved Has an implementation plan		

** Status will be listed as one of the following: Approved by EPA, Under Development or Implementation

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

**WETLAND RATING
Wetland B**

Adelfia LLC
 Attn: Chris Markezinis
 1007 Stitch Rd
 Lake Stevens, WA 98270

Figure B-4
 WRI Job #18289
 Drawn by:AR

APPENDIX B

CORPS WETLAND DETERMINATION DATA FORMS

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WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 18289 - 44th St NE City/County: City of Marysville Sampling Date: 9-11-18
 Applicant/Owner: Adelfia LLC State: WA Sampling Point: S1
 Investigator(s): J. Goodman, A. Richardson Section, Township, Range: S35, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): none Slope (%): <5%
 Subregion (LRR): LRR-A Lat: 48.0362683 Long: -122.1330440 Datum: NAD 83
 Soil Map Unit Name: Tokul gravelly medial loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Within Wetland B.	

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>5m²</u>)					
1. <u>Alnus rubra</u>		<u>35</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Thuja plicata</u>		<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. _____					
4. _____					
		<u>55</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>3m²</u>)					
1. <u>Rubus spectabilis</u>		<u>35</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Rubus armeniacus</u>		<u>10</u>	<u>N</u>	<u>FAC</u>	
3. <u>Polygonum cuspidatum</u>		<u>5</u>	<u>N</u>	<u>FACU</u>	
4. <u>Acer circinatum</u>		<u>5</u>	<u>N</u>	<u>FAC</u>	
5. _____					
		<u>55</u>	= Total Cover		
Herb Stratum (Plot size: <u>1m²</u>)					
1. <u>Phalaris arundinacea</u>		<u>50</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Athyrium filix-femina</u>		<u>10</u>	<u>N</u>	<u>FAC</u>	
3. <u>Polystichum munitum</u>		<u>5</u>	<u>N</u>	<u>FACU</u>	
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
		<u>65</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>3m²</u>)					
1. _____					
2. _____					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>35</u>					

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
 Total Number of Dominant Species Across All Strata: 4 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species _____ x 1 = 0
 FACW species _____ x 2 = 0
 FAC species _____ x 3 = 0
 FACU species _____ x 4 = 0
 UPL species _____ x 5 = 0
 Column Totals: 0 (A) 0 (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

SOIL

Sampling Point: S1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-6	10YR 4/1	100	10YR 4/1				Silty Loam	Moist
6-14+	10YR 5/2	90	10YR 3/6	10	C	M	Silty Clay Loam	Moist

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

2 cm Muck (A10)
 Red Parent Material (TF2)
 Very Shallow Dark Surface (TF12)
 Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)	

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): _____	
Saturation Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches): _____	
(includes capillary fringe)			

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 18289 44th St NE City/County: City of Marysville Sampling Date: 9-11-18
 Applicant/Owner: Adelfia LLC State: WA Sampling Point: S2
 Investigator(s): J. Goodman, A. Richardson Section, Township, Range: S35, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): <5%
 Subregion (LRR): LRR-A Lat: 48.0362683 Long: -122.1330440 Datum: NAD 83
 Soil Map Unit Name: Tokul gravelly medial loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <u>Outside Wetland B.</u>	

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	Notes
Tree Stratum (Plot size: <u>5m²</u>)					
1. <u>Thuja plicata</u>		<u>60</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Alnus rubra</u>		<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. _____					
4. _____					
		<u>80</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>3m²</u>)					
1. <u>Acer circinatum</u>		<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Rubus spectabilis</u>		<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. _____					
4. _____					
5. _____					
		<u>15</u>	= Total Cover		
Herb Stratum (Plot size: <u>1m²</u>)					
1. <u>Rubus ursinus</u>		<u>60</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Polystichum munitum</u>		<u>40</u>	<u>Y</u>	<u>FACU</u>	
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
		<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>3m²</u>)					
1. _____					
2. _____					
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>					

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
 Total Number of Dominant Species Across All Strata: 6 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species _____ x 1 = 0
 FACW species _____ x 2 = 0
 FAC species _____ x 3 = 0
 FACU species _____ x 4 = 0
 UPL species _____ x 5 = 0
 Column Totals: 0 (A) 0 (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>
--	--

Remarks:

SOIL

Sampling Point: S2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-14	10YR 3/3	100					Loam	Dry

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

2 cm Muck (A10)

Red Parent Material (TF2)

Very Shallow Dark Surface (TF12)

Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Frost-Heave Hummocks (D7)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	

Field Observations:

Surface Water Present? Yes No Depth (inches): _____

Water Table Present? Yes No Depth (inches): _____

Saturation Present? Yes No Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 18289 44th St NE City/County: City of Marysville Sampling Date: 9-11-18
 Applicant/Owner: Adelfia LLC State: WA Sampling Point: S3
 Investigator(s): J. Goodman, A. Richardson Section, Township, Range: S35, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): <5%
 Subregion (LRR): LRR-A Lat: 48.0362683 Long: -122.1330440 Datum: NAD 83
 Soil Map Unit Name: Tokul gravelly medial loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Outside Wetland A.	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>5m²</u>)					
1. <u>Alnus rubra</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60%</u> (A/B)	
2. <u>Acer macrophyllum</u>	<u>15</u>	<u>N</u>	<u>FACU</u>		
3. <u>Thuja plicata</u>	<u>7</u>	<u>N</u>	<u>FAC</u>		
4. _____					
	<u>72</u>	= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot size: <u>3m²</u>)					
1. <u>Rubus spectabilis</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>		
2. <u>Rubus armeniacus</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>		
3. _____					
4. _____					
	<u>50</u>	= Total Cover			
Herb Stratum (Plot size: <u>1m²</u>)					
1. <u>Rubus ursinus</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <u>Polystichum munitum</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>		
3. <u>Epilobium sp.</u>	<u>Trace</u>	<u>N</u>			
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
	<u>15</u>	= Total Cover			
Woody Vine Stratum (Plot size: <u>3m²</u>)					
1. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
2. _____					
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum <u>85</u>					

Remarks:

SOIL

Sampling Point: S3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-5	10YR 3/3	100					Loam	Dry
5-14	10YR 3/3	98	5YR 4/6	2	C	M	Loam	Charcoal in layer

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	

2 cm Muck (A10)
 Red Parent Material (TF2)
 Very Shallow Dark Surface (TF12)
 Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)

<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks (D7)	<p>Field Observations:</p> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)
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Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 18289 44th St NE City/County: City of Marysville Sampling Date: 9-11-18
 Applicant/Owner: Adelfia LLC State: WA Sampling Point: S4
 Investigator(s): J. Goodman, A. Richardson Section, Township, Range: S35, T30N, R5E, W.M.
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 5-10%
 Subregion (LRR): LRR-A Lat: 48.0362683 Long: -122.1330440 Datum: NAD 83
 Soil Map Unit Name: Tokul gravelly medial loam NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Inside Wetland A.	

VEGETATION – Use scientific names of plants.

Stratum	Plot size	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>5m²</u>)					
1. <u>Alnus rubra</u>		<u>50</u>	<u>Y</u>	<u>FAC</u>	
2. _____		_____	_____	_____	
3. _____		_____	_____	_____	
4. _____		_____	_____	_____	
		<u>50</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>3m²</u>)					
1. <u>Rubus spectabilis</u>		<u>30</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Corylus cornuta</u>		<u>30</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Cornus sericea</u>		<u>15</u>	<u>Y</u>	<u>FACW</u>	
4. <u>Ilex aquifolium</u>		<u>trace</u>	<u>N</u>	<u>FACU</u>	
5. _____		_____	_____	_____	
		<u>75</u>	= Total Cover		
Herb Stratum (Plot size: <u>1m²</u>)					
1. <u>Tolmeia menziesii</u>		<u>40</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Dryopteris expansa</u>		<u>30</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Lysichiton americanus</u>		<u>20</u>	<u>Y</u>	<u>OBL</u>	
4. <u>Athyrium filix-femina</u>		<u>10</u>	<u>N</u>	<u>FAC</u>	
5. <u>Equisetum telmateia</u>		<u>Trace</u>	<u>N</u>	<u>FACW</u>	
6. _____		_____	_____	_____	
7. _____		_____	_____	_____	
8. _____		_____	_____	_____	
9. _____		_____	_____	_____	
10. _____		_____	_____	_____	
11. _____		_____	_____	_____	
		<u>100</u>	= Total Cover		
Woody Vine Stratum (Plot size: <u>3m²</u>)					
1. _____		_____	_____	_____	
2. _____		_____	_____	_____	
		<u>0</u>	= Total Cover		
% Bare Ground in Herb Stratum <u>0</u>					

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)
 Total Number of Dominant Species Across All Strata: 7 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 85% (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by:
 OBL species _____ x 1 = 0
 FACW species _____ x 2 = 0
 FAC species _____ x 3 = 0
 FACU species _____ x 4 = 0
 UPL species _____ x 5 = 0
 Column Totals: 0 (A) 0 (B)
 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
 Rapid Test for Hydrophytic Vegetation
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Wetland Non-Vascular Plants¹
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes No

Remarks:

SOIL

Sampling Point: S4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-16	10YR 2/1	100					Silty Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<p>Indicators for Problematic Hydric Soils³:</p> <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
<p><input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)</p>	<p>³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.</p>

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
 It is likely this soil profile would meet indicator A12. Given the site geomorphology and the strongly hydrophytic vegetative community, it is our professional opinion that the area mapped as wetland is saturated long enough during the growing season to develop anaerobic conditions in the upper portion of the soil profile.

HYDROLOGY

Wetland Hydrology Indicators:	
<p>Primary Indicators (minimum of one required; check all that apply)</p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p>Secondary Indicators (2 or more required)</p> <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Other (Explain in Remarks)
<p>Field Observations:</p> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	<p>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX C

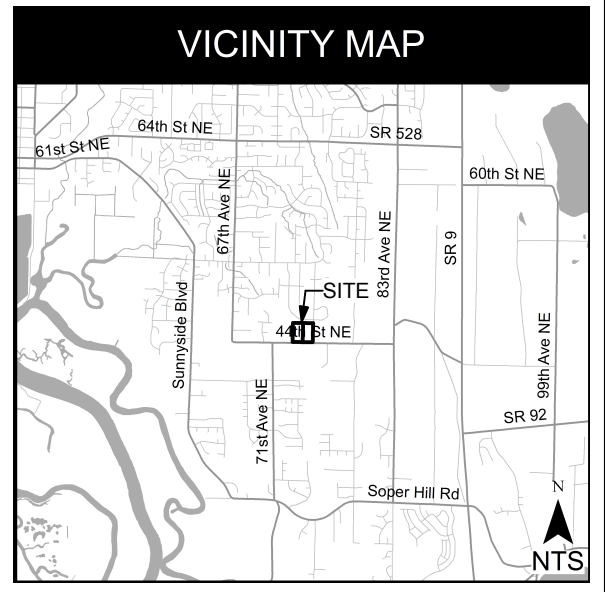
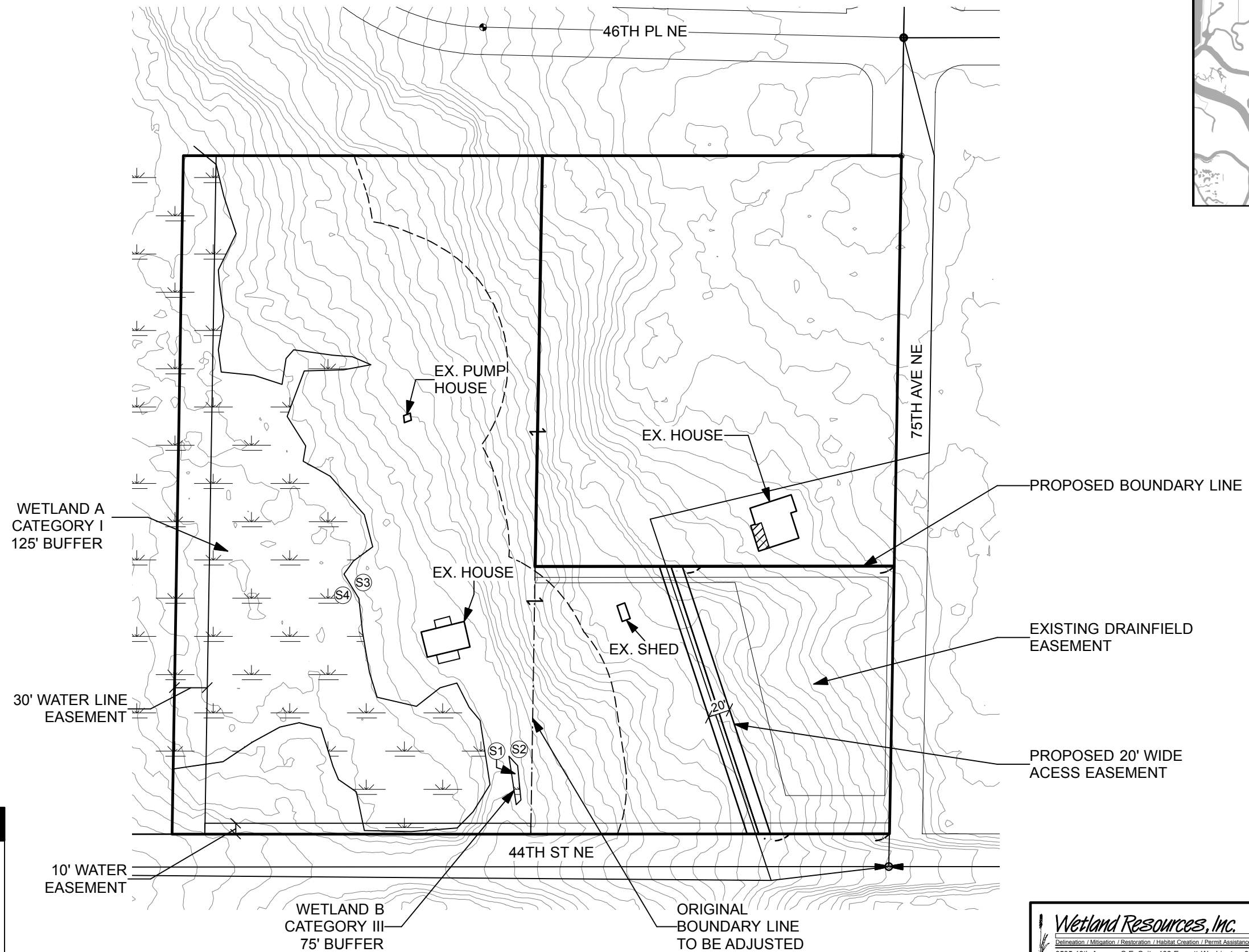
CRITICAL AREA REPORT AND
BOUNDARY LINE ADJUSTMENT MAP

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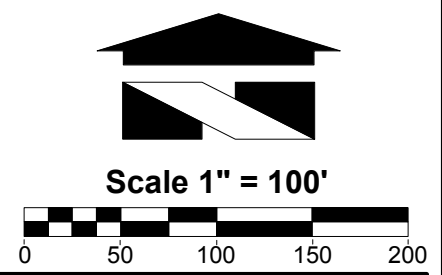
CRITICAL AREA REPORT & BOUNDARY LINE ADJUSTMENT MAP

ADELFIA - 44TH ST NE

PORTION OF SECTION 35, TOWNSHIP 30N, RANGE 5E, W.M.



LEGEND	
	DELINEATED WETLAND
	BUFFER
	ORIGINAL BOUNDARY LINE
	FINAL BOUNDARY LINE



Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
 9505 19th Avenue S.E., Suite 106 Everett, Washington 98208
 Phone: (425) 337-3174
 Fax: (425) 337-3045
 Email: mailbox@wetlandresources.com

Critical Area Report &
 Boundary Line Adjustment Map
Adelfia - 44th St NE
 City of Marysville, WA

Adelfia LLC
 Attn: Chris Markezinis
 1007 Stitch Rd
 Lake Stevens, WA 98258

Sheet 1/1
 WRI #18289
 Drawn by: TA
 Date: 3/1/2019

APPENDIX C

Marysville - 44th Preliminary Plan Set (DRS)

SW 1/4 SECTION 35, TOWNSHIP 30 N, RANGE 5 E, W.M.
MARYSVILLE - 44TH PRD

VERTICAL DATUM:
 NAVD88 PER GNSS OBSERVATIONS

BENCHMARKS:
 FOUND 2" BRASS DISK IN CONCRETE MONUMENT STAMPED "LS#30427" DOWN 0.30 IN CASE. @ INTERSECTION OF 46TH PLACE NE AND 75TH AVENUE NE.
 ELEVATION=313.40

BASIS OF BEARINGS:
 N01°03'22"E ALONG THE EAST LINE OF THE SOUTHWEST QUARTER OF SECTION 35, TOWNSHIP 30, RANGE 5 E, W.M. PER REF. 2.

REFERENCES:
 1. CITY OF MARYSVILLE BLA NO. BLA 19-004, RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NO. 201910295002.
 2. RECORD OF SURVEY RECORDED IN BOOK 4 OF SURVEYS, PAGE 166, UNDER SNOHOMISH COUNTY AUDITOR'S FILE NO. 7609290248.

LEGAL DESCRIPTION:
 TPN: 30053500303600
 LOT 7 OF THAT SURVEY RECORDED IN BOOK 4 OF SURVEYS, PAGE 166, UNDER AUDITOR'S FILE NO. 7609290248, BEING A PORTION OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 35, TOWNSHIP 30 NORTH, RANGE 5 EAST, W.M.
 SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

TPN: 30053500303700
 LOT 8 OF THAT SURVEY RECORDED IN BOOK 4 OF SURVEYS, PAGE 166, UNDER AUDITOR'S FILE NO. 7609290248, BEING A PORTION OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 35, TOWNSHIP 30 NORTH, RANGE 5 EAST, W.M.
 SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

EXCEPTIONS CONTAINED IN TITLE:
 TPN: 30053500303600, COMMITMENT NO. 500126919

- THIS SITE IS SUBJECT TO A WATER LINE EASEMENT AND THE RIGHTS INCIDENTAL THERETO AS DISCLOSED BY INSTRUMENT RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NO. 1226499. (SHOWN HEREON)
- THIS SITE IS SUBJECT TO A RELEASE OF DAMAGES AND THE TERMS AND CONDITIONS THEREOF AS DISCLOSED BY INSTRUMENT RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NO. 2093460. (NOTHING TO PLOT)
- THIS SITE IS SUBJECT TO COVENANTS, CONDITIONS, RESTRICTIONS, RECITALS, RESERVATIONS, EASEMENTS, EASEMENT PROVISIONS, DEDICATIONS, BUILDING SETBACK LINES, NOTES, STATEMENTS, AND OTHER MATTERS AS SET FORTH BY SURVEY RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NUMBER 7609290248.
- THIS SITE IS SUBJECT TO A WATER LINE EASEMENT AND THE RIGHTS INCIDENTAL THERETO AS DISCLOSED BY INSTRUMENT RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NO. 7911210154.
- THIS SITE IS SUBJECT TO COVENANTS, CONDITIONS, RESTRICTIONS, RECITALS, RESERVATIONS, EASEMENTS, EASEMENT PROVISIONS, DEDICATIONS, BUILDING SETBACK LINES, NOTES, STATEMENTS, AND OTHER MATTERS AS SET FORTH ON PURPORTED CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO 19-004 RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NUMBER 201910295002. (PROPOSED LOT LINE SHOWN HEREON)

TPN: 30053500303700, COMMITMENT NO. 500126920

- THIS SITE IS SUBJECT TO A RELEASE OF DAMAGES AND THE TERMS AND CONDITIONS THEREOF AS DISCLOSED BY INSTRUMENT RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NO. 2093460. (NOTHING TO PLOT)
- THIS SITE IS SUBJECT TO COVENANTS, CONDITIONS, RESTRICTIONS, RECITALS, RESERVATIONS, EASEMENTS, EASEMENT PROVISIONS, DEDICATIONS, BUILDING SETBACK LINES, NOTES, STATEMENTS, AND OTHER MATTERS AS SET FORTH BY SURVEY RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NUMBER 7609290248.
- THIS SITE IS SUBJECT TO AN UNDERGROUND ELECTRIC TRANSMISSION AND DISTRIBUTION LINE EASEMENT AND THE RIGHTS INCIDENTAL THERETO AS DISCLOSED BY INSTRUMENT RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NO. 7809200175. (SHOWN HEREON)
- THIS SITE IS SUBJECT TO A TIGHT LINE AND DRAINFIELD EASEMENT AND THE RIGHTS INCIDENTAL THERETO AS DISCLOSED BY INSTRUMENT RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NO. 8002190104. SAID EASEMENT IS A RE-RECORDING OF EASEMENT RECORDED UNDER AUDITOR'S FILE NO. 7911210153. (APPROXIMATE LOCATION SHOWN HEREON)
- THIS SITE IS SUBJECT TO COVENANTS, CONDITIONS, RESTRICTIONS, RECITALS, RESERVATIONS, EASEMENTS, EASEMENT PROVISIONS, DEDICATIONS, BUILDING SETBACK LINES, NOTES, STATEMENTS, AND OTHER MATTERS AS SET FORTH ON PURPORTED CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO 19-004 RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NUMBER 201910295002. (PROPOSED LOT LINE SHOWN HEREON)
- THIS SITE IS SUBJECT TO AN INGRESS, EGRESS AND UTILITIES EASEMENT AND THE RIGHTS INCIDENTAL THERETO AS DISCLOSED BY INSTRUMENT RECORDED UNDER SNOHOMISH COUNTY AUDITOR'S FILE NO. 201910290273. (SHOWN HEREON)

NOTES:

- ALL TITLE INFORMATION SHOWN ON THIS MAP HAS BEEN EXTRACTED FROM CHICAGO TITLE COMPANY OF WASHINGTON COMMITMENT NO. 500126920 AND 500126919 BOTH DATED SEPTEMBER 6, 2021. IN PREPARING THIS MAP, CORE DESIGN, INC. HAS CONDUCTED NO INDEPENDENT TITLE SEARCH NOR IS CORE DESIGN, INC. AWARE OF ANY TITLE ISSUES AFFECTING THE SURVEYED PROPERTY OTHER THAN THOSE SHOWN ON THE MAP AND DISCLOSED BY THE REFERENCED CHICAGO TITLE COMPANY OF WASHINGTON COMMITMENTS. CORE DESIGN, INC. HAS RELIED WHOLLY ON CHICAGO TITLE COMPANY OF WASHINGTON'S REPRESENTATIONS OF THE TITLE'S CONDITION TO PREPARE THIS SURVEY AND THEREFORE CORE DESIGN, INC. QUALIFIES THE MAP'S ACCURACY AND COMPLETENESS TO THAT EXTENT.
- THIS SURVEY REPRESENTS VISIBLE PHYSICAL IMPROVEMENT CONDITIONS EXISTING ON OCTOBER 13, 2021. ALL MEASURING INSTRUMENTS AND "FOUND" WAS RECOVERED FOR THIS PROJECT IN OCTOBER, 2021.
- PROPERTY AREA = 407,865± SQUARE FEET (9.3633± ACRES).
- ALL DISTANCES ARE IN US FEET AT GROUND LEVEL.
- CONTOUR INTERVAL = 2 FEET.
- ELEVATION AND/OR CONTOUR INFORMATION SHOWN HEREON IS GENERATED FROM DIRECT FIELD OBSERVATION. SAID INFORMATION MEETS US NATIONAL MAPPING STANDARDS AND IS ACCURATE TO WITHIN ONE-HALF THE CONTOUR INTERVAL.
- BOUNDARY INFORMATION SHOWN HEREON IS DERIVED FROM OBSERVATION OF CONTROLLING MONUMENTATION AND INTERPRETATION OF RECORD DESCRIPTIONS AND OTHER EVIDENCE. TOPOGRAPHIC INFORMATION SHOWN HEREON IS RELATED TO THE BOUNDARY BY DIRECT FIELD OBSERVATION FROM CONTROLLING MONUMENTATION.
- THIS IS A COMBINED FIELD TRAVERSE AND GPS/GNSS SURVEY. A THREE SECOND COMBINED ELECTRONIC TOTAL STATION AND GPS/GNSS UNIT WITH OPUS/WARN CORRECTIONS WERE USED TO MEASURE THE ANGULAR AND DISTANCE RELATIONSHIPS BETWEEN THE CONTROLLING MONUMENTATION AS SHOWN. CLOSURE RATIOS OF THE TRAVERSE MET OR EXCEEDED THOSE SPECIFIED IN WAC 332-130-090. ALL MEASURING INSTRUMENTS AND EQUIPMENT ARE MAINTAINED IN ADJUSTMENT ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
- UTILITIES OTHER THAN THOSE SHOWN MAY EXIST ON THIS SITE. ONLY THOSE UTILITIES WITH EVIDENCE OF THEIR INSTALLATION VISIBLE AT GROUND SURFACE OR AS MARKED BY 811 OR OTHER UTILITY LOCATING PROVIDERS ARE SHOWN HEREON. UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. UNDERGROUND CONNECTIONS ARE SHOWN AS STRAIGHT LINES BETWEEN SURFACE EVIDENCE OF UTILITY LOCATIONS BUT MAY CONTAIN BENDS OR CURVES NOT SHOWN. SOME UNDERGROUND LOCATIONS SHOWN HEREON MAY HAVE BEEN TAKEN FROM PUBLIC RECORDS. CLIENT UNDERSTANDS THAT CORE DESIGN ASSUMES NO LIABILITY FOR THE ACCURACY OF PUBLIC RECORDS OR PAINTED UTILITY LOCATIONS.

PARKING REQUIREMENTS:

REQUIRED	PROVIDED
116 / 4 = 29	35

BUILDING SETBACKS:

- 15' SENSITIVE AREAS BUFFER
- 10' FRONT/R.O.W.
- 10' SIDE/R.O.W.
- 5' FROM PROPERTY AND TRACT BOUNDARIES

SOIL TYPE AND VEGETATIVE COVER:

SOILS: TOKUL GRAVELLY MEDIAL LOAM, 0-8% SLOPES
 TOKUL GRAVELLY MEDIAL LOAM, 8-15% SLOPES
 VEGETATIVE COVER: PRIMARILY FORESTED

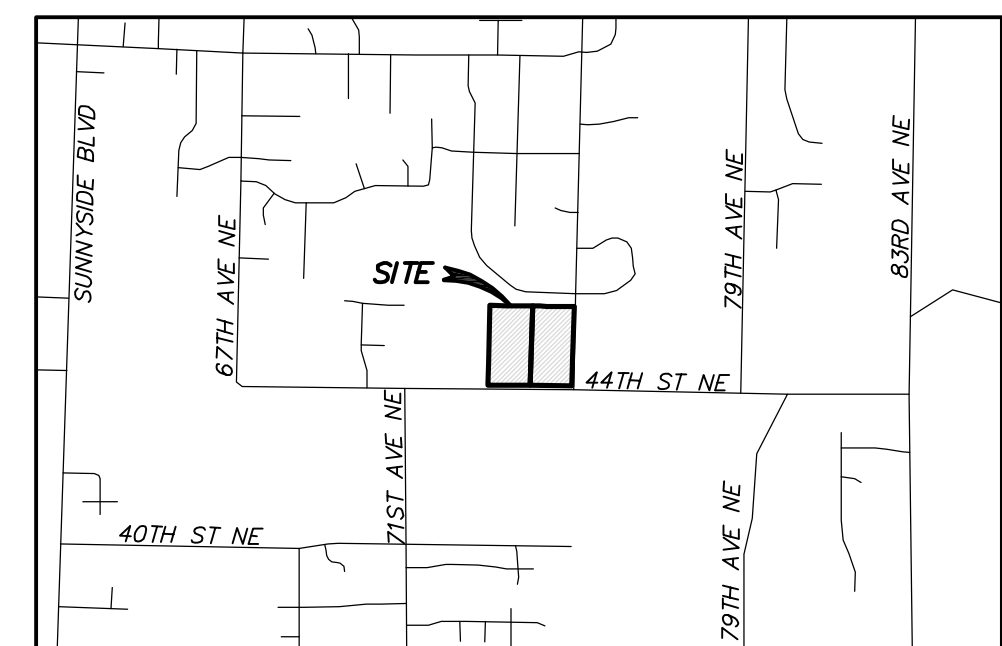
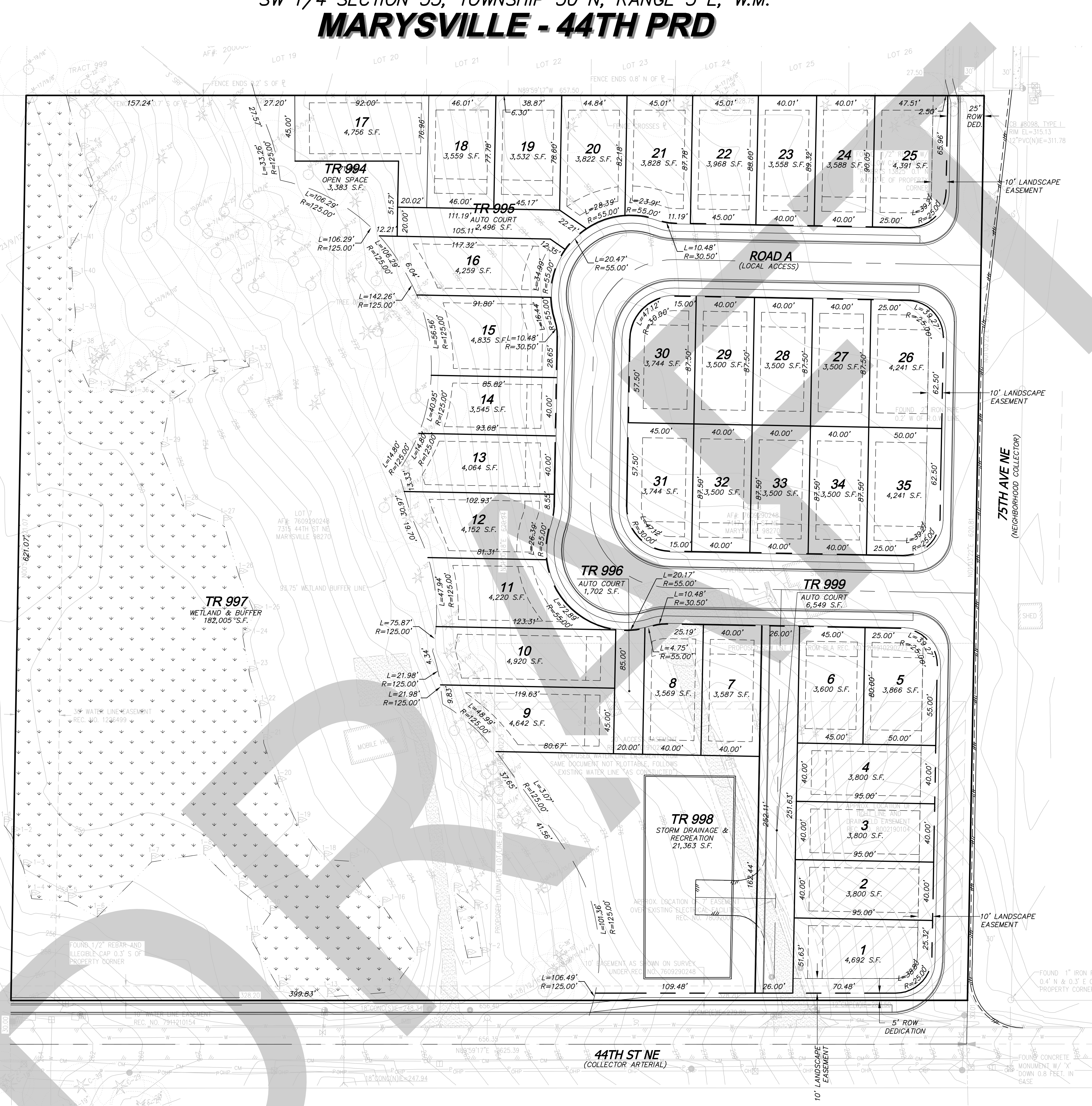
OPEN SPACE CALCULATIONS:

MIN OPEN SPACE REQUIREMENTS PER MMC 220.080.100

MAXIMUM REQUIRED OPEN SPACE TO BE PROVIDED BY CRITICAL AREAS AND BUFFERS (10% OF NET PROJECT AREA):	AREA REQUIRED:	AREA PROVIDED:
	77,471 SQ. FT.	77,471 SQ. FT.
MINIMUM REQUIRED ACTIVE SPACE OUTSIDE OF CRITICAL AREAS AND BUFFERS (MIN 5% OF NET PROJECT AREA):	38,736 SQ. FT.	87,430 SQ. FT.
TOTAL OPEN SPACE (MIN 15% OF NET PROJECT AREA):	116,207 SQ. FT.	134,901 SQ. FT.
TOTAL OPEN SPACE (INCLUDING ALL CRITICAL AREAS AND BUFFERS):		483,148 SQ. FT.

LEGEND:

- FOUND MONUMENT AS NOTED
- SET STANDARD KING COUNTY MONUMENT WITH BRASS DISK STAMPED "DRS 37555" IN MONUMENT CASE.
- FOUND CORNER MONUMENT AS AS NOTED.
- SET 5/8" X 24" REBAR WITH PLASTIC CAP STAMPED "DRS 37555"
- SET MAG NAIL WITH 1 1/2" ALUMINUM WASHER STAMPED "DRS 37555"
- VBFB VERTICAL BOARD FENCE
- CLF CHAIN LINK FENCE



PROJECT CONTACTS:

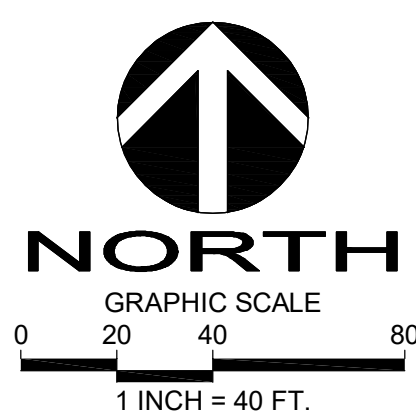
- APPLICANT/OWNER..... HARBOR HOMES
 1441 N 34TH ST, STE 200
 SEATTLE, WA 98103
 (206) 315-8130
 CONTACT: JAMIE WALTER
- CIVIL ENGINEER..... D.R. STRONG CONSULTING ENGINEERS, INC.
 620 7TH AVE
 KIRKLAND, WASHINGTON 98033
 (425) 827-3063
 CONTACT: LUAY R. JOUDEH, P.E.
 LUAY.JOUEH@DRSTRONG.COM
- SURVEYOR..... D.R. STRONG CONSULTING ENGINEERS, INC.
 620 7TH AVE
 KIRKLAND, WASHINGTON 98033
 (425) 827-3063
 CONTACT: STEVE SCHREI, P.L.S.
 STEVE.SCHREI@DRSTRONG.COM
- GEOTECHNICAL ENGINEER..... EARTH SOLUTIONS NW, LLC
 1805 136TH PL NE, SUITE 201
 BELLEVUE, WASHINGTON 98005
 (425) 284-9900
 CONTACT: KEVIN HOFFMANN
 KEVIN.HOFFMANN@EARTHSOLUTIONSNW.COM
- WETLAND BIOLOGIST..... WETLAND RESOURCES
 9505 19TH AVE SE, SUITE 106
 EVERETT, WASHINGTON 98208
 (425) 337-3045
 CONTACT: SCOTT BRAINARD
 SCOTT@WETLANDRESOURCES.COM
- TRAFFIC ENGINEER..... GIBSON TRAFFIC CONSULTANTS
 2802 WETMORE AVE, SUITE 220
 EVERETT, WASHINGTON 98201
 (425) 339-8266
 CONTACT: BRAD LINCOLN, P.E.
 BRAD.L@GIBSONTRAFFIC.COM
- LANDSCAPE ARCHITECT..... VARLEY VARLEY VARLEY
 12743 NE 170TH LANE
 WOODINVILLE, WASHINGTON 98072
 (425) 468-9430
 CONTACT: JEFF VARLEY
 VARLEY_JEFF@hotmail.com

PROJECT DESCRIPTION:

- ADDRESS OF THE PROPERTY: 7315 & 7417 - 44TH ST NE
 PARCEL NUMBERS: 3005350030-3600, -3700
 SITE ACREAGE: 9.36 AC (407,865 SF)
 AREA CREDITED TO RCH PRR: 6.676 ACRES (287,208 SQ. FT.)
 ROW ACREAGE: 1.15 AC (50,230 SF)
 NET PROJECT ACREAGE: 5.19 AC (225,860 SF)
 EXISTING ZONING: R-6.5
 ALLOWABLE DWELLING UNITS: 114.80
 PROPOSED DWELLING UNITS: 35
 PROPOSE DENSITY: 6.51 DU/ACRE
 PROPOSED USE: PRO
 SEWER AND WATER DISTRICT: CITY OF MARYSVILLE
 SCHOOL DISTRICT: MARYSVILLE SCHOOL DISTRICT 25
 FIRE DISTRICT: MARYSVILLE FIRE DISTRICT RFA
 TELEPHONE SERVICE: FRONTIER
 POWER SOURCE: SNOHOMISH COUNTY PUD

SHEET INDEX:

- C1 OF 7 PRELIMINARY PLAT COVER SHEET
- C2 OF 7 PRELIMINARY PRD PLAN
- C3 OF 7 CONCEPTUAL ROAD, GRADING AND STORM DRAINAGE PLAN
- C4 OF 7 CONCEPTUAL ROAD PROFILE
- C5 OF 7 CONCEPTUAL ROAD PROFILES
- C6 OF 7 CONCEPTUAL ROAD PROFILE
- C7 OF 7 CONCEPTUAL SEWER AND WATER PLAN



Call 2 Working Days Before You Dig
811
 Utilities Underground Location Center
 (D,MT,ND,OR,WA)



MARYSVILLE - 44TH PRD
 PRELIMINARY PLAT COVER SHEET

TOLL BROS., INC
 8815 - 122ND AVE NE, STE 200
 KIRKLAND, WA 98033
 (425) 825-1955

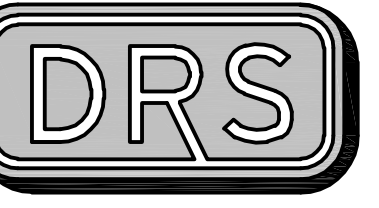


APR
 REVISION
 DATE

DRAFTED BY: ZLJ
 DESIGNED BY: LRJ
 PROJECT ENGINEER: LRJ
 DATE: 05-12-22
 PROJECT NO.: 21101

DRAWING: C1
 SHEET: 1 OF 7

SW 1/4 SECTION 35, TOWNSHIP 30 N, RANGE 5 E, W.M.
MARYSVILLE - 44TH PRD



D.R. STRONG
 CONSULTING ENGINEERS
 ENGINEERS PLANNERS SURVEYORS
 620 - 7th AVENUE KIRKLAND, WA 98033
 O 425.827.3065 F 425.827.2423

MARYSVILLE - 44TH PRD
 PRELIMINARY PRD PLAN
 7315 & 7417 - 44TH ST NE
 MARYSVILLE, WA
 PARCELS 3005350030-3600-3700

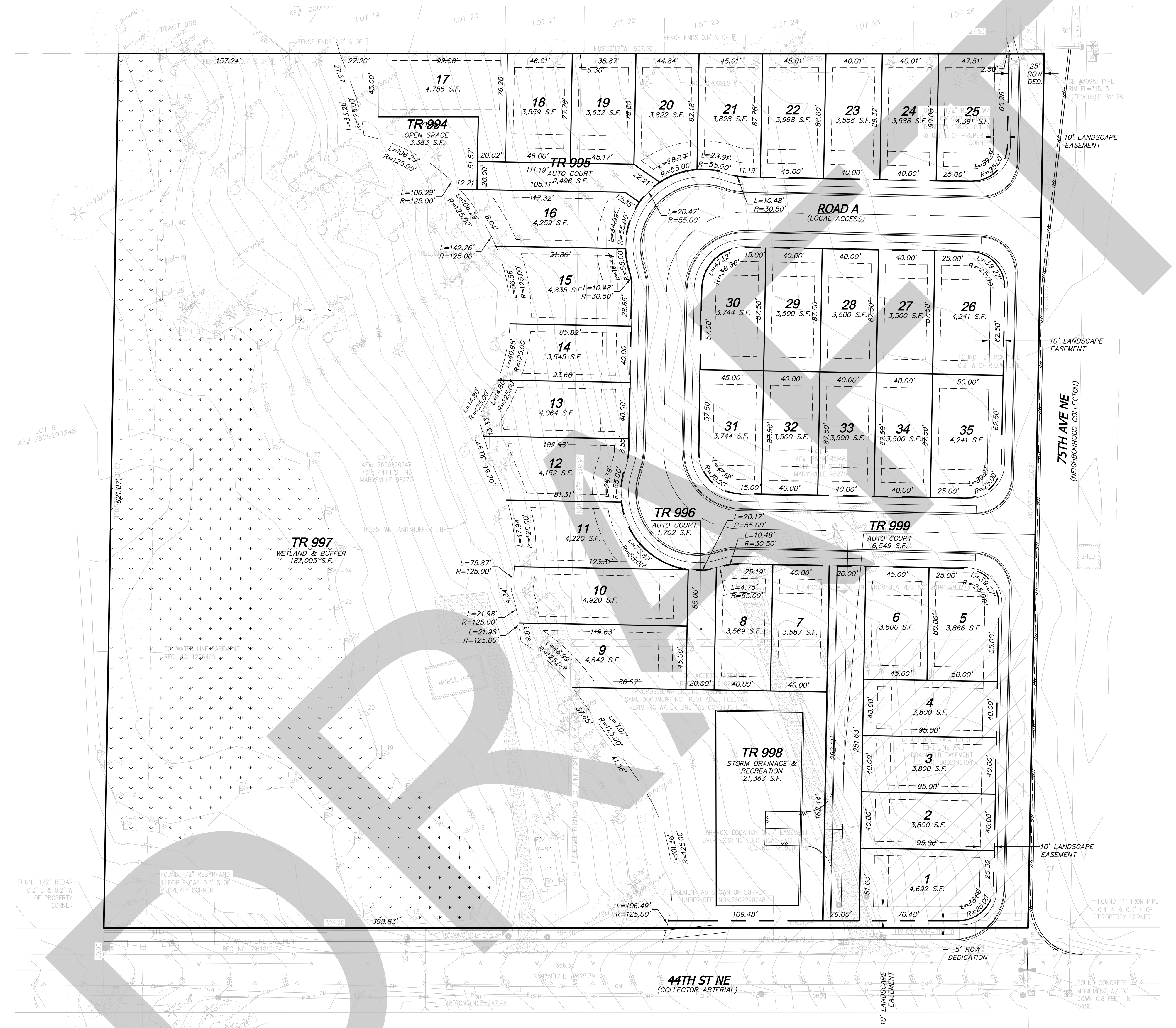
TOLL BROS., INC
 8815 - 122ND AVE NE, STE 200
 KIRKLAND, WA 98033
 (425) 825-1955



APR	REVISION	DATE

DRAFTED BY: ZLJ
 DESIGNED BY: LRJ
 PROJECT ENGINEER: LRJ
 DATE: 05-12-22
 PROJECT NO.: 21101

DRAWING: C2
 SHEET: 2 OF 7



PARKING REQUIREMENTS:

RESIDENTS	REQUIRED	PROVIDED
115	115 X 2 = 230	480
GUESTS	115 / 4 = 29	38

BUILDING SETBACKS:
 15' SENSITIVE AREAS BUFFER
 10' FRONT/R.O.W.
 10' SIDE/R.O.W.
 5' FROM PROPERTY AND TRACT BOUNDARIES

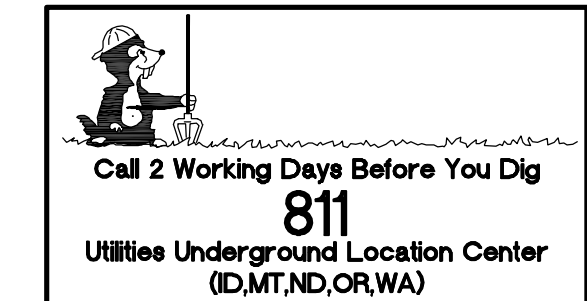
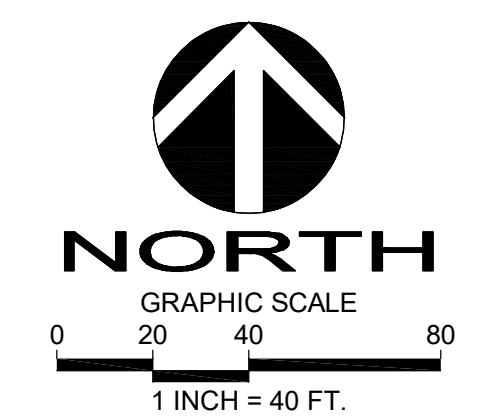
VERTICAL DATUM:
 NAVD88 PER GNSS OBSERVATIONS

BENCHMARKS:
 FOUND 2" BRASS DISK IN CONCRETE MONUMENT STAMPED "LS#30427" DOWN 0.30.
 IN CASE @ INTERSECTION OF 46TH PLACE NE AND 75TH AVENUE NE.
 ELEVATION=313.40

BASIS OF BEARINGS:
 N01°3'22"E ALONG THE EAST LINE OF THE SOUTHWEST QUARTER OF SECTION 35,
 TOWNSHIP 30, RANGE 5 E W.M. PER REF. 2.

TYPICAL YARD SETBACKS (PRD):

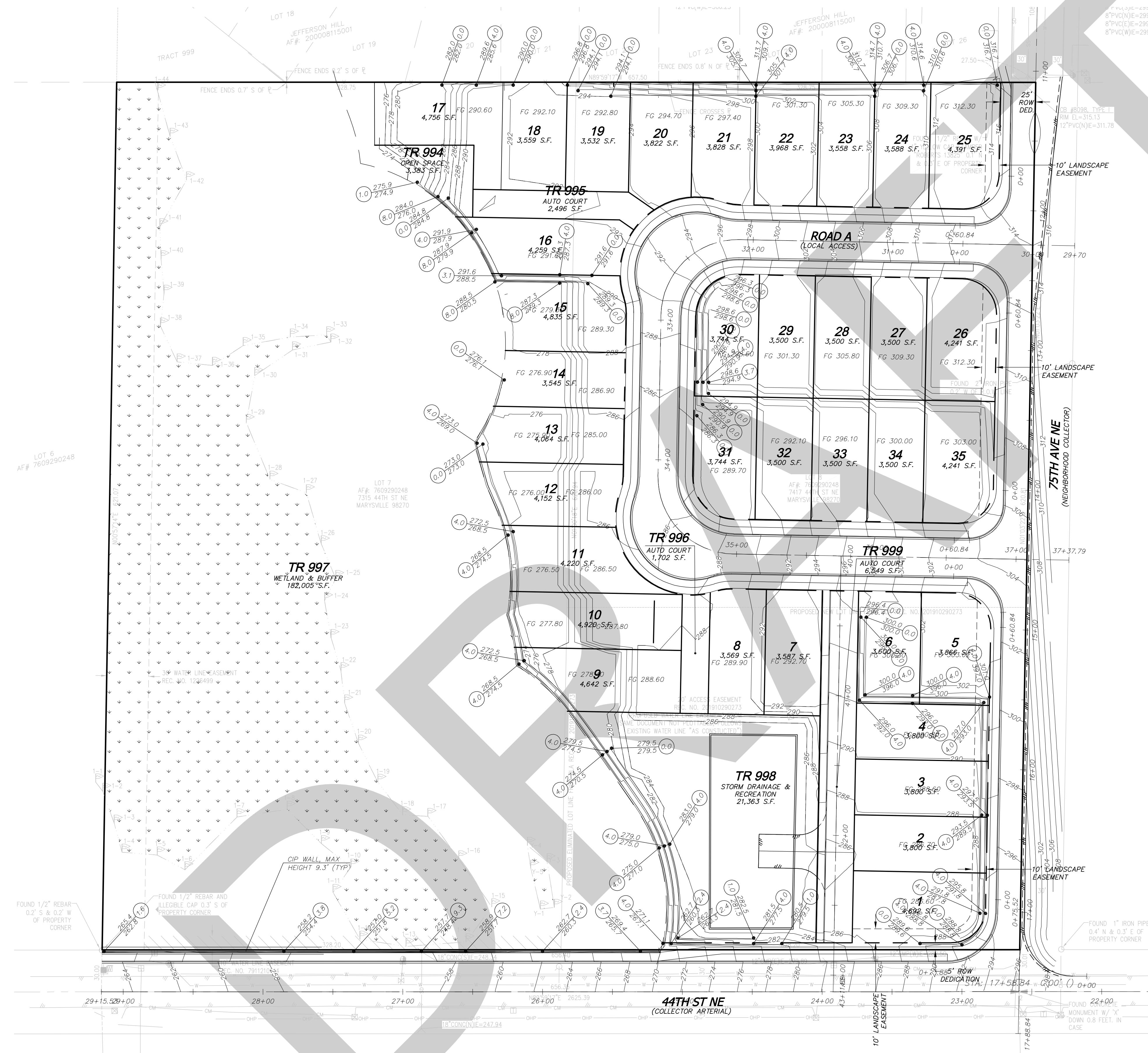
- FRONT 10'
- GARAGE 20'
- SIDE 5'
- REAR 10'
- CRITICAL AREAS 15'



SW 1/4 SECTION 35, TOWNSHIP 30 N, RANGE 5 E, W.M.
MARYSVILLE - 44TH PRD



D.R. STRONG
 CONSULTING ENGINEERS
 ENGINEERS PLANNERS SURVEYORS
 620 - 7th AVENUE KIRKLAND, WA 98033
 O 425.827.3063 F 425.827.2423



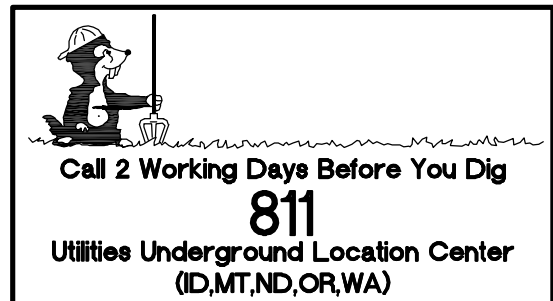
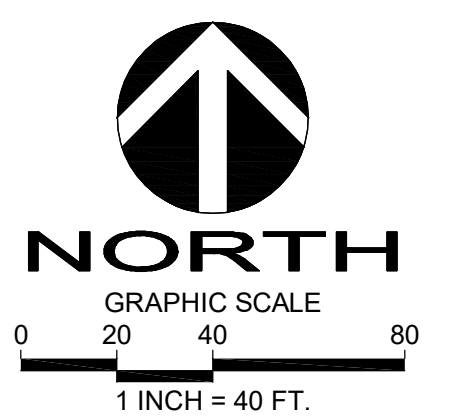
SITE VOLUME CALCULATIONS

CUT VOLUME (CU. YDS.)	FILL VOLUME (CU. YDS.)	NET VOLUME (CU. YDS.)
39,402	11,546	27,856 CUT

ALL VOLUMES ARE APPROXIMATE AND ARE PROVIDED FOR PERMITTING PURPOSES AND REPRESENT FINISH GRADE TO EXISTING GRADE AS SHOWN. CONTRACTOR SHALL RELY ON HIS/HER OWN ESTIMATES FOR DETERMINING ACTUAL EARTHWORK QUANTITIES. THE VOLUMES DO NOT INCLUDE STRIPPING, STRUCTURAL EXCAVATION, EXPANSION/COMPACTION FACTOR OR ANY SOIL TYPE RESTRICTIONS.

MARYSVILLE - 44TH PRD
 CONCEPTUAL ROAD, GRADING AND
 STORM DRAINAGE PLAN
 7315 & 7417 - 44TH ST NE
 MARYSVILLE, WA
 PARCELS 3005350030-3600-3700

TOLL BROS., INC
 8815 - 122ND AVE NE, STE 200
 KIRKLAND, WA 98033
 (425) 825-1955

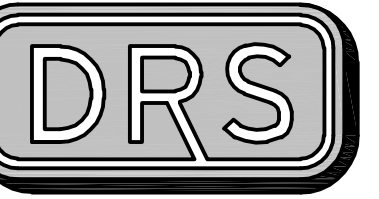


DATE	APR
REVISION	

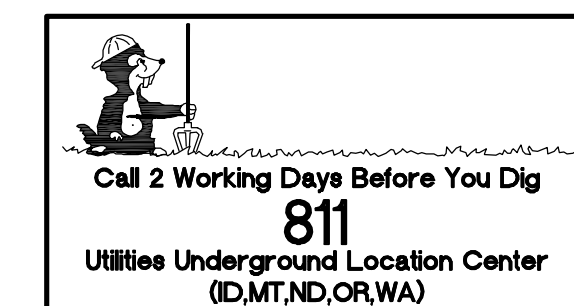
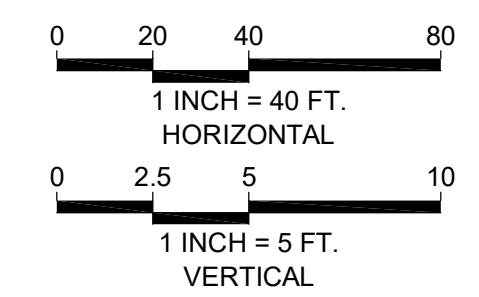
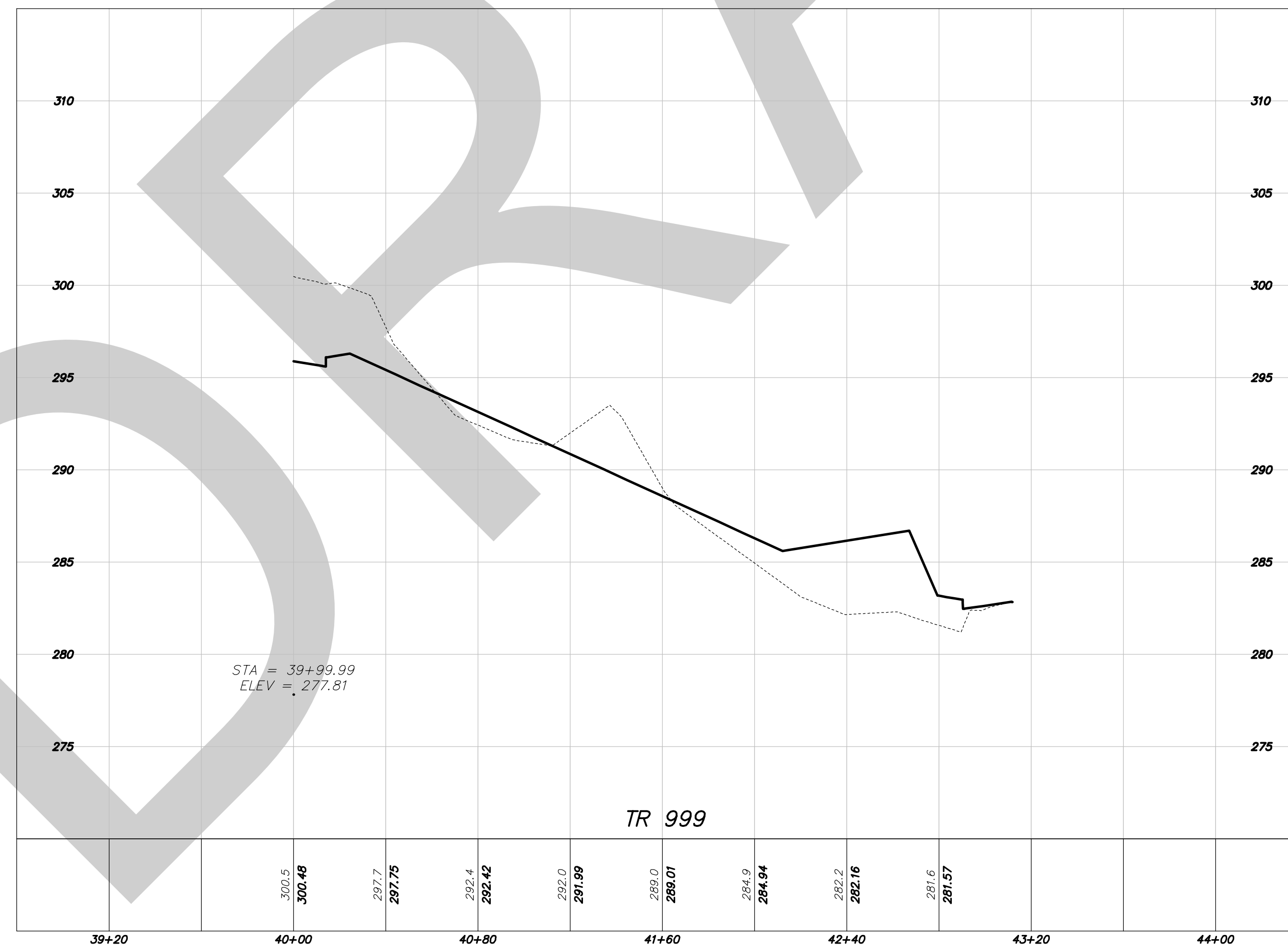
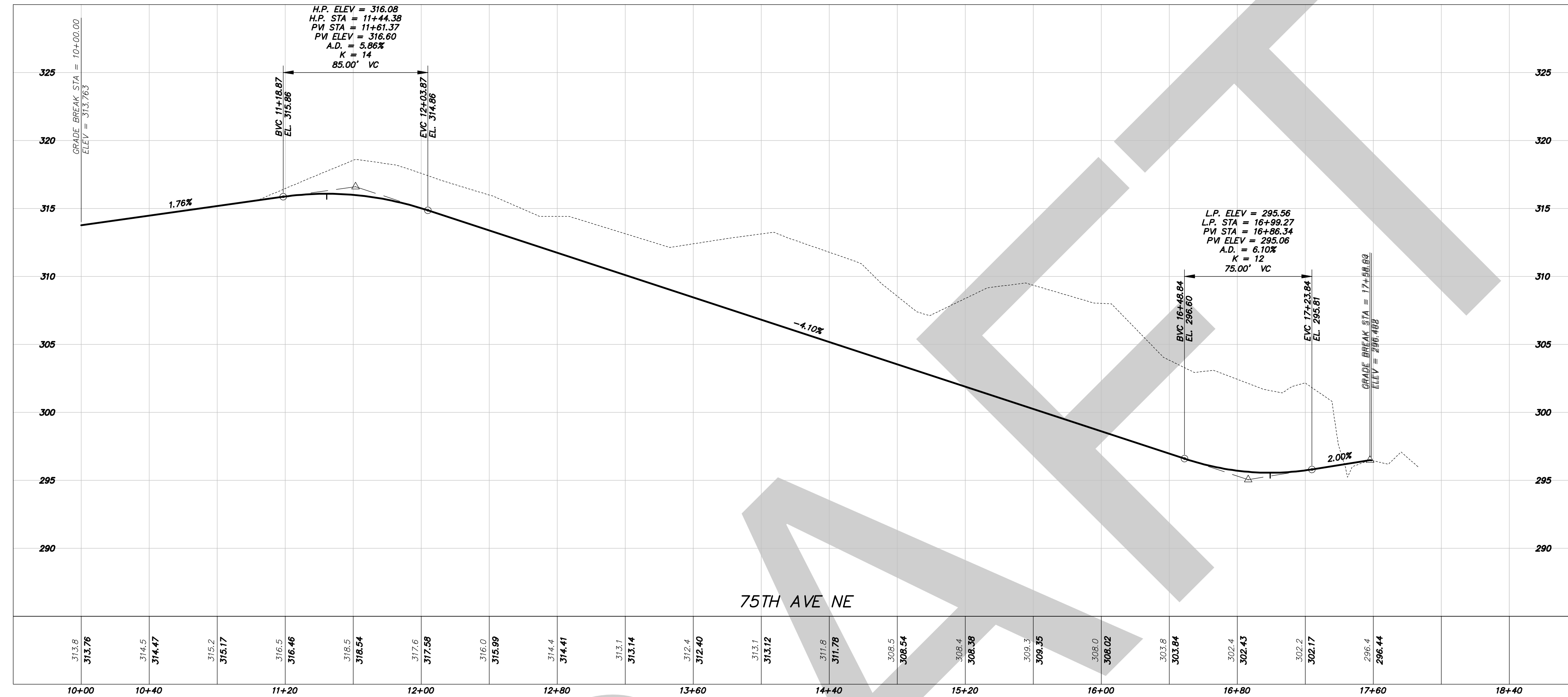
DRAFTED BY: ZLJ
 DESIGNED BY: LRJ
 PROJECT ENGINEER: LRU
 DATE: 05-12-22
 PROJECT NO.: 21101

DRAWING: **C3**
 SHEET: **3** OF **7**

SW 1/4 SECTION 35, TOWNSHIP 30 N, RANGE 5 E, W.M.
MARYSVILLE - 44TH PRD



D.R. STRONG
 CONSULTING ENGINEERS
 ENGINEERS PLANNERS SURVEYORS
 620 - 7th AVENUE KIRKLAND, WA 98033
 O 425.827.3063 F 425.827.3423



MARYSVILLE - 44TH PRD

CONCEPTUAL ROAD PROFILES
 7315 & 7417 - 44TH ST NE
 MARYSVILLE, WA
 PARCELS 3005350030-3600,-3700

TOLL BROS., INC

8815 - 122ND AVE NE, STE 200
 KIRKLAND, WA 98033
 (425) 825-1955



APR

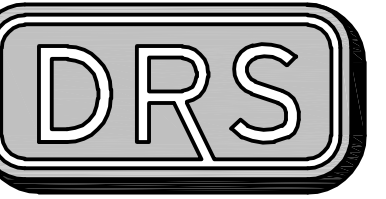
REVISION

DATE

DRAFTED BY: ZLJ
 DESIGNED BY: LRJ
 PROJECT ENGINEER: LRJ
 DATE: 05-12-22
 PROJECT NO.: 21101

DRAWING: **C4**
 SHEET: **4** OF **7**

SW 1/4 SECTION 35, TOWNSHIP 30 N, RANGE 5 E, W.M.
MARYSVILLE - 44TH PRD



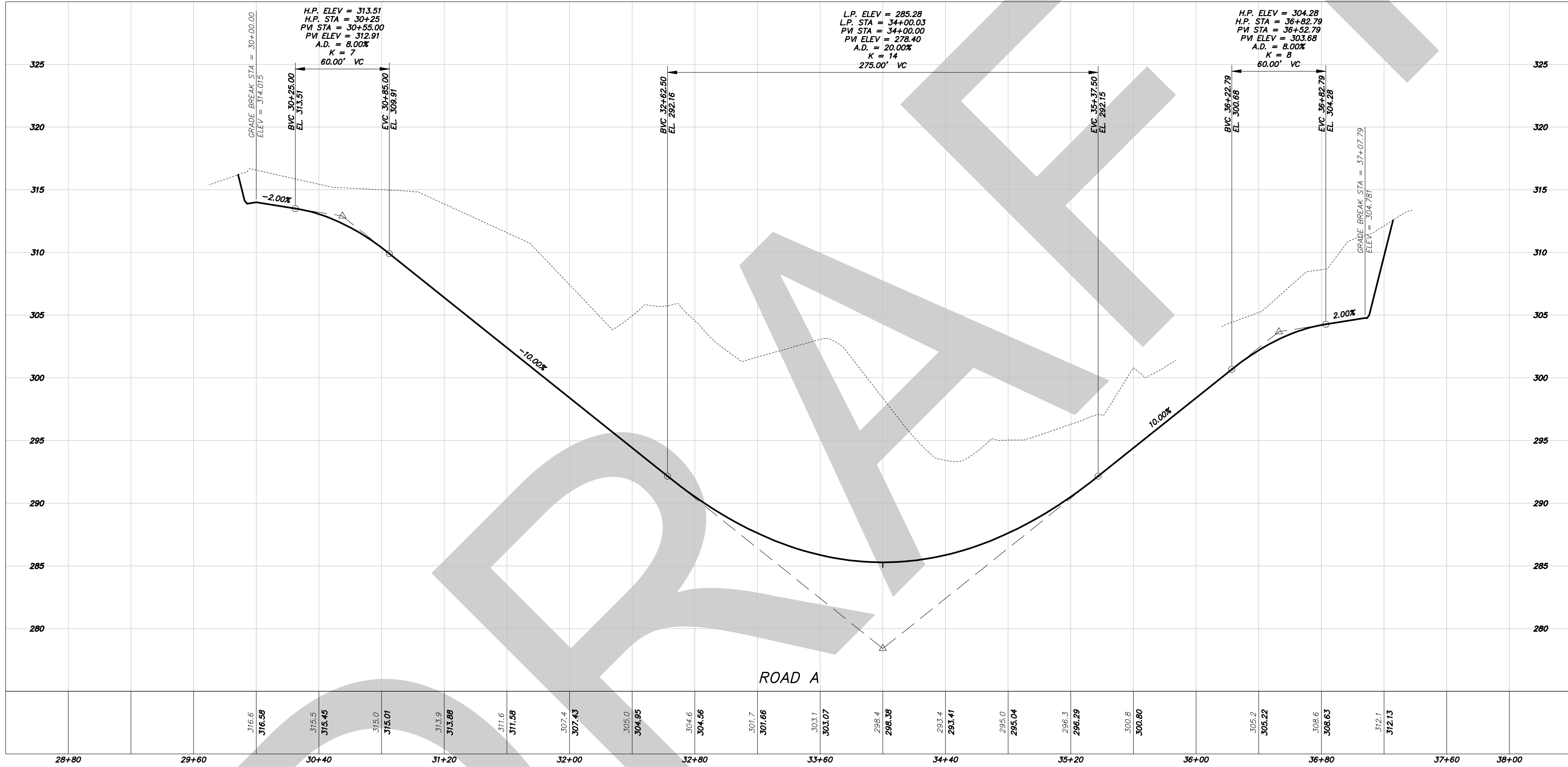
D.R. STRONG
 CONSULTING ENGINEERS
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 620 - 7th AVENUE KIRKLAND, WA 98033
 O 425.827.3063 F 425.827.3423

MARYSVILLE - 44TH PRD

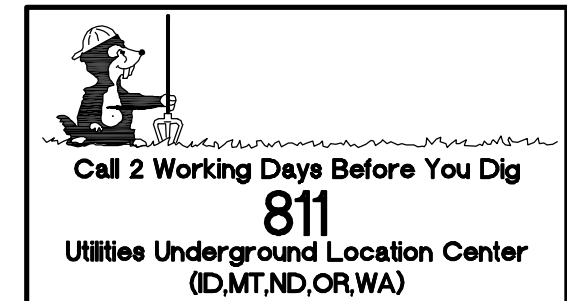
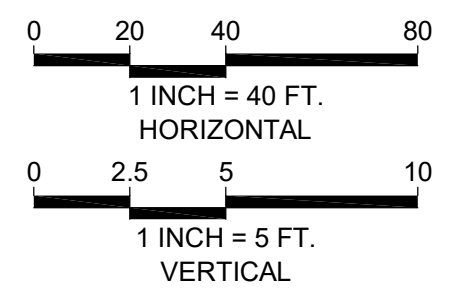
CONCEPTUAL ROAD PROFILES
 7315 & 7417 - 44TH ST NE
 MARYSVILLE, WA
 PARCELS 3005350030-3600,-3700

TOLL BROS., INC

8815 - 122ND AVE NE, STE 200
 KIRKLAND, WA 98033
 (425) 825-1955



ROAD A



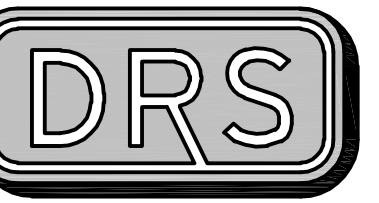
APR	
REVISION	
DATE	

DRAFTED BY: ZLJ
 DESIGNED BY: LRJ
 PROJECT ENGINEER: LRJ
 DATE: 05-12-22
 PROJECT NO.: 21101

DRAWING: **C5**
 SHEET: **5** OF **7**

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SW 1/4 SECTION 35, TOWNSHIP 30 N, RANGE 5 E, W.M.
MARYSVILLE - 44TH PRD



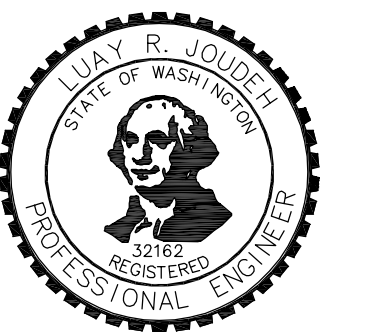
D.R. STRONG
 CONSULTING ENGINEERS
 ENGINEERS PLANNERS SURVEYORS
 620 - 7th AVENUE KIRKLAND, WA 98033
 O 425.827.3063 F 425.827.3423

MARYSVILLE - 44TH PRD

CONCEPTUAL ROAD PROFILE
 7315 & 7417 - 44TH ST NE
 MARYSVILLE, WA
 PARCELS 3005350030-3600,-3700

TOLL BROS., INC

8815 - 122ND AVE NE, STE 200
 KIRKLAND, WA 98033
 (425) 825-1955



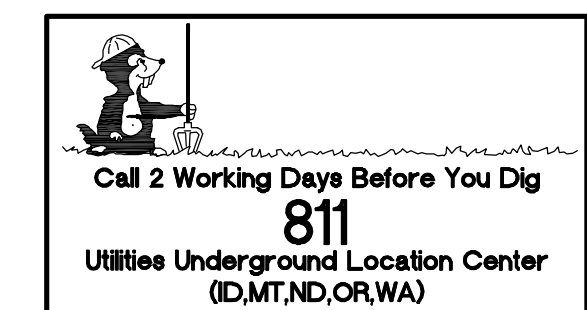
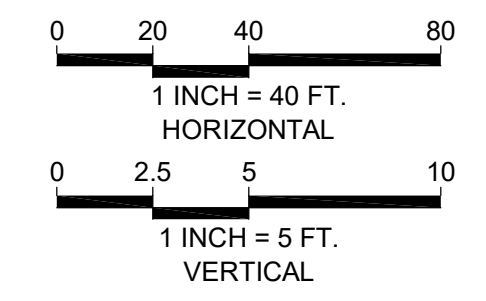
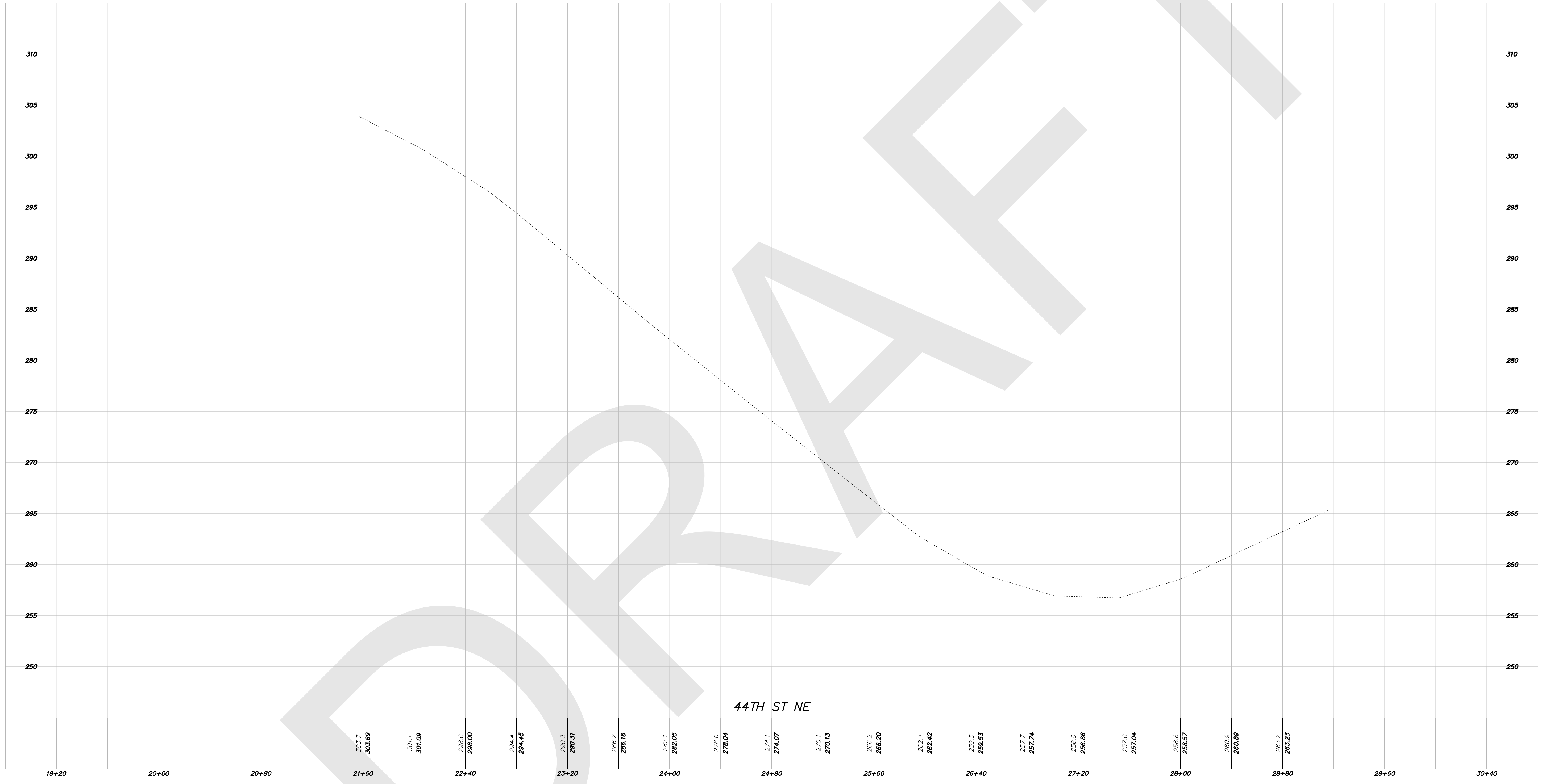
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REVISION

DATE

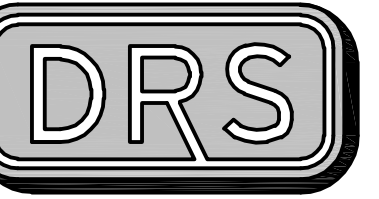
DRAFTED BY: ZLJ
 DESIGNED BY: LRJ
 PROJECT ENGINEER: LRJ
 DATE: 05-12-22
 PROJECT NO.: 21101

DRAWING: **C6**
 SHEET: **6** OF **7**

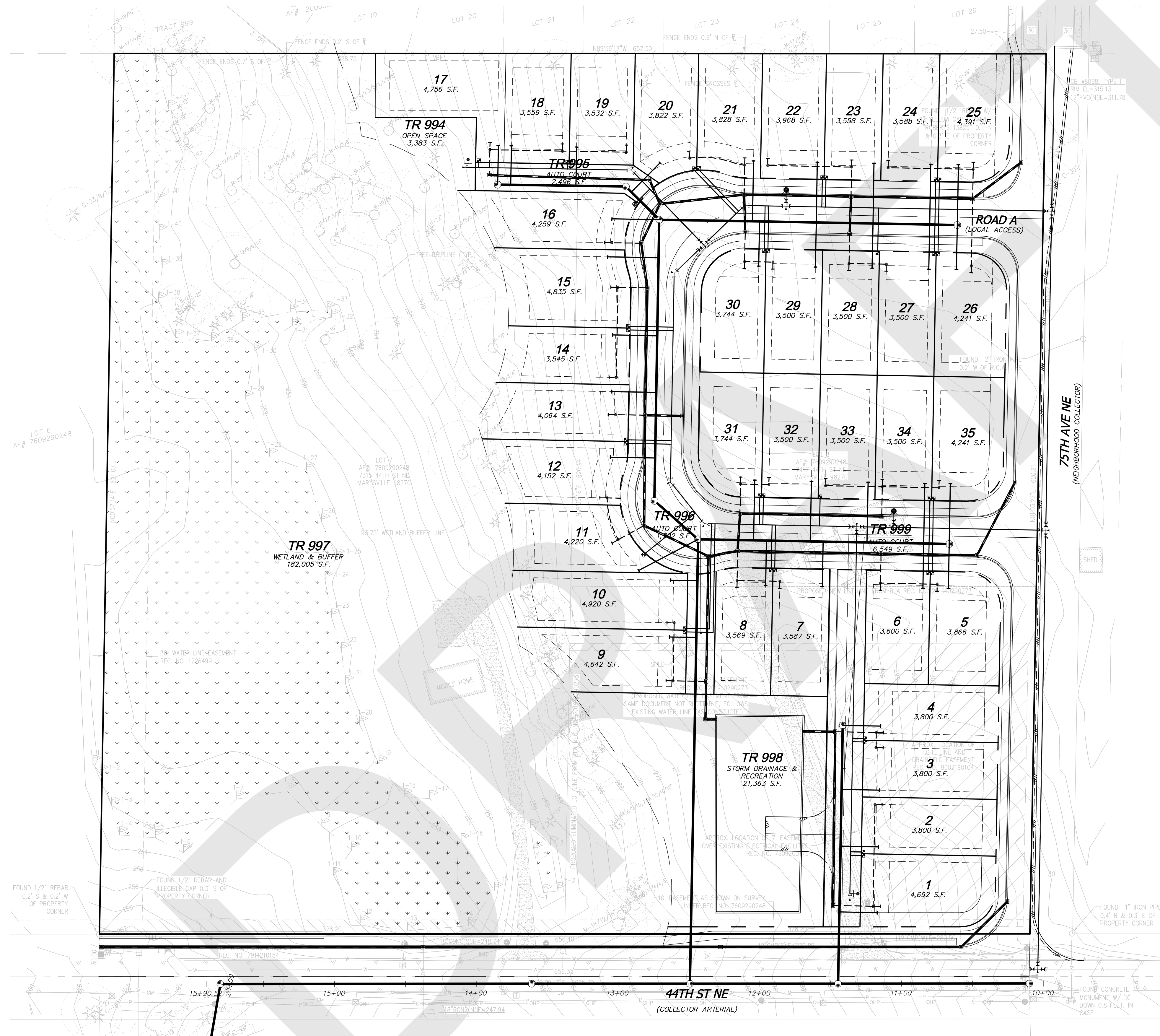


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SW 1/4 SECTION 35, TOWNSHIP 30 N, RANGE 5 E, W.M.
MARYSVILLE - 44TH PRD



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CONSULTING ENGINEERS
 ENGINEERS PLANNERS SURVEYORS
 620 - 7th AVENUE KIRKLAND, WA 98033
 O 425.827.3065 F 425.827.2423



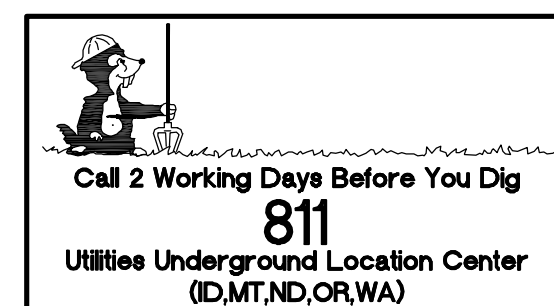
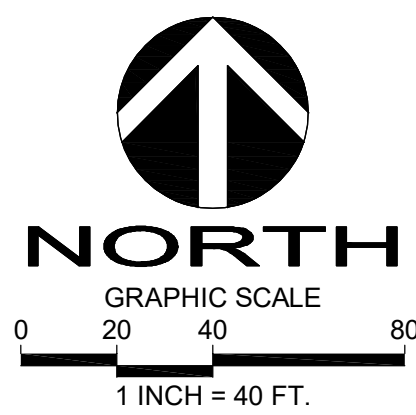
NOTE:
 WATER AND SEWER SHOWN IS CONCEPTUAL.

MARYSVILLE - 44TH PRD

CONCEPTUAL UTILITIES PLAN
 7315 & 7417 - 44TH ST NE
 MARYSVILLE, WA
 PARCELS 3005350030-3600-3700

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 DESIGNED BY: LRJ
 PROJECT ENGINEER: LRU
 DATE: 05-12-22
 PROJECT NO.: 21101

DRAWING: **C8**
 SHEET: **8** OF **7**