Vicinity Map

0 36 72

Scale 1: 435 Feet

Map Generated on: 04/05/2023

This SEPA Checklist was reviewed by Jordan Borst on 04/05/2023.

Development Services

SEPA Environmental Checklist

The City of Bellevue uses this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions

The checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully and to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions.

You may respond with “Not Applicable” or "Does Not Apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies and reports. Please make complete and accurate answers to these questions to the best of your ability in order to avoid delays. For assistance, see SEPA Checklist Guidance on the Washington State Department of Ecology website.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The city may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Background

1. Name of proposed project, if applicable McKissick Residence
2. Name of applicant Ashley and Ian McKissick
3. Contact person Frank Russell, Integral Construction Phone frankrussell@integralconstruct
4. Contact person address 23415 97th Pl W, Edmonds, WA 98020
5. Date this checklist was prepared 11/17/2022
6. Agency requesting the checklist City of Bellevue

7. Proposed timing or schedule (including phasing, if applicable)

It is anticipated that an application for a Building Permit will be submitted following approval of the Critical Areas Land Use Permit. Construction would begin upon issuance of the Building Permit.

8. Do you have any plans for future additions, expansion or further activity related to or connected with this proposal? If yes, explain.

No

9. List any environmental information you know about that has been prepared or will be prepared, that is directly related to this proposal.

Critical Areas Report – McKissick Residence, Bellevue, WA. The Watershed Company. November 2022.

Arborist Report – McKissick Residence, Bellevue, WA. The Watershed Company. November 2022.

Geotechnical Engineering Study Proposed Parking Deck 1600 West Lake Sammamish Parkway Northeast Bellevue, Washington. March 2022.

10. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None that are known.

11. List any government approvals or permits that will be needed for your proposal, if known.

Critical Areas Land Use Permit – submitted concurrently with this SEPA Checklist
Building Permit – not yet applied

12. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The proposed project includes the construction of a 776 square foot elevated concrete parking platform for boat storage over an existing gravel parking area with the eastern extent of the platform extending over a steep slope. A stabilization wall consisting of ten 18-inch concrete piles will support the eastern edge of the platform. Under the proposed design, 621 square feet of pervious surfaces will be converted to the platform. The project proposes the removal of eight trees; five significant and three non-significant. One non-significant snag will also be removed.

13. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and the section, township and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

Address: 1600 West Lake Sammamish Pkwy NE
Bellevue, WA 98008

Legal Description: ROSEMONT BEACH ADD PCL A BELLEVUE BLA #06-135914-LW REC #20070502900001 SD BLA BEING LOT 27 & POR LOT 26 OF SD ADD

Township 30, Section 25 NE, Range 06

Environmental Elements

Earth

1. General description of the site:
   - ☐ Flat
   - ☐ Rolling
   - ☐ Hilly
   - ☑ Steep Slopes
   - ☐ Mountainous
   - ☐ Other _____
2. What is the steepest slope on the site (approximate percent slope)? Slopes greater than 40%.

3. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

According to Natural Resources Conservation Service (NRCS) soil maps, the project site is comprised of Alderwood and Kitsap soils, very steep.

City GIS data also indicates the entire site is found to have very steep Alderwood and Kitsap soils (AkF).

Based on City GIS data, the area in which the proposed development is located is not liquefaction prone. The area on which the residence is located is deemed moderate to high liquefaction area and is located within 85 feet of Lake Sammamish.

4. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

According to Geotech Conslutants, Inc., there is no indications of deep-seated movement on the slope and no history of deep-seated instability. Shallow slides on natural steep slopes in the surrounding area have affected the uppermost few feet of looser, weathered soil, typically occurring following extending periods of heavy precipitation.

5. Describe the purpose, type, total area and approximate quantities and total affected area of any filling, excavation and grading proposed. Indicate the source of the fill.

Minor excavation (drilling) would occur to install soldier piles. Otherwise, no grading will occur as part of the project.

Erosion Control regulated by BCC 23.76.

6. Could erosion occur as a result of clearing, construction or use? If so, generally describe.

Erosion could occur if exposed soils are mobilized by rainfall. Short-term erosion may occur in areas cleared of vegetation. However, any impacts would be short-term and the measures described below would help minimize erosion.

Erosion Control regulated by BCC 23.76.

7. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? 621 SF of new platform (partially pervious)

8. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

All clearing and grading construction would be in accordance with City of Bellevue Clearing & Grading Code (Chapter 23.76), permit conditions, and all other applicable codes, ordinances, and standards. As needed, the applicant will install temporary erosion and sedimentation control measures such as silt fencing. A silt fence would be installed around exposed soils as necessary to prevent slope instability or silt-laden water from leaving the site during rainfall events. Further, erosion control will be conducted as recommended by the project geotechnical consultant.

Erosion Control regulated by BCC 23.76.

Air

1. What types of emissions to the air would result from the proposal during construction, operation and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Minimal emissions from vehicle trips and construction equipment would occur during site construction. After project completion, emissions to the air would occur from vehicle trips associated with a single-family residence.

2. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No off-site sources of emissions or odor would affect the proposal.

3. Proposed measures to reduce or control emissions or other impacts to air, if any.

Vehicles and construction equipment would be kept in good working order.

Water

1. Surface Water
   a. Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

   The project site is located adjacent to Lake Sammamish. No other waterbodies are on or in the immediate vicinity of the site.

   b. Will the project require any work over, in or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

   No project construction will occur within 200 feet of the Lake Sammamish shoreline. Mitigation will occur in a portion of the 200-foot Lake Sammamish shoreline zone.

   c. Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of the fill material.

   No excavation or filling will occur within surface waters or wetlands.

   d. Will the proposal require surface water withdrawals or diversions? Give a general description, purpose and approximate quantities, if known.

   The proposal would not require surface water withdrawals or diversions.

   e. Does the proposal lie within a 100-year floodplain? No
   If so, note the location on the site plan.

f. Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The proposal does not involve any discharges of waste materials to surface waters.

2. Ground Water

a. Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No withdrawal of ground water or discharge of water to ground water would occur as part of this project.

b. Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals…; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste material from septic tanks or other sources would be discharged into the ground as part of this project.

3. Water Runoff (including stormwater)
   a. Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Precipitation would be expected to flow through gaps in the cedar decking of the platform and infiltrate into the soils beneath. Proposed native understory plantings downslope from the platform may improve drainage runoff in the area.

   b. Could waste materials enter ground or surface waters? If so, generally describe.

Waste materials would not enter ground or surface waters.

   c. Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No drainage patterns in the vicinity will be affected.

Indicate any proposed measures to reduce or control surface, ground and runoff water, and drainage pattern impacts, if any.

The erosion control measures described under Earth question #8 would be implemented as necessary.

Plants

1. Check the types of vegetation found on the site:

- ☑ deciduous tree: alder, maple, aspen, other _____
- ☑ evergreen tree: fir, cedar, pine, other _____
- ☑ shrubs
- ☐ grass
- ☐ pasture
- ☐ crop or grain
- ☐ orchards, vineyards or other permanent crops
- ☐ wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other _____
- ☐ water plants: water lily eelgrass, milfoil, other _____
- ☑ other types of vegetation Invasive species: English ivy and Himalayan blackberry

2. What kind and amount of vegetation will be removed or altered?

For a detailed list of vegetation found on the site, please see the Critical Areas Report – McKissick Residence, Bellevue, WA prepared by The Watershed Company (Nov. 2022). Report is enclosed with this SEPA checklist.

3. List any threatened and endangered species known to be on or near the site.

No threatened or endangered plant species are known to be on or near the site.

4. Proposed landscaping, use of native plants or other measures to preserve or enhance vegetation on the site, if any.

The proposal involves the planting of 1,645 square feet of the site with native trees, shrubs and groundcover. Tree species proposed include big-leaf maple and western red cedar. Shrubs proposed include vine maple, serviceberry, tall Oregon grape, and evergreen huckleberry. Proposed groundcovers and perennials include western sword fern and salal. See enclosed mitigation planting plan.

5. List all noxious weeds and invasive species known to be on or near the site.

Himalayan blackberry, English ivy

Animals

1. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include:

   Birds: ☑hawk, ☑heron, ☑eagle, ☑songbirds, ☐other _____

   Mammals: ☐deer, ☐bear, ☐elk, ☐beaver, ☐other _____

   Fish: ☑bass, ☑salmon, ☑trout, ☐herring, ☐shellfish, ☐other _____

2. List any threatened and endangered species known to be on or near the site.

No threatened or endangered plant species are known to be on or near the site.

3. Is the site part of a migration route? If so, explain.

Adult and juvenile salmon migrate up and downstream, respectively, through Lake Sammamish. Migrating waterfowl may use the lake as resting and foraging areas during spring and fall migrations. Western Washington is also part of the Pacific Flyway for migratory birds.

4. Proposed measures to preserve or enhance wildlife, if any.

The proposed project will enhance wildlife habitat through the removal of non-native species and the planting of native species within the project area.

JTB, 4/5/2023

5. List any invasive animal species known to be on or near the site.

No invasive animal species are known to be on or near the site.

Energy and Natural Resources

1. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

No forms of energy will be required for the use of the parking platform.

2. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

The project would not affect the potential use of solar energy by adjacent properties.

3. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

No energy conservation features will be included in the proposal plans as no forms of energy will be used for the completed project.

Environmental Health

1. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill or hazardous waste, that could occur as a result of this proposal? If so, describe.

Typical hazards related to heavy equipment fuels and fires are associated with construction of the proposed project. After project completion, hazards would consist of those related to use of a parking area.

a. Describe any known or possible contamination at the site from present or past uses.

No known or possible contamination at the site from present or past uses.

b. Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

No known existing hazardous chemicals/conditions on site.

c. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

No toxic or hazardous chemicals will be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

d. Describe special emergency services that might be required.

Emergency services are not anticipated at the site. In the unlikely event that an accident (spill, fire, other exposure) occurs involving toxic chemicals or hazardous wastes, the local Fire Department's Hazardous Materials Team would respond. If necessary, local medical services might also be required. The full range of safety and accident response supplies would be on-site to treat any emergency during construction. After project completion, emergency services would not be required, beyond those typical of a single-family residence.

e. Proposed measures to reduce or control environmental health hazards, if any.

Standard precautions would be taken to ensure the safety of the work crew. The construction manager would be contacted by a crew member immediately upon discovery of a spill. The construction manager would then ensure that the spill is cleaned up in the manner dictated by the chemical use instructions and would contact the appropriate authorities

2. Noise

a. What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

The type of noise in the area is that typical of a single-family neighborhood and would not affect the project.

Noise control regulated by BCC 9.18

b. What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Noise associated with project construction would be restricted to the use of excavating and grading equipment and parking platform construction. Construction noise would be limited to normal daytime working hours. There would be no long-term noise associated with the completed project, other than that associated with boat storage. Noise control regulated by BCC 9.18

c. Proposed measures to reduce or control noise impacts, if any.

As mentioned above, construction noise would be limited to daylight weekday hours. No other noise-control measures are necessary.

Noise control regulated by BCC 9.18

Land and Shoreline Uses

1. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The current use of the site is single-family residential. The current use of properties immediately adjacent to the north, south, and east is also single-family residential. Lake Sammamish is located immediately west of the site.

2. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to non-farm or non-forest use?

The site has not been used for agriculture or forestry.

   a. Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling and harvesting? If so, how?

There is no exisiting working farm or forest land surrounding the site.

3. Describe any structures on the site.

The project site includes a single-family house with attached garage and a dock.

4. Will any structures be demolished? If so, what?

No

5. What is the current zoning classification of the site? R-2.5 (Single-Family Residential).

6. What is the current comprehensive plan designation of the site? SF-M (Single Family, Medium D

7. If applicable, what is the current shoreline master program designation of the site?

~~Residential~~ Shoreline Residential (SR)

8. Has any part of the site been classified as a critical area by the city or county? If so, specify.

The steep slope on the property has been classified as a critical area. ~~Further, Lake Sammamish is also considered a critical area.~~

9. Approximately how many people would reside or work in the completed project? None

10. Approximately how many people would the completed project displace? None

11. Proposed measures to avoid or reduce displacement impacts, if any.

No measures are necessary.

12. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

This project does not affect existing land use.

13. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any.

No measures are necessary.

No nearby agricultural and forest lands of long-term commercial significance.

Housing

1. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Not applicable to project.

2. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

No dwelling units will be eliminated.

3. Proposed measures to reduce or control housing impacts, if any.

No measures are necessary.

Aesthetics

1. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The platform will be constructed generally on-grade; however, due to the underlying slope, the downhill portion of the platform will extend approximately 7-10 feet above grade. It will be constructed with steel soldier piles and cedar decking.

2. What views in the immediate vicinity would be altered or obstructed?

The proposed project calls for a parking platform. The platform will be located within the existing footprint area of a gravel parking area as well as to the north and south of the existing footprint. The height of the parking platform will not exceed City of Bellevue height requirements.

3. Proposed measures to reduce or control aesthetic impacts, if any

No measures are necessary.

Light and Glare

1. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Light or glare is not expected to increase as a result of the parking construction.

2. Could light or glare from the finished project be a safety hazard or interfere with views?

No

3. What existing off-site sources of light or glare may affect your proposal?

None. Any glare from Lake Sammamish will be obscured by existing vegetation.

4. Proposed measures to reduce or control light and glare impacts, if any.

No measures are necessary.

Recreation

1. What designated and informal recreational opportunities are in the immediate vicinity?

Lake Sammamish provides boating, swimming, fishing and wildlife viewing opportunities.

2. Would the proposed project displace any existing recreational uses? If so, describe.

The proposed project would not displace any existing recreational uses.

3. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any.

No such measures are necessary.

Proposal should not impacts on recreation and recreation opportunities.

Historic and Cultural Preservation

1. Are there any buildings, structures or sites located on or near the site that are over 45 years old listed in or eligible for listing in national, state or local preservation registers located on or near the site? If so, specifically describe.

No such places or objects are known to be on or next to the site.

2. Are there any landmarks, features or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No such landmarks or evidence is known to be on or next to the site.

3. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

N/A

4. Proposed measures to avoid, minimize or compensate for loss, changes to and disturbance to resources. Please include plans for the above and any permits that may be required.

Should historic, archeological, scientific or culturally significant items be encountered during implementation of this project, work would be temporarily stopped while the appropriate agencies are notified.

Transportation

1. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The site is currently accessed via Mallard Lane. Site access would not be changed as a result of the proposed project.

The site is currently accessed via Mallard Lane AND N Rosemont Beach Road, however, the proposed development will be accessed via Mallard Lane.

2. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

The nearest King County Metro transit stop is located at West Lake Sammamish Parkway NW and NE 24th Street, approximately 0.70 mile away.

3. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

This project would not eliminate any parking spaces. An additional two spaces would be created as part of the residential redevelopment.

4. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The proposal would not require any new roads or streets, or improvements to existing roads or streets.

5. Will the project or proposal use (or occur in the immediate vicinity of) water, rail or air transportation? If so, generally describe.

Water, rail, or air transportation would not be utilized by the completed project.

6. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?

The proposed project would not create any additional vehicle trips above those already generated by the existing residence. No increase in traffic generation is expected.

7. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

8. Proposed measures to reduce or control transportation impacts, if any.

No such measures are necessary.

Public Service

1. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No increase in public service needs would result from this project.

2. Proposed measures to reduce or control direct impacts on public services, if any.

No such measures are necessary.

Utilities

1. Check the utilities currently available at the site:

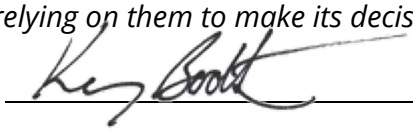
- ☑ Electricity
- ☐ natural gas
- ☑ water
- ☑ refuse service
- ☑ telephone
- ☑ sanitary sewer
- ☐ septic system
- ☐ other

2. Describe the utilities that are proposed for the project, the utility providing the service and the general construction activities on the site or in the immediate vicinity which might be needed.

No new utilities are proposed as part of the project.

Signature

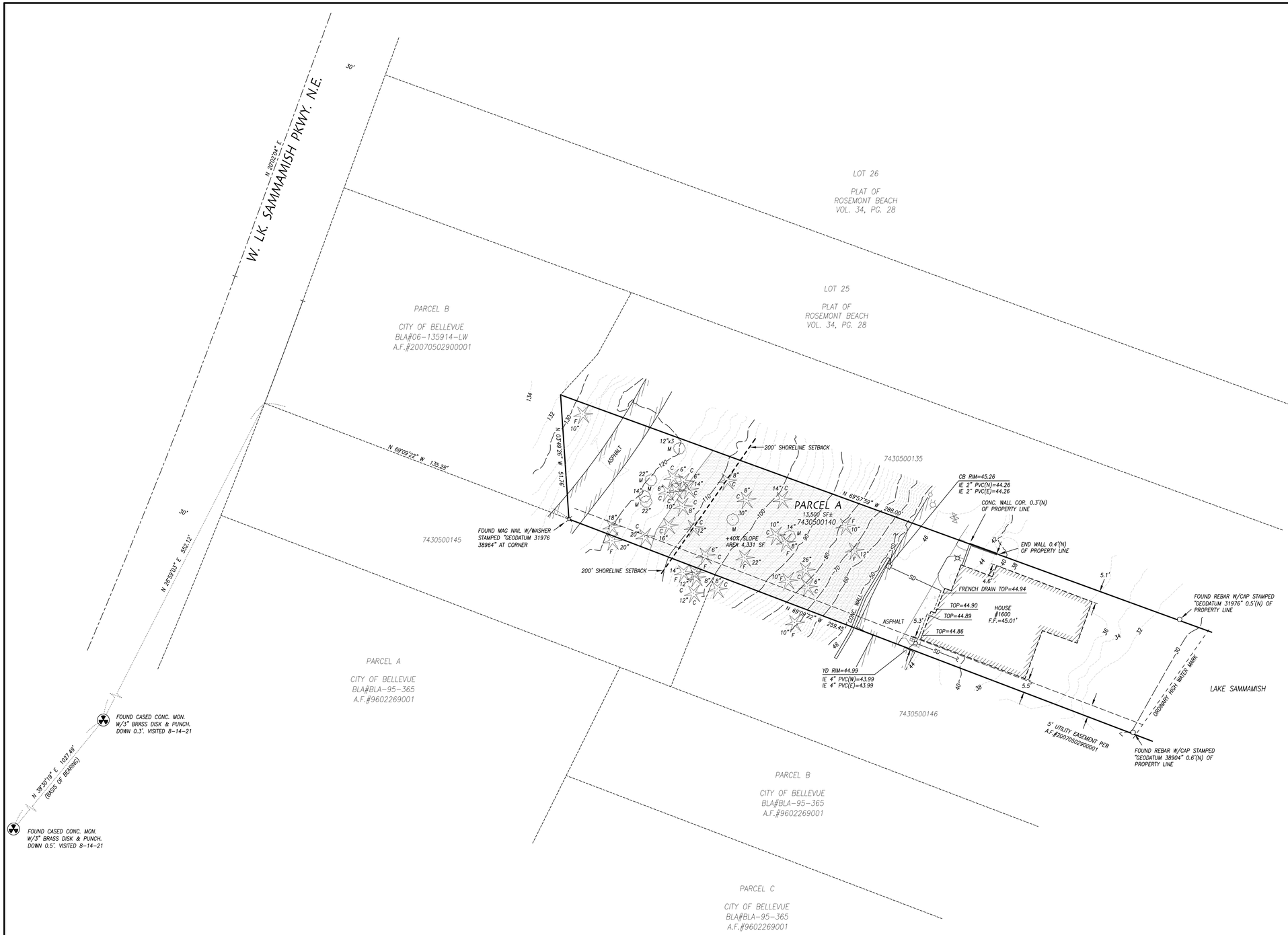
The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature 

Name of signee Kenny Booth, AICP

Position and Agency/Organization The Watershed Company

Date Submitted 12-12-22



EQUIPMENT & PROCEDURES

METHOD OF SURVEY:
SURVEY PERFORMED BY FIELD TRAVERSE

INSTRUMENTATION:
LEICA TS16 ROBOTIC ELECTRONIC TOTAL STATION

PRECISION:
MEETS OR EXCEEDS STATE STANDARDS WAC 332-130-090

BASIS OF BEARING:
THE MONUMENTED CENTERLINE OF W. LAKE SAMMAMISH PARKWAY N.E., AS THE BEARING OF N 39°30'19" E.

LEGAL DESCRIPTION

PARCEL A OF CITY OF BELLEVUE BOUNDARY LINE ADJUSTMENT NO. 06-135914-LW, AS RECORDED MAY, 2, 2007, UNDER RECORDING NUMBER 20070502900001, RECORDS OF KING COUNTY, WASHINGTON.

TOGETHER WITH AN EASEMENT FOR INGRESS, EGRESS AND UTILITIES CONTAINED IN INSTRUMENT RECORDED UNDER RECORDING NO. 3254708.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

VERTICAL DATUM

NAVD 88

FOUND CASED CONC. MON. W/3" BRASS DISK & PUNCH.
CITY OF BELLEVUE HORIZONTAL STATION #0514
ELEV. = 150.70'

SURVEY REFERENCES

(R1) CITY OF BELLEVUE B.L.A. – A.F.#20070502900001

(R2) PLAT OF ROSEMONT BEACH – VOL. 34, PG. 28

LEGEND

- SET 1/2" X 24" REBAR W/CAP STAMPED "PCS 37536"
- EXISTING REBAR W/CAP, AS NOTED
- SET NAIL AND WASHER STAMPED "PCS 37536"
- EXISTING NAIL AND WASHER AS NOTED
- FOUND CONCRETE MONUMENT AS NOTED
- RIGHT OF WAY CENTERLINE
- CATCH BASIN
- YARD DRAIN
- WATER VALVE
- FIRE HYDRANT
- WATER METER
- UTILITY/POWER POLE
- YARD LIGHT
- CONIFEROUS TREE
- DECIDUOUS TREE
- F FIR
- C CEDAR
- M MAPLE

NOTES

1.) THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF PARTIES WHOSE NAMES APPEAR HEREON ONLY, AND DOES NOT EXTEND TO ANY UNNAMED THIRD PARTIES WITHOUT EXPRESS RECERTIFICATION BY THE LAND SURVEYOR OF RECORD.

2.) BOUNDARY LINES SHOWN AND CORNERS SET REPRESENT DEED LOCATIONS; OWNERSHIP LINES MAY VARY. NO GUARANTEE OF OWNERSHIP IS EXPRESSED OR IMPLIED. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ALL EASEMENTS, RESTRICTIONS, RESERVATIONS, AND OCCUPATION WHICH MAY ENCUMBER TITLE OR USE OF SUBJECT PROPERTY.

SCALE: 1" = 20'
0 20 40

DARREN J. RIDDLE
STATE OF WASHINGTON
37536
REGISTERED
PROFESSIONAL LAND SURVEYOR

Pacific Coast Surveys, Inc.
LAND SURVEYING & MAPPING
P.O. BOX 13619
MILL CREEK, WA 98082
PH. 425.512.7099 FAX 425.357.3577
www.PCSurveys.net

TOPOGRAPHIC SURVEY FOR:
INTEGRAL CONSTRUCTION
SW 1/4, NE 1/4, SEC.30, T.25N., R.6E., W.M.
SE 1/4, NW 1/4, SEC.30, T.25N., R.6E., W.M.

DRAWN BY	DATE	DRAWING FILE NAME	SCALE	JOB NO.
MAH	08.30.22	212367top.dwg	1" = 20'	21-2367

MCKISSICK RESIDENCE BUILDING ADDITION

1600 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008

VICINITY MAP
NTS
★ = PROJECT SITE

OWNER

IAN & ASHLEY MCKISSICK
1600 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008

CONSULTANTS

STRUCTURAL ENGINEER
CG ENGINEERING
250 4TH AVE S, SUITE 200
EDMONDS, WA 98020
425.778.8500 FAX 778.5536
CONTACT: DENNIS TITUS, PE, SE

CONTRACTOR
INTEGRAL CONSTRUCTION
23415 97TH PL W
EDMONDS, WA 98020
206.362.4165
CONTACT: FRANK RUSSELL

GEOTECHNICAL ENGINEER
GEOTECH CONSULTANTS, INC.
2401 10TH AVE E
SEATTLE, WA 98102
425.747.5618
CONTACT: MARC MCGINNIS, PE

SURVEYOR
PACIFIC COAST SURVEYS, INC.
P.O. BOX 13619
MILL CREEK, WA 98082
425.512.7099 FAX 425.357.3577
CONTACT: DARREN RIDDLE, PLS

LEGAL DESCRIPTION

PARCEL A OF CITY OF BELLEVUE BOUNDARY LINE ADJUSTMENT NO. 06-135914-LW, AS RECORDED MAY, 2, 2007, UNDER RECORDING NUMBER 20070502900001, RECORDS OF KING COUNTY, WASHINGTON.

TOGETHER WITH AN EASEMENT FOR INGRESS, EGRESS AND UTILITIES CONTAINED IN INSTRUMENT RECORDED UNDER RECORDING NO. 3254708.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

PARCEL NUMBER

7430500140

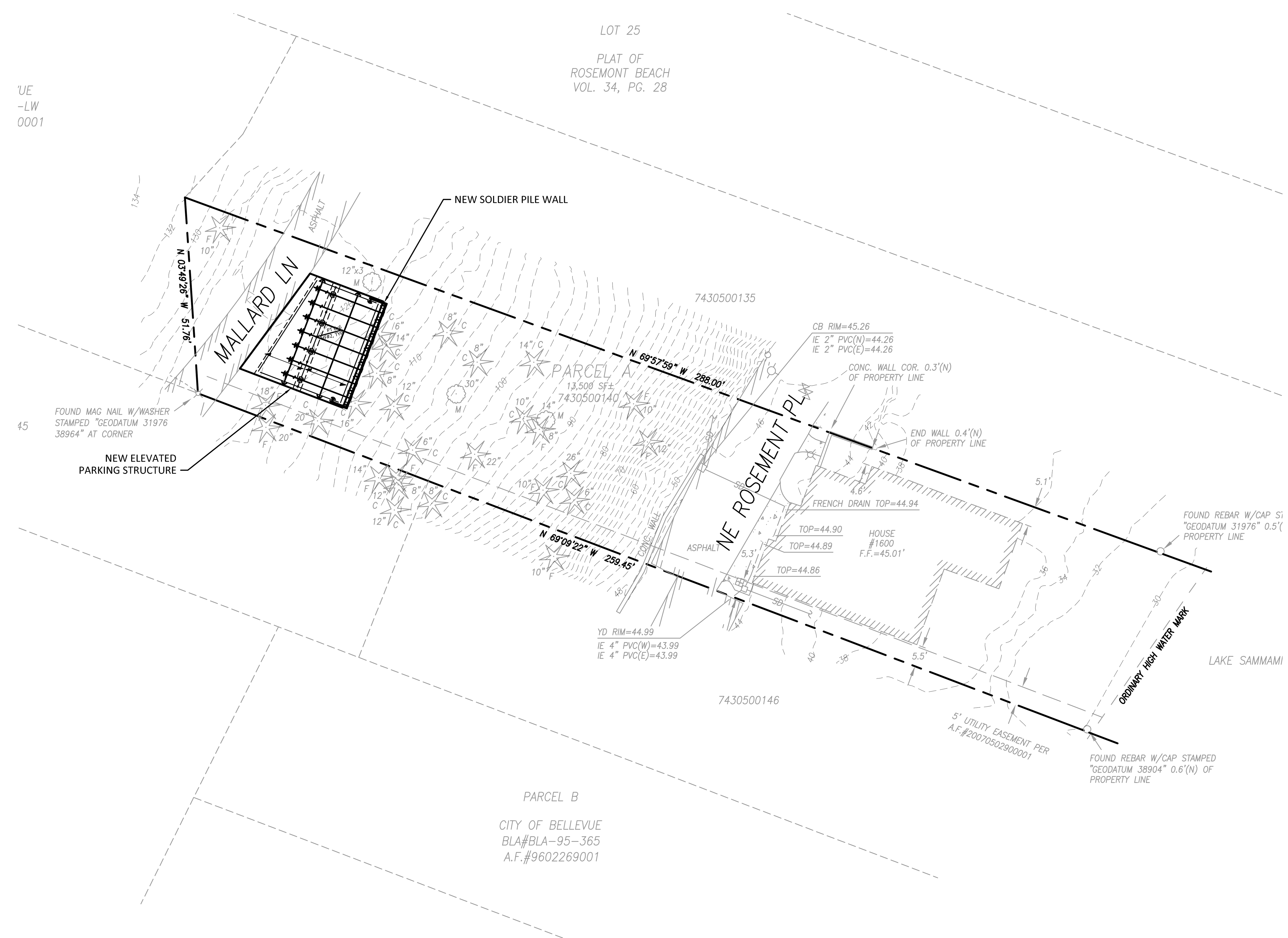
PROPERTY INFORMATION

TOTAL LOT AREA	= 13,447 SQFT
EX BUILDING FOOTPRINT	= 1,948 SQFT
PROPOSED BUILDING FOOTPRINT	= NOT TO CHANGE
TOTAL IMPERVIOUS SURFACE	= NOT TO CHANGE

SCOPE OF WORK

CONSTRUCT NEW ELEVATED PARKING STRUCTURE.

PLAN NOTES:
1. THIS SITE IS DESIGNATED AS A POTENTIAL LANDSLIDE AREA DUE TO STEEP SLOPES, GEOLOGIC CONDITIONS, AND KNOWN LANDSLIDE ACTIVITY.
2. GRADING MUST BE STABILIZED BY OCTOBER 31ST, AND NO EXCAVATION OR FILL PLACEMENT CAN BE PERFORMED BETWEEN OCTOBER 31ST AND APRIL 1ST WITHOUT AN EXTENSION FROM THE SDCI GEOTECHNICAL ENGINEERING GROUP.



1 SITE PLAN
SCALE: 1" = 20'
20 0 10 20 40

CG ENGINEERING
250 4TH AVE. S., SUITE 200
EDMONDS, WASHINGTON 98020
PHONE (425) 778-8500
FAX (425) 778-5536

PRELIMINARY
NOT FOR CONSTRUCTION
XX/XX/XX

MARK	DATE	DESCRIPTION
	10/21/22	PERMIT SUBMITTAL
	XX/XX/XX	PERMIT RESUBMITTAL

DESIGN:	BTJ
DRAWN:	ATD
CHECK:	DMT
JOB NO:	22273.10
DATE:	10/21/22

MCKISSICK RESIDENCE
1600 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008

SITE PLAN

FILE NAME:

SHEET:

S0.1

STRUCTURAL NOTES

(THESE NOTES ARE TYPICAL UNLESS NOTED OR DETAILED OTHERWISE ON DRAWINGS)

CODE

ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION. SPECIFICATIONS AND STANDARDS WHERE REFERENCED ON THE DRAWINGS ARE TO BE THE LATEST EDITION.

DESIGN LOADS

SOIL LOADS:

REFER TO PRESSURE DIAGRAM

DEAD LOADS:
PARKING DECK 15 PSF

LIVE LOADS:
ROOF (SNOW LOAD) 25 PSF
BOAT & BOAT TRAILER 6500 LBS (TOTAL)

SPECIAL INSPECTION

OPERATION	CONT	PERIODIC	REMARKS
SOILS			
SOLDIER PILE INSTALLATION	X		GEOTECH ENGINEER

NOTE:
ALL ITEMS MARKED WITH AN "X" SHALL BE INSPECTED IN ACCORDANCE WITH IBC CHAPTER 17. SPECIAL INSPECTION SHALL BE PERFORMED BY A QUALIFIED TESTING AGENCY DESIGNATED BY THE OWNER. THE ARCHITECT, STRUCTURAL ENGINEER, AND BUILDING OFFICIAL SHALL BE FURNISHED WITH COPIES OF ALL RESULTS. ANY INSPECTION FAILING TO MEET THE PROJECT SPECIFICATIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE DESIGN TEAM.

SHOP DRAWINGS

SHOP DRAWINGS ARE NOT REQUIRED.

CONCRETE

ALL CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED, AND PLACED IN ACCORDANCE WITH CHAPTER 26 OF ACI 318 AND THE AMERICAN CONCRETE INSTITUTE'S SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301).

ALL CONCRETE SHALL BE STONE-AGGREGATE CONCRETE HAVING A UNIT WEIGHT OF APPROXIMATELY 150 POUNDS PER CUBIC FOOT.

CONCRETE STRENGTHS AT 28 DAYS (f'c) AND MIX CRITERIA SHALL BE AS FOLLOWS:

TYPE OF CONSTRUCTION	f'c	MAXIMUM WATER/CEMENT RATIO	MIN CEMENT CONTENT PER CUBIC YARD	MAXIMUM SHRINKAGE STRAIN
AUGERCAST PILES	4000 PSI	0.50	6 1/2 SACK	N/A
SLABS ON GRADE	3000 PSI	0.55	5 1/2 SACK	N/A
FOOTINGS	3000 PSI	0.55	5 1/2 SACK	N/A
GRADE BEAMS	3000 PSI	0.50	5 1/2 SACK	N/A
WALLS	4000 PSI	0.45	5 1/2 SACK	N/A
ELEVATED SLABS	4000 PSI	0.45	6 1/2 SACK	0.034%
BEAMS, COLUMNS	4000 PSI	0.45	6 1/2 SACK	N/A

THE MINIMUM AMOUNT OF CEMENT LISTED ABOVE MAY BE CHANGED IF A CONCRETE PERFORMANCE MIX IS SUBMITTED TO THE ENGINEER AND THE BUILDING DEPARTMENT FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. THE PERFORMANCE MIX SHALL INCLUDE THE AMOUNTS OF CEMENT, FINE AND COARSE AGGREGATE, WATER, AND ADMIXTURES AS WELL AS THE WATER-CEMENT RATIO, SLUMP, CONCRETE YIELD, AND SUBSTANTIATING STRENGTH DATA IN ACCORDANCE WITH CHAPTER 26 OF ACI 318.

ALL CONCRETE EXPOSED TO WEATHER OR TO FREEZING TEMPERATURES SHALL BE AIR-ENTRAINED IN ACCORDANCE WITH ACI 318 TABLE 19.3.3.1 FOR MODERATE EXPOSURE CLASS F1.

SQUARE SHAFT HELICAL ANCHOR INSTALLATION

HELICAL ANCHOR SHAFT SHALL BE 1 1/2" SQUARE WITH A MIN Fy = 70KSI. HELIX PLATES SHALL HAVE A MINIMUM THICKNESS OF 3/8" & SHALL CONFORM TO ASTM 572 WITH MIN Fy = 50KSI. WHERE ANCHORS HAVE MULTIPLE FLIGHTS OF HELICES THE HELICES SHALL BE SEPARATED BY A MINIMUM OF 3 HELIX DIAMETERS. ANCHORS SHALL BE HOT DIP GALVANIZED FOR CORROSION PROTECTION.

REFER TO THE ANCHOR LOADING SCHEDULE FOR ANCHOR CAPACITIES. ANCHOR CAPACITIES SHALL BE VERIFIED DURING INSTALLATION TO 200% OF THE ALLOWABLE CAPACITY. THE STRUCTURAL ENGINEER SHOULD BE CONTACTED IF THE ALLOWABLE PILE CAPACITY IS NOT ACHIEVED. A MINIMUM OF 3% OR AT LEAST (1) ANCHOR SHALL BE TESTED IN ACCORDANCE WITH ASTM STD D1143.

ALL ANCHORS SHALL PENETRATE THROUGH THE LOOSE SOIL & EMBED INTO DENSE SOIL. THE DEPTH OF THE DENSE SOIL SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER. ANCHORS SHALL HAVE A MINIMUM EMBEDMENT DEPTH OF 8 FT BELOW BOTTOM OF FOOTING OR AS APPROVED BY THE GEOTECHNICAL SPECIAL INSPECTOR. THE ANCHOR INSTALLATION AND LOAD TESTING SHALL BE CONTINUOUSLY MONITORED BY THE GEOTECHNICAL ENGINEER.

REFER TO SOILS REPORT FOR ADDITIONAL ANCHOR INSTALLATION REQUIREMENTS.

REINFORCING STEEL

REINFORCING STEEL SHALL BE DEFORMED BILLET STEEL CONFORMING TO ASTM A615, AND SHALL BE GRADE 60 (Fy = 60,000 PSI), UNLESS NOTED OTHERWISE. GRADE 60 REINFORCING BARS INDICATED ON DRAWINGS TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCING COMPLYING WITH ASTM A615 MAY BE WELDED IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN AWS D1.4 ARE SUBMITTED.

WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. PROVIDE WELDED WIRE FABRIC IN SHEETS NOT ROLLS. LAP WELDED WIRE FABRIC 12" AT SIDES AND ENDS.

REINFORCING STEEL SHALL BE DETAILED INCLUDING HOOKS AND BENDS IN ACCORDANCE WITH ACI SP-66 AND ACI 318, LATEST EDITIONS. UNLESS OTHERWISE NOTED, REINFORCING SPLICE LENGTHS AND DEVELOPMENT LENGTHS SHALL BE PER SCHEDULE.

MECHANICAL SPLICING OF REINFORCING BARS, WHERE INDICATED ON THE DRAWINGS, SHALL BE BY AN ICBO APPROVED SYSTEM, SHALL DEVELOP 125% OF THE SPECIFIED YIELD STRENGTH OF THE BAR, AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

REINFORCING SHALL BE PLACED AND ADEQUATELY SUPPORTED PRIOR TO PLACING CONCRETE. WET-SETTING EMBEDDED ITEMS IS NOT ALLOWED WITHOUT PRIOR ENGINEER APPROVAL. BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL NOT BE FIELD BENT UNLESS SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER. REFER TO CHAPTER 25 OF ACI 318 FOR OTHER REINFORCING STEEL REQUIREMENTS.

MINIMUM LAPS AND EMBEDMENT

UNLESS OTHERWISE NOTED, REINFORCING SPLICE LENGTHS AND DEVELOPMENT LENGTHS SHALL BE AS TABULATED BELOW:

f'c = 3000 PSI						
BAR SIZE	DEVELOPMENT LENGTH			LAP SPLICE		
	TENSION		COMPRESSION	TENSION		COMPRESSION
	TOP BARS	OTHER BARS	ALL BARS	TOP BARS	OTHER BARS	ALL BARS
#3	22	17	9	28	22	12
#4	29	22	11	37	29	15
#5	36	28	14	47	36	19
#6	43	33	17	56	43	23
#7	63	48	20	81	63	27
#8	72	55	22	93	72	30

NOTE:
1. ALL LENGTHS ARE IN INCHES.
2. ALL LAP SPLICES ARE CLASS B.
3. "TOP BARS" ARE HORIZONTAL REINFORCEMENT PLACED SUCH THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.

CONCRETE COVER ON REINFORCING

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"

CONCRETE EXPOSED TO EARTH AND WEATHER:
#6 BARS AND LARGER 2"
#5 BARS AND SMALLER 1 1/2"

CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
SLABS, WALLS AND JOISTS 3/4"
COLUMN TIES OR SPIRALS AND BEAM STIRRUPS 1 1/2"

CONCRETE GENERAL NOTES

VERTICAL BARS SHALL START FROM TOP OF FOOTING. HORIZONTAL BARS SHALL START A DISTANCE OF 1/2 THE NORMAL BAR SPACING FROM TOP OF FOOTING AND TOP OF FRAMED SLABS. IN ADDITION, THERE SHALL BE A HORIZONTAL BAR AT A MAXIMUM OF 3" FROM TOP OF WALL AND BOTTOM OF FRAMED SLABS.

PROVIDE CORNER BARS TO MATCH THE HORIZONTAL REINFORCING WITH TENSION LAP SPLICE AT EACH SIDE PER TABLE, OR BEND ONE SIDE OVER TO PROVIDE TENSION LAP.

PROVIDE CONTROL OR CONSTRUCTION JOINTS IN SLABS ON GRADE TO BREAK UP SLAB INTO RECTANGULAR AREAS OF NOT MORE THAN 400 SQUARE FEET EACH. AREAS TO BE AS SQUARE AS PRACTICAL AND HAVE NO ACUTE ANGLES. JOINT LOCATIONS TO BE APPROVED BY THE ARCHITECT.

ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED AND PROPERLY PREPARED IMMEDIATELY PRIOR TO POURING OF CONCRETE. DOWEL STEEL SHALL BE THE SAME SIZE AND SPACING AS MAIN REINFORCING DETAILED BEYOND JOINT.

SEE ARCHITECTURAL DRAWINGS AND MECHANICAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF OPENINGS IN CONCRETE WALLS, FLOORS AND ROOF. UNLESS INDICATED OTHERWISE, REINFORCE AROUND OPENINGS GREATER THAN 12" IN EITHER DIRECTION WITH (2) #5 EACH SIDE AND (1) #5 x 4'-0" DIAGONAL AT EACH CORNER. EXTEND BARS 2'-0" BEYOND EDGE OF OPENING. IF 2'-0" IS UNAVAILABLE, EXTEND AS FAR AS POSSIBLE AND HOOK. HOOK ALL REINFORCING INTERRUPTED BY OPENINGS.

BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL NOT BE FIELD BENT UNLESS SO DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER.

SEE ARCHITECTURAL DRAWINGS FOR ALL GROOVES, NOTCHES, CHAMFERS, FEATURE STRIPS, COLOR, TEXTURE AND OTHER FINISH DETAILS AT ALL EXPOSED CONCRETE SURFACES. PROVIDE 3/4" CHAMFER AT ALL CORNERS EXCEPT AS NOTED.

STRUCTURAL STEEL

STRUCTURAL STEEL DESIGN, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", LATEST EDITION.

WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992, Fy = 50 KSI.

PLATES, ANGLES, CHANNELS, AND RODS SHALL CONFORM TO ASTM A36, Fy = 36 KSI.

STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 GRADE B, Fy = 46 KSI.

STEEL PIPE SHALL CONFORM TO ASTM A53 GRADE B, Fy = 35 KSI.

BOLTS CONNECTING STEEL MEMBERS SHALL CONFORM TO ASTM A325-N. BOLTS SHALL BE 3/4"Ø MINIMUM, UNO ANCHOR BOLTS SHALL CONFORM TO ASTM A307.

CONTRACTOR SHALL PROVIDE CONNECTION ADJUSTMENT TOLERANCES TO SATISFY THE REQUIREMENTS OF AISC MANUAL OF STEEL CONSTRUCTION.

UNLESS SPECIFIED AS STAINLESS STEEL, ALL STEEL MEMBERS, SHAPES, BOLTS, AND ACCESSORIES EXPOSED TO WEATHER SHALL BE PAINTED TO PROTECT AGAINST CORROSION. BEFORE APPLYING PAINT STEEL SHALL BE CLEAN AND FREE OF RUST OR DEBRIS. PAINTING SHALL CONSIST OF AN ORGANIC ZINC PRMER COAT NOT LESS THAN 2.5 MILS DRY FILM THICKNESS. TOP COAT SHALL CONSIST OF AN EPOXY PAIN NOT LESSS THAN 3.0 MILS DRY FILM THICKNESS.

ANY SCUFF MARKS OR SCRATCHES THAT OCCUR DURING CONSTRUCTION SHALL BE REPAIRED WITH A FIELD APPLIED EPOXY PAINT.

WELDING

WELDING SHALL CONFORM TO AWS "STRUCTURAL WELDING CODE", LATEST EDITION. ALL WELDING SHALL BE DONE WITH 70 KSI LOW HYDROGEN ELECTRODES. WHERE NOT CALLED OUT, MINIMUM FILLET WELD SIZE SHALL BE PER TABLE 5.8 IN AWS D1.1, LATEST EDITION.

WELDING OF REINFORCING BARS SHALL NOT BE PERMITTED UNLESS SPECIFICALLY CALLED OUT ON DRAWINGS OR APPROVED BY STRUCTURAL ENGINEER. WELDING OF GRADE 60 REINFORCING BARS SHALL BE PERFORMED USING LOW HYDROGEN ELECTRODES. WELDING OF GRADE 40 REINFORCING BARS SHALL BE PERFORMED USING E70XX ELECTRODES. SEE REINFORCING NOTES FOR MATERIAL REQUIREMENTS OF WELDED BARS. WELDING WITHIN 4" OF COLD BENDS IN REINFORCING BARS IS NOT PERMITTED.

ALL WELDING SHALL BE DONE BY WASHINGTON ASSOCIATION OF BUILDING OFFICIALS (WABO) CERTIFIED WELDERS.

HEADED STUDS

HEADED STUDS FOR CONNECTION OF STRUCTURAL STEEL TO CONCRETE SHALL BE MANUFACTURED FROM MATERIAL CONFORMING TO ASTM A108 AND SHALL BE WELDED IN CONFORMANCE WITH AWS REQUIREMENTS.

LUMBER

ALL GRADES SPECIFIED ARE MINIMUM GRADES REQUIRED. ALL LUMBER SHALL BE IN ACCORDANCE WITH WWPA GRADING RULES, KILN-DRIED TO MC 19 AND OF THE FOLLOWING MINIMUM STANDARDS:

SIZE CLASSIFICATION	SPECIES	GRADE	Fb (PSI)	Fc (PSI)
SLEEPERS	DOUG-FIR	STUD	700	-
LIGHT FRAMING (STUDS)	HEM-FIR	STUD	675	800
2x JOISTS AND PLANKS	HEM-FIR	#2	850	-
PLATES AND BLOCKING	HEM-FIR	#2	850	-
6x AND LARGER BEAMS AND STRINGERS	DOUG-FIR	#2	875	-
4x AND SMALLER BEAMS AND STRINGERS	HEM-FIR	#2	850	-
ALL POSTS AND TIMBERS	DOUG-FIR	#1	1200	1000

REFER TO PLAN NOTES, SCHEDULES, AND DETAILS FOR MORE SPECIFIC LUMBER SIZE AND GRADE REQUIREMENTS.

UNLESS NOTED OTHERWISE IN THE PLANS, ALL WOOD AND WOOD-BASED MEMBERS EXPOSED TO WEATHER OR IN CONTACT WITH CONCRETE, MASONRY, OR WITHIN 8" OF SOIL SHALL BE PRESERVATIVE-TREATED BY VACUUM-PRESSURE IMPREGNATION IN ACCORDANCE WITH AWPA STANDARD U1.

NAILS, BOLTS, AND METAL CONNECTORS FOR WOOD

ALL NAILS SHALL CONFORM TO THE STANDARDS SET FORTH BY THE NATIONAL DESIGN STANDARDS (NDS) FOR WOOD CONSTRUCTION, LATEST EDITION. NAILING NOT SPECIFIED SHALL BE PER IBC TABLE 2304.10.1 NAILING SCHEDULE. ALL NAILS CALLED OUT ON PLANS SHALL BE COMMON NAILS UNLESS NOTED OTHERWISE AND SHALL MEET OR EXCEED THE FOLLOWING MINIMUM GUIDELINES:

NAIL	SHANK Ø	MIN LENGTH
8d COMMON	0.131Ø	2 1/2" SHANK
10d COMMON	0.148Ø	3" SHANK
12d COMMON	0.148Ø	3 1/4" SHANK
16d COMMON	0.162Ø	3 1/2" SHANK

10d BOX NAILS MAY BE SUBSTITUTED FOR 8d COMMON NAILS WITH NO CHANGE IN NAIL SPACING. FRAMING MEMBERS MAY BE NAILED WITH 16d SINKERS (0.148"Ø x 3 1/4"), BUT ONLY 16d COMMON NAILS SHALL BE USED WHERE 16d NAILS ARE INDICATED IN THIS DRAWING SET. ENGINEER MAY APPROVE OTHER NAILS IF NAIL LABELS ARE SUBMITTED TO ENGINEER PRIOR TO START OF CONSTRUCTION.

ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. LEAD HOLES FOR LAG BOLTS SHALL BE BORED FOR THE SHANK AND THREADED PORTIONS PER NDS 12.1.4.2.

CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY. CATALOG TO BE THE LATEST EDITION, OR ENGINEER APPROVED EQUAL. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND WITH THE NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY THE MANUFACTURER. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE ONE-HALF OF THE NAILS, SCREWS, OR BOLTS IN EACH MEMBER.

INSTALL SOLID BLOCKING AT ALL BEARING POINTS. ALL SHIMS SHALL BE SEASONED, DRIED, AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

GALVANIZATION

UNLESS NOTED OTHERWISE, STEEL CONNECTORS IN CONTACT WITH TREATED WOOD SHALL BE GALVANIZED ACCORDING TO THE FOLLOWING TABLE:

GALVANIZATION	UNTREATED WOOD	CCA-C	SBX	ACQ-C ACQ-D	CBA-A CA-B	OTHER BORATE	ACZA	OTHER PT WOOD
G90	X	X	X					
G185	X	X	X	X	X	X		
HDG	X	X	X	X	X	X		
STT300	X	X	X	X	X	X	X	X

G90 = 0.90 OZ. OF ZINC PER SQUARE FOOT OF AREA
G185 = 1.85 OZ. OF ZINC PER SQUARE FOOT OF AREA
HDG = HOT DIP GALVANIZED
SST300 = TYPE 316L STAINLESS STEEL

TIMBER LAGGING/SAWN LUMBER

SAWN LUMBER SHALL CONFORM TO GRADING AND DRESSING RULES, WEST COAST LUMBER INSPECTION BUREAU (WCLIB), LATEST EDITION. LUMBER SHALL BE THE GRADE LISTED BELOW:

ALL LAGGING SHALL BE TREATED WITH ACZA WOOD PRESERVATIVE TREATMENT WITH THE LEVELS LISTED BELOW. ANY LAGGING FIELD CUT SHALL HAVE ACZA TREATMENT FIELD APPLIED TO THE CUT END.

	SIZE	SPECIES	GRADE	Fb (PSI)	ACZA TREATMENT
WALL LAGGING	4x12	HF	#2	850	0.4 LBS/CU FT

GENERAL SHORING NOTES

(THESE NOTES ARE TYPICAL UNLESS NOTED OR DETAILED OTHERWISE ON DRAWINGS).

UTILITY LOCATION/EXISTING CONDITIONS

THE LOCATIONS OF EXISTING UTILITIES AND SITE FEATURES SHOWN HEREON HAVE BEEN FURNISHED BY OTHERS BY FIELD SURVEY OR OBTAINED FROM AVAILABLE RECORDS AND SHOULD THEREFORE BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN AND TO FURTHER DISCOVER AND PROTECT ANY OTHER UTILITIES NOT SHOWN HEREON WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN. CG ENGINEERING ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THE EXISTING UTILITIES AND SITE FEATURES PRESENTED ON THESE DRAWINGS.

CONTRACTOR SHALL LOCATE AND PROTECT ALL UTILITIES DURING CONSTRUCTION AND SHALL CONTACT THE UNDERGROUND UTILITIES LOCATION SERVICE (1-800-424-5555) AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE PROJECT SITE BEFORE STARTING WORK AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

IF THE ACTUAL FIELD VERIFIED LOCATION OF UTILITIES COULD RESULT IN A CONFLICT WITH THE SHORING, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

PRIOR TO CONSTRUCTION, CONTRACTOR SHALL VERIFY THAT OVERHEAD OBSTRUCTIONS, INCLUDING ELECTRICAL LINES, DO NOT INTERFERE WITH USE OF THE CONTRACTOR'S DRILLING EQUIPMENT.

COORDINATE AND ARRANGE FOR ALL UTILITY RELOCATIONS AND/OR SERVICE INTERRUPTIONS WITH THE AFFECTED OWNERS AND APPROPRIATE UTILITY COMPANIES. INTERRUPTIONS TO EXISTING UTILITIES SHALL BE MADE ONLY WITH THE WRITTEN APPROVAL OF THE AUTHORITIES GOVERNING SAID UTILITIES AND WITH A MINIMUM 48 HOURS ADVANCE NOTICE.

EXISTING UTILITY LINES IN SERVICE WHICH ARE DAMAGED DUE TO CONSTRUCTION WORK SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE AND INSPECTED AND ACCEPTED BY OWNER'S REPRESENTATIVE PRIOR TO BACKFILLING.

EROSION AND SEDIMENTATION CONTROL

ALL DISTURBED SOIL AREAS SHALL BE SEEDED OR STABILIZED BY OTHER ACCEPTABLE METHODS FOR THE PREVENTION OF ON-SITE EROSION AFTER THE COMPLETION OF CONSTRUCTION.

THE CONTRACTOR SHALL KEEP OFF-SITE STREETS CLEAN AT ALL TIMES BY SWEEPING. WASHING OF STREETS WILL NOT BE ALLOWED WITHOUT PRIOR APPROVAL.

REFER TO CIVIL DRAWINGS FOR ADDITIONAL EROSION CONTROL INFORMATION.

TEMPORARY SHORING

CONTRACTOR SHALL BE RESPONSIBLE FOR AND SHALL INSTALL AND MAINTAIN TEMPORARY SHORING AND BRACING IN ADDITION TO SHORING SHOWN ON THESE PLANS AS NECESSARY TO PROTECT WORKERS, EXISTING BUILDINGS, STREETS, WALKWAYS, UTILITIES AND OTHER EXISTING AND PROPOSED IMPROVEMENTS AND EXCAVATIONS AGAINST LOSS OF GROUND OR CAVING EMBANKMENTS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REMOVAL OF ANY TEMPORARY SHORING AND BRACING, AS REQUIRED.

FOUNDATIONS: SOLDIER PILES

SOILS REPORT: REPORT NO: GEOTCH CONSULTANTS, INC.
PREPARED BY: MARC MCGINNIS, PE
DATED: 03/23/2022

SOLDIER PILE DESIGN PARAMETERS:

PILE SHAFT FRICTION: 1000 PSF
LATERAL EARTH PRESSURES: REFER TO PRESSURE DIAGRAM

FOOTINGS SHALL BEAR ON FIRM UNDISTURBED EARTH OR 12" OF COMPACTED STRUCTURAL FILL AS REQUIRED AND AT LEAST 18" BELOW ADJACENT EXTERIOR GRADE. ANY FOOTING ELEVATIONS SHOWN IN THE DRAWINGS REPRESENT MINIMUM DEPTHS AND ARE FOR BIDDING ONLY. ACTUAL FOOTING ELEVATIONS ARE SUBJECT TO SITE CONDITIONS AND MUST THEREFORE BE ESTABLISHED BY THE CONTRACTOR. FOOTINGS SHALL BE CENTERED BELOW COLUMNS OR WALLS ABOVE, UNLESS NOTED OTHERWISE.

BACKFILL BEHIND ALL RETAINING WALLS WITH WELL-DRAINING, GRANULAR FILL AND PROVIDE FOR SUBSURFACE DRAINAGE. PROVIDE DAMPPROOFING AT EXTERIOR FACE OF ALL FOUNDATION WALLS EXPOSED TO EARTH PER ARCHITECTURAL SPECIFICATIONS.

EXCAVATIONS AND DRAINAGE INSTALLATION SHALL BE OBSERVED BY A SOILS ENGINEER RETAINED BY THE OWNER. IF EXCAVATION SHOWS SOIL CONDITIONS TO BE OTHER THAN THOSE ASSUMED ABOVE, NOTIFY THE STRUCTURAL ENGINEER FOR POSSIBLE FOUNDATION REDESIGN.

CONCRETE/GROUT

ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 19 OF THE INTERNATIONAL BUILDING CODE. CONCRETE STRENGTHS SHALL BE VERIFIED BY 28-DAY STANDARD CYLINDER TESTS, UNLESS APPROVED OTHERWISE. GROUT STRENGTHS SHALL BE VERIFIED BY 2-INCH CUBE TESTS PER ASTM C109.

CONCRETE MIX DESIGNS SHALL CONFORM TO THE UNIFORM BUILDING CODE. COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE AS FOLLOWS:

SOLDIER PILE CONCRETE: f'c = 2500 PSI

PILE CORROSION PROTECTION

PILES SHALL BE PAINTED TO PROTECT AGAINST CORROSION. BEFORE APPLYING PAINT PILES SHALL BE CLEAN AND FREE OF RUST OR DEBRIS. PAINTING SHALL CONSIST OF AN ORGANIC ZINC PRIMER COAT NOT LESS THAN 2.5 MILS DRY FILM THICKNESS. TOP COAT SHALL CONSIST OF AN EPOXY PAINT NOT LESS THAN 3.0 MILS DRY FILM THICKNESS. PILES SHALL BE PAINTED TO 2'-0" BELOW GRADE MINIMUM.

ANY SCUFF MARKS OR SCRATCHES THAT OCCUR DURING CONSTRUCTION SHALL BE REPAIRED WITH A FIELD APPLIED EPOXY PAINT.

PROCEDURE/CONSTRUCTION SEQUENCING:

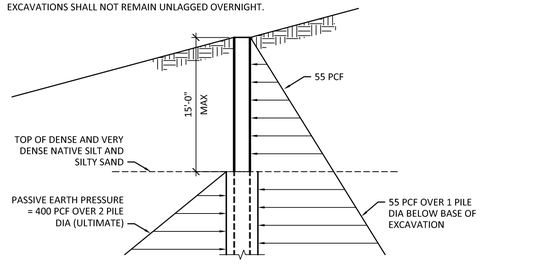
PRECONSTRUCTION MEETING

CONTRACTOR SHALL CALL THE ENGINEERING INSPECTION LINE TO SET UP A PRECONSTRUCTION MEETING PRIOR TO ANY SITE WORK.

CONCRETE PLACEMENT

CONCRETE SHALL NOT BE ALLOWED TO FREE-FALL TO THE BOTTOM OF THE DRILLED HOLE, BUT SHALL EITHER BE TREMIED OR PUMPED INTO THE HOLE.

EXCAVATIONS SHALL NOT REMAIN UNLAGGED OVERNIGHT.



1 EARTH PRESSURE DIAGRAM W/ SLOPED BACK SLOPE
SCALE: NTS

CG ENGINEERING
250 4TH AVE. S., SUITE 200
EDMONDS, WASHINGTON 98020
PHONE (425) 778-8500
FAX (425) 778-5536

PRELIMINARY NOT FOR CONSTRUCTION
DENNIS M. TITUS — STATE OF WASHINGTON — 22801 — PROFESSIONAL ENGINEER
XX/XX/XX

MARK	DATE	DESCRIPTION
	10/21/22	PERMIT SUBMITTAL
	XX/XX/XX	PERMIT RESUBMITTAL

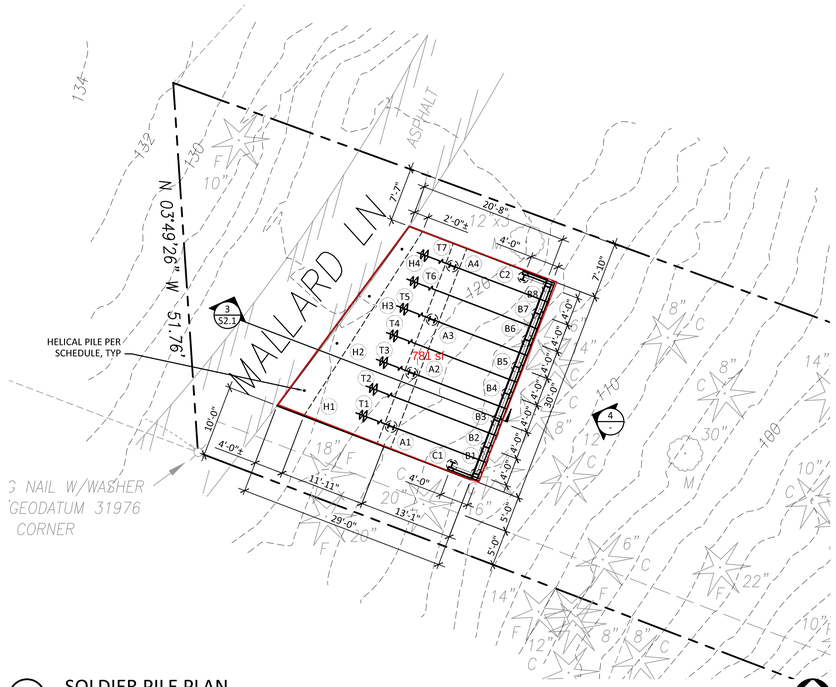
DESIGN: BTJ
DRAWN: ATD
CHECK: DMT
JOB NO: 22273.10
DATE: 10/21/22

MCKISSICK RESIDENCE
1600 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008

STRUCTURAL NOTES

FILE NAME:

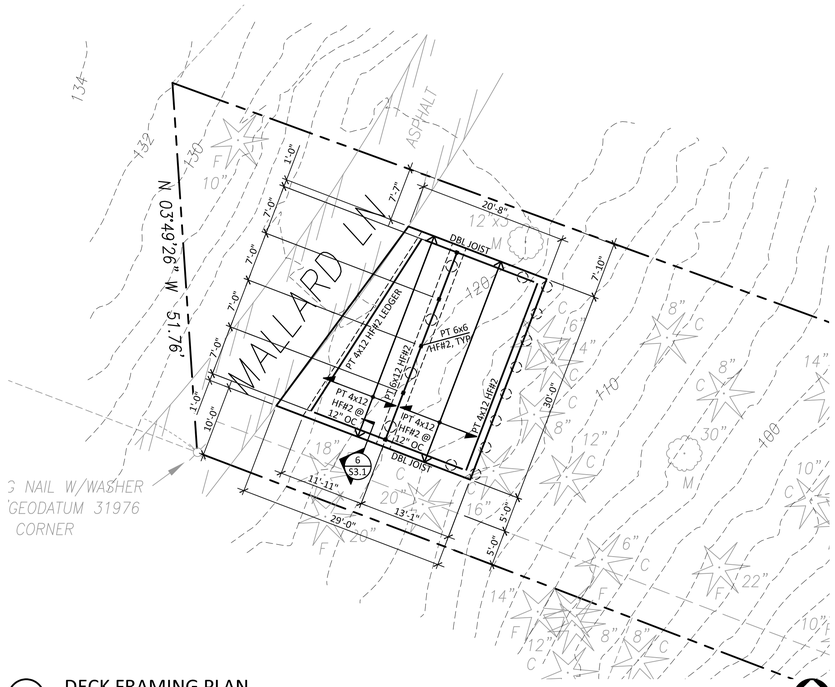
SHEET:
S1.1



1 SOLDIER PILE PLAN

SCALE: 1" = 10'

10 0 5 10 20



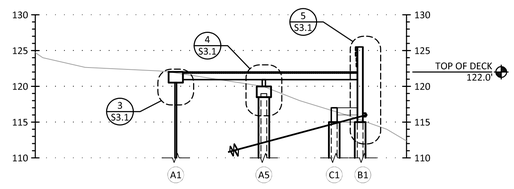
2 DECK FRAMING PLAN

SCALE: 1" = 10'

10 0 5 10 20

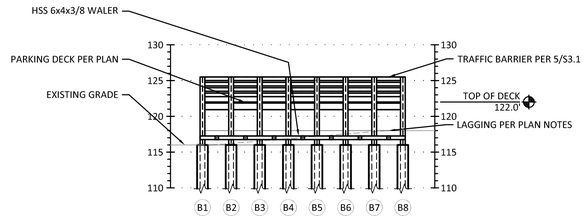
DECK FRAMING PLAN NOTES:

1. DECKING SHALL CONSIST OF 2x CEDAR DECKING.



3 PROFILE

SCALE: 1" = 10'

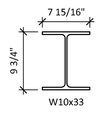


4 PROFILE

SCALE: 1" = 10'

SOLDIER PILE SCHEDULE

PILE(S)	A1-A4	B1-B8	C1-C2
PILE SHAFT DIA	1'-6"Ø	1'-6"Ø	1'-6"Ø
STEEL SECTION	W10x33	W10x33	W10x33
MIN EMBEDMENT BELOW EXIST GRADE	25'-0"	35'-0'	35'-0"



NOTES:
1. REFER TO SHORING DRAWINGS FOR ADDITIONAL INFORMATION.
2. REFER TO THE SHORING PROFILE FOR TOP & BOT. OF PILES

HELICAL PILE & SCHEDULE

PILE	TYPE	DESIGN LOAD	PILE SHAFT	MIN INSTALL TORQUE	MAX INSTALL TORQUE	NOTES
H1-H4	HELICAL PILE	16.6K	SS150	3,400 FT#	7,000 FT#	
T1-T7	HELICAL PILE	13.5K	SS150	2,700 FT#	7,000 FT#	

NOTES:
1. CONTRACTOR SHALL SELECT HELIX CONFIGURATION CAPABLE OF DEVELOPING THE DESIGN LOADS.
2. MIN INSTALL TORQUE ASSUMES Kt = 10.0 IF A PILE WITH A DIFFERENT Kt VALUE IS USED MIN INSTALL TORQUE SHALL BE ADJUSTED.
3. MIN INSTALL TORQUE INCLUDES A FACTOR OF SAFETY OF 2.0.
4. ALL PILES SHALL INSTALLED TO TWICE THE DESIGN LOAD.

CG ENGINEERING
250 4TH AVE. S., SUITE 200
EDMONDS, WASHINGTON 98020
PHONE (425) 778-8500
FAX (425) 778-5536

PRELIMINARY NOT FOR CONSTRUCTION
DENNIS M. TITUS STATE OF WASHINGTON 22001 PROFESSIONAL ENGINEER
XX/XX/XX

MARK	DATE	DESCRIPTION
	10/21/22	PERMIT SUBMITTAL
	XX/XX/XX	PERMIT RESUBMITTAL

DESIGN:	BTJ
DRAWN:	ATD
CHECK:	DMT
JOB NO:	22273.10
DATE:	10/21/22

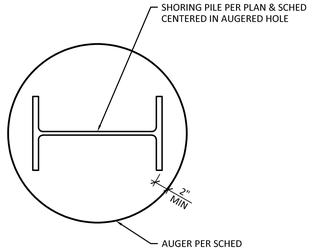
MCKISSICK RESIDENCE
1600 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008

SOLDIER PILE PLAN AND DECK FRAMING PLAN AND PROFILE

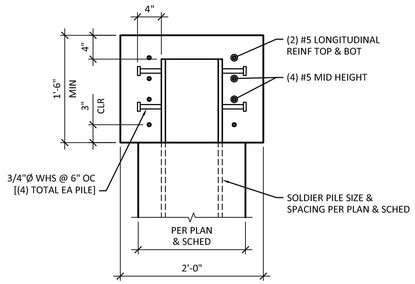
FILE NAME:

SHEET:

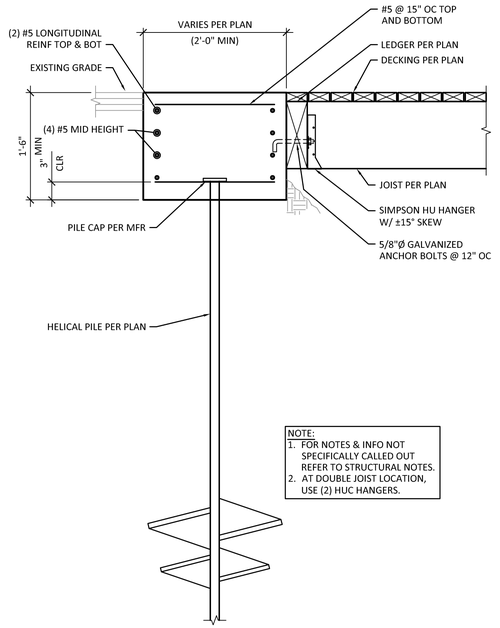
S2.1



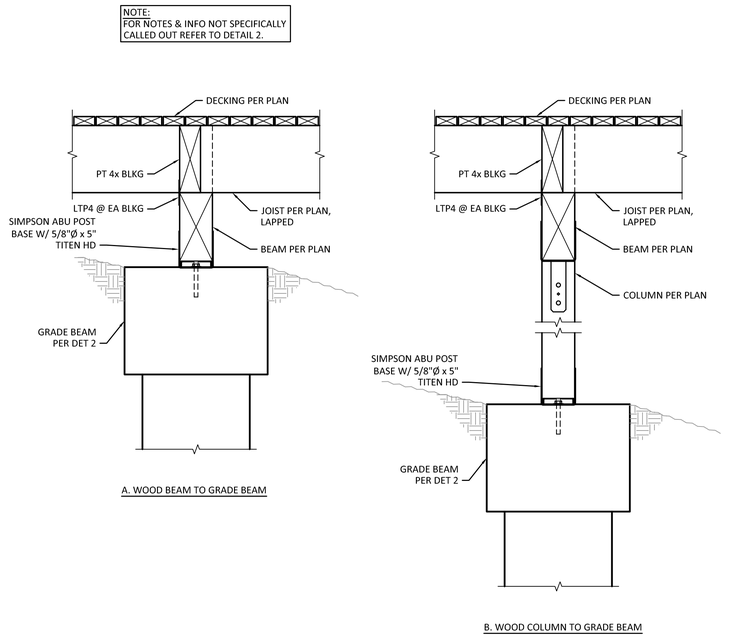
1 TYPICAL PILE PLAN
SCALE: 1" = 1'-0"



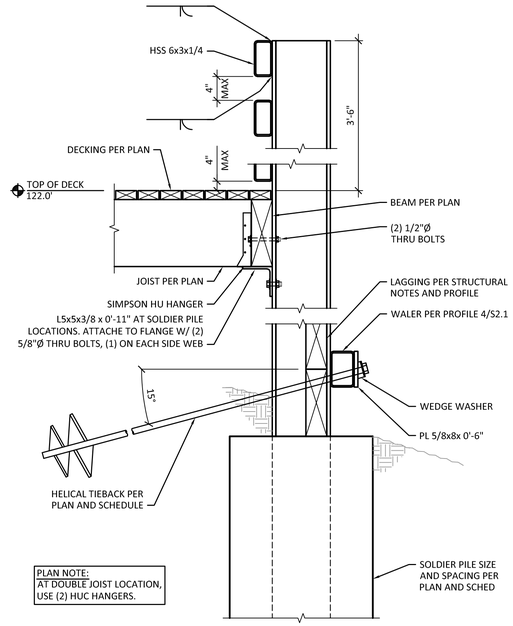
2 TYPICAL GRADE BEAM
SCALE: 1" = 1'-0"



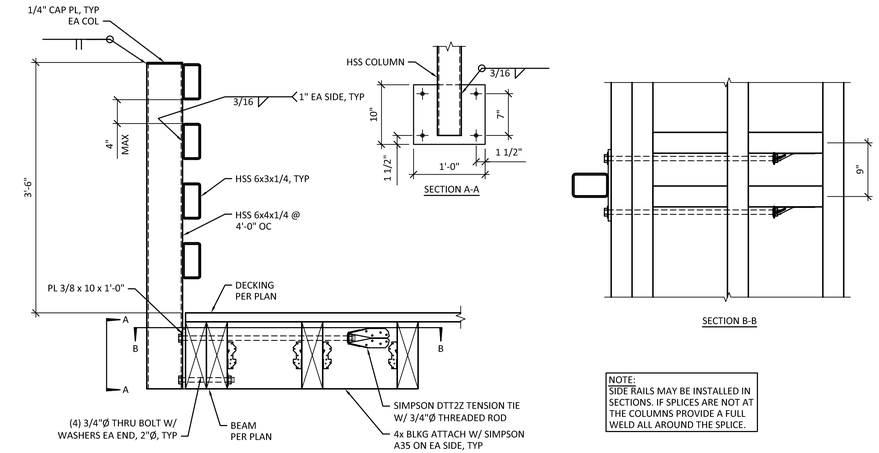
3 SECTION
SCALE: 1" = 1'-0"



4 SECTION
SCALE: 1" = 1'-0"



5 SECTION
SCALE: 1" = 1'-0"



6 RAIL SECTION PERPENDICUALR TO BEAM
SCALE: 1" = 1'-0"

ENGINEERING
250 4TH AVE. S., SUITE 200
EDMONDS, WASHINGTON 98020
PHONE (425) 778-8500
FAX (425) 778-5536

PRELIMINARY
NOT FOR CONSTRUCTION
DENNIS M. TITUS
STATE OF WASHINGTON
22001
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER
XX/XX/XX

MARK	DATE	DESCRIPTION
	10/21/22	PERMIT SUBMITTAL
	XX/XX/XX	PERMIT RESUBMITTAL

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MCKISSICK RESIDENCE
1600 WEST LAKE SAMMAMISH PARKWAY NE
BELLEVUE, WA 98008

STRUCTURAL DETAILS

FILE NAME:

SHEET:

S3.1

GEOTECH
CONSULTANTS, INC.

2401 10th Ave E
Seattle, Washington 98102
(425) 747-5618

March 23, 2022

JN 21319

Integral Construction, Inc.
23415 – 97th Place West
Edmonds, Washington 98020

Attention: Frank Russell
via email: frankrussell@integralconstruction.com

Subject: **Transmittal Letter – Geotechnical Engineering Study**
Proposed Parking Deck
McKissick Property
1600 West Lake Sammamish Parkway Northeast
Bellevue, Washington

Greetings:

Attached to this transmittal letter is our geotechnical engineering report for the proposed parking deck to be constructed on the McKissick property in Bellevue. The scope of our services consisted of exploring site surface and subsurface conditions, and then developing this report to provide recommendations for general earthwork and design considerations for foundations, retaining walls, slope stability, subsurface drainage, and temporary excavations. This work was authorized by your acceptance of our Statement of Acceptance, dated January 28, 2022.

The attached report contains a discussion of the study and our recommendations. Please contact us if there are any questions regarding this report, or for further assistance during the design and construction phases of this project.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.

Matthew K. McGinnis
Geotechnical Engineer

Marc R. McGinnis, P.E.
Principal

cc: Ian McKissick
via email: ian.mckissick@gmail.com

MKM/MRM:kg

GEOTECHNICAL ENGINEERING STUDY
Proposed Parking Deck
1600 West Lake Sammamish Parkway Northeast
Bellevue, Washington

This report presents the findings and recommendations of our geotechnical engineering study for the site of the proposed Parking Deck to be located in Bellevue

Development of the property is in the planning stage, and no plans were available to us at the time of this study. We understand that an elevated parking deck is proposed to be constructed near the western property line of the site, along the eastern edge of Mallard Lane. This parking deck would extend off from the roadway elevation, above the sloping grade to the east. Planned excavations for the parking deck will not likely be extensive, and the parking deck will likely be set as close to the property boundaries as allowed, in order to limit the size of the parking deck. We do not anticipate that the new parking deck will be enclosed, or that it will contain a second story.

If the scope of the project changes from what we have described above, we should be provided with revised plans in order to determine if modifications to the recommendations and conclusions of this report are warranted.

SITE CONDITIONS

SURFACE

The Vicinity Map, Plate 1, illustrates the general location of the site on the western shoreline of Lake Sammamish, north of the lake's centerline. The irregular shaped property comprises a total area of 0.28-acres. The property is bounded to the north and south by similar, narrow residential parcels, to the east by Lake Sammamish, and to the west by Mallard Lane.

The McKissick residence lies on a gently- to moderately sloped area extending between Rosemont Boulevard, a narrow private access road serving numerous houses, and the shore of Lake Sammamish. Immediately to the west of Rosemont Boulevard is a steep slope that rises to Mallard Lane, which abuts the western property line. The ground continues to slope upward through the western neighboring lots at a moderate to steep inclination to the edge of West Lake Sammamish Parkway Northeast. The steep on-site slope between Mallard Lane and Rosemont Boulevard is overgrown with underbrush and numerous trees. The base of the steep slope, alongside Rosemont Boulevard, has been cut at a near-vertical inclination in conjunction with the previous development of this neighborhood and the private lane. King County Assessor records indicate that the original houses on Rosemont Boulevard were built in the early- to mid-1940s. The overall height of the oversteepened, near-vertical cut is in excess of 20 feet. The remainder of the slope above this old manmade cut is undisturbed and is inclined at its natural grade. On several of the nearby properties, more recent cuts have been made into the toe of this older manmade slope to create narrow parking alongside Rosemont Boulevard. These shorter cuts are either unretained or are protected by non-engineered rockeries or modular walls.

The slope east of Mallard Lane is inclined approximately 50 to 55 percent along the upper, steep portion. Most of this steeply inclined slope meets the City of Bellevue criteria for both a Steep Slope and Landslide Hazard Area, as it is inclined in excess of 40 percent over an elevation change in excess of 10 feet.

Based on our observations, shallow sloughing of the near-surface soils has occurred on the lower, exposed cut face over the years, but there are no indications of larger, or deep-seated movement on the slope. The area is known to be underlain by competent, glacially-compressed soils, and there is no history of deep-seated instability. From our previous experience on other projects in the vicinity, we are aware of shallow slides on natural steep slopes in the surrounding area that have affected the uppermost few feet of looser, weathered soil. They have also occurred in areas of improperly placed fill soils, such as along West Lake Sammamish Parkway, and the numerous access road and driveways that cross the slopes in the area. These shallow slides typically occur following extending periods of heavy precipitation. Some surficial seeps were observed within the exposed cut face along the toe of this steep slope and appeared to result from thin perched seams within the glacially compressed soils. We saw no indications of large-scale slope movement on the oversteepened cut slope alongside Rosemont Boulevard.

SUBSURFACE

The subsurface conditions for the proposed parking deck were explored by drilling one test boring at the approximate location shown on the Site Exploration Plan, Plate 2. Our exploration program was based on the proposed construction, anticipated subsurface conditions and those encountered during exploration, and the scope of work outlined in our proposal.

The test boring was drilled on February 25, 2022 using a track-mounted, hollow-stem auger drill. Samples were taken at approximate 2.5- to 5-foot intervals with a standard penetration sampler. This split-spoon sampler, which has a 2-inch outside diameter, is driven into the soil with a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler a given distance is an indication of the soil density or consistency. A geotechnical engineer from our staff observed the drilling process, logged the test borings, and obtained representative samples of the soil encountered. The Test Boring Log is attached as Plate 3.

Soil Conditions

Test Boring 1 was drilled east of Mallard Lane, within a small gravel parking area near the proposed parking deck. Beneath the ground surface, a layer of rock fill was encountered. This rock fill was underlain by soft, disturbed silt fill soils that continued to a depth of approximately 4 feet. Native, medium-stiff/medium-dense silt was revealed beneath the fill, and continued to a depth of 10 feet, where the silt became dense. Very dense native silty sand and silt were revealed past depths of 15 feet, continuing to the base of the boring at a depth of 31.5 feet.

The dense and very dense native soils are glacially compressed and are of a similar composition to the soils revealed in the exposed cut face along the oversteepened cut at the toe of the slope alongside Rosemont Boulevard.

Other test borings have been conducted by previous consulting companies near the toe of the steep slope, along the western edge of Rosemont Boulevard. Similar, glacially compressed soils were revealed at relatively shallow depths beneath the ground surface in these borings.

No obstructions were revealed by our explorations. However, debris, buried utilities, and old foundation and slab elements are commonly encountered on sites that have had previous development.

Although our explorations did not encounter cobbles or boulders, they are often found in soils that have been deposited by glaciers or fast-moving water.

Groundwater Conditions

Perched groundwater seepage was observed within several soil samples from a depth of 10.5 to 20 feet during drilling. Further groundwater was observed at a depth of 30 feet during drilling, and this may be another perched groundwater seam. These thin perched seams are similar to the slow seepage observed in the face of the tall cut at the toe of the steep slope and are likely all localized lenses that are transporting subsurface water downslope. The test borings were left open for only a short time period. Therefore, the seepage levels on the logs represent the location of transient water seepage and may not indicate the static groundwater level. Groundwater levels encountered during drilling can be deceptive because seepage into the boring can be blocked or slowed by the auger itself.

It should be noted that groundwater levels vary seasonally with rainfall and other factors. We anticipate that groundwater could be found in more permeable soil layers, within thin sandy seams, and between the looser near-surface soil and the underlying denser soil.

The stratification lines on the logs represent the approximate boundaries between soil types at the exploration locations. The actual transition between soil types may be gradual, and subsurface conditions can vary between exploration locations. The logs provide specific subsurface information only at the locations tested. If a transition in soil type occurred between samples in the borings, the depth of the transition was interpreted. The relative densities and moisture descriptions indicated on the test boring logs are interpretive descriptions based on the conditions observed during drilling.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL

THIS SECTION CONTAINS A SUMMARY OF OUR STUDY AND FINDINGS FOR THE PURPOSES OF A GENERAL OVERVIEW ONLY. MORE SPECIFIC RECOMMENDATIONS AND CONCLUSIONS ARE CONTAINED IN THE REMAINDER OF THIS REPORT. ANY PARTY RELYING ON THIS REPORT SHOULD READ THE ENTIRE DOCUMENT.

The test boring conducted for this study encountered native, dense, and very dense glacially compressed silty sand and silt beneath a 10-foot-thick mantle of fill and looser, weathered native soils. Based on the soils encountered in the test boring, and from our observations of the exposed lower slope, it is apparent that this glacially compressed soil comprises the core of this slope and is not susceptible to deep-seated instability.

While no plans have been developed as of yet for the parking deck, the structural system to support such a structure within a critical area will need to consist of a deep foundation system due to the presence of loose fill and uncompressed native soils and the sloping topography. Based on our experience with previous projects of a similar scope, drilled, cast-in-place concrete piles will likely provide the most practical support system for the parking deck. These drilled piles would be embedded into the underlying glacially compressed soils and would provide both vertical and lateral support for the parking deck, which would be constructed as a structural concrete slab atop the piles. The use of these piles would help to limit site disturbance and limit required excavations to localized excavations made to drill and set each pile. Additional recommendations can be found in

the ***Drilled Concrete Piles*** section of this report. If found feasible during design, portions of the foundation system could be comprised of small diameter pipe piles. Pipe piles are much less expensive and quicker to install, but their lateral capacity is negligible due to their small diameter. Pipe pile considerations are presented in a subsequent section.

Because the proposed development area is located close to a Steep Slope Hazard and Landslide Hazard Area, preventing instability in the development area is required by the City of Bellevue Land Use Code. This includes stability under both static and seismic conditions. Future shallow soil movement in the looser, near-surface soils on the steep slope is likely to occur periodically. Based on our test borings, and the results of our slope stability analyses (attached), in order to satisfy City of Bellevue slope stability requirements in the event of the design earthquake, a subsurface stabilization wall will need to be constructed along the eastern side of the parking deck. This reinforced pile wall would be designed to retain the loose fill and upper weathered soils beneath the parking deck in the event of a future landslide on the steep slope. The stabilization wall would be constructed of closely spaced, drilled soldier piles. The wall should be continuous across the length of the development area and will need to return around the northern and southern corners of the development perimeter a distance of two piles. This wall could be used to support the eastern extent of the parking deck as well, similarly to the drilled concrete piles described above. In order to determine the necessary depth of stabilization, we have conducted a slope stability analysis using the modeling program, Slope/W, which is developed by Geoslope. Based on this analysis, (attached to the end of this report as Appendix A for reference), a stabilization depth of 15 feet beneath the existing grade was determined. Additional recommendations can be found in the ***Stabilization Wall*** section of this report. The stabilization wall will not increase or decrease the potential for future slope movement on the steep slope to the east of the development area, but will protect the development area behind the stabilization wall in the event of future slope instability.

As previously discussed, the subject site meets the criteria for a Landslide Hazard Area per Bellevue Code. The core of the subject site consists of dense to very dense, glacially compressed silty sand and silt soil that has a low potential for deep-seated landslides. However, any slope in the Puget Sound area has some potential for shallow soil movement in the near-surface soils, particularly after extended periods of concentrated precipitation. The potential for failures of the onsite steep slope to affect the proposed development will be mitigated by proper retention of the looser soils within the development area. As discussed below in the ***Critical Areas Discussion***, the recommendations presented in this report are intended to prevent adverse impacts to the stability of the slope on the site and the adjoining properties, and to protect the planned development from damage in the event of future instability.

The construction of the parking deck and stabilization wall will have the benefit of protecting that section of Mallard Lane from damage due to future slope movement in the fill and loose soils.

No soil generated from the project excavation or new structural fill should be placed on, or near the steep slope, as the surcharge from the additional soils could reduce the stability of the slope. This will likely require that all excavated soils and drill spoils be exported offsite. No significant volumes of water should be directed towards the steep slope along the eastern side of the development. Poorly managed stormwater runoff is a common cause of slope instability that is well documented in the Puget Sound area. Due to the silty, fine-grained nature of the upper fill and native soils onsite and the steep inclination of the slope to the east of the proposed parking deck, it is our professional opinion that onsite infiltration of stormwater runoff from impervious areas is infeasible for this project. All collected stormwater should be discharged to an approved stormwater system.

The erosion control measures needed during the site development will depend heavily on the weather conditions that are encountered. We anticipate that a silt fence will be needed around the downslope sides of any cleared areas. Existing pavements, ground cover, and landscaping should be left in place wherever possible to minimize the amount of exposed soil. Rocked staging areas and construction access roads should be provided to reduce the amount of soil or mud carried off the property by trucks and equipment. Trucks should not be allowed to drive off of the rock-covered areas. Cut slopes and soil stockpiles should be covered with plastic during wet weather. Following clearing or rough grading, it may be necessary to mulch or hydroseed bare areas that will not be immediately covered with landscaping or an impervious surface. On most construction projects, it is necessary to periodically maintain or modify temporary erosion control measures to address specific site and weather conditions.

The drainage and/or waterproofing recommendations presented in this report are intended only to prevent active seepage from flowing through concrete walls or slabs. Even in the absence of active seepage into and beneath structures, water vapor can migrate through walls, slabs, and floors from the surrounding soil, and can even be transmitted from slabs and foundation walls due to the concrete curing process. Water vapor also results from occupant uses, such as cooking, cleaning, and bathing. Excessive water vapor trapped within structures can result in a variety of undesirable conditions, including, but not limited to, moisture problems with flooring systems, excessively moist air within occupied areas, and the growth of molds, fungi, and other biological organisms that may be harmful to the health of the occupants. The designer or architect must consider the potential vapor sources and likely occupant uses, and provide sufficient ventilation, either passive or mechanical, to prevent a build up of excessive water vapor within the planned structure.

Geotech Consultants, Inc. should be allowed to review the final development plans to verify that the recommendations presented in this report are adequately addressed in the design. Such a plan review would be additional work beyond the current scope of work for this study, and it may include revisions to our recommendations to accommodate site, development, and geotechnical constraints that become more evident during the review process.

We recommend including this report, in its entirety, in the project contract documents. This report should also be provided to any future property owners so they will be aware of our findings and recommendations.

SUMMARY OF SLOPE STABILITY ANALYSES

As part of the preparation of this report, we have conducted a slope stability analysis on a typical cross section running through the area of the proposed development (cross section A-A' running east-west through the site and steep slope). Attached to this report as Appendix A are the results of our slope stability analyses using the program Slope/W under both static and seismic loading conditions. The recently adopted ASCE 7-16 (2018 IBC) was used for reference in determining the seismic parameters for this project.

Future slope instability within the existing fill and upper, looser soils is probable. This risk exists currently, regardless of whether or not the parking deck is constructed. Soil movement in the fill and loose soils could undermine Mallard Lane. As discussed above in the ***General*** section, in order to meet City of Bellevue code minimums for static and dynamic slope stability scenarios, and to allow for a reduction of the prescriptive 50-foot buffer, a stabilization wall will need to be constructed along the eastern perimeter of the development area. This stabilization wall would need to be designed to retain soil below the existing grade in the event of a future design seismic event

and a resulting slope failure to the east of the development area, depending on the desired slope setback. Results of this post-construction condition yielded factors of safety of 2.4 and 1.6 for static and dynamic scenarios, respectively. These factors of safety exceed the City of Bellevue code minimums for areas at high risk of failure (1.5 and 1.15 for static and dynamic scenarios, respectively). The referenced slope stability cross section location can be found on Plate 2, and the slope stability analyses are attached to this report as Appendix A.

CRITICAL AREAS DISCUSSION

The onsite slope east of the proposed parking deck meets the City of Bellevue's criteria for both a steep slope and a landslide hazard. The planned development will occur on the steep, manmade slope east of Mallard Lane. This will be well within the City's prescriptive 65-foot building setback (50-foot buffer and 15-foot foundation setback) from the top of the eastern steep slope. As a result, we expect that a Critical Area Land Use Permit (CALUP) will need to be obtained.

The recommendations presented in this report are intended to allow a reduction to the prescriptive steep slope buffer without adverse impacts to slope stability, while protecting the structures from damage in the event of future slope movement.

In order to respond to specific geotechnical criteria in the Bellevue Municipal Code for a CALUP, we present the following discussion:

20.25H.125 Performance standards – Landslide hazards and steep slopes.

A. The City of Bellevue's prescriptive 50-foot top-of-slope buffer has been partially disturbed by the existing alignment of Mallard Lane, which was cut in on its western side, and filled out along its eastern edge to create the small parking area. The existing grades to the east of the gravel parking pad on the east side of Mallard Lane located within the development area are mostly natural. The new construction will be supported on deep foundations consisting of either driven or drilled piles, which will allow for the parking deck to be elevated over the existing grade as it extends east from Mallard Lane. This will minimize the alterations to the natural or existing condition of the slope. Both of these foundations systems will be embedded into the underlying glacially compressed soils, which are not susceptible to deep-seated instability.

B. The new construction will extend within Bellevue's prescriptive 50-foot buffer from the top of the eastern steep slope. Again, this buffer has already been partially disturbed by previous grading for Mallard Lane, but the new construction will not result in disturbance of the natural steep slope and will preserve the existing landforms and vegetation in the steep slope and landslide hazard areas east of the planned development.

   As part of the submitted plans and critical area report, a temporary erosion and sedimentation control (TESC) plan will be submitted with the permit plans. This plan will clearly delineate the area of construction, as well as the means and methods used to reduce the erosion potential and potential for disturbance outside of the construction area. The area surrounding the new residence will be landscaped to maintain appropriate permanent erosion control.

C. The proposed development will not result in greater risk, or a need for increased buffers, on neighboring properties. This is due to the proposed stabilization wall lining the eastern extent of the development area, which will be designed to retain the looser upper soils and protect the development area in the event of future instability on the eastern slope. The existing drainage will not be adversely impacted by the planned development provided adequate surface and subsurface drainage systems are implemented during the site work.

D. Preliminary plans have not been developed at the time of this report. However, we do not anticipate that significant retaining walls outside of the eastern stabilization wall will be needed for the new construction.

We anticipate that the existing topography through the development area will be maintained close to its current state following the completion of construction.

E. The new parking deck will modify the impervious surfaces currently located within the prescriptive steep slope buffer. A robust surface and subsurface drainage system will need to be implemented as part of the new construction to direct any collected stormwater away from the steep slope. Directing new stormwater runoff from impervious areas away from the eastern steep slope will act to increase the surficial stability of the slope soils, as seasonal storms and heavy concentrated runoff are a common trigger for shallow landslides on slopes in the Puget Sound area. No infiltration or dispersion systems should be constructed at the site, as they would act to adversely affect the stability of the upper soils on the steep slope.

F. There is no planned clearing or grading of the steep slope to the east of the development area at this time.

G. No new above-grade retaining walls are anticipated as part of the proposed development related to the construction of the parking deck at this time.

H. The eastern extent of the parking deck will likely extend over the steep slope. We understand that the parking deck would be supported above-grade atop pile caps constructed atop either drilled or driven piles. This will minimize any topographic modification to what is needed to allow for machine access, and to install the piles.

I. The parking deck will likely extend out into the top of the steeply inclined natural slope east of Mallard Lane. Piled support systems in the form of drilled concrete piles, driven pipe piles, and stabilization piles are being proposed as part of the planned development.

J. Outside of the footprint of the new construction, we expect that all areas of new permanent disturbance and all areas of temporary disturbance will be mitigated with erosion control plans as a part of the building permit.

Section 20.25H.140 Critical Areas Report – Additional Provisions for Landslide Hazards and Steep Slopes:

A. Not applicable. The site is not in a coal mine hazard area.

B. 1. A Site Plan for the proposal will be submitted as part of the Critical Areas Report.
2. This report includes an assessment of the onsite soils as well as a review of the site history including publicly available information regarding previous geologic events and site grading. No information regarding these topics was found in our research, but conclusions regarding lot grading and fill placement were able to be made based on our time at the project site, as well as the subsurface conditions logged in our test borings. Please refer to the ***Surface, Subsurface***, and ***General*** sections of this report for additional discussions.
3. The above discussions contain descriptions of the proposed project, as well as its potential impact on the hazard areas and surrounding properties. The new parking deck will be supported on deep foundations. These foundation systems will transmit the loads from the new construction through the loose fill and weathered soils to refusal in the stiff to hard, glacially compressed soils, which are not prone to deep seated instability.

A stabilization wall consisting of closely-spaced, heavily-reinforced, drilled concrete piles will need to be constructed on the east side of the development area to retain the upper soils in the event of future instability under code-required conditions for static and seismic cases. The use of the deep foundation systems will transfer the loads of the new parking deck to a competent soil layer and protect the development area in the event of a future shallow instability. In utilizing the recommended stabilization wall, the stability of the existing slope will not be adversely affected, and the proposed development will not increase the possibility for adversely impacting the adjacent lots outside of what already exists.
4. The proposed parking deck will encroach well within the City of Bellevue prescriptive steep slope buffer of 50 feet from the top of the eastern steep slope and will likely extend into the top of the steep slope. This prescriptive buffer has already been partially disturbed, but the area adjacent to the top of the steep slope appears to be mostly natural. The recommended stabilization wall is to be constructed at the eastern perimeter of the development area. Using a stabilization depth of 15 feet below the existing grade, it is our professional opinion that no buffer or setback from the top of the eastern steep slope can is necessary. Considering the implementation of a stabilization wall, it is our opinion that the

recommended buffers from the steep slope listed above are adequate to mitigate the landslide hazard to the new structures, and to prevent adverse impacts on the neighboring properties. The recommended stabilization system will also increase protection to Mallard Lane against future slope instability.

Section 20.25H.145 Critical Areas Report – Approval of Modification:

A. The proposal will not increase the geological hazards to adjacent properties due to being supported on deep foundations bearing into the glacially compressed soils that comprise the core of the site. The stabilization wall will be designed to retain the loose fill and weathered native soils within the development area. This stabilization wall will prevent any future failure on the steep slope from undermining the development area. This is an improvement over the existing condition, where there are no stabilizing measures at all.
B. The proposed modifications to the onsite buffers will not adversely impact other critical areas due to the construction of a stabilization wall. The prescriptive top-of-slope buffer has already been disturbed by the previous site development. The construction area will be replanted following the completion of construction.
C. The hazard to the constructed project is mitigated to a level equal to or less than would exist if the proposed modifications to critical area buffers were not approved. The recommended foundation systems will transmit the structural loading down through the loose fill and weathered soils to the dense and very dense, glacially compressed soils below. This will act to prevent a surcharge load to the loose fill soil on the slope and will not further adversely affect the critical area. The proposed stabilization wall will improve the stability of the development area to the standards of the Bellevue Land Use Code.
D. The proposed development protects life safety under the conditions that we anticipate. The proposed foundation systems and stabilization wall will protect the residence and other improvements in the event of future soil movement on the steep, eastern slope.
E. This geotechnical report is intended to satisfy the criteria for a geotechnical report demonstrating no adverse impacts on stability of surrounding slopes or structures.
F. From our understanding of the current development proposal, it will comply with best management practices.
G. We are not aware of any species of importance in the planned work area.

SEISMIC CONSIDERATIONS

In accordance with the International Building Code (IBC), the site class within 100 feet of the ground surface is best represented by Site Class Type D (Stiff Soil). As noted in the USGS website, the mapped spectral acceleration value for a 0.2 second (S_s) and 1.0 second period (S_1) equals 1.28g and 0.44g, respectively.

The IBC and ASCE 7 require that the potential for liquefaction (soil strength loss) during an earthquake be evaluated for the peak ground acceleration of the Maximum Considered Earthquake (MCE), which has a probability of occurring once in 2,475 years (2 percent probability of occurring in a 50-year period). The MCE peak ground acceleration adjusted for site class effects (F_{PGA}) equals 0.61g. The soils encountered in our test boring are not susceptible to seismic liquefaction under the ground motions of the MCE because of their dense, glacially compressed nature.

Sections 1803.5 of the IBC and 11.8 of ASCE 7 require that other seismic-related geotechnical design parameters (seismic surcharge for retaining wall design and slope stability) include the potential effects of the Design Earthquake. The peak ground acceleration for the Design Earthquake is defined in Section 11.2 of ASCE 7 as two-thirds (2/3) of the MCE peak ground acceleration, or 0.403g.

DRILLED CONCRETE PILES

Drilled concrete piers could be used to support the new elevated parking deck. These piles would be installed using larger drills and can attain higher vertical and lateral capacities than smaller diameter piling systems. Based on our explorations, we anticipate that the holes could be drilled without casing, but the contractor should be prepared to case the holes or use the slurry method if caving soil is encountered. Excessive ground loss in the drilled holes must be avoided to reduce the potential for settlement of adjacent structures. If water is present in a hole at the time concrete is poured, concrete must be tremied to the bottom of the hole.

A wide variety of depths and pile diameters are possible, but we recommend using a minimum pile diameter of 18 inches. For a minimum embedment of 10 feet into the dense to very dense native silt and silty sand soils and a pier diameter of 18 inches, we recommend assuming an allowable compressive capacity of 20 tons per pile. Center-to-center pile spacing should be no less than three times the pier diameter. The minimum pile length should be 25 feet (measured from below the existing ground); however, the required pile length may be greater to reach adequate embedment in areas.

We recommend reinforcing each pile its entire length. This typically consists of a cage of rebar extending a portion of the pile's length, with a full-length center bar. For design of the reinforcing, we recommend that the piles be assumed to have a point of fixity (point of maximum bending moment) at a depth of 10 feet below the top of the pile. The lateral capacity of a pile is a function of both the soil that surrounds the pile and the composition of the pier itself. Passive earth pressures on the grade beams will also provide some lateral resistance. If structural fill is placed against the outside of the grade beams, the design passive earth pressure from the fill can be assumed to be equal to that pressure exerted by an equivalent fluid with a density of 250 pcf. This passive pressure is an ultimate value that does not include safety factors.

PIPE PILES

Four-, 6-, or 8-inch-diameter pipe piles driven with 1,100-, 2,000-pound, or 3,000-pound hydraulic jackhammer to the following final penetration rates may be assigned the following compressive capacities.

INSIDE PILE DIAMETER	FINAL DRIVING RATE (1,100-pound hammer)	FINAL DRIVING RATE (2,000-pound hammer)	FINAL DRIVING RATE (3,000-pound hammer)	ALLOWABLE COMPRESSIVE CAPACITY
4 inches	10 sec/inch	4 sec/inch	n/a	10 tons
6 inches	20 sec/inch	10 sec/inch	6 sec/inch	15 tons

Note: The refusal criteria indicated in the above table are valid only for pipe piles that are installed using a hydraulic impact hammer carried on leads that allow the hammer to sit on the top of the pile during driving. If the piles are installed by alternative methods, such as a vibratory hammer or a hammer that is hard mounted to the installation machine, numerous load tests to 200 percent of the design capacity would be necessary to substantiate the allowable pile load. The appropriate number of load tests would need to be determined at the time the contractor and installation method are chosen.

As a minimum, Schedule 40 pipe should be used. The site soils are not highly organic and are not located near salt water. As a result, they do not have an elevated corrosion potential. Considering this, it is our opinion that standard "black" pipe can be used, and corrosion protection, such as galvanizing, is not necessary for the pipe piles.

Bellevue has adopted Seattle Director's Rule 10-2009, which contains several prescriptive requirements related to the use of pipe piles having a diameter of less than 10 inches. Under Director's Rule 10-2009, load tests are required on 3 percent of the installed piles up to a maximum of 5 piles, with a minimum of one pile load test on each project. Additionally, full-time observation of the pile installation by the geotechnical engineer-of-record is required by Director's Rule 10-2009.

Pile caps and grade beams should be used to transmit loads to the piles. Isolated pile caps should include a minimum of two piles to reduce the potential for eccentric loads being applied to the piles. Subsequent sections of pipe can be connected with slip or threaded couplers, or they can be welded together. If slip couplers are used, they should fit snugly into the pipe sections. This may require that shims be used or that beads of welding flux be applied to the outside of the coupler.

Lateral loads due to wind or seismic forces may be resisted by passive earth pressure acting on the vertical, embedded portions of the foundation. For this condition, the foundation must be either poured directly against relatively level, undisturbed soil or be surrounded by level compacted fill. We recommend using a passive earth pressure of 250 pounds per cubic foot (pcf) for this resistance. If the ground in front of a foundation is loose or sloping, the passive earth pressure given above will not be appropriate. We recommend a safety factor of at least 1.5 for the foundation's resistance to lateral loading, when using the above ultimate passive value.

STABILIZATION WALL

As discussed in the ***General*** section, a stabilization wall is recommended along the eastern side of the development area. Based on the soil conditions encountered in our test boring near the proposed parking deck location, and our slope stability analysis, we recommend that the wall be designed for a retention depth of approximately 15 feet. This stabilization depth is measured from the existing grade along the eastern side of the development area. Several return piles will be needed along the north and south ends of the stabilization wall.

The stabilization wall should consist of closely spaced, drilled soldier piles spaced no further apart than 3 feet edge-to-edge so that the soil will arch between them. Drilled piles would be constructed by setting steel H-beams or rebar cages in drilled holes and grouting the spaces between the steel reinforcements and the soil with concrete for the entire height of the hole. Excessive ground loss in the drilled holes must be avoided to reduce the potential for settlement of adjacent structures. If water is present in a hole at the time of construction, concrete must be tremied to the bottom of the hole. The contractor should be well prepared for this and have at least one casing and a tremie pipe of sufficient length prior to starting drilling.

The stabilization wall should be designed for an active soil pressure equal to that pressure exerted by an equivalent fluid with a unit weight of 55 pcf to account for a sloping ground condition. A seismic surcharge should not need to be added to this lateral earth pressure, as the stabilization wall will not actually have to retain soil until after the piles are exposed by slope movement. An ultimate (no safety factor included) passive soil pressure equal to that pressure exerted by a fluid with a density of 400 pcf will resist the lateral movement of the piles below the stabilization depth.

If the stabilization piles are to be used to support the eastern side of the parking deck, an allowable adhesion of 1,000 psf can be assumed along the embedded portion of the piles below the retained heights.

Typical design considerations for a stabilization wall are depicted on Plate 4.

LIMITATIONS

The conclusions and recommendations contained in this report are based on site conditions as they existed at the time of our exploration and assume that the soil and groundwater conditions encountered in the test borings are representative of subsurface conditions on the site. If the subsurface conditions encountered during construction are significantly different from those observed in our explorations, we should be advised at once so that we can review these conditions and reconsider our recommendations where necessary. Unanticipated conditions are commonly encountered on construction sites and cannot be fully anticipated by merely taking samples in test borings. Subsurface conditions can also vary between exploration locations. Such unexpected conditions frequently require making additional expenditures to attain a properly constructed project. It is recommended that the owner consider providing a contingency fund to accommodate such potential extra costs and risks. This is a standard recommendation for all projects.

The recommendations presented in this report are directed toward the protection of only the proposed structure from damage due to slope movement. Predicting the future behavior of steep slopes and the potential effects of development on their stability is an inexact and imperfect science that is currently based mostly on the past behavior of slopes with similar characteristics. Landslides and soil movement can occur on steep slopes before, during, or after the development of property. The owner of any property containing or located close to steep slopes must ultimately accept the possibility that some slope movement could occur, resulting in possible loss of ground or damage to the facilities around the proposed structure.

This report has been prepared for the exclusive use of Integral Construction and its representatives, for specific application to this project and site. Our conclusions and recommendations are professional opinions derived in accordance with our understanding of current local standards of practice, and within the scope of our services. No warranty is expressed or implied. The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. Our services also do not include assessing or minimizing the potential for biological hazards, such as mold, bacteria, mildew, and fungi in either the existing or proposed site development.

ADDITIONAL SERVICES

In addition to reviewing the final plans, Geotech Consultants, Inc. should be retained to provide geotechnical consultation, testing, and observation services during construction. This is to confirm that subsurface conditions are consistent with those indicated by our exploration, to evaluate whether earthwork and foundation construction activities comply with the general intent of the recommendations presented in this report, and to provide suggestions for design changes in the event subsurface conditions differ from those anticipated prior to the start of construction. However, our work would not include the supervision or direction of the actual work of the contractor and its

employees or agents. Also, job and site safety, and dimensional measurements, will be the responsibility of the contractor.

During the construction phase, we will provide geotechnical observation and testing services when requested by you or your representatives. Please be aware that we can only document site work we actually observe. It is still the responsibility of your contractor or on-site construction team to verify that our recommendations are being followed, whether we are present at the site or not.

The following attachments complete this report:

Plate 1	Vicinity Map
Plate 2	Site Exploration Plan
Plate 3	Test Boring Log
Plate 4	Typical Stabilization Wall Detail
	Slope Stability Analyses

We appreciate the opportunity to be of service on this project. Please contact us if you have any questions, or if we can be of further assistance.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.

3/23/2022

Marc R. McGinnis, P.E.
Principal

MKM/MRM:kg

NORTH

(Source: King County iMap)

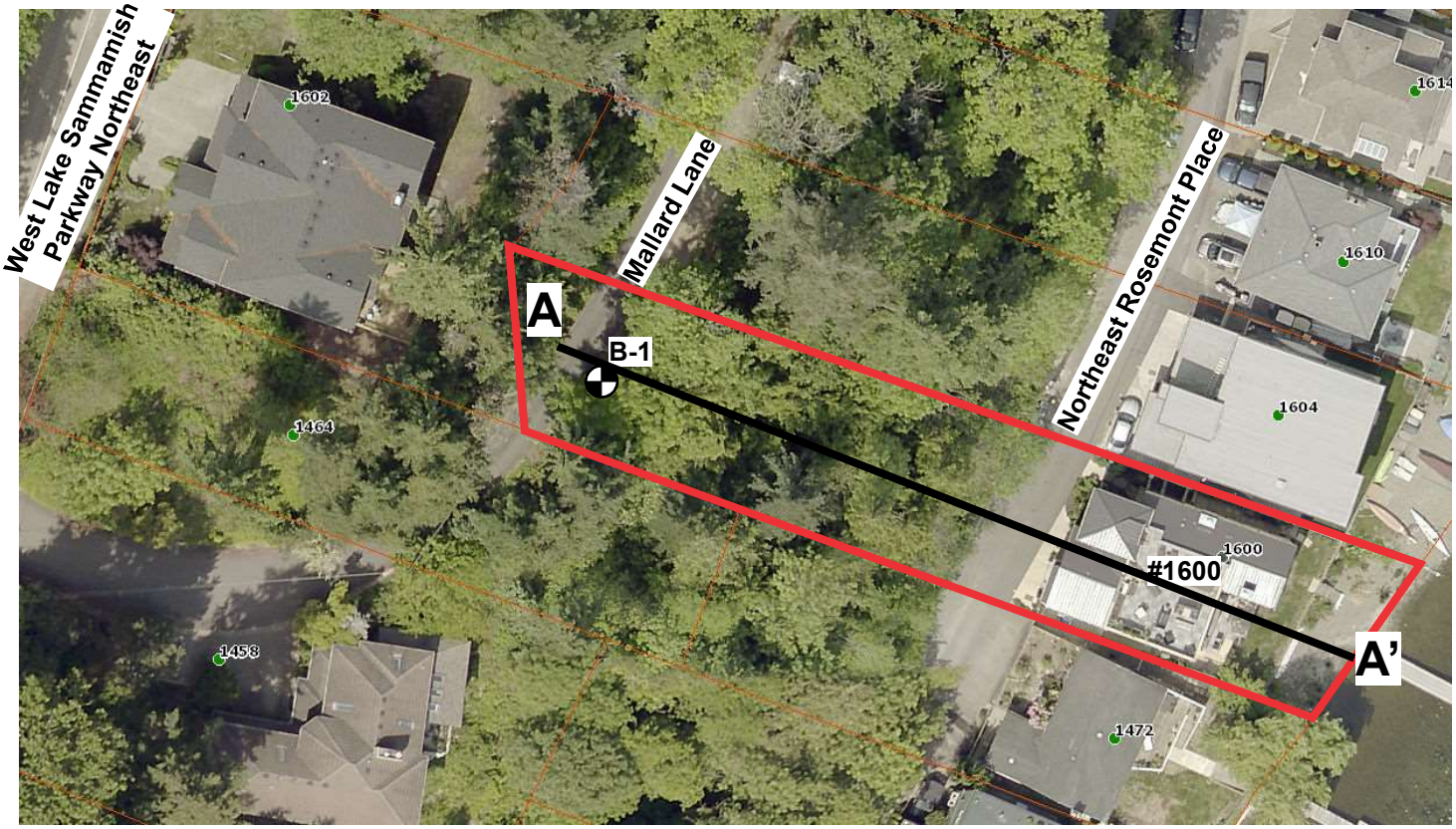
GEOTECH
CONSULTANTS, INC.

VICINITY MAP

1600 W Lake Sammamish Parkway NE
Bellevue, Washington

Job No:	Date:		Plate:
21319	March 2022		1

NORTH



Legend:

Test Boring Location

A-A' Slope Stability Cross Section Location

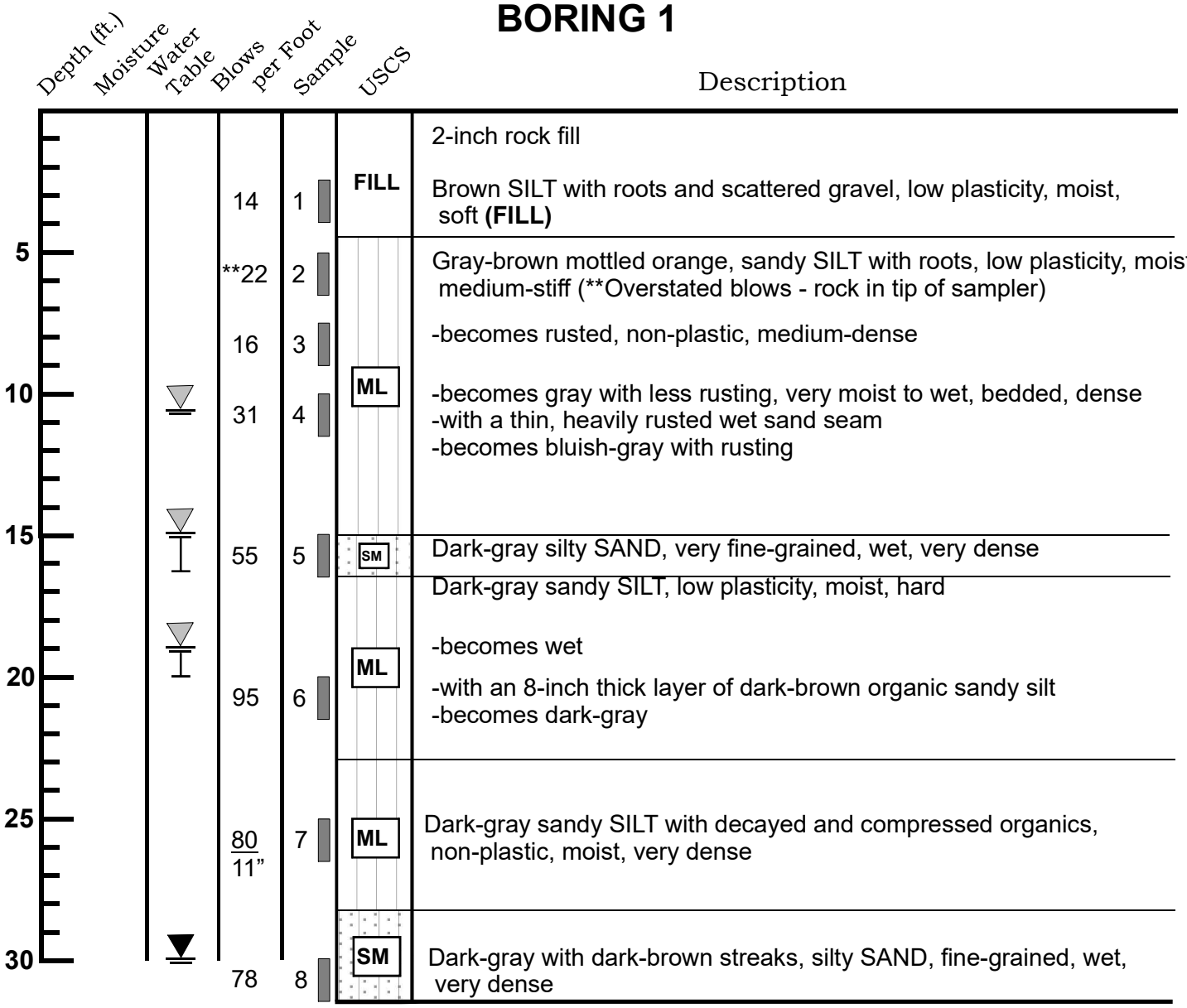
GEOTECH CONSULTANTS, INC.

SITE EXPLORATION PLAN

1600 W Lake Sammamish Parkway NE
Bellevue, Washington

Job No:	Date:		Plate:
21319	March 2022	No Scale	2

BORING 1



*** Test boring was terminated at 31.5 feet on February 25, 2022 due to auger refusal.**

*** Perched groundwater was encountered at 10.5 feet and from 15 to 16.5 and 19 to 20 feet during drilling.**

*** Groundwater was encountered at 30 feet during drilling**

GEOTECH
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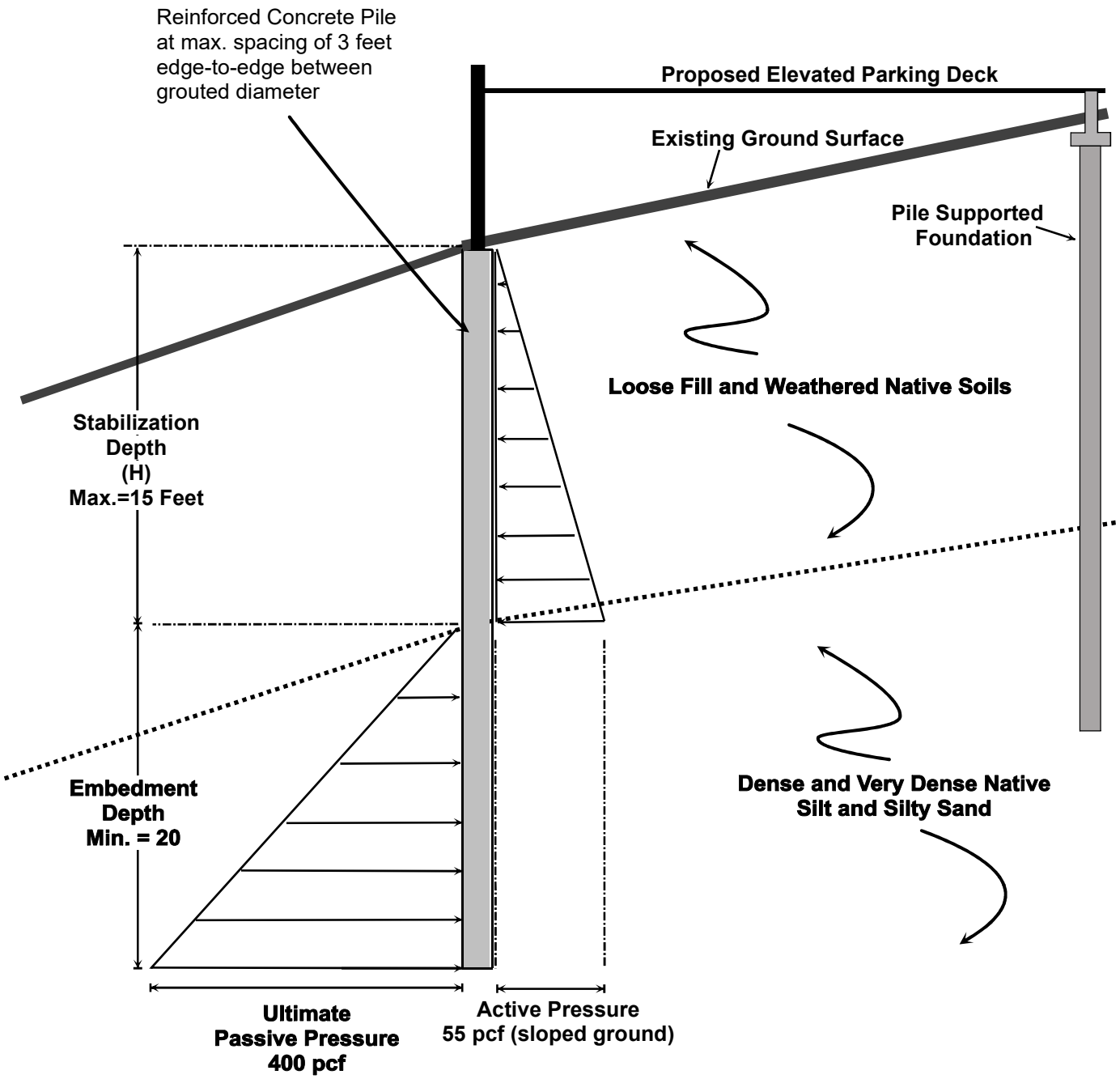
TEST BORING LOG

1600 W Lake Sammamish Parkway NE
Bellevue, Washington

Job	Date:	Logged by:	Plate:
21319	March 2022	MKM	3



Notes:

(1) The report should be referenced for specifics regarding design and installation.
(2) Active pressures act over the pile spacing.
(3) Passive pressures act over twice the grouted pile diameter or the pile spacing, whichever is smaller.
on the shoring wall.
(4) An allowable skin friction of 1,000 pounds per square foot (psf) can be attributed to the embedded portion of the piles if the edge of the parking deck is to be supported by the stabilization piles.

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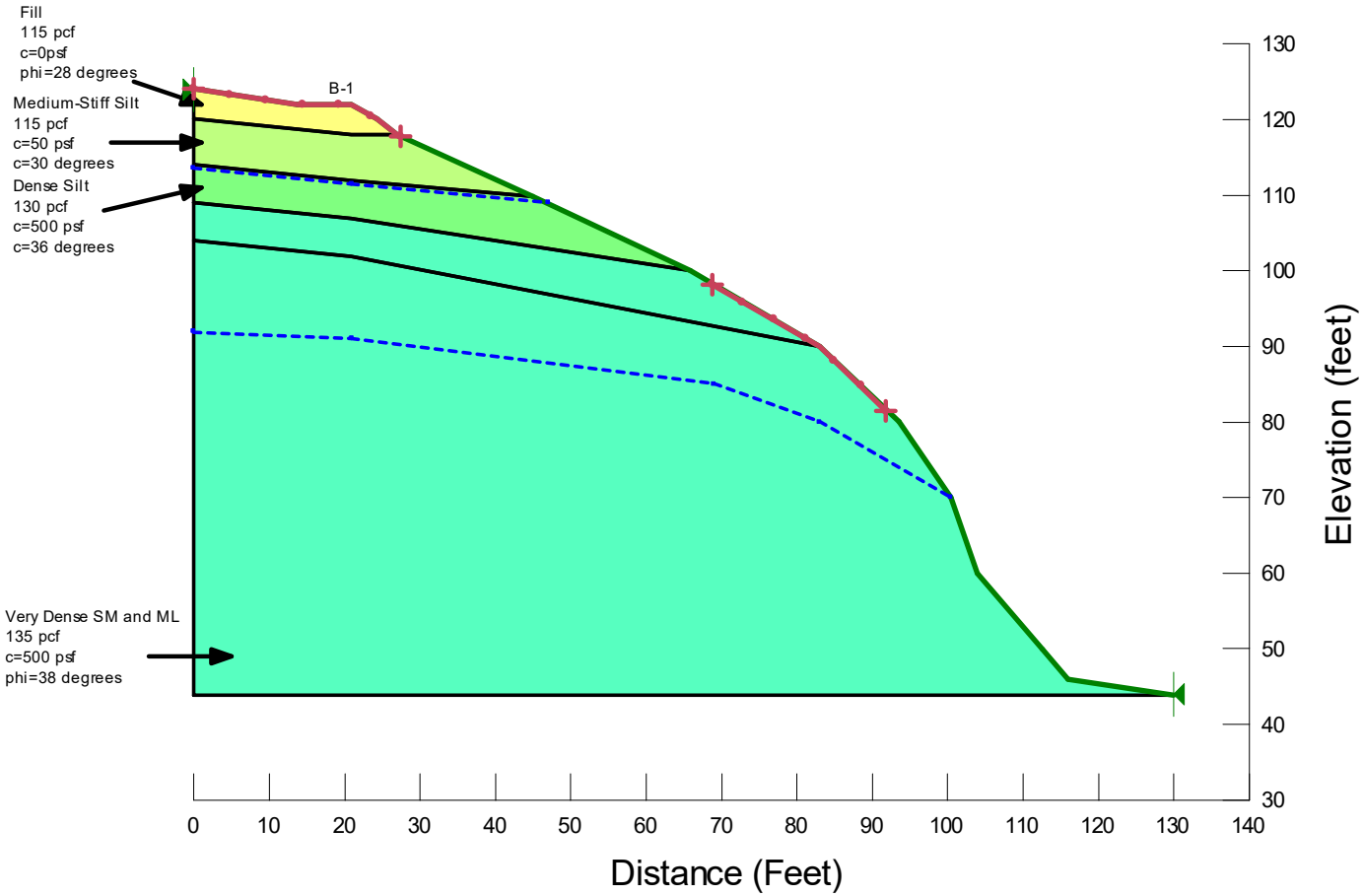
TYPICAL STABILIZATION WALL DETAIL

1600 W Lake Sammamish Parkway NE
Bellevue, Washington

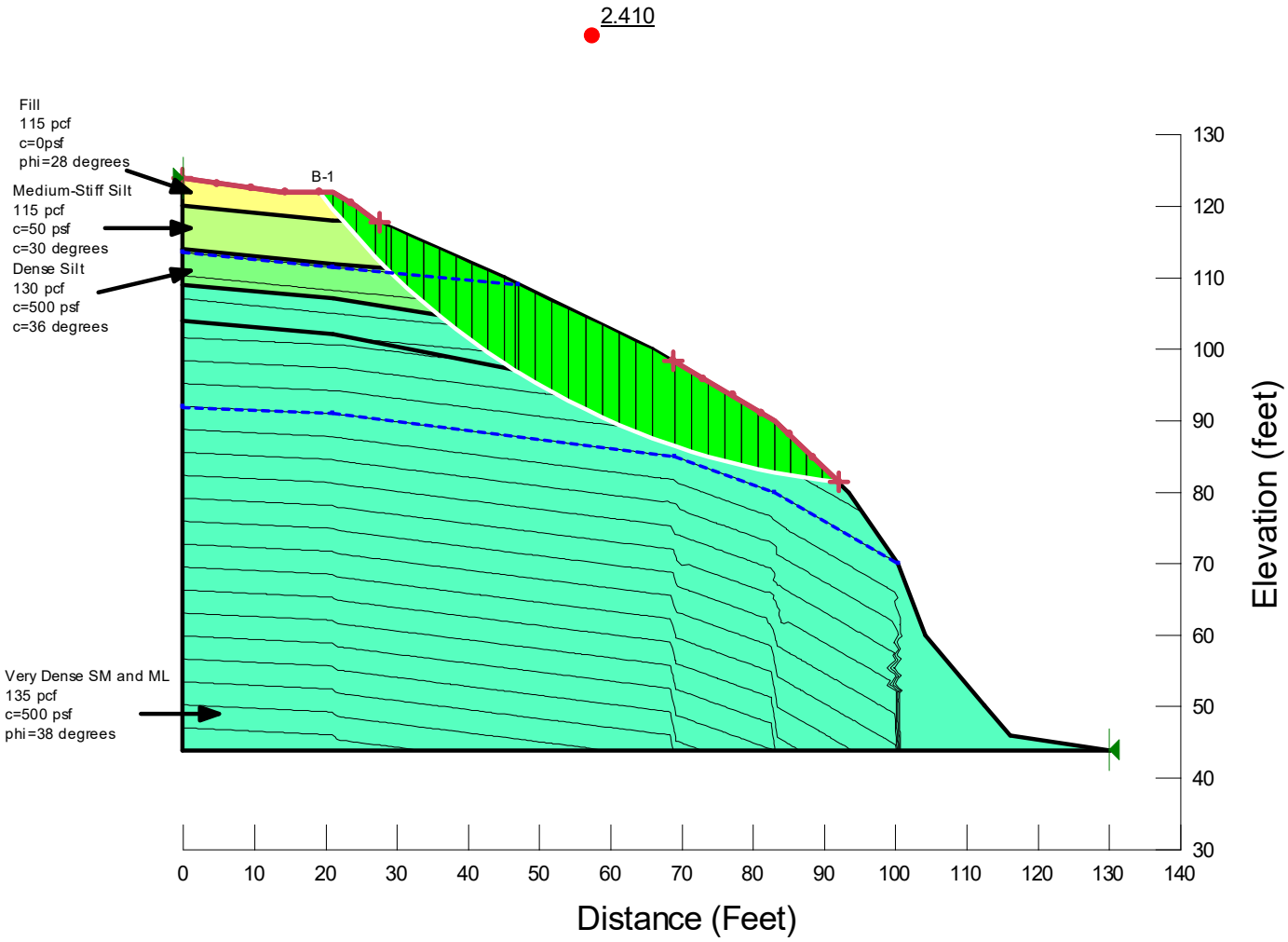
Job No:	Date:		Plate:
21319	March 2022		4

Appendix A
Slope Stability Analysis
JN 21319
Integral Construction (McKissick)

21319 Integral Construction (McKissick)
Static



21319 Integral Construction (McKissick)
Static



Static

File Information

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Title: 21319 Integral (McKissick)
Created By: Matt McGinnis
Last Edited By: Matt McGinnis
Revision Number: 42
Date: 3/21/2022
Time: 10:34:40 AM
Tool Version: 8.15.6.13446
File Name: 21319 AA'.gsz
Directory: C:\Users\MattM\Geotech Consultants\Shared Documents - Documents\2021 Jobs\21319 Integral Construction (MRM)\21319 Slope Stability\
Last Solved Date: 3/21/2022
Last Solved Time: 10:34:43 AM

Project Settings

Length(L) Units: Feet
Time(t) Units: Seconds
Force(F) Units: Pounds
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D
Element Thickness: 1

Analysis Settings

Static

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
Side Function
Interslice force function option: Half-Sine
PWP Conditions Source: Piezometric Line
Apply Phreatic Correction: Yes
Use Staged Rapid Drawdown: No
Slip Surface
Direction of movement: Left to Right
Use Passive Mode: No
Slip Surface Option: Entry and Exit
Critical slip surfaces saved: 1
Resisting Side Maximum Convex Angle: 1 °
Driving Side Maximum Convex Angle: 5 °
Optimize Critical Slip Surface Location: No
Tension Crack

Tension Crack Option: (none)
F of S Distribution
F of S Calculation Option: Constant
Advanced
Number of Slices: 30
F of S Tolerance: 0.001
Minimum Slip Surface Depth: 0.1 ft
Search Method: Root Finder
Tolerable difference between starting and converged F of S: 3
Maximum iterations to calculate converged lambda: 20
Max Absolute Lambda: 2

Materials

Fill

Model: Mohr-Coulomb
Unit Weight: 115 pcf
Cohesion': 0 psf
Phi': 28 °
Phi-B: 0 °

Medium-Stiff Silt

Model: Mohr-Coulomb
Unit Weight: 115 pcf
Cohesion': 50 psf
Phi': 30 °
Phi-B: 0 °

Dense Silt

Model: Mohr-Coulomb
Unit Weight: 130 pcf
Cohesion': 500 psf
Phi': 36 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

Very Dense Silt and Silty Sand

Model: Mohr-Coulomb
Unit Weight: 135 pcf
Cohesion': 500 psf
Phi': 38 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 2

Wet Very Dense SM and ML

Model: Mohr-Coulomb
Unit Weight: 135 pcf
Cohesion': 500 psf
Phi': 38 °
Phi-B: 0 °

Pore Water Pressure
Piezometric Line: 1

Slip Surface Entry and Exit

Left Projection: Range
Left-Zone Left Coordinate: (0, 124) ft
Left-Zone Right Coordinate: (27.45, 117.8) ft
Left-Zone Increment: 6
Right Projection: Range
Right-Zone Left Coordinate: (68.724, 98.3) ft
Right-Zone Right Coordinate: (91.925, 81.5) ft
Right-Zone Increment: 6
Radius Increments: 6

Slip Surface Limits

Left Coordinate: (0, 124) ft
Right Coordinate: (130, 44) ft

Piezometric Lines

Piezometric Line 1

Coordinates

	X (ft)	Y (ft)
Coordinate 1	0	113.54769
Coordinate 2	21	111.5
Coordinate 3	47.08	109

Piezometric Line 2

Coordinates

	X (ft)	Y (ft)
Coordinate 1	0	92
Coordinate 2	21	91
Coordinate 3	69	85
Coordinate 4	83	80
Coordinate 5	100.4	70

Seismic Coefficients

Horz Seismic Coef.: 0

Points

	X (ft)	Y (ft)
Point 1	0	124

Point 2	13.8	122
Point 3	21	122
Point 4	24.2	120
Point 5	45	110
Point 6	65.8	100
Point 7	83	90
Point 8	93.5	80
Point 9	100.4	70
Point 10	104	60
Point 11	112.5	50
Point 12	116	46
Point 13	130	44
Point 14	0	44
Point 15	21	118
Point 16	21	112
Point 17	21	107
Point 18	21	91
Point 19	27	118
Point 20	0	120
Point 21	0	114
Point 22	0	109
Point 23	21	111.5
Point 24	21	102
Point 25	0	104

Regions

	Material	Points	Area (ft^2)
Region 1	Fill	1,2,3,4,19,15,20	89.2
Region 2	Medium-Stiff Silt	19,5,16,21,20,15	222
Region 3	Dense Silt	5,6,17,22,21,16	316.2
Region 4	Wet Very Dense SM and ML	22,25,24,7,6,17	423.8
Region 5	Very Dense Silt and Silty Sand	14,13,12,11,10,9,8,7,24,25	5,304.5

Current Slip Surface

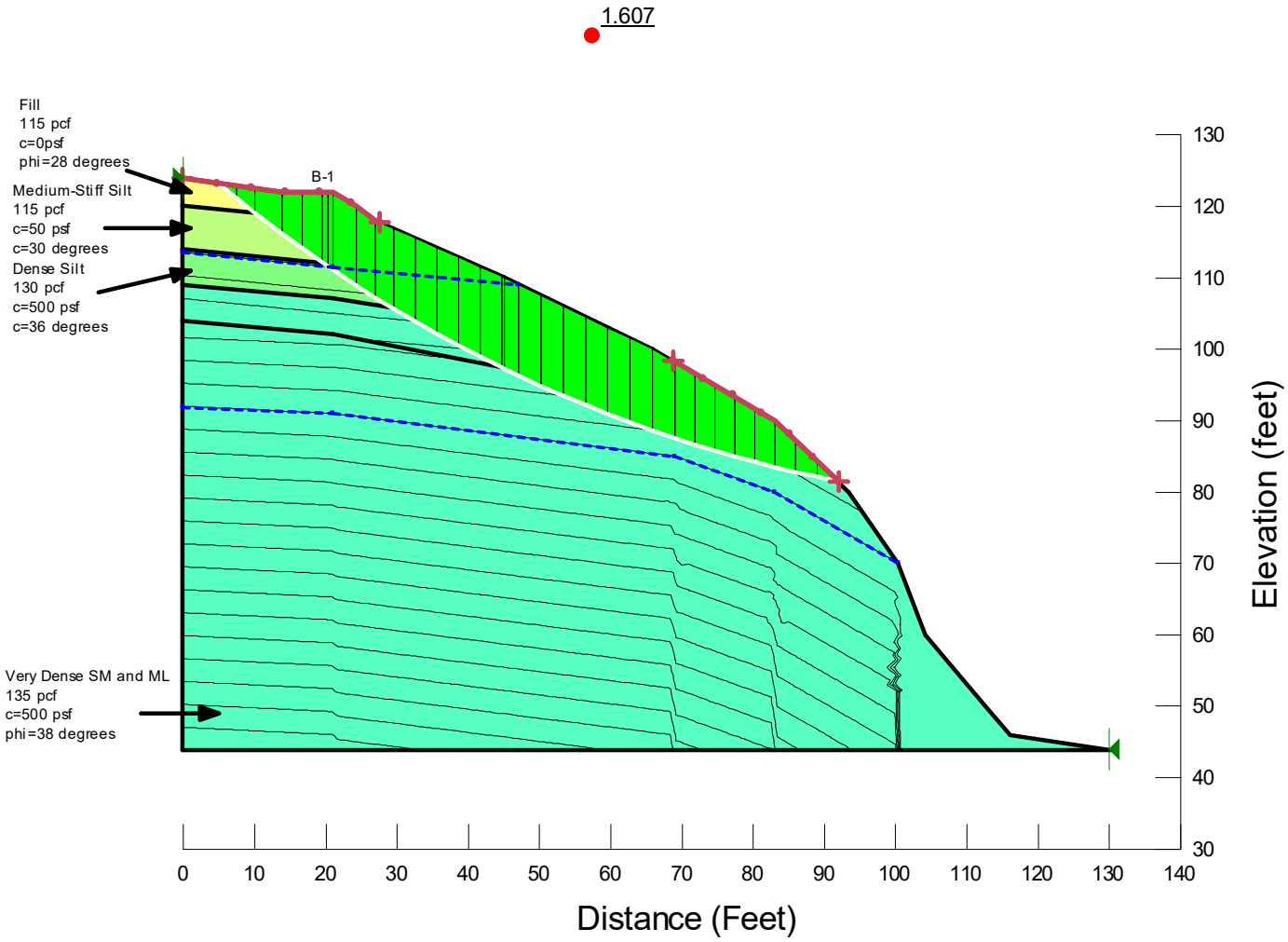
Slip Surface: 241
F of S: 2.410
Volume: 657.857 ft^3
Weight: 86,387.992 lbs
Resisting Moment: 9,585,691.5 lbs-ft
Activating Moment: 3,976,553.8 lbs-ft
Resisting Force: 81,382.538 lbs
Activating Force: 33,762.601 lbs
F of S Rank (Analysis): 1 of 343 slip surfaces
F of S Rank (Query): 1 of 343 slip surfaces
Exit: (91.925, 81.5) ft
Entry: (19.089919, 122) ft
Radius: 105.49968 ft
Center: (102.60902, 186.4573) ft

Slip Slices

	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
Slice 1	20.044959	120.79905	0	103.83984	55.212625	0
Slice 2	21.667925	118.79905	0	233.43712	124.12072	0
Slice 3	23.267925	116.93627	0	276.04529	159.37482	50
Slice 4	25.6	114.37681	0	343.27267	198.18857	50
Slice 5	27.747476	112.12825	0	405.92017	234.35812	50
Slice 6	28.831435	111.04623	-18.360297	347.05129	252.14752	500
Slice 7	30.303486	109.64805	59.366605	435.41456	273.21483	500
Slice 8	32.574624	107.57092	174.33796	562.86315	282.28007	500
Slice 9	34.845761	105.61097	282.06382	674.46073	285.09304	500
Slice 10	37.108664	103.7662	382.71709	773.9275	305.64707	500
Slice 11	39.363331	102.02874	476.78372	868.9877	306.42333	500
Slice 12	41.617999	100.38541	565.02973	956.89856	306.16148	500
Slice 13	43.872666	98.830921	647.78309	1,039.6015	306.12212	500
Slice 14	45.80877	97.558515	714.98271	1,102.1679	302.50224	500
Slice 15	46.84877	96.897801	-560.87947	1,122.6112	877.07998	500
Slice 16	48.25	96.05035	-519.5735	1,166.4274	911.31298	500
Slice 17	50.59	94.683686	-453.57684	1,238.3952	967.54038	500
Slice 18	52.93	93.395926	-392.42807	1,306.4702	1,020.7264	500
Slice 19	55.27	92.183833	-335.92832	1,369.8935	1,070.2781	500
Slice 20	57.61	91.044522	-283.90023	1,427.6074	1,115.3692	500
Slice 21	59.95	89.975411	-236.18526	1,478.2766	1,154.9563	500
Slice 22	62.29	88.974189	-192.64138	1,520.3264	1,187.8091	500
Slice 23	64.63	88.038782	-153.14119	1,552.0023	1,212.5571	500
Slice 24	67.4	87.020751	-111.86695	1,550.9533	1,211.7375	500
Slice 25	70.166667	86.077154	-82.669796	1,514.8209	1,183.5078	500
Slice 26	72.5	85.352659	-88.693056	1,464.6473	1,144.3079	500
Slice 27	74.833333	84.686813	-97.961995	1,396.2557	1,090.8745	500
Slice 28	77.166667	84.078471	-110.41324	1,309.2679	1,022.9122	500
Slice 29	79.5	83.526611	-125.99035	1,203.9659	940.64129	500

Slice 30	81.833333	83.030331	-144.64324	1,081.3341	844.83078	500
Slice 31	84.115625	82.59733	-151.9077	892.16086	697.03246	500
Slice 32	86.346875	82.224623	-194.57521	639.53411	499.65881	500
Slice 33	88.578125	81.900856	-239.53828	378.51495	295.72829	500
Slice 34	90.809375	81.625572	-286.77562	112.75904	88.09702	500

21319 Integral Construction (McKissick)
Seismic



Seismic

File Information

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Last Solved Date: 3/21/2022
Last Solved Time: 10:34:44 AM

Project Settings

Length(L) Units: Feet
Time(t) Units: Seconds
Force(F) Units: Pounds
Pressure(p) Units: psf
Strength Units: psf
Unit Weight of Water: 62.4 pcf
View: 2D
Element Thickness: 1

Analysis Settings

Seismic

Kind: SLOPE/W
Method: Morgenstern-Price
Settings
Side Function
Interslice force function option: Half-Sine
PWP Conditions Source: Piezometric Line
Apply Phreatic Correction: Yes
Use Staged Rapid Drawdown: No
Slip Surface
Direction of movement: Left to Right
Use Passive Mode: No
Slip Surface Option: Entry and Exit
Critical slip surfaces saved: 1
Resisting Side Maximum Convex Angle: 1 °
Driving Side Maximum Convex Angle: 5 °
Optimize Critical Slip Surface Location: No
Tension Crack

Tension Crack Option: (none)
F of S Distribution
F of S Calculation Option: Constant
Advanced
Number of Slices: 30
F of S Tolerance: 0.001
Minimum Slip Surface Depth: 0.1 ft
Search Method: Root Finder
Tolerable difference between starting and converged F of S: 3
Maximum iterations to calculate converged lambda: 20
Max Absolute Lambda: 2

Materials

Fill

Model: Mohr-Coulomb
Unit Weight: 115 pcf
Cohesion': 0 psf
Phi': 28 °
Phi-B: 0 °

Medium-Stiff Silt

Model: Mohr-Coulomb
Unit Weight: 115 pcf
Cohesion': 50 psf
Phi': 30 °
Phi-B: 0 °

Dense Silt

Model: Mohr-Coulomb
Unit Weight: 130 pcf
Cohesion': 500 psf
Phi': 36 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 1

Very Dense Silt and Silty Sand

Model: Mohr-Coulomb
Unit Weight: 135 pcf
Cohesion': 500 psf
Phi': 38 °
Phi-B: 0 °
Pore Water Pressure
Piezometric Line: 2

Wet Very Dense SM and ML

Model: Mohr-Coulomb
Unit Weight: 135 pcf
Cohesion': 500 psf
Phi': 38 °
Phi-B: 0 °

Pore Water Pressure
Piezometric Line: 1

Slip Surface Entry and Exit

Left Projection: Range
Left-Zone Left Coordinate: (0, 124) ft
Left-Zone Right Coordinate: (27.45, 117.8) ft
Left-Zone Increment: 6
Right Projection: Range
Right-Zone Left Coordinate: (68.724, 98.3) ft
Right-Zone Right Coordinate: (91.925, 81.5) ft
Right-Zone Increment: 6
Radius Increments: 6

Slip Surface Limits

Left Coordinate: (0, 124) ft
Right Coordinate: (130, 44) ft

Piezometric Lines

Piezometric Line 1

Coordinates

	X (ft)	Y (ft)
Coordinate 1	0	113.54769
Coordinate 2	21	111.5
Coordinate 3	47.08	109

Piezometric Line 2

Coordinates

	X (ft)	Y (ft)
Coordinate 1	0	92
Coordinate 2	21	91
Coordinate 3	69	85
Coordinate 4	83	80
Coordinate 5	100.4	70

Seismic Coefficients

Horz Seismic Coef.: 0.201

Points

	X (ft)	Y (ft)
Point 1	0	124

Point 2	13.8	122
Point 3	21	122
Point 4	24.2	120
Point 5	45	110
Point 6	65.8	100
Point 7	83	90
Point 8	93.5	80
Point 9	100.4	70
Point 10	104	60
Point 11	112.5	50
Point 12	116	46
Point 13	130	44
Point 14	0	44
Point 15	21	118
Point 16	21	112
Point 17	21	107
Point 18	21	91
Point 19	27	118
Point 20	0	120
Point 21	0	114
Point 22	0	109
Point 23	21	111.5
Point 24	21	102
Point 25	0	104

Regions

	Material	Points	Area (ft^2)
Region 1	Fill	1,2,3,4,19,15,20	89.2
Region 2	Medium-Stiff Silt	19,5,16,21,20,15	222
Region 3	Dense Silt	5,6,17,22,21,16	316.2
Region 4	Wet Very Dense SM and ML	22,25,24,7,6,17	423.8
Region 5	Very Dense Silt and Silty Sand	14,13,12,11,10,9,8,7,24,25	5,304.5

Current Slip Surface

Slip Surface: 93
F of S: 1.607
Volume: 809.75327 ft^3
Weight: 104,438.82 lbs
Resisting Moment: 19,360,526 lbs-ft
Activating Moment: 12,045,419 lbs-ft
Resisting Force: 90,855.126 lbs
Activating Force: 56,517.255 lbs
F of S Rank (Analysis): 1 of 343 slip surfaces
F of S Rank (Query): 1 of 343 slip surfaces
Exit: (91.925, 81.5) ft
Entry: (4.7588061, 123.31032) ft
Radius: 195.0329 ft
Center: (130.05875, 272.76853) ft

Slip Slices

	X (ft)	Y (ft)	PWP (psf)	Base Normal Stress (psf)	Frictional Strength (psf)	Cohesive Strength (psf)
Slice 1	6.0766811	122.22497	0	77.080913	40.984649	0
Slice 2	8.7124313	120.09217	0	216.38018	115.05138	0
Slice 3	11.915153	117.60954	0	342.6057	197.80349	50
Slice 4	15.206651	115.14937	0	487.99049	281.74144	50
Slice 5	18.019952	113.13712	0	614.14432	354.57639	50
Slice 6	19.849156	111.86043	-15.342641	637.86205	463.4339	500
Slice 7	20.635855	111.32421	13.061007	686.1555	489.03177	500
Slice 8	22.6	110.02095	81.968845	729.68459	470.59304	500
Slice 9	25.6	108.07653	184.41451	753.74885	413.64561	500
Slice 10	28.234963	106.43257	270.44617	781.95376	371.63202	500
Slice 11	30.990871	104.77963	356.31564	836.822	375.41271	500
Slice 12	34.032761	103.02228	446.94604	893.54307	348.91984	500
Slice 13	37.074651	101.33692	533.12528	946.75927	323.16629	500
Slice 14	40.116542	99.721443	614.9835	999.22932	300.20573	500
Slice 15	43.158432	98.173909	692.64068	1,053.4159	281.86852	500
Slice 16	44.839688	97.33902	-572.55817	1,191.1679	930.64234	500
Slice 17	46.04	96.764681	-546.48919	1,216.7562	950.63412	500
Slice 18	48.64	95.551507	-491.91979	1,268.4995	991.0604	500
Slice 19	51.76	94.150956	-429.83152	1,326.9037	1,036.6908	500
Slice 20	54.88	92.815396	-371.73631	1,378.4491	1,076.9625	500
Slice 21	58	91.543389	-317.54585	1,420.3307	1,109.684	500
Slice 22	61.12	90.333607	-267.17843	1,449.4997	1,132.4733	500
Slice 23	64.24	89.184818	-220.55845	1,462.8949	1,142.9387	500
Slice 24	67.4	88.082689	-177.11243	1,437.6461	1,123.2123	500
Slice 25	70.4	87.090032	-143.33542	1,374.5562	1,073.921	500
Slice 26	73.2	86.213514	-150.16907	1,295.2712	1,011.9768	500
Slice 27	76	85.382933	-159.54492	1,196.6177	934.90019	500
Slice 28	78.8	84.597681	-171.42929	1,079.4696	843.37408	500
Slice 29	81.6	83.857191	-185.7909	945.49165	738.69903	500

Slice 30	84.4875	83.140594	-187.41554	725.10546	566.51448	500
Slice 31	87.4625	82.450193	-235.23099	419.04873	327.39675	500
Slice 32	90.4375	81.808633	-285.33744	103.14254	80.583786	500

CRITICAL AREAS REPORT
McKissick Residence – Bellevue, WA

Prepared for:

Ashley and Ian McKissick
1600 West Lake Sammamish Parkway NE
Bellevue, WA 98008

Prepared by:

THE WATERSHED COMPANY
750 Sixth Street South
Kirkland . WA 98033
p 425.822.5242
f 425.827.8136
watershedco.com

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The Watershed Company Reference Number:
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The Watershed Company Contact Person:
Amanda Fleischman

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MCKISSICK RESIDENCE – BELLEVUE, WA

1 INTRODUCTION

1.1 Background and Purpose

The purpose of this report is to document potential critical area impacts associated with the proposed site improvements for a single-family residence located on the western shore of Lake Sammamish in the City of Bellevue, Washington (Figure 1). The property includes a single-family residence (built in 2016) with an attached garage and dock. The home is situated near the base of a steep slope critical area that slopes down to the southeast in the western and central portions of the property. Two roads bisect the property; NE Rosemont Place is located between the toe of the slope and the house and Mallard Lane is located at the top of the slope.

The applicant proposes to construct a parking platform with a stabilization wall on the upper portion of the slope, adjacent to Mallard Lane. This improvement would be located within the steep slope buffer and a small portion of the steep slope area. This report is intended to describe habitat impacts and mitigation associated with the parking platform construction.

Bellevue Land Use Code (LUC) 20.25H.230 requires compliance with specific critical areas report criteria as part of any modification to a critical area or critical area buffer/setback. This report fulfills these criteria. This report presents a detailed discussion of the habitat and vegetation within the project area and how the proposed development can be achieved with no net loss of on-site or off-site critical area functions and values.

Further, pursuant to LUC 20.25H.250(C)(1), this report has been prepared in conjunction with a geotechnical analysis report by Geotech Consultants, INC. (Geotech). The majority of technical geological hazard discussion can be found in Geotech's report (*Geotechnical Engineering Study Proposed Parking Deck 1600 West Lake Sammamish Parkway Northeast Bellevue, Washington* [Geotech. 3/23/2022]) (geotechnical report). The geotechnical report concluded: "*The prescriptive top-of-slope buffer has already been disturbed by the previous site development"* and "*the stabilization wall will not increase or decrease the potential for future slope movement on the steep slope to the east of the development area, but will protect the development area behind the stabilization wall in the event of future slope instability."*

Figure 1. Vicinity Map.

1.2 Methods

Personnel from The Watershed Company visited the site on September 14, 2022, to evaluate existing site conditions. Vegetative structure and composition, special habitat features, presence of wildlife species and signs, and human disturbance were assessed, which inform the discussion of habitat are presented in this report. Observations of established trees and dominant plant species on-site were utilized in preparation of the associated Mitigation Plan (Appendix A). The results of the arborist assessment can be found in the Arborist Report, dated November 2022 (Appendix B).

2 SUBJECT PROPERTY

2.1 Location and Description

The subject project is located at 1600 West Lake Sammamish Pkwy NE (parcel #7430500140) in the City of Bellevue. Lake Sammamish borders the project area to the east, and single-family residences are located to the north and south of the property. The subject property is approximately 12,565 square-feet in size and is currently developed with a single-family residence and associated site improvements, along with an ornamental landscape. The site is zoned single

family residential (R-2.5). The rectangular property extends more than 200 feet landward from the lake. The property is approximately 0.29 acres in size.

The property includes portions of a steep slope that extend from the western edge of the property, down to the approximate center of the parcel and ending in a steep scarp adjacent to the western edge of NE Rosemont Place. Slopes extend from an elevation of approximately 125 feet down to a terrace on the lakefront at around 35 feet (Figure 2). There is a flat gravel area at the top of the slope adjacent to Mallard Lane which is the location of the proposed parking platform (Figure 3).

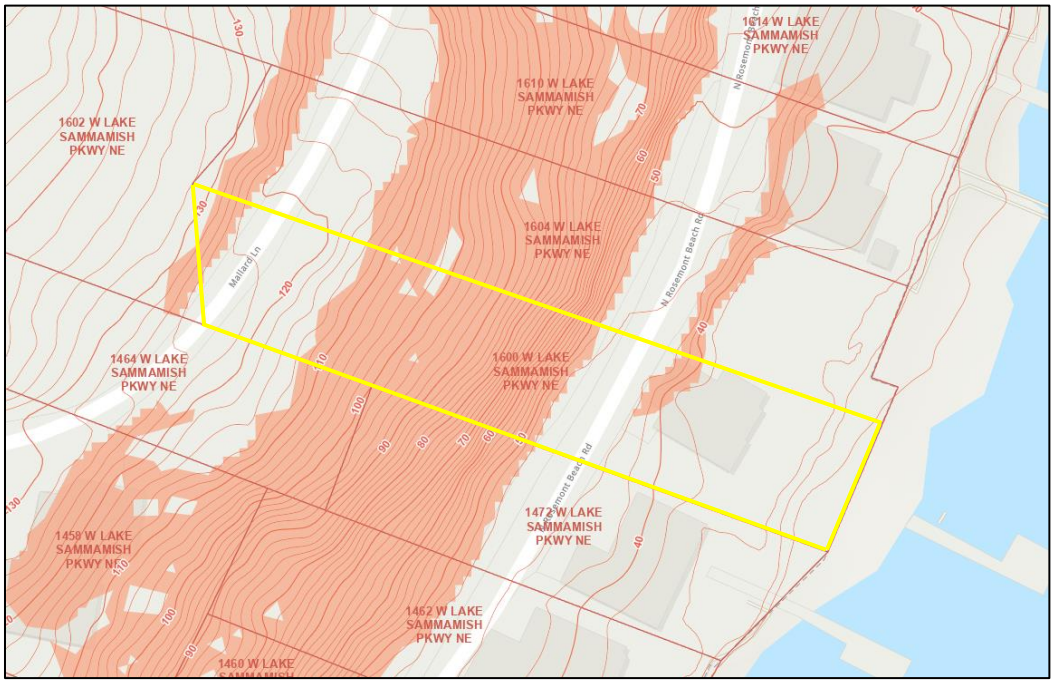


Figure 2. Steep slope areas, highlighted in orange, on the subject parcel.

Figure 3. View of gravel parking area at the top of slope on subject property.

3 CRITICAL AREAS

3.1 Geologic Hazard Areas

The subject property contains an area of steep slopes that meet the City's definition for critical area as a type of geologic hazard area. The area of steep slope has been determined by the project surveyor and is located near the west central portion of the parcel, extending on the northern and southern adjacent parcels. Vegetation located in and adjacent to this critical area provides a number of functions, discussed below.

Vegetation

The proposed project area is dominated by a robust canopy cover from native trees; primarily western red cedar (*Thuja plicata*), with an understory of English ivy (Figure 4). Further downslope, there are sparse sections of understory, with little vegetation aside from the existing western red cedar canopy (Figure 5). Bigleaf maple (*Acer macrophyllum*), beaked hazelnut (*Corylus cornuta*), osoberry (*Oemleria cerasiformis*), trailing blackberry (*Rubus ursinus*), and sword fern (*Polystichum munitum*) are also present throughout the upper slope area adjacent to the project area, interspersed with some bare areas. Downed wood, snags, and large woody debris were observed throughout the upper slope area (Figure 6).

As described in the separately prepared Arborist Report, the site includes a total of 12 significant trees on-site.

Figure 4. View looking upslope on subject property.

Figure 5. Bare areas on the steep slope on the subject property.

Figure 6. View of downed wood on upper slope area of subject property.

Soils

According to Natural Resources Conservation Service (NRCS) soil maps, the project site is comprised of Alderwood and Kitsap soils, very steep.

Habitat

Habitat structure on the site is relatively limited, with decreased vegetative structural diversity. The sparse native herb and shrub layers and bare areas limit food and cover opportunities for most wildlife species. Ivy present onsite may provide cover for small mammals, but in suburban environments, these are usually limited to pest species (mice and rats). Snags, logs, and large woody debris on the upper portion of the slope provide habitat for birds and small mammals. The existing tree canopy provides perching and nesting opportunities for birds. Mitigation opportunities include removal of invasive blackberry and ivy species and replacement with native shrubs to increase habitat complexity. The addition of nut- and berry-producing plants within mitigation areas such as evergreen huckleberry (*Vaccinium ovatum*) and Oregon grape (*Mahonia aquifolium*) provide a food source for songbirds and small mammals.

The location of the property within the surrounding landscape is relevant in characterizing habitat, as it determines whether the opportunity for wildlife to use

a site exists. The vegetated slope on the subject property is connected to a narrow, mostly undeveloped forested corridor extending northeast to southwest through residential development. Because these forested open space areas are within a developed urban/suburban landscape, they have value as a refuge for urban wildlife. However, due to the limited size and fragmentation, they most likely support only species common in developed areas (e.g., raccoons, coyotes, and "backyard species" of songbirds) and not those that depend on larger, undisturbed forest. Other forested parches nearby are limited to small patches of trees located in residential areas. These nearby areas may act as a "source," providing the potential for wildlife to access and use nearby areas.

The presence of Lake Sammamish at the property edge provides the opportunity for the property to be used by species that frequent the lake. These include the species of significance discussed in the following section, as well as otters, beaver, and birds of shorelines and open water. These may include Vaux's swifts, belted kingfishers, double-crested cormorants, several swallow species, various flycatchers, and other insectivores that could use the study property for resting or foraging perches.

Water Quality, Hydrology, and Slope Stability Functions

In addition to habitat functions, vegetation also provides important water quality and hydrology functions. The ability of the site to perform these functions well is dependent upon the vegetation present (e.g., forested versus pave). The vegetated slope on the subject property provides an area to intercept, allow for infiltration, and uptake rain and surface runoff, thereby functioning well to both filter water and reduce the quantity of water flowing downgradient into Lake Sammamish.

Furthermore, when located on slopes, vegetation can function to prevent soil erosion and improve slope stability. During heavy rain events, live vegetation and dead plant parts (e.g., dead stems, branches, leaves, etc.) prevent concentrated and potentially erosive flows from developing on steep slopes through rainwater interception. Vegetation growing on slopes also has the opportunity to provide slope stability through establishment of deep, inter-woven plant roots. Most native trees, shrubs, and groundcover plants perform this function well, while shallow-rooted weeds like Himalayan blackberry and English ivy, do not.

4 SPECIES OF LOCAL IMPORTANCE

The City of Bellevue designates habitat associated with species of local importance as a critical area [LUC 20.25H.150(B)]. Species of local importance [LUC 20.25H.150(A)] for which suitable habitat may be present in the general vicinity of the subject property are bald eagle, pileated woodpecker, Vaux's swift, merlin, purple martin, great blue heron, osprey, red-tailed hawk, and common loon. Potential fish use of Lake Sammamish includes Chinook and coho salmon, bull trout, and river lamprey. The likelihood of each of these species utilizing the property is discussed below.

Bald eagles are common foragers over Lake Washington, and active nests are known in the lake area. Eagles often perch in tall lakeside trees for foraging and resting. Eagle nests are most commonly built near broken tops of tall trees, and in western Washington, nests in forks of large deciduous trees are also common. It is unlikely that trees within the subject parcel provide potential nesting or perching habitat; nearby areas provide suitable nesting habitat, with greater tree density and less human disturbance. No active nests are present within the subject property.

Pileated woodpeckers commonly use large conifers for drumming and foraging. The species is often spotted in suburban areas in King County. Individuals may occasionally use the trees on the property, although the species' preferred large snags are not present. Suitable nesting sites for this species do not exist on the property.

Vaux's swifts forage in open skies over forests, lakes, and rivers, where insects are abundant. Lake Sammamish provides suitable foraging habitat, and the species may be present at times over the study area. Nesting normally takes place in old-growth forest where large, hollow snags are available. The study parcel does not provide nesting habitat for this species.

Merlins occur throughout western Washington in winter and during migration. Breeding birds are rare in the state. Occurrences are spotty but not uncommon in suburban areas, and the study parcel may provide a small amount of suitable hunting or perching area in the non-breeding season.

Purple martin is Washington State's least common swallow. The species forages over open water and could potentially use the lake area adjacent to the study property for foraging.

Great blue herons are widespread in western Washington. Outside of breeding, which occurs in tall trees, commonly away from human disturbance, the birds are

most often observed in and along rivers, lakes, and wetlands. The adjacent waters of Lake Sammamish are likely used by foraging and nesting herons throughout the year, although regular human disturbances along the densely developed shoreline are likely a limiting factor in their frequency.

Osprey are very common over Lake Sammamish. Osprey typically nest in trees adjacent and above water. No osprey nests are present on-site.

Red-tailed hawks nest in large trees, and although no active nests are present, the on-site trees may be suitable for the species. However, nests are generally located in more extensive woodlands than the site offers. Red-tailed hawks are ubiquitous in this area and are likely to occasionally perch on or fly over the property. However, red-tailed hawks forage in open grassy areas or woodland fringes, not open water areas such as Lake Sammamish.

Common loons prefer large, secluded lakes in the eastern part of the state for breeding. In winter, the species is most common on the coast and in saltwater bays and inlets but can be seen on freshwater lakes near the coast as well. The open waters of Lake Sammamish are commonly used by wintering loons, but the species is unlikely to enter the study parcel.

Chinook and coho salmon migrate through Lake Sammamish. The lake itself does not provide spawning habitat. The lake is used by juveniles for migration, as well as rearing. Lake temperatures are warmer than preferred by these species, particularly in shallow areas along the shoreline, and outside of the existing pier, the shoreline area provides no cover for refuge. The lake area immediately adjacent to the property is unlikely to be used extensively by these species.

Bull trout are rare or non-existent in Lake Sammamish. The species has a narrow temperature tolerance range and is very unlikely to occur near the shallow waters adjacent to the study area.

River lamprey have been identified in tributaries to Lake Sammamish. According to the U.S. Fish and Wildlife Service, the species has declined, present status is unknown, and little is known about their biology.

5 Local Regulations

In Bellevue, steep slope critical areas are governed by Critical Areas Ordinance No. 5680. According to LUC 20.25H.120(A)(2), slopes of 40 percent or more that have a rise of at least 10 feet and exceed 1,000 square feet in area are designated as geologic hazard areas and therefore subject to the regulations of LUC 20.25H.120

through 20.25H.145. According to LUC 20.25H.120(B)(1)(b), steep slope critical areas require a top-of-slope buffer of 50 feet. Further, pursuant to LUC 20.25H.120(C)(2), steep slopes require a toe-of-slope setback of 75 feet. The setback is intended to minimize long-term impacts of development and protect the critical area from adverse impacts during construction. The proposed construction of the parking platform is entirely within the top-of-slope buffer and a portion of the steep slope area.

Critical areas (including steep slopes) in shoreline jurisdiction are regulated, by reference and as applicable, under LUC 20.25H (LUC 20.25E.065.B.2.d). The project does not propose any modifications within the shoreline setback, although mitigation is located within the 200-foot shoreline zone.

Steep slope, steep slope buffer, and steep slope setbacks can only be modified through an approved critical areas report. The applicant must demonstrate that the modifications to the critical area, buffer, and setback, combined with any restoration efforts, will result in equivalent or better protection of critical area functions and values than would result from adhering to the standard application of the regulations (LUC 20.25H.230). Restoration of the critical area may involve removing invasive plant species and/or planting native vegetation within the critical area and/or buffer. An approved restoration plan would require monitoring and maintenance in accordance with LUC 20.25H.220.

6 PROJECT DESCRIPTION

The proposed project consists of installing a 776 square foot rectangular parking platform with a stabilization wall over an existing gravel area at the top of the slope adjacent to Mallard Lane. Under the proposed design, 621 square feet of pervious surface will be converted to the wood decking platform. The project proposes the removal of eight trees, one snag, and invasive species within the footprint of the improvement. See the accompanying mitigation plan for more details on project impacts.

Project Purpose

The purpose of the proposed project is to provide an additional parking area for boat storage for the single-family home.

Mitigation Sequencing

Pursuant to LUC 20.25H.215, attempts to avoid and minimize impacts to the on-site steep slope, buffer, and setback, as well as the shoreline setback have been taken.

Unavoidable impacts to the steep slope critical area and associated buffer will occur through site development. To compensate for these impacts, on-site mitigation is proposed.

Avoidance: The parking platform will provide boat storage that avoids creating congestion and access issues on NE Rosemont Place. Given the limitations of available undeveloped, non-critical area land on the subject property, full avoidance of critical area impacts is not feasible. However, the top-of-slope buffer has already been disturbed by previous grading for Mallard Lane and the area for the proposed improvement contains existing impervious gravel surface. The construction of the parking pad will not result in disturbance of the natural steep slope and the stabilization wall will provide protection of the adjacent portion of Mallard Lane from damage due to future slope movement. The project avoids all impacts to the shoreline setback.

Minimization: Minimization techniques were utilized during the design process in order to limit impacts. Impacts to the steep slope critical area resulting from parking platform are minimized as much as possible. The parking platform has the smallest footprint possible while maintaining intended function.

Mitigation: As mitigation for installing a parking platform within portions of the steep slope area and its associated buffer, a 1:2.6 mitigation ratio is proposed. This includes removal of invasive species and installation of mitigation plantings throughout the upper slope area of the property. In total, 1,645 square feet of critical area on the parcel will be enhanced with new native shrubs and groundcover. Proposed areas of enhancement are currently devoid of native understory vegetation or contain invasive species.

As demonstrated below in Section 7, proposed mitigation measures will provide a net increase in critical area and buffer functions and will compensate for the proposed parking platform.

7 Impact Assessment / Lift Analysis

As mentioned in the previous section, the parking platform will be located within the steep slope buffer area and a portion of the steep slope. New structure within the steep slope critical area will total 621 square feet of net impact. No temporary impacts to areas of existing vegetation are proposed, all construction staging will be done in existing developed areas.

Mitigation will include steep slope invasive species removal, native plantings, and slope stability measures. Table 1 below summarizes proposed impacts and mitigation areas.

Proposed impacts and mitigation areas are depicted on the mitigation plan in Appendix A.

Table 1. Impact Assessment

	New Impervious Surfaces (SF)	Restoration Plantings/Enhancement (SF)
Steep Slope Critical Area	13	1,446
Steep Slope Critical Area Buffer	608	199
Total	621	1,645

As can be seen in the above table, a significant increase in on-site native vegetation will result from the proposed project. Proposed native vegetation is intended to improve the overall functions and values of the on-site critical area and buffer. The proposed restoration plan fulfills the requirements of LUC 20.25H.220(B). The plan seeks to restore and enhance substantial portions of the on-site upper steep slope critical area and associated buffer. The steep slope has a high potential for enhancement to increase several important functions, as it presently lacks native vegetation structural complexity. Invasive English ivy and other non-native plants are understory components beneath the native tree canopy in both the impact and mitigation area.

The habitat functions provided by the steep slope and associated buffer, in both the impact area and mitigation area, are specifically associated with steep slope and are not related to shoreline function.

To achieve the enhancement objectives, the plan calls for the restoration of 1,645 square feet of degraded steep slope areas through the planting of shade-tolerant native trees, shrubs and groundcover and the removal/control of invasive species. Trees proposed include big leaf maple (*Acer macrophyllum)* and western red cedar (*Thuja plicata)*, shrubs include vine maple (*Acer circinatum)*, serviceberry (*Amelanchier alnifolia)*, Tall Oregon grape (*Mahonia aquifolium*), beaked hazelnut (*Corylus cornuta*), common snowberry (*Symphoricarpos albus*), thimbleberry (*Rubus parvifolium*), and evergreen huckleberry (*Vaccinium ovatum*). Proposed groundcovers and perennials include salal and sword fern (*Polystichum munitum*). An analysis of the specific functions and values provided by the existing site and the post-project site is provided in Table 2.

Table 2. Site-Wide Functional Lift Analysis

Critical Area/ Buffer Functions	Existing Conditions	Proposed Conditions	Functional Improvement?
Water Quality	Much of the existing upper steep slope and associated buffer areas are relatively devoid of native shrubs or vegetated by non-native or invasive species.	Remove invasive species and enhance/restore with native trees, shrubs, and groundcovers.	Yes; water quality will be improved. New native plantings will allow for filtration of stormwater and help to remove pollutants from stormwater on the slope.
Slope Stability[1]	The existing upper steep slope and associated buffer contain dense cover by English ivy. Ivy has shallow roots and prevents the growth of other plants.	Remove invasive species and restore with native trees, shrubs and groundcover.	Yes; new native plantings will have deeper root systems than the current English ivy or unvegetated areas, reducing erosion potential.
Habitat	The existing upper steep slope lack the native vegetation necessary to provide substantial forage and cover opportunities.	Remove invasive species and enhance/restore habitat with native trees, shrubs, and groundcover.	Yes; 1,645 square feet of the site will be enhanced with new native plantings including fruit- and nut-bearing trees, shrubs, and groundcover, which will provide a net increase in species and structural diversity, while providing additional forage and feeding opportunities to animal species. Further, new plantings will provide additional organic matter and foraging and nesting opportunities for terrestrial wildlife, including several songbird species.
Net Condition	Degraded critical areas.	Invasive species are removed throughout the steep slope and buffer; additional native trees, shrubs, and groundcover are planted in the steep slope and buffer.	Yes. Slope habitat restored with an increase in native vegetation (1,645 SF of mitigation planting area); filtering of stormwater by native plantings; improved slope stability; increased habitat structural and compositional complexity, and an increase in organic material to the food chain.

[1] The Watershed Company does not provide geotechnical analysis. The functional assessment herein is habitat-based and considers the reduction in potential erosion. This assessment does not represent an analysis of general slope stability, existing or proposed. Reference the project geotechnical report for detailed slope stability analysis.

Temporal loss on-site includes the removal eight trees; five significant, three non-significant, and one non-significant snag. Post-construction, the site will see an increase in the quality of habitat. Vegetation removal consists primarily of invasive species.

Although a greater footprint will be covered by the proposed development than the existing development, so will a greater area of diverse, native habitat result from the proposal. The property will be more suitable overall for urban songbird and small mammal species than it is presently; the understory will contain more woody vegetation and a greater structural complexity, which is more attractive to songbirds and small mammals than vegetated areas with only a forest canopy. A greater mix of flowering, fruiting and seeding plants will provide forage over a longer yearly timespan than the relatively uniform existing low vegetation. Wildlife species of the Pacific Northwest are also better adapted to forage provided by native plants than non-native and ornamental species.

As can be seen in Table 2, significant enhancement will occur within the steep slope critical area and buffer. Proposed enhancement is intended to improve the overall functions and values of the steep slope critical area and buffer by increasing slope stability through the removal of invasive species and the addition of native plantings.

8 CRITICAL AREAS REPORT CRITERIA

The parking platform construction will be conducted in accordance with LUC 20.25H.120.B.3. As previously mentioned, steep slope critical areas are regulated under LUC 20.25H, and they may be modified pursuant to LUC 20.25H.230. The Director may approve modifications if it can be shown that, through restoration, the modification will result in equivalent or better protection of critical area functions and values. The existing project site contains steep slopes that do not provide significant wildlife habitat functions. While the lower slope contains a relatively diverse forest community, the upper and mid-slope areas are devoid of shrub and groundcover communities and invasive species exist throughout the vegetated slope.

In total, 1,645 square feet of the site will be enhanced through invasive species removal and the planting of native trees, shrubs, and groundcover within the steep slope critical area and steep slope buffer. The planting layout incorporates a diversity of native plant species. The restoration plan will provide for substantially improved critical area and buffer functions and values relative to the existing condition. A monitoring and maintenance plan for the proposed mitigation area is also included in this report.

Per the LUC, the critical areas report must meet specific decision criteria in order for the Director to approve a proposal to modify the regulated steep slope critical area and/or

steep slope buffer. Compliance with the relevant critical areas report criteria listed in LUC 20.25H.250(B) is addressed below:

1. *Identification of each regulation or standard of this code proposed to be modified.*

   The subject site contains an area of steep slope, as defined by LUC 20.25H.120(A)(2). Pursuant to LUC 20.25H.120(B)(1)(b) and 20.25H.120(C)(2)(b), a 50-foot top-of-slope buffer and 75-foot toe-of-slope setback are required. The applicant proposes to construct a parking platform over an existing gravel area within portions of the steep slope critical area and its associated buffer.

3. *Identification of each regulation or standard of this code proposed to be modified.*

   The project proposes non-allowed (per LUC 20.25H.055.B) improvements within a critical area and critical area buffer.

4. *A habitat assessment consistent with the requirements of LUC 20.25H.165.*

   1. *Detailed description of vegetation and habitat on and adjacent to the site;*

      See Section 2 and 3.

   2. *Identification of any species of local importance that have a primary association with habitat on or adjacent to the site and assessment of potential project impacts to the use of the site by the species;*

      See Section 4.

   3. *A discussion of any federal, state, or local special management recommendations, including Washington Department of Fish and Wildlife habitat management recommendations, that have been developed for species or habitats located on or adjacent to the site;*

      See Section 4 for a summary of species with the potential to occur within the project area. The potential impact to species of local significance is low as the species are either unlikely to occur or their associated habitat is not present on the subject property. Therefore, the project is not subject to LUC 20.25H.160, which states that a Washington Department of Fish and Wildlife (WDFW) wildlife management plan be implemented.

   4. *A detailed discussion of the direct and indirect potential impacts on habitat by the project, including potential impacts to water quality;*

See Table 2. The most notable wildlife impact of the proposed project is the loss of a few native trees. Replacement trees and shrubs will be planted, although there will be a temporal loss as the new trees and shrubs mature. The temporal loss will be offset through the enhancement of the upper slope area.

5. A discussion of measures, including avoidance, minimization, and mitigation, proposed to preserve existing habitats and restore any habitat that was degraded prior to the current proposed use or activity and to be conducted in accordance with the mitigation sequence set forth in LUC 20.25H.215; and

See Section 6 for mitigation sequencing and Section 7 for habitat restoration details.

6. A discussion of ongoing management practices that will protect habitat after the site has been developed, including proposed monitoring and maintenance programs.

See Section 9.

5. An assessment of the probable cumulative impacts to critical areas resulting from development of the site and the proposed development.

Indirect and cumulative impacts can be addressed insofar as land use of the surrounding landscape can be expected to change over time. The lots surrounding the property are zoned R-2.5, with several not yet potentially achieving maximum allowable density. Therefore, it is possible that additional development of these properties may occur. In the event that nearby, undeveloped forest is fragmented further, the restored areas of the property will gain "refuge" value. Small and/or isolated forested patches within a developed landscape act as refuges to traveling wildlife and are extremely important for keeping wildlife within urban and suburban areas, as well as for facilitating movement through and within such areas. Thus, the increase in habitat complexity associated with the restoration plan for the project site will improve future refuge value of the site in the event that nearby properties are further developed.

6. An analysis of the level of protection of critical area functions and values provided by the regulations or standards of this Code, compared with the level of protection provided by the proposal. The analysis shall include:

a) A discussion of the functions and values currently provided by the critical area and critical area buffer on the site and their relative importance to the ecosystem in which they exist;

The steep slope area is primarily vegetated by a canopy of native trees and an understory of English ivy. The native tree canopy provides habitat structure and slope stability. However, the understory is a monoculture of invasive species, which provides limited habitat function or erosion reduction.

b. A discussion of the functions and values likely to be provided by the critical area and critical area buffer on the site through application of the regulations and standards of this Code over the anticipated life of the proposed development;

An accessory parking area is not an allowed use within a critical area/buffer, per LUC 20.25H.045.B. Therefore, if the proposed platform and accompanying mitigation are not installed, the existing degraded steep slope and portions of the buffer would remain in their existing degraded condition and no restoration would occur.

Instead, the proposed project will result in the addition of substantial native vegetation within the steep slope critical area and buffer. The native plantings will improve stormwater infiltration and provide increased species and structural habitat diversity within the steep slope critical area along with improved slope stability. See also Table 2.

c. A discussion of the functions and values likely to be provided by the critical area and critical area buffer on the site through the modifications and performance standards included in the proposal over the anticipated life of the proposed development; and

By requesting a critical area modification pursuant to LUC 20.25H.230, the applicant is provided the opportunity to restore portions of the on-site steep slope critical area and buffer. A restoration plan has been prepared (see Appendix A) that details the area proposed for restoration. This plan mitigates for the construction of the parking platform in the steep slope buffer and a portion of the steep slope. Restoration will involve a total of 1,645 square feet within the steep slope critical area and associated buffer at a 1:2.6 mitigation ratio. The planting layout incorporates a diversity of native plant species. Proposed plantings include native trees, shrubs, and groundcover. A monitoring and maintenance plan for the proposed mitigation is also included in this report. Overall, a net gain in critical area functions is proposed. Therefore, modification of the on-site critical areas, and subsequent restoration, will provide a substantially higher level of protection than provided through the application of the regulations of LUC 20.25H [See also Table 2].

7. *A discussion of the performance standards applicable to the critical area and proposed activity pursuant to LUC 20.25H.160, and recommendation for additional or modified performance standards, if any.*

   The proposed project and restoration plan will comply with all applicable performance standards (see Section 9).

8. *A discussion of the mitigation requirements applicable to the proposal pursuant to LUC 20.25H.210, and a recommendation for additional or modified mitigation, if any.*

   The proposed restoration plan has been developed in accordance with the standards of LUC 20.25H.210 through 20.25H.225. The project applicant proceeded through the design of the proposed project by first attempting to avoid impacts to the on-site critical area buffer, and setback. However, it is not feasible to construct the parking platform outside of the steep slope areas; therefore, the applicant proceeded with a design that attempted to minimize impacts to the greatest extent possible and mitigate all new disturbed areas in accordance with LUC 20.25H.125.J. Subsequently, the parking platform location is limited to a small area that is partially already disturbed by previous grading and existing impervious gravel surface between the existing road and the top of the steep slope. The primary vegetation impacted will be smaller trees and invasive species and all impacts will be appropriately mitigated at a 1:2.6 ratio. The applicant has compensated for impacts to the critical area by proposing a restoration plan that will improve the critical area functions and values relative to the existing condition. A monitoring and maintenance plan for the proposed restoration area has also been prepared and is included in this report. The plan includes the components required by LUC 20.25H.220.

To allow a steep slope critical area modification through an approved critical areas report, the Director must also find compliance with the decision criteria established in LUC 20.25H.255(A) and (B). Compliance with the relevant sections listed in LUC 20.25H.255(A) and (B) is addressed below.

1. *The modifications and performance standards included in the proposal lead to levels of protection of critical area functions and values at least as protective as application of the regulations and standards of this code.*

   A restoration plan that details the areas proposed for restoration as a result of the critical area modifications has been prepared. The plan mitigates for the proposed construction of a parking platform within portions of the steep slope critical area and associated buffer by restoring an area greater than the area of impact at a ratio of 1:2.6. Restoration will involve the planting of native vegetation (trees, shrubs, and groundcover) within the steep slope

critical area and associated buffer. The overall planting layout incorporates a diversity of native plant species.

The proposed native plantings will increase species diversity, providing a variety of foraging resources for wildlife. An increase in structural diversity over existing conditions will also result, providing more suitable year-round cover conditions for wildlife, particularly songbirds. The proposed native plantings will also improve stormwater functions within the slope, allowing filtration of stormwater within proximity of the lake and by helping to remove pollutants from stormwater on the slope.

Overall, the restoration plan will provide for improved critical area and buffer functions and values relative to the existing condition. The monitoring and maintenance plan will ensure long-term success of the mitigation [See also Table 2].

2. *Adequate resources to ensure completion of any required mitigation and monitoring efforts.*

A comprehensive five-year maintenance and monitoring plan is included in this report (Section 9). The plan specifies appropriate species for planting and planting techniques, describes proper maintenance activities, and sets forth performance standards to be met yearly during monitoring. This will ensure that restoration plantings will be maintained, monitored, and successfully established within the first five years following implementation. Furthermore, to ensure that the proposed plantings are installed and that the five-year maintenance and monitoring plan is implemented, the applicant will post an Installation Assurance Device and a Maintenance Assurance Device prior to building permit issuance.

3. *The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site.*

The restoration of significant portions of the on-site steep slope will provide improved water quality, erosion control, and more extensive root systems on the steep slope area. The steep slope contains a sparse understory dominated by invasive species. English ivy grows throughout the slope and on a majority of trees. While a majority of the native tree species will be maintained, the existing understory provides little function for erosion reduction, and English ivy does not have a deep root system. The native trees, shrubs, and groundcover included in the restoration plan will provide a more complex and deeper root system, which is beneficial on steeper slopes. The dense vegetation will also help to reduce stormwater velocities and filter associated sediments, improving water quality.

4. *The resulting development is compatible with other uses and development in the same land use district.*

   The proposed parking pad will be compatible with adjacent properties and surrounding development within the same land use district (Single Family R-2.5). Adjacent properties also contain single-family land uses.

1. *The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in overall critical area or critical area buffer functions.*

   See preceding paragraphs and Table 2.

2. *The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in the most important critical area or critical area buffer functions to the ecosystem in which they exist.*

   The most significant function provided by the vegetation and condition of steep slopes and their associated buffers is the protection of slope stability and reduction of erosion potential. A majority of native trees in the steep slope area that are already providing this function will be retained. The understory and remainder of the proposed mitigation areas are dominated by a lack of vegetation or invasive species. Areas that are vegetated by ivy or are sparsely vegetated may experience erosion during periods of heavy rain because the saturated soils can become too heavy for the shallow root system to support. With the implementation of the proposed restoration plan along the slope, these poorly functioning areas will be substantially enhanced with a combination of trees, shrubs, and groundcover on the steep slopes and in the buffer will provide deeper and stronger root systems. Mitigation plantings will also provide habitat complexity and foraging and perching opportunities for many wildlife species.

3. *The proposal includes a net gain in stormwater water quality function by the critical area buffer or by elements of the development proposal outside of the reduced regulated critical area buffer.*

   The proposed native plantings will improve stormwater functions within the steep slope, allowing filtration of stormwater and helping to remove pollutants from stormwater on the slope. Overall, a net gain in stormwater quality function is proposed.

Modification of a critical area, buffer, or setback requires the applicant to apply for and receive a Critical Areas Land Use Permit. Before issuing a Critical Areas Land Use Permit, the Director must find that the project meets specific decision criteria.

Compliance with the applicable Critical Areas Land Use Permit decision criteria listed in LUC 20.30P.140 is addressed below.

A. The proposal obtains all other permits required by the Land Use Code.

The project applicant will obtain all required permits under LUC.

B. The proposal utilizes to the maximum extent possible the best available construction, design and development techniques, which result in the least impact on the critical area and critical area buffer.

As mitigation for impacts of the proposed parking platform, the existing degraded steep slope critical area will be restored.

The applicant has used the best available design and development techniques to design the new parking platform. The design constitutes the minimum necessary impact on the critical area and buffer. As previously noted, minimization techniques were utilized in an attempt to further limit impacts to the critical area and buffer. However, the slope, buffer, and setback encumber the majority of the site and some level of critical area intrusion is necessary to construct the improvements. Coupled with steep slope restoration, the improvements will result in the least possible impact on the critical area and critical area buffer.

C. The proposal incorporates the performance standards of Part 20.25H LUC to the maximum extent applicable.

See below for steep slope performance standard compliance (per LUC 20.25H.125 and 145).

D. The proposal will be served by adequate public facilities including streets, fire protection, and utilities.

The proposed project will be served by adequate public facilities. No new streets will be needed to serve the site and no new vehicle trips will be generated by the proposal.

E. The proposal includes a mitigation or restoration plan consistent with the requirements of LUC 20.25H.210; except that a proposal to modify or remove vegetation pursuant to an approved Vegetation Management Plan under LUC 20.25H.055.C.3.i shall not require a mitigation or restoration plan.

A mitigation and restoration plan has been prepared in accordance with the requirements of LUC 20.25H.220. See Section 8 and Appendix A.

F. The proposal complies with other applicable requirements of this code.

The proposed project will comply with all other applicable City of Bellevue Land Use Codes.

Modification of a geologic hazard area requires the applicant to show compliance with the specific performance standards for landslide hazards and steep slopes as set forth in LUC 20.25H.125. Compliance with the applicable criteria listed in LUC 20.25H.125 is addressed below.

A. Structures and improvements shall minimize alterations to the natural contour of the slope, and foundations shall be tiered where possible to conform to existing topography;

See Geotech geotechnical report.

B. Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation;

See Geotech geotechnical report.

C. The proposed development shall not result in greater risk or a need for increased buffers on neighboring properties;

See Geotech geotechnical report.

D. The use of retaining walls that allow the maintenance of existing natural slope area is preferred over graded artificial slopes where graded slopes would result in increased disturbance as compared to use of retaining wall;

See Geotech geotechnical report.

E. Development shall be designed to minimize impervious surfaces within the critical area and critical area buffer;

See Geotech geotechnical report.

F. Where change in grade outside the building footprint is necessary, the site retention system should be stepped and regrading should be designed to minimize topographic modification. On slopes in excess of 40 percent, grading for yard area may be disallowed where inconsistent with this criteria;

See Geotech geotechnical report.

G. Building foundation walls shall be utilized as retaining walls rather than rockeries or retaining structures built separately and away from the building wherever feasible.

Freestanding retaining devices are only permitted when they cannot be designed as structural elements of the building foundation;

See Geotech geotechnical report.

H. *On slopes in excess of 40 percent, use of pole-type construction which conforms to the existing topography is required where feasible. If pole-type construction is not technically feasible, the structure must be tiered to conform to the existing topography and to minimize topographic modification;*

See Geotech geotechnical report.

I. *On slopes in excess of 40 percent, piled deck support structures are required where technically feasible for parking or garages over fill-based construction types; and*

See Geotech geotechnical report.

J. *Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210.*

A restoration plan has been developed, pursuant to LUC 20.25H.220, and is included in Appendix A. The plan will mitigate for areas of permanent disturbance.

Finally, modifications to steep slope critical areas and critical area buffers can only be approved if the Director determines that compliance with LUC 20.25H.145 has occurred. Compliance with the applicable decision criteria listed in LUC 20.25H.145 is addressed below.

A. *Will not increase the threat of the geological hazard to adjacent properties over conditions that would exist if the provisions of this part were not modified;*

See Geotech geotechnical report.

B. *Will not adversely impact other critical areas;*

See Geotech geotechnical report.

C. *Is designed so that the hazard to the project is eliminated or mitigated to a level equal to or less than would exist if the provisions of this part were not modified;*

See Geotech geotechnical report.

D. Is certified as safe as designed and under anticipated conditions by a qualified engineer or geologist, licensed in the state of Washington;

See Geotech geotechnical report.

E. The applicant provides a geotechnical report prepared by a qualified professional demonstrating that modification of the critical area or critical area buffer will have no adverse impacts on stability of any adjacent slopes, and will not impact stability of any existing structures. Geotechnical reporting standards shall comply with requirements developed by the Director in City of Bellevue Submittal Requirements Sheet 25, Geotechnical Report and Stability Analysis Requirements, now or as hereafter amended;

See Geotech geotechnical report.

F. Any modification complies with recommendations of the geotechnical support with respect to best management practices, construction techniques or other recommendations; and

See Geotech geotechnical report.

G. The proposed modification to the critical area or critical area buffer with any associated mitigation does not significantly impact habitat associated with species of local importance, or such habitat that could reasonably be expected to exist during the anticipated life of the development proposal if the area were regulated under this part.

See Section 4 for a detailed discussion on habitat associated with species of local importance. The proposed project will result in an overall lift in habitat function for all species (see also Table 2).

9 MITIGATION PLAN

The mitigation plan include in Appendix A has been prepared as mitigation for impacts to the steep slope area and steep slope buffer. The impacts are to accommodate the construction of a parking platform. The impacted area consists of impervious gravel surface, native forest, and invasive groundcover species that have little habitat value. This proposal will impact a total of 608 square feet of the steep slope buffer area and 13 square feet of the steep slope. To offset these critical area impacts, a total of 1,645 square feet of enhancement is proposed. This results in a net enhancement to impact ratio of 1:2.6. Enhancement of the steep slope will include removal of non-native and invasive species, the installation of a native tree, shrub and groundcover plant community and maintenance and monitoring of the mitigation area.

9.1 Mitigation Area Work Sequence

A restoration specialist shall make site visits to verify the following project milestones:

1. Mark the clearing limits with high visibility fencing or similar means.

2. Install erosion control measures according to City BMPs.

3. Prepare site soils per the soil preparation detail (Sheet L005).

4. Install native plants per planting details on Sheet L005.

    a) Native plant installation shall occur during the dormant season (October 15th through March 1st) in frost-free periods only.

    b) Layout plant material per plan for inspection by the restoration specialist. Plant substitutions will not be allowed without prior written approval of the restoration specialist.

    c) Install plants per planting details.

5. Water in each plant thoroughly to remove air pockets.

6. Install a temporary irrigation system capable of supplying at least 1 inch of water per week to the entire planted area during the dry season (June 1st through September 30th).

7. One year after initial planting, apply a slow-release, phosphorous-free, granular fertilizer to each installed plant.

9.2 Maintenance and Monitoring Plan

The site shall be maintained and monitored for five years following successful installation. Components of the 5-Year maintenance and monitoring plan are detailed below:

9.2.1 Maintenance

1. Replace each plant found dead in the summer monitoring visits in the following dormant season (October 15-March 1). Replacement shall be of the same species and size per plan unless otherwise approved by the restoration specialist.

2. General weeder for all planting areas:

    a. At least twice annually, remove competing grasses and weeds from the base of each installed plant to a radius of 12 inches. Weeding

should occur at least once in the spring and once in the summer. Thorough weeding will result in lower plant mortality and associated plant replacement costs.

b. More frequent weeding may be necessary depending on weed conditions that develop after plant installation.

c. Noxious weeds must be removed from the entire mitigation area at least twice annually.

d. Do not use string trimmers in the vicinity of installed plants, as they easily damage or kill plants.

3. Maintain a three-inch layer of woodchip mulch across the entire planting area. Mulch should be pulled back two inches from the plant stems.

4. Inspect and repair the irrigation system as necessary each spring. During at least the first two growing seasons, make sure that the entire planting area receives a minimum of one inch of water per week starting June 1st through September 30th.

9.2.2 Goals

1. Maintain slope stability by establishing shrubs in the steep slope and steep slope buffer areas (areas currently dominated by shallow-rooting invasive species).

2. Enhance 1,645 square feet of degraded steep slope area and steep slope buffer.

a) Create a dense, native shrub and groundcover community.

b) Remove non-native and invasive plant species from the enhancement area.

9.2.3 Performance Standards

The following performance standards will be used to gauge the success of the project over time. If all performance standards have been satisfied by the end of year five, the project shall be considered complete, and the City of Bellevue shall release the performance bond.

1. Survival

a) Achieve 100% survival of all installed trees and shrubs by the end of Year One.

b) Achieve 80% survival of all installed shrubs and 100% of all installed conifers by the end of Year Two.

c) Achieve 80% survival of all installed trees and shrubs by the end of Year 5.

Survival standards may be achieved through establishment of planted material, recruitment of native volunteers, or replacement plants as necessary.

2. Diversity

    a) Establish at least four native shrub species in the enhancement area by the end of year five. Establishment is defined as five or more individual plants of the same species alive and healthy.

3. Native Plant Cover

    a) Achieve 40% cover of native trees, shrubs, and groundcover by the end of year three. Existing native canopy will not count towards this standard.

    b) Achieve 60% cover of native trees, shrubs, and groundcover by the end of year five. Existing native canopy will not count towards this standard.

    c) No more than 10% cover by invasive species listed as class A, B, or C by the King County Noxious Weed Control Board in any monitoring year.

9.2.4 Monitoring Methods

This monitoring program is designed to track the success of the mitigation site over time and to measure the degree to which the site is meeting the performance standards outlined in the preceding section.

Prior to the commencement of the monitoring phase, and As-Built plan documenting the successful installation of the project will be submitted to the City of Bellevue. If necessary, the As-Built report may include a mark-up of the original plan that notes any significant changes or substitutions that occurred. During the as-built inspection, the restoration specialist will establish at least four permanent photo-points.

The site will be monitored twice annually for five years, beginning with approval of the as-built report. Each spring, the restoration specialist will conduct a brief maintenance inspection followed by a memo summarizing maintenance items necessary for the upcoming growing season. The formal late-season monitoring

inspection will take place once annually during late summer or early fall. During each late-season monitoring inspection, the following data will be collected:

1. Percent survival of all installed plantings, including species specific counts of installed tree and shrub plantings (note: groundcover plants counted in year-1 only, for warranty purposes).
2. Native woody cover as determined using visual cover class estimates.
3. Native herbaceous plant cover as determined using visual cover class estimates.
4. Estimates of invasive herbaceous plants or groundcover using visual cover estimates.
5. The species composition, noting whether a species is native or exotic and whether plants were installed or are volunteers.
6. The general health and vigor of the installed vegetation.
7. Photographs from fixed photo-points established during the as-built inspection.
8. Any evidence of wildlife usage in the mitigation area.

Monitoring reports shall be submitted annually to the City. Reports shall document the conditions of the site, including quantitative data collected during the monitoring inspection, and shall provide maintenance recommendations that may be necessary to help the site achieve the stated performance standards.

9.2.5 Contingency Plan

If any monitoring report reveals that the restoration plan has failed in whole or in part and should that failure be beyond the scope of routine maintenance, the applicant will submit a contingency plan to the City of Bellevue for approval. This plan may include replanting, soil amendments or topdressing, substitutions for species selected in the original plan, and adaptive weed control methods.

10 SUMMARY

Construction of a parking platform within portions of a steep slope critical area and buffer is proposed. The proposal results in the addition of 621 square feet of new structural coverage within the critical area and buffer. A total of 1,645 square feet of site enhancement plantings are proposed. Native species to be

installed include western red cedar, big leaf maple, vine maple, cascara, serviceberry, salal, and sword fern.

The planting layout incorporates a diversity of native plant species. The restoration plan will provide significantly better protection of those critical area functions and values than would be provided by the standard application of the geologic hazard area regulations. Therefore, an overall net gain in critical area buffer functions and values is proposed.

References

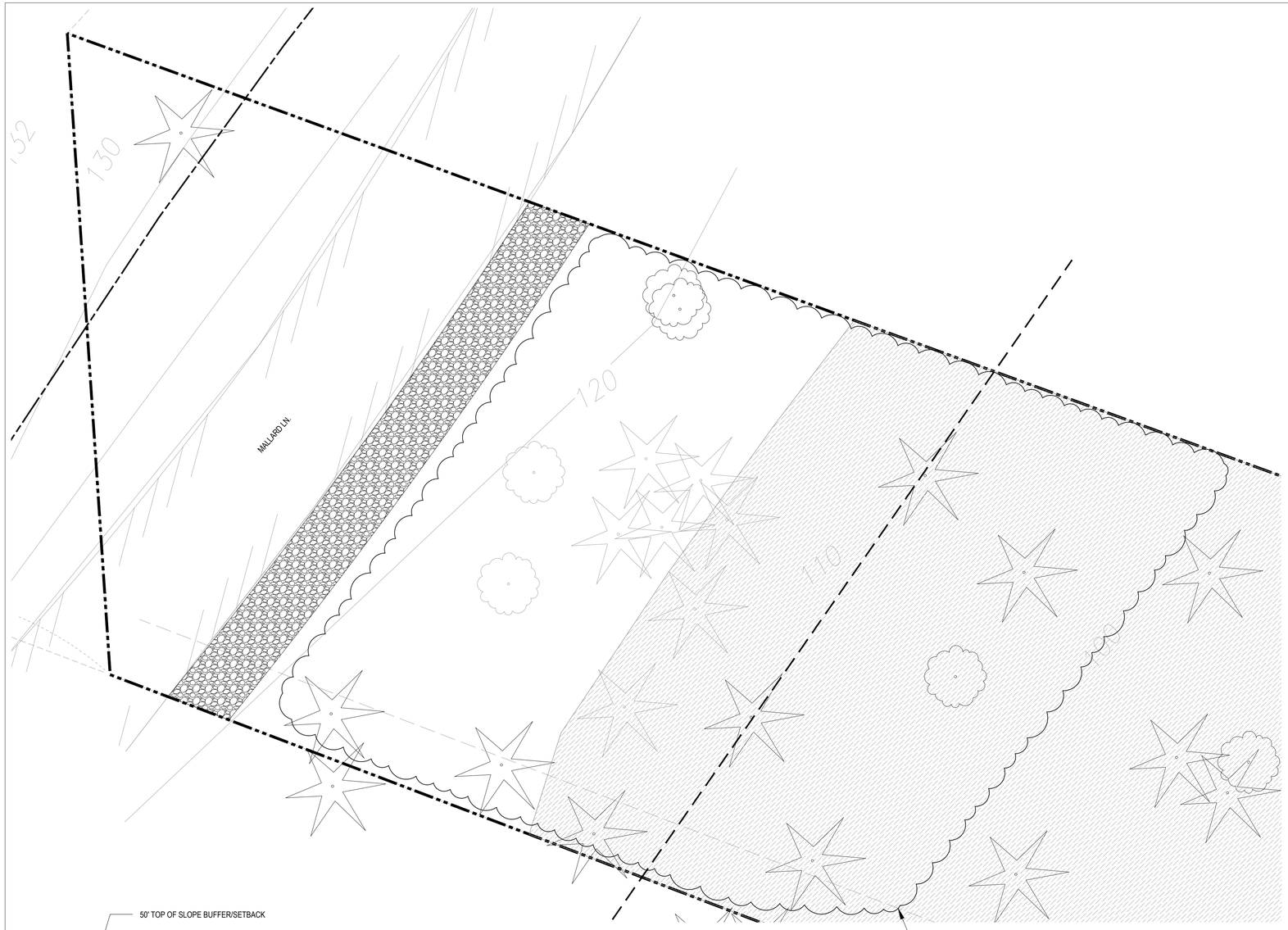
Tabor, R.A., H.A. Gearns, C.M. McCoy III, and S. Camacho. 2006. Nearshore habitat use by juvenile Chinook salmon in lentic systems, 2003 and 2004. Prepared by the U.S. Fish and Wildlife Service, Western Washington Fish and Wildlife Office, Fisheries Division. Prepared for Seattle Public Utilities.

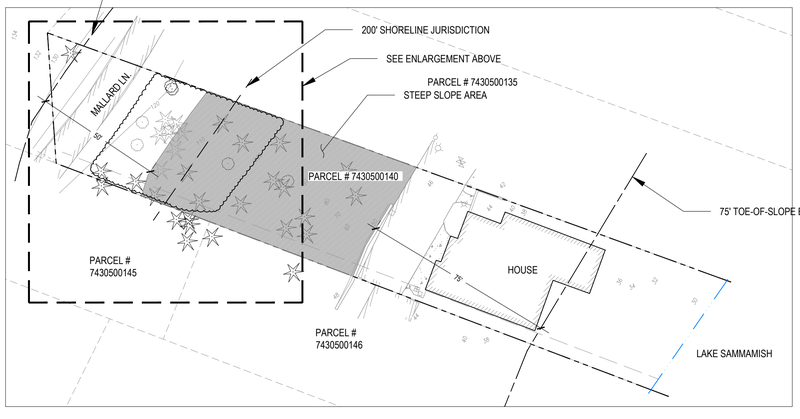
Tabor, R.A., J.A. Scheurer, H.A. Gearns, and E.P. Bixler. 2004. Nearshore habitat use by juvenile Chinook salmon in lentic systems of the Lake Washington basin, annual report 2002. Prepared by the U.S. Fish and Wildlife Service, Western Washington Fish and Wildlife Office, Fisheries Division. Prepared for Seattle Public Utilities.

Geotech Consultants, Inc. 2022. Geotechnical Engineering Study, Proposed Parking Deck, McKissick Property. Bellevue, Washington.

APPENDIX A

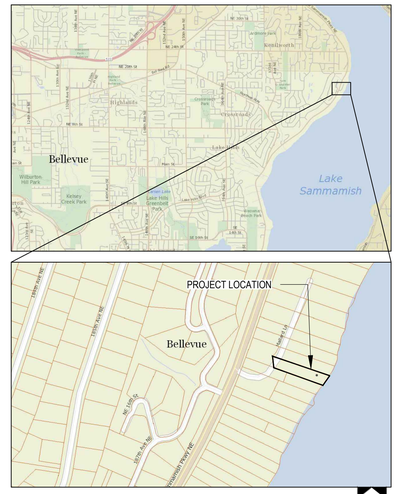
Mitigation Plan





KEY MAP NTS

STEEP SLOPE AND BUFFER AREA HAS SUFFICIENT EXISTING NATIVE TREE CANOPY INCLUDING WESTERN RED CEDAR, BIG LEAF MAPLE, AND DOUGLAS FIR. HOWEVER, THIS AREA LACKS SUFFICIENT NATIVE UNDER STORY AND IS ENCUMBERED BY A HEAVY PRESENCE OF INVASIVE SPECIES INCLUDING SCOTCH BROOM, MULLEIN, SPURGE LAUREL, AND HIMALAYAN BLACKBERRY. SEE CRITICAL AREA REPORT BY THE WATERSHED COMPANY.



VICINITY MAPS NTS

SHEET INDEX

LEGEND

EXISTING

- APPROXIMATE OHWM
- PROPERTY LINE
- 200' SHORELINE JURISDICTION
- STEEP SLOPE SETBACK (50')
- STEEP SLOPE AREA
- GRAVEL
- EXISTING TREES

NOTES

1 SURVEY WAS CONDUCTED BY PACIFIC COAST SURVEYS INC. ON 08/30/2022 AND PROVIDED TO THE WATERSHED COMPANY ON 08/31/2022.

5' 2.5' 0 5' 10'
SCALE 1" = 5'

THE WATERSHED COMPANY
SCIENCE & DESIGN
750 6TH STREET SOUTH
KIRKLAND, WA 98033
425.822.5242
WWW.WATERSHEDCO.COM

PROJECT:
MCKISSICK RESIDENCE
1600 WEST LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

PRINCIPAL: KB
PROJECT MANAGER: AF
DRAWN BY: HC
CHECKED BY: AF
JOB NO.: 220821
DATE: 11/21/2022

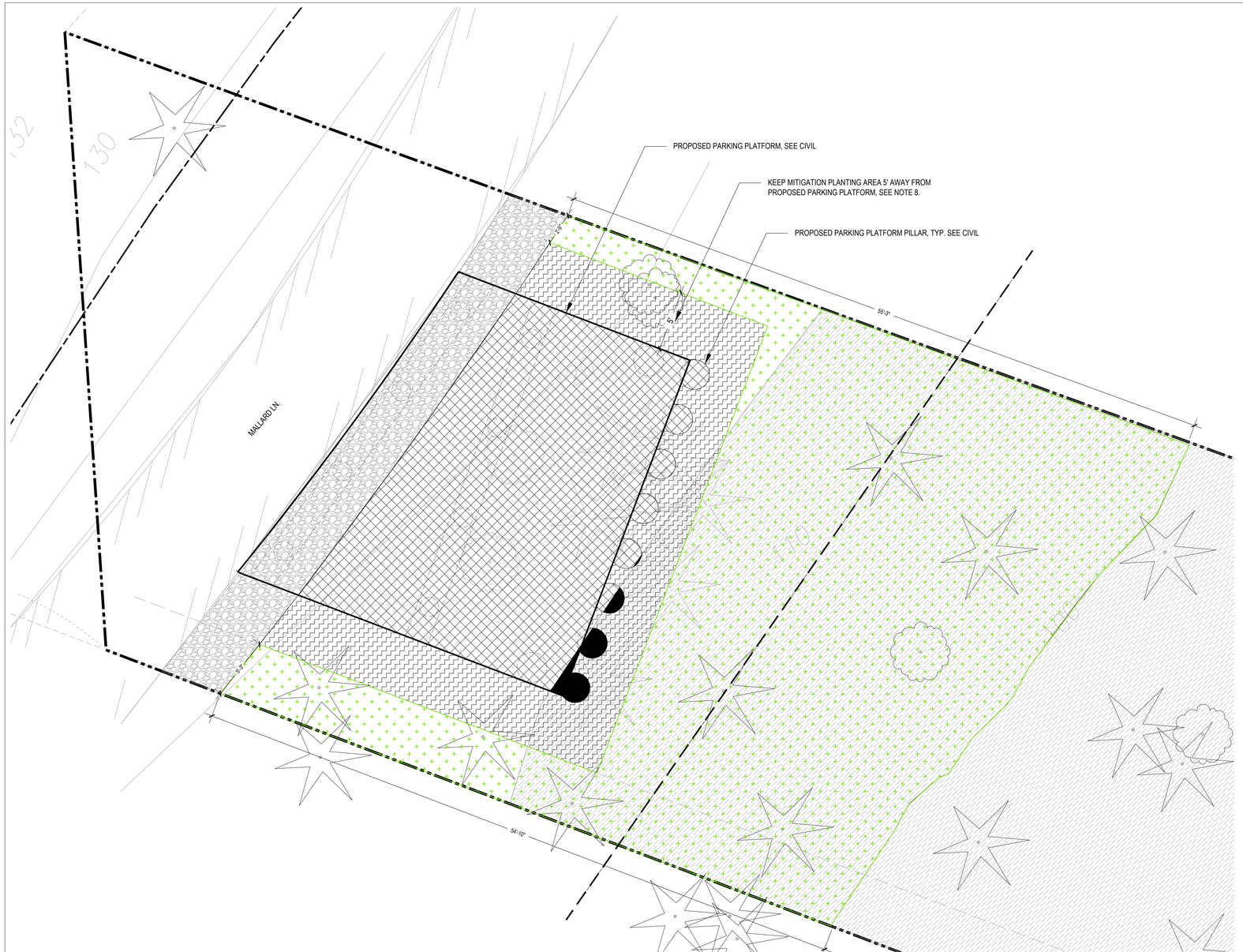
REVISIONS:

NO.	DESCRIPTION	DATE
1	MITIGATION PLAN	11/21/22

NOT FOR CONSTRUCTION
MITIGATION PLAN
11/21/2022

EXISTING CONDITIONS

L001



IMPACTS AND MITIGATION NOTES

1. ALL TESC MEASURES SHALL BE PUT IN PLACE PRIOR TO ANY INVASIVE REMOVAL OR SOIL PREPARATION. SEE CIVIL.
2. PRIOR TO PLANTING, ALL INVASIVE SPECIES SHALL BE REMOVED FROM THE ENTIRETY OF THE RESTORATION AREAS PRIOR TO SOIL PREPARATION. PROTECT AND PRESERVE ALL EXISTING NATIVE VEGETATION.
3. INVASIVE SPECIES SHALL BE DEFINED AS ALL SPECIES LISTED AS CLASS A, B, OR C OR AS A SPECIES OF CONCERN BY THE KING COUNTY NOXIOUS WEED CONTROL BOARD (KCNWCB).
4. INVASIVE SPECIES SHALL BE REMOVED AND DISPOSED OF ACCORDING TO KCNWCB RECOMMENDATION.
5. SEE SHEET L004 FOR PLANTING PLAN AND SCHEDULE.
6. SEE SHEET L005 FOR PLANT INSTALLATION SPECIFICATIONS AND DETAILS AND SOIL PREPARATION.
7. IF MECHANICAL EXCAVATION OCCURS NEAR A TREE TO REMAIN, USE AN AIR OR WATER EXCAVATOR AND ROOT PRUNING BY HAND, OR USING A MECHANICAL ROOT PRUNING TOOL DESIGNED TO CUT ANY ROOTS OVER ONE INCH THAT ARE EXPOSED AFTER MECHANICAL EXCAVATION SHOULD BE CLEAN CUT BY HAND.
8. INSTALL A THREE (3) INCH LAYER OF WOODCHIP OR BARK MULCH TO THE ADDITIONAL INVASIVE CLEARING AREA AFTER INVASIVE REMOVAL PRESERVE EXISTING NATIVE VEGETATION.

LEGEND

EXISTING

- PROPERTY LINE
- 200' SHORELINE JURISDICTION
- STEEP SLOPE SETBACK (50')
- STEEP SLOPE AREA
- GRAVEL
- EXISTING TREES

PROPOSED

- PERMANENT STEEP SLOPE IMPACT (13 SF)
- PERMANENT STEEP SLOPE BUFFER IMPACT (608 SF)
- MITIGATION PLANTING AREA (1,645 SF)
- AREA OF ADDITIONAL INVASIVE ABOVE GROUND CLEARING (364 SF)

NOTES:

1. SITE PLAN WAS PROVIDED TO THE WATERSHED COMPANY BY CG ENGINEERING ON 10/18/2022.

5' 2.5' 0 5' 10'

SCALE 1" = 5'

THE WATERSHED COMPANY
SCIENCE & DESIGN
750 6TH STREET SOUTH
KIRKLAND, WA 98033
425.822.5242
WWW.THEWATERSHEDCO.COM

PROJECT:
MCKISSICK RESIDENCE
1600 WEST LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

PRINCIPAL: KB
PROJECT MANAGER: AF
DRAWN BY: HC
CHECKED BY: AF
JOB NO.: 220821
DATE: 11/21/2022

REVISIONS:

NO.	DESCRIPTION	DATE
1	MITIGATION PLAN	11/21/22

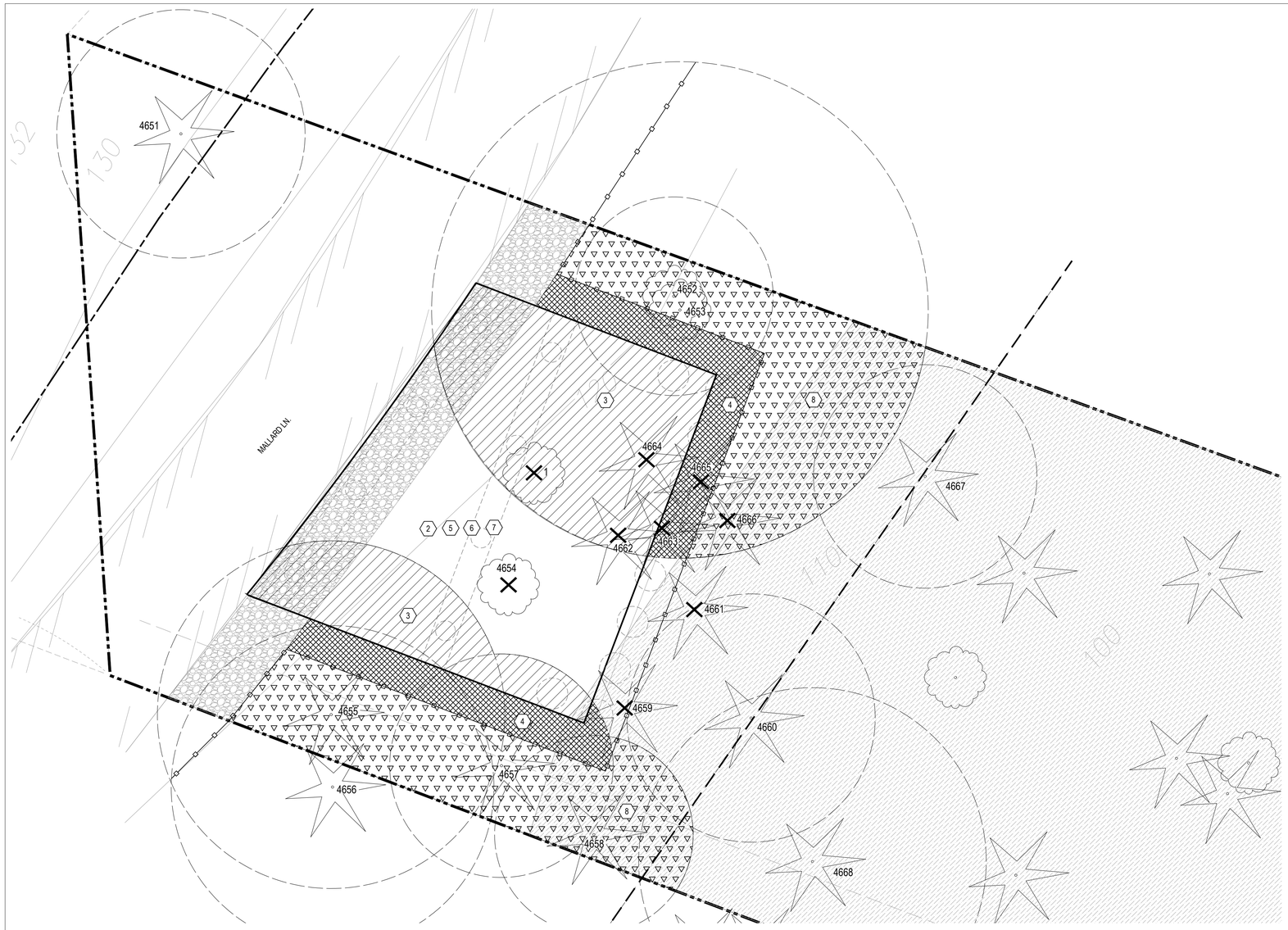
NOT FOR CONSTRUCTION

MITIGATION PLAN

11/21/2022

SITE IMPACTS AND MITIGATION PLAN

L002



LEGEND

EXISTING

- PROPERTY LINE
- 200' SHORELINE JURISDICTION
- STEEP SLOPE SETBACK (50')
- STEEP SLOPE AREA
- GRAVEL
- EXISTING TREES WITH NUMBERS
- DRIP LINE

PROPOSED

- TREES TO BE REMOVED (9 TOTAL)
- TREE PROTECTION FENCE (1 / L003)
- POTENTIAL ROOT ZONE IMPACTS (FOR TREES TO REMAIN)
- ROOT PROTECTION ZONE (SEE NOTE 4 BELOW)
- VEGETATION PROTECTION AREA (SEE NOTE 8 BELOW)

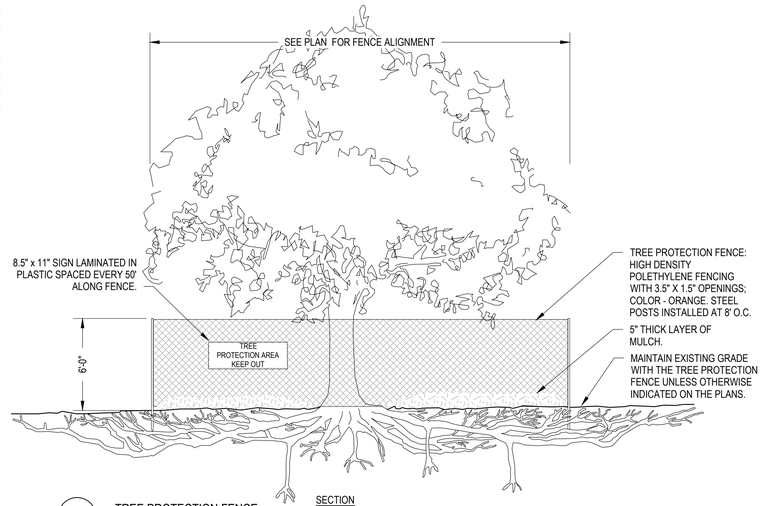
TREE REMOVAL AND PROTECTIONNOTES

1. TREE DATA WAS RECORDED BY A CERTIFIED ARBORIST AT THE WATERSHED COMPANY ON 09/14/2022.
2. NO LIMB PRUNING SHALL BE PERFORMED UNLESS UNDER THE DIRECTION OF AN ARBORIST.
3. ROOT PRUNING WITHIN DRIPLINES OF PROPOSED WORK SHALL BE DONE BY HAND.
4. INSTALL 1-2" OF MULCH TO THE ROOT PROTECTION ZONE WITHIN THE TREE PROTECTION AREA.
5. NO EQUIPMENT OR MATERIALS SHALL BE STORED OR OPERATED INSIDE THE TREE PROTECTIVE FENCING, INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
6. UNAUTHORIZED ACTIVITIES IN TREE PROTECTION AREA MAY REQUIRE EVALUATION BY PRIVATE ARBORIST TO IDENTIFY IMPACTS AND MITIGATION REQUIRED.
7. EXPOSED ROOTS: FOR ROOTS GREATER THAN 1" DAMAGED DURING CONSTRUCTION, MAKE A CLEAN, STRAIGHT CUT TO REMOVE DAMAGED PORTION AND INFORM CITY ARBORIST.
8. FOR THE VEGETATION PROTECTION AREA: PRIOR TO CONSTRUCTION, INSTALL 1-2" OF MULCH AND A TEMPORARY ABOVE-GROUND IRRIGATION SYSTEM CAPABLE OF DELIVERING 1-2" OF WATER PER WEEK DURING SUMMER MONTHS TO ALL VEGETATION WITHIN THE PROTECTION AREAS. SYSTEM SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.

TREE TABLE

ID (Tag #)	SCIENTIFIC NAME (COMMON NAME)	EV / DEC	COMB DBH ROUNDED	CONDITION	SIGNIFICANT?	REMOVE?
1	ACER MACROPHYLLUM (BIGLEAF MAPLE)	D	0.0	DEAD	NO	YES
4651	PSEUDOTSUGA MENZIESII (DOUGLAS-FIR)	E	13.5	FAIR	YES	NO
4652	ACER MACROPHYLLUM (BIGLEAF MAPLE)	D	6.9	GOOD	NO	NO
4653	ACER MACROPHYLLUM (BIGLEAF MAPLE)	D	28.3	GOOD	YES	NO
4654	ACER MACROPHYLLUM (BIGLEAF MAPLE)	D	24.4	FAIR	YES	YES
4655	PSEUDOTSUGA MENZIESII (DOUGLAS-FIR)	E	20.4	FAIR	YES	NO
4656	PSEUDOTSUGA MENZIESII (DOUGLAS-FIR)	E	22.1	FAIR	YES	NO
4657	THUJA PLICATA (WESTERN RED CEDAR)	E	16.2	GOOD	YES	NO
4658	CORNUS NUTTALLII (PACIFIC DOGWOOD)	D	7.2	GOOD	NO	NO
4659	THUJA PLICATA (WESTERN RED CEDAR)	E	17.6	GOOD	YES	YES
4660	THUJA PLICATA (WESTERN RED CEDAR)	E	12.1	GOOD	YES	NO
4661	THUJA PLICATA (WESTERN RED CEDAR)	E	10.6	GOOD	YES	YES
4662	THUJA PLICATA (WESTERN RED CEDAR)	E	6.3	GOOD	NO	YES
4663	THUJA PLICATA (WESTERN RED CEDAR)	E	10.8	GOOD	YES	YES
4664	THUJA PLICATA (WESTERN RED CEDAR)	E	7.0	FAIR	NO	YES
4665	THUJA PLICATA (WESTERN RED CEDAR)	E	6.9	GOOD	NO	YES
4666	THUJA PLICATA (WESTERN RED CEDAR)	E	13.0	GOOD	YES	YES
4667	THUJA PLICATA (WESTERN RED CEDAR)	E	10.1	FAIR	YES	NO
4668	PSEUDOTSUGA MENZIESII (DOUGLAS-FIR)	E	13.9	GOOD	YES	NO

NOTE: SEE ARBORIST REPORT FOR TREE RETENTION CALCULATIONS.



1 TREE PROTECTION FENCE — SECTION

Scale: NTS

5' 2.5' 0 5' 10'

SCALE 1" = 5'

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NOT FOR CONSTRUCTION

MITIGATION PLAN

11/21/2022

TREE REMOVAL AND PROTECTION PLAN

L003

LEGEND

EXISTING

- PROPERTY LINE
- 200' SHORELINE SETBACK
- STEEP SLOPE SETBACK (50')
- STEEP SLOPE AREA
- GRAVEL
- EXISTING TREES

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME	SIZE	QTY
	ACER MACROPHYLLUM/ BIG-LEAF MAPLE	2 GALLON	2
	THUJA PLICATA / WESTERN RED CEDAR	2 GALLON	1

SHRUBS	BOTANICAL / COMMON NAME	SIZE	QTY
	ACER CIRCINATUM / VINE MAPLE	2 GALLON	3
	AMELANCHIER ALNIFOLIA / SERVICEBERRY	2 GALLON	4

SHRUB AREAS	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY*
	SHRUBS**			
	CORYLUS CORNUTA / WESTERN HAZELNUT	2 GALLON	60" o.c.	14
	MAHONIA AQUIFOLIUM / OREGON GRAPE	2 GALLON	60" o.c.	14
	OEMLERIA CERASIFORMIS / OSOBERRY	2 GALLON	60" o.c.	14
	RUBUS PARVIFLORUS / THIMBLEBERRY	2 GALLON	60" o.c.	14
	SYMPHORICARPOS ALBUS / COMMON WHITE SNOWBERRY	2 GALLON	60" o.c.	14
	VACCINIUM OVATUM / EVERGREEN HUCKLEBERRY	2 GALLON	60" o.c.	14
	GROUND COVERS**			
	GAULTHERIA SHALLON / SALAL	2 GALLON	24" o.c.	150
	POLYSTICHUM MUNITUM / WESTERN SWORD FERN	2 GALLON	24" o.c.	150

*THE PLANTING AREA IS ON A 1.5:1 SLOPE AND THEREFORE, PLANT QUANTITIES WERE MULTIPLIED BY A FACTOR OF 1.2019.
**GROUP GROUNDCOVERS AND SHRUBS BY SPECIES AND PLANT IN GROUPS OF 5-7

PLANTING NOTES

1. SEE SHEET L005 FOR PLANT INSTALLATION SPECIFICATIONS AND DETAILS AND SOIL PREPARATION.
2. THIS PLAN ASSUMES THAT ONCE INVASIVE ARE CLEARED, THERE WILL BE NO EXISTING NATIVE SHRUBS OR GROUNDCOVER PRESENT.
3. FIELD ADJUST PLANT LOCATIONS TO AVOID EXISTING ROOTS.

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NOT FOR CONSTRUCTION
MITIGATION PLAN
11/21/2022

RESTORATION PLANTING PLAN

L004

PLANT INSTALLATION SPECIFICATIONS

GENERAL NOTES

QUALITY ASSURANCE
1. PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
2. PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF).
3. TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
4. NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 2018 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997.

DEFINITIONS
1. PLANTS/PLANT MATERIALS. PLANTS AND PLANT MATERIALS SHALL INCLUDE ANY LIVE PLANT MATERIAL USED ON THE PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO CONTAINER GROWN, B&B OR BARREROOT PLANTS; LIVE STAKES AND FASCINES (WATTLES); TUBERS, CORMS, BULBS, ETC..; SPRIGS, PLUGS, AND LINERS.
2. CONTAINER GROWN. CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.

SUBSTITUTIONS
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SPECIFIED MATERIALS IN ADVANCE IF SPECIAL GROWING, MARKETING OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED MATERIALS.
2. SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE RESTORATION CONSULTANT.
3. IF PROOF IS SUBMITTED THAT ANY PLANT MATERIAL SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR ALTERNATIVE SPECIES, WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICE.
4. SUCH PROOF WILL BE SUBSTANTIATED AND SUBMITTED IN WRITING TO THE CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION.

INSPECTION
1. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE RESTORATION CONSULTANT FOR CONFORMANCE TO SPECIFICATIONS, EITHER AT TIME OF DELIVERY ON-SITE OR AT THE GROWER'S NURSERY. APPROVAL OF PLANT MATERIALS AT ANY TIME SHALL NOT IMPAIR THE SUBSEQUENT RIGHT OF INSPECTION AND REJECTION DURING PROGRESS OF THE WORK.
2. PLANTS INSPECTED ON SITE AND REJECTED FOR NOT MEETING SPECIFICATIONS MUST BE REMOVED IMMEDIATELY FROM SITE OR RED-TAGGED AND REMOVED AS SOON AS POSSIBLE.
3. THE RESTORATION CONSULTANT MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE, THE RESTORATION CONSULTANT MAY REQUIRE THE INSPECTED PLANTS BE LABELED AND RESERVED FOR PROJECT. SUBSTITUTION OF THESE PLANTS WITH OTHER INDIVIDUALS, EVEN OF THE SAME SPECIES AND SIZE, IS UNACCEPTABLE.

MEASUREMENT OF PLANTS
1. PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AS OUTLINED IN THIS CONTRACT.
2. HEIGHT AND SPREAD DIMENSIONS SPECIFIED REFER TO MAIN BODY OF PLANT AND NOT BRANCH OR ROOT TIP TO TIP. PLANT DIMENSIONS SHALL BE MEASURED WHEN THEIR BRANCHES OR ROOTS ARE IN THEIR NORMAL POSITION.
3. WHERE A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE LESS THAN THE MINIMUM SIZE AND AT LEAST 50% OF THE PLANTS SHALL BE AS LARGE AS THE MEDIAN OF THE SIZE RANGE. (EXAMPLE: IF THE SIZE RANGE IS 12" TO 18", AT LEAST 50% OF PLANTS MUST BE 15" TALL.).

SUBMITTALS

PROPOSED PLANT SOURCES
1. WITHIN 45 DAYS AFTER AWARD OF THE CONTRACT, SUBMIT A COMPLETE LIST OF PLANT MATERIALS PROPOSED TO BE PROVIDED DEMONSTRATING CONFORMANCE WITH THE REQUIREMENTS SPECIFIED. INCLUDE THE NAMES AND ADDRESSES OF ALL GROWERS AND NURSERIES.

PRODUCT CERTIFICATES
1. PLANT MATERIALS LIST - SUBMIT DOCUMENTATION TO CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION THAT PLANT MATERIALS HAVE BEEN ORDERED. ARRANGE PROCEDURE FOR INSPECTION OF PLANT MATERIAL WITH CONSULTANT AT TIME OF SUBMISSION.
2. HAVE COPIES OF VENDOR'S OR GROWERS' INVOICES OR PACKING SLIPS FOR ALL PLANTS ON SITE DURING INSTALLATION. INVOICE OR PACKING SLIP SHOULD LIST SPECIES BY SCIENTIFIC NAME, QUANTITY, AND DATE DELIVERED (AND GENETIC ORIGIN IF THAT INFORMATION WAS PREVIOUSLY REQUESTED).

DELIVERY, HANDLING, & STORAGE

NOTIFICATION
CONTRACTOR MUST NOTIFY CONSULTANT 48 HOURS OR MORE IN ADVANCE OF DELIVERIES SO THAT CONSULTANT MAY ARRANGE FOR INSPECTION.

PLANT MATERIALS
1. TRANSPORTATION - DURING SHIPPING, PLANTS SHALL BE PACKED TO PROVIDE PROTECTION AGAINST CLIMATE EXTREMES, BREAKAGE AND DRYING. PROPER VENTILATION AND PREVENTION OF DAMAGE TO BARK, BRANCHES, AND ROOT SYSTEMS MUST BE ENSURED.
2. SCHEDULING AND STORAGE - PLANTS SHALL BE DELIVERED AS CLOSE TO PLANTING AS POSSIBLE. PLANTS IN STORAGE MUST BE PROTECTED AGAINST ANY CONDITION THAT IS DETRIMENTAL TO THEIR CONTINUED HEALTH AND VIGOR.
3. HANDLING - PLANT MATERIALS SHALL NOT BE HANDLED BY THE TRUNK, LIMBS, OR FOLIAGE BUT ONLY BY THE CONTAINER, BALL, BOX, OR OTHER PROTECTIVE STRUCTURE, EXCEPT BAREROOT PLANTS SHALL BE KEPT IN BUNDLES UNTIL PLANTING AND THEN HANDLED CAREFULLY BY THE TRUNK OR STEM.
4. LABELS - PLANTS SHALL HAVE DURABLE, LEGIBLE LABELS STATING CORRECT SCIENTIFIC NAME AND SIZE. TEN PERCENT OF CONTAINER GROWN PLANTS IN INDIVIDUAL POTS SHALL BE LABELED. PLANTS SUPPLIED IN FLATS, RACKS, BOXES, BAGS, OR BUNDLES SHALL HAVE ONE LABEL PER GROUP.

WARRANTY

PLANT WARRANTY
PLANTS MUST BE GUARANTEED TO BE TRUE TO SCIENTIFIC NAME AND SPECIFIED SIZE, AND TO BE HEALTHY AND CAPABLE OF VIGOROUS GROWTH.

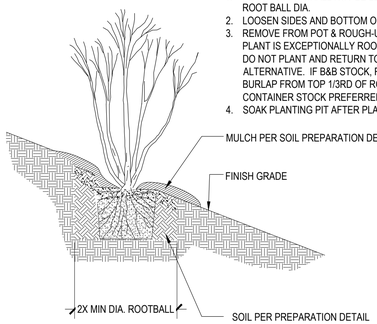
REPLACEMENT
1. PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS AT THE CONSULTANT'S DISCRETION MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
2. PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED AT THE CONTRACTOR'S EXPENSE.

PLANT MATERIAL

GENERAL
1. PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH.

QUANTITIES
SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

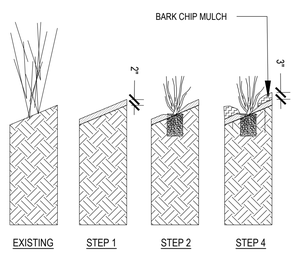
ROOT TREATMENT
1. CONTAINER GROWN PLANTS (INCLUDES PLUGS): PLANT ROOT BALLS MUST HOLD TOGETHER WHEN THE PLANT IS REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL.
2. PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
3. ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.



NOTES:
1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA.
2. LOOSEN SIDES AND BOTTOM OF PLANT PIT
3. REMOVE FROM POT & ROUGH-UP ROOT BALL BEFORE INSTALLING. IF PLANT IS EXCEPTIONALLY ROOT-BOUND OR CONTAINS CIRCLING ROOTS, DO NOT PLANT AND RETURN TO NURSERY FOR AN ACCEPTABLE ALTERNATIVE. IF B&B STOCK, REMOVE ALL TWINE/WIRE, & REMOVE BURLAP FROM TOP 1/3RD OF ROOTBALL PRIOR TO PLANTING (NOTE: CONTAINER STOCK PREFERRED)
4. SOAK PLANTING PIT AFTER PLANTING

1 CONTAINER PLANTING DETAIL

Scale: NTS



*NOTE:
COMPOST OR MULCH MAY REQUIRE HYDRAULIC APPLICATION ON STEEP SLOPES.

PLANTING AREA PREPARATION

STEP 1
REMOVE UNDESIRABLE SPECIES. WORK WITHIN EXISTING ROOT ZONES SHALL BE DONE BY HAND. CLEAR AND GRUB BY HAND. ALL CLEARED VEGETATION SHALL BE REMOVED OFF SITE. PLACE 2" OF COMPOST BLANKET.

STEP 2
INSTALL PLANTS PER DETAIL.

STEP 4
INSTALL BARK CHIP MULCH BLANKET LAYER TO A DEPTH OF THREE (3) INCHES.

2 STEEP SLOP SOIL PREPARATION

Scale: NTS

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MITIGATION PLAN

11/21/2022

PLANT INSTALLATION DETAILS AND NOTES

L005

MITIGATION PLAN NOTES

THIS PLAN HAS BEEN PREPARED AS MITIGATION FOR IMPACTS TO THE STEEP SLOPE AREA AND STEEP SLOPE BUFFER AREA. THE IMPACTS TO THE BUFFER ARE TO ACCOMMODATE THE CONSTRUCTION OF A NEW PARKING PLATFORM. WHICH WILL IMPACT A TOTAL OF 621 SQUARE FEET OF STEEP SLOPE AND BUFFER. TO OFFSET THESE CRITICAL AREA BUFFER IMPACTS, A TOTAL OF 1,645 SQUARE FEET OF ENHANCEMENT IS PROPOSED. THE PLANTING OF SHRUBS, AND GROUND COVERS WILL BE FOCUSED ON THE EAST SIDE OF THE PROPOSED PARKING PLATFORM IN ORDER TO MAXIMIZE THE BENEFIT TO HABITAT FUNCTION. THIS AREA CURRENTLY CONTAINS MANY NATIVE TREES BUT HAS A HEAVY PRESENCE OF INVASIVE SPECIES, LACKS A NATIVE SHRUB UNDERSTORY, AND WILL BENEFIT FROM ADDED STRUCTURAL COMPLEXITY. MITIGATION ACTIVITIES WILL CONSIST OF REMOVAL OF NON-NATIVE MATERIALS; PLANTING NATIVE SHRUBS AND GROUND COVERS PLANTS AS DESIGNATED IN THE ATTACHED PLANS (TOTALING 1,645 SF); AND MAINTENANCE AND MONITORING OF MITIGATION AREAS.

MITIGATION AREA WORK SEQUENCE (SEE MATERIALS FOR ITEMS IN BOLD)

A RESTORATION SPECIALIST SHALL MAKE SITE VISITS TO VERIFY THE FOLLOWING PROJECT MILESTONES:

1. MARK THE CLEARING LIMITS WITH HIGH VISIBILITY FENCING OR SIMILAR MEANS, AND / OR REVIEW INSTALLATION OF TREE PROTECTION FENCE AND VEGETATION PROTECTION MEASURES.
2. INSTALL EROSION CONTROL MEASURES ACCORDING TO CITY BMPS.
3. PREPARE SITE SOILS PER THE SOIL PREPARATION DETAIL (SHEET L005)
4. INSTALL NATIVE PLANTS PER PLANTING DETAILS ON SHEET L005.
   a. NATIVE PLANT INSTALLATION SHALL OCCUR DURING THE DORMANT SEASON (OCTOBER 15TH THROUGH MARCH 1ST) IN FROST-FREE PERIODS ONLY.
   b. LAYOUT PLANT MATERIAL PER PLAN FOR INSPECTION BY THE RESTORATION SPECIALIST. PLANT SUBSTITUTIONS WILL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE RESTORATION SPECIALIST.
   c. INSTALL PLANTS PER PLANTING DETAILS
5. WATER IN EACH PLANT THOROUGHLY TO REMOVE AIR POCKETS.
6. INSTALL A TEMPORARY IRRIGATION SYSTEM CAPABLE OF SUPPLYING AT LEAST 1-INCH OF WATER PER WEEK TO THE ENTIRE PLANTED AREA DURING THE DRY SEASON (JUNE 1ST THROUGH SEPTEMBER 30TH).
7. ONE YEAR AFTER INITIAL PLANTING, APPLY A SLOW-RELEASE, PHOSPHOROUS-FREE, GRANULAR FERTILIZER TO EACH INSTALLED PLANT.

MAINTENANCE

THE SITE SHALL BE MAINTAINED FOR FIVE YEARS FOLLOWING SUCCESSFUL INSTALLATION.

1. REPLACE EACH PLANT FOUND DEAD IN THE SUMMER MONITORING VISITS IN THE FOLLOWING DORMANT SEASON (OCTOBER 15 - MARCH 1). REPLACEMENT SHALL BE OF THE SAME SPECIES AND SIZE PER PLAN UNLESS OTHERWISE APPROVED BY THE RESTORATION SPECIALIST.
2. GENERAL WEEDING FOR ALL PLANTED AREAS
   a. AT LEAST TWICE ANNUALLY, REMOVE COMPETING GRASSES AND WEEDS FROM AROUND THE BASE OF EACH INSTALLED PLANT TO A RADIUS OF 12 INCHES. WEEDING SHOULD OCCUR AT LEAST ONCE IN THE SPRING AND ONCE IN THE SUMMER. THOROUGH WEEDING WILL RESULT IN LOWER PLANT MORTALITY AND ASSOCIATED PLANT REPLACEMENT COSTS.
   b. MORE FREQUENT WEEDING MAY BE NECESSARY DEPENDING ON WEED CONDITIONS THAT DEVELOP AFTER PLANT INSTALLATION.
   c. NOXIOUS WEEDS MUST BE REMOVED FROM THE ENTIRE MITIGATION AREA, AT LEAST TWICE ANNUALLY.
   d. DO NOT USE STRING TRIMMERS IN THE VICINITY OF INSTALLED PLANTS, AS THEY MAY DAMAGE OR KILL THE PLANTS.
3. MAINTAIN A THREE-INCH-THICK LAYER OF WOODCHIP MULCH ACROSS THE ENTIRE PLANTING AREA. MULCH SHOULD BE PULLED BACK TWO INCHES FROM THE PLANT STEMS.
4. INSPECT AND REPAIR THE IRRIGATION SYSTEM AS NECESSARY EACH SPRING. DURING AT LEAST THE FIRST TWO GROWING SEASONS, MAKE SURE THAT THE ENTIRE PLANTING AREA RECEIVES A MINIMUM OF ONE INCH OF WATER PER WEEK FROM JUNE 1ST THROUGH SEPTEMBER 30TH.

GOALS

1. MAINTAIN SLOPE STABILITY BY ESTABLISHING SHRUBS IN THE STEEP SLOPE AND STEEP SLOPE BUFFER AREAS (AREAS CURRENTLY DOMINATED BY SHALLOW-ROOTING INVASIVE SPECIES).
2. ENHANCE 1,645 SQUARE FEET OF DEGRADED STEEP SLOPE AREA AND STEEP SLOPE BUFFER.
   a. CREATE A DENSE, NATIVE SHRUB AND GROUNDCOVER COMMUNITY.
   b. REMOVE NON-NATIVE AND INVASIVE PLANT SPECIES FROM THE ENHANCEMENT AREA.

PERFORMANCE STANDARDS

THE FOLLOWING PERFORMANCE STANDARDS WILL BE USED TO GAUGE THE SUCCESS OF THE PROJECT OVER TIME. IF ALL PERFORMANCE STANDARDS HAVE BEEN SATISFIED BY THE END OF YEAR FIVE, THE PROJECT SHALL BE CONSIDERED COMPLETE AND THE CITY OF BELLEVUE SHALL RELEASE THE PERFORMANCE BOND.

1. SURVIVAL
   a. ACHIEVE 100% SURVIVAL OF ALL INSTALLED TREES AND SHRUBS BY THE END OF YEAR ONE.
   b. ACHIEVE 80% SURVIVAL OF ALL INSTALLED SHRUBS AND 100% SURVIVAL OF ALL INSTALLED CONIFERS BY THE END OF YEAR TWO.
   c. ACHIEVE 80% SURVIVAL OF ALL INSTALLED TREES AND SHRUBS BY THE END OF YEAR FIVE.

   SURVIVAL STANDARDS MAY BE ACHIEVED THROUGH ESTABLISHMENT OF PLANTED MATERIAL, RECRUITMENT OF NATIVE VOLUNTEERS, OR REPLACEMENT PLANTS AS NECESSARY.
2. DIVERSITY
   a. ESTABLISH AT LEAST FOUR NATIVE SHRUB SPECIES IN THE ENHANCEMENT AREA BY THE END OF YEAR FIVE. ESTABLISHMENT IS DEFINED AS FIVE OR MORE INDIVIDUAL PLANTS OF THE SAME SPECIES ALIVE AND HEALTHY.
3. COVER
   a. ACHIEVE 40% COVER OF NATIVE TREES, SHRUBS AND GROUNDCOVER BY THE END OF YEAR THREE.
   b. ACHIEVE 60% COVER OF NATIVE TREES, SHRUBS, AND GROUNDCOVER BY THE END OF YEAR FIVE.
   c. NO MORE THAN 10% COVER BY INVASIVE SPECIES LISTED AS CLASS A, B, OR C BY THE KING COUNTY NOXIOUS WEED CONTROL BOARD IN ANY MONITORING YEAR.

MONITORING

PRIOR TO THE COMMENCEMENT OF THE MONITORING PHASE, AN AS-BUILT PLAN DOCUMENTING THE SUCCESSFUL INSTALLATION OF THE PROJECT WILL BE SUBMITTED TO THE CITY OF BELLEVUE. IF NECESSARY, THE AS-BUILT REPORT MAY INCLUDE A MARK-UP OF THE ORIGINAL PLAN THAT NOTES ANY SIGNIFICANT CHANGES OR SUBSTITUTIONS THAT OCCURRED. DURING THE AS-BUILT INSPECTION, THE RESTORATION SPECIALIST WILL ESTABLISH AT LEAST FOUR PERMANENT PHOTO-POINTS.

THE SITE WILL BE MONITORED TWICE ANNUALLY FOR FIVE YEARS BEGINNING WITH APPROVAL OF THE AS-BUILT REPORT. EACH SPRING THE RESTORATION SPECIALIST WILL CONDUCT A BRIEF MAINTENANCE INSPECTION FOLLOWED BY A MEMO SUMMARIZING MAINTENANCE ITEMS NECESSARY FOR THE UPCOMING GROWING SEASON. THE FORMAL LATE-SEASON MONITORING INSPECTION WILL TAKE PLACE ONCE ANNUALLY DURING LATE SUMMER OR EARLY FALL. DURING EACH LATE-SEASON MONITORING INSPECTION, THE FOLLOWING DATA WILL BE COLLECTED:

1. PERCENT SURVIVAL OF ALL INSTALLED PLANTINGS, INCLUDING SPECIES SPECIFIC COUNTS OF INSTALLED TREE AND SHRUB PLANTINGS (NOTE: GROUNDCOVER PLANTS COUNTED IN YEAR-1 ONLY, FOR WARRANTY PURPOSES).
2. NATIVE WOODY COVER AND GRROUNDCOVER AS DETERMINED USING VISUAL COVER CLASS ESTIMATES.
3. ESTIMATES OF INVASIVE HERBACEOUS PLANTS OR GROUNDCOVER USING VISUAL COVER ESTIMATES.
4. THE SPECIES COMPOSITION, NOTING WHETHER A SPECIES IS NATIVE OR EXOTIC AND WHETHER PLANTS WERE INSTALLED OR ARE VOLUNTEERS.
5. THE GENERAL HEALTH AND VIGOR OF THE INSTALLED VEGETATION.
6. PHOTOGRAPHS FROM FIXED PHOTO-POINTS ESTABLISHED DURING THE AS-BUILT INSPECTION.
7. ANY EVIDENCE OF WILDLIFE USAGE IN THE MITIGATION AREA.

MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY TO THE CITY. REPORTS SHALL DOCUMENT THE CONDITIONS OF THE SITE, INCLUDING QUANTITATIVE DATA COLLECTED DURING THE MONITORING INSPECTION, AND SHALL PROVIDE MAINTENANCE RECOMMENDATIONS THAT MAY BE NECESSARY TO HELP THE SITE ACHIEVE THE STATED PERFORMANCE STANDARDS.

CONTINGENCY PLAN

IF ANY MONITORING REPORT REVEALS THAT THE RESTORATION PLAN HAS FAILED IN WHOLE OR IN PART, AND SHOULD THAT FAILURE BE BEYOND THE SCOPE OF ROUTINE MAINTENANCE, THE APPLICANT WILL SUBMIT A CONTINGENCY PLAN TO THE CITY OF BELLEVUE FOR APPROVAL. THIS PLAN MAY INCLUDE REPLANTING, SOIL AMENDMENTS OR TOPDRESSING, SUBSTITUTIONS FOR SPECIES SELECTED IN THE ORIGINAL PLAN, AND ADAPTIVE WEED CONTROL METHODS.

MATERIALS

1. WOODCHIP MULCH: 9-14.4(3) BARK OR WOOD CHIPS- WSDOT STANDARD SPEC.

   BARK OR WOOD CHIP MULCH SHALL BE DERIVED FROM DOUGLAS FIR, PINE, OR HEMLOCK SPECIES. IT SHALL NOT CONTAIN RESIN, TANNIN, OR OTHER COMPOUNDS IN QUANTITIES THAT WOULD BE DETRIMENTAL TO PLANT LIFE. SAWDUST SHALL NOT BE USED AS MULCH.

   BARK OR WOOD CHIPS WHEN TESTED SHALL BE ACCORDING TO WSDOT TEST METHOD T 123 PRIOR TO PLACEMENT AND SHALL MEET THE FOLLOWING LOOSE VOLUME GRADATION:

SIEVE SIZE	PERCENT PASSING	
	MINIMUM	MAXIMUM
2"	95	100
NO. 4	0	30

2. COMPOST: CEDAR GROVE COMPOST OR EQUIVALENT "COMPOSTED MATERIAL" PER WASHINGTON ADMIN. CODE 173-350-220.
3. FERTILIZER: SLOW-RELEASE, PHOSPHOROUS-FREE GRANULAR FERTILIZER. MOST COMMERCIAL NURSERIES CARRY THIS PRODUCT. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR USE. KEEP FERTILIZER IN WEATHER-TIGHT CONTAINER WHILE ON-SITE. FERTILIZER IS ONLY TO BE APPLIED IN YEARS TWO AND THREE, NOT IN YEAR ONE.
4. RESTORATION SPECIALIST: QUALIFIED PROFESSIONAL ABLE TO EVALUATE AND MONITOR THE CONSTRUCTION OF ENVIRONMENTAL RESTORATION PROJECTS.

THE WATERSHED COMPANY
SCIENCE & DESIGN
750 6TH STREET SOUTH
KIRKLAND, WA 98033
425.822.5242
WWW.THEWATERSHEDCO.COM

PROJECT:
MCKISSICK RESIDENCE
1600 WEST LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

PRINCIPAL: KB
PROJECT MANAGER: AF
DRAWN BY: HC
CHECKED BY: AF
JOB NO.: 220821
DATE: 11/21/2022

REVISIONS:

NO.	DESCRIPTION	DATE
1	MITIGATION PLAN	11/21/22

NOT FOR CONSTRUCTION

MITIGATION PLAN

11/21/2022

MITIGATION PLAN NOTES

L006

November 18, 2022

Ashley and Ian McKissick
1600 West Lake Sammamish Pkwy NE
Bellevue, WA 98008
c/o Frank Russell, Integral Construction
Via email: frankrussell@integralconstruction.com

Re: Arborist Report - McKissick Residence

The Watershed Company Reference Number: 220821

Dear Ashley and Ian:

We are pleased to present you with the findings of our tree inventory and assessment for your property at 1600 West Lake Sammamish Pkwy NE (parcel #7430500140) located in Bellevue, Washington. Drew Foster, an ISA Certified Arborist® and Qualified Tree Risk Assessor (TRAQ) with The Watershed Company, visited the subject property on September 14, 2022 to inventory and assess trees within the study area. The intent of this tree inventory was to screen for, measure, and tag any trees meeting Bellevue's significant tree definition that may be impacted by the proposed project described below.

Tree attributes, including species, size, and condition, were assessed during the on-site inventory and are summarized in the enclosed Tree Inventory Table. The following documents are included with this letter:

- Tree Inventory Table
- Tree Inventory Sketch

Site Characterization

The subject parcel is approximately 12,565 square-feet in size and is currently developed with a single-family residence and associated site improvements, along with an ornamental landscape. The site is zoned single family residential (R-2.5). The parcel also contains a steep slope and

natural wooded area which spans roughly from Mallard Ln to NE Rosemont Place. See Figure 1 for a map of the subject parcel and site vicinity.

Figure 1. Vicinity map showing the approximate location of the parcel area (outlined in yellow). (*Image source: King County iMap.*) The study area falls near the northwest portion of the parcel around Mallard Ln.

Study Area

The study area for the proposed project encompasses a portion of the wooded hillside and steep slope surrounding Mallard Ln and the subject parcel. Mallard Ln is paved with gravel shoulders. The wooded area consists of mature native trees with a mix of native and invasive understory shrubs and vines. The study area for locating trees was determined by estimating potential impacts from a proposed development shown on preliminary site plan drawings (CG Engineering, August 17, 2022).

Design Proposal

The project proposes construction of a rectangular parking platform over an existing gravel shoulder off Mallard Ln and adjacent wooded area. The platform would be supported by pilings installed in drilled holes, ranging between 18 and 30 inches in diameter, according to

preliminary site plan and soldier pile plan drawings (CG Engineering, October 18, 2022). To install pilings, 30 to 50 feet of vertical clearance above grade would be required (email communication, October 7, 2022).

Tree Assessment Methods

All significant trees in the study area were identified and assessed in the field using a Level I Visual Assessment according to International Society of Arboriculture (ISA) standards to collect species name (scientific and common), number of stems, diameter, estimated height, crown radius, condition, and general assessment notes. Attributes were recorded for additional off-site trees with critical root zones extending into the study area.

According to Bellevue Municipal Code (LUC) 20.50.046, significant trees are defined as "A healthy evergreen or deciduous tree, eight inches in diameter or greater, measured four feet above existing grade. The Director of the Development Services Department may authorize the exclusion of any tree which for reasons of health, age or site development is not desirable to retain."

Trees within and adjacent to the study area were assessed and assigned a unique identification number. Each assessed on-site tree was tagged with a 1.25-inch aluminum tag that was affixed to the trunk of the tree. Dead trees and off-site trees did not receive an aluminum tag.

Tree data and geospatial locations were collected in the field using an iPad with the ArcGIS Field Maps application. A Topographic Survey, provided by Pacific Coast Surveys, Inc (September 7, 2021) was referenced to adjust tree locations. Accuracy is variable and should not be considered equivalent to a professional land survey. No warranty is expressed or implied.

Additional trees were documented and located on the survey provided, which continue down a steep slope toward the driveway of the residence. These trees were confirmed to align with existing conditions, but were outside of the study area to be impacted by the project, and therefore not assessed for the information as follows.

Diameter

The diameter-at-breast-height (DBH) of all assessed trees was measured at four feet above existing grade. Methodology for measuring and calculating the diameter of trees with multiple trunks, major leans, or on steep slopes followed those outlined in the *Guide for Plant Appraisal, 10th Edition*, written by the Council of Tree and Landscape Appraisers (CTLA) and published by ISA (CTLA, 2020). DBH for multi-stemmed trees was calculated by taking the square root of

the sum of each diameter squared, which allows for comparison to other single-stemmed trees and for more accurate permitting and tree retention calculations.

Height

Measurements for tree heights were taken using a TruPulse 200L laser rangefinder by Laser Technology, Inc.

Canopy Radius

Canopy radius, also known as dripline, was measured horizontally from the center of the trunk to the outermost branch tips. For trees with uneven crowns, the average of two perpendicular radii was recorded.

Condition

A Level 1 visual assessment was used to evaluate the health and condition of trees within the study area in accordance with ISA and CTLA standards. The condition determination was based on current conditions and considered the health, structural integrity, and form of the tree, in addition to characteristics of each species. Each tree was given a rating from 1-6 (Excellent – Dead/Dying) as summarized below in Table 1.

Table 1. Tree Condition Ratings. (CTLA 2020)

Rating Category	Condition Components			Percent Rating
	Health	Structure	Form	
Excellent - 1	High vigor and nearly perfect health with little or no twig dieback, discoloration, or defoliation.	Nearly ideal and free of defects.	Nearly ideal for the species. Generally symmetric. Consistent with the intended use.	81% to 100%
Good - 2	Vigor is normal for species. No significant damage due to diseases or pests. Any twig dieback, defoliation, or discoloration is minor.	Well-developed structure. Defects are minor and can be corrected.	Minor asymmetries/deviations from species norm. Mostly consistent with the intended use. Function and aesthetics are not compromised.	61% to 80%
Fair - 3	Reduced vigor. Damage due to insects or diseases may be significant and associated with defoliation but is not likely to be fatal. Twig dieback, defoliation, discoloration, and/or dead branches may compromise up to 50% of the crown.	A single defect of a significant nature or multiple moderate defects. Defects are not practical to correct or would require multiple treatments over several years.	Major asymmetries/deviations from species norm and/or intended use. Function and/or aesthetics are compromised.	41% to 60%
Poor - 4	Unhealthy and declining in appearance. Poor vigor. Low foliage density and poor foliage color are present. Potentially fatal pest infestation. Extensive twig and/or branch dieback.	A single serious defect or multiple significant defects. Recent change in tree orientation. Observed structural problems cannot be corrected. Failure may occur at any time.	Largely asymmetric/abnormal. Detracts from intended use and/or aesthetics to a significant degree.	21% to 40%
Very Poor - 5	Poor vigor. Appears dying and in the last stages of life. Little live foliage.	Single or multiple severe defects. Failure is probable or imminent.	Visually unappealing. Provides little or no function in the landscape.	6% to 20%
Dead - 6				0% to 5%

Tree Assessment Results

A total of 21 trees were assessed in the study area. Of those trees, 12 were significant and on-site (stem is located within the subject parcel), three were significant and off-site (stem located off the subject parcel but canopy and root zone within project area), and the remaining six trees did not meet the criteria for a significant tree. Of those trees assessed that are both significant and on-site, three are Douglas-firs (*Pseudotsuga menziesii*), seven are western redcedar (*Thuja plicata*), and two are bigleaf maples (*Acer macrophyllum*). A summary of all trees inventoried can be found in the enclosed Tree Inventory Table.

Diameter

Assessed on-site significant trees within the study area range in DBH from 10.1 inches to 28.3 inches. The average diameter is 15.9 inches.

Height

The height of significant trees within the study area ranges from 30 feet to 100 feet. The average height is 62.9 feet.

Canopy Radius

The canopy radii of on-site significant trees within the study area ranges from nine feet to 20 feet, with an average radius of 12.1 feet.

Condition

The majority of trees (8) are in *good* condition; they have good vigor, healthy canopies and are generally free of defects and disease. Four are rated as *fair*, mostly because of low live crown ratio and ivy crowding the tree canopy.

Local Regulations

City of Bellevue regulates tree activity under Land Use Code (LUC) 20.20.900 – Tree Retention and Replacement. Additionally, any impacts to vegetation within an identified Critical Area are regulated under LUC 20.25H. Critical area impacts and mitigation strategies are discussed in a Critical Areas Report as well as a Mitigation Plan prepared by The Watershed Company.

Project Implications

This proposed project would be regulated under LUC 20.20.900.D.2 requiring retention of at least 15 percent of the diameter inches of significant existing trees. Significant trees that are prioritized for retention are: i. Healthy significant trees over 60 feet in height; ii. Significant trees which form a continuous canopy; iii. Significant trees which contribute to the character of the

environment, and do not constitute a safety hazard; iv. Significant trees which provide winter wind protection or summer shade; v. Groups of significant trees which create a distinctive skyline feature; and vi. Significant trees in areas of steep slopes or adjacent to watercourses or wetlands.

Additionally, Bellevue LUC 20.20.900.D.5 requires that the applicant shall use tree protection techniques during land alteration and construction in order to provide for the continual healthy life of retained significant trees.

The top of a steep slope area is documented on the survey provided to Watershed by the client (Pacific Coast Surveys, Inc., August 08, 2022), as well as the 200-foot shoreline jurisdiction boundary from the Ordinary High Water Mark (OHWM) of Lake Sammamish. No impacts to trees or vegetation are expected within shoreline jurisdiction for this project. However, the proposed project would impact trees and vegetation within the steep slope and its buffer.

Recommended Actions

The following recommendations are provided to best address the proposed tree impacts. If the following recommended tree protection actions are not taken, trees included in this study are susceptible to significant root zone impacts that may jeopardize the long-term health of the tree.

Tree Removal Recommendations

Several trees fall within the footprint of the proposed development and will need to be removed for this project. Tree #4654, a 2-stem 24.4-inch bigleaf maple, and Tree #4663, a 10.8-inch western redcedar, are two significant on-site trees which fall within the proposed project footprint and are recommended to be removed. An additional four on-site non-significant trees are also recommended to be removed because they fall within the proposed project footprint, or will not likely survive impacts to their critical root zone. These four trees were determined to be non-significant because they did not meet the diameter threshold for a significant tree, or are standing dead snags.

Additionally, Tree #4659 (a 17.6-inch western redcedar), Tree #4661 (a 10.6-inch western redcedar), and Tree #4666 (a 13-inch western redcedar) are not expected to survive potential impacts to the canopy and root zone based on the proposed design and are recommended for removal. These three trees fall within the steep slope area. Stump grinding for these trees is not recommended to reduce disturbance to soil.

Tree Retention Calculations

The sum of diameter inches for on-site significant trees assessed within the study area is 190.9 inches. The total diameter inches for significant proposed removals is 76.4 inches, and 114.5 inches for retained trees. Therefore, 60% of assessed on-site significant trees will be retained, exceeding the 15% minimum requirement. By this calculation, the recommended tree removals will meet the requirement set forth in LUC 20.20.900.D.

Moreover, this calculation only applies to the study area around the proposed project area. There are additional trees on the subject parcel documented on the survey which are not assessed in this report. This indicates that the retained percentage is likely much higher than the numbers stated above.

Table 2. Calculation of diameter of assessed trees

Tree ID	Name	Combined DBH (in.)	Significant (Yes/No)	Remove (Yes/No)
Non-significant on-site trees to remove				
1	Bigleaf maple	0 (dead)	No	Yes
4662	Western redcedar	6.3	No	Yes
4664	Western redcedar	7.0	No	Yes
4665	Western redcedar	6.9	No	Yes
	Subtotal	**20.2**		
Non-significant on-site trees to retain				
4652	Bigleaf maple	6.9	No	No
4658	Pacific dogwood	7.2	No	No
	Subtotal	**14.1**		
Significant on-site trees to remove				
4654	Bigleaf maple	24.4	Yes	Yes
4659	Western redcedar	17.6	Yes	Yes
4661	Western redcedar	10.6	Yes	Yes
4663	Western redcedar	10.8	Yes	Yes
4666	Western redcedar	13.0	Yes	Yes
	Subtotal	**76.4**		
Significant on-site trees to retain				
4651	Douglas-fir	13.5	Yes	No
4653	Bigleaf maple	28.3	Yes	No
4655	Douglas-fir	20.4	Yes	No

4657	Western redcedar	16.2	Yes	No
4660	Western redcedar	12.1	Yes	No
4667	Western redcedar	10.1	Yes	No
4668	Douglas-fir	13.9	Yes	No
Subtotal of retained significant trees		**114.5**		
Total DBH inches of on-site significant trees		**190.9**		
Percent DBH inches of retained trees		**60%**		

Tree Protection Recommendations

The following best management practices (BMPs) are recommended to protect retained trees (Fite and Smiley 2008):

- **Tree protection fencing:** The critical root zone (CRZ) is the area that contains tree roots critical to the health and stability of the tree. Tree protection fencing should be installed along the outer dripline edge of all trees to remain. Because tree roots can extend many times the distance of the overhead canopy and the trees on the project site are growing closely together, it is recommended that the fence extends to a minimum distance of one foot for every diameter inch of the trunk to ensure adequate root survival. The fencing should be four to six feet high, constructed of chain link, wire-mesh, or high-visibility plastic fencing, and include warning signs, such as "Tree Protection Area – Keep Out."

- **Minimize root zone disturbance:** All construction activities, including staging and driving machinery, should be located outside of the CRZ. If temporary impacts in the CRZ are unavoidable, use one of the following temporary measures to minimize soil compaction and root damage:

    - Install six to twelve inches of wood chip mulch over the CRZ.
    - Lay down a ¾-inch thick plywood sheet over at least four inches of wood chip mulch.
    - Apply four to six inches of gravel over staked geotextile fabric.
    - Place commercial logging mats on top of a 4-inch mulch layer.

    The gravel, geotextile fabric, mats, and all mulch over four-inches thick **must** be removed after the temporary disturbance is finished.

- **Minimize grade changes:** Most tree roots grow in the top six to 18 inches of soil and are highly susceptible to damage from grade changes. The grade should not be altered in the CRZ. If the grade is lowered in the CRZ, roots critical to health and stability will be removed. If the grade is raised in the CRZ, roots can suffocate from lack of oxygen.

- **Root pruning:** If mechanical excavation occurs near a tree to remain, the arborist recommends using an air or water excavator and root pruning by hand, or by using a mechanical root pruning tool designed to cut roots. Any roots over one inch that are exposed after mechanical excavation should be clean cut by hand.

- **Canopy pruning:** All construction activities should stay out of the canopy zone. However, if the canopy of a tree will conflict with construction, the canopy could be raised to a maximum of 20 feet to avoid aerial conflicts, after consulting with the project arborist. Any pruning of trees should be done using best management practices as defined by the International Society of Arboriculture (ISA), and performed by ISA certified arborists. Topping, coppicing, or pollarding are **not** acceptable pruning methods for these trees. No other pruning should be necessary and could negatively impact the health of the trees.

- **Maintenance:** The impacts of construction are stressful to trees, which may not show the signs of stress for up to five to ten years after being impacted. To help the trees adjust to the new conditions, two to four inches of wood chip mulch can be placed in the CRZ (keep mulch 12 inches away from trunks). Additionally, applying one to two inches of water to the root zones each week in the summer during construction will help the trees regenerate roots and acclimate to their new conditions.

- **Monitoring:** After construction is complete, the tree protection fencing can be removed. Any branches accidentally broken during construction should be pruned. An ISA certified arborist could assist with health assessment, monitoring, and provide management recommendations for the trees post-construction as the trees recover from the impacts of construction and adapt to their new conditions.

Limitations of This Study

The findings of this report are based on the best available science and are limited to the scope, budget, and site conditions at the time of the assessment. Although the information in this report is based on sound methodology, internal physical flaws (such as cracking or root rot) or other conditions that are not visible cannot be detected with this limited basic visual screening.

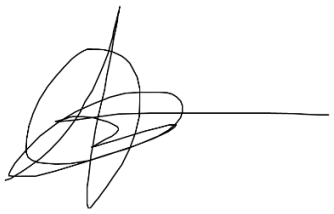
Trees are inherently unpredictable. Even vigorous and healthy trees can fail due to high winds, heavy snow, ice storms, rain, age, or other causes.

This report is based on the current observable conditions and may not represent future conditions of the trees. Changes in site conditions, including clearing and grading, will alter the condition of remaining trees in a way that is not predictable.

The conclusions contained within this report have been made for permitting purposes only and are not intended for tree risk assessment purposes.

Please call if you have any questions or if we can provide you with any additional information.

Sincerely,



Drew Foster
ISA Certified Arborist© PN-8213A
Tree Risk Assessment Qualified

References

Council of Tree & Landscape Appraisers (CTLA). 2020. Guide for Plant Appraisal: 10th Edition, Revised. Atlanta, GA: International Society of Arboriculture.

Dunster, J. 2017. Tree Risk Assessment Manual, Second Edition. Champaign, IL: International Society of Arboriculture.

Fite K., and E.T. Smiley. 2008. Best Management Practices: Managing Trees During Construction. Champaign, IL: International Society of Arboriculture.

THE WATERSHED COMPANY

McKissick PROPERTY
1600 West Lake Sammamish Pkwy NE
Bellevue, WA (parcel # 7430500140)

Tree Inventory Table
Table Issued: 11/18/2022
Site Visit: 09/14/2022

TAG #	TREE NAME	EV / DEC	# STEMS	COMB DBH (IN)	HEIGHT (FT)	RADIUS (FT)	CONDITION	SIGNIFICANT	Remove? (Yes/No)	NOTES
1	Acer macrophyllum (Bigleaf maple)	D	1	**0.0**		0	Dead	No	Yes	Dead. No tag installed
2	Pseudotsuga menziesii (Douglas-fir)	E	1	**20.0**	95	15	Good	Yes	No	Off-site, no tag installed.
3	Thuja plicata (Western red cedar)	E	1	**18.0**	100	15	Good	Yes	No	Measurements estimated. Off-site, no tag installed.
4651	Pseudotsuga menziesii (Douglas-fir)	E	1	**13.5**	60	10	Fair	Yes	No	Dbh measured with ivy. Low live crown ratio. Fairly dense ivy growing up trunk.
4652	Acer macrophyllum (Bigleaf maple)	D	1	**6.9**	55	8	Good	No	No	Not significant.
4653	Acer macrophyllum (Bigleaf maple)	D	3	**28.3**	65	20	Good	Yes	No	One stem has 3ft cavity at base. Measured with ivy on trunk. Ivy growing in to crown.
4654	Acer macrophyllum (Bigleaf maple)	D	2	**24.4**	70	15	Fair	Yes	Yes	Measured with ivy. Basal decay.
4655	Pseudotsuga menziesii (Douglas-fir)	E	1	**20.4**	100	14	Fair	Yes	No	Measured with ivy. Ivy growing up entire trunk. Low live crown ratio.
4656	Pseudotsuga menziesii (Douglas-fir)	E	1	**22.1**	100	13	Fair	Yes	No	Off-site tree. Measured with ivy. Ivy growing up 90% of tree. Low live crown ratio.
4657	Thuja plicata (Western red cedar)	E	1	**16.2**	55	9	Good	Yes	No	
4658	Cornus nuttallii (Pacific dogwood)	D	1	**7.2**	45	8	Good	No	No	Not significant.
4659	Thuja plicata (Western red cedar)	E	1	**17.6**	50	10	Good	Yes	Yes	May need to be removed depending on impacts to critical root zone.
4660	Thuja plicata (Western red cedar)	E	1	**12.1**	55	10	Good	Yes	No	
4661	Thuja plicata (Western red cedar)	E	1	**10.6**	50	10	Good	Yes	Yes	
4662	Thuja plicata (Western red cedar)	E	1	**6.3**	35	6	Good	No	Yes	Not significant
4663	Thuja plicata (Western red cedar)	E	1	**10.8**	65	11	Good	Yes	Yes	
4664	Thuja plicata (Western red cedar)	E	1	**7.0**	15	10	Fair	No	Yes	deformed top, possibly been topped. Branches poorly pruned. Sweep at base. Not significant.
4665	Thuja plicata (Western red cedar)	E	1	**6.9**	25	11	Good	No	Yes	Not significant.
4666	Thuja plicata (Western red cedar)	E	1	**13.0**	70	13	Good	Yes	Yes	
4667	Thuja plicata (Western red cedar)	E	1	**10.1**	30	9	Fair	Yes	No	Deformed top, topped.
4668	Pseudotsuga menziesii (Douglas-fir)	E	1	**13.9**	85	14	Good	Yes	No	

750 6th Street South, Kirkland, WA 98033
(425) 822-5242

McKissick Property Tree Assessment

Trees

- Non-significant, On-site
- Significant, Off-site
- Significant, On-site
- Subject Parcel
- Parcel Boundary

Tree Inventory Map

Site Address: 1600 West Lake Sammamish Pkwy NE

Parcel Number: 7430500140

Site Visit Date: September 14, 2022

Prepared for: Ashley & Ian McKissick

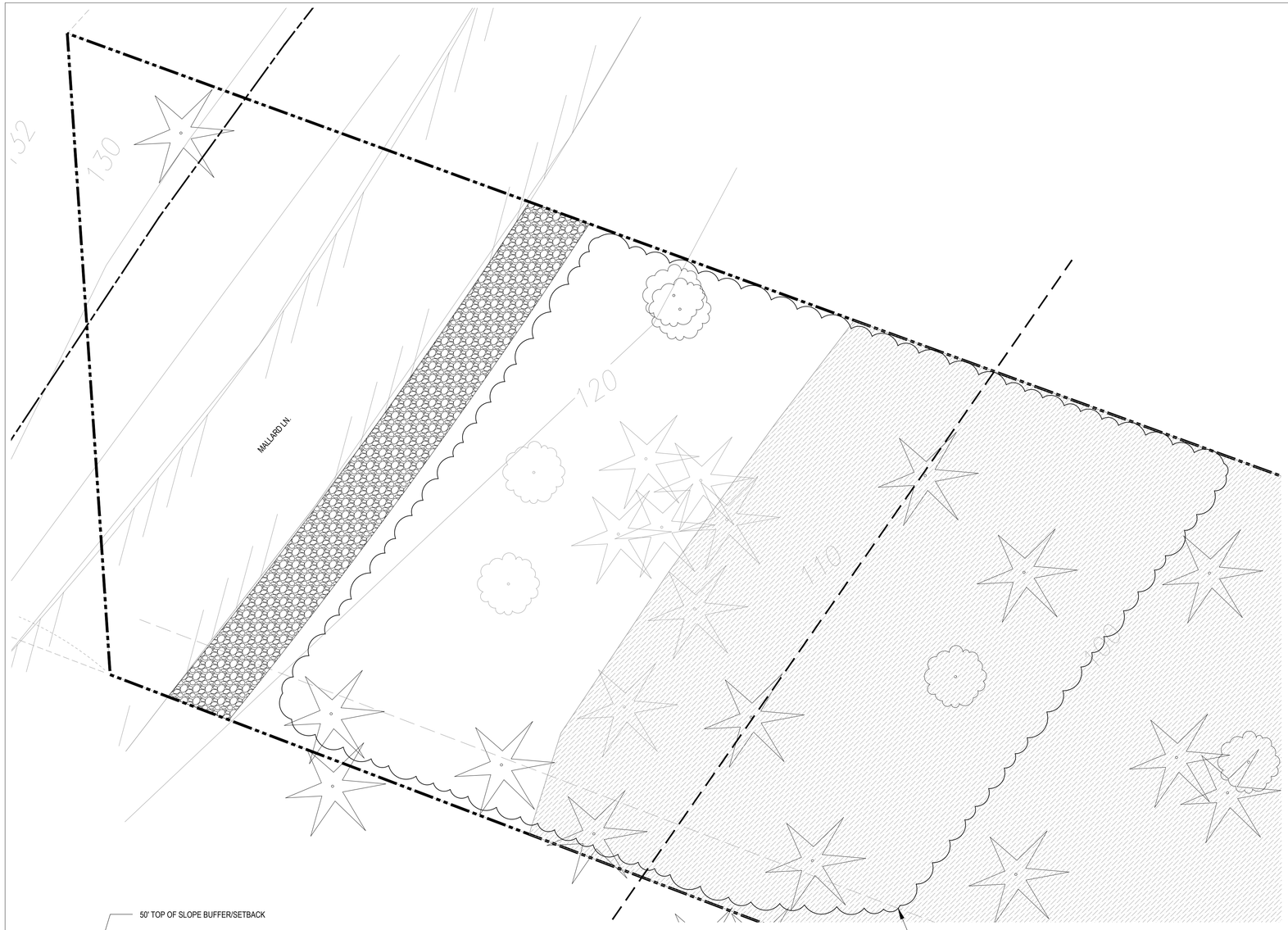
TWC Project #: 220821

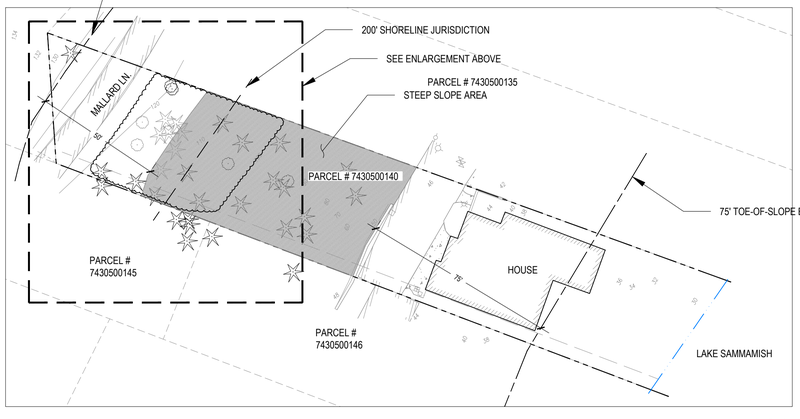
N

0 5 10 20 Feet

THE WATERSHED COMPANY

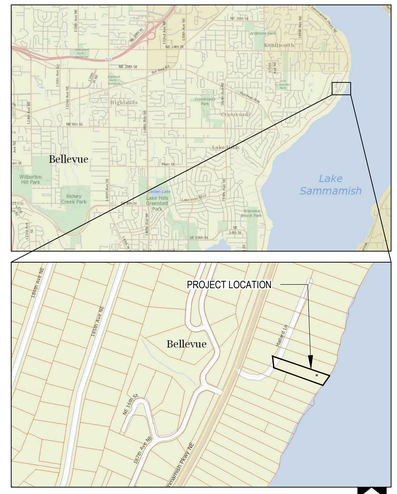
All trees potentially impacted in the study area were tagged with a numbered round aluminum tag between 4651 - 4668 on the side of the trunk near the base. For questions on tree locations, contact Drew Foster at the Watershed Company. Phone: (425) 822-5242





KEY MAP NTS

STEEP SLOPE AND BUFFER AREA HAS SUFFICIENT EXISTING NATIVE TREE CANOPY INCLUDING WESTERN RED CEDAR, BIG LEAF MAPLE, AND DOUGLAS FIR. HOWEVER, THIS AREA LACKS SUFFICIENT NATIVE UNDER STORY AND IS ENCUMBERED BY A HEAVY PRESENCE OF INVASIVE SPECIES INCLUDING SCOTCH BROOM, MULLEIN, SPURGE LAUREL, AND HIMALAYAN BLACKBERRY. SEE CRITICAL AREA REPORT BY THE WATERSHED COMPANY.



VICINITY MAPS NTS

SHEET INDEX

LEGEND

EXISTING

- APPROXIMATE OHWM
- PROPERTY LINE
- 200' SHORELINE JURISDICTION
- STEEP SLOPE SETBACK (50')
- STEEP SLOPE AREA
- GRAVEL
- EXISTING TREES

NOTES

1 SURVEY WAS CONDUCTED BY PACIFIC COAST SURVEYS INC. ON 08/30/2022 AND PROVIDED TO THE WATERSHED COMPANY ON 08/31/2022.

5' 2.5' 0 5' 10'
SCALE 1" = 5'

THE WATERSHED COMPANY
SCIENCE & DESIGN
750 6TH STREET SOUTH
KIRKLAND, WA 98033
425.822.5242
WWW.WATERSHEDCO.COM

PROJECT:
MCKISSICK RESIDENCE
1600 WEST LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

PRINCIPAL: KB
PROJECT MANAGER: AF
DRAWN BY: HC
CHECKED BY: AF
JOB NO.: 220821
DATE: 11/21/2022

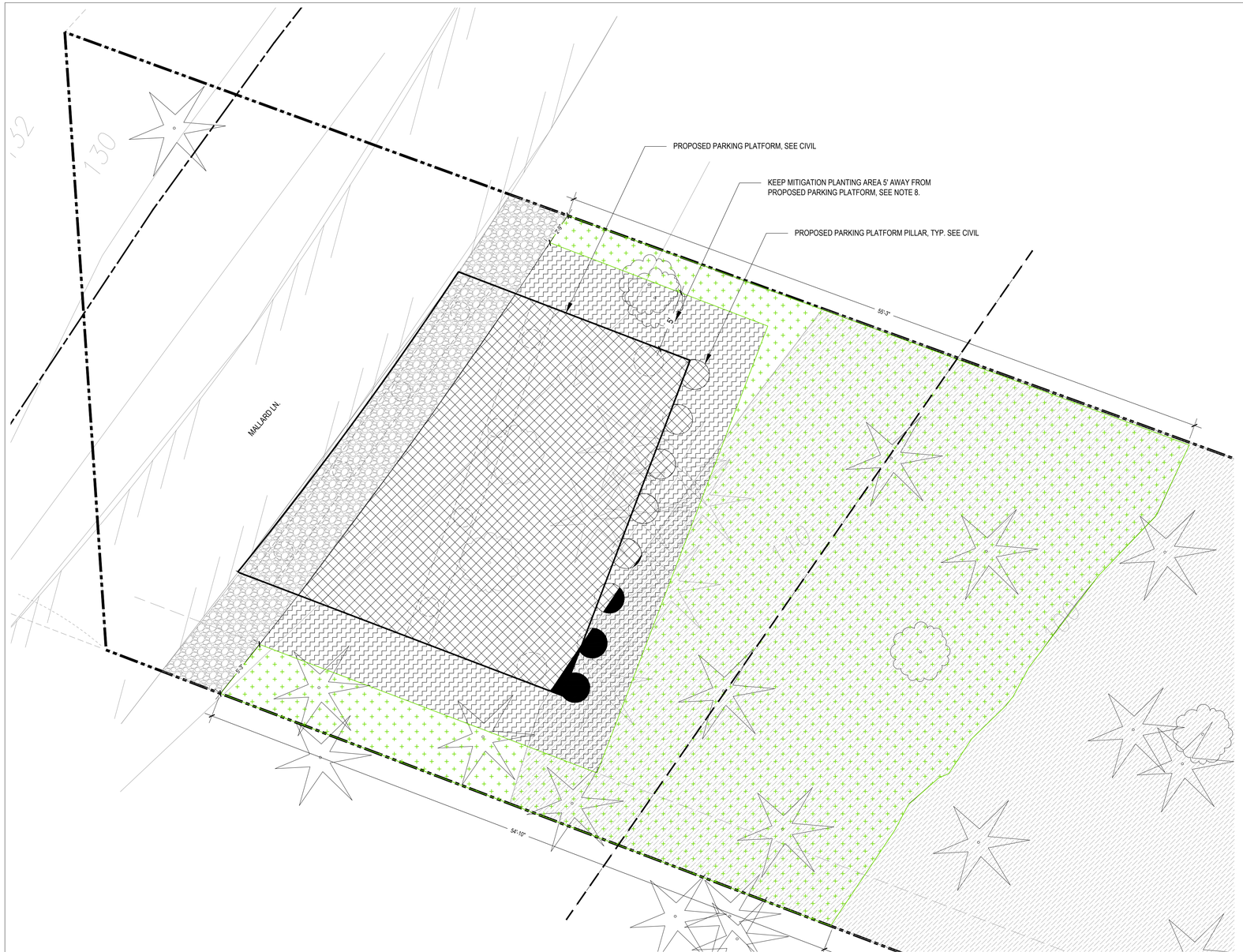
REVISIONS:

NO.	DESCRIPTION	DATE
1	MITIGATION PLAN	11/21/22

NOT FOR CONSTRUCTION
MITIGATION PLAN
11/21/2022

EXISTING CONDITIONS

L001



IMPACTS AND MITIGATION NOTES

1. ALL TESC MEASURES SHALL BE PUT IN PLACE PRIOR TO ANY INVASIVE REMOVAL OR SOIL PREPARATION. SEE CIVIL.
2. PRIOR TO PLANTING, ALL INVASIVE SPECIES SHALL BE REMOVED FROM THE ENTIRETY OF THE RESTORATION AREAS PRIOR TO SOIL PREPARATION. PROTECT AND PRESERVE ALL EXISTING NATIVE VEGETATION.
3. INVASIVE SPECIES SHALL BE DEFINED AS ALL SPECIES LISTED AS CLASS A, B, OR C OR AS A SPECIES OF CONCERN BY THE KING COUNTY NOXIOUS WEED CONTROL BOARD (KCNWCB).
4. INVASIVE SPECIES SHALL BE REMOVED AND DISPOSED OF ACCORDING TO KCNWCB RECOMMENDATION.
5. SEE SHEET L004 FOR PLANTING PLAN AND SCHEDULE.
6. SEE SHEET L005 FOR PLANT INSTALLATION SPECIFICATIONS AND DETAILS AND SOIL PREPARATION.
7. IF MECHANICAL EXCAVATION OCCURS NEAR A TREE TO REMAIN, USE AN AIR OR WATER EXCAVATOR AND ROOT PRUNING BY HAND, OR USING A MECHANICAL ROOT PRUNING TOOL DESIGNED TO CUT ANY ROOTS OVER ONE INCH THAT ARE EXPOSED AFTER MECHANICAL EXCAVATION SHOULD BE CLEAN CUT BY HAND.
8. INSTALL A THREE (3) INCH LAYER OF WOODCHIP OR BARK MULCH TO THE ADDITIONAL INVASIVE CLEARING AREA AFTER INVASIVE REMOVAL PRESERVE EXISTING NATIVE VEGETATION.

LEGEND

EXISTING

- PROPERTY LINE
- 200' SHORELINE JURISDICTION
- STEEP SLOPE SETBACK (50')
- STEEP SLOPE AREA
- GRAVEL
- EXISTING TREES

PROPOSED

- PERMANENT STEEP SLOPE IMPACT (13 SF)
- PERMANENT STEEP SLOPE BUFFER IMPACT (608 SF)
- MITIGATION PLANTING AREA (1,645 SF)
- AREA OF ADDITIONAL INVASIVE ABOVE GROUND CLEARING (364 SF)

NOTES:

1. SITE PLAN WAS PROVIDED TO THE WATERSHED COMPANY BY CG ENGINEERING ON 10/18/2022.

5' 2.5' 0 5' 10'

SCALE 1" = 5'

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SCIENCE & DESIGN
750 6TH STREET SOUTH
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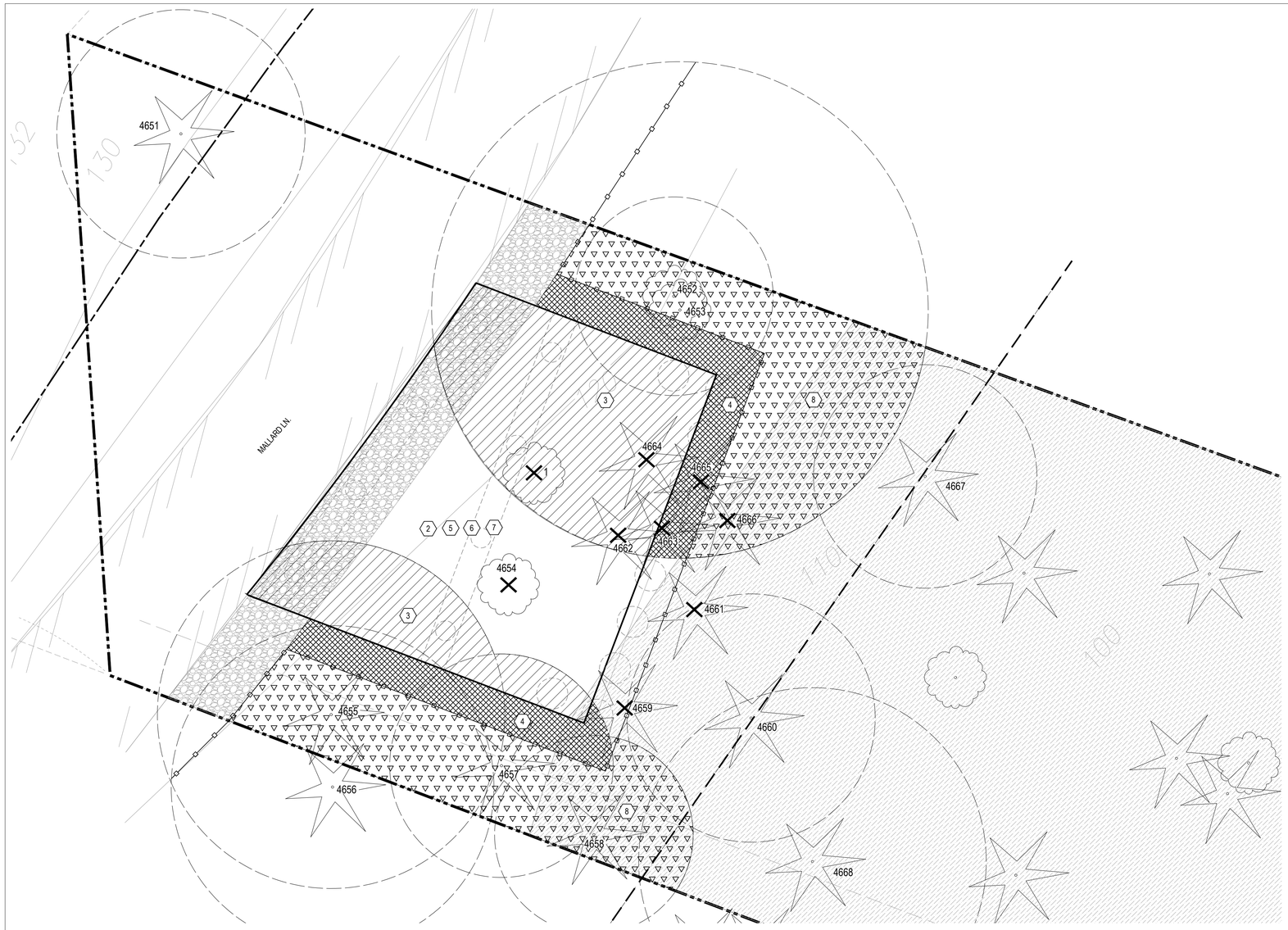
MITIGATION PLAN

11/21/2022

SITE IMPACTS AND MITIGATION PLAN

L002



LEGEND

EXISTING

- PROPERTY LINE
- 200' SHORELINE JURISDICTION
- STEEP SLOPE SETBACK (50')
- STEEP SLOPE AREA
- GRAVEL
- EXISTING TREES WITH NUMBERS
- DRIP LINE

PROPOSED

- TREES TO BE REMOVED (9 TOTAL)
- TREE PROTECTION FENCE (1 / L003)
- POTENTIAL ROOT ZONE IMPACTS (FOR TREES TO REMAIN)
- ROOT PROTECTION ZONE (SEE NOTE 4 BELOW)
- VEGETATION PROTECTION AREA (SEE NOTE 8 BELOW)

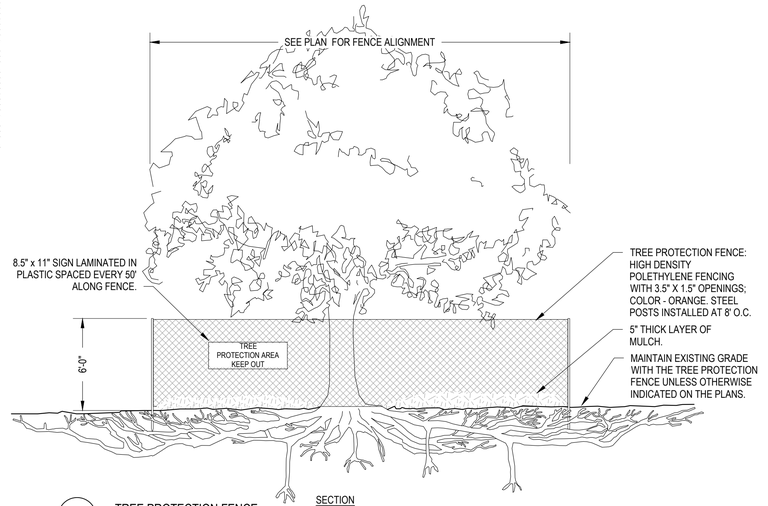
TREE REMOVAL AND PROTECTIONNOTES

1. TREE DATA WAS RECORDED BY A CERTIFIED ARBORIST AT THE WATERSHED COMPANY ON 09/14/2022.
2. NO LIMB PRUNING SHALL BE PERFORMED UNLESS UNDER THE DIRECTION OF AN ARBORIST.
3. ROOT PRUNING WITHIN DRIPLINES OF PROPOSED WORK SHALL BE DONE BY HAND.
4. INSTALL 1-2" OF MULCH TO THE ROOT PROTECTION ZONE WITHIN THE TREE PROTECTION AREA.
5. NO EQUIPMENT OR MATERIALS SHALL BE STORED OR OPERATED INSIDE THE TREE PROTECTIVE FENCING, INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
6. UNAUTHORIZED ACTIVITIES IN TREE PROTECTION AREA MAY REQUIRE EVALUATION BY PRIVATE ARBORIST TO IDENTIFY IMPACTS AND MITIGATION REQUIRED.
7. EXPOSED ROOTS: FOR ROOTS GREATER THAN 1" DAMAGED DURING CONSTRUCTION, MAKE A CLEAN, STRAIGHT CUT TO REMOVE DAMAGED PORTION AND INFORM CITY ARBORIST.
8. FOR THE VEGETATION PROTECTION AREA: PRIOR TO CONSTRUCTION, INSTALL 1-2" OF MULCH AND A TEMPORARY ABOVE-GROUND IRRIGATION SYSTEM CAPABLE OF DELIVERING 1-2" OF WATER PER WEEK DURING SUMMER MONTHS TO ALL VEGETATION WITHIN THE PROTECTION AREAS. SYSTEM SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.

TREE TABLE

ID (Tag #)	SCIENTIFIC NAME (COMMON NAME)	EV / DEC	COMB DBH ROUNDED	CONDITION	SIGNIFICANT?	REMOVE?
1	ACER MACROPHYLLUM (BIGLEAF MAPLE)	D	0.0	DEAD	NO	YES
4651	PSEUDOTSUGA MENZIESII (DOUGLAS-FIR)	E	13.5	FAIR	YES	NO
4652	ACER MACROPHYLLUM (BIGLEAF MAPLE)	D	6.9	GOOD	NO	NO
4653	ACER MACROPHYLLUM (BIGLEAF MAPLE)	D	28.3	GOOD	YES	NO
4654	ACER MACROPHYLLUM (BIGLEAF MAPLE)	D	24.4	FAIR	YES	YES
4655	PSEUDOTSUGA MENZIESII (DOUGLAS-FIR)	E	20.4	FAIR	YES	NO
4656	PSEUDOTSUGA MENZIESII (DOUGLAS-FIR)	E	22.1	FAIR	YES	NO
4657	THUJA PLICATA (WESTERN RED CEDAR)	E	16.2	GOOD	YES	NO
4658	CORNUS NUTTALLII (PACIFIC DOGWOOD)	D	7.2	GOOD	NO	NO
4659	THUJA PLICATA (WESTERN RED CEDAR)	E	17.6	GOOD	YES	YES
4660	THUJA PLICATA (WESTERN RED CEDAR)	E	12.1	GOOD	YES	NO
4661	THUJA PLICATA (WESTERN RED CEDAR)	E	10.6	GOOD	YES	YES
4662	THUJA PLICATA (WESTERN RED CEDAR)	E	6.3	GOOD	NO	YES
4663	THUJA PLICATA (WESTERN RED CEDAR)	E	10.8	GOOD	YES	YES
4664	THUJA PLICATA (WESTERN RED CEDAR)	E	7.0	FAIR	NO	YES
4665	THUJA PLICATA (WESTERN RED CEDAR)	E	6.9	GOOD	NO	YES
4666	THUJA PLICATA (WESTERN RED CEDAR)	E	13.0	GOOD	YES	YES
4667	THUJA PLICATA (WESTERN RED CEDAR)	E	10.1	FAIR	YES	NO
4668	PSEUDOTSUGA MENZIESII (DOUGLAS-FIR)	E	13.9	GOOD	YES	NO

NOTE: SEE ARBORIST REPORT FOR TREE RETENTION CALCULATIONS.



1 TREE PROTECTION FENCE — SECTION

Scale: NTS

5' 2.5' 0 5' 10'

SCALE 1" = 5'

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NOT FOR CONSTRUCTION

MITIGATION PLAN

11/21/2022

TREE REMOVAL AND PROTECTION PLAN

L003

LEGEND

EXISTING

- PROPERTY LINE
- 200' SHORELINE SETBACK
- STEEP SLOPE SETBACK (50')
- STEEP SLOPE AREA
- GRAVEL
- EXISTING TREES

PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME	SIZE	QTY
	ACER MACROPHYLLUM/ BIG-LEAF MAPLE	2 GALLON	2
	THUJA PLICATA / WESTERN RED CEDAR	2 GALLON	1

SHRUBS	BOTANICAL / COMMON NAME	SIZE	QTY
	ACER CIRCINATUM / VINE MAPLE	2 GALLON	3
	AMELANCHIER ALNIFOLIA / SERVICEBERRY	2 GALLON	4

SHRUB AREAS	BOTANICAL / COMMON NAME	SIZE	SPACING	QTY*
	SHRUBS**			
	CORYLUS CORNUTA / WESTERN HAZELNUT	2 GALLON	60" o.c.	14
	MAHONIA AQUIFOLIUM / OREGON GRAPE	2 GALLON	60" o.c.	14
	OEMLERIA CERASIFORMIS / OSOBERRY	2 GALLON	60" o.c.	14
	RUBUS PARVIFLORUS / THIMBLEBERRY	2 GALLON	60" o.c.	14
	SYMPHORICARPOS ALBUS / COMMON WHITE SNOWBERRY	2 GALLON	60" o.c.	14
	VACCINIUM OVATUM / EVERGREEN HUCKLEBERRY	2 GALLON	60" o.c.	14
	GROUND COVERS**			
	GAULTHERIA SHALLON / SALAL	2 GALLON	24" o.c.	150
	POLYSTICHUM MUNITUM / WESTERN SWORD FERN	2 GALLON	24" o.c.	150

*THE PLANTING AREA IS ON A 1.5:1 SLOPE AND THEREFORE, PLANT QUANTITIES WERE MULTIPLIED BY A FACTOR OF 1.2019.
**GROUP GROUNDCOVERS AND SHRUBS BY SPECIES AND PLANT IN GROUPS OF 5-7

PLANTING NOTES

1. SEE SHEET L005 FOR PLANT INSTALLATION SPECIFICATIONS AND DETAILS AND SOIL PREPARATION.
2. THIS PLAN ASSUMES THAT ONCE INVASIVE ARE CLEARED, THERE WILL BE NO EXISTING NATIVE SHRUBS OR GROUNDCOVER PRESENT.
3. FIELD ADJUST PLANT LOCATIONS TO AVOID EXISTING ROOTS.

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11/21/2022

RESTORATION PLANTING PLAN

L004

PLANT INSTALLATION SPECIFICATIONS

GENERAL NOTES

QUALITY ASSURANCE
1. PLANTS SHALL MEET OR EXCEED THE SPECIFICATIONS OF FEDERAL, STATE, AND LOCAL LAWS REQUIRING INSPECTION FOR PLANT DISEASE AND INSECT CONTROL.
2. PLANTS SHALL BE HEALTHY, VIGOROUS, AND WELL-FORMED, WITH WELL DEVELOPED, FIBROUS ROOT SYSTEMS, FREE FROM DEAD BRANCHES OR ROOTS. PLANTS SHALL BE FREE FROM DAMAGE CAUSED BY TEMPERATURE EXTREMES, LACK OR EXCESS OF MOISTURE, INSECTS, DISEASE, AND MECHANICAL INJURY. PLANTS IN LEAF SHALL BE WELL FOLIATED AND OF GOOD COLOR. PLANTS SHALL BE HABITUATED TO THE OUTDOOR ENVIRONMENTAL CONDITIONS INTO WHICH THEY WILL BE PLANTED (HARDENED-OFF).
3. TREES WITH DAMAGED, CROOKED, MULTIPLE OR BROKEN LEADERS WILL BE REJECTED. WOODY PLANTS WITH ABRASIONS OF THE BARK OR SUN SCALD WILL BE REJECTED.
4. NOMENCLATURE: PLANT NAMES SHALL CONFORM TO FLORA OF THE PACIFIC NORTHWEST BY HITCHCOCK AND CRONQUIST, UNIVERSITY OF WASHINGTON PRESS, 2018 AND/OR TO A FIELD GUIDE TO THE COMMON WETLAND PLANTS OF WESTERN WASHINGTON & NORTHWESTERN OREGON, ED. SARAH SPEAR COOKE, SEATTLE AUDUBON SOCIETY, 1997.

DEFINITIONS
1. PLANTS/PLANT MATERIALS. PLANTS AND PLANT MATERIALS SHALL INCLUDE ANY LIVE PLANT MATERIAL USED ON THE PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO CONTAINER GROWN, B&B OR BARREROOT PLANTS; LIVE STAKES AND FASCINES (WATTLES); TUBERS, CORMS, BULBS, ETC..; SPRIGS, PLUGS, AND LINERS.
2. CONTAINER GROWN. CONTAINER GROWN PLANTS ARE THOSE WHOSE ROOTBALLS ARE ENCLOSED IN A POT OR BAG IN WHICH THAT PLANT GREW.

SUBSTITUTIONS
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SPECIFIED MATERIALS IN ADVANCE IF SPECIAL GROWING, MARKETING OR OTHER ARRANGEMENTS MUST BE MADE IN ORDER TO SUPPLY SPECIFIED MATERIALS.
2. SUBSTITUTION OF PLANT MATERIALS NOT ON THE PROJECT LIST WILL NOT BE PERMITTED UNLESS AUTHORIZED IN WRITING BY THE RESTORATION CONSULTANT.
3. IF PROOF IS SUBMITTED THAT ANY PLANT MATERIAL SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR ALTERNATIVE SPECIES, WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICE.
4. SUCH PROOF WILL BE SUBSTANTIATED AND SUBMITTED IN WRITING TO THE CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION.

INSPECTION
1. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE RESTORATION CONSULTANT FOR CONFORMANCE TO SPECIFICATIONS, EITHER AT TIME OF DELIVERY ON-SITE OR AT THE GROWER'S NURSERY. APPROVAL OF PLANT MATERIALS AT ANY TIME SHALL NOT IMPAIR THE SUBSEQUENT RIGHT OF INSPECTION AND REJECTION DURING PROGRESS OF THE WORK.
2. PLANTS INSPECTED ON SITE AND REJECTED FOR NOT MEETING SPECIFICATIONS MUST BE REMOVED IMMEDIATELY FROM SITE OR RED-TAGGED AND REMOVED AS SOON AS POSSIBLE.
3. THE RESTORATION CONSULTANT MAY ELECT TO INSPECT PLANT MATERIALS AT THE PLACE OF GROWTH. AFTER INSPECTION AND ACCEPTANCE, THE RESTORATION CONSULTANT MAY REQUIRE THE INSPECTED PLANTS BE LABELED AND RESERVED FOR PROJECT. SUBSTITUTION OF THESE PLANTS WITH OTHER INDIVIDUALS, EVEN OF THE SAME SPECIES AND SIZE, IS UNACCEPTABLE.

MEASUREMENT OF PLANTS
1. PLANTS SHALL CONFORM TO SIZES SPECIFIED UNLESS SUBSTITUTIONS ARE MADE AS OUTLINED IN THIS CONTRACT.
2. HEIGHT AND SPREAD DIMENSIONS SPECIFIED REFER TO MAIN BODY OF PLANT AND NOT BRANCH OR ROOT TIP TO TIP. PLANT DIMENSIONS SHALL BE MEASURED WHEN THEIR BRANCHES OR ROOTS ARE IN THEIR NORMAL POSITION.
3. WHERE A RANGE OF SIZE IS GIVEN, NO PLANT SHALL BE LESS THAN THE MINIMUM SIZE AND AT LEAST 50% OF THE PLANTS SHALL BE AS LARGE AS THE MEDIAN OF THE SIZE RANGE. (EXAMPLE: IF THE SIZE RANGE IS 12" TO 18", AT LEAST 50% OF PLANTS MUST BE 15" TALL.).

SUBMITTALS

PROPOSED PLANT SOURCES
1. WITHIN 45 DAYS AFTER AWARD OF THE CONTRACT, SUBMIT A COMPLETE LIST OF PLANT MATERIALS PROPOSED TO BE PROVIDED DEMONSTRATING CONFORMANCE WITH THE REQUIREMENTS SPECIFIED. INCLUDE THE NAMES AND ADDRESSES OF ALL GROWERS AND NURSERIES.

PRODUCT CERTIFICATES
1. PLANT MATERIALS LIST - SUBMIT DOCUMENTATION TO CONSULTANT AT LEAST 30 DAYS PRIOR TO START OF WORK UNDER THIS SECTION THAT PLANT MATERIALS HAVE BEEN ORDERED. ARRANGE PROCEDURE FOR INSPECTION OF PLANT MATERIAL WITH CONSULTANT AT TIME OF SUBMISSION.
2. HAVE COPIES OF VENDOR'S OR GROWERS' INVOICES OR PACKING SLIPS FOR ALL PLANTS ON SITE DURING INSTALLATION. INVOICE OR PACKING SLIP SHOULD LIST SPECIES BY SCIENTIFIC NAME, QUANTITY, AND DATE DELIVERED (AND GENETIC ORIGIN IF THAT INFORMATION WAS PREVIOUSLY REQUESTED).

DELIVERY, HANDLING, & STORAGE

NOTIFICATION
CONTRACTOR MUST NOTIFY CONSULTANT 48 HOURS OR MORE IN ADVANCE OF DELIVERIES SO THAT CONSULTANT MAY ARRANGE FOR INSPECTION.

PLANT MATERIALS
1. TRANSPORTATION - DURING SHIPPING, PLANTS SHALL BE PACKED TO PROVIDE PROTECTION AGAINST CLIMATE EXTREMES, BREAKAGE AND DRYING. PROPER VENTILATION AND PREVENTION OF DAMAGE TO BARK, BRANCHES, AND ROOT SYSTEMS MUST BE ENSURED.
2. SCHEDULING AND STORAGE - PLANTS SHALL BE DELIVERED AS CLOSE TO PLANTING AS POSSIBLE. PLANTS IN STORAGE MUST BE PROTECTED AGAINST ANY CONDITION THAT IS DETRIMENTAL TO THEIR CONTINUED HEALTH AND VIGOR.
3. HANDLING - PLANT MATERIALS SHALL NOT BE HANDLED BY THE TRUNK, LIMBS, OR FOLIAGE BUT ONLY BY THE CONTAINER, BALL, BOX, OR OTHER PROTECTIVE STRUCTURE, EXCEPT BAREROOT PLANTS SHALL BE KEPT IN BUNDLES UNTIL PLANTING AND THEN HANDLED CAREFULLY BY THE TRUNK OR STEM.
4. LABELS - PLANTS SHALL HAVE DURABLE, LEGIBLE LABELS STATING CORRECT SCIENTIFIC NAME AND SIZE. TEN PERCENT OF CONTAINER GROWN PLANTS IN INDIVIDUAL POTS SHALL BE LABELED. PLANTS SUPPLIED IN FLATS, RACKS, BOXES, BAGS, OR BUNDLES SHALL HAVE ONE LABEL PER GROUP.

WARRANTY

PLANT WARRANTY
PLANTS MUST BE GUARANTEED TO BE TRUE TO SCIENTIFIC NAME AND SPECIFIED SIZE, AND TO BE HEALTHY AND CAPABLE OF VIGOROUS GROWTH.

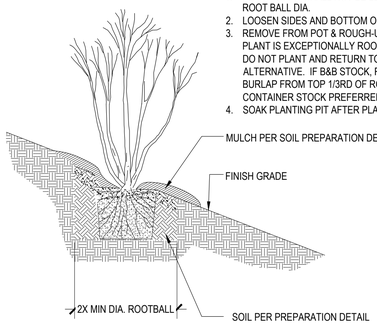
REPLACEMENT
1. PLANTS NOT FOUND MEETING ALL OF THE REQUIRED CONDITIONS AT THE CONSULTANT'S DISCRETION MUST BE REMOVED FROM SITE AND REPLACED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
2. PLANTS NOT SURVIVING AFTER ONE YEAR TO BE REPLACED AT THE CONTRACTOR'S EXPENSE.

PLANT MATERIAL

GENERAL
1. PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO OR MORE SEVERE THAN THOSE OF THE PROJECT SITE.
2. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY OR SUBSPECIES. NO CULTIVARS OR NAMED VARIETIES SHALL BE USED UNLESS SPECIFIED AS SUCH.

QUANTITIES
SEE PLANT LIST ON ACCOMPANYING PLANS AND PLANT SCHEDULES.

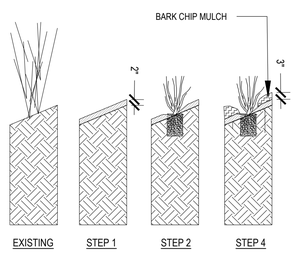
ROOT TREATMENT
1. CONTAINER GROWN PLANTS (INCLUDES PLUGS): PLANT ROOT BALLS MUST HOLD TOGETHER WHEN THE PLANT IS REMOVED FROM THE POT, EXCEPT THAT A SMALL AMOUNT OF LOOSE SOIL MAY BE ON THE TOP OF THE ROOTBALL.
2. PLANTS MUST NOT BE ROOT-BOUND; THERE MUST BE NO CIRCLING ROOTS PRESENT IN ANY PLANT INSPECTED.
3. ROOTBALLS THAT HAVE CRACKED OR BROKEN WHEN REMOVED FROM THE CONTAINER SHALL BE REJECTED.



NOTES:
1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA.
2. LOOSEN SIDES AND BOTTOM OF PLANT PIT
3. REMOVE FROM POT & ROUGH-UP ROOT BALL BEFORE INSTALLING. IF PLANT IS EXCEPTIONALLY ROOT-BOUND OR CONTAINS CIRCLING ROOTS, DO NOT PLANT AND RETURN TO NURSERY FOR AN ACCEPTABLE ALTERNATIVE. IF B&B STOCK, REMOVE ALL TWINE/WIRE, & REMOVE BURLAP FROM TOP 1/3RD OF ROOTBALL PRIOR TO PLANTING (NOTE: CONTAINER STOCK PREFERRED)
4. SOAK PLANTING PIT AFTER PLANTING

1 CONTAINER PLANTING DETAIL

Scale: NTS



*NOTE:
COMPOST OR MULCH MAY REQUIRE HYDRAULIC APPLICATION ON STEEP SLOPES.

PLANTING AREA PREPARATION

STEP 1
REMOVE UNDESIRABLE SPECIES. WORK WITHIN EXISTING ROOT ZONES SHALL BE DONE BY HAND. CLEAR AND GRUB BY HAND. ALL CLEARED VEGETATION SHALL BE REMOVED OFF SITE. PLACE 2" OF COMPOST BLANKET.

STEP 2
INSTALL PLANTS PER DETAIL.

STEP 4
INSTALL BARK CHIP MULCH BLANKET LAYER TO A DEPTH OF THREE (3) INCHES.

2 STEEP SLOP SOIL PREPARATION

Scale: NTS

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PLANT INSTALLATION DETAILS AND NOTES

L005

MITIGATION PLAN NOTES

THIS PLAN HAS BEEN PREPARED AS MITIGATION FOR IMPACTS TO THE STEEP SLOPE AREA AND STEEP SLOPE BUFFER AREA. THE IMPACTS TO THE BUFFER ARE TO ACCOMMODATE THE CONSTRUCTION OF A NEW PARKING PLATFORM. WHICH WILL IMPACT A TOTAL OF 621 SQUARE FEET OF STEEP SLOPE AND BUFFER. TO OFFSET THESE CRITICAL AREA BUFFER IMPACTS, A TOTAL OF 1,645 SQUARE FEET OF ENHANCEMENT IS PROPOSED. THE PLANTING OF SHRUBS, AND GROUND COVERS WILL BE FOCUSED ON THE EAST SIDE OF THE PROPOSED PARKING PLATFORM IN ORDER TO MAXIMIZE THE BENEFIT TO HABITAT FUNCTION. THIS AREA CURRENTLY CONTAINS MANY NATIVE TREES BUT HAS A HEAVY PRESENCE OF INVASIVE SPECIES, LACKS A NATIVE SHRUB UNDERSTORY, AND WILL BENEFIT FROM ADDED STRUCTURAL COMPLEXITY. MITIGATION ACTIVITIES WILL CONSIST OF REMOVAL OF NON-NATIVE MATERIALS; PLANTING NATIVE SHRUBS AND GROUND COVERS PLANTS AS DESIGNATED IN THE ATTACHED PLANS (TOTALING 1,645 SF); AND MAINTENANCE AND MONITORING OF MITIGATION AREAS.

MITIGATION AREA WORK SEQUENCE (SEE MATERIALS FOR ITEMS IN BOLD)

A RESTORATION SPECIALIST SHALL MAKE SITE VISITS TO VERIFY THE FOLLOWING PROJECT MILESTONES:

1. MARK THE CLEARING LIMITS WITH HIGH VISIBILITY FENCING OR SIMILAR MEANS, AND / OR REVIEW INSTALLATION OF TREE PROTECTION FENCE AND VEGETATION PROTECTION MEASURES.
2. INSTALL EROSION CONTROL MEASURES ACCORDING TO CITY BMPS.
3. PREPARE SITE SOILS PER THE SOIL PREPARATION DETAIL (SHEET L005)
4. INSTALL NATIVE PLANTS PER PLANTING DETAILS ON SHEET L005.
   a. NATIVE PLANT INSTALLATION SHALL OCCUR DURING THE DORMANT SEASON (OCTOBER 15TH THROUGH MARCH 1ST) IN FROST-FREE PERIODS ONLY.
   b. LAYOUT PLANT MATERIAL PER PLAN FOR INSPECTION BY THE RESTORATION SPECIALIST. PLANT SUBSTITUTIONS WILL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE RESTORATION SPECIALIST.
   c. INSTALL PLANTS PER PLANTING DETAILS
5. WATER IN EACH PLANT THOROUGHLY TO REMOVE AIR POCKETS.
6. INSTALL A TEMPORARY IRRIGATION SYSTEM CAPABLE OF SUPPLYING AT LEAST 1-INCH OF WATER PER WEEK TO THE ENTIRE PLANTED AREA DURING THE DRY SEASON (JUNE 1ST THROUGH SEPTEMBER 30TH).
7. ONE YEAR AFTER INITIAL PLANTING, APPLY A SLOW-RELEASE, PHOSPHOROUS-FREE, GRANULAR FERTILIZER TO EACH INSTALLED PLANT.

MAINTENANCE

THE SITE SHALL BE MAINTAINED FOR FIVE YEARS FOLLOWING SUCCESSFUL INSTALLATION.

1. REPLACE EACH PLANT FOUND DEAD IN THE SUMMER MONITORING VISITS IN THE FOLLOWING DORMANT SEASON (OCTOBER 15 - MARCH 1). REPLACEMENT SHALL BE OF THE SAME SPECIES AND SIZE PER PLAN UNLESS OTHERWISE APPROVED BY THE RESTORATION SPECIALIST.
2. GENERAL WEEDING FOR ALL PLANTED AREAS
   a. AT LEAST TWICE ANNUALLY, REMOVE COMPETING GRASSES AND WEEDS FROM AROUND THE BASE OF EACH INSTALLED PLANT TO A RADIUS OF 12 INCHES. WEEDING SHOULD OCCUR AT LEAST ONCE IN THE SPRING AND ONCE IN THE SUMMER. THOROUGH WEEDING WILL RESULT IN LOWER PLANT MORTALITY AND ASSOCIATED PLANT REPLACEMENT COSTS.
   b. MORE FREQUENT WEEDING MAY BE NECESSARY DEPENDING ON WEED CONDITIONS THAT DEVELOP AFTER PLANT INSTALLATION.
   c. NOXIOUS WEEDS MUST BE REMOVED FROM THE ENTIRE MITIGATION AREA, AT LEAST TWICE ANNUALLY.
   d. DO NOT USE STRING TRIMMERS IN THE VICINITY OF INSTALLED PLANTS, AS THEY MAY DAMAGE OR KILL THE PLANTS.
3. MAINTAIN A THREE-INCH-THICK LAYER OF WOODCHIP MULCH ACROSS THE ENTIRE PLANTING AREA. MULCH SHOULD BE PULLED BACK TWO INCHES FROM THE PLANT STEMS.
4. INSPECT AND REPAIR THE IRRIGATION SYSTEM AS NECESSARY EACH SPRING. DURING AT LEAST THE FIRST TWO GROWING SEASONS, MAKE SURE THAT THE ENTIRE PLANTING AREA RECEIVES A MINIMUM OF ONE INCH OF WATER PER WEEK FROM JUNE 1ST THROUGH SEPTEMBER 30TH.

GOALS

1. MAINTAIN SLOPE STABILITY BY ESTABLISHING SHRUBS IN THE STEEP SLOPE AND STEEP SLOPE BUFFER AREAS (AREAS CURRENTLY DOMINATED BY SHALLOW-ROOTING INVASIVE SPECIES).
2. ENHANCE 1,645 SQUARE FEET OF DEGRADED STEEP SLOPE AREA AND STEEP SLOPE BUFFER.
   a. CREATE A DENSE, NATIVE SHRUB AND GROUNDCOVER COMMUNITY.
   b. REMOVE NON-NATIVE AND INVASIVE PLANT SPECIES FROM THE ENHANCEMENT AREA.

PERFORMANCE STANDARDS

THE FOLLOWING PERFORMANCE STANDARDS WILL BE USED TO GAUGE THE SUCCESS OF THE PROJECT OVER TIME. IF ALL PERFORMANCE STANDARDS HAVE BEEN SATISFIED BY THE END OF YEAR FIVE, THE PROJECT SHALL BE CONSIDERED COMPLETE AND THE CITY OF BELLEVUE SHALL RELEASE THE PERFORMANCE BOND.

1. SURVIVAL
   a. ACHIEVE 100% SURVIVAL OF ALL INSTALLED TREES AND SHRUBS BY THE END OF YEAR ONE.
   b. ACHIEVE 80% SURVIVAL OF ALL INSTALLED SHRUBS AND 100% SURVIVAL OF ALL INSTALLED CONIFERS BY THE END OF YEAR TWO.
   c. ACHIEVE 80% SURVIVAL OF ALL INSTALLED TREES AND SHRUBS BY THE END OF YEAR FIVE.

   SURVIVAL STANDARDS MAY BE ACHIEVED THROUGH ESTABLISHMENT OF PLANTED MATERIAL, RECRUITMENT OF NATIVE VOLUNTEERS, OR REPLACEMENT PLANTS AS NECESSARY.
2. DIVERSITY
   a. ESTABLISH AT LEAST FOUR NATIVE SHRUB SPECIES IN THE ENHANCEMENT AREA BY THE END OF YEAR FIVE. ESTABLISHMENT IS DEFINED AS FIVE OR MORE INDIVIDUAL PLANTS OF THE SAME SPECIES ALIVE AND HEALTHY.
3. COVER
   a. ACHIEVE 40% COVER OF NATIVE TREES, SHRUBS AND GROUNDCOVER BY THE END OF YEAR THREE.
   b. ACHIEVE 60% COVER OF NATIVE TREES, SHRUBS, AND GROUNDCOVER BY THE END OF YEAR FIVE.
   c. NO MORE THAN 10% COVER BY INVASIVE SPECIES LISTED AS CLASS A, B, OR C BY THE KING COUNTY NOXIOUS WEED CONTROL BOARD IN ANY MONITORING YEAR.

MONITORING

PRIOR TO THE COMMENCEMENT OF THE MONITORING PHASE, AN AS-BUILT PLAN DOCUMENTING THE SUCCESSFUL INSTALLATION OF THE PROJECT WILL BE SUBMITTED TO THE CITY OF BELLEVUE. IF NECESSARY, THE AS-BUILT REPORT MAY INCLUDE A MARK-UP OF THE ORIGINAL PLAN THAT NOTES ANY SIGNIFICANT CHANGES OR SUBSTITUTIONS THAT OCCURRED. DURING THE AS-BUILT INSPECTION, THE RESTORATION SPECIALIST WILL ESTABLISH AT LEAST FOUR PERMANENT PHOTO-POINTS.

THE SITE WILL BE MONITORED TWICE ANNUALLY FOR FIVE YEARS BEGINNING WITH APPROVAL OF THE AS-BUILT REPORT. EACH SPRING THE RESTORATION SPECIALIST WILL CONDUCT A BRIEF MAINTENANCE INSPECTION FOLLOWED BY A MEMO SUMMARIZING MAINTENANCE ITEMS NECESSARY FOR THE UPCOMING GROWING SEASON. THE FORMAL LATE-SEASON MONITORING INSPECTION WILL TAKE PLACE ONCE ANNUALLY DURING LATE SUMMER OR EARLY FALL. DURING EACH LATE-SEASON MONITORING INSPECTION, THE FOLLOWING DATA WILL BE COLLECTED:

1. PERCENT SURVIVAL OF ALL INSTALLED PLANTINGS, INCLUDING SPECIES SPECIFIC COUNTS OF INSTALLED TREE AND SHRUB PLANTINGS (NOTE: GROUNDCOVER PLANTS COUNTED IN YEAR-1 ONLY, FOR WARRANTY PURPOSES).
2. NATIVE WOODY COVER AND GRROUNDCOVER AS DETERMINED USING VISUAL COVER CLASS ESTIMATES.
3. ESTIMATES OF INVASIVE HERBACEOUS PLANTS OR GROUNDCOVER USING VISUAL COVER ESTIMATES.
4. THE SPECIES COMPOSITION, NOTING WHETHER A SPECIES IS NATIVE OR EXOTIC AND WHETHER PLANTS WERE INSTALLED OR ARE VOLUNTEERS.
5. THE GENERAL HEALTH AND VIGOR OF THE INSTALLED VEGETATION.
6. PHOTOGRAPHS FROM FIXED PHOTO-POINTS ESTABLISHED DURING THE AS-BUILT INSPECTION.
7. ANY EVIDENCE OF WILDLIFE USAGE IN THE MITIGATION AREA.

MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY TO THE CITY. REPORTS SHALL DOCUMENT THE CONDITIONS OF THE SITE, INCLUDING QUANTITATIVE DATA COLLECTED DURING THE MONITORING INSPECTION, AND SHALL PROVIDE MAINTENANCE RECOMMENDATIONS THAT MAY BE NECESSARY TO HELP THE SITE ACHIEVE THE STATED PERFORMANCE STANDARDS.

CONTINGENCY PLAN

IF ANY MONITORING REPORT REVEALS THAT THE RESTORATION PLAN HAS FAILED IN WHOLE OR IN PART, AND SHOULD THAT FAILURE BE BEYOND THE SCOPE OF ROUTINE MAINTENANCE, THE APPLICANT WILL SUBMIT A CONTINGENCY PLAN TO THE CITY OF BELLEVUE FOR APPROVAL. THIS PLAN MAY INCLUDE REPLANTING, SOIL AMENDMENTS OR TOPDRESSING, SUBSTITUTIONS FOR SPECIES SELECTED IN THE ORIGINAL PLAN, AND ADAPTIVE WEED CONTROL METHODS.

MATERIALS

1. WOODCHIP MULCH: 9-14.4(3) BARK OR WOOD CHIPS- WSDOT STANDARD SPEC.

   BARK OR WOOD CHIP MULCH SHALL BE DERIVED FROM DOUGLAS FIR, PINE, OR HEMLOCK SPECIES. IT SHALL NOT CONTAIN RESIN, TANNIN, OR OTHER COMPOUNDS IN QUANTITIES THAT WOULD BE DETRIMENTAL TO PLANT LIFE. SAWDUST SHALL NOT BE USED AS MULCH.

   BARK OR WOOD CHIPS WHEN TESTED SHALL BE ACCORDING TO WSDOT TEST METHOD T 123 PRIOR TO PLACEMENT AND SHALL MEET THE FOLLOWING LOOSE VOLUME GRADATION:

SIEVE SIZE	PERCENT PASSING	
	MINIMUM	MAXIMUM
2"	95	100
NO. 4	0	30

2. COMPOST: CEDAR GROVE COMPOST OR EQUIVALENT "COMPOSTED MATERIAL" PER WASHINGTON ADMIN. CODE 173-350-220.
3. FERTILIZER: SLOW-RELEASE, PHOSPHOROUS-FREE GRANULAR FERTILIZER. MOST COMMERCIAL NURSERIES CARRY THIS PRODUCT. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR USE. KEEP FERTILIZER IN WEATHER-TIGHT CONTAINER WHILE ON-SITE. FERTILIZER IS ONLY TO BE APPLIED IN YEARS TWO AND THREE, NOT IN YEAR ONE.
4. RESTORATION SPECIALIST: QUALIFIED PROFESSIONAL ABLE TO EVALUATE AND MONITOR THE CONSTRUCTION OF ENVIRONMENTAL RESTORATION PROJECTS.

THE WATERSHED COMPANY
SCIENCE & DESIGN
750 6TH STREET SOUTH
KIRKLAND, WA 98033
425.822.5242
WWW.THEWATERSHEDCO.COM

PROJECT:
MCKISSICK RESIDENCE
1600 WEST LAKE SAMMAMISH PKWY NE
BELLEVUE, WA 98008

PRINCIPAL: KB
PROJECT MANAGER: AF
DRAWN BY: HC
CHECKED BY: AF
JOB NO.: 220821
DATE: 11/21/2022

REVISIONS:

NO.	DESCRIPTION	DATE
1	MITIGATION PLAN	11/21/22

NOT FOR CONSTRUCTION

MITIGATION PLAN

11/21/2022

MITIGATION PLAN NOTES

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