GEOTECH
CONSULTANTS, INC.

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

October 28, 2021

JN 21383

Robert and Gina Maguire
7643 Southeast 72nd Place
Mercer Island, Washington 98040
via email: robmaguire@dwt.com & Gina.Magiure@ge.com

Subject: **Transmittal Letter – Geotechnical Engineering Study**
Proposed Landscape Project
7643 Southeast 72nd Place
Mercer Island, Washington

Dear Maguire Family,

Attached to this transmittal letter is our geotechnical engineering report for the proposed landscape project to be constructed in Mercer Island, Washington. 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, and temporary excavations. This work was authorized by your acceptance of our proposal, P-10963, dated September 13, 2021.

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.

D. Robert Ward, P.E.
Principal

cc: **Bethune Associates, Inc.** – Lauchlin Bethune
via email: lauch@bethuneassociates.com

MKM/DRW:kg

GEOTECHNICAL ENGINEERING STUDY
Proposed Landscape Project
7643 Southeast 72nd Place
Mercer Island, Washington

This report presents the findings and recommendations of our geotechnical engineering study for the site of the proposed landscape project to be located in Mercer Island.

We were provided with a preliminary site plans and a topographic map. Bethune Associates, Inc. developed the site plan, which is dated September 16, 2021, and Terrane developed the survey, dated July 1, 2020. Based on the provided plan, we understand that the southern yard areas of the existing residential property will be landscaped. As part of this, two new, flat grass areas are proposed in the current, moderately sloped yard. To accomplish this, new retaining walls will be needed to facilitate both the upslope cuts, as well as the downslope fills associated with flattening these areas out. These walls are proposed to have exposed heights of up to 4 to 5 feet at this time. New walkways are also being proposed along the southern side of the existing residence, and a small patio is shown to extend east from the existing elevated deck near the southwestern corner of the house. The southern-most yard area is shown to be located close to the property lines which lies in close proximity to the western neighbor's rockery, and eastern neighbor's landscape block wall.

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 near the southern end of Mercer Island. The irregular shaped site comprises a total site area of approximately 0.29-acres. The site is bordered to the north by Southeast 72nd Place, and to the east, south, and west by single family parcels.

The residential property slopes downward from east to west, with a total elevation change of up to 22 feet across. The existing residence is located in the approximate center of the property and consists of two-stories underlain by a basement space that occupies the full footprint of the residence. The grade north of the residence slopes downward gently from east to west across a sloped, grass yard area. A short rockery lines the western edge of the yard, where the grade drops several feet to the elevation of the flat driveway.

To the south of the residence, the grade follows a similar east-west downward slope, extending downward at a moderate inclination from the eastern property line, before flattening out across a paver patio. This grade continues to drop gently past the western side of the patio, continuing across the footprint of the elevated deck, and a small play area located near the southwestern corner of the residence. A terraced rock wall is set near the property line, where the grade drops several feet into the lower, western adjacent parcel.

We understand that a small piece of land was recently purchased from the adjacent southern property owner. This piece of land, which forms a rough triangle south of the existing property line, also slopes downward moderately from east to west. This area is undeveloped and is covered with scattered trees and landscaping.

The City of Mercer Island GIS maps the site within a Potential Landslide Hazard Area, as well as an Erosion Hazard Area. Much of the surrounding vicinity is also mapped with these hazards. No steep slopes or seismic hazards are mapped at the property.

Th adjacent properties are all single-family-residence developments. Most notably, the adjacent southeastern and southwestern properties contain site features located in close proximity to the proposed landscape project of the subject site. To the east and just upslope of the proposed project area, the adjacent eastern property contains a relatively short, landscape block wall that lines the western edge of a small yard terrace. This wall is approximately 1.5 to 2.5 feet in height, and at its closest, is set less than approximately 3 feet from the property line at its closest point. It appears that the base blocks for this wall bear just beneath the ground surface, and it is not apparent if the wall is reinforced. The adjacent western property contains a short, approximately 4-foot-tall rockery along the property line that is located near the proposed southern landscape area. This rockery is situated just below the proposed landscape project area.

SUBSURFACE

The subsurface conditions were explored by drilling one test boring and excavating five test holes at the approximate locations 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 October 1, 2021 using a portable Acker drill, and the test holes were excavated using hand tools. Samples were taken at approximate 2.5- and 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 Logs are attached as Plates 3 and 4.

Soil Conditions

The test boring and test holes were excavated near the locations of proposed landscape walls, and they generally encountered similar subsurface soil conditions. A small depth of fill soil was revealed in one exploration, but generally native, loose, weathered silty sand containing roots was revealed at the ground surface. This weathered layer extended to depths of approximately 2 to 3.5 feet in the explorations, and then became unweathered, cemented, and dense. This soil became denser with depth. This dense to very dense, silty sand soil is glacially compressed and is geologically referred to as glacial till. The glacial till extended to the base of the explorations at depths ranging from 2.5 to 4 feet, where auger refusal was met both with the small drill the hand tools because of its very dense condition.

Several attempts were made to advance Test Hole 5 through the upper weathered layer. However, refusal was met at depths of up to 3 feet in the attempts atop large roots associated with the nearby cedar tree, as well as on rocks and cobbles.

Groundwater Conditions

No groundwater seepage was observed during our explorations. Howvever, it should be noted that groundwater levels vary seasonally with rainfall and other factors. Higher and greater groundwater levels occur in the winter and spring months in the Puget Sound area. It is possible that that some perched groundwater could be found between the looser near-surface soil and the underlying glacial till during these months.

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. The relative densities and moisture descriptions indicated on the test boring and test hole 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 and test holes conducted for this study encountered dense to very dense glacial till at depths of approximately 2 to 3.5 feet. The glacial till has a high internal shear strength and is not susceptible to slope instability. This soil will provide an excellent base for the project, and we recommend that the foundations of the new landscaping walls bear on the glacial till. Several recommendations for block wall foundations and wall design/construction can be found in a subsequent section of this report.

The excavations for the new landscaping walls will range depending on the final design but will result in excavations of several feet to construct the new footings or base course of blocks. Based on the soils encountered in our explorations, the upper fill and weathered native soils should not be excavated steeper than a 1:1 (Horizontal:Vertical). Once the underlying glacial till has been reached, a steeper 0.75:1 (H:V) inclination can be utilized for deeper excavations. Large areas of vertical excavations should not be made on, or near the shared property lines, or near any adjacent settlement sensitive structures. Excavations within the southern landscape area will thus be challenging due to the presence of settlement-sensitive, block wall upslope and east of the proposed new walls. The base of the adjacent wall appears to lie within 12 inches of the ground surface atop loose soils. It will be imperative that no vertical excavations be made on the property line so as not to cause a potential loss of ground near the neighbor's block wall, or to cause a loss of ground to extend onto the neighboring property. Therefore, the front of the new wall should be placed at least 5 feet from the neighboring eastern block wall, and the new wall will need to be constructed in sections no larger than 6 horizontal feet in order to reduce the size of the exposed excavation. This build as you go procedure will allow each section of the new wall to be excavated,

blocks laid, drainage installed, and backfilled prior to opening the next section, and will help to reduce the potential for excavations to cave onto the adjacent property.

CRITICAL AREA STUDY AND INFORMATION (MICC 19.07)

Landslide Hazard Areas: There are several criteria for being a Landslide Hazard Area based on the MICC. The first of several criteria are as follow:

1. Areas of historic failures.
2. Areas with all three of the following characteristics:
   a. Slopes steeper than 15 percent; and
   b. Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and
   c. Springs or ground water seepage.
3. Areas that have shown evidence of past movement or that are underlain or covered by mass wastage debris from past movements.
4. Areas potentially unstable because of rapid stream incision and stream bank erosion.

In our professional opinion, based on site features and the glacial till soil revealed at a shallow depth in the explorations, none of these four criteria noted above are met within the site.

There is also a fifth criteria with regards to Landslide Hazard areas: Any slope that is 40 percent or greater measured over a 30-foot horizontal run (Steep Slope). No slopes are present within the site boundaries that would meet this additional criteria.

Erosion Hazard Area: The site also meets the City of Mercer Island's criteria for an Erosion Hazard Area. However, this potential hazard can readily be mitigated using typical erosion control measures. The temporary erosion control measures needed during the site development will depend heavily on the weather conditions that are encountered during the site work. One of the most important considerations, particularly during wet weather, is to immediately cover any bare soil areas to prevent accumulated water or runoff from the work area from becoming silty in the first place. Silty water cannot be discharged off the site, so a temporary holding tank should be planned for wet weather earthwork. A wire-backed silt fence bedded in compost, not native soil, or sand, should be erected as close as possible to the planned work area, and the existing vegetation west of the silt fence be in place. Covering the base of the excavation with a layer of clean gravel or rock is also prudent to reduce the amount of mud and silty water generated. Cut slopes and soil stockpiles should be covered with plastic during wet weather. Soil stockpiles should be minimized. Silty water accumulating in the excavation must not be allowed to flow off the site. Following rough grading, it may be necessary to mulch or hydroseed bare areas that will not be immediately covered with landscaping or an impervious surface.

Statement of Risk: In order to satisfy the City of Mercer Island's requirements, a statement of risk is needed. As such, we make the following statement:

Provided the recommendations in this report are followed, it is our professional opinion that the proposed development will be as safe as if it were not located in a geologically hazardous area and will not adversely impact any potential critical areas on adjacent properties.

The soils that will be excavated for the new walls will consist of a thin layer of uncontrolled fill soils, which are underlain by fine-grained silty sand containing organics. These soils have poor drainage

characteristics and are exceedingly difficult to adequately compact for use as structural fill. If structural fill is needed beneath the base of the new walls, or where free draining backfill is needed behind retaining walls, imported, granular structural fill should be utilized.

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.

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 C (Very Dense Soil and Soft Rock). 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 1.47g and 0.51g, 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 0.75g. The soils beneath the site are not susceptible to seismic liquefaction under the

ground motions of the MCE because of their dense nature and the absence of near-surface groundwater.

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 0.50g.

MODULAR BLOCK WALLS

Modular block walls will be used to create the new landscape terraces south of the existing residences. A combination of both cut and fill walls are needed to flatten out the proposed yard areas in the currently moderately sloped areas. The base of all these walls should be on the glacial till that was

Currently, the western side of the southern landscape area will require that a fill wall with an exposed fill height of up to 4 feet be constructed to meet the proposed finish grades. As stated in the ***General*** section of this report, this wall will bear close to the adjacent western neighbor's rockery. The base of this wall must bear directly upon the dense, native glacial till and its base should be at least 30 inches below the existing ground; this is to reduce the potential for placing a surcharge load atop the neighbor's rockery. Geogrid reinforcement will be needed to construct this fill wall. For preliminary design, we have included a detail for the southwestern fill wall. This can be found attached to this report as Plate 5.

The northern landscape area, as well as the eastern side of the southern landscape area, show the construction of cut walls with exposed heights ranging from 4 to 5 feet. Assuming that the walls have a level backslope, and no surcharges exist, the cut walls could be constructed as gravity walls using the modular blocks, although they need to bear directly on the native glacial till. *Where these cut walls will be under 3 feet in total height, as measured from outside ground to outside ground, modular blocks should have a minimum depth of 12 inches. Where total wall heights will exceed 3 feet in height, blocks with a minimum depth of 20 inches should be used below the 3-foot level.* General notes for the reinforced wall attached as Plate 5 can be used for the base layer preparation, drainage, and backfill of the cut walls. Also, as presented in the ***General*** section of this report, the excavation sequencing and recommendations in the area of the southern portion of the project area that is near the neighbor's block wall to the east should be closely followed during construction to prevent adverse impacts.

EXCAVATIONS AND SLOPES

Temporary excavation slopes should not exceed the limits specified in local, state, and national government safety regulations. Also, temporary cuts should be planned to provide a minimum 2 to 3 feet of space for construction of foundations, walls, and drainage. Temporary cuts to a maximum overall depth of about 4 feet may be attempted vertically in unsaturated soil, if there are no indications of slope instability. However, vertical cuts should not be made near property boundaries, or existing utilities and structures. We do not recommend that vertical cuts be made at the base of sloped cuts for this project. Based upon Washington Administrative Code (WAC) 296, Part N, the upper fill and weathered native soil at the subject site would generally be classified as Type B. Therefore, temporary cut slopes greater than 4 feet in height should not be excavated at an

inclination steeper than 1:1 (Horizontal:Vertical), extending continuously between the top and the bottom of a cut. The underlying dense glacial till would generally be classified as Type A, and temporary cut slopes could be steepened to a 0.75:1 (H:V), extending continuously between the top and the bottom of a cut. Excavation recommendations near the eastern side of the southern portion of the site that are noted in the ***General*** section of this report need also to be adhered to.

The above-recommended temporary slope inclinations are based on the conditions exposed in our explorations, and on what has been successful at other sites with similar soil conditions. It is possible that variations in soil and groundwater conditions will require modifications to the inclination at which temporary slopes can stand. Temporary cuts are those that will remain unsupported for a relatively short duration to allow for the construction of foundations, retaining walls, or utilities. Temporary cut slopes should be protected with plastic sheeting during wet weather. It is also important that surface runoff be directed away from the top of temporary slope cuts. Cut slopes should also be backfilled or retained as soon as possible to reduce the potential for instability. Please note that loose soil can cave suddenly and without warning. Excavation, foundation, and utility contractors should be made especially aware of this potential danger. These recommendations may need to be modified if the area near the potential cuts has been disturbed in the past by utility installation, or if settlement-sensitive utilities are located nearby.

All permanent cuts into native soil should be inclined no steeper than 2:1 (H:V). Compacted fill slopes should not be constructed with an inclination greater than 2:1 (H:V). To reduce the potential for shallow sloughing, fill must be compacted to the face of these slopes. This can be accomplished by overbuilding the compacted fill and then trimming it back to its final inclination. Adequate compaction of the slope face is important for long-term stability and is necessary to prevent excessive settlement of patios, slabs, foundations, or other improvements that may be placed near the edge of the slope.

Water should not be allowed to flow uncontrolled over the top of any temporary or permanent slope. All permanently exposed slopes should be seeded with an appropriate species of vegetation to reduce erosion and improve the stability of the surficial layer of soil.

DRAINAGE CONSIDERATIONS

Footing drains should be used for the landscape walls. These drains should be surrounded by at least 6 inches of 1-inch-minus, washed rock that is encircled with non-woven, geotextile filter fabric (Mirafi 140N, Supac 4NP, or similar material).

The excavation and site should be graded so that surface water is directed off the site and away from the tops of slopes. Water should not be allowed to stand in any area where foundations, slabs, or pavements are to be constructed. Final site grading in areas adjacent to buildings should slope away at least one to 2 percent, except where the area is paved. Surface drains should be provided where necessary to prevent ponding of water behind foundation or retaining walls. A discussion of grading and drainage related to pervious surfaces near walls and structures is contained in the ***Foundation and Retaining Walls*** section.

GENERAL EARTHWORK AND STRUCTURAL FILL

All building and pavement areas should be stripped of surface vegetation, topsoil, organic soil, and other deleterious material. The stripped or removed materials should not be mixed with any

materials to be used as structural fill, but they could be used in non-structural areas, such as landscape beds.

Structural fill is defined as any fill, including utility backfill, placed under, or close to, a building, or in other areas where the underlying soil needs to support loads. All structural fills should be placed in horizontal lifts with a moisture content at, or near, the optimum moisture content. The optimum moisture content is that moisture content that results in the greatest compacted dry density. The moisture content of fill is very important and must be closely controlled during the filling and compaction process. As discussed in the ***General*** section, the on-site soils are not suitable for reuse as structural fill, due to its variable composition, and poor drainage and compactive qualities. Imported, free-draining, granular fill should be utilized where needed.

The allowable thickness of the fill lift will depend on the material type selected, the compaction equipment used, and the number of passes made to compact the lift. The loose lift thickness should not exceed 12 inches, but should be thinner if small, hand-operated compactors are used. We recommend testing structural fill as it is placed. If the fill is not sufficiently compacted, it should be recompacted before another lift is placed. This eliminates the need to remove the fill to achieve the required compaction. The following table presents recommended levels of relative compaction for compacted fill:

LOCATION OF FILL PLACEMENT	MINIMUM RELATIVE COMPACTION
Beneath footings, slabs or walkways	95%
Filled slopes and behind retaining walls	90%
Beneath pavements	95% for upper 12 inches of subgrade; 90% below that level

Where: Minimum Relative Compaction is the ratio, expressed in percentages, of the compacted dry density to the maximum dry density, as determined in accordance with ASTM Test Designation D 1557-91 (Modified Proctor).

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 and test holes 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 and test holes. 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.

This report has been prepared for the exclusive use of Robert and Gina Maguire, and their 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 plates are attached to complete this report:

Plate 1	Vicinity Map
Plate 2	Site Exploration Plan
Plates 3 - 4	Test Boring and Test Hole Logs
Plate 5	Reinforced Modular Block Wall Detail

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.

10/28/2021

D. Robert Ward, P.E.
Principal

MKM/DRW:kg

NORTH

(Source: King County iMap)

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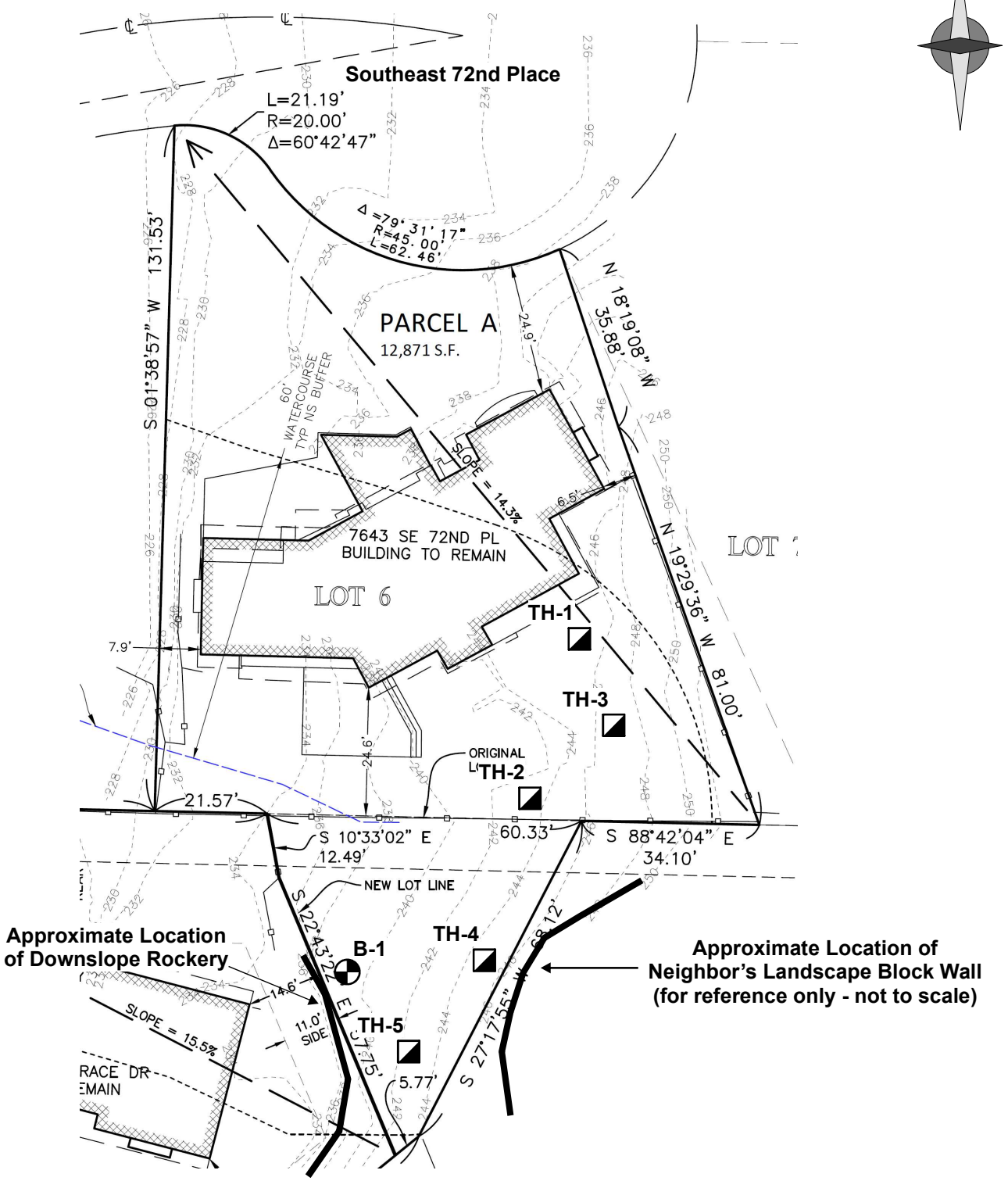
VICINITY MAP

7643 Southeast 72nd Place
Mercer Island, Washington

Job No:	Date:		Plate:
21383	Oct. 2021		1



Legend:

- Test Boring Location
- Test Hole Location

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SITE EXPLORATION PLAN

7643 Southeast 72nd Place
Mercer Island, Washington

Job No:	Date:		Plate:
21383	Oct. 2021	No Scale	2

BORING 1

Depth (ft.)	Moisture	Water Table	Blows per Foot	Sample	USCS	Description	Elevation ±238 feet
						Brown silty SAND with roots, fine-grained, moist, loose	
					SM	-becomes tannish-brown, moist to dry	
						-becomes loose to medium-dense	
			73/11”	1		-becomes gray with rusting, cemented, very dense **(Glacial Till)**	
5							

*** Test boring was terminated at 4 feet on October 1, 2021 due to auger refusal.**

*** No groundwater was encountered during drilling.**

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TEST BORING LOG

7643 Southeast 72nd Place
Mercer Island, Washington

Job	Date:	Logged by:	Plate:
21383	Oct. 2021	MKM	3

TEST HOLE 1

Depth (feet)	Soil Description
0.0 – 1.5	Topsoil and landscape rock **[FILL]** - 1.5', layer of filter fabric
1.5 – 3.0	Brown silty SAND with roots, fine-grained, moist to dry, loose **[SM]** - 2', becomes gray-brown, damp, medium-dense - 2.5', becomes gray, cemented, dense **(Glacial Till)**

Test Hole was terminated at 3 feet on October 1, 2021.
No groundwater seepage was encountered in the test hole.

TEST HOLE 2

Depth (feet)	Soil Description
0.0 – 1.5	Topsoil and dark-brown silty SAND, fine-grained, moist, loose **[FILL]**
1.5 – 2.5	Gray-brown mottled orange, silty SAND , fine-grained, moist to very moist, loose to medium-dense **[SM]** - 2', increased gravels, becomes slightly cemented, dense

Test Hole was terminated at 2.5 feet on October 1, 2021.
No groundwater seepage was encountered in the test hole.

TEST HOLE 3

Depth (feet)	Soil Description
0.0 – 1.0	Topsoil
1.0 – 3.5	Brown silty SAND with gravel and roots, fine-grained, moist to dry, loose **[SM]** - 2', becomes gray-brown with trace roots, dry, medium-dense - 3', becomes gray, moist, cemented, dense **(Glacial Till)**

Test Hole was terminated at 3.5 feet on October 1, 2021.
No groundwater seepage was encountered in the test hole.

TEST HOLE 4

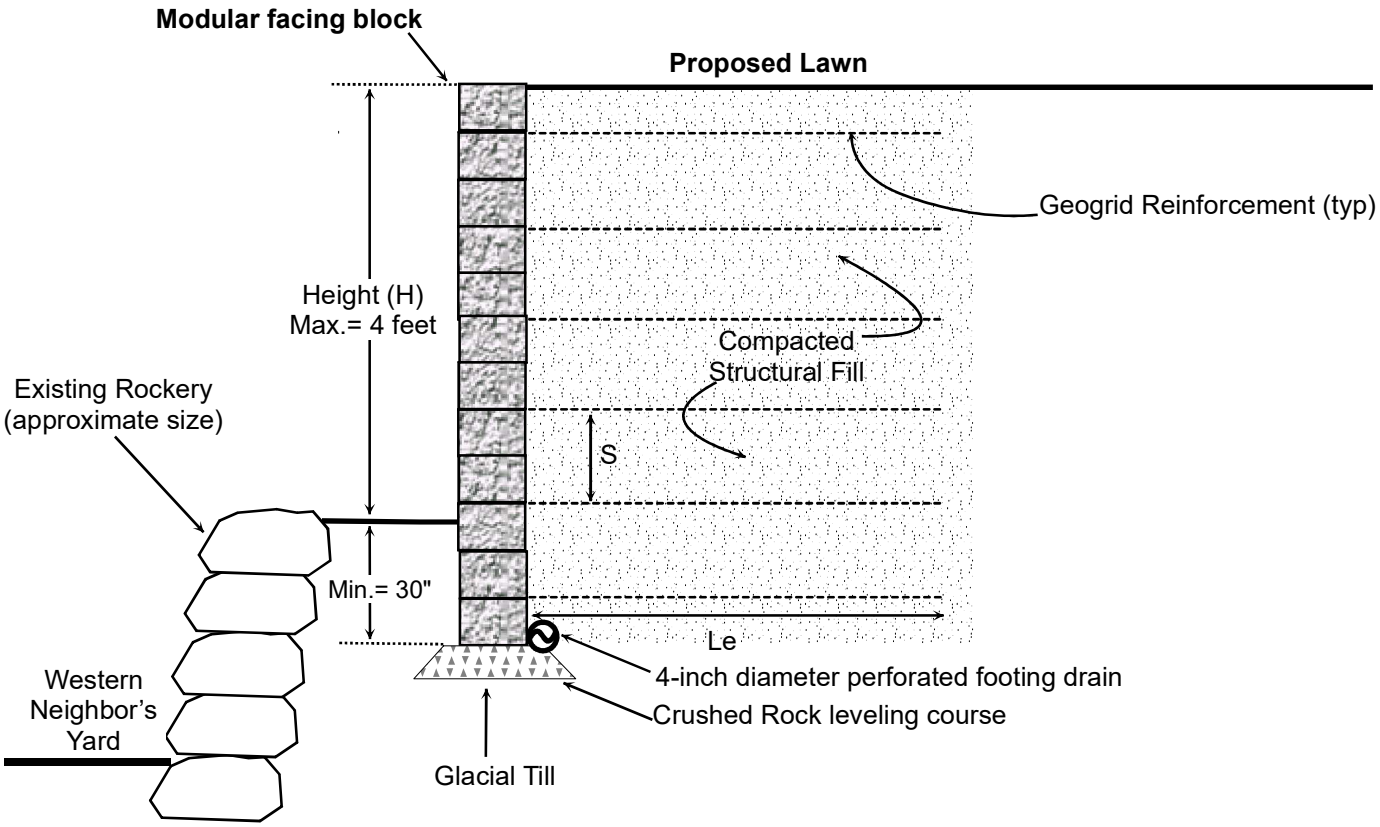
Depth (feet)	Soil Description
0.0 – 1.0	Topsoil
1.0 – 3.0	Reddish-brown silty SAND with roots, fine-grained, moist, loose **[SM]** - 2.5', becomes gray-brown mottled orange, loose to medium-dense - 3', becomes gray mottled orange and rust, damp, cemented, dense **(Glacial Till)**

Test Hole was terminated at 3.0 feet on October 1, 2021.
No groundwater seepage was encountered in the test hole.

TEST HOLE 5

Depth (feet)	Soil Description
0.0 – 3.0+	Brown silty SAND with roots, gravel, and cobbles, fine-grained, dry, loose **[SM]**

Test Hole was terminated at 3 feet on October 1, 2021 due to refusal on large roots and rocks after several attempts.
No groundwater seepage was encountered in the test hole.



Notes:

1. The modular block wall should be constructed by an experienced contractor. Construction of the geogrid-reinforced fill and the modular block facing should be monitored by the geotechnical engineer.
2. The modular block wall must be constructed in accordance with the manufacturer's specifications. This includes their details for corners.
3. Modular blocks must have a minimum facing depth of 12 inches. Wall batter may be near vertical.
4. Geogrid Reinforcement should be Stratagrid 350, or a geogrid having similar strength and deformation properties. Substitutions should be submitted to the geotechnical engineer for approval prior to starting construction. Geogrids must be pulled taut prior to placement of fill.
5. The lowest layer of Geogrid Reinforcement should be at the same level as the final grade at the face of each modular block wall. The upper layer of Geogrid Reinforcement should be within 24 inches of the top of the modular block wall.
6. Geogrid spacing (S) is 16 inches. The geogrid reinforcement, Le, should be 6 feet in length for the above shown wall height.
7. Compacted Fill, and Structural Fill placed below the modular block wall and geogrids, should be an imported, free-draining granular fill. Samples of the proposed fill materials should be submitted to the geotechnical engineer for approval prior to starting construction. All fill should be placed with a maximum loose lift thickness of 12 inches and be compacted to at least 95 percent of the maximum Modified Proctor dry density (ASTM D-1557).
8. Surface water must be prevented from infiltrating into the Compacted Fill behind the wall blocks. The ground surface behind each modular block wall should be sloped so that no standing water can develop, as excessive water in the backfill can cause failure of the reinforced fill. During wet weather, the Compacted Fill behind the wall should be covered with plastic until the ground surface is sloped for proper drainage.
9. A Footing Drain consisting of a 4-inch perforated PVC pipe should be installed in the base of the Crushed Rock layer.
10. The final slope should be vegetated or landscaped to provide erosion protection.

GEOTECH
CONSULTANTS, INC.

MODULAR BLOCK WALL DETAIL

7643 Southeast 72nd Place
Mercer Island, Washington

Job No:	Date:		Plate:
21383	Oct. 2021		5

SITE INFORMATION

SITE ADDRESS — **7643 SE 72nd Place, Mercer Island, Washington 98040**

TAX PARCEL NUMBER — **545400-0060**

SITE AREA — **12,871 SF or 0.30 acres**

PROJECT DESCRIPTION
The work scope for this residential project is a backyard grading, terracing, drainage and landscaping. The work is in a Potential Landslide Hazard Area and Erosion Hazard Area. The access for the project is from the south though the neighbor's side yard accessing the cul-de-sac on 7333 Mercer Terrace Drive. A Critical Area Report was prepared by Sewell Wetland Consulting of November 2, 2021 which identifies the water course as erroneous and no existent. A Geotechnical Study of October 21, 2021 has been prepared by Geotech Consultants. The proposed work will follow the Geotechnical Study specification including designated reviews by the engineer throughout the project. Project work includes excavation and construction of two gravity landscape block walls, drainage, paving and landscaping. Drainage design has been completed by Hankins Engineering. The north retaining wall will be a 5' tall cut wall stepping down to 12" height at the ends. The southern retaining wall is both a 48" height cut wall to the east stepping down to 12" height at the ends, and a 48" height fill wall matching grade at the ends to the west. The walls meet at grade in the middle of the terrace. The west fill wall will have additional 18" of depth to reach stable glacial till soil per the Gecotech Study. All walls will have drainage per the civil engineer and the fill wall will be installed with structural backfill and geotechnical fabric for stability. A 10' wide Sewer Easement runs east and west through the site. No landscape walls are in the 10' Sewer Easement. There is an additional triangular sewer easement in the southeast corner of the lot. Landscape work includes replacement and reduction in size of a sand set paver patio and sand set block steps off the existing deck. Work includes rebuilding a 12" height rock wall with on-site rocks 4' from and along the north east property line for the existing zip line. Landscape work also includes building an 18" height block wall as replacement for existing rock wall west and south of the existing deck. Work includes surface drainage, irrigation, low voltage lighting soil preparation, planting and sod lawn. The site will also be fenced with a 6' height black aluminum powder coated fence. The fence sections though the easement will be set in sleeves and will be removable for utility work.

OWNER
Mr. Robert Maguire
Mrs. Gina Maguire
7643 SE 72nd Place
Mercer Island, Washington 98040
(206) 850-6982
Email: Gina.Maguire@gc.com
robmaguire@dwt.com

GEOTECHNICAL ENGINEER
Geotech Consultants, Inc
2401 10th Avenue East
Seattle, Washington 98102
(425) 747-5618
Contact: Mr. Rob Ward
Email: robw@geotechnw.com

WETLAND CONSULTANT
Sewell Wetland Consulting
PO Box 880
Fall City, Washington 98024
(425) 859-0513
Mr. Ed Sewell
Email: esewell@sewellwl.com

LANDSCAPE ARCHITECT
Lauchlin R. Bethune Associates, Inc.
PO Box 1442
Maple Valley, Washington 98038
(425) 432-9877
Contact: Mr. Lauchlin Bethune
Email: lauch@bethuneassociates.com

CIVIL ENGINEER
Hankins Engineering
1689 SW Gails Avenue
Chehalis, Washington 98532
(360) 324-3061
Contact: Mr. Robert Hankins
Email: hankinsengineering@gmail.com

LANDSCAPE CONTRACTOR
Legacy Landscaping
1705 Newport Way NW
Issaquah, Washington 98027
(425) 226-6333
Mr. Chris Holecek
Email: legacylandscaping@comcast.net
Contractor's License LEGACL 1953MQ
Bond 859413C General Contractors License

SITE AREA
12,871 sf or 0.30 acres
Original Parcel A =10,756 sf (0.25 acres)
New Parcel A =12,871 sf (0.30 acres)

SITE ZONING — **R-9.6 (9,600 sf min. lot size)**

BUILDING SET BACKS

Front Yard Setback	20'-0"
Side Yard Setback	15'-0"
Rear Yard Setback	25'-0"

LOT SLOPE (from survey)

Highest elevation point	253
Lowest elevation point	228
Elevation difference	25'
Horizontal difference	175'
Lot slope	14.2%
Allowable Lot Coverage	**40%**
Required Landscape Area	**60%**

PROPOSED LOT COVERAGE

Buildings Roof Area	3,301 sf
Driveway	882 sf
Total Proposed Lot Coverage	**4,183 sf or 32%**
Allowed Lot Coverage	**5,148 sf or 40%**
Required Landscape Area	**7,723 sf or 60%**
Total Proposed Landscape Area	**8,688 sf or 67%**

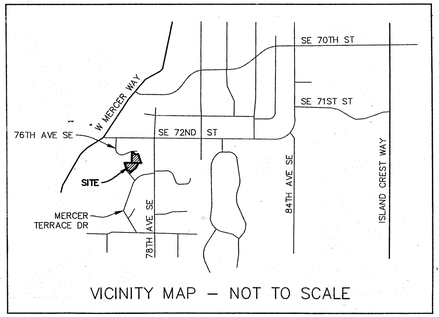
HARDSCAPE CALCULATIONS

Current Hardscape		
Deck	349 sf	
Patio	469 sf	
Entry walk	198 sf	
Wood stairs	82 sf	
Rockeries	150 sf	
Total current hardscape		**1,248 sf**
Hardscape to be removed		
Patio and wood stairs		
Total hardscape to be removed		**551 sf**
Proposed Hardscape		
Patio	250 sf	
Retaining walls	170 sf	
Total new hardscape		**420 sf**
Project Hardscape		
Existing 1,248 sf- removed 551 sf + new 420 sf =		**1,117 sf or 8.6%**
Allowed Hardscape		
Site 12,871 sf x 9% =		**1,158 sf or 9%**

CUT AND FILL CALCULATIONS

Cut (material to be exported)	**75 cu yds.**
Fill (structural imported material)	**60 cu yds.**

SHEET SCHEDULE



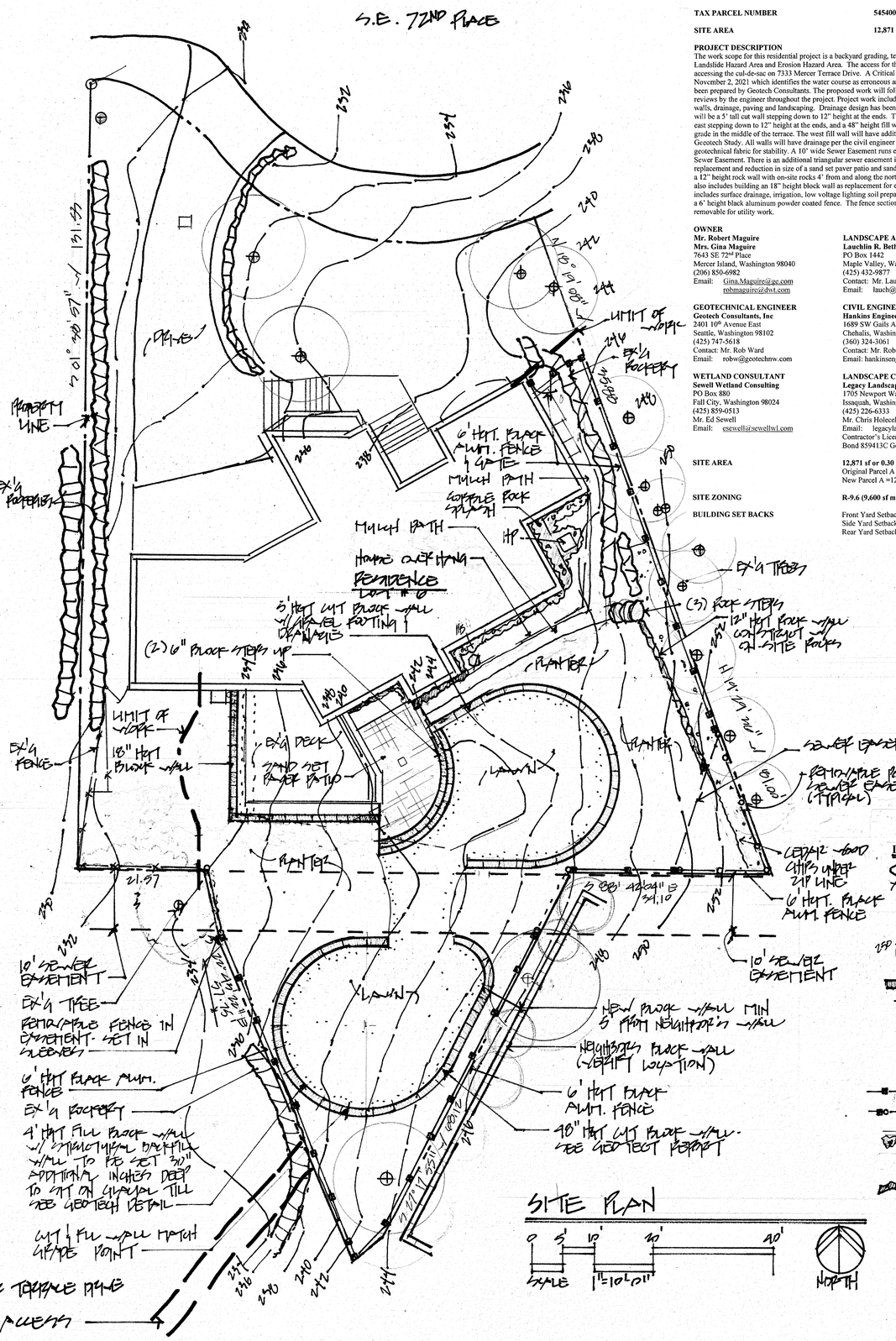
VICINITY MAP – NOT TO SCALE

LEGAL DESCRIPTION

TAX PARCEL NO. 545400–0060
LOT 6 OF MERCER VILLAGE, AS PER PLAT RECORDED IN VOLUME 64 OF PLATS, ON PAGE 60, RECORDS OF KING COUNTY;
EXCEPT THAT PORTION THEREOF DESCRIBED AS FOLLOWS:
BEGINNING AT THE MOST WESTERLY CORNER OF LOT 7 IN SAID PLAT; THENCE SOUTH 18°19'08" EAST 35.88 FEET; THENCE SOUTH 19°29'36" EAST 81.07 FEET TO A POINT ON THE SOUTH LINE OF SAID LOT 6; THENCE SOUTH 88°42'04" EAST 11.98 FEET TO THE SOUTHWEST CORNER OF SAID LOT 7; THENCE NORTH 24°25'45" WEST 121.64 FEET TO THE POINT OF BEGINNING OF THIS EXCEPTION;

(ALSO BEING KNOWN AS PARCEL A OF CITY OF MERCER ISLAND LOT LINE ADJUSTMENT NO. MI95–0555, ACCORDING TO THE SURVEY RECORDED UNDER RECORDING NO 9507259002, RECORDS OF KING COUNTY).

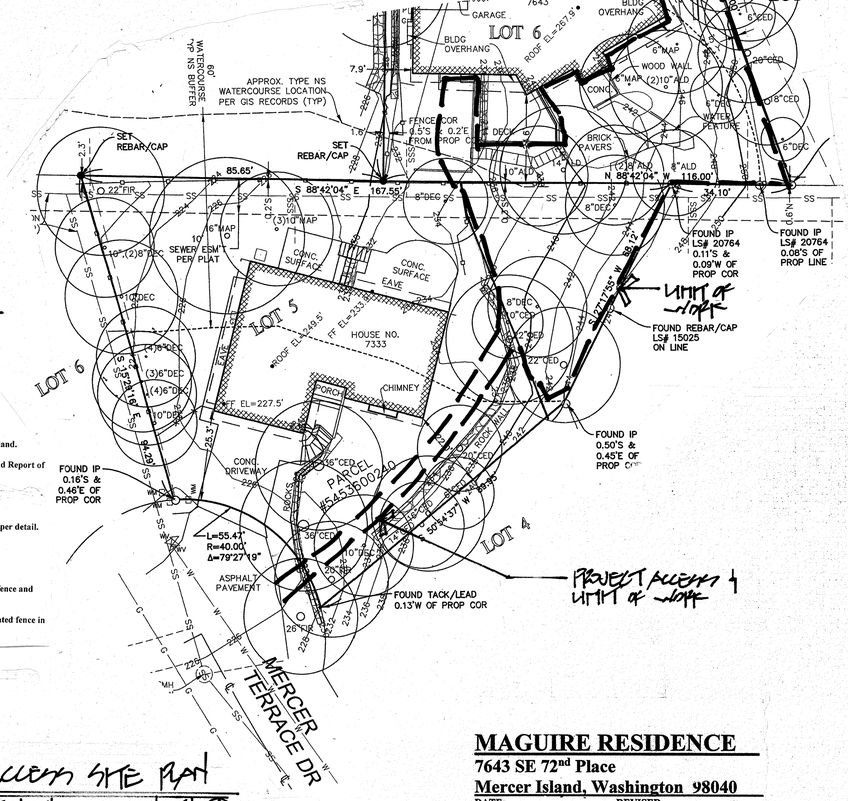
TAX PARCEL NO. 545360–0240
LOT 5, MERCER TERRACE, AS PER PLAT RECORDED IN VOLUME 72 OF PLATS, PAGE 86, RECORDS OF KING COUNTY, WASHINGTON;
TOGETHER WITH THAT PORTION OF LOT 6 IN SAID PLAT LYING EASTERLY OF THE FOLLOWING DESCRIBED LINE:
BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 6; THENCE NORTH 88°42'04" WEST 2.55 FEET; THENCE SOUTH 15°29'16" EAST 94.30 FEET TO A POINT 0.48 FEET WESTERLY OF MOST EASTERLY CORNER OF LOT 6.



SITE PLAN
0 5' 10' 20' 40'
SCALE 1"=10'-0" NORTH

LEGEND

- Existing rockery to remain.
- Existing fence to remain.
- Existing shrubs to remain.
- 258 — Existing contour per Survey by Terrane of 7/1/20.
- Existing tree to remain, preserve and protect. Install Tree Protection measures per City of Mercer Island.
- Proposed Block Retaining Wall per Geotech Section and Report of October 28, 2021.
- Proposed paver sand set paver patio
- Proposed Block steps- two 6" height radius block steps per detail.
- Proposed basalt rock steps.
- Proposed cedar wood chips under zip line.
- Proposed 6' tall black aluminum black powder coated fence and gates
- Proposed removable 6' tall black aluminum powder coated fence in Drainage Easement
- Proposed cobble rock splash around building.
- Proposed 12" tall rockery.



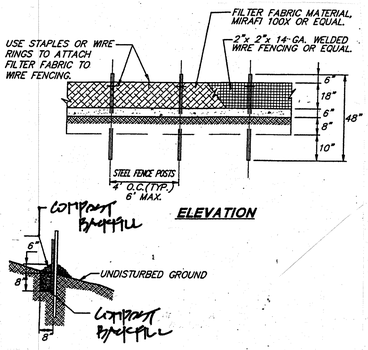
ACCESS SITE PLAN
1"= 20'-0" NORTH
FROM TERRAINE LOT LINE REVISION PLANS OF 7/1/21

MAGUIRE RESIDENCE

7643 SE 72nd Place
Mercer Island, Washington 98040

DATE: REVISED:
JOB# 216183
SCALE: 1"=10'-0" SHEET # L 1.0

Lauchlin R. Bethune Associates, Inc.
■ *Landscape Architecture & Planning, ASLA*
P.O. Box 1442 phone: (425) 432-9877
Maple Valley, Washington 98038-1442 www. bethuneassociates.com

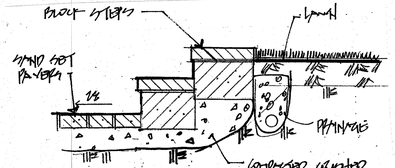


ELEVATION

SECTION

SILT FENCES DETAIL

NTS



SECTION A - BLOCK STEPS

NTS

GENERAL CONSTRUCTION NOTES

1. The work outlined on the plans are based on the Geotechnical Engineering Study of October 28, 2021 by Geotech Consultants, Inc. All methods and recommendation in the Geotechnical Study will be strictly followed including erosion control recommendation, staging requirements, exported cut material, imported fill material, drainage, paver and block wall construction. Geotech Consultants will be retained to observe the site preparation, erosion control measure, excavation, drainage and construction of block walls.

The conditions of the Geotechnical Report include not limited to the report:

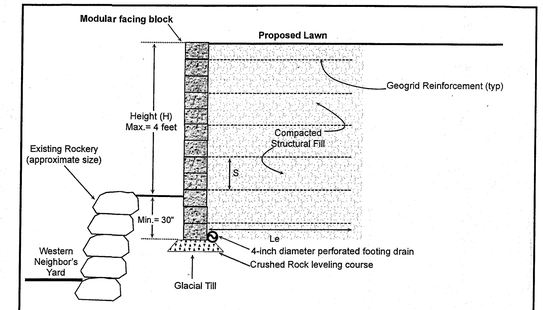
- Construction during the dryer period of the summer to reduce erosion and impact to slope.
- Cover all exposed soil with plastic.
- Temporary Erosion control holding tank.
- Installation of silt fence bedded in compost along lower portion of work.
- Retain all existing vegetation possible
- Construct access road and base of excavation with clean rock or gravel.
- Cut slopes and soil stockpiles to be covered with plastic
- No silty water to run offsite
- Soil stock piles should be limited
- Following rough grading mulch or hydroseed exposed grades.
- No cut material to be used for fill, export all cut material.
- All walls to sit on glacial till soils per Geotech Study.
- Structural fill required for fill walls and to include geotech fabric per Geotech Engineers Detail
- Rock staging and access roads. Trucks and equipment not allowed to drive off the rock covered area.

2. Provide minimum 4" depth 60-40 mix from Corliss Materials 253 891-6680 in all lawn beds. Scarify subgrade by rototilling and add topsoil on surface, mix topsoil and subgrade thoroughly. Add additional topsoil as needed to contour and level lawns.
3. Provide minimum 2" depth fine blend hem-fir mulch to all planting beds. Mulch from Carpetinos, Kent, Washington. Fill all planting beds and lawn areas to within 1" of top of all curbs and walks. Slope all planting beds and lawn areas to drain.
4. Provide one (1) year warranty for all plant materials and workmanship.
5. Locate, protect and avoid disruption of all above and below grade utilities and site features prior to construction. Contractor is responsible for any resulting damages during construction. Call locate before you dig at 1 800 424-5555.
6. All work performed shall conform to the City of Mercer Island requirements, codes and specifications.

LEGEND

- Silt fence per detail and Geotech Report of October 28, 2021.
- Existing contour per Survey by Terrane of 7/1/20.
- Existing tree to remain, preserve and protect
  Install Tree Protection measures per City of Mercer Island.
- Proposed Block Retaining Wall per Geotech Section and Report of October 28, 2021.
- Proposed paver sand set paver patio
- Proposed Block steps- two 6" height radius block steps per detail.
- Proposed basalt rock steps.
- Proposed cedar wood chips under zip line.
- Proposed 6' tall black aluminum black powder coated fence and gates
- Proposed removable 6' tall black aluminum powder coated fence in Drainage Easement
  Set in concrete sleeves for removal for access to utilities.
- Proposed cobble rock splash around building.
- Proposed 12" tall rockery.
- Existing rockery to remain.
- Existing fence to remain.
- Existing shrubs to remain.

Spot elevation- TW -Top of wall elevation
BW – Bottom of wall elevation



Notes:

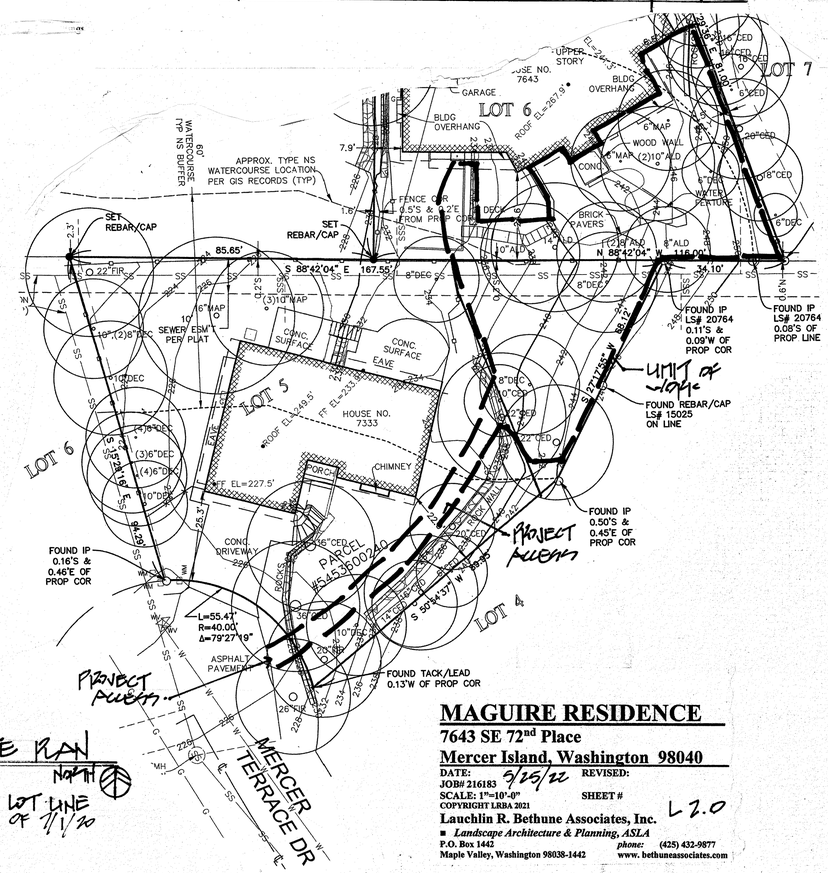
1. The modular block wall should be constructed by an experienced contractor. Construction of the geogrid-reinforced fill and the modular block facing should be monitored by the geotechnical engineer.
2. The modular block wall must be constructed in accordance with the manufacturer's specifications. This includes their details for corners.
3. Modular blocks must have a minimum facing depth of 12 inches. Wall batter may be near vertical.
4. Geogrid Reinforcement should be Stratagrid 350, or a geogrid having similar strength and deformation properties. Substitutions should be submitted to the geotechnical engineer for approval prior to starting construction. Geogrids must be pulled taut prior to placement of fill.
5. The lowest layer of Geogrid Reinforcement should be at the same level as the final grade at the face of each modular block wall. The upper layer of Geogrid Reinforcement should be within 24 inches of the top of the modular block wall.
6. Geogrid spacing (S) is 16 inches. The geogrid reinforcement, Le, should be 6 feet in length for the above shown wall height.
7. Compacted Fill, and Structural Fill placed below the modular block wall and geogrids, should be an imported, free-draining granular fill. Samples of the proposed fill materials should be submitted to the geotechnical engineer for approval prior to starting construction. All fill should be placed with a maximum loose lift thickness of 12 inches and be compacted to at least 95 percent of the maximum Modified Proctor dry density (ASTM D-1557).
8. Surface water must be prevented from infiltrating into the Compacted Fill behind the wall blocks. The ground surface behind each modular block wall should be sloped so that no standing water can develop, as excessive water in the backfill can cause failure of the reinforced fill. During wet weather, the Compacted Fill behind the wall should be covered with plastic until the ground surface is sloped for proper drainage.
9. A Footing Drain consisting of a 4-inch perforated PVC pipe should be installed in the base of the Crushed Rock layer.
10. The final slope should be vegetated or landscaped to provide erosion protection.

GEOTECH CONSULTANTS, INC.

MODULAR BLOCK WALL DETAIL
7643 Southeast 72nd Place
Mercer Island, Washington

Job No:	Date:		Plate:
21383	Oct. 2021		5

EPISTERLT FILL BLOCK WALL DETAIL | NOTES



ACCESS SITE PLAN

1"= 20'-0" NORTH

FROM TERRANE LOT LINE REVISION PLANS OF 7/1/20

MAGUIRE RESIDENCE
7643 SE 72nd Place
Mercer Island, Washington 98040

DATE: 5/25/22 REVISED:
JOB# 216183
SCALE: 1"=10'-0" SHEET # L 2.0

Lauchlin R. Bethune Associates, Inc.
■ *Landscape Architecture & Planning, ASLA*
P.O. Box 1442 phone: (425) 432-9877
Maple Valley, Washington 98038-1442 www. bethuneassociates.com

Legend:

Proposed Storm Drain
—SD—

Proposed Spot Elev.
TW 241
BW 237

Proposed Wall Drain
—WD—

O = Clean Out for WD

TW = Top of Wall
BW = Bottom of Wall

See additional notes on the other sheets by others. This storm plan is for Storm Drainage as it pertains to the new court yard with pavers and the proposed wall drains. Site design layout and Survey is by others.

Call before you dig for any and all utilities that will be within the project area.

It may be possible to substitute the Catch Basins to yard drains, this will need to be verified and approved (by Engineer and the City) prior to contractor ordering material.

Please review the Geotec's Report for recommendations concerning Walls, grading etc...
Please look at the Site Plan for additional information.

STORM AND GRADING MATERIAL SPECIFICATIONS

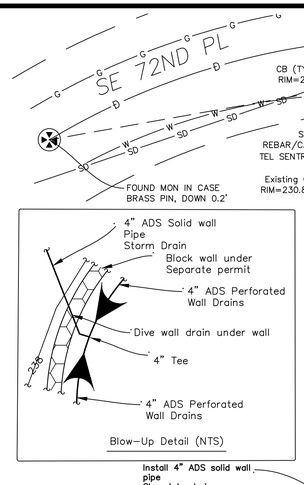
1. CATCH BASIN	TYPE I, W.S.D.O.T. STANDARD PLAN B-5.20-00 TYPE IL, W.S.D.O.T. STANDARD PLAN B-5.40-00 TYPE II, W.S.D.O.T. STANDARD PLAN B-10.20-00 STORM DRAIN MANHOLE TYPE I, W.S.D.O.T. STANDARD PLAN B-15.20-00
2. FRAME & GRATE:	VANED GRATE, W.S.D.O.T. STANDARD PLAN B-2b (AS NOTED ON PLANS). STANDARD FRAME AND GRATE, W.S.D.O.T. STANDARD B-30.50-00 CURB INLET WSDOT STANDARD PLAN B-25.20-00
3. SOLID METAL COVER:	3 BOLT LOCKING TYPE, OLYMPIC FOUNDARY TYPE MH 300/7 OR EQUAL FOR TYPE II CATCH BASINS. OLYMPIC FOUNDARY TYPE SM 605 OR W.S.D.O.T. STANDARD PLAN B-30.70-00 (OR EQUAL) FOR TYPE I CATCH BASINS.
4. STORM SEWER PIPE	*CORRUGATED METAL PIPE, n=0.024 (CMP) PER W.S.D.O.T. 9-05.9 *CONCRETE PIPE PER W.S.D.O.T. 9-05.7(1) & 9-05.7(2) n=0.012 *CORRUGATED HIGH DENSITY POLYETHYLENE PIPE (HDPE), ADS N-12 OR HANCOR Hi-Q (ASSHTO M294 TYPE S) n=0.012
5. DOWN SPOUT TIGHTLINE:	ADS N-12 (OR EQUAL.)
6. PIPE BEDDING	W.S.D.O.T. 9-03.12(3) GRAVEL BACKFILL FOR PIPE BEDDING.
7. INITIAL BACKFILL:	NATIVE MATERIAL OBTAINED FROM EXCAVATION PER W.S.D.O.T. 7-08.3(3)
8. REMAINING BACKFILL:	NATIVE MATERIAL OBTAINED FROM EXCAVATION PER W.S.D.O.T. 2-09.3(1)E.

GRADING NOTES

1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN THE EVENT OR DISCOVERY OF POOR SOILS, GROUNDWATER OR DISCREPANCIES IN THE EXISTING CONDITIONS AS NOTED ON THE PLANS.
2. MAXIMUM SLOPE STEEPNESS SHALL BE 2:1 HORIZONTAL: VERTICAL FOR CUT AND FILL SLOPES.
3. UNLESS OTHERWISE SPECIFIED, ALL EMBANKMENTS IN THE PLAN SET SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 2-03.3(14)B OF THE WSDOT STANDARD SPECIFICATIONS. EMBANKMENT COMPACTIONS SHALL CONFORM TO SECTION 2-03.3(14)C, METHOD B OF SAID STANDARD SPECIFICATION.
4. EMBANKMENTS DESIGNED TO IMPOUND WATER SHALL BE COMPACTED TO 95% MAXIMUM DENSITY PER SECTION 2-03.3(14)C, METHOD C OF WSDOT STANDARD SPECIFICATIONS.
5. ALL AREAS RECEIVING FILL MATERIAL SHALL BE PREPARED BY REMOVING VEGETATION, NONCOMPLYING FILL, TOPSOIL AND OTHER UNSUITABLE MATERIAL, BY SCARIFYING THE SURFACE TO PROVIDE A BOND WITH THE NEW FILL, AND WHERE THE SLOPES ARE STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL AND THE HEIGHT IS GREATER THAN 5 FT., BY BENCHING INTO SOUND COMPETENT MATERIAL AS DETERMINED BY THE ENGINEER.

CALL 48 HOURS
BEFORE YOU DIG
811

The approximate location of existing underground utilities are shown on the plans. It is the contractor's responsibility to determine the location of the existing utilities prior to commencing work. the Contractor shall be responsible fro damages that might be occasioned by the contractor's failure to locate, preserve and protect underground utilities.



PROJECT INFORMATION

SITE AREA		**12,871 sf or 0.30 acres** Original Parcel A =10,756 sf (0.25 acres) New Parcel A =12,871 sf (0.30 acres)
SITE ZONING		**R-9.6 (9,600 sf min. lot size)**
BUILDING SET BACKS		Front Yard Setback 20'-0" Side Yard Setback 15'-0" Rear Yard Setback 25'-0"
LOT SLOPE (from survey)		
Highest elevation point	253	
Lowest elevation point	228	
Elevation difference	25'	
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Lot slope	14.2%	
Allowable Lot Coverage	**40%**	
Required Landscape Area	**60%**	
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	Driveway	882 sf
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Patio	250 sf	
Retaining walls	170 sf	
Total new hardscape		**420 sf**
Project Hardscape	**Existing 1,248 sf- removed 551 sf + new 420 sf =**	**1,117 sf or 8.6%**
Allowed Hardscape	**Site 12,871 sf x 9% =**	**1,158 sf or 9%**

LOT SLOPE

PARCEL A
HI ELEV: 228' LOW ELEV: 253' DIST: 175'
SLOPE=14.3%

PARCEL B
HI ELEV: 220' LOW ELEV: 243' DIST: 148'
SLOPE=15.5%

CUT AND FILL CALCULATIONS

Cut (material to be exported)	**75 cu yds.**
Fill (structural imported material)	**60 cu yds.**

PRELIMINARY STORM DRAINAGE PLAN

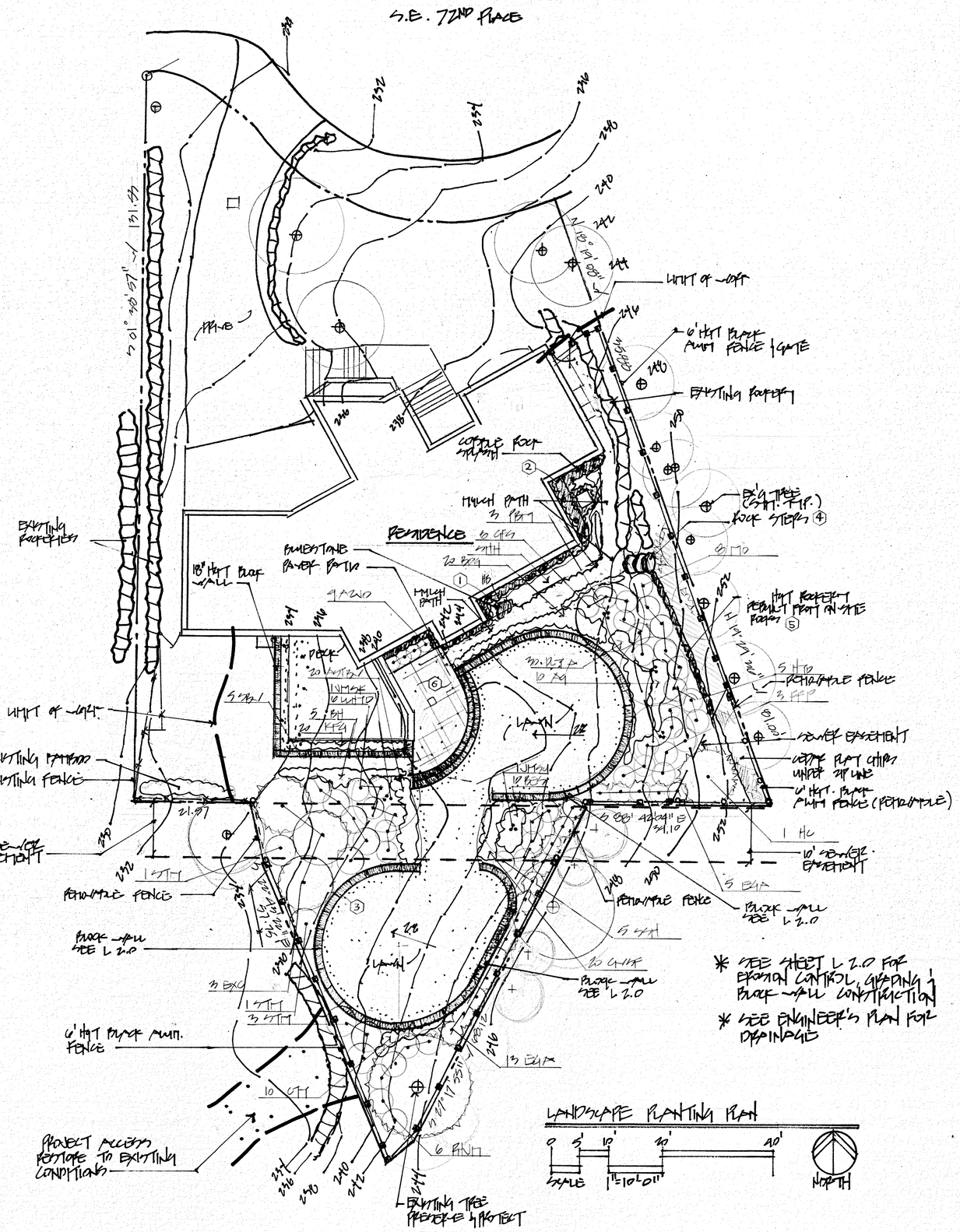
HANKINS ENGINEERING
1689 SW GAILS AVE.
CHEHALIS, WA 98532
PH: (360) 324-3061
EMAIL:hankins.engineering @gmail.com

ROBERT E. HANKINS
STATE OF WASHINGTON
43354
REGISTERED
PROFESSIONAL ENGINEER

MERCER ISLAND SUB20-003
NW 1/4 OF SE 1/4, SEC. 25 , T. 24 N., Rreh E., W.M.

MAGUIRE LLR
PARCEL NO. 5454000060 & 5453600240
7643 SE 72nd Pl & 7333 Mercer Terrace Dr

JOB NO.:
DATE: 5/25/2022
DRAFTED BY: reh
CHECKED BY: REH
SCALE: 1" = 20'
1.0 OF 1.0



PLANT MATERIAL LEGEND

Abrev.	*Common Name*	*Botanical Name*	*Size*
trees:			
EGA	Emerald Green Arborvitae	*Thuja occidentallis "Emerald Green"*	6' hgt./B&B
EXC	Excelsa Cedar	*Thuja plicata "excelsa"*	6' hgt./B&B
HC	Hinoke Cypress	*Chamaecyparis obtusa "Hinoke"*	6' hgt./B&B
JMSK	Japanese Maple Sango Kaku	*Acer palmatum "Sango Kaku"*	8' hgt./B&B, Specimen
JMSU	Japanese Maple Seiryu	*Acer palmatum "Seiryu"*	6' hgt./B&B, Specimen
PBM	Paperbark Maple	*Acer griseum*	1.5" cal./B&B
shrubs:			
AZJO	Azalea Johanna	*Same*	12"x12"/cont.
FFP	Forest Flame Pieris	*Pieris floribunda "Forest Flame"*	24" hgt./cont.
GFS	Spirea Goldflame	*Spirea japonica "Goldflame"*	16" hgt./cont.
HYD	Peegee Hydrangea	*Hydrangea paniculata "Grandiflora"*	24" hgt./cont.
LLHYD	Lime Light Hydrangea	*Hydrangea paniculata "Lime Light"*	24" hgt/cont
MO	Mexican Orange	*Chosia ternate*	24" hgt./cont.
RHJM	Rhodo. "Jean Marie"	*Same*	21-24"/B&B
SBV	Spring Bouquet Viburnum	*Viburnum tinus "Spring Bouquet"*	24" hgt./cont.
SSH	Spirea Shirobana	*Spirea shirobana*	12" hgt./cont.
STM	Strawberry Madrone	*Arbutus unedo*	30" hgt./cont.
grasses:			
BOG	Blue Oat Grass	*Helictotrichon sempervirens*	1 gal./cont.
GVSF	Golden Verigated Sweet Flag	*Acorus gramineus "Ogon"*	1 gal./cont.
KFG	Karl Foerster Grass	*Calamagrostis x acutiflora*	1 gal./cont.
symbols/ground covers:			
AG	Agapanthus	*Agapanthus "Queen Anne"*	1 gal./cont.
AST-BV	Astilbe -Bridal Veil	*Astilbe ardensii 'Bridal Veil'*	1 gal./cont.
BES	Black Eyed Susan	*Rudbeckia fulgida*	1 gal./cont.
BH	Bishops Hat	*Epimedium grandiflorum*	1 gal./cont.
CTY	Candytuft	*Iberis sempervirens*	1 gal./cont.
DLY A	Day Lilly	*Hemerocallis "Anzac"*	1 gal./cont.
SHH	Sarcococca – Dwarf	*Sarcococca hookeriana "Humilis"*	1 gal./cont.

Lawn Sod from Country Green 1 800 300 1763

SITE SPECIFIC NOTES

1. BLUE STONE PAVER. Blue Stone Paver from Marenakos Rock Center; Issaquah, WA (425) 392-3313. Blue Stone to be 1 1/2" thick set over 2" depth compacted rock and 1" depth washed sand.
2. ROCK SPLASH. Cobble rock 4-6" washed 10" deep and 12" wide, wider by heat pump.
3. MODULAR BLOCK WALL. Per Geotech report of 10-28-21.
4. ROCK STEPS. Set basalt steps with flat tops and consistent riser secure steps form rocking with soil and gravel.
5. ROCK WALL ADJACENT ZIPLINE. Constructed with on-site rocks. 12" HGT.
6. SANDSET INTERLOCKING PAVERS. Sandset interlocking pavers contained with aluminum edging.

GENERAL CONSTRUCTION NOTES

1. All work performed shall conform to the City of Mercer Island landscape and irrigation requirements, codes and specifications.
2. Owner to secure all necessary permits for required work per Landscape and Irrigation Plan.
3. Clean subgrade by removing all undesirable vegetation including grasses and weeds including roots. Leave subgrade in landscape areas minimum 8" below paving for shrub beds and 6" depth for lawn. Remove all debris from site.
4. Provide minimum 8" depth 60-40 mix from Corliss Materials (253) 891-6680 in all shrub beds. Scarify subgrade by rototilling and add topsoil on surface, mix topsoil and subgrade thoroughly. Add additional topsoil as needed to contour shrub beds including required berms.
5. Provide minimum 4" depth 60-40 mix from Corliss Materials (253) 891-6680 in all lawn areas. Scarify subgrade by rototilling and add topsoil on surface. Add additional topsoil as needed to level and slope to drain at 2%. shrub beds including required berms.
6. Provide minimum 2" depth fine blend hem-fir mulch to all planting beds. Mulch from Sawdust Supply, Seattle. Fill all planting beds and lawn areas to within 1" of top of all curbs and walks. Slope all planting beds and lawn areas to drain.
7. Provide one (1) year warranty for all plant materials and workmanship.
8. Locate, protect and avoid disruption of all above and below grade utilities and site features prior to construction. Contractor is responsible for any resulting damages during construction. Call locate before you dig at 811.
9. Verify all quantities shown on the plant list and plans. If discrepancies exist between the graphic representation and the numeric totals, the graphic representation shall rule.
10. All plant materials to be specimen quality with full, symmetrical trunk and foliage, unless otherwise noted.
11. Insure proper drainage of all planting holes prior to installing plant materials. If planting holes do not drain or if heavy clay soils are evident contact landscape architect.
12. Coordinate drainage, irrigation and lighting with planting plan.

MAGUIRE RESIDENCE

7643 SE 72nd Place

Mercer Island, Washington 98040

DATE: 5/25/22 REVISED:
JOB# 216183
SCALE: 1"=10'-0" SHEET # L-3.0

Lauchlin R. Bethune Associates, Inc.
■ *Landscape Architecture & Planning, ASLA*
P.O. Box 1442 phone: (425) 432-9877
Maple Valley, Washington 98038-1442 www. bethuneassociates.com

Ben and Carla Munger
2425 84th Avenue SE
Mercer Island, WA 98040

January 21, 2022

To: City of Mercer Island

We are writing on behalf of our neighbors, Rob and Gina Maguire 7643 SE 72nd Place, to confirm that we have given them consent to access their backyard landscaping project through our property for approximately five weeks. They have talked through their project with us and sent us their plans and we are supporting them as good neighbors.

Thank you for your time,

Ben and Carla Munger