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AOA

Environmental
Planning &
Landscape
Architecture



May 22, 2025

AOA-7341

Dan Buchser
dan@macphersonconstruction.com

**SUBJECT: Critical Areas Report for Butterworth Property (Revised)
5320 & 5330 Butterworth Road, Parcels 866140-0040 and -0045
Mercer Island, WA**

Dear Dan:

We have updated this report to address the current site plan revisions.

On February 1, 2024 I conducted a wetland and stream reconnaissance on the subject property located on Lake Washington utilizing the methodology outlined in the May 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*. Although no wetlands were identified on or adjacent to the property during the field investigation, one stream (Stream 1) was observed flowing from west to east along the south property line.

The site is currently entirely developed with a single-family residence, sport court, and associated maintained yard. No intact native or definitive hydrophytic plant communities were observed on the property and a mowed lawn and ornamental groundcover extends to the edge of a rocked bulkhead along the shoreline.

Borings taken on the site revealed higher chroma non-hydric soils and there was no evidence of ponding or prolonged soil saturation anywhere in the vicinity of the property above the beach or Stream 1.

Stream 1

Stream 1 is entirely rock-lined and includes a small created pond (see survey). Vegetation within the corridor of the stream consists primarily of plantings associated with the landscaped areas.

The lower portion of Stream 1 is considered a Type F stream by the City that requires a 120-foot buffer and 10-foot structure setback. The upper off-site portion of the stream is considered a Type Np stream that requires a 60-foot buffer and 10-foot structure setback. The small piped portion of the channel requires a 45-foot structure setback that is located entirely within the two stream buffers.



Typical view of rocky stream channel with plantings.



View of lawn and ornamental groundcover extending to edge of shoreline.

Proposed Project

The proposed project currently consists of dividing the existing residence into two separate residences (one on each lot). As part of the required improvements to the existing access driveway, smaller trees and yard areas along the south side of the existing driveway within the buffer would be impacted by the required widening and turnaround.

Mitigation Sequencing

The City of Mercer Island requires per MICC 19.01.100 that *an applicant for a development proposal or activity shall implement the following sequential measures, listed below in order of preference, to avoid, minimize, and mitigate impacts to environmentally critical areas and associated buffers. Applicants shall document how each measure has been addressed before considering and incorporating the next measure in the sequence:*

- A. *Avoiding the impact altogether by not taking a certain action or parts of an action. The applicant shall consider reasonable, affirmative steps and make best efforts to avoid critical area impacts. However, avoidance shall not be construed to mean mandatory withdrawal or denial of the development proposal or activity if the proposal or activity is an allowed, permitted, or conditional use in this title. In determining the extent to which the proposal should be redesigned to avoid the impact, the code official may consider the purpose, effectiveness, engineering feasibility, commercial availability of technology, best management practices, safety and cost of the proposal and identified changes to the proposal. Development proposals should seek to avoid, minimize and mitigate overall impacts based on the functions and values of all of the relevant critical areas and based on the recommendations of a critical area study. If impacts cannot be avoided through redesign, use of a setback deviation pursuant to Section 19.06.110(C), or because of site conditions or project requirements, the applicant shall then proceed with the sequence of steps in subsections B through E of this section;*

Much of the existing access drive is located within the standard stream buffer and the required improvements cannot be located outside of the buffer. It is my understanding that the improvements will occur as designed to avoid a very large cedar tree located immediately adjacent to the north side of the driveway.

- B. *Minimizing impacts by limiting the degree or magnitude of the action and its implementation, using a setback deviation pursuant to Section 19.06.110(C), using appropriate technology, or by taking affirmative steps to avoid or reduce impacts;*

It is my understanding that the driveway improvements and turnaround are the minimum necessary to meet the Fire Department requirements. Tree impacts (3 birch trees) have been minimized to the extent feasible and only those trees impacted by the required improvements will be removed.

- C. *Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;*

Tree protection and construction limit fencing should be installed as required. Following construction, any temporarily impacted buffer areas should be restored.

D. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;

Native groundcover plantings would be planted beneath the existing canopy and preserved in the buffer in perpetuity and the area maintained for a minimum of 5 years as part of an established monitoring and maintenance program. In addition, replacement trees will be planted as necessary as part of a separate tree replacement plan.

E. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and/or

We have prepared a compensatory mitigation planting plan (**Figures 1 through 3**) that will increase the habitat functions of the watercourse buffer over current conditions. Mitigation will include the removal of all invasive species and planting native groundcovers with supplemental trees added as part of the tree plan.

F. Monitoring the impact and taking appropriate corrective measures to maintain the integrity of compensating measures.

A 5-year monitoring program has been developed to ensure success of the proposed buffer enhancement plan.

Proposed Buffer Mitigation

A watercourse buffer enhancement plan has been prepared. As part of the mitigation plan, selected degraded portions of the watercourse buffer would be enhanced by the removal of invasive non-native invasive species and re-planting with native groundcover species (and the tree replacement plan).

The proposed plantings have been designed to increase wildlife habitat within the buffer and to provide additional physical and visual screening to the watercourse from the residences.

Goal, Objective, and Performance Standard for Enhancement Area

The primary goal of the enhancement plan is to provide additional habitat and screening to the stream. To meet this goal, the following objectives and performance standards have been incorporated into the design of the plan:

Objective A: Increase the structural and plant species diversity within the enhancement area.

Performance Standard: There will be 100% survival of all planted species throughout the enhancement area at the end of the first year of planting. Following Year 1, success will be based on an 80% survival rate or areal cover of planted or recolonized native species of 15% after Year 1, 25% after Year 2, 40% after Year 3, and 60% after Year 5.

Objective B: Limit the amount of invasive and exotic species within the enhancement area.

Performance Standard: After installation and at the end of the fifth year after planting, exotic and invasive plant species will be maintained at levels below 10% total cover in all planted areas.

Monitoring Methodology

The monitoring program will be conducted for a period of five years, with annual reports submitted to the City of Mercer Island.

Photo-points will be established from which photographs will be taken throughout the monitoring period. These photographs will document general appearance and progress of plant community establishment in the enhancement area. Review of the photos over time will provide a visual representation of the success of the plan.

Maintenance

Maintenance will be conducted on a routine, year-round basis. Additional maintenance needs will be identified and addressed following a twice-yearly maintenance review. Contingency measures and remedial action on the site shall be implemented on an as-needed basis at the direction of the consultant or the owner. Tall grasses and weeds shall be removed at the base of plants to prevent engulfment. Weed control should be performed by hand removal.

Contingency

All dead plants will be replaced with the same species or an approved substitute species that meets the goal of the enhancement plan. Plant material shall meet the same specifications as originally installed material. Replanting will not occur until after the reason for failure has been identified (e.g., moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, etc.). Replanting shall be completed under the direction of the consultant, City of Mercer Island, or the owner.

As-built

Following completion of construction activities, an as-built plan for the enhancement area will be provided to the City of Mercer Island. The plan will identify and describe any changes in relation to the original approved plan.

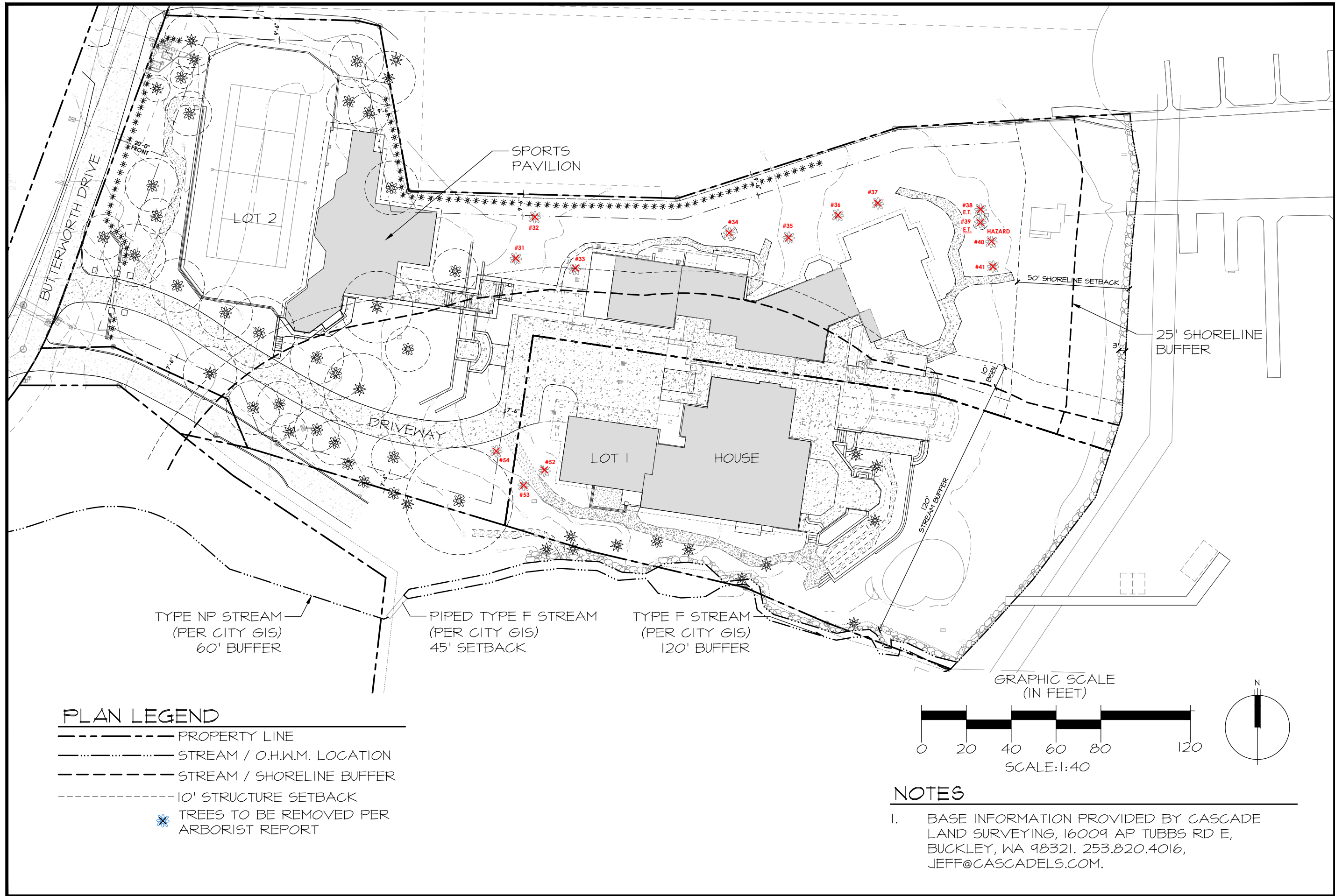
If you have any questions, please give me a call.

Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC

A handwritten signature in black ink that reads "John Altmann". The signature is fluid and cursive, with the first name "John" and last name "Altmann" clearly distinguishable.

John Altmann
Ecologist



PROJECT

7341

DRAWN

KV

SCALE

AS NOTED

DATE

5-21-25

REVISED

1/3

FIGURE 1: EXISTING CONDITIONS
BUTTERWORTH SHORT PLAT
5330 BUTTERWORTH ROAD
MERCER ISLAND, WASHINGTON
PARCEL 866140-0040

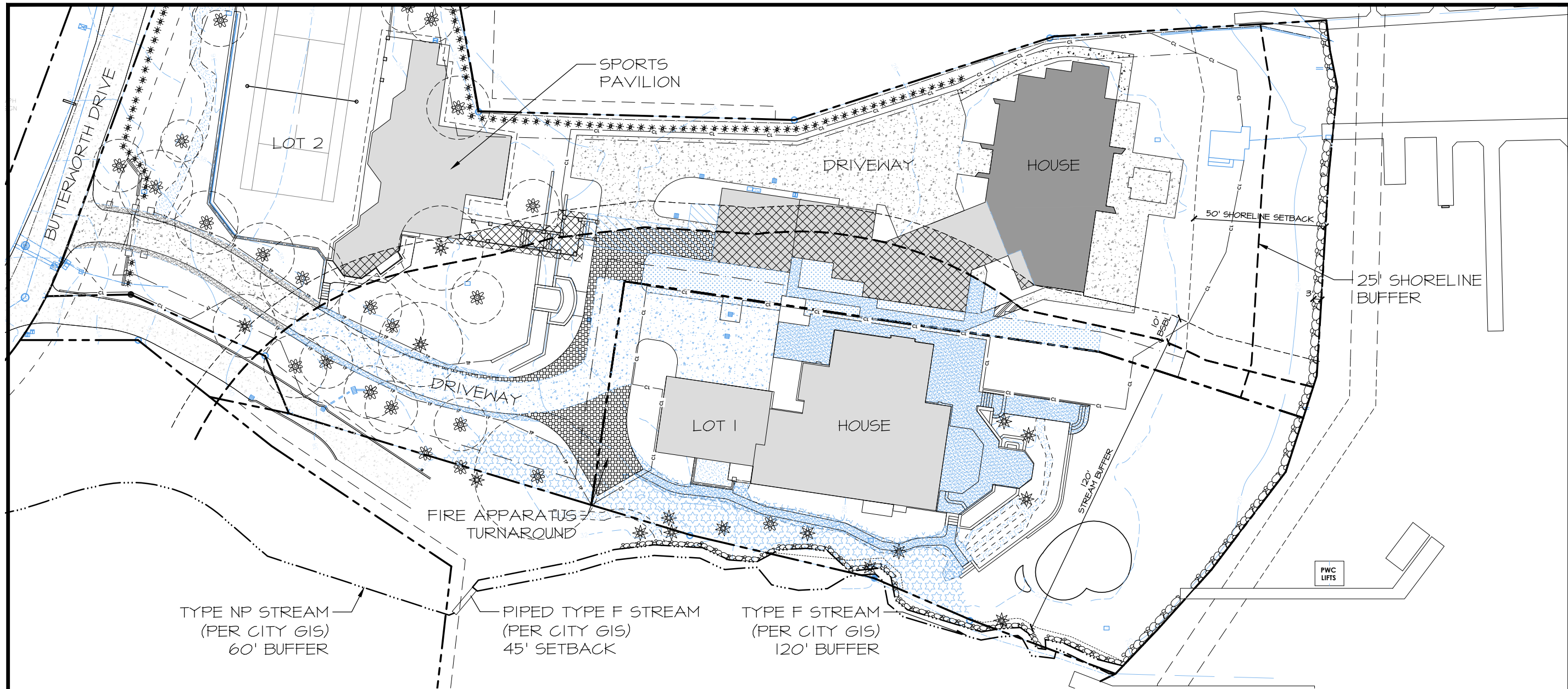
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STREAM BUFFER / SETBACK IMPACTS

EXISTING IMPERVIOUS TO REMAIN

STRUCTURE	3,675 SF
DRIVEWAY	3,555 SF
SIDEWALKS, PATHS, SHOULDERS	3,389 SF

TOTAL EXISTING IMPERVIOUS: 10,619 SF

REMOVED IMPERVIOUS

STRUCTURE	685 SF
SIDEWALKS, PATHS, MISC	2,020 SF

TOTAL REMOVED IMPERVIOUS: 2,705 SF

NEW IMPERVIOUS

DRIVEWAY AND HAMMERHEAD	1,790 SF
SIDEWALKS, PATHS, MISC	33 SF

TOTAL NEW IMPERVIOUS: 1,823 SF

NOTE: AREAS ARE MEASURED WITHIN THE LIMITS OF THE STREAM BUFFER/SETBACK. ALL AREAS OUTSIDE BUFFER/SETBACK ARE EXCLUDED.

IMPERVIOUS DECREASE IN BUFFER/SETBACK = 822 SF

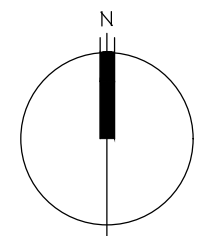
MITIGATION LEGEND

STREAM BUFFER	2,860 SF
ENHANCEMENT	

GRAPHIC SCALE
(IN FEET)



SCALE: 1:40



NOTES

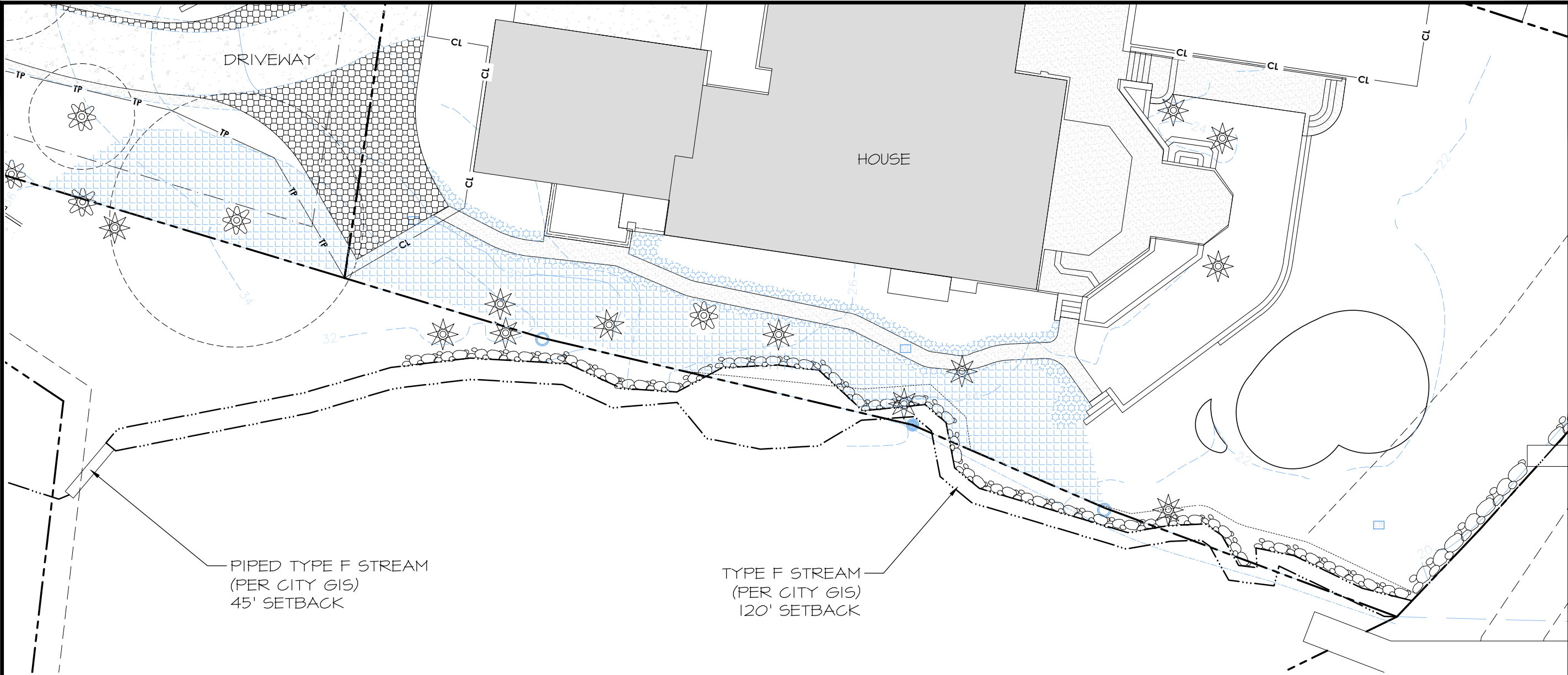
- BASE INFORMATION PROVIDED BY CASCADE LAND SURVEYING, 16009 AP TUBBS RD E, BUCKLEY, WA 98321. 253.820.4016, JEFF@CASCADELS.COM.

FIGURE 2: STREAM BUFFER MITIGATION PLAN
BUTTERWORTH SHORT PLAT
5330 BUTTERWORTH ROAD
MERCER ISLAND, WASHINGTON
PARCEL 866140-0040



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SCALE	AS NOTED
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REVISED	2/3

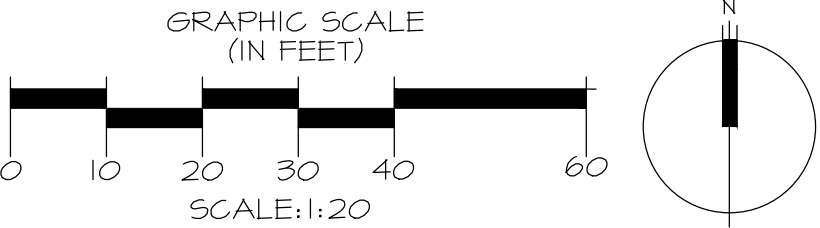


PLANT SCHEDULE

GROUND COVER

KEY	SCIENTIFIC NAME	COMMON NAME	DENSITY	QTY	SIZE (MIN.)	NOTES
	FRAGARIA CHILOENSIS	BEACH STRAWBERRY	2' O.C.	125	1 GAL.	FULL & BUSHY
	POLYSTICHUM MUNITUM	SWORD FERN*	3' O.C.	155	1 GAL.	FULL & BUSHY

* PLANT SWORD FERN AT 3' SPACING AROUND EXISTING NATIVE GROUND COVER FOR A TOTAL OF ~50% OF THE AREA.



NOTES

- I. BASE INFORMATION PROVIDED BY CASCADE LAND SURVEYING, 16009 AP TUBBS RD E, BUCKLEY, WA 98321. 253.820.4016, JEFF@CASCADELS.COM.

FIGURE 3: PLANTING PLAN - STREAM BUFFER ENHANCEMENT
BUTTERWORTH SHORT PLAT
5330 BUTTERWORTH ROAD
MERCER ISLAND, WASHINGTON
PARCEL 866140-0040