ACU-24-041

Reconnaissance-Level Geologic Hazard Assessment Report

Proposed Development
Business Boys, LLC's Property
North of Sacchi Beach, Coos County, Oregon

Coos County Property ID:
T26S-R14W-S32-TL403

June 24, 2024

Prepared for:

Business Boys, LLC

C/O Sheri McGrath
Coos Curry Consulting
PO Box 1548
Bandon, Oregon 97411

Prepared by:

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Project No. 959-23015-01

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ENGINEERING GEOLOGIST

EXP. 2/1/2025

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EXPIRES: 6/30/2025

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1.0 INTRODUCTION

EVREN Northwest, Inc. is pleased to present our Reconnaissance-level Geologic Hazard Assessment Report for the referenced property located southwest of Coos Bay, Oregon (see Figure 1). This report has been prepared consistent with Coos County Zoning and Land Development Ordinance (CCZLDO) - Natural Hazard Report 4.11.132 and standard engineering geology practices.[1] This report is valid for a period of five (5) years from the date of site reconnaissance.

The County parcel number for the 17.23-acre property is Tax Lot 403, T26S 14W 32 (see Figures 1 and 2). The assessment, along with the findings and recommendations, are limited to the subject property and the proposed building area. The Reconnaissance-level Geologic Hazard report was prepared and signed by a Certified Engineering Geologist and a Professional Geotechnical Engineer, both licensed in the State of Oregon.

1.1 Purpose

The purpose of the assessment was to identify the potential geologic hazards within the subject property and to evaluate the proposed development with respect to the Coos County Natural Hazard Report, as outlined in the CCZLDO Chapter 4.11.132.

1.2 Scope

ENW completed the following scope of work:

- Review of published geologic and geohazard online maps, along with historical aerial photographs of the vicinity of the property.
- Conduct a Reconnaissance-Level Geologic Hazard site investigation on October 31, 2023.
- Prepare this report.

1.3 Site Description

The referenced property is approximately 11 miles north of the City of Bandon, located in Coos County, Oregon (see Figures 1). The reference site is mapped in the northwest quarter of Section 32, Township 26 south, Range 14 west of the Willamette Meridian in Coos County, Oregon (see Figure 1). The 17.23-acre property is roughly trapezoidal in shape with a mid-length of about 780 feet, running north to south, and mid-base width of 860 feet, running west to east (see Figures 2 and 3). The subject property is currently undeveloped, except for a gravel road that splits from Sacchi Lane within the Sansaria gated community and continues along the east boundary of the

[1] Oregon State Board of Geologist Examiners. May 30, 2014. Guidelines for Preparing Engineering Geologic Reports, 2nd Addition.

property. The property was accessed from the north by dirt road from Tax Lot 300 (see Figure 4). The property was covered in dense forest vegetation except for an oval shaped area that was cleared in early 2023 (see Figures 4 and 5).

1.4 Project Description

ENW understands the owners cleared a relatively small oval-shaped area of the site for future development (see Figure 4). The recently cleared area is located on a north-trending ridge in the northwest portion of the property. At the time of our site visit the cleared area was not graded and predominantly sloped towards the south with gentle slopes observed towards the west and to the south the slopes were much steeper (see Figures 4 and 5). The elevations of the cleared area ranged from 380 feet above mean sea level (NAVD88) at the north end and 350 feet NAVD88 at the south end (see Figure 5). South of the proposed development area, the property slopes steeply into an ephemeral drainage ravine with flow, when present, towards the ocean (see Figure 5).

2.0 SITE SETTING

2.1 Topography/Geomorphology

The referenced site is situated on the western edge of the coastal marine terraces south of Cape Arago. The marine terraces represent ancient shorelines that were uplifted by large seismic events over the last several million years (see Figure 6).

The property slopes west with an ephemeral drainage ravine located in the approximate center of the property (see Figures 4 and 5). This ephemeral drainage basin trends from the northeast to the southwest and drains towards the Pacific Ocean when water is flowing (see Figures 4 and 5). Elevations at the site range from 420 feet above mean sea level (NAVD 88) at the northeast property boundary and 230 feet NAVD88 at the bottom of drainage basin at the southwest property boundary (see Figures 4 and 5).

2.2 Hydrology

No seeps or other indicator of shallow ground water was observed near or around the proposed building pads. At the center of the property there is a seasonal stream that flow to the southwest into the Pacific Ocean (see Figure 4). At the time of our site investigation, we could not confirm water flowing in the streams due to the steep and densely vegetated terrain.

2.3 Geology

Regional Geology: The Wiley et al (2015) [2] mapped the area surrounding the referenced property as uplifted coastal marine terraces that cap the older marine sedimentary deposits (see Figure 6). The marine terraces include the Seven Devils Terrace Deposits, and the older marine sedimentary rocks include the Coaledo Formation (see Figure 6).

Site Geology: The Seven Devils marine terrace mantles most of the property and encompasses the cleared area for future development (see Figure 6). The remainder of the property is mapped

[2] Wiley, T.J., J.D. McClaughry, L. Ma, K. A. Mickelson, C.A. Niewendorp, and H. H. Herinckx. 2015, Geologic Map of Cape Arago 7.5' Quadrangle, Coos County, Oregon: Oregon Department of Geology and Mineral Industries Open File Report O-15-04.

as the Coaleda Formation.

The Sevens Devils terrace is relatively flat lying and is situated mostly on the higher elevated portion of the property. The deposits typically consist of unconsolidated to slightly cemented sand and gravel that were deposited in a shoreline-beach environment. The underlying Coaleda formation is typically well-bedded micaceous siltstone, mudstone, and fine sandstone deposited in an ancient delta environment.

2.4 Hydrogeology/Ground Water

In September 2023, a domestic water well was drilled on Tax Lot 101, the property to the east (see Figure 3 and Appendix A). The water well log suggests that ground water ranges from 45 to 65 feet below ground surface (bgs) at this property. (see Appendix A). Shallow ground water provides a source of drinking water in the area and is recharged by the infiltration and downward percolation of incident precipitation, and discharges naturally to seeps and springs or as underflow to streams and other surface water features.

2.5 Reconnaissance-Level Field Investigation

On October 31, 2023, ENW completed a reconnaissance-level field investigation of the site to evaluate the surface conditions of the proposed building area. In addition to making general observations related to the geology and geomorphic features of the subject site and surrounding area, four (4) shallow hand auger borings were advanced across the cleared western ridge area (designated HA-1 through HA-4, see Figures 5 and Appendix B). The depths of the hand auger borings were up to 5 feet bgs. The shallow depths were due to auger refusal.

2.5.1 Surface Conditions

The subject property is situated on a west-facing slope except for the center of the property which encompasses a relatively small drainage basin (see Figure 4). A gravel access road runs along the eastern property boundary. A dirt access road forks just above the northeast corner of the property boundary and continues northwest across tax lot 300 and then turns to enter the site at the center of the north property line (see Figure 5). At the north end of the cleared area, the proposed development area slopes gently towards the south. To the east and west of the cleared area, the property slopes moderately; however, to the southeast, the property slopes steeply into the drainage ravine (see Figures 5).

Before our site investigation the proposed developable area was cleared of trees and brush (see Figures 4 and 5). After clearing, the top of the terrace feature was left ungraded and slopes with the natural gradient of the terrace to the west, south, and east. (see Figures 5). At the time of our site visit, the cleared area was abundant with slash piles, organic debris, and other deleterious material.

2.5.2 Subsurface Conditions

ENW encountered the following subsurface conditions in the hand auger borings:

Topsoil. Up to two (2) feet of Silty Topsoil was encountered in all hand auger borings which were throughout the recently cleared area (see Appendix B). The Topsoil was brown, moist, loose, and had varying amounts of organics.

Topsoil is not appropriate for foundation bearing subgrade, structural fill, or retaining wall backfill. These materials shall be overexcavated to the approved subgrade depth and either stockpiled onsite or removed from the property. Once the building is complete, the Topsoil can be reused as General Fill for areas of vegetation.

Seven Devils Terrace – Clayey Sand to Sandstone. Sediments of the Seven Devils Terrace were encountered below the Topsoil and to the extent of the borings. The sediments were moderate brown to reddish brown mottled orange-brown, with low to medium plastic clay and fine-grained sands.

The Terrace deposits are appropriate for foundation bearing subgrade.

2.5.3 Ground Water

No groundwater was encountered in the shallow hand auger borings (see Appendix B). As noted in Section 2.3.1, ground water was encountered at a depth of approximately 45-feet on a property just east of the subject site. However, the occurrence of ground water is site-specific and would need to be confirmed by drilling and hydrogeologic evaluation, if the underlying ground water resource was to be utilized as a drinking water source in the future.

3.0 REVIEW OF POTENTIAL NATURAL HAZARDS

ENW reviewed Coos County's All Hazards Viewer online tool to determine if the site was located within a Natural Hazard Zone, which would require a Geologic Assessment Review in accordance with Section 4.11.150. Coos County has inventoried the following geologic hazards:

- Flood Hazard
    - Riverine Flooding
    - Coastal Flooding
- Landslides and Earthquakes
    - Landslide Susceptibility
    - Liquefaction Potential
- Tsunamis
- Erosion
    - Riverine Streambank Erosion
    - Coastal
        - Shoreline and Headland
        - Wind

Of the geologic hazards listed above, only the Landslide and Coastal Erosion Hazard apply to the site. The flood and tsunami hazards are considered non-critical for the site.

3.1 Landslide Hazard

3.1.1 Landslide Susceptibility.

Mass wasting includes all forms of down slope movement of soil and rock material under the influence of gravity. It includes everything from barely perceptible soil creep to catastrophic mud

flows and landslides. Steep slopes, weak soil and rock strength, and the various effects of water on soil and rock are the primary controlling factors for mass wasting. The potential for mass wasting can be increased by adding weight to the top of a slope or excavating soil from the lower portion of a slope.

The DOGAMI landslide susceptibility map indicates that the landslide hazard is moderate to high; however, no area on the site is mapped or designated very high (see Figure 7). The proposed development area is on a moderately south-sloping ridge that is adjacent to a steep slope to the southeast that drops into a stream that flows towards the ocean.

At the time of our field investigation, we did not observe signs of slope instability in the proposed development area.

3.2 Earthquake Hazards

Beaulieu and Hughes (1975)[3] state that geologic evidence for earthquake activity in western Coos and Douglas Counties is ambiguous and historical data are limited; however, the possibility of future faulting of undefined magnitude remains. In the past three decades, geologists have determined that the Northwest is subject to infrequent, but very powerful (magnitude 9+ on the Richter Scale) subduction zone earthquakes on the offshore Cascadia Subduction Zone (CSZ) fault system. The most recent subduction zone earthquake known to have occurred in the Northwest was in January of 1700.

Geologists have determined that very large subduction zone earthquakes occur on a 300- to 500-year recurring basis, and that smaller, but still significant, subduction related earthquakes occur on a much more frequent basis.

3.2.1 Seismic Induced Slope Failure

The seismic effect on slope stability in the project area is difficult to predict. Small landslide deposits are mapped in the northeast region of the site as noted above. The State has indicated that the landslide hazard is moderate to high on the proposed buildable area of the site and high on the steeply sloping areas of the site (see Figure 7). The occurrence of a major subduction zone earthquake may increase the likelihood of mass wasting on the steeply sloping areas of the site; however, it is difficult to predict what the overall impact will be.

3.2.2 Amplification of Ground Shaking

The subject site is within the area of the state where peak ground accelerations of 0.98 g can inflict considerable damage in specially designed structures and great damage in ordinary structures during an earthquake occurring once in every 1,000 years[4]. Earthquake shaking potential at the site and surrounding area is expected to be severe. Amplification of ground shaking should be accounted for in the design of the proposed buildings.

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[3] Beaulieu, J.D. and Hughes, P.W., 1975, Land use geology of western Curry County, Oregon: Oregon Dept. of Geol. And Mineral Industries Bulletin 90, 148pp

[4] Madin, I. P. and Mabey, M. A., 1996, Earthquake Hazard Maps for Oregon: Geological Map Series GMS-100, issued by the State of Oregon Department of Geology and Mineral Industries.

3.3 Tsunamis

Tsunamis are seismically generated sea waves that typically cause catastrophic flooding when they strike coastal areas. Major earthquakes that occur anywhere in the Pacific Basin have the potential to generate a tsunami that could impact the project area. However, the greatest threat is from an earthquake occurring along the Cascadian Subduction Zone (CSZ), located just offshore of the Pacific Northwest coastline. The magnitude of the earthquake and its resultant tsunami are primarily driven by the amount and geometry of the slip that takes place when the North American Plate snaps westward over the Juan de Fuca Plate during a CSZ event.

DOGAMI's tsunami inundation map[5] displays the output of its computer models representing five (5) selected tsunami scenarios (S, M, L, XL and XXL), all of which include the earthquake-produced subsidence and the tsunami-amplifying effects of the splay fault, which roughly parallels the CSZ. This model predicts that the subject site would not be inundated by a tsunami under all five (5) scenarios, which correspond to a range of approximate magnitude of 8.7 to 9.1 earthquakes. It has been just over 300 years since the last CSZ event. Based on modeling by the State, the maximum wave elevation for a XXL event is 80 feet, which is lower than the site. Based on the State's models, the site is outside of the inundation zone.

3.4 Coastal Erosion Hazard

Coos County has mapped the site within the coastal erosion zone (see Figure 8). ENW did not observe erosion associated with coastal shoreland, headland, or wind during our reconnaissance-level site evaluation. The subject property is of sufficient elevation and distance from the shoreline to be significantly effected from coastal erosion as described in CCZLDO Chapter 4.11.132.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on our assessment and the findings discussed above, it is our opinion that there is an elevated risk of landslide hazards along the steep slopes adjacent to the proposed development area. The coastal erosion hazard is low, and therefore does not need mitigation. To safely develop the site, with respect to steep slopes, ENW recommends the following:

4.1 Landslide Hazard

During our reconnaissance-level site evaluation, we observed that the proposed development area was surrounded by steep slopes to the west, south, and east (see Figure 5). While no landslides were mapped or observed, there is still an increased risk of isolated landslides and slumping along the steep slopes. Therefore, to reduce the potential of damage from the landslide hazard, ENW recommends the following:

- The proposed building footprints be offset from the top of slope by 40 feet or more. If the proposed building pad is closer than 40 feet, then a Geotechnical Engineering Report should be completed for the site.
- Stormwater runoff from the house and shop shall be directed away from the steep slopes surrounding the developed area. Vegetation within the drainage shall be maintained. If needed, additional native plants shall be planted.

[5] DOGAMI. 2012. Local Source (Cascadia Subduction Zone) Tsunami Inundation Map Coos-17.

- Cuts and Fills should be minimized on the site. If extensive cuts and fill are proposed for the site, then a Geotechnical Engineering Evaluation and Report should be completed for the site to further evaluate the stability of hillside.

4.2 Amplification of Ground Shaking

As noted above, severe ground shaking is anticipated for the site. ENW recommends that a Structural Engineer be consulted so that the anticipated ground shaking is considered in the design of the proposed foundations and structures.

4.3 Erosion Hazard

4.3.1 Coastal Erosion.

It is our opinion that the site is not affected by coastal erosion. This is due to the site's proximity to the coastline and the elevation of subject property. While costal erosion is not a hazard to the property, it is important to reduce the potential for surface erosion of the site during and after construction.

4.3.2 Surface Erosion Control Measures

ENW recommends the following surface erosion control measures shall be considered:

- Stripping of vegetation, grading, or other soil disturbance shall be done in a manner which will minimize soil erosion, stabilize the soil as quickly as practicable, and expose the smallest practical area at any one-time during construction.
- Development plans shall minimize cut or fill operations to prevent off-site impacts.
- Temporary vegetation and/or mulching shall be used to protect exposed critical areas during construction.
- Permanent plantings and any required structural erosion control and drainage measures shall be installed as soon as practical.
- Provisions shall be made to effectively accommodate increased runoff caused by altered soil and surface conditions during and after development. The rate of surface water runoff shall be reduced where necessary.
- Provisions shall be made to prevent surface water from damaging the cut face of excavations or the sloping surface of fills by installing temporary or permanent drainage across or above such areas, or by using other suitable stabilization measures such as mulching, seeding, planting, or armoring with rolled erosion control products, stone, or other similar methods.
- All site drainage shall be designed to adequately carry existing and potential surface runoff from the twenty-year frequency storm to suitable drainageways such as storm drains, natural watercourses, or drainage swales. In no case shall runoff be directed in such a way that it significantly decreases the stability of known landslides or areas identified as unstable slopes prone to earth movement, either by erosion or increase of groundwater pressure.

- Where drainage swales are used to divert surface waters, they shall be vegetated or protected as necessary to prevent offsite erosion and sediment transport.
- Erosion and sediment control measures may be required, and therefore, they should include, but are not limited to, the following:
    - Energy absorbing devices to reduce runoff water velocity.
    - Sedimentation controls such as sediment or debris basins. Any trapped materials shall be removed to an approved disposal site on an approved schedule.
    - Dispersal of water runoff from developed areas over large undisturbed areas.
- Onsite stockpiles of excavated spoils or topsoil shall be covered with mulch or by other means to reduce the potential of the stockpiles from eroding and flowing into streams or drainageways. Another action that could be considered is the location of the stockpiles with respect to the streams or drainages.
- Non-erosion pollution associated with construction such as pesticides, fertilizers, petrochemicals, solid wastes, construction chemicals, or wastewaters shall be prevented from leaving the construction site through proper handling, disposal, site monitoring and clean-up activities.

5.0 LIMITATIONS

The scope of this report is limited to observations made during on-site work; interviews with knowledgeable sources; and review of readily available published and unpublished reports and literature. As a result, the conclusions are based on information supplied by others as well as interpretations by qualified parties. Conclusions and recommendations presented in this assessment were prepared in accordance with generally accepted professional geologic engineering principles and practices. We make no warranty, either express or implied.

We have performed our services for this project in accordance with our agreement and understanding with the Client. This document and the information contained herein have been prepared solely for the use of the Client. We have performed this study under a limited scope of services per our agreement. It is possible, despite the use of reasonable care and interpretation that we may have failed to identify the presence of geological hazards other than those specifically mentioned in this assessment. We assume no responsibility for conditions that we did not specifically evaluate, or conditions that were not generally recognized at the time this report was prepared. This report is subject to review and should not be relied upon after a period of 5 years.

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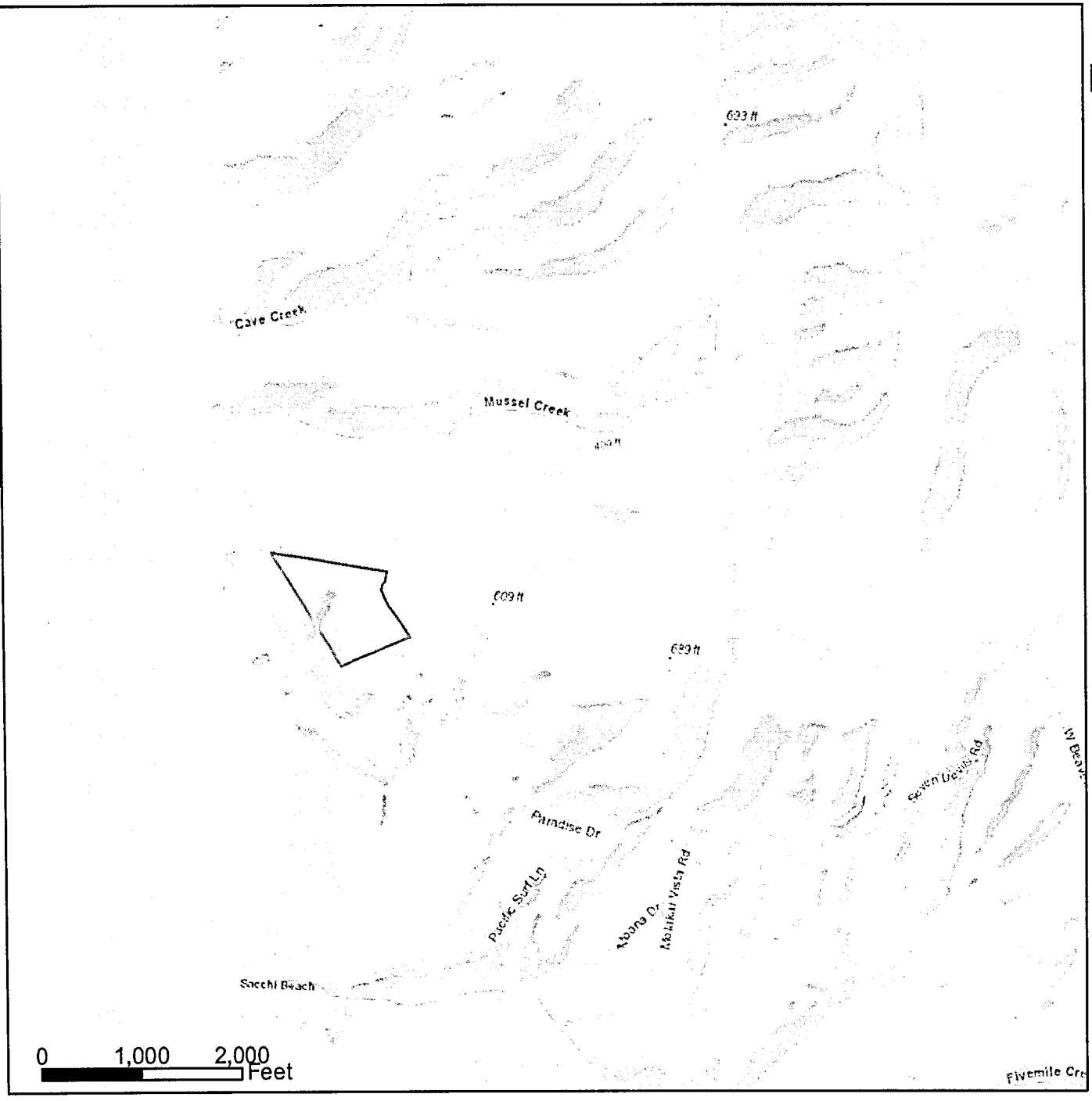
D. SCULLY, 1/29/2024	C. HOVIND, 1/29/2024	L. GREEN, 1/29/2024	959-23015-01



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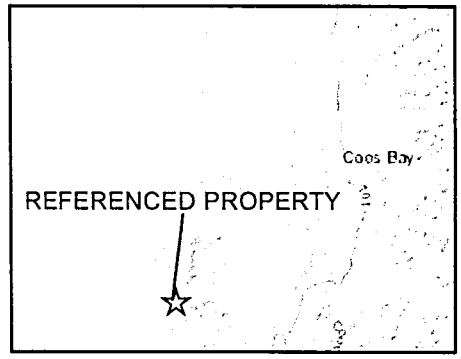
REFERENCED PROPERTY



NOTES:

1. BASE MAP BY ESRI.
2. PROPERTY BOUNDARY PROVIDED BY COOS COUNTY.

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FIGURE 1
SITE VICINITY MAP

BUSINESS BOYS, LLC'S PROPERTY
NORTH OF SACCHI BEACH
BANDON, OREGON

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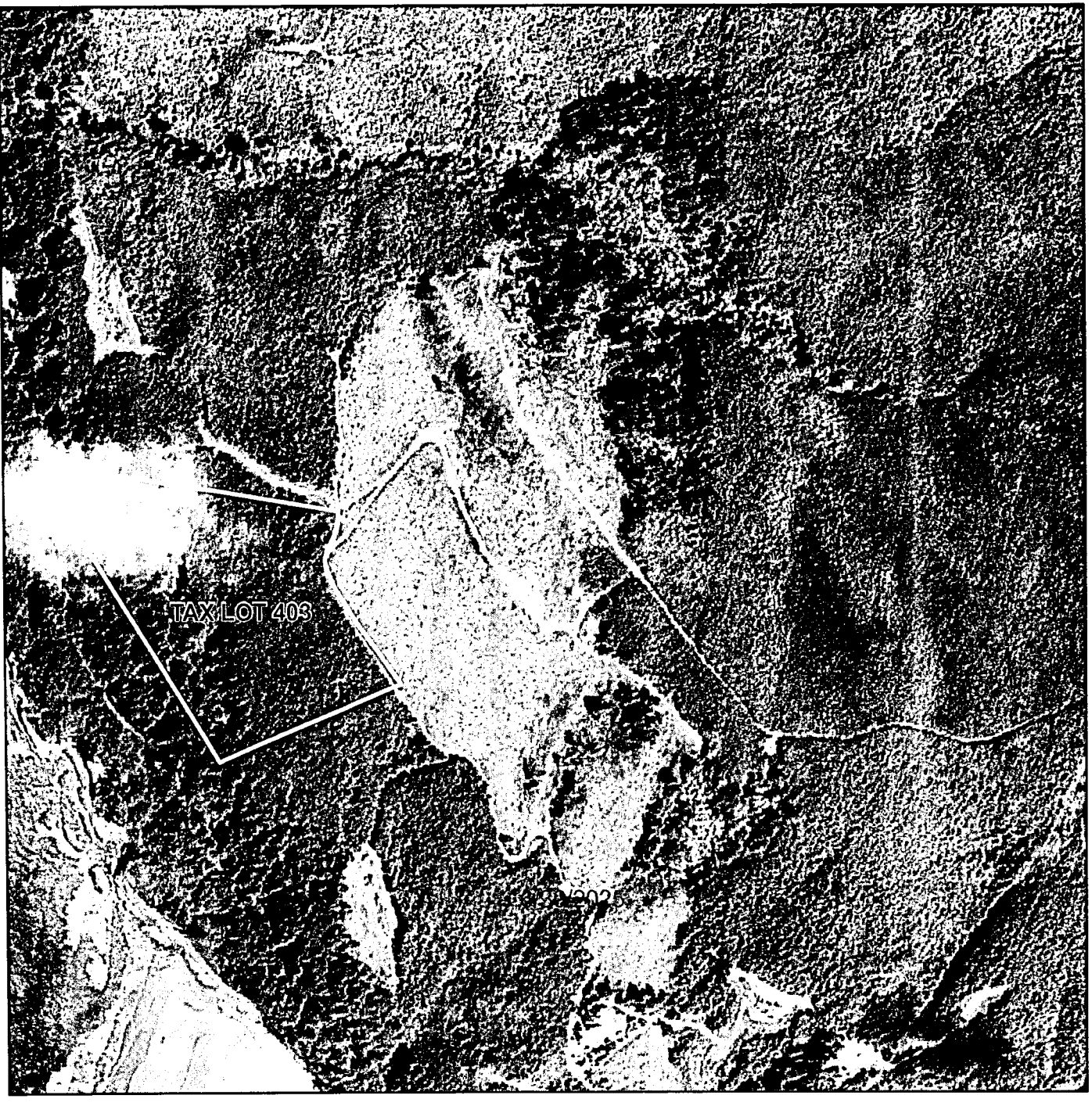

LEGEND:

REFERENCED PROPERTY

NOTES:

1. AERIAL IMAGERY BY GOOGLE EARTH, 7/2023.

0 200 400 800 Feet

N

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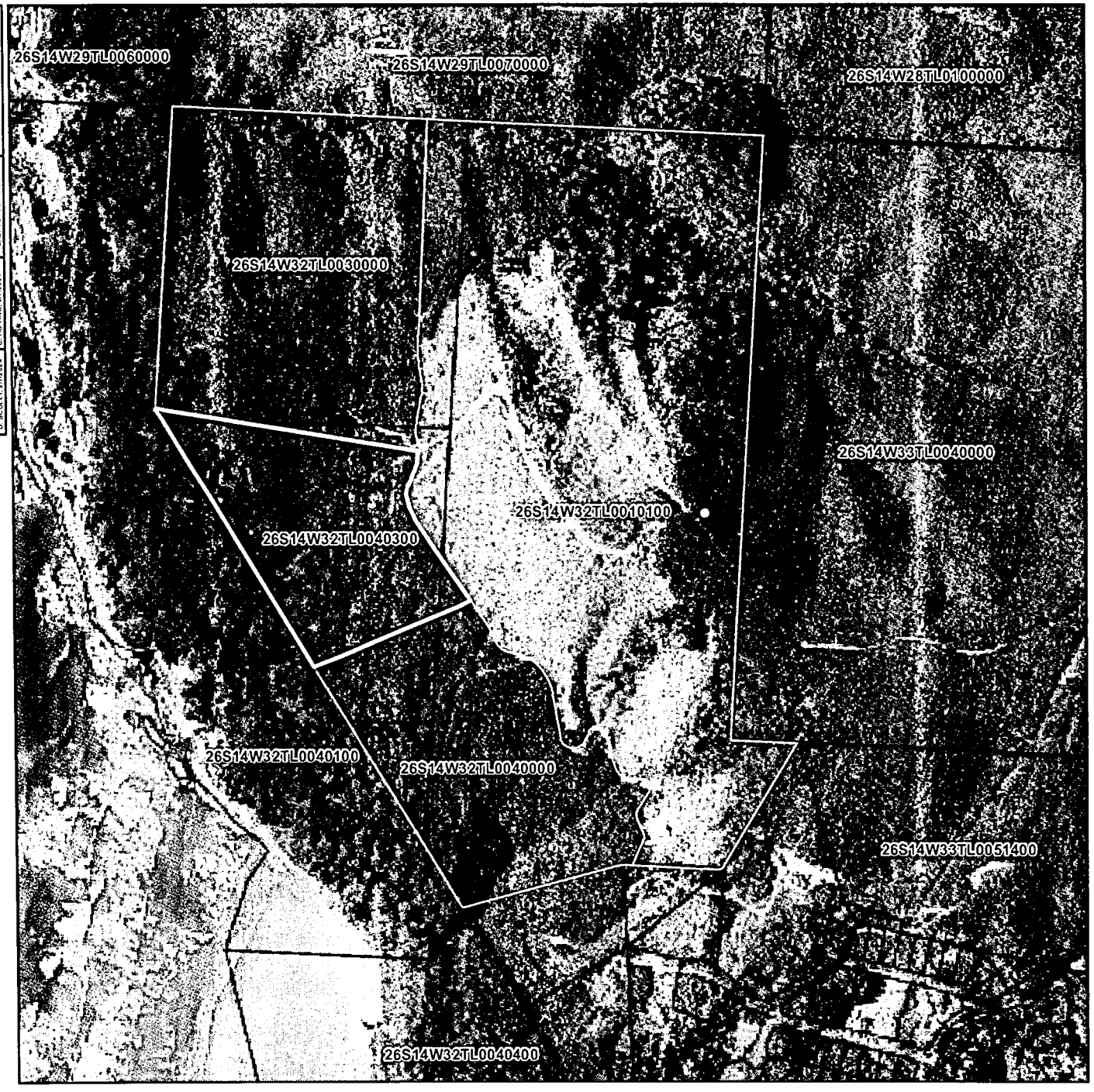
FIGURE 2
AERIAL PHOTO MAP

BUSINESS BOYS, LLC'S PROPERTY
NORTH OF SACCHI BEACH
BANDON, OREGON



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D. SCULLY, 2/7/2024	C. HOVIND, 2/7/2024	L. GREEN, 2/7/2024	559-23015-01

LEGEND:

REFERENCED PROPERTY

ADJUSTED TAX LOT BOUNDARY

TAX LOT WATER WELL, 9/14/2023

NOTES:

1. PROPERTY LINE ADJUSTMENT SURVEY BY MULKINS & RAMBO, LLC 11/2022.

2. TAX LOT MAP PROVIDED BY COOS COUNTY. BOUNDARIES ARE APPROXIMATE.

3. AERIAL IMAGERY FROM OREGON STATEWIDE IMAGERY PROGRAM (OSIP), 2022.

0 250 500 1,000 Feet

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FIGURE 3
COOS COUNTY TAX LOT MAP

BUSINESS BOYS, LLC'S PROPERTY
NORTH OF SACCHI BEACH
BANDON, OREGON

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LEGEND:

- REFERENCED PROPERTY
- CLEARED SITE FOR HOME AND SHOP
- HANDAUGER
- DIRT ROAD
- CONTOUR, 10 FEET
- EPHEMERAL DRAINAGE

NOTES:

1. CONTOUR MAP GENERATED FROM DOGAMI LIDAR (2009).
2. SITE MAP DEVELOPED FROM AN AERIAL PHOTO (2023)
3. ALL BUILDINGS, STREETS, AND FEATURES LOCATIONS ARE APPROXIMATE.
4. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.

0 125 250 500 Feet

N

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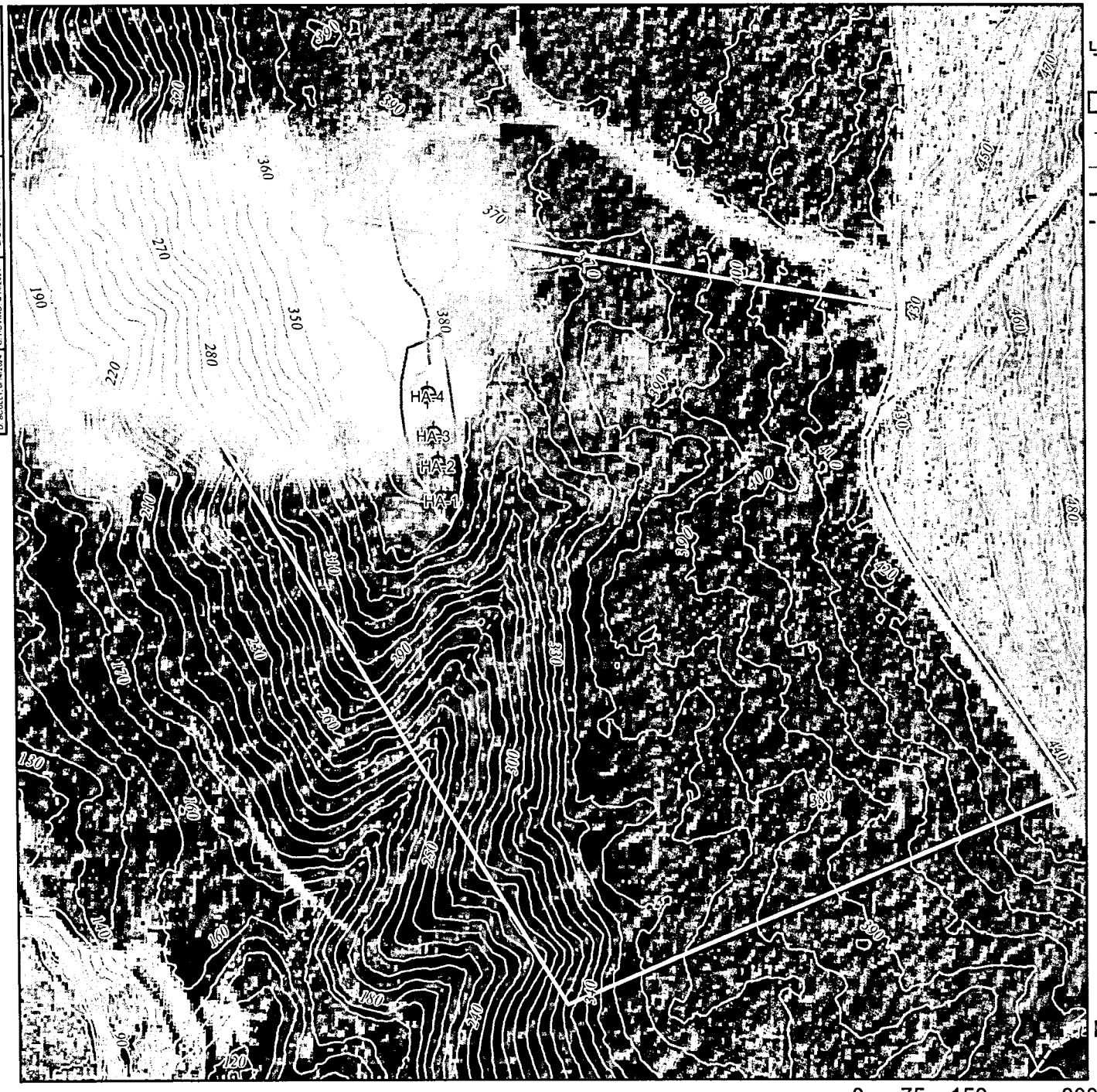
FIGURE 4
EXISTING SITE PLAN

BUSINESS BOYS, LLC'S PROPERTY
NORTH OF SACCHI BEACH
BANDON, OREGON



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LEGEND:

- REFERENCED PROPERTY
- CLEARED SITE FOR HOME AND SHOP
- HANDAUGER
- CONTOUR, 10 FEET
- EXISTING DIRT ROAD
- EPHEMERAL DRAINAGE

NOTES:

1. CONTOUR MAP GENERATED FROM DOGAMI LIDAR (2009).
2. SITE MAP DEVELOPED FROM COOS CURRY CONSULTING 2024 AND GOOGLE EARTH 2023.
3. ALL BUILDINGS, STREETS, AND FEATURES LOCATIONS ARE APPROXIMATE.
4. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.

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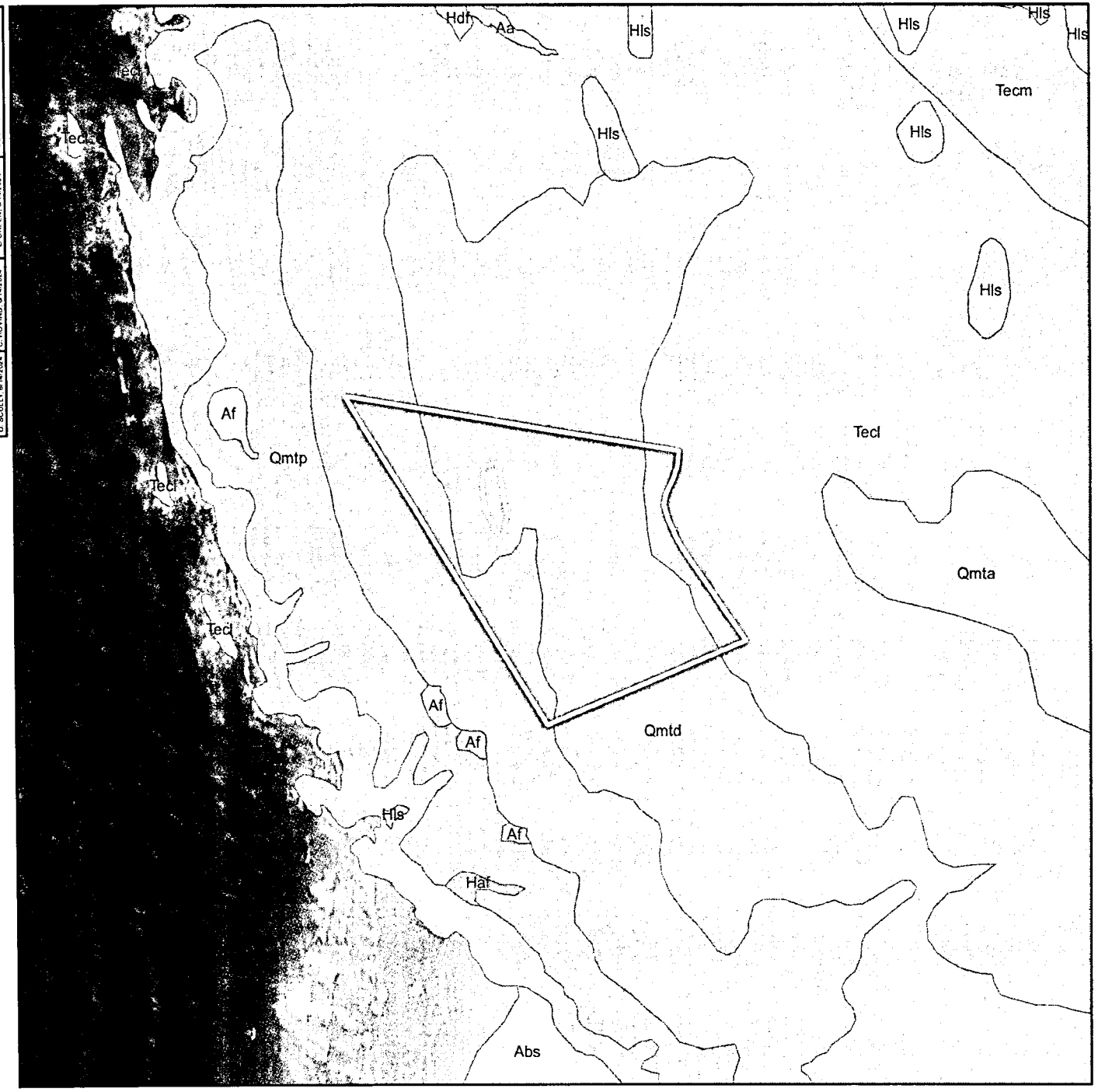
FIGURE 5
PROPOSED DEVELOPMENT PLAN

BUSINESS BOYS, LLC'S PROPERTY
NORTH OF SACCHI BEACH
BANDON, OREGON



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Legend

REFERENCED PROPERTY

CLEARED SITE FOR HOME AND SHOP

- Af — Modern Fill and Construction Material
- Aa — Alluvium
- Abs — Beach and Berm Deposits
- Haf — Alluvial Fan Deposits
- Hdf — Debris Fan Deposits
- Hls — Landslide Deposits
- Qmtp — Pioneer Terrace Sediments
- Qmtd — Seven Devils Terrace Sediments
- Qmta — Arago Peak Terrace Sediments
- Tecm — Coaledo Formation, Middle Member
- Tecl — Coaledo Formation, Lower Member

NOTES:

1. GEOLOGIC MAP GENERATED FROM DOGAMI OPEN FILE REPORT 0-15-04

2. TOPOGRAPHIC MAP PROVIDED BY USGS.

0 200 400 800 Feet

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FIGURE 6
GEOLOGY MAP

BUSINESS BOYS, LLC'S PROPERTY
NORTH OF SACCHI BEACH
BANDON, OREGON

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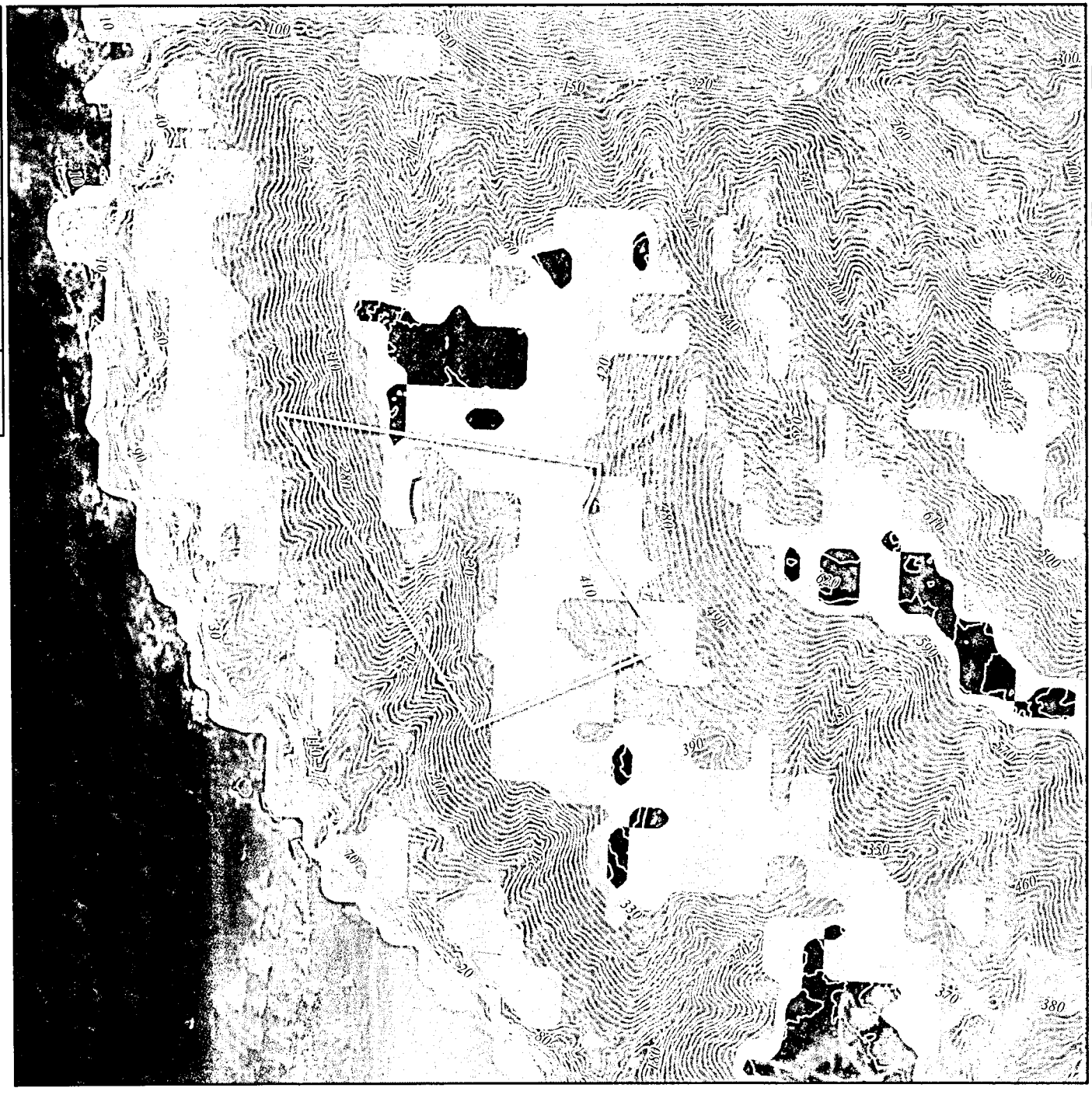

LEGEND:

- CLEARED SITE FOR HOME AND SHOP
- REFERENCED PROPERTY
- CONTOUR, 10 FEET

LANDSLIDE HAZARD

- MODERATE
- HIGH

NOTES:

1. CONTOUR MAP, 10-F00T INTERVAL, GENERATED FROM DOGAMI LIDAR (2009).

2.LANDSLIDE HAZARD OVERLAY GENERATED FROM DOGAMI SLIDO (2016).

0 200 400 800 Feet

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FIGURE 7
LANDSLIDE HAZARD MAP

BUSINESS BOYS, LLC'S PROPERTY
NORTH OF SACCHI BEACH
BANDON, OREGON

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D. SCULLY 8/14/2024	C. HOVIND 8/14/2024	L. GREEN 8/14/2024	959-23015-01

LEGEND:

- REFERENCED PROPERTY
- CLEARED SITE FOR HOME AND SHOP
- COASTAL EROSION OVERLAY (COOS COUNTY)

NOTES:

1. COASTAL EROSION OVERLAY PROVIDED BY COOS COUNTY.
2. AERIAL IMAGERY BY GOOGLE EARTH, 7/2023.

0 200 400 800 Feet

N

EVREN NORTHWEST INC.
environmental, natural resource consultants

FIGURE 8
COASTAL EROSION OVERLAY MAP

BUSINESS BOYS, LLC'S PROPERTY
NORTH OF SACCHI BEACH
BANDON, OREGON

APPENDIX A

WATER WELL LOG TAX LOT 101

Amended 10/18/2023

STATE OF OREGON
WATER SUPPLY WELL REPORT

(as required by ORS 537.545 & 537.765 and OAR 690-205-0210)

COOS 58314

9/19/2023

WELL I.D. LABEL# L 152102
START CARD # 1071347
ORIGINAL LOG #

(1) LAND OWNER
Owner Well I.D.
First Name Last Name
Company IRELAND INVESTMENTS LLC
Address PO BOX 338
City DILLARD State OR Zip 97432

(2) TYPE OF WORK
[X] New Well [ ] Deepening [ ] Conversion [ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION

	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD
[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE
[X] Domestic [ ] Irrigation [ ] Community
[ ] Industrial/ Commericial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION
Special Standard [ ] (Attach copy)
Depth of Completed Well 100.00 ft.

BORE HOLE

Dia	From	To
10	0	38
6	38	100

SEAL

Material	From	To	Amt	sacks/lbs
Bentonite	0	38	18	S
		Calculated	17.48	
		Calculated		

Seal placement method [ ] A [ ] B [ ] C [ ] D [ ] E [X] Other: POURED
Backfill placed from ft. to ft. Material
Filter pack from ft. to ft. Material Size
Explosives used: [ ] Type Amount
Seal Placement Begin Date 9/14/2023 Begin Time 11 30

(5a) ABANDONMENT USING UNHYDRATED BENTONITE
Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●	○	6	X	2	38	.250	●	○	X	
○	●	4		5	100	sch40	○	●		

Shoe [ ] Inside [X] Outside [ ] Other Location of shoe(s) 38
Temp casing [ ] Yes Dia From + To

(7) PERFORATIONS/SCREENS
Perforations Method Saw Cut
Screens Type Material

Perf/ Screen	Casing/ Screen Liner	Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size
Perf	Liner	4	40	100	.1	5	102	

(8) WELL TESTS: Minimum testing time is 1 hour
( ) Pump ( ) Bailer (●) Air ( ) Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
45		100	1

Temperature 56 °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount 255 ppm

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)
County coos Twp 26.00 S N/S Range 14.00 W E/W WM
Sec 32 SE 1/4 of the NE 1/4 Tax Lot 101
Tax Map Number Lot
Lat ° ' " or 43.27608000 DMS or DD
Long ° ' " or -124.37627000 DMS or DD
(●) Street address of well ( ) Nearest address
0 SACCHI LN BANDON, OR 97411

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	9/14/2023			45

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 63.00

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
9/14/2023	63	64	45			45

(11) WELL LOG
Ground Elevation

Material	From	To
sandy brown clay	0	19
sandy grey clay	19	29
sandstone/claystone siltstone	29	100

Construction
Begin Date 9/14/2023 Begin Time 09 30 End Date 9/14/2023

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
License Number Date
Signed

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
License Number 1878 Date 9/19/2023
Signed KERRY SCHATTENKERK (E-filed)
Contact Info (optional) Southern Oregon Water Wells 541-672-7834

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK Form Version:
New exempt use wells must be submitted with a map and recording fee.

WATER SUPPLY WELL REPORT - continuation page

COOS 58314

9/19/2023

WELL I.D. LABEL# L	152102
START CARD #	1071347
ORIGINAL LOG #	

(2a) PRE-ALTERATION

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Material	From	To	Amt	sacks/lbs

Water Quality Concerns

From	To	Description	Amount	Units

(5) BORE HOLE CONSTRUCTION

BORE HOLE

Dia	From	To

SEAL

Material	From	To	Amt	sacks/lbs
		Calculated		
		Calculated		
		Calculated		
		Calculated		

FILTER PACK

From	To	Material	Size

(10) STATIC WATER LEVEL

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

(7) PERFORATIONS/SCREENS

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

(11) WELL LOG

Material	From	To

Name of person(s) who assisted with construction and Trainee License # / Helper #

Assistant Name	Type	#
JAKE SMITH	HELPER WATER	8888848

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Comments/Remarks

STATE OF OREGON
WELL LOCATION MAP

This map is supplemental to the WATER SUPPLY WELL REPORT

Oregon Water Resources Department
725 Summer St NE, Salem OR 97301
(503)986-0900

OREGON WATER RESOURCES DEPARTMENT

LOCATION OF WELL

Latitude: 43.27608 Datum: WGS84

Longitude: -124.37627

Township/Range/Section/Quarter-Quarter Section:

WM 26S 14W 32 SENE

Address of Well:

0 SACCHI LN BANDON, OR 97411

Well Label: L152102

Well Log: COOS 58314

Printed: October 19, 2023

DISCLAIMER: This map is intended to represent the approximate location of the exempt use well provided by the land owner. It is not intended to be construed as survey accurate in any manner.

Generated by OWRD

APPENDIX B

HAND AUGER BORING LOGS

File: T:\EN\Projects\959\Sheri_McGrath_Consulting\2023\23015 (26-14-32 TL 403 Business Boys Property (Formerly Ireland Property) Bandon)\Hand Auger Logs\959-23015-01_Business Boys LLC TL403.log Date: 8/17/202

EVREN Northwest, Inc.

Boring Log No. B-1

Proj Name: Business Boys LLC TL 403

Location: North of Sacchi Beach, Bandon, Oregon			**Proj No. 959-23015-01**
Method: Hand Auger			**Ground EL:**
Hammer:		**Hammer weight (lb):**	**Hole depth (ft): 2.5**
Sampler:	**Drop (in):**	**G.W.T. @ Drilling (ft):**	**Sampled by: DMS**
Driller:		**Drill Date: 10-31-2023**	**Logged by: DMS**

Depth	Strata	GWT	No.	Type	Blows Per 6"	USCS	Soil Description	■ SPT. blow/ft ○ Moisture % (0 20 40 60)	Notes
0						CL	Sandy Clay Topsoil		
1		GWT not encountered				CL	Sandy Clay (CL) Dark brown, moist, soft, low plasticity, sand is fine-grained, few silt, trace organics, trace mottled orange brown inclusions (Terrace Deposits).		
2								○	
3							Boring completed at depth of 2.5 feet bgs. Hand auger refusal.		
4									
5									
6									
7									

Remarks:

Plate 0

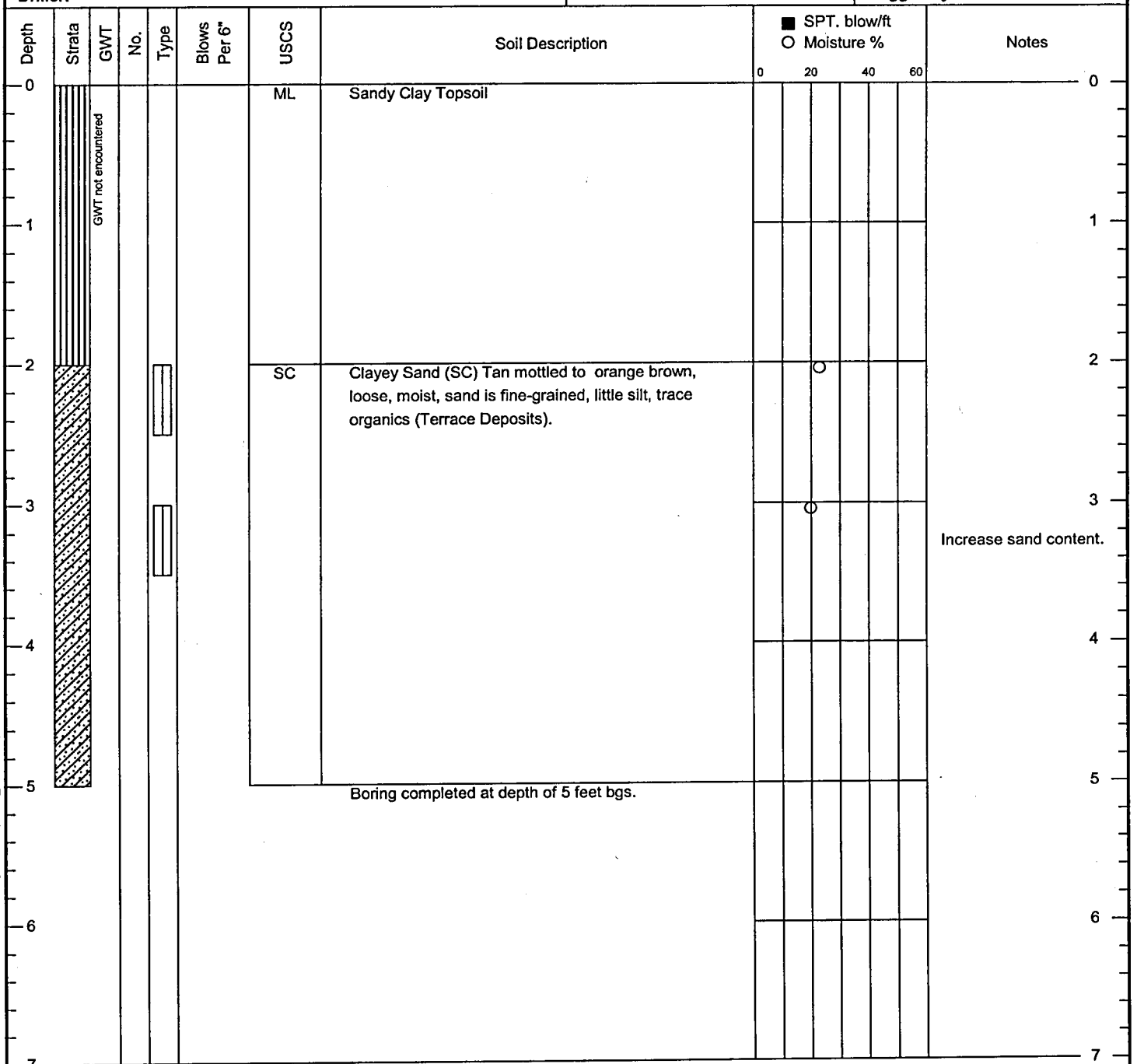
File: T:\ENW\Projects\959\Sheri_McGrath_Consulting\202312015 (26-14-32 TL 403 Business Boys Property (Formerly Ireland Property) Bandon)\Hand Auger Logs\959-23015-01_Business Boys LLC TL403.log Date: 6/17/202

EVREN Northwest, Inc.

Boring Log No. B-2

Proj Name: Business Boys LLC TL 403

Location: North of Sacchi Beach, Bandon, Oregon			**Proj No. 959-23015-01**
Method: Hand Auger			**Ground EL:**
Hammer:		**Hammer weight (lb):**	**Hole depth (ft): 5**
Sampler:	**Drop (in):**	**G.W.T. @ Drilling (ft):**	**Sampled by: DMS**
Driller:		**Drill Date: 10-31-2023**	**Logged by: DMS**



Remarks:

Plate 1

File: T:\ENW\Projects\959\Sheri_McGrath_Consulting\2023\23015 (26-14-32 TL 403 Business Boys Property (Formerly Ireland Property) Bandon)\Hand Auger Logs\959-23015-01_Business Boys LLC TL403.log Date: 6/17/202

EVREN Northwest, Inc.

Boring Log No. B-3

Proj Name: Business Boys LLC TL 403

Location: North of Sacchi Beach, Bandon, Oregon			**Proj No. 959-23015-01**
Method: Hand Auger			**Ground EL:**
Hammer:		**Hammer weight (lb):**	**Hole depth (ft): 2**
Sampler:	**Drop (in):**	**G.W.T. @ Drilling (ft):**	**Sampled by: DMS**
Driller:		**Drill Date: 10-31-2023**	**Logged by: DMS**

Depth	Strata	GWT	No.	Type	Blows Per 6"	USCS	Soil Description	■ SPT. blow/ft ○ Moisture % (0 20 40 60)	Notes
0						CL	Sandy Clay Topsoil		
						SC	Clayey Sand (SC) Moderate brown mottled to orange brown, moist, loose, sand is fine-grained, few silt (Terrace Deposits).	○	
1		GWT not encountered				CL	Sandy Clay (CL) Moderate brown mottled to orange brown, moist, soft, low to medium plasticity, sand is fine-grained, few silt.	○	
2							Boring completed at depth of 2 feet bgs. Hand auger refusal.		
3									
4									
5									
6									
7									

Remarks:

Plate 2

File: T:\ENW\Projects\959\Sheri_McGrath_Consulting\2023\23015 (26-14-32 TL 403 Business Boys Property (Formerly Ireland Property) Bandon)\Hand Auger Logs\959-23015-01_Business Boys LLC TL403.log Date: 6/17/202

EVREN Northwest, Inc.

Boring Log No. B-4

Proj Name: Business Boys LLC TL 403

Location: North of Sacchi Beach, Bandon, Oregon			Proj No. 959-23015-01
Method: Hand Auger			Ground EL:
Hammer:		Hammer weight (lb):	Hole depth (ft): 2
Sampler:	Drop (in):	G.W.T. @ Drilling (ft):	Sampled by: DMS
Driller:		Drill Date: 10-31-2023	Logged by: DMS

Depth	Strata	GWT	No.	Type	Blows Per 6"	USCS	Soil Description	■ SPT. blow/ft ○ Moisture % (0 20 40 60)	Notes
0						ML	Sandy Clay Topsoil		
1		GWT not encountered							
2						CL	Sandy Clay (CL) Moderate brown mottled to orange brown, moist, soft, low to medium plasticity, sand is fine-grained, few silt (Terrace Deposits).		
							Boring completed at depth of 2 feet bgs. Hand auger refusal.		
3									
4									
5									
6									
7									

Remarks:

Looking north up access road from northern extent of cleared proposed buildable area.

Looking north from southern extent of cleared proposed buildable area.

Looking south from northern extent of cleared proposed buildable area.

Looking northeast from the center of cleared proposed buildable area.

EVREN NORTHWEST INC. environmental, natural resource consultants	Business Boys, LLC TL 403 North of Sacchi Beach Bandon, Oregon	**Site Photographs**	Project No. 959-23015-01 Appendix **C**

Looking south at top of slope at southern extent of cleared proposed buildable area.

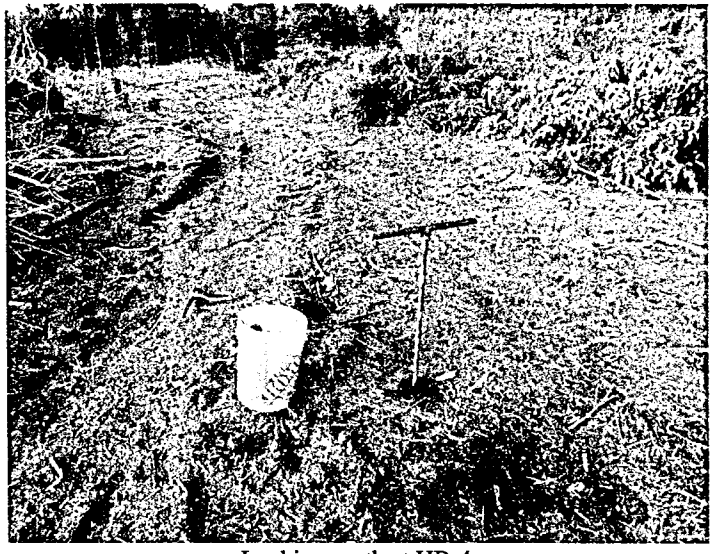
Hand auger boring 1 HB-1 located at southern extent of cleared proposed buildable area.

Looking south near southern extent of cleared proposed buildable area.

Hand auger boring 2 HB-2 located 60 feet north of HB-1.

EVREN NORTHWEST INC. environmental natural resource consultants	Business Boys, LLC TL 403 North of Sacchi Beach Bandon, Oregon	**Site Photographs**	Project No. 959-23015-01 Appendix **C**

Hand auger boring 3 HB-3 located 60 feet north of HB-2.



Looking north at HB-4.

Hand auger boring 4 HB-4 located 60 feet north of HB-3.

EVRENNORTHWEST INC. environmental · natural resource consultants	Business Boys, LLC TL 403 North of Sacchi Beach Bandon, Oregon	**Site Photographs**	Project No. 959-23015-01 Appendix **C**