Tillamook County

DEPARTMENT OF COMMUNITY DEVELOPMENT
BUILDING, PLANNING & ON-SITE SANITATION SECTIONS

1510 – B Third Street
Tillamook, Oregon 97141
www.tillamook.or.us
Building (503) 842-3407
Planning (503) 842-3408
Sanitation (503) 842-3409
FAX (503) 842-1819
Toll Free 1(800) 488-8280

Land of Cheese, Trees and Ocean Breeze

NOTICE TO MORTGAGEE, LIENHOLDER, VENDOR OR SELLER:
ORS 215 REQUIRES THAT IF YOU RECEIVE THIS NOTICE,
IT MUST BE PROMPTLY FORWARDED TO THE PURCHASER

NOTICE OF PUBLIC HEARING
TILLAMOOK COUNTY PLANNING COMMISSION

Date of Notice: August 17, 2023

A public hearing will be held by the Tillamook County Planning Commission at 6:30p.m. on Thursday, September 14, 2023, in the Port of Tillamook Bay Conference Center, 4000 Blimp Boulevard, Tillamook, OR 97141 to consider the following:

#851-23-000219-PLNG: Conditional Use request to amend the Planned Development Master Plan for 'Sahhali Shores at Neskowin Unit III'. Located between Sahhali Drive and Tyee Court, both private roads, the subject property is located within the Neskowin Unincorporated Community, zoned Neskowin Rural Residential (NeskRR), and designated as Tax Lot 5700 of Section 13DC, Township 5 South, Range 11 West of the Willamette Meridian, Tillamook County, Oregon. The applicant and property owners are Jennifer Gaudioso and Damian Donckels.

Notice of public hearing, a map of the request area, applicable specific request review criteria and a general explanation of the requirements for submission of testimony and the procedures for conduct of hearing has been mailed to all property owners within 250-feet of the exterior boundary of the subject properties for which application has been made at least 28 days prior to the date of the hearing.

Applicable criteria and standards are contained within the Tillamook County Land Use Ordinance Section 6.040: Conditional Use Review Criteria, the Tillamook County Comprehensive Plan, TCLUO Section 3.320: Neskowin Rural Residential (NeskRR) zone, and TCLUO Section 3.520: Planned Development Overlay (PD). Only comments relevant to the approval criteria are considered relevant evidence.

The hearing will take place at the Port of Tillamook Bay Conference Center with an option for virtual participation. For instructions on how to provide oral testimony at the September 14, 2023 hearing and hearing protocol, please visit the Tillamook County Community Development homepage at https://www.co.tillamook.or.us/commdev or email Lynn Tone, Office Specialist 2, at ltone@co.tillamook.or.us. The virtual meeting link can be found on the Community Development Department homepage as well as a dial in number for those who wish to participate via teleconference.

Written testimony may be submitted to the Tillamook County Department of Community Development, 1510-B Third Street, Tillamook, Oregon, 97141 prior to 4:00 p.m. on the date of the September 14, 2023, Planning Commission hearing. Testimony submitted by 4:00pm on Tuesday, September 5, 2023, will be included in the packet mailed to the Planning Commission the week prior to the September 14, 2023, hearing. Failure of an issue to be raised in a hearing, in person or by letter, or failure to provide sufficient specificity to afford the decision-maker an opportunity to respond to the issue precludes appeal to the Land Use Board of Appeals on that issue. Please contact Lynn Tone, Office Specialist 2, Tillamook

County Department of Community Development, ltone@co.tillamook.or.us as soon as possible if you wish to have your comments included in the staff report that will be presented to the Planning Commission.

Documents and submitted application are also available on the Tillamook County Department of Community Development website (https://www.co.tillamook.or.us/commdev/landuseapps) or at the Department of Community Development office located at 1510-B Third Street, Tillamook, Oregon 97141. A copy of the application and related materials may be purchased from the Department of Community Development at a cost of 25 cents per page. The staff report will be available for public inspection seven days prior to the hearing. Please contact Lynn Tone for additional information ltone@co.tillamook.or.us or call 1-800-488-8280 x3423.

In addition to the specific applicable review criteria, the Tillamook County Land Use Ordinance, Tillamook County Comprehensive Plan and Statewide Planning Goals which may contain additional regulations, policies, zones and standards that may apply to the request are also available for review at the Department of Community Development.

The Port of Tillamook Bay Conference Center is accessible to persons with disabilities. If special accommodations are needed for persons with hearing, visual, or manual impairments who wish to participate in the hearings, call 1-800-488-8280 ext. 3423 or email ltone@co.tillamook.or.us at least 24 hours prior to the hearing so that the appropriate communications assistance can be arranged.

If you need additional information, please contact Lynn Tone, DCD Office Specialist, at 1-800-488-8280 ext. 3423 or email ltone@co.tillamook.or.us.

Tillamook County Department of Community Development

Melissa Jenck, CFM, Senior Planner

Sarah Absher, CFM, Director

Enc. Maps

SECTION 6.040: REVIEW CRITERIA:

Any CONDITIONAL USE authorized according to this Article shall be subject to the following criteria, where applicable:

(1) The use is listed as a CONDITIONAL USE in the underlying zone, or in an applicable overlying zone.

(2) The use is consistent with the applicable goals and policies of the Comprehensive Plan.

(3) The parcel is suitable for the proposed use considering its size, shape, location, topography, existence of improvements and natural features.

(4) The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or prevents the use of surrounding properties for the permitted uses listed in the underlying zone.

(5) The proposed use will not have detrimental effect on existing solar energy systems, wind energy conversion systems or wind mills.

(6) The proposed use is timely, considering the adequacy of public facilities and services existing or planned for the area affected by the use.

TCLUO SECTION 3.080(3)(B) PLANNED DEVELOPMENT OVERLAY CRITERIA

During its review the Planning Department shall distribute copies of the proposal to county agencies for study and comment. In considering the plan, the Planning Department shall seek to determine that:

(1) There are special physical conditions or objectives of development which the proposal will satisfy to warrant a departure from the standard ordinance requirements.

(2) Resulting development will not be inconsistent with the comprehensive plan provisions or zoning objectives of the area.

(3) The plan can be completed within a reasonable period of time.

(4) The streets are adequate to support the anticipated traffic and the development will not overload the streets outside the planned area.

(5) Proposed utility and drainage facilities are adequate for the population densities and type of development proposed.

(6) The parcel is suitable for the proposed use, considering its size, shape, location, topography, existence of improvements, and natural features.

(7) The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or prevents the use of surrounding properties for the permitted uses listed in the underlying zone.

(8) The proposed use is timely, considering the adequacy of public facilities and services existing or planned for the area affected by the use.

(9) Proposed uses which are not otherwise permitted by the underlying zoning on the parcel are accessory uses within the entire development.

Citizen Tips for Providing Testimony at a Planning Commission/Board of County Commissioner Hearing

Goal 1 of Oregon's Statewide Planning Goals recognizes the importance of citizen involvement "in all phases of the planning process." One of the principal ways for citizens to be involved is by testifying at local land use hearings. These citizen tips are designed to help citizens prepare and deliver testimony during Tillamook County land use hearing processes.

Know the Process

The Chair of the decision-making body will always read aloud the order of presentation and the process. Presentation is generally as follows:

- Planning Staff Presentation (generally 15 minutes)
    - Questions to Staff by the Decision-Maker
- Applicant's Presentation (generally 15 minutes)
    - Questions to Applicant by the Decision-Maker
- Public Comment Period
    - Generally limited to 3 minutes per person.
- Applicant Rebuttal & Final Statements
- Staff Final Statements
- Public Hearing Closed for Decision-Maker Deliberation
    - No further public testimony accepted.
- Decision-Maker may ask questions of staff.
- Decision-Makers vote on issue.
- Notice of Decision mailed to all parties.

Understand the Issue

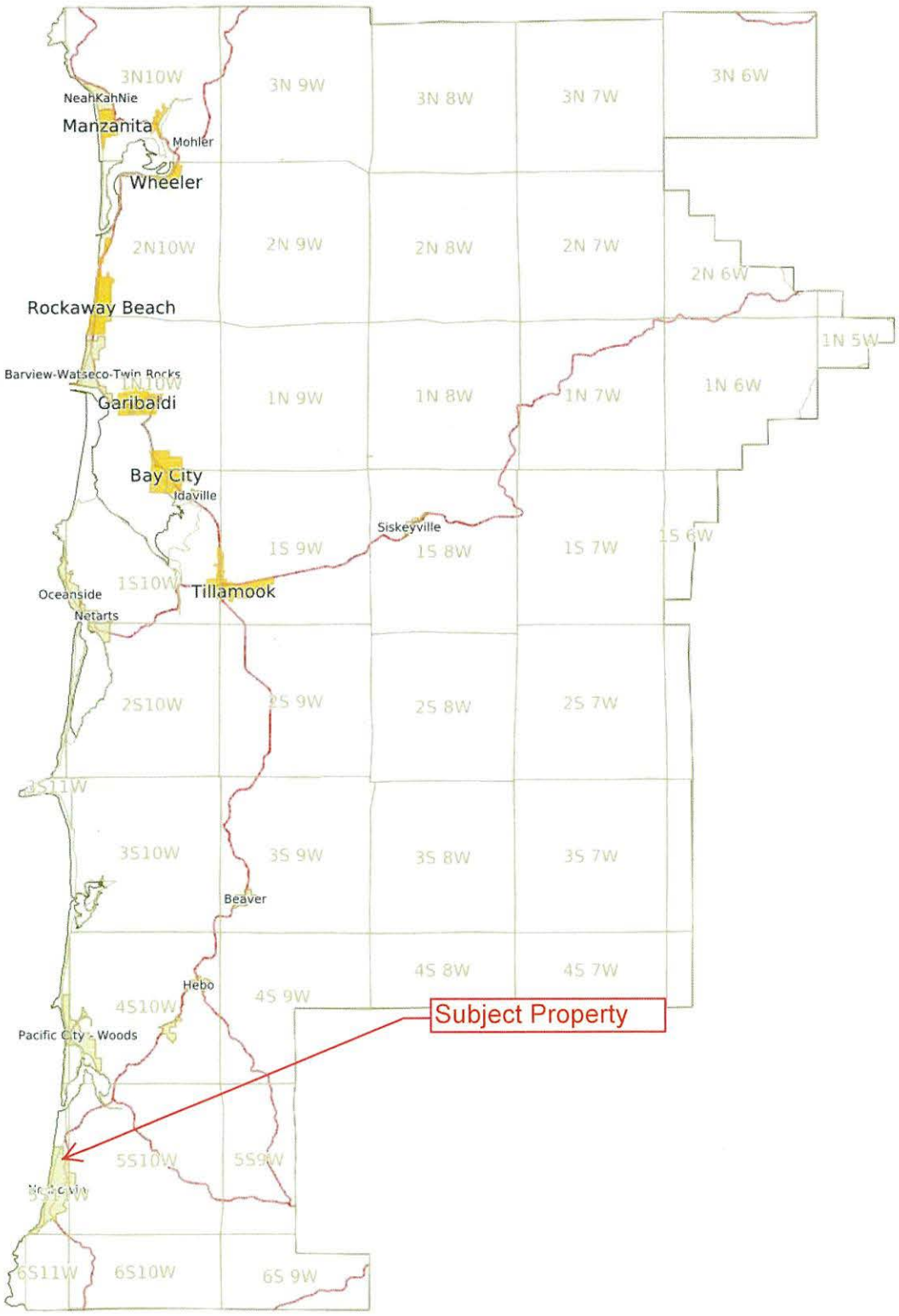
- Become familiar with the land use record (application, staff report and hearing materials) found on the Land Use Applications page under the Planning tab of the Community Development website.
- Become familiar with the relevant criteria (included in notice of public hearing).
- Prepare an outline of your testimony to use while testifying and focus testimony to the relevant criteria
- Decisions to approve or deny a request are based on the relevant criteria.
- Know when, where and who you are speaking to.
    - Tillamook County Planning Commission or Board of County Commissioners- depending on nature of request, application review process, and current phase of hearing process.
- Public testimony is generally limited to 3 minutes per person.
- Be sure to state your name and address for the record at the beginning of your testimony to ensure you receive notice of decision after hearing process has ended.

Check Department Website for Updates

- Visit the Land Use Applications page.
- Follow posted calendar dates for written testimony submittal opportunities if the hearing is ongoing.
- Review additional written testimony received during the open comment periods.
- Review hearing packets and agendas if hearing process is ongoing.
- Review Notice of Decision and remain informed on appeal dates.

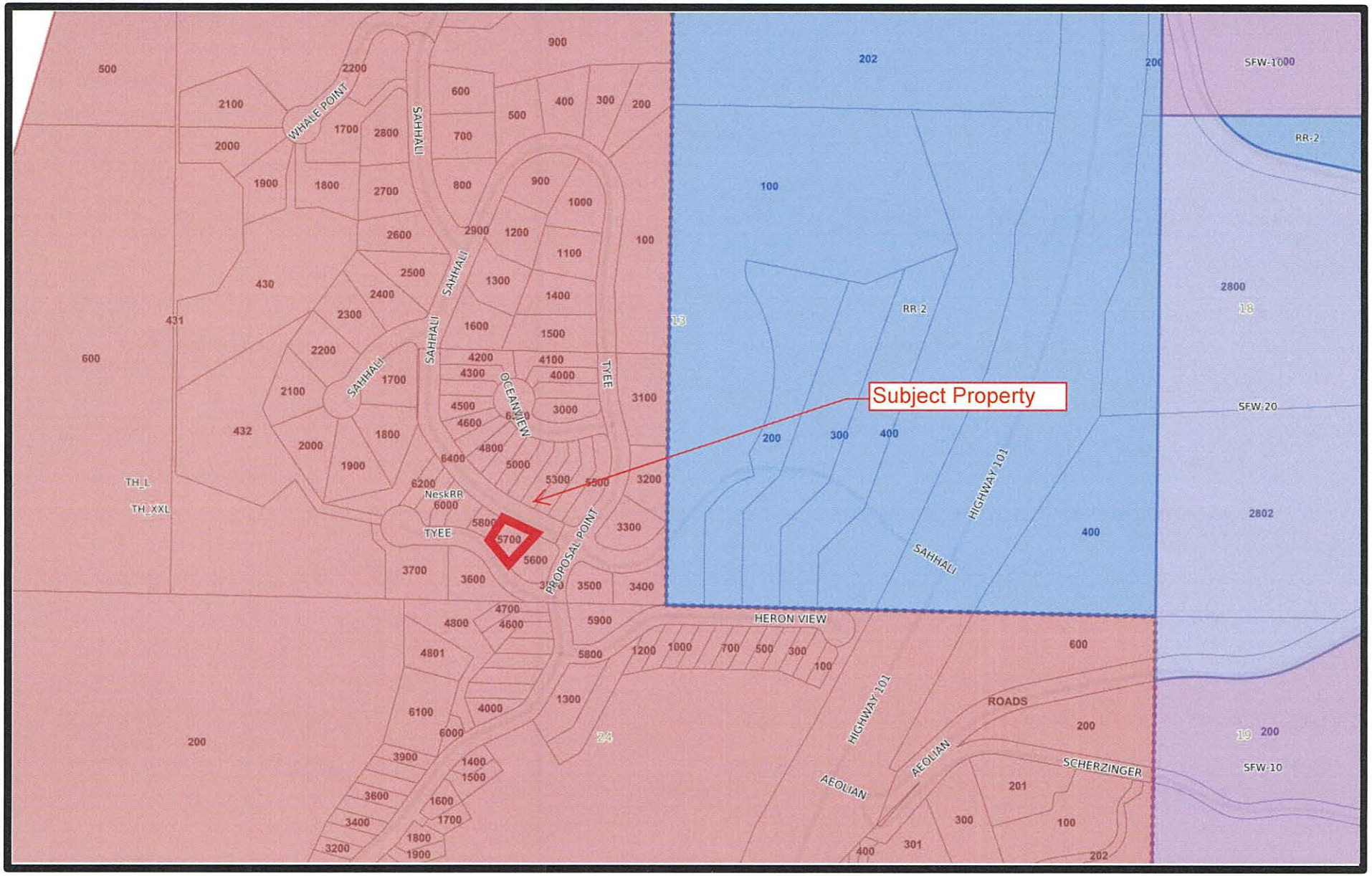
EXHIBIT A

Vicinity Map



Generated with the GeoMOOSE Printing Utilities

Zoning Map

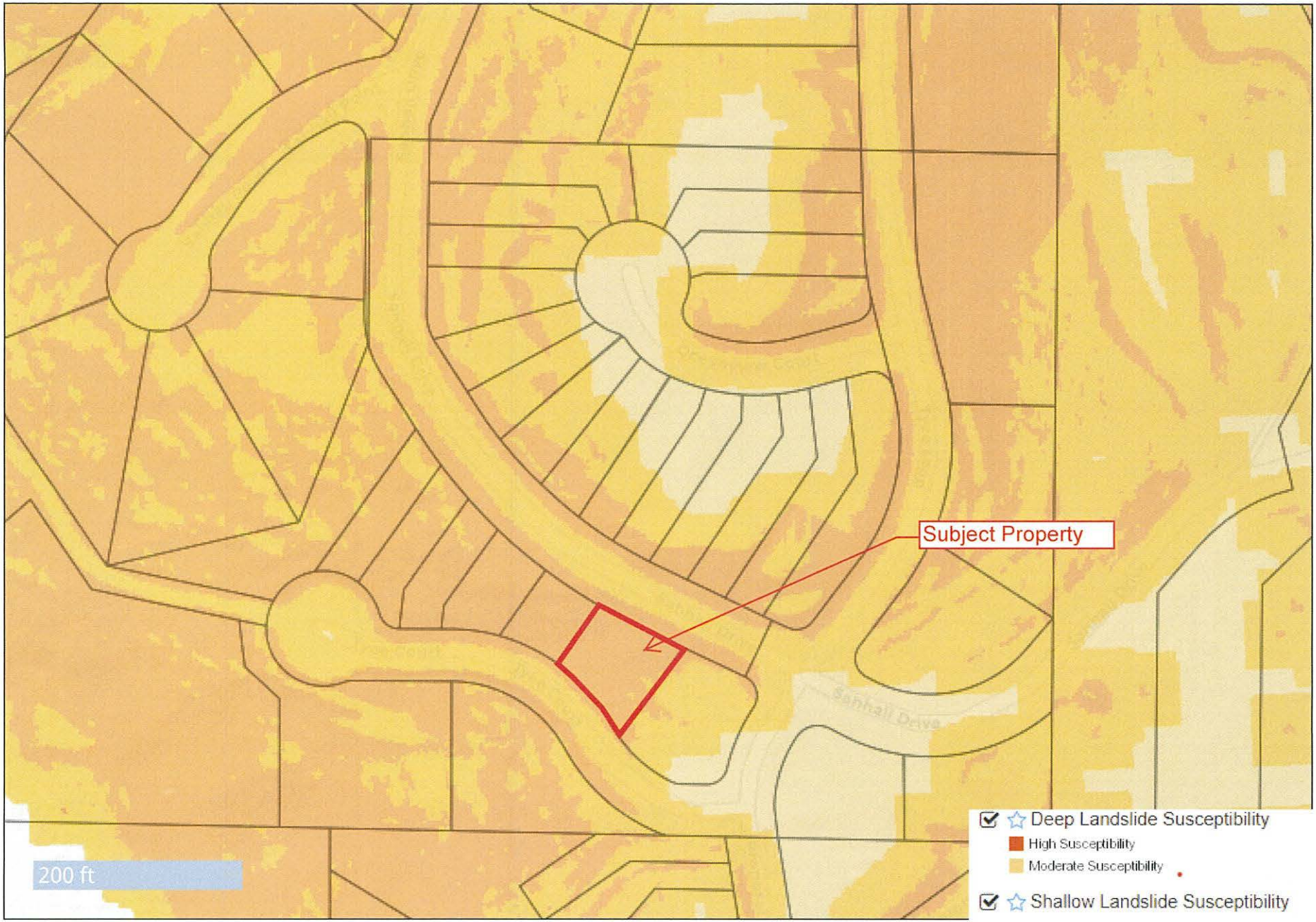


Generated with the GeoMOOSE Printing Utilities


05S11W13DC
SAHHALI SHORES
CANCELLED:
S.W.1/4 S.E.1/4 SEC.13 T.5S. R.11W. W.M.
Tillamook County
1" = 100'
FOR ASSESSMENT AND TAXATION ONLY. NOT SUITABLE FOR LEGAL, ENGINEERING, OR SURVEY PURPOSES
SEE MAP 5S 11W 13DB
SEE MAP 5S 11W 13
SEE MAP 5S 11W 24AB
S 1/4
22-10
Subject Property
SAHHALI POINT DRIVE
SAHHALI TYEE DRIVE
SAHHALI SHORES TYEE COURT
SAHHALI SHORES DRIVE
OCEANVIEW COURT
THREE LOOP
UNIT TWO
AT TYEE MESKOWIN
SAHHALI SHORES
05S11W13DC
REVISED 03/09/12, WS

Hazard Map

Oregon Coastal Atlas



Printed 8 / 16 / 2023

National Flood Hazard Layer FIRMette

FEMA

123°58'40"W 45°8'3"N

123°58'3"W 45°7'38"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

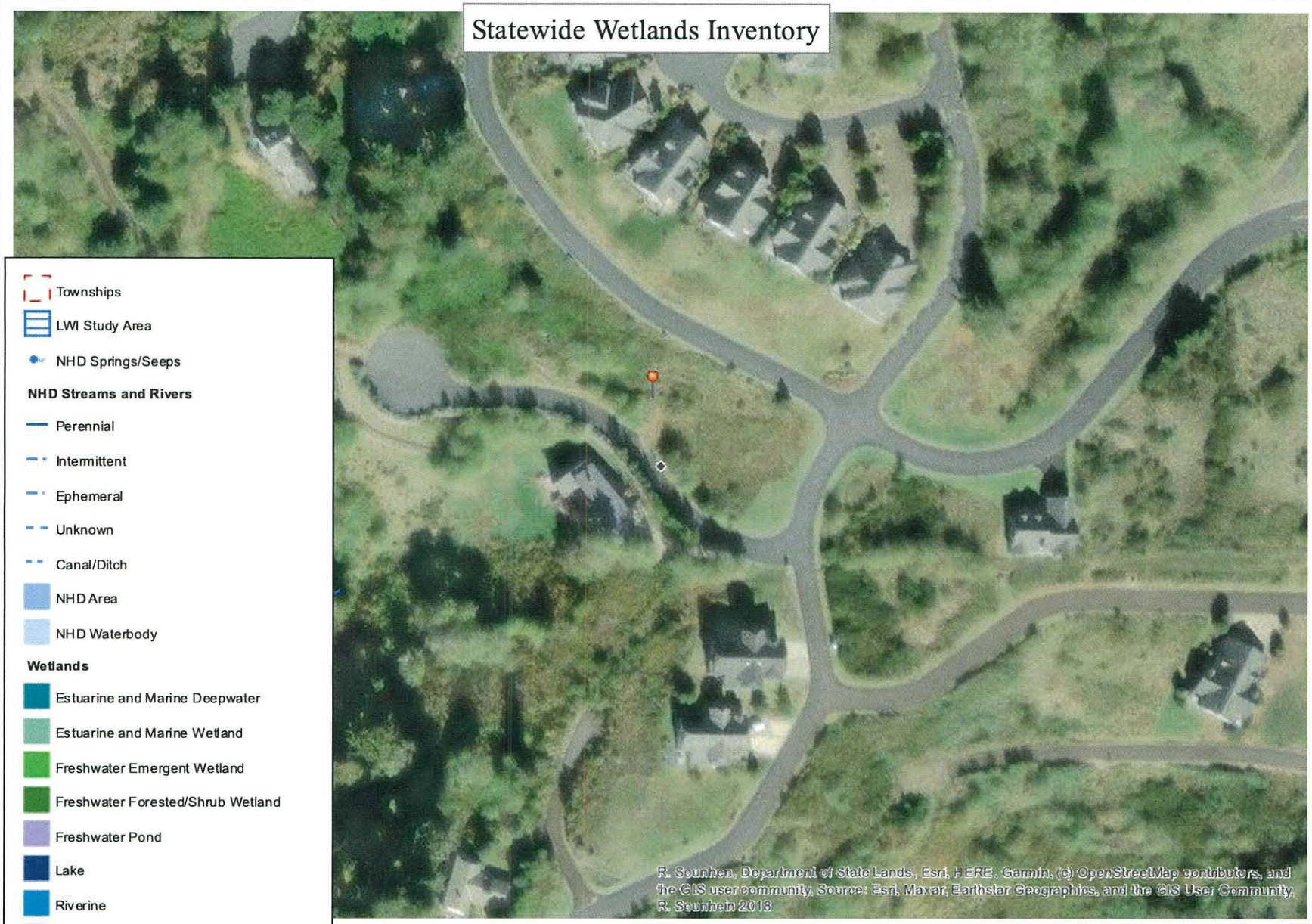
The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/16/2023 at 7:10 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Statewide Wetlands Inventory



- Townships
- LWI Study Area
- NHD Springs/Seeps

NHD Streams and Rivers

- Perennial
- Intermittent
- Ephemeral
- Unknown
- Canal/Ditch
- NHD Area
- NHD Waterbody

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine
- SWI Predominantly Hydric Soil Map Units
- SWI Agate-Winlo Soils

https://www.oregon.gov/dsl/WW/Pages/SWI.aspx

1 inch = 0.04 miles

0 0.0125 0.025 0.05 0.075 0.1 mi

The Statewide Wetlands Inventory (SWI) represents the best data available at the time this map was published and is updated as new data becomes available. In all cases, actual field conditions determine the presence, absence and boundaries of wetlands and waters (such as creeks and ponds). An onsite investigation by a wetland professional can verify actual field conditions.

N

Date: 8/16/2023

State of Oregon
Department of State Lands
775 Summer Street NE, Ste 100
Salem, OR, 97301-1279
(503) 986-5200

EXHIBIT B

Tillamook County Department of Community Development
1510-B Third Street. Tillamook, OR 97141 / Tel: 503-842-3408 Fax: 503-842-1819
www.co.tillamook.or.us

PLANNING APPLICATION

OFFICE USE ONLY
Date Stamp RECEIVED JUL 12 2023 BY: email
☐Approved ☐Denied
Received by: LT
Receipt #: 13288
Fees: 1900
Permit No: 851-23-000219-PLNG

Applicant ☑ *(Check Box if Same as Property Owner)*

Name: Phone:

Address:

City: State: Zip:

Email:

Property Owner

Name: GAUDIOSO, JENNIFER M & DONCKELS, DAMIAN M Phone: JENNIFER: 505-557-9362 DAMIAN 505-315-0102

Address: 3339 CENTRAL AVE UNIT 310

City: ALBUQUERQUE State: NM Zip: 87106

Email: jen_gaudioso@yahoo.com, damiandonckels@yahoo.com

Request: PLANNING COMMISSION APPROVAL FOR A DEVELOPMENT OF A SINGLE FAMILY HOME ON ~~SAHHALI SHORES AT NESKOWIN UNIT 3, LOT 80 WITH BUILDING SETBACKS AS DEFINED BY~~ THE PROPERTY'S ZONING ORDINANCE NESKRR IN PLACE OF THE CLUSTER ZERO-LOT LINES AS APPROVED BY THE BOARD IN 2002 FOR SAHHALI SHORES UNIT III

Type II	Type III	Type IV
☐ Farm/Forest Review	☐ Detailed Hazard Report	☐ Ordinance Amendment
☑ Conditional Use Review	☐ Conditional Use (As deemed by Director)	☐ Large-Scale Zoning Map Amendment
☐ Variance	☐ Ordinance Amendment	☐ Plan and/or Code Text Amendment
☐ Exception to Resource or Riparian Setback	☐ Map Amendment	
☐ Nonconforming Review (Major or Minor)	☐ Goal Exception	
☐ Development Permit Review for Estuary Development	☐ Nonconforming Review (As deemed by Director)	
☐ Non-farm dwelling in Farm Zone	☐ Variance (As deemed by Director)	
☐ Foredune Grading Permit Review		
☐ Neskowin Coastal Hazards Area		

Location:

Site Address: SAHHALI SHORES AT NESKOWIN UNIT 3, Lot 80

Map Number: 5S	11	13	05700
Township	Range	Section	Tax Lot(s)

Clerk's Instrument #: _____

Authorization

This permit application does not assure permit approval. The applicant and/or property owner shall be responsible for obtaining any other necessary federal, state, and local permits. The applicant verifies that the information submitted is complete, accurate, and consistent with other information submitted with this application.

Signer ID: [illegible] (Required) Signer ID: XALTUW6Y10... Damian Donckels Date

Applicant Signature Signer ID: XALTUW6Y10... Damian Donckels Date

Nathan Good Architects
205 Liberty St NE
Salem, OR 97302

July 12, 2023

Tillamook County
Community Development
Attn: Melissa Jenck
1510-B Third Street

RE: Conditional Use Request
Tax Lot: 5S1113DC05700
Address Sahhali Shores at Neskowin Unit 3 Lot - 80

Subject: Responses to TCLUO Section 6.040 Section 6.040 Conditional Use Review Criteria and TCLUO Section 3.080(3)(b) Planned Development Overlay Criteria

A. *TCLUO Section 6.040 Section 6.040 Conditional Use Review Criteria*

1. *The use is listed as a Conditional Use in the underlying zone, or in an applicable overlying zone.*

Response A.1: The proposed use is a single-family dwelling as permitted outright in the NeskRR zone. Section 3.320 (2)

2. *The use is consistent with the applicable goals and policies of the Comprehensive Plan.*

Response A.2: The proposed use is a single-family dwelling consistent with the Comprehensive Plan's applicable goals and policies.

3. *The parcel is suitable for the proposed use considering its size, shape, location, topography, existence of improvements, and natural features.*

Response A.3: The parcel's suitability for a single-family home is unaffected by the change in use from a townhome. Its size, shape, location, topography, improvements, and natural features collectively support the development of a single-family residence on the parcel.

- Size: The parcel is spacious enough to comfortably accommodate a single-family home, providing ample room for a residence with sufficient landscape space.
- Shape: The parcel's shape is suited for a single-family home. Its configuration allows for a layout and design that aligns with the requirements of a standalone dwelling.
- Location: The parcel is positioned alongside two paved streets that provide convenient access. Moreover, existing underground utilities indicate that the necessary infrastructure is readily available for a single-family home. Furthermore, the fact that it has been previously plotted and developed for a townhome reinforces its suitability for a single-family home.
- Topography: The unique topography is more practicable for the proposed single-family home as it can be tailored to the specific conditions of the land than a townhome that may require more uniformity across units and shared infrastructure.
- Existence of improvements: The parcel already benefits from existing improvements, such as utilities, which are compatible with the proposed single-family home.
- Natural features: There is an absence of mature trees, water bodies, rock formations, and other significant natural features that would inhibit the development of a single-family home.

4. *The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or prevents the use of surrounding properties for the permitted uses listed in the underlying zone.*

Response A.4: The Sahhali Shores Architectural Review Board has reviewed and approved the proposed use and building design. See attached HOA letter of approval.

5. *The proposed use will not have detrimental effect on existing solar energy systems, wind energy conversion systems or windmills.*

Response A.5: The proposed single-family use will not have a detrimental effect on existing solar energy systems, wind energy conversion systems, or windmills because there are none in the vicinity of the proposed development.

6. *The proposed use is timely, considering the adequacy of public facilities and services existing or planned for the area affected by the use.*

Response A.6: The proposed use is entirely timely and fulfilling the intended development of Sahhali Shores. The roads have been constructed, and utilities installed to facilitate the development of a home on the plot. The Home Owners Associations Architectural Review Board has given approval for the development to start construction within a 2-year period beginning on March 20, 2023.

B. TCLUO Section 3.080(3)(b) Planned Development Overlay Criteria

1. There are special physical conditions or objectives of development which the proposal will satisfy to warrant a departure from the standard ordinance requirements.

Response B.1: The proposal for a single-family home instead of the standard ordinance requirement of a townhome can be justified by several special physical conditions or development objectives. These justifications warrant a departure from the standard ordinance requirements. Here are some potential reasons:

1. Neighborhood character: The neighboring homes primarily consist of single-family homes, and the proposed development aims to maintain the area's existing character and architectural style. This can be justified by the Sahhali Shores Home Owners Association's Architectural Review Board's approval of the proposed single-family home.
2. Topography and Land Adaptation: the topography features of the parcel, such as the steep terrain, make it more suitable for a single-family home rather than a townhome. By developing the lot as a single-family home, the proposed development can adapt to the land's unique conditions specific to the parcel, ensuring proper construction and integration with the environment.
3. Given the existing single-family home on the neighboring lot intended for a zero-lot line and townhome. It would be impractical to develop a townhome given the existing conditions.

2. Resulting development will not be inconsistent with the comprehensive plan provisions or zoning objectives of the area.

Response B.2: Single-family homes are consistent with the comprehensive plan and provisions for the NeskRR Zone.

3. The plan can be completed within a reasonable period of time.

Response B.3: The construction timeline for the proposed home is estimated by the contractor to be 15 months, which aligns with the industry standard for a residence of comparable size, complexity, and location. This estimated timeframe takes into account the various factors involved in the construction process, including site preparation, construction activities, and finalizing interior finishes.

4. The streets are adequate to support the anticipated traffic and the development will not overload the streets outside the planned area.

Response B.4: The Sahhali Shores existing streets have been purposefully designed to accommodate residential development, with a focus on individual lots for single occupancy residences, which aligns with the proposed home intentions. The street layout, width, and infrastructure have been planned to cater to the needs of single-family homes, ensuring an appropriate environment for single-family dwellings.

5. Proposed utility and drainage facilities are adequate for the population densities and type of development proposed.

Response B.5: The infrastructure of Sahhali Shores has been professionally planned and constructed to accommodate both single-family and townhomes. In the case of the proposed home's lot, a STEP (Septic Tank Effluent Pump) septic system is required and this system has been specifically designed by a registered Environmental Health Specialist, ensuring that it meets the necessary standards for safe and efficient wastewater management. This involvement of a professional in the septic design process ensures that the septic system is appropriately tailored to the specific characteristics of the lot and adheres to all relevant regulations and guidelines.

6. The parcel is suitable for the proposed use, considering its size, shape, location, topography, existence of improvements, and natural features.

Response B.6: The proposed use of the parcel as a single-family home shares many similarities with the designated townhomes within the NeskRR Zone and Sahhali Shores CC&R (Covenants, Conditions, and Restrictions). The proposed home's size, shape, and location align with the requirements and setbacks specified in the NeskRR Zone and Sahhali Shores CC&R's. The dimensions of the parcel are suitable for accommodating the single-family home. Multiple geotechnical engineers have conducted geological hazard reports and determined that the parcel is suitable for home development.

7. The proposed use will not alter the character of the surrounding area in a manner which substantially limits, impairs or prevents the use of surrounding properties for the permitted uses listed in the underlying zone.

Response B.7: The Sahhali Shores Architectural Review Board has reviewed and approved the proposed use and building design. See attached HOA letter of approval.

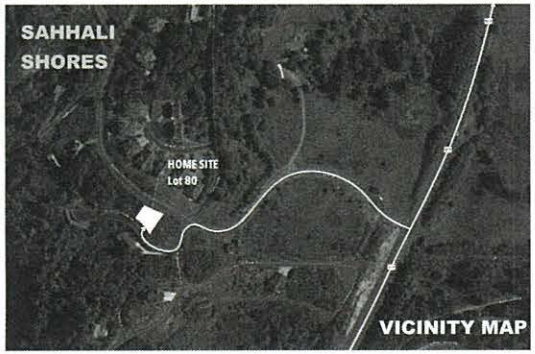
8. The proposed use is timely, considering the adequacy of public facilities and services existing or planned for the area affected by the use.

Response B.8: The proposed use is entirely timely and fulfilling the intended development of Sahhali Shores. The roads have been constructed, and utilities installed to facilitate the development of a home on the plot. The Home Owners Associations Architectural Review Board has approved for the proposed home to start construction within two years, beginning on March 20, 2023.

9. Proposed uses which are not otherwise permitted by the underlying zoning on the parcel are accessory uses within the entire development.

Response B.9: The proposed use is permitted by the underlying zone of the parcel.

SAHHALI SHORES AT NESKOWIN, LOT 80



PROJECT INFO

LEGAL DESCR	Sahhali Shores at Neskowin Unit 3 Lot - 80
MAP AND TAXLOT	5S1113DC05700
TAX ACCOUNT	409535
OR TAXLOT	2905.00S11.00W24AB--000004000
ACRES	0.17 acres
ZONING	NeskRR

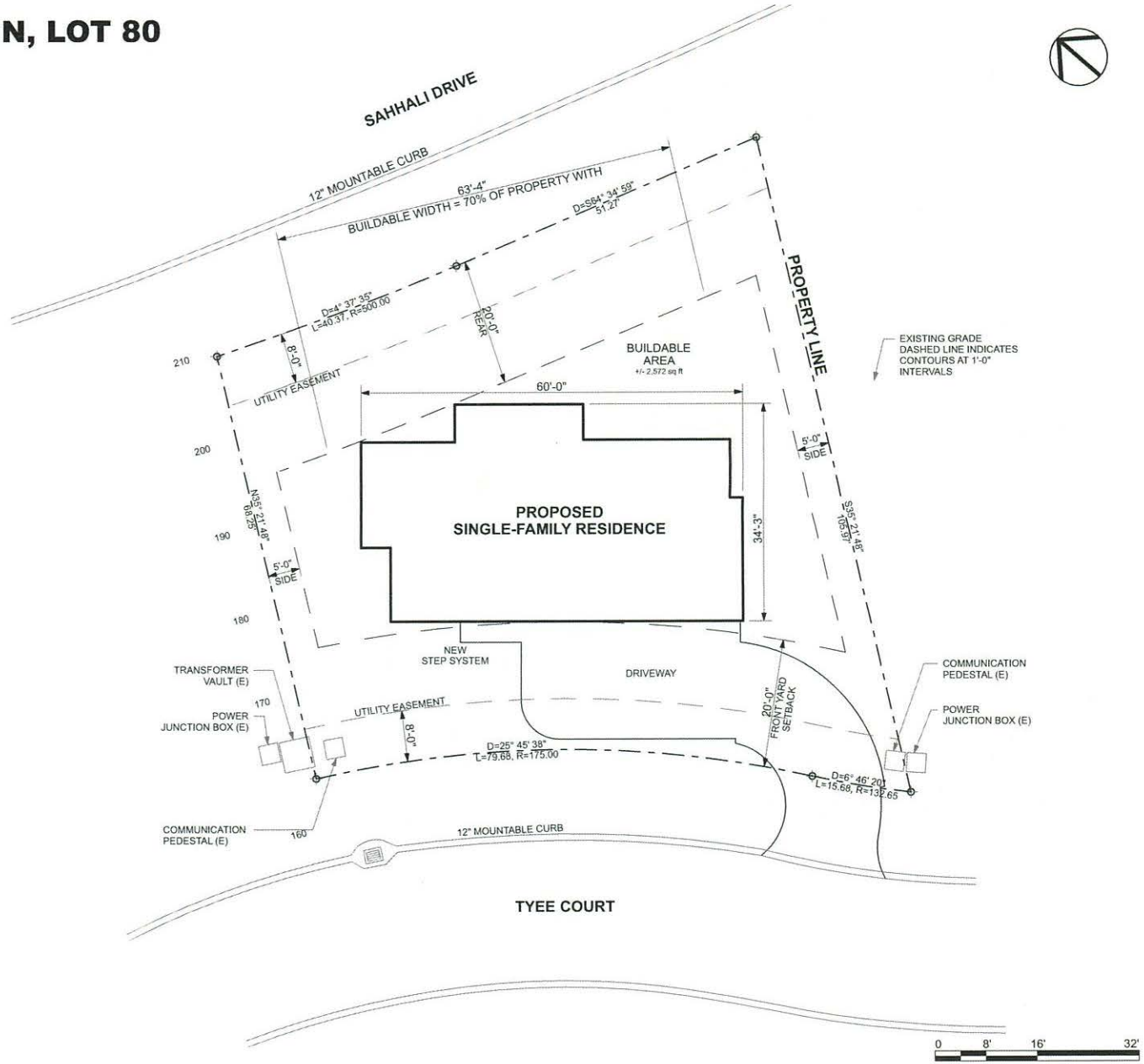
DEVELOPMENT STANDARDS

TILLAMOOK COUNTY LAND USE ORDINANCE
NESKOWIN RURAL RESIDENTIAL ZONE

BUILDING SETBACKS:
Front 20 feet
Side 5 feet,
Rear 20 feet

BUILDING HEIGHT
The maximum building height shall be 35 feet. Within the Neskowin Community Growth Boundary, building height shall be measured as the vertical distance from the existing grade at a given point to the highest surface of any building element or projection above that same point. The building height shall not exceed the maximum building height at any point.

BUILDING COVERAGE
(1) The building depth at all points shall not exceed 70% of the distance between the front and rear lot lines (measured as close to perpendicular to those lines as possible).
(2) Building width at all points shall not exceed 70% of the distance between opposite side lot lines (measured as close to perpendicular to those lines as possible).
(3) Structural elements exempted from setback requirements by other sections of the Land Use Ordinance shall be exempt from this standard.



NATHAN GOOD ARCHITECTS

SITE PLAN

GAUDIOSO-DONCKELS RESIDENCE,
SAHHALI SHORES AT NESKOWIN, LOT 80
7/12/23

Sahhali Shores at Neskowin COA
44495 Sahhali Drive
Neskowin, OR 97149
Website: www.sahhalishores.org

Jennifer Gaudioso and Damian Donkels

March 20, 2023

This letter is to notify you that the Architectural Review Board (ARB) has reviewed your application for architectural review and has approved your plans for construction as presented to the Board on March 14, 2023 of a single-family home on Lot #80. This approval is for the home, hardscape and landscape elements outlined in the set of plans submitted on March 10, 2023.

ARB approval of the following variances is also included:

1. Variance Request dated February 09, 2023 for construction of driveway retaining walls within the front setback area (CC&R Sections 9.11, 9.13), with landscape modifications to conceal the driveway structures as per the March 10, 2023 drawing set.
2. Variance Request dated March 02, 2023 for construction of home consisting of a lower garage/entry level and two stories of living space above (CC&R Section 9.3.1).
3. Variance Request dated March 10, 2023 to install a wall-mounted heat exchange unit instead of a ground-mounted unit (ARB Standard 3/6/2019).

As discussed and agreed at the March 14, 2023 ARB Review Meeting, approval of the solar energy system, as proposed, is conditioned upon the March 17, 2023 letter of understanding (attached) which addresses COA concerns over potential glare from the solar panels.

This approval is granted pursuant to the ARB's authority under the Association's governing documents to regulate the external design, appearance, and location for construction of new Living Units and to review proposed exterior changes for existing structures. The ARB has not undertaken any review of compliance with legal requirements or confirmed the accuracy of any information submitted by the owner's engineer. The submitting owner is responsible for meeting all legal or other requirements for the construction of the proposed new Living Unit and for obtaining any necessary approvals from neighboring property owners, the jurisdiction's building department, or any other approvals required by law.

Note that any external modifications or additions to the plans upon which this approval is granted must be provided to the ARB for review and approval prior to commencing work on the changes.

According to the Covenants, Conditions, & Restrictions (CC&Rs) for Sahhali Shores at Neskowin, the decision of the ARB is subject to appeal by an Interested Owner. The ARB has defined an Interested Owner as an owner of a lot withing 100 feet of the lot upon which the ARB has made a review decision. Upon notice of the approval, Interested Owners will then have a 30-day period in which to file an appeal with the COA Secretary as allowed in the CC&Rs, Section 10.5, if they disagree with the ARB decision.

Please note that this approval is not transferable and is subject to a 2-year deadline to begin construction. Failure to begin construction within 2 years of the approval date will cause the approval to expire, and you will be required to resubmit plans and a full fee. Also note that, per Section 9.3.2(a) of the CC&Rs, the exterior of the structure must be complete, including applied finishes where applicable (e.g. trim painted), within one year from the start of construction.

If you have any questions, please do not hesitate to contract myself or the COA Board of Directors. We look forward to you joining our community!

Sincerely,

Maria Veltre

Maria Veltre
Board President, Sahhali Shores at Neskowin Consolidated Owners Association
president@sahhalishores.org
917.446.1621

March 17, 2023

Architectural Review Board
Sahhali Shores

Subject: Solar Panel Agreement

Dear Board Members,

With respect to concerns over the possibility of glare from the proposed solar panels, Jen and Damian Gaudioso-Donckels agree that during the first 365 days of installed solar panels, if any glare disturbs the uphill townhouses, they will address concerns up to and including removing the offending panels as a last resort.

Sincerely,

Jennifer Gaudioso Damian Donckels

Jennifer and Damian Gaudioso-Donckels

Signature: Jennifer Gaudioso (Mar 17, 2023 13:11 MDT)
Email: jen_gaudioso@yahoo.com

Signature: Damian Donckels (Mar 17, 2023 13:12 MDT)
Email: damiandonckels@yahoo.com

Lot 80 - SOLAR PANEL UNDERSTANDING

Final Audit Report 2023-03-17

Created:	2023-03-17
By:	Forrest Good (forrest@ngapc.com)
Status:	Signed
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Document created by Forrest Good (forrest@ngapc.com)
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Signer jen_gaudioso@yahoo.com entered name at signing as Jennifer Gaudioso
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Update to a
Geologic Hazards and
Geotechnical Investigation
Tax Lot 5700, Map 5S-11W-13DC
Sahhali Drive, Neskowin
Tillamook County, Oregon

Prepared for:
Mr. Damian Donckels
3339 Central Avenue NE, #310
Albuquerque, NM 87106

Project #Y224659

November 18, 2022

H.G. Schlicker & Associates, Inc.

H.G. Schlicker & Associates, Inc.
607 Main Street, Suite 200 · Oregon City, Oregon 97045
(503) 655-8113 · FAX (503) 655-8173

Project #Y224659

November 18, 2022

To: **Mr. Damian Donckels**
3339 Central Avenue NE, #310
Albuquerque, NM 87106

Subject: **Update to a**
Geologic Hazards and
Geotechnical Investigation
Tax Lot 5700, Map 5S-11W-13DC
Sahhali Drive, Neskowin
Tillamook County, Oregon

Dear Mr. Donckels:

The accompanying report presents the results of our update to a geologic hazards and geotechnical investigation for the above subject site. The intent of this report is to address the applicable requirements set forth in Tillamook County Land Use Ordinance (TCLUO) Section 4.130, Development Requirements for Geologic Hazard Areas. The undersigned Oregon certified engineering geologist has the appropriate qualifications and experience to prepare this report and all of its contents.

After you have reviewed our report, we would be pleased to discuss the report and to answer any questions you might have.

This opportunity to be of service is sincerely appreciated. If we can be of any further assistance, please contact us.

H.G. SCHLICKER & ASSOCIATES, INC.

Adam M. Large MSc, RG, CEG
President/Principal Engineering Geologist

AML:mgb

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APPENDICES

H.G. Schlicker & Associates, Inc.
607 Main Street, Suite 200 · Oregon City, Oregon 97045
(503) 655-8113 · FAX (503) 655-8173

Project #Y224659

November 18, 2022

To: **Mr. Damian Donckels**
3339 Central Avenue NE, #310
Albuquerque, NM 87106

Subject: **Update to a**
Geologic Hazards and
Geotechnical Investigation
Tax Lot 5700, Map 5S-11W-13DC
Sahhali Drive, Neskowin
Tillamook County, Oregon

Dear Mr. Donckels:

1.0 Introduction

At your request and authorization, a representative of H.G. Schlicker and Associates, Inc. (HGSA) visited the subject site (Figures 1 and 2; Appendix A) on September 28, 2022, to complete an update to a geologic hazards and geotechnical investigation of Tax Lot 5700, Map 5S-11W-13DC, Sahhali Drive, Sahhali Shores, Neskowin Tillamook County, Oregon. It is our understanding that you are working with an architect and planning the construction of a house at the site.

This report addresses the geologic hazards and geotechnics at the site with respect to the construction of a house. The scope of our work consisted of a site visit, site observations and measurements, a review of our previous reports (HGSA #Y184144 and #Y184144B), a limited review of the geologic literature, interpretation of topographic maps, lidar, and aerial photographs, and preparation of this update report with our findings, conclusions, and recommendations.

2.0 Previous Work at the Site and Project Description

In spring 2018, we completed a geologic hazards and geotechnical investigation for the site. At that time, we explored the subsurface with test pit excavations and provided recommendations for conventional foundations for the construction of a house stepped down the hillside.

Since the time of our initial investigation, based on feedback from the design team, it was our understanding that a daylight basement-style house, accessed from Tyee Court, was proposed. The design at that time called for a tall foundation retaining wall supporting the northern slopes at the site. In the spring and summer of 2019, we completed a second geotechnical investigation, including a drilled boring and laboratory analysis, to provide geotechnical data for use in the design and construction of that retaining wall.

It is our understanding that you recently purchased the lot and are working with the architecture firm that provided the previous design work. We completed a site visit to observe the current site conditions, reviewed and compiled the contents of our past reports, and prepared this updated report.

3.0 Site Description

The site is located on a steep slope that overlooks Lake Neskowin and the Pacific Ocean to its west-southwest (Figure 1). The site consists of a 0.17-acre lot, approximately 105 feet deep, north to south, and approximately 94 feet wide, east to west (Figure 2). The lot is bounded to its west by a vacant lot, to its east by a lot with a house under construction, to its north by Sahhali Drive, and to its south by Tyee Court (Figure 2). The site is vegetated with ferns, Scotch broom, grasses, and brush. A few spruce trees are present near Tyee Court. Much of the site is now overgrown with dense brush.

Since the time of our earlier work, there does not appear to be any substantial changes to the engineering geologic conditions at the site. The surface of Sahhali Drive, along the northern portion of the site, appears to have been recently coated; during our previous site visits, we observed signs of distress in the pavement in this area (Appendix A).

4.0 Geologic Hazards Analysis

Our geologic hazards analysis is presented below.

4.1 Bedrock, Soil Types, and Structures

The site lies in an area which has been mapped as the basaltic sandstone member of the Oligocene Alsea Formation, which consists of massive to thick-bedded and trough cross-bedded grit to fine-grained concretionary sandstone with minor pebble conglomerate and siltstone (Snavely et al., 1996). The basaltic sandstone mantels undifferentiated Eocene basalt, which consists of platy basalt flows, pillow lavas, lapilli tuff, and mudflow breccia with blocks of hard basalt. Across Sahhali Drive, to the north of the site, basalt is exposed in the road cut (Appendix A).

Structural deformation and faulting along the Oregon Coast is dominated by the Cascadia Subduction zone (CSZ) which is a convergent plate boundary extending for approximately 680 miles from northern Vancouver Island to northern California. This convergent plate boundary is defined by the subduction of the Juan de Fuca plate beneath the North America Plate and forms an offshore north-south trench approximately 60 miles west of the Oregon coast shoreline. A resulting deformation front consisting of north-south oriented reverse faults is present along the western edge of an accretionary wedge east of the trench, and a zone of margin-oblique folding and faulting extends from the trench to the Oregon Coast (Geomatrix, 1995).

A west-trending fault has been mapped approximately 0.5 feet north of the site, and a southwest-trending fault is mapped approximately 0.25 feet south of the site. These two faults intersect approximately 1.2 miles east of the site (Snavely et al., 1996). This faults cut Tertiary units with no evidence of recent movement.

The nearest mapped potentially active fault is the Happy Camp Fault (formerly the Netarts Bay fault), which lies at the north end of Netarts Bay, approximately 21 miles north of the site (Geomatrix, 1995). This fault is a west-northwest trending, high angle reverse fault which cuts Miocene basaltic and Pleistocene channel deposits. This fault is believed to have been active approximately 125,000 years ago; however, it does not appear to cut 80,000-year-old marine terrace deposits, which suggests that the fault has not been active for at least 80,000 years (Geomatrix, 1995).

Other mapped potentially active faults are located in the Tillamook Bay fault zone, approximately 29 miles north of the site (Personius et al., 2003). The Tillamook Bay fault zone is a major northwest-striking fault that offsets the Eocene Tillamook Volcanics on the west flank of the Coast Range. No displacements in Quaternary deposits have been documented, but the fault zone parallels the mountain front that controls the northeastern margin of Tillamook Bay and thus has geomorphic expression consistent with Quaternary displacement (Personius et al., 2003).

Previous Subsurface investigation

During our May 21, 2018, site visit, we explored the subsurface by excavating four test pits using a Link-Belt 2650 CR trackhoe. Soils encountered in the test pits were logged by a geologist from our office and visually classified according to the Unified Soil Classification System (USCS). Approximate location of the test pits are shown on Figures 3 and 4. A detailed test pit log is provided in Appendix B of this report.

Excavations generally encountered approximately 2 feet of organic-rich silt, overlying medium to coarse-grained sandy silt and cobble-sized fragments of highly weathered basaltic sandstone.

At the time of our July 1, 2019, site visit, we completed additional subsurface exploration by advancing one mud rotary drilled boring to a depth of approximately 50 feet with a GeoProbe 7822DT tracked drill rig. Sampling was completed by obtaining and observing cuttings during drilling and observing materials recovered in split spoon samples from Standard Penetration Tests (SPTs) conducted at selected depth intervals to obtain in situ soil strength data based on penetration resistance (blow counts or "N" values). The borehole was logged by a geologist from our office who visually classified the soils encountered according to the Unified Soil Classification System (USCS). A detailed boring log is provided in Appendix C of this report. The approximate location of the boring is shown on Figures 3 and 4.

The boring generally encountered approximately 5 feet of brown, soft, sandy silt fill, disturbed soil, and debris underlain by approximately 7 feet of loose silty sand, underlain by slightly to intensely weathered, soft to moderately hard, fractured, friable basaltic sandstone extending to the maximum depth explored of 51.5 feet. The weathering and strength of the basaltic sandstone varied with depth based on the penetration resistance as measured with the SPTs (Appendix C). Free groundwater was not encountered in the boring.

Previous Laboratory Analysis

Three Unconfined Compression Strength of Soil (ASTM D2166) tests were attempted on select soil samples collected from the boring to assist in determining the engineering characteristics of the soils. Laboratory test results are presented in Appendix D of this report.

Unit weight (dry density) ranged from 97.3 to 110.0 pounds per cubic foot (pcf). Samples analyzed for unit weight content were collected from the boring from 15, 20, and 25 feet below the ground surface (bgs).

Two out of the three samples submitted, collected at approximately 20 feet and 25 feet bgs, were sufficiently competent for unconfined compression testing; the third sample, from a depth of 15 feet, could not be tested. Laboratory test results indicate that the soil samples tested from 20 and 25 feet bgs have an ultimate unconfined compressive strength of approximately 1,020 pounds per square foot (psf) and approximately 1,140 pounds per square foot (psf), respectively.

4.2 Slopes

As discussed above, the eastern areas of the site generally slope at approximately 20 degrees. Toward the west, the site slopes at approximately 35 degrees (Figures 3 and 4).

The northern part of the site is approximately 40 to 45 feet higher in elevation than the southern part.

4.3 Orientation of Bedding Planes in Relation to the Dip of the Surface Slope

We were not able to obtain bedding orientations from the exposures at the site. However, basaltic sandstone exposed in a road cut at the end of Whale Point Drive, approximately 600 feet northwest of the site, exposed bedding planes that dip down toward the west from 5 to 15 degrees. The western part of the Sahhali Shores area generally slopes down to the west, which may be associated with the dip of the basaltic Alsea Formation. The steeper sloping bluff along the west of the site, formed by ancient ocean wave erosion, and the dip of the slope do not appear to be directly associated with the regional dip of the underlying rock units.

Based on our review of lidar, there are a series of ridges in the Sahhali Shores area, which extend west beyond the main bluff line forming small headlands. These ridges appear to be associated with a series of northeast-southwest trending lineaments through Sahhali Shores. These lineaments may be associated with lava flow patterns and structures associated with the Eocene basalts which underlie the basaltic sandstone at the site, or may be associated with unmapped faults.

4.4 Site Surface Water Drainage Patterns

We observed no streams or drainage channels at the site. Surface water drainage generally flows across the site to the south-southwest.

4.5 Slope Stability and Erosion

The site slopes down toward the south from 20 to approximately 35 degrees, with localized steeper areas and consists of sandy silt with basaltic sandstone fragments underlain by basalt rock. The southern and eastern portions site have been subject to past grading to prepare the site for drill rig access in 2019. During our recent site visit, dense brush at the site made ground surface observations difficult. However, some indications of more recent grading activities and disturbances were present along the eastern portion of the site.

While conducting previous fieldwork, we observed some signs of ground distress along Sahhali Drive. There were loose basalt fragments and indications of poorly controlled fill between the southern side of Sahhali Drive and the northern property line. Signs of minor ground distress were previously observed along Sahhali Drive adjacent to the site, including patched cracks in the road, gaps between the asphalt road surface and the curb, and a hole indicating animal activity.

The site is in an area of moderate to high landslide susceptibility, based on the DOGAMI methodology (Burns, Mickelson, and Madin, 2016).

More recent detailed landslide susceptibility mapping by Calhoun, Burns and Franczyk (2020) identifies the site as having moderate susceptibility to deep-seated landslides (greater than 15 feet below the ground surface). The site is mapped as having a moderate to high susceptibility to shallow landslides (less than 15 feet below the ground surface). The site lies outside of lands mapped within a potential rapidly moving landslide hazard (Hofmeister et al., 2002).

Due to the slopes at the site and the presence of fine-grained soils, stormwater erosion can occur if not mitigated, particularly in areas that have been cleared or graded.

4.6 Regional Seismic Hazards

Abundant evidence indicates that a series of geologically recent large earthquakes related to the Cascadia Subduction Zone have occurred along the coastline of the Pacific Northwest. Evidence suggests that more than 40 great earthquakes of magnitude 8 and larger have struck western Oregon during the last 10,000 years. The calculated odds that a Cascadia earthquake will occur in the next 50 years range from 7–15 percent for a great earthquake affecting the entire Pacific Northwest, and about a 37 percent chance that the southern end of the Cascadia Subduction Zone will produce a major earthquake in the next 50 years (OSSPAC, 2013; OSU News and Research Communications, 2010; Goldfinger et al., 2012). Evidence suggests the last major earthquake occurred on January 26, 1700 and may have been of magnitude 8.9 to 9.0 (Clague et al., 2000).

There is now increasing recognition that great earthquakes do not necessarily result in a complete rupture along the full 1,200 km fault length of the Cascadia subduction zone. Evidence in the paleorecords indicates that partial ruptures of the plate boundary have occurred due to smaller earthquakes with moment magnitudes (Mw) < 9 (Witter et al., 2003; Kelsey et al., 2005). These partial segment ruptures appear to occur more frequently on the southern Oregon coast, as determined from paleotsunami studies. Furthermore, the records have documented that local tsunamis from Cascadia earthquakes recur in clusters (~250–400 years) followed by gaps of 700–1,300 years, with the highest tsunamis associated with earthquakes occurring at the beginning and end of a cluster (Allan et al., 2015).

These major earthquake events were accompanied by widespread subsidence of a few centimeters to 1–2 meters (Leonard et al., 2004). Tsunamis appear to have been associated with many of these earthquakes. In addition, settlement, liquefaction, and landsliding of some earth materials are believed to be commonly associated with these seismic events.

Other earthquakes related to shallow crustal movements or earthquakes related to the Juan de Fuca plate have the potential to generate magnitude 6.0 to 7.5 earthquakes. The recurrence interval for these types of earthquakes is difficult to determine from present

data but estimates of 100 to 200 years have been given in the literature (Rogers et al., 1996).

The expected strength of shaking to occur at the site during an earthquake in a 500-year period has been mapped as very strong (DOGAMI Oregon HazVu website, accessed November 2022). "Very Strong" is the third-highest level of a six-level gradation from "Light" to "Violent" in this mapping system

4.7 Flooding Hazards

Based on the 2018 Flood Insurance Rate Map (FIRM Panel #41057C0865F), the site lies in Zone X (outside the 0.2% annual chance floodplain). We observed no streams or springs at or near the site that could cause flooding at the site.

Based on Oregon Department of Geology and Mineral Industries mapping (DOGAMI, 2012), the site lies outside the tsunami inundation zone resulting from a 9.1 and smaller magnitude Cascadia Subduction Zone (CSZ) earthquake. The 2012 DOGAMI mapping is based upon five computer-modeled scenarios for shoreline tsunami inundation caused by potential CSZ earthquake events ranging in magnitude from approximately 8.7 to 9.1. The January 1700 earthquake event has been rated as an approximate 8.9 magnitude in DOGAMI's methodology. Other earthquake source zones can also generate tsunamis.

4.8 Climate Change

According to most of the recent scientific studies, the Earth's climate is changing as the result of human activities which are altering the chemical composition of the atmosphere through the buildup of greenhouse gases, primarily carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons (EPA, 1998). Although there are uncertainties about exactly how the Earth's climate will respond to enhanced concentrations of greenhouse gases, scientific observations indicate that detectable changes are underway (EPA, 1998; Church and White, 2006). Global sea level rise, caused by melting polar ice caps and ocean thermal expansion, could lead to flooding of low-lying coastal property, loss of coastal wetlands, erosion of beaches and bluffs, and saltwater contamination of fresh groundwater. It can also lead to increased rainfall, resulting in an increase in landslide occurrence.

5.0 Development Standards

The main engineering geologic concerns at the site are:

1. We have observed signs of ground distress adjacent to the northern portion of the site, indicating possible slope instability of the fill at and near the road.

2. The presence of several feet of loose, silty soils, which will not be suitable for foundations, is underlain by highly weathered basaltic sandstone and medium to coarse-grained sandy silt.

3. Uncontrolled fills up to several feet thick are present on the northern part of the site, along the south side of Sahhali Drive.

4. Foundations will need to be footings stepped up the slope, grade beams supported on deep foundations such as augered pile, or daylight basement type design.

5. There is an inherent regional risk of earthquakes along the Oregon Coast, which could cause harm and damage structures. Existing ancient and young landslides can also be mobilized as a result of earthquake events. Earthquake events can also cause new landslides. The site lies outside a mapped tsunami inundation hazard zone. However, a tsunami impacting the Neskowin area could cause harm, loss of life, and damage to structures. These risks must be accepted by the owner, future owners, developers, and residents of the site.

Our recommended development standards are presented below.

5.1 Development Density

It is our understanding that only one single-family residence will be located at the site.

5.2 Locations for Structures and Roads – Safest Site

Development of this property requires mitigation for potential landsliding and steep slopes, which will likely include drainage and waterproofing of the building envelope, construction of retaining walls, and grading. Stabilization of slopes above and below the proposed home may also be required.

A stepped foundation design would be most appropriate for the site. A daylight basement design may require both freestanding and integrated foundation retaining walls. A daylight basement design will also require a formal grading plan prepared by the project's civil engineer showing an estimate of the depths and extent of all proposed excavation and fill work and temporary and permanent shoring (TCLUO Section 3.530(5)(e)(B)). A topographic survey completed by an Oregon licensed surveyor may be required to complete this grading plan.

5.3 Grading Practices

We recommend the following:

5.3.1 Site Preparation

An HGSA representative shall observe the footing locations and foundation excavations prior to placing fill, forming and/or pouring of concrete.

Building loads may be supported on individual and continuous spread footings bearing in undisturbed, native, non-organic, firm soils, basaltic sandstone rock, or properly designed and compacted structural fill placed on these materials. All footing areas should be stripped of all organic soils, organic debris, and any existing fills. We anticipate that non-organic, firm soils and/or basaltic sandstone will be encountered at depths of approximately 2 to 7 feet; however, depths may vary substantially, which will necessitate HGSA's professional site observations during excavation for the foundations. Care should be taken during excavation so that materials exposed in the excavation are not disturbed or softened. Protection of footing areas from deterioration may be necessary and can be accomplished by placing 3 to 4 inches of well compacted crushed rock aggregate in footing and slab areas.

Any tree stumps, including the root systems, shall be removed from beneath footing, slab, and pavement areas, and the resulting holes backfilled with compacted structural backfill placed in lifts not exceeding 8 inches and compacted to a dry density of at least 95 percent of the Modified Proctor maximum dry density (ASTM D1557).

All test pits in footing, slab, and driveway areas should be excavated to their full depth and replaced with structural fill per the recommendations provided herein. The approximate location of the test pits are shown on Figures 3 and 4.

Silty soils at the site should be easily excavated using standard excavating equipment, such as backhoes or trackhoes. The underlying basaltic sandstone can be hard, and specialized equipment such as large trackhoes, rock hammers, or jackhammers will be required for excavation once the sandstone is encountered.

5.3.2 Cut Slopes and Fills

Temporary unsupported cut and fill slopes less than 9 feet in height shall be sloped no steeper than 1 horizontal to 1 vertical (1H:1V). If temporary slopes greater than 9 feet high are desired, or if water seepage is encountered in cuts, our firm shall be contacted to provide additional recommendations. Temporary cuts in excess of 5 feet high and steeper than 1H:1V will likely require appropriate shoring to provide for worker safety, per OSHA regulations. Temporary cuts shall be protected from

inclement weather by covering them with plastic sheeting to help prevent erosion and failure.

If the cut slope recommendations provided herein cannot be achieved due to construction and/or property line constraints, temporary or permanent retention of cut slopes may be required, as determined by a representative of HGSA.

Permanent unsupported cut and fill slopes shall be constructed no steeper than 2 horizontal to 1 vertical (2H:1V). Fill slopes steeper than 2H:1V shall be mechanically reinforced using geogrids, or other suitable products as approved by HGSA. Areas that slope steeper than 5H:1V and are to receive fill shall be benched. Benches shall be cut into native, non-organic, firm soil. The lowest bench shall be keyed a minimum of 2 feet into native, firm soil, and be a minimum of 6 feet wide.

TEMPORARY AND PERMANENT CUTS	
Temporary Cuts	1H:1V (maximum) [a]
Permanent Cuts	2H:1V (maximum) [a]
[a] All cuts greater than 9 feet high, or cuts, where water seepage is encountered, shall be approved by a representative of H.G. Schlicker & Associates, Inc.	

Structural fills supporting building or driveway loads should consist of granular material, free of organics and deleterious materials, and contain no particles greater than 1 inch in diameter so that nuclear methods (ASTM D2922 &ASTM D3017) can be easily used for field density testing. Fill should contain less than 5% of material passing the 200 mesh sieve based on the minus ¾ inch fraction and a washed sieve analysis. Structural fill should be placed in lifts not exceeding 8 inches and compacted to a minimum of 95% of the maximum dry density as determined by ASTM D1557. All areas to receive fill should be stripped of all organic soils, organic debris and existing fill and to a depth approved by a representative of HGSA.

Proper test frequency and earthwork documentation usually requires daily observation during stripping, rough grading, and placement of structural fill. Field density testing should generally conform to ASTM D2922 and D3017, or D1556. To minimize the number of field and laboratory tests, fill materials should be from a single source and of a consistent character. Structural fill should be approved and periodically observed by HGSA and tested by a qualified testing firm. Test results will need to be reviewed and approved by HGSA. We recommend that one density test be performed for at least every 18 inches of fill placed and every 200 cubic yards, whichever requires more testing. Because testing is performed on an on-call

basis, we recommend that the earthwork contractor be held contractually responsible for proper test scheduling.

STRUCTURAL FILL	
Compaction Requirements	A minimum of 95% of ASTM D1557, compacted in 8-inch lifts maximum, at or near the optimum moisture content.
Benching Requirements [a]	Slopes steeper than 5H:1V that are to receive fill should be benched. Fills should not be placed along slopes steeper than 3H:1V, unless approved by H.G. Schlicker & Associates, Inc.
[a] Benches should be cut into native, non-organic, firm soils. Benches should be a minimum of 6 feet wide with side cuts no steeper than 1H:1V and no higher than 6 feet. The lowest bench should be keyed in a minimum of 2 feet into native, non-organic, firm soils.	

5.3.3 Unanticipated Conditions

Unanticipated subsurface conditions are commonly encountered during site excavation and grading, especially in coastal and hillside areas. Therefore, we should observe foundation excavations prior to placing fill, forming and/or pouring concrete to assure that suitable bearing materials have been reached. At the time of our observations, we may recommend changes to foundation specifications or additional embedment depths if suitable bearing materials have not been reached. There will be additional costs for this service.

5.4 Vegetation Removal and Re-Vegetation Practices

Vegetation should be removed only as necessary, and exposed areas should be replanted following construction. Disturbed ground surfaces exposed during the wet season (November 1 through April 30) should be temporarily planted with grasses or protected with erosion control blankets or hydromulch.

Temporary sediment fences should be installed downslope of any disturbed areas of the site until permanent vegetation cover can be established (Figure 5).

Exposed sloping areas steeper than 3 horizontal to 1 vertical (3H:1V) should be protected with a straw erosion control blanket (North American Green S150 or equivalent) to provide erosion protection until permanent vegetation can be established. Erosion control blankets should be installed as per the manufacturer's recommendations.

5.5 Foundation Recommendations

Conventional Shallow Spread Footings

1. Building loads may be supported on continuous spread footings bearing in undisturbed, native, hard, basaltic sandstone or properly designed and compacted granular fill placed on the sandstone. All footing areas should be stripped of all organic and loose soils, debris and any existing fills. We anticipate that basaltic sandstone will be encountered at depths of 2 to 7 feet. However, firm silty soils are also suitable for foundation support based on the observation and approval by a representative of HGSA.

2. Footings bearing on undisturbed, hard basaltic sandstone or properly placed and compacted structural fill placed on the sandstone may be designed for an allowable dead plus live load bearing capacity of 3,000 pounds per square foot, or 1,500 psf on firm soil, with an increase of one-third allowed for short term wind or seismic loads.

ALLOWABLE SOIL BEARING CAPACITIES	
Allowable Dead Plus Live Load Bearing Capacity [a]	3,000 psf (hard sandstone) 1,500 psf (firm soil)
Passive Resistance	400 psf/ft embedment depth (hard sandstone) 200 psf/ft embedment depth (firm soil)
Lateral Sliding Coefficient	0.40 (hard sandstone) 0.30 (firm soil)
[a] Allowable bearing capacity may be increased by one-third for short term wind or seismic loads.	

An elevated floor and crawlspace, stepped up the hillside, or a daylight basement design would be appropriate for the site. For conventional light-frame construction*, our recommended minimum widths and embedment depths for continuous footings are as follows:

MINIMUM FOOTING WIDTHS & EMBEDMENT DEPTHS			
Number of Stories	One	Two	Three
Minimum Footing Width	18 inches	18 inches	23 inches
Minimum Exterior Footing Embedment Depth [a]	18 inches	20 inches	24 inches
Minimum Interior Footing Embedment Depth [b]	6 inches	6 inches	6 inches

[a] If foundations will be placed along or immediately adjacent to slopes steeper than 3H:1V, foundation embedments will need to be a minimum of 24 inches, as approved by a representative of our firm.

[b] Interior footings shall be embedded a minimum of 6 inches below the lowest adjacent finished grade, or as otherwise recommended by our firm. In general, interior footings placed on sloping or benched ground shall be embedded or set back from cut slopes in such a manner as to provide a minimum horizontal distance between the foundation component and face of the slope of one foot per every foot of elevation change.

*Please contact us for additional recommendations if brick veneer, hollow concrete masonry, or solid concrete or masonry wall construction is incorporated in the design of the house.

Isolated footings should meet Section R403.1.7 of the 2021 Oregon Residential Specialty Code (ORSC) requirements.

Deck footings should meet or exceed the minimum sizes set forth in Table R507.3.1 of the 2021 ORSC.

5.6 Retaining Wall Recommendations

For static conditions, freestanding retaining walls should be designed for a lateral active earth pressure expressed as an equivalent fluid weight (EFW) of 35 pounds per cubic foot, assuming level backfill. An EFW of 45 pounds per cubic foot should be used assuming sloping backfill of 2H:1V.

For static conditions, at-rest retaining walls should be designed for a lateral static, at-rest pressure expressed as an equivalent fluid weight EFW of 85 pounds per cubic foot, assuming sloping backfill of 2H:1V. An EFW of 60 pounds per cubic foot should be used assuming level backfill. Walls need to be fully drained to prevent the build-up of hydrostatic pressures.

RETAINING WALL EARTH PRESSURE PARAMETERS	
Static Case, Active Wall (level backfill/grades)	35 pcf [a]
Static Case, Active Wall (2H:1V backfill/grades)	45 pcf [a]
Static Case, At-Rest Wall (level backfill/grades)	60 pcf [a]
Static Case, At-Rest Wall (2H:1V backfill/grades)	85 pcf [a]
Seismic Loading (level backfill/grades)	12.4 pcf $(H)^2$ [b]

[a] Earth pressure expressed as an equivalent fluid weight (EFW).

[b] Seismic loading expressed as a pseudostatic force, where H is the height of the wall in feet. The location of the pseudostatic force can be assumed to act at a distance of 0.6H above the base of the wall.

The EFWs provided herein assume static conditions and no surcharge loads from vehicles or structures. If surcharge loads will be applied to the retaining walls, forces on the walls resulting from these loads will need to be added to the pressures given herein.

For seismic loading, a unit pseudostatic force equal to 12.4 pcf $(H)^2$, where H is the height of the wall in feet, should be added to the static lateral earth pressures. The location of the pseudostatic force can be assumed to act at a distance of 0.6H above the base of the wall.

Free-draining granular backfill for walls should be placed in 8-inch horizontal lifts and machine compacted to 95 percent of the maximum dry density as determined by ASTM D1557. Compaction within 2 feet of the wall should be accomplished with lightweight hand-operated compaction equipment to avoid applying additional lateral pressure on the walls. Drainage of the retaining wall should consist of slotted drains placed at the base of the wall on the backfilled side and backfilled with free-draining crushed rock (less than 5% passing the 200 mesh sieve using a washed sieve method) protected by non-woven filter fabric (Mirafi® 140N, or equivalent) placed between the native soil and the backfill. Filter fabric protected free-draining crushed rock should extend to within 2 feet of the ground surface behind the wall, and the filter fabric should be overlapped at the top per the manufacturer's recommendations. All walls should be fully drained to prevent the build-up of hydrostatic pressures. All retaining walls should have a minimum of 2 feet of embedment at the toe or be designed without passive resistance. The EFWs provided above assume that free-draining material will be used for the retaining wall backfill.

Fills supporting retaining wall loads should be limited to a thin layer of well-compacted granular material to level footing areas, be free of organics and deleterious materials, and contain no particles greater than 1 inch in diameter.

Pile Supported Retaining Walls

Lateral loads may be resisted by passive pressures acting on embedded footings, micropile anchors, or the use of batter pile. Batter pile and micropile anchors may be designed using the grout-to-ground bond strength values presented herein.

General guidelines for grout-to-ground bond strengths for a gravity grouted micropile system are provided in Table 5-21 of the Federal Highway Administration National Highway Institutes Micropile Design and Construction Reference Manual. Based on the subsurface materials encountered in our boring and the laboratory test results, we recommend using conservative bond ultimate strength values of 10 psi (1,440 psf) for the upper 12 feet of silty sand and fill and 22 psi (3,168 psf) for the underlying weathered basaltic sandstone (Sabatini et al., 2005). Pile spacing and embedment depths can vary with the size and type of the pile utilized. The project's structural engineer shall design the pile. HGSA should work with the structural engineer, pile installation contractor, and designer during the design process. Prior to construction, the pile installation contractor should provide a work plan for HGSA's review. We recommend using a factor of safety of 2 for the micropile in compression and a factor of safety of 3 for the micropile in tension.

5.7 Slab-On-Ground Construction

All areas beneath slabs for garages and driveways should be excavated a minimum of 8 inches into native, non-organic, firm soil or basaltic sandstone. The slab excavation should then be backfilled with a minimum of 8 inches of ¾ inch minus, clean, free-draining, crushed rock placed in 8-inch lifts maximum, which are compacted to 95 percent of the Modified Proctor (ASTM D1557).

SLABS-ON-GROUND	
Minimum thickness of 3/4 inch minus crushed rock beneath slabs	8 inches
Compaction Requirements	95% ASTM D1557, compacted in 8 inch lifts maximum.

A representative of H.G. Schlicker & Associates should approve the condition of the base of the excavation prior to placing structural fill, and/or forming and pouring concrete (Appendix E). Reinforcing of the slab is recommended and the slab should be fully waterproofed in accordance with structural design considerations. An underslab drainage system is recommended for all below-grade slabs, such as basement slabs, as per the architect's recommendations.

5.8 Drainage and Stormwater Management

Surface water should be diverted from building foundations and walls to approved disposal points by grading the ground surface to slope away a minimum of 2 percent for at least 6 feet towards a suitable gravity outlet to prevent ponding near the structures. Permanent subsurface drainage of the building perimeter using footing drains is recommended.

Footing drains should be installed adjacent to the perimeter footings and sloped a minimum of 2 percent to a gravity outlet. The perimeter drain excavation should be constructed in a manner which prevents undermining of foundation or slab components or any disturbance to supporting soils. A suitable perimeter footing drain system would consist of 4-inch diameter, perforated PVC pipe (typical) embedded below and adjacent to the bottom of footings and backfilled with approved drain rock. The type of pipe to be utilized may depend on building agency requirements and should be verified prior to construction. HGSA also recommends lining the drainage trench excavation with a non-woven geotextile filter, such as Mirafi® 140N, or equivalent, to increase the life of the footing drain and prevent the drain from being clogged by soil.

In addition to the perimeter foundation drain system, drainage of any crawlspace areas is required. Each crawlspace should be graded to a low point for installation of a crawlspace drain that is tied into the perimeter footing drain and tightlined to an approved disposal point. All crawlspaces will need to be vented as per ORSC requirements.

All roof drains should be collected and tightlined in a separate system independent of the footing drains, or an approved backflow prevention device shall be used. All roof and footing drains should be discharged to an approved disposal point. If water will be discharged to the ground surface, we recommend that energy dissipaters, such as splash blocks or a rock apron, be utilized at all pipe outfall locations. Water should not be discharged to slopes steeper than 3H:1V unless approved by our firm. Water collected on the site should not be concentrated and discharged to adjacent properties.

5.9 Groundwater

Water seepage may be encountered in excavations during grading, particularly during wet weather conditions. If water seepage is encountered, dewatering of excavations should be the responsibility of the contractor.

5.10 Erosion Control

As detailed above (Section 5.4), vegetation should be removed only as necessary and exposed areas should be replanted following construction. Disturbed ground surfaces exposed during the wet season (November 1 through April 30) should be temporarily planted with grasses or protected with erosion control blankets.

A temporary sediment fence should be installed downslope of any disturbed areas of the site until permanent vegetation cover can be established (Figure 5).

As recommended above, exposed sloping areas steeper than 3 horizontal to 1 vertical (3H:1V) should be protected with a straw erosion control blanket (North American Green S150 or equivalent) to provide erosion protection until permanent vegetation can be established. Erosion control blankets should be installed as per the manufacturer's recommendations.

Should wet weather grading be anticipated, the use of clean, well-graded granular fill containing less than 5 percent passing the No. 200 sieve is recommended for soil stabilization. The thickness of applied granular fill should be sufficient to stabilize the subgrade soils.

5.11 Flooding Considerations

Flooding considerations are discussed in Section 4.7.

5.12 Seismic Considerations

The structure and all structural elements should be designed to meet current Oregon Residential Specialty Code (ORSC) seismic requirements. Based on our knowledge of subsurface conditions at the site and our analysis using the guidelines recommended in the ORSC, the structure should be designed to meet the following seismic parameters:

SEISMIC DESIGN PARAMETERS	
Site Class	D
Seismic Design Category	D_2
Mapped Spectral Response Acceleration for Short Periods	S_S = 1.287g
Site Coefficients	F_a = 1.200 F_v = 1.700
Design Spectral Response Acceleration at Short Periods	S_{DS} = 1.03

5.13 Plan Review and Site Observations

We should be provided the opportunity to review all site development, foundation, drainage, and grading plans prior to construction to assure conformance with the intent of our recommendations (Appendix E). The plans, details and specifications should clearly show that the above recommendations have been implemented into the design.

We should observe all footing and slab excavations prior to placing structural fill, and/or forming and pouring concrete to assure that suitable bearing materials have been reached

(Appendix E). Please provide us with at least five (5) days notice prior to any site observations. There will be additional costs for these services.

6.0 Additional Services

Design Review

Prior to construction, we should be provided the opportunity to review all site development, foundation, drainage, erosion control and grading plans to assure conformance with the intent of our recommendations (Appendix E). HGSA should also be provided with a foundation construction work plan for review prior to construction. All site plans, details and specifications should clearly show that the above recommendations have been implemented into the design.

This report pertains to a specific site and development. It is not applicable to adjacent sites nor is it valid for types of development other than that to which it refers. Any variation from the site or development plans necessitates a geotechnical review in order to determine the validity of the design concepts evolved herein.

HGSA's review of final plans and specifications is necessary to determine whether the recommendations detailed in this report and our earlier report for the site have been properly interpreted and incorporated in the design and construction documents. At the completion of our review, we will issue a letter of conformance to the client for the plans and specifications.

Construction Monitoring

A representative of HGSA should observe footing, grade beam and slab excavations prior to placing structural fill, forming and pouring concrete to assure that suitable bearing materials have been reached (Appendix E). At the time of our observations, we may recommend additional excavation if suitable bearing materials have not been reached. If used in the design, we should also observe pile installation operations (Appendix E). Please provide us with at least 5 (five) days' notice prior to any needed site observations. There will be additional costs for these services.

Because of the judgmental character of geotechnics, as well as the potential for adverse circumstances arising from construction activity, observations during site preparation, excavation, and construction will need to be carried out by a representative of HGSA or our designate. These observations may then serve as a basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein to the benefit of the project.

Field observations become increasingly important should earthwork proceed during adverse weather conditions. Oregon Structural Specialty Code requires full-time inspection of deep foundation construction by a qualified professional.

7.0 Limitations

The Oregon Coast is a dynamic environment with inherent, unavoidable risks to development. Landsliding, erosion, tsunamis, storms, earthquakes and other natural events can cause severe impacts to structures built within this environment and can be detrimental to the health and welfare of those who choose to place themselves within this environment. The client is warned that, although this report is intended to identify the geologic hazards causing these risks, the scientific and engineering communities' knowledge and understanding of geologic hazards processes is not complete. This report pertains to the subject site only and is not applicable to adjacent sites nor is it valid for types of development other than that to which it refers. Geologic conditions including materials, processes, and rates can change with time and therefore a review of the site and this report may be necessary as time passes to assure its accuracy and adequacy.

The subsurface information depicts generalized subsurface conditions only at these specific locations and at the particular time the subsurface exploration was completed. Soil and groundwater conditions at other locations may differ from the conditions at these locations.

Our investigation was based on geological reconnaissance and a limited review of published information. The information presented in this report is believed to be representative of the site. The conclusions herein are professional opinions derived in accordance with current standards of professional practice, budget and time constraints. No warranty is expressed or implied. The performance of this site during a seismic event has not been evaluated. If you would like us to do so, please contact us. This report may only be copied in its entirety.

8.0 Disclosure

H.G. Schlicker & Associates, Inc. and the undersigned Certified Engineering Geologist have no financial interest in the subject site, the project or the Client's organization.

9.0 References

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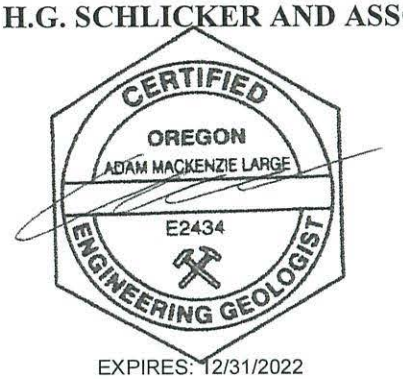
It has been our pleasure to serve you. If you have any questions concerning this report, or the site, please contact us.

Respectfully submitted,

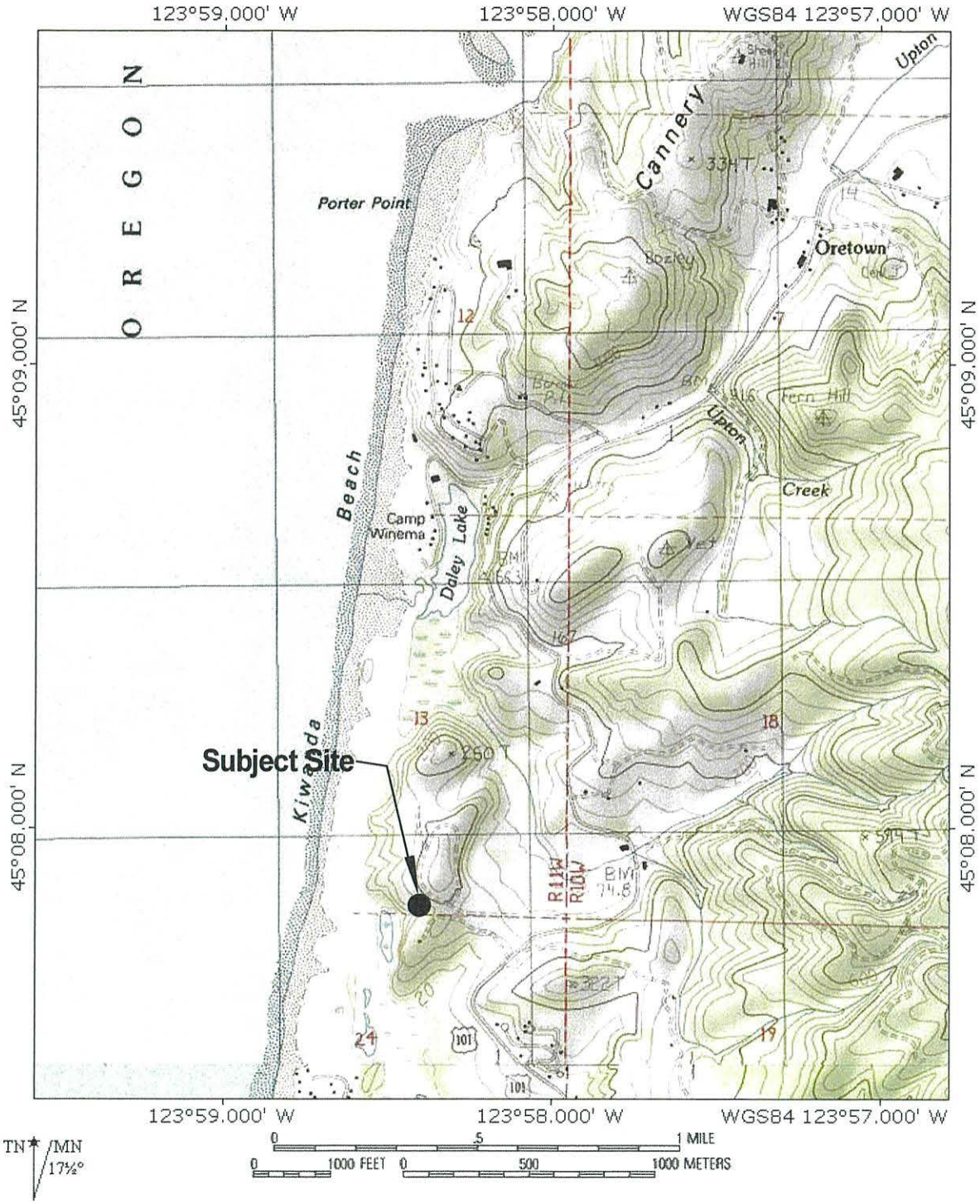
H.G. SCHLICKER AND ASSOCIATES, INC.



EXPIRES: 12/31/2022

Adam M. Large, MSc, RG, CEG
President/Principal Engineering Geologist

AML:mgb

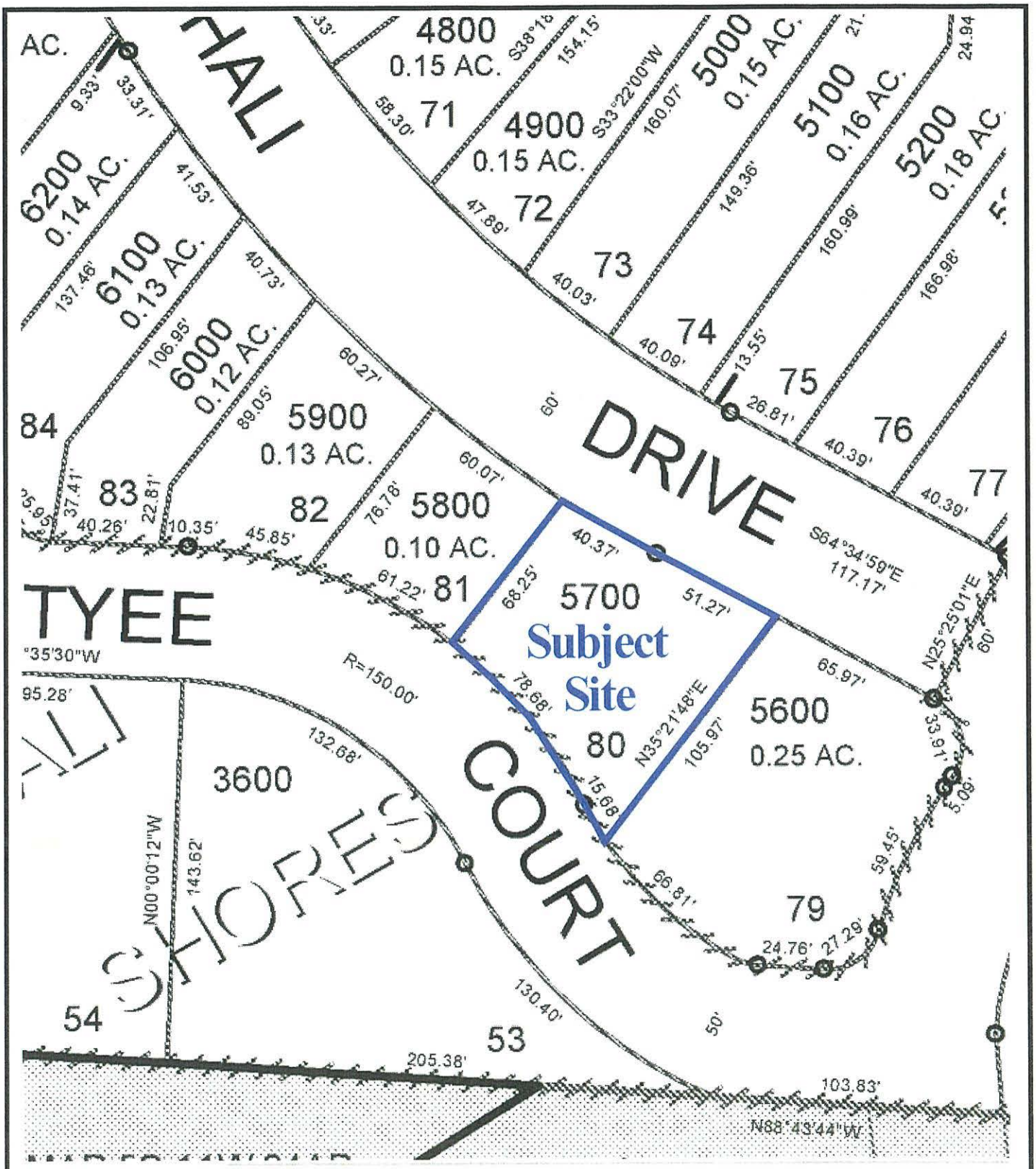


Date: 11/18/2022	**Project #Y224659**	Prepared by: MGB
Scale: 1" = 2,000'		Approved by: AML

Location Map
Tax Lot 5700, Map 5S-11-13DC
Sahhali Drive, Neskowin, Tillamook County, Oregon

H.G. Schlicker & Associates, Inc.

Figure 1



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Modified from the Tillamook County assessor's plat, 5S-11-13DC

All locations and dimensions are approximate.

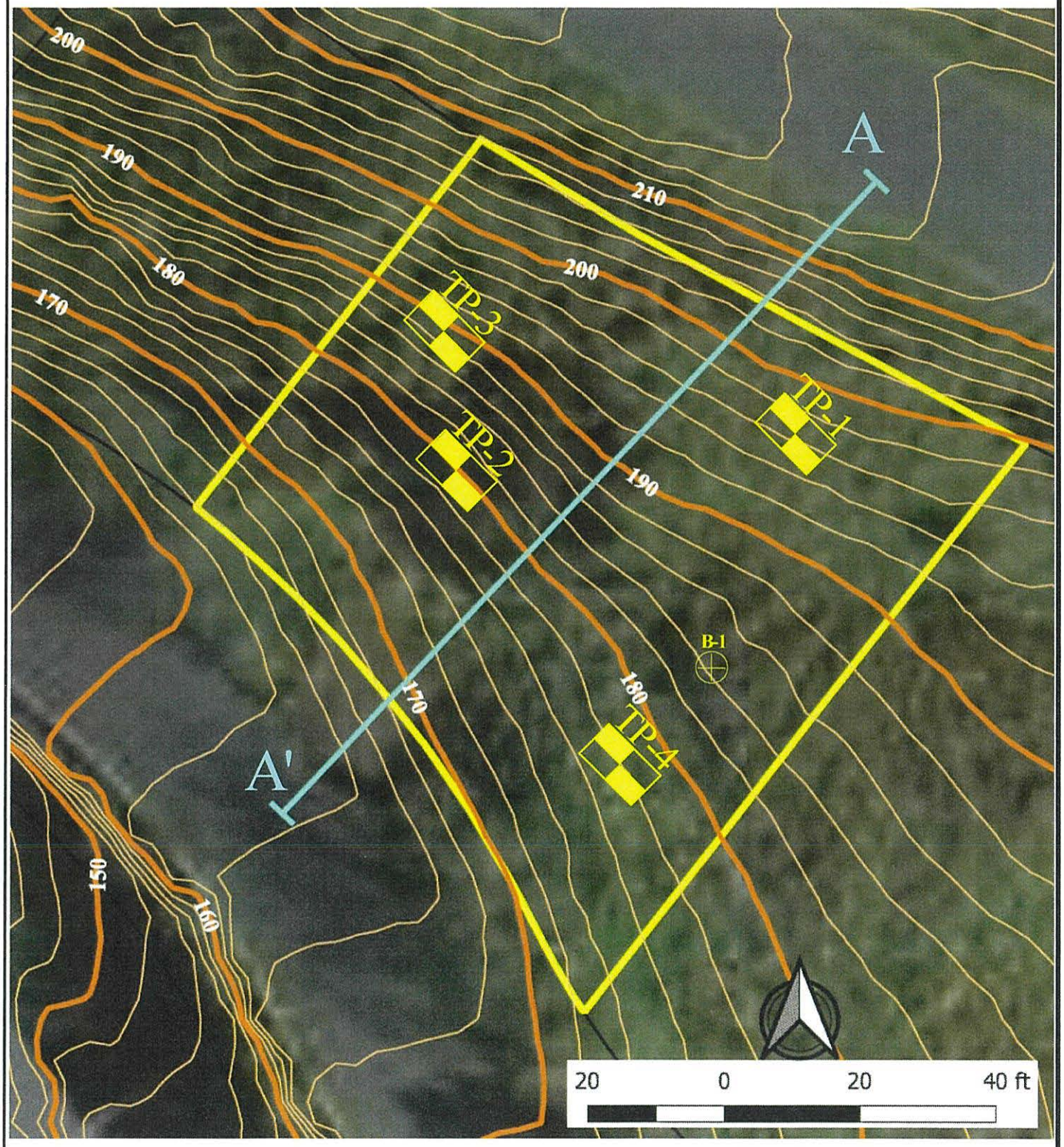
Date: 11/18/2022	**Project #Y224659**	Prepared by: MGB
Scale: 1" = 50'		Approved by: AML

Plat Map

Tax Lot 5700, Map 5S-11-13DC
Sahhali Drive, Neskowin, Tillamook County, Oregon

H.G. Schlicker & Associates, Inc.

Figure 2



B-1 = Approximate location of 2019 boring

TP-1 = Approximate location of 2018 test pit

= Approximate location of profile line

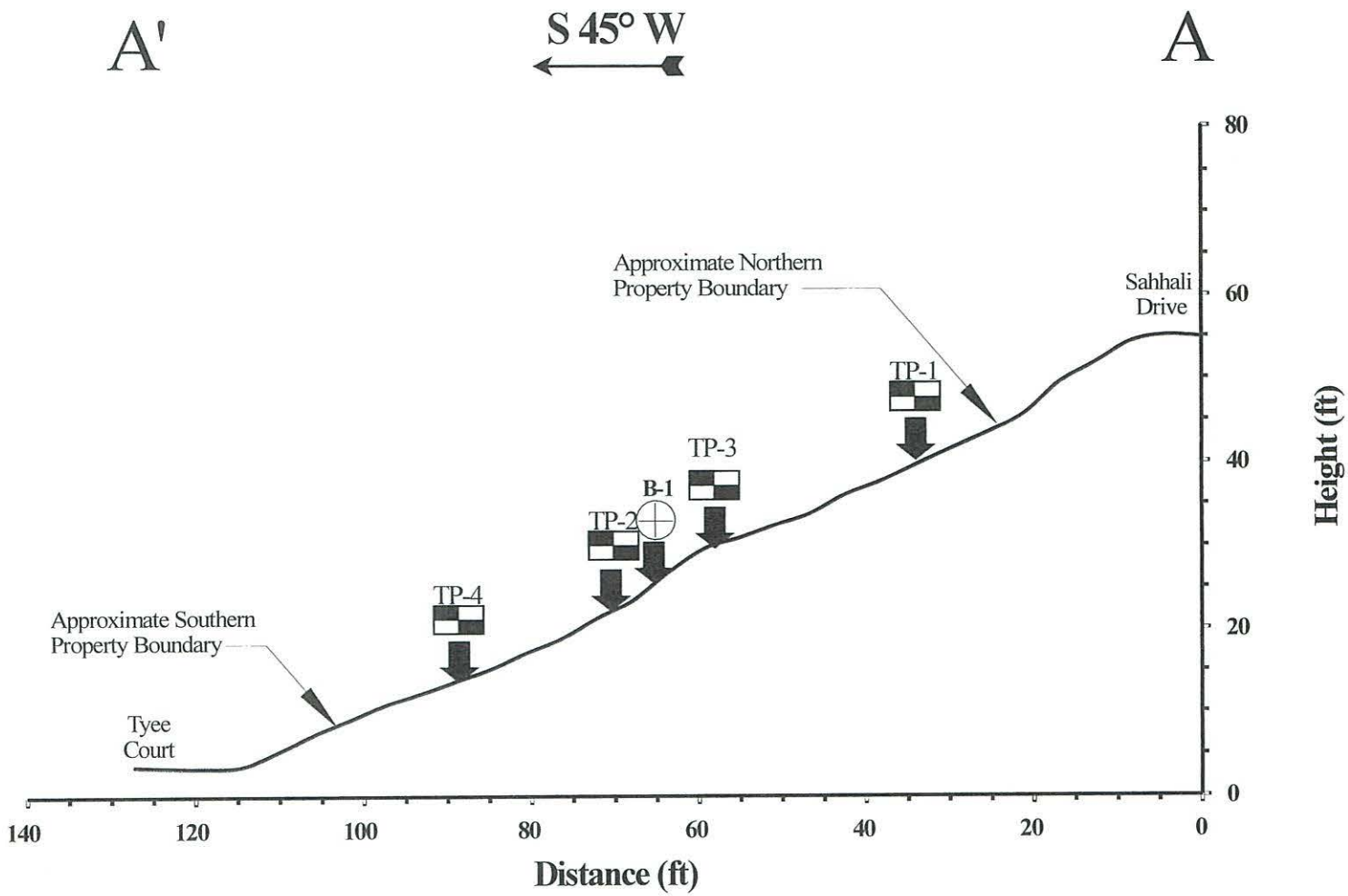
Imagery provide by GOOGLE
Topography derived from 2009 OLC_North Coast provided by DOGAMI.
All locations and dimensions are approximate.

Date: 11/18/2022	**Project #Y224659**	Prepared by: MGB
Scale: 1" = 20'		Approved by: AML

Site Topographic Map with Profile Line
Tax Lot 5700, Map 5S-11-13DC
Sahhali Drive, Neskowin, Tillamook County, Oregon

H.G. Schlicker & Associates, Inc.

Figure 3



B-1 = Approximate location of 2019 boring

TP-1 = Approximate location of 2018 test pit

Slope profile derived from 2009 OLC_North Coast provided by DOGAMI.
All locations and dimensions are approximate.

Date: 11/18/2022	**Project #Y224659**	Prepared by: MGB
Scale: 1" = 20'		Approved by: AML

Slope Profiles A-A'
Tax Lot 5700, Map 5S-11-13DC
Sahhali Drive, Neskowin, Tillamook County, Oregon

H.G. Schlicker & Associates, Inc.

Figure 4

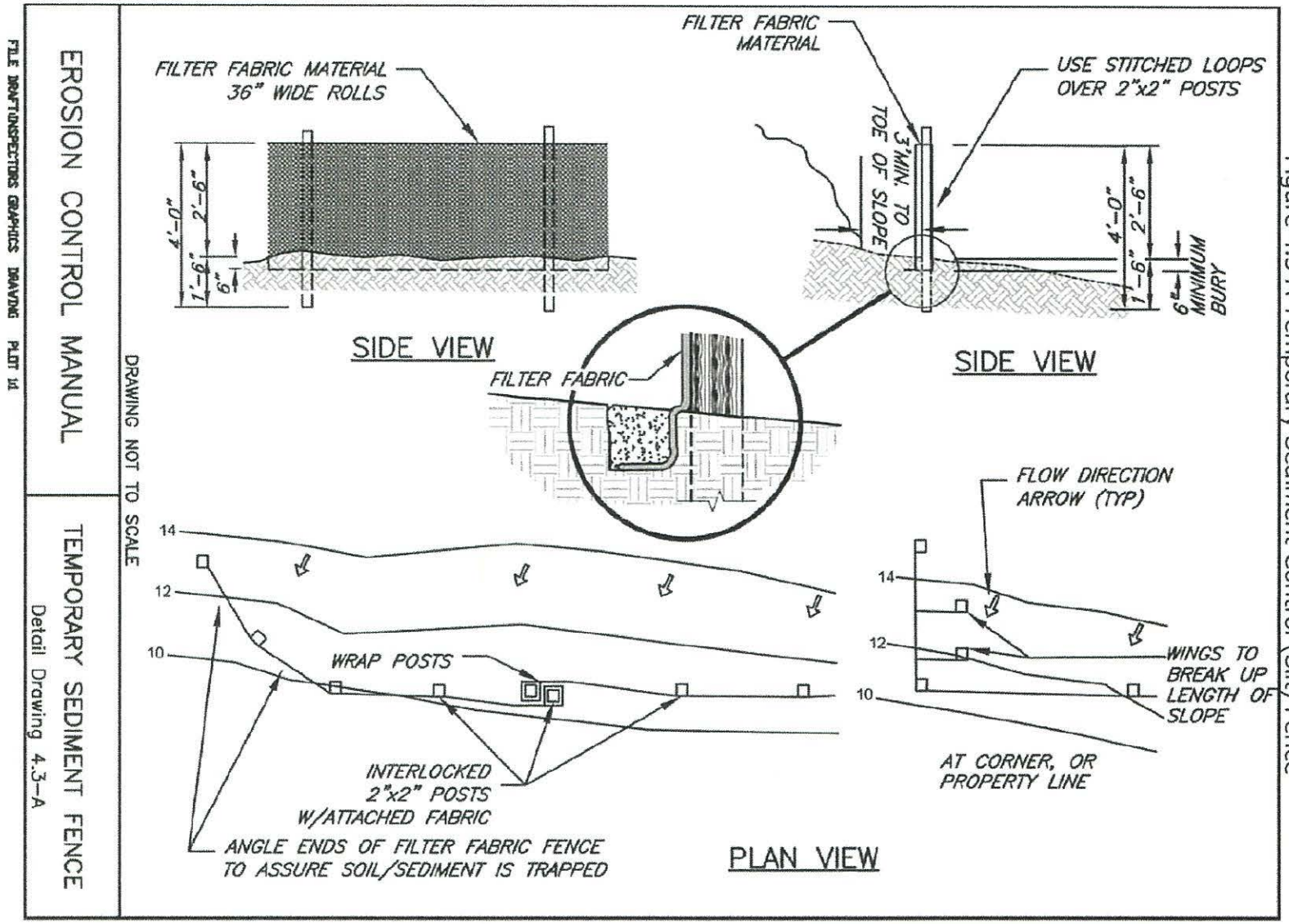


Figure 4.3-A Temporary Sediment Control (Silt) Fence

Date: 11/18/2022	**Project #Y224659**	Prepared by: MGB
Scale: As Shown		Approved by:AML

Sediment Fence Detail

Tax Lot 5700, Map # 5S-11-13DC
Sahhali Drve, Neskowin Tillamook County, Oregon

H.G. Schlicker & Associates, Inc.

Figure 5

Drawing modified from Erosion and Sediment Control Manual,
City of Portland Bureau of Environmental Services, 2008.

Refer to Original Source for Design Criteria/ Specifications

Project #Y224659

Appendix A
- Site Photographs -

Photo 1 – Northerly view of the site from Tyee Court (2022).

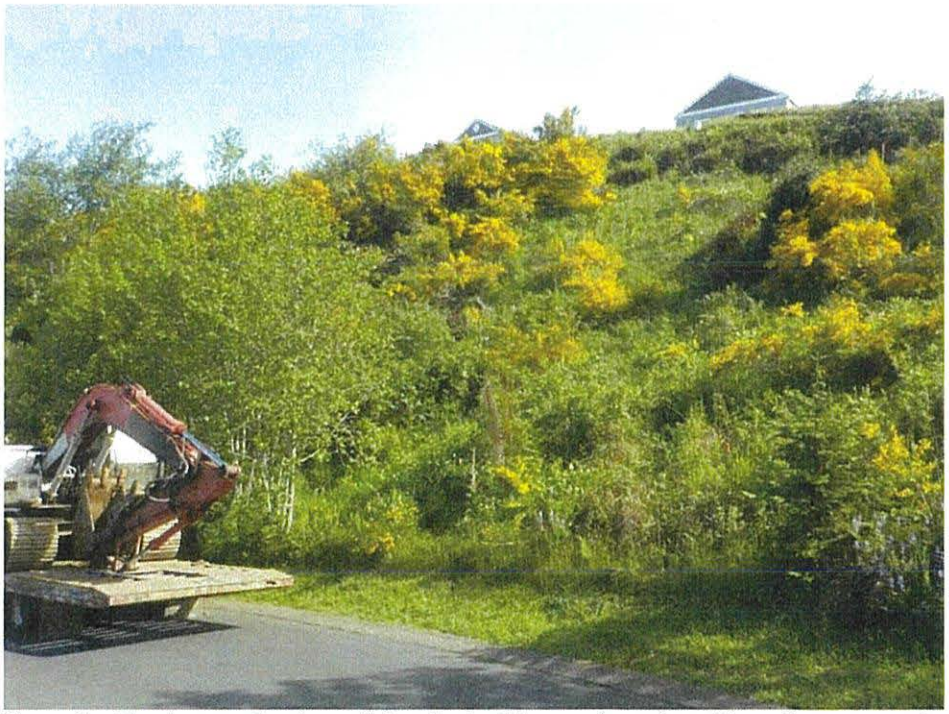


Photo 2 – Northwesterly view of the site looking upslope from Tyee Court towards Sahhali Drive (2018).

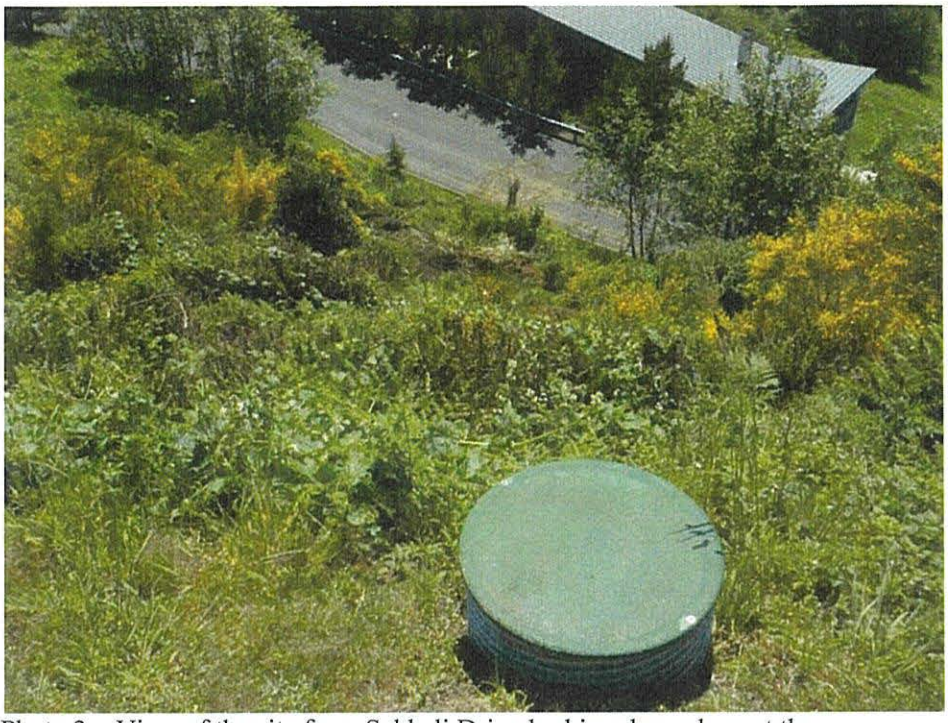


Photo 3 – View of the site from Sahhali Drive looking downslope at the northwestern portion of the site (2018).

Photo 4 – View of the site from Sahhali Drive looking downslope at the northwestern portion of the site (2022).

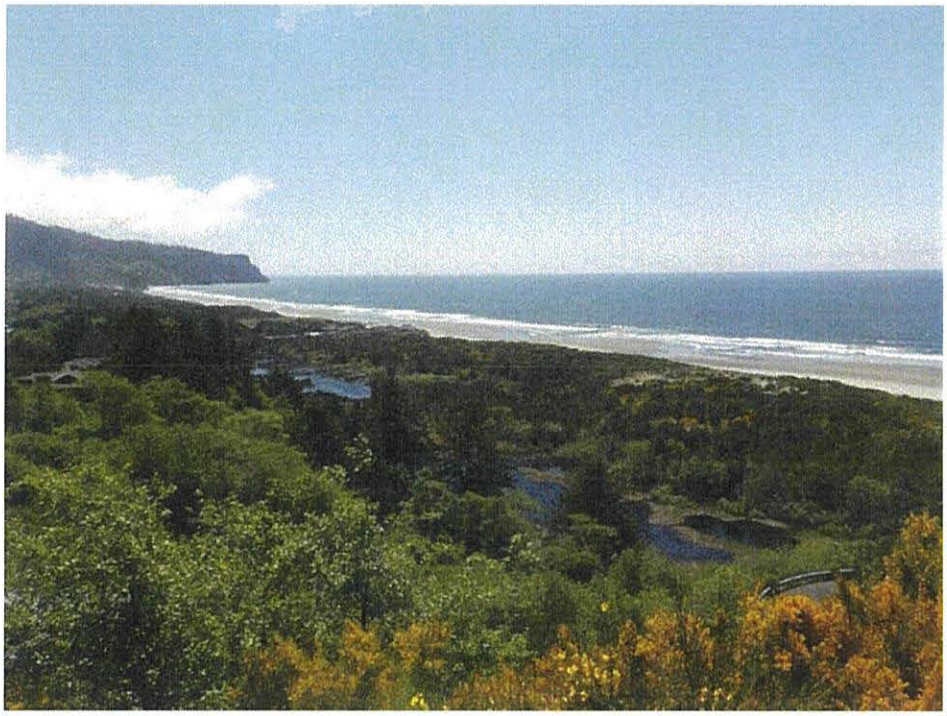


Photo 5 – View of the Pacific Ocean from the site (2018).

Photo 6 – View of Test Pit 1 being excavated (2018).

Photo 7 – View of Test Pit 2 being excavated (2018).

Photo 8 – View of a highly weathered basaltic sandstone fragment typical of those encountered in the test pits (2018).

Photo 9 – View of spoils from Test Pit 3 (2018).

Photo 10 – Northeasterly view of the location of Boring B-1 from Tyee Court (2019).

Photo 11 – View of the mud rotary drill rig set up at Boring B-1 (2019).

Photo 12 – Close-up view of a fragment of weathered and fractured basaltic sandstone typical of the materials recovered between 15 and 50 feet depth (2019).

Photo 13 – View of the basaltic sandstone exposed in a cut at the top of the access ramp used during drilling (2019).

Photo 14 – View of the basalt exposed in a road cut along the north side of Sahhali Drive due north of the site (2018).

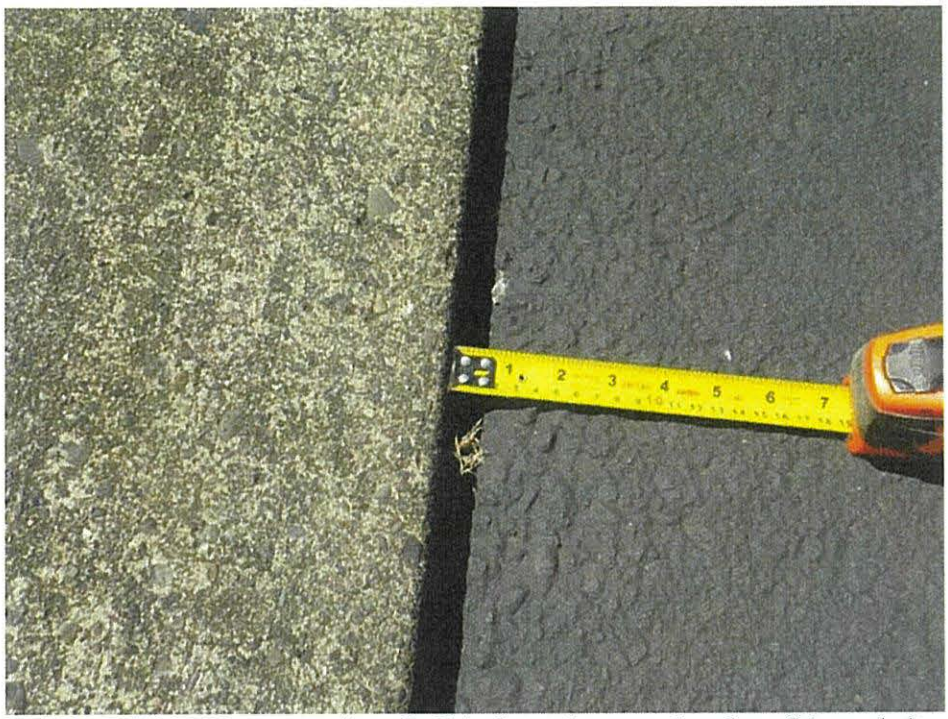


Photo 15 – View of an approximately ¾ inch gap between the edge of the asphalt surface and curb along the southern side of Sahhali Drive north of the site (2018).

Photo 16 – View of the recent pavement surface coating along the northern portion of the site. (2022).

Appendix B
- 2018 Test Pit Logs -

TEST PIT LOG EXPLANATION

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS), ASTM D2487			
MAJOR DIVISIONS		GROUP SYMBOL *	GROUP NAME
COARSE-GRAINED SOILS	GRAVELS	GW	Well-graded gravel
		GP	Poorly-graded gravel
		GM	Silty gravel
		GC	Clayey gravel
	SANDS	SW	Well-graded sand
		SP	Poorly-graded sand
		SM	Silty sand
		SC	Clayey sand
FINE-GRAINED SOILS	SILTS AND CLAYS Liquid Limit Less than 50	ML	Silt with low plasticity
		CL	Clay with low plasticity
		OL	Organic silt or organic clay with low plasticity
	SILTS AND CLAYS Liquid Limit 50 or more	MH	Silt with high plasticity
		CH	Clay with high plasticity
		OH	Organic silt or organic clay with high plasticity
HIGHLY ORGANIC SOILS		PT	Peat, Muck, and other highly organic soils.

* NOTE: the symbol RK (not within the USCS system) is used in our logs to denote rock materials.

Test Pit Log

TP-1	Depth (ft.)	USCS	Description
	0 – 2.0	ML (Disturbed)	SILT, dark brown, moist, soft, with black organic debris and angular basalt fragments.
	2.5 – 5.0	ML	SANDY SILT, brown, moist, soft to medium stiff matrix with angular to subangular, highly weathered, friable basaltic sandstone cobble-sized fragments.
	5.0 – 8.5	ML	SANDY SILT, brown, moist, soft to medium stiff, medium to coarse grained matrix with 6" to 18" angular to subangular, highly weathered, friable basaltic sandstone fragments.

TP-2	Depth (ft.)	USCS	Description
	0 – 2.0	ML (Disturbed)	SILT, dark brown, moist, soft, with black organic debris and angular basalt fragments.
	2.0 – 9.0	ML	SANDY SILT, brown, moist, soft to medium stiff matrix with angular to sub-angular, highly weathered, friable basaltic sandstone fragments. Fragmented weathered basalt at 9 feet.

TP-3	Depth (ft.)	USCS	Description
	0 – 2.0	ML (Disturbed)	SILT, dark brown, moist, soft, with black organic debris and angular basalt fragments.
	2.0 – 8.0	ML	SANDY SILT, brown, moist, soft to medium stiff matrix with angular to sub-angular, highly weathered, friable basaltic sandstone cobbles. Some slightly weathered angular to subangular basalt fragments 6"-10" in size at 7 feet.

TP-4	Depth (ft.)	USCS	Description
	0 – 2.0	ML (Disturbed)	SILT, brown, moist, soft, with black organic debris.
	2.0 – 5.0	ML	SANDY SILT, brown, moist, medium stiff matrix with angular to sub-angular, highly weathered, friable basaltic sandstone fragments.
	5.0 – 9.0	ML	SANDY SILT, brown, moist, soft to medium stiff, basaltic sandstone fragments becoming more competent with depth. Bucket scraping at 9 feet.

Appendix C
- 2019 Boring Log -

BORING LOG EXPLANATION

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS), ASTM D2487			
MAJOR DIVISIONS		GROUP SYMBOL	GROUP NAME
COARSE-GRAINED SOILS	GRAVELS	GW	Well-graded gravel
		GP	Poorly-graded gravel
		GM	Silty gravel
		GC	Clayey gravel
	SANDS	SW	Well-graded sand
		SP	Poorly-graded sand
		SM	Silty sand
		SC	Clayey sand
FINE-GRAINED SOILS	SILTS AND CLAYS Liquid Limits Less than 50	ML	Silt with low plasticity
		CL	Clay with low plasticity
		OL	Organic silt or organic clay with low plasticity
	SILTS AND CLAYS Liquid Limits 50 or more	MH	Silt with high plasticity
		CH	Clay with high plasticity
		OH	Organic silt or organic clay with high plasticity
HIGHLY ORGANIC SOILS		PT	Peat, Muck, and other highly organic soils.

SAMPLE TYPE

SPT = Standard Penetration Test and Split-Barrel Sampler (ASTM D1586); 1 3/8-inch I.D.
2.5" = Modified 2.5-inch I.D. Split-Barrel Sampler.
Shelby = Thin-Walled Tube Sampler (ASTM D1587); 3-inch O.D.

Sampling Interval

 = No sample attempted

 = Location of retrieved sample.

 = Location where sample was attempted with no recovery.

Standard Penetration Test (SPT)

Blows per 6" = Number of blows required to drive SPT sampler 6 inches using a 140 Lb. hammer dropped from a height of 30 inches (recorded in three 6" intervals).
N = Standard Penetration Resistance: Number of blows (N) required to drive SPT sampler 12 inches using a 140 Lb. hammer dropped from a height of 30 inches (ASTM D1586).
P = Indicates that SPT sampler was pushed 6 inches with only the weight of the hammer or drill stem (N = 0)

Location: Sahhali Shores, OR	**Job Name:** Diehl		**Project #:** Y184144B
Drilling Company: Western States	**Driller:** Lucas/Tim		**Boring #:** B-1
Drill Rig: Geoprobe 7822DT Solid Auger 4"	Hollow Auger	**Rotary Wash**	**Sheet** 1 of 3
Sampler Type: 2.5" Split Barrel	2.8" Shelby Tube	**SPT**	**Drilling Time**
Drive Wt. 140 Lbs	**Fall:** 30 In.		**Start** / **Finish**
Water Level / **Depth** (ft.)	**Time**	**Date**	**Time:** 10:30 am / **Time:** 2:15 pm
			Date: 7/1/2019 / **Date:** 7/1/2019
Field Personnel: M. Bordal	**Casing Depth:** (Ft.)		**Ground Elevation:** ~180 (Ft.)

Blows per 6"			N	Sample Type	Depth (Ft.)	USCS	Description
					0	ML	Sandy SILT FILL; brown, dry, loose, sandy silt fill with organic debris.
4	5	6	11	SPT	2.5	ML	Sandy SILT DISTURBED; orange-brown, moist, stiff, sandy silt.
							8 inches of material recovered from 2.5 to 4 feet.
4	8	7	15	SPT	5	ML	Sandy SILT DISTURBED; orange-brown, moist, stiff, sandy silt
							10 inches of material recovered from 5 to 6.5 feet.
3	3	5	8	SPT	7.5	SM	Silty SAND; brown, moist, loose, silty sand with very weathered, friable, orange-brown, basaltic sandstone fragments. 10 inches of material recovered from 7.5 to 9 feet. Driller lost approximately 40 gallons of mud after sample was pulled.
2	4	4	8	SPT	10	SM	Silty SAND; brown, moist, loose, silty sand with very weathered, friable, orange-brown, basaltic sandstone fragments. 6 inches of material recovered from 10 to 11.5 feet.
					12.5		Drillers encountered harder material at approximately 12 feet.
11	16	13	29	SPT	15	RK	ROCK; orange-brown, moist, soft to moderately soft, intensely weathered, coarse-grained, friable basaltic sandstone. 11 inches of material recovered from 15 to 16.5 feet.
					17.5		

H.G. Schlicker & Associates, Inc.

Location: Sahhali Shores, OR	**Job Name:** Diehl		**Project #:** Y184144B
Drilling Company: Western States	**Driller:** Lucas/Tim		**Boring #:** B-1
Drill Rig: Geoprobe 7822DT Solid Auger 4"	Hollow Auger	**Rotary Wash**	**Sheet** 2 of 3
Sampler Type: 2.5" Split Barrel	2.8" Shelby Tube	**SPT**	**Drilling Time**
Drive Wt. 140 Lbs	**Fall:** 30 In.		**Start** / **Finish**
Water Level / **Depth** (ft.)	**Time**	**Date**	**Time:** 10:30 am / **Time:** 2:15 pm
			Date: 7/1/2019 / **Date:** 7/1/2019
Field Personnel: M. Bordal	**Casing Depth:** (Ft.)		**Ground Elevation:** ~180 (Ft.)

Blows per 6"			N	Sample Type	Depth (Ft.)		USCS	Description
6	11	18	29	SPT	20		RK	ROCK; orange-brown, moist, soft to moderately soft, intensely weathered, coarse-grained, friable basaltic sandstone. 10 inches of material recovered from 20 to 21.5 feet.
					22.5			
7	11	13	24	SPT	25		RK	ROCK; orange-brown, moist, soft to moderately soft, intensely weathered, coarse-grained, friable basaltic sandstone with black and red staining. 12 inches of material recovered from 25 to 26.5 feet.
					27.5			Drilling slowed and encountered harder material at approximately 27.5 feet; dark grey clayey-silty sand cuttings.
12	17	20	37	SPT	30		RK	ROCK; orange-brown, moist, soft to moderately soft, intensely weathered, coarse-grained, friable, fractured basaltic sandstone. 14 inches of material recovered from 30 to 31.5 feet.
					32.5			
40	50	90	X	SPT	35		RK	ROCK; orange-brown, moist, soft to moderately soft, intensely weathered, coarse-grained, friable basaltic sandstone. 14 inches of material recovered from 35 to 36.5 feet.
		(for 11 inches)						
					37.5			

Location: Sahhali Shores, OR					**Job Name:** Diehl						**Project #:** Y184144B		
Drilling Company: Western States					**Driller:** Lucas/Tim						**Boring #:** B-1		
Drill Rig: Geoprobe 7822DT			Solid Auger 4"		Hollow Auger		**Rotary Wash**				**Sheet** 3 of 3		
Sampler Type:			2.5" Split Barrel		2.8" Shelby Tube		**SPT**				**Drilling Time**		
Drive Wt.			140 Lbs		**Fall:**		30 In.				**Start**	**Finish**	
Water Level			**Depth** (ft.)		**Time**		**Date**				**Time:** 10:30 am	**Time:** 2:15 pm	
											Date: 7/1/2019	**Date:** 7/1/2019	
Field Personnel: M. Bordal					**Casing Depth:** (Ft.)						**Ground Elevation:** ~180 (Ft.)		

Blows per 6"			N	Sample Type	Depth (Ft.)		USCS	Description
16	20	30	50	SPT	40		RK	ROCK; orange-brown, moist, soft to moderately soft, intensely weathered, coarse-grained, friable basaltic sandstone. 11 inches of material recovered from 40 to 41.5 feet.
					42.5			
26	50	X		SPT	45		RK	ROCK; orange-brown, moist, moderately soft to moderately hard, intensely weathered, coarse-grained, friable basaltic sandstone. 8inches of material recovered from 45 to 46.5 feet.
	(for 4 inches)							
					47.5			
25	7	4	11	SPT	50		RK	ROCK; orange-brown, moist, very soft, very intensely weathered to decomposed, coarse-grained, friable basaltic sandstone. 6 inches of material recovered from 50 to 51.5 feet.

Project #Y224659

Appendix D
- 2019 Laboratory Results -

Northwest Testing, Inc.
A Division of Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B, Wilsonville, Oregon 97070 | ph: 503.682.1880 fax: 503.682.2753 | www.nwgeotech.com

TECHNICAL REPORT

Report To:	Mr. J. Douglas Gless, R.G., C.E.G. H. G. Schlicker & Associates, Inc. 607 Main Street Oregon City, Oregon 97045	**Date:** **Lab No.:**	12/04/2019 19-403
Project:	Laboratory Testing Project No. Y184144B	**Project No.:**	3260.1.1

Report of: Unconfined compression of soil

Sample Identification

NTI completed unconfined compression testing on soil samples delivered to our laboratory on November 8, 2019. Testing was performed in accordance with the standards indicated. Our laboratory test results are summarized below and on the attached pages.

Sample Id: B-1 @ 15.0 ft.

Unconfined Compressive Strength of Cohesive Soil (ASTM D2166)					
Mass (grams)	**Diameter (inches)**	**Height (inches)**	**Area (Sq. inches)**	**Initial Moisture Content (percent)**	**Initial Dry Density (lbs/ft^3)**
118.48	1.378	2.348	1.491	17.2	110.0

Note: Insufficient sample for unconfined compression test

Attachments: Laboratory Test Results

Copies: Addressee

Northwest Testing, Inc.
A Division of Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B, Wilsonville, Oregon 97070 | ph: 503.682.1880 fax: 503.682.2753 | www.nwgeotech.com

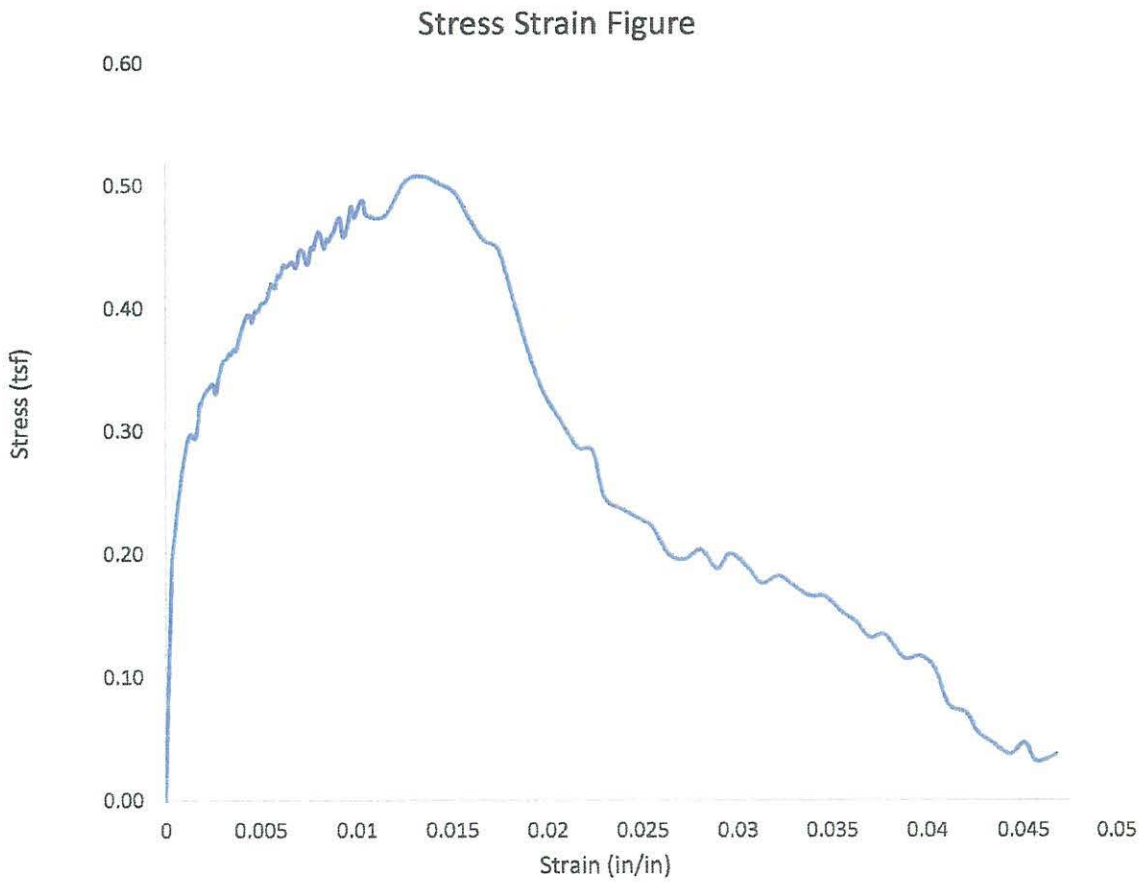
TECHNICAL REPORT

Report To:	Mr. J. Douglas Gless, R.G., C.E.G. H. G. Schlicker & Associates, Inc. 607 Main Street Oregon City, Oregon 97045	**Date:** **Lab No.:**	12/04/2019 19-403
Project:	Laboratory Testing Project No. Y184144B	**Project No.:**	3260.1.1

Laboratory Test Results

Sample Id: B-1 @ 20.0 ft.

Unconfined Compressive Strength of Cohesive Soil (ASTM D2166)					
Mass (grams)	**Diameter (inches)**	**Height (inches)**	**Area (Sq. inches)**	**Initial Moisture Content (percent)**	**Initial Dry Density (lbs/ft³)**
143.13	1.436	2.80	1.62	22.7	98.0



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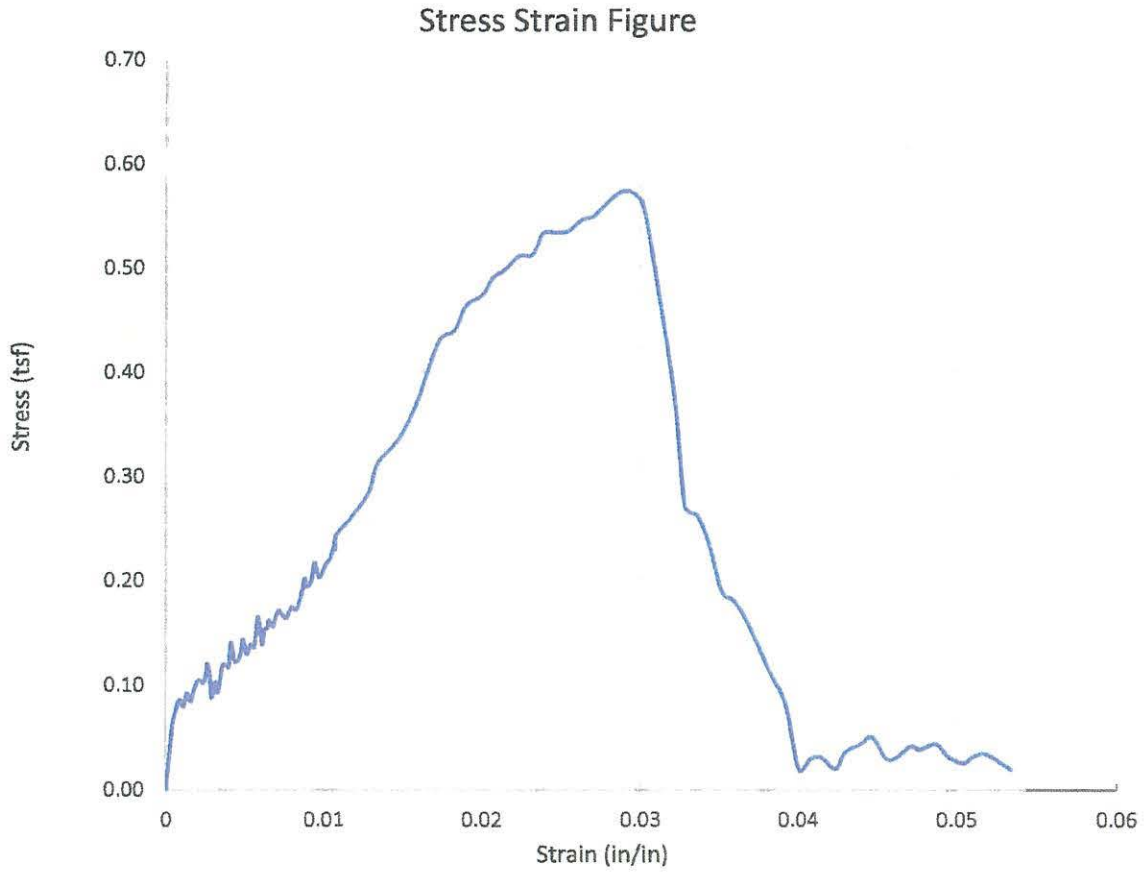
TECHNICAL REPORT

Report To:	Mr. J. Douglas Gless, R.G., C.E.G. H. G. Schlicker & Associates, Inc. 607 Main Street Oregon City, Oregon 97045	**Date:** **Lab No.:**	12/04/2019 19-403
Project:	Laboratory Testing Project No. Y184144B	**Project No.:**	3260.1.1

Laboratory Test Results

Sample Id: B-1 @ 25.0 ft.

Unconfined Compressive Strength of Cohesive Soil (ASTM D2166)					
Mass (grams)	**Diameter (inches)**	**Height (inches)**	**Area (Sq. inches)**	**Initial Moisture Content (percent)**	**Initial Dry Density (lbs/ft³)**
149.26	1.446	2.822	1.642	26.1	97.3



Project #Y224659

Appendix E
- Checklist of Recommended Plan Reviews and Site Observations -

APPENDIX E
Checklist of Recommended Plan Reviews and Site Observations
To Be Completed by a Representative of H.G. Schlicker & Associates, Inc.

Item No.	Date Done	Procedure	Timing
1*		Review site development, foundation, drainage, grading and erosion control plans.	Prior to permitting and construction.
2*		Observe foundation excavations.	Following excavation of foundations, and prior to placing fill, forming and pouring concrete. **
3*		Observe pile installation operations.	During installation. **
4*		Review Proctor (ASTM D1557) and density test results for all fills placed at the site.	Following compaction, and prior to forming and pouring, or paving.

* There will be additional charges for these services.
** Please provide us with at least 5 days' notice prior to all desired site observations.