

TALASAEA
CONSULTANTS, INC.

20 September 2018

TAL-1129B

Ms. Nicole Gaudette
Senior Planner
City of Mercer Island Development Services Group
9611 SE 36th Street
Mercer Island, Washington 98040

REFERENCE: Review Comments for File No. CAO17-010 – Hou Critical Areas Determination 4825 E Mercer Way, Mercer Island, WA 98040; King County Tax Parcel #216200-0070

SUBJECT: Response to City of Mercer Island Comments dated 11 July 2018

Dear Nicole:

In response to your comments regarding the Hou Property dated 11 July 2018, we are providing the following comments. As is typical with our procedure for response letter, we will be providing your comments verbatim in **bold** text. Our responses will follow each comment.

- 1. According to your consultant, Wetland A is rated a Category III wetland based upon its position on a slope. The city does not agree with the rating of Wetland A because the rating form does not recognize the presence of mature forest or riparian priority habitat types within 330 feet of Wetland A as required in Habitat Section 2.3. The rating form should be revised to include these priority habitat types in addition to those already listed. The rating form also indicates that the rating was completed on October 19, 2006, which does not reflect Talasaea's more recent site visit on 2017. The rating forms should be updated based on the 2017 site visit or a more recent site visit.**

The 2006 rating form has been revised based on the most recent site visit on 14 July 2017. The revised wetland rating form is provided as **Attachment 1**. The requested adjustments to the habitat score have been made. However, those changes have no effect on the final category of the wetland or its associated buffer. Wetland A

remains a Category III wetland with a low habitat score (less than 20) with a standard 50-foot buffer, reducible to 25-feet.

- 2. Please indicate on plans where any utilities, including drainage, will be located in a critical area or its buffer. Please demonstrate how the critical areas will be protected from the utility and how impacts will be mitigated.**

No utilities or drainage will be located in critical areas or their buffers. All utilities will be collocated in the driveway.

- 3. According to MICC 19.07.070.b(3)(c) the total area contained in the averaged buffers cannot be decreased below the total area that would be provided if the maximum width were not averaged. The legend on Sheet W1.1 of the mitigation plan indicates that area of stream buffer reduction is 354 square feet and the area of stream buffer replacement is 333 square feet. Since the area of stream buffer reduction is more than that area of buffer replacement the mitigation plan is not in compliance with code requirements. In addition, the stream buffer replacement area proposed is not contiguous with the stream itself and therefore does not contribute to function and values. Instead, the area of stream buffer replacement is located within the buffer of Wetland A and likely provides benefits to the wetland's buffer. Please provide stream buffer replacement contiguous to the stream.**

The Proposed Site Development Plan has been revised to reflect NO modifications to the stream buffer (**Attachment 2**).

- 4. The proposed woody shrub plantings in the eastern portion of the buffer enhancement area for stream buffer reduction mitigation will be planted approximately 34 feet from Stream 1 at the southern edge of the buffer, bordering the proposed house. The placement of woody shrub plantings at this distance will not significantly contribute to improving stream functions. In addition, proposed plantings for the remaining portions of the buffer enhancement area are sparse and limited in number. ESA does not believe that the proposed buffer enhancement would provide adequate mitigation for impacts from buffer averaging, as these features would not significantly improve ecological functions of the stream.**

The Proposed Site Development Plan has been revised to reflect NO modifications to the stream buffer.

- 5. Impacts from the buffer reduction of Wetland A are not being mitigated for entirely consistent with MICC 19.07.070(B)(2) because the mitigation plan proposes a three-year monitoring period in addition to removal of noxious**

weeds and replanting with native vegetation. Per MICC 19.07.070(B)(2)(b)(iii), a five-year monitoring period is required with removal of noxious weeds and native plantings. Please update your proposal to require a five-year monitoring plan.

Comment noted. A five-year monitoring will be followed.

- 6. The wetland and watercourse buffers shall not be reduced within the drip lines of trees 916 and 917 which provide habitat benefits (e.g. shading, organic inputs, etc.) to the wetland and watercourse. Please add the drip lines of these trees to the plan sheets.**

Please provide the language from the MICC that stipulates buffer reductions relative to drip lines of trees. The drip lines of the two trees have been added to the Proposed Site Development Plan for clarity. Reductions to the stream buffer have been removed from the Plan, which includes removing additional proposed development from within the dripline of these two trees. However, wetland buffer reduction is still proposed with a minor area of reduction occurring within the drip lines of concern. This area is a small fragment of the total drip line of these two trees. The previously stipulated 20-foot tree protection zone remains around the larger of the trees. A summary of drip line encroachments is below in **Table 1**. Total tree removal on the Site is 25% (8 out of 32 trees) with a 75% retention rate.

Table 1. Summary of Drip Line Encroachments

	Total Drip Line Area (SF)	Existing Development (SF)	Proposed Additional Development in Drip Line (SF)	Final Undisturbed Drip Line (SF)
80" Tree	5,027	862	1,110	3,055
		17%	22%	61%
42" Tree	2,827	0	498	2,329
			18%	82%

- 7. In a recent telephone conversation with Mr. Skall he mentioned that he previously was granted permission to provide a driveway that did not meet the required width and slope requirements. The previous review of this property occurred over 10 years ago. Both building and fire codes change approximately every 3 years. Considering this, regulations that applied to the project during previous review likely no longer apply. Please do not assume you will be granted exceptions to the driveway standards or any other**

standards. Please contact Herschel Rostov, Fire Marshal, to discuss driveway standards.

Comment noted.

- 8. In the same telephone conversation mentioned in item #6 above, Mr. Skall stated that the applicant may not be willing to construct the pin pile driveway designed to protect the 80-inch fir tree as proposed by the project arborist. The 80-inch fir tree is protected by MICC as an exceptional tree. Tree protection will be required, including construction of the driveway as proposed by the arborist, unless the project arborist provides other protection measures that are equal to or better than currently proposed as determined by the City Arborist. Please contact John Kenney, City Arborist, to discuss tree protection.**

As the arborist is not an engineer, the project engineer will determine which construction methods and driveway position, composition, and construction are feasible. The possible options will be discussed with the project arborist to discuss jointly how to best protect the tree based on the possible ways to construct the driveway. As the site plan is conceptual at this point in time, the project has not yet proceeded to a point where we have a final answer to provide the City. This application is not for construction permits. Once a final buildable area has been identified and approved by the City, the next steps will be to involve the engineer further, along with the other project team members and a contractor to design the details of an actual house design, including all elements such as a driveway, final utilities, etc. This design will include details on locations of these features, materials, how the critical areas and trees will be protected onsite, as well as detailed construction sequencing.

- 9. In your letter addressed to the City dated June 4, 2018, you provide a general approach to construction management as requested by the City. Thank you for this information. There are some concerns with this response. The plan states that construction activities will begin with the construction of a soldier pile wall along the south side of the property. The arborist report states that the pin pile driveway shall be constructed before other construction activity occurs to prevent injury to the 80-inch fir tree. If the soldier (*sic*) pile wall is constructed first, how will the tree roots be protected during construction of the wall? How will equipment to construct the wall be brought onto the site without a driveway in place? The plan also states that utility installation will be south of the proposed driveway. For tree protection, the driveway will be required to be set back as far as possible from the tree. Also, the driveway will likely be required to be at least 16-feet wide, consuming much of the area between the property line and the tree protection area. Considering these**

requirements, utilities will likely be located underneath the driveway. Where will utility installation equipment be staged before the driveway is installed providing access to a staging location outside the tree protection area? Will hand tools be used for utility installation to avoid impacts that may result from large equipment?

The landowner will discuss and implement best management practices as determined by the team to optimize the use of the site for a new single family home while minimizing damage to the tree roots.

We trust that you will find this information helpful for your current needs. If you have any questions or require additional information, please contact me at (425) 861-7550.

Sincerely,

TALASAEA CONSULTANTS, INC.



Jennifer M. Marriott, PWS
Senior Ecologist

Attachments:

1. Revised Wetland Rating Form
2. Revised plan sheets:
 - a. W1.0 Existing Conditions
 - b. W1.1 Proposed Site Development Plan
 - c. W1.2 Planting Plan

Left Skall property

C-1000

Buffer width = 50 feet

VAL 1129

Wetland name or number A

Plover Island

Minimum = 25 feet

WETLAND RATING FORM - WESTERN WASHINGTON
Version 2 - Updated July 2006 to increase accuracy and reproducibility among users

Name of wetland (if known): Wetland A Date of site visit: 10/19/06 / 7/14/17

Rated by Caroline Christy / JMM Trained by Ecology? Yes No Date of training 10/06

SEC: 19 TOWNSHIP: 24 RANGE: 5 Is S/T/R in Appendix D? Yes No

Map of wetland unit: Figure Estimated size 5,000 ft² (includes off-site portion)

SUMMARY OF RATING

Category based on **FUNCTIONS** provided by wetland

I II III IV

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions 17
Score for Hydrologic Functions 8
Score for Habitat Functions 15
TOTAL score for Functions 33
36

Category based on **SPECIAL CHARACTERISTICS** of wetland

I II Does not Apply

Final Category (choose the "highest" category from above)

III

Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics	Wetland HGM Class used for Rating	
Estuarine	Depressional	
Natural Heritage Wetland	Riverine	
Bog	Lake-fringe	
Mature Forest	Slope	<input checked="" type="checkbox"/>
Old Growth Forest	Flats	
Coastal Lagoon	Freshwater Tidal	
Interdunal		
None of the above	Check if unit has multiple HGM classes present	<input type="checkbox"/>

Wetland name or number A

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	YES	NO
SP1. <i>Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered animal or plant species (T/E species)?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. <i>Has the wetland unit been documented as habitat for any State listed Threatened or Endangered animal species?</i> For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X
SP3. <i>Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?</i>		X
SP4. <i>Does the wetland unit have a local significance in addition to its functions?</i> For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Wetland name or number A

Classification of Wetland Units in Western Washington

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 (i.e. except during floods)?
NO - go to 2 YES - the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? YES - **Freshwater Tidal Fringe** NO - **Saltwater Tidal Fringe (Estuarine)**

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 rated as an **Estuarine wetland**. Wetlands that were called estuarine in the first and second editions of the rating system are called **Salt Water Tidal Fringe** in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

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 both** of the following criteria?
___ The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (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?**

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 <3ft diameter and less than 1 foot deep).*

- NO - go to 5 YES - The wetland class is **Slope**

Wetland name or number A

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 two years. **NO**
NOTE: The riverine unit can contain depressions that are filled with water when the river is not flooding.

NO - go to 6 YES - The wetland class is **Riverine**

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 your wetland. **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 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 Class(es) within the wetland unit being rated	HGM Class to Use in Rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake-fringe	Lake-fringe
Depressional + Riverine along stream within boundary	Depressional
Depressional + Lake-fringe	Depressional
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE under wetlands with special characteristics

If you are unable still 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

D Depressional and Flats Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality		(Only 1 score per box)
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
D	<p>D 1.1 Characteristics of surface water flows out of the wetland:</p> <p>Unit is a depression with no surface water leaving it (no outlet) points = 3</p> <p>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2</p> <p>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 1</p> <p>Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1</p> <p>(If ditch is not permanently flowing treat unit as "intermittently flowing")</p> <p>Provide photo or drawing</p>	Figure ___
D	<p>S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic (<i>use NRCS definitions</i>)</p> <p>YES points = 4</p> <p>NO points = 0</p>	
D	<p>D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)</p> <p>Wetland has persistent, ungrazed, vegetation > = 95% of area points = 5</p> <p>Wetland has persistent, ungrazed, vegetation > = 1/2 of area points = 3</p> <p>Wetland has persistent, ungrazed vegetation > = 1/10 of area points = 1</p> <p>Wetland has persistent, ungrazed vegetation < 1/10 of area points = 0</p> <p>Map of Cowardin vegetation classes</p>	Figure ___
D	<p>D 1.4 Characteristics of seasonal ponding or inundation.</p> <p><i>This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate area as the average condition 5 out of 10 yrs.</i></p> <p>Area seasonally ponded is > 1/2 total area of wetland points = 4</p> <p>Area seasonally ponded is > 1/4 total area of wetland points = 2</p> <p>Area seasonally ponded is < 1/4 total area of wetland points = 0</p> <p>Map of Hydroperiods</p>	Figure ___
D	Total for D.1	Add the points in the boxes above
D	<p>D 2. Does the wetland unit have the <u>opportunity</u> to improve water quality?</p> <p>Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity.</p> <ul style="list-style-type: none"> — Grazing in the wetland or within 150 ft — Untreated stormwater discharges to wetland — Tilled fields or orchards within 150 ft of wetland — A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging — Residential, urban areas, golf courses are within 150 ft of wetland — Wetland is fed by groundwater high in phosphorus or nitrogen — Other _____ <p>YES multiplier is 2 NO multiplier is 1</p>	(see p. 44)
D	TOTAL - Water Quality Functions	Multiply the score from D1 by D2
		Add score to table on p. 1

Wetland name or number A

D Depressional and Flats Wetlands		Points (only 1 score per box)
HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream degradation		
D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?		<i>(see p.46)</i>
D	<p>D 3.1 Characteristics of surface water flows out of the wetland unit</p> <p>Unit is a depression with no surface water leaving it (no outlet) points = 4</p> <p>Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2</p> <p>Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch points = 1</p> <p><i>(If ditch is not permanently flowing treat unit as "intermittently flowing")</i></p> <p>Unit has an unconstricted, or slightly constricted, surface outlet (<i>permanently flowing</i>) points = 0</p>	
D	<p>D 3.2 Depth of storage during wet periods</p> <p><i>Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).</i></p> <p>Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7</p> <p>The wetland is a "headwater" wetland points = 5</p> <p>Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5</p> <p>Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3</p> <p>Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1</p> <p>Marks of ponding less than 0.5 ft points = 0</p>	
D	<p>D 3.3 Contribution of wetland unit to storage in the watershed</p> <p><i>Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.</i></p> <p>The area of the basin is less than 10 times the area of unit points = 5</p> <p>The area of the basin is 10 to 100 times the area of the unit points = 3</p> <p>The area of the basin is more than 100 times the area of the unit points = 0</p> <p>Entire unit is in the FLATS class points = 5</p>	
D	Total for D 3	<i>Add the points in the boxes above</i>
D	<p>D 4. Does the wetland unit have the <u>opportunity</u> to reduce flooding and erosion?</p> <p>Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur.</p> <p><i>Note which of the following indicators of opportunity apply.</i></p> <ul style="list-style-type: none"> — Wetland is in a headwater of a river or stream that has flooding problems — Wetland drains to a river or stream that has flooding problems — Wetland has no outlet and impounds surface runoff water that might otherwise flow into a river or stream that has flooding problems — Other _____ <p>YES multiplier is 2 NO multiplier is 1</p>	<i>(see p. 49)</i>
D	TOTAL - Hydrologic Functions	multiplier
Multiply the score from D 3 by D 4		
<i>Add score to table on p. 1</i>		

Wetland name or number A

S Slope Wetlands		Points
WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality		(only 1 score per box)
S	S 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.64)
S	S 1.1 Characteristics of average slope of unit: Slope is 1% or less (a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance) points = 3 Slope is 1% - 2% points = 2 Slope is 2% - 5% points = 1 <u>Slope is greater than 5%</u> steep slope points = 0	0
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic. (use NRCS definitions) <u>Thick muck 5. Swells like sulfur</u> <u>YES = 3 points</u> NO = 0 points	3
S	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover); and uncut means not grazed or mowed and plants are higher than 6 inches. Dense, uncut, herbaceous vegetation > 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation > 1/2 of area points = 3 <u>Dense, woody, vegetation > 1/2 of area</u> points = 2 Dense, uncut, herbaceous vegetation > 1/4 of area points = 1 Does not meet any of the criteria above for vegetation points = 0 Aerial photo or map with vegetation polygons	Figure 2
S	Total for S 1 Add the points in the boxes above	5
S	S 2. Does the wetland unit have the <u>opportunity</u> to improve water quality? Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity. <input type="checkbox"/> Grazing in the wetland or within 150ft <input type="checkbox"/> Untreated stormwater discharges to wetland <input checked="" type="checkbox"/> Tilled fields, logging, or orchards within 150 feet of wetland <input checked="" type="checkbox"/> Residential, urban areas, or golf courses are within 150 ft upslope of wetland <input type="checkbox"/> Other _____ <u>YES multiplier is 2</u> NO multiplier is 1	(see p.67) multiplier 2
S	TOTAL - Water Quality Functions Multiply the score from S1 by S2 Add score to table on p. 1	10

Comments

△ The houses to the west and south of the wetland are both upslope of it

Wetland name or number A

S Slope Wetlands		Points
HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion.		(only 1 score per box)
	S 3. Does the wetland unit have the potential to reduce flooding and stream erosion?	(see p. 68)
S	<p>S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows)</p> <p>Dense, uncut, rigid vegetation covers > 90% of the area of the wetland. <u>points = 6</u></p> <p>Dense, uncut, rigid vegetation > 1/2 area of wetland. points = 3</p> <p>Dense, uncut, rigid vegetation > 1/4 area. points = 1</p> <p>More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid. points = 0</p>	6
S	<p>S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area.</p> <p><u>YES points = 2</u></p> <p>NO points = 0</p>	2
S	Add the points in the boxes above	
S	<p>S 4. Does the wetland have the opportunity to reduce flooding and erosion?</p> <p>Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? Note which of the following conditions apply.</p> <ul style="list-style-type: none"> — Wetland has surface runoff that drains to a river or stream that has flooding problems - — Other _____ <p>(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam))</p> <p>YES multiplier is 2 <u>NO multiplier is 1</u></p>	(see p. 70)
S	TOTAL - Hydrologic Functions Multiply the score from S 3 by S 4 Add score to table on p. 1	
		8

* look into stream


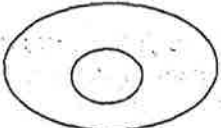

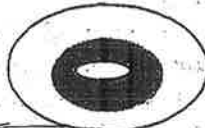


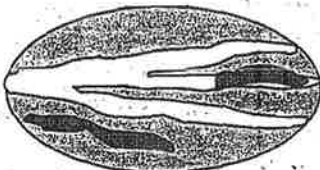
Comments

Δ a stream flows adjacent to the wetland, but is a very small, seasonal drainage. The lack of residential development upslope makes me believe that the stream does not have flooding problems.

These questions apply to wetlands of all HGM classes.		Points (only 1 score per box)								
HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat										
H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?										
<p>H 1.1. <u>Vegetation structure</u> (see p. 72)</p> <p>Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.</p> <p><input type="checkbox"/> Aquatic bed</p> <p><input checked="" type="checkbox"/> Emergent plants</p> <p><input checked="" type="checkbox"/> Scrub/shrub (areas where shrubs have >30% cover)</p> <p><input type="checkbox"/> Forested (areas where trees have >30% cover)</p> <p>If the unit has a forested class check if:</p> <p><input 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</p> <p>Add the number of vegetation structures that qualify. If you have:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%; text-align: right;">4 structures or more points = 4</td> </tr> <tr> <td></td> <td style="text-align: right;">3 structures points = 2</td> </tr> <tr> <td></td> <td style="text-align: right;"><u>2 structures</u> points = 1</td> </tr> <tr> <td></td> <td style="text-align: right;">1 structure points = 0</td> </tr> </table> <p>Map of Cowardin vegetation classes</p>			4 structures or more points = 4		3 structures points = 2		<u>2 structures</u> points = 1		1 structure points = 0	<p>Figure <u> </u></p>
	4 structures or more points = 4									
	3 structures points = 2									
	<u>2 structures</u> points = 1									
	1 structure points = 0									
<p>H 1.2. <u>Hydroperiods</u> (see p. 73)</p> <p>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 acre to count. (see text for descriptions of hydroperiods)</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><input type="checkbox"/> Permanently flooded or inundated</td> <td style="width: 50%; text-align: right;">4 or more types present points = 3</td> </tr> <tr> <td><input checked="" type="checkbox"/> Seasonally flooded or inundated</td> <td style="text-align: right;"><u>3 types present</u> points = 2</td> </tr> <tr> <td><input checked="" type="checkbox"/> Occasionally flooded or inundated</td> <td style="text-align: right;">2 types present point = 1</td> </tr> <tr> <td><input checked="" type="checkbox"/> Saturated only</td> <td style="text-align: right;">1 type present points = 0</td> </tr> </table> <p><input type="checkbox"/> Permanently flowing stream or river in, or adjacent to, the wetland</p> <p><input type="checkbox"/> Seasonally flowing stream in, or adjacent to, the wetland - <i>stream does not cover 710% of wetland</i></p> <p><input type="checkbox"/> Lake-fringe wetland = 2 points</p> <p><input type="checkbox"/> Freshwater tidal wetland = 2 points</p> <p>Map of hydroperiods</p>		<input type="checkbox"/> Permanently flooded or inundated	4 or more types present points = 3	<input checked="" type="checkbox"/> Seasonally flooded or inundated	<u>3 types present</u> points = 2	<input checked="" type="checkbox"/> Occasionally flooded or inundated	2 types present point = 1	<input checked="" type="checkbox"/> Saturated only	1 type present points = 0	<p>Figure <u> </u></p> <p style="text-align: center; font-size: 2em;">2</p>
<input type="checkbox"/> Permanently flooded or inundated	4 or more types present points = 3									
<input checked="" type="checkbox"/> Seasonally flooded or inundated	<u>3 types present</u> points = 2									
<input checked="" type="checkbox"/> Occasionally flooded or inundated	2 types present point = 1									
<input checked="" type="checkbox"/> Saturated only	1 type present points = 0									
<p>H 1.3. <u>Richness of Plant Species</u> (see p. 75)</p> <p>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)</p> <p>You do not have to name the species.</p> <p>Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle</p> <p>If you counted:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%; text-align: right;">> 19 species points = 2</td> </tr> <tr> <td></td> <td style="text-align: right;"><u>5 - 19 species</u> points = 1</td> </tr> <tr> <td></td> <td style="text-align: right;">< 5 species points = 0</td> </tr> </table> <p>List species below if you want to:</p>			> 19 species points = 2		<u>5 - 19 species</u> points = 1		< 5 species points = 0	<p>Figure <u> </u></p>		
	> 19 species points = 2									
	<u>5 - 19 species</u> points = 1									
	< 5 species points = 0									

Total for page 4

Wetland name or number A

<p>H 1.4. Interspersion of habitats (see p. 76) Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>None = 0 points</p> </div> <div style="text-align: center;">  <p>Low = 1 point</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> <div style="text-align: center;">  <p>Moderate = 2 points</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;">  <p>High = 3 points</p> </div> <div style="text-align: center;">  <p>High = 3 points</p> </div> <div style="text-align: center;">  <p>[riparian braided channels]</p> </div> </div> <p>NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes</p>	<p>Figure _____</p> <p style="font-size: 2em; text-align: center;">2</p>
<p>H 1.5. Special Habitat Features: (see p. 77) Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). <input checked="" type="checkbox"/> Standing snags (diameter at the bottom > 4 inches) in the wetland <input checked="" type="checkbox"/> Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m) <input type="checkbox"/> Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown) <input type="checkbox"/> At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. (structures for egg-laying by amphibians) <input type="checkbox"/> Invasive plants cover less than 25% of the wetland area in each stratum of plants <p><i>NOTE: The 20% stated in early printings of the manual on page 78 is an error.</i></p>	<p style="font-size: 2em; text-align: center;">3</p>
<p>H 1. TOTAL Score - potential for providing habitat Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5</p>	<p style="font-size: 2em;">9</p>

Comments

<p>H 2. Does the wetland unit have the opportunity to provide habitat for many species?</p> <p>H 2.1 Buffers (see p. 80) <i>Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."</i></p> <ul style="list-style-type: none"> — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively NO undisturbed also means no-grazing, no landscaping, no daily human use) Points = 5 — 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. Points = 4 — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% NO circumference. Points = 4 — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, Points = 3 — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. Points = 3 <p style="text-align: center;">If buffer does not meet any of the criteria above</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. Points = 2 — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. Points = 2 — Heavy grazing in buffer. Points = 1 — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland) Points = 0. — Buffer does not meet any of the criteria above. Points = 1 <p style="text-align: center;">Aerial photo showing buffers</p>	<p>Figure <u> </u></p> <p style="text-align: center; font-size: 2em;">2</p>
<p>H 2.2 Corridors and Connections (see p. 81)</p> <p>H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (<i>dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor</i>). YES = 4 points (go to H 2.3) NO = go to H 2.2.2</p> <p>H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above? YES = 2 points (go to H 2.3) NO = H 2.2.3</p> <p>H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? YES = 1 point NO = 0 points</p>	<p style="text-align: center; font-size: 2em;">1</p>

Total for page 3

Wetland name or number A

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see p. 82)

Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.*

These are DFW definitions. Check with your local DFW biologist if there are any questions.

Riparian: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

Aspen Stands: Pure or mixed stands of aspen greater than 0.8 ha (2 acres).

Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.

Old-growth 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 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age.

Mature forests: Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less than 100%; 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.

Prairies: Relatively undisturbed areas (as indicated by dominance of native plants) where grasses and/or forbs form the natural climax plant community.

Talus: Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

Caves: A naturally occurring cavity, recess, void, or system of interconnected passages

Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component of the stand is 25%.

Urban Natural Open Space: A priority species resides within or is adjacent to the open space and uses it for breeding and/or regular feeding; and/or the open space functions as a corridor connecting other *priority habitats*, especially those that would otherwise be isolated; and/or the open space is an isolated remnant of natural habitat larger than 4 ha (10 acres) and is surrounded by urban development.

Estuary/Estuary-like: Deepwater tidal habitats and adjacent tidal wetlands, usually semi-enclosed by land but with open, partly obstructed or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water. Estuarine habitat extends upstream and landward to where ocean-derived salts measure less than 0.5ppt. during the period of average annual low flow. Includes both estuaries and lagoons.

Marine/Estuarine Shorelines: Shorelines include the intertidal and subtidal zones of beaches, and may also include the backshore and adjacent components of the terrestrial landscape (e.g., cliffs, snags, mature trees, dunes, meadows) that are important to shoreline associated fish and wildlife and that contribute to shoreline function (e.g., sand/rock/log recruitment, nutrient contribution, erosion control).

If wetland has 3 or more priority habitats = 4 points

If wetland has 2 priority habitats = 3 points

If wetland has 1 priority habitat = 1 point

No habitats = 0 points

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)

X
4

★ Bald Eagle tree on property - near Lake WA

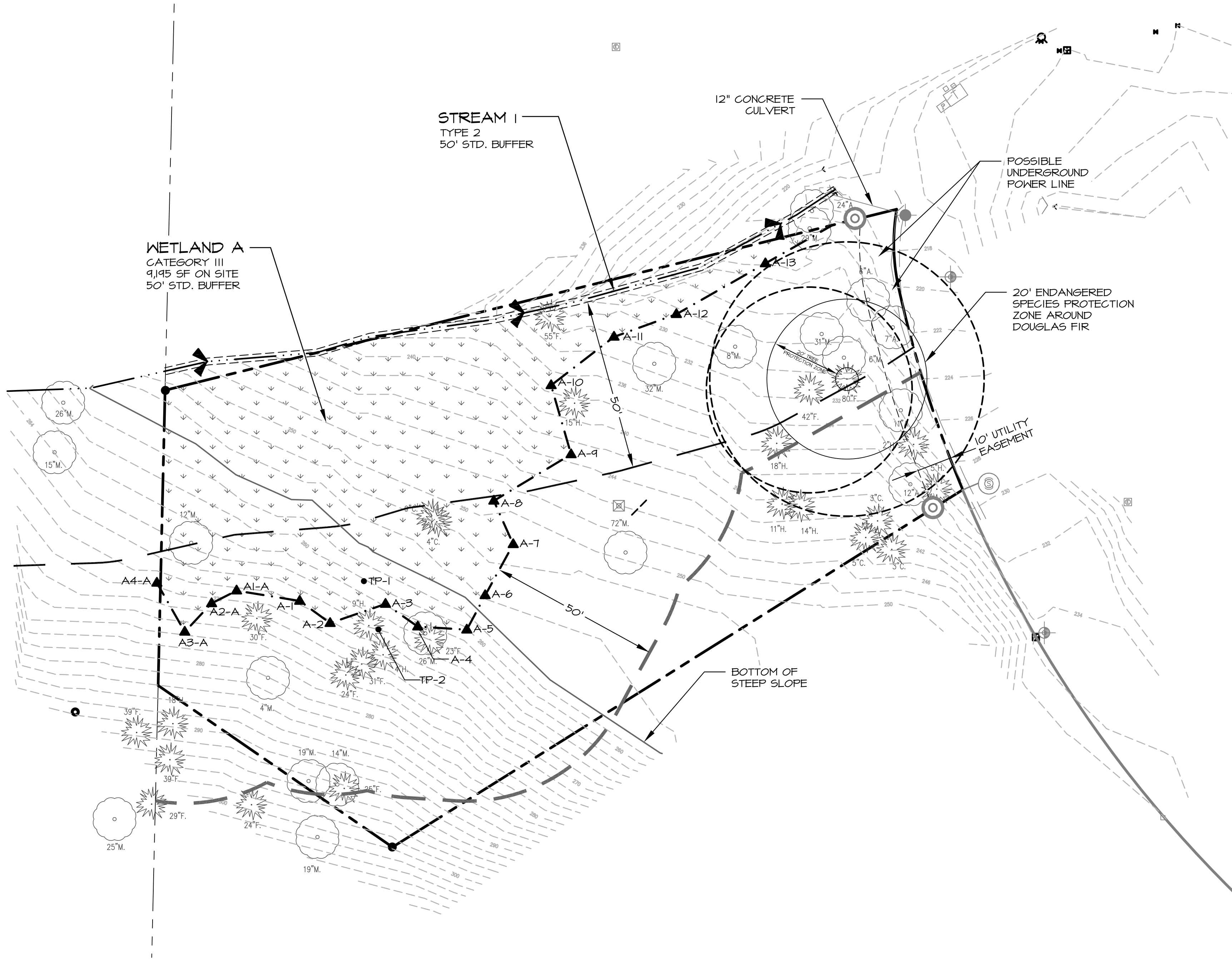
Wetland name or number A

<p>H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)</p> <p>There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5</p> <p>The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5</p> <p>There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3</p> <p>The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3</p> <p><u>There is at least 1 wetland within ½ mile.</u> points = 2</p> <p>There are no wetlands within ½ mile. points = 0</p>	<p>2</p>
<p>H 2. TOTAL Score - opportunity for providing habitat Add the scores from H2.1, H2.2, H2.3, H2.4</p>	<p>69</p>
<p>TOTAL for H 1 from page 14</p>	<p>9</p>
<p>Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1</p>	<p>18</p>

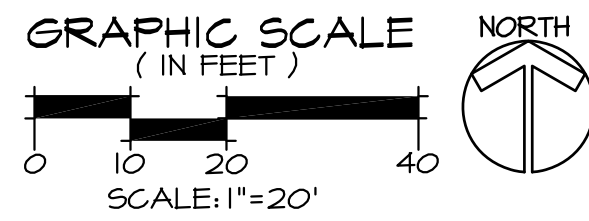
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1000



EXISTING CONDITIONS PLAN



PLAN LEGEND

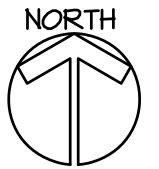
- PROPERTY LINE
- EXISTING WETLAND
- WETLAND BUFFER - STANDARD
- CENTERLINE OF STREAM & FLOW DIRECTION
- APPROXIMATE OHM
- STREAM BUFFER - STANDARD
- ▲A-# WETLAND FLAG LOCATION
- TP-# SOIL TEST PLOT LOCATION
- EXISTING TREES

VICINITY MAP

NTS



SOURCE: WWW.MAPQUEST.COM



CONTACTS

APPLICANT
 NAME: SANG HOU
 ADDRESS: 7022 EAST MERCER WAY
 MERCER ISLAND, WA 98040
 PHONE: (206) 948-7698

SURVEYOR
 NAME: ESM CONSULTING ENGINEERS
 ADDRESS: 33400 8TH AVE S #205
 FEDERAL WAY, WA 98003
 PHONE: (253) 838-6113
 CONTACT:

ENVIRONMENTAL CONSULTANT
 NAME: TALASAEA CONSULTANTS, INC.
 ADDRESS: 15020 BEAR CREEK RD. NE
 WOODINVILLE, WA 98077
 PHONE: (425) 861-7550
 CONTACT: ANN M. OLSEN, RLA
 SENIOR PROJECT MANAGER
 JENNIFER MARRIOTT, PHS
 SENIOR WETLAND ECOLOGIST

SHEET INDEX

SHEET #	SHEET TITLE
WI.0	EXISTING CONDITIONS PLAN
WI.1	PROPOSED SITE DEVELOPMENT PLAN
WI.2	PLANTING PLAN

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Know what's below.
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NOTES

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- SOURCE DRAWING WAS MODIFIED BY TALASAEA CONSULTANTS FOR VISUAL ENHANCEMENT.
- THIS PLAN IS AN ATTACHMENT TO THE CRITICAL AREAS REPORT PREPARED BY TALASAEA CONSULTANTS IN SEPTEMBER 2018.

Revisions	Date	By
CITY COMMENTS	9-4-2018	KM

Date: 7-27-2011
 Scale: AS SHOWN
 Designed: AO
 Drawn: MW
 Checked: OA
 Approved: BS

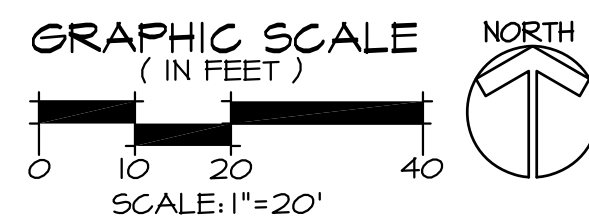
Project # B911B

Sheet # WI.0

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PROPOSED SITE DEVELOPMENT PLAN



PLAN LEGEND

- PROPERTY LINE
- EXISTING WETLAND
- WETLAND BUFFER - STANDARD
- CENTERLINE OF STREAM & FLOW DIRECTION
- APPROXIMATE OHWM
- STREAM BUFFER - STANDARD
- PROPOSED CRITICAL AREAS BUFFER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED

BUFFER MITIGATION LEGEND

	PROPOSED BUFFER REDUCTION (PER MICC 19.07.080.C.2.)	2,191 SF
	NON-COMPENSATORY BUFFER ADDITION	776 SF
	PROPOSED BUFFER ENHANCEMENT*	11,366 SF
	PROPOSED BUILDABLE AREA	4,960 SF

*DURING CONSTRUCTION FEDERA HELIX WILL BE FIELD LOCATED AND REMOVED IN ENHANCEMENT AREAS. ALL INVASIVE WEEDS WILL BE DISPOSED OF OFF SITE.

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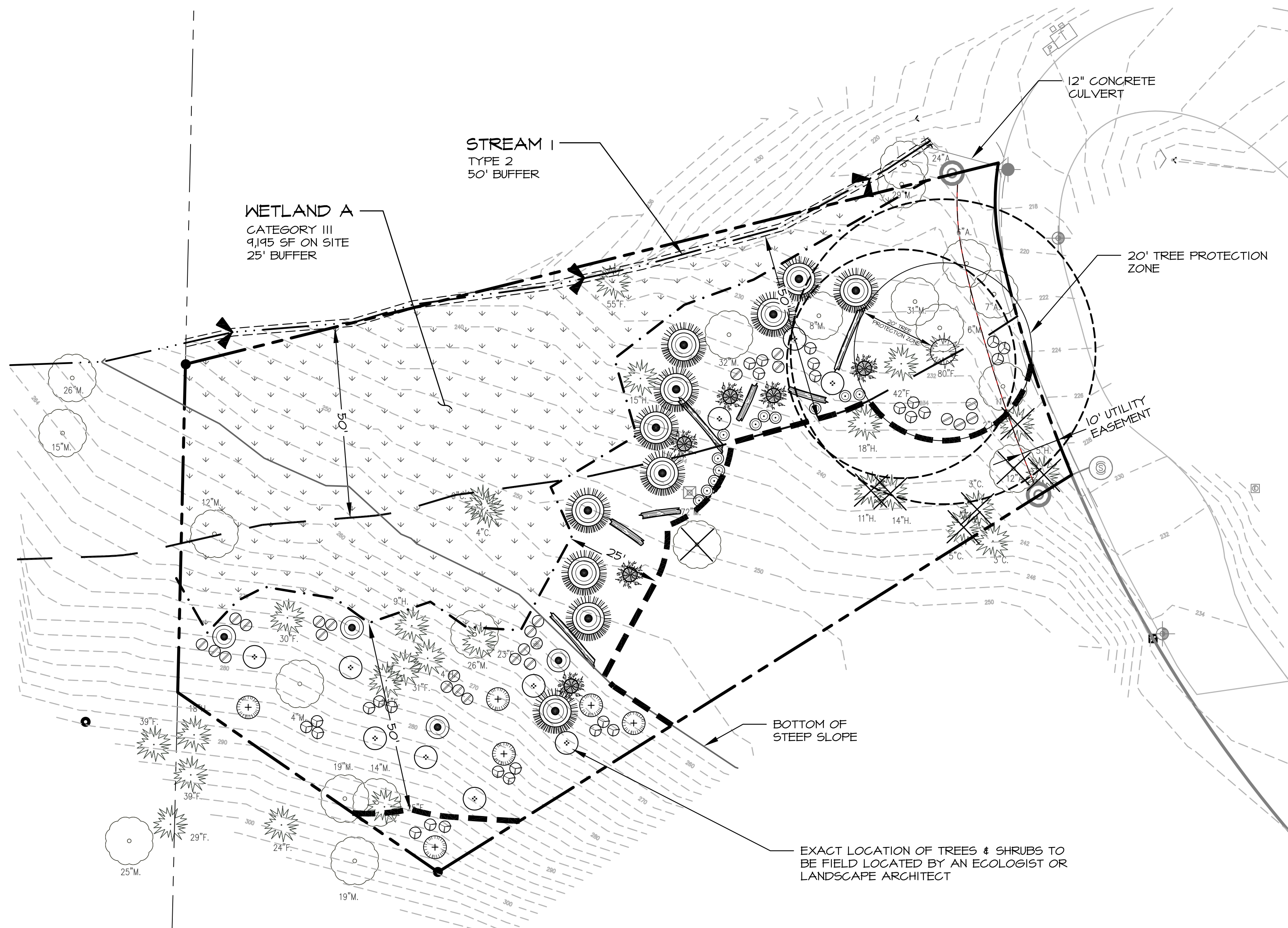


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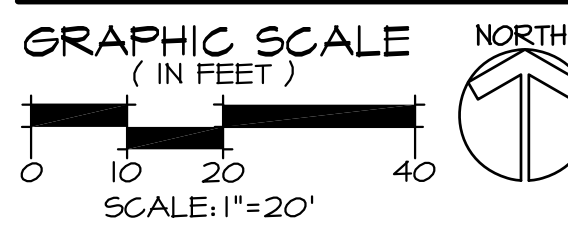
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By	
Date	9-4-2018 KM
Revisions	
CITY COMMENTS	
Date	7-27-2017
Scale	1"=20'
Designed	AQ
Drawn	MW
Checked	OA
Approved	ES
Project #	#1124B
Sheet #	W11



PLANTING PLAN

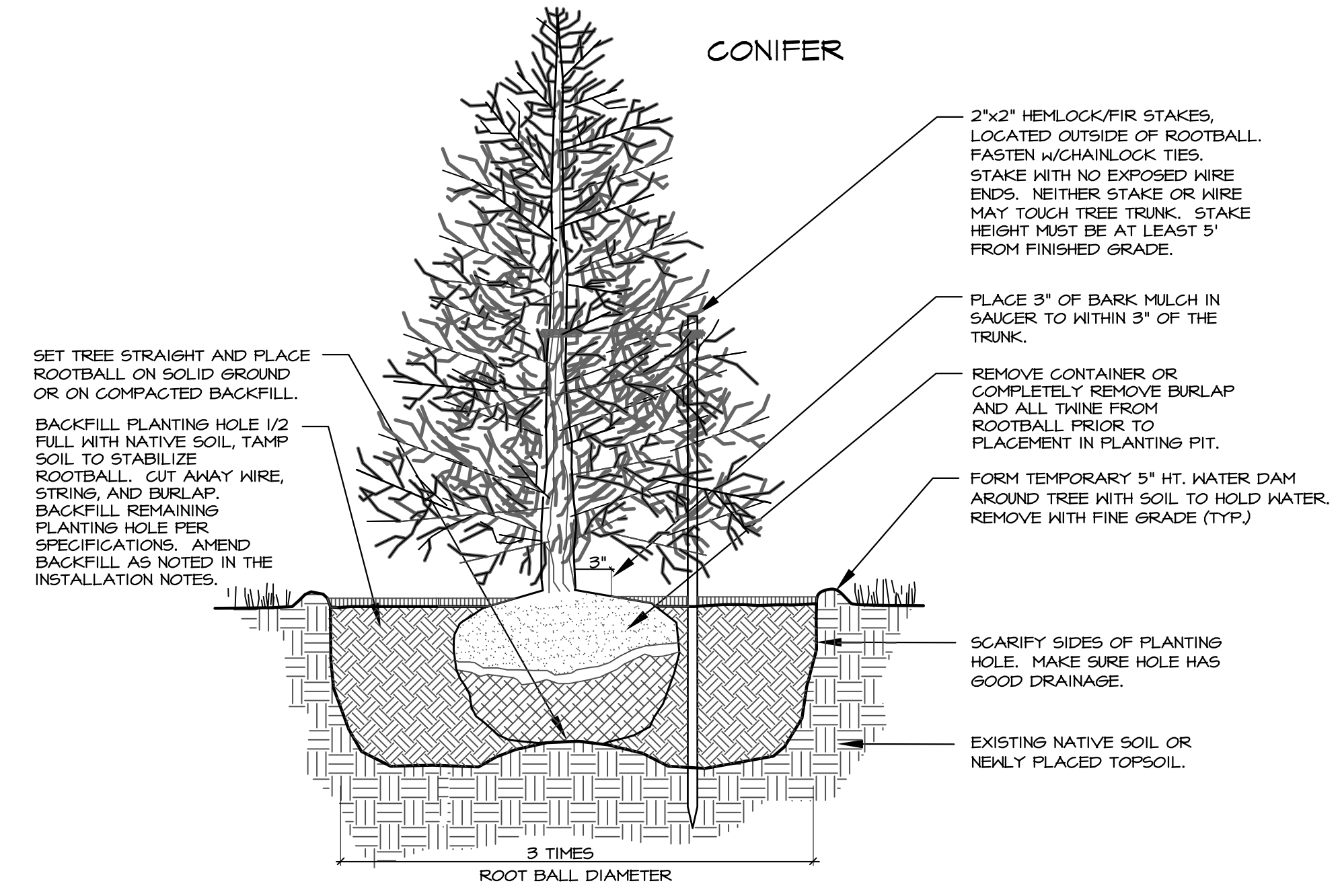


PLAN LEGEND

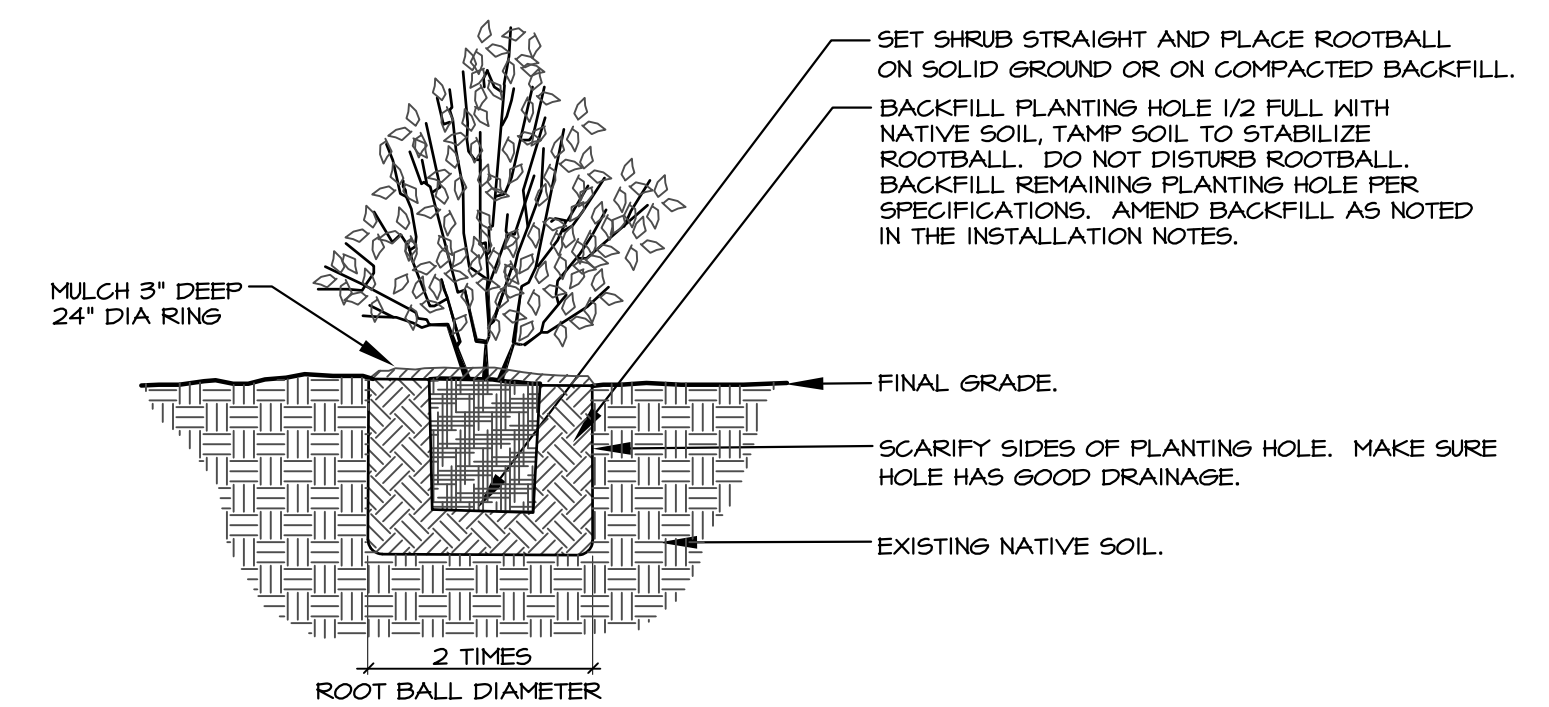
- PROPERTY LINE
- EXISTING WETLAND
- CENTERLINE OF STREAM & FLOW DIRECTION
- APPROXIMATE OHWM
- PROPOSED CRITICAL AREAS BUFFER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- LARGE WOODY DEBRIS

PLANT SCHEDULE

TREES							
SYMBOL	SCIENTIFIC NAME	COMMON NAME	WL STATUS	QTY.	SPACING	SIZE (MIN.)	NOTES
	ACER CIRCINATUM	VINE MAPLE	FAC	10	AS SHOWN	1 GAL.	FULL & BUSHY
	PSEUDOTSUGA MENZIESII	DOUGLAS FIR	FACU	6	AS SHOWN	1 GAL.	B&B, FULL & BUSHY
	THUJA PLICATA	WESTERN RED CEDAR	FAC	11	AS SHOWN	4-5' HT.	B&B, FULL & BUSHY
	THUJA PLICATA	WESTERN RED CEDAR	FAC	4	AS SHOWN	1 GAL.	B&B, FULL & BUSHY
SHRUBS							
SYMBOL	SCIENTIFIC NAME	COMMON NAME	WL STATUS	QTY.	SPACING	SIZE (MIN.)	NOTES
	OEMLERIA CERASIFORMIS	INDIAN PLUM	FACU	28	5' O.C.	18" HT.	MULTI-CANE (3 MIN.)
	ROSA GYMNOCARPA	BALDHIP ROSE	FACU	12	3' O.C.	1 GAL.	MULTI-CANE (3 MIN.)
	RUBUS SPECTABILIS	SALMONBERRY	FAC	25	3' O.C.	1 GAL.	FULL & BUSHY



1 LARGE CONIFER TREE PLANTING (TYP.)
SCALE: NTS



2 CONTAINER TREE/SHRUB PLANTING (TYP.)
SCALE: NTS

GENERAL PLANTING INSTALLATION NOTES

1. PLANT TREE &/OR SHRUB 1/2" HIGHER THAN DEPTH GROWN AT NURSERY.
2. FOR CONTAINER TREES &/OR SHRUBS, SCORE FOUR SIDES OF ROOTBALL PRIOR TO PLANTING. BUTTERFLY ROOTBALL IF ROOT GIRLING IS EVIDENT.
3. AFTER PLANTING, STAKE TREES ONLY IF NECESSARY (LEANING OR DRIPPING) OR IN EXPOSED AREAS.
4. TREE STAKES TO BE VERTICAL, PARALLEL, EVEN-TOPPED, UNSCARRED AND DRIVEN INTO UNDISTURBED SUBGRADE. REMOVE AFTER ONE YEAR.
5. WATER IMMEDIATELY AND THOROUGHLY, HEAVIER AT FIRST, 2 OR 3 TIMES PER WEEK THROUGH THE DRY SEASON, THEN LESS UNTIL ESTABLISHED.

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CRITICAL AREAS MITIGATION PLAN
PLANTING PLAN, SCHEDULE, NOTES & DETAILS
HOU PROPERTY
MERCER ISLAND, WA

TALASAEA
CONSULTANTS, INC.
 Resource & Environmental Planning
 15009 Bear Creek Road Northeast - Woodinville, Washington 98077
 Bur (425) 861-1650 - Fax (425) 861-7549

Revisions

Date 7-27-2017
 Scale AS NOTED
 Designed AO
 Drawn MW
 Checked OA
 Approved BS

Project # 11214B

Sheet # WL2