CITY OF MERCER ISLAND

COMMUNITY PLANNING & DEVELOPMENT
9611 SE 36TH STREET | MERCER ISLAND, WA 98040
PHONE: 206.275.7605 | www.mercerisland.gov

DECISION

CRITICAL AREA REVIEW 2 CAO23-017

Project No:	CAO23-017
Description:	A request to construct a 720.5 square foot deck to replace an existing deck for a single-family dwelling within geologically hazardous areas.
Applicant / Owner:	Henry Lo (HhLodesign) / Eric and Judy Blohm
Site Address:	5642 East Mercer Way, Mercer Island WA 98040
Zoning District	R-15
Staff Contact:	Andrew Leon, Planner
Exhibits:	1. Development Application, dated August 28, 2023 2. Letter of Completeness, issued by the City of Mercer Island on September 12, 2023 3. Public Notice of Application, issued by the City of Mercer Island on September 18, 2023 4. Geotechnical Report and Critical Area Study prepared by Geotech Consultants, Inc., dated August 14, 2023 5. Geotechnical Review of Plans prepared by Geotech Consultants, Inc., dated November 7, 2023 6. Site Plan, dated August 28, 2023 7. Project Narrative, dated August 28, 2023

INTRODUCTION

I. Project Description

The applicant is proposing to construct a new, 720.5 square foot deck to replace an existing deck on the second floor of a single-family residence. The southern portion of the deck is proposed to be covered by a new roof extending from the house. New stairs are proposed to be constructed on the south side of the deck to connect the deck to the ground floor.

II. Site Description and Context

The subject site is currently developed with a single-family residence. The subject site is zoned Single-Family Residential in the R-15 zone. Neighboring properties are also within the R-15 zone and contain residential uses. The project area contains mapped landslide and erosion hazard areas.

Findings of Fact & Conclusions of Law

III. Application Procedure

1. The application for a Critical Area Review 2 was received by the City of Mercer Island on August 30, 2023. The application was determined to be complete on September 12, 2023 (Exhibit 2).

2. According to MICC 19.15.030, Table A, applications for Critical Area Review 2 must undergo Type III review. Type III reviews require notice of application (discussed below). A notice of decision is issued once the project review is complete.

3. A notice of application was issued on September 18, 2023, and the public comment period ran from September 18, 2023 to October 18, 2023 (Exhibit 3). Public notice was issued via a mailing to neighboring property owners within 300 feet of the subject site, a sign posted on the subject property, and a posting in the City's weekly permit bulletin.

4. The city received no comments during the public comment period.

IV. SEPA Finding of Fact and Conclusions

5. This project is categorically exempt from SEPA pursuant to WAC 197-11-800(1)(b)(i).

V. Consistently with the Critical Areas Code

6. MICC 19.07.160(A) When an alteration within a landslide hazard area, seismic hazard area or buffer associated with those hazards is proposed, the applicant must submit a critical area study concluding that the proposal can effectively mitigate risks of the hazard. The study shall recommend appropriate design and development measures to mitigate such hazards. The code official may waive the requirement for a critical area study and the requirements of subsections (B)(2) and (B)(3) of this section when he or she determines that the proposed development is minor in nature and will not increase the risk of landslide, erosion, or harm from seismic activity, or that the development site does not meet the definition of a geologically hazardous area.

   Staff Analysis: Through their geotechnical report (Exhibit 4) and review of the plan set (Exhibit 5), Geotech Consultants, Inc. reviewed the proposal and has confirmed the plans include relevant recommendations from the Geotechnical report to effectively mitigate risks of the hazard. The findings of the geotechnical report underwent peer review with the city's geotechnical consultant, who found that it is consistent with the standards of MICC 19.07.160.

CONDITIONS OF APPROVAL

1. The project proposal shall be in substantial conformance with Exhibit 6 and all applicable development standards contained within Mercer Island City Code (MICC) Chapter 19.07.

2. The applicant is responsible for documenting any required changes in the project proposal due to conditions imposed by any applicable local, state and federal government agencies.

3. Construction or substantial progress toward construction of a development for which a permit has been granted must be undertaken within three years after the approval of the permit or the permit shall terminate. The code official shall determine if substantial progress has been made.

DEVELOPMENT REGULATION COMPLIANCE – DISCLOSURE

1. Compliance with all applicable codes, including but not limited to zoning, critical areas (including Fish & Wildlife Habitat Conservation Areas), and building code, will be required as part of building permit review.

DECISION / RECOMMENDATION

Based upon the above noted Findings of Fact and Conclusions of Law, Critical Area Review 2 application CAO23-017, as depicted in Exhibit 6, is hereby **APPROVED**. This decision is final, unless appealed in writing consistent with adopted appeal procedures, MICC 19.15.020(J), and all other applicable appeal regulations.

Approved this 27th day of November, 2023.

_____

Andrew Leon
Planner
Community Planning & Development
City of Mercer Island

If you desire to file an appeal, you must submit the appropriate form, available from the department of Community Planning and Development, and file it with the City Clerk within fourteen (14) days from the date after the notice of decision is made available to the public and applicant pursuant to MICC 19.15.130. Upon receipt of a timely complete appeal application and appeal fee, an appeal hearing will be scheduled. To reverse, modify or remand this decision, the appeal hearing body must find that there has been substantial error, the proceedings were materially affected by irregularities in procedure, the decision was unsupported by material and substantial evidence in view of the entire record, or the decision is in conflict with the city's applicable decision criteria.

Please note that the City will provide notice of this decision to the King County Department of Assessment, as required by State Law (RCW 36.70B.130). Pursuant to RCW 84.41.030(1), affected property owners may request a change in valuation for property tax purposes notwithstanding any program of revaluation by contacting the King County Department of Assessment at (206) 296-7300.

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CITY USE ONLY		
PROJECT#	RECEIPT #	**FEE**
Date Received:		
Received By:		

DEVELOPMENT APPLICATION

STREET ADDRESS/LOCATION	ZONE
5642 E Mercer Way	R-15
COUNTY ASSESSOR PARCEL #'S	PARCEL SIZE (SQ. FT.)
192405-9152	33,451

PROPERTY OWNER *(required)*	ADDRESS *(required)*	CELL/OFFICE *(required)*
Eric and Jody Blohm	5642 E Mercer Way	206-660-5769 E-MAIL *(required)*
PROJECT CONTACT NAME	ADDRESS	CELL/OFFICE
Henry Lo	215 W. Crockett St Seattle, WA 98119	206-229-8082 E-MAIL hhlodesign@gmail.com
TENANT NAME	ADDRESS	CELL PHONE
NA		E-MAIL

DECLARATION: I HEREBY STATE THAT I AM THE OWNER OF THE SUBJECT PROPERTY OR I HAVE BEEN AUTHORIZED BY THE OWNER(S) OF THE SUBJECT PROPERTY TO REPRESENT THIS APPLICATION, AND THAT THE INFORMATION FURNISHED BY ME IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

SIGNATURE

08-28-23
DATE

PROPOSED APPLICATION(S) AND CLEAR DESCRIPTION OF PROPOSAL (PLEASE USE ADDITIONAL PAPER IF NEEDED)**:**

This project proposes the constriction of a 720.5 SF deck to replace an existing raised deck on the East side of an existing single family residence. This deck will add a roof over a portion of the deck to cover the deck. It will also add a stair to the ground floor. The roof and the stair are not part of the original deck that is being replaced.

ATTACH RESPONSE TO DECISION CRITERIA IF APPLICABLE

CHECK TYPE OF LAND USE APPROVAL REQUESTED:

CRITICAL AREAS	ENVIRONMENTAL REVIEW (SEPA)	SUBDIVISION
☐ Critical Area Review 1	☐ SEPA Review	☐ Short Plat- Preliminary
☑ Critical Area Review 2	☐ Environmental Impact Statement	☐ Short Plat- Alteration
		☐ Short Plat- Final Plat
DESIGN REVIEW		☐ Long Plat- Preliminary
☐ Design Review – Signs	**LEGISLATIVE**	☐ Long Plat- Alteration
☐ Design Review – Code Official	☐ Code Amendment	☐ Long Plat- Final Plat
☐ Design Commission Study Session	☐ Comprehensive Plan Docket Application	☐ Lot Line Revision
☐ Design Commission Review – Exterior Alteration	☐ Comprehensive Plan Application (If Docketed) ☐ Rezone	
☐ Design Commission Review – Major New Construction		
	OTHER LAND USE	
	☐ Accessory Dwelling Unit	
DEVIATIONS	☐ Code Interpretation Request	
☐ Deviations to Antenna Standards – Code Official	☐ Conditional Use (CUP) ☐ Noise Exception Type I - IV	**WIRELESS COMMUNICATION FACILITIES** ☐ New Wireless Communication Facility
☐ Deviations to Antenna Standards – Design Commission	☐ Other Permit/Services Not Listed	☐ Wireless Communications Facilities-6409 Exemption
☐ Public Agency Exception	**SHORELINE MANAGEMENT**	☐ Small Cell Deployment
☐ Reasonable Use Exception	☐ Shoreline Exemption	☐ Height Variance
☐ Variance	☐ Shoreline Substantial Development Permit	
☐ Seasonal Development Limitation Waiver – Wet Season Construction Approval	☐ Shoreline Variance ☐ Shoreline Conditional Use Permit ☐ Shoreline Permit Revision	

COMMUNITY PLANNING & DEVELOPMENT

206.275.7605
www.mercerisland.gov/cpd

September 12, 2023

Henry Lo
HhLodesign
215 W Crockett St
Seattle, WA 98119

RE: CAO23-017 (Blohm Deck Addition)
Notice of Complete Application
5642 East Mercer Way
Mercer Island, WA 98040
King County Tax Parcel 192405-9152

Dear Henry Lo:

The City of Mercer Island received the above referenced applications for a Critical Area Review 2 on August 30, 2023. The City has assigned file number CAO23-017 to the Critical Area Review 2. Following review of the application, City staff has determined that this application was **complete** on September 12, 2023:

Formal review of the application will now begin in compliance with the City of Mercer Island's critical area regulations as set forth in Chapter 19.07 MICC. As review progresses, additional documentation will most likely be requested. Pursuant to Mercer Island City Code 19.15.020(C)(4), if the applicant fails to provide the required information by the date listed on the request for information, the application shall lapse, and become null and void.

Sincerely,

Andrew Leon, Planner
City of Mercer Island Community Planning and Development
Andrew.leon@mercerisland.gov
(206) 275-7720

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PUBLIC NOTICE OF APPLICATION

NOTICE IS HEREBY GIVEN that the City of Mercer Island has received the application described below:

File No.:	CAO23-017
Permit Type:	Type III
Description of Request:	A request for a Critical Area Review 2 to construct an addition to a deck within a geologically hazardous area.
Applicant/ Owner:	Henry Lo / Eric and Jody Blohm
Location of Property:	5642 East Mercer Way, Mercer Island, WA 98040 King County Assessor tax parcel number: 192405-9152
SEPA Compliance:	This project is exempt from SEPA pursuant to WAC 197-11-800(1)(b)(i).
Project Documents:	https://mieplan.mercergov.org/public/CAO23-017

Written Comments: Written comments on this proposal may be submitted to the City of Mercer Island either by email or by mail to the City of Mercer Island, 9611 SE 36th Street, Mercer Island, WA 98040-3732. Anyone may comment on the application, receive notice, and request a copy of the decision once made.

Only those persons who submit written comments or participate at the public hearing (if a hearing is required) will be parties of record; and only parties of record will have the right to appeal.

Applicable Development Regulations: Applications for Critical Area Review 2 are required to be processed as Type III land use reviews pursuant to Mercer Island City Code (MICC) 19.15.030. Processing requirements for Type III land use reviews are further detailed in MICC 19.15.030. The city's critical area requirements are contained in Chapter 19.07 MICC.

Other Associated Permits:	Building permit 2304-062
Environmental Documents:	Copies of all studies and / or environmental documents are available through the above project documents link.
Public Hearing:	Pursuant to MICC 19.15.030 Table B a public hearing is not required for Type I-III permits.
Application Process Information:	Date of Complete Application: September 12, 2023. Notice of Application Issued: September 18, 2023 Public Comment Period: September 18, 2023 through October 18, 2023.
Project Contact:	Andrew Leon, Planner Andrew.Leon@mercerisland.gov | 206-275-7720

GEOTECH
CONSULTANTS, INC.

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

August 14, 2023

JN 23271

Jody and Eric Blohm
5642 East Mercer Way
Mercer Island, Washington 98040
via email: jody.blohm@comcast.net; eblohm@savills.us

Subject: **Geotechnical Engineering Study**
Proposed Deck / Roof Addition to Existing Residence
5642 East Mercer Way
Mercer Island, Washington

Greetings:

This report presents the findings and recommendations of our geotechnical engineering study for the site of the proposed deck / roof addition to an existing residence to be located at 5642 East Mercer Way on Mercer Island. 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 and critical area considerations. This work was authorized by your acceptance of our proposal, P-11434, dated August 2, 2023.

We were provided with architectural plans for the project that included topographic information from HhLo Design, which are dated April 4, 2023. Based on these plans, we understand that an existing deck along the eastern side of the residence will be removed and replaced with a similarly-sized deck. However, the larger, southern portion of the deck will be covered with a roof. The deck will extend off the main level, which is in the range of 9 feet above the outside ground.

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 central-eastern side of Mercer Island. The property is nearly rectangular with its dimensions being approximately 100 feet by 300 feet; the long dimension is in the east-west direction. Although the property has an East Mercer Way address, it is not directly adjacent to that street. It is located west of a drive lane that resembles a street; this drive lane extends from East Mercer Way that begins a few blocks to the north/northwest of the property. This drive lane provides access to many houses in the area of the subject property.

The entire property slopes upward from the drive lane to East Mercer Way in generally an east/southeast direction. Directly adjacent to the lane, there is a steep slope with an inclination in the range of 50 to 60 percent whose height varies from about 8 to 10 feet. This slope is mostly covered with hedge-like vegetation. The property then has only a gentle inclination over a horizontal

distance of approximately 100 to 120 feet. This area contains the existing residence, and detached garage, a driveway, and yard. The residence has an existing main-level deck in the gently-sloped area that is located about 35 to 40 feet east of the top of the steep slope (that is near the drive lane). West of the gently-sloped area on the property slopes upward over a total vertical distance of about 70 feet up to East Mercer Way. However, the property only contains about 50 feet of this vertical distance (the remainder is on an adjacent property). The first, approximately 20 vertical feet of this slope has an inclination in the 45 to 50 percent range. Above this first, steeper portion, the slope above is only inclined in the 20 to 35 percent range up to East Mercer Way. The slope east of the gentle to moderate area on the property is covered with forest and landscape vegetation. We did not observe any indications of instability of the steep slopes on the site.

Most of the properties surrounding the subject property are developed with residences. However, based on Mercer Island GIS Portal, there is a watercourse on the adjacent northern property; this watercourse begins upslope of East Mercer Way and extends down to Lake Washington. We observed that water was flowing in this area during our recent visit. The watercourse is located in a swale; the top of the southern portion of the swale is near or just on the subject property.

Also based on the Mercer Island GIS portal, the entire property is noted as being a Potential Landslide Hazard Area and an Erosion Hazard Area. The above-noted swale is considered a Potential Seismic Hazard Area. Part of the steep slope that is on the western portion of the property is considered a Steep Slope Area. However, no known landslides are noted in the GIS information on or in the vicinity of the property.

SUBSURFACE

A test hole was hand-excavated just east of the southern, larger portion of the proposed deck. An attached Site Exploration Plan indicates the location of the test hole. The soils revealed in the test hole consist of a few inches of topsoil overlying native, silty sand with gravel soil. This native soil was initially relatively loose, but then became very dense at a depth of approximately 2 feet; the very dense soil is glacially-consolidated and known geologically as Glacial Till.

Our firm observed the excavation of test pits in the past on sites located adjacent to the north and just above the site to the southwest. We also obtained the logs of test pits excavated by others above and west of the site. Above the site, Glacial Till was revealed as the core soils in the test pits. To the north, dense to very dense or hard, glacially-consolidated soils (Glacial Till or silt) were revealed as the core soil in the test pits. We have included the logs of the test pits; these are for addresses at 5632, 5638, and 5650 East Mercer Way, respectively.

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 1.45g and 0.50g, 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 0.74g. The soils beneath the site are not susceptible to seismic liquefaction under the ground motions of the MCE because of their dense 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 0.50g.

CONCLUSIONS AND RECOMMENDATIONS, AND CRITICAL AREAS STUDY

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 hole that was excavated in the area of the deck/roof, as well as the nearby test pits, indicate that the soil at shallow depths at the deck and in the vicinity of the residence are very dense/hard, and glacially-consolidated. Specifically, very dense, Glacial Till soil was revealed at approximately 2 feet adjacent to approximately the east edge of the larger, southern portion of the proposed deck/roof. The foundations of the deck/roof can consist of conventional footings provided they bear on the very dense soil.

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.

CRITICAL AREAS STUDY (MICC 19.07)

Potential Landslide Hazard Area: The entire property of the subject site is located within a mapped Potential Landslide Hazard area. However, the area where the new deck/roof are proposed has an inclination of only about 10 percent, which is quite gentle. An 8- to 10-foot-tall slope is located about 35 to 40 feet east and downslope of the proposed deck/roof area, while a much taller steep slope is located between about 35 feet and 90 feet west and upslope of the deck/roof area. The existing residence, garage, and/or driveway are essentially located between the slope and the proposed deck/roof area. We did not observe indications of instability of the steep slopes or gentle slopes on the property, and no past landslides are noted in the vicinity of the property. As noted previously, the core of the subject property and adjacent properties upslope is comprised of very dense/hard glacially-consolidated soils, mostly Glacial Till. These soils have a very high internal shear strength, and thus a quite low potential for deep seated landslides and are excellent in supporting building loads. Because of the existence of the very dense/hard soils, because the foundations of the deck/roof will bear in these soils, and because there are no known landslides in the area, it is our professional opinion that there is not a potential for a landslide affecting the proposed deck/roof.

Steep Slope Hazard Areas: Based on the topographic survey for the site, the eastern steep slope that is 10 feet tall meets Mercer Island's code criteria for a Steep Slope Hazard. The taller steep slope on the western portion of the site is also a Steep Slope Hazard; such a hazard also qualifies

as a Landslide Hazard Area under the Mercer Island Code. As discussed in the previous section, very dense/hard soil is the core soil of the property and vicinity, and the new deck/roof foundations will bear in these soils. Because of this, and because the deck will be located at least 35 feet from the steep slopes, which do not show indications of instability and there are no previous nearby landslides, we believe the location of the deck/roof is very suitable in our opinion. Provided that the recommendations in this report are incorporated into the project plans and construction, the construction of the new structure is very suitable in our professional opinion. The setback distance the deck/roof structure will be located from the steep slopes is very suitable in our opinion.

Seismic Hazard Area: This Hazard Area is mostly located north of the property where a swale exists. The Hazard is shown on the GIS portal as extending just into the northern edge of the property. As noted earlier, the core soil of the property and nearby properties is very dense/hard, glacially-consolidated soil. Because of this, it is our professional opinion that the property does not meet the criteria for a Seismic Hazard Area. The new foundations will bear on the underlying very dense/hard soils, and no additional mitigation to address the mapped seismic hazard is warranted from a geotechnical perspective at this time.

Erosion Hazard: The site also meets the City of Mercer Island's criteria for an Erosion Hazard Area. However, because the work area for the proposed deck/roof structure is located in only a gently-sloped area and excavations for the project will be minimal. Thus, typical erosion control measures will be very suitable to suitably control the potential of erosion. 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. A wire-backed silt fence should be erected as close as possible to the east side of the planned work area, and the existing vegetation (mostly yard grass) east of the silt fence. Straw wattles may also be used in tandem with the silt fence as needed. Also, any soil stockpiles should be covered with plastic during wet weather. Soil stockpiles should be minimized. 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.

Buffers and Mitigation: The recommendations presented in this geotechnical report are intended to allow the project to be constructed in the proposed configuration without adverse impacts to critical areas on the site or the neighboring properties. The geotechnical recommendations associated with foundations will mitigate any potential hazards associated with the Steep Slope and Erosion Hazard, as well as the mapped Seismic Hazard. No buffers are needed in our opinion. No buffer is required by the MICC for an Erosion Hazard Area.

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 recommendations presented in this report for the proposed deck/roof structure will render the development as safe as if it were not located in a geologically hazardous area and will not adversely impact critical areas on adjacent properties.*

CONVENTIONAL FOUNDATIONS

The proposed structure can be supported on conventional continuous and spread footings bearing on competent, undisturbed, very dense/hard, native soil. We recommend that continuous and individual spread footings have minimum widths of 12 and 16 inches, respectively. Exterior footings

should also be bottomed at least 18 inches below the lowest adjacent finish ground surface for protection against frost and erosion. The local building codes should be reviewed to determine if different footing widths or embedment depths are required. Footing subgrades must be cleaned of loose or disturbed soil prior to pouring concrete. Depending upon site and equipment constraints, this may require removing the disturbed soil by hand.

An allowable bearing pressure of 2,000 pounds per square foot (psf) is appropriate for footings supported on competent native soil as noted above. A one-third increase in this design bearing pressure may be used when considering short-term wind or seismic loads.

Lateral loads due to wind or seismic forces may be resisted by friction between the foundation and the bearing soil, or by passive earth pressure acting on the vertical, embedded portions of the foundation. For the latter condition, the foundation must be either poured directly against relatively level, undisturbed soil or be surrounded by level, well-compacted fill. We recommend using the following ultimate values for the foundation's resistance to lateral loading:

PARAMETER	ULTIMATE VALUE
Coefficient of Friction	0.50
Passive Earth Pressure	300 pcf

Where: pcf is Pounds per Cubic Foot, and Passive Earth Pressure is computed using the Equivalent Fluid Density.

If the ground in front of a foundation is loose or sloping, the passive earth pressure given above will not be appropriate. The above ultimate values for passive earth pressure and coefficient of friction do not include a safety factor.

EXCAVATIONS AND SLOPES

No excavation taller than about 3 feet is anticipated for this project. 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. Based upon Washington Administrative Code (WAC) 296, Part N, the 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 above-recommended temporary slope inclination is 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.

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.

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.

This report has been prepared for the exclusive use of Jody and Eric Blohm, 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.

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.

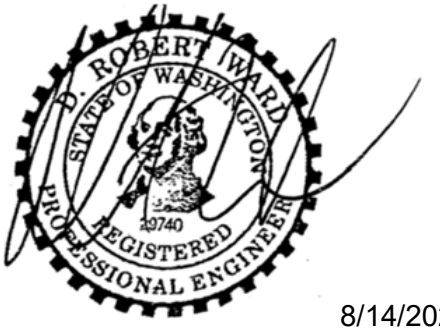
The following plates are attached to complete this report:

- Vicinity Map
- Site Exploration Plan
- Test Hole Log
- Logs of Nearby Test Pits

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.

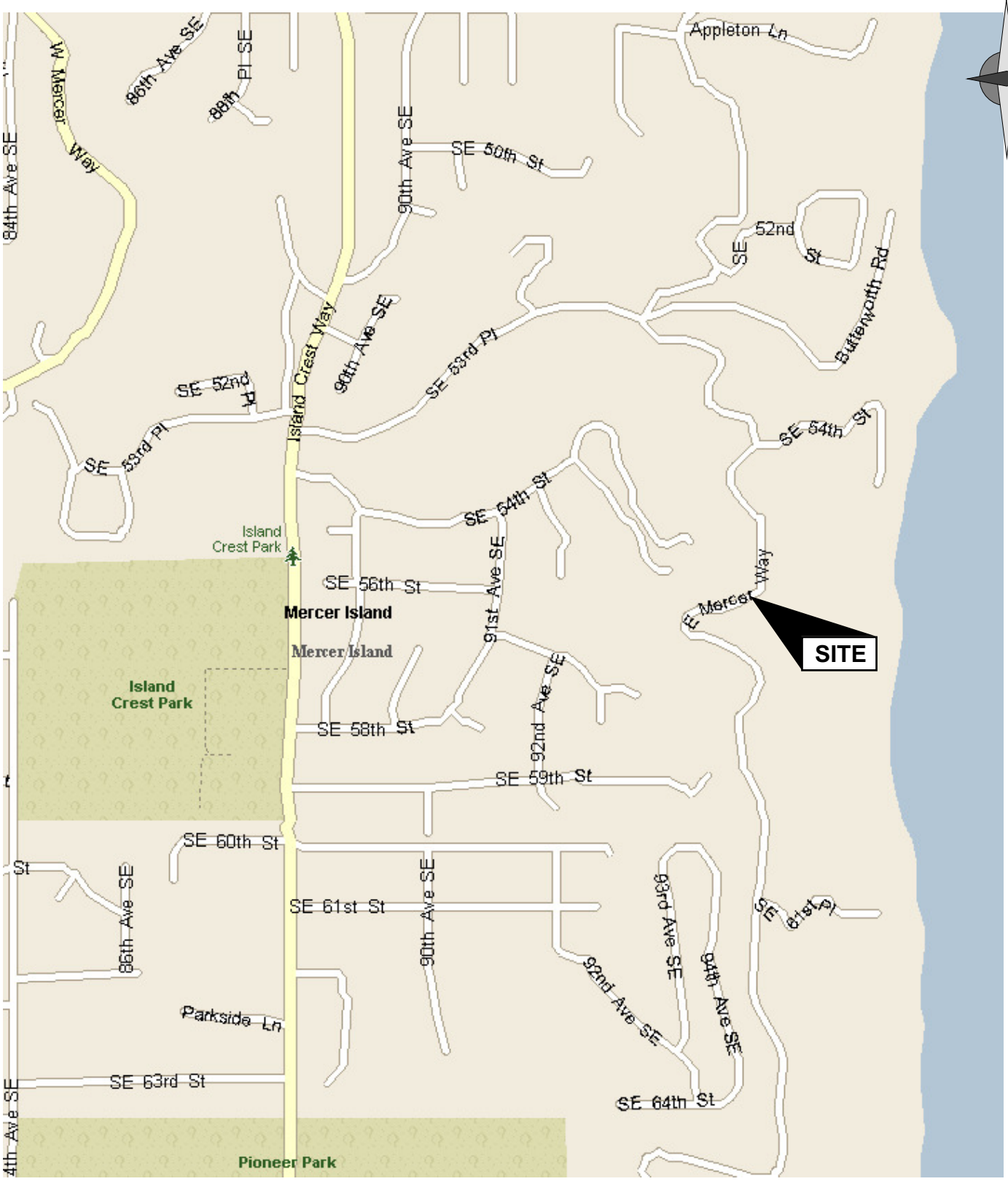


8/14/2023

D. Robert Ward, P.E.
Principal

cc: HhLodesign – Henry Lo
via email: *hhlodesign@gmail.com*

DRW:kg



(Source: Microsoft MapPoint, 2013)

GEOTECH
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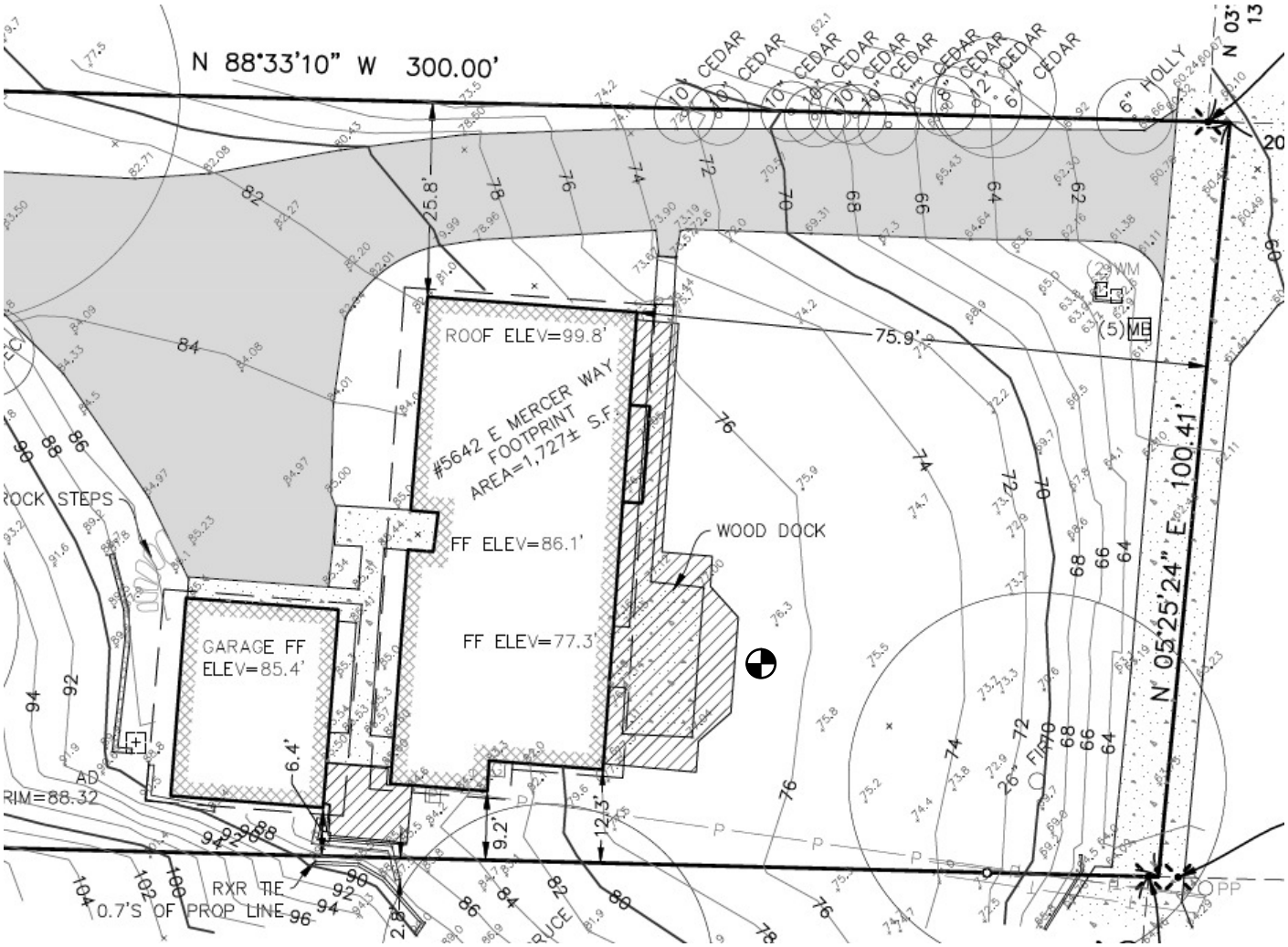
VICINITY MAP

5642 East Mercer Way
Mercer Island, Washington

Job No:	Date:		Plate:
23271	Aug. 2023		



Legend:

- Test Hole Location

GEOTECH
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SITE EXPLORATION PLAN

5642 East Mercer Way
Mercer Island, Washington

Job No:	Date:		Plate:
23271	Aug. 2023	No Scale	

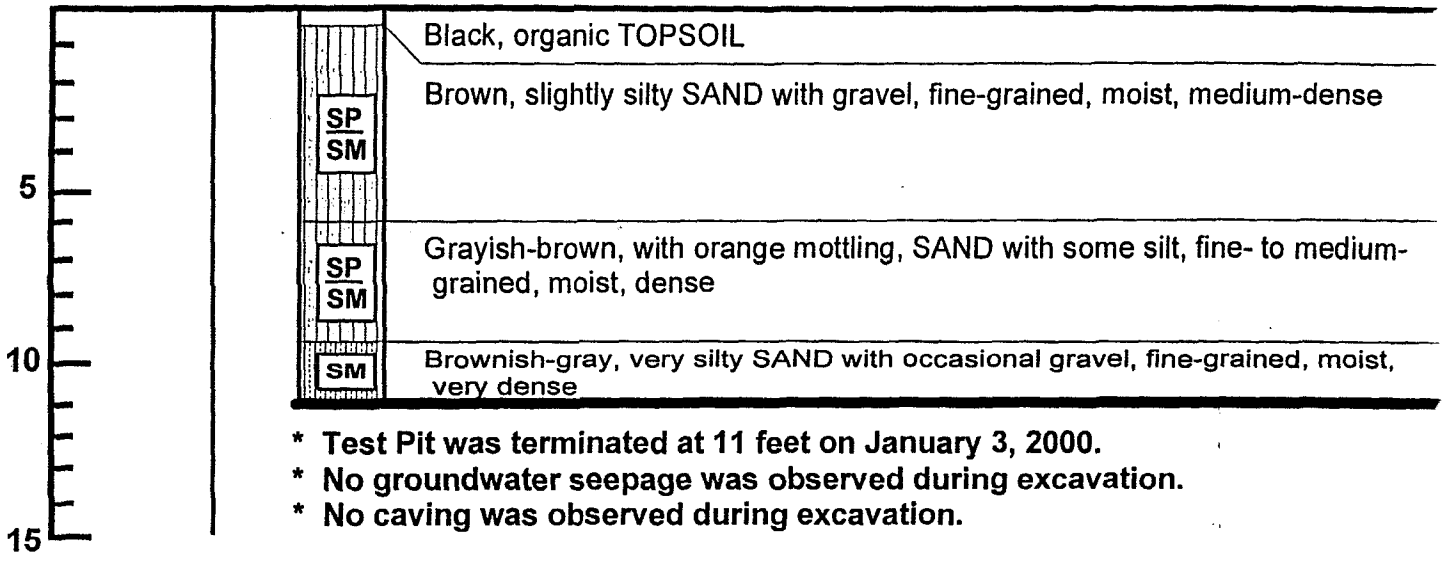
TEST HOLE LOG

TEST HOLE

Depth (feet)	Soil Description
0 – 0.25	Sod and topsoil
0.25 – 3.0	Brown, silty Sand with minor organics, moist, loose to medium-dense - at 2 feet, becomes gray, no organics, very dense (Glacial Till) **[SM]**

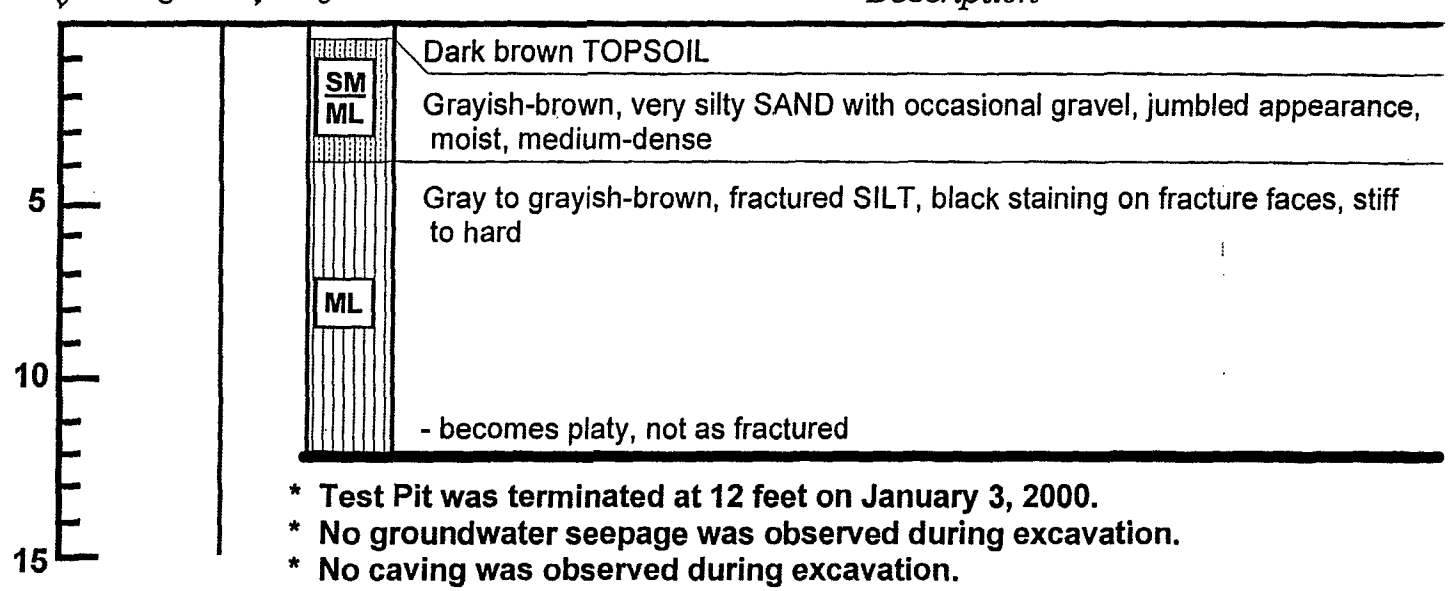
The test hole was terminated at 3 feet on August 5, 2023.
No groundwater seepage was encountered.

TEST PIT 1



* **Test Pit was terminated at 11 feet on January 3, 2000.**
* **No groundwater seepage was observed during excavation.**
* **No caving was observed during excavation.**

TEST PIT 2



* **Test Pit was terminated at 12 feet on January 3, 2000.**
* **No groundwater seepage was observed during excavation.**
* **No caving was observed during excavation.**

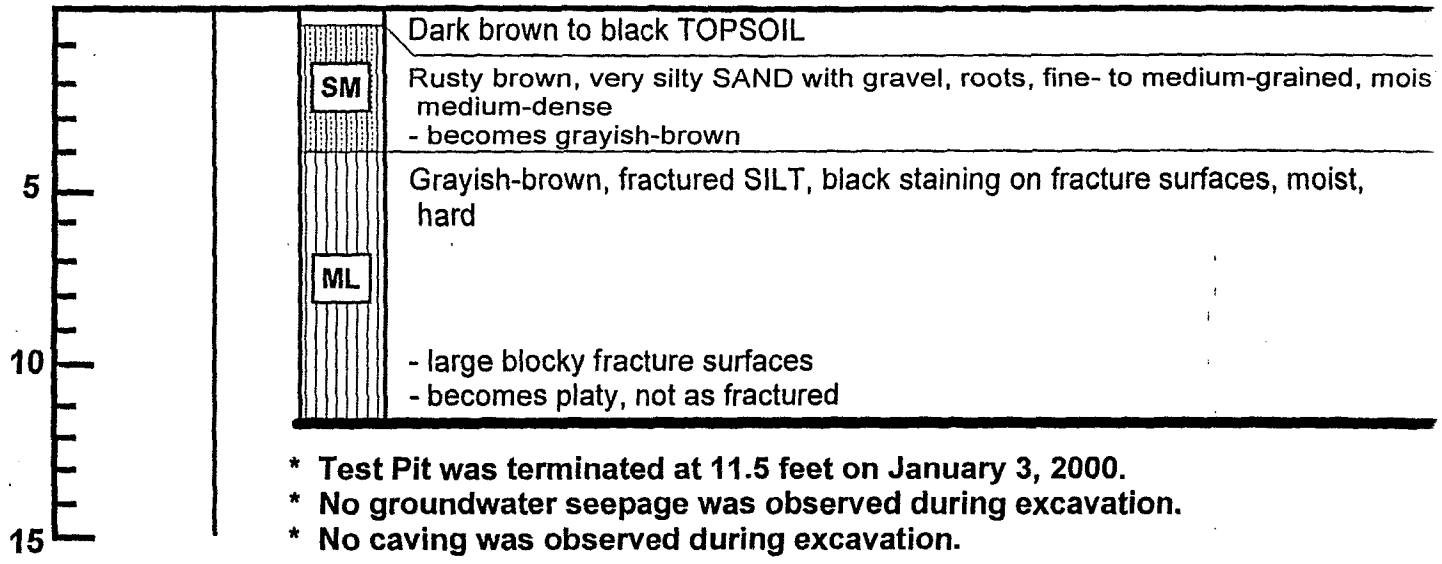
GEOTECH
CONSULTANTS, INC.

TEST PIT LOG

56xx East Mercer Way
Mercer Island, Washington

Job No:	Date:	Logged by:	Plate:
00007	January 2000	TAJ	3

TEST PIT 3



* **Test Pit was terminated at 11.5 feet on January 3, 2000.**
* **No groundwater seepage was observed during excavation.**
* **No caving was observed during excavation.**

GEOTECH
CONSULTANTS, INC.

TEST PIT LOG

56xx East Mercer Way
Mercer Island, Washington

Job No:	Date:	Logged by:	Plate:
00007	January 2000	TAJ	4

EXPLORATION PIT LOG

Number EP-1

0

Topsoil/roots.

Loose, moist, brown, mottled, gravelly, fine SAND, some gravel, many roots. (Regolith)

5

Very dense, moist, brown, gravelly, silty, fine SAND with zones of hard, laminated silt. (Lodgement Till)

BOH @ 8'
Note: No seepage; no caving.

10

15

Number EP-2

0

8" Topsoil/roots.

Loose, moist, brown, silty, fine SAND, many roots. (Regolith)

Dense to very dense, moist, yellow-brown, silty, fine SAND; trace silt, coarser grained and wetter with depth. (Advance Outwash)

5

BOH @ 6'
Note: No seepage; no caving.

10

15

Subsurface conditions depicted represent our observation at the time and location of this exploratory hole, modified by geologic interpretation, engineering analysis, and judgment. They are not necessarily representative of other times and locations. We will not accept responsibility for the use or interpretation by others of information presented on this log.

Reviewed By ghb

Associated Earth Sciences, Inc.
911 Fifth Avenue, Suite 100
Kirkland, Washington 98033
Phone: 206-827-7701

Single Family Residence
Mercer Island, Washington
Project No. G96065A

EXPLORATION PIT LOG

Number EP-3

0

Loose, moist to wet, brown, mottled, silty, fine SAND, some gravel. (Regolith)

Very dense, wet, brown, gravelly, silty, fine SAND; blocks of hard silt. (Lodgement Till)

5

BOH @ 6-1/2'
Note: No seepage; no caving.

10

15

Number EP-4

0

8" Topsoil/roots.

Loose, moist to wet, brown, silty, fine SAND, trace gravel, many roots. (Regolith)

5

Hard, moist, brown, sandy SILT. (Lodgement Till)

BOH @ 5-1/2'
Note: No seepage; no caving.

10

15

Subsurface conditions depicted represent our observation at the time and location of this exploratory hole, modified by geologic interpretation, engineering analysis, and judgment. They are not necessarily representative of other times and locations. We will not accept responsibility for the use or interpretation by others of information presented on this log.

Reviewed By ghb

Associated Earth Sciences, Inc.
911 Fifth Avenue, Suite 100
Kirkland, Washington 98033
Phone: 206-827-7701

Single Family Residence
Mercer Island, Washington
Project No. G96065A

EXPLORATION PIT LOG

Number EP-5

0	Topsoil/root zone.
	Loose, moist to wet, brown, silty, fine SAND, some gravel, many roots. (Regolith)
5	Very dense, moist, brown-gray, gravelly, silty, fine SAND. (Lodgement Till)
	BOH @ 5-1/2' Note: No seepage; no caving.
10	
15	

Number

0

5

10

15

Subsurface conditions depicted represent our observation at the time and location of this exploratory hole, modified by geologic interpretation, engineering analysis, and judgment. They are not necessarily representative of other times and locations. We will not accept responsibility for the use or interpretation by others of information presented on this log.

Reviewed By ghb

Associated Earth Sciences, Inc.
911 Fifth Avenue, Suite 100
Kirkland, Washington 98033
Phone: 206 827 7701

Single Family Residence
Mercer Island, Washington
Project No. G96065A

TEST PIT 1

LOGGED BY: DBG

DEPTH (FT.)	MOIST. (%)	USCS	DESCRIPTION	ELEVATION=
0		SM	Brown Silty SAND, Moist, Loose (Fill)	
	15.6	SM	Dark Brown Organic Silty SAND, Moist, Loose (Topsoil)	
5		SM	Gray Very Silty SAND, Moist, Medium Dense	
		SM	Mottled SAND and SILT, Moist to Wet, Medium Dense	
		SM	Gray Silty Gravelly SAND, Moist, Dense (Glacial Till)	
10			Test Pit terminated on 3/25/87 at 8.5 feet below existing grade. No groundwater seepage was encountered during excavation.	
15				

TEST PIT 2

DEPTH (FT.)	MOIST. (%)	USCS	DESCRIPTION	ELEVATION=
0		SM	Tan to Gray Silty SAND, Moist, Medium Dense to Dense with depth	
	13.9			
5		SM	Gray Silty Slightly Gravelly SAND, Moist, Dense (Glacial Till)	
		SP	Gray SAND, Moist, Dense	
10				
15				

GEOTECH CONSULTANTS

TEST PIT LOGS
5650 EAST MERCER WAY
MERCER ISLAND, WASHINGTON

JOB NO. 87063 | PLATE 3

GEOTECH
CONSULTANTS, INC.

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

November 7, 2023

JN 23271

Jody and Eric Blohm
5642 East Mercer Way
Mercer Island, Washington 98040
via email: jody.blohm@comcast.net; eblohm@savills.us

Subject: **Review of Plans**
Proposed Deck / Roof Addition to Existing Residence
5642 East Mercer Way
Mercer Island, Washington

Greetings:

We have completed a general review of the geotechnical aspects of the plans for the deck and roof addition to the existing residence at 5642 East Mercer Way on Mercer Island. The plans we reviewed include: 1) Sheets A-1.0 through A-4.0, which were prepared by HhLo design dated August 28, 2023, and 2) Sheets S1 through S3, which were completed by techinstruc LLC dated March 30, 2023. We completed a geotechnical engineering study for this project dated August 14, 2023.

In our judgment, the plans conform to the recommendations in our geotechnical engineering report. If the recommendations and conditions of the geotechnical engineering report are satisfied during construction and use of the project, the proposed project will not increase the potential for soil movement. The areas disturbed by construction will be stabilized and should remain stable, subject to the conditions of our geotechnical engineering report. The risk of damage to the proposed development, or to adjacent properties, from soil instability on this site will be minimal, subject to the conditions set forth in our report. The use of the word "minimal" should not be taken to imply that there is no risk, but rather that the risk is low, as construction on, or close to, a slope always involves some risk.

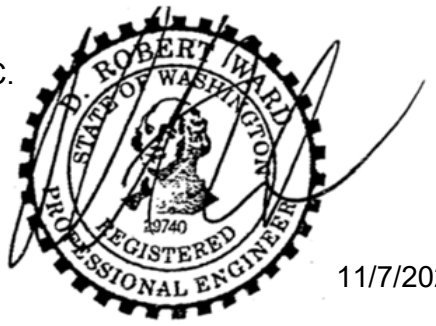
In addition to our review of plans, we also need to prepare a “statement of risk” per Mercer Island requirements. As such, we make the following statement:

> *It is our professional opinion that the reviewed plans for the proposed deck/roof structure will render the development as safe as if it were not located in a geologically hazardous area and will not adversely impact critical areas on adjacent properties.*

If there are any questions regarding this letter, or if we can be of further service, please do not hesitate to contact us.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.

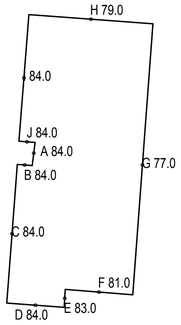


D. Robert Ward, P.E.
Principal

11/7/2023

cc: **HhLodesign –** Henry Lo
via email: hhlodesign@gmail.com

Exhibit 6



ABE Calculation

Segment	Length	Elevation	Product
A	5.1	84	428.4
B	3.4	84	285.6
C	31.1	84	2612.4
D	12.9	84	1083.6
E	4.0	83	332
F	15.1	81	1223.1
G	60.4	77	4650.8
H	27.9	79	2204.1
I	28.4	84	2385.6
J	3.6	84	302.4
Total	191.9		15508

ABE = 15508 / 191.9 = 80.8'

PROJECT DATA	PROPERTY DATA	CONSTRUCTION DATA
OWNER Eric and Jody Blohm ARCHITECT HhLodesign 215 W. Crockett St. Seattle, WA 98119 Contact: Henry H Lo 206-229-8082 CONTRACTOR Urban Restoration Contact: Reg Willing 425-417-4811 STRUCTURAL ENGINEER TBD	PROJECT ADDRESS 5642 E Mercer Way Mercer Island, WA 98040 ZONING DESIGNATION R-15 HEIGHT LIMIT 30'-0" Max Building Height SETBACKS Front Yard Setback 20'-0" Rear Yard Setback 25'-0" Side Yard Setback 17.0' Total 5.6' Min. LOT AREA 33,451 sq ft ASSESSOR'S TAX NUMBER 192405-9152 LEGAL DESCRIPTION POR GL 3 BEG AT PT 2120 FT N OF S LN OF SEC & 1032.41 FT E OF N & S C/L OF SEC TH N 03-58-12 E 100.24 FT TH E 300 FT TO WLY LN OF PRIVATE RDWY TH S 03-58-12 W 100.24 FT TH W 300 FT TO BEG ALSO POR GL 3 LY BET LN S 2205 FT & 2220 FT N OF S LN OF SEC & ELY OF PRIVATE RD TGW SH LDS ADJ	SCOPE OF WORK Addition of 720.5 SF raised deck with stair to ground floor to existing Single Family Residence. New Roof Over Deck. LOT SLOPE High Point 136.0' Low Point 60.3' Length 322.9' Slope 23.4%

LOT COVERAGE CALCULATIONS

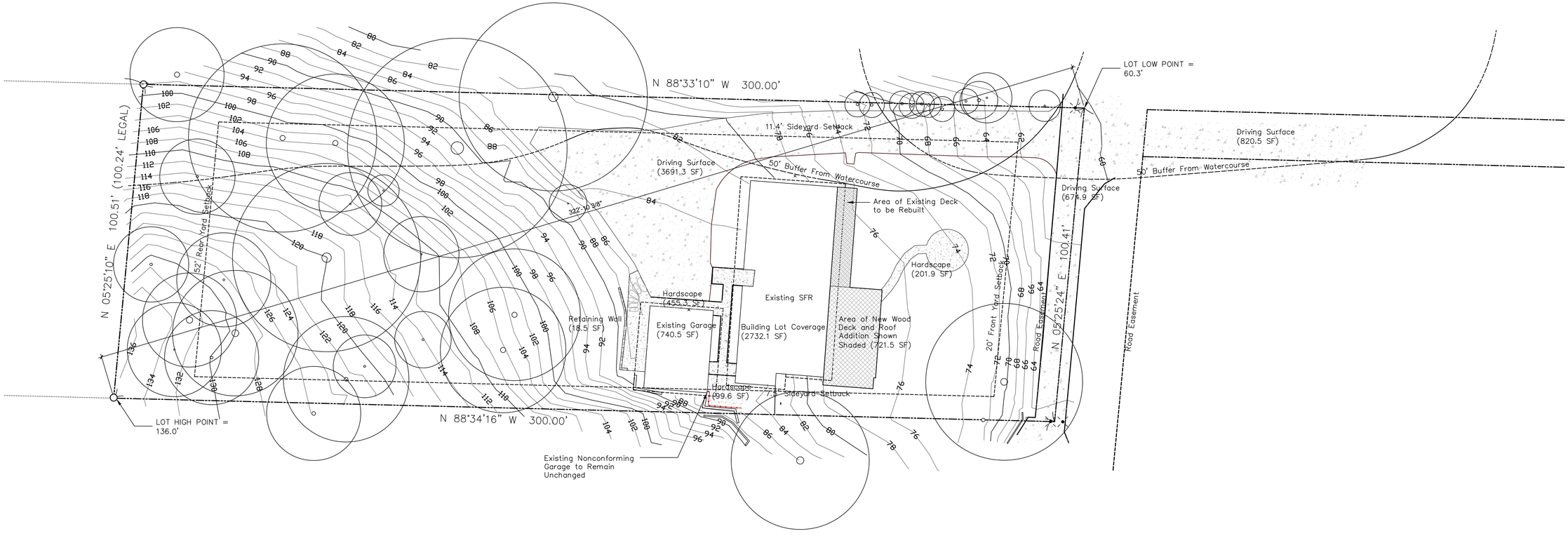
A.	Gross Lot Area	33451	Square Feet
B.	Net Lot Area	33451	Square Feet
C.	Allowed Lot Coverage Area	11707.9	Square Feet
D.	Allowed Lot Coverage	35	% of Lot
E.	Existing Lot Coverage:		
	1. Main Structure Roof Area	2732.1	Square Feet
	2. Accessory Building Roof Area	740.5	Square Feet
	3. Vehicular Use (driveway, paved access easements [portion used by the lot for access], parking	5186.7	Square Feet
	4. Covered Patios and Covered Decks	721.5	Square Feet
	5. Total Existing Lot Coverage Area (E1+E2+E3+E4)	9380.8	Square Feet
F.	(Total Lot Coverage Area Removed)	0	Square Feet
G.	Proposed Adjustment for Single Story (Area)	0	Square Feet
H.	Proposed Adjustment for Flag Lot	0	Square Feet
I.	Total New Lot Coverage Area:		
	1. Main Structure Roof Area	2732.1	Square Feet
	2. Accessory Structure Roof Area	740.5	Square Feet
	3. Vehicular Use (driveway, paved access easement [portion used by the lot for access], parking)	5186.7	Square Feet
	4. Covered Patios and Covered Decks	721.5	Square Feet
	5. Total New Lot Coverage Area (I1 + I2 + I3 + I4)	9380.8	
J.	Total Project Lot Coverage Area = (E5 - F) + I5	9380.8	Square Feet
K.	Proposed Lot Coverage Area = (J/B) x 100	28.0	% of Lot

Lot coverage calculations shown on Plan Sheet # A-1.0

HARDSCAPE CALCULATIONS

A.	Gross Lot Area	33451	Square Feet
B.	Net Lot Area	33451	Square Feet
C.	Area Borrowed from Lot Coverage	2327.1	Square Feet
D.	Allowed Hardscape Area = 9% of lot area + C	5337.7	% of Lot
E.	Allowed Hardscape Area	5337.7	Square Feet
F.	Total Existing Hardscape Area:		
	1. Uncovered Decks	0	Square Feet
	2. Uncovered Patios	99.6	Square Feet
	3. Walkways	657.2	Square Feet
	4. Stairs	0	Square Feet
	5. Rockeries and Retaining Walls	18.5	Square Feet
	6. Other	0	Square Feet
	7. Total Existing Hardscape Area (F1+F2+F3+F4+F5+F6)	775.3	Square Feet
G.	(Total Hardscape Area Removed)	0	Square Feet
H.	Total New Hardscape Area:		
	1. Uncovered Decks	0	Square Feet
	2. Uncovered Patios	0	Square Feet
	3. Walkways	0	Square Feet
	4. Stairs	0	Square Feet
	5. Rockeries and Retaining Walls	0	Square Feet
	6. Other		Square Feet
	7. Total New Hardscape Area (H1+H2+H3+H4+H5+H6)	0	Square Feet
I.	Total Project Hardscape Area = (F7 - G) + H7	775.3	Square Feet
J.	Total Project Hardscape Area = (I/B)x100	2.3%	% of Lot

Hardscape calculations shown on Plan Sheet # A-1.0



1 Site Plan
1/16" = 1'-0"

PLAN NORTH

HhLodesign
minimalist.spatial.creation
215 West Crockett Street
Seattle, Washington 98119
206.229.8082

DRAWN BY

DESIGN BY

CHECKED BY

APPROVED BY

DATE
August 28, 2023

REVISIONS

BLOHM DECK

5642 E Mercer Way
Mercer Island, Washington

8190 REGISTERED ARCHITECT
HENRY H. LO
STATE OF WASHINGTON

Site Plan

A-1.0

GENERAL NOTES

GN-1 GENERAL NOTE
All work to comply with the following current codes:
- 2018 INTERNATIONAL BUILDING CODE (IBC)
- 2018 INTERNATIONAL RESIDENTIAL CODE (IRC)
- 2018 INTERNATIONAL MECHANICAL CODE
- 2018 INTERNATIONAL FIRE CODE
- 2018 INTERNATIONAL FUEL GAS CODE (Natural Gas)
- 2018 UNIFORM PLUMBING CODE
- 2018 WASHINGTON STATE ENERGY CODE
- and all other applicable local codes

GN-2 GENERAL NOTE
All applicable codes, ordinances, and minimal structural requirements take precedence over drawings, notes, and specifications.

GN-3 GENERAL NOTE
Dimensions are to face of stud unless noted otherwise.

GN-4 GENERAL NOTE
Plumbing work and Electrical work is "Design/Build" and executed under separate permit.

EARTH WORK

EW-1 VERIFY SOIL CONDITIONS
Geotechnical Engineer shall field verify conformance of actual soil conditions with design assumptions

EW-2 GEOTECHNICAL ENGINEER SITE VISITS
General contractor is responsible for scheduling site visits by Geotechnical Engineer

EW-3 BEARING DEPTH
Extend excavation down to undisturbed soil of the specified strength with a minimu depth of 18" below finish grade

EW-4 COMPACTED FILL
Compacted fill to be well graded and granular with no more than 5% passing a 200 sieve. Place in 8: loose lifts and compact to 95% modified AASHO density at optimum moisture content.

EW-5 BACKFILL
Backfill behind all retauning walls with free draining granular fill and provide for subsurface drainage. (Subject to field review by Geotechnical Engineer)

MOISTURE PROTECTION

MP-1 (IRC R317.1)

Provide a minimum clearance of 12" between untreated beams & girders and earth

Provide a minimum clearance of 18" between untreated joists and earth

Provide a minimum of 8" clear between untreated framing members in contact concrete or masonry exterior walls and earth

All wood in contact with concrete or masonry exterior walls to be pressure treated

All sills and sleepers on concrete slab that is in direct contact with the earth to be pressure treated

All wood in direct contact with the ground or embedded in concrete shall be pressure treated

Wood siding, sheathing and framing shall have a clearance of 6" to earth and 2" from concrete steps, porch slabs, patio slabs and similar horizontal surfaces exposed to weather.

MP-2 (IRC R408) CRAWLSPACE VENTILATION
Crawlspace ground surface shall be covered with a Class 1 (0.1 per or less) vapor retarder material.
Provide 1 sf of net free vent area for each 300 sf of crawlspace area.
Vents shall be protected by 1/8" minimum, 1/4" maximum non-corrosive screen.

MP-3 (IRC R806) ROOF VENTILATION
Provide 1 sf of net free vent area for each 150 sf of attic area.
Venting my be reduced to 1 sf of net free vent area for each 300 sf of attic area provided at least 50% but no more than 80% of the vent area is located in the upper portion of the roof at least 3 feet above the eave.
Vents shall be protected by 1/8" minimum, 1/4" maximum non-corrosive screen or approved soffit vents.
A minimum 1" clear air space shall be provided between the insulation and the roof sheathing through the roof.
All rafter bays to be ventilated.
A vent shall be located within 3 feet of each corner.

FIRE PROTECTION cont'd.

FP-9 (IRC R315.1) CARBON MONOXIDE ALARMS
For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages.

FP-10 (IRC R315.3) CARBON MONOXIDE ALARM REQUIREMENTS
Single station carbon monoxide alarms shall be listed as complying with UL 2034 and shall be installed in accordance with this code and the manufacturer's installation instructions.

FP-11 (IRC R302.11) FIREBLOCKING REQUIRED
Fire blocking is required in the following locations.

-In concealed spaces of stud walls and partitions including furred spaces, parallel rows of studs, staggered studs as follows:
Vertically at ceiling and floor levels
Horizontally at intervals not exceeding 10 feet
-At all interconnections between consealed vertical and horizontal spaces such as soffits, dropped ceilings, and coved ceilings
-In concealed spaces between stair stringers at the top and bottom of the run.
-At openings around vents, pipes, ducts, cables, and wire at ceiling and floor level
-At fireplaces & chimneys per IRC R1003.19
-Fireblocking cornices of a 2-family dwelling is required at the line of dwelling unit separation

SAFETY AND SECURITY

SS-1 (IRC R308.4) SAFETY GLAZING - HAZARDOUS LOCATIONS
Provide safety glazing in the following locations

- Glazing in swinging doors

- Glazing in fixed and sliding panels of sliding door assemblies and panels in sliding and bifold closet door assemblies

- Glazing in storm doors

-Glazing in unframed swinging doors

- Glazing in door or enclosure for hot tub, whirlpool, sauna, steam room, bathtub, and shower. Glazing in any part of the a building wall enclosing these where the the bottom edge of the glazing is less than 60" above a standing or walking surface.

- Glazing in an individual fixed or operable panel adjacent to a door where the nearest vertical edge is within a 24" arc of the door in a closed position AND whose bottom edge is less than 60" from the floor or walking surface

- Glazing that meets all of the following conditions

  Exposed area of an individual pane larger than 9 sf
  Bottom edge less than 18" above the floor
  Top edge more than 36" above the floor
  Walking surface within 36" horizontally of the glazing

-All glazing in railings (regardless of area or height)

-Glazing in walls and fences enclosing swimming pools, hot tubs, spas where the bottom edge is less than 60" above walking surface and within 60" horizontally of the water's edge.

-Glazing adjacent to stairways, landings, and ramps within 36" horizontally of a walking surface when the exposed surface of the glass is less than 60" above the the plane of the adjacent walking surface

-Glazing adjacent to stairways within 60" horizontally of the bottom tread in any direction when the exposed surface of the glass is less than 60" above the nose of the tread

(SEE CODE SECTION FOR LIMITED LIST OF EXCEPTIONS)

SS-2 (IRC R310.1.1,2,3,4) EMERGENCY ESCAPE (EGRESS)
Emergency escape opening shall have a minimum net clear opening of 5.7 sf
Grade floor openings shall have a minimum net clear opening of 5.0 sf
- Emergency escape opening shall have a minimum net clear opening height of 24"
- Emergency escape opening shall have a minimum net clear opening width of 20"
- Emergency escape opening shall have a maximum sill height of 44"

SS-3 (IRC R311.2) EXIT DOOR
Not less than one exit door shall be provided.
Minimum size of 3'-0" x 6'-8"

SS-4 (IRC R311.7) STAIRWAYS
WIDTH
Stairway width shall be no less than 36" in clear width above the handrail height and below the required headroom height, handrails may project no more than 4.5" on either side of the stairway

HEADROOM
The minimum headroom of all parts of the stairway shall be no less than 6'-8" measured vertically from the sloped plane adjoining the tread nosings

RISER HEIGHT
The maximum riser height is 7-3/4"
The maximum discrepancy between tallest & shortest risers shall not exceed 3/8"

TREAD DEPTH
The minimum tread depth is 10" measured from nosing projection to nosing projection
The maximum discrepancy between widest & narrowest treads shall not exceed 3/8"

NOSING
Provide a nosing not less than 3/4" but not more than 1-1/4" wide on stairways with solid risers.

HANDRAIL
A continuous handrail is required on at least one side of each continuous run of treads or flight with 4 or more risers

HANDRAIL HEIGHT
Not less than 34" or more than 38" above the sloped plan adjoinging the tread nosings

HANDRAIL CONTINUITY
Handrail shall be continuous for the full length of the flight from a point ditectly above the top riser to a point directly above the bottom riser. Handrails shall be returned to the wall or terminate in a newel post or safety terminus.

HANDRAIL SPACE
There shall be a space of no less than 1-1/2" between handrail and adjacent wall surface.

HANDRAIL GRIP SIZE
Handrails with a circular cross section shall have an outside diameter of at least 1-1/4" and no more than 2". If the handrail is not circular it shall have a perimeter dimension of at least 4" and not more than 6-1/4" with a maximum cross section dimension of 2-1/4"
(See code for additional options)

SS-5 (IRC R312) GUARDS
Porches, balconies, ramps, and raised floor surfaces more than 30" above the floor or grade below shall have a guard not less than 36" in height.
Open side of stairs with a total rise of 30" or more shall shall have guards a minimum height of 34" above nosings.
Guards shall have intermediate rails or balusters spaced so as not to allow the passing of a 4" diameter sphere.
Contractor shall verify to inspector that all guards and railings shall be capable of resisting 200 lb. lo0ad on top rail acting in any direction as required by
IRC Table R301.5.

BATHROOM NOTES

BN-1 (2018 IRC 307.1) SPACE REQUIREMENTS
Toilet - Minimum 15" clear each side, Minimum 21" clear in front of bowl
Vanity - Minimum 21" clear in front
Shower - Minimum 30" x 30", 24" clear in front of opening

BN-2 (2018 IRC 307.2) TUB & SHOWER WALLS
Bathtub and shower floors and walls above bathtubs with shower heads shall be finished with a non-absorbant surface to a height of at least 6 feet above the floor.

ENERGY CODE

EC-1 CODE
All work to comply with 2018 WSEC

EC-2 (2018 R402) BUILDING ENVELOPE REQUIREMENTS

Climate Zone 4C - King County
Compliance Path: Mandatory plus Prescriptive

Table 402.1.1

Glazing U-Factor (Vertical):	0.30
Glazing U-Factor (Overhead):	0.50
Door U-Factor:	0.20
Entire Slab:	R-10
Below grade walls (interior):	10/15/21 int + TB
Below grade walls (exterior):	10/15/21 int + TB
Above grade walls:	R-21
Floor Insulation:	R-30
Ceilings:	R-49 or R-38 adv
Vaulted Ceilings:	R-38

See Table 402.1.1 for footnotes

EC-3 (2018 R406) ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS
Dwelling units shall comply with all provisions of WSEC Chapter 4 and shall comply with sufficient options from Table R406.2 so as to achieve the at least the minimum number of Energy Credits as required (WSEC R406.2).

EC-4 (2018 R402.2.4) ACCESS HATCHES & DOORS
Access hatches from conditioned spaces to crawlspaces and attics shall be weatherstripped and insulated to a level equivalent to the surrounding surfaces

EC-5 (2018 R303.1.3) FENESTRATION (DOOR & WINDOW) U-FACTOR LABELS
All products shall be identified with NFRC labels Indicating U-value, SHGC (or VT).

EC-6 (2018 402.4.1.1) AIR BARRIER
A continuous air barrier shall be installed in the building envelope. Breaks or joints in the barrier shall be sealed. Air-permeable insulation shall not be uses as a sealing material.

EC-7 GROUND COVER
A ground cover of 6 mil black polyethelyene, Class 1 (0.1 per or less), vapor retarder material shall be installed over the ground in crawlspaces. Joints should be lapped 12" and the ground cover should extend to the foundation walls. Gound cover can be omitted if crawlspaces have a concrete slab with a minimum thickness of 3-1/2"

EC-8 (2018 R402.4.3) AIR LEAKAGE OF FENESTRATION
Exterior doors and windows shall be constructed to limit air leakage and be fitted with weatherstripping. Joints around door and window frames, openings between walls and foundations, between walls and roof, and any other penetrations shall be sealed, caulked, gasketed, or weatherstripped to prevent air leakage. Windows, skylights and sliding glass doors shall have an air infiltration rate of not more than 0.3 cfm per square foot, and swinging doors no more than 0.5 cfm per square foot, and be listed and labeled by the manufacturer

EC-9 (2018 R402.4.4) RECESSED LIGHTING
Recessed light cans installed in the building envelope shall be Type IC rated and certified under ASTM 283 to have no more than 2.0 cfm air movement into the unconditioned cavity. They shall be installed with a gasket or caulk between the frame and the ceiling to prevent air leakage

EC-10 (2018 503.4) EQUIPMENT PERFORMANCE
All heating equipment shall meet the requirements of the National Appliance Energy Conservation Act and be so labeled and compy with Section 1411.

EC-11 (2018 R403.5) MECHANICAL VENTILATION
Mechanical ventilation system fans shall meet the efficacy requirements of Table R403.5.1

EC-12 (2018 R403.1) CONTROLS
Provide a programmable thermostat for regulation of temperature. Thermostat shall allow for a 5-2 programmable schedule (weekdays/weekends) and be capable of providing at least two programmable setback periods per day.

EC-13 (2018 R403.2) DUCTS
Ducts within or partial exposed to unconditioned spaces shall be insulated to a minimum of R-8 (WSEC R403.2.1). Framing cavities shall not be used as ducts or plenums. Installation of ducts in exterior walls shall not displace required envelope insulation (WSEC R403.2.3)

EC-14 (2018 R403.2.2) SEALING OF MECHANICAL SYSTEM
Ducts, air handlers, and filter boxes shall be sealed. Ducts shall be leak tested in accordance with the provisions of 2012 WSEC R403.2.2

EC-15 (2018 R403.2.2) DUCT LEAKAGE TEST
Duct leakage test results shall be provided to the building inspector and homeowner prior to an approved final inspection. A signed affidavit documenting the duct leakage test results shall be provided to the building inspector prior to an approved final inspection.

EC-16 (2018 R403.3) MECHANICAL SYSTEM PIPING
Mechanical system piping capable of carrying fluids above 105 deg. F shall be insulated to a minimum of R-6.

EC-17 (2018 R40.3.4.2) HOT WATER PIPE INSULATION
Insulation for hot water pipes shall have a minimum thermal resistance of R-4.

EC-18 (2018 R403.4.3) ELECTRIC WATER HEATER INSULATION
Electric water heaters in unconditioned space or on concrete floors shall be placed on an incompressible insulated surface with a minimum R-10.

EC-19 (2018 R404.1) LIGHTING EQUIPMENT
A minimum of 75 percent of permanently installed lamps in lighting fixtures shall be high efficacy lamps.

EC-20 (2018 402.4.1.2) AIR LEAKAGE TESTING
The building or dwelling shall be tested and verified to have an air leakage rate not exceeding 5 air changes per hour. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. Where required by the building official testing shall be conducted by an approved third party. Testing shall be performed any time after creation of all penetrations in the building thermal envelope. The test results shall be posted on the Residential Energy Compliance Certificate.

EC-21 (2018 401.3) ENERGY COMPLIANCE CERTIFICATE
A Residential Energy Compliance Certificate complying with SEC 105.4 is required to be completed by the design professional or builder and permanently posted within 3'-0" of the electrical panel prior to inspection.

EXHAUST SYSTEMS CODE

VC-1 CODE
All work to comply with International Residential Code (IRC), Chapter 15, Exhaust Systems

VC-2 (IRC Section M1507) MECHANICAL VENTILATION
Source Specific Exhaust Fans
- Exhaust fans providing source specific ventilation shall have a minimum fan flow rating not less than 50 cfm at 0.25 inches water gauge for bathrooms, laundries, or similar rooms and 100 cfm at 0.25 inches water gauge for kitchens.
- Source specific ventilation systems shall be controlled by manual switches, dehumidistats, timers, or other approved means.
- Source specific ventilation ducts shall terminate outside the building. Exhaust ducts shall be equipped with backdraft dampers. All ducts in unconditioned spaces shall be insulated to a minimum of R-8.

VC-3 (IRC Section M1507.3) WHOLE HOUSE VENTILATION
Intermittent Whole House Ventilation Integrated with a Forced-Air System
- Integrated whole house ventilation systems shall provide outdoor air at the rate calculated using Section M1507.3.3,4
- Integrated forced-air ventilation systems shall distribute outdoor air to each habitable room through the forced-air system ducts.
- Integrated forced-air ventilation systems shall have an outdoor air inlet duct connecting a terminal element on the outside of the building to the return air plenum of the forced air system at a point within 4 feet upstream of the air handler.
- The outdoor air inlet duct connection to the return air stream shall be located upstream of the forced-air system blower and shall not be connected directly into a furnace cabinet to prevent thermal shock to the heat exchanger.
- The system shall be equipped with a motorized damper connected to the automatic ventilation control as specified in Section M1508.5.2. The required flow rate shall be verified by field testing with a flow hood or a flow measuring station.
Controls
- The whole house ventilation system shall be controlled by a 24-hour clock timer with the capability of continuous operation, manual and automatic control. At the time of final inspection the automatic control timer shall be set to operate the whole house system for at least 8 hours a day. A label shall be affixed to the control that reads "WHOLE HOUSE VENTILATION - See operating instructions"

MECHANICAL WORK

MW-1 (IRC M1307.2) WATER HEATER ANCHORAGE
Water heater shall be strapped at points within the upper 1/3 and lower 1/3 of the appliance. Strapping shall be a minimum of 4" above the controls.

MW-2 (IRC M1307.3) ELEVATION OF IGNITION SOURCE
Appliances having an ignition source shall be elevated such that the source of the ignition is not less than 18" above the floor.

MW-3 (IRC M1307.3.1) PROTECTION FROM IMPACT
Appliances located in the garage shall be protected from impact by approved barriers.

FIRE PROTECTION

FP-1 (IRC R302.6) SEPARATION REQUIRED
The garage shall be separated from the residence and its attic by not less than 1/2" thick GWB on the garage side. Garages beneath habitable rooms above by not less than 5/8" thick GWB Type X. Where the separation is a ceiling-floor assembly the structure supporting the assembly shall also be protected by not less than 1/2" thick GWB.

FP-2 (IRC R302.5) OPENING PROTECTION
Openings between garage and residence shall be protected by either
- Solid wood door not less than 1 3/8" thick, or
- Solid or honeycomb metal door not less than 1 3/8" thick, or
- 20-minute fire rated door

FP-3 (IRC R302.5.2) DUCT PENETRATION
Ducts in the garage and ducts penetrating the walls or ceiling separating the dwelling from the garage shall be a minimum of 26 gauge sheet metal and have no openings into the garage.

FP-4 (IRC R302.7) UNDER-STAIR PROTECTION
Enclosed accessible space under stairs shall have walls and under-stair-surfaces protected on the enclosed side by not less than 1/2" thick GWB.

FP-5 (IRC R314.1) SMOKE DETECTION AND NOTIFICATION
All smoke alarms shall be listed in accordance with UL 217 and installed in accordance with the provisions of the IRC and the household fire warning equipment provisions of NFPA 72.

FP-6 (IRC R314.3) SMOKE DETECTION LOCATION
Smoke alarms shall be installed in the following locations
-In each sleeping room
-Outside each separate sleeping area in the immediate vicinity of the bedrooms
-On each additional story of the building including basements and habitable attics
When more than one smoke alarm is required to be installed within an individual dwelling unit, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

FP-7 (IRC R314.3.1) SMOKE ALARMS - ALTERATIONS, REPAIRS AND ADDITIONS
When alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings.

FP-8 (IRC R314.4) SMOKE ALARM POWER SOURCE
Smoke alarms shall receive their primary power from the building and have battery backup. Wiring shall be permamnent and without disconnecting switch other than those required for overcurrent protection

Permit Conditions:

1. Provide a residential Fire Sprinkler TI Permit for the modification, addition, or subtraction of the fire sprinkler system. A licensed fire sprinkler contractor must evaluated the current system and provide a letter stating the changes needed and if the current system has capacity.

2. Provide annual test records showing the system has been recently tested within the last 365 days.

3. Fire Sprinkler System activation must activate internal sounders or smoke alarms.

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206.229.8082

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DESIGN BY

CHECKED BY

APPROVED BY

DATE
April 04, 2023

REVISIONS

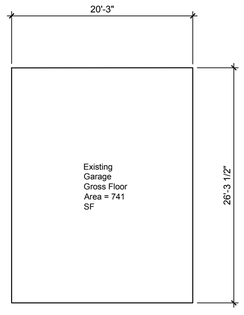
BLOHM
DECK

5642 E Mercer Way
Mercer Island, Washington

8190 REGISTERED ARCHITECT
HENRY H. LO
STATE OF WASHINGTON

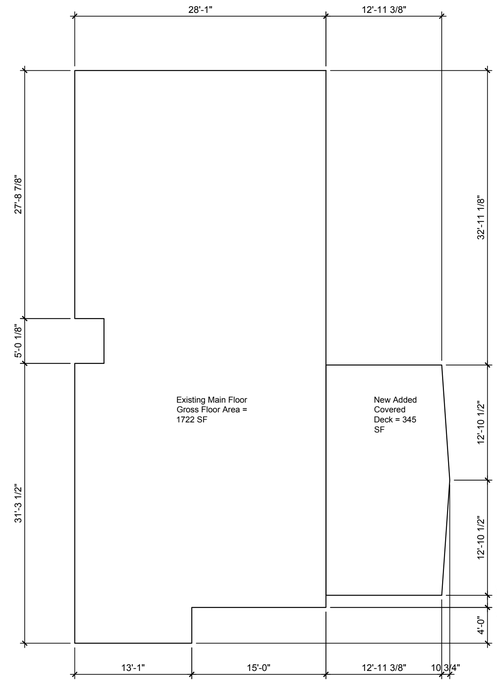
General Notes

A-1.1



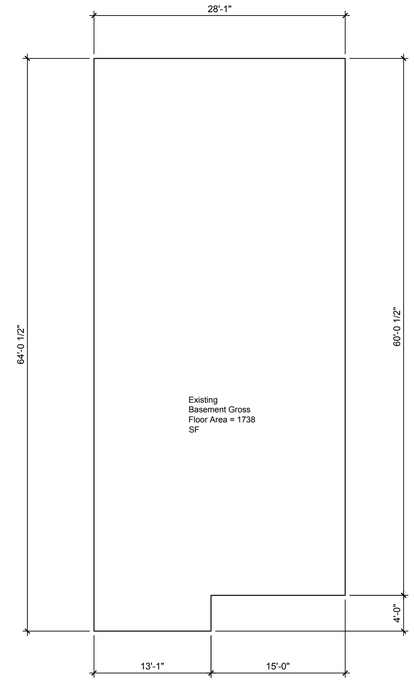
3 Garage - Gross Floor Area
1/8" = 1'-0"

PLAN NORTH



2 Main Level - Gross Floor Area
1/8" = 1'-0"

PLAN NORTH



1 Basement Level - Gross Floor Area
1/8" = 1'-0"

PLAN NORTH

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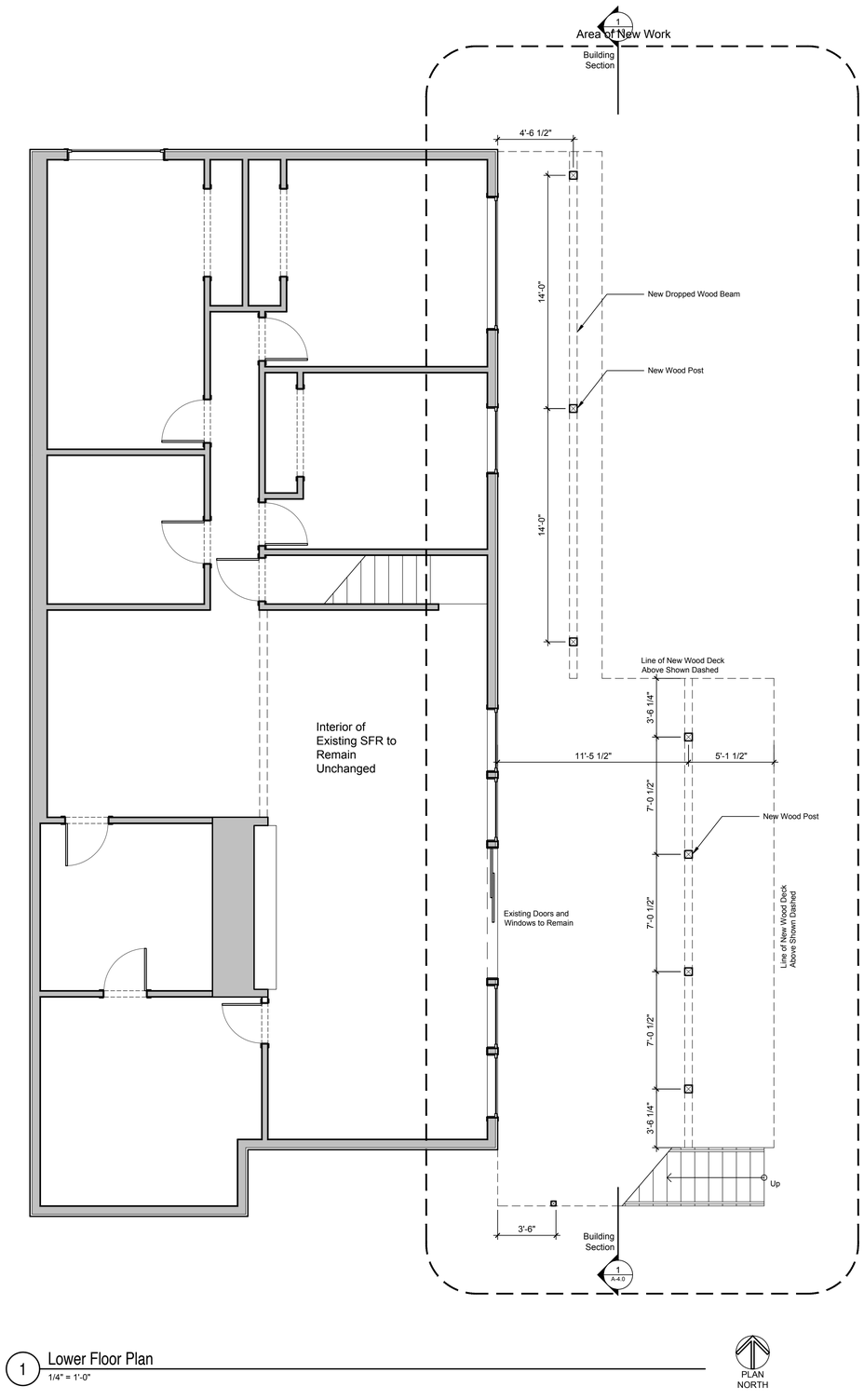
Gross Floor
Area Calculation

A-1.2



1 Lower Floor Plan
1/4" = 1'-0"

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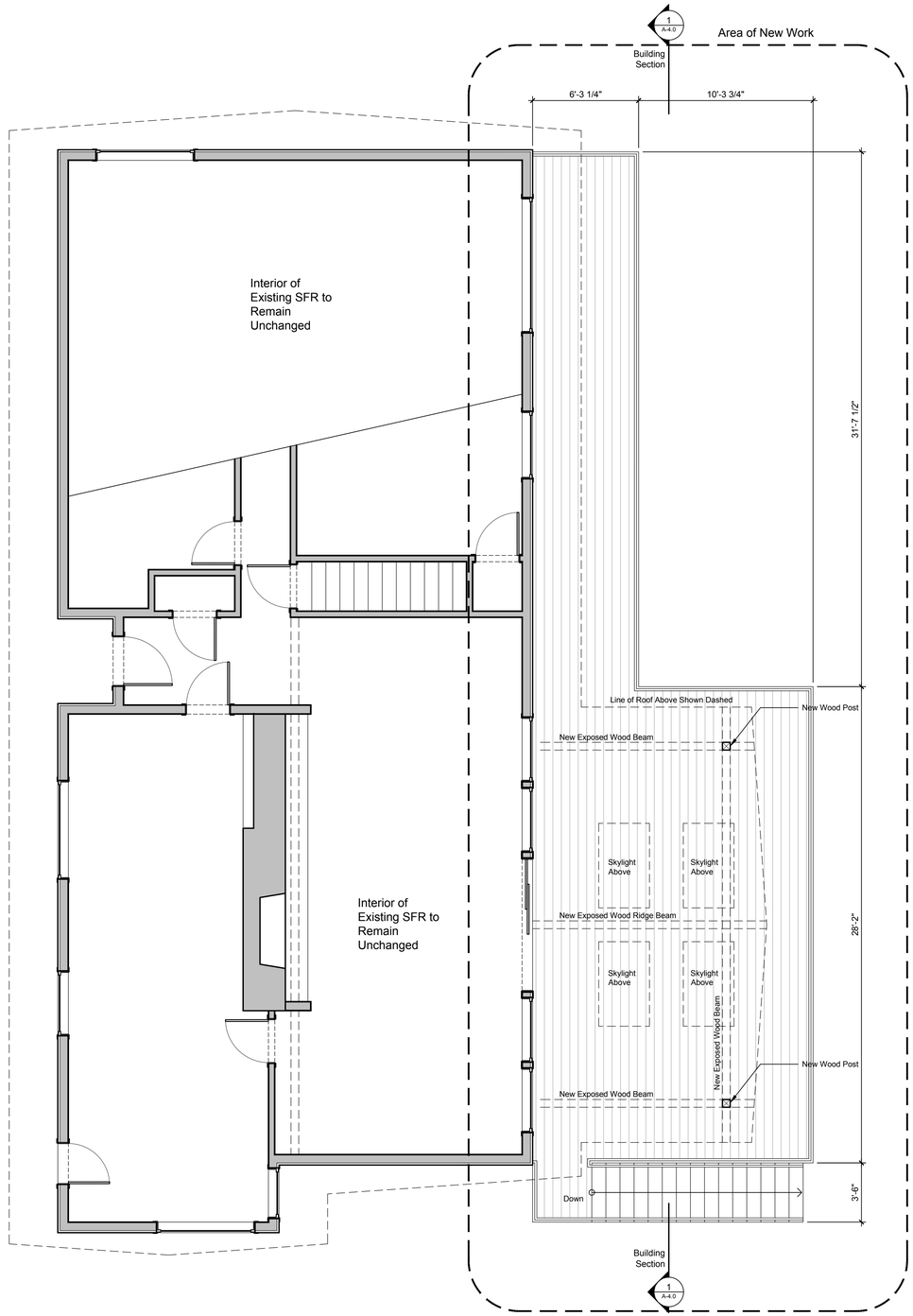
Lower Floor Plan

A-2.0



1 Main Floor Plan
1/4" = 1'-0"

PLAN NORTH

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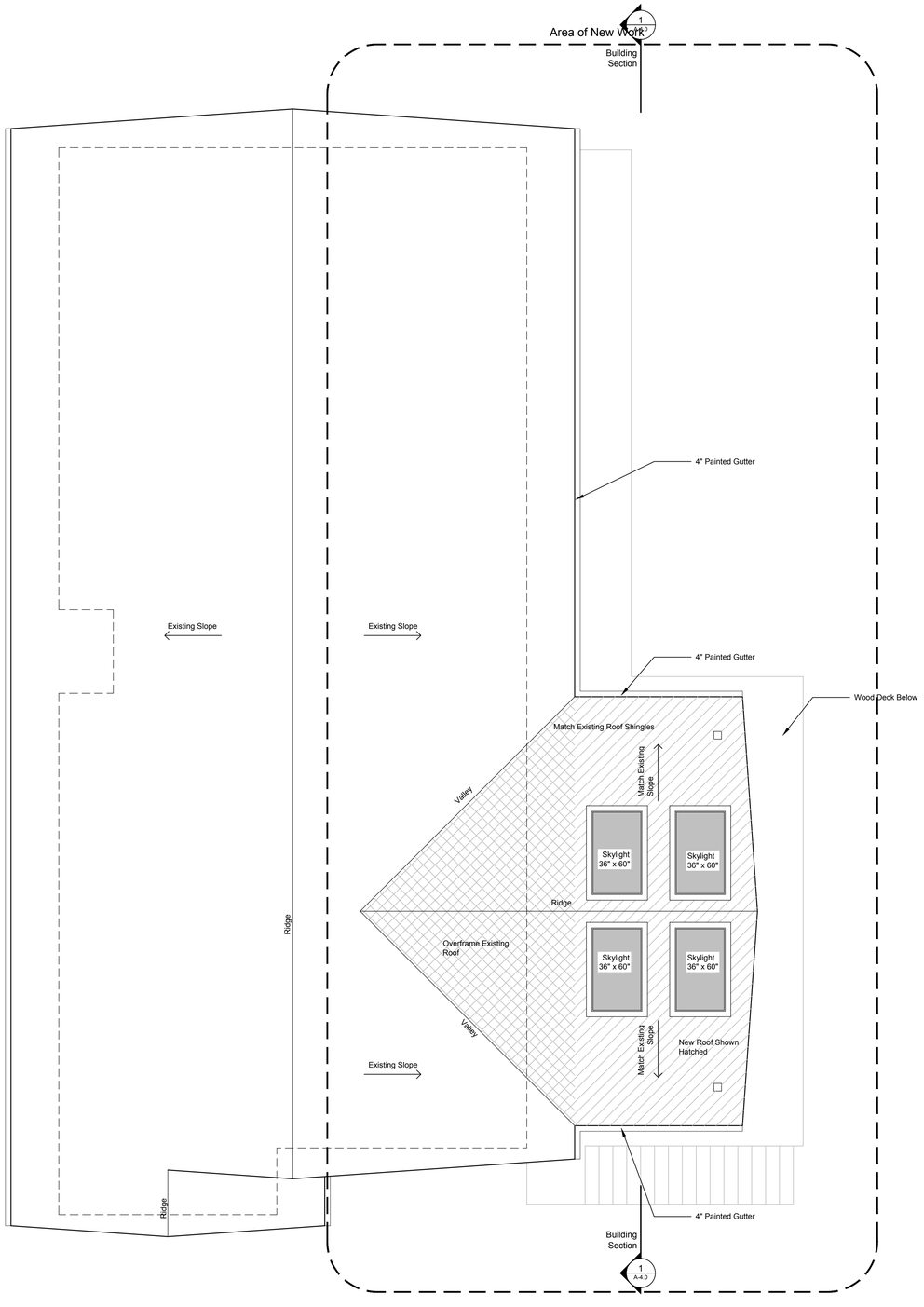
Main Floor Plan

A-2.1



1 Roof Plan

1/4" = 1'-0"

PLAN NORTH

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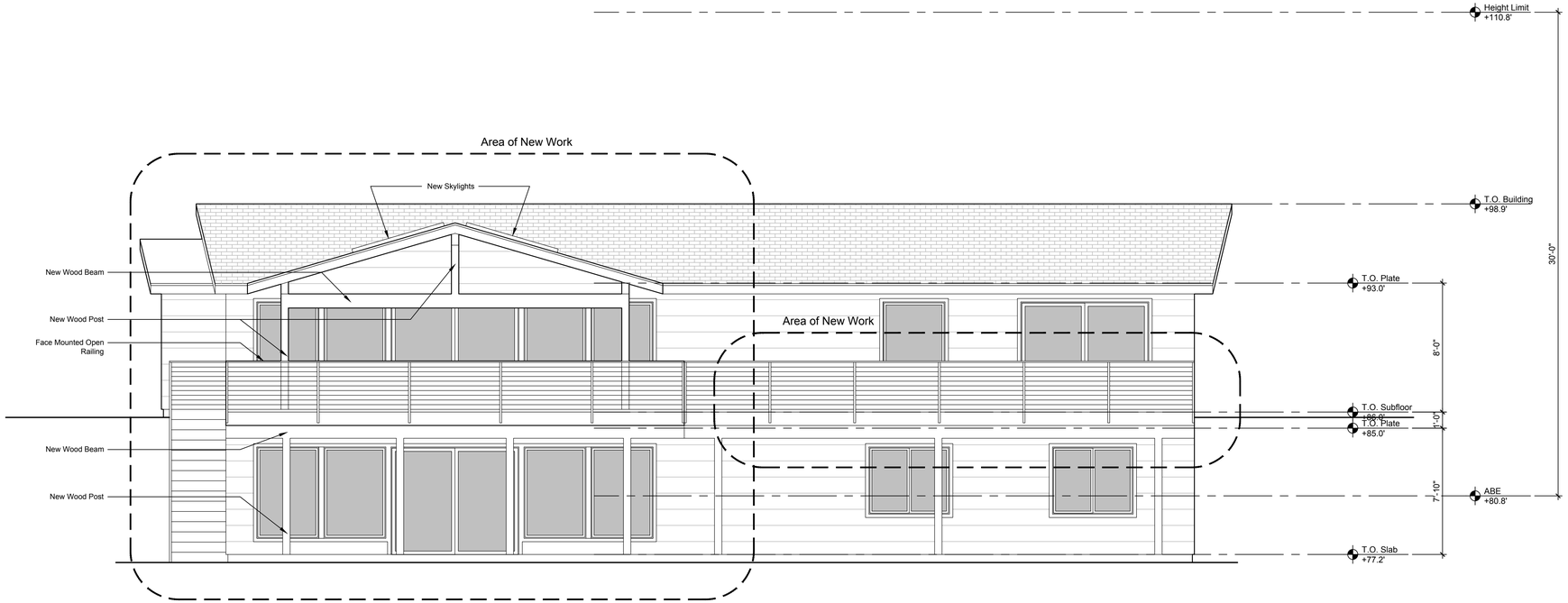
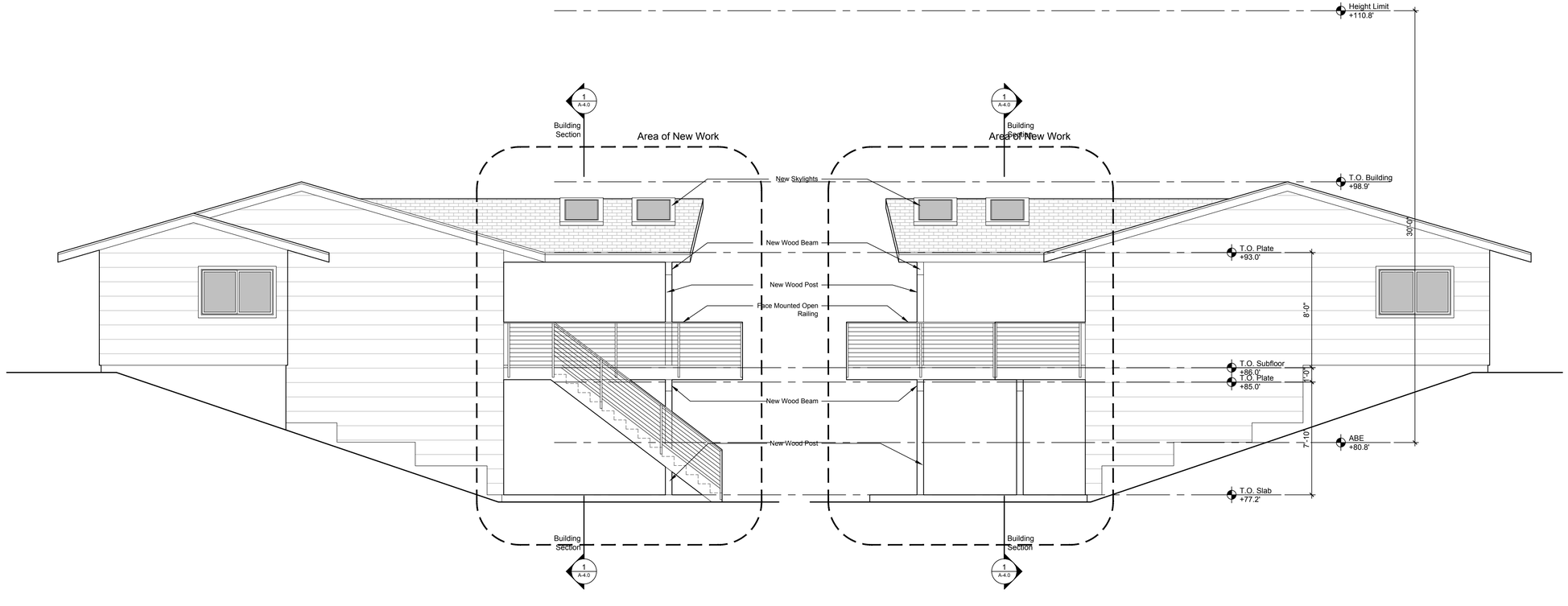
Roof Plan

A-2.2



1 East Elevation
1/4" = 1'-0"



2 South Elevation
1/4" = 1'-0"

3 North Elevation
1/4" = 1'-0"

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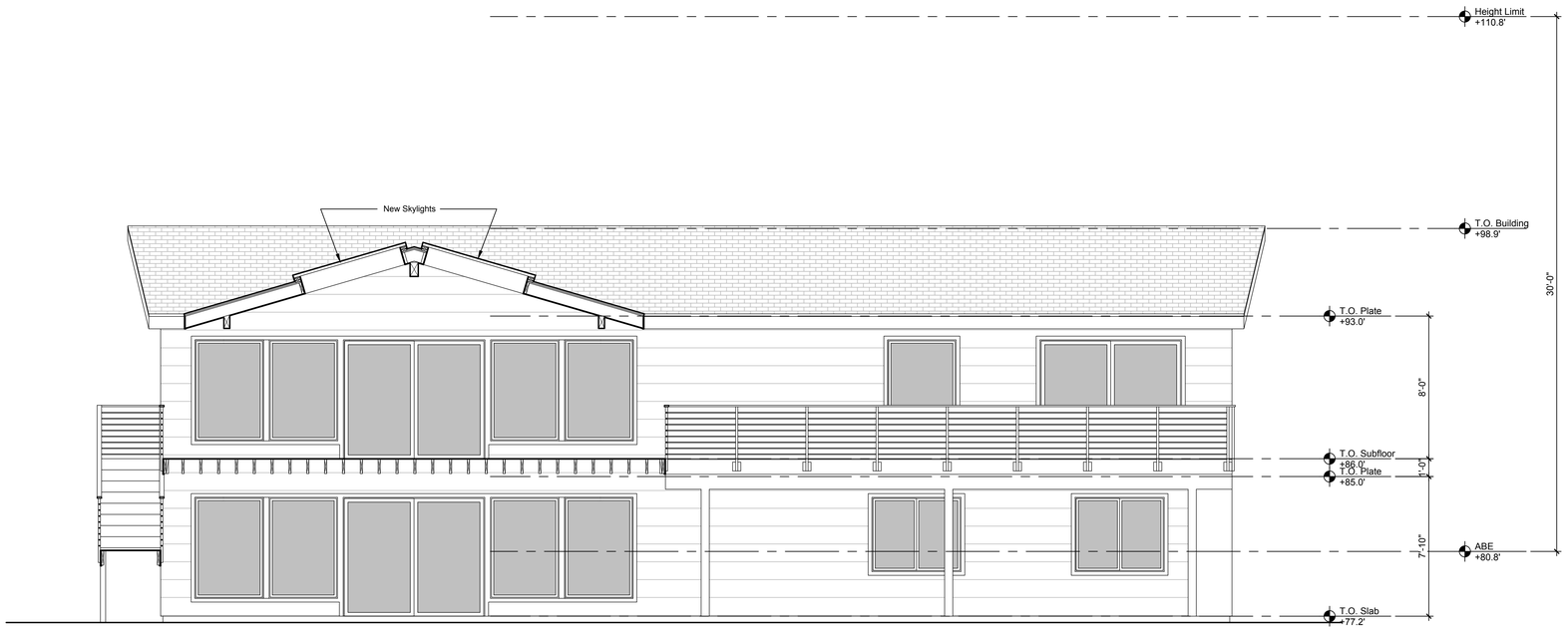
Exterior Elevations

A-3.0



1 Building Section
1/4" = 1'-0"

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Building Section

A-4.0

GENERAL STRUCTURAL NOTES

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, THE INTERNATIONAL BUILDING CODE (IBC, 2018 EDITION) AND MODIFICATIONS TO THE INTERNATIONAL BUILDING CODE BY THE LOCAL JURISDICTION.

2. DESIGN LOAD CRITERIA

DEAD LOADS

ROOF	15 PSF
FLOORS	15 PSF
DECKS	8 PSF
EXTERIOR WALLS	10 PSF
INTERIOR WALLS	8 PSF

LIVE LOADS

ROOF	20 PSF
FLOOR / LIVING SPACE	40 PSF
DECKS / BALCONIES	60 PSF

SNOWLOADS

GROUND LOAD	25 PSF
ROOF SNOW LOAD	25 PSF

WIND

ULTIMATE DEIGN WIND SPEED		110 MPH
WIND EXPOSURE		B
IMPORTANCE FACTOR	I_W =	1.0
ADJUSTMENT FACTOR	λ =	1.0
WIND SPEED UP FACTOR		1.0

SEISMIC

SEISMIC USE GROUP		II
IMPORTANCE FACTOR I_E		1.0
SITE CLASS		D
SEISMIC DESIGN CATEGORY		D
RESPONSE FACTOR	R =	6.5
MAPPED ACCELERATION	S_S =	1.5
(PER USGS)	S_1 =	0.5

SOIL PRESSURE:

ALL SOIL PRESSURE	1,500 PSF

3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS, MEMBER SIZES, AND CONDITIONS PRIOR TO COMMENCING WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS ARE INTENDED AS GUIDELINES ONLY AND MUST BE VERIFIED.
5. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE CONTRACTORS WORK. THE STRUCTURAL ENGINEER HAS NO OVERALL SUPERVISORY AUTHORITY OR ACTUAL AND/OR DIRECT RESPONSIBILITY FOR THE SPECIFIC WORKING CONDITIONS AT THE SITE AND/OR FOR ANY HAZARDS RESULTING FROM THE ACTIONS OF ANY TRADE CONTRACTOR. THE STRUCTURAL ENGINEER HAS NO DUTY TO INSPECT, SUPERVISE, NOTE, CORRECT, OR REPORT ANY HEALTH OR SAFETY DEFICIENCIES OF THE OWNER, CONTRACTORS, OR OTHER SITE ENTITIES OR PERSONS AT THE PROJECT SITE.
7. CONTRACTOR-INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.
8. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.
9. ALL STRUCTURAL SYSTEMS WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.

FOUNDATIONS

10. ALL FOOTINGS AND FOUNDATIONS SHALL BE SUPPORTED BY COMPETENT NATIVE SOIL 18" BELOW FINISHED GRADE FOR EXTERIOR SIDE AND 12" FOR INTERIOR FOOTINGS, FREE OF ORGANIC MATERIALS. OVEREXCAVATION MIGHT BE NEEDED TO REACH THE COMPETENT SOIL.
11. FOOTINGS AND FOUNDATION EXCAVATION SHALL BE FREE OF LOOSE SOILS, SLOUGHS, DEBRIS, AND FREE OF WATER AT ALL TIMES.
12. FOUNDATION WALL BACKFILL SHALL BE PLACED SIMULTANEOUSLY ON BOTH SIDES OF WALL PROVIDING 4" PERFORATED PIPE (AS REQUIRED) FOR SUBSURFACE DRAINAGE.
13. U.N.O. IN AN APPROVED GEOTECHNICAL REPORT, THE FOLLOWING METHOD FOR BACKFILL PLACEMENT AND COMPACTION IS TO BE USED:

    EXCEPT FOR BACKFILL AGAINST BELOW-GRADE WALLS OR RETAINING WALLS, ALL OTHER STRUCTURAL FILL AND STRUCTURAL BACKFILL MATERIALS SHALL BE PLACED IN RELATIVELY HORIZONTAL LOOSE LIFTS NOT EXCEEDING 10 INCHES IN THICKNESS AND COMPACTED TO AT LEAST 95 PERCENT OF THE MODIFIED PROCTOR (ASTM D1557) MAXIMUM DENSITY AT MOISTURE CONTENTS WITHIN TWO (2) PERCENT OF OPTIMUM. THE SPECIFIED COMPACTION DENSITY AND MOISTURE CONTENT OF EACH LIFT MUST BE VERIFIED BY INSPECTION, PRIOR TO PLACEMENT OF SUBSEQUENT LIFTS. BACKFILL AGIANST BELOW-GRADE WALLS AND RETAINING WALLS SHOULD BE COMPACTED AS DESCRIBDED ABOVE TO ONLY 90 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557.
14. FOOTING SIZE SHALL BE AS INDICATED ON DRAWINGS OR MIN. AS PER IBC SECTION 1806.
15. WHERE THE SURFACE IS SLOPED MORE THAN OE (1) FOOT IN TEN (10) FEET THE FOUNDATION SHALL BE LEVEL OR STEPPED SO THAT BOTH, TOP AND BOTTOM, OF SUCH FOUNDATION ARE LEVEL PER IBC.
16. WHERE STRUCTURAL COLUMNS AND POSTS ARE EXPOSED TO WATER SPLASH ABOVE, A CONCRETE SURFACE OR TO THE WEATHER, PROVIDE A MIN. OF 1" ABOVE CONCRETE SURFACE, OR 8" ABOVE THE EXPOSED EARTH PER IBC.

CONCRETE

17. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH IBC SECTION 1905, 1906, AND ACI 301. STRENGTH AT AGE 28 DAYS AND MIX CRITERIA SHALL BE AS FOLLOWS, U.N.O.:

MEMBER TYPE (IN)	PSI	MAX AGGR RATIO	MAX W/C
SLABS ON GRADE	2,500	1	0.45
FOUNDATIONS	2,500	1	0.45
WALLS	2.500	1	0.50
COLUMNS, ELEVATED SLABS & BEAMS	4,500	¾	0.40

18. CONCRETE MIX FOR FOUNDATION AND SLAB:
    CEMENT: 5.5 SACK TYPE I NORMAL PORTLAND CEMENT
    1,210 LBS OF WET SAND
    1,925 LBS GRAVEL
19. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, FY = 60,000 PSI, UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM-185.
20. DETAILING OF REINFORCING STEEL (INCLUDING HOOKS AND BENDS) SHALL BE IN ACCORDANCE WITH ACI 318-14. LAP ALL REINFORCEMENTS IN ACCORDANCE WITH "THE REINFORCING SPLICE AND DEVELOPMENT LENGTH SCHEDULE".PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 8" AT SIDES AND ENDS.
21. NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS SPECIFICALLY SO DETAILED AND APPROVED BY THE STRUCTURAL ENGINEER.
22. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

    FOOTINGS AND OTHER UNFORMED SURFACES
    CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"

    FORMED SURFACES EXPOSED TO EARTH OR WEATHER

    (NO. 6 BARS OR LARGER) 2"
    (NO 5 BARS OR SMALLER) 1-1/2"
    COLUMN TIES OR SPIRALS AND BEAM STIRRUPS 1-1/2"

    SLABS AND WALLS: GREATER OF BAR DIAMETER + 1/8 OR 3/4"
23. CAST–IN-PLACE CONCRETE: SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND DIMENSIONS OF DOOR AND WINDOW OPENINGS IN ALL CONCRETE WALLS. SEE MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF MISCELLANEOUS MECHANICAL OPENINGS THROUGH CONCRETE WALLS .
24. NON-SHRINK GROUT SHALL BE FURNISHED BY AN APPROVED MANUFACTURER AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED RECOMMENDATIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (2,500 PSI MIN).

PROTECTION FOR REINFORCEMENT OF CAST IN-PLACE CONCRETE	MIN. COVER
Concrete cast against and permanently exposed to earth	3"
Concrete exposed to earth or weather	
Wall panels:	
No. 6 through No. 18 bars	2"
No. 5 bars, W31 or D31 wire, and smaller	1 ½"
Concrete exposed to neither earth or weather	
Slabs, walls, and joists:	
No. 14 and no. 18 bars	1 ½"
No. 11 and smaller bars	¾"
Beams and Columns:	
Primary reinforcement, ties, stirrups, and spirals	1 ½"
Shells and folded-plate members:	
No. 6 bars and larger	¾"
No. 5 bars, W31 or D31 or smaller	¾"

FLOOR SLABS

25. INTERIOR CONCRETE SLAB-ON-GRADE FLOORS SHOULD BE UNDERLAIN BY CAPILARY BREAK CONSISTING OF AT LEAST 4 INCHES PEA GRAVEL OR COMPACTED ¾- INCH CLEAN CRUSHED ROCK (LESS THAN 3 PERCENT FINES).

ANCHORAGE

26. EPOXY-GROUTED ITEMS (THREADED RODS OR REINFORCING BARS) SPECIFIED ON THE DRAWINGS SHALL BE INSTALLED WITH SIMPSON EPOXY "SET-XP" OR EQUAL. SPECIAL INSPECTION IS REQUIRED. RODS SHALL BE ASTM A-36 UNLESS NOTED OTHERWISE.
27. DRIVEN PINS AND OTHER POWDER ACTUATED FASTENERS SHALL BE LOW VELOCITY TYPE. INSTALL IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1" UNLESS OTHERWISE NOTED. MAINTAIN AT LEAST 3" TO NEAREST CONCRETE.
28. PERIODIC SPECIAL INSPECTION FOR EPOXIED ANCHORS AND BOLTS IS REQUIRED.

STEEL

29. STRUCTURAL STEEL FABRICATION, ERECTION AND WELDING INSPECTION SHALL COMPLY WITH THE SPECIAL INSPECTION SCHEDULE.
30. STRUCTURAL STEEL SHALL BE GRADE A-36 UNLESS NOTED OTHERWISE.
31. ARCHITECTURALLY EXPOSED STEEL SHALL CONFORM TO SECTION 10 OF THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
32. THE FOLLOWING ADHESIVE-TYPE ANCHORING SYSTEMS SHALL BE USED FOR CONCRETE AND MASONRY, AS APPLICABLE AND IN ACCORDANCE WITH CORREPSONDING CURRENT ICC ESR REPORT.

    - SIMPSON "SET-XP" – ICC ESR 2508 FOR ANCHORING TO CONCRETE
33. ALL WELDING SHALL BE IN CONFORMANCE WITH AISC AND A.W.S STANDARDS AND SHALL BE PERFORMED BY W.A.B.O. CERTIFIED WELDERS USING E70 XX ELECTRODES. ONLY PREQUALIFIED WELDS(AS DEFINED BY A.W.S.) SHALL BE USED ALL COMPLETE JOINT PENETRATION GROOVE WELDS SHALL BE MADE WITH A FILLER MATERIAL THAT HAS A MINIMUM CVN TOUGHNESS OF 20 FT LBS AT -20 DEGREES F, AS DETERMINED BY AWS CLASSIFICATION OR MANUFACTURER CERTIFICATION
34. WELDING INSPECTION SHALL BE IN COMPLIANCE WITH AWS D1.1.

WOOD

35. ALL SOLID LUMBER TO BE GRADED BY WCLIB OR WWSA. ALL LUMBER SHALL BE HEM-FIR #2 (HF #2) OR BETTER. ALL SOLID LUMBER 5" X 4" OR LARGER SHALL BE DOUGLAS FIR #2 (DF #2) U.N.O. ALL GLUE-LAMINATED LUMBER SHALL BE GLULAM 24F-1.8E WS.

    DESIGN VALUES FOR GLULAM BEAMS

FLEXURAL STRESS TENSION ZONE	2,400 PSI
FLEXURAL STRESS COMPRESSION ZONE	1,850 PSI
COMPRESSION PERPENDICULAR TO GRAIN	650 PSI
SHEAR	266 PSI
APPARENT E	1.8x16 lb-in^2
TRUE E	1.9x10 lb-in^2

36. LUMBER IN CONTACT WITH CONCRETE AND ALL EXTERIOR WOOD SHALL BE PRESSURE TREATED, ALL CONNECTORS GALVANIZED.
37. INSTALL SOLID BLOCKING BTWN JOISTS AT ALL BEARING POINTS.

    THROUGH BOLTS AND LAG BOLTS SHALL BE ASTM A307. PROVIDE MALLEABLE IRON WASHER AT ALL BOLT AND LAG BOLT LOATIONS. PROVIDE CUT WASHER FOR ALL BOLTS PROTRUDING BEARING WOOD.
38. ALL METAL (CONNECTORS, NAILS, BOLTS, ETC.) IN CONTACT WITH P.T. WOOD SHALL BE HOT DIPPED GALVANIZED.
39. U.N.O. CONNECTORS AND FASTENERS SHALL COMPLY WITH IBC TABLE 2304.9.1

OPEN WEB TRUSSES

40. THE INSTALLATION OF OPEN WEB TRUSSES SHALL COMPLY WITH THE REQUIREMENTS OF IBC 2015 TABLE 1705.2.3.
41. OPEN WEB TRUSS SHOP DRAWINGS SHALL BE PREPARED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF WASHINGTON AND AFTER REVIEW AND APPROVAL BY ENGINEER OF RECORD SHALL BE SUBMITTED TO DCI FOR FINAL APPROVAL.

COMPARISON OF COMMON, BOX AND SINKER NAIL DIMENSIONS (inches) OF THE SAME PENNYWEIGHT.

TYPE	FEATURE	PENNYWEIGHT				
		6d	8d	10d	12d	16d
COMMON	Length	2	2-1/2	3	3-1/4	3-1/2
	Diameter	0.113	0.131	0.148	0.148	0.162
	Head	0.226	0.281	0.312	0.312	0.344
BOX	Length	2	2-1/2	3	3-1/4	3-1/2
	Diameter	0.099	0.113	0.128	0.128	0.135
	Head	0.266	0.297	0.312	0.312	0.344
SINKER	Length	1-7/8	2-3/8	2-7/8	3-1/8	3-1/4
	Diameter	0.092	0.113	0.120	0.135	0.148
	Head	0.231	0.266	0.281	0.312	0.344

Special Inspection Requirements per Chapter 17 IBC

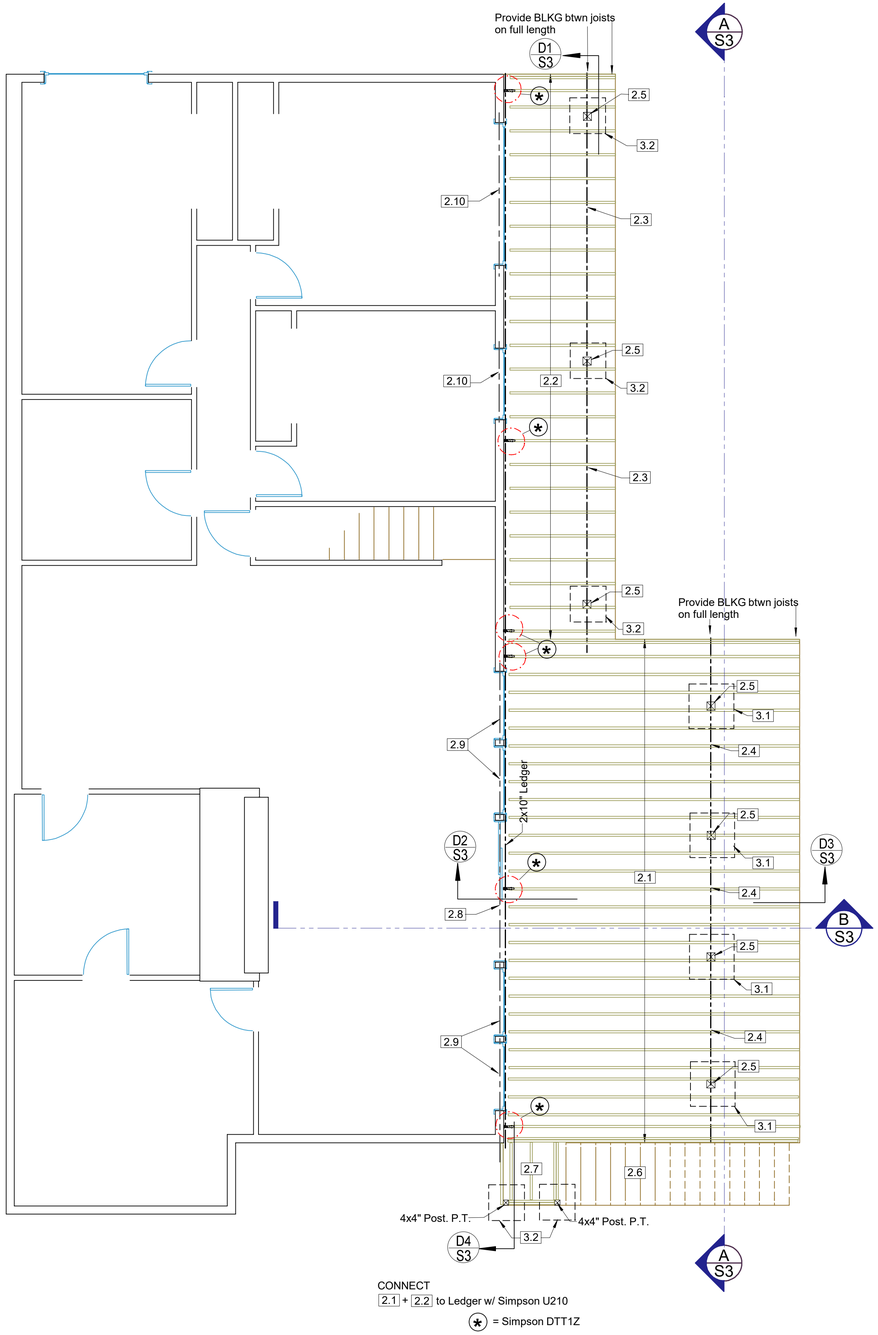
Table 1705.3 Required Special Inspections and Tests of Concrete	Continuous Special Inspection	Periodic Special Inspection
1. Inspect reinforcement and verify placement		X
3. Inspect anchors cast in concrete		X
4. Inspect anchors post-installed in hardened concrete members		
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads	X	
b. Mechanical anchors and adhesive anchors not defined in 4.a		X
5. Verify use of required design mix		X
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content specimens, and determine the temperature of the concrete	X	
7. Inspect concrete placement for proper application techniques	X	
8. Verify maintenance of specified curing temperature and techniques		X
12. Inspect formwork for shape, location and dimensions of the concrete member being formed		X

Table 1705.6 Required Special Inspections and Tests of Soils	Continuous Special Inspection	Periodic Special Inspection
1. Verify materials below sahllow foundations are adequate to achieve the design bearing capacity		X
2. Verify excavations are extended to proper depth and have reached proper material		X
3. Perform classification and testing of compacted fill material		X
4. Verify use of proper materials, densities and lift thickness during placement and compaction of compacted fill	X	
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly		X

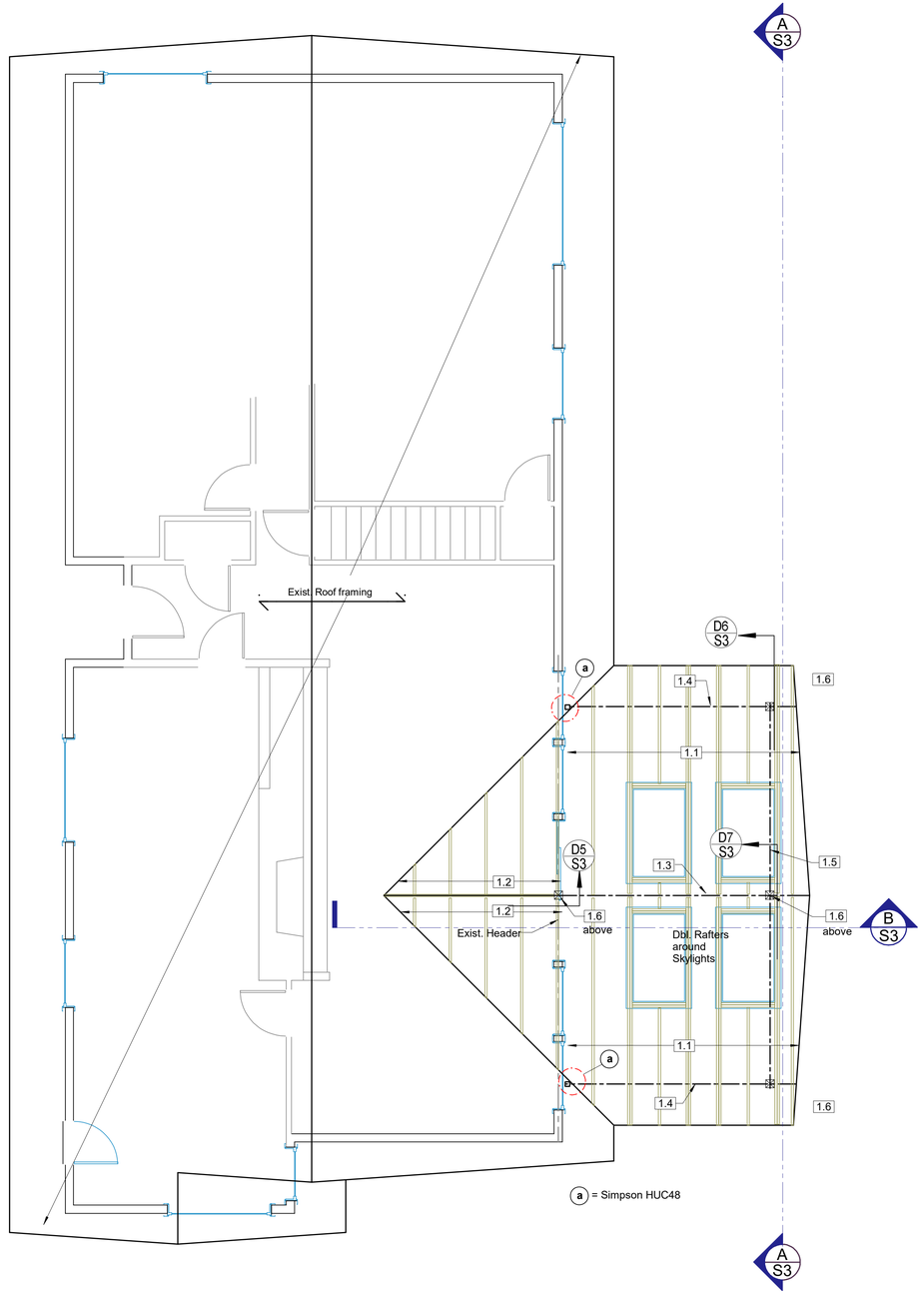
ROLAND HEIMISCH
STATE OF WASHINGTON
43479
REGISTERED
PROFESSIONAL ENGINEER

tecinstruct LLC
4111 164th St. SW #51, Lynnwood, WA 98087
Telephone (206) 553 9076 - email: www.rheimisch@yahoo.com
ENGINEERING

CLIENT:	Eric & Jodi Blohm	SHEET
JOB SITE:	5642 E Mercer Way, Mercer Island, WA	S1
PROPERTY #		
DESCRIPTION:	New Covered Deck	
DATE:	03/30/2023 SCALE: as noted	
ENGINEER:	Roland Heimisch, P. E.	



DECK FRAMING AND FOUNDATION PLAN SCALE: 1/4" = 1'-0" (1:48)



DECK COVER FRAMING PLAN SCALE: 1/4" = 1'-0" (1:48)

KEY NO.	ROOF LEVEL
1.1	Rafters, HF No.2, 2x8" @ 24" o.c.
1.2	Overframing, HF No.2, 2x6" @ 24" o.c.
1.3	Ridge Beam, DF No.2, 6x10"
1.4	Beam, DF No. 2, 4x8"
1.5	Glulam WS, 24F-1.8E, 5-1/2x10-1/2"
1.6	Post, HF No.2, 6x6", P.T.

KEY NO.	DECK
2.1	Deck Joists, HF No.2, 2x10" @ 12" o.c.
2.2	Deck Joists, HF Mo.2, 2x10" @ 16" o.c.
2.3	Beam, HF No.2, 6x12", P.T.
2.4	Beam, HF No.2, 6x12", P.T.
2.5	Post, HF No.2, 6x6", P.T.
2.6	Stair Stringers, HF No.2, 2x12" @ 12" o.c., P.T.
2.7	Landing Joists, HF No.2, 2x6" @ 16" o.c., P.T.
2.8	Exist. Header, verify min. LSL, 1.55E, 2325Fb, 3-1/2x9-1/4"
2.9	Exist. Header, DF No.2, verify min. 4x8"
2.10	Exist. Header, DF No.2, verify min. 4x6"

KEY NO.	FOUNDATION
3.1	Spread Footing, fc = 2,500 psi, 30x30x8"
3.2	Spread Footing, fc = 2,500 psi, 24x24x8"

ROLAND HEIMISCH STATE OF WASHINGTON 43479 REGISTERED PROFESSIONAL ENGINEER

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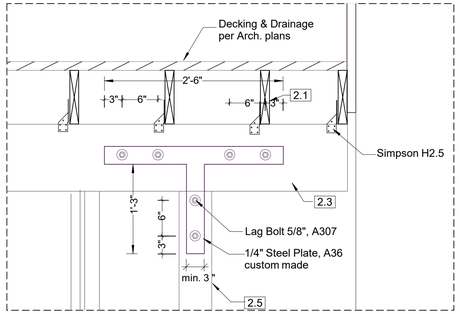
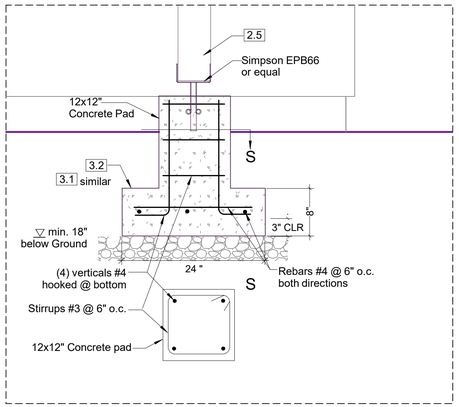
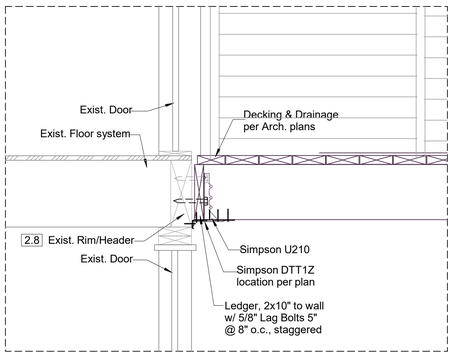
ENGINEERING

CLIENT:	Eric & Jodi Blohm	SHEET
JOB SITE:	5642 E Mercer Way, Mercer Island, WA	S2
PROPERTY #		
DESCRIPTION:	New Covered Deck	
DATE:	03/30/2023 SCALE: as noted	
ENGINEER:	Roland Heimisch, P. E.	





DETAIL (1) SCALE: 1" = 1'-0" (1:12)



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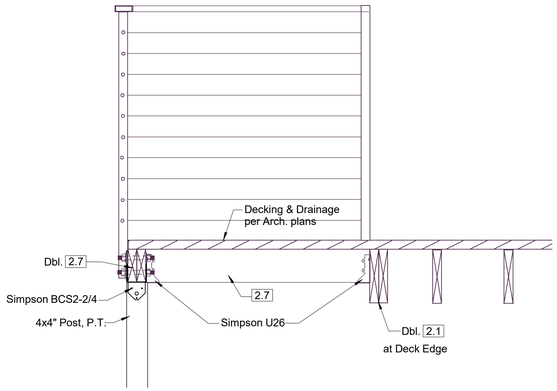
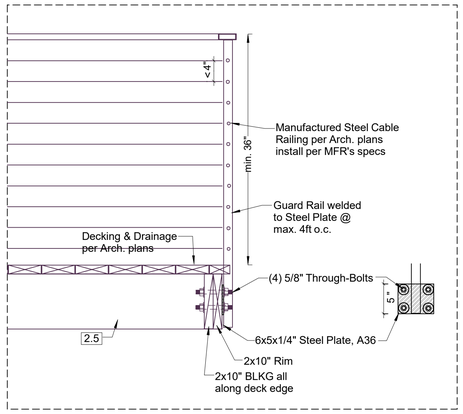
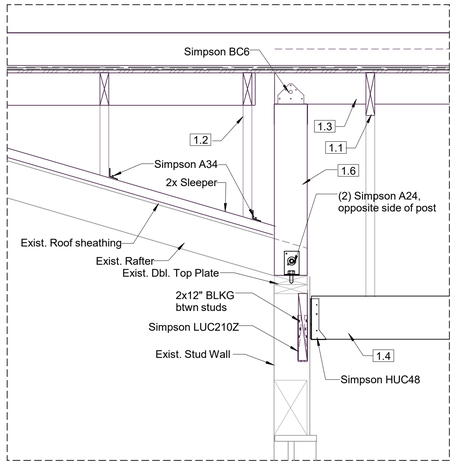


DETAIL (4) SCALE: 1" = 1'-0" (1:12)

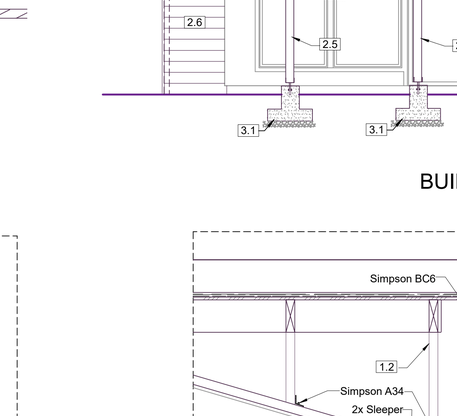


DETAIL (3) SCALE: 1" = 1'-0" (1:12)

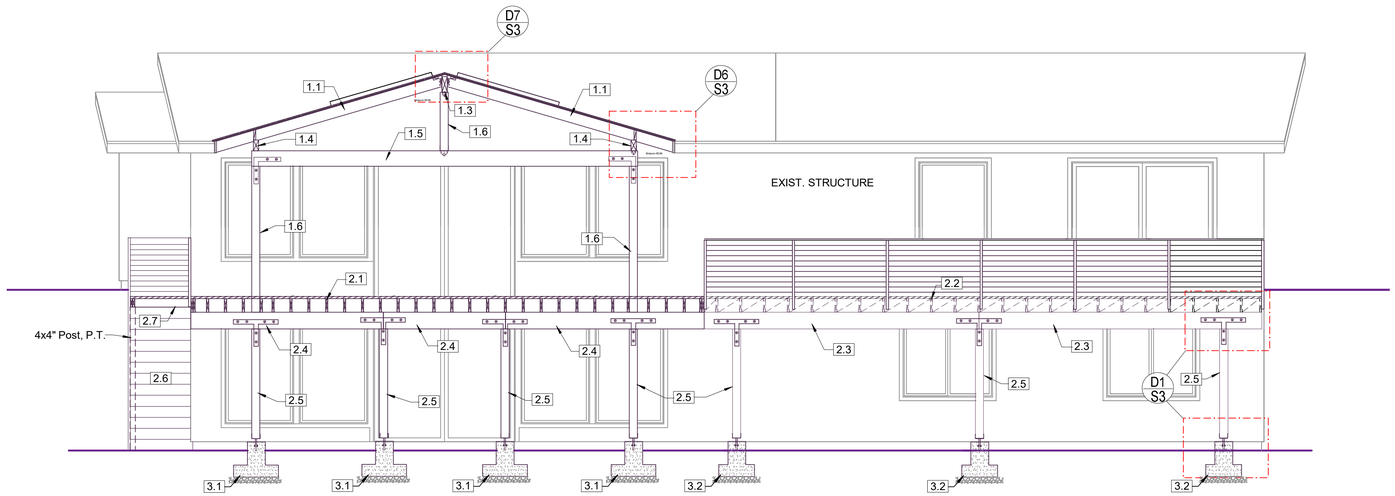
DETAIL (7) SCALE: 1" = 1'-0" (1:12)



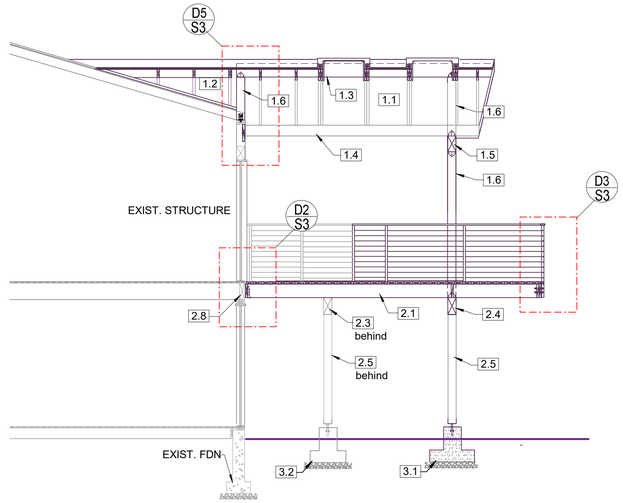
DETAIL (5) SCALE: 1" = 1'-0" (1:12)



DETAIL (6) SCALE: 1" = 1'-0" (1:12)



BUILDING SECTION A-A SCALE: 1/4" = 1'-0" (1:48)



BUILDING SECTION B SCALE: 1/4" = 1'-0" (1:48)

ROLAND HEIMISCH
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CLIENT:	Eric & Jodi Blohm	SHEET
JOB SITE:	5642 E Mercer Way, Mercer Island, WA	S3
PROPERTY #		
DESCRIPTION:	New Covered Deck	
DATE:	03/30/2023 SCALE: as noted	
ENGINEER:	Roland Heimisch, P. E.	

TOPOGRAPHIC & BOUNDARY SURVEY

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED, APN NO. 20150826000882)

PARCEL A:
THAT PORTION OF GOVERNMENT LOT 3, SECTION 19, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., RECORDS OF KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT OF A LINE 2120.00 FEET NORTH OF THE SOUTH LINE OF SAID SECTION, WHICH IS 1032.41 FEET EAST OF THE NORTH–SOUTH CENTERLINE OF SAID SECTION;
THENCE NORTH 03°58'12" EAST 100.24 FEET TO A LINE 2220.00 FEET NORTH OF THE SOUTH LINE OF SAID SECTION;
THENCE EAST 300.00 FEET TO THE WESTERLY LINE OF THAT CERTAIN PRIVATE ROADWAY ESTABLISHED AND NOW EXISTING UNDER EASEMENT RECORDED UNDER AUDITOR'S FILE NO. 4004443, RECORDS OF KING COUNTY;
THENCE SOUTH 03°58'12" WEST ALONG SAID WESTERLY LINE 100.24 FEET TO A POINT EAST OF THE POINT OF BEGINNING;
THENCE WEST 300.00 FEET TO THE POINT OF BEGINNING;

PARCEL B:
THAT PORTION OF GOVERNMENT LOT 3, SECTION 19, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., RECORDS OF KING COUNTY, WASHINGTON, LYING BETWEEN LINES PARALLEL WITH AND 2205.00 FEET AND 2220.00 FEET NORTH OF THE SOUTH LINE OF SAID SECTION AND EASTERLY OF THE ABOVE DESCRIBED PRIVATE ROADWAY;

TOGETHER WITH SHORELANDS CONVEYED BY THE STATE OF WASHINGTON, SITUATE IN FRONT OF, ADJACENT TO, OR ABUTTING THEREON; AND TOGETHER WITH AN EASEMENT FOR INGRESS AND EGRESS OVER SAID PRIVATE ROADWAY, LYING EAST OF EAST MERCER WAY BETWEEN LINES DRAWN PARALLEL TO AND DISTANT RESPECTIVELY 1400 AND 2220 FEET NORTH OF THE SOUTH LINE OF SAID SECTION 19, DESCRIBED AS MORE FULLY PROVIDE IN EASEMENT DATED MARCH 25, 1942 UNDER AUDITOR'S FILE NO. 3230364 AND IN EASEMENT DATED JUNE 1, 1943, RECORDED APRIL 10, 1950 UNDER AUDITOR'S FILE NO. 4004443, RECORDS OF KING COUNTY, WASHINGTON;

SITUATE IN THE CITY OF MERCER ISLAND, COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARINGS

NAD 83(2011) WASHINGTON NORTH COORDINATE SYSTEM PER GPS OBSERVATIONS, THE CENTERLINE OF E MERCER WAY BEARS N 05°41'32" E BETWEEN FOUND MONUMENTS.

REFERENCES

1. UNRECORDED SURVEY BY DUFFY, LAWYER & KUMPF, INC. ENGINEERS LAND SURVEYORS, DATED DEC. 23, 1975 641/30
2. RECORD OF SURVEY, BOOK 150, AT PAGE 193, KING COUNTY, WASHINGTON.
3. RECORD OF SURVEY, VOLUME 151, PAGE 17, IN KING COUNTY, WASHINGTON.
4. RECORD OF SURVEY, VOLUME 67, PAGE 181, IN KING COUNTY, WASHINGTON.
5.
6. RECORD OF SURVEY, VOLUME 74, PAGE 224, IN KING COUNTY, WASHINGTON.
7. TIMBERLAND NO. 7 PLAT
8. KING COUNTY CONTROL SURVEY, SEC. 19, TWP. 24, RGE 05

VERTICAL DATUM

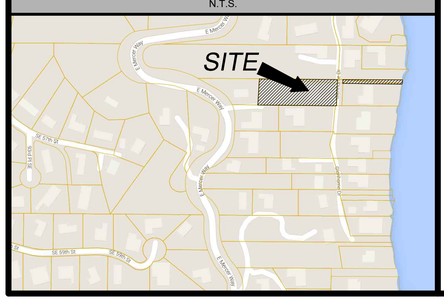
NAVD88 PER GPS OBSERVATIONS

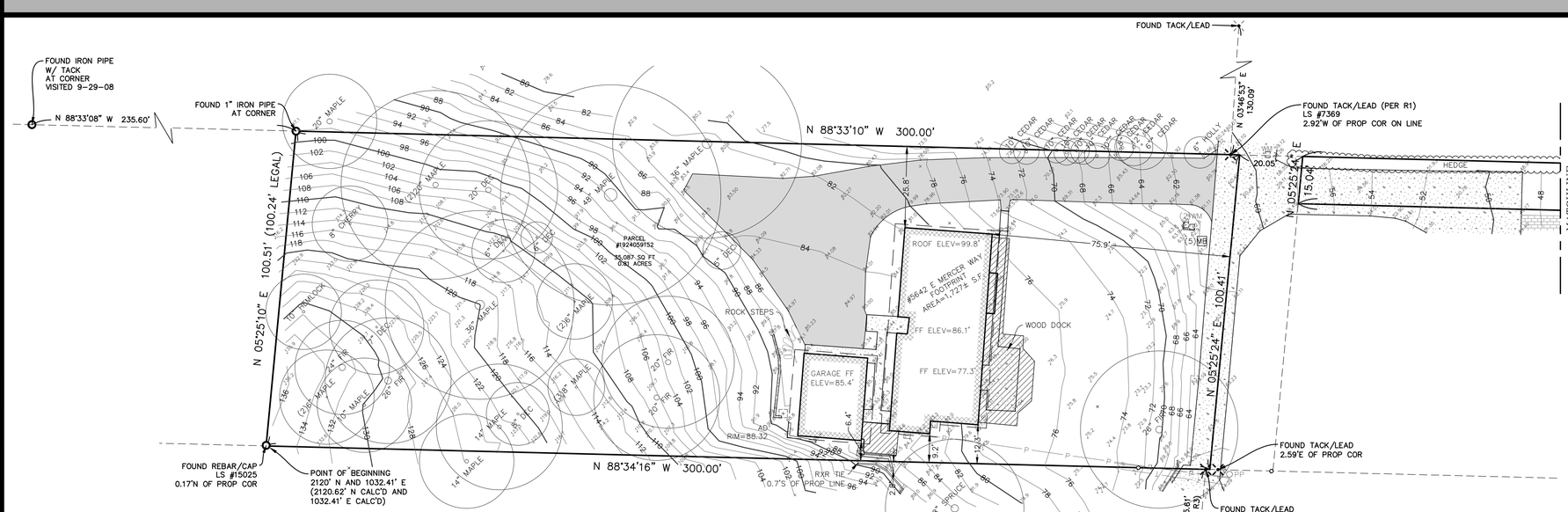
SURVEYOR'S NOTES

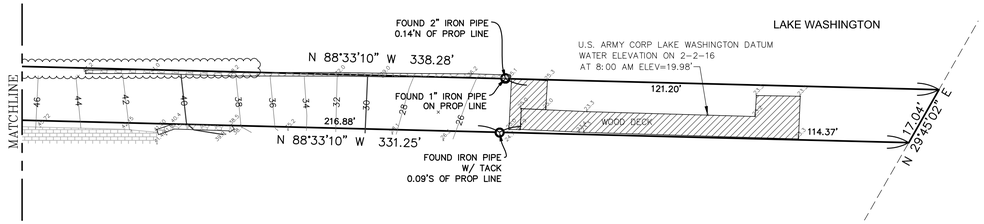
1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN FEBRUARY OF 2016. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
2. BURIED UTILITIES SHOWN BASED ON RECORDS FURNISHED BY OTHERS AND VERIFIED WHERE POSSIBLE IN THE FIELD. GEODIMENSIONS ASSUMES NO LIABILITY FOR THE ACCURACY OF THOSE RECORDS OR ACCEPT RESPONSIBILITY FOR UNDERGROUND LINES WHICH ARE NOT MADE PUBLIC RECORD. FOR THE FINAL LOCATION OF EXISTING UTILITIES IN AREAS CRITICAL TO DESIGN CONTACT THE UTILITY OWNER/AGENCY. AS ALWAYS, CALL 1–800–424–5555 BEFORE CONSTRUCTION.
3. SUBJECT PROPERTY TAX PARCEL NO. 1924059152
4. SUBJECT PROPERTY AREA PER THIS SURVEY IS 35,087± S.F. (0.81± ACRES)
5. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST THAT ARE NOT SHOWN HEREON.
6. INSTRUMENTATION FOR THIS SURVEY WAS A TRIMBLE ELECTRONIC DISTANCE MEASURING UNIT. PROCEDURES USED IN THIS SURVEY WERE DIRECT AND REVERSE ANGLES, NO CORRECTION NECESSARY. MEETS STATE STANDARDS SET BY WAC 332–130–090.

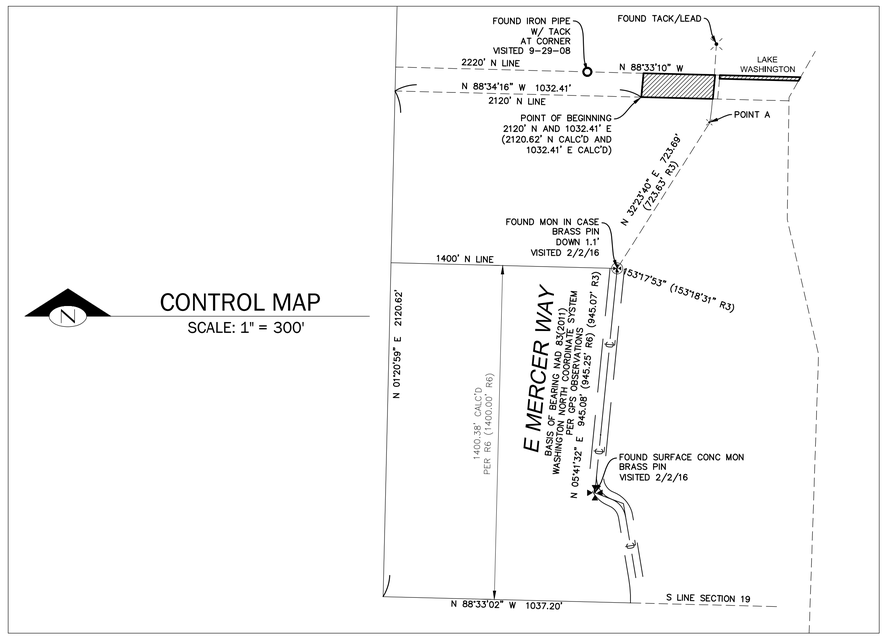
VICINITY MAP

N.T.S.



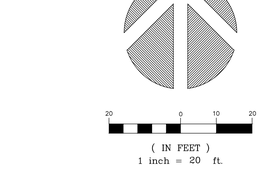






CONTROL MAP

SCALE: 1" = 300'



(IN FEET)
1 inch = 20 ft.

LEGEND

- ASPHALT SURFACE
- BUILDING
- CENTERLINE ROW
- CONCRETE SURFACE
- DECK
- GAS METER
- HEDGE ROW
- IRON PIPE (FOUND)
- SURFACE MON
- MON IN CASE (FOUND)
- NAIL AS NOTED
- POWER METER
- POWER (OVERHEAD)
- POWER POLE
- REBAR AS NOTED/FOUND
- ROCKERY
- TELEPHONE (OVERHEAD)
- SIZE/TYPE TREE (AS NOTED)
- WATER METER
- WOOD FENCE

measure success

TOPOGRAPHIC & BOUNDARY SURVEY
NE 1/4 OF SE 1/4 SEC 19, TWP. 24 N., RGE 05 E., W.M.
PARCEL NO. 1924059152

BLOHM RESIDENCE
5642 E MERCER WAY
MERCER ISLAND, WA 98040

SEAN A. PAULETTE-MILLER — STATE OF WASHINGTON — 22400 — REGISTERED LAND SURVEYOR — PROFESSIONAL LAND SURVEYOR

GeoDimensions
GeoDimensions, Inc., 10801 Main Street, Suite 102, Bellevue, WA 98004
phone 425.458.4468 support@geodimensions.net
www.geodimensions.net

JOB NUMBER:	160011
DATE:	2/26/16
DRAFTED BY:	TGC
CHECKED BY:	SRM
SCALE:	1"= 20'

REVISION HISTORY

SHEET NUMBER
1 OF 1

HhLodesign

206-229-8082 hhlodesign@gmail.com 215 W. Crockett St. Seattle, WA 98119

August 28, 2023

5642 E Mercer Way, Mercer Island, WA 98040

Project Narrative for Critical Areas Review 2

This project proposes the constriction of a 720.5 SF deck to replace an existing raised deck on the East side of an existing single family residence. This deck will add a roof over a portion of the deck to cover the deck. It will also add a stair to the ground floor. The roof and the stair are not part of the original deck that is being replaced. We are aware that the entire site is considered a landslide geological hazard, and have provided a geotechnical report to verify the safety of the proposed project. We are not within the steep slope area, nor the steep slope buffer area. We are also aware that there exists a watercourse buffer area that is close to our planned development. We have shown in our site plan that the area of replaced deck is not within the watercourse buffer area.