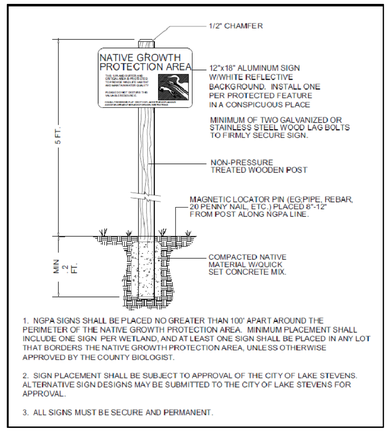
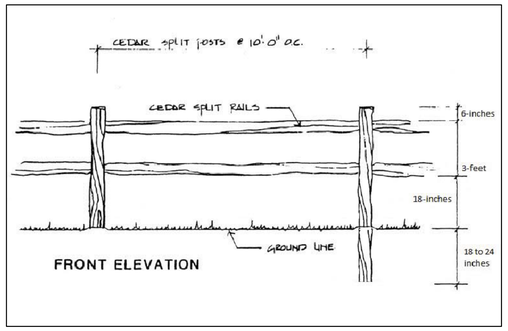
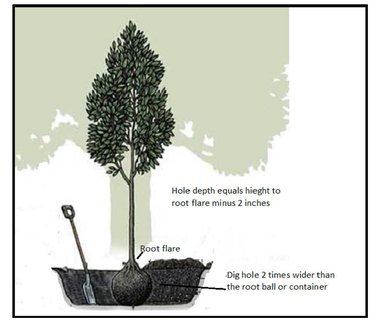


1 TYPICAL NGPA SIGN DETAIL
NO SCALE



2 TYPICAL NGPA SPLIT RAIL FENCE DETAIL
NO SCALE



3 TYPICAL TREE PLANTING DETAIL
NO SCALE

PROJECT INFORMATION

APPLICANT/OWNER..... MATTISON HILL HOMES, LLC
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SURVEYOR/ENGINEER..... GROUP FOUR, INC.
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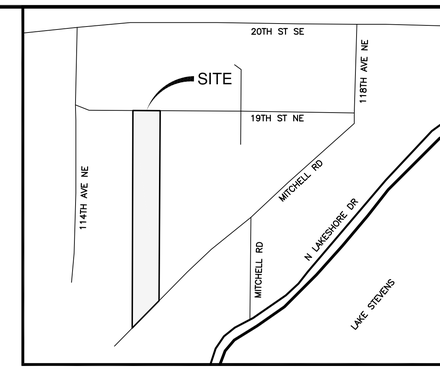
PROJ. MGR.: KEN WILLIAMS

WETLAND BIOLOGIST..... WATERMARK CRITICAL AREAS, LLC
PO BOX 1785
STANWOOD, WA, 98292
PHONE: (425) 210-9228
CONTACT: JONI URBANSKI

PLANTING SPECIFICATIONS

Calculations are based on an overall plant spacing of between 7X7 and 8X8 feet (approximately 800 plants/acre. Actual planting design will feature irregular planting spacing (i.e. clustering of plants) and spacing off existing desirable species. Prior to plant installation, pull Himalayan Blackberry, English Ivy, and scalp grass sod a minimum of 2 foot radius around the planting spot prior to plant installation. Within wetland, plant Willow, Red Osier Dogwood and Salmonberry in areas that pond; featuring Willow where ponding is significant and plant trees where only soil saturation occurs.

Allow for room around the plants to mown or cut away the blackberry and ivy until the plants are well established. Plants will be purchased from a nursery in 1-gallon containers or larger. Bare root plants are allowed. Planting will be done between October and May. Watering and fertilization will not be required. Mulching will not be required. Plant species have been chosen best suited to conditions of the site. Plant choice will depend on availability. Substitutions of plants with similar microclimate requirements will be allowed.



VICINITY MAP
SCALE 1" = 2,000'

NO.	REVISION	DATE	BY
1	REVISED PER CITY 1ST REVIEW	09/26/2017	CSJ
2	REVISED PER BIOLOGIST REVIEW COMMENTS	01/29/2018	DMR (JR)
3	REVISED PER CITY 2ND REVIEW	05/22/2018	CSJ
4	REVISED PER NEW POND	08/07/2018	CLI

DATE:	05/22/2018
DRAWN:	EWJ
DESIGNED:	CLI
CHECKED:	CLI
APPROVED:	REM

WETLAND LEGEND

- BUFFER REDUCTION 7,121 SF
- BUFFER ADDITION WITH ENHANCEMENT PLANTING 6,240 SF
- BUFFER ADDITION 1,366 SF (DOES NOT INCLUDE ENHANCEMENT PLANTING)
- BUFFER ENHANCEMENT (PULL BLACKBERRY-ENGLISH IVY, PLANT NATIVE TREES AND SHRUBS 47,824 SF)
- WETLAND ENHANCEMENT (PULL BLACKBERRY, PLANT NATIVE TREES AND SHRUBS 5,599 SF
- SPLIT RAIL FENCING (OR EQUIVALENT) AND NGPA SIGNAGE

WETLANDS AND STREAM TABLE

Table 1: Wetlands

Name	Size	HGM	Category	Rating Score	Land Use Intensity	Buffer Width
B off property	210 sq. ft.	Riverine	I-II	40	High	50 feet*
C	1,503 sq. ft.	Slope	III	34	High	95 feet
D	2,216 sq. ft.	Slope	IV	28	High	35 feet
E off property	690 sq. ft.	Slope	IV	28	High	35 feet
F	485 sq. ft.	Slope	IV	17	High	35 feet
G	1,691 sq. ft.	Slope	IV	19	High	35 feet
H	1,172 sq. ft.	Depressional	III	40	High	50 feet*
I	1,048 sq. ft.	Slope	III	32	High	50 feet
J	1,378 sq. ft.	Slope	IV	22	High	35 feet
K off property	~0.8 ac.	Depressional	III	**	High	50-95 feet

*Category III wetlands B, H, and I habitat score less than 20 points.
**Wetland K Category III rating based on Lake Stevens Critical Areas Mapping.

Table 2: Streams

Name	Type	Buffer Width
Stream A	Type F	100 feet
Stream C	Type Ns	50 feet

WETLAND ENHANCEMENT PLANTING
5,599 square feet

Common Name	Species	Size	WIS	Number
Select from listed species				
SHRUBS/FERNS				
Red-osier dogwood	*Cornus stolonifera*	1-gal	FACW	70
Willows (Sitka, Pacific, Scouler's)	*Salix sitchensis, lucinde, scouleriana*		FAC-FACW	
Salmonberry	*Rubus spectabilis*		FAC	
Vine maple	*Acer circinatum*		FAC	
Pacific ninebark	*Physocarpus capitatus*		FACW	
Nootka rose	*Rosa nutkana*		FAC	
Lady fern	*Athyrium filix-femina*		FAC	
TREES				
Western redcedar	*Thuja plicata*	1-gal	FAC	20
Sitka spruce	*Picea sitchensis*		FAC	
Pacific crabapple	*Malus fusca*		FACW	
Oregon ash	*Fraxinus latifolia*		FACW	
Western redcedar	*Thuja plicata*	4-6 ft	FAC	10
Sitka spruce	*Picea sitchensis*		FAC	
		Total Plants		100

Bareroot stock and substitutions of upland native plants with similar microsite requirements allowed.

BUFFER ENHANCEMENT PLANTING
47,824 square feet (enhancement retained buffer)
6,240 square feet (enhancement added buffer)

Common Name	Species	Size	WIS	Number
Select from listed species				
SHRUBS/FERNS				
Snowberry	*Symphoricarpus albus*	1-gal	FACU	670
Baldhip rose	*Rosa gymnocarpa*		FACU	
Red elderberry	*Sambucus racemosa*		FACU	
Serviceberry	*Amelanchier alnifolia*		FACU	
Indian plum	*Oemeria cerasiformis*		FACU	
Sword fern	*Polystichum munitum*		FACU	
TREES				
Western redcedar	*Thuja plicata*	24"	FAC	310
Paper birch	*Betula pagyrifera*		FAC	
Bitter cherry	*Prunus emarginata*		FACU	
Pacific dogwood	*Cornus nuttalli*		FACU	
Shore pine	*Pinus contorta*		FACU	
Western redcedar	*Thuja plicata*	4-6 ft	FAC	100
Douglas-fir	*Pseudotsuga menziesii*		UPL	
Western hemlock	*Tsuga heterophylla*		FACU	
Total Plants				1,080

Bareroot stock and substitutions of upland native plants with similar microsite requirements allowed.

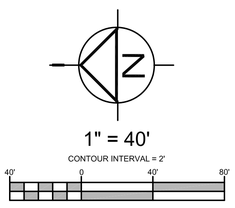
MITIGATION COSTS

Restoration Item	Cost per Item	Number of Items	Total Cost
Planting material	$5.00/plant	1,070	$5,350
Planting material-larger stock	$15/plant	110	$1,850
Planting and ground preparation	$3.00/plant	1,180	$3,540
Mulch*	$435/10 yd	6	$2,610
Total Mitigation Cost			**$13,350**
Mitigation Report Monitoring/Maintenance	$300/report	8	$2,400
		Total Cost	**$15,750**

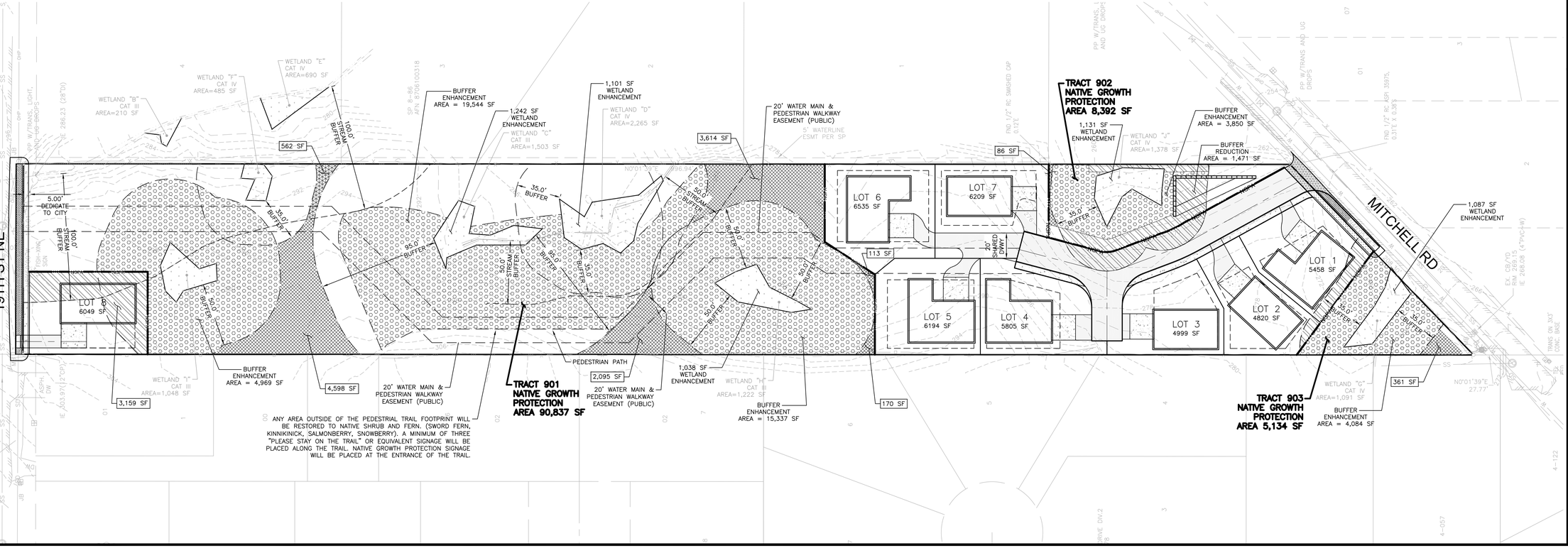
*Mulch may be supplemented with onsite chipping of removed hazard trees.

MONITORING AND MAINTENANCE

Monitoring reports will be required at the time of construction; 30 days post planting; early in the growing season and end of the growing season in the first and second years, annually years 3 through 5. Photo points of the planting sites will be established documentation purposes. At a minimum, photos will be taken at the end of years 1, 3, and 5 for inclusion in the monitoring reports. Monitoring and photo points will be the responsibility the landowner hiring a qualified consultant of the property owner's choice. Replanting will be the responsibility of the property owner.
Performance standard of 90 percent survival of planted stock will be required in years 1 through 3. A performance standard of 85 percent survival of planted stock will be required for Years 4 through 5. Any plants not surviving will be replaced to meet the performance standard. If a significant number of desirable native volunteers are present in the planted areas, these plants may be used to meet the performance standard percentage. Cover percent will strive for 50 percent at 5 years; however, it is highly dependent on planted species growth patterns.
If natural seeding/resprouting of undesirable plant species competes with planted vegetation, thinning/brushing to favor the planted species will be required. The presence of Himalayan blackberry and English ivy will likely require several years of removal while favoring desirable native plant species.
If planting survival is poor, species selection will be evaluated to determine which ones are best suited to thrive in the wetland and buffer. Replanting will feature the most successful plant species.



1" = 40'
CONTOUR INTERVAL = 2'
40' 0 40' 80'



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MATTISON HILL
CRITICAL AREAS MITIGATION PLAN

CITY OF LAKE STEVENS WASHINGTON

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