Depoe Bay Planning Commission
Regular Meeting
Depoe Bay City Hall

September 8, 2021
Wednesday, 6:00 PM

The meeting location will be accessible to the public. Public comments may be made, via email up to two hours before the meeting start time at info@cityofdepoebay.org or you can also dial in to attend using your telephone (888) 204-5987, access code 9599444.

AGENDA

I. Call Meeting to Order and Establish a Quorum

II. Approval of Minutes: August 11, 2021, Regular Meeting

III. Public Hearings

A. Case File: #1-VAR-PC-21
Applicant: Roy Brown
Application: Variance to Yard Setback Standards
Zone, Map and Tax Lot: Residential R-4, 09-11-05-CA Tax Lot #08100
Location: 125 NW Vista Street

B. Case File: #1-GEO-PC-21
Applicant: Hal and Misty Byers
Application: Geologic Hazards Permit and Variance to Yard Setback Standards
Zone, Map and Tax Lot: Residential R-5PD, 09-11-05-DD Tax Lot #01500
Location: 220 NE Spring Avenue

C. Case File: #2-GEO-PC-21
Applicant: Elly Bishop-Monday, Todd Monday
Application: Geologic Hazards Permit
Zone, Map and Tax Lot: Residential R-5PD, 09-11-05-DC Tax Lot #06500
Location: 80 NE Spring Avenue

D. Case File: #2-CS-PC-21
Applicant: Dan and Jeri Fouts
Application: Coastal Shorelands Development, Exception to the Area of Visual Concern Standard
Zone, Map and Tax Lot: Residential R-1, 09-11-17-BC Tax Lot #02100
Location: 1947 SW McDonald Avenue

IV. Unfinished Business

V. New Business

A. Code Violations

- 571 SW Point Ave, Case #4-CS-PC-18, Rock Retaining Wall and Fill
- 525 SW Point Ave, Case #1-CS-PC-16, Stairway in Area of Visual Concern

VI. Public Comments – Items Not on Tonight's Agenda

VII. City Council Liaison Report (September: Faucett; October: Hayes)

VIII. Planner's Report

IX. Planning Commission Concerns

X. Adjourn

Depoe Bay City Hall is accessible to the disabled. If special accommodations are needed, please notify City Recorder at 765-2361 48 Hours in advance of the meeting so that appropriate assistance can be provided.
TTY#1-800-735-2900
"This institution is an equal opportunity provider"

Depoe Bay Planning Commission
Regular Meeting
Wednesday, August 11, 2021 – 6:00 PM
Depoe Bay City Hall

PRESENT: G. Steinke, F. Ruby, R. Moreland, M. Phillips, J. Faucett
ABSENT: J. Hayes, E. Berner
STAFF: City Planner J. White, Recording Secretary C. Duering

I. CALL MEETING TO ORDER

Phillips called the meeting to order and established a quorum at 6:00 PM.

II. APPROVAL OF MINUTES: July 14, 2021, Regular Meeting

Motion: Faucett moved to approve the minutes of the July 14, 2021, regular meeting as written. Ruby seconded.

Vote: Motion passed.
Ayes: Steinke, Ruby, Phillips, Faucett
Abstain: Moreland

III. INTRODUCTION OF NEW MEMBER – RUTH MORELAND

Phillips introduced Ruth Moreland and thanked her for volunteering.

Moreland stated she has lived in Depoe Bay for about 20-years and has been involved with the city periodically and is now able to participate more formally.

IV. ELECTION OF PRESIDENT AND VICE-PRESIDENT

Faucett nominated Phillips as president. Steinke seconded.

Show of Hands: Steinke, Moreland, Ruby, Phillips, Faucett

Ruby nominated Faucett as vice-president. Steinke seconded. Faucett nominated Steinke as vice-president. Steinke declined due to conflicts with his travel obligations.

Show of Hands: Steinke, Moreland, Ruby, Phillips

V. PUBLIC HEARINGS

Phillips noted there are three public hearings on the agenda, one was postponed to September 8, 2021, and the following statement applies to the remaining two.

Phillips said testimony and evidence given must be directed toward criteria described by the City Planner, or other criteria in the code that the testifier believes apply to the request. Failure to raise an issue, accompanied by statements or evidence sufficient to afford the Commission and the parties an opportunity to respond to the issue precludes appeal to the State Land Use Board of Appeals on that issue. Application materials or other evidence relied upon by the applicant had been provided to the City and made available to the public.

Phillips explained the hearing procedure: Applicants will have the opportunity to present information relevant to their application, followed by testimony in support of the application, then testimony in opposition, with the applicant having the opportunity for rebuttal. Unless there is a request to hold the record open, testimony will be closed, and the Commission will enter into deliberations on the application.

A. Case File: #1-GEO-PC-21 (Postponed to September 8, 2021)
Applicant: Hal Byers
Application: Geologic Hazards Permit
Zone, Map and Tax Lot: Residential R-5PD, 09-11-05-DD, Tax Lot #01500
Location: 220 NE Spring Avenue

B. Case File: #1-VAR-PC-21
Applicant: Roy Brown
Application: Variance to Yard Setback Standards
Zone, Map and Tax Lot: Residential R-4, 09-11-05-CA, Tax Lot #08101
Location: 125 SW Vista Street

There was no ex-parte contact, conflict of interest, or biased declared.

There was no objection to any Planning Commissioner hearing the case.

White summarized the Staff Report (copy attached to original of these minutes). No written public testimony was received. He corrected *(page 4 of 8) …the applicant is requesting a variance of 6' from the west side yard setback resulting in a 4' side yard.*

Discussion ensued regarding (1) Surrounding properties appear in compliance with the Zoning Ordinance side-yard setback standards; (2) Many structures were built before the incorporation of the City and are nonconforming to today's standards; (3) The applicant has requested a variance to construct a carport *to provide covered parking in inclement weather to travel from car to garage on foot for elderly*; (4) The existing garage is the same width of a single-car garage. The depth allows two cars to park tandem; (5) A potential solution would be to extend the garage forward 8' to be flush with the rest of the house; (6) The prior approval of a 12' setback from the top of the bluff versus 40' does not apply to the current request. The proposed carport would not extend beyond the back of the existing structure and would not encroach into the Area of Visual Concern any more than the existing structure; (7) The 2015 Findings, Conclusions, and Final Order stated – *The homes across Vista Street to the south may still obtain an ocean view through the setback between the homes and the 10' right-of-way to the east;* (8) The subject lot is 5,429 sq. ft. – Development constraints include the area of visual concern and coastal erosion setback standards; and (9) The prior approval granted a variance to the front yard setback.

The applicant's contractor, Jacob Holzgrafe, stated the following: (1) The proposed location is already a graveled parking area; (2) There is approximately 24' between the subject house and the neighbor, the vicinity average is 8' between structures; (3) The proposed open-air carport will not obstruct ocean views; and (4) The elderly applicant's truck will not fit in the garage. The garage door header is too low.

Discussion ensued between the applicant and Commission: (1) The applicant's hardship is the size of their vehicle; (2) Intention of the designated areas of exceptional aesthetic resources and the preservation of the beautiful, unencumbered ocean views; (3) The number of existing public viewing locations with benches and parking; (4) The garage height is two inches too low; (5) The existing garage door is already flush with the front porch. The picture provided by the City Planner *(page 2 of 8)* and the plot plan *(page 5 of 8)* submitted by the applicant are incorrect; and (6) Did the approved building permit/plans illustrate the garage flush with the house.

There was no testimony in support or opposition of the application and no request to keep the record open.

The public hearing was closed, and deliberations began.

The Commission discussed: (1) Delaying a decision until corrected plans are submitted and the Depoe Bay Fire District reviews the plans for emergency services access; (2) A Commissioner surveyed the homes located on NW Vista Street and NW Alsea Street and found that 43% of the homes have 1-car garages or no garage. The applicant's argument is not evidenced that they have a situation that does not apply generally to other properties in the vicinity. The applicant does not meet *a. Exceptional or extraordinary circumstances apply to the property which do not*

apply generally to other properties in the same zone or vicinity; and result from lot size or shape, legally existing prior to the date of this ordinance, or other circumstances over which the applicant has no control; (3) Concern regarding maintaining the view corridors; and (4) A practical solution to the hardship would be to purchase a vehicle that fits in the existing garage.

Motion: Steinke moved to postpone the decision to the next meeting and to request the applicant submit corrected drawings. Ruby seconded.

The Commission directed: (1) The applicant to submit an accurate drawing before the next meeting portraying the current home buildout and proposed carport; (2) The Planner to send an email to the Fire Chief requesting a review of the proposed plans for emergency services access; and (3) The Planner to verify that the approved building permit plans illustrated the garage flush with the house.

The applicant offered to submit photographs of the existing house/garage.

Vote: Motion passed.
Ayes: Moreland, Phillips, Faucett, Steinke, Ruby

Phillips stated the next Planning Commission meeting is September 8, 2021.

C. Case File: #1-CS-PC-21
Applicant: Barrett Family Trust
Application: Residential Development in the Coastal Shorelands Overlay Zone
Zone, Map and Tax Lot: Residential R-1, 09-11-17-CB, Tax Lot #00300
Location: Whale Cove – McDonald Avenue

There was no ex-parte contact, conflict of interest, or biased declared.

There was no objection to any Planning Commissioner hearing the case.

White summarized the Staff Report (copy attached to original of these minutes). No written public testimony was received.

Discussion followed regarding the Geologic Hazards Investigation reference to beachfront protection – *According to the Ocean Shores Viewer (http.www.coastalatlas.net/oceanshores/, accessed December 2020), the site does not appear to be Goal 18 eligible for a beachfront protective structure*.

The applicant, Mike Barrett, stated they are not asking for any variances or exceptions to the Zoning Ordinance and would appreciate the approval of their application. He and his wife have lived in Lincoln County off and on for 20 years and want to build a beautiful legacy home for their family. They understand the reason for coastal erosion standards, don't like riprap, and are happy to adhere to the 40' Area of Visual Concern setback. He offered to answer any questions.

Architect, Hans Kretschmer, stated the City Council's approval of the septic was based on prior approval of a septic system on the subject lot. The neighborhood is currently served by individual septic systems and the probability of the city sewer system being extended in the future is very tentative and very cost-prohibitive. The applicant's proposed system is an updated, state-of-the-art system, and requires much less filtration.

There was no testimony in support or opposition of the application and no request to keep the record open.

The public hearing was closed, and deliberations began.

The Planner confirmed that the proposed septic system exceeds all State and County requirements and is to be maintained and inspected periodically.

Motion: Faucett moved to approve Case File 1-CS-PC-21 (Residential Development in the Coastal Shorelands Overlay Zone) and to adopt the Conditions of Approval (Items 1. Thru 9.) as prepared by the City Planner. Steinke seconded.

Vote: Motion passed.
Ayes: Phillips, Faucett, Steinke, Ruby, Moreland

The Commission directed the City Planner to prepare the Findings, Conclusions, and Final Orders for Phillip's signature.

VI. UNFINISHED BUSINESS

There was none.

VII. NEW BUSINESS

A. Long-Term Water Conservation

Phillips reported the City Council has discussed the following: (1) There are no issues with the Rocky Creek water source; and (2) The American Rescue Plan (ARPA) funds could be utilized for rehabilitation of two wells.

The Planner explained when a developer of a Planned Development completes construction of the infrastructure (streets, storm drainage, water, and sewer systems) they will request dedication/adoption by the City Council.

Discussion followed regarding (1) One point source metering; (2) The City will include provisions/covenants to protect the City in the event the system fails (i.e., warranty, sharing repair costs, etc.); (3) The Planning Commission's approval of The Hills of Depoe Bay and Whale Watch Planned Developments require the Homeowner's Association (HOA) to be responsible for maintaining the streets; (4) The Kalani Ridge Subdivision and connection to the City's water system; (5) The two potable wells located in Little Whale Cove; (6) The Mid-Coast Water Planning Partnership; (7) The City's Water Conservation Plan; and (8) The Public Works Director has indicated the City is not experiencing a water supply shortage due to the current drought conditions.

B. Traffic Safety

A Commissioner expressed their concerns regarding pedestrian safety on Collins Street, a Lincoln County Street, i.e., poor sightlines, vehicles exceeding speed limits, etc. and would like the Commission to encourage the Council to consider any traffic calming measures i.e., stop sign at the corner of Spring Avenue and Collins Street or additional slow children at play signage.

Discussion followed regarding: (1) The Planning Commission's duties; (2) Reviewing the City's master plans and studies: (3) Making recommendations to City Council; and (4) Bay Street Parking lot improvements i.e., signage, crosswalks, information kiosks, etc.

C. Parking

The Commission discussed: (1) City Council's decision to cancel the South of the Bridge Project; (2) Increased traffic flow and congestion; (3) Prioritizing parking and next steps; (4) Constructing a parking structure; (5) Parking lot maintenance and signage; (6) Transformation of Leavenworth Washington and Wheeler, Oregon; (7) City's vision and concept planning; and (8) Funding opportunities.

D. Codification of City Code

The Planner reported that a consultant has been hired and it is anticipated to be an 8–10-month project.

Discussion followed regarding outsourcing the maintenance/updating of the City of Depoe Bay Municipal Code after completion.

VIII. PUBLIC COMMENTS – ITEMS NOT ON TONIGHT'S AGENDA

There were none.

IX. CITY COUNCIL LIAISON REPORT

Phillips reported on the July 20, 2021, and August 3, 2021, meetings (copy attached to original of these minutes).

X. PLANNER'S REPORT

White reviewed the Planner's Report – Land Use and Building Permit Activity July 14, 2021 – August 5, 2021 (copy attached to original of these minutes). He announced: (1) The City Council has scheduled a workshop on August 17, 2021, for the presentation of the Water/Sewer Rate Study; (2) The grant application for the update to the City Comprehensive Plan was submitted on July 31, 2021; (3) Three Public Hearings are anticipated in September; and (4) The sidewalk has been completed at Anchor Storage.

XI. PLANNING COMMISSION CONCERNS

Steinke: None

Ruby: None

Moreland: Asked if the City's Transportation System Plan is comprehensive and addresses the concerns mentioned this evening.

Staff volunteered to provide the Commission members with a flash drive of the City's Master Plans and Studies.

Phillips: Thanked the Commission and City Staff for their support.

Faucett: None.

Discussion followed regarding the ownership of the lot at the corner of Lillian Lane and Highway 101 and its relationship to the Whale Watch Planned Development.

XII. ADJOURN

There being no further business, the meeting was adjourned at 8:10 PM.

_____

Michael Phillips, President

_____

Carla Duering, Recording Secretary

Variance Application
Case File: #1-VAR-PC-21
Date Filed: July 14, 2021
Application Complete: July 14, 2021
Planning Commission Meeting Date: Aug. 11, 2021, 6:00 pm
September 8, 2021, 6:00pm
120-day Decision Date: Nov. 14, 2021

UPDATE September 2021: Request for Variance Public Hearing was held at the August 11, 2021 Planning Commission meeting. The Planning Commission decided to continue the hearing until the next regularly scheduled Planning Commission meeting (September 8, 2021) in order to allow the City Planner to gather additional items requested by the Planning Commission.

During the gathering of additional items, the City Planner discovered the following:

- On January 21, 2004, the Planning Commission approved construction of a new single-family residence at 125 NW Vista Street, Tax Lot # 09-11-05-CA-08100. The new residence replaced an existing single-family residence on the property. The new residence met all the requirements of the R-4 Residential Zone and the Coastal setback for erosion (Coastal setback for visual concern was adopted after this request was approved). Based on a building height of 26 feet, the required side yard setback was 8'-8". The applicant did not request any variances or exceptions to the codes.
- On January 13, 2010, the Planning Commission approved partition of Tax Lot # 09-11-05-CA-08100. The partition resulted in a west lot located at 125 NW Vista and an east lot.
- Unfortunately, there were no site plans or drawings accompanying the City files for the above two Planning Commission actions.
- The east lot later became Tax Lot # 09-11-05-CA-08101 with a street address of 123 NW Vista.
- In 2010 and 2015, the Planning Commission approved front yard variances and exceptions to the coastal setbacks for construction of a single-family residence for the eastern parcel (lot # 08101).
- Again, unfortunately, there were no site plans or drawings accompanying the City files for the 2010 and 2015 Planning Commission actions and the parcel was loosely referred to as *"the subject property located on the east side of 125 Vista Street".* The property was not referred to by either 125 NW Vista Street or by Tax Lot # 09-11-05-CA-08101, thus adding to the confusion.

Because of the lack of location maps and site plans in the files as described above, the August 11, 2021 Staff Report mistakenly associated the 2010 and 2015 Planning Commission actions with current case file #1-VAR-PC-21.

The corrected Staff Report for Case File #1-VAR-PC-21-BROWN, Tax Lot #09-11-05-CA-08100, 125 NW Vista Street, is below.

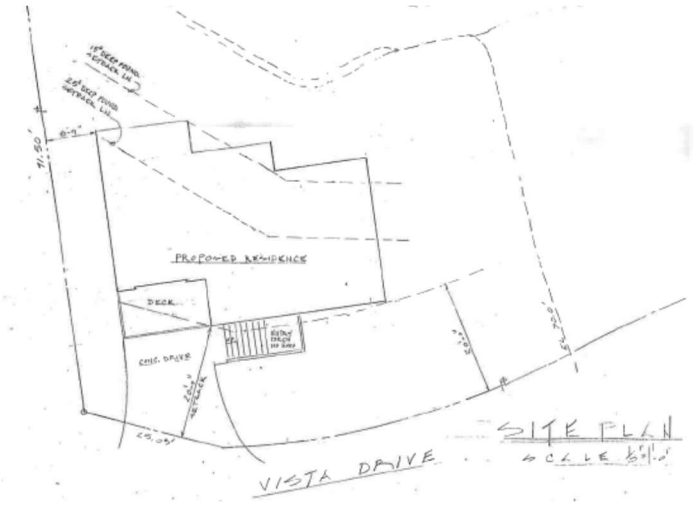
STAFF REPORT
Depoe Bay Planning Commission Action

OWNER/APPLICANT: Roy Brown (Owner), Jacob Holzgrafe (Agent)

REQUEST: The applicant is requesting a side yard variance to construct a carport on an existing single-family dwelling. A four-foot west side yard setback is requested, the required (existing) side yard setback is 8'-8".

BACKGROUND:

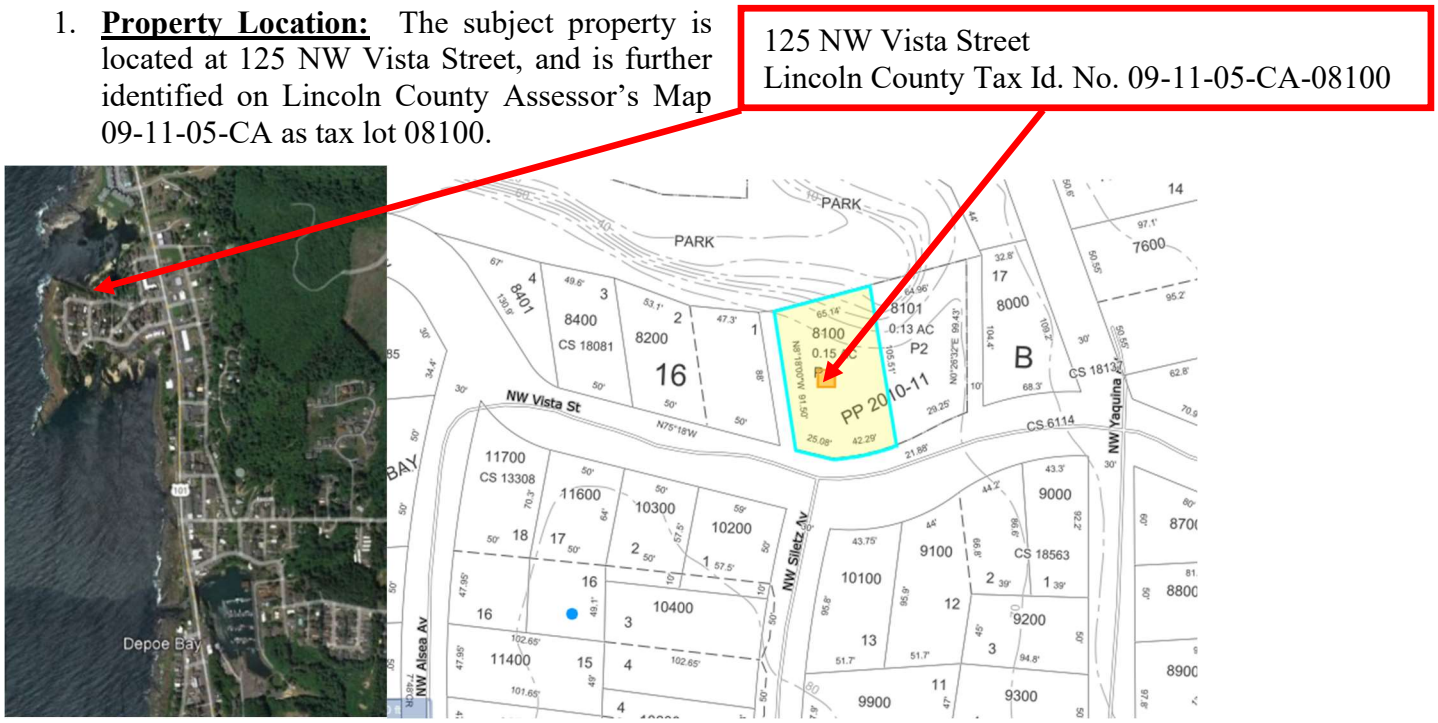
- On January 21, 2004, the Planning Commission approved construction of a new single-family residence at 125 NW Vista Street, Tax Lot # 09-11-05-CA-08100. The new residence replaced an existing single-family residence on the property. The new residence met all the requirements of the R-4 Residential Zone and the Coastal setback for erosion (Coastal setback for visual concern was adopted after this request was approved). Based on a building height of 26 feet, the required side yard setback was 8'-8". The applicant did not request any variances or exceptions to the codes.



- June 13, 2019. A building permit to extend the garage to be even with the front of the house was approved by the City Planner. The project extended the garage, "filling" in the area under the second-floor deck, and added a side door to the garage.

A. RELEVANT FACTS:

1. **Property Location:** The subject property is located at 125 NW Vista Street, and is further identified on Lincoln County Assessor's Map 09-11-05-CA as tax lot 08100.



2. **Lot Size and Dimensions:** The lot totals 5,429 square feet (total area landward of the Mean High Water Line). The lot is 51.5 feet wide at the front line with an average lot depth of 108 feet.
3. **Zoning Designation:** R-4 Residential
4. **Plan Designation:** Residential
5. **Surrounding Land Use:** Single family residential uses are located to the south, east, and west. The Pacific Ocean (Pirate Cove) is located north of the site.
6. **Topography and Vegetation:** This lot has a well vegetated hillside from top of bank down towards the ocean. The flat portion of the lot is mostly grass. The hillside has dense shrubs.
7. **Existing Structures:** Single Family Residence
8. **Utilities:** The following utilities currently serve the subject property:
   a. Sewer: City sewer service.
   b. Water: City water service.
   c. Electricity: Central Lincoln P.U.D.
9. **Development Constraints:**
   a. 'Coastal setbacks-for erosion standard' and 'area of visual concern' standards of the Coastal Shorelands Overlay Zone.

B. EVALUATION OF THE REQUEST:

1. **Relevant Criteria:**
   Depoe Bay Zoning Ordinance No. 24 (as amended)
   a. Section 3.040: Residential Zone R-4
   b. Section 3.360: Coastal Shorelands Overlay Zone
   c. Section 4.820: Protection of Coastal Headlands, Areas of Exceptional Aesthetic Resources
   d. Article 7: Non-Conforming Uses
   e. Article 8: Variances
   f. Article 13: Development Guidelines
2. **Applicant's Proposal:**
   The applicant requests approval of a variance to the side yard setback to construct a carport on an existing single-family dwelling.
3. **Public Testimony.** At the time this staff report was written, the City had not received any written testimony.
4. **Public Agency Comments.** At the time this staff report was written, the City had not received any written testimony.

C. SUMMARY AND STAFF ANALYSIS: The Planning Commission reviews the proposal for conformance with the appropriate standards of the Depoe Bay Zoning Code. To facilitate review, staff identifies the following issues:

1. **Application.** The applicant requests approval of a side yard variance to construct a carport on the existing structure.

2. **R-4 Residential Standards.** The R-4 building setback and height standards, existing, and proposed development are described below

Standard	Requirement	Existing	Proposed
Front Yard	Min. 20'0"	20'	NA
Rear Yard	Min. 10'0"	57'10" to property line	NA
Side Yards	Min. 8'8" (w/ 26' bldg. ht.)	West Side: 12'-0" East Side: 10'-0"	West Side: 4' East Side: NA
Building Height	Max. 35'0"	26'	NA

The above table demonstrates that the R-4 standards were met when the existing residence was constructed. In fact, the resulting west side yard setback is 12', greater than the required 8'8".

The applicant is requesting a variance of 4'-8" from the west side yard setback.

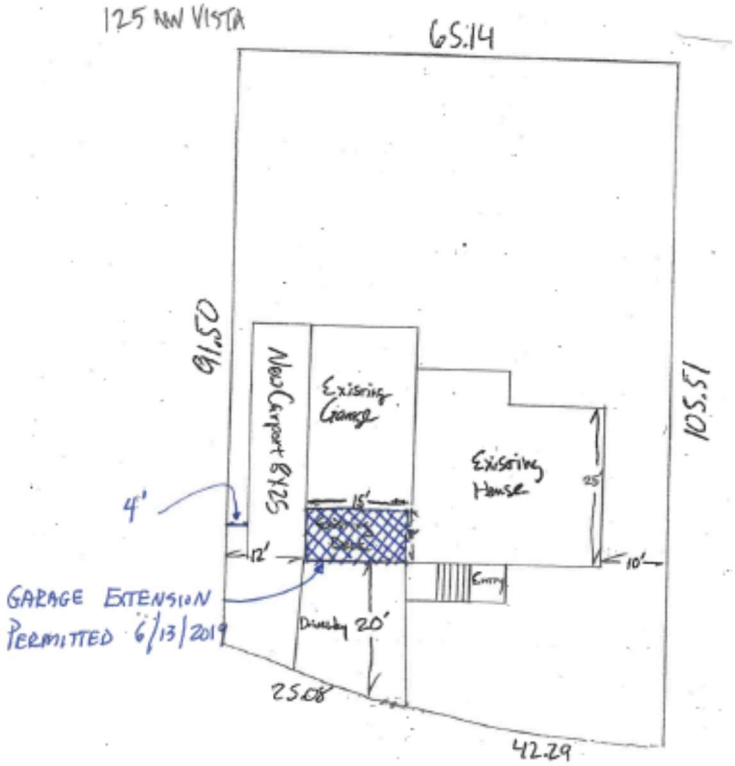
3. **Area of Visual Concern.** The existing residence was constructed prior to adoption of the 40' setback for Area of Visual Concern. It is considered non-conforming with the current code.

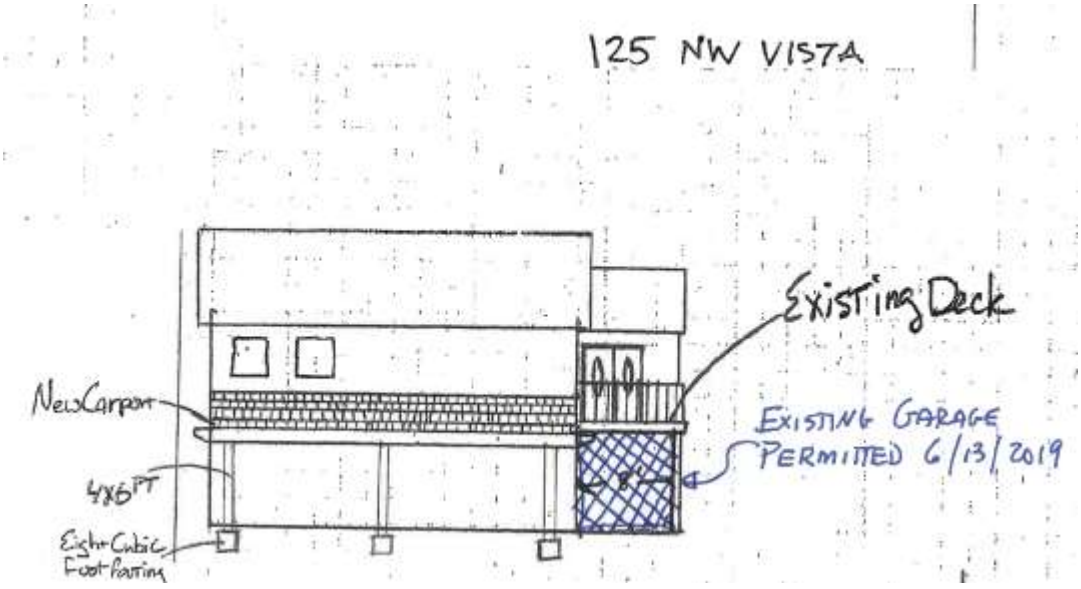
The proposed carport would not extend beyond the back of the existing structure and

would not encroach into the Area of Visual Concern any more than the existing structure.

4. **West Side Yard Variance Request.** The applicant is requesting a variance to the west side yard setback. The standard R-4 side yard setback is 5 feet, or 1 foot for every 3 feet of building height, whichever is greater. The existing structure has a height of 26 feet with a resulting required side yard of 8'-8". The existing side yard is 12 feet.

   The applicant is requesting a 4'-8" side yard variance therefore, if granted, the building would be located 4 feet from the west property line.





A variance may be granted only in the event that all of the following five circumstances exist. The circumstances are stated in *italics* and followed by a paraphrased version of the applicant's response.

a. *Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the same zone or vicinity, and result from lot size or shape, legally existing prior to the date of this ordinance, or other circumstances over which the applicant has no control.*

   APPLICANT RESPONSE: The variance does not harm public safety but an unnecessary hardship exists from limitations on covered parking in inclement weather to travel from car to garage on foot for elderly. Through this addition substantial justice is achieved for the community and neighbors

b. *The variance is necessary for the preservation of a property right of the applicant substantially the same as owners of other property in the same zone or vicinity possess.*

   APPLICANT RESPONSE: Yes, the variance is necessary and typical of other properties in same zone.

c. *The variance would not be materially detrimental to the purposes of this ordinance, or to property in the zone or vicinity in which the property is located, or otherwise conflict with the objectives of any City plan or policy.*

   APPLICANT RESPONSE: Proposed carport is a simple structure 8'x25' with open sides.

d. *The hardship is not self-imposed and the variance requested is the minimum variance which would alleviate the hardship.*

   APPLICANT RESPONSE: The hardship is not self-imposed. The variance requested is the minimum to alleviate the hardship.

e. *The hardship asserted as a basis for the variance does not arise from a violation of the Zoning Ordinance.*

   APPLICANT RESPONSE: The zoning ordinance has not been violated.

5. **Coastal Setback – Area of Coastal Erosion.** The 2004 approval included confirmation that the proposed development meets the required setback for the area of coastal erosion.

   The proposed carport will not extend beyond the back of the house and not encroach into the area of coastal erosion.

6. **Coastal Setback – Area of Visual Concern.** The existing residence was permitted and constructed prior to the adoption of the 40-foot coastal setback for the area of visual concern. The existing structure is considered non-conforming by the current code.

   The proposed carport will not extend beyond the back of the house and not further encroach into the area of visual concern.

7. **Non-Conforming Structure.** DBZO Section 7.040. Expansion or Renovation of Non-Conforming Use. states "A non-conforming use (existing at the time zoning was adopted or changed in the area) may be expanded or renovated if the Planning Commission determines that such use is not detrimental to the public health, safety and welfare, and that such use is in compliance with all state rules and local ordinances. Expansions or renovations of non-conforming uses and structures may be allowed providing the work does not result in a greater adverse effect on the surrounding area considering factors such as parking, traffic, dust, noise, lighting or hazards."

   The proposed carport will not extend beyond the back of the house and not result in a greater adverse effect on the surrounding area.

8. **Archaeological Resources.** The site is identified in the Comprehensive Plan Inventory as having potential archaeological resources. The DBZO Section 3.360(5)(b)(1) states that development on identified archaeological sites shall be conducted in a manner so as to minimize site disturbance and prevent irreversible loss of archaeological resources. This does not require the property owner to hire an archaeologist, however, it does require the property owner to be cognizant of archaeological resources when developing the site. The applicant needs to be aware of potential archaeological resources and take feasible action to minimize site disturbance and prevent irreversible loss of archaeological resources.

D. <u>CONCLUSIONS:</u> In evaluating the request, the Planning Commission bases it's decision on compliance with the applicable code standards. If the Planning Commission finds the request fails to satisfy the ordinance standards, it can move to deny the request, articulating the basic conclusions and rationale for the decision and directing staff to prepare findings for adoption.

If the Planning Commission finds the request satisfies the applicable criteria, it can move to approve the request and direct staff to prepare findings for adoption. In the event of an approval, staff suggests the following conditions of approval be attached.

VARIANCE CONDITIONS

1. **West Side Yard Setback.** Development shall be accomplished in conformance with the approved plan. This includes the proposed 8' x 25'carport attached to the existing residence. The carport will not extend beyond the rear and front of the existing residence. The proposed carport will encroach into the required 8'-8" side yard, resulting in a 4-foot side yard.

   All other conditions as specified in the previous planning action approvals for this property (2004) remain in effect.

STANDARD CONDITIONS

2. **Building Permit.** Development shall be accomplished in conformance with the approved plan. This includes, but is not limited to, the 8' x 25' carport, resulting in a west side yard setback of 4 feet. The applicant shall obtain a valid building permit prior

to commencement of construction.

3. **Archaeological Resources.** Development shall be conducted in a manner so as to minimize site disturbance and prevent irreversible loss of archaeological resources. Before and during excavation, any discovery of archaeological resources shall mean that the applicant shall cease excavation activities, notify the State Historic Preservation Office and Confederated Tribe of Siletz Indians, and meet State statutes before proceeding.

Submitted by,

Jaime White,
City Planner

Enclosure: Vicinity Map
Aerial Photograph
Site Plan
Building Elevations

Geologic Hazards Permit Application and Request for a Variance
Case File: #1-GEO-PC-21
Date Filed: July 7, 2021
Application Complete: August 4, 2021
Meeting Date: Sep 8, 2021, 6:00 p.m.
120-day Decision Date: Dec. 4, 2021

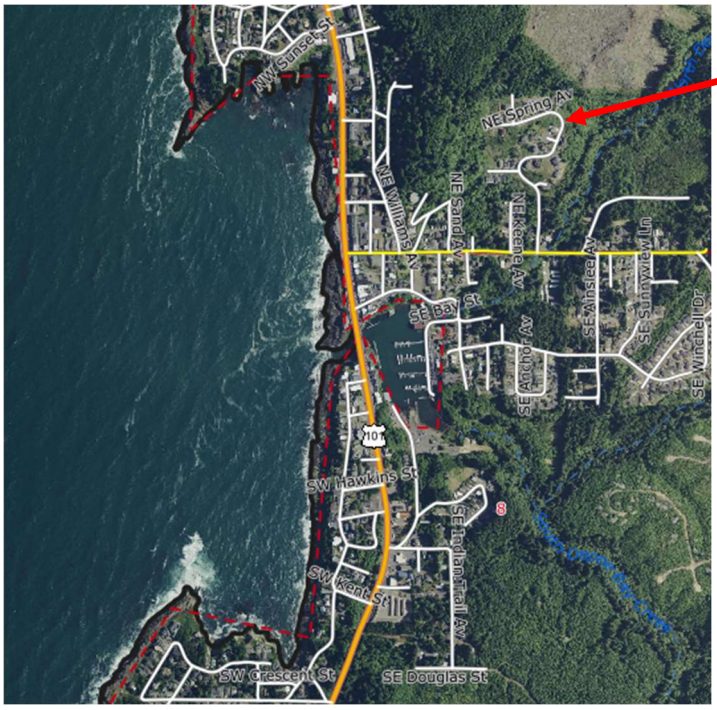
STAFF REPORT
Depoe Bay Planning Commission Action

APPLICANT: Howard & Misty Byers

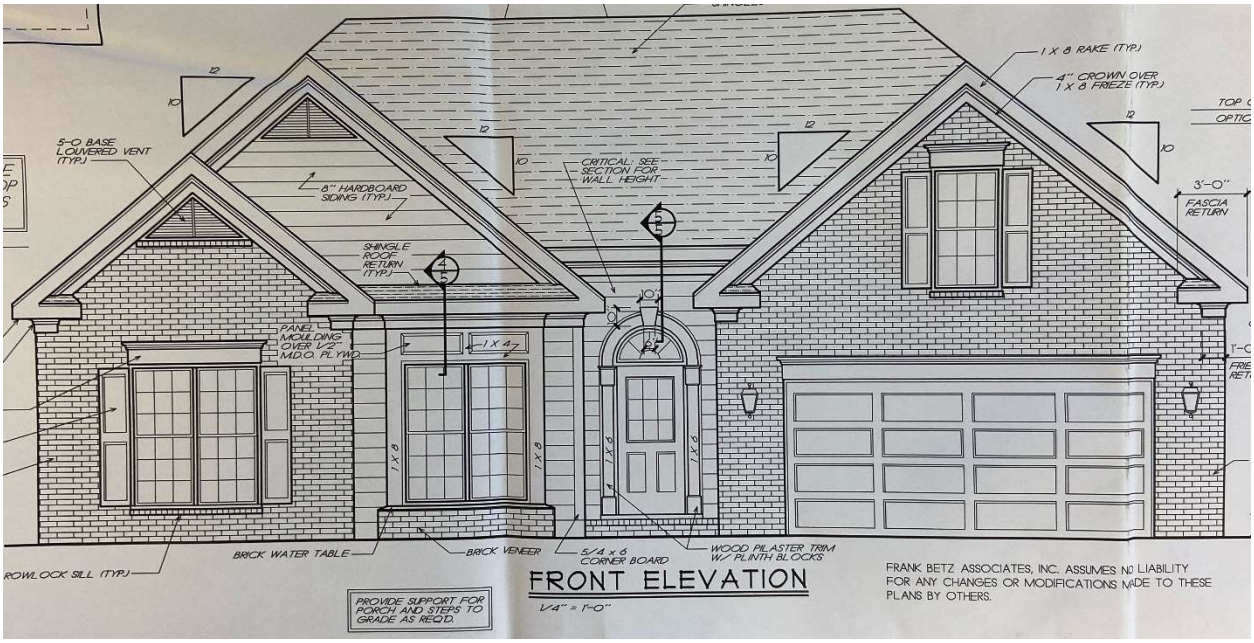
REQUEST: The applicant requests approval of a geologic hazards permit and variance to side yard setbacks. The applicant proposes to construct a new single-family dwelling in the R-5PD Residential zone.

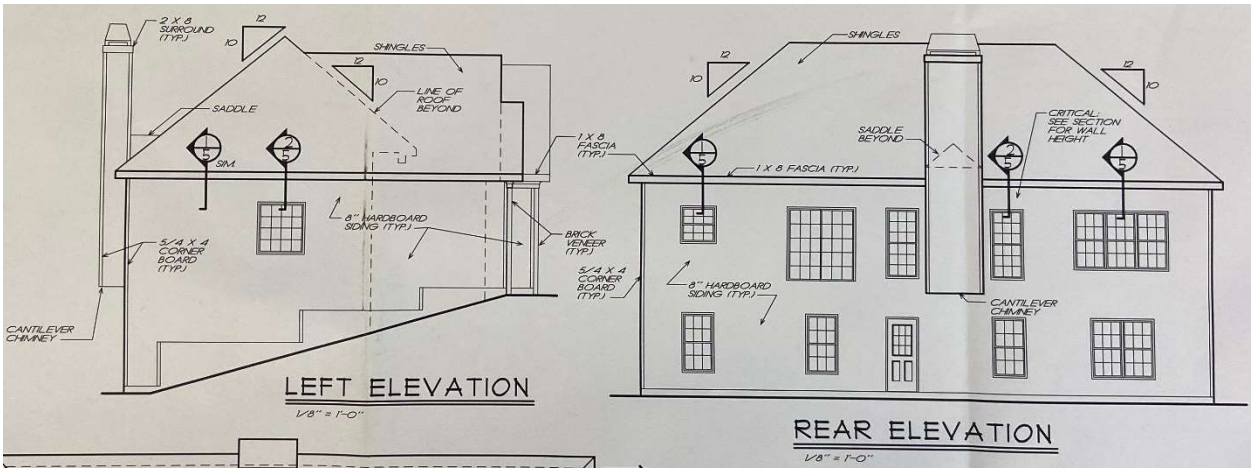
A. RELEVANT FACTS:

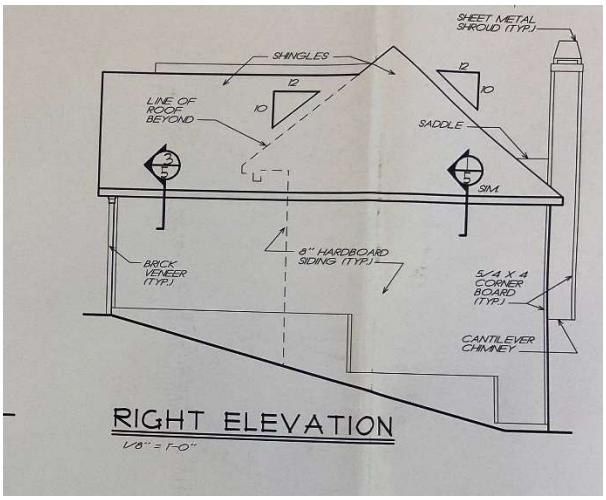
1. **Property Location:** The subject property is located at 220 NE Spring Avenue in View of the Bay Planned Development, and is further identified on Lincoln County Assessor's Map 09-11-05-DD as tax lot 01500.



Lincoln County Tax Id. No. 09-11-05-DD-001500


1 X 8 RAKE (TYP.)
4" CROWN OVER 1 X 8 FRIEZE (TYP.)
5'-0" BASE LOUVERED VENT (TYP.)
8" HARDBOARD SIDING (TYP.)
CRITICAL: SEE SECTION FOR WALL HEIGHT
SHINGLE ROOF RETURN (TYP.)
3'-0" FASCIA RETURN
PANEL MOULDING OVER 1/2" M.D.O. PLYWD.
1 X 4
1 X 8
BRICK WATER TABLE
BRICK VENEER
5/4 x 6 CORNER BOARD
WOOD PILASTER TRIM W/ PLINTH BLOCKS
ROWLOCK SILL (TYP.)
PROVIDE SUPPORT FOR PORCH AND STEPS TO GRADE AS REQ'D.
FRONT ELEVATION
1/4" = 1'-0"
FRANK BETZ ASSOCIATES, INC. ASSUMES NO LIABILITY FOR ANY CHANGES OR MODIFICATIONS MADE TO THESE PLANS BY OTHERS.


2 X 8 SURROUND (TYP.)
SHINGLES
LINE OF ROOF BEYOND
SADDLE
SIM.
1 X 8 FASCIA (TYP.)
8" HARDBOARD SIDING (TYP.)
BRICK VENEER (TYP.)
5/4 X 4 CORNER BOARD (TYP.)
CANTILEVER CHIMNEY
LEFT ELEVATION
1/8" = 1'-0"
SADDLE BEYOND
CRITICAL: SEE SECTION FOR WALL HEIGHT
REAR ELEVATION
1/8" = 1'-0"


SHEET METAL SHROUD (TYP.)
SHINGLES
LINE OF ROOF BEYOND
SADDLE
SIM.
8" HARDBOARD SIDING (TYP.)
BRICK VENEER (TYP.)
5/4 X 4 CORNER BOARD (TYP.)
CANTILEVER CHIMNEY
RIGHT ELEVATION
1/8" = 1'-0"

2. **Lot Size:** 0.54 acres (23,522 square feet).

3. **Zoning Designation:** R-5PD (View of the Bay Planned Development (PD))

4. **Plan Designation:** Residential

5. **Surrounding Land Use:** The subject property is surrounded by undeveloped land and open space with single-family residential development within View of the Bay Planned Development and along Spring Avenue.

6. **Topography & Vegetation:** (Paraphrased from Geologic Hazards and Geotechnical Investigation)

   The site generally slopes down to the east-southeast at an average slope angle of approximately 38 degrees, with the eastern half of the lot being steeper, leading down to North Depoe Bay Creek. The upper portion of the site slopes between approximately 5 and 10 degrees and appears to have been previously graded near NE Spring Avenue.

   Much of the upper portion of the site has been cleared of brush; where the site has not been cleared, vegetation consists of salal, blackberry, scotch broom, and immature shore pine trees. The slope leading down to North Depoe Bay Creek is densely vegetated with immature alder trees with an understory of ferns, evergreen huckleberry, and other brush typical of the Oregon coast.

7. **Existing Structures:** The subject property is vacant.

8. **Utilities:** The following utilities currently serve the subject property:

a. Sewer: City sewer service.
b. Water: City water service.
c. Electricity: Central Lincoln P.U.D.

9. **Development Constraints:**

a. Geologic hazards.
b. Steep slopes
c. Stream corridor easement

B. EVALUATION OF THE REQUEST:

1. **Applicant's Proposal:**
The applicant proposes to construct a single-family dwelling on the site. The applicant is requesting variances to the side yard setbacks.

The applicant submitted the application form and fee/deposit, and the following material:

- Application form and fee/deposit for Geologic Permit and request for Variance
- May 14, 2021 Geologic Hazards and Geotechnical Investigation
- Site Plan
- Building Elevations
- Floor Plans

2. Relevant Depoe Bay Zoning Ordinance (DBZO) Criteria:
Depoe Bay Zoning Ordinance No. 24 (as amended)
a. Section 3.050: Residential Zone R-5
b. Section 4.030: Off-Street Parking
c. Article 8: Variances
d. Article 13: Development Guidelines

Section 3.050 Residential Zone R-5 Relevant Standards
b. Yards.
1. The front yard shall be a minimum of 20 feet.
2. Each side yard shall be a minimum of either 5 feet or 1 foot for each 3 feet of building height, whichever requirement is the greater.
3. The street side yard shall be a minimum of twenty (20) feet except this may be reduced by one (1) foot for each foot the average lot width is less than sixty (60) feet, however, no street side yard shall be less than ten (10) feet.
4. The rear yard shall be a minimum of 10 feet, except that on a corner lot, it shall be a minimum of either 5 feet or one foot for each 3 feet of building height, whichever requirement is the greater.

c. No building in the R-5 zone shall exceed a height of 40 feet.

Section 4.030 Off-Street Parking and Off-Street Loading Requirements
4. Off-street parking spaces for dwellings, hotels, motels, resorts and time-shares shall be located on the same lot or on a lot immediately adjacent to the lot served by such parking.

11. Except with respect to approved driveways, required off-street parking areas shall not be provided in the required front or street side-yard areas in a residential zone.
19. Off-Street Parking Space Requirements
    a. Single family residential use: Two (2) spaces

Article 8. Variances

Section 8.010 Authorization to Grant or Deny Variances.

The Planning Commission may authorize variances from the requirements of this ordinance where it can be shown that, owing to special and unusual circumstances related to a specific piece of property, strict application of the ordinance would cause an undue or unnecessary hardship. No variance shall be granted to allow the use of property for a purpose not authorized within the zone in which the proposed use would be located.

Section 8.020. Circumstances for Granting a Variance. A variance may be granted only in the event that all of the following circumstances exist:

1. Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the same zone or vicinity, and result from lot size or shape, legally existing prior to the date of this ordinance, topography, or other circumstances over which the applicant has no control.
2. The variance is necessary for the preservation of a property right of the applicant substantially the same as owners of other property in the same zone or vicinity possess.
3. The variance would not be materially detrimental to the purposes of this ordinance, or to property in the zone or vicinity in which the property is located, or otherwise conflict with the objectives of any city plan or policy.
4. The hardship is not self-imposed and the variance requested is the minimum variance which would alleviate the hardship.
5. The hardship asserted as a basis for the variance does not arise from a violation of the Zoning Ordinance.

Section 8.040. Time Limit on a Variance. Authorization of a variance shall be void after one year unless substantial construction pursuant thereto has taken place. However, the Planning Commission may extend authorization for an additional period not to exceed one year, on request.

Article 13 Development Guidelines:

Section 13.050. Permit Procedures. In order to obtain a Geologic Permit, the applicant shall submit, along with the appropriate fee, a Geologic Hazard Report which shall be prepared by a registered geologist or a certified engineering geologist recognized by the State of Oregon and dated no more than one year prior to the application date. The report shall explain fully the activity for which the permit is being sought. If the purpose of the Geologic Hazard Report is for a building permit, then the report shall accompany and address final building plans. Any activities not specifically covered in the report will not be covered by the permit. The report shall also identify the nature, extent and location of all geologic hazards associated with the proposed site and activity. Finally, the report shall detail exact measures to be taken so as to avoid the occurrence of landslides, erosion, sloughing, puddling, or other identified geologic hazards on the subject and surrounding property or any prohibited activity identified above. For uses requiring removal of vegetation or excavation, plans for the legal disposal of such materials shall be submitted.

Section 13.055. Specific Requirements for Geologic Hazard Reports. Geologic Hazard Reports provided pursuant to this Article shall conform to the following requirements from the "Guidelines for Preparing Engineering Geologic Reports in Oregon". The geologist's report shall have reviewed these specific requirements and the applicant shall address the applicable conditions in the proposal. Sections that are not applicable shall be identified as not applicable.

This section of the DBZO identifies six subsections to address. Please refer to the DBZO for the description of requirements for each subsection:

a. General Information
b. Geologic Mapping and Investigation
c. Geologic Descriptions
d. Conclusions and Recommendations
e. Assessment of Geologic Factors
f. Inspection and Monitoring

Section 13.060. Determination of Compliance. Geologic Hazard Reports submitted for review in accordance with Article 10, shall be reviewed by the Planning Commission, which shall determine whether the Report addresses the provisions of this Article as it reviews the entire application. Land use applications before the Planning Commission shall not be approved until such a determination has been made. Regardless of approval by the City, liability remains with the report signator and the applicant, who must conform with the report's requirements. Signed acceptance of this liability shall accompany the permit application.

In determining compliance, the Planning Commission shall evaluate:

a. if the report appears to adequately recognize the causes, extent, and potential of the hazards and conforms substantively with the requirements found in Section 13.055.
b. if the recommendations to overcome the recognized hazards are set out clearly and specifically and are included in the engineered plans of the development.
c. if the Geologic Hazard Report indicates that possible future danger may exist from a hazard, the Applicant or Property Owner shall complete and sign the Declaration of Covenants and Conditions of Responsibility and Indemnity (The Declaration) provided by the City. Prior to issuance of a building permit, the Applicant or Property Owner shall execute and record the Declaration in the deed records of Lincoln County, Oregon.
d. if the Geologic Hazard Report and the associated plans contain the signature and professional stamp of a licensed geologist or engineering geologist qualified to certify such reports and plans.

3. **Public Testimony:** At the time this staff report was written, one written testimony had been received by the City via email 8/31/2021.

Gary and Nancy Owens

> On Sep 1, 2021, at 8:05 AM, planner <planner@CityofDepoebay.org> wrote:
>
> Good morning and thank you for your comments, I will incorporate into the record.
>
> A few quick updates:
> The final design of the house is for a height of 22'-5". The required side yard setbacks are 7'-6". The applicant is requesting 6' setbacks, a variance of 1'-6" on each side.
>

> The staff report will be available this afternoon which includes a statement from the applicant addressing the need for a variance. The applicant and the public will have an opportunity at the Planning Commission Public Hearing to present their case.
>
> Thanks,
>
> Jaime White, City Planner
> City of Depoe Bay
> planner@cityofdepoebay.org
> 541-765-2361 x15
> (Tuesday & Wednesday Only)
>
> -----Original Message-----
> From: Nancy Owens
> Sent: Tuesday, August 31, 2021 7:50 PM
> To: planner <planner@CityofDepoebay.org>
> Subject: Testimony in response ro Request for Variance - 220 NE Spring Avenue
>
> Attn: Jaime White
>
> Dear Mr. White,
>
> I'm following up after our phone conversation last week to document my concern to the request for variance for side yard setbacks for the property located at 220 NE Spring Avenue.
>
> I understand from our conversation that the proposed structure is to be 21-ft high. Therefore, per City of Depoe Bay Zoning Ordinance, Article 3, Section 3.050 - 3b(2), the side yard is required to be 7-ft from the property line.
>
> Additionally, I understand the property owner is requesting a 6.5-ft setback, instead of the required 7-ft. I have two questions:
>
> - Why can't the house be moved slightly to avoid the need for a variance?
> - Why can't the design of the house be altered to meet City code?
>
> Article 8 of the zoning ordinance, Section 8.050 lists the criteria under which a variance can be granted. As stated, ALL circumstances must exist. I don't understand how the first two criteria, listed below, can exist since our property, which is adjacent to 220 NE Spring Avenue, is very similar in topography, and dimensions, and we've designed a house to meet all City code without variance.
>
> Section 8.020.
> 1. Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the same zone or vicinity, and result from lot size or shape legally existing prior to the date of this ordinance, topography, or other circumstances over which the applicant has no control.
>
> 2. The variance is necessary for the preservation of property right of the applicant substantially the same as owners of other property in the same zone or vicinity possess.
>
> I feel this variance is unnecessary and any narrowing of setbacks should be avoided in this circumstance.

>
> Please provide a response to my questions.
>
> Thank you for your attention to this matter,
>
> Gary L. and Nancy S. Owens
> Owners of Lot 15
> View of the Bay

4. Applicant Narrative:

We are asking for a variance due to the Geotechnical hazard report stating that the back of our house can only be 60' back from the street, without adding extensive concrete piers. Also due to the narrowing of our property lines within the 60' limitation.

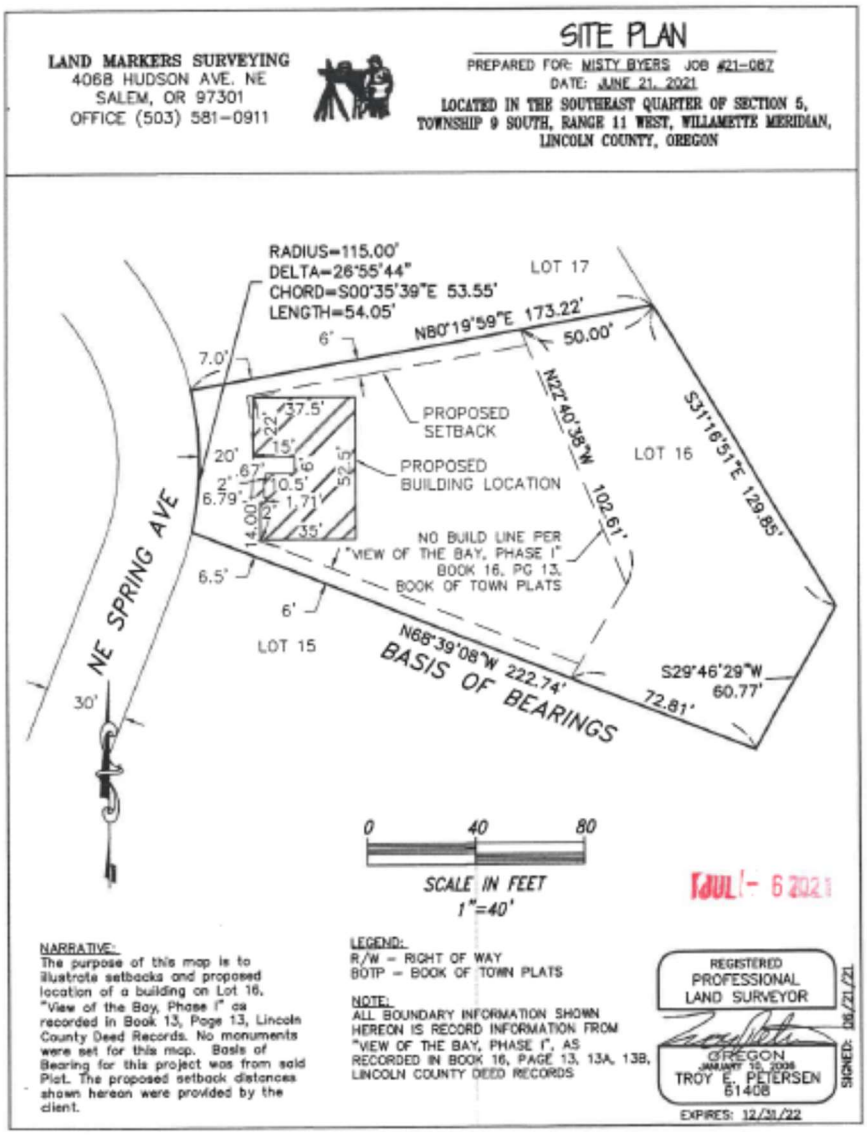
The variance we are asking for due to the 3/1 ratio set back from the side property lines is 2"11" in roof height. The roof peak height from the back of the house at the walkout basement will be 26'11". From the front of the house at street level the peak of the roof will only be 17'11", bringing our average to 22'5" roof peak height. The South side set back from our property line being 6'6" only allows our roof peak height with the 3/1 ratio to be 19'6".

We appreciate your considering our request on this matter, and we look forward to being part of this beautiful community.

C. SUMMARY AND STAFF ANALYSIS: The Planning Commission reviews the proposal for conformance with the appropriate standards of the Depoe Bay Zoning Code. To facilitate review, staff provides the following analysis:

1. **R-5 Residential Standards and Parking Requirements**

Standard	Requirement	Proposed
Building Height	Max. 40’	22’-5”
Front Yard	Min. 20’-0”	20’-0”
Rear Yard	Min. 10’-0”	~110’
North Side Yard	Min. 5’ or 1’ for every 3’ of bldg. ht. **7’-6”** required w/ 22’-5” bldg. ht.	6’
South Side Yard	Min. 5’ or 1’ for every 3’ of bldg. ht. **7’-6”** required w/ 22’-5” bldg. ht.	6’
Parking Space Requirements	2 spaces	2 garage spaces Plus driveway



2. Variances

A variance may be granted only in the event that all of the following five circumstances exist. The circumstances are stated in *italics* and followed by a paraphrased version of the applicant's response.

a. *Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the same zone or vicinity, and result from lot size or shape, legally existing prior to the date of this ordinance, or other circumstances over which the applicant has no control.*

APPLICANT RESPONSE: The Geotechnical hazard report states any structure can only be within 60' of the street. Building beyond this would require adding extensive concrete piers or other structural members. The lot is irregularly shaped, narrowing towards the west requiring smaller setbacks for the building footprint.

b. *The variance is necessary for the preservation of a property right of the applicant substantially the same as owners of other property in the same zone or vicinity possess.*

APPLICANT RESPONSE: The proposed residence is similar in size to other residences in the

View of the Bay subdivision.

c. *The variance would not be materially detrimental to the purposes of this ordinance, or to property in the zone or vicinity in which the property is located, or otherwise conflict with the objectives of any City plan or policy.*

APPLICANT RESPONSE: The proposed residence is similar to other residences in the view of the Bay subdivision. The proposed residence meets all other zone standards.

d. *The hardship is not self-imposed and the variance requested is the minimum variance which would alleviate the hardship.*

APPLICANT RESPONSE: The proposed residence is similar to other residences in the view of the Bay subdivision. The requested side yard setbacks are larger than the minimum 5' (without taking height into consideration) required by the Zoning Ordinance.

e. *The hardship asserted as a basis for the variance does not arise from a violation of the Zoning Ordinance.*

APPLICANT RESPONSE: There is no violation of the Zoning Ordinance.

3. <u>Geologic Hazards and Geotechnical Investigation.</u>

The May 14, 2021 Geologic Hazards and Geotechnical Investigation includes an introduction, scope of work, parcel location and description, site vicinity, slopes, proposed development, geologic setting, geologic hazard mapping, soils observed, geologic hazard reconnaissance, drainage, erosion, conclusions, recommendations, and report limitations (report attached to this staff report).

The primary recommendation from the Geologic Hazards and Geotechnical Investigation is:

"We recommend that foundation elements be no further east than 60 feet from NE Spring Avenue to minimize hazards associated with the steeper slopes on the eastern portion of the site. To mitigate possible shallow ground movement, foundations located from 50 to 60 feet from NE Spring Avenue should consist of augered piers embedded a minimum of 10 feet below existing grades or on rock as approved by a representative of HGSA. Piers should consist of steel-reinforced, cast-in-place concrete piers a minimum of 12 inches in diameter. Foundations located within 50 feet of NE Spring Avenue may be supported on individual and continuous spread footings or daylight basement bearing in undisturbed, native, non-organic, firm soils or properly designed and compacted structural fill placed on these soils."

The geologist provides the following recommendations:

8.0 Conclusions and Recommendations

The main engineering geologic concerns at the site are:

1. The site lies on a large ancient landslide which has a low potential of reactivating. At the time of our site visit, we did not observe signs of active landsliding at the site; however, younger landslide features were noted on the adjacent lot to the south.

2. Fill and soft/loose soils approximately 2.5 feet thick or more are present. These soils are unsuitable for supporting new foundations.

3. Loose surficial soils are susceptible to erosion caused by stormwater, if not mitigated for. Surface and stormwater drainage will need to be directed to areas where it will not be detrimental to improvements.

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

The following recommendations shall be adhered to during design and construction:

8.1 Site Preparation

We recommend that foundation elements be no farther east than 60 feet from NE Spring Avenue to minimize hazards associated with the steeper slopes on the eastern portion of the site. To mitigate possible shallow ground movement, foundations located from 50 to 60 feet from NE Spring Avenue should consist of augered piers embedded a minimum of 10 feet below existing grades or on rock as approved by a representative of HGSA. Piers should consist of steel-reinforced, cast-in-place concrete piers a minimum of 12 inches in diameter. Foundations located within 50 feet of NE Spring Avenue may be supported on individual and continuous spread footings or daylight basement bearing in undisturbed, native, non-organic, firm soils or properly designed and compacted structural fill placed on these soils.

All footing areas should be stripped of all organic soils, organic debris and existing fills. We anticipate that non-organic, firm soils will generally be encountered at depths of approximately 2.5 feet; however, depths may vary.

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 inches of well-compacted crushed aggregate in footing areas and covering areas with plastic sheeting.

Any tree stumps, including the root systems, shall be removed from beneath footing, slab and pavement areas, and the resulting holes backfilled with compacted non-organic structural backfill placed in lifts not exceeding 8 inches and compacted to a dry density of at least 92 percent of the Modified Proctor maximum dry density (ASTM D1557).

8.2 Soil Bearing Capacities

Footings bearing in undisturbed, native, non-organic, firm soils or properly compacted, imported, structural fill placed on these soils may be designed for the following:

ALLOWABLE SOIL BEARING CAPACITIES	
Allowable Dead Plus Live Load Bearing Capacity*	1,500 psf
Passive Resistance	150 psf/ft embedment depth
Lateral Sliding Coefficient	0.30
* Allowable bearing capacity may be increased by one-third for short-term wind or seismic loads.	

8.3 Footings

We recommend that the house be constructed with an elevated floor and crawlspace or daylight basement design. Our recommended minimum footing widths and embedment depths are as follows:

MINIMUM FOOTING WIDTHS & EMBEDMENT DEPTHS			
Number of Stories	One	Two	Three
Minimum Footing Width	15 inches	18 inches	22 inches
Minimum Exterior Footing Embedment Depth [a]	15 inches	18 inches	24 inches
Minimum Interior Footing Embedment Depth [b]	6 inches	6 inches	6 inches

[a] All footings shall be embedded as specified above, or extend below the frost line as per Table R301.2(1) of the 2017 ORSC, whichever provides greater embedment.
[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.

8.4 Slabs-On-Ground

All areas beneath slabs for driveways or garages shall be excavated a minimum of 6 inches into native, non-organic, firm soils. The exposed subgrade in the slab excavation shall be cut smooth, without loose or disturbed soil or rock remaining in the excavation.

SLABS-ON-GROUND	
Minimum thickness of 3/4 inch minus crushed rock beneath slabs	6 inches
Compaction Requirements	92% ASTM D1557, compacted in 8-inch lifts maximum

The slab excavation shall then be backfilled with a minimum of 6 inches of ¾ inch minus, clean, free-draining, crushed rock placed in 8-inch lifts maximum which are compacted to a minimum of 92 percent of the Modified Proctor (ASTM D1557). Reinforcing of the slab is recommended, and the slab shall be fully waterproofed in accordance with structural design considerations. An underslab drainage system is recommended for all below grade slabs, as per the architect's recommendations. Where floor coverings are planned, slabs shall also be underlain by a suitable moisture barrier.

8.5 Retaining Walls

For static conditions, free-standing retaining walls shall 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 shall be used assuming sloping backfill of 2H:1V. At-rest retaining walls shall be designed for a lateral pressure expressed as an EFW of 60 pounds per cubic foot, assuming level backfill behind the wall equal to a distance of at least half of the height of the wall. 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]
Seismic Loading (level backfill/grades)	13.7 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 are applied to the retaining walls, forces on the walls resulting from these loads will need to be added to the pressures given above.

For seismic loading, a unit pseudostatic force equal to 13.7 pcf $(H)^2$, where H is the height of the wall in feet, shall be added to the static lateral earth pressure. 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 shall be placed in 8-inch horizontal lifts and machine compacted to a minimum of 92 percent of the maximum dry density as determined by ASTM D1557. Compaction within 2 feet of the wall shall be accomplished with lightweight hand-operated compaction equipment to avoid applying additional lateral pressure on the walls. Drainage of the retaining wall shall 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 shall extend to within 2 feet of the ground surface behind the wall, and the filter fabric shall be overlapped at the top per the manufacturer's recommendations. All walls shall be fully drained to prevent the build-up of hydrostatic pressures. All retaining walls shall

have a minimum of 2 feet of embedment at the toe or be designed without passive resistance. The EFWs provided above assume that properly compacted free-draining crushed rock will be used for the retaining wall backfill.

8.6 Seismic Requirements

The structure and all structural elements shall 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 shall 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 = 1.432g
Site Coefficients	F_a = 1.200 F_v = 1.700
Design Spectral Response Acceleration at Short Periods	S_{DS} = 1.146g

8.7 Structural Fills

Structural fills should consist of imported, crushed granular material, free of organics and deleterious materials, and contain no particles greater than 1½ inches in diameter so that nuclear methods (ASTM D2922 & ASTM D3017) can be easily used for field density and moisture testing. All areas to receive fill should be stripped of all soft soils, organic soils, organic debris, existing fill, and disturbed soils.

STRUCTURAL FILL	
Compaction Requirements	92% 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 shall be benched. Fills shall not be placed along slopes steeper than 3H:1V, unless approved by H.G. Schlicker & Associates, Inc.
[a] Benches shall be cut into native, non-organic, firm soils. Benches shall be a minimum of 6 feet wide with side cuts no steeper than 1H:1V and no higher than 6 feet. The lowest bench shall be keyed in a minimum of 2 feet into native, non-organic, firm soils.	

Proper test frequency and earthwork documentation usually require 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 at least three density tests be performed for every 18 inches or every 200 cubic yards of fill placed, whichever requires more testing. Because testing is performed on an on-call basis, we recommend that the earthwork contractor schedule the testing. Relatively more testing is typically necessary on smaller projects.

8.8 Groundwater

Groundwater may be encountered at shallow depths in excavations during the wet season. If groundwater is encountered, unwatering of the excavation is required and shall be the contractor's responsibility. Unwatering can typically be accomplished by pumping from one or more sumps or daylighting the excavations to drain.

8.9 Erosion Control

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

Temporary sediment fences shall be installed downslope of any disturbed areas of the site until permanent vegetation cover can be established.

Exposed sloping areas steeper than 3 horizontal to 1 vertical (3H:1V) shall 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 shall be installed as per the manufacturer's recommendations.

8.10 Cut and Fill Slopes

Temporary unsupported cut and fill slopes less than 9 feet in height shall be sloped no steeper than 1½ horizontal to 1 vertical (1½H: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 1½H: 1V will likely require appropriate shoring to provide for worker safety, per OSHA regulations. Temporary cuts shall be protected from inclement weather by covering with plastic sheeting to help prevent erosion and/or failure.

Permanent unsupported cut and fill slopes shall be constructed no steeper than 2 horizontal to 1 vertical (2H:1V). Cut slopes steeper than 2H:1V shall be retained with an engineered retaining wall. 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	1½H:1V (maximum) *
Permanent Cuts	2H:1V (maximum) *
* 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.	

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.

8.11 Drainage

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 6 feet towards a suitable gravity outlet to prevent ponding near the structures. Permanent subsurface drainage of the building perimeter is recommended to prevent extreme seasonal variation in moisture content of subgrade materials and subjection of foundations and slabs to hydrostatic pressures.

Footing drains should be installed adjacent to the perimeter footings and sloped a minimum of 2 percent to a gravity outlet. A suitable perimeter footing drain system would consist of a 4-inch diameter, perforated PVC pipe (typical) embedded 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 geotextile filter such as Mirafi® 140N, or equivalent, to increase the life of the drainage system. The perimeter drain excavation should be constructed in a manner which prevents undermining of foundation or slab components or any disturbance to supporting soils.

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 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 collected on the site should not be concentrated and discharged to adjacent properties.

8.12 Plan Review and Site Observations

We shall 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 B). The plans, details, and specifications shall clearly show that the above recommendations have been implemented into the design. There will be additional charges for these services.

We shall observe footing and slab excavations prior to placing fill, forming and/or pouring of concrete, and observe pavement areas prior to placing fill to assure that suitable bearing soils have been reached. At the time of our observations, we may recommend additional excavation if suitable bearing soils have not been reached. Please provide us with at least five (5) days' notice prior to any needed site observations. There will be additional costs for these services.

4. **Building Setback NE Spring Ave.** The geologist recommends that foundation elements be no further east than 60 feet from NE Spring Avenue to minimize hazards associated with the steeper slopes on the eastern portion of the site. With a 20-foot front yard setback, the rear of the house is at approximately 58 feet from the street.

5. **Geologist Certification, Inspection and Monitoring.** Prior to issuance of a building permit a certified engineering geologist shall provide a letter(s) to the City stating that final plans for site development are in conformance with the recommendations described in the May 14, 2021 Geologic Hazards and Geotechnical Investigation.

6. **Erosion Control and Drainage Plan.** Prior to issuance of a building permit, the City Superintendent shall review and approve an erosion control and drainage plan.

7. **Archaeological Resources.** The site is identified in the Comprehensive Plan Inventory as having potential archaeological resources. The DBZO Section 3.360(5)(b)(1) states that development on identified archaeological sites shall be conducted in a manner so as to minimize site disturbance and prevent irreversible loss of archaeological resources. This does not require the property owner to hire an archaeologist, however, it does require the property owner to be cognizant of archaeological resources when developing the site. The applicant needs to be aware of potential archaeological resources and take feasible action to minimize site disturbance and prevent irreversible loss of archaeological resources.

8. **Declaration.** The Applicant/Property Owner shall complete and sign the Declaration of Covenants and Conditions of Responsibility and Indemnity (The Declaration) provided by the City. Prior to issuance of a building permit, the Applicant or Property Owner shall execute and

record the Declaration in the deed records of Lincoln County, Oregon. The Declaration is required for all geologic hazard reports per Depoe Bay Zoning Ordinance Section 13.060.3. The Declaration states that the applicant shall be responsible for the consequences, including the safety of the public, of constructing and maintaining the Improvements.

D. CONCLUSIONS: In evaluating the request, the Planning Commission bases its decision on compliance with the applicable code standards. If the Commission finds the request fails to satisfy the ordinance standards, it can move to deny the request, articulating the basic conclusions and rationale for the decision and directing staff to prepare findings.

If the Planning Commission finds the request satisfies the applicable criteria, it can move to approve the request and direct staff to prepare findings. In the event of an approval, staff suggests the following conditions of approval:

1. **R-5 Residential and Parking Standards.** Development shall be accomplished in accordance with the submitted plan and in conformance with all R-5 Residential and parking standards. This includes a minimum front yard of 20' and minimum rear yard of 10'. A minimum 2 on-site parking spaces shall be provided.

   Variances are granted for side yard setbacks (from code required 7'-6" to 6'). North side yard shall be a minimum of 6'. South side yard shall be a minimum of 6'.

2. **Building Permit.** The applicant shall obtain a valid building permit prior to commencement of construction.

3. **Geologist Certification, Inspection and Monitoring.** Prior to issuance of a building permit a certified engineering geologist shall provide a letter to the City stating that final plans for site development are in conformance with the recommendations described in the May 14, 2021 Geologic Hazards and Geotechnical Investigation. Any fill placed in the proposed building area must be placed only after the subgrade is properly prepared and then approved by a qualified engineering geologist or geotechnical specialist.

4. **Erosion Control and Drainage Plan.** Prior to issuance of a building permit, the City Superintendent shall review and approve an erosion control and drainage plan.

5. **Design and Construction Recommendations.** Development shall be accomplished in conformance with the recommendations described in the May 14, 2021 Geologic Hazards and Geotechnical Investigation.

6. **Archaeological Resources.** Development shall be conducted in a manner so as to minimize site disturbance and prevent irreversible loss of archaeological resources. Before and during excavation, any discovery of archaeological resources shall mean that the applicant shall cease excavation activities, notify the State Historic Preservation Office and Confederated Tribe of Siletz Indians, and meet State statutes before proceeding.

7. **Declaration.** The Applicant/Property Owner shall complete and sign the Declaration of Covenants and Conditions of Responsibility and Indemnity (The Declaration) provided by the City. Prior to issuance of a building permit, the Applicant or Property Owner shall execute and record the Declaration in the deed records of Lincoln County, Oregon.

Submitted by,

Jaime White, City Planner

Enclosures: Vicinity Map

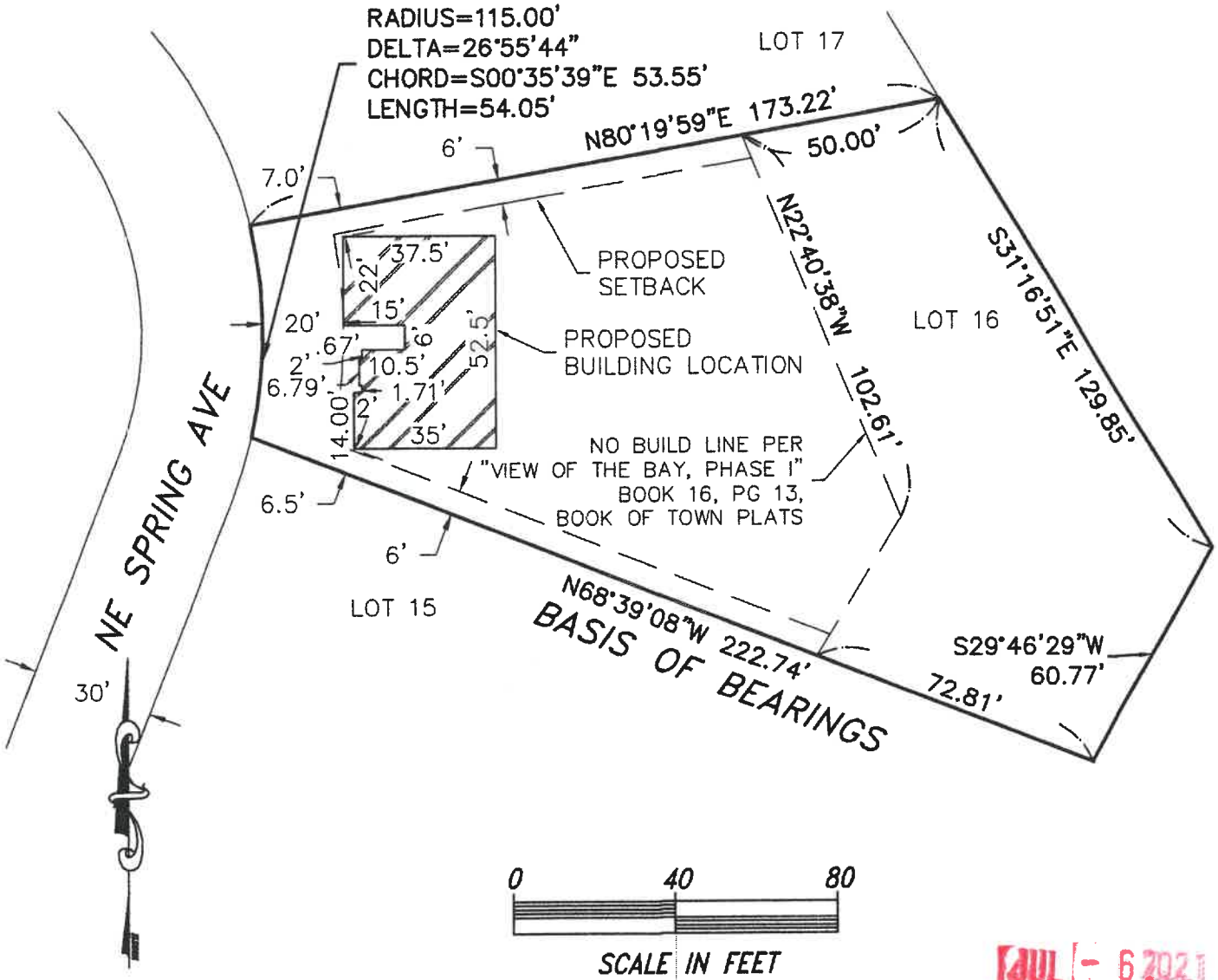
Site Plan
Building Elevations
May 14, 2021 Geologic Hazards and Geotechnical Investigation

SITE PLAN

LAND MARKERS SURVEYING
4068 HUDSON AVE. NE
SALEM, OR 97301
OFFICE (503) 581-0911

PREPARED FOR: MISTY BYERS JOB #21-087
DATE: JUNE 21, 2021

LOCATED IN THE SOUTHEAST QUARTER OF SECTION 5, TOWNSHIP 9 SOUTH, RANGE 11 WEST, WILLAMETTE MERIDIAN, LINCOLN COUNTY, OREGON



JUL - 6 2021

NARRATIVE:
The purpose of this map is to illustrate setbacks and proposed location of a building on Lot 16, "View of the Bay, Phase I" as recorded in Book 13, Page 13, Lincoln County Deed Records. No monuments were set for this map. Basis of Bearing for this project was from said Plat. The proposed setback distances shown hereon were provided by the client.

LEGEND:
R/W - RIGHT OF WAY
BOTP - BOOK OF TOWN PLATS

NOTE:
ALL BOUNDARY INFORMATION SHOWN HEREON IS RECORD INFORMATION FROM "VIEW OF THE BAY, PHASE I", AS RECORDED IN BOOK 16, PAGE 13, 13A, 13B, LINCOLN COUNTY DEED RECORDS

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JANUARY 10, 2006
TROY E. PETERSEN
61408

EXPIRES: 12/31/22

SIGNED: 06/21/21

Geologic Hazards and Geotechnical Investigation
Tax Lot 1500, Map 9-11-05DD
Lot 16 View Of The Bay
Depoe Bay, Lincoln County, Oregon

Prepared for:
Ms. Misty Byers
P.O. Box 971
Lincoln City, Oregon 97367

Project #Y214499

May 14, 2021

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 #Y214499

May 14, 2021

To: **Ms. Misty Byers**
P.O. Box 971
Lincoln City, Oregon 97367

Subject: **Geologic Hazards and**
Geotechnical Investigation
Tax Lot 1500, Map 9-11-05DD
Lot 16 View Of The Bay
Depoe Bay, Lincoln County, Oregon

Dear Ms. Byers:

The accompanying report presents the results of our geologic hazards and geotechnical investigation for the above subject site.

After you have reviewed our report, we would be pleased to discuss it 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.

J. Douglas Gless, MSc, RG, CEG, LHG
President/Principal Engineering Geologist

JDG:aml

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

Project #Y214499

May 14, 2021

To: **Ms. Misty Byers**
P.O. Box 971
Lincoln City, Oregon 97367

Subject: **Geologic Hazards and**
Geotechnical Investigation
Tax Lot 1500, Map 9-11-05DD
Lot 16 View Of The Bay
Depoe Bay, Lincoln County, Oregon

Dear Ms. Byers:

1.0 Introduction and General Information

At your request and authorization, a representative of H.G. Schlicker and Associates, Inc. (HGSA) visited the subject site on May 3, 2021, to complete a geologic hazards and geotechnical investigation of Tax Lot 1500, Map 9-11-05DD, located in Depoe Bay, Lincoln County, Oregon (Figures 1 and 2; Appendix A). It is our understanding that you are planning to construct a new house on the site.

This report addresses the engineering geology and geologic hazards at the site with respect to constructing a house. The scope of our work consisted of a site visit, site observations and measurements, hand augered borings, a slope profile, limited review of the geologic literature, review of our previous reports for the View of the Bay subdivision (HGSA #951202) and site (HGSA #Y042402), interpretation of topographic maps, lidar and aerial photographs, and preparation of this report which provides our findings, conclusions, and recommendations.

2.0 Site Description

The subject site consists of a vacant, irregular-shaped, 0.54-acre parcel located in the View Of The Bay development in eastern Depoe Bay (Figure 1). The site is bounded to the west by NE Spring Avenue, to its north and south by undeveloped lots and to its east by North Depoe Bay Creek, located on vacant land owned by the City of Depoe Bay (Figures 2 and 3; Appendix A). Access to the site is by way of NE Spring Avenue.

The site generally slopes down to the east-southeast at an average slope angle of approximately 38 degrees, with the eastern half of the lot being steeper, leading down to a small stream. The upper portion of the site slopes between approximately 5 and 10 degrees and appears to have been previously graded near NE Spring Avenue (Figures 3 and 4; Appendix A).

Much of the upper portion of the site had been recently cleared of brush; however, where the site had not been cleared, vegetation consisted of salal, blackberry, scotch broom, and immature shore pine trees (Appendix A). The slope leading down to North Depoe Bay Creek is densely vegetated with immature alder trees with an understory of ferns, evergreen huckleberry, and other brush typical of the Oregon coast (Appendix A).

2.1 View Of The Bay Subdivision

The subject site is part of Phase 1 of the View Of The Bay Subdivision, a 58-lot Planned Unit Development located within and platted approximately 20 years ago from Tax Lot 200, Map 9-11-05DC in the Depoe Bay area of Lincoln County, Oregon. The area of the subdivision ranges in elevation from approximately 120 to 380 feet MSL, with gentle to steep slopes of 10 to 70%. Slopes generally trend down to the south, southeast, and east, and the subdivision is bound to its east and southeast by North Depoe Creek. H.G. Schlicker & Associates, Inc. (HGSA) completed a previous geotechnical investigation for the Phase 1 portion of the View Of The Bay Subdivision. Results of that investigation are detailed in our April 14, 1995 report (HGSA #951202).

3.0 Geology

The site lies in an area mapped as Miocene Astoria Formation, consisting of massive to thin-bedded, very fine- to medium-grained micaceous and carbonaceous arkosic sandstone and siltstone (Schlicker et al., 1973). Locally, the Astoria Formation dips to the northwest at an angle of 12 to 19 degrees. Overlying the Astoria Formation in the site vicinity and mapped as the primary geologic unit to the west and northwest of the subject site is Miocene Depoe Bay Basalt, which consists of isolated pillow breccia, pillow flows, extrusive breccia and columnar-jointed flows (Schlicker et al., 1973). The Depoe Bay Basalt generally weathers to a reddish-brown, sandy clay soil that can be up to 20 to 30 feet thick. The subject site is located on ancient landslide deposits that originated further up the slope and, in part, consist of Depoe Bay Basalt materials.

At the time of our site visit, we hand augered three borings to depths up to approximately 5 feet below the ground surface (bgs). The approximate location of the boring is shown on Figures 3 and 4. A geologist from our office visually classified the soils encountered according to the Unified Soil Classification System (USCS) as follows:

B-1	Depth (ft.)	USCS	Description
	0.0 – 1.0	ML	Disturbed SILT; brown, moist to wet, loose. With occasional weathered basalt fragments to ~1/2 inch diameter, and root mat in top 6 inches.
	1.0 – 4.0	ML	SILT; reddish-brown to light brown with depth, wet, slightly stiff to stiff. With fragments of weathered basalt to ~1/4 inch diameter.
	4.0 – 5.0	ML	Slightly Clayey SILT; grayish light brown, wet, stiff.
			Boring terminated at the extent of the auger. Free groundwater was not encountered.

B-2	Depth (ft.)	USCS	Description
	0.0 – 2.0	ML(Fill)	SILT FILL; dark brown, moist to wet, loose. With occasional weathered basalt fragments to 1/4 inch diameter. ~2 inches thick light brown silt layer at ~0.75 feet bgs.
			Boring terminated at refusal on rock clast. Free groundwater was not encountered.

B-3	Depth (ft.)	USCS	Description
	0.0 – 0.75	ML(Fill)	SILT FILL; dark brown, moist to wet, loose. With occasional weathered basalt fragments to 1/4 inch diameter.
	0.75 – 1.0	ML(Fill)	SILT FILL; light brown, wet, loose.
	1.0 – 2.0	ML(Fill)	SILT FILL; dark brown, moist to wet, loose. With occasional weathered basalt fragments.
	2.0 – 2.5	ML/OL	SILT/ORGANIC SILT; dark brown/black, wet, soft. With high organic content.
	2.5 – 5.0	ML	Sandy SILT; reddish-brown, wet, slightly dense (loose when disturbed). Highly weathered basaltic rock fragments.
			Boring terminated at the extent of the auger. Free groundwater was not encountered.

In general, we encountered up to approximately 2.5 feet of fill and soft soils overlying slightly stiff to stiff silt. The soils encountered are consistent with landslide colluvium, which

can vary in thickness and type throughout the site. Free groundwater was not encountered; however, soils were wet throughout the site.

3.1 Geologic Structures

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).

The nearest mapped potentially active faults are the Cape Foulweather Fault located approximately 1.9 miles south of the site, and the Siletz Bay Faults located approximately 1.8 miles north of the site. The Cape Foulweather Fault is a southwest-northeast trending oblique fault with left-lateral strike-slip (Geomatrix, 1995). The Siletz Bay Faults are a series of northeast to southwest trending faults that have been mapped in the area of Siletz Bay and may trend through Salishan Spit. These faults are generally normal faults and are upthrown to their north. (Schlicker et al., 1973).

Other mapped potentially active faults are the Yaquina Bay Fault located approximately 12.7 miles south of the site and the Yaquina Head Fault located approximately 9.7 miles south of the site. The Yaquina Bay Fault is a generally east-northeast trending oblique fault that also has left-lateral strike-slip and either contractional or extensional dip-slip offset components (Personius et al., 2003). This fault is believed to extend offshore for approximately 7 to 8 miles and may be a structurally controlling feature for the mouth of Yaquina Bay (Goldfinger et al., 1996; Geomatrix, 1995). At Yaquina Bay, a 125,000-year-old platform has been displaced approximately 223 feet up-on-the-north by the Yaquina Bay Fault. This fault has the largest component of vertical slip (as much as 2 feet per 1,000 years) of any active fault in coastal Oregon or Washington (Geomatrix, 1995). Although the age for the last movement of the Yaquina Bay Fault is not known, the fault also offsets 80,000-year-old marine terrace sediments. The Yaquina Head Fault is an east-trending oblique fault with left-lateral strike-slip and either contractional or extensional dip-slip offset components (Personius et al., 2003). It offsets the 80,000-year-old Newport marine terrace by approximately 5 feet, indicating a relatively low rate of slip, if still active (Schlicker et al., 1973; Personius et al., 2003).

4.0 Slope Stability and Erosion

The site lies within a large, ancient landslide slump block extending from near the northwest corner of the View Of The Bay Subdivision, southeast to North Depoe Creek (Figure 1). We observed hummocky topography throughout the subdivision, which is associated with this ancient landslide. At the time of our site visit, we observed no indications of recent movement of this ancient landslide. North Depoe Creek, located east and southeast of the site, cuts into the toe of this ancient slide, forming very steep slopes along lower elevations of the subdivision. Based on our site observations, the slide plane of the ancient landslide is probably between 100 and 200 feet deep. There is a low possibility that the ancient landslide could be reactivated, which could occur in the future as a result of an earthquake event or other changing geologic and climatic conditions.

Based on our previous work in the area, indications of more recent landslide activity were observed on the adjacent lot south of the site along the upper western slopes of the North Depoe Bay Creek stream valley, as shown on Figure 3. The observed slope failures are occurring near the toe of the ancient landslide block and appear to be the result of weathered weak surface soils, steep slopes, and wet soil conditions. These recent landslides do not appear to be the result of the reactivation of the large ancient landslide. Based on our site observations, there is a low risk this recent landslide activity could threaten the subject site.

A southeast-facing prehistoric landslide (PriestGR2004a_80) is located on the eastern slope at the site and northeast of the site based on DOGAMI's SLIDO-3 landslide mapping (Burns et al., 2012; Burns and Watzig, 2014). The subject site is mapped in an area of high landslide susceptibility based on the DOGAMI methodology (Burns, Mickelson, and Madin, 2016).

We observed minor surficial erosion at the site, confined primarily to exposed loose topsoil and oversteepened slopes along an older vegetated cat road (Figure 4). These soils are highly susceptible to erosion caused by stormwater when stripped of vegetation.

5.0 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, to 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; DOGAMI, 2013).

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 have been 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). Wong and others (2000) have reported that the Yaquina Bay fault located in the Newport area is capable of generating a magnitude 6.0 to 6.5 earthquake, and the Waldport faults are capable of generating magnitude 6.3 to 6.5 earthquakes.

The expected strength of shaking to occur at the site during an earthquake in a 500-year period has been mapped as very strong to severe (DOGAMI Oregon HazVu website, accessed May 2021). "Very Strong" and "Severe" are the third and second-highest levels of a six-level gradation from "Light" to "Violent" in this mapping system.

6.0 Flooding Hazards

Based on the 2019 Flood Insurance Rate Map (FIRM, Panel #41041C0233E), the site lies in an area rated as Zone X, which is defined as an area of minimal flood hazard, determined to be outside the 0.2% annual chance floodplain.

Based on the Oregon Department of Geology and Mineral Industries mapping (DOGAMI, 2013), the site lies outside the tsunami inundation zone.

7.0 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. Global climate change and the resultant sea-level rise may impact the subject site through increased rainfall which can result in an increase in landslide occurrence.

8.0 Conclusions and Recommendations

The main engineering geologic concerns at the site are:

1. The site lies on a large ancient landslide which has a low potential of reactivating. At the time of our site visit, we did not observe signs of active landsliding at the site; however, younger landslide features were noted on the adjacent lot to the south.

2. Fill and soft/loose soils approximately 2.5 feet thick or more are present. These soils are unsuitable for supporting new foundations.

3. Loose surficial soils are susceptible to erosion caused by stormwater, if not mitigated for. Surface and stormwater drainage will need to be directed to areas where it will not be detrimental to improvements.

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

The following recommendations shall be adhered to during design and construction:

8.1 Site Preparation

We recommend that foundation elements be no farther east than 60 feet from NE Spring Avenue to minimize hazards associated with the steeper slopes on the eastern portion of the site. To mitigate possible shallow ground movement, foundations located from 50 to 60 feet from NE Spring Avenue should consist of augered piers embedded a minimum of 10 feet below existing grades or on rock as approved by a representative of HGSA. Piers should consist of steel-reinforced, cast-in-place concrete piers a minimum of 12 inches in diameter. Foundations located within 50 feet of NE Spring Avenue may be supported on individual and continuous spread footings or daylight basement bearing in undisturbed, native, non-organic, firm soils or properly designed and compacted structural fill placed on these soils.

All footing areas should be stripped of all organic soils, organic debris and existing fills. We anticipate that non-organic, firm soils will generally be encountered at depths of approximately 2.5 feet; however, depths may vary.

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 inches of well-compacted crushed aggregate in footing areas and covering areas with plastic sheeting.

Any tree stumps, including the root systems, shall be removed from beneath footing, slab and pavement areas, and the resulting holes backfilled with compacted non-organic structural backfill placed in lifts not exceeding 8 inches and compacted to a dry density of at least 92 percent of the Modified Proctor maximum dry density (ASTM D1557).

8.2 Soil Bearing Capacities

Footings bearing in undisturbed, native, non-organic, firm soils or properly compacted, imported, structural fill placed on these soils may be designed for the following:

ALLOWABLE SOIL BEARING CAPACITIES	
Allowable Dead Plus Live Load Bearing Capacity [a]	1,500 psf
Passive Resistance	150 psf/ft embedment depth
Lateral Sliding Coefficient	0.30
[a] Allowable bearing capacity may be increased by one-third for short-term wind or seismic loads.	

8.3 Footings

We recommend that the house be constructed with an elevated floor and crawlspace or daylight basement design. Our recommended minimum footing widths and embedment depths are as follows:

MINIMUM FOOTING WIDTHS & EMBEDMENT DEPTHS			
Number of Stories	One	Two	Three
Minimum Footing Width	15 inches	18 inches	22 inches
Minimum Exterior Footing Embedment Depth [a]	15 inches	18 inches	24 inches
Minimum Interior Footing Embedment Depth [b]	6 inches	6 inches	6 inches

[a] All footings shall be embedded as specified above, or extend below the frost line as per Table R301.2(1) of the 2017 ORSC, whichever provides greater embedment.
[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.

8.4 Slabs-On-Ground

All areas beneath slabs for driveways or garages shall be excavated a minimum of 6 inches into native, non-organic, firm soils. The exposed subgrade in the slab excavation shall be cut smooth, without loose or disturbed soil or rock remaining in the excavation.

SLABS-ON-GROUND	
Minimum thickness of 3/4 inch minus crushed rock beneath slabs	6 inches
Compaction Requirements	92% ASTM D1557, compacted in 8-inch lifts maximum

The slab excavation shall then be backfilled with a minimum of 6 inches of ¾ inch minus, clean, free-draining, crushed rock placed in 8-inch lifts maximum which are compacted to a minimum of 92 percent of the Modified Proctor (ASTM D1557). Reinforcing of the slab is recommended, and the slab shall be fully waterproofed in accordance with structural design considerations. An underslab drainage system is recommended for all below grade slabs, as per the architect's recommendations. Where floor coverings are planned, slabs shall also be underlain by a suitable moisture barrier.

8.5 Retaining Walls

For static conditions, free-standing retaining walls shall 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 shall be used assuming sloping backfill of 2H:1V. At-rest retaining walls shall be designed for a lateral pressure expressed as an EFW of 60 pounds per cubic foot, assuming level backfill behind the wall equal to a distance of at least half of the height of the wall. 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]
Seismic Loading (level backfill/grades)	13.7 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 are applied to the retaining walls, forces on the walls resulting from these loads will need to be added to the pressures given above.

For seismic loading, a unit pseudostatic force equal to 13.7 pcf $(H)^2$, where H is the height of the wall in feet, shall be added to the static lateral earth pressure. 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 shall be placed in 8-inch horizontal lifts and machine compacted to a minimum of 92 percent of the maximum dry density as determined by ASTM D1557. Compaction within 2 feet of the wall shall be accomplished with lightweight hand-operated compaction equipment to avoid applying additional lateral pressure on the walls. Drainage of the retaining wall shall 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 shall extend to within 2 feet of the ground surface behind the wall, and the filter fabric shall be overlapped at the top per the manufacturer's recommendations. All walls shall be fully drained to prevent the build-up of hydrostatic pressures. All retaining walls shall

have a minimum of 2 feet of embedment at the toe or be designed without passive resistance. The EFWs provided above assume that properly compacted free-draining crushed rock will be used for the retaining wall backfill.

8.6 Seismic Requirements

The structure and all structural elements shall 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 shall 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 = 1.432g
Site Coefficients	F_a = 1.200 F_v = 1.700
Design Spectral Response Acceleration at Short Periods	S_{DS} = 1.146g

8.7 Structural Fills

Structural fills should consist of imported, crushed granular material, free of organics and deleterious materials, and contain no particles greater than 1½ inches in diameter so that nuclear methods (ASTM D2922 & ASTM D3017) can be easily used for field density and moisture testing. All areas to receive fill should be stripped of all soft soils, organic soils, organic debris, existing fill, and disturbed soils.

STRUCTURAL FILL	
Compaction Requirements	92% 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 shall be benched. Fills shall not be placed along slopes steeper than 3H:1V, unless approved by H.G. Schlicker & Associates, Inc.
[a] Benches shall be cut into native, non-organic, firm soils. Benches shall be a minimum of 6 feet wide with side cuts no steeper than 1H:1V and no higher than 6 feet. The lowest bench shall be keyed in a minimum of 2 feet into native, non-organic, firm soils.	

Proper test frequency and earthwork documentation usually require 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 at least three density tests be performed for every 18 inches or every 200 cubic yards of fill placed, whichever requires more testing. Because testing is performed on an on-call basis, we recommend that the earthwork contractor schedule the testing. Relatively more testing is typically necessary on smaller projects.

8.8 Groundwater

Groundwater may be encountered at shallow depths in excavations during the wet season. If groundwater is encountered, unwatering of the excavation is required and shall be the contractor's responsibility. Unwatering can typically be accomplished by pumping from one or more sumps or daylighting the excavations to drain.

8.9 Erosion Control

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

Temporary sediment fences shall be installed downslope of any disturbed areas of the site until permanent vegetation cover can be established.

Exposed sloping areas steeper than 3 horizontal to 1 vertical (3H:1V) shall 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 shall be installed as per the manufacturer's recommendations.

8.10 Cut and Fill Slopes

Temporary unsupported cut and fill slopes less than 9 feet in height shall be sloped no steeper than 1½ horizontal to 1 vertical (1½H: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 1½H: 1V will likely require appropriate shoring to provide for worker safety, per OSHA regulations. Temporary cuts shall be protected from inclement weather by covering with plastic sheeting to help prevent erosion and/or failure.

Permanent unsupported cut and fill slopes shall be constructed no steeper than 2 horizontal to 1 vertical (2H:1V). Cut slopes steeper than 2H:1V shall be retained with an engineered retaining wall. 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	1½H: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.	

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.

8.11 Drainage

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 6 feet towards a suitable gravity outlet to prevent ponding near the structures. Permanent subsurface drainage of the building perimeter is recommended to prevent extreme seasonal variation in moisture content of subgrade materials and subjection of foundations and slabs to hydrostatic pressures.

Footing drains should be installed adjacent to the perimeter footings and sloped a minimum of 2 percent to a gravity outlet. A suitable perimeter footing drain system would consist of a 4-inch diameter, perforated PVC pipe (typical) embedded 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 geotextile filter such as Mirafi® 140N, or equivalent, to increase the life of the drainage system. The perimeter drain excavation should be constructed in a manner which prevents undermining of foundation or slab components or any disturbance to supporting soils.

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 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 collected on the site should not be concentrated and discharged to adjacent properties.

8.12 Plan Review and Site Observations

We shall 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 B). The plans, details, and specifications shall clearly show that the above recommendations have been implemented into the design. There will be additional charges for these services.

We shall observe footing and slab excavations prior to placing fill, forming and/or pouring of concrete, and observe pavement areas prior to placing fill to assure that suitable bearing soils have been reached. At the time of our observations, we may recommend additional excavation if suitable bearing soils have not been reached. Please provide us with at least five (5) days' notice prior to any needed site observations. There will be additional costs for these services.

9.0 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/or this report may be necessary as time passes to assure its accuracy and adequacy.

Boring logs, descriptions of subsurface geology and related information depict 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 engineering 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.

10.0 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.

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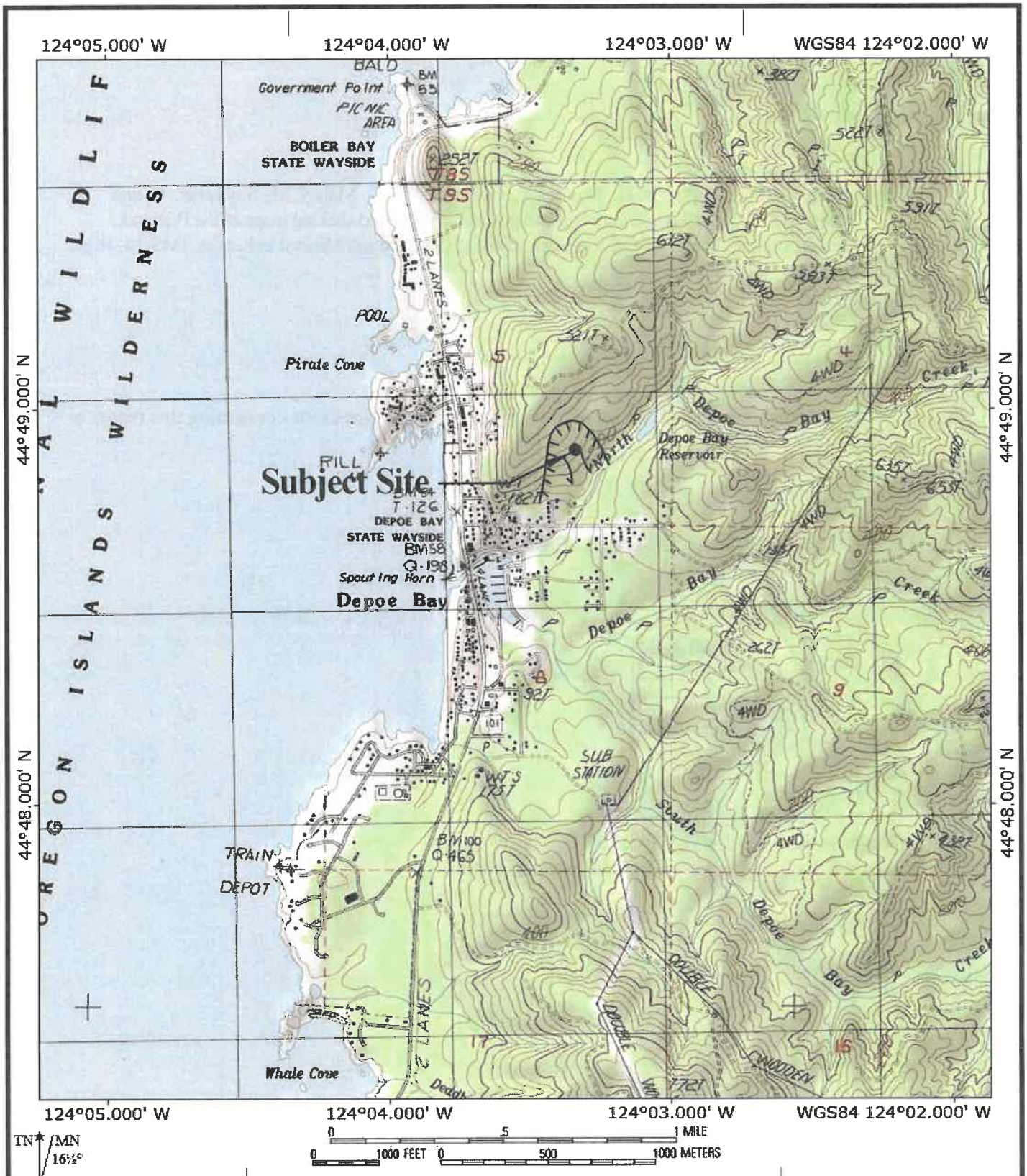
It has been our pleasure to serve you. If you have any questions concerning this report or the site, please contact us.

Respectfully submitted,

H.G. SCHLICKER AND ASSOCIATES, INC.

EXPIRES: 10/31/2021
J. Douglas Gless, MSc, RG, CEG, LHG
President/Principal Engineering Geologist

JDG:aml



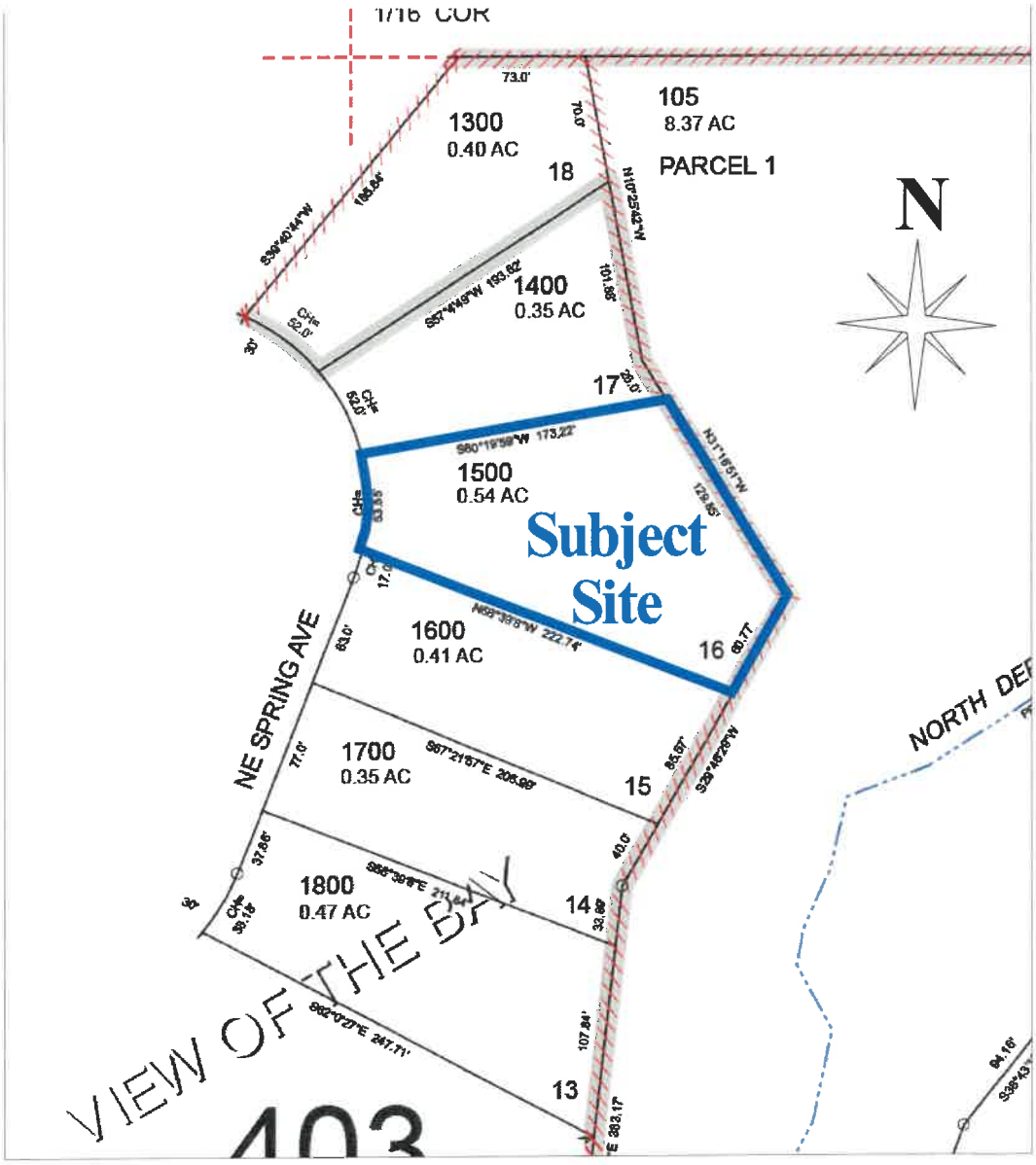
= Approximate location of ancient landslide scarp (arrows indicate direction of movement)

Date: 05/14/2021	**Project #Y214499**	Prepared by: AML
Scale: 1" = 2,000'		Approved by: JDG

Location Map
Tax Lot 1500, Map 9-11-05DD
Lot 16 View Of The Bay, Depoe Bay, Oregon

H.G. Schlicker & Associates, Inc.

Figure 1



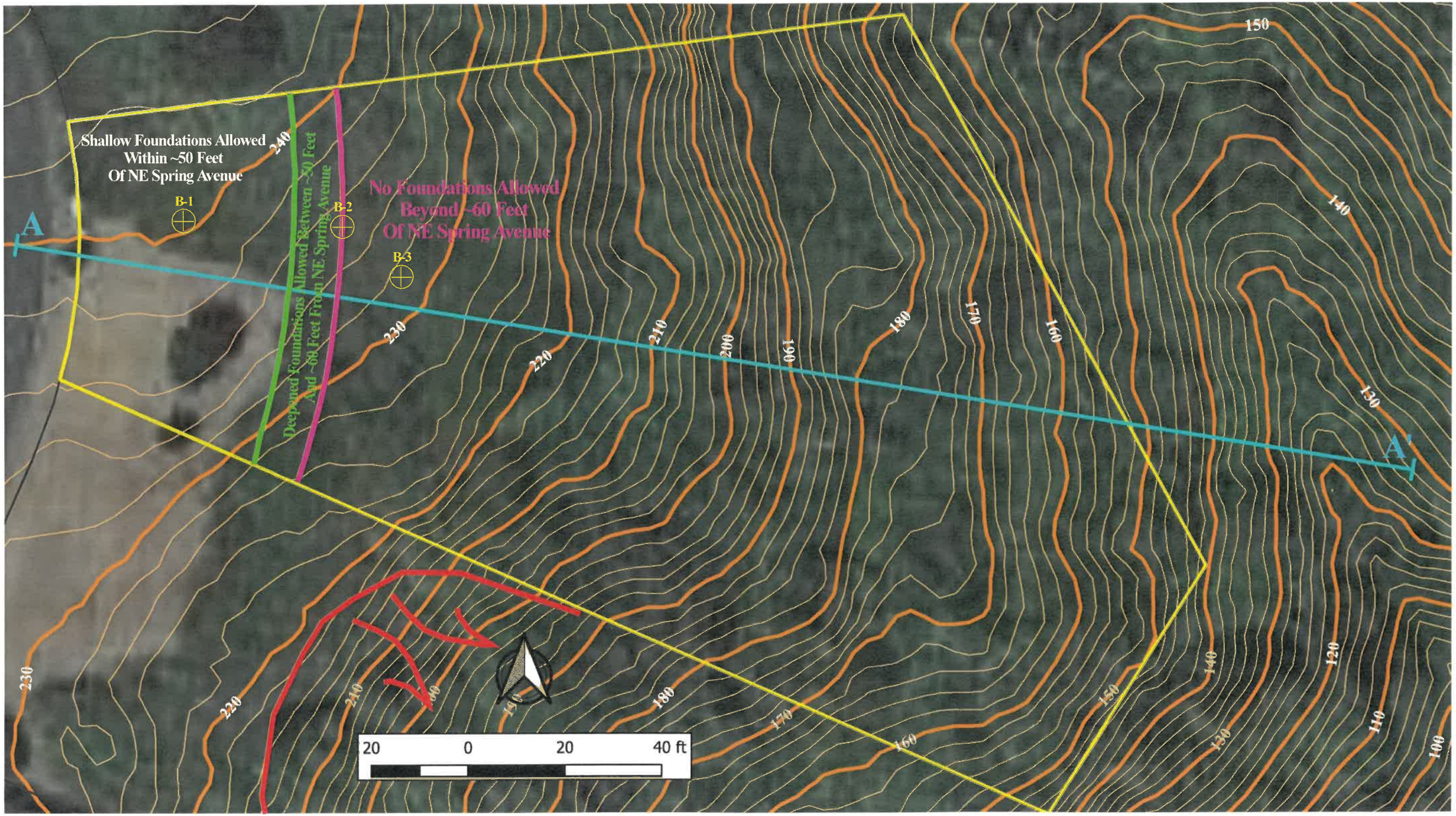
Modified from the Lincoln County assessor's plat
T9S, R11W, Sec. 5.
All locations and dimensions are approximate.

Date: 05/14/2021	**Project #Y214499**	Prepared by: AML
Scale: 1" = 100'		Approved by: JDG

Plat Map
Tax Lot 1500, Map 9-11-05DD
Lot 16 View Of The Bay, Depoe Bay, Oregon

H.G. Schlicker & Associates, Inc.

Figure 2



= Landslide features. Arrows show direction of ground movement.

A A' = Approximate trend of profile line

B-1 = Approximate location of boring

Imagery provided Google.
Topographic data derived from 2009_OLC_North_Coast data from DOGAMI.
All locations and dimensions are approximate.

Date: 05/14/2021	**Project #Y214499**	Prepared by: AML
Scale: 1" = 20'		Approved by: JDG

Site Topographic Map
Tax Lot 1500, Map 9-11-05DD
Lot 16 View Of The Bay, Depoe Bay, Oregon

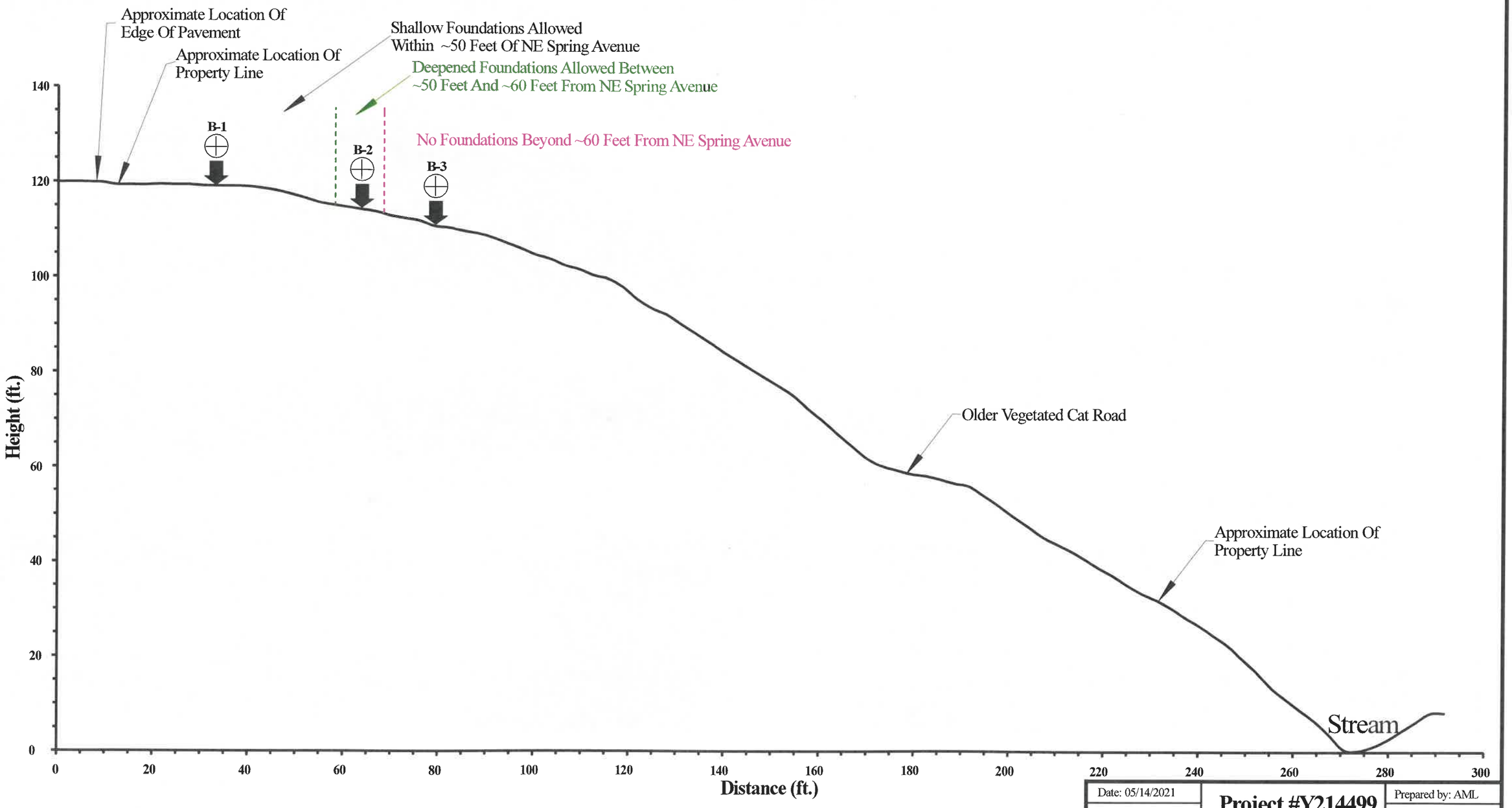
H.G. Schlicker & Associates, Inc.

Figure 3

A

S 80° E

A'



All dimensions, elevations and locations are approximate.
Slope profile derived from 2009 OLC_North_Coast Lidar provided by DOGAMI

Date: 05/14/2021	**Project #Y214499**	Prepared by: AML
Scale: 1" = 20'		Approved by: JDG

Slope Profile A-A'
Tax Lot 1500, Map 9-11-05DD
Lot 16 View Of The Bay, Depoe Bay, Oregon

H.G. Schlicker & Associates, Inc.

Figure 4

Appendix A
- Site Photographs -

Photo 1 – Easterly view of the site from NE Spring Avenue.

Photo 2 – Northeasterly view of the site from near the southern property corner along NE Spring Avenue.

Photo 3 – Southeasterly view from the site.

Photo 4 – View of the densely vegetated steep slope on the eastern part of the site.

Photo 5 – View of the small stream at the base of the slope on the eastern part of the site.

Photo 6 – View of the material encountered in hand augered boring B-1.

Photo 7 – View of the material encountered in hand augered boring B-3.

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

Project #Y214499

APPENDIX B
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*		Review Proctor (ASTM D1557) and field density test results for all fills placed at the site.	During construction.

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

Geologic Hazards Permit Application
Case File: #2-GEO-PC-19
Date Filed: July 27, 2021
Application Complete: July 27, 2021
Meeting Date: Sep. 8, 2021, 6:00 p.m.
120-day Decision Date: Nov. 27, 2021

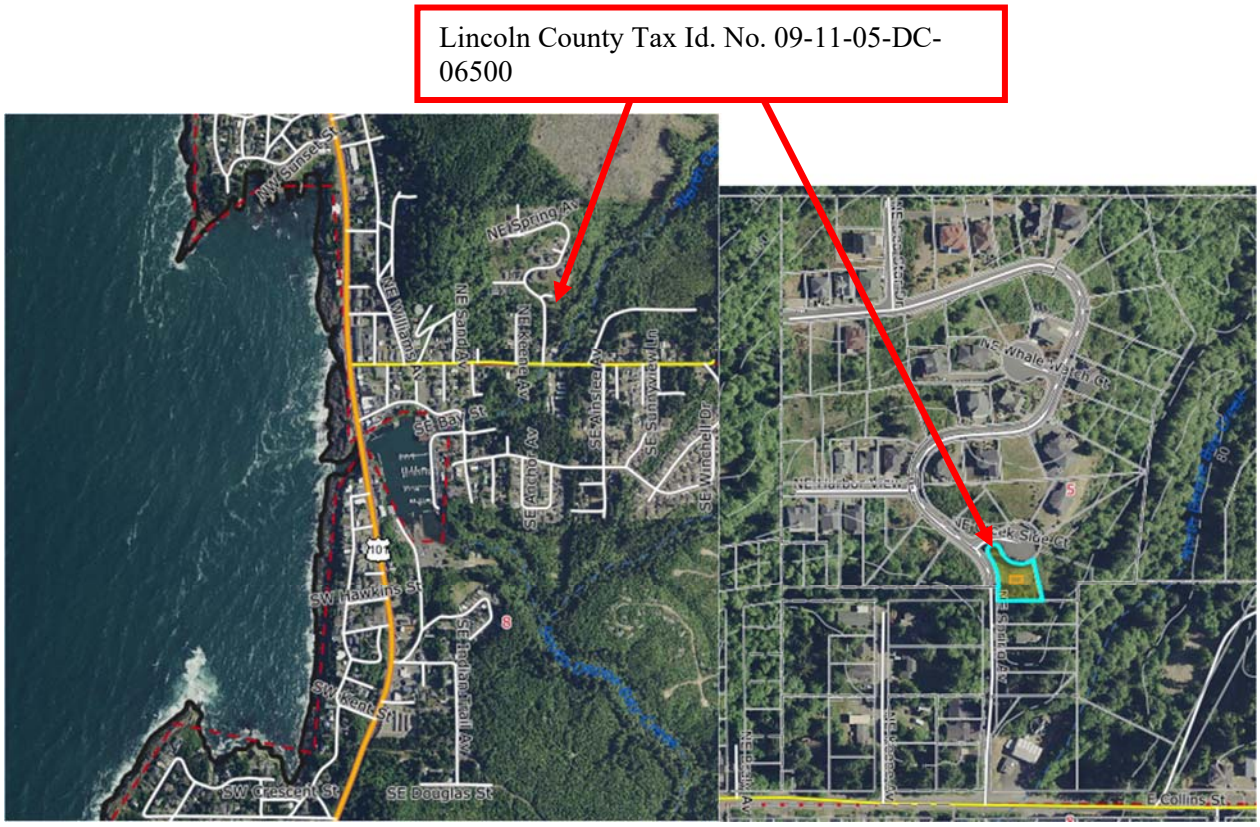
STAFF REPORT
Depoe Bay Planning Commission Action

APPLICANT: Elly Bishop-Monday and Todd Monday

REQUEST: The applicant requests approval of a geologic hazards permit. The applicant proposes to construct a new single-family dwelling in the R-5PD Residential zone.

A. RELEVANT FACTS:

1. **Property Location:** The subject property is located at 80 NE Spring Avenue in View of the Bay Planned Development, and is further identified on Lincoln County Assessor's Map 09-11-05-DC as tax lot 06500.



2. **Lot Size:** The property totals 0.2 acres (8700 sq. ft.).

3. **Zoning Designation:** R-5PD (View of the Bay Planned Development (PD))

4. **Plan Designation:** Residential

5. **Surrounding Land Use:** The subject property is primarily surrounded by some undeveloped land, open space, and single-family development within View of the Bay Planned Development and along Spring Street.

6. **Topography & Vegetation:** (paraphrased from the Geologic Hazard Assessment and Geotechnical Evaluation) The site is situated on generally moderate, southwest facing slopes. The fill slope on the north property boundary ranges from 14 to 55 degrees, averaging about 30 to 35 degrees, and slopes become less steep to the south and southwest ranging about 3 to 10 degrees. The site is clear of any trees, vegetation consists of short grass, Himalayan blackberry, and Salal.

7. **Existing Structures:** The subject property is vacant with the exception of a drinking water pump station on the southwest corner of the lot.

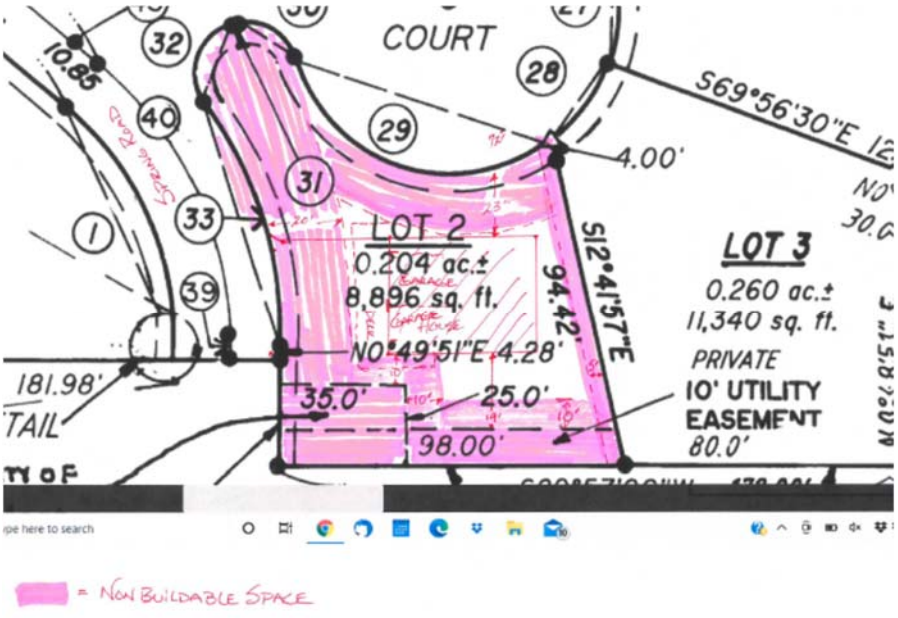
8. **Utilities:** The following utilities currently serve the subject property:
   a. Sewer: City sewer service.
   b. Water: City water service.
   c. Electricity: Central Lincoln P.U.D.

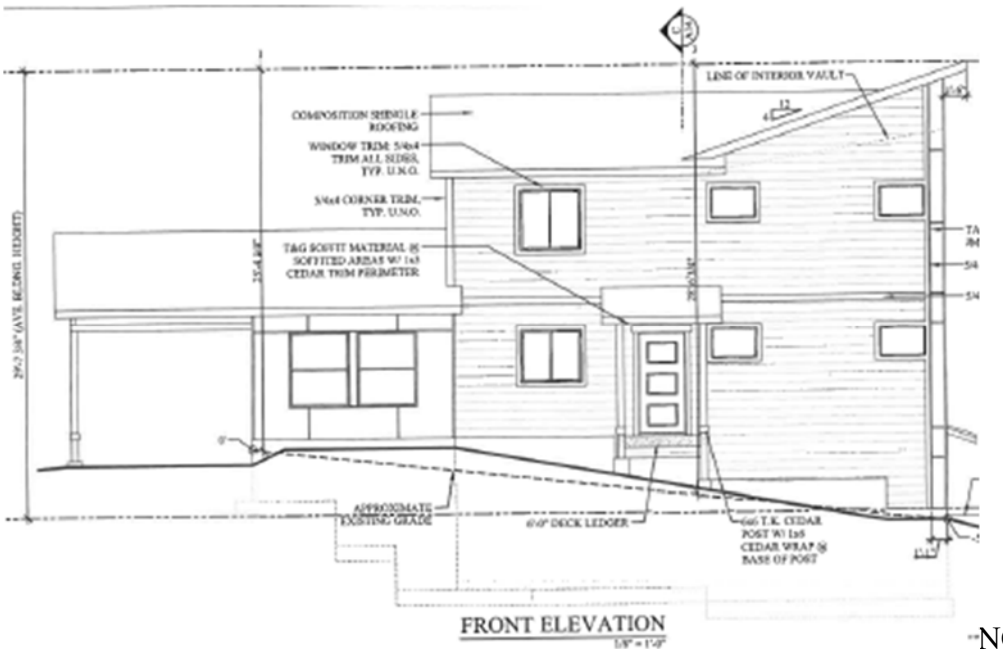
9. **Development Constraints:** Geologic hazards.

B. EVALUATION OF THE REQUEST:

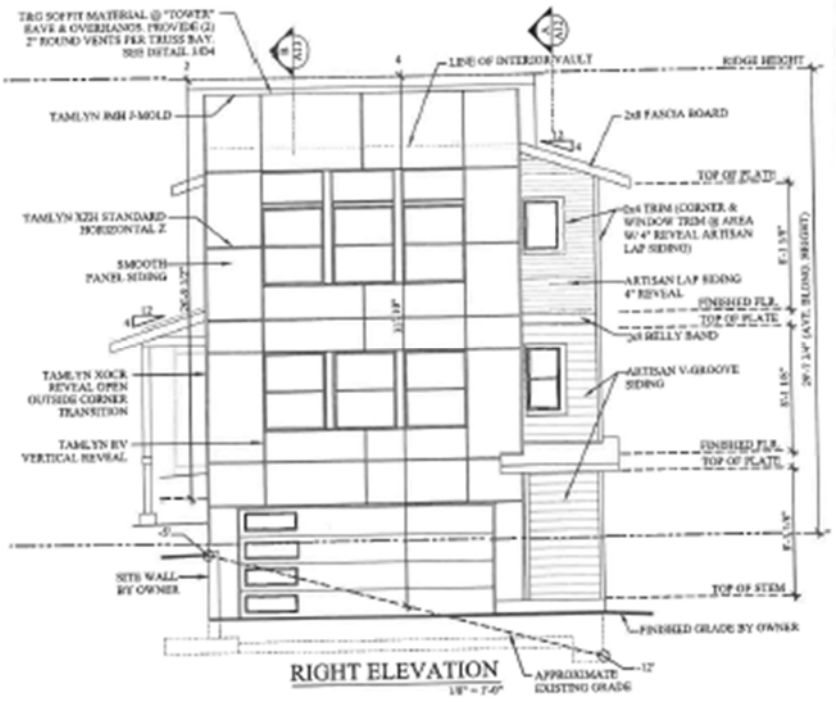
1. **Applicant's Proposal:**
   The applicant proposes to construct a single-family dwelling on the site. The applicant submitted the application form and fee/deposit, and the following material:

   - October 16, 2020 Geotechnical and Geologic Site Assessment
   - Site Plan
   - Building Elevations
   - Floor Plans

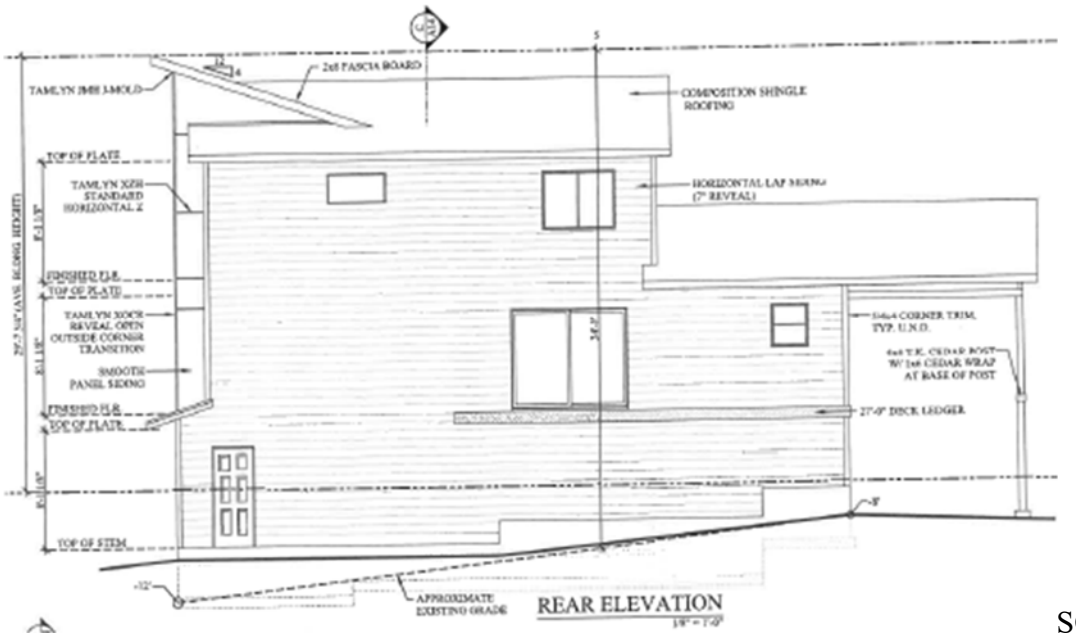



LINE OF INTERIOR VAULT
COMPOSITION SHINGLE ROOFING
WINDOW TRIM, 5/4x4 TRIM ALL SIDES, TYP. U.N.O.
5/4x4 CORNER TRIM, TYP. U.N.O.
T&G SOFFIT MATERIAL @ SOFFITED AREAS W/ 1x3 CEDAR TRIM PERIMETER
APPROXIMATE EXISTING GRADE
6'-0" DECK LEDGER
6x6 T.K. CEDAR POST W/ 1x6 CEDAR WRAP @ BASE OF POST
FRONT ELEVATION
1/8" = 1'-0"

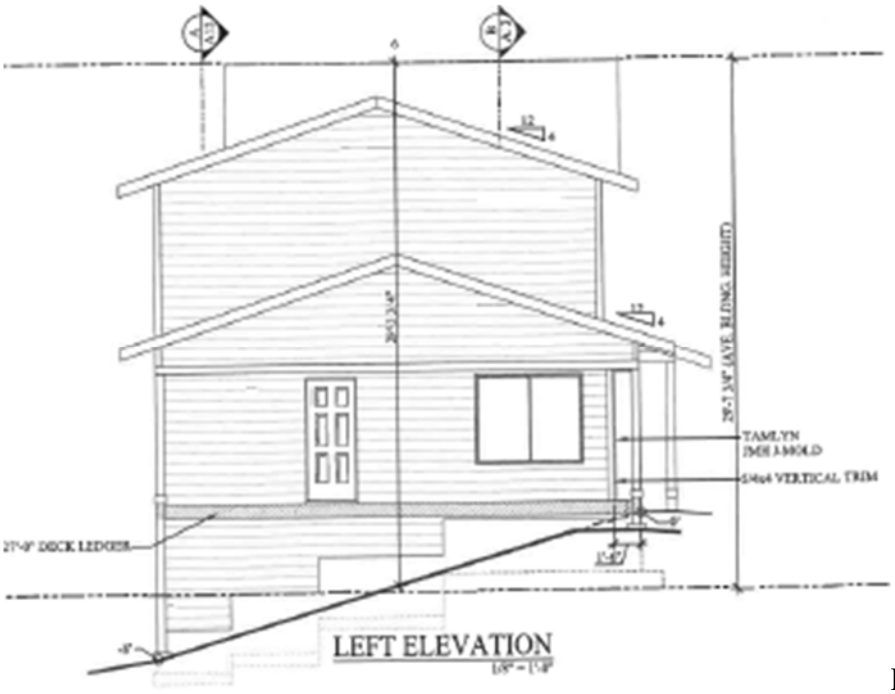
NORTH


T&G SOFFIT MATERIAL @ "TOWER" EAVE & OVERHANGS. PROVIDE (2) 2" ROUND VENTS PER TRUSS BAY. SEE DETAIL 3/D4
LINE OF INTERIOR VAULT
RIDGE HEIGHT
TAMLYN FSH J-MOLD
2x8 FASCIA BOARD
TOP OF PLATE
TAMLYN XZH STANDARD HORIZONTAL Z
2x6 TRIM (CORNER & WINDOW TRIM @ AREA W/ 4" REVEAL ARTISAN LAP SIDING)
SMOOTH PANEL SIDING
ARTISAN LAP SIDING 4" REVEAL
FINISHED FLR.
TOP OF PLATE
2x8 BELLY BAND
TAMLYN XOCR REVEAL OPEN OUTSIDE CORNER TRANSITION
ARTISAN V-GROOVE SIDING
TAMLYN RV VERTICAL REVEAL
FINISHED FLR.
TOP OF PLATE
SITE WALL BY OWNER
TOP OF STEM
FINISHED GRADE BY OWNER
RIGHT ELEVATION
1/8" = 1'-0"
APPROXIMATE EXISTING GRADE

WEST



SOUTH



EAST

2. **<u>Relevant Depoe Bay Zoning Ordinance (DBZO) Criteria</u>**

Section 3.050 Residential Zone R-5 Relevant Standards

b. Yards.

1. The front yard shall be a minimum of 20 feet.
2. Each side yard shall be a minimum of either 5 feet or 1 foot for each 3 feet of building height, whichever requirement is the greater.

3. The street side yard shall be a minimum of twenty (20) feet except this may be reduced by one (1) foot for each foot the average lot width is less than sixty (60) feet, however, no street side yard shall be less than ten (10) feet.
4. The rear yard shall be a minimum of 10 feet, except that on a corner lot, it shall be a minimum of either 5 feet or one foot for each 3 feet of building height, whichever requirement is the greater.

c. No building in the R-5 zone shall exceed a height of 40 feet.

Section 4.030 Off-Street Parking and Off-Street Loading Requirements

4. Off-street parking spaces for dwellings, hotels, motels, resorts and time-shares shall be located on the same lot or on a lot immediately adjacent to the lot served by such parking.
11. Except with respect to approved driveways, required off-street parking areas shall not be provided in the required front or street side-yard areas in a residential zone.
19. Off-Street Parking Space Requirements
    a. Single family residential use: Two (2) spaces

Article 13 Development Guidelines:

Section 13.050. Permit Procedures. In order to obtain a Geologic Permit, the applicant shall submit, along with the appropriate fee, a Geologic Hazard Report which shall be prepared by a registered geologist or a certified engineering geologist recognized by the State of Oregon and dated no more than one year prior to the application date. The report shall explain fully the activity for which the permit is being sought. If the purpose of the Geologic Hazard Report is for a building permit, then the report shall accompany and address final building plans. Any activities not specifically covered in the report will not be covered by the permit. The report shall also identify the nature, extent and location of all geologic hazards associated with the proposed site and activity. Finally, the report shall detail exact measures to be taken so as to avoid the occurrence of landslides, erosion, sloughing, puddling, or other identified geologic hazards on the subject and surrounding property or any prohibited activity identified above. For uses requiring removal of vegetation or excavation, plans for the legal disposal of such materials shall be submitted.

Section 13.055. Specific Requirements for Geologic Hazard Reports. Geologic Hazard Reports provided pursuant to this Article shall conform to the following requirements from the "Guidelines for Preparing Engineering Geologic Reports in Oregon". The geologist's report shall have reviewed these specific requirements and the applicant shall address the applicable conditions in the proposal. Sections that are not applicable shall be identified as not applicable.

This section of the DBZO identifies six subsections to address. Please refer to the DBZO for the description of requirements for each subsection:

a. General Information
b. Geologic Mapping and Investigation
c. Geologic Descriptions
e. Conclusions and Recommendations
d. Assessment of Geologic Factors
f. Inspection and Monitoring

Section 13.060. Determination of Compliance. Geologic Hazard Reports submitted for review in accordance with Article 10, shall be reviewed by the Planning Commission, which shall determine whether the Report addresses the provisions of this Article as it reviews the entire application. Land use applications before the Planning Commission shall not be approved until such a determination has been made. Regardless of approval by the City, liability remains with the report

signator and the applicant, who must conform with the report's requirements. Signed acceptance of this liability shall accompany the permit application.

In determining compliance, the Planning Commission shall evaluate:

a. if the report appears to adequately recognize the causes, extent, and potential of the hazards and conforms substantively with the requirements found in Section 13.055.

b. if the recommendations to overcome the recognized hazards are set out clearly and specifically and are included in the engineered plans of the development.

c. if the Geologic Hazard Report indicates that possible future danger may exist from a hazard, the Applicant or Property Owner shall complete and sign the Declaration of Covenants and Conditions of Responsibility and Indemnity (The Declaration) provided by the City. Prior to issuance of a building permit, the Applicant or Property Owner shall execute and record the Declaration in the deed records of Lincoln County, Oregon.

d. if the Geologic Hazard Report and the associated plans contain the signature and professional stamp of a licensed geologist or engineering geologist qualified to certify such reports and plans.

3. **Public Testimony.** No written testimony was received by the City at the time this staff report was written.

C. <u>SUMMARY AND STAFF ANALYSIS:</u> The Planning Commission reviews the proposal for conformance with the appropriate standards of the Depoe Bay Zoning Code. To facilitate review, staff provides the following analysis:

1. **R-5 Residential Standards and Parking Requirements**

Standard	Requirement	Proposed
Building Height	Max. 40'	29'-8"
Front Yard (N)	Min. 20'-0"	23'
Rear Yard (S)	Min. 10'-0"	29'
West Side Yard	Corner lot – Street side yard min. 20'	20'
East Side Yard	Min. 5' or 1' for every 3' of bldg. ht. **9'-11"** required w/ 29'-8" bldg. ht.	10'
Parking Space Requirements	2 spaces	2 garage spaces and driveway

2. **Geologic Hazards and Geotechnical Investigation Assessment.** The October 16, 2020 Geologic Hazard Assessment includes an introduction, scope of work, parcel location and description, site vicinity, slopes, geologic setting, geologic hazard mapping, soils observed, previous reports in vicinity, drainage, erosion, conclusions, recommendations, and report limitations (report attached to this staff report). The geologist provides the following recommendations:

Recommendations

Suitable subgrade consisting of native weathered siltstone soil is expected to be found below the fill at 4- to 8-feet BGS, with deeper excavation to native competent soil closest to the cul-de-sac. Moderately deep (at least two feet into acceptable subgrade materials) drained, stepped spread footings or a daylight basement with the upslope wall doubling as a drained retaining wall, set on competent stiffer/denser native colluvium/residuum or approved structural fill replacing soft materials would adequately support a single-family residence by keying into the stiffer/denser sub-grade to reduce slope hazards. Footings should be reinforced with rebar to facilitate underpinning at some time in the future if erosion and slope instability weaken the subgrade materials. Access to the downslope footings should also be maintained to facilitate potential underpinning.

Disposal of gutter discharge should be directed onto the NE Creek Side Court pavement in the same manner as other residences in the immediate site vicinity if possible. Perimeter footing drains shall be discharged in a system to prevent gutter drain backflow from saturating the footing subgrade. Clean-out ports should be placed adjacent to the footings/stemwalls to help prevent blockages of the drain lines. In general, surface water within construction areas should be drained away by cutting drainage ditches or pumping from a sump hole if necessary. Surface vegetation; topsoil; stumps; and any saturated, disturbed or incompetent materials encountered during construction should be removed and replaced if necessary, with densely-compacted granular fill materials. Exposed moisture-sensitive sub-grade materials should be protected from rain, freezing and traffic with 6-inches of crushed rock.

Grass seed covered with straw mulch should be planted on exposed soils as a temporary erosion-prevention method, and bare soil spoils piles should be covered with tarps to reduce erosion from rainfall. The site should be re-vegetated as soon as possible after construction to reduce soil erosion. Maintaining deep-rooted, perennial native vegetation on slopes is arguably the best way to enhance stability, the roots bind the soil together and remove water from the subgrade, organic forest soils soak up more water, and the foliage protects the soil from rain and wind impact. Soils adjacent to footing walls should be sloped away from the building to reduce infiltration and potential foundation settlement. Irrigation systems on or immediately above the steeper slopes should be avoided to prevent surface run-off erosion.

Temporary unsupported cut slopes should be no steeper than 1 horizontal to 1 vertical (1H:1V) and in general can be cut vertical up to 5-feet. All excavations should be performed in accordance with Department of Labor Occupational Safety and Health Administration (OSHA) guidelines for Type C soils. Deeper excavations may be excavated at grades steeper than the recommended OSHA grades provided the excavations are monitored and certified by a qualified geotechnical engineer. Heavy equipment and construction materials shall not be placed within 10-feet of the top of cut slopes. Site safety is the sole responsibility of the project contractor and /or the owners. Fills should not be placed on or near steep slopes on the site prior to consulting with a qualified engineering geologist or geotechnical specialist. Any fill placed in the proposed building area must be placed only after the subgrade is properly prepared and then approved by a qualified engineering geologist or geotechnical specialist. All permanent unsupported slopes should be no steeper than 2 horizontal to 1 vertical (2H:1V) unless specified by a qualified geotechnical specialist.

Earth retaining structures, when founded on suitable native subgrade, will also have an allowable bearing capacity of 1,500 psf, a coefficient of friction of 0.35 for concrete poured neat against undisturbed native rock or compacted crushed aggregate atop rock. For site retaining walls that are properly drained so that no hydrostatic pressure develops, the equivalent fluid pressure for the active lateral force of the site soil in the upper 6-feet is 30 pcf (unrestrained walls), the at-rest lateral force is 45 pcf (walls restrained at the top) and the passive lateral force is 300 pcf.

3. **Geologist Certification, Inspection and Monitoring.** Prior to issuance of a building permit a certified engineering geologist shall provide a letter(s) to the City stating that final plans for site development are in conformance with the recommendations described in the May 14, 2019 Geologic Hazard Assessment.

4. **Erosion Control and Drainage Plan.** Prior to issuance of a building permit, the City Superintendent shall review and approve an erosion control and drainage plan.

5. **Archaeological Resources.** The site is identified in the Comprehensive Plan Inventory as having potential archaeological resources. The DBZO Section 3.360(5)(b)(1) states that development on identified archaeological sites shall be conducted in a manner so as to minimize site disturbance and prevent irreversible loss of archaeological resources. This does not require the property owner to hire an archaeologist, however, it does require the property owner to be cognizant of archaeological resources when developing the site. The applicant needs to be aware of potential archaeological resources and take feasible action to minimize site disturbance and prevent irreversible loss of archaeological resources.

6. **Declaration.** The Applicant/Property Owner shall complete and sign the Declaration of Covenants and Conditions of Responsibility and Indemnity (The Declaration) provided by the City. Prior to issuance of a building permit, the Applicant or Property Owner shall execute and record the Declaration in the deed records of Lincoln County, Oregon. The Declaration is required for all geologic hazard reports per Depoe Bay Zoning Ordinance Section 13.060.3. The Declaration states that the applicant shall be responsible for the consequences, including the safety of the public, of constructing and maintaining the Improvements.

D. <u>CONCLUSIONS</u>: In evaluating the request, the Planning Commission bases its decision on compliance with the applicable code standards. If the Commission finds the request fails to satisfy the ordinance standards, it can move to deny the request, articulating the basic conclusions and rationale for the decision and directing staff to prepare findings.

If the Planning Commission finds the request satisfies the applicable criteria, it can move to approve the request and direct staff to prepare findings. In the event of an approval, staff suggests the following conditions of approval:

1. **R-5 Residential and Parking Standards.** Development shall be accomplished in accordance with the submitted plan and in conformance with all R-5 Residential and parking standards. This includes a minimum front yard of 20', minimum rear yard of 10', minimum street side yard (west) of 20', and minimum east side yard of 1' for every 3' of building height (min. 9'11" side yard setbacks for a 29'8" building height). A minimum 2 on-site parking spaces shall be provided.
2. **Building Permit.** The applicant shall obtain a valid building permit prior to commencement of construction.
3. **Geologist Certification, Inspection and Monitoring.** Prior to issuance of a building permit a certified engineering geologist shall provide a letter to the City stating that final plans for site development are in conformance with the recommendations described in the October 16, 2020 Geologic Hazard Assessment. Any fill placed in the proposed building area must be placed only after the subgrade is properly prepared and then approved by a qualified engineering geologist or geotechnical specialist.
4. **Erosion Control and Drainage Plan.** Prior to issuance of a building permit, the City Superintendent shall review and approve an erosion control and drainage plan.
5. **Design and Construction Recommendations.** Development shall be accomplished in conformance with the recommendations described in the October 16, 2020 Geologic Hazard Assessment:

    5a. **Footings.** Moderately deep (at least two feet into acceptable subgrade materials) drained, stepped spread footings or a daylight basement with the upslope wall doubling as a drained retaining wall, set on competent stiffer/denser native colluvium/residuum or approved

structural fill replacing soft materials would adequately support a single-family residence by keying into the stiffer/denser sub-grade to reduce slope hazards. Footings should be reinforced with rebar to facilitate underpinning at some time in the future if erosion and slope instability weaken the subgrade materials. Access to the downslope footings should also be maintained to facilitate potential underpinning.

5b. **Drainage.** Disposal of gutter discharge should be directed onto NE Creek Side Court pavement in the same manner as other residences in the immediate site vicinity if possible. Perimeter footing drains shall be discharged in a system to prevent gutter drain backflow from saturating the footing subgrade. Cleanout ports should be placed adjacent to the footings/stemwalls to help prevent blockages of the drain lines. In general, surface water within construction areas should be drained away by cutting drainage ditches or pumping from a sump hole if necessary. Surface vegetation, topsoil, stumps, and any saturated, disturbed or incompetent materials encountered during construction should be removed and replaced if necessary with densely-compacted granular fill materials. Exposed moisture-sensitive sub-grade materials should be protected from rain, freezing and traffic with 6 inches of crushed rock.

5c. **Erosion.** Grass seed covered with straw mulch should be planted on exposed soils as a temporary erosion-prevention method, and bare soil spoils piles should be covered with tarps to reduce erosion from rainfall. The site should be re-vegetated as soon as possible after construction to reduce soil erosion. Maintaining deep-rooted, perennial native vegetation on slopes is arguably the best way to enhance stability, the roots bind the soil together and remove water from the subgrade, organic forest soils soak up more water, and the foliage protects the soil from rain and wind impact. Soils adjacent to footing walls should be sloped away from the building to reduce infiltration and potential foundation settlement. Irrigation systems on or immediately above the steeper slopes should be avoided to prevent surface run-off erosion.

5d. **Slopes**. Temporary unsupported cut slopes should be no steeper than 1 horizontal to 1 vertical (1H:1V) and in general can be cut vertical up to 5 feet. All excavations should be performed in accordance with Department of Labor Occupational Safety and Health Administration (OSHA) guidelines for Type C soils. Deeper excavations may be excavated at grades steeper than the recommended OSHA grades provided the excavations are monitored and certified by a qualified geotechnical engineer. Heavy equipment and construction materials shall not be placed within 10-feet of the top of cut slopes. Site safety is the sole responsibility of the project contractor and/or the owners. Fills should not be placed on or near steep slopes on the site prior to consulting with a qualified engineering geologist or geotechnical specialist. Any fill placed in the proposed building area must be placed only after the subgrade is properly prepared and then approved by a qualified engineering geologist or geotechnical specialist. All permanent unsupported slopes should be not steeper than 2 horizontal to 1 vertical (2H:1V) unless specified by a qualified geotechnical specialist.

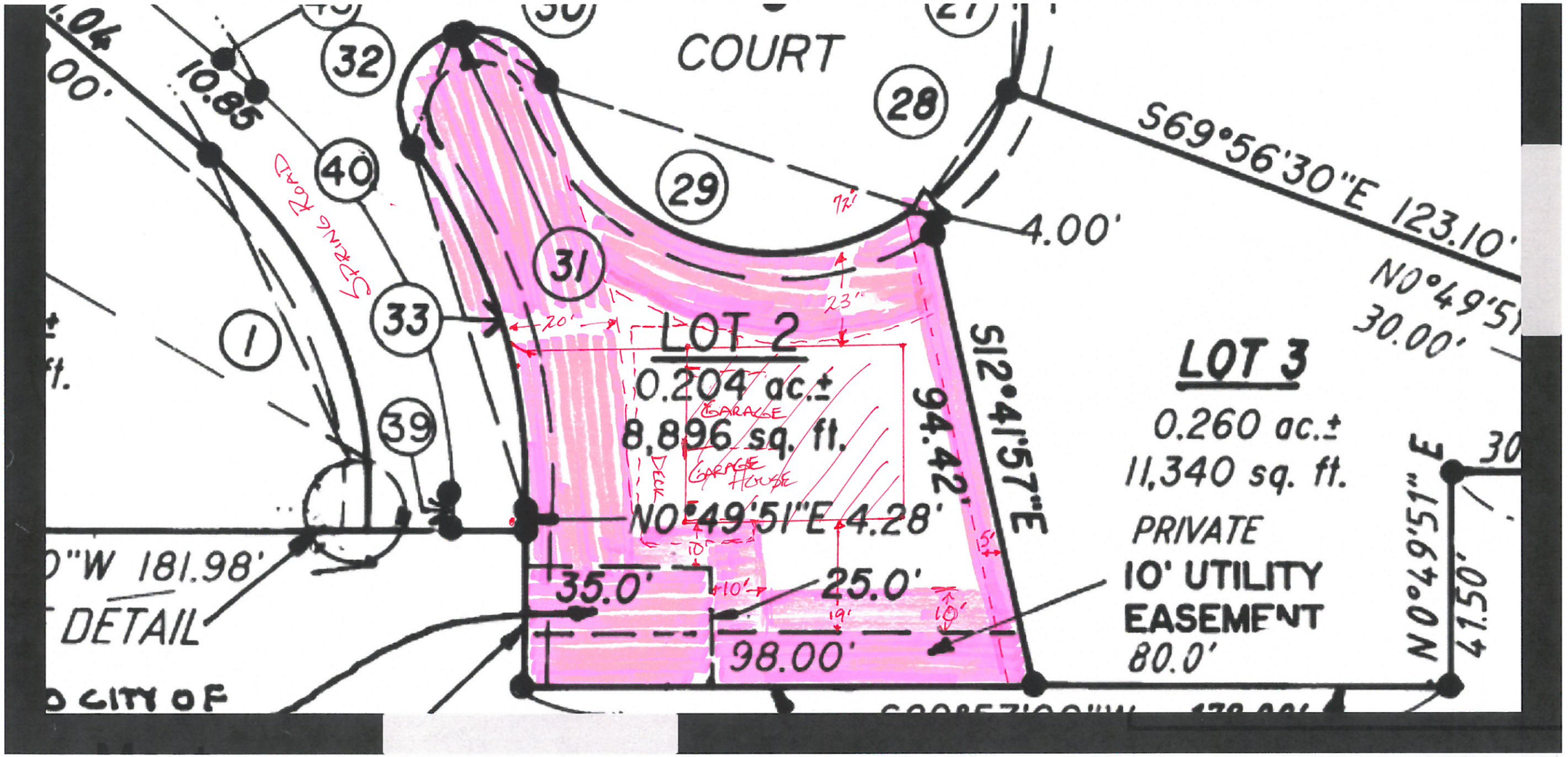
5e. **Retaining Structures.** Earth retaining structures, when founded on suitable native subgrade, will also have an allowable bearing capacity of 1,500 psf, a coefficient of friction of 0.35 for concrete poured neat against undisturbed native rock or compacted crushed aggregate atop rock. For site retaining walls that are properly drained so that no hydrostatic pressure develops, the equivalent fluid pressure for the active lateral force of the site soil in the upper 6-feet is 30pcf (unrestrained walls), the at-rest lateral force is 45 pcf (walls restrained at the top) and the passive lateral force is 300 pcf.

6. **Archaeological Resources.** Development shall be conducted in a manner so as to minimize site disturbance and prevent irreversible loss of archaeological resources. Before and during excavation, any discovery of archaeological resources shall mean that the applicant shall cease excavation activities, notify the State Historic Preservation Office and Confederated Tribe of Siletz Indians, and meet State statutes before proceeding.
7. **Declaration.** The Applicant/Property Owner shall complete and sign the Declaration of Covenants and Conditions of Responsibility and Indemnity (The Declaration) provided by the City. Prior to issuance of a building permit, the Applicant or Property Owner shall execute and record the Declaration in the deed records of Lincoln County, Oregon.

Submitted by,

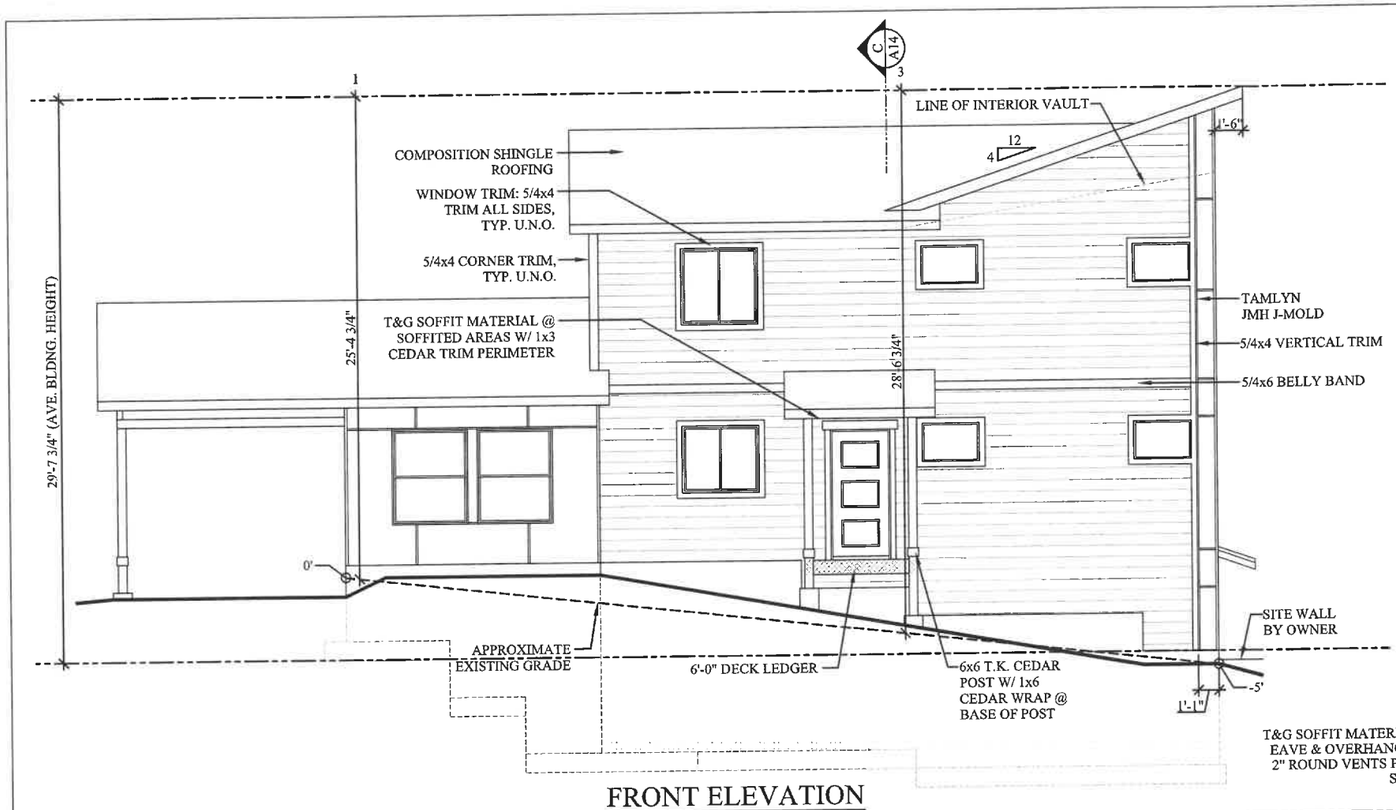
Jaime White, City Planner

Enclosures:
- Vicinity Map
- Site Plan
- Building Elevations
- October 16, 2020 Geologic Hazard Assessment



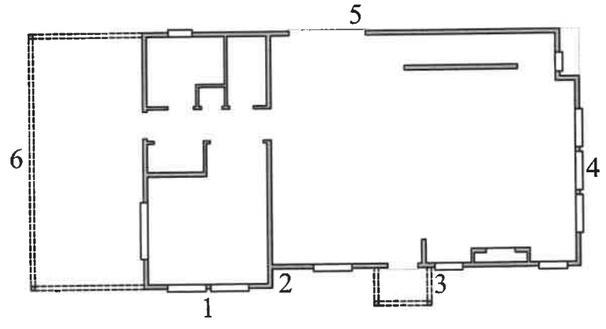
NORTH

= NON BUILDABLE SPACE



FRONT ELEVATION

1/8" = 1'-0"

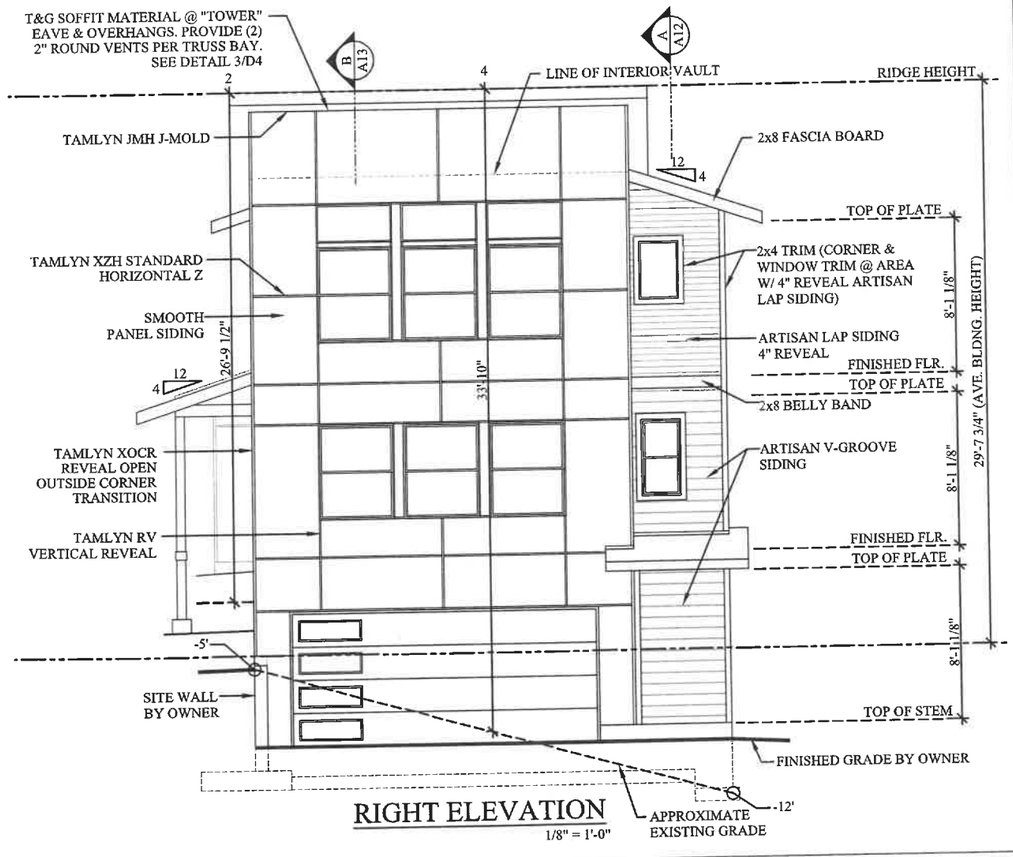


BUILDING HEIGHT CALCULATIONS	
WALL 1	25.40'
WALL 2	26.79'
WALL 3	28.56'
WALL 4	33.83'
WALL 5	34.00'
WALL 6	29.31'
TOTAL	177.89'
BUILDING HEIGHT	29.65'

NOTE:
EXTERIOR ELEVATIONS ARE DRAWN W/ ESTIMATED GRADES. ONCE SITE CLEARING & EXCAVATION IS COMPLETE, SOME ADJUSTMENTS MAY BE NECESSARY.

HIGH WIND EXPOSURE:
UPGRADED STRUCTURAL HARDWARE, HAND TABBED ROOF SHINGLES, HI-WIND GARAGE DOOR, PREMIUM VINYL WINDOW UPGRADE, SIDING HIGH WIND INSTALLATION GUIDELINES & OTHER REQUIREMENTS TO MEET LOCAL CODE.

CORROSIVE ENVIRONMENT PKG.:
STAINLESS STEEL FLASHING & NAILS, PLASTIC ROOF VENTS & STAINLESS STEEL 200amp UNDERGROUND ELEC. METER BASE



RIGHT ELEVATION

1/8" = 1'-0"

2017 ORSC

MONDAY/BISHOP-MONDAY

JOB NUMBER: LO-30213

PLAN ORIENTATION: STANDARD

GARAGE CONFIGURATION: UNDER

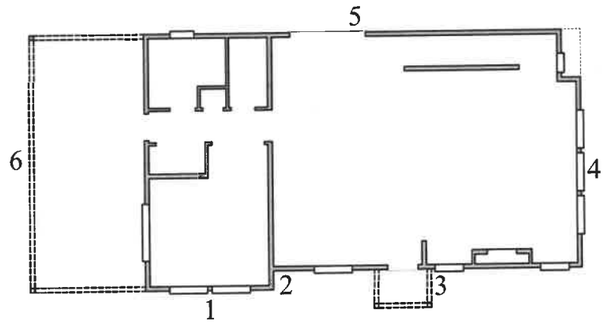
SCALE: 1/8" = 1'-0"
DATE: 06/29/2021
DRAFTED BY: KH
REV:

PAGE: A1

EXTERIOR ELEVATIONS

ADAIR HOMES INC.

ADAIR HOMES, INC
1311 SE CARDINAL COURT
SUITE 100
VANCOUVER, WA 98683



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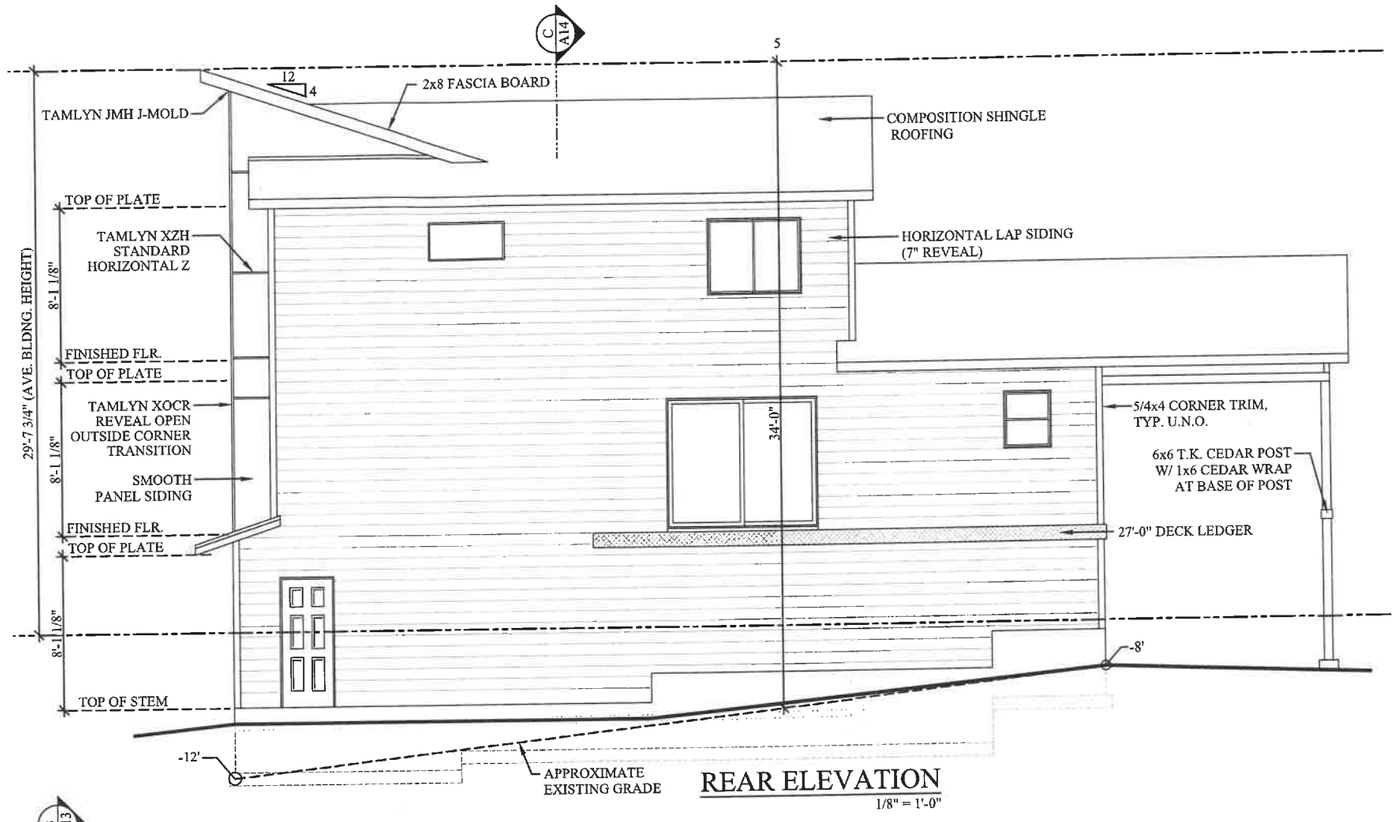
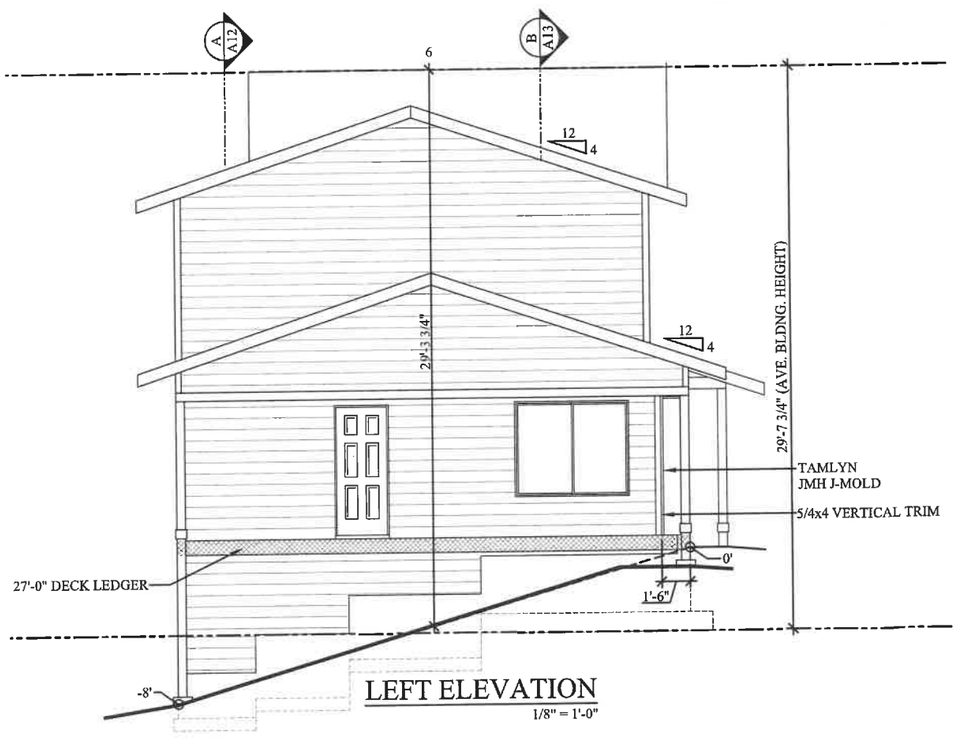


REAR ELEVATION
1/8" = 1'-0"



LEFT ELEVATION
1/8" = 1'-0"

CORROSIVE ENVIRONMENT PKG.:
STAINLESS STEEL FLASHING & NAILS, PLASTIC ROOF VENTS & STAINLESS STEEL 200amp UNDERGROUND ELEC. METER BASE

HIGH WIND EXPOSURE:
UPGRADED STRUCTURAL HARDWARE, HAND TABBED ROOF SHINGLES, HI-WIND GARAGE DOOR, PREMIUM VINYL WINDOW UPGRADE, SIDING HIGH WIND INSTALLATION GUIDELINES & OTHER REQUIREMENTS TO MEET LOCAL CODE.

NOTE:
EXTERIOR ELEVATIONS ARE DRAWN W/ ESTIMATED GRADES. ONCE SITE CLEARING & EXCAVATION IS COMPLETE, SOME ADJUSTMENTS MAY BE NECESSARY.

2017 ORSC

MONDAY/BISHOP-MONDAY

PAGE: A1.1

SCALE: 1/8" = 1'-0"
DATE: 06/29/2021
DRAFTED BY: KH
REV:

JOB NUMBER: LO-30213

PLAN ORIENTATION: STANDARD

GARAGE CONFIGURATION: UNDER

EXTERIOR ELEVATIONS

ADAIR HOMES INC.

ADAIR HOMES, INC
1311 SE CARDINAL COURT
SUITE 100
VANCOUVER, WA 98683

October 16, 2020

Elly Bishop-Monday
Via email: ramblinrose101@yahoo.com

RE: GEOTECHNICAL AND GEOLOGIC SITE ASSESSMENT
TAX LOT 6500 – VIEW OF THE BAY SUBDIVISION
NE CREEKSIDE COURT
DEPOE BAY, OREGON
BRANCH ENGINEERING INC. PROJECT NO. 20-436

Pursuant to your request, Branch Engineering Inc. (BEI) collaborated with Gary C. Sandstrom, Certified Engineering Geologist, to conduct a Geologic Hazard Assessment and Geotechnical Evaluation of the subject site located at Tax Lot 6500, Lot 2 in the View of the Bay Subdivision in Depoe Bay, Oregon, see Figure-1. This study was requested for the planned construction of a single-family residence. The purpose of the study is to identify the geologic hazards that may impact the proposed site development, evaluate impacts of the site development on adjacent properties, and provide preliminary engineering design recommendations for design and constructions pursuant to Lincoln County land use planning code 1.0055 (2) Natural Hazard Policies.

Introduction

Lincoln County has determined the subject parcel is located within a mapped geologic hazard zone and required this study for the proposed construction of a single-family residence. BEI staff performed a geotechnical/geological evaluation and subsurface investigation of the subject site on August 21, 2020, with review of photographed site conditions, boring log information, and geologic mapping by Gary C. Sandstrom. Adjacent Tax Lots 1900 and 6600 were investigated and a Geologic Hazard Assessment by Gary C. Sandstrom was submitted to the county dated May 14, 2019. The finding of that investigation was used to supplement the investigation of Tax Lot 6500.

Scope of Work

A site reconnaissance, geologic assessment, and sub-surface investigation was conducted by excavating one hand-auger exploratory geotechnical boring and two dynamic cone penetrometer tests. In addition, the following websites, literature and map sources were reviewed:

- Google Maps, https://www.google.com/maps
- Google Earth, Photo Location Map, earth.google.com
- Sandstrom, G.C., *Geologic Hazard Assessment of Tax Lots 1900 and 6600*, Gary C. Sandstrom, Geologist, LLC.
- ORMAP GIS, https://www.ormap.net/gis/index.html Oregon Map website listing Tax Lot numbers
- Lincoln County Assessor, https://maps.co.lincoln.or.us
- USGS, https://viewer.nationalmap.gov/basic, 1984 and 2017 Depoe Bay Topographic Quadrangle maps from US Dept. of Interior, Geological Survey.

- Snavely, P.D., MacLeod, N.S., Wagner, H.C. and Rau, W.W., Geologic Map of the Cape Foulweather and Euchre Mountain Quadrangles, Lincoln County, Oregon, US Dept. of the Interior, Geological Survey, Misc. Investigation I-868, 1976

- Schlicker, H.G., Olcott, G.W., Beaulieu, J.D. and Deacon, R.J., Environmental Geology of Lincoln County, Oregon, State of Oregon, DOGAMI, Bulletin B-81, 1973

- Snavely, P.D., MacLeod, N.S. and Wagner, H.C., Preliminary Bedrock Geologic Map of the Cape Foulweather and Euchre Mountain Quadrangles, Lincoln County, Oregon, US Dept. of the Interior, Geological Survey, Open File Report 72-350, 1972

- Willamette Engineering and Earth Sciences, Lot 8200 Geotechnical and Geologic Hazard Assessment, 10/9/2013

- Pacific Northwest Soils, United States Dept. of Agriculture, Natural Resources Conservation Service, https://websoilsurvey.sc.egov.usda.gov/App/WebsoilSurvey

- State of Oregon, Oregon Department of Geology and Mineral Industries (DOGAMI) website, LIDAR, https://gis.dogami.oregon.gov/maps/lidarviewer/,

- State of Oregon, DOGAMI website, Statewide Landslide Inventory for Oregon (SLIDO), https://gis.dogami.oregon.gov/slido/

- State of Oregon, DOGAMI website, Statewide Geohazards Viewer (HazVu), https://oregongeology.org/hazvu/index.htm

- Cascadia Magazine, Cascadia Earthquake Timeline, State of Oregon, DOGAMI, Winter 2010

This report presents our geologic hazard assessment and geotechnical recommendations for the site.

Site Location and Description

The subject site is located in an expanding residential neighborhood on the northeast side of the city of Depoe Bay, Lincoln County, Oregon, at the approximate coordinates of 44.813152° north longitude and 124.055892° north latitude (see Google Maps Location Map, USGS 1984 and 2017 Depoe Bay Topographic Quadrangle Maps, ORMAP and Lincoln County Photo and Plat Tax Maps, Google Earth Photos with Cross Section, and Cross Section). The site consists of one Tax Lot (Lot 2 of the View of the Bay development) situated on generally moderate, southwest facing slopes on the southwest margin of NE Creekside Court, a cul-de-sac east of NE Spring Avenue approximately 0.4-miles northeast of the US Highway 101 bridge at Depoe Bay and about 500 feet north of the intersection of NE Collins Street and NE Spring Avenue. Lot 2 is generally rectangular in shape, measuring 0.20-acres in size and is listed as Tax Lot 6500 in T9S, R11W, Section 5 dd (SE ¼ of SE ¼). What appears to be a small garage is situated in the southwest margin of the site but the Lincoln County Maps website says the parcel is undeveloped. Lot 5 (05DC 6000) to the northeast is occupied by a single-family dwelling, but the other adjoining parcels were vacant at the time of the investigation.

No particular floor plan was provided by the client at the time of the investigation, however, the home owners association rules mandate structure two-stories or less. Sewage will be disposed of via the

public sanitary system. Gutter and foundation drain discharge is unknown, but may be into the stormwater disposal system observed on the Creek Side Court cul-de-sac.

Site Vicinity

The subject site is situated on the lower slopes of a southwest-descending ridgeline generally bounded on the southeast by North Depoe Bay Creek, which flows southwestward at the base of the slopes about 50-feet southeast of the southeast corner of Lot 4, continuing into the Depoe Bay harbor. The ridgetop rises to approximately 550-feet elevation about 2,200-feet north of the subject site and terminates at the north end of the harbor, and elevation of the ridge crest directly upslope (NW) is approximately 400-to 420-feet. The elevation of the pavement near the northeast corner of the site one Creek Side Court is estimated from Google Earth imaging at 157-feet, the southwest corner adjacent to Spring Street is at an elevation of about 130-feetand the elevation of the creek southeast of the site is estimated at about 63-feet. The site is clear of any trees, vegetation consists of short grass, Himalayan blackberry, and Salal. A Depoe Bay water treatment facility is located on the northeast corner of the intersection of NE Collins Street and NE Spring Avenue where North Depoe Bay Creek flows under NE Collins Street at an elevation of about 55-feet. The North Depoe Bay Creek Reservoir is about a quarter mile northeast of the subject site at an estimated elevation of about 120-feet.

Slopes

Native slopes in the site vicinity prior to development are estimated from the USGS 1984 Depoe Bay Topographic Quadrangle Maps at approximately 8-11°, becoming steeper about 100-feet southeast of the curb at Creek Side Court and about 30- to 40-feet from the southeast corner of the site and ranging an estimated 30 to 40 -degrees adjacent to the creek. The site vicinity has likely been graded/cut for development to depths of up to an estimated 10-feet (Lot 8200 Geotechnical and Geologic Hazard Assessment, Willamette Engineering and Earth Sciences 2014). The northern margin of Creek Side Court is a relatively steep, bare soil cut-slope estimated about 10-feet high, and topography and imagery in my opinion suggest the native slope in that vicinity prior to excavation of the court was about 14% (8 degrees). DOGAMI LIDAR Bare Earth Slope imaging indicates the slopes west of the subject site and Spring Street are variable probably due to site development excavations but likely averaged about 20 degrees to the south-southwest prior to development. Slopes in the western half of the south neighboring parcel (tax lot 300) range generally 5 to 12 degrees.
Moderate to moderately steep slopes are present in the area of the subject parcel most likely to be developed. The fill slope on the southern margin of the cul-de-sac ranges from 14 to 55-degrees, averaging about 30-35 degrees and slopes become less steep to the south and southwest, ranging from about 3 to 10 degrees, steepening to about 18 degrees in an apparent cut adjacent to the garage near the middle of the southern boundary.

Geologic Setting

The slopes underlying the project site are classified in the geologic literature as middle Miocene-age Astoria Formation marine sandstone and siltstone deposits including shelf, slope channel, deltaic and turbidite sandstone, and slope mudstone. Mapped deposits dip to the northwestward at 14-degrees about 1100-feet northeast of the subject site and 19-degrees northwestward about 1700-feet southwest of the site (see USGS I-868, USGS OF-72-350-1 and DOGAMI Bulletin 81 geologic maps). Later Miocene (14 to 16-million years old) Columbia River Basalt is mapped on the ridgeline northwest of the subject site and structurally generally overlies and in places intrudes down into the Astoria Formation deposits. The SW-NE trending contact is mapped west of NE Spring Street, approximately 400-feet northwest of the subject site. A normal NW-SE trending normal fault downthrown to the southwest is mapped about

2/3-mile northeast of the subject site. Pleistocene Marine Terrace deposits are mapped south of the residence at 60 NE Spring Avenue, Tax Lot 400, about 100-feet south of the subject site, generally below an elevation of about 120-feet. Terrace Deposits are also mapped to an elevation of approximately 90-feet on the southeast slopes of the North Depoe Creek channel about 550-feet southeast of the subject site and an elevation of 190-feet approximately a quarter mile ESE of the subject site.

The website for the U.S. Dept. of Agriculture Natural Resource Conservation Service maps surface soils underlying the slopes of the subject site as Fendall-Templeton Silt Loam on 35-65% slopes, described as colluvium derived from sedimentary rock that is very limited to development for buildings with basements by steep slopes, possible shallow soft bedrock and possible slight shrink-swell hazard. Soils are well-drained, American Association of State Highway and Transportation Officials (AASHTO) A-8 materials belonging to hydrologic Group C having slow infiltration rates when thoroughly saturated. Sandy soils derived from Marine Terrace deposits are mapped about 150 feet south of the subject parcel and volcanic colluvium associated with the Columbia River Basalt is mapped in essentially the same location as shown on the geologic maps, about 375-feet northwest of the subject site.

Geologic Hazard Mapping

The DOGAMI SLIDO website does not map any landslides underlying the subject site, but a landslide is mapped approximately 600-feet northeast of the site spanning the contact between the basalt and the underlying siltstone/sandstone, situated mostly in the sedimentary rock. The subject site is rated at high hazard for landsliding - landsliding is likely. DOGAMI B-81 maps landslide topography in Astoria Formation Deposits on generally southwest-facing slopes east of North Depoe Bay Creek where bedding is sub-parallel to the slopes, but not underlying the subject site where the bedding dips generally into the southeast-facing slopes. DOGAMI LIDAR (Light Detection and Ranging) Bare Earth Slope imagery shows the steeper slopes adjacent to North Depoe Creek in red and the relatively flat and level areas in darker green, gentle slopes yellow-green, moderate slopes in yellow, and moderately steep in orange. The cut slope on the north margin of the cul-de-sac and the fill slope on the south margin are also visible in red. The southeast-facing slopes below the subject site are generally steeper than the northwest-facing slopes above the creek opposite the site. The LIDAR bare earth hillside image suggests common arcuate bowl and scarp structures on steeper southeast-facing slopes suggestive of bedding dipping into the slopes of rotational slumpage. The northwest-facing slopes are gentler with what appear to be occasional relict blocks translated on bedding generally sub-parallel to the slope.
The DOGAMI HazVu website rates the site vicinity likely to feel severe shaking in the event of a Cascadia Subduction Zone earthquake and very strong shaking from lesser magnitudes. Slopes to the south that are underlain by Marine Terrace deposits have a moderate soil liquefaction hazard but the subject parcel is not mapped at risk. The closest mapped fault is a northwest-southeast trending normal fault dropped down to the northeast approximately two thirds of a mile to the northeast of the subject site. The closest active fault is a WSW-ENE trending fault mapped on the HazVu website approximately 1.5-miles to the south-southeast. The subject site is not mapped at risk from flooding or tsunami inundation. Relatively-recent work (see Cascadia 2010 EQ Timeline) by Dr. Chris Goldfinger at Oregon State University suggests that large subduction zone earthquakes, general slippage along the whole fault segment between northern California and Vancouver Island, occurs approximately once every five hundred years, with the most recent occurring approximately 300-years ago (see also DOGAMI Occurrence and Relative Size of Cascadia Subduction Zone Megathrust Earthquakes). Odds of a significant subduction zone earthquake in the Newport vicinity and north of Newport were estimated at approximately one in four in the next 50-years. In the opinion of many geologists, such an event would likely reactivate previous landslides and trigger new slides in areas prone to instability. Damage along the entire Oregon coast would likely be severe, with bridge and highway failures plus tsunami inundation.

Soils Observed

Several shallow (< 2-feet deep) shovel-dug test pits and one hand auger boring excavated approximately 20-feet south of Creek Side Court were used to classify subsurface soil and a metal hand probe was utilized to assess soil consistency throughout the rest of the site. Based on site topography and soil observed in Tax Lots 1900 and 6600 in the May, 2019 investigation, the steeper slopes on the northern margin of the site is likely fill derived from excavation of the cul-de-sac. The depth of the fill is estimated to be 2- to 7.5-feet, with the deepest fill closest to the cul-de-sac. DCP-1 was performed on the lower fill slopes and encountered generally medium dense materials down to about 3.5 feet overlying loose materials.

HA-1 was excavated on the fill slope about 20-feet south of the cul-de-sac to the maximum depth explored 7.5-feet Below Ground Surface (BGS) and encountered reddish brown clayey silt interpreted as fill derived from Astoria Formation siltstone/sandstone. A shallow test pit hand dug with a shovel near the southern boundary of the site uncovered completely weathered brown-orange interpreted Astoria Formation sandstone/siltstone at 2-feet BGS.

Native soil profiles encountered during the investigation of the adjacent lots to the east are described as topsoil grading to brown with speckled orange sandy silt with clay, gravelly in places with friable green-gray relict gravel fragments interpreted as colluvium. Materials were generally medium dense to dense, damp to moist, low-medium plasticity gravel content generally increasing with depth. Occasional clasts of blocky/friable to hard tuffaceous brown siltstone with black oxidation on parting planes were encountered below 4.5-feet and hard clasts of fine-grained concoidal basalt and scoriaceous basalt breccia were encountered below about 6.5 feet. The excavation was terminated at 7.5-feet depth with no static groundwater encountered. Materials encountered are interpreted as colluvium derived from basalt and sedimentary rocks possibly grading to weathered/fractured basalt, but basaltic materials were not encountered on the subject parcel.

Previous Report in the Vicinity

A site Geologic Hazard Assessment was performed by Gary C. Sandstrom, Geologist, LLC in May of 2019 for the adjacent Tax Lots 1900 and 6600, finding described in the Soils Observed section of this report. The GCS 2019 report refers to a 2004 geologic report by H.G. Schlicker & Associates on nearby lot 16 (TL 05dd 1500 about 450-feet north-northeast of the subject site) reports a test pit excavated on that site during a prior investigation, possibly the original subdivision report, encountering a few inches of clayey, silty topsoil underlain by hard, very weathered basaltic rock with random fractures and silt seams from 1-to 3.5-feet, with light brown clayey silt (presumably weathered Astoria Formation but not specifically interpreted as such) from 3.5-to 11-feet, similar to materials observed in TP-2 excavated on adjacent lots 1900 and 6600. The 2004 Schlicker investigation included 2 hand-augered borings to depths of 5-feet encountered topsoil and generally stiff, reddish-brown to very stiff sandy silt to dense silty sand, harder below about 4 feet. Materials in these test pits were interpreted as weathered basaltic soil/landslide debris. A cross section included in the 2004 report shows relatively level ground to a distance of about 30-feet from the pavement suitable for shallow strip footings, and recommends foundations placed on the gentle to moderate slopes beyond that point be supported on augered piers embedded a minimum of 10-feet below existing grade or on rock. Lot 16 is presently vacant.

Drainage

No flowing water or stream channels were observed on the subject site and none are mapped in any of the sources referenced. The North Depoe Bay Creek Reservoir is about a quarter mile northeast of the subject site at an estimated elevation of about 120-feet and North Depoe Bay Creek flows from the reservoir generally southwest into Depoe Bay, passing within 200-feet of the southeast corner of the

site. A Depoe Bay water treatment facility is located on the northeast corner of the intersection of NE Collins Street and NE Spring Avenue where North Depoe Bay Creek flows under NE Collins Street at an elevation of about 55- feet and a gravel access road runs along the northeast side of the creek at the bottom of the steeper southeastern slopes. No springs were observed on the site or the slopes below the site near the creek. No ponded water was observed at the base of the slopes, but sword ferns were common in the understory on the steeper slopes below the canopy of native firs and occasional cedars and maples to the southeast. Skunk cabbage and other water-loving vegetation was observed on the relatively flat to gentle slopes adjacent to the creek. The flood plain adjacent to North Depoe Bay Creek averages about 75-feet wide in the site vicinity, ranging from about 60-feet to about 120-feet. The channel of the creek meanders somewhat across the flood plain with incised banks a foot or two high in places. A stormwater collection grate was observed along the south margin of the NE Creek Side Court pavement near the intersection with NE Spring Avenue, indicating a stormwater control system is present. A municipal sewerage system will receive discharge from the proposed residence.

Erosion

Google Earth historical imagery suggests the site vicinity was logged and developed sometime between 1994 and 2000 (the residence on lot 14 - TL 1700) is visible in the 2000 image. Sub-parallel bedding planes and slopes tend more often to generate more global block translational slides and gentler slopes, such as suggested by LIDAR on the slopes southeast of North Depoe Bay Creek. The presence of the mature timber on the steeper slopes tends to inhibit small-scale slumping somewhat by anchoring the soil with roots. No springs, tension cracks, or bare soil erosional or landslide scarps suggestive of significant ongoing instability were observed, but the DOGAMI SLIDO website classifies most of the site vicinity as being at high risk from landsliding - landsliding is likely.

Conclusions

Materials encountered in the hand auger boing, shovel dug test pit, and adjacent site investigation are interpreted as colluvium derived from basalt and sedimentary rocks possibly grading to residuum and then to weathered/fractured Astoria Formation silty sandstone. No static groundwater was encountered in the current investigation or the 2019 GCS investigation.

No indications of significant slope instability such as tension cracks, bare soil slump scarps, sunken grades, hummocky terrain, incised erosional channels, seeps, sag ponds, water-loving vegetation or unusual drainage were observed on the slopes of the subject site. Some soil creep evidenced by conifers with curved trunks and irregular topography due in part to relatively shallow surficial slumping and erosion were observed on the steeper slopes beyond about 30- to 40-feet southeastward from the southeast corner of the site. DOGAMI classifies most of the site vicinity at high risk from landsliding.

As noted above, recent work (see Cascadia 2010 EQ Timeline) by Dr. Chris Goldfinger at Oregon State University suggests that large subduction zone earthquakes, general slippage along the whole fault segment between northern California and Vancouver Island, occurs approximately once every five hundred years, with the most recent occurring approximately 300-years ago. Odds of a significant subduction zone earthquake in the Newport vicinity and north of Newport) were estimated at approximately one in four in the next 50-years. In the opinion of many geologists, such an event would likely reactivate previous landslides and trigger new slides in areas prone to instability. Damage along the entire Oregon coast would likely be severe, with bridge and highway failures plus tsunami inundation. The subject site is expected to experience severe shaking in the event of a Cascadia Subduction Zone earthquake and very strong shaking from lesser magnitudes. The

immediate homesite vicinity has no liquefaction hazard. Based on review of published hazard mapping by DOGAMI, and our site investigation, our findings are stated below:

Recommendations

Suitable subgrade consisting of native weathered siltstone soil is expected to be found below the fill at 4- to 8-feet BGS, with deeper excavation to native competent soil closest to the cul-de-sac. Moderately deep (at least two feet into acceptable subgrade materials) drained, stepped spread footings or a daylight basement with the upslope wall doubling as a drained retaining wall, set on competent stiffer/denser native colluvium/residuum or approved structural fill replacing soft materials would adequately support a single-family residence by keying into the stiffer/denser sub-grade to reduce slope hazards. Footings should be reinforced with rebar to facilitate underpinning at some time in the future if erosion and slope instability weaken the subgrade materials. Access to the downslope footings should also be maintained to facilitate potential underpinning.

Disposal of gutter discharge should be directed onto the NE Creek Side Court pavement in the same manner as other residences in the immediate site vicinity if possible. Perimeter footing drains shall be discharged in a system to prevent gutter drain backflow from saturating the footing subgrade. Clean-out ports should be placed adjacent to the footings/stemwalls to help prevent blockages of the drain lines. In general, surface water within construction areas should be drained away by cutting drainage ditches or pumping from a sump hole if necessary. Surface vegetation; topsoil; stumps; and any saturated, disturbed or incompetent materials encountered during construction should be removed and replaced if necessary, with densely-compacted granular fill materials. Exposed moisture-sensitive sub-grade materials should be protected from rain, freezing and traffic with 6-inches of crushed rock.

Grass seed covered with straw mulch should be planted on exposed soils as a temporary erosion-prevention method, and bare soil spoils piles should be covered with tarps to reduce erosion from rainfall. The site should be re-vegetated as soon as possible after construction to reduce soil erosion. Maintaining deep-rooted, perennial native vegetation on slopes is arguably the best way to enhance stability, the roots bind the soil together and remove water from the subgrade, organic forest soils soak up more water, and the foliage protects the soil from rain and wind impact. Soils adjacent to footing walls should be sloped away from the building to reduce infiltration and potential foundation settlement. Irrigation systems on or immediately above the steeper slopes should be avoided to prevent surface run-off erosion.

Temporary unsupported cut slopes should be no steeper than 1 horizontal to 1 vertical (1H:1V) and in general can be cut vertical up to 5-feet. All excavations should be performed in accordance with Department of Labor Occupational Safety and Health Administration (OSHA) guidelines for Type C soils. Deeper excavations may be excavated at grades steeper than the recommended OSHA grades provided the excavations are monitored and certified by a qualified geotechnical engineer. Heavy equipment and construction materials shall not be placed within 10-feet of the top of cut slopes. Site safety is the sole responsibility of the project contractor and /or the owners. Fills should not be placed on or near steep slopes on the site prior to consulting with a qualified engineering geologist or geotechnical specialist. Any fill placed in the proposed building area must be placed only after the subgrade is properly prepared and then approved by a qualified engineering geologist or geotechnical specialist. All permanent unsupported slopes should be no steeper than 2 horizontal to 1 vertical (2H:1V) unless specified by a qualified geotechnical specialist.

Earth retaining structures, when founded on suitable native subgrade, will also have an allowable bearing capacity of 1,500 psf, a coefficient of friction of 0.35 for concrete poured neat against

undisturbed native rock or compacted crushed aggregate atop rock. For site retaining walls that are properly drained so that no hydrostatic pressure develops, the equivalent fluid pressure for the active lateral force of the site soil in the upper 6-feet is 30 pcf (unrestrained walls), the at-rest lateral force is 45 pcf (walls restrained at the top) and the passive lateral force is 300 pcf.

Report Limitations

This report presents BEI's site observations, site research, site explorations, and recommendations for the proposed site development. The conclusions in this report are based on the conditions described in this report and are intended for the exclusive use of the Elly and Todd Bishop-Monday and their designated representatives for use in the site development design and construction. The analysis and general recommendations provided herein may not be suitable for structures or purposes other than those described herein. Services performed by the geologist and geotechnical engineer for this project have been conducted with the level of care and skill exercised by other current geotechnical professionals in this area under similar budget and time constraints. No warranty is herein expressed or implied. The conclusions in this report are based on the site conditions as they currently exist and it is assumed that the limited site locations that were physically investigated generally represent the subsurface conditions at the site. Should site development or site conditions change, or if a substantial amount of time goes by between our site investigation and site development, we reserve the right to review this report for its applicability. If you have any questions regarding the contents of this report, or if we can be of further assistance, please contact our office.

Sincerely,
Branch Engineering Inc.

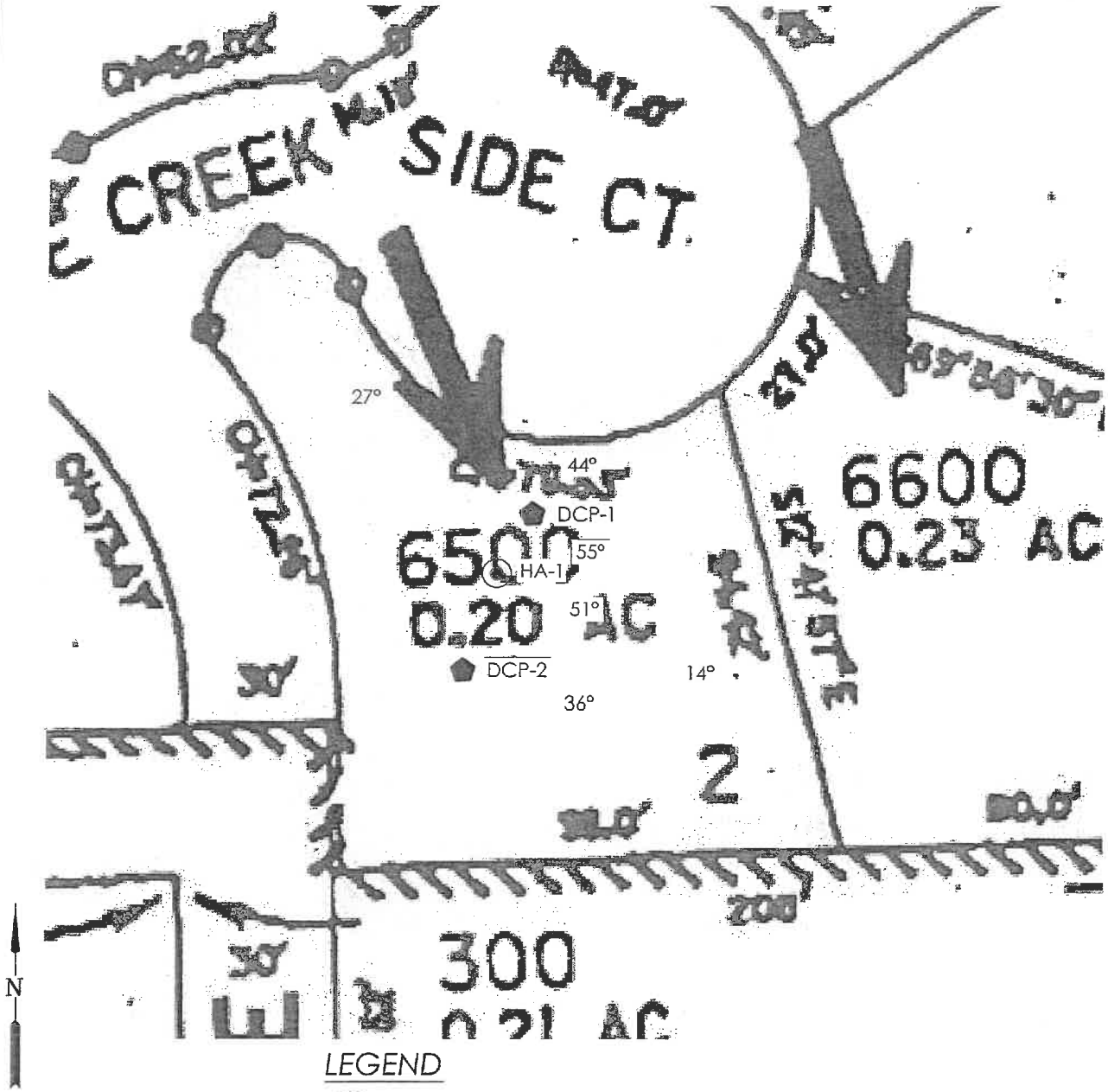
Digitally signed by Ronald J. Derrick
Date: 2020.10.16 13:56:32 -07'00'

EXPIRES: 12/31/2021

Ronald J. Derrick, P.E., G.E.
Principle Geotechnical Engineer

Gary Sandstrom, R.G., C.E.G
Certified Engineering Geologist

Branch ENGINEERING Inc
Since 1977



LEGEND

HA-1	INDICATES APPROXIMATE LOCATION OF HAND AUGER BORING
DCP-1	INDICATES APPROXIMATE LOCATION OF DCP TESTING
44°	APPROXIMATE SLOPE ANGLE IN DEGREES

FIGURE-1: LOT 2 VIEW OF THE BAY SUBDIVISION — FIGURE-1

DEPOT BAY, OREGON — 10-08-2020

PROJECT NO. 20-436

RELATIVE DENSITY - COARSE GRAINED SOILS

RELATIVE DENSITY	SPT N-VALUE	D&M SAMPLER (140 lbs hammer)	D&M SAMPLER (300 lbs hammer)
VERY LOOSE	< 4	< 11	< 4
LOOSE	4 - 10	11 - 26	4 - 10
MEDIUM DENSE	10 - 30	26 - 74	10 - 30
DENSE	30 - 50	74 - 120	30 - 47
VERY DENSE	> 50	> 120	> 47

USCS GRAIN SIZE

FINES		< #200 (.075 mm)
SAND	Fine	#200 - #40 (.425 mm)
	Medium	#40 - #10 (2 mm)
	Coarse	#10 - #4 (4.75 mm)
GRAVEL	Fine	#4 - 0.75 inch
	Coarse	0.75 - 3 inch
COBBLES		3 - 12 inches

CONSISTENCY - FINE GRAINED SOILS

CONSISTENCY	SPT N-VALUE	D&M SAMPLER (140 lbs hammer)	D&M SAMPLER (300 lbs hammer)	POCKET PEN. / UNCONFINED (TSF)	MANUAL PENETRATION TEST
VERY SOFT	< 2	< 3	< 2	< 0.25	Easy several inches by fist
SOFT	2 - 4	3 - 6	2 - 5	0.25 - 0.50	Easy several inches by thumb
MEDIUM STIFF	4 - 8	6 - 12	5 - 9	0.50 - 1.00	Moderate several inches by thumb
STIFF	8 - 15	12 - 25	9 - 19	1.00 - 2.00	Readily indented by thumb
VERY STIFF	15 - 30	25 - 65	19 - 31	2.00 - 4.00	Readily indented by thumbnail
HARD	> 30	> 65	> 31	> 4.00	Difficult by thumbnail

UNIFIED SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			GROUP SYMBOLS AND TYPICAL NAMES	
COARSE-GRAINED SOILS: More than 50% retained on No. 200 sieve	GRAVELS: 50% or more *retained* on the No. 4 sieve	CLEAN GRAVELS	GW	Well-graded gravels and gravel-sand mixtures, little or no fines.
			GP	Poorly-graded gravels and gravel-sand mixtures, little or no fines.
		GRAVELS WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravels, gravel-sand-clay mixtures.
	SANDS: 50% or more *passing* the No. 4 sieve	CLEAN SANDS	SW	Well-graded sands and gravelly sands, little or no fines.
			SP	Poorly-graded sands and gravelly sands, little or no fines.
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures.
			SC	Clayey sands, sand-clay mixtures.
FINE-GRAINED SOILS: Less than 50% retained on No. 200 sieve	SILT AND CLAY	LIQUID LIMIT LESS THAN 50	ML	Inorganic silts, rock flour, clayey silts.
			CL	Inorganic clays of low to medium plasticity, lean clays.
			OL	Organic silt and organic silty clays of low plasticity.
		LIQUID LIMIT 50 OR GREATER	MH	Inorganic silts, clayey silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity.
HIGHLY ORGANIC SOILS			PT	Peat, muck, and other highly organic soil.

MOISTURE CONTENT

DRY: Absence of moisture, dusty, dry to the touch
DAMP: Some moisture but leaves no moisture on hand
MOIST: Leaves moisture on hand
WET: Visble free water, usually saturated

	PLASTICITY	DRY STRENGTH	DILATANCY	TOUGHNESS
ML	Non to Low	Non to Low	Slow to Rapid	Low, can't roll
CL	Low to Med.	Med. to High	None to Slow	Medium
MH	Med. to High	Low to Med.	None to Slow	Low to Med.
CH	Med. to High	High to V.High	None	High

STRUCTURE

STRATIFIED: Alternating layers of material or color > 6mm thick.
LAMINATED: Alternating layers < 6mm thick.
FISSURED: Breaks along definate fracture planes.
SLICKENSIDED: Striated, polished, or glossy fracture planes.
BLOCKY: Cohesive soil that can be broken down into small angular lumps which resist further breakdown.
LENSES: Has small pockets of different soils, note thickness.
HOMOGENEOUS: Same color and appearance throughout.

LIST OF ABBREVIATION & EXPLANATIONS

SPT Standard Penetration Test split barrel sampler
D&M Dames and Moore sampler
LL Atterberg Liquid Limit
PL Atterberg Plastic Limit
PP Pocket Penetrometer
VS Vane Shear
G Grab sample
MC Moisture Content
MD Moisture Density
UC Unconfined Compressive Strength

TABLE A-1

Branch ENGINEERING

HAND AUGER ID: HA-1

Client: Bishop-Monday
Project Name: Lot 2 View of the Bay Subdivison
Project Number: 20-436
Project Location: Depoe Bay
Date Started: Sep 13 2020 **Completed:** Sep 13 2020
Logged By: SPR **Checked By:** RJD
Drilling Contractor: Branch Engineering Inc.
Latitude: **Longitude:** **Elevation:**
Drilling Method: 4.25" HSA
Ground Water Levels
Equipment: Hand Auger/DCP — No Groundwater Detected
Hammer Type: 35 lb Slide Hammer
Notes:

Depth	Graphic	Material Description	Sample	Recovery % RQD	Blow Counts (N Value)	Pocket Pen. (tsf)
1		Reddish-Brown Clayey Silt (OL), Damp, Medium Stiff.				
2						
3		Reddish Brown Clayey Silt (ML), Trace of Fine-Grained Sand, Damp to Moist, Medium Plasticity, No Dilatancy. Likely Fill From Site Development.				
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

SPT N-Value : ▲
MC : ⊗
PL LL: ●—■
10 20 30 40 50 60 70 80 90

Plot Legend: ▲ SPT N-Value ◊ Fines Content ⊗ Moisture Content ●—■ Plastic Limit and Liquid Limit

Branch ENGINEERING Inc.
Since 1972
civil · transportation
structural · geotechnical
SURVEYING

DYNAMIC CONE LOG

PROJECT NUMBER: 20-436
DATE STARTED: 09-13-2020
DATE COMPLETED: 09-13-2020

HOLE #: DCP-1
CREW: Sam Rabe EIT
PROJECT: Tax Lot 6500
ADDRESS: NE Creekside Court
LOCATION: Depoe Bay, Oregon

SURFACE ELEVATION:
WATER ON COMPLETION: No
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
1 ft	18	79.9	••••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
	17	75.5	••••••••••••••••••••	21	MEDIUM DENSE	VERY STIFF
	12	53.3	••••••••••••••	15	MEDIUM DENSE	STIFF
2 ft	8	35.5	•••••••••	10	LOOSE	STIFF
	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
	9	40.0	••••••••••	11	MEDIUM DENSE	STIFF
3 ft	9	40.0	••••••••••	11	MEDIUM DENSE	STIFF
1 m	8	35.5	•••••••••	10	LOOSE	STIFF
	4	15.4	••••	4	VERY LOOSE	SOFT
4 ft	5	19.3	•••••	5	LOOSE	MEDIUM STIFF
	7	27.0	•••••••	7	LOOSE	MEDIUM STIFF
	7	27.0	•••••••	7	LOOSE	MEDIUM STIFF
5 ft	8	30.9	••••••••	8	LOOSE	MEDIUM STIFF
	7	27.0	•••••••	7	LOOSE	MEDIUM STIFF
	7	27.0	•••••••	7	LOOSE	MEDIUM STIFF
6 ft	6	23.2	••••••	6	LOOSE	MEDIUM STIFF
	6	23.2	••••••	6	LOOSE	MEDIUM STIFF
2 m	6	23.2	••••••	6	LOOSE	MEDIUM STIFF
7 ft						
8 ft						
9 ft						
3 m 10 ft						
11 ft						
12 ft						
4 m 13 ft						

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DYNAMIC CONE LOG

PROJECT NUMBER: 20-436
DATE STARTED: 09-13-2020
DATE COMPLETED: 09-13-2020

HOLE #: DCP-2
CREW: Sam Rabe EIT
PROJECT: Tax Lot 6500
ADDRESS: NE Creekside Court
LOCATION: Depoe Bay, Oregon

SURFACE ELEVATION:
WATER ON COMPLETION: No
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
1 ft	9	40.0	••••••••••••	11	MEDIUM DENSE	STIFF
	10	44.4	••••••••••••••	12	MEDIUM DENSE	STIFF
	8	35.5	•••••••••••	10	LOOSE	STIFF
2 ft	7	31.1	•••••••••	8	LOOSE	MEDIUM STIFF
	7	31.1	•••••••••	8	LOOSE	MEDIUM STIFF
	7	31.1	•••••••••	8	LOOSE	MEDIUM STIFF
3 ft	8	35.5	•••••••••••	10	LOOSE	STIFF
1 m	10	44.4	••••••••••••••	12	MEDIUM DENSE	STIFF
	10	38.6	••••••••••••	11	MEDIUM DENSE	STIFF
4 ft	10	38.6	••••••••••••	11	MEDIUM DENSE	STIFF
	8	30.9	••••••••	8	LOOSE	MEDIUM STIFF
	8	30.9	••••••••	8	LOOSE	MEDIUM STIFF
5 ft	7	27.0	•••••••	7	LOOSE	MEDIUM STIFF
	8	30.9	••••••••	8	LOOSE	MEDIUM STIFF
	7	27.0	•••••••	7	LOOSE	MEDIUM STIFF
6 ft	6	23.2	••••••	6	LOOSE	MEDIUM STIFF
	10	38.6	••••••••••••	11	MEDIUM DENSE	STIFF
2 m						
7 ft						
8 ft						
9 ft						
3 m 10 ft						
11 ft						
12 ft						
4 m 13 ft						

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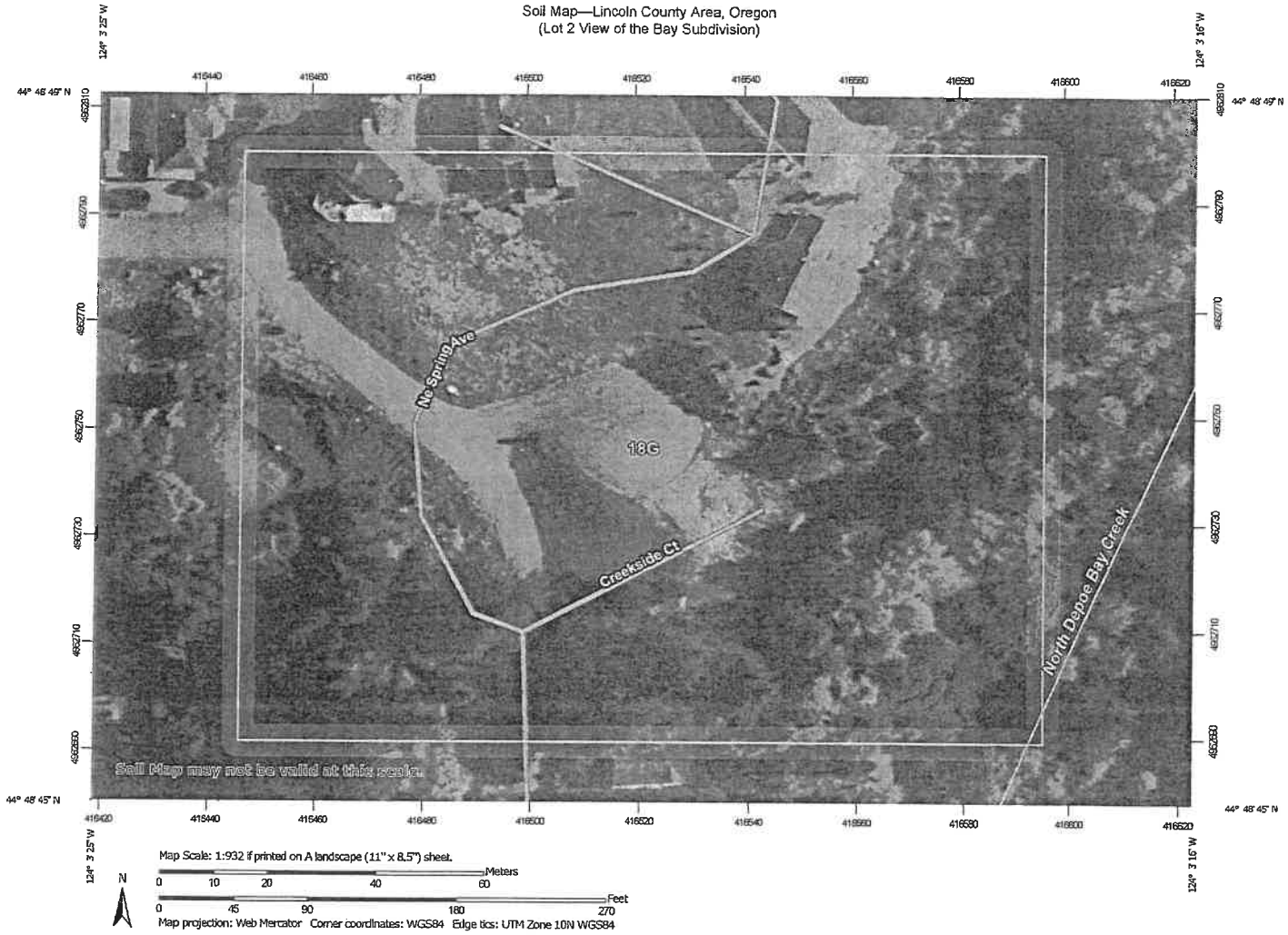
Soil Map—Lincoln County Area, Oregon
(Lot 2 View of the Bay Subdivision)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lincoln County Area, Oregon
Survey Area Data: Version 17, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 23, 2020—May 28, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
18G	Fendall-Templeton silt loams, 35 to 60 percent slopes	4.1	100.0%
Totals for Area of Interest		**4.1**	**100.0%**

Lincoln County Area, Oregon

18G—Fendall-Templeton silt loams, 35 to 60 percent slopes

Map Unit Setting

National map unit symbol: 257g
Elevation: 50 to 800 feet
Mean annual precipitation: 70 to 100 inches
Mean annual air temperature: 48 to 52 degrees F
Frost-free period: 160 to 210 days
Farmland classification: Not prime farmland

Map Unit Composition

Fendall and similar soils: 45 percent
Templeton and similar soils: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fendall

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave, convex
Across-slope shape: Concave, convex
Parent material: Colluvium derived from sedimentary rock

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
H1 - 2 to 18 inches: silt loam
H2 - 18 to 29 inches: silty clay loam
H3 - 29 to 40 inches: silty clay
H4 - 40 to 44 inches: weathered bedrock

Properties and qualities

Slope: 35 to 60 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Templeton

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, concave
Across-slope shape: Convex, concave
Parent material: Colluvium derived from sedimentary rock

Typical profile

Oi - 0 to 3 inches: slightly decomposed plant material
H1 - 3 to 20 inches: silt loam
H2 - 20 to 58 inches: silty clay loam
H3 - 58 to 68 inches: weathered bedrock

Properties and qualities

Slope: 35 to 60 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very high (about 15.3 inches)

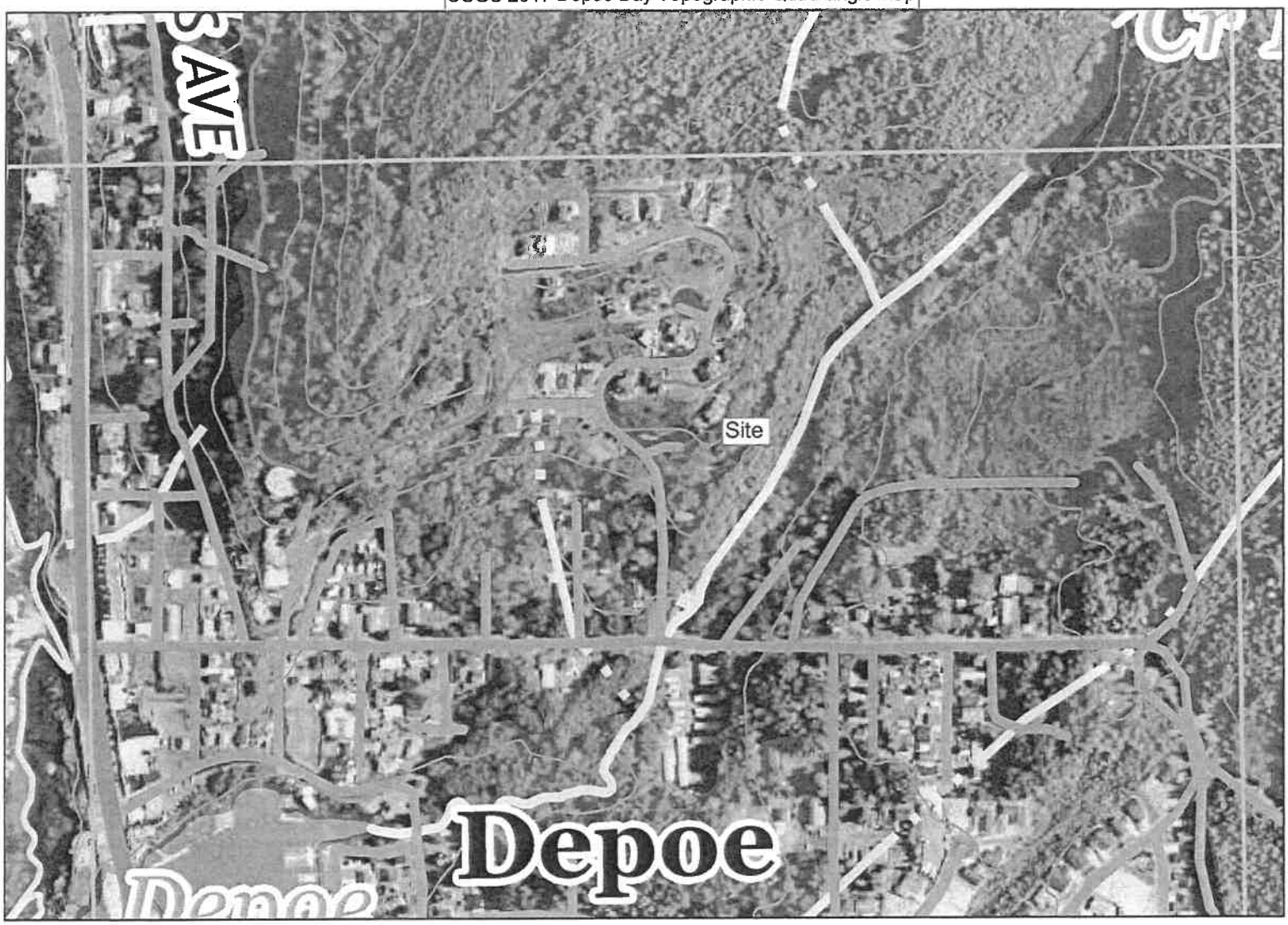
Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

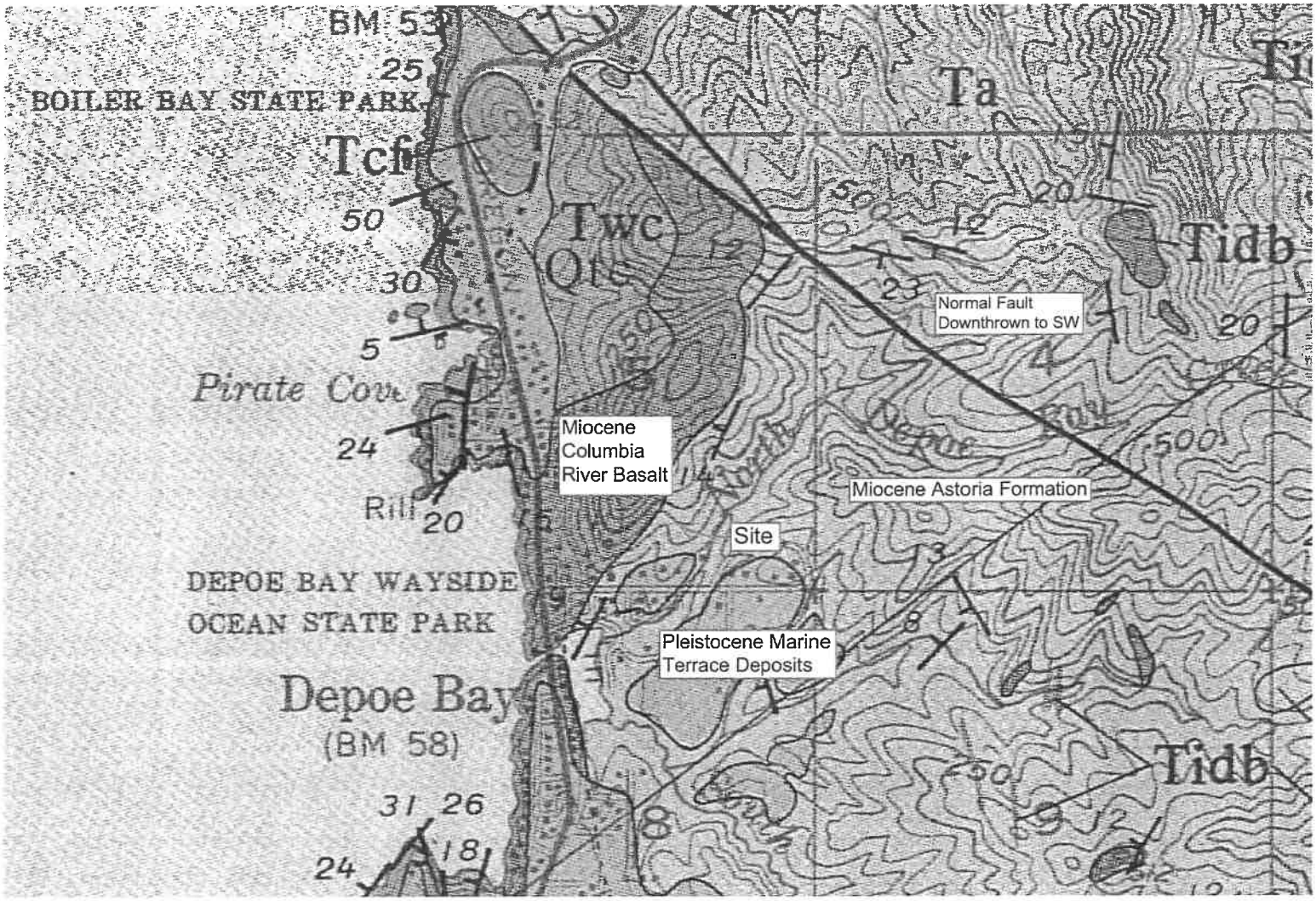
Data Source Information

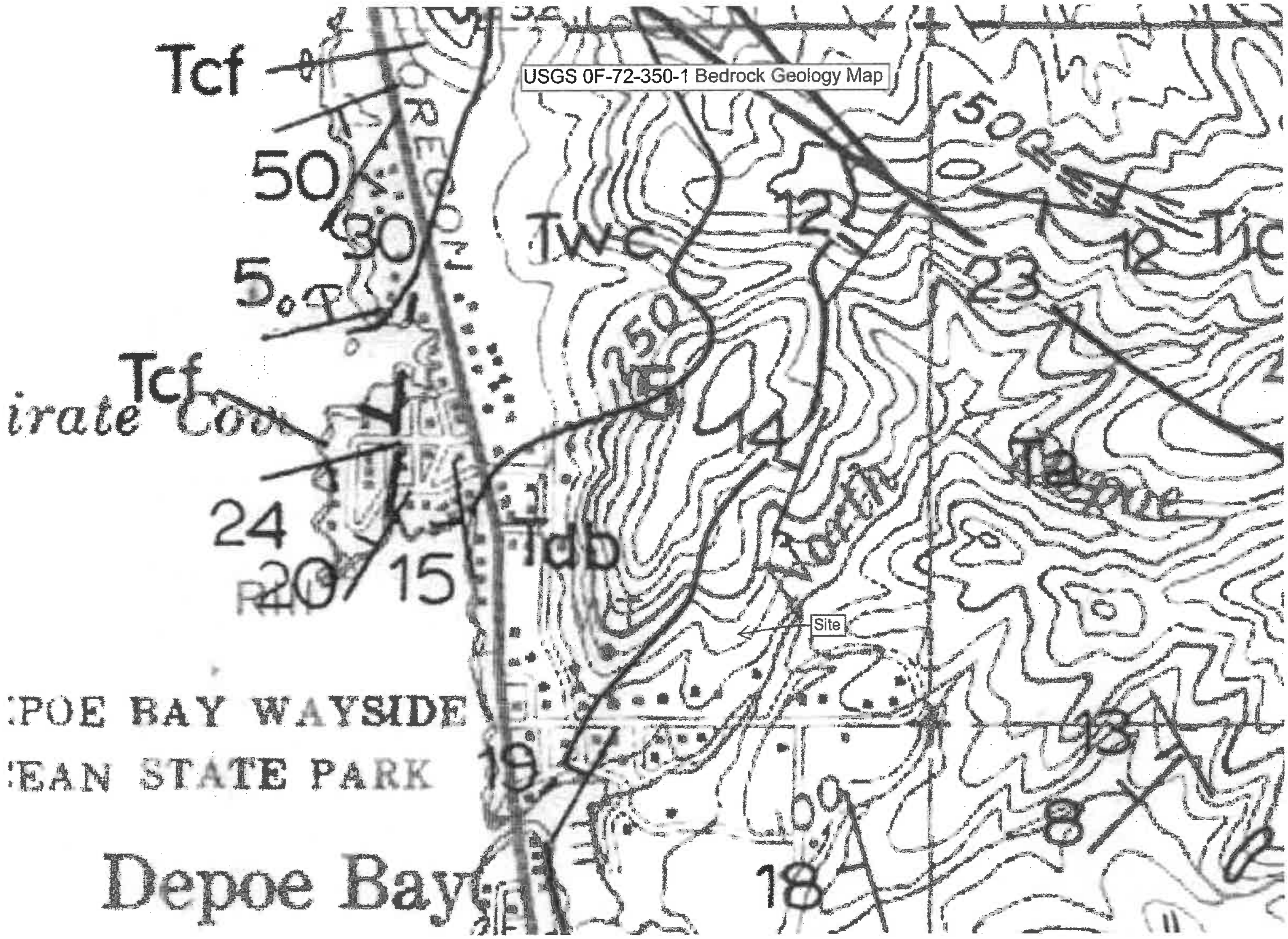
Soil Survey Area: Lincoln County Area, Oregon
Survey Area Data: Version 17, Jun 11, 2020

USGS 2017 Depoe Bay Topographic Quadrangle Map



USGS I-868 Geologic Map




USGS 0F-72-350-1 Bedrock Geology Map
Site
Tcf
Tcf
Twc
Tdb
Ta
North
irate
POE BAY WAYSIDE
EAN STATE PARK
Depoe Bay

Lot 6500 NE Creekside Court

T9S R11W 05DC Lot 6500

Printed 10/15/2020

LIDAR Bare Earth Slope Image

April 30, 2013

Bare Earth Slope (degrees)

Red: Band_1

Green: Band_2

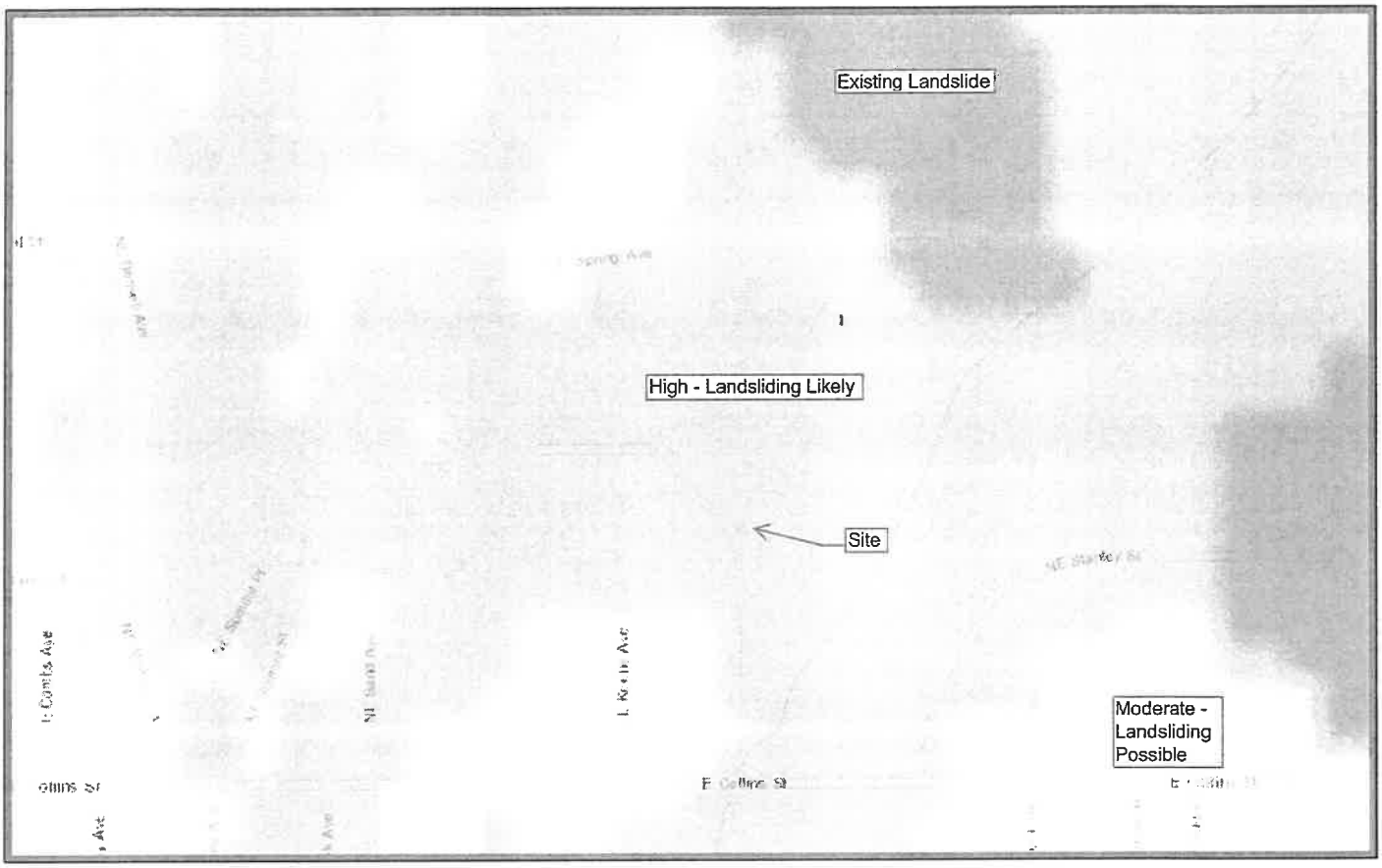
Blue: Band_3

1:1,320

0 0.01 0.02 0.04 mi

0 0.02 0.04 0.07 km

SLIDO Landslide Hazard Map



April 30, 2019

Landslide Hazard

Red: Band_1

Green: Band_2

Blue: Band_3

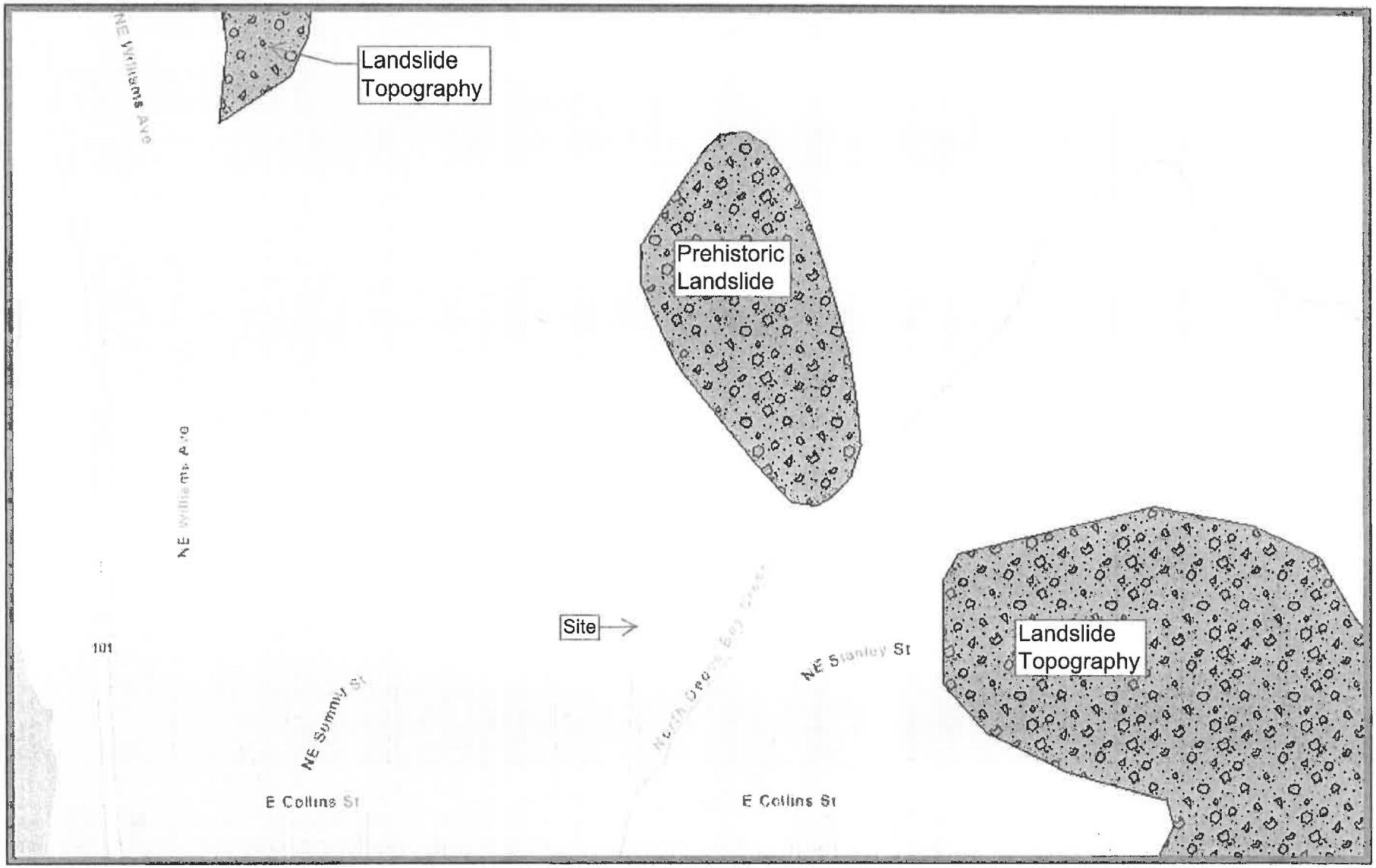
1:4,800

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

SLIDO Landslide Map



May 3, 2019

1:7,200

0 0.04 0.09 0.17 mi

0 0.05 0.1 0.2 km

Scarp

Head Scarp

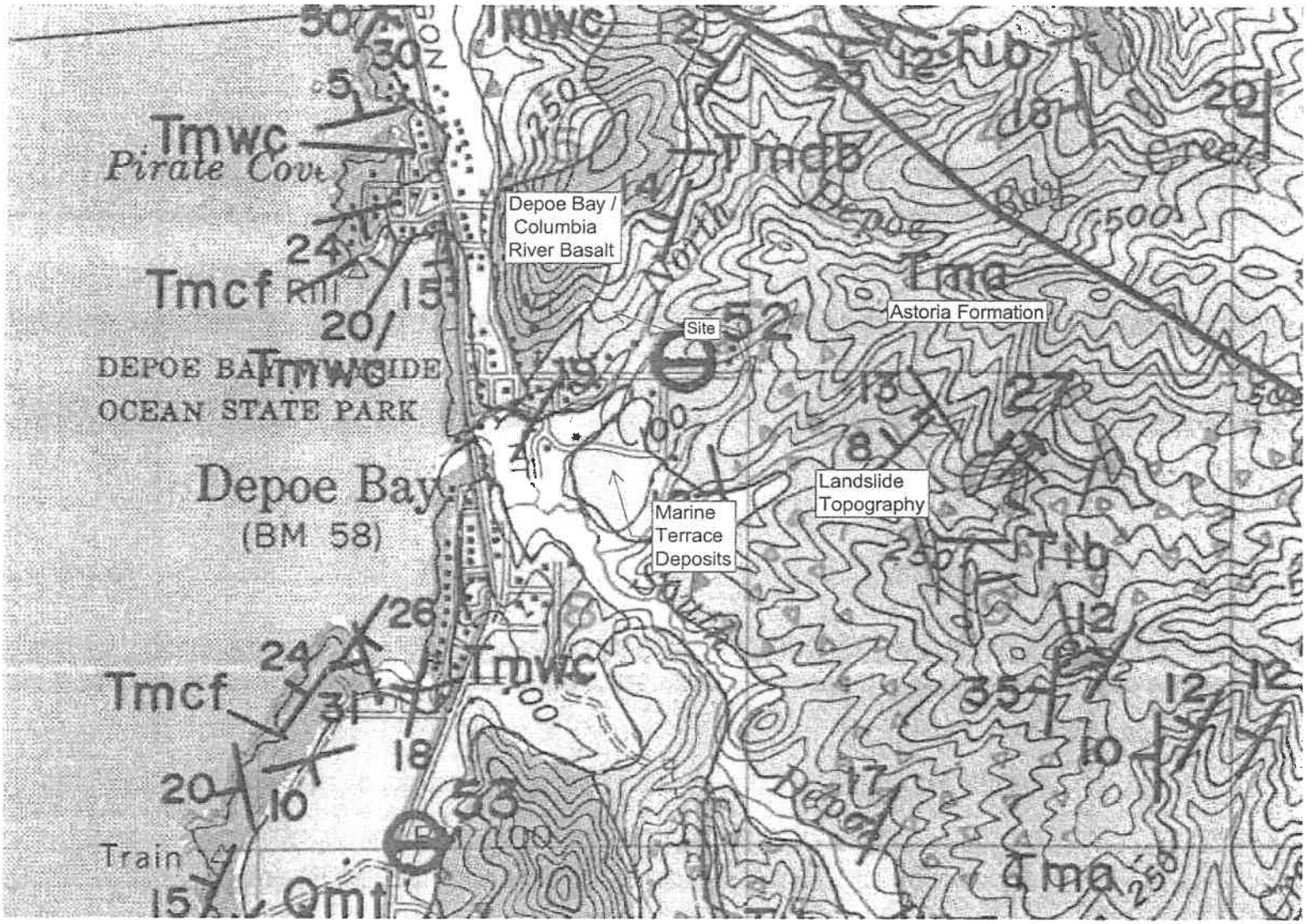
Deposits

Talus-Colluvium

Fan

Landslide

DOGAMI B-81-01 Geologic Map



Coastal Shorelands Overlay Zone
Case File: #2-CS-PC-21
Date Filed: July 21, 2021
Application Complete: Aug. 18, 2021
Meeting Date: Sep. 8, 2021, 6:00 pm
120-day Decision Date: Jan. 8, 2022

STAFF REPORT
Depoe Bay Planning Commission Action

APPLICANT: Tom Golden

OWNERS: Dan and Jeri Fouts

REQUEST: The applicant requests approval for development in the coastal shorelands overlay zone to remodel an existing single-family dwelling. The existing residence is 2-story, 2-bedroom, 2 & ½ bath with a footprint of 810 square feet. The remodeled residence will be 2-story, 2-bedroom, 3 & ½ bath with a footprint of 2810 square feet (includes garage). All of the proposed construction is away from the bluff.

A. RELEVANT FACTS:

1. **Property Location:** The subject property is located at approximately 1947 SW McDonald Avenue, and is further identified on Lincoln County Assessor's Map 09-11-17-BC as tax lot 02100.

2. **Lot Size and Dimensions:** The lot is roughly rectangular totaling approximately 0.43 acres in size with road frontage of approximately 125 feet and a depth of 165 feet.
3. **Zoning Designation:** Residential Zone R-1.
4. **Plan Designation:** Residential

5. **Surrounding Land Use:** Single family residential uses are located to the north and south. Undeveloped forested properties lie to the east. Whale Cove and the Pacific Ocean is immediately to the southwest.

6. **Topography and Vegetation:** The site slopes from northeast to southwest before dropping off significantly at the top of the bluff. There is a slight concave depression toward the center and west portion of the lot where the existing residence is located.

7. **Existing Structures:** A two bedroom, two story house currently exists on the property. House footprint is 810 square feet.

8. **Utilities:** The following utilities currently serve the subject property:
   a. Sewer: None. (existing septic system)
   b. Water: City water service.
   c. Electricity: Central Lincoln P.U.D.

9. **Development Constraints:**

   a. 'Coastal setbacks-for erosion' and 'area of visual concern' standards of the Coastal Shorelands Overlay Zone.

B. EVALUATION OF THE REQUEST:

1. **Relevant Criteria:**
   Depoe Bay Zoning Ordinance (DBZO) No. 24 (as amended)
   a. Section 3.010: Residential Zone R-1
   b. Section 3.360: Coastal Shorelands Overlay Zone
   c. Section 4.030: Off-Street Parking
   d. Section 4.820: Protection of Coastal Headlands, Areas of Exceptional Aesthetic Resources
   e. Article 13.080: Development Guidelines – Areas of Coastal Erosion, Areas of visual Concern
   Complete descriptions of the relevant criteria are attached to this staff report.

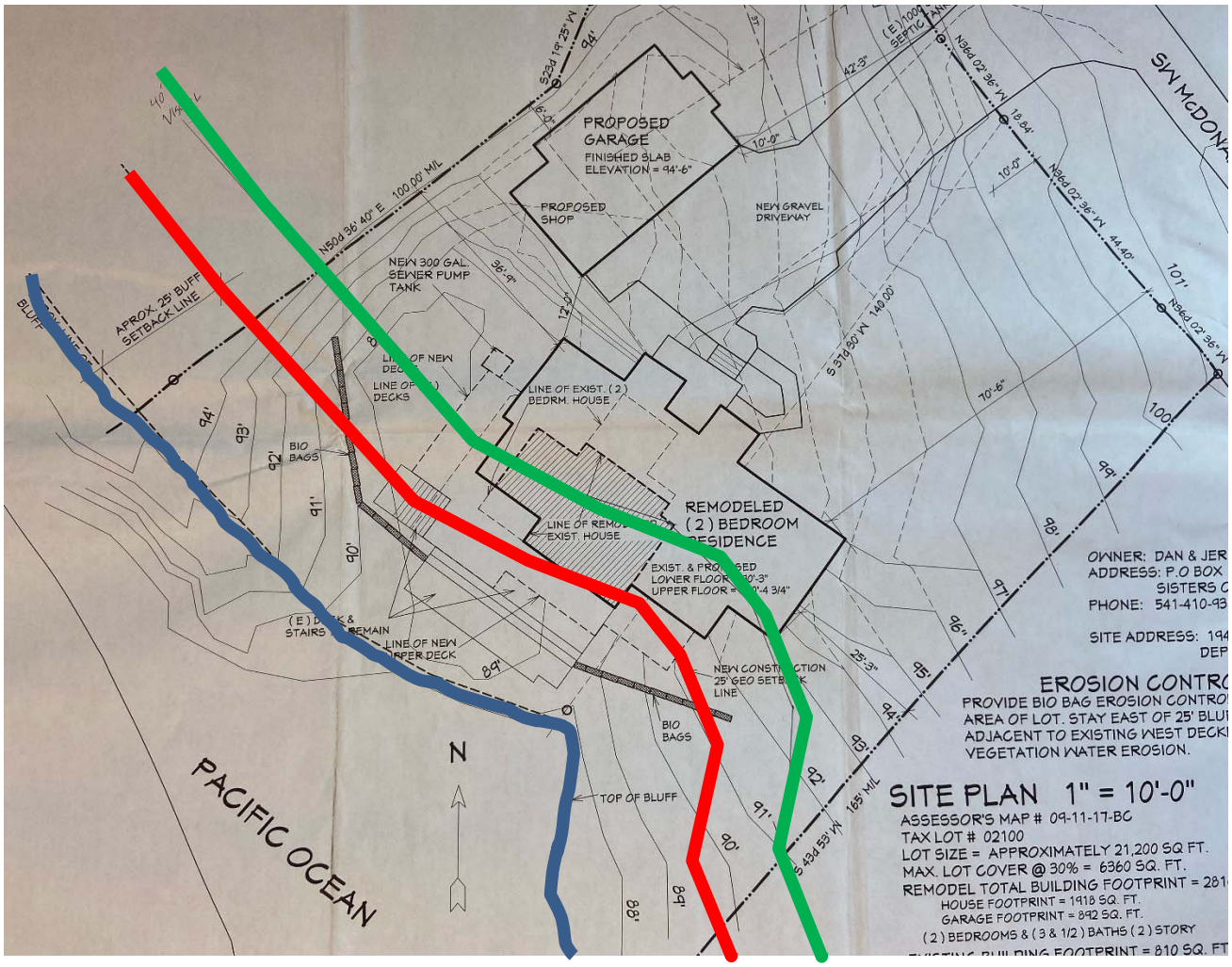
2. **Applicant's Proposal:**
   The applicant requests approval of a coastal shorelands overlay application to remodel the existing single-family dwelling. The request is to expand the existing structure within the 40' area of visual concern.

   The applicant submitted the following:
   - Application form and fee/deposit for Substantial Development in the Coastal Shorelands Zone.
   - Narrative addressing protection of coastal headlands and areas of exceptional aesthetic resources.
   - Engineering Geologic Hazards Investigation dated February 20, 2021.
   - Site Plan
   - Building elevations

40’ Visual Setback

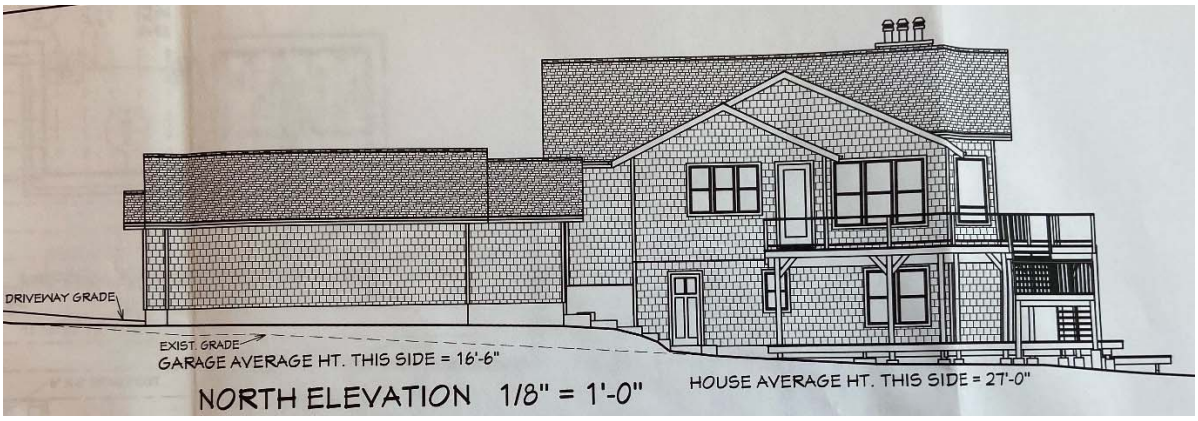
25’ Geo Setback

Bluff

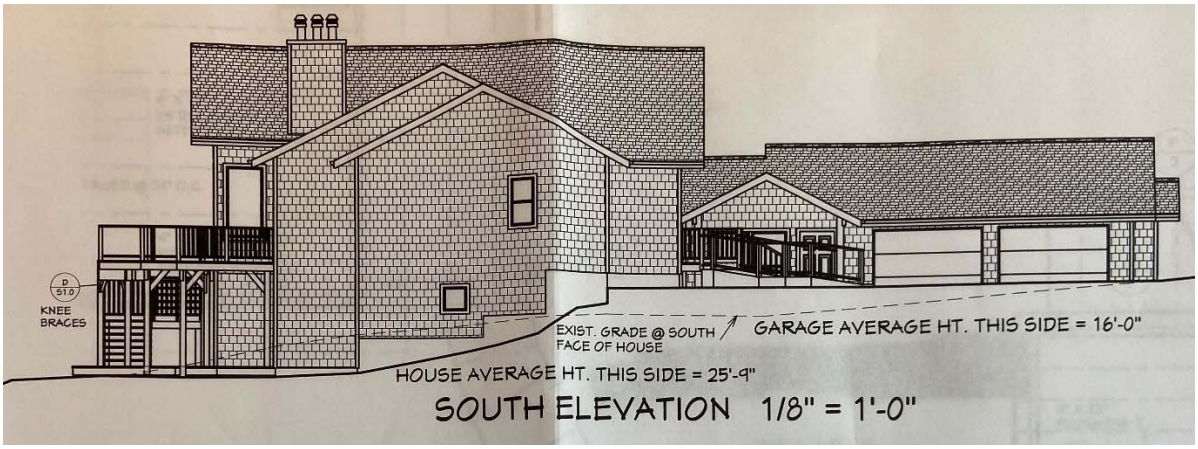


East Elevation (view from street)

West Elevation (view from Whale Cove)



North Elevation



South Elevation

Applicant Narrative:

The applicant provided the below letter and exhibit (also included as enclosure):

August 16. 2021

From: Tom Golden Residential Design and Drafting

To: City of Depoe Bay
Planning Department

For: Owners, Dan and Jeri Fouts
Site address: 1947 McDonald Ave Depoe Bay, OR 97341
Assessor's map: 09-11-17-BC
Tax Lot: 02100
Zone: R-1

The proposed project is a remodel to an existing two story residence. The residence is an ocean front home located in Whale Cove, in an "Area Of Visual Concern" requiring a 40' coastal bluff setback. The most westward portion of this existing two story residence currently has an ocean bluff setback of 22'-9". A recent Geological Hazard Report requires a 25' minimum bluff setback to any new construction on the site. (H,G. Slicker & Associates, Feb. 20, 2021) . 540 sq. ft. the existing 810 sq. ft. house footprint is to remain. This includes approximately 10 sq. ft. of the (E) house that is less than the 25" geologic setback that is to remain. All new westward construction of the proposed 1918 sq. ft. footprint is to be from 27' to 34' set back from the bluff.

This letter is written to address the City of Depoe Bay's Planning Ordinance Section 4.820 'Protection of coastal Headlands, Area of Exceptional Aesthetic Resources, sub-section 2, Item a, #6.a,b & c.

Item #6 states that, where a permitted use of an existing lot existing prior to the establishment of this ordinance would be precluded by strict adherence to these requirements. We can ask for an exception to these standards if the applicant meets the following standards:

a) The request is the minimum necessary.
Response: The proposed residence meets all side and front yard setbacks. In the west we proposed saving 540 sq ft. of the house with its 22'-9" setback and to set all new construction east of the minimum 25' geologic hazard setback from 2' to 10'. This is to functionally tie into the existing house and to take in the westward coastal view which these properties are purchased to enjoy.

b) Disruption of the visual character of the area has been minimized.
Response: The request is the minimum necessary in that it maintains the use of most of the footprint of the existing house and leaves more than 50% of the westward lot width undeveloped. The proposed home does not extend west as much as the average setback of the existing oceanfront homes along McDonald avenue.
See: Exhibit "A"

c) The options such as clustering of improvements, maximizing variance setbacks on the sides of the development away from the aesthetic resource or other design methods to minimize impact are not feasible.
Response: For this residence we have kept the footprint narrower than allowed to maintain a view corridor past the house to the ocean for east neighbors as well as leaving more than 50% of the lot width undeveloped for viewing for ocean recreational boaters, kayakers, etc. This should help the home fit in with the existing homes in this area.

The exhibit attached to the applicant's narrative shows the distances of existing residences to the bluff within the Wale Cove Subdivision. The Fouts residence, 1947 SW McDonald Ave, is consistent with other homes along the bluff.

3. **Public Testimony.** At the time this staff report was written, one testimony had been received by the City via email 8/24/2021.

Comment on Fouts' Application to Depoe Bay Planning Commission

I have been involved in the Whale Cove area for 25 years and am very familiar with the homes in the Coastal Shorelands Overlay Zone and the Area of Exceptional Aesthetic Resource. These homes have been added or replaced without damaging the Overlay Zone or impacting the Aesthetic view.

There is no question the Fouts' new residence will fit into the area without hurting or reducing the scenic characteristic of the neighborhood.

Please approve their application.

Richard Johnson
Long Time Whale Cove Resident

C. **SUMMARY AND STAFF ANALYSIS:** The Planning Commission reviews the proposal for conformance with the appropriate standards of the Depoe Bay Zoning Code. To facilitate review, staff identifies the following:

1. **R-1 Residential Standards and Parking Space Requirements.** The R-1 standards including yard setbacks and building height. The following table identifies the R-1 standards and the proposed development.

	Standard	Proposed
Front Yard	Min. 20'	42'-3"
West Side Yard	Min. 5', or 1' for each 3' of building height, whichever is greater. The proposed building height is 27' therefore the required side yard setback is 9'.	36'-9"
East Side Yard		25'-3"
Rear Yard	Min. 10'	25'
Building Ht.	Max. 30'	27'

The R-1 zone requires 2 parking spots for a single-family residence. The site plan identifies a two-car garage as well as a 40-foot-long driveway.

2. **Coastal Setback – Area of Coastal Erosion.** In the Areas of Coastal Erosion, no excavating, filling, or placement of retaining walls, deck posts or other permanent structures is allowed, unless based on a Geological Hazard Report approved by the Commission. Based on the H.G. Schlicker & Associates investigation, the applicable potential of coastal erosion is slight.

   The recommended coastal setback for this specific site is 25 feet from the top of the bluff.

   The existing deck and southern tip of the existing residence are just within the area of coastal erosion setback. With the exception of the existing residence, none of the proposed residence remodel would be within the area of coastal erosion. All of the proposed construction is away from the bluff.

3. **Area of Visual Concern.** DBZO Section 4.820.2.a(2) describes the Areas of Exceptional Aesthetic Resources and identifies that the **Area of Visual Concern for this subject site extends 40 feet landward from the top of the coastal bluff.** Section 13.081 states that no grading, excavating, or filling that changes the profile of the top of the bluff or the slope seaward from its top; vegetation removal; or placement of a building is allowed with some exceptions for vegetation pruning or removal, and placement of benches, tables, chairs, and gazebo.

   The existing deck and majority of the existing residence are within the area of visual concern. Approximately one third to half of the proposed remodeled residence would be within the area of visual concern. All of the proposed construction is away from the bluff.

According to the applicant, the footprint width of the remodel has been kept narrower than allowed by code in order to maintain view corridors past the house to the ocean from the undeveloped lots to the east. More than 50% of the lot width remains undeveloped.

4. **Geotechnical Report Recommendations.**
The Engineering Geologic Hazards and Investigation was prepared February 20, 2020.

The February 20, 2020 investigation includes design and construction recommendations. The recommendations were based on a site visit, site observations and measurements, hand augered borings, a slope profile, limited review of the geologic literature, interpretation of topographic maps, lidar and aerial photographs. The design and construction recommendations address:

a.	Site Preparation	g. Structural Fills
b.	Soil Bearing Capacities	h. Groundwater
c.	Footings	i. Erosion Control
d.	Slabs-On-Ground	j. Cut and Fill Slopes
e.	Retaining Walls	k. Drainage
f.	Seismic Requirements	l. Plan Review and Site Observations

The February 20, 2020 Engineering Geologic Hazards Investigation is attached.

The engineering geologist provides the following recommendation for **setback and locations for structures**:

> To mitigate for the future recession of the bluff caused by erosion and landsliding, we recommend that the setback for all shallow foundations be approximately 25 feet east of the upper edge of the bluff, approximately where the existing foundation is located as shown on Figures 3 and 4. Structures approximately 25 feet and more from the upper bluff edge can utilize standard continuous and isolated shallow spread footings. Any decks or other structures located west of the house should not be attached to the house.

Upon an approval, a recommended condition is for the applicant to submit a letter to the City prepared by an engineering geologist stating that final building plans are in accordance with all the engineering geologist's recommendations.

5. **Erosion Control and Drainage Plan.** The City Public Works Director requests review and approval of plans for erosion control and storm drainage prior to issuance of a building permit.

6. **Parking.** DBZO Section 4.030 requires two on-site parking spaces for a single-family residence. The site plan identifies a two-car garage as well as a 40-foot-long driveway.

7. **Septic System.** Residences within the Whale Cove Subdivision are served by individual septic systems since they were built prior to the City's incorporation and were permitted by Lincoln County and the State of Oregon. By Ordinance Nos. 46 and 168, new septic systems are not permitted within Depoe Bay City Limits.

Portions of the existing septic system will be repaired or replaced as required as part of the remodel. However, capacity of the system will not be increased since the existing residence is a 2-bedroom and the remodel, although increasing overall square footage, is still a 2-bedroom residence.

8. **Archaeological Resources.** All of the Depoe Bay planning area falls within the "high density" archaeological site density classification shown in the 1976 Lincoln County Statewide Inventory Historical Sites and Buildings, published by the Oregon State Historic Preservation Office, Parks and Recreation Branch, Department of Transportation. Although the property is not specifically identified as an archaeological site, the applicant needs to be aware of potential archaeological resources and take feasible action to minimize site disturbance and prevent irreversible loss of archaeological resources. The DBZO Section 3.360(5)(b)(1) states that development on identified archaeological sites shall be conducted in a manner so as to minimize site disturbance and prevent irreversible loss of archaeological resources. This does not require the property owner to hire an archaeologist, however, it does require the property owner to be cognizant of archaeological resources when developing the site.

9. **Declaration.** The Applicant/Property Owner shall complete and sign the Declaration of Covenants and Conditions of Responsibility and Indemnity (The Declaration) provided by the City. Prior to issuance of a building permit, the Applicant or Property Owner shall execute and record the Declaration in the deed records of Lincoln County, Oregon.

D. CONCLUSIONS: In evaluating the request, the Planning Commission bases its decision on compliance with the applicable code standards. If the Planning Commission finds the request fails to satisfy the ordinance standards, it can move to deny the request, articulating the basic conclusions and rationale for the decision and directing staff to prepare findings for adoption.

If the Planning Commission finds the request satisfies the applicable criteria, it can move to approve the request and direct staff to prepare findings for adoption. In the event of an approval, staff suggests the following conditions of approval be attached.

1. **Building Permit.** Development shall be accomplished in conformance with the approved plan including the required setbacks.

2. **Coastal Shoreland Setback.** Development shall be accomplished in conformance with the approved plan.

   With the exception of the footprint of the existing residence, no portions of the proposed remodel will occur within the 25-foot coastal shoreland setback. All new decks west of the existing residence shall not be attached to the house

3. **Area of Visual Concern.** Development shall be accomplished in conformance with the approved plan.

   No new construction shall occur any closer to the bluff than the existing residence. With the exception of required maintenance, no future construction shall be allowed within the 40-foot area of visual concern.

4. **Geotechnical Construction Recommendations and Inspections.** Development shall be accomplished in conformance with the approved plan and the Engineering Geological Hazards Investigation dated February 20, 2020.

   The applicant will be responsible for submitting a letter to the City prepared by an engineering geologist stating that final building plans are in accordance with all the engineering geologist's recommendations.

   The applicant will be responsible for submitting a letter to the City prepared by an engineering

geologist stating that inspections were performed during construction of soils or foundation related phases of work.

5. **Drainage and Erosion Control.** The City Public Works Director shall review and approve plans for erosion control and storm drainage prior to issuance of a building permit.

6. **Parking.** Two parking spaces shall be provided.

7. **Septic System.** The septic system shall be repaired/replaced in conformance to the plans and adhere to Lincoln County and State of Oregon regulations.

8. **Archaeological Resources.** Development shall be conducted in a manner so as to minimize site disturbance and prevent irreversible loss of archaeological resources. Before and during excavation, any discovery of archaeological resources shall mean that the applicant shall cease excavation activities, notify the State Historic Preservation Office and Confederated Tribe of Siletz Indians, and meet State statutes before proceeding.

9. **Declaration.** The Applicant/Property Owner shall complete and sign the Declaration of Covenants and Conditions of Responsibility and Indemnity (The Declaration) provided by the City. Prior to issuance of a building permit, the Applicant or Property Owner shall execute and record the Declaration in the deed records of Lincoln County, Oregon.

Submitted by,

Jaime White
City Planner

Enclosure: Vicinity Map
Site plan
Building elevations
Applicant Narrative
February 20, 2020 Engineering Geologic Hazards Investigation

August 16. 2021

From: Tom Golden Residential Design and Drafting

To: City of Depoe Bay
Planning Department

For: Owners, Dan and Jeri Fouts
Site address: 1947 McDonald Ave Depoe Bay, OR 97341
Assessor's map: 09-11-17-BC
Tax Lot: 02100
Zone: R-1

The proposed project is a remodel to an existing two story residence. The residence is an ocean front home located in Whale Cove, in an "Area Of Visual Concern" requiring a 40' coastal bluff setback. The most westward portion of this existing two story residence currently has an ocean bluff setback of 22'-9". A recent Geological Hazard Report requires a 25' minimum bluff setback to any new construction on the site. (H,G. Slicker & Associates, Feb. 20, 2021) . 540 sq. ft. the existing 810 sq. ft. house footprint is to remain. This includes approximately 10 sq. ft. of the (E) house that is less than the 25" geologic setback that is to remain. All new westward construction of the proposed 1918 sq. ft. footprint is to be from 27' to 34' set back from the bluff.

This letter is written to address the City of Depoe Bay's Planning Ordinance Section 4.820 'Protection of coastal Headlands, Area of Exceptional Aesthetic Resources, sub-section 2, Item a, #6.a,b & c.

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b) Disruption of the visual character of the area has been minimized.
Response: The request is the minimum necessary in that it maintains the use of most of the footprint of the existing house and leaves more than 50% of the westward lot width undeveloped. The proposed home does not extend west as much as the average setback of the existing oceanfront homes along McDonald avenue.
See: Exhibit "A"

c) The options such as clustering of improvements, maximizing variance setbacks on the sides of the development away from the aesthetic resource or other design methods to minimize impact are not feasible.
Response: For this residence we have kept the footprint narrower than allowed to maintain a view corridor past the house to the ocean for east neighbors as well as leaving more than 50% of the lot width undeveloped for viewing for ocean recreational boaters, kayakers, etc. This should help the home fit in with the existing homes in this area.

Tom Golden

EXHIBIT "A"

Legend

- Taxlots
- Cities
- Sections
- 40 Foot Contours
- Streams

Printed on 8 / 17 / 2021

N

Lincoln County
OREGON

Geologic Hazards and Geotechnical Investigation
Tax Lot 2100, Map 09-11-17BC
1947 McDonald Avenue
Depoe Bay, Lincoln County, Oregon

Prepared for:
Mr. Dan Fouts
P.O. Box 2100
Sisters, Oregon 97759

Project #Y204323

February 20, 2020

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 #Y204323 February 20, 2020

To: **Mr. Dan Fouts**
P.O. Box 2100
Sisters, Oregon 97759

Subject: **Geologic Hazards and Geotechnical Investigation**
Tax Lot 2100, Map 09-11-17BC
1947 McDonald Avenue
Depoe Bay, Lincoln County, Oregon

Dear Mr. Fouts,

The accompanying report presents the results of our geologic hazards and geotechnical investigation for the above subject site.

After you have reviewed our report, we would be pleased to discuss it 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.

J. Douglas Gless, MSc, RG, CEG, LHG
President/Principal Engineering Geologist

JDG:aml

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

FIGURES

APPENDICES

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

Project #Y204323 February 20, 2020

To: **Mr. Dan Fouts**
P.O. Box 2100
Sisters, Oregon 97759

Subject: **Geologic Hazards and Geotechnical Investigation**
Tax Lot 2100, Map 09-11-17BC
1947 McDonald Avenue
Depoe Bay, Lincoln County, Oregon

Dear Mr. Fouts:

1.0 Introduction and General Information

At your request and authorization, a representative of H.G. Schlicker and Associates, Inc. (HGSA) visited the subject site on February 04, 2020, to complete a geologic hazards and geotechnical investigation of Tax Lot 2100, Map 09-11-17BC, located at 1947 McDonald Avenue, Depoe Bay, Lincoln County, Oregon (Figures 1 and 2; Appendix A). It is our understanding that you are planning to remove the existing house and construct a new house on the property.

This report addresses the geologic hazards and geotechnics at the site with respect to constructing a new home. The scope of our work consisted of a site visit, site observations and measurements, shovel test pits, a slope profile, limited review of the geologic literature, interpretation of topographic maps, lidar and aerial photographs, and preparation of this report which provides our findings, conclusions, and recommendations.

2.0 Site Description

The site is located on an elevated marine terrace, adjacent to an approximately 50 to 60 feet high near-vertical bluff overlooking Whale Cove to its west (Figure 1; Appendix A). The subject property consists of an irregular shaped, approximately 0.58-acre oceanfront lot, Tax Lot 2100 (Figure 2). The site is bound to its north and south by adjacent developed lots, to its east by McDonald Avenue, and to its west by the Pacific Ocean. (Figures 2 and 3).

Slopes at the site create a depression that opens to the bluff in the southwest (Figure 3). The gravel driveway and parking area present in the northeastern portion of the site slopes down to the southwest at approximately 4 to 6 degrees. The central portion of the site, in the area of the existing house and yard, was generally graded flat to gently sloping to the southwest. From the southwestern portion of the house to the upper bluff edge slopes increase to approximately 14 to 16 degrees. The 50 to 60 feet high bluff along the west-southwestern part of the site is near vertical. Slopes along the northern property boundary vary from approximately 10 to 30 degrees, with an elevation change up to approximately 8 feet northwest of the existing house. Slopes along the southern property boundary vary from approximately 5 to 35 degrees, with an elevation change up to approximately 10 feet southeast of the existing house (Figures 3 and 4; Appendix A).

At the time of our site visit, we observed waves breaking at the base of the bluff. Two small sea caves are present at the base of the bluff southwest of the house (Figure 3; Appendix A). A larger north-northeasterly trending sea cave was observed near the northwestern corner of the site, and underlying the adjacent lot to the north. We were unable to determine the depth of the small sea caves that underlie the subject lot. No beach sand was observed at the base of the bluff at the time of our site visit; however, a small pocket beach is present at the north end of Whale Cove (Appendix A).

Vegetation at the site consists of landscape plants, English ivy, salal, ferns, and shrubs, along with spruce, shore pine, and Douglas fir trees. No vegetation was observed on the near-vertical bluff (Appendix A).

3.0 Geologic Mapping, Investigation and Descriptions

The site lies in an area mapped as Quaternary Marine Terrace deposits underlain by the middle Tertiary aged Sandstone of Whale Cove (Schlicker et al., 1973; Priest and Allan, 2004). The upper Quaternary marine terrace deposits consist of semi-consolidated uplifted beach sand, overlain locally by fine-grained dune sand deposits. The lower Sandstone of Whale Cove consists of fine to coarse-grained, massive, thick-bedded to cross-bedded arkosic sandstone, and thin-bedded micaceous, carbonaceous siltstone. The upper terrace sands are generally horizontal, while the Sandstone of Whale Cove dips to the west at an angle of approximately 15 degrees. Locally the upper terrace deposits are approximately 10 to 15 feet thick and consist of yellow-tan to tan, dense, friable, fine to medium-grained sand and mudstone. Beach sands in the site vicinity are fine to medium-grained. Basalt flows, extrusive breccia, tuff breccia, and lapilli tuff of the Cape Foulweather Basalt are exposed to the north and south of Whale Cove and at its western entrance (Schlicker et al., 1973; Priest and Allan, 2004).

Typically in the area of the site, the marine terrace deposits at the top of the bluff are near vertical with overhanging vegetative mats; however, the marine terrace deposits along the top of

the bluff at this site are generally more sloping, at approximately 14 to 16 degrees, and more vegetated than those exposed and observed at neighboring sites to the north and south (Appendix A).

Several north-south trending fracture zones were observed at the base of the bluff and appear to be stress-relief fractures. These fracture zones weaken the surrounding sandstone and are more easily eroded by ocean waves. This erosion has formed sea caves in the bluff over a time period of hundreds to thousands of years (Appendix A).

At the time of our site visit, we hand dug two shovel test pits (STP) to depths of approximately 2 feet below the ground surface (bgs). The approximate locations of the STPs are shown on Figures 3 and 4. A geologist from our office visually classified the soils encountered according to the Unified Soil Classification System (USCS) as follows:

STP-1	**Depth (ft.)**	**USCS**	**Description**
	0 – 0.5	ML (Fill)	SILT FILL; Dark brown, wet, medium dense. With numerous roots up to ½" diameter.
	0.5 – 1.25	ML (Fill)	Sandy SILT FILL; Orange-brown, wet, medium dense.
	1.25 – 1.5	ML	Sandy SILT; Dark brown, wet, medium dense. No refusal when pushing a tile probe from 1.5 to 4 feet. Increasing sand with depth.
			Free groundwater was not encountered.
STP-2	**Depth (ft.)**	**USCS**	**Description**
	0 – 0.5	ML (Fill)	SILT FILL; Dark brown, wet, medium dense. With numerous roots up to ½" diameter.
	0.5 – 1.0	ML (Fill)	Sandy SILT FILL; Orangish brown, wet, medium dense.
	1.0 – 2.0	ML (Fill)	Sandy SILT FILL; Dark brown, wet, medium dense.
	2.0	GM (Fill)	Silty GRAVEL FILL; 1 ½" minus basalt gravel with dark brown silt. Refusal on gravel.
			Free groundwater encountered at approximately 1 foot below the ground surface.

In general, we encountered 1.5 to 2 feet of undocumented fill soil and gravel overlying medium dense sandy silt.

3.1 Structures

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).

Schlicker et al. (1973) mapped several faults north and south of the site, trending in a northwesterly direction. These faults are normal faults with their upthrown sides to the northeast. One fault trends toward Whale Cove along the trace of Deadhorse Creek and is exposed along the bluff slope south of the site. Faults mapped east of the site trend in a north-south direction and are normal faults with their upthrown sides to the southeast. All mapped faults cut Tertiary aged deposits with no indications of recent movement.

The nearest potentially active faults are the Yaquina Bay Fault located approximately 8 miles south of the site, and the Yaquina Head Fault located approximately 11 miles south of the site. The Yaquina Bay Fault is a generally east-northeast trending oblique fault that also has left-lateral strike-slip and either contractional or extensional dip-slip offset components (Personius et al., 2003). This fault is believed to extend offshore for approximately 7 to 8 miles and may be a structurally controlling feature for the mouth of Yaquina Bay (Goldfinger et al., 1996; Geomatrix, 1995). At Yaquina Bay, a 125,000-year-old platform has been displaced approximately 223 feet up-on-the-north by the Yaquina Bay Fault. This fault has the largest component of vertical slip (as much as 2 feet per 1,000 years) of any active fault in coastal Oregon or Washington (Geomatrix, 1995). Although the age for the last movement of the Yaquina Bay Fault is not known, the fault also offsets 80,000-year-old marine terrace sediments. The Yaquina Head Fault is an east-trending oblique fault with left-lateral strike-slip and either contractional or extensional dip-slip offset components (Personius et al., 2003). It offsets the 80,000-year-old Newport marine terrace in the area of the site by approximately 5 feet, indicating a relatively low rate of slip, if still active (Schlicker et al., 1973; Personius et al., 2003).

4.0 Slope Stability and Erosion

The upper bluff slope with exposed marine terrace materials shows signs of minor erosion and sloughing (Appendix A).

The lower Sandstone of Whale Cove is undergoing erosion primarily as the result of ocean wave activity. Priest (1994) and Priest et al. (1994) determined an erosion rate for the

bluff at the subject site. Average annual erosion rates for the ocean bluff at the subject site was determined to be 0.17 ± 0.09 feet per year (Priest et al., 1994). This erosion rate was calculated by measuring the distance from existing structures in the area to the bluff and compared to distances measured on a 1939 or 1967 vertical aerial photograph (Priest et al., 1994.)

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

Based on mapping completed by Priest and Allan (2004), the bluff slope lies in the Active Erosion Hazard Zone; the area of the marine terrace within approximately 20 feet of the upper bluff edge lies in the High-Risk Erosion Hazard Zone, the Moderate-Risk Erosion Hazard Zone is mapped from approximately 20 to 40 feet from the upper bluff edge and the Low-Risk Erosion Hazard Zone from approximately 40 to 60 feet from the upper bluff edge. The coastal erosion hazard zone definitions and methodology are provided below.

The methodology provided by Priest and Allan (2004) defines four coastal erosion hazard zones for bluffs of Lincoln County, Oregon, as follows:

"*The basic techniques used here are modified from Gless and others (1998), Komar and others (1999), and Allan and Priest (2001). The zones are as follows:*

1) Active hazard zone: The zone of currently active mass movement, slope wash, and wave erosion.

2) The other three zones define high-, moderate-, and low-risk scenarios for expansion of the active hazard zone by bluff top retreat. Similar to the dune-backed shorelines, the three hazard zones depict decreasing levels of risk that they will become active in the future. These hazard zone boundaries are mapped as follows:

a. High-risk hazard zone: The boundary of the high-risk hazard zone will represent a best case for erosion. It will be assumed that erosion proceeds gradually at a mean erosion rate for 60 years, maintaining a slope at the angle of repose for talus of the bluff materials.

b. Moderate-risk hazard zone: The boundary of the moderate-risk hazard zone will be drawn at the mean distance between the high- and low-risk hazard zone boundaries.

c. Low-risk hazard zone: The low-risk hazard zone boundary represents a "worst case" for bluff erosion. The worst case is for a bluff to erode gradually at a maximum erosion rate for 100 years, maintaining its slope at the angle of repose for talus of the bluff materials. The bluff will then be assumed to suffer a maximum slope failure (slough or landslide). For bluffs composed of poorly consolidated or unconsolidated sand, another

worst-case scenario will be mapped that assumes that the bluff face will reach a 2:1 slope as rain washes over it and sand creeps downward under the forces of gravity. For these sand bluffs, whichever method produces the most retreat will be adopted."

It should be noted that mapping done for the 2004 study was intended for regional planning use, not for site-specific hazard identification.

According to the Oceanshores Atlas Viewer website (Accessed February 2020), the site appears to be eligible for an oceanfront protection structure under Goal 18; however, the potential to receive a permit for oceanfront protection is dependent upon meeting certain regulatory requirements in addition to the Goal 18 eligibility requirement.

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

5.0 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, to 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; DOGAMI, 2013).

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 have been 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 subject site is mapped in an area of very strong to severe expected earthquake shaking during an earthquake in a 500-year period (DOGAMI Oregon HazVu website, accessed October 2019). "Very Strong" is the third-highest level, and "Severe" is the second-highest level of a six-level gradation from "Light" to "Violent" in this mapping system.

6.0 Flooding Hazards

Based on the 2019 Flood Insurance Rate Map (FIRM, Panel #41041C0237E), the bluff slope lies in an area rated as Zone VE (EL 39 Feet) which is defined as a special flood hazard area with base flood elevation (BFE). The eastern portion of the site lies in an area rated as Zone X, which is defined as an area of minimal flood hazard, determined to be outside the 0.2% annual chance floodplain.

Based on Oregon Department of Geology and Mineral Industries mapping (DOGAMI, 2013), the lower bluff slope and the beach area west of the site lie within the tsunami inundation zone resulting from an approximately 8.7 and greater magnitude Cascadia Subduction Zone (CSZ) earthquake. Based on the mapping, the tsunami inundation zone from an approximately 9.1 and greater magnitude CSZ earthquake event extends across the subject site to McDonald Avenue. The 2013 DOGAMI mapping is based upon 5 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 (discussed in Section 5.0 above) has been rated as an approximate 8.9 magnitude in DOGAMI's methodology. More distant earthquakes can also generate tsunamis.

We encountered shallow groundwater in STP-2 approximately 1 foot below the ground surface, observed standing water in an abandoned pit on the site, and water was observed seeping out of the bluff face at the contact of the marine terrace and underlying mudstone southwest of the existing house. (Appendix A). Seasonal groundwater changes may create areas of standing water on the ground surface in low lying areas of the site.

7.0 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. Global climate change and the resultant sea-level rise will impact the subject site through accelerated coastal erosion. It can also lead to increased rainfall which can result in an increase in landslide occurrence.

8.0 Conclusions and Recommendations

The main engineering geologic concerns at the site are:

1. Approximately 1 to 2 feet of fill soils were encountered during site observations and are unsuitable for supporting new foundations. The extent and depths of these unsuitable soils may vary across the site.

2. Shallow groundwater is present throughout the site.

2. The bluff slope on the western part of the site is undergoing continuous erosion, sloughing, and shallow landsliding. These hazards are common to oceanfront property in this area.

3. There is an inherent regional risk of earthquakes along the Oregon Coast, which could cause harm and damage structures. The site lies within the mapped tsunami inundation hazard zone, a tsunami impacting the 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.

The following recommendations shall be adhered to during design and construction:

8.1 Site Preparation

All footing and slab areas shall be stripped of all organic, disturbed, and loose/soft soils, existing fills, and debris. We anticipate that non-organic, medium dense sandy soils will be encountered at depths of 1 to 2 feet; however, depths may vary, particularly after removing the existing structures.

Any tree stumps, including the root systems, shall be removed from beneath footing, slab and pavement areas, and the resulting holes backfilled with compacted non-organic structural backfill placed in lifts not exceeding 8 inches and compacted to a dry density of at least 92 percent of the Modified Proctor maximum dry density (ASTM D1557).

To mitigate for the future recession of the bluff caused by erosion and landsliding, we recommend that the setback for all shallow foundations be approximately 25 feet east of the upper edge of the bluff, approximately where the existing foundation is located as shown on Figures 3 and 4. Structures approximately 25 feet and more from the upper bluff edge can utilize standard continuous and isolated shallow spread footings. Any decks or other structures located west of the house should not be attached to the house.

Please note, the Oregon Coast is a dynamic and energetic environment. Most of the coastline is currently eroding and will continue to erode in the future. Most structures built near ocean bluffs will eventually be undermined by erosion and landsliding. The setback recommendations presented in this report are based on past average erosion rates as determined from aerial photography, and past and current geologic conditions and processes. These setbacks are intended to protect the structure(s) from bluff recession for a minimum of 60 years. Geologic conditions and the rates of geologic processes can change in the future. Setbacks greater than our recommended minimum setbacks would provide the proposed structure with greater anticipated life and a lower risk from some geologic hazards.

8.2 Soil Bearing Capacities

Footings bearing in undisturbed, native, non-organic, firm soils or properly compacted structural fill placed on these soils may be designed for the following:

ALLOWABLE SOIL BEARING CAPACITIES	
Allowable Dead Plus Live Load Bearing Capacity [a]	1,500 psf
Passive Resistance	200 psf/ft embedment depth
Lateral Sliding Coefficient	0.35
[a] Allowable bearing capacity may be increased by one-third for short-term wind or seismic loads.	

8.3 Footings

We recommend that the house be constructed using an elevated floor and crawlspace design. Our recommended minimum footing widths and embedment depths are as follows:

MINIMUM FOOTING WIDTHS & EMBEDMENT DEPTHS			
Number of Stories	One	Two	Three
Minimum Footing Width	12 inches	15 inches	18 inches
Minimum Exterior Footing Embedment Depth [a]	12 inches	18 inches	24 inches
Minimum Interior Footing Embedment Depth [b]	6 inches	6 inches	6 inches

[a] All footings shall be embedded as specified above, or extend below the frost line as per Table R301.2(1) of the 2014 ORSC, whichever provides greater embedment.

[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.

8.4 Slabs-On-Ground

All areas beneath slabs for driveways or garages shall be excavated a minimum of 6 inches into native, non-organic, firm soils. The exposed subgrade in the slab excavation shall be cut smooth, without loose or disturbed soil or rock remaining in the excavation.

SLABS-ON-GROUND	
Minimum thickness of 3/4 inch minus crushed rock beneath slabs	6 inches
Compaction Requirements	92% ASTM D1557, compacted in 8-inch lifts maximum

The slab excavation shall then be backfilled with a minimum of 6 inches of ¾ inch minus, clean, free-draining, crushed rock placed in 8-inch lifts maximum, which are compacted to a minimum of 92 percent of the Modified Proctor (ASTM D1557). Reinforcing of the slab is recommended, and the slab shall be fully waterproofed in accordance with structural design considerations. An underslab drainage system is recommended for all below-grade slabs, as per the architect's recommendations. Where floor coverings are planned, slabs shall also be underlain by a suitable moisture barrier.

8.5 Retaining Walls

For static conditions, free-standing retaining walls shall be designed for a lateral static 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 shall be used assuming sloping backfill of 2H:1V. At rest retaining walls shall be designed for a lateral

at-rest pressure expressed as an EFW of 60 pounds per cubic foot, assuming level backfill behind the wall equal to a distance of at least half of the height of the wall. 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]
Seismic Loading (level backfill/grades)	13.4 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 above assume static conditions and no surcharge loads from vehicles or structures. If surcharge loads are applied to the retaining walls, forces on the walls resulting from these loads will need to be added to the pressures given above.

For seismic loading, a unit pseudostatic force equal to 13.4 pcf $(H)^2$, where H is the height of the wall in feet, shall be added to the static lateral earth pressure. 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 shall be placed in 8-inch horizontal lifts and machine compacted to a minimum of 92 percent of the maximum dry density as determined by ASTM D1557. Compaction within 2 feet of the wall shall be accomplished with lightweight hand-operated compaction equipment to avoid applying additional lateral pressure on the walls. Drainage of the retaining wall shall 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 shall extend to within 2 feet of the ground surface behind the wall, and the filter fabric shall be overlapped at the top per the manufacturer's recommendations. All walls shall be fully drained to prevent the build-up of hydrostatic pressures. All retaining walls shall have a minimum of 2 feet of embedment at the toe or be designed without passive resistance. The EFWs provided above assume that properly compacted free-draining crushed rock will be used for the retaining wall backfill.

8.6 Seismic Requirements

The structure and all structural elements shall 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 shall 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 = 1.461 g
Site Coefficients	F_a = 1.200 F_v = 1.700
Design Spectral Response Acceleration at Short Periods	S_{DS} = 1.169 g

8.7 Structural Fills

Structural fills should consist of imported, crushed granular material, free of organics and deleterious materials, and contain no particles greater than 1½ inches in diameter so that nuclear methods (ASTM D2922 & ASTM D3017) can be easily used for field density and moisture testing. All areas to receive fill should be stripped of all soft soils, organic soils, organic debris, existing fill, and disturbed soils.

STRUCTURAL FILL	
Compaction Requirements	92% ASTM D1557, compacted in 8-inch lifts maximum, at or near the optimum moisture content

Proper test frequency and earthwork documentation usually require 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 at least three density tests be performed for every 18 inches or every 200 cubic yards of fill placed, whichever requires more testing. Because testing is performed on an on-call basis, we recommend that the earthwork

contractor schedule the testing. Relatively more testing is typically necessary on smaller projects.

8.8 Groundwater

Groundwater will likely be encountered at shallow depths in excavations during the wet season. If groundwater is encountered, unwatering of the excavation is required and shall be the contractor's responsibility. Unwaterering can typically be accomplished by pumping from one or more sumps or daylighting the excavations to drain.

8.9 Erosion Control

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

Temporary sediment fences shall be installed downslope of any disturbed areas of the site until permanent vegetation cover can be established.

Exposed sloping areas steeper than 3 horizontal to 1 vertical (3H:1V) shall 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 shall be installed as per the manufacturer's recommendations.

8.10 Cut and Fill Slopes

Temporary unsupported cut and fill slopes less than 8 feet in height shall be sloped no steeper than 1 horizontal to 1 vertical (1H:1V). If temporary slopes greater than 8 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 4 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 the use of plastic sheeting to help prevent erosion and/or failure.

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.	

If the above cut slope recommendations 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). Cut slopes steeper than 2H:1V shall be retained with an engineered retaining wall. Fill slopes steeper than 2H:1V shall be retained or 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.

8.11 Drainage

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 6 feet towards a suitable gravity outlet to prevent ponding near the structures. Permanent subsurface drainage of the building perimeter is recommended to prevent extreme seasonal variation in moisture content of subgrade materials and subjection of foundations and slabs to hydrostatic pressures.

Footing drains should be installed adjacent to the perimeter footings and sloped a minimum of 2.0 percent to a gravity outlet. A suitable perimeter footing drain system would consist of a 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 PVC 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 geotextile filter such as Mirafi® 140N, or equivalent, to increase the life of the drainage system. The perimeter drain excavation should be constructed in a manner that prevents undermining of foundation or slab components or any disturbance to supporting soils.

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 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 collected on the site should not be concentrated and discharged to adjacent properties. Water should not be disposed of along the bluff slope unless piped to the harder sandstone.

8.12 Plan Review and Site Observations

We shall 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 B). The plans, details, and specifications shall clearly show that the above recommendations have been implemented into the design.

We shall observe footing and slab excavations prior to forming and/or pouring of concrete, and observe pavement areas prior to placing fill, to assure that suitable bearing soils have been reached. At the time of our observations, we may recommend additional excavation if suitable bearing soils have not been reached. There will be additional charges for these services. Our recommended site observations and plan reviews are detailed in Appendix B of this report.

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

9.0 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/or this report may be necessary as time passes to assure its accuracy and adequacy.

The shovel test pit logs and related information depict 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 engineering 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.

10.0 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.

11.0 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.

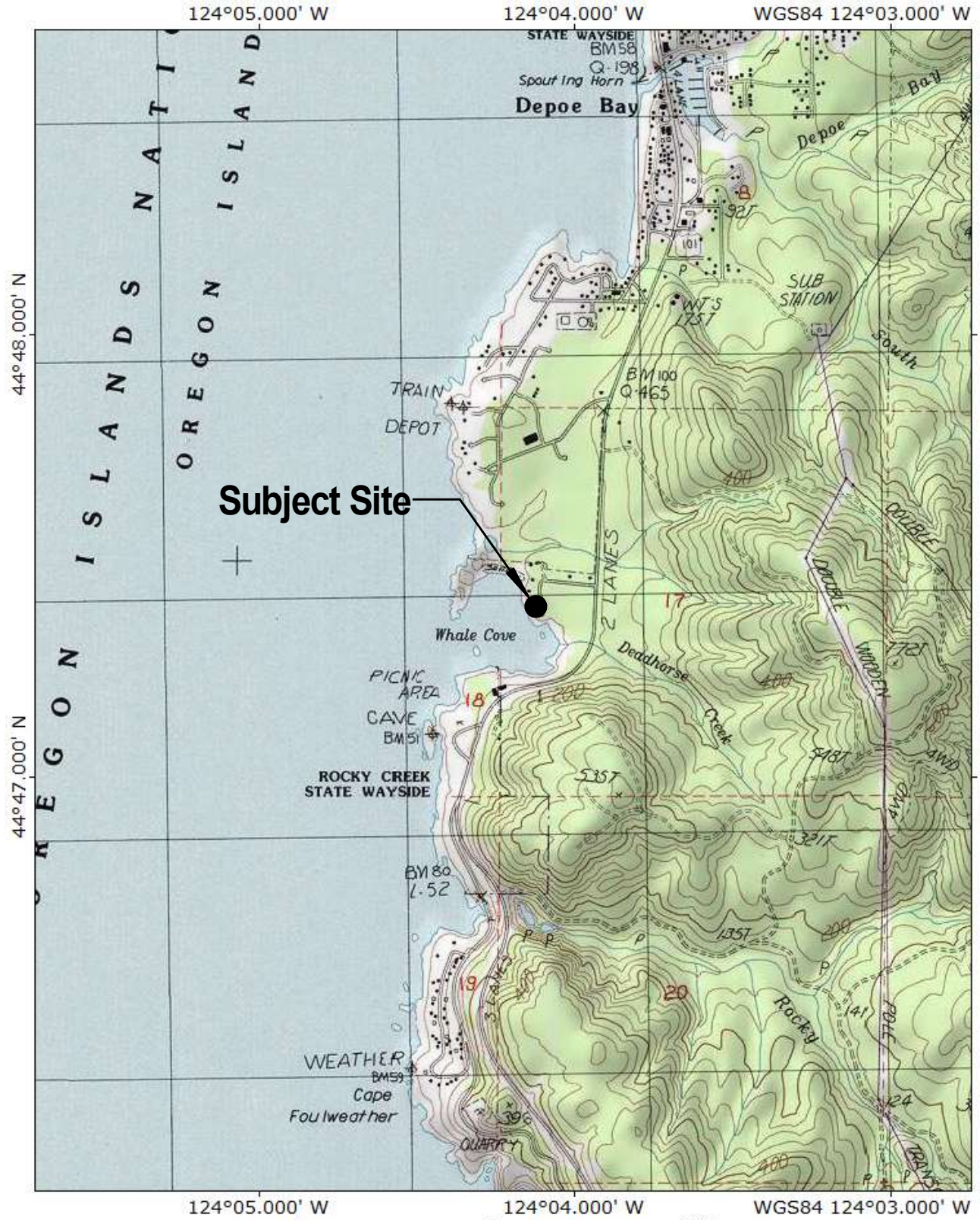
Respectfully submitted,

H.G. SCHLICKER AND ASSOCIATES, INC.

EXPIRES: 10/31/2020

J. Douglas Gless, MSc, RG, CEG, LHG
President/Principal Engineering Geologist

JDG: aml



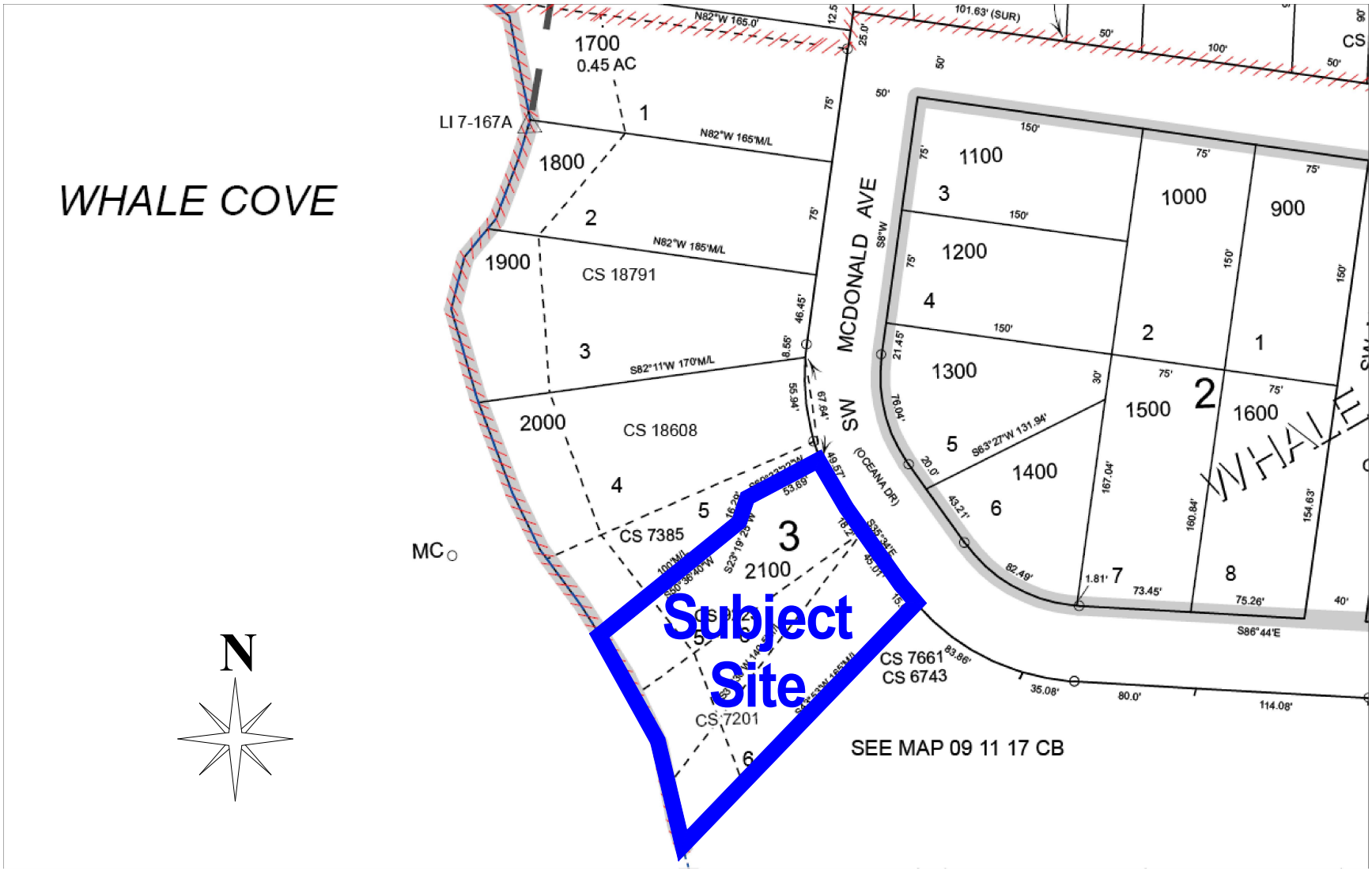
Date: 02/20/2020	**Project #Y204323**	Prepared by: AML
Scale: 1" = 2,000'		Approved by: JDG

Location Map

Tax Lot 2100, Map 09-11-17BC
1947 McDonald Avenue, Depoe Bay, Lincoln County, Oregon

H.G. Schlicker & Associates, Inc.

Figure 1



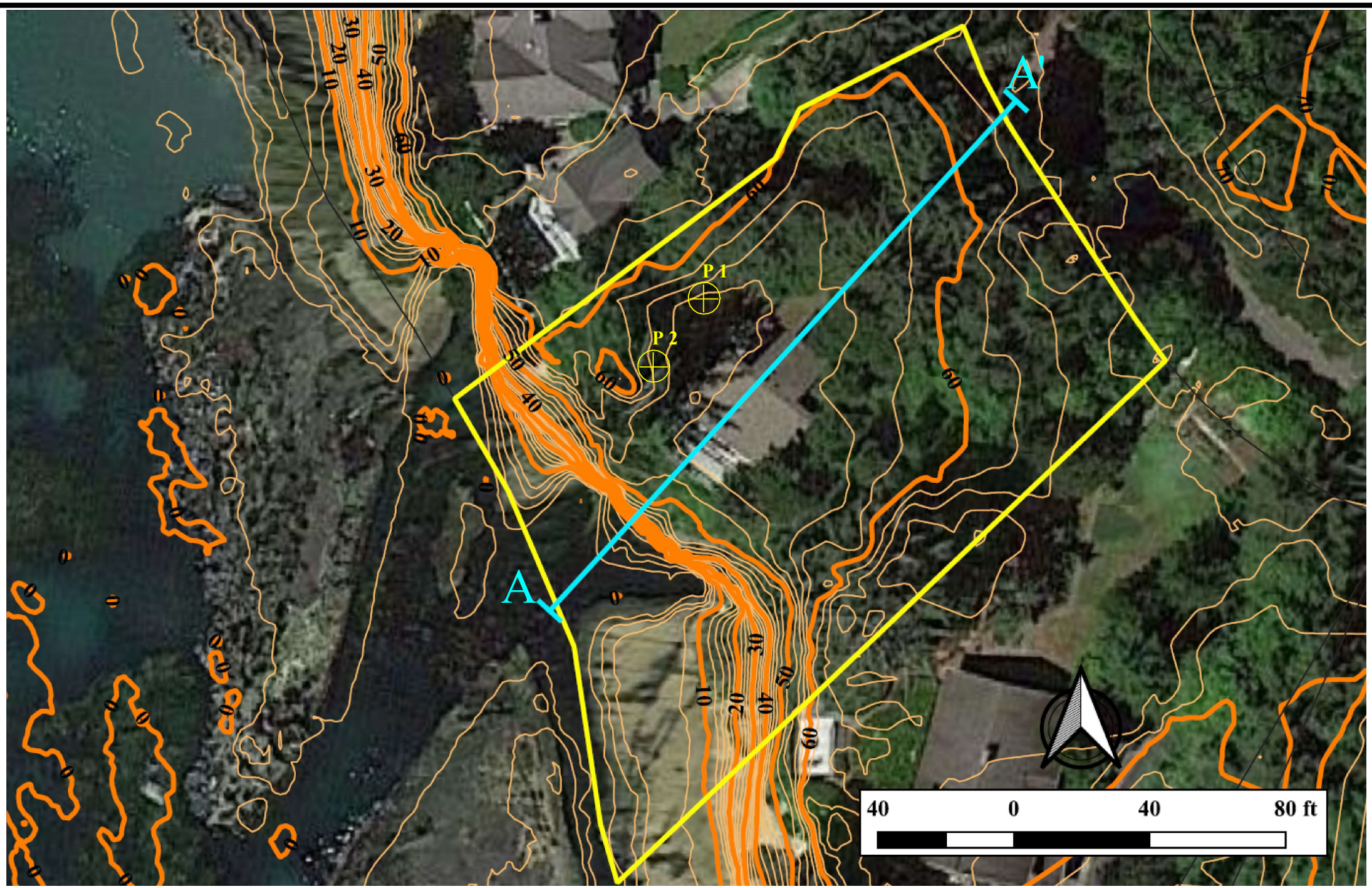
Modi ied ro t e Lincoln County
a e or' plat, 09-11-17BC
All location and di en ion are approxi ate

Date: 02/20/2020	**Project #Y204323**	Prepared by: AML
Scale: 1" = 100'		Approved by: JDG

P at Map
Tax Lot 2100, Map 09-11-17BC
1947 McDonald Avenue, Depoe Bay, Lincoln County, Oregon

H.G. Schlicker & Associates, Inc.

Figure 2



A — A' = Approxi ate trend o pro ile line

P 1 ⊕ = Approxi ate location o ovel te t pit

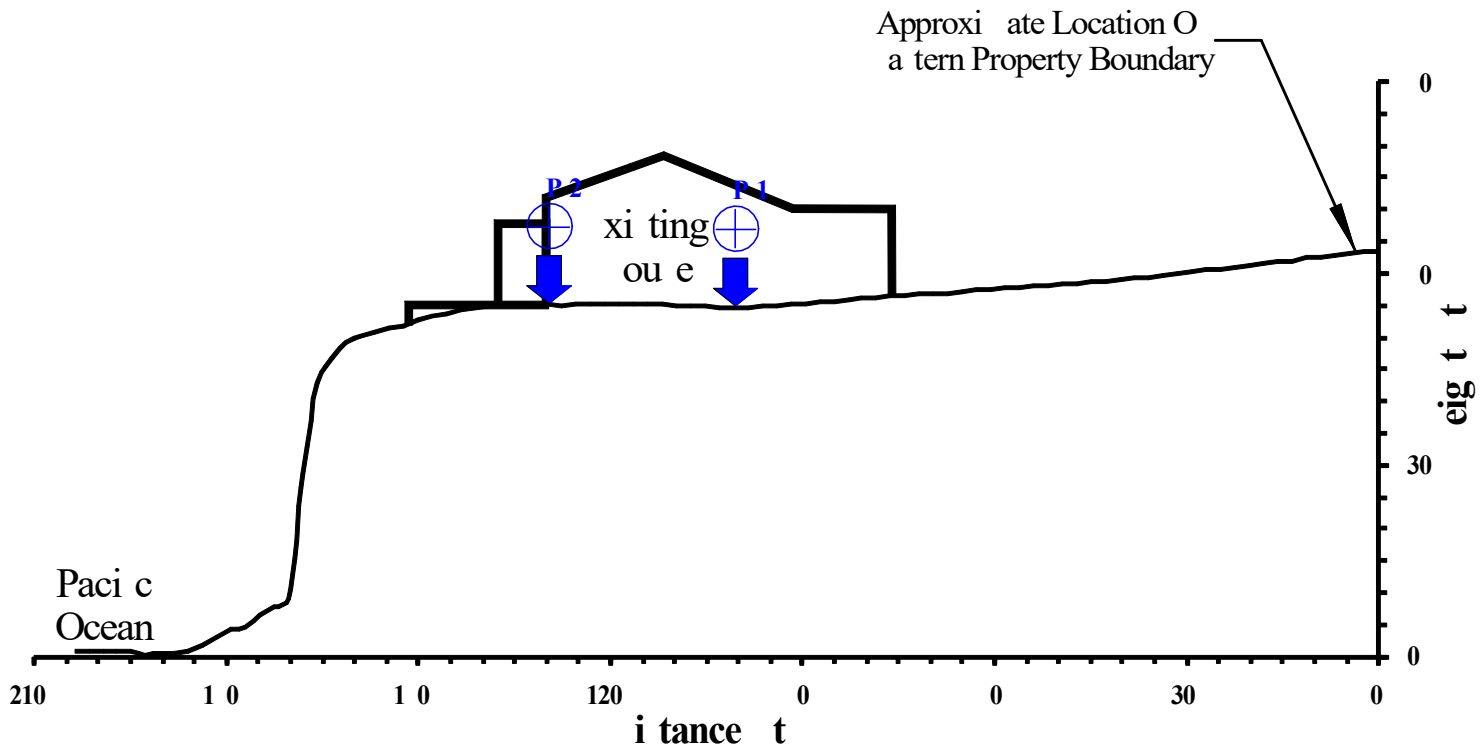
201 atellite i agery ro Google art
Topograp ic data derived ro e t Coa t
201 1 ino lidar data ro OAA
All location and di en ion are approxi ate

Date: 02/20/2020 Scale: 1" = 40'	**Project #Y204323**	Prepared by: AML Approved by: JDG	**ite opograp ic Map** Tax Lot 2100, Map 09-11-17BC 1947 McDonald Avenue, Depoe Bay, Lincoln County, Oregon	H.G. Schlicker & Associates, Inc.	**Figure 3**

A

out 42 e t

A'



1

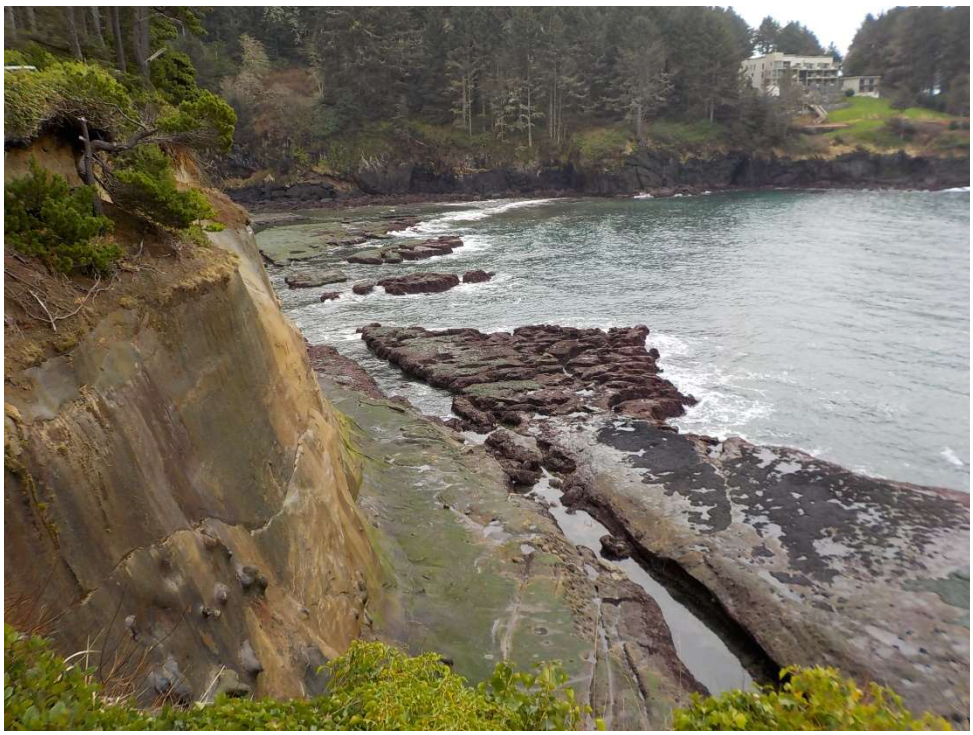
= Approxi ate location o ovel te t pit

All di en ion , elevation and location are approxi ate
Slope pro ile derived ro e t Coa t 201 l ino lidar data ro OAA

Date: 02/20/2020 Scale: 1" = 0'	**Project #Y204323**	Prepared by: AML Approved by: JDG
ope Pro i e Tax Lot 2100, Map 09-11-17BC 1947 McDonald Avenue, Depoe Bay, Lincoln County, Oregon		
H.G. Schlicker & Associates, Inc.		**Figure 4**

Appendix A
- Site Photographs -

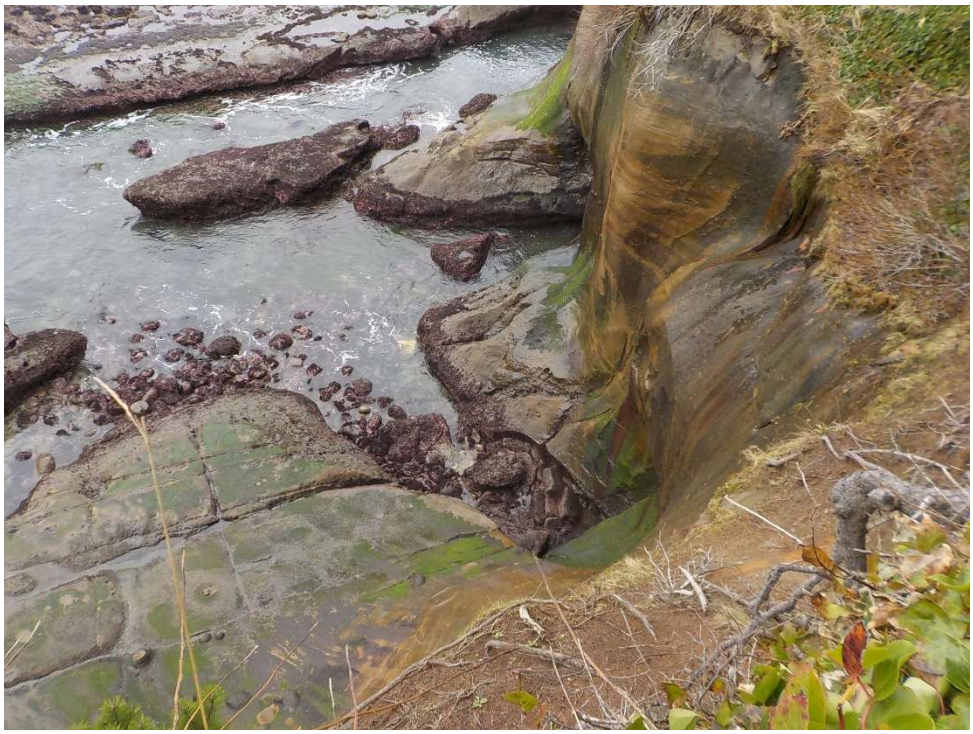
P oto 1 ie o t e ite ro McDonald Avenue



P oto 2 Sout erly vie o t e blu and ale Cove ote t e ave cut plat or it t e deeply eroded racture

P oto ort e terly vie o ale Cove and t e Paci ic Ocean ro t e ite

P oto 4 ort erly vie o t e blu ronting t e ite ote t e vegetated lope in tead o vertical arine terrace depo it co pare to p oto 2 above



P oto ie o t e eroded racture in t e ud tone t at ave or ed ea cave under t e ite

P oto ie loo ing out e t o t e yard and nort ern ide o t e exi ting ou e

P oto 7 ie o ree ground ater encountered in ovel te t pit 2

P oto ie o tanding ater in an abandoned pit at t e ite

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

APPENDIX B
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 construction.
2*		Observe foundation excavations.	Following excavation of foundations, and prior to placing fill, forming and pouring concrete. **
3*		Review Proctor (ASTM D1557) and field density test results for all fill placed at the site.	During construction.

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

CITY OF DEPOE BAY
2021 LAND USE & BUILDING PERMIT ACTIVITY

August 5 – September 2, 2021

Date	Applicant	Type of Activity	Zoning District	Location	Description	Status/Comments
8/18/2021	Gross/Defoe	Property Line adjustment	R-4	460 & 480 Alsea Ave.	Property Line adjustment	Tentative Approval Letter
8/18/2021	Depoe Bay/Terrafirma	Building Permit	MC	09-11-08-AB-07600 220 SE Bay Street	Foundation Repair	Approved
8/25/2021	Joseph Dragon – Crushed & Crafted	Sign Permit	C-1	50 N HWY 101	8'x5' Wall Sign	Approved

- Harbor/Park silt check dam mid-September
- Community Hall Repairs end of September