NOTICE OF LAND USE DECISION

You may have received this because you are an adjacent property owner, and this notice is required to be provided pursuant to ORS 215.416. The proposal is identified in this decision and will be located on the subject property.

Coos County Planning
60 E Second St.
Coquille, OR 97423
http://www.co.coos.or.us/
Phone: 541-396-7770
planning@co.coos.or.us

This decision notice is required to be sent to the property owner(s), applicant(s), adjacent property owners (distance of notice is determined by zone area – Urban 100 feet, Rural 250 feet, and Resource 750 feet), special taxing districts, agencies with interest, or person that has requested notice. Please read all information carefully as this decision. (See attached vicinity map for the location of the subject property).

Date of Notice:	**Tuesday, January 18, 2022**
File No(s):	V-21-001/ACU-21-033/ACU-21-034
Proposal:	Request for a Land Use Approval
Applicant(s):	Nicholas Klein & Diane Shakin 3039 Dannyhill Drive Los Angeles, CA 90064
Staff Planner:	Amy Dibble, Planner II

Decision: **Approved with Conditions.** All decisions are based on the record. This decision is final and effective at close of the appeal period unless a complete application with the fee is submitted by the Planning Department at 5 p.m. on **Wednesday, February 02, 2022** . Appeals are based on the applicable land use criteria found in the Coos County Zoning and Land Development Ordinance (CCZLDO) Section 4.3.200.28 Dwelling- Replacement, Section 4.3.225 General Siting Standards, Section 4.3.230; Additional Siting Standards Controlled Development; Section 4.11.129 Beaches and Dunes (Policy 5.10); Section 4.11.130 Non- Estuarine Coastal Shoreland Boundary; Section 4.11. 132. Natural Hazards-Erosion, Tsunami, & Wildfire; 4.11.300 Airport Surfaces; and Article 5.3. Variances. **Civil matters including property disputes outside of the criteria listed in this notice will not be considered. For more information please contact the staff planner listed in this notice.**

Property Information

Account Numbers	2936972
Map Numbers	29S1501CC-02700
Property Owners	KLEIN, NICHOLAS F & SHAKIN, DIANE P 3039 DANNYHILL DR LOS ANGELES, CA 90064-4627
Situs Addresses	54182 GOULD RD BANDON, OR 97411
Acreages	0.20 Acres
Zoning(s)	CONTROLLED DEVELOPMENT-10 (CD-10)
Special Development Considerations and Overlays	ARCHAEOLOGICAL AREAS OF INTEREST (ARC) BANDON AIRPORT CONICAL ZONE (ABC) BANDON URBAN GROWTH BOUNDARY (BGB) BEACHES/DUNES - LIMITED (BDL) COASTAL SHORELAND BOUNDARY (CSB) NATURAL HAZARD - EROSION - COASTAL EROSION (NHERC) NATURAL HAZARD - TSUNAMI (NHTHO) NATURAL HAZARD - WILDFIRE (NHWF)

This notice shall be posted from January 18, 2022 to February 2, 2022

The purpose of this notice is to inform you about the proposal and decision, where you may receive more information, and the requirements if you wish to appeal the decision by the Director to the Coos County Hearings Body. Any person who is adversely affected or aggrieved or who is entitled to written notice may appeal the decision by filing a written appeal in the manner and within the time period as provided below pursuant to Coos County Zoning and Land Development Ordinance (CCZLDO) Article 5.8. If you are mailing any documents to the Coos County Planning Department the address is 250 N. Baxter, Coquille OR 97423. Mailing of this notice to you precludes an appeal directly to the Land Use Board of Appeals.

Mailed notices to owners of real property required by ORS 215 shall be deemed given to those owners named in an affidavit of mailing executed by the person designated by the governing body of a county to mail the notices. The failure of the governing body of a county to cause a notice to be mailed to an owner of a lot or parcel of property created or that has changed ownership since the last complete tax assessment roll was prepared shall not invalidate an ordinance.

Staff tries to post all applications on the website at the following link:
https://www.co.coos.or.us/planning/page/applications-2021

The application and all documents and evidence contained in the record, including the staff report and the applicable criteria, are available for inspection, at no cost, in the Planning Department located at 225 North Adams Street, Coquille, Oregon. Copies may be purchased at a cost of 50 cents per page. If you would like to view the record in this matter, please make an appointment. The decision is based on the application submittal and information on record. The name of the Coos County Planning Department representative to contact is Crystal Orr, Planner I and the telephone number where more information can be obtained is **(541) 396-7770**.

Failure of an issue to be raised in a hearing, in person or in writing, or failure to provide statements of evidence sufficient to afford the Approval Authority an opportunity to respond to the issue precludes raising the issue in an appeal to the Land Use Board of Appeals.

Reviewed by: Amy Dibble **Date:** **Tuesday, January 18, 2022** .
Amy Dibble, Planner II

This decision is authorized by the Coos County Planning Director, Jill Rolfe based on the staff's analysis of the Findings of Fact, Conclusions, Conditions of approval, Application and all evidence associated as listed in the exhibits.

EXHIBITS
Exhibit A: Conditions of Approval
Exhibit B: Vicinity Map
The following exhibits are on file at the Coos County Planning Department and may be accessed by contacting the department. All noticeable decisions are posted on the website for viewing when possible.
Exhibit C: Staff Report -Findings of Fact and Conclusions
Exhibit D: Comments
Exhibit E: Application

EXHIBIT "A"

The applicant (applicant includes property owner and any successor) shall comply with the following conditions of approval with the understanding that all costs associated with complying with the conditions are the responsibility of the applicants and that the applicants are not acting as an agent of the county. If the applicant fails to comply or maintain compliance with the conditions of approval the permit may be revoked as allowed by the Coos County Zoning and Land Development Ordinance. Please read the following conditions of approval and if you have any questions contact planning staff.

CONDITIONS OF APPROVAL

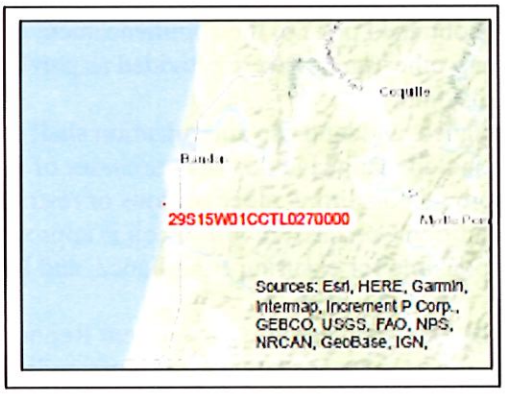
The applicant has met the criteria for a Replacement Dwelling, with the following conditions:

1. All applicable federal, state, and local permits shall be obtained prior to the commencement of any development activity. If there were comments from any other agency were provided as part of this review, it is the responsibility of the property owner to comply.
2. The property owner is responsible for ensuring compliance, and land use authorization shall remain recorded in the chain of title. The statement needs to include language that the purchaser of the property has been provided a copy of the land use approval containing all conditions or restrictions understands the obligation and agrees to fulfill the conditions, unless a modification is approved as provided in this ordinance. The property owner is responsible for ensuring compliance, and land use authorization.
3. Shall comply with the recommendations set forth in the Geotechnical Site Assessment Report performed by Cascadia Geoservices, Inc. A follow up report is required that all recommendation have been complied with.
4. Due to the proximity to known cultural resources, the property owner is responsible to contact the Coquille Indian Tribe office at (541) 808-5554 (Kassandra Rippee, Archaeologist/THPO) to schedule a Cultural during all ground-disturbing activities. Please schedule the monitor minimum of 72-hours in advance of anticipated project start time.
5. The applicant shall submit a site plan that have all elements 4.11.130 Non-Estuarine Shoreland Boundary(a)(ii) to be attached to the Zoning Compliance Letter.
6. A Driveway/Access/Parking permit shall be approved.
7. A Zoning Compliance Letter is required after the decision becomes final.

EXHIBIT "B"
VICINITY MAP

COOS COUNTY PLANNING DEPARTMENT

Mailing Address: 225 N. Adams, Coquille, Oregon 97423
Physical Address: 60 E. Second, Coquille Oregon
Phone: (541) 396-7770
TDD (800) 735-2900



File:	ACU-21-033. ACU-21-034, V-21-001
Applicants/ Owner:	Nicholas Klein and Diane Shakin Nicholas Klein and Diane Shakin
Date:	December 3, 2021
Location:	Township 29S Range 15W Section 1CC TL 2700
Proposal:	Administrative Conditional Use

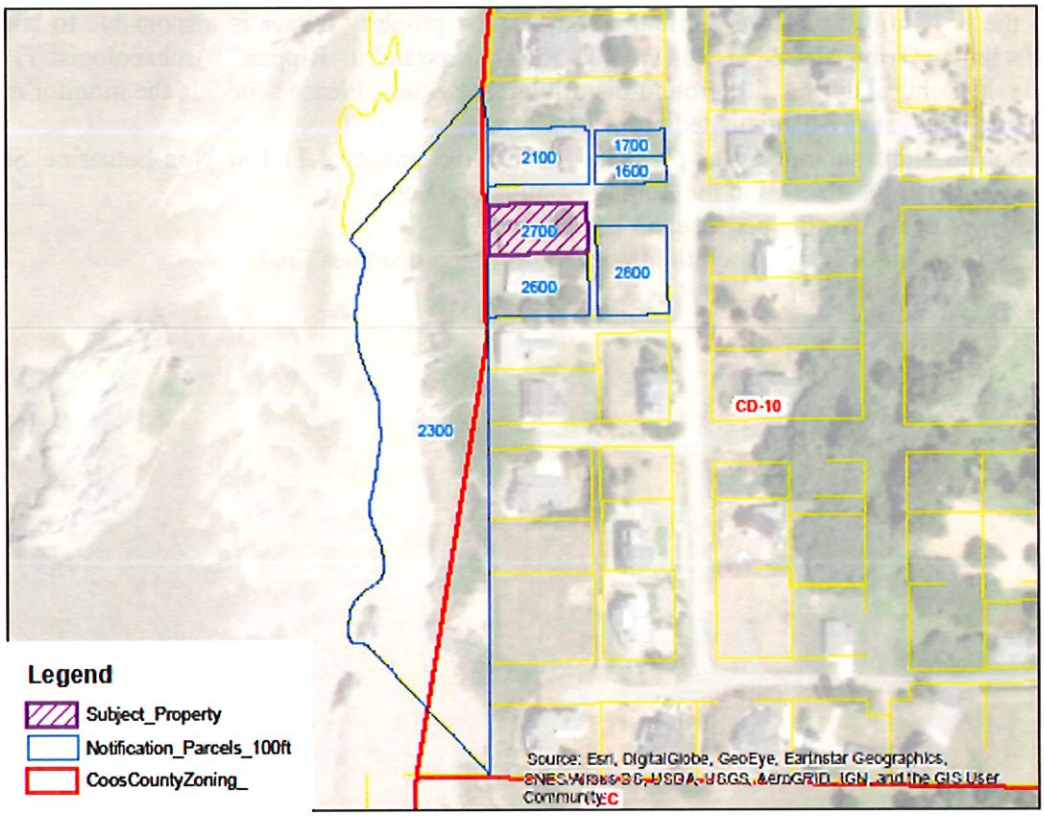


EXHIBIT "C"
STAFF REPORT
FINDINGS OF FACT AND CONCLUSIONS

I. PROPOSAL AND BACKGROUND/PROPERTY HISTORY INFORMATION:

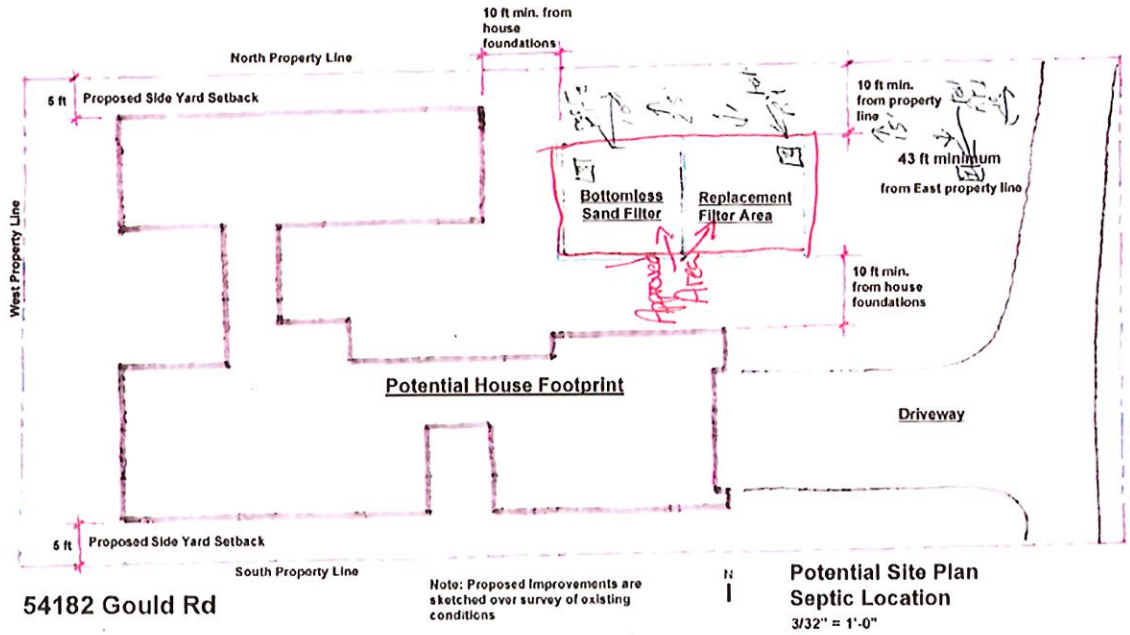
A. PROPOSAL: Request for a Conditional Use Approval for a Single Family Dwelling to be sited in the Controlled Development Zone and address all Special Development Considerations and Overlays (Coastal Shoreland Boundary, Beaches and Dunes with Limited Suitablity, Coastal Erosion, Wildfire, Airport Overlay) and a Varaince to the corner and road setback.

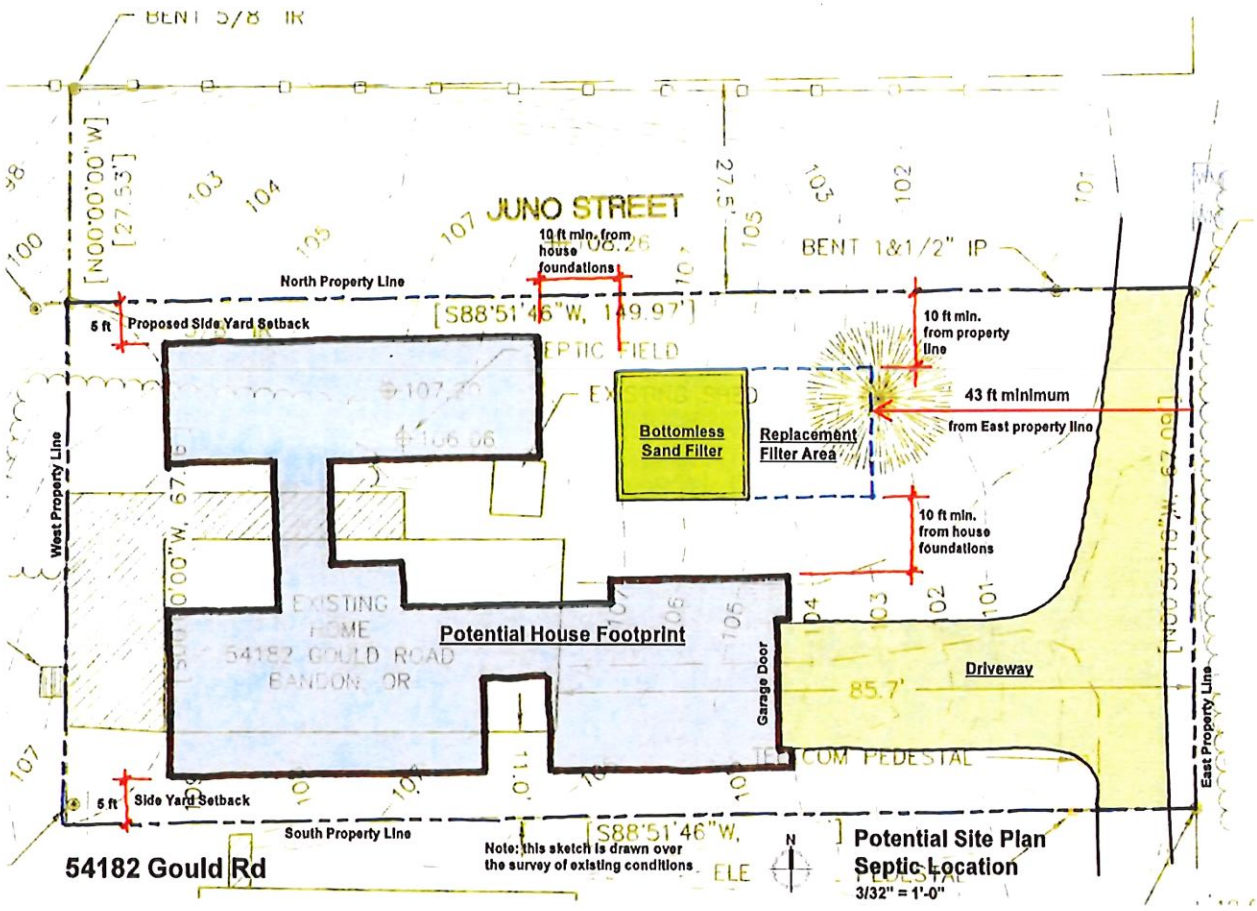
B. BACKGOUND/PROPERTY HISTORY:
This property has a single-family dwelling that was constructed in 1970 according to available assessment information. This means that the dwelling predates the Coos County Zoning and Land Development Ordinance (CCZLDO). The property also contains a small shed according to the plot plan.

On October 2, 2015 a Zoning Clearance Letter (ZCL-15-267) was issued allowing the dwelling to be used as a vacation rental. This allowance did not transfer to subsequent buyers of the property.

On January 21, 2020 a Compliance Determination was submitted requesting clearance to continue the use of the Vacation Rental under new owner's name (Nicholas Klein & Diane Shakin). Zoning Compliance Letter (ZCL-20-021) issued to allow continue use of the vacation rental.

August 18, 2020 Septic Request (SR-20-069) was submitted and a on October 12, 2020 a Zoning Compliance Letter (ZCL-20-291) was granted to perform a septic site evaluation only. Below is the site plan presented to Department of Environmental Quality for site evaluation of the new dwelling.


10 ft min. from house foundations
North Property Line
5 ft Proposed Side Yard Setback
10 ft min. from property line
43 ft minimum from East property line
Bottomless Sand Filter
Replacement Filter Area
Approved Area
West Property Line
10 ft min. from house foundations
Potential House Footprint
Driveway
East Property Line
5 ft Proposed Side Yard Setback
South Property Line
Note: Proposed Improvements are sketched over survey of existing conditions
N
54182 Gould Rd
Potential Site Plan
Septic Location
3/32" = 1'-0"


BENT 5/8 IR
JUNO STREET
10 ft min. from house foundations
BENT 1&1/2" IP
North Property Line
5 ft Proposed Side Yard Setback
[S88°51'46"W, 149.97']
SEPTIC FIELD
10 ft min. from property line
43 ft minimum
from East property line
Bottomless Sand Filter
Replacement Filter Area
West Property Line
10 ft min. from house foundations
EXISTING HOME 54182 GOULD ROAD BANDON, OR
Potential House Footprint
Garage Door
Driveway
85.7'
COM PEDESTAL
East Property Line
5 ft Side Yard Setback
South Property Line
[S88°51'46"W,
Note: this sketch is drawn over the survey of existing conditions
N
54182 Gould Rd
Potential Site Plan
Septic Location
3/32" = 1'-0"

On August 25, 2020 a Variance (V-20-002) was submitted to the setbacks to the fifteen-foot secondary street setback and the 35' ft center line setback on Juno. On August 28, 2020 the application was deemed incomplete. This was incomplete because a variance would not have been able to be approved until the geotechnical review was completed to find the safest site. Once an application is deemed incomplete the applicant has 180 days from the deemed incomplete date to submit the requested information. The applicants chose to wait and resubmit when all the information was available. This application was deemed withdrawn.

On May 3, 2021 two (2) Conditional Use Applications and a Variance (ACU-21-033/ACU-21-034/V-21-001) were submitted. The variance is to setbacks and the conditional uses cover Coastal Shoreland Boundary (which requires a site plan for structures) and Conditional Use for Beaches and Dunes with Limited Development Suitability including Coastal Erosion. On June 2, 2021 the application was deemed incomplete. Information to address the completeness issues was received, and the application was deemed complete September 17, 2021. Although, it might have not covered all of the missing items it was enough to move the review forward.

C. LOCATION:

The subject property is located off Gould Road, which is accessed through Beach Lane via Coos County Maintained Beach Loop Road, north of the City of Bandon with a situs address of 54182 Gould Road, Bandon, OR 97411.

D. ZONING: The subject property is zoned Controlled Development-10 (CD-10).

ARTICLE 4.2 – ZONING PURPOSE AND INTENT

SECTION 4.2.200 MIXED COMMERCIAL-RESIDENTIAL

The intent of the Controlled Development is to reserve areas that are experiencing or are projected to experience limited conversion of residential areas to commercial uses. Urban Growth Areas include Urban Growth Boundaries (UGB) and Urban Unincorporated Communities (UUC) that were developed to urban levels of development and could be included in an Urban Growth Boundary expansion in the future. This designation is applied to specific portions of the following Urban Growth Areas: Bandon, Charleston, Barview and Bunker Hill.

There are two different controlled development zoning districts: Controlled Development-5 (CD-5) and Controlled Development-10 (CD-10).

The purpose of the "CD-5" and "CD-10" district is to recognize the scenic and unique quality of selected areas within Urban Growth Boundaries, to enhance and protect the unique "village atmosphere," to permit a mix of residential, commercial, and recreational uses and to exclude those uses which would be inconsistent with the purpose of this district, recognizing tourism as a major component of the County's economy.

E. SITE DESCRIPTION AND SURROUNDING USESSITE DESCRIPTION AND SURROUNDING USES:

The subject tract contains .20 acres (Assessor mapped) and is developed with a dwelling and small shed. The subject property is located on Gould Road, which is off Beach Lane, which is accessed via Coos County Maintained Beach Loop Road. The parcels surrounding are like in

size and are also zoned CD-10 containing residential development. The property abuts a public platted road that ends at the beach.

F. COMMENTS:

a. **PUBLIC AGENCY:** This application required a request for comments to Oregon Department of Aviation. They responded that they have no comments to add for this proposal.

b. **PUPLIC COMMENTS:** This application request did not require any request for public comments prior to the release of the decision.

c. **LOCAL TRIBE COMMENTS:** Request for comments were sent to Coquille Indian Tribe, their response can be found below:
"Our records show known cultural resources within extreme proximity to the project area. Due to the proximity to known cultural resources, we request that the landowner and or contractor contact our office to schedule a Cultural Resource Monitor to be on site during all ground disturbing activities. Please schedule the monitor minimum of 72 hours in advance of anticipated project start time."

II. Property Compliance:

A. COMPLIANCE PURSUANT TO SECTION 1.1.300:

It shall be unlawful for any person, firm, or corporation to cause, develop, permit, erect, construct, alter or use any building, structure or parcel of land contrary to the provisions of the district in which it is located. No permit for construction or alteration of any structure shall be issued unless the plans, specifications, and intended use of any structure or land conform in all respects with the provisions of this Ordinance, unless approval has been granted by the Hearings Body.

FINDING: Staff has reviewed the property history and county files to determine that at the time of this decision and found the property complies with The Coos County Zoning and Land Development Ordinance (CCZLDO).

***B.* SECTION 6.1.125 LAWFULLY CREATED LOTS OR PARCELS:**

"Lawfully established unit of land" means:

1. The unit of land was created:

a. Through an approved or pre-ordinance plat;

b. Through a prior land use decision including a final decision from a higher court. A higher court includes the Land Use Board of Appeals;

c. In compliance with all applicable planning, zoning and subdivision or partition ordinances and regulations at the time it was created.

d. By a public dedicated road that was held in fee simple creating an interviewing ownership prior to January 1, 1986;

e. By deed or land sales contract, if there were no applicable planning, zoning or subdivision or partition ordinances or regulations that prohibited the creation.

f. By the claim of intervening state or federal ownership of navigable streams, meandered lakes or tidewaters. "Navigable-for-title" or "title-navigable" means that ownership of the waterway, including its bed, was passed from the federal government to the state at statehood. If a waterway is navigable-for-title, then it also is generally open to public use for navigation, commerce, recreation, and fisheries.

FINDING: This property was determined to be a lawfully created unit of land through prior land use decision. The determination was made that this property was part of a larger tract described in separate lots between two deeds documents number 63-4-84240 and 69-08-4126. Tax lots 2700 and 2701 were sold in 1970 under deed 70-07-49905 and consists of two units of land. The one unit of land was conveyed to tax lot 2600 in 1990 leaving tax lot 2700 and the partial vacation of Juno street was done shortly after creating the current configuration of tax lot 2700. Therefore, this property is confirmed as a legal unit of land.

III. STAFF FINDINGS AND CONCLUSIONS:

A. SUMMARY OF PROPOSAL AND APPLICABLE REVIEW CRITERIA:

The proposal is a request for a Land Use Approval for a Variance to the required setbacks for a proposed replacement dwelling. This dwelling proposal is also within the Coastal Shoreland Boundary, Beaches & Dunes, and Erosion, Tsunami & Wildfire Natural Hazards.

B. *Criteria and standards for Replacement Dwelling*

a. Section 4.3.200 Zoning Tables for Urban and Rural Residential, mixed Commercial-Residential, Commercial, Industrial, Minor Estuary and South Slough

The table indicates the type of review process that is required. Remember that CU is an conditional use review and the letter prior explain what level of conditional use is required (A = administrative and H=Hearing)
As used in the zoning tables the following abbreviations are defined as:

- *"P" Permitted and requires no review from the Planning Department. No review is required but other agencies may have requirements.*
- *"CD" Compliance Determination review (permitted with standards) with clear and objective standards (Staff review usually referred to as Type I process or ministerial action). These uses are subject to development standards in sections 4.3.22, 4.3.230 and notices requesting comments may be provided to other agencies as result. The process takes a minimum of 30 days to complete. Industrial zones may require additional review. All structures and uses shall meet the applicable Development and Siting Criteria or Special Development Considerations and Overlays for the zoning district in which the structure will be sited.*
- *"ACU" Administrative Conditional Use (Planning Director's Decision usually referred to as a Type II Process)*
- *"HBCU" Hearing Body Conditional Use (Planning Commission, Board of Commissioner or Hearings Officer Decision usually referred to as a Type III Process)*
- *"PLA" Property Line Adjustments subject to standards found in Chapter 6.*
- *"P", "SUB", "PUD" = Partition, Subdivision, Planned Unit Development that require Land Division Applications subject to standards found in Chapter 6.*

- *The "Subject To" column identifies any specific provisions of Section 4.3.210 to which the use is subject.*
- *"N" means the use is not allowed.*

The zoning table sets out Uses, Developments and Activities that may be listed in a zone and the type of review that is required within that zone. If there is a conflict between uses the more restrictive shall apply. Section 4.3.210 provides an explanation of the use category and the specific criteria that shall apply and if the use is identified as requiring a conditional use. Section 4.3.225 General Siting Standards apply to all regulated Uses, Developments, or Activities, but these are clear and objective standards that do not, in themselves, require a land use notice. Section 4.3.230 Specific Standards list specific siting standards by zones and 4.2.220 Additional Conditional Use Review and Standards for table 4.3.200 contains any additional criteria that applied to a Use, Development or Activity that has been identified by the following table as requiring.

#	Use	Zones Section 4.3.210 CATEGORIES & Review Standards - 4.3.220 Additional Conditional Use Review – Section 4.3.225 General Siting Standards - Section 4.3.230 Specific Standards												Subject To
		UR-1	UR-2	UR-M	RR-2	RR-5	CD	RC	C-1	IND	AO	REC	SS	MES	
28.	Dwelling - Replacement	CD	CD	CD	CD	CD	CD	CD	ACU	ACU	ACU	ACU	ACU	ACU	(27)(i)

FINDING: Replacement Dwellings are subject to CCZLDO Use found in *Section 4.3.200 (28) Dwelling- Replacement requiring a Compliance Determination and Subject to Section 4.3.210 (27)(i)*

b. Section 4.3.210 – CATEGORIES AND REVIEW STANDARDS

The following categories provide a definition and specific standards that will regulate the Development, Use or Activity identified in the table above.

(27)(i)Replacement dwelling - alteration, restoration or replacement of a lawfully established dwelling that:

(i)has intact exterior walls and roof structure;
(ii)has indoor plumbing consisting of a kitchen sink, toilet and bathing facilities connected to a sanitary waste disposal system;
(iii)has interior wiring for interior lights;
(iv)has a heating system; and
(v)In the case of replacement, is removed, demolished or converted to an allowable non-residential use within three months of the completion of the replacement dwelling

FINDING: The property contains a 1970 Single-Family Dwelling with approximately 786 square feet. This Dwelling was used as a vacation rental until recently. It contains all the necessary components listed within the above criteria. The existing dwelling will be removed prior to construction. This application will need to show it can meet 4.3.225 General Siting Standards, 4.3.230 Specific Standards, and Article 4.11 Special Development Considerations and Overlays.

- **SECTION 4.3.225 GENERAL SITING STANDARDS**

(1) ***
(2) *Fences, Hedges, and Walls: No requirement, but vision clearance provisions of Section 7.1.525 apply.*
(3) ***
(4) ***
(5) *Parking - Off-street access, parking and loading requirements per Chapter VII apply.*
(6) ***
(7) *Setbacks:*

(a) All Development with the exception of fences shall be set back a minimum of thirty-five (35) feet from any road right-of-way centerline, or five (5) feet from the right-of-way line, whichever is greater. This setback may be greater under specific zoning siting requirements.

(b) Firebreak Setback - New or replacement dwellings on lots, parcels or tracts abutting the "Forest" zone shall establish and maintain a firebreak, for a distance of at least 30 feet in all directions. Vegetation within this firebreak may include mowed grasses, low shrubs (less than ground floor window height), and trees that are spaced with more than 15 feet between the crowns and pruned to remove dead and low (less than 8 feet from the ground) branches. Accumulated needles, limbs and other dead vegetation should be removed from beneath trees.

(8) *OUTDOOR STORAGE IN RESIDENTIAL ZONES (a) Boats and trailers, travel trailers, pick-up campers or coaches, motorized dwellings, and similar recreation equipment may be stored on a lot but not used as an accessory use; (b) Automotive vehicles or trailers of any kind or type without current license plates, where required, and which are not in mechanical working order, shall not be parked or stored on any residentially zoned property other than in completely enclosed buildings; (c) One operating truck may be stored on the lot of a truck driver provided it is accessory to the main use of the property. Additional trucks shall not be allowed.*

FINDING: The applicants are requesting a variance to the 35-foot setback. The fire break setback was not addressed other than in a supplemental statement that it will be met. The outdoor storage also was not addressed but this will be a condition of approval.

- **SECTION 4.3.230 ADDITIONAL SITING STANDARDS**

This section has specific siting standards and criteria set by the zoning district for USES, ACTIVITIES and DEVELOPMENT:

(3) ***Controlled Development (CD)** - The following siting standards apply to all USES, activities and development within the CD zoning district.*

(a) Minimum Lot size:

(1) The following Controlled Development-5 minimum lot sizes shall apply:

1. *Sites having both public water and public sewer cannot be less than 5,000 square feet.*
2. *Sites not having both public water and public sewer cannot be less than one (1) acre.*
3. *Dwelling unit density shall not exceed one (1) unit per minimum lot size, except each additional attached dwelling unit requires 1200 additional square feet above the minimum lot size.*

(2) The following Controlled Development-10 minimum lot sizes shall apply:

1. *Site not having both public water and public sewer cannot be less than one (1) acre.*
2. *Sites having both public water and public sewer cannot be less than 10,000 square feet.*
3. *Dwelling unit density shall not exceed one (1) unit per minimum lot size, except each additional attached dwelling unit requires 1200 additional square feet above the minimum lot size. (OR-00-05-014PL)*

(b) Density or Size limits -

(1) Dwelling density shall be no more than one dwelling per lawfully created parcel unless otherwise provided for by this ordinance.

(2) If lawfully created parcels are less than one acre in size and not served by a public sewer then Department of Environmental Quality, State Building Codes and Oregon Department of Water Resources should be consulted by the developer prior to seeking a land use authorization to construct a dwelling as there may be development limitations.

(c) Setbacks:

(1) Front Setback: 20 feet.

(2) *Side and Rear Set-Back: The side and rear setback shall be a minimum of 5 feet unless the side or rear yard is adjacent to a street or road (corner lot) the minimum setback shall be 15 feet from that street or road.*

(3) *Setback exception – Front yard setback requirements of this Ordinance shall not apply in any residential district where the average depth of existing front yards on developed lots within the same zoning district block, but no further than 250 feet from the exterior side lot lines of the lot and fronting on the same side of the street as such lot, is less than the minimum required front yard building setback. In such cases the front yard setback requirement on any such lot shall not be less than the average existing front yard building setback.*

(d) *Building Height - Maximum Building height is 35 feet. However, spires, towers, domes, steeples, flag poles, antennae, chimneys, solar collectors, smokestacks, ventilators or other similar objects may be erected above the prescribed height limitations, provided no usable floor.*

FINDING: The request is for a replacement of a *Single Family Dwelling* with a *Single Family Dwelling*. *The side and rear setback shall be a minimum of 5 feet unless the side or rear yard is adjacent to a street or road (corner lot) the minimum setback shall be 15 feet from that street or road.* The applicants will not be able to meet this standard and have requested a variance. The applicant does not address the building height but it is limited to 35 feet. This is also within the Airport Overlay which will be addressed under the Special Development Consideration and Overlays. There is no new division of property proposed so the minimum lots size does not apply to this request. Once the Variance has been reviewed these criteria will be addressed below. Therefore, these criteria have been addressed.

c. *VARIANCE –*

SECTION 5.3.200 VARIANCE:
The Planning Director shall consider all formal requests for variances for zoning and land development variances.

SECTION 5.3.350 CRITERIA FOR APPROVAL OF VARIANCES:
No variance may be granted by the Planning Director unless, on the basis of the application, investigation, and evidence submitted;

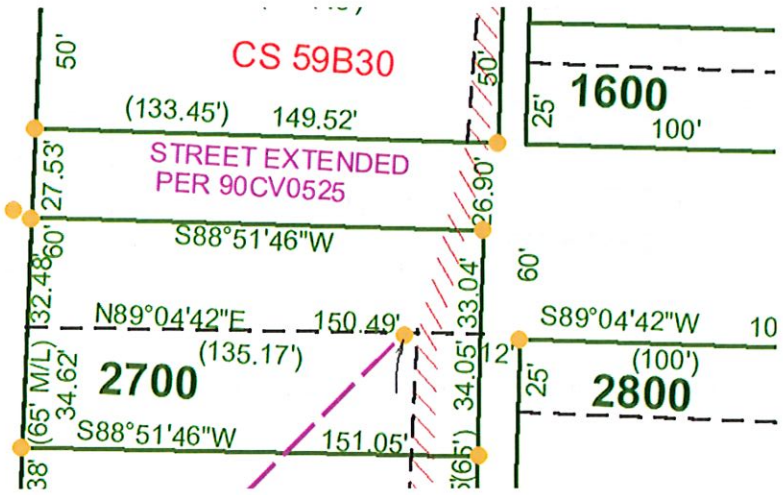
1. *Both findings "a" and "b" below are made:*
   a. *One of the following circumstances shall apply:*
      i. *That a strict or literal interpretation and enforcement of the specified requirement would result in unnecessary physical hardship and would be inconsistent with the objectives of this Ordinance;*
      ii. *That there are exceptional or extraordinary circumstances or conditions applicable to the property involved which do not apply to other properties in the same zoning district; or*
      iii. *That strict or literal interpretation and enforcement of the specified regulation would deprive the applicant of privileges legally enjoyed by the owners of other properties or classified in the same zoning district;*
   b. *That the granting of the variance will not be detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the near vicinity.*
2. *That the granting of the variance will not be detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the near vicinity.*
3. *In addition to the criteria in (1) above, no application for a variance to the Airport Surfaces Floating Zone may be granted by the Planning Director unless the following additional finding is made: "the variance will not create a hazard to air navigation".*

4. *In lieu of the criteria in (1) above, an application for a variance to the /FP zone requirements shall comply with Section 4.6.227.*
5. *Variance regulations in CCZLDO Article 5.3 shall not apply to Sections 4.11.400 through 4.11.460, Chapter VII and Chapter VIII.*

SECTION 5.3.360 EXPIRATION AND EXTENSION OF VARIANCES:
Variances are not subject to expiration dates.

FINDING: In looking at other Dwellings within 500-foot radius of the subject property within the Controlled Development Zone the developed properties are developed with a like size dwelling as proposed and have an average of a five-foot setback on the sides and back. This property is unique because it abuts a partially vacated road (Juno). The vacation made this road a substandard road for development. The Road is within Coastal Shoreland Boundary and cannot be fully vacated. It is not likely this can be used for a public access given the topographical area but Statewide Planning Goal 17 requires that public ways be maintained in the Coastal Shoreland Boundary.

The applicant explained that partial road vacation created a corner lot but that statement is not correct. This property was a corner lot prior to the vacation. The vacation was done to add additional land to the property which moved the northern property boundary by about 33 feet. The street was 60 feet wide prior to the vacation. This change the acreage of subject property by .11 of an acre.



A portion of the subject property does abut an alleyway (between 2700 and 2800). The other portion is open to the road. Laws prevent the applicants from fully vacating the rest of the street to the north that would prevent them from requesting a variance. This variance is necessary as there are exceptional or extraordinary circumstances or conditions applicable to the property involved which do not apply to other properties in the same zoning district. By allowing this variance it will additional room for the Single Family Dwelling, onsite septic system, driveway and access. Staff further finds after reviewing the Geotechnical report and application that this requires will not be detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the near vicinity. Therefore, staff is granted the variance to the side setback and allow the dwelling to have the same five (5) foot setback as other properties in the neighborhood.

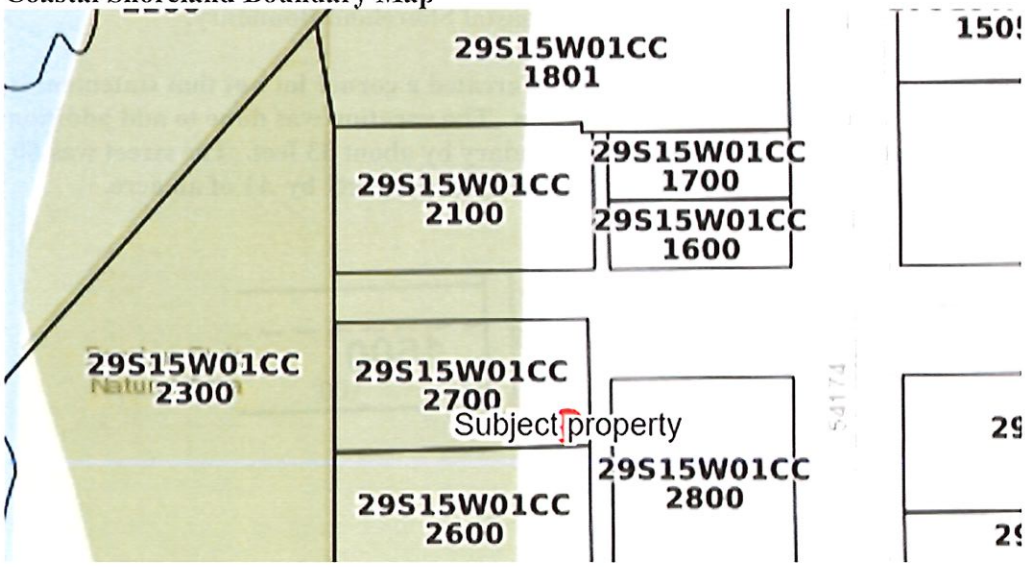
Therefore, the applicable criteria have been addressed.

d. SPECIAL DEVELOPMENT CONSIDERATIONS AND OVERALYS:

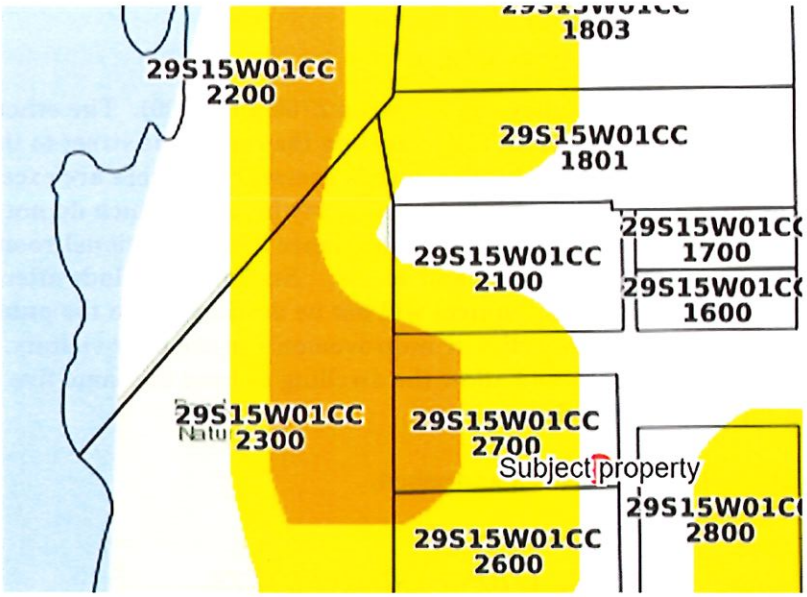
SECTION 4.11.125 Special Development Considerations: The considerations are map overlays that show areas of concern such as hazards or protected sites. Each development consideration may further restrict a use. Development considerations play a very important role in determining where development should be allowed In the Balance of County zoning. The adopted plan maps and overlay maps have to be examined in order to determine how the inventory applies to the specific site.

FINDING: The subject property is mapped in the regulated Coastal Shoreland Boundary, Beaches and Dunes with Limited Suitability for development along with Coastal Erosion that will be covered through the geohazard report. The property is outside the mapped flood hazard, landslide and liquefaction. The property is approximately 80 feet from the Statutory Vegetation Line and the eastern half of the property is inventoried in the Open Dune area.

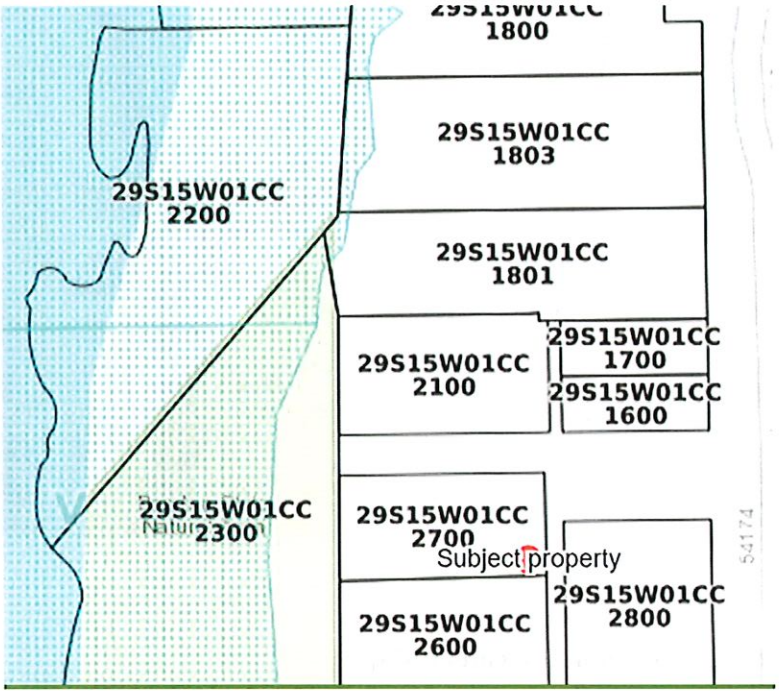
Coastal Shoreland Boundary Map



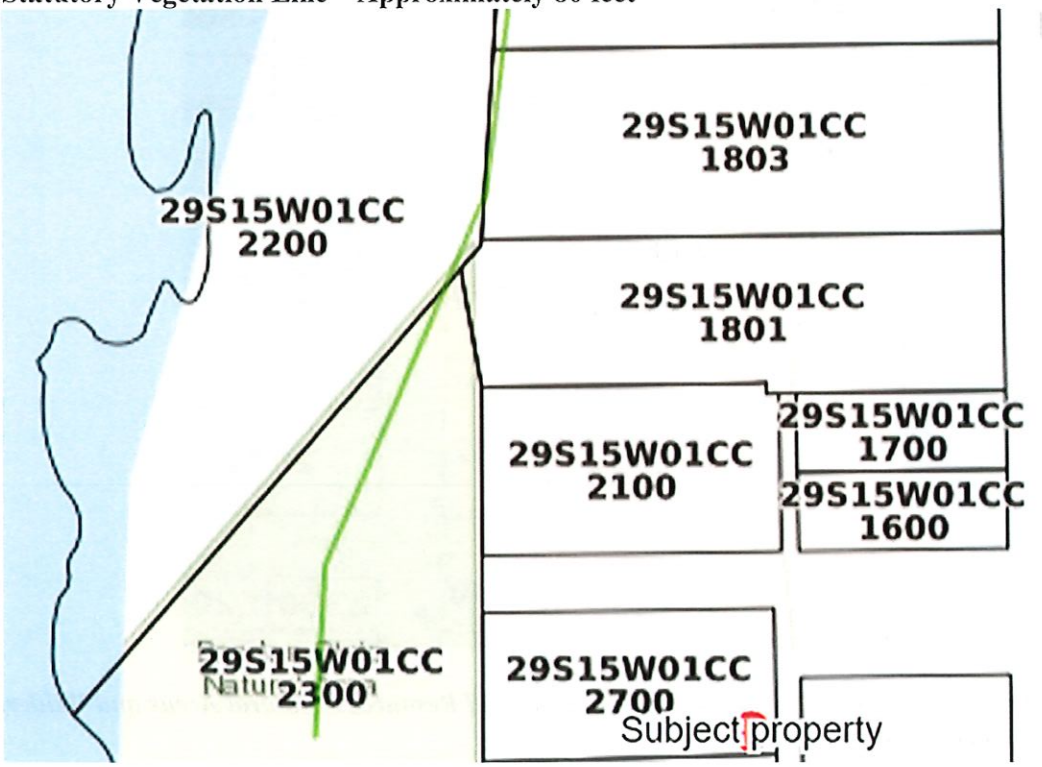
Landslide Map – Moderate and High but no the regulated Very High



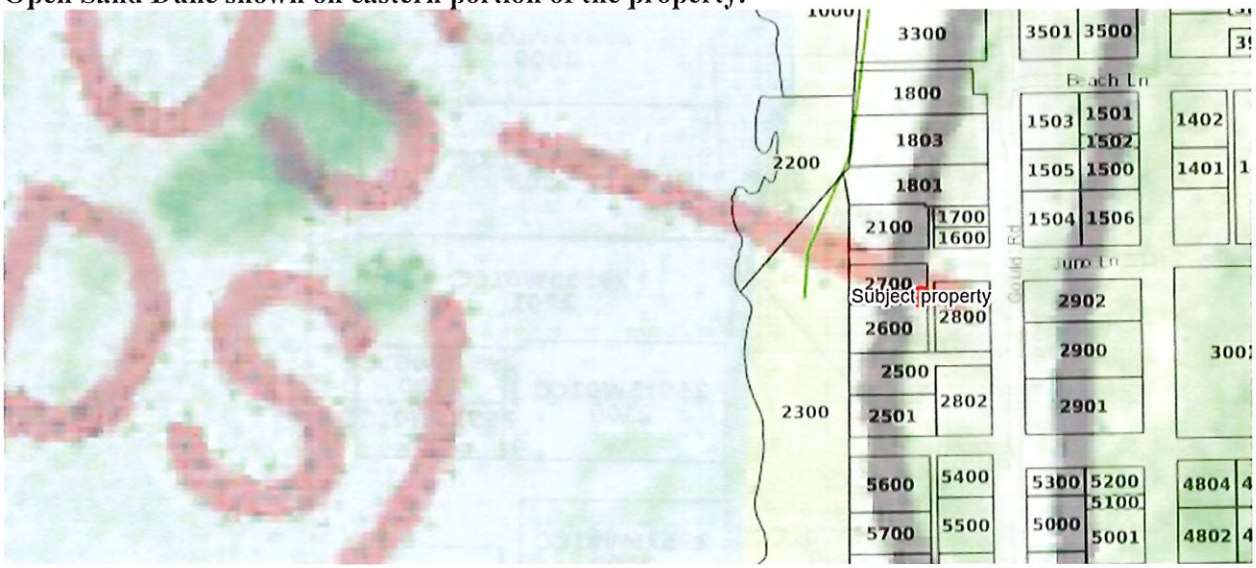
Flood Hazard



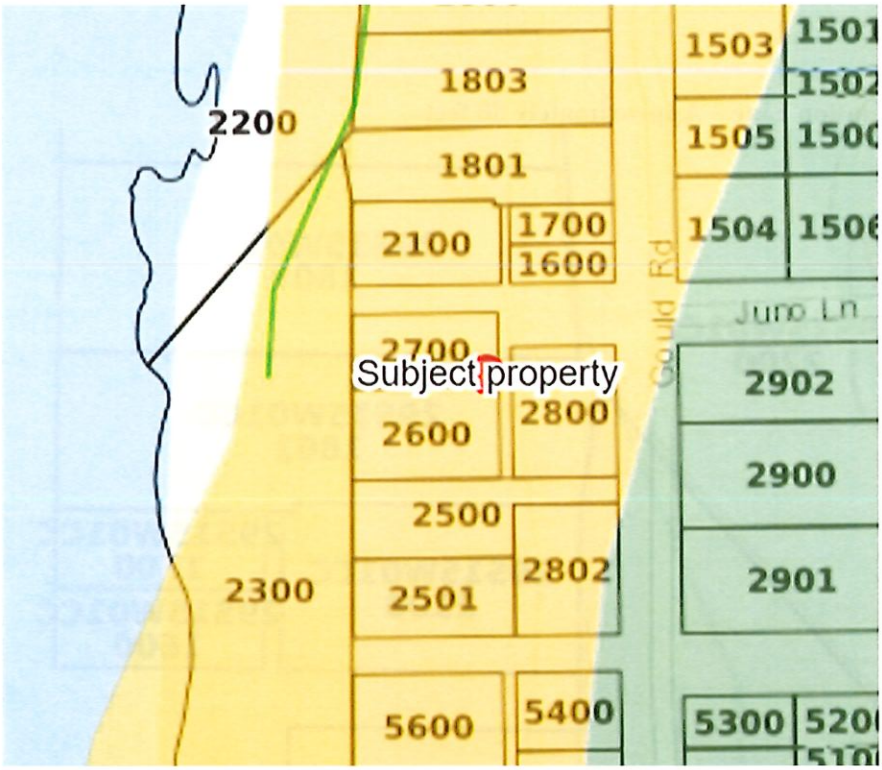
Statutory Vegetation Line – Approximately 80 feet



Open Sand Dune shown on eastern portion of the property.



Limited Suitability - Beaches and Dunes Inventory Map



- ***4.11.128 Historical, Cultural and Archaeological Resources, Natural Areas and Wilderness (Balance of County Policy 5.7)***

  The Historical/Archeological maps have inventoried the following:

- *Historical;*
- *Area of Archaeological Concern;*
- *Botanical; and*
- *Geological Resources.*

Purpose Statement:

*Coos County shall manage its historical, cultural and archaeological areas, sites, structures and objects so as to preserve their original resource value. This strategy recognizes that preservation of significant historical, cultural and archaeological resources is necessary to sustain the County's cultural heritage. ****

b. Areas of Archaeological Concern: Coos County shall continue to refrain from wide-spread dissemination of site-specific inventory information concerning identified archaeological sites. Rather, Coos County shall manage development in these areas so as to preserve their value as archaeological resources.

i. This strategy shall be implemented by requiring development proposals to be accompanied by documentation that the proposed project would not adversely impact the historical and archaeological values of the project's site. "Sufficient documentation" shall be a letter from a qualified archaeologist/historian and/or a duly authorized representative of a local Indian tribe(s).

FINDING: This property is close to a known archaeological site so a notice was provided to the Coquille Tribe. Due to the proximity to known cultural resources, we request that the landowner and/or contractor contact our office at (541) 808-5554 (Kassandra Rippee, Archaeologist/THPO) to schedule a Cultural during all ground-disturbing activities. Please schedule the monitor a minimum of 72-hours in advance of anticipated project start time.

- ***4.11.129 BEACHES AND DUNES (POLICY 5.10) - THE BEACHES AND DUNES MAP HAS INVENTORIED THE FOLLOWING: BEACHES AND DUNES***

  - *Suitable for most uses; few or no constraints (Does not require a review)*
  - *Limited Suitability; special measures required for most development*
  - *Not Suitable for Residential, commercial or Industrial Structures*

Purpose Statement:

Coos County shall base policy decisions for dunes on the boundaries for these areas as identified on the plan map titled "Development Potential within Ocean Shorelands and Dunes" and the boundaries delineates following specific areas "Suitable", "Limited Suitability" and "Not Suitable" areas of development potential.

a. Limited Suitability: "Beach and Dune Areas with Limited Development Suitability" includes all dune forms except older stabilized dunes, active foredunes, conditionally stable foredunes that are subject to ocean undercutting or wave overtopping, and interdune areas (deflation plains) subject to ocean flooding.

The measures prescribed in this policy are specifically required by Statewide Planning Goal #18 for the above-referenced dune forms; and that this strategy recognizes that designated mitigation sites must be protected from other uses.

Implementation shall occur through an Administrative Conditional Use process, which shall include submission of a site investigation report that addresses this subsection, by a qualified registered and licensed geologist or engineer.

FINDING: Based on a review of Coos County's Map Atlas, the site has been inventoried as having "limited suitability" for development potential within the Beach and Dune Area of Coos County. Further, the site is within an area of geologic hazards as identified by Coos County. As part of the planning and permitting process, Coos County will consider whether the site is suitable for the proposed development, whether development will impact other surrounding areas and if there were will be hazards to life, public and private property, and the natural environment which may be caused by the proposed development. There may be need for temporary and/or permanent stabilization along with planned maintenance of new and existing vegetation.

In response to the Special Development Consideration the applicant provided a Geotechnical Site Assessment Report from Cascadia Geoservices, Inc. for a project proposal; however, it is not indicated that a site plan of the exact development was supplied to the Engineering Geologist as part of this review but details were verbally explanation it provide enough information but a Geotechnical Report.

The report is written by Eric Oberbeck, Registered Engineering Geologist #1332. According to the geologic report the first site visit was on July 12, 2019, at which time a geologic reconnaissance of the site was completed, and two geotechnical borings were drilled east of the existing structure and the second site visit on March 13, 2020 at which time three geotechnical borings were completed west of the existing residential structure near the break in slope above the sea cliff. It was the understanding that the new structure would utilize as much of the western portion of the subject property as possible and to remove the existing structure and site a new structure. Further understand of the project explained was the foundation of the new structure would not be placed any further west than the location of the existing dwelling, because this option may require that the new structure be closer to the break in slope than the existing structure, and because of anticipated additional loads created by the cantilevered design it is the opinion of the professional that the new structure should be sited on a deep foundation system such as piles which are embedded in the underlying bedrock and this will require a structural engineer.

i. *Coos County shall permit development within areas designated as "Beach and Dune Areas with Limited Development Suitability" only upon the establishment of findings that consider at least:*
   a) *The type of use proposed and the adverse effects it might have on the site and adjacent areas;*
   b) *The need for temporary and permanent stabilization programs and the planned maintenance of new and existing vegetation;*
   c) *The need for methods for protecting the surrounding area from any adverse effects of the development; and*
   d) *Hazards to life, public and private property, and the natural environment which may be caused by the proposed use.*

FINDING: According to the report Geohazard Report page 8 and 9, *"[b]ased on our site observations, the subject property and surrounding area appeared stable at the time of our site visit. The younger foredunes at the base of the sea cliff are migrating to the south and appeared marginally stable. These dunes are being replaced by drifting sand and do not impact the overall stability of the site. It is the opinion that if the site is developed as proposed, the residential structure will not have an*

adverse impact on either the site or adjacent areas. We note that the site is currently developed with a residential structure and that there is no indication of an adverse impact on the stability of the dune. Also, it is our opinion that there is no need for temporary or permanent stabilization programs and/or maintenance of new and existing vegetation. Further, we see no hazards to life, public or private property, or to the natural environment by the proposed development." **Therefore, according to the stamped report the application meets the criteria of Subsection 4.11.129(i).**

ii. *Further, Coos County shall cooperate with affected local, state and federal agencies to protect the groundwater from drawdown, which would lead to loss of stabilizing vegetation, loss of water quality, or intrusion of saltwater into water supplies. Coos County shall cooperate with state and federal agencies in regulating the following actions in the beach and dune areas with limited development potential:*

a) *Destruction of desirable vegetation (including inadvertent destruction by moisture loss or root damage);*
b) *The exposure of stable and conditionally stable areas to erosion;*
c) *Construction of shore structures which modify current air wave patterns leading to beach erosion; and*
d) *Any other development actions with potential adverse impacts.*

FINDING: According to the report submitted if the site is developed in accordance with the recommendations, the proposed development will not cause destruction of desirable vegetation (including inadvertent destruction by moisture loss or root damage), cause exposure of stable and conditionally stable areas to erosion, or modify current air wave patterns leading to beach erosion. Staff is conditioning the development be constructed in accordance with the report and follow up to ensure these criteria will be met and continue to met through construction. Staff will continue to working state, federal and other local jurisdiction regarding water draw down and dune concerns. Therefore, according to the stamped report the application meets the criteria of Subsection 4.11.129(ii).

- ***4.11.130 Non-Estuarine Shoreland Boundary (Balance of County Policy 5.10)***
  The Coastal Shoreland Boundary map has inventoried the following:
  - *Coastal Shoreland Boundary*
  - *Beach Erosion*
  - *Coastal Recreation Areas*
  - *Area of Water-Dependent Uses*
  - *Riparian Vegetation*
  - *Fore Dunes*
  - *Head of Tide*
  - *Steep Bluffs over 50% Slope*
  - *Significant wetland wildlife habitats*
  - *Wetlands under agricultural use*
  - *Areas of Exceptional Aesthetic or Scenic Quality and Coastal Headlands*
  - *Headland Erosion*

Purpose Statement:
Protection of major marshes (wetlands), habitats, headlands, aesthetics, historical and archaeological sites: Coos County shall provide special protection to major marshes, significant wildlife habitat, coastal headlands, exceptional aesthetic resources, and historic and archaeological sites located within the Coastal Shorelands Boundary of the ocean, coastal lakes and minor estuaries. This strategy shall be implemented through plan designations and ordinance measures that limit uses in these special areas to those uses that are consistent with protection of natural values, such as propagation and selective

harvesting of forest products, grazing, harvesting wild crops, and low intensity water-dependent recreation. This strategy recognizes that special protective consideration must be given to key resources in coastal shorelands over and above the protection afforded such resources elsewhere in this plan.

Coos County shall consider:

i. "Major marshes" to include certain extensive marshes associated with dune lakes in the Oregon Dunes National Recreation Area and wetlands associated with New River as identified in the Inventory text and maps, and on the Special Considerations Map;

ii. "Significant wildlife habitat" to include "sensitive big-game range", Snowy Plover nesting areas, Bald Eagle, and Osprey nesting areas, Salmonid spawning and rearing areas, and wetlands;

iii. "Coastal headlands" to include Yoakum Point, Gregory Point, Shore Acres, Cape Arago south to Three-Mile Creek, Five Mile Point, and Coquille Point;

iv. "Exceptional resources Aesthetic or Scenic Quality" to include the coastal headlands identified above, and other areas identified in the Coastal Shorelands Inventory Map; and

v. "Historical, cultural and archaeological sites" to include those identified in the Historical, Cultural and Archaeological Sites Inventory and Assessment.

a. Uses allowed within the Coastal Shoreland Boundary: This strategy recognizes: (1) that Coos County's rural shorelands are a valuable resource and accordingly merit special consideration; and (2) that Statewide Planning Goal #17 places strict limitations on land divisions within coastal shorelands.

i. Uses within the Coastal Shoreland Boundary: Coos County shall manage its rural areas within the "Coastal Shorelands Boundary" of the ocean, coastal lakes and minor estuaries through implementing ordinance measures that allow the following uses:

a) Farm uses as provided in ORS 215;

b) Propagation and harvesting of forest products consistent with the Oregon Forest Practices Act.

c) private and public water dependent recreation developments;

d) aquaculture;

e) water-dependent commercial and industrial uses and water-related uses are allowed only upon finding by the Board of Commissioners that such uses satisfy a need, which cannot otherwise be accommodated on shorelands in urban and urbanizable areas;

f) single family residences on existing lots, parcels, or units of land when compatible with the objectives and implementation standards of the Coastal Shorelands goal, and as otherwise permitted by the underlying zone; or

g) any other uses, provided that the Board of Commissioners determines that such uses:

a. Satisfy a need which cannot be accommodated at other upland locations or in urban or urbanizable areas;

b. Are compatible with the objectives of Statewide Planning Goal #17 to protect riparian vegetation and wildlife habitat;

c. The "other" use complies with the implementation standard of the underlying zone designation; and

d. In addition, the above uses shall only be permitted upon a finding that such uses do not otherwise conflict with the resource preservation and protection policies established elsewhere in this plan.

ii. A site plan and design review is only necessary when required in Coos County Comprehensive Plan Volume I Part 3 § 3.5: Structures associated with the above uses, with the exception of farm and forest uses, shall only be permitted after an Administrative Conditional Use Review or higher review addressing the criteria and requirements of this subsection below and upon a finding that such uses do not otherwise conflict with the Special Development Considerations and Overlay Zones found in this Ordinance.

a) Site Review and Approval Criteria.

Construction, site development and landscaping shall be carried out in substantial accord with the plans, drawings, sketches and other documents as approved.

Nothing in this subsection shall be construed to prevent ordinary repair, maintenance and replacement of any part of the building or landscaping which does not involve a substantial change from the purpose and objectives of this section. Proposed "substantial changes" shall be submitted to the Planning Director for approval.

All variances from the site development criteria which are deemed necessary by the applicant shall be requested pursuant to ARTICLE 5.3.

These standards are intended to provide a frame of reference for the applicant to the development of a site and building plans as well as a method of review. These standards shall not be regarded as inflexible requirements, nor do they advocate any particular architectural style, for they are intended to encourage creativity, invention and innovation. The following standards shall be utilized in reviewing the plans, drawings, sketches and other documents required under for this review:

1. *Landscaping*
    a. *The landscape shall be such to minimize soil erosion and lessen the visual impact;*
    b. *Any grade changes shall be in keeping with the general appearance of neighboring developed areas.*
2. *Structures*
    a. *Proposed structures shall be related harmoniously to the terrain and to existing buildings in the vicinity that have a visual relationship to the proposed buildings;*
    b. *The achievement of such relationship may include the enclosure of space in conjunction with other existing buildings or other proposed buildings and the creation of focal points with respect to avenues of approach, terrain features or other buildings.*
3. *Drives, Parking and Circulation*
    With respect to vehicular and pedestrian circulation, including walkways, interior drives and parking, special attention shall be given to the location and number of access points, general interior circulation, separation of pedestrian and vehicular traffic, and arrangement of parking areas that are safe and convenient and must comply with the standards found in Chapter VII. The Roadmaster is responsible for determining compliance with this subsection.
4. *Surface Water Drainage*
    Special attention shall be given to proper site surface drainage so that removal of surface waters will not adversely affect neighboring properties, the public storm drainage system, or create environmental problems.
5. *Utility Service*
    a. *Whenever feasible, electric, telephone and other utility lines shall be underground;*
    b. *Any utility installations remaining above ground shall be located so as to have an harmonious relation to neighboring properties and the site;*
    c. *The proposed method of sanitary sewage disposal from all buildings shall be indicated.*

b) Application Submittal and Review Procedure.

1. *Submission of Documents - A prospective applicant for a building or other permit who is subject to site design review shall submit the following to the County Planning Director:*
    a. *A site plan, drawn to scale, shows the proposed layout of all structures and other improvements;*
    b. *A landscape plan, drawn to scale, showing the location of existing trees proposed to be retained on the site, the location and design of landscaped areas, the varieties and sizes of trees and plant materials to be planted on the site, other pertinent landscape features, and irrigation systems required to maintain trees and plant materials;*
    c. *Architectural drawings or sketches, drawn to scale, including floor plans, in sufficient detail to permit computation of yard requirements and showing all elevations of the proposed structures and other improvements as they will appear on completion of construction;*
    d. *Specifications as to type, color and texture of exterior surfaces of proposed structures including reflective surfaces of solar collectors;*
    e. *An application request which shall include:*
        1) *Name and address of applicant;*
        2) *Statement of applicant's legal interest in the property (owner, contract purchaser, lessee, renter, etc.) and a description of that interest, and in case the applicant is not the owner, verification of the owner's consent;*
        3) *Address and legal description of the property;*
        4) *Statement explaining the intended request;*
        5) *The required fee; and*
        6) *Any other materials or information as may be deemed necessary to assist in evaluation of the request. The request will be made prior to deeming the application complete. However, if this review is before the hearings body they may request for additional information to ensure compliance.*
2. *Threshold Standard. The Planning Director has the discretion to waive part or all of the site plan requirements if, in the Director's judgment, the proposed development is "de minimis" in extent to the existing development.*

FINDING: A *single family residences on existing lots, parcels, or units of land when compatible with the objectives and implementation standards of the Coastal Shorelands goal, and as otherwise permitted by the underlying zone. Furthermore, Structures associated with the above uses (Single Family Dwelling), shall only be permitted after an Administrative Conditional Use Review or higher review addressing the criteria and requirements of this subsection below and upon a finding that such uses do not otherwise conflict with the Special Development Considerations and Overlay Zones found in this Ordinance.* These criteria require a site plan to address landscaping, structures, parking and driveway circulation, surface water drainage and utilities. Staff was not able to locate the plans as required under Subsection b or a request to waive any portion of the requirement. Staff understands that a structural engineer will need to review any final plans and this site is already used for a Single-Family Dwelling. Therefore, staff can find that this criterion can be met but to ensure compliance a final plan with all elements will be submitted prior to a final Zoning Compliance Letter is issued.

- ***4.11.132 Natural Hazards (Balance of County Policy 5.11)****
    - **Wildfire**
    f. Wildfires: Coos County shall promote protection of property from risks associated with wildfires. New development or substantial improvements shall, at a minimum, meet the following standards, on parcels designated or partially designated as "High" or "Moderate" risk on the

Oregon Department of Forestry 2013 Fire Threat Index Map for Coos County or as designated as at-risk of fire hazard on the 2015 Coos County Comprehensive Plan Natural Hazards Map:

1. *The dwelling shall be located within a fire protection district or shall be provided with residential fire protection by contract. If the dwelling is not within a fire protection district, the applicant shall provide evidence that the applicant has asked to be included within the nearest such district or is provided fire protection by contract.*
2. *When it is determined that these standards are impractical the Planning Director may authorize alternative forms of fire protection that shall comply with the following:*
    a. *The means selected may include a fire sprinkling system, onsite equipment and water storage or other methods that are reasonable, given the site conditions, as established by credible documentation approved in writing by the Director;*
    b. *If a water supply is required for fire protection, it shall be a swimming pool, pond, lake, or similar body of water that at all times contains at least 4,000 gallons per dwelling or a stream that has a continuous year round flow of at least one cubic foot per second per dwelling;*
    c. *The applicant shall provide verification from the Water Resources Department that any permits or registrations required for water diversion or storage have been obtained or that permits or registrations are not required for the use; and*
    d. *Road access shall be provided to within 15 feet of the water's edge for firefighting pumping units. The road access shall accommodate the turnaround of firefighting equipment during fire season. Permanent signs shall be posted along the access route to indicate the location of the emergency water source.*
3. *Fire Siting Standards for New Dwellings:*
    a. *The property owner shall provide and maintain a water supply of at least 500 gallons with an operating water pressure of at least 50 PSI and sufficient ¾ inch garden hose to reach the perimeter of the primary fuel-free building setback.*
    b. *If another water supply (such as a swimming pool, pond, stream, or lake) is nearby, available, and suitable for fire protection, then road access to within 15 feet of the water's edge shall be provided for pumping units. The road access shall accommodate the turnaround of firefighting equipment during the fire season. Permanent signs shall be posted along the access route to indicate the location of the emergency water source.*
4. *Firebreak:*
    a. *A firebreak shall be established and maintained around all structures, including decks, on land owned or controlled by the applicant for a distance of at least 30 feet in all directions.*
    b. *This firebreak will be a primary safety zone around all structures. Vegetation within this primary safety zone may include mowed grasses, low shrubs (less than ground floor window height), and trees that are spaced with more than 15 feet between the crowns and pruned to remove dead and low (less than 8 feet from the ground) branches. Accumulated needles, limbs and other dead vegetation should be removed from beneath trees.*
    c. *Sufficient garden hose to reach the perimeter of the primary safety zone shall be available at all times.*
    d. *The owners of the dwelling shall maintain a primary fuel-free break area surrounding all structures and clear and maintain a secondary fuel-free break on land surrounding all structures that is owned or controlled by the owner in accordance with the provisions in "Recommended Fire Siting Standards for Dwellings and Structures and Fire Safety Design Standards for Roads" dated March 1, 1991, and published by Oregon Department of Forestry and shall demonstrate compliance with Table 1.*

Table 1 – Minimum Primary Safety Zone

Slope	*Feet of Primary Safety Zone*	*Feet of Additional Primary Safety Zone Down Slope*
0%	*30*	*0*
10%	*30*	*50*
20%	*30*	*75*
25%	*30*	*100*
40%	*30*	*150*

e. *All new and replacement structures shall use non-combustible or fire resistant roofing materials, as may be approved by the certified official responsible for the building permit.*
f. *If a water supply exceeding 4,000 gallons is suitable and available (within 100 feet of the driveway or road) for fire suppression, then road access and turning space shall be provided for fire protection pumping units to the source during fire season. This includes water supplies such as a swimming pool, tank or natural water supply (e.g. pond).*
g. *The structure shall not be sited on a slope of greater than 40 percent.*
h. *If the structure has a chimney or chimneys, each chimney shall have a spark arrester.*
i. *Except for private roads and bridges accessing only commercial forest uses, public roads, bridges, private roads, and driveways shall be constructed so as to provide adequate access for firefighting equipment. Confirmation shall be provided from the Coos County Road Department or local fire protection district that these standards have been met.*

5. *Wildfires inside urban growth boundaries. Certain areas inside urban growth boundaries may present special risks and may be made subject to additional or different standards and requirements jointly adopted by a city and the county in the form of code requirements, master plans, annexation plans, or other means.*

FINDING: This property is mapped in a wildfire hazard area due to gorse. The property is with the Bandon Fire District. The applicant did not adequately address the fire portion of the application. Setbacks will need to be maintained and shall be included in the final site plan. Therefore, this has been addressed.

- **OVERLAYS - FLOATING ZONE: AIRPORT SURFACES**

DESIGNATION: /AS
Bandon, Lakeside and Powers Airports
SECTION 4.11.300 Purpose:
The purpose of the Airport Surface Floating zone is to protect public health, safety and welfare. It is recognized that obstructions to aviation have potential for endangering the lives and property of users of selected airports, and property of occupancy of land in the airport's vicinity. An obstruction may affect future instrument approach minimums and obstructions may reduce the area available for the landing, take-off and maneuvering of aircraft, thus tending to destroy or impair the utility of the airport and the public investment therein.

SECTION 4.11.305 Designation of Airport Surfaces:
Those lands lying beneath the approach surfaces, transition surfaces, horizontal surfaces and conical surfaces as they apply to the "Bandon, Lakeside and Powers Airports Approach and Clear Zone Inventory Map" shall be subject to the requirements of this floating zone. Southwest Regional Airport Surfaces (AKA North Bend Municipal Airport) regulations can be found in Sections 4.11.400 through 4.11.460.

SECTION 4.11.310 Airport Sub-Zones:
*Sub-zones are hereby established and defined as follows: ****

3. *Horizontal Conical Zone – The horizontal conical zone is established by swinging arcs of 9,000 feet radii from the center of each end of the primary surface of each runway and connecting the adjacent arcs by drawing lines tangent to those arcs. The horizontal conical zone does not include the approach and transitional zones*

SECTION 4.11.315 Airport Surfaces Height Limitations:
Notwithstanding other provisions of this Ordinance, no structure shall be created or altered to a height in excess of the applicable height limits herein established. Such applicable height limitations are hereby established:***

3. Horizontal Conical Zone – Maximum allowable height = 35 feet.

FINDING: This property is within the Horizontal Conical zone which has a limitation of 35 feet for building. This structure is limited to this height also because it is located with the Urban Growth Boundary of Bandon. This will be complied with. A request for comments was made to Department of Aviation and no additional requirements were suggested.

IV. DECISION:

The proposed Single Family Dwelling within the Beaches and Dunes with Limited Development Suitability, Coastal Shoreland Boundary, Wildfire Overlay and Airport Overlay along with the Variance to the setbacks meets the requirements of the Coos County Zoning and Land Development Ordinance, with conditions listed in Exhibit "A" of this report.

V. EXPIRATION:

The conditional use will not expire; however, a Geotechnical Report is only valid for a period of five (5) years.

VI. NOTICE REQUIREMENTS:

A notice of decision will be provided to property owners within 100 feet of the subject properties and the following agencies, special districts, or parties: Bandon Rural Fire Protection District & Southern Coos General Health Department.

A Notice of Decision and Staff Report will be provided to the following:
Applicants/Owners, Department of Land Conservation and Development, Coos Health and Wellness, Planning Commission and Board of Commissioners.

Adjacent property owners will receive a Notice of Decision and maps, but all other attachments can be found by contacting the Planning Department or visiting the website. If not found on the website the public may contact the department to view the official record.

COQUILLE INDIAN TRIBE
3050 Tremont Ave. North Bend, OR 97459
Telephone: (541) 756-0904 ~ Fax: (541) 756-0847
www.coquilletribe.org

May 19, 2021

Coos County Planning Department
250 N Baxter
Coquille, Oregon 97429

Re: V-21-001_ACU-21-033_ACU-21-034

Project location: 54182 Gould Rd, Bandon, OR 97411

Thank you for the opportunity to comment on the proposal to construct a new single-family dwelling at the above referenced location. Our records show known cultural resources within extreme proximity to the project area.

Due to the proximity to known cultural resources, we request that the landowner and/or contractor contact our office at (541) 808-5554 (Kassandra Rippee, Archaeologist/THPO) to schedule a Cultural Resource Monitor to be on site during all ground-disturbing activities. Please schedule the monitor a **minimum of 72-hours** in advance of anticipated project start time.

Please be aware that state statutes and federal law governs how archaeological sites are to be managed. 43 CFR 10 applies on tribal and federal lands, federal projects, federal agencies, as well as to federal actions and federally funded (directly or indirectly) projects. ORS 97.745 prohibits the willful removal, mutilation, defacing, injury, or destruction of any cairn, burial, human remains, funerary objects, or objects of cultural patrimony of a Native Indian. ORS 358.920 prohibits excavation, injury, destruction, or alteration of an archaeological site or object, or removal of an archaeological object from public or *private lands*. If archaeological materials are discovered, uncovered, or disturbed on the property, we will discuss the appropriate actions with all necessary parties.

Thank you again and feel free to contact me if you have any questions.

Masi (thank you),

Todd Martin
Tribal Historic Preservation Specialist

CRT21204

Michelle Berglund

From: THOMPSON Seth <Seth.THOMPSON@aviation.state.or.us>
Sent: Monday, May 17, 2021 9:58 AM
To: Michelle Berglund
Cc: Planning Department
Subject: RE: V-21-001/ACU-21-033/ACU-21-034 Klein & Shakin

This Message originated outside your organization.

Good morning Michelle,

The Oregon Department of Aviation (ODA) has no comment on File Number: V-21-001/ACU-21-033/ACU-21-034 Klein & Shakin.

Thank you for allowing the ODA to comment on this proposal.

Please let me know if you have any questions.

Best regards,

Seth Thompson
OREGON DEPARTMENT OF AVIATION
AVIATION PLANNER

OFFICE 503-378-2529 **CELL** 503-507-6965
EMAIL seth.thompson@aviation.state.or.us
3040 25TH STREET SE, SALEM, OR 97302
WWW.OREGON.GOV/AVIATION

From: Michelle Berglund <mberglund@co.coos.or.us>
Sent: Wednesday, May 5, 2021 3:00 PM
To: PECK Heather <heather.peck@aviation.state.or.us>; THOMPSON Seth <Seth.THOMPSON@aviation.state.or.us>
Cc: Planning Department <planning@co.coos.or.us>
Subject: V-21-001/ACU-21-033/ACU-21-034 Klein & Shakin

Good afternoon;
Please find attached the application for Nicholas Klein and Diane Shakin. They are applying for a variance so they can build a home on their property. The application is long so it has been split over several exhibits.

Please let us know any questions, concerns, or comments you might have.

Thank you so much!

Coos County Planning Dept
Michelle, Planning Aide
planning@co.coos.or.us

Disclaimer

Coos County Land Use Permit Application

SUBMIT TO COOS COUNTY PLANNING DEPT. AT 225 N. ADAMS STREET OR MAIL TO: COOS COUNTY PLANNING 250 N. BAXTER. COQUILLE OR 97423. EMAIL PLANNING@COOSCOUNTY.US PHONE: 541-396-7770

FILE NUMBER: V-21-001/ACU-21-033/ ACU-21-034

Date Received: 5/3/21 *Receipt #:* 224366 *Received by:* A. Dibble

This application shall be filled out electronically. If you need assistance please contact staff.

If the fee is not included the application will not be processed.
(If payment is received on line a file number is required prior to submittal)

LAND INFORMATION

A. Land Owner(s) Nicholas Klein and Diane Shakin

Mailing address: 3039 Dannyhill Drive, Los Angeles, California 90064-4627

Phone: _____ Email: dianeshakin@gmail.com nick@nfkrelaw.com

Township:	Range:	Section:	¼ Section:	1/16 Section:	Tax lots:
29S	15W	1	C	C	2700
Select	Select	Select	Select	Select	

Tax Account Number(s): 2936972

Tax Account Number(s) _____

Zone: Select Zone Controlled Development (CD)

Please Select

B. Applicant(s) Nicholas Klein and Diane Shakin

Mailing address: 3039 Dannyhill Drive, Los Angeles, California 90064-4627

Phone: _____

C. Consultant or Agent: Stuntzner Engineering and Forestry L.L.C. C/O Chris Hood

Mailing Address PO Box 118, Coos Bay, Oregon, 97420

Phone #: 541-267-2872 Email: chood@stuntzner.com

Type of Application Requested

- ☐ Comp Plan Amendment
- ☐ Text Amendment
- ☐ Map - Rezone
- ☑ Administrative Conditional Use Review - ACU
- ☐ Hearings Body Conditional Use Review - HBCU
- ☑ Variance - V
- ☐ Land Division - P, SUB or PUD
- ☐ Family/Medical Hardship Dwelling
- ☐ Home Occupation/Cottage Industry

Special Districts and Services

Water Service Type: City Water

Sewage Disposal Type: On-Site Septic

School District: Bandon

Fire District: Bandon RFPD

Please include the supplement application with request. If you need assistance with the application or supplemental application please contact staff. Staff is not able to provide legal advice. If you need help with findings please contact a land use attorney or contultant.

Any property information may be obtained from a tax statement or can be found on the County Assessor's webpage at the following links: Map Information Or Account Information ARC, AIR

D. ATTACHED WRITTEN STATEMENT. With all land use applications, the "burden of proof" is on the applicant. It is important that you provide information that clearly describes the nature of the request and indicates how the proposal complies with all of the applicable criteria within the Coos County Zoning and Land Development Ordinance (CCZLDO). You must address each of the Ordinance criteria on a point-by-point basis in order for this application to be deemed complete. A planner will explain which sections of the Ordinance pertain to your specific request. The information described below is required at the time you submit your application. The processing of your application does not begin until the application is determined to be complete. An incomplete application will postpone the decision, or may result in denial of the request. Please mark the items below to ensure your submittal is complete.

Application Check List: Please make off all steps as you complete them.

I. ☑ A written statement of intent, attached to this application, with necessary supporting evidence which fully and factually describes the following:
   1. ☑ A complete explanation of how the request complies with the applicable provisions and criteria in the Zoning Ordinance. A planner will explain which sections of the Ordinance pertain to your specific request. You must address each of the Ordinance criteria on a point-by-point basis in order for this application to be deemed complete.
   2. ☑ A description of the property in question, including, but not limited to the following: size, vegetation, crops grown, access, existing buildings, topography, etc.
   3. ☑ A complete description of the request, including any new structures proposed.
   4. ☑ If applicable, documentation from sewer and water district showing availability for connection.

II. ☑ A plot plan (map) of the property. Please indicate the following on your plot plan:
   1. ☑ Location of all existing and proposed buildings and structures
   2. ☑ Existing County Road, public right-of-way or other means of legal access
   3. ☑ Location of any existing septic systems and designated repair areas
   4. ☑ Limits of 100-year floodplain elevation (if applicable)
   5. ☑ Vegetation on the property
   6. ☑ Location of any outstanding physical features
   7. ☑ Location and description (paved, gravel, etc.) of vehicular access to the dwelling location

III. ☑ A copy of the current deed, including the legal description, of the subject property. Copies may be obtained at the Coos County Clerk's Office.

I certify that this application and its related documents are accurate to the best of my knowledge. I am aware that there is an appeal period following the date of the Planning Director's decision on this land use action. I understand that the signature on this application authorizes representatives of the Coos County Planning Department to enter upon the subject property to gather information pertinent to this request. If the application is signed by an agent, the owner's written authorization must be attached.

If this application is refereed directly to a hearings officer or hearings body I understand that I am obligated to pay the additional fees incurred as part of the conditions of approval. I understand that I/we are not acting on the county's behalf and any fee that is a result of complying with any conditions of approval is the applicants/property owner responsibility. I understand that conditions of approval are required to be complied with at all time and an violation of such conditions may result in a revocation of this permit.

X _____ 4/30/21

X _____ 4/30/21

EXHIBIT "A"

KLEIN/SHAKIN VARIANCE
LOCATED IN T.29, R.15, S.01CC, TL 2700

PURPOSE, AND INTENT OF THIS APPLICATION

The purpose and intent of this application is three fold. The applicant is requesting a variance (Variance #1) to the 15 foot side yard setback as required for corner lots in the applicable Controlled Development (CD-10) zone district. The applicant is also requesting a variance (Variance #2) to the 35 foot setback from center line of an existing road that has been applied to all zone districts, as the direct result of a recent Ordinance Amendment. The applicant is also addressing natural hazards, special development consideration and development in the Coastal Shoreland Boundary.

VARIANCE #1 BACKGROUND AND FINDING

The applicant's property contains 0.20 acres, is zoned Controlled Development (CD-10), and is located at 54182 Gould Road, as more specifically identified above. As a result of a 1990 vacation, the Northerly 33 feet (approx.) of the property contains vacated Juno Lane. That vacated portion of the applicant's property now fronts the remaining portion of Juno Lane to the north and to the east, essentially making the property a corner lot.

For corner lots, the Coos County Zoning and Land Development Ordinance (CCZLDO) requires a residential setback of 20 feet along the frontage streets, and a 15 foot setback along the side street in the CD-10 District. The frontage street is defined as the street from which access is provided to the property. Access to the property is determined by the street that the garage/driveway faces for ingress and egress. The applicant's garage will face east toward the property's east frontage with Juno Lane, and will require a 20 foot setback. The portion of Juno Lane fronting the property's north boundary is therefore considered the side street and would normally require a 15 foot setback.

The westerly boundary of the subject property fronts Oregon State Parks lands for approximately 67 feet. It is highly unlikely that the state land, with a steep westerly facing slope to the Pacific Ocean and a coastal shoreland overlay, will ever be utilized for any type of development. The portion of Juno Lane lying north of the subject property averages approximately 27 feet in width and also ends where it fronts the state land to the west. Because of its narrow width, the Juno right-of-way does not meet the minimum Urban Road Standards pursuant to Chapter 7 (Transportation) CCZLDO. The narrow width does not allow for appropriate ingress and egress, parking, or a turn-around for emergency or vehicular traffic. Where Juno terminates at the State Park land to the west, the slopes to the beach are extreme and not conducive to any type of road or street development. Therefore, it is very unlikely that the right-of-way will ever be utilized for anything other than a pedestrian pathway to the beach.

The applicant's plan is to construct a new residential dwelling and because the property directly overlooks the Pacific Ocean to the west, it is logical that they wish to design their dwelling to maximize their westerly view shed. They are therefore requesting a 10 foot variance to the required 15 foot side yard setback along Juno Lane to the north. The requested variance will result in a 5.0 foot setback requirement from the applicant's north boundary.

The purpose of maintaining corner lot setbacks is to maintain vision clearance for vehicular traffic in all directions when approaching a right-of-way intersection. However, the property is a corner lot as a result of the 1990 vacation, and no intersection exists where the lot fronts Juno Lane on two sides.

The intent of this application is to request a 10 foot variance to the 15 foot side yard setback for corner lots based upon exceptional or extraordinary circumstances or conditions applicable to the property. If granted, the side yard setback will be 5 feet along the property's Northern boundary.

ARTICLE 5.3. VARIANCES

SECTION 5.3.100 GENERAL:

Practical difficulty and unnecessary physical hardship may result from the size, shape, or dimensions of a site or the location of existing structures thereon, geographic, topographic or other physical conditions on the site or in the immediate vicinity, or, from population density, street location, or traffic conditions in the immediate vicinity. Variances may be granted to overcome unnecessary physical hardships or practical difficulties. The authority to grant variances does not extend to use regulations, minimum lot sizes or riparian areas within the Coastal Shoreland Boundary.

APPLICANT'S RESPONSE: The request for a variance is based upon the fact that a street vacation resulted in the creation of a corner lot. However, the applicable corner lot setbacks subject to this variance are intended to alleviate hazardous traffic conditions that do not apply to this particular situation. In other words, there are exceptional and extraordinary circumstances or conditions applicable to the property that justify a variance to the required setback.

SECTION 5.3.150 SELF-INFLICTED HARDSHIPS:

A variance shall not be granted when the special circumstances upon which the applicant relies are a result of the actions of the applicant, current owner(s) or previous owner(s) willful violation.

This does not mean that a variance cannot be granted for other reasons.

APPLICANT'S RESPONSE: The request for a variance is based upon the fact that a street vacation resulted in the creation of a corner lot. However, the applicable corner lot setbacks subject to this variance are intended to alleviate hazardous traffic conditions that do not apply to this particular situation. The special circumstances upon which the applicant relies are not a result a willful violation.

SECTION 5.3.200 VARIANCE:

The Planning Director shall consider all formal requests for variances for zoning and land development variances.

SECTION 5.3.350 CRITERIA FOR APPROVAL OF VARIANCES:

No variance may be granted by the Planning Director unless, on the basis of the application, investigation, and evidence submitted;

1. Both findings "a" and "b" below are made:

    a. One of the following circumstances shall apply:

        i. That a strict or literal interpretation and enforcement of the specified requirement would result in unnecessary physical hardship and would be inconsistent with the objectives of this Ordinance;

        ii. That there are exceptional or extraordinary circumstances or conditions applicable to the property involved which do not apply to other properties in the same zoning district; or

APPLICANT'S RESPONSE: The applicant's property contains 0.20 acres and is zoned Controlled Development (CD-10). As a result of a 1990 vacation, the Northerly 33 feet (approx.) of the property consists of vacated Juno Lane. That vacated portion of the applicant's ownership now fronts the remaining portion of Juno Lane to the north, and the northeast 33 feet of the parcel fronts Juno Lane along its east boundary. The remaining portion of the applicant's east boundary (34 feet) fronts an un-improved alley that is 12 feet in width.

For corner lots, the Coos County Zoning and Land Development Ordinance requires a residential setback of 20 feet along the frontage street, and a 15 foot setback along the side street in the CD-10 District. The frontage street is defined as the street from which access is provided to the property. Access to the property is determined by the street that the garage/driveway faces for ingress and egress. The applicant's garage will face east toward the property's east frontage with Juno Lane, and will require a 20 foot setback. The portion of Juno Lane fronting the property's north boundary is therefore considered the side street and would normally require a 15 foot setback.

The westerly boundary of the subject property fronts Oregon State Parks lands for approximately 67 feet. It is highly unlikely that the state land, with a steep westerly facing slope to the Pacific Ocean and a coastal shoreland overlay, will ever be utilized for any type of development. The portion of Juno Lane lying north of the subject property averages approximately 27 feet in width and also ends where it fronts the state land to the west. Because of its narrow width, the Juno right-of-way does not meet the minimum Urban Road Standards pursuant to Chapter 7 (Transportation) CCZLDO. The narrow width does not allow for appropriate ingress and egress, parking, or a turn-around for emergency or vehicular traffic. Where Juno terminates at the State Park land to the west, the slopes to the beach are extreme and not conducive to any type of road or street development. Therefore, it is very unlikely that the right-of-way will ever be utilized for anything other than a pedestrian pathway to the beach.

The purpose of maintaining corner lot setbacks is to maintain vision clearance for vehicular traffic in all directions when approaching a right-of-way intersection. However, the property is a corner lot as a result of the 1990 vacation, and no intersection exists where the lot fronts Juno Lane to the east.

With consideration to the fact that the property is a corner lot by frontage as a result of a partial vacation, and not by function as with a corner lot created by frontage at the intersection of two streets, there are

clearly exceptional or extraordinary circumstances or conditions applicable to the property involved which do not apply to other properties in the same zoning district.

iii. That strict or literal interpretation and enforcement of the specified regulation would deprive the applicant of privileges legally enjoyed by the owners of other properties or classified in the same zoning district;

b. That the granting of the variance will not be detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the near vicinity.

APPLICANT'S RESPONSE: The intent of maintaining corner lot setbacks is to maintain visual clearance for vehicular traffic in all directions when approaching a right-of-way intersection. However, the property is a corner lot as a result of the 1990 vacation, and no intersection exists where the lot fronts Juno Lane on two sides. Therefore granting of the variance will not be detrimental to the public health, safety, or welfare, or materially injurious to properties or improvements in the near vicinity.

2. That the granting of the variance will not be detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the near vicinity.

APPLICANT'S RESPONSE: See (b.) above

3. In addition to the criteria in (1) above, no application for a variance to the Airport Surfaces Floating Zone may be granted by the Planning Director unless the following additional finding is made: "the variance will not create a hazard to air navigation".

APPLICANT'S RESPONSE: The requested variance is to a side yard setback and will have no impact to air navigation.

4. In lieu of the criteria in (1) above, an application for a variance to the FP zone requirements shall comply with Section 4.6.227.

APPLICANT'S RESPONSE: The subject property is not located within a Flood Plain overlay.

5. Variance regulations in CCZLDO Article 5.3 shall not apply to Sections 4.11.400 through 4.11.460, Chapter VII and Chapter VIII.

APPLICANT'S RESPONSE: The requested variance is to the setback requirement of Section 4.3.230(3)(c)(2) and does not apply to Sections 4.11.400 through 4.11.460, Chapter VII and Chapter VIII.

CONCLUSION

The requested variance is based upon the fact that the side street of the corner lot will never be developed as a vehicular thoroughfare and the corner lot is not situated at an intersection. Therefore, the side yard is no different than any other side yard in a standard lot and block development.

While the applicant has chosen to address Section 5.3.350(1)(a)(ii), and the exceptional circumstances that exist, those circumstances also give merit to subsections (i) and (iii). The strict interpretation and enforcement would result in an unnecessary hardship by reducing the area of the applicant's ownership

that is allowed for development. Also, the strict enforcement would deprive the applicant of privileges enjoyed by other property owners that do not front intersections for which the setbacks are designed.

The circumstances that were created as a result of a street vacation are not the conditions for which corner lot setbacks are intended. However, the hardship associated with this type of situation is clearly what variances are intended to cure. The applicant therefore requests approval of a 10 foot variance to the required 15 foot standard.

VARIANCE #2 BACKGROUND AND FINDING

APPLICANT'S RESPONSE: The applicant's property contains 0.20 acres and is zoned Controlled Development (CD-10). As a result of a 1990 vacation, the Northerly 33 feet (approx.) of the property consist of vacated Juno Lane. That vacated portion of the applicant's ownership now fronts the remaining portion of Juno Lane to the north, and the northeast 33 feet of the parcel fronts Juno Lane along its east boundary. The remaining portion of the applicant's east boundary (34 feet) fronts an un-improved alley that is 12 feet in width.

Pursuant to Section 4.3.225(7)(a) all development in all zone districts is now subject to the following:

> (a) All Development with the exception of fences shall be set back a minimum of thirty-five (35) feet from any road right-of-way centerline, or five (5) feet from the right-of-way line, whichever is greater. This setback may be greater under specific zoning siting requirements.

APPLICANT'S RESPONSE: The applicant's property fronts Juno Lane to both the north and to the east. However, the road "right of way" runs both east and west and there is no "right-of-way centerline" along that portion of Juno Lane fronting the east boundary of the applicant's parcel. Therefore, this variance request only applies to the parcel frontage on Juno Lane to the North.

The remaining non-vacated portion of Juno Lane where it fronts the applicant's property is 26.90 feet in width at its east end and 27.53 feet at its west end. The centerline of the remaining right-of-way is 13.45 feet at the east end and 13.77 feet at the west end, from the north boundary of the applicant's parcel. The required 35 foot setback from the centerline of remaining Juno Lane would extend south, 21.55 feet at the east end and 21.23 feet at the west end, of the applicant's north boundary. The applicant is requesting a setback variance of 16.55 feet at the east end and 16.23 feet at the west end, from his north line. The request variance will result in a 5.0 foot setback requirement from the applicant's north boundary.

ARTICLE 5.3. VARIANCES

SECTION 5.3.100 GENERAL:

Practical difficulty and unnecessary physical hardship may result from the size, shape, or dimensions of a site or the location of existing structures thereon, geographic, topographic or other physical conditions on the site or in the immediate vicinity, or, from population density, street location, or traffic conditions in the immediate vicinity. Variances may be granted to overcome unnecessary physical hardships or practical difficulties. The authority to grant variances does not extend to use regulations, minimum lot sizes or riparian areas within the Coastal Shoreland Boundary.

APPLICANT'S RESPONSE: The request for a variance is based upon the fact that the intent of a 35 foot setback pursuant to Section 4.3.225(7)(a) has historically served to assure that a 60 foot public right-of-

way is protected in rural and resource zone districts that do not establish specific development setbacks. It is unclear why it was deemed necessary for the county to apply this general requirement to urban districts that have established very specific setbacks within each district. To do so only creates conflict as to which setback should apply, when consideration has already been given to the needs of individual residential, or more significantly, commercial and industrial districts that are specifically intended for high density lot coverage inside with no setback requirements. Without knowing the reason for applying this regulation to all zoning districts, it is difficult to show how the intent of the rule does not apply to a particular situation. However, in this situation, applying the rule to this particular property would essentially restrict development on a segment of the parcel that was vacated for the express purpose of providing more space for development.

The portion of Juno Lane lying north of the subject property averages approximately 27 feet in width and ends where it fronts the state land to the west. Because of its narrow width, the Juno right-of-way does not meet the minimum Urban Road Standards pursuant to Chapter 7 (Transportation) CCZLDO. The narrow width does not allow for appropriate ingress and egress, parking, or a turn-around for emergency or vehicular traffic. It is clear that the county made a determination that the westerly most segment of Juno Lane was not needed as a public street for vehicular traffic. It is also clear that at the time of the vacation, that subject 35 foot setback regulation did not apply to urban zone districts. It is therefore reasonable to conclude that the vacation was not intended to increase the size of the lot to compensate for the 35 foot setback.

It seems clear that the vacation of Juno Lane was intended to provide more space for development and not to compensate for setback requirements. Also, it is clear that the county did not see a need to maintain a right-of-way for vehicular traffic. Therefore, the general intent of the 35 foot setback (to maintain an adequate right-of-way width) does not apply to this situation and requiring compliance with the standard would constitute a "practical difficulty."

SECTION 5.3.150 SELF-INFLICTED HARDSHIPS:

A variance shall not be granted when the special circumstances upon which the applicant relies are a result of the actions of the applicant, current owner(s) or previous owner(s) willful violation.

This does not mean that a variance cannot be granted for other reasons.

APPLICANT'S RESPONSE: This variance request is intended to address a setback requirement that will be applied to future development of the property. This variance is not intended to cure and existing violation and therefore this criterion does not apply.

SECTION 5.3.200 VARIANCE:

The Planning Director shall consider all formal requests for variances for zoning and land development variances.

SECTION 5.3.350 CRITERIA FOR APPROVAL OF VARIANCES:

No variance may be granted by the Planning Director unless, on the basis of the application, investigation, and evidence submitted;

1. Both findings "a" and "b" below are made:

    a. One of the following circumstances shall apply:

        i. That a strict or literal interpretation and enforcement of the specified requirement would result in unnecessary physical hardship and would be inconsistent with the objectives of this Ordinance;

        ii. That there are exceptional or extraordinary circumstances or conditions applicable to the property involved which do not apply to other properties in the same zoning district; or

APPLICANT'S RESPONSE: The applicant's property contains 0.20 acres and is zoned Controlled Development (CD-10). As a result of a 1990 vacation, the Northerly 33 feet (approx.) of the property consist of vacated Juno Lane. That vacated portion of the applicant's ownership now fronts the remaining portion of Juno Lane to the north.

The remaining non-vacated portion of Juno Lane where it fronts the applicant's property is 26.90 feet in width at its east end and 27.53 feet at its west end. The centerline of the remaining right-of-way is 13.45 feet at the east end and 13.77 feet at the west end, from the north boundary of the applicant's parcel. The required 35 foot setback from the centerline of remaining Juno Lane would extend south, 21.55 feet at the east end and 21.23 feet at the west end, of the applicant's north boundary.

The intent of a 35 foot setback pursuant to Section 4.3.225(7)(a) has historically served to assure that a 60 foot public right-of-way is protected in rural and resource zone districts that do not establish specific development setbacks. It is unclear as to why it was deemed necessary to apply this rural standard to urban districts, however, applying the rule to this particular property would essentially restrict development on a segment of the parcel that was vacated for the purpose of providing more space for development.

The portion of Juno Lane lying north of the subject property averages approximately 27 feet in width and ends where it fronts the state land to the west. Because of its narrow width, the Juno right-of-way does not meet the minimum Urban Road Standards pursuant to Chapter 7 (Transportation) CCZLDO. The narrow width does not allow for appropriate ingress and egress, parking, or a turn-around for emergency or vehicular traffic. It is clear that the county made a determination that the westerly most segment of Juno Lane was not needed as a public street for vehicular traffic. It is also clear that at the time of the vacation, the subject 35 foot setback regulation did not apply to urban zone districts. It is therefore reasonable to conclude that the vacation was not intended to increase the size of the lot to compensate for the 35 foot setback.

It seems clear that the vacation of Juno Lane was intended to provide more space for development and not to compensate for setback requirements. Also, it is clear that the county did not see a need to maintain a right-of-way sufficient for vehicular traffic. The general intent of the 35 foot setback (to maintain an adequate right-of-way width) does not apply to this property and therefore, there are exceptional or extraordinary circumstances applicable to the property involved which do not generally apply to other properties in the same zoning district.

iii. That strict or literal interpretation and enforcement of the specified regulation would deprive the applicant of privileges legally enjoyed by the owners of other properties or classified in the same zoning district;

b. That the granting of the variance will not be detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the near vicinity.

APPLICANT'S RESPONSE: The intent of the specified setback is to maintain a right-of-way width necessary to meet county road and street standards. Because the county concluded that Juno Lane is not needed as a vehicular right of way, not applying the 35 foot setback standard will not have a detrimental impact to the public or improvements in the area.

2. That the granting of the variance will not be detrimental to the public health, safety, or welfare or materially injurious to properties or improvements in the near vicinity.

APPLICANT'S RESPONSE: See (b.) above

3. In addition to the criteria in (1) above, no application for a variance to the Airport Surfaces Floating Zone may be granted by the Planning Director unless the following additional finding is made: "the variance will not create a hazard to air navigation".

APPLICANT'S RESPONSE: The requested variance is to a side yard setback and will have no impact to air navigation.

4. In lieu of the criteria in (1) above, an application for a variance to the FP zone requirements shall comply with Section 4.6.227.

APPLICANT'S RESPONSE: The subject property is not located within a Flood Plain overlay.

5. Variance regulations in CCZLDO Article 5.3 shall not apply to Sections 4.11.400 through 4.11.460, Chapter VII and Chapter VIII.

APPLICANT'S RESPONSE: The requested variance is to the setback requirement of Section 4.3.225(7) and does not apply to Sections 4.11.400 through 4.11.460, Chapter VII and Chapter VIII.

CONCLUSION

The requested variance is based upon a 35 foot setback from centerline of the existing right-of-way centerline. The intent of the setback requirement is to maintain an undeveloped 60 foot right-of-way width in which road development may *occur. Because the county has determined through a vacation process that there is no need for a vehicular right-of-way at the westerly most end of Juno Lane, there is no practical of physical reason to require the setback.*

SPECIAL DEVELOPMENT CONSIDERATIONS AND OVERLAYS

4.11.128 Historical, Cultural and Archaeological Resources, Natural Areas and Wilderness (Balance of County Policy 5.7)

APPLICANT'S RESPONSE: The subject property is located within an identified Archaeological site. In conjunction with the Septic Site Evaluation, the local tribes were contacted and were on site during test-hole excavation. The tribes will continue to be notified and contacted prior to any earth moving activities that may occur as a result of these applications.

4.11.129 Beaches and Dunes (Policy 5.10)

APPLICANT'S RESPONSE: The subject property is located within an identified Beaches and Dunes overlay with "Limited Suitability" for development. A Geotechnical Site Assessment Report has been submitted by Cascadia Geoservices, Inc.. On pages 8 and 9 of the report, the proposed residential development on the site has been addressed and the report concludes that there will be no "adverse impact on either the site or adjacent areas." The report further concludes that "there is no need for temporary or permanent stabilization programs and/or maintenance of new and existing vegetation."

4.11.130 Non-Estuarine Shoreland Boundary (Balance of County Policy 5.10)

The Coastal Shoreland Boundary map has inventoried the following:

- Coastal Shoreland Boundary
- Beach Erosion
- Coastal Recreation Areas
- Area of Water-Dependent Uses
- Riparian Vegetation
- Fore Dunes
- Head of Tide
- Steep Bluffs over 50% Slope
- Significant wetland wildlife habitats
- Wetlands under agricultural use
- Areas of Exceptional Aesthetic or Scenic Quality and Coastal Headlands
- Headland Erosion

APPLICANT'S RESPONSE: The subject property has been identified as being within a Non-Estuarine Coastal Shoreland Boundary. The specific policy for uses within a Coastal Shoreland Boundary is as follows:

> a. Uses allowed within the Coastal Shoreland Boundary: This strategy recognizes: (1) that Coos County's rural shorelands are a valuable resource and accordingly merit special consideration; and (2) that Statewide Planning Goal #17 places strict limitations on land divisions within coastal shorelands. i.Uses within the Coastal Shoreland Boundary: Coos County shall manage its rural areas within the "Coastal Shorelands Boundary" of the ocean, coastal lakes and minor estuaries through implementingordinance measures that allow the following uses:

f) single family residences on existing lots, parcels, or units of land when compatible with the objectives and implementation standards of the Coastal Shorelands goal, and as otherwise permitted by the underlying zone; or

APPLICANT'S RESPONSE: The subject property consists of a legal lot of record. The objectives of the Coastal Shoreland Boundary goal is to assure compliance with the applicable policies of the inventoried factors identified above (4.11.130). There are no Coastal Shoreland inventoried factors that apply to the subject property. However, the property is identified as being within a Natural Hazard, pursuant to the "Coastal Erosion" inventory map. Therefore, Beach Erosion and Headland Erosion are addressed below under Natural Hazards (Coastal Erosion).

A single family residence is allowed by the underlying zone and is therefore permitted within the Coastal Shoreland Boundary subject to compliance with the natural hazard provisions addressed below.

4.11.132 Natural Hazards (Balance of County Policy 5.11) IV- 168

NATURAL HAZARD "COASTAL EROSION"

APPLICANT'S RESPONSE: The subject property has been identified by Coos County as being within a "Coastal Erosion" hazard area. Under "Erosion" per Section 4.11.132 (below) the subtext identifies "Shoreline and Headlands," and "Wind" as pertaining Coastal Erosion.

4.11.132 Natural Hazards

Coos County has inventoried the following hazards:

- Erosion
  - Riverine streambank erosion
  - Coastal
    - Shoreline and headlands
    - Wind

Under Subsection (e.) below, the areas subject to Natural Hazard are more clearly spelled out as being "Shoreline, Headlands, and Wind Erosion and Deposition Hazards:"

e. Erosion: Coos County shall promote protection of property from risks associated with shoreline, headland, and wind erosion and deposition hazards.

Coos County shall promote protection of property from risks associated with bank erosion along rivers and streams through necessary erosion-control and stabilization measures, preferring non-structural solutions when practical.

Any proposed structural development within a wind erosion/deposition area, within 100 feet of a designated bank erosion area, or on a parcel subject to wave attack, including all oceanfront lots,

will be subject to a geologic assessment review as set out in Section 4.11.150. There is a setback of 100 feet from any rivers or streams that have been inventoried in the erosion layer

The subject property is not located along a shoreline and in fact is located 100 feet east of the ocean shore. The property is not located on a "Headland" area as specifically identified by the County Ordinance. The property is not located within a "Wind Erosion and Deposition" area that is specifically mapped by the County and primarily exists along open dune areas such as the Oregon Dunes National Recreation Area. In other words, the property is not located within a Coastal Erosion hazard area as defined above.

Coastal Shoreland Boundary "Coastal Erosion"

APPLICANT'S RESPONSE: The subject property is located within a Non- Estuarine Coastal Shoreland Boundary (CSB) and is subject to the inventoried factors of Section 4.11.130. The inventoried CSB factors that address erosion are "Beach Erosion" and "Headland Erosion."

Beach Erosion
The West boundary of the subject property is located 100 feet East and 60 feet (MSL) in elevation above the beach shoreline. Any Beach Erosion that may occur will have no immediate adverse impact to the property or the proposed residential use of the property.

Headland Erosion
The subject property is not identified as a coastal headland by the Coos County Zoning and Land Development Ordinance or the County Comprehensive Plan. Therefore Headland Erosion does not apply.

COOS COUNTY COMPREHENSIVE PLAN (Coastal Erosion)

APPLICANT'S RESPONSE: Part I Volume I of the Coos County Comprehensive Plan (CCCP) addresses Natural Hazards under Strategy 5.11. Plan Implementation Strategy #1 states that the Coastal Erosion hazards are addressed under the Dunes, Ocean and Lake Shorelands, Strategy 5.10 (below).

PLAN IMPLEMENTATION STRATEGIES 1. Coos County shall regulate development in known areas potentially subject to natural disasters and hazards, so as to minimize possible risks to life and property. Coos County considers natural disasters and hazards to include stream and ocean flooding, wind hazards, wind erosion and disposition, ***critical streambank erosion, coastal erosion and deposition**, mass movement (earthflow and slump topography), earthquakes, and weak foundation soils.

***These hazards are addressed under policies for "Dunes and Ocean and Lake Shorelands."**

The subject property is located within a Special Consideration overlay, Beaches and Dunes with Limited Development Suitability. Elsewhere in this report, Strategy 5.10 is addressed with regard to the proposed residential development. The report concludes that the proposed residential structure will not have an adverse impact to the site or adjacent areas. Furthermore, due to the stability of the site and surrounding area, and, the unlikely potential for erosion, the report further states: "there is no need for temporary or permanent stabilization programs and/or maintenance of new and existing vegetation."

c. Tsunamis: Coos County shall promote increased resilience to a potentially catastrophic Cascadia Subduction Zone (CSZ) tsunami through the establishment of a Tsunami Hazard Overlay Zone (THO) in the Balance of County Zoning. See Sections 4.11.260-4.11.270 for the requirements of this overlay zone.

4.11.270 Tsunami Hazard Overlay Zone (Purpose, Applicability and Uses)

3. Uses

In the Tsunami Hazards Overlay Zone, except for the prohibited uses set forth in subsection 4 all uses permitted pursuant to the provisions of the underlying zone map may be permitted, subject to the additional requirements and limitations of this section. The Tsunami Hazard Overlay Zone does not establish any new or additional review processes. Application of the standards and requirements of the Tsunami Hazard Overlay Zone is accomplished through the applicable review processes of the underlying zone.

4. Prohibited Uses a. In areas identified as subject to inundation from the L magnitude local source tsunami events set forth on the TIM, the following uses are prohibited:

i. Hospitals and other medical facilities having surgery and emergency treatments area as;
ii. Fire and police stations;
iii. Hospital and other medical facilities having surgery and emergency treatment areas;
iv. Structures and equipment in government communication centers and other facilities required for emergency response;
v. Building with a capacity greater than 250 individuals for every public, private or parochial school through secondary level or childcare centers;
vi. Buildings for colleges or adult education schools with a capacity of greater than 500 persons; and
vii. Jails and detention facilities

b. In areas identified as subject to inundation from the M magnitude local source tsunami event as set forth on the Tsunami Inundation Map (TIM), the following uses are prohibited: i. Tanks or other structures containing, housing or supporting water or fire-suppression materials or equipment required for the protection of essential or hazardous facilities or special occupancy structures;

ii. Emergency vehicle shelters and garages;
iii. Structures and equipment in emergency preparedness centers;
iv. Standby power generating equipment for essential facilities;
v. Covered structures whose primary occupancy is public assembly with a capacity of greater than 300 persons;
vi. Medical facilities with 50 or more resident, in capacitated patients;
vii. Manufactured home parks, of a density exceeding 10 units per acre; and
viii. Hotels or motels with more than 50 units.

c. Notwithstanding the provisions of Article 5.6 of the Coos County Zoning and Land Development Ordinance, the requirements of this subsection shall not have the effect of rendering any lawfully established use or structure nonconforming. The Tsunami Hazard Overlay is, in general, not intended to apply to or regulate existing uses or development.

APPLICANT'S RESPONSE: For the sake of brevity, the majority of the Tsunami provisions of Sections 4.11.260-4.11.270 have not been included. In the "Uses" section above, it is clear that the Tsunami Hazard provisions are only intended to apply to essential, emergency and high occupancy facilities. Other

than those uses listed above, all uses and replacement uses allowed by the underlying zone district, are permitted in the tsunami overlay zone. The requested residential use is therefore permitted.

f. Wildfires: Coos County shall promote protection of property from risks associated with wildfires.

New development or substantial improvements shall, at a minimum, meet the following standards, on parcels designated or partially designated as "High" or "Moderate" risk on the Oregon Department of Forestry 2013 Fire Threat Index Map for Coos County or as designated as at-risk of fire hazard on the 2015 Coos County Comprehensive Plan Natural Hazards Map:

1. The dwelling shall be located within a fire protection district or shall be provided with residential fire protection by contract. If the dwelling is not within a fire protection district, the applicant shall provide evidence that the applicant has asked to be included within the nearest such district or is provided fire protection by contract.

APPLICANT'S RESPONSE: The subject property is located within the Bandon Rural Fire Protection district. The subject property is currently provided domestic water service by the City of Bandon. There is a City of Bandon Fire Hydrant that produces 630 GPM within 400 feet of the property. The flow and distance exceeds fire code for urban fire protection.

2. When it is determined that these standards are impractical the Planning Director may authorize alternative forms of fire protection that shall comply with the following: a. The means selected may include a fire sprinkling system, onsite equipment and water storage or other methods that are reasonable, given the site conditions, as established by credible documentation approved in writing by the Director;

b. If a water supply is required for fire protection, it shall be a swimming pool, pond, lake, or similar body of water that at all times contains at least 4,000 gallons per dwelling or a stream that has a continuous year round flow of at least one cubic foot per second per dwelling;

c. The applicant shall provide verification from the Water Resources Department that any permits or registrations required for water diversion or storage have been obtained or that permits or registrations are not required for the use; and

d. Road access shall be provided to within 15 feet of the water's edge for firefighting pumping units. The road access shall accommodate the turnaround of firefighting equipment during fire season. Permanent signs shall be posted along the access route to indicate the location of the emergency water source.

3. Fire Siting Standards for New Dwellings: a. The property owner shall provide and maintain a water supply of at least 500 gallons with an operating water pressure of at least 50 PSI and sufficient ¾ inch garden hose to reach the perimeter of the primary fuel-free building setback.

b. If another water supply (such as a swimming pool, pond, stream, or lake) is nearby, available, and suitable for fire protection, then road access to within 15 feet of the water's edge shall be provided for pumping units. The road access shall accommodate the turnaround of firefighting equipment during the fire season. Permanent signs shall be posted along the access route to indicate the location of the emergency water source.

APPLICANT'S RESPONSE: The subject property is located within the Bandon Rural Fire Protection district. The subject property is currently provided domestic water service by the City of Bandon. There is a City of Bandon Fire Hydrant that produces 630 GPM within 400 feet of the property. The flow and distance exceeds fire code for urban fire protection. There is no need for alternative forms of fire protection.

4. Firebreak:

a. A firebreak shall be established and maintained around all structures, including decks, on land owned or controlled by the applicant for a distance of at least 30 feet in all directions.

APPLICANT'S RESPONSE: The applicant will establish and maintain a fire break around all structures, including decks, on land owned or controlled by the applicant for a distance of at least 30 feet in all directions.

b. This firebreak will be a primary safety zone around all structures. Vegetation within this primary safety zone may include mowed grasses, low shrubs (less than ground floor window height), and trees that are spaced with more than 15 feet between the crowns and pruned to remove dead and low (less than 8 feet from the ground) branches. Accumulated needles, limbs and other dead vegetation should be removed from beneath trees.

APPLICANT'S RESPONSE: The applicant will comply with the fire break requirements cited above.

c. Sufficient garden hose to reach the perimeter of the primary safety zone shall be available at all times.

APPLICANT'S RESPONSE: The applicant will comply with the garden hose requirements cited above

d. The owners of the dwelling shall maintain a primary fuel-free break area surrounding all structures and clear and maintain a secondary fuel-free break on land surrounding all structures that is owned or controlled by the owner in accordance with the provisions in "Recommended Fire Siting Standards for Dwellings and Structures and Fire Safety Design Standards for Roads" dated March 1, 1991, and published by Oregon Department of Forestry and shall demonstrate compliance with Table 1.

Table 2 – Minimum Primary Safety Zone Slope	Feet of Primary Safety Zone	Feet of Additional Primary Safety Zone Down Slope
0%	30	0
10%	30	50
20%	30	75
25%	30	100
40%	30	150

APPLICANT'S RESPONSE: The applicant will comply with the primary and secondary fuel free fire break requirements on land within their ownership.

EXHIBITS

1. *Exhibit #1 consists of a survey showing the portion of Juno Lane that was vacated and applicant's ownership. Note that 33 feet of Juno was vacated and only 27 feet of the Juno right-of-way remains. This is clear evidence that there was no intent by the County to maintain that segment of Juno Lane as a vehicular right-of- way.*

2. *Exhibit #2 is a topography map used to show the vacated portion of Juno Lane (dashed line) that now makes up 47 percent of the applicant's entire ownership.*

3. *Exhibit #3 is an aerial photograph showing the subject property and the remaining portion of Juno Lane fronting the subject property. Note that Juno Lane has not been developed through Block 24 lying east of the subject property. Because Gould Road is improved and fronts Block 24 as well as block 23 directly north of Juno, there is no need, and therefore it is unlikely, that the segment of Juno Lane between Blocks 23 and 24 will ever be improved. This evidence further demonstrates that the remaining portion of Juno lane fronting the applicant's property will never be utilized for vehicular traffic as it is not connected to the nearest cross street, Gould Road.*

4. *Exhibit #4 shows the subject property's north property line and the current setback requirements. Note that when the south side lot is added to the required setbacks, 38 percent of the parcel width will be utilized for setback under the 35 foot standard. Under the 15 foot standard for corner lots, 30 percent of the lot width will be utilized for setbacks. Furthermore, 77 percent and 55 percent of the area that was vacated for development (vacated Juno) would be restricted from development under the 35 foot and 15 foot standards respectively.*

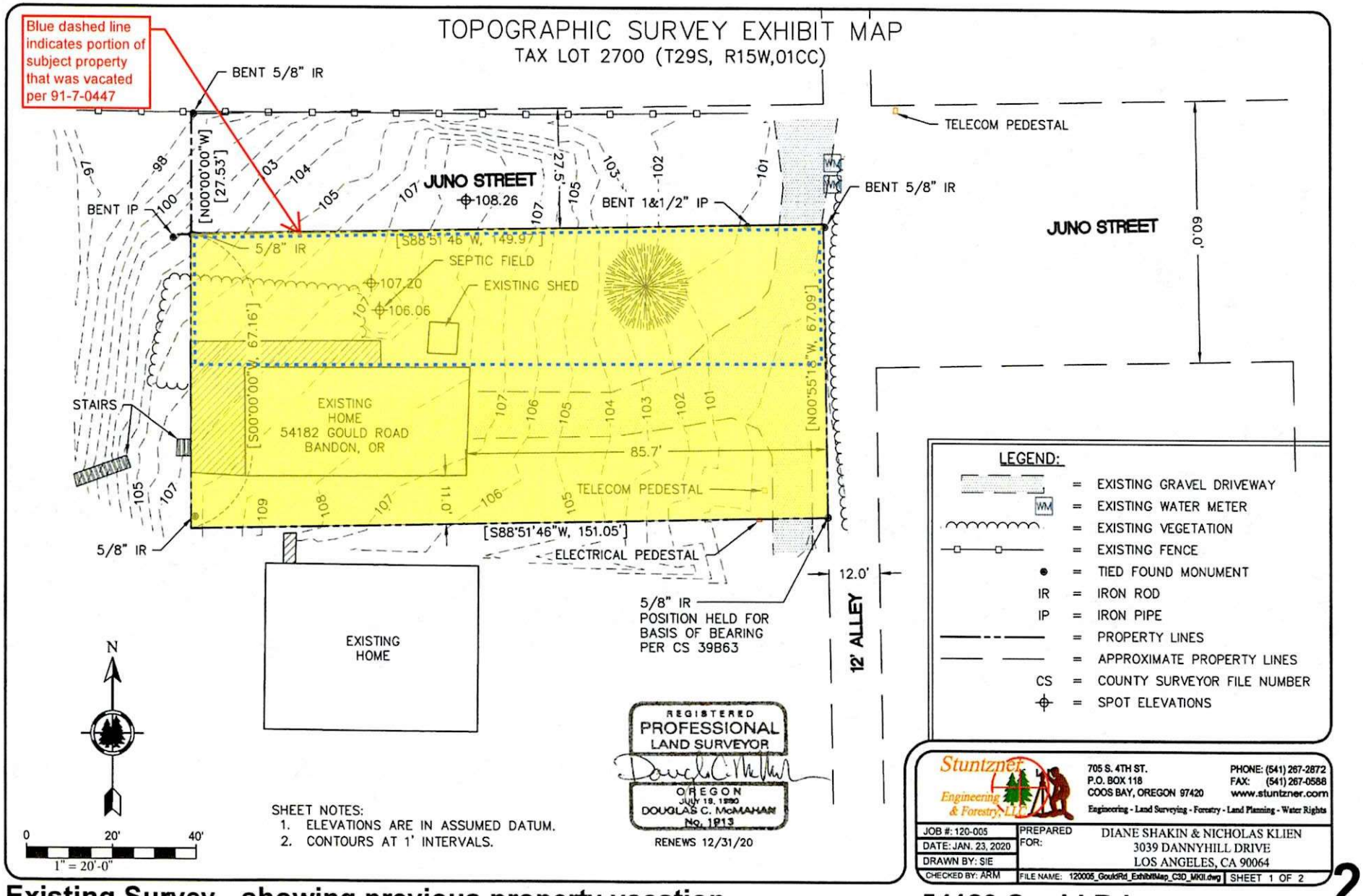
5. *Exhibit #5 shows an example of a footprint for a residential structure with a front deck and rear entryway, utilizing the requested 5 foot north and south side line setbacks. The footprint exemplifies a 5,000 (approx.) square foot home with two stories. The 5 foot setbacks allow for just over 55 feet of westerly frontage (ocean view). The 10 westerly-most dwellings lying north and south of the applicant's property average between 65 to 70 feet of developed westerly frontage (ocean view). Three of the dwellings contain approximately 80 feet of developed frontage. It is clear that even if this variance is approved, the applicant's residence and particularly their westerly frontage (ocean view) will be modest in comparison with other residences in the neighborhood. Again, the street vacation was clearly intended to increase the parcels developable area and particularly its westerly frontage.*

6. *Exhibit #6 shows the location of the septic drainfield areas (primary and secondary). This map (dimensions and setbacks) was utilized as the site plan for the Oregon Department of Environmental Quality Site Evaluation approval. Note that the setbacks from the approved location (only suitable location), controls the easterly and northerly location of the residence.*

- *Oregon Department of Environmental Quality Site Evaluation Approval*
- *Geotechnical site Assessment Report, Cascadia Geoservices*

Property, Right-of-Way and Property Vacation - 54182 Gould Rd

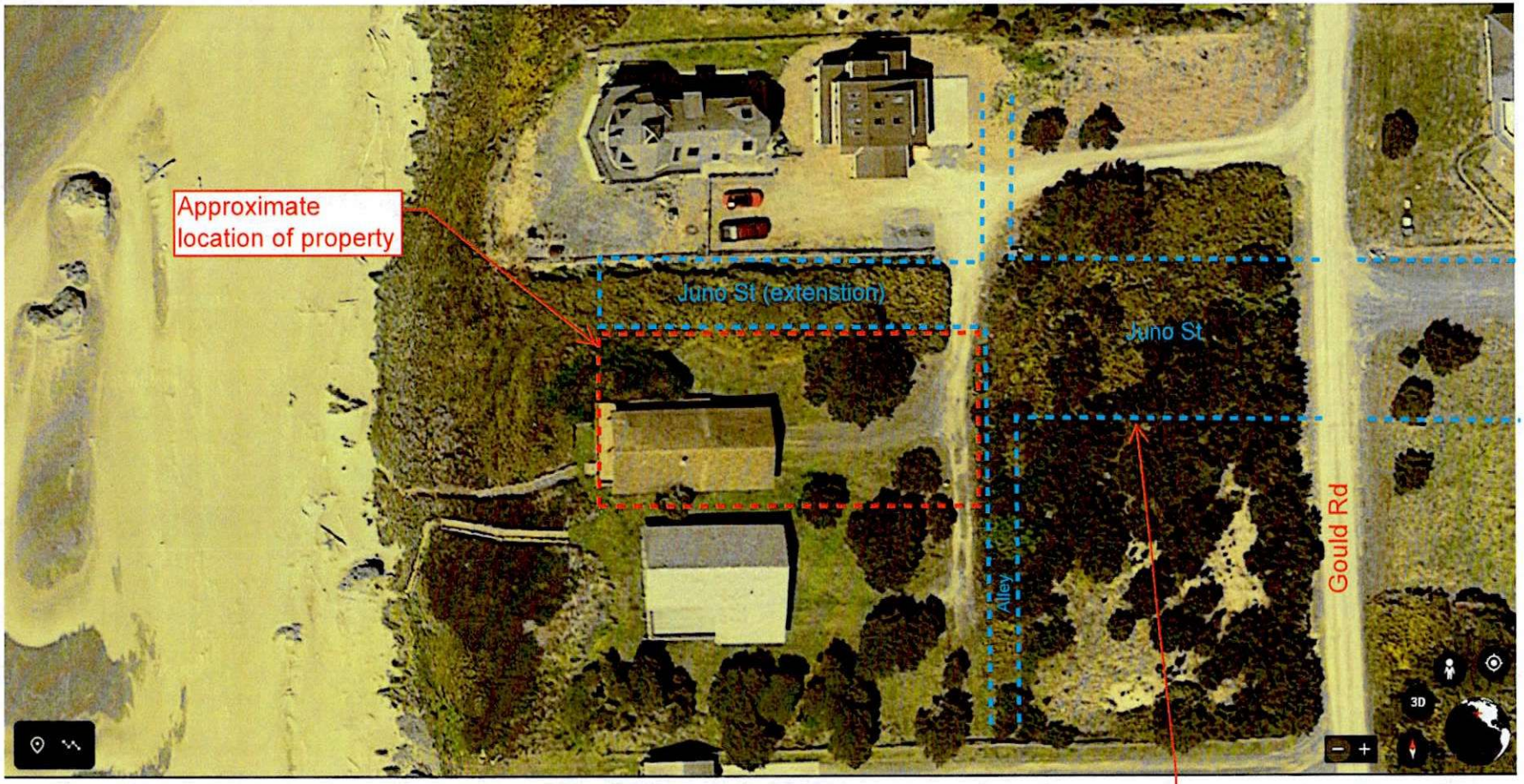
Blue dashed line indicates portion of subject property that was vacated per 91-7-0447



Existing Survey - showing previous property vacation

54182 Gould Rd

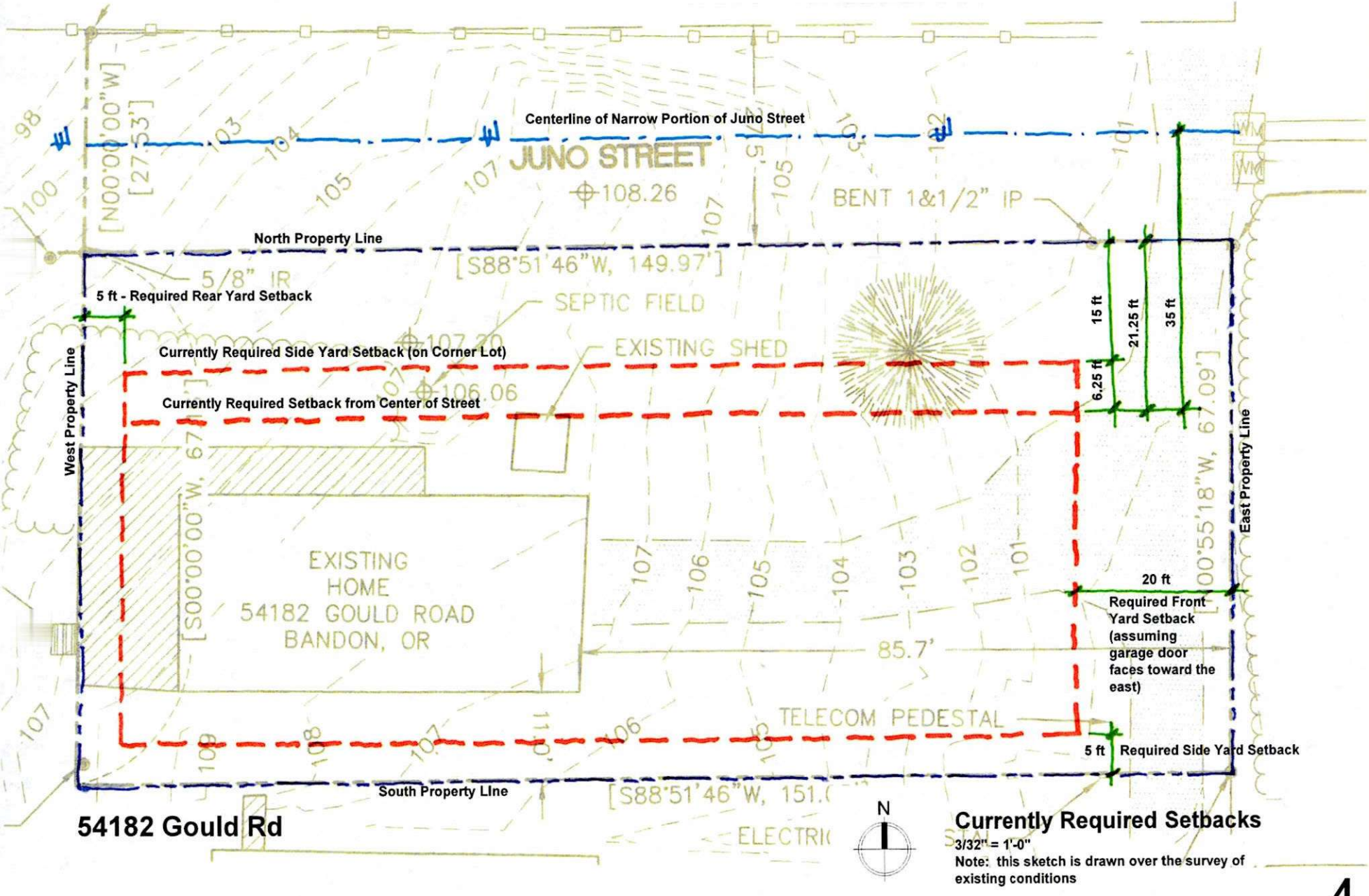
2

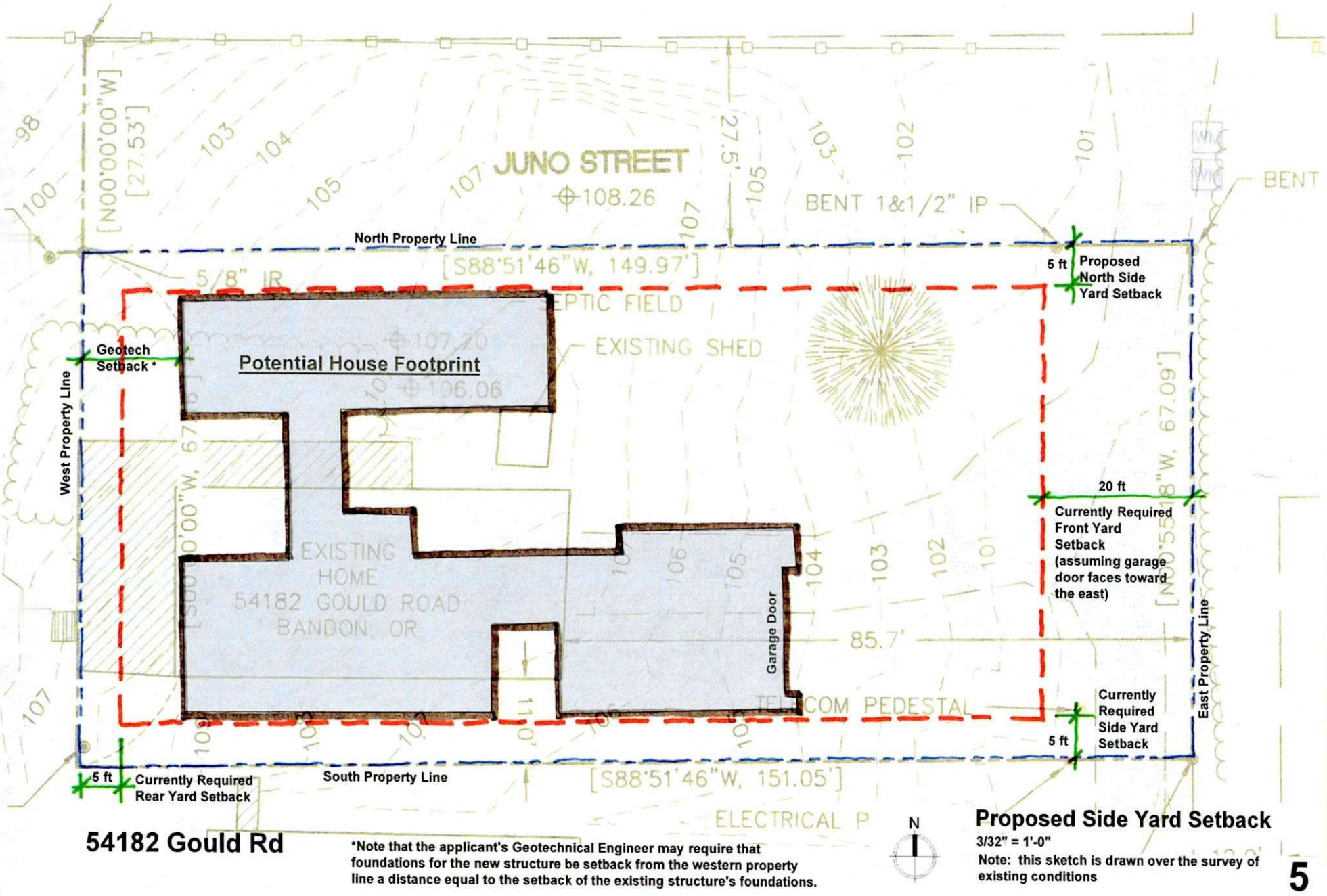


54182 Gould Rd

Property & Right of Way

3


Centerline of Narrow Portion of Juno Street
JUNO STREET
108.26
BENT 1&1/2" IP
North Property Line
[S88°51'46"W, 149.97']
5/8" IR
5 ft - Required Rear Yard Setback
SEPTIC FIELD
EXISTING SHED
Currently Required Side Yard Setback (on Corner Lot)
Currently Required Setback from Center of Street
West Property Line
East Property Line
15 ft
21.25 ft
35 ft
6.25 ft
EXISTING
HOME
54182 GOULD ROAD
BANDON, OR
85.7'
20 ft
Required Front Yard Setback (assuming garage door faces toward the east)
TELECOM PEDESTAL
5 ft
Required Side Yard Setback
South Property Line
54182 Gould Rd
N
Currently Required Setbacks
3/32" = 1'-0"
Note: this sketch is drawn over the survey of existing conditions
4



54182 Gould Rd

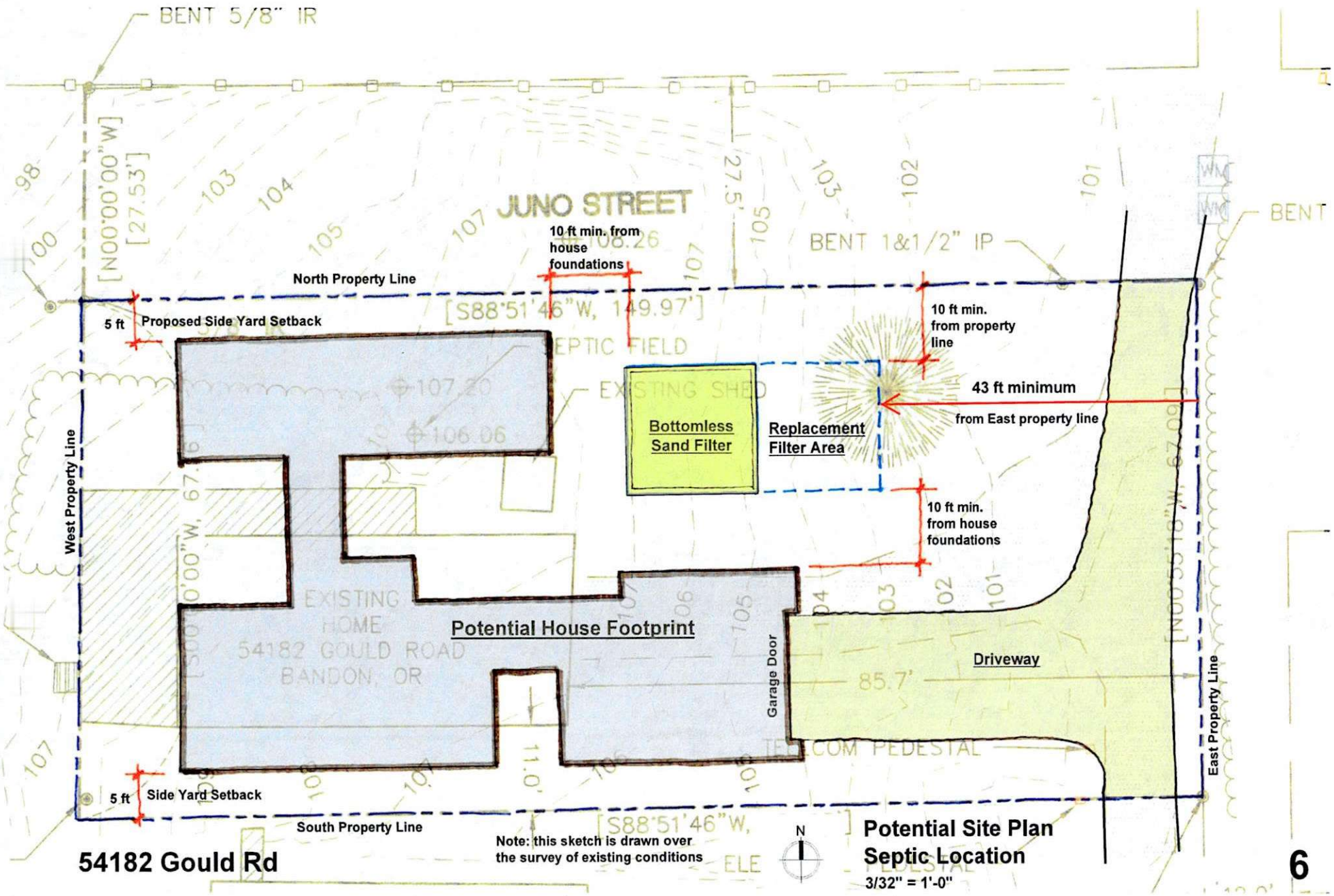
*Note that the applicant's Geotechnical Engineer may require that foundations for the new structure be setback from the western property line a distance equal to the setback of the existing structure's foundations.

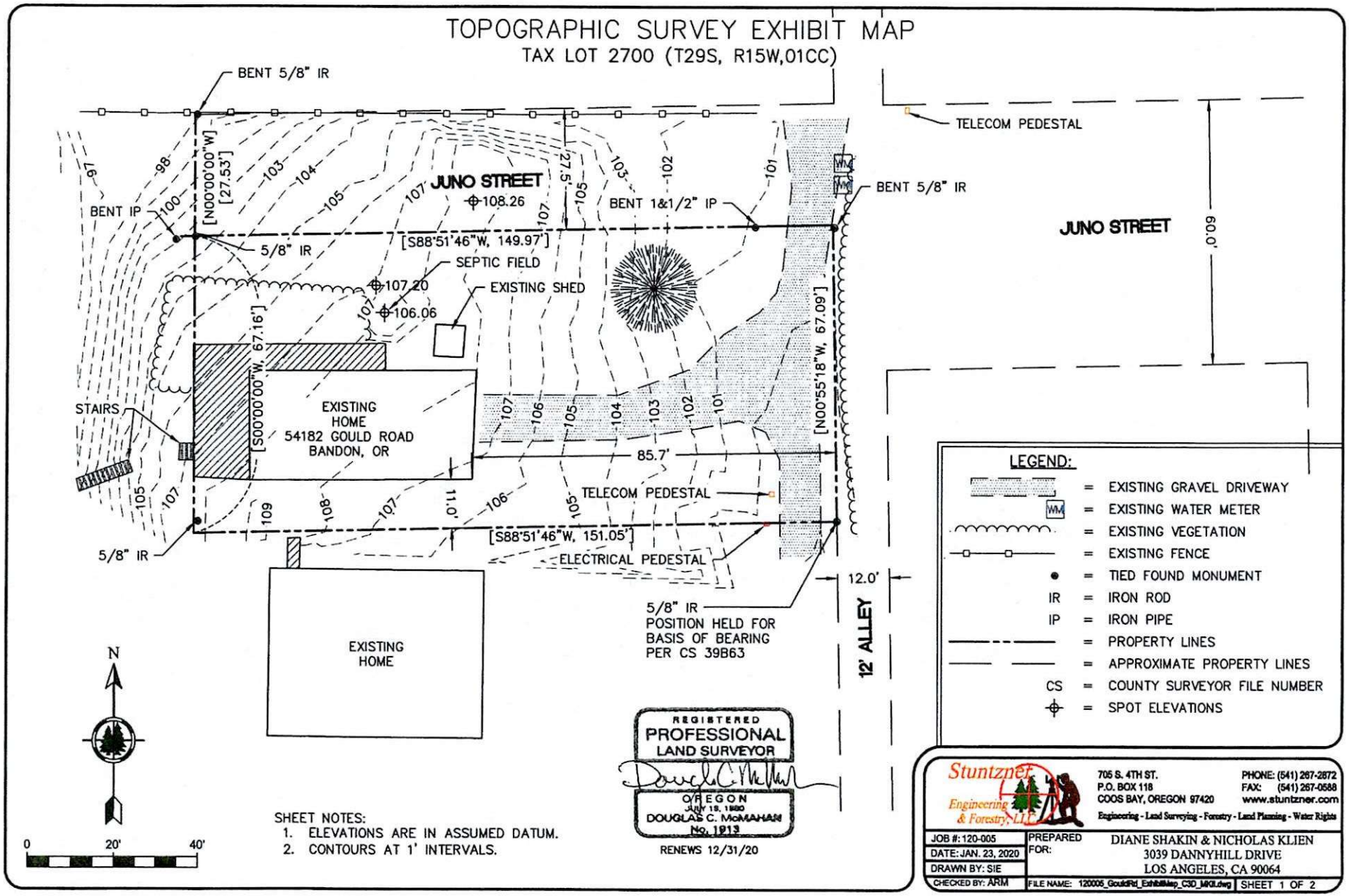
Proposed Side Yard Setback

3/32" = 1'-0"

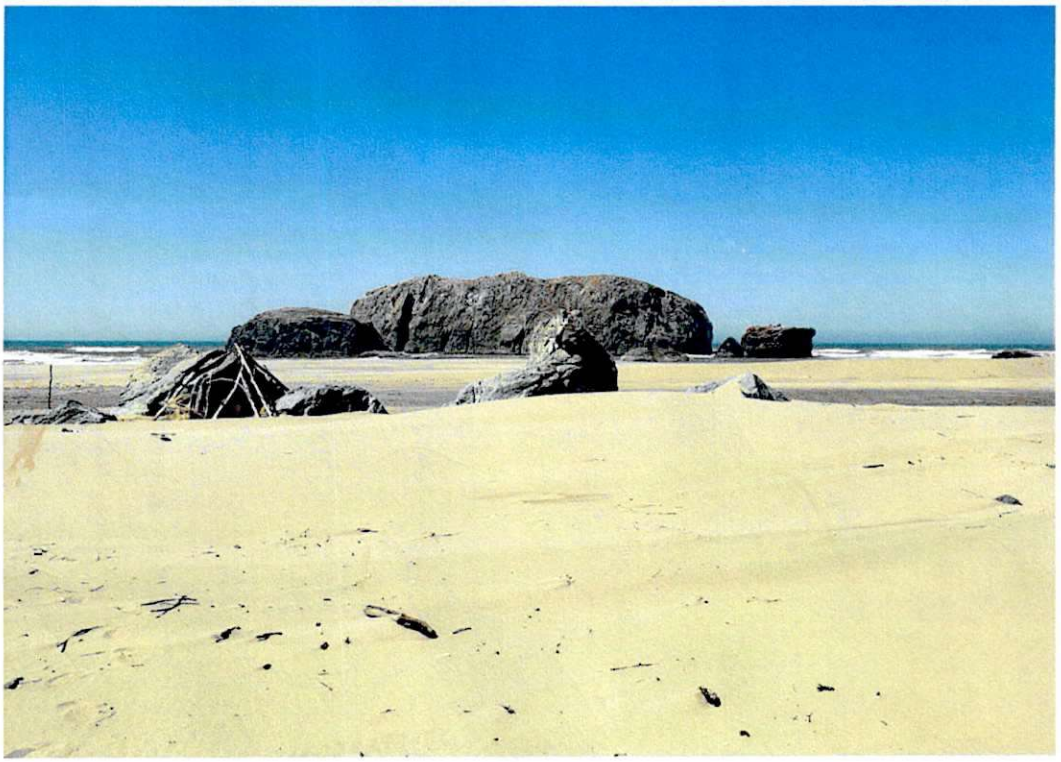
Note: this sketch is drawn over the survey of existing conditions

5


BENT 5/8" IR
[N00°00'00"W]
[27.53']
JUNO STREET
10 ft min. from house foundations
BENT 1&1/2" IP
North Property Line
5 ft
Proposed Side Yard Setback
[S88°51'46"W, 149.97']
EPTIC FIELD
EXISTING SHED
10 ft min. from property line
43 ft minimum
from East property line
Bottomless Sand Filter
Replacement Filter Area
West Property Line
10 ft min. from house foundations
EXISTING HOME
54182 GOULD ROAD
BANDON, OR
Potential House Footprint
Garage Door
Driveway
85.7'
COM PEDESTAL
East Property Line
5 ft
Side Yard Setback
South Property Line
[S88°51'46"W,
Note: this sketch is drawn over the survey of existing conditions
N
Potential Site Plan
Septic Location
3/32" = 1'-0"
54182 Gould Rd
6


TOPOGRAPHIC SURVEY EXHIBIT MAP
TAX LOT 2700 (T29S, R15W,01CC)
BENT 5/8" IR
TELECOM PEDESTAL
JUNO STREET
BENT IP
5/8" IR
[N00°00'00"W] [27.53']
[S88°51'46"W, 149.97']
BENT 1&1/2" IP
BENT 5/8" IR
JUNO STREET
60.0'
SEPTIC FIELD
EXISTING SHED
107.20
106.06
108.26
STAIRS
EXISTING HOME
54182 GOULD ROAD
BANDON, OR
[S00°00'00"W, 67.16']
[N00°55'18"W, 67.09']
85.7'
TELECOM PEDESTAL
[S88°51'46"W, 151.05']
ELECTRICAL PEDESTAL
5/8" IR
EXISTING HOME
5/8" IR
POSITION HELD FOR
BASIS OF BEARING
PER CS 39B63
12.0'
12' ALLEY
N
0
20'
40'
SHEET NOTES:
1. ELEVATIONS ARE IN ASSUMED DATUM.
2. CONTOURS AT 1' INTERVALS.
REGISTERED
PROFESSIONAL
LAND SURVEYOR
OREGON
JULY 19, 1980
DOUGLAS C. McMAHAN
No. 1913
RENEWS 12/31/20
LEGEND:
= EXISTING GRAVEL DRIVEWAY
WM = EXISTING WATER METER
= EXISTING VEGETATION
= EXISTING FENCE
= TIED FOUND MONUMENT
IR = IRON ROD
IP = IRON PIPE
= PROPERTY LINES
= APPROXIMATE PROPERTY LINES
CS = COUNTY SURVEYOR FILE NUMBER
= SPOT ELEVATIONS
Stuntzner Engineering & Forestry, LLC
705 S. 4TH ST.
P.O. BOX 118
COOS BAY, OREGON 97420
PHONE: (541) 267-2872
FAX: (541) 267-0588
www.stuntzner.com
Engineering - Land Surveying - Forestry - Land Planning - Water Rights
JOB #: 120-005
DATE: JAN. 23, 2020
DRAWN BY: SIE
CHECKED BY: ARM
PREPARED FOR:
DIANE SHAKIN & NICHOLAS KLIEN
3039 DANNYHILL DRIVE
LOS ANGELES, CA 90064
FILE NAME: 120005_GouldRd_ExhibitMap_C3D_MKE.dwg
SHEET 1 OF 2

Cascadia Geoservices, Inc.
190 6th Street
PO Box 1026
Port Orford, Oregon 97465
D. 541-332-0433
C. 541-655-0021
Email: info@cascadiageoservices.com
www: cascadiageoservices.com



Geotechnical Site Assessment Report

54182 Gould Avenue
Bandon, Oregon 97411

Prepared for:
Nicholas F. Klein, Esq.
Diane Shakin
11755 Wilshire Blvd., Suite 1660
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Email: nick@nfkrelaw.com, dianeshakin@gmail.com

November 28, 2020
CGS Project No. 19045

Table of Contents

INTRODUCTION

Cascadia Geoservices, Inc. (CGS) is pleased to submit this Geotechnical Site Assessment Report for a portion of the property (subject property or site) located at 54182 Gould Avenue in Bandon, Oregon (see Figure 1, Location Map). This site assessment began in May 2019 as part of your due diligence prior to purchasing the subject property. As part of that due diligence, a preliminary geologic site evaluation was completed by CGS which included two geotechnical borings (Boring B-1 and B-2). The work was summarized in a Preliminary Geotechnical Site Assessment Report to you dated September 16, 2019. After you purchased the site, you once again retained CGS and asked them to determine the feasibility of building a new residential structure on the site. In evaluating the site further, CGS bored 3 additional geotechnical brings (B3, B4 and B5). These were drilled west of the existing structure using a trac mounted drill rig. Based on the data obtained from these borings, a Slope Stability Analysis was completed, and recommendations were made which included specifications for a deep foundation system utilizing bored micropyles. This work was summarized in an Addendum to the original report dated May 6, 2020. To help simplify understanding the geotechnical issues associated with developing the site and to assist with the planning and permitting process, CGS has combined these two reports into this report. This report summarizes our project understanding, site investigation, and subsurface explorations and provides conclusions and recommendations.

PROJECT UNDERSTANDING

Our understanding is based on an email and telephone correspondence with you, your real estate broker, Ms. Jenny Forbes, and your architect, Mr. Douglas Dworsky beginning on May 15, 2019, and on several site visits beginning on May 25, 2019. These site visits included the first on July 12, 2019, at which time a geologic reconnaissance of the site was completed and two geotechnical borings were drilled east of the existing structure and the second site visit on March 13, 2020 at which time three geotechnical borings were completed west of the existing residential structure near the break in slope above the sea cliff.

We understand that you are proposing to utilize as much of the western portion of the subject property as possible and to remove the existing structure and site a new structure. We further understand that you are currently considering siting the foundation of the new structure no further west than the location of the existing dwelling.

As we have previously discussed, because this option may require that the new structure be closer to the break in slope than the existing structure and because of anticipated additional loads created by the cantilevered design, it is our opinion that the new structure should be supported on a deep foundation system such as piles which are embedded in the underlying bedrock. As we discussed, you will need to retain a structural engineer to assist in the design of the new structure.

Based on a review of Coos County's Map Atlas, the site has been inventoried as having "limited suitability" for development potential within the Beach and Dune Area of Coos County. Further, the site is within an area of geologic hazards as identified by Coos County. As part of the planning and permitting process, Coos County will consider whether the site is suitable for the proposed development and whether development will impact other surrounding areas. We note that the site does not abut the ocean shore and therefore the additional requirements for Geologic Reports pursuant to Coos County Zoning Ordinance 4.11.155A2 do not apply.

SURFACE DESCRIPTION

The site is part of an elevated marine terrace located within the Coast Range Physiographic Region of southern Oregon. This marine terrace is a regional landform known locally as the Bandon Bluff and is bordered on the west by a sea cliff. The site is in a residential neighborhood and is part of the Sunset City Subdivision. The site is bordered to the east by Gould Avenue and a private driveway and to the north and south by residential structures.

The site is located on the west end of tax Lot 2700, Sec 01CC, T 29S, R15W which is 149.97 feet long (measured east to west) by 67.10 feet wide (measured north to south). The site is generally level to gently sloping to the east and is approximately 50 feet above mean sea level (AMSL). The existing structure is set back 10 feet from the southern property boundary and 22 feet, at the closest point, from the break in slope of the sea cliff. The sea cliff slope is heavily vegetated with both native and exotic grasses and plants (principally gorse) and grades on average 50 percent. The base of the sea cliff is covered by geologically young sand dunes. Areas of the sand dunes have been stabilized by dune grasses (Photo 1). Light grey bedrock sandstone is visible in outcrop at the base of the sea cliff (Photo 2).

Based on our site observations, the subject property and sea cliff west of the site appeared stable at the time of our site visit. We did not observe recent storm debris or indications of recent coastal erosion at the base of the sea cliff. The younger sand dunes west of the sea cliff appeared partially stabilized by dune grasses. Coastal erosion is discussed in depth later in this report under geologic hazards.

Based on work done by others[1,2], native soils at the site consist of sandy loam (8E—Bullards sandy loam, 30 to 50 percent slopes). Underlying these are surficial sediments of Quaternary marine terrace deposits (QMTD) which consist of semi-consolidated sand, silt, clay, and gravel. Under the marine terrace deposits is upper Cretaceous to Jurassic meta-volcanic, and meta-sedimentary bedrock of the mélange of Sixes River (MSR). Bedrock is exposed in outcrop at the base of the sea cliff below but is not exposed on the building site. This assemblage of soils and rocks has been elevated due to regional tectonic forces associated with the Cascadia Subduction Zone.

SUBSURFACE EXPLORATIONS

Our initial borings were drilled during our July 12, 2019 site visit (Photo 3). The borings were drilled by Dan Fischer Excavation of Forest Grove, Oregon and were drilled using a trailer-mounted drill rig and advanced using conventional auger drilling techniques. Access to the site was restricted due to the existing residential structure. Boring B-1 was drilled along the north side of the structure and B-2 was drilled on the south side of the structure. Standard penetration tests (SPT) were taken at 2.5 feet for the first 10.0 feet and at 5-foot intervals thereafter.

The second set of geotechnical borings (B-3 through B-5) were drilled along the top of the sea cliff during our March 13, 2020 site visit. The borings were drilled by Western States Soils Conservation Service of Hubbard, Oregon using a track mounted drill rig. The borings were advanced using mud rotary drilling techniques. Standard penetration tests (SPT) were taken at 2.5 feet for the first 10.0 feet and at 5-foot intervals thereafter. The borings were drilled through the upper surficial layers until they encountered hard

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1 United States Department of Agriculture (USDA). Natural Resource Conservation Service Web Soil Survey, retrieved from http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

2 Thomas J. Wiley, et. al. (2014). Geologic map of the southern Oregon coast between Port Orford and Bandon, Curry and Coos Counties, Oregon. Oregon Department of Geology and Mineral Industries (DOGAMI) Open-File Report O-14-0.

rock resulting in refusal to advance the boring tool. Both sets of borings were logged by an Oregon certified engineering geologist from our southern Oregon coast office. Soil samples from the borings were collected and stored in sealed plastic bags for later analysis. Summary logs are included here as Attachment 1. The locations of the borings are shown on Figure 2, Site Map.

In general, CGS encountered loose to medium-dense, tan, fine-grained sand: dry from the surface to 10.0 feet below ground surface (bgs) in both borings. Below this, we encountered medium-stiff tan and gray clay grading to coarse-grained sand: moist, and clayey sand: moist. We infer that these sediments are part of the Quaternary marine terrace deposits identified by others.[2] At 15.0 feet and 15.5 feet bgs in B-1 and B-2, respectively, we encountered very dense, gray, medium-fine to medium-grained sandstone: dry. We infer, based on mapping done by others[2] and on outcrop observed at the base of the sea cliff, that this is sandstone bedrock of the upper Cretaceous to Jurassic mélange of Sixes River (MSR). B-1 and B-2 were abandoned at 16.0 feet and 16.3 feet bgs, respectively, due to the inability to advance the auger (refusal).

Our analysis of the subsurface conditions on the site is based on the soils encountered in our borings and is summarized as follows:

Silty Sand (Topsoil): Soils encountered from 0.0 to 5.0 feet bgs consist of very loose to loose tan fine sand and silty organics. These soils were described as moist.

Cemented Sands (Marine Terrace Deposits): We encountered surficial deposits from 5.0 to 22.5 feet bgs. The upper part of the section consists of loose to medium dense tan fine sand with variable silt: moist, moderately cemented. These sands are interlayered with stiff silty clay which was determined in the field to be medium plasticity. The lower 2 feet of the section consists of medium dense coarse sand with variable clay: wet.

Sandstone (Bedrock- Mélange of Sixes River): Bedrock was encountered at from 13.0 feet bgs in B-3 to 22.5 feet bgs in B-4. Bedrock was indicated by the drill by significantly harder drilling and in poor recovery in the sampler and consisted of light gray (R-2) coarse sandstone. The sandstone was dry and had a Rock Quality Descriptor (RQD) of from 60% (fair).

All borings were backfilled with bentonite and their locations determined and plotted using GPS.

LABORATORY ANALYSIS

Selected samples collected from the borings were packaged in moisture-tight bags and were classified in general accordance with the Unified Soil Classification System, Visual-Manual Procedure. After classification, the samples were shipped to a commercial laboratory where selected samples were analyzed, where applicable, for water content (ASTM D698), percent fines (-#200) (ASTM D1140), and Atterberg limits (ASTM D4318). The results are summarized below in Table 1. The Lab Analysis Report for the samples is provided at the end of this report as Attachment 2.

Table 1: Laboratory Analysis

Sample Number	Boring	Depth Feet (bgs)	Soil Description	Moisture Content Percent	Percent Fines (-#200)	USCS[3]
SS-2	B-1	5.0	Fine sand	3.6	2.0	SP
SS-8	B-2	7.5	Fine sand	13.1		SP

Our lab analysis indicates that the sands encountered at 5.0 and 7.5 feet bgs are poorly graded and contain less than 10 percent fines. These soils appear well drained as indicated by the measured moisture content.

Our analysis and recommendations are based on the following physical properties of the soils and rock encountered

Table 2: Physical Properties of Soil

Type of Soil	Depth below Surface (feet)	N Value[4]	Effective Unit Weight (pcf)	Drained Friction Angle, φ' (degrees)	Drained Cohesion, c' (psf)
Silty Sand	0.0 to 5.0	5 to 6	115	25-30	0
Cemented Sand	2.5 to 22.5	7 to 23	125	30-38	0

[3] Unified Soil Classification System

4 Standard Penetration Testing (SPT, ASTM D 1586) involves advancing an 18-inch-long by 2-inch (outer diameter) split spoon sampler with a 140-pound hammer falling 30 inches. The blow counts (hammer strikes) required to advance the sampler for each 6-inch interval are counted and recorded. The number of blows for the final 12 inches is recorded as the N-value. The N-value provides correlation of relative density for granular (coarse-grained) soils, or the consistency of cohesive (fine-grained) soil.

Table 3: Physical Properties of Rock

Type of Rock	Depth below Surface (feet)	Description	Dry Density (pcf)	Unconfined Compressive Strength (psi)
Sandstone	13.0 to 22.0	Weak Rock (R2)	134	725-3,500

GROUNDWATER/DRAINAGE

Groundwater was not encountered in any of our borings. The soils encountered in the borings were observed to be dry to damp. Based on a review of well logs in the area, the primary groundwater aquifer is believed to be less than 50 feet bgs and typically occurs at the contact of Quaternary marine terrace deposits with underlying bedrock.

We anticipate that groundwater levels will rise during periods of heavy rainfall. We further anticipate that clay layers encountered at 10.0 to 11.0 feet bgs will act as confining layers and will cause perched groundwater to collect. We did not observe either hydric plants or evidence of near-surface groundwater near the proposed homesite. We infer that the hydraulic gradient is toward the west and the sea cliff.

The area along the northern boundary of Tax Lot 2700 appears to have been a steep, short drainage swale which was filed (Photo 4). This was confirmed by our review of LIDAR of the area. We observed hydric plants at the base of the slope.

GEOLOGIC HAZARDS

Beach and Dune Hazards

Based on a review of the Coos County Map Atlas[5] and on correspondence with Coos County, the site, in accordance with Statewide Planning Goal 18, has been identified as having limited suitability for development. The county has mapped the area at the base of the sea cliff west of the site as being open dune sand (younger stabilized dunes).

Based on our site observations, the subject property and surrounding area appeared stable at the time of our site visit. The younger foredunes at the base of the sea cliff are migrating to the south and appeared marginally stable. These dunes are being replaced by drifting sand and do not impact the overall stability of the site. It is our

[5] Viewed online at https://www.coastalatlas.net

opinion that if the site is developed as proposed, the residential structure will not have an adverse impact on either the site or adjacent areas. We note that the site is currently developed with a residential structure and that there is no indication of an adverse impact on the stability of the dune. Also, it is our opinion that there is no need for temporary or permanent stabilization programs and/or maintenance of new and existing vegetation. Further, we see no hazards to life, public or private property, or to the natural environment by the proposed development. Finally, it is our professional opinion that if the site is developed in accordance with our recommendations, the proposed development will not cause destruction of desirable vegetation (including inadvertent destruction by moisture loss or root damage), cause exposure of stable and conditionally stable areas to erosion, or modify current air wave patterns leading to beach erosion. (If, after development, you decide to remove reclaim a portion of the dunes with from the gorse, we recommend that you seek advice from your local Soil Conservation Survey or the city of Bandon).

Based on a review of Oregon HazVu: Statewide Geohazards Viewer,[6] the sea cliff west of the site and the top of the bluff adjacent to the sea cliff have been identified by the State as being susceptible to very high (active) and high to moderate coastal erosion, respectively. Coastal erosion on the Bandon Bluff is well documented and is a significant geologic hazard causing localized landslides along the edges of the sea cliff. Because of this coastal erosion hazard, the sea cliff and top of the bluff have both been identified by the State as having a high likelihood of future landslides.

Oregon's Department of Geology and Mineral Industries (DOGAMI), in concert with others,[7] has begun monitoring rates of erosion along parts of the Oregon coastline. The department has identified chronic coastal hazards such as mass wasting of sea cliffs and recession of coastal bluffs caused by wave attack and

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[6] Oregon Department of Geology and Mineral Industries (DOGAMI) Oregon HazVu: Statewide Geohazards Viewer, viewed at https://gis.dogami.oregon.gov/maps/hazvu

7 Washington Department of Ecology (WA beaches), Oregon Department of Geology and Mineral Industries (OR beaches), and at Oregon State University (OR/WA near-shore bathymetry). Accessed at The Northwest Association of Networked Ocean Observing Systems (NANOOS) website at http://www.nanoos.org/

geologic instability. This process is known as bluff retreat.

Beach profiles surveyed by DOGAMI using GPS[8] provide a measure of offshore wave energy, which is reflected in accretion of sediments on the beach during the summer and erosion of sediments in winter. These data allow profiling of the beach and a determination as to past bluff erosion and retreat rates. A beach profile taken 1,117.0 feet north of the site, which was initially surveyed in April 1998 and most recently in February 2009, indicates that approximately 80.0 feet of sand has been deposited at the base of the sea cliff during the 11 years between surveys. The profile indicates that accretion of sediments at the base of the sea cliff has occurred since 1998 at various rates. We conclude, based on our site observations, that wind deposition has been the prevailing form of sediment transport. The cliff-backed beach where the survey was conducted is similar in elevation and geologic setting as that of the sea cliff west of the subject property.

Based on this, it is our opinion that this rate of deposition is representative of what we are seeing along the sea cliff west of the subject property. Please note that erosion of Oregon's coastal bluffs is expected to intensify in the future along its beaches due to diminishing beach sediments which provide buffering during winter storms. Future wave attack will be more destructive due, in part, to long-term rises in mean sea level and warmer oceans which will cause more intense storms associated with climate cycles such as El Niño.

LIDAR

A review of LIDAR for the area (a surveying technology that reveals topography by illuminating the ground with laser light) indicates that the site is located at the top of a level bluff which is bordered to the west by a sea cliff. The area adjacent to and north of the existing structure is inferred to be part of an older western-flowing drainage swale which has been filled in and leveled. We further note that the sea cliff west of the existing structure appears irregular and hummocky which is indicative of landslide topography. The top of the bluff where the existing structure is located appears level with no anomalous landforms.

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[8] Measurements of the beach were taken using Real-Time Kinematic Differential Global Positioning Systems (RTK-DGPS).

Based on a review of U.S. Geological Survey maps,[9] there are no geologically young faults in the area which would impact the site.

Seismic Design Criteria

The subject property is located in an area that is highly influenced by regional seismicity due to the proximity to the Cascadia Subduction Zone (CSZ). Recent studies[10] indicate that the southern CSZ has generated maximum credible earthquakes with a moment magnitude (Mm) of 8.7 or greater every 200 to 300 years. Time-dependent probabilities currently range up to 18 percent in 50 years for a southern segment rupture.

The seismic design criteria for this project is based on the 2012/2015 IBC and is summarized in Table 2 below.

Table 4: 2012/2015 International Building Code Recommended Seismic Provisions

Seismic Design Parameters	Short Period	1 Second
Maximum Credible Earthquake Spectral Acceleration	S_s = 1.664 g	S_1 = 0.805 g
Site Class	D = Stiff Soil	
Site Coefficient	F_a = 1.0	F_v = 1.5
Adjusted Spectral Acceleration	S_{MS} = 1.664 g	S_{M1} = 1.208 g
Design Spectral Response Acceleration Parameters	S_{DS} = 1.11 g	S_{D1} = 0.805 g
Peak Ground Acceleration[11]	PGA = .828 g	

Liquefaction

Liquefaction potential was assessed based on the information obtained from our borings and using the parameters suggested in the 2015 ODOT Geotechnical Design Manual. According to our seismic analysis, the site will experience a peak ground acceleration (PGA) during a seismic event of .828 g. Based on the nature of the soils encountered in our borings and the indicated depth to groundwater, it is our opinion that the loose, fine sand encountered from 0.0 to 5.0 feet bgs has a moderate

[9] U.S. Geological Survey (USGS), Quaternary Faults Web Mapping Application, viewed at https://earthquake.usgs.gov

[10] Goldfinger, C., et al. (2012). Turbidite Event History—Methods and Implications for Holocene Paleoseismicity of the Cascadia Subduction Zone. U.S. Geological Survey (USGS), Professional Paper: 1661-F.

[11] Mapped MCE Geometric Mean (MCE_G) Peak Ground Acceleration as provided by 2015 NEHRP.

liquefaction potential while the underlying medium-dense fine sand and stiff gray clay have a low-to-moderate liquefaction potential.

Tsunamis

According to recent mapping and modeling done by the State of Oregon,[12] the site is within the Tsunami Inundation Zone. Based on this modeling, the subject property and surrounding area will be inundated by a tsunami wave generated by a CSZ moment magnitude (Mm) earthquake of 9.0 or greater. Because of this, we strongly recommend that you check with the City of Bandon, Coos County, and with the State of Oregon's Department of Geology and Mineral Industries (DOGAMI) Tsunami Resource Center[13] for current information regarding tsunami preparedness and emergency procedures.

Slope Stability Analysis

To determine the suitability of the proposed location of the home site, CGS developed a model of the slope in order to determine a Factor of Safety (FS) for future slope failure. The Factor of Safety is defined as the ratio of the force driving downslope movement (typically gravity) and the forces resisting downslope movement (typically the shear strength of the soil). If the calculated Factor of Safety is less than 1.0, the driving force is greater than the resisting force and the slope is indicated to be unstable. For residential sites built on a slope, a Factor of Safety equal to or greater than 1.5[14] is required to ensure that the site is stable.

Our slope model was used to complete a slope stability analysis which in turn allowed us to determine a Factor of Safety. Our analysis is based on the north to south cross section shown on Figure 2 and is tied to the subsurface geology encountered in Boring B-1and B-3. The topography and resulting cross-section were developed based on published LIDAR maps of the area and measurements taken at the site.

As can be seen on Figure 3, in order to set the house to within 5 feet from the break in slope and still maintain a FS of 1.5, the house will need to be supported on a deep foundation system such as piles which are embedded in the underlying bedrock.

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[12] Local Source (Cascadia Subduction Zone) Tsunami Inundation Map, Bandon, Oregon, 2012, State of Oregon Department of Geology and Mineral Industries.
[13] DOGAMI Tsunami Hazards, Oregon Department of Geology and Mineral Industries, viewed at https://www.oregongeology.org
14 ODOT – Geotechnical Design Manual-Chapter 7-Slope Stability Analysis

DISCUSSION

Feasibility

Based on our surface and subsurface evaluation the site, it is or opinion that the site is safe to site the proposed residential structure provided it is developed in accordance with our recommendations.

It is our opinion that the site is currently stable and that there is no active coastal erosion along the base of the sea cliff west of the subject property. We reference a beach profile taken 1,117.0 feet north of the site, which was initially surveyed in April 1998 and most recently in February 2009, which indicates that approximately 80.0 feet of sand has been deposited at the base of the sea cliff during the 11 years between surveys. The profile indicates that accretion of sediments at the base of the sea cliff has occurred since 1998 at various rates.

Our bore data was used to develop a Slope Stability Analysis from which a Factor of Safety for future slope failure of the site was calculated. Based on our analysis, if the new dwelling is sited in the location of the existing dwelling and is supported on micro piles which are in turn supported on underlying bedrock sandstone, the Factor of Safety for slope stability will equal 1.5. A Factor of Safety of 1.5 is considered acceptable for residential structures located adjacent to slopes. Micro piles are an industry standard and are commonly used to support residential and commercial structures.

As we discussed, erosion along Oregon's coastal bluffs is expected to intensify in the future due to long-term rises in mean sea level and more severe winter storms. This anticipated rise in sea levels may cause sea cliff erosion and bluff retreat which may, over time, impact the new structure provided it is not supported on piles.

DESIGN

Micropiles

Micropile installation is an industry standard performed by many contractors and would provide the most efficient foundation system for this site. We recommend that the piles be installed in pre-bored holes with a minimum 5 feet socketed into the underlying sandstone bedrock. As discussed, bedrock was encountered at from 13.0 to 22.5 feet bgs in our borings. The number of micropiles and specific micropile design and layout should be determined by the structural engineer based on the structure that you choose to build. Likewise, installation and testing should be the responsibility of the contractor who is in the best position to choose systems that fit the overall plan of

operation. The piles used should be designed to withstand the corrosive marine environment. A CGS engineering geologist (or their representative) should confirm suitable bearing conditions and evaluate all micro pile borings. Refer to the accompanying figures and specifications for detailed information on micropile capacity and installation.

As can be seen in Figure 3, the recommended pile scenario is a vertical micropile with a supporting inclined (batter) pile installed at a 1:H to 3: V incline. Both piles are drilled and grouted 5 feet into the underlying bedrock. Based on the sandstone encountered in our borings, the piles as shown will provide a tension and compression capacity of 60 kips and a lateral capacity of 2 kips. This configuration assumes a minimum setback of 5 feet from the break in slope from the sea cliff.

Figure 4 provides a cross section through the slope looking east and details a minimum spacing for the piles of 10 feet. As discussed, the number of micropiles and layout should be determined by the structural engineer. Figure 5 shows a cross section of a pile and provides specifics for the construction. As can been seen from Figure 5, we recommend an epoxy coated (or similar) #10 All Thread bar set inside a 5.5-inch OD pipe casing. The casing extends to a depth of 2 feet below the contact with the sandstone allowing the bottom 3 feet to bond to the sandstone. The grout used is 4000 PSI cement (neat).

We refer the reader to Appendix 1 located in the back of this report which provides general construction recommendations regarding preparing the site and provides recommendations and specifications for materials.

LIMITATIONS

Cascadia Geoservices, Inc.'s (CGS) professional services will be performed, findings obtained, and recommendations prepared in accordance with generally accepted principles and practices for engineering geologists. No other warranty, express or implied, is made. The Customer acknowledges and agrees that:

1. CGS is not responsible for the conclusions, opinions, or recommendations made by others based upon our findings.
2. This report has been prepared for the exclusive use of the addressee, and their agents, and is intended for their use only. It is not to be photographed, photocopied, or

similarly reproduced, in total or in part, without the expressed written consent of the Customer and Cascadia Geoservices, Inc.

3. The opinions, comments, and conclusions presented in this report are based upon information derived from our literature review, historical topographic map and aerial photograph review, and on our site observations. The scope of our services is intended to evaluate soil and groundwater (ground) conditions within the primary influence or influencing the proposed development area. Our services do not include an evaluation of potential ground conditions beyond the depth of our explorations or agreed-upon scope of our work. Conditions between or beyond our site observations may vary from those encountered.

4. Recommendations provided herein are based in part upon project information provided to CGS. If the project information is incorrect or if additional information becomes available, the correct or additional information should be immediately conveyed to CGS for review.

5. The scope of services for this subsurface exploration and report did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous substances in the soil, surface water, or groundwater at this site.

6. If there is a substantial lapse of time between the submission of this report and the start of work at the site, if conditions have changed due to natural causes or construction operations at or adjacent to the site, or if the basic project scheme is significantly modified from that assumed, this report should be reviewed to determine the applicability of the conclusions and recommendations. Land use, site conditions (both on and off site), or other factors may change over time and could materially affect our findings. Therefore, this report should not be relied upon after two years from its issue, or in the event that the site conditions change.

7. The work performed by the Consultant is not warrantied or guaranteed.

8. There is an assumed risk when building on marginal ground, sites subject to flooding, or adjacent to bluffs, sea cliffs, or on steep ground.

9. The Consultant's work will be performed to the standards of the engineering and geology professions and will be supervised by licensed professionals. Attempts at improving marginal ground, sites subject to flooding, or adjacent to bluffs, sea cliffs, or on steep ground supporting the Customer's property may, through acts of God or otherwise, be temporary and that marginal ground, sites subject to flooding, or adjacent to bluffs, sea cliffs, or on steep ground may continue to degrade over time.

The Customer hereby waives any claim that it may have against CGS for any claim, whether based on personal injury, property damage, economic loss, or otherwise, for any work performed by CGS for the Customer relating to or arising out of attempts to stabilize the marginal ground, sites subject to flooding, or bluffs, sea cliffs, or steep ground located at the Customer's property identified hereunder. It is further understood and agreed that continual monitoring of the Customer's property may be required, and that such monitoring is done by sophisticated monitoring instruments used by CGS. It is further understood and agreed that repairs may require regular and periodic maintenance by the Customer.

10. The Customer shall indemnify, defend, at the Customer's sole expense, and hold harmless CGS, affiliated companies of CGS, its partners, joint ventures, representatives, members, designees, officers, directors, shareholders, employees, agents, successors, and assigns (Indemnified Parties) from and against any and all claims for bodily injury or death, damage to property, demands, damages, and expenses (including but not limited to investigative and repair costs, attorney's fees and costs, and consultant's fees and costs) (hereinafter "Claims") which arise or are in any way connected with the work performed, materials furnished, or services provided under this Agreement by CGS or its agents.

PROFESSIONAL QUALIFICATIONS

Please see our website at www.CascadiaGeoservices.com to review our qualifications.

Sincerely,
Cascadia Geoservices, Inc.

Eric Oberbeck, RG, CEG
Expires May 31, 2021

PHOTOGRAPHIC LOG

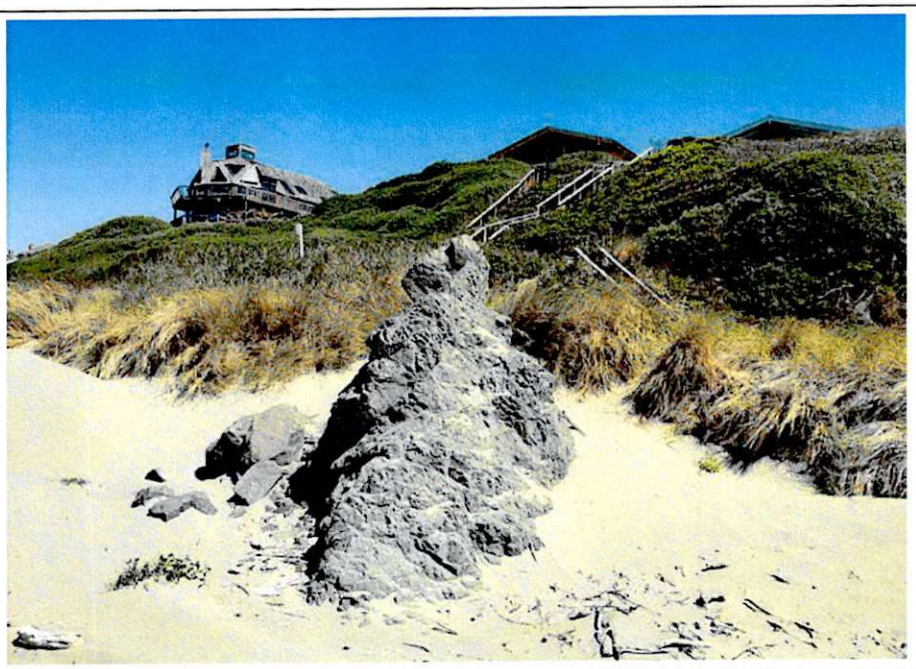
FIGURES

ATTACHMENTS

APPENDIX

CASCADIA Geoservices — Geologists and Engineers	Nicholas F. Klein 54182 Gould Avenue Bandon, Oregon 97411	**Photographic Log**
	Date: September, 2019	Cascadia Geoservices, Inc. Project No: 19045

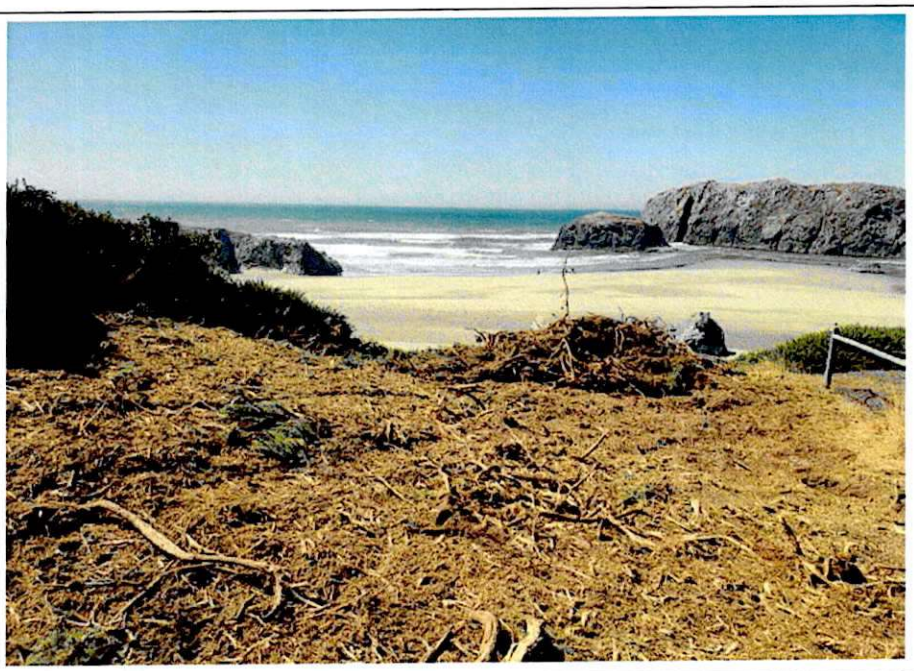
Photo No:	1
Direction Photo is Taken: North	
Photo Description:	
Areas of the sand dunes at the base of the sea cliff have been stabilized by dune grasses	

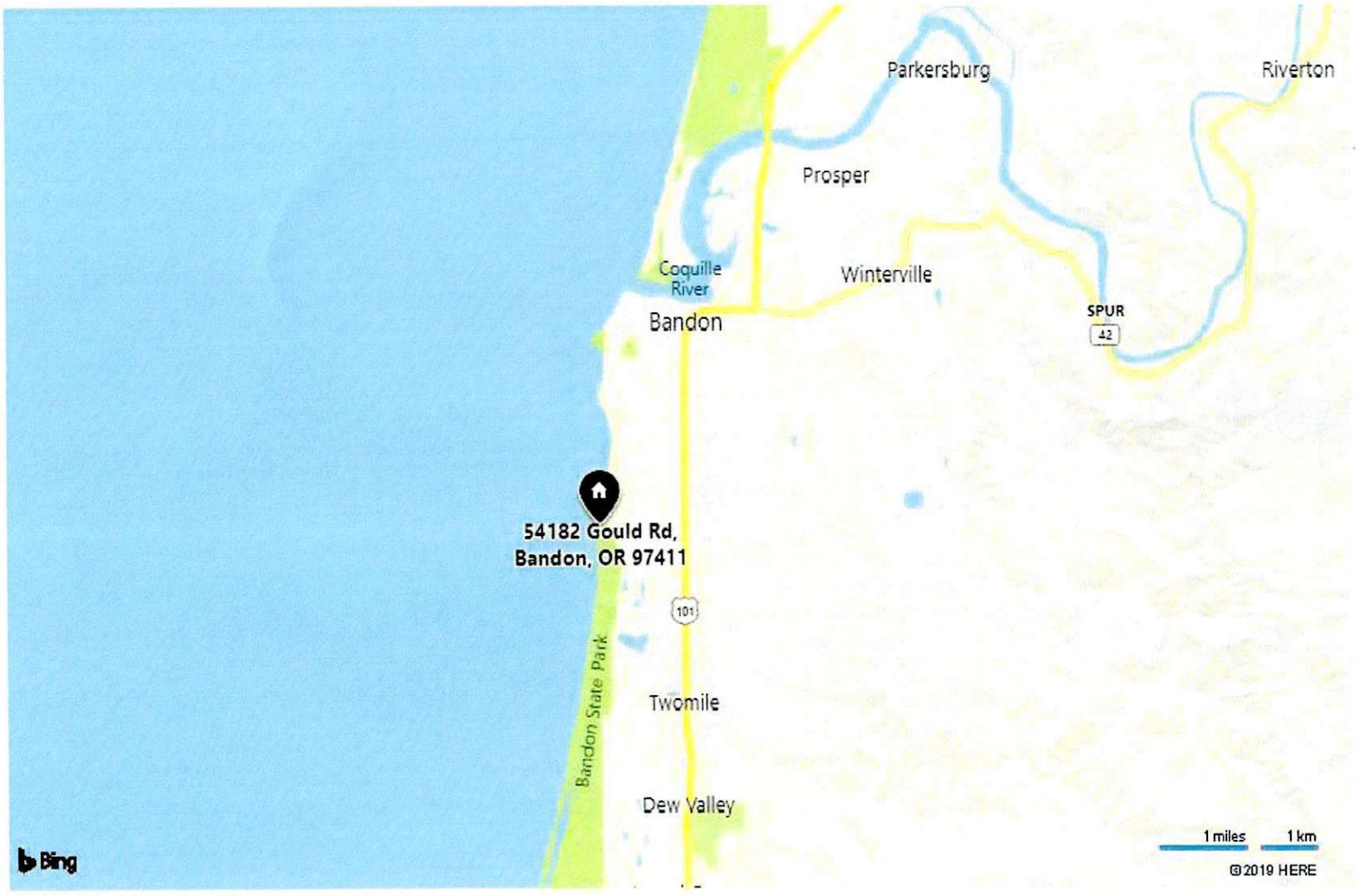
Photo No:	2
Direction Photo is Taken: East	
Photo Description:	
Light grey bedrock sandstone is visible in outcrop at the base of the sea cliff.	

CASCADIA Geoservices — Geologists and Engineers	Nicholas F. Klein 54182 Gould Avenue Bandon, Oregon 97411	**Photographic Log**
	Date: September, 2019	Cascadia Geoservices, Inc. Project No: 19045

Photo No:	**3**
Direction Photo is Taken: West	
Photo Description:	
CGS observed two geotechnical borings during recent site visit	

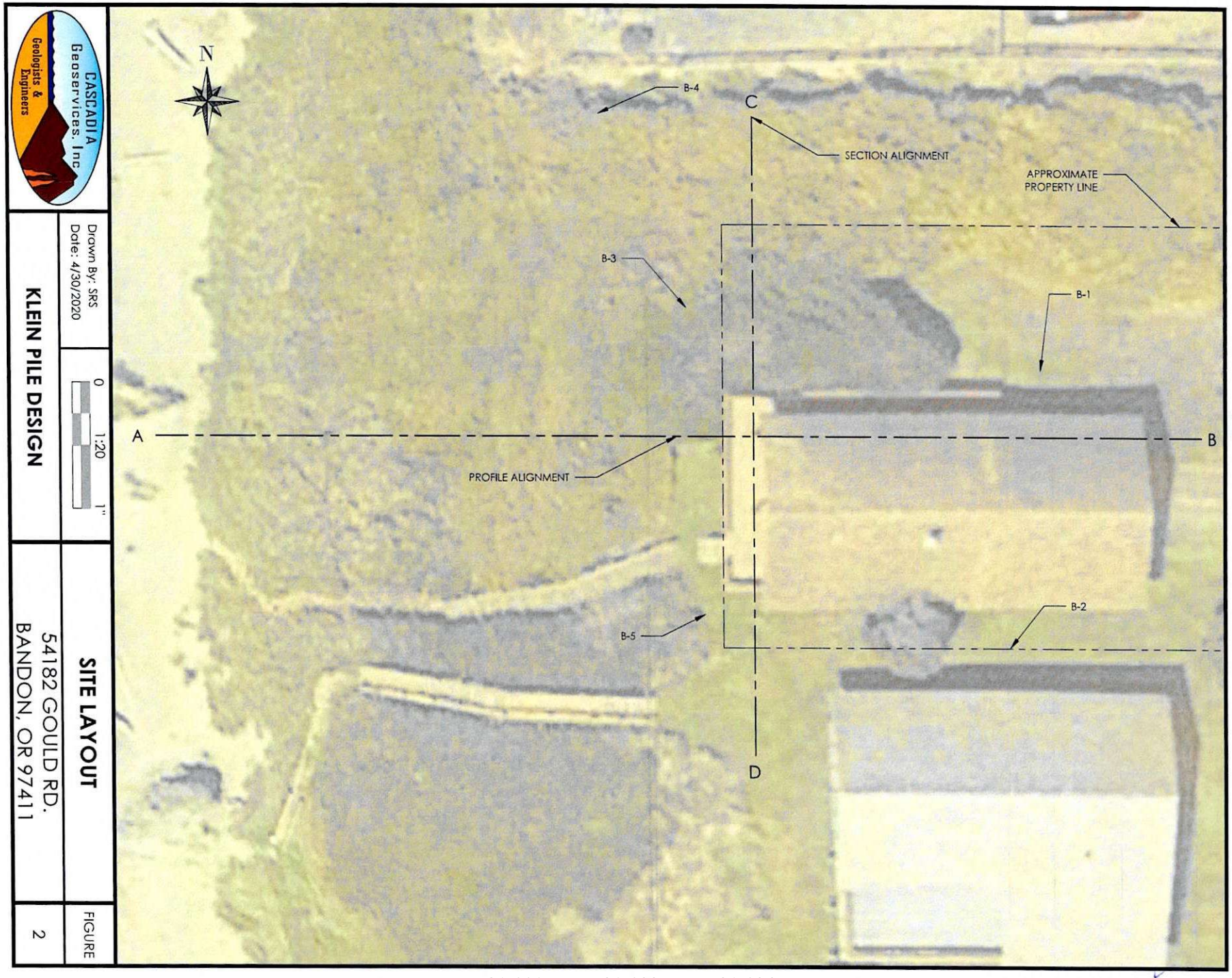
Photo No:	
Direction Photo is Taken: North	
Photo Description:	
The area along the northern boundary of the site was a steep, short drainage swale which was filed.	





Prepared for Mr. Nicholas F. Klein

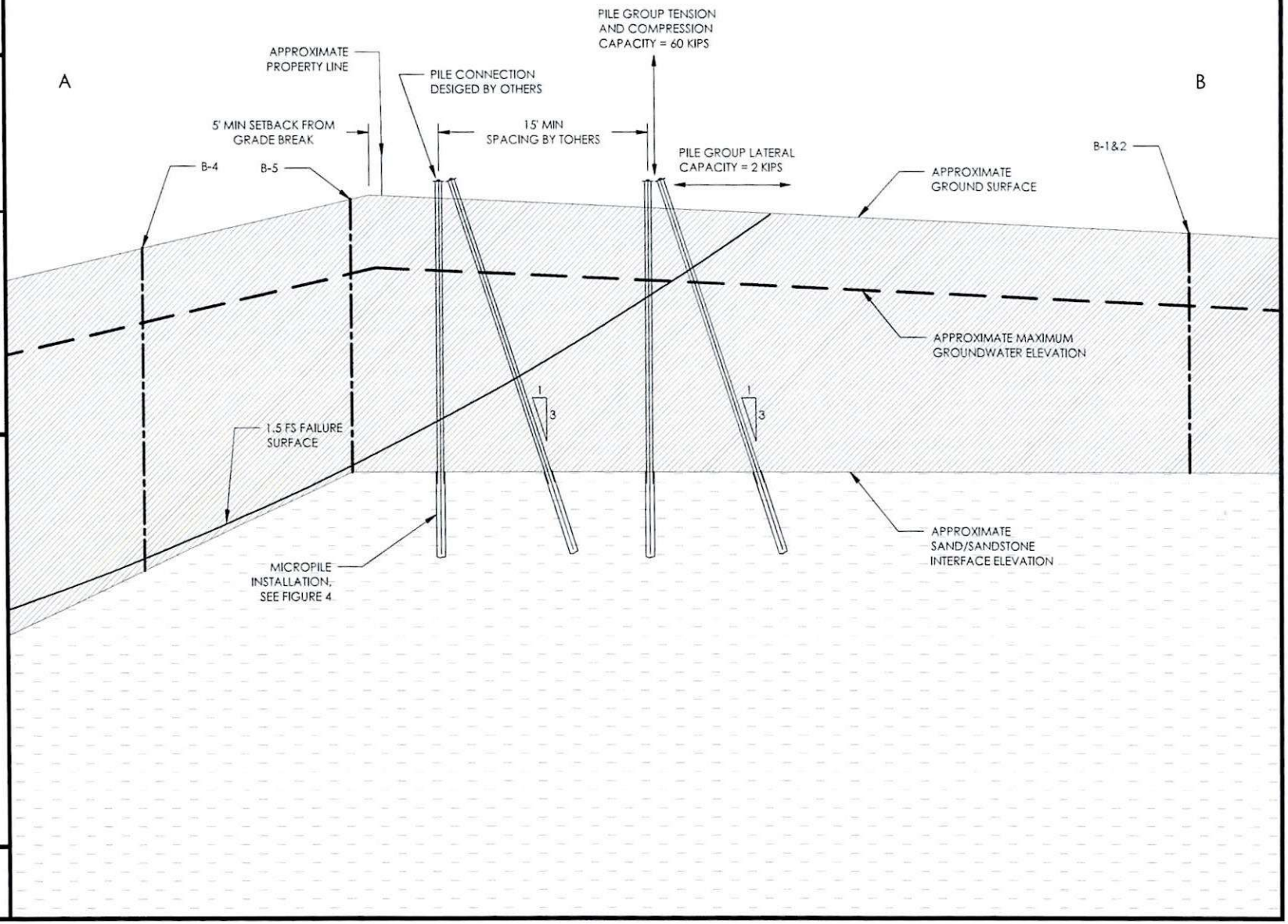
CASCADIA Geoservices Geologists and Engineers	Sept, 2019 CGS Proj: 19045	**Location Map** 54182 Gould Avenue Bandon, Oregon 97411	**Figure 1**


CASCADIA Geoservices, Inc
Geologists & Engineers
KLEIN PILE DESIGN
Drawn By: SRS
Date: 4/30/2020
0
1:20
1"
SITE LAYOUT
54182 GOULD RD.
BANDON, OR 97411
FIGURE
2
N
B-4
C
SECTION ALIGNMENT
APPROXIMATE
PROPERTY LINE
B-3
B-1
A
B
PROFILE ALIGNMENT
B-2
B-5
D

CASCADIA Geoservices, Inc
Geologists & Engineers

SOIL PROPERTIES SUMMARY

MATERIAL NAME	HATCH	UNIT WEIGHT (lbs/ft³)	COHESION (psf)	PHI (deg)	UNDRAINED SHEAR (PSF)	USCS SOIL	LL	PL	PI
LOOSE SAND		115	0	30	NA	SM	NA	NA	NA
SANDSTONE		130	0	NA	NA	NA	NA	NA	NA



KLEIN PILE DESIGN

Drawn By: SRS
Date: 4/30/2020

0 1:20 1"

SITE PILE PROFILE LAYOUT

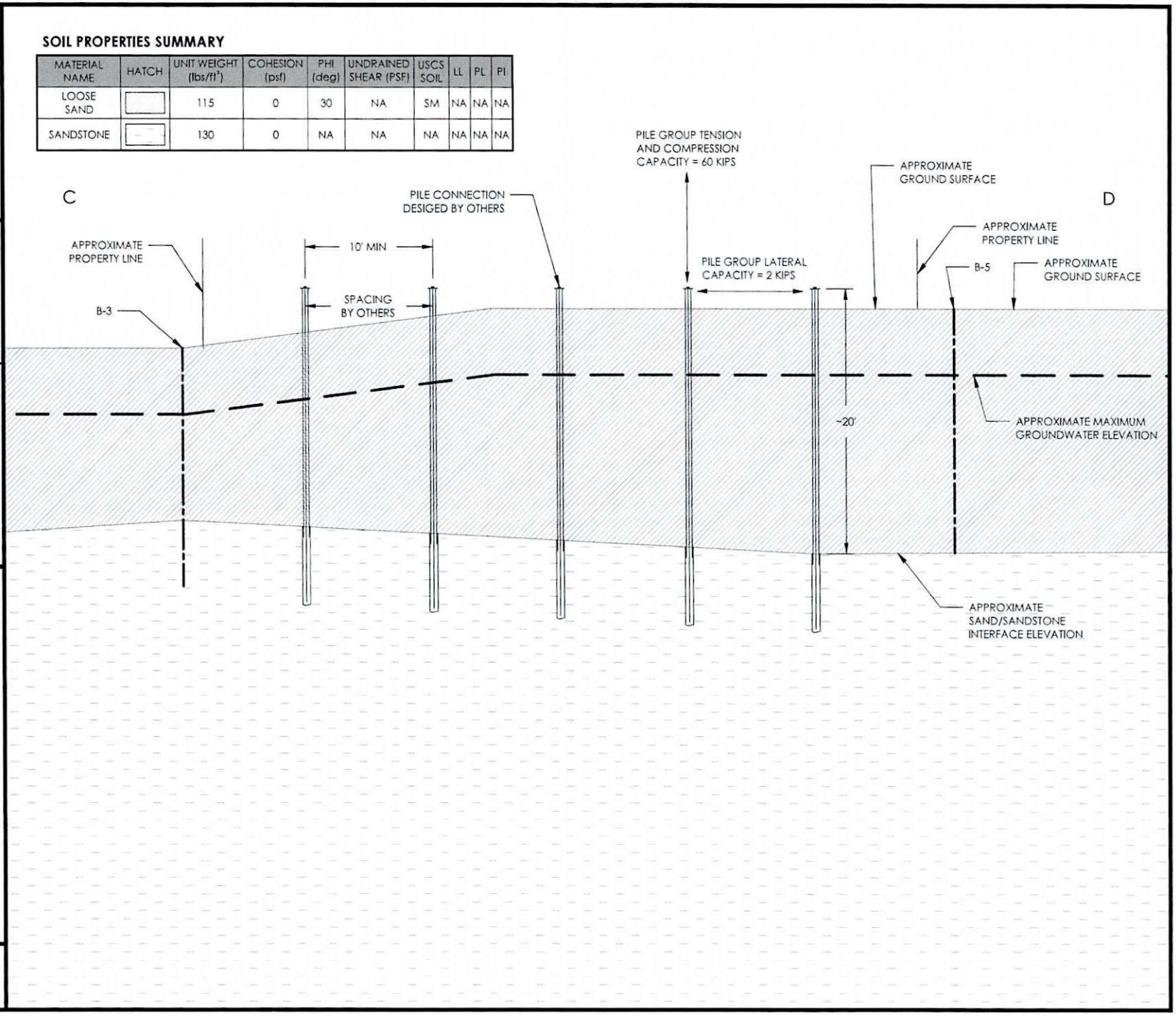
54182 GOULD RD.
BANDON, OR 97411

FIGURE 3

CASCADIA Geoservices, Inc
Geologists & Engineers

SOIL PROPERTIES SUMMARY

MATERIAL NAME	HATCH	UNIT WEIGHT (lbs/ft³)	COHESION (psf)	PHI (deg)	UNDRAINED SHEAR (PSF)	USCS SOIL	LL	PL	PI
LOOSE SAND		115	0	30	NA	SM	NA	NA	NA
SANDSTONE		130	0	NA	NA	NA	NA	NA	NA



KLEIN PILE DESIGN

Drawn By: SRS
Date: 4/30/2020

0
1:20
1"

SITE PILE SECTION LAYOUT

54182 GOULD RD.
BANDON, OR 97411

FIGURE 4

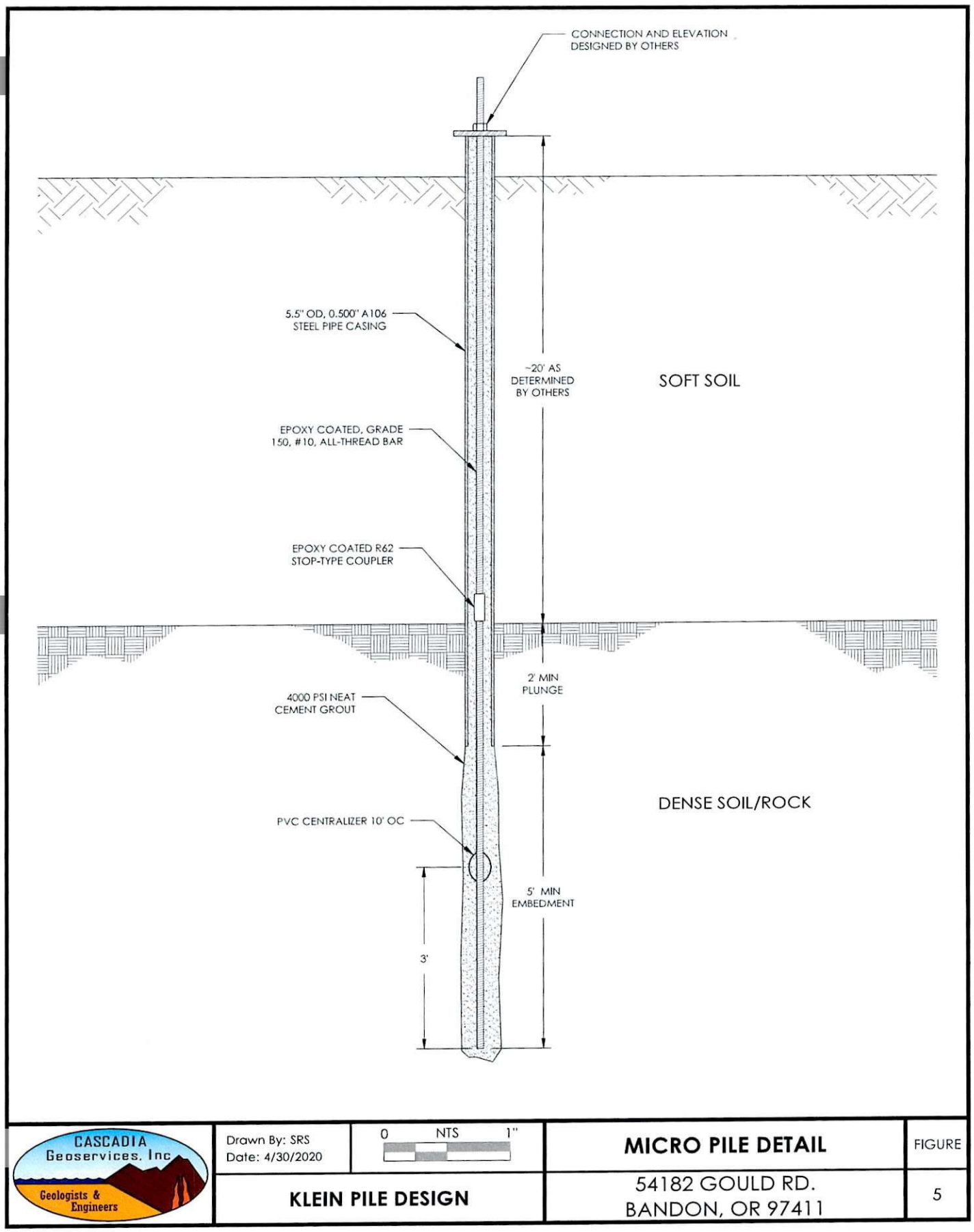

CONNECTION AND ELEVATION DESIGNED BY OTHERS
5.5" OD, 0.500" A106 STEEL PIPE CASING
~20' AS DETERMINED BY OTHERS
SOFT SOIL
EPOXY COATED, GRADE 150, #10, ALL-THREAD BAR
EPOXY COATED R62 STOP-TYPE COUPLER
2' MIN PLUNGE
4000 PSI NEAT CEMENT GROUT
DENSE SOIL/ROCK
PVC CENTRALIZER 10' OC
5' MIN EMBEDMENT
3'
CASCADIA Geoservices, Inc
Geologists & Engineers
Drawn By: SRS
Date: 4/30/2020
0 NTS 1"
MICRO PILE DETAIL
FIGURE
KLEIN PILE DESIGN
54182 GOULD RD.
BANDON, OR 97411
5

TABLE 1
FIELD CLASSIFICATIONS

SOILS

SOIL DESCRIPTION FORMAT	
(1) consistency,	(9) structure,
(2) color,	(10) cementation,
(3) grain size,	(11) reaction to HCL,
(4) classification name [secondary PRIMARY additional];	(12) odor,
(5) moisture,	(13) groundwater seepage,
(6) plasticity of fines,	(14) caving,
(7) angularity	**(15) (unit name and/or origin),**
(8) shape,	

Note: Bolded items are the minimum required elements for a soil description.

1. CONSISTENCY - COARSE-GRAINED

TERM	SPT (140-LB. HAMMER)[1]	D & M SAMPLER (140-LB. HAMMER)[1]	DYNAMIC CONE PENETROMETER PENETRATION RATE SAMPLER (DCP)[4,5,6]	FIELD TEST (USING ½-INCH REBAR)
Very loose	0 – 4	0 – 11	0 – 2	Easily penetrated when pushed by hand
Loose	4 – 10	11 – 26	2 – 5	Easily penetrated several inches when pushed by hand
Medium dense	10 – 30	26 – 74	6 – 31	Easily to moderately penetrated when driven by 5 lb. hammer
Dense	30 – 50	74 – 120	32 – 42	Penetrated 1-foot with difficulty when driven by 5 lb. hammer
Very dense	>50	>120	>43	Penetrated only few inches when driven by 5 lb. hammer

1. CONSISTENCY - FINE-GRAINED

TERM	SPT (140-LB. HAMMER)[1]	D & M SAMPLER (140-LB. HAMMER)[1]	DYNAMIC CONE PENETROMETER PENETRATION RATE SAMPLER (DCP)[5,6]	POCKET PEN.[2]	TORVANE[3]	FIELD TEST
Very soft	<2	<3	<2	<0.25	<0.13	Easily penetrated several inches by fist
Soft	2 – 4	3 – 6	2 – 3	0.25 – 0.5	0.13 – 0.25	Easily penetrated several inches by thumb
Medium stiff	5 – 8	7 – 12	4 – 7	0.50 – 1.0	0.25 – 0.5	Can be penetrated several inches by thumb with moderate effort
Stiff	9 – 15	13 – 25	8 – 16	1.0 – 2.0	0.5 – 1.0	Readily indented by thumb but penetrated only with great effort
Very stiff	16 – 30	26 – 65	17 – 27	2.0 – 4.0	1.0 – 2.0	Readily indented by thumbnail
Hard	>30	>65	>28	>4.0	>2.0	Difficult to indent by thumbnail

1 Standard penetration resistance (SPT N-value); Dames and Moore (D & M) sampler, number of blows/ft. for last 12" and 30" drop. Unconfined
2 compressive strength with pocket penetrometer; in tons per square foot (tsf).
3 Undrained shear strength with torvane (tsf).
4 Up to maximum medium-size sand grains only.
5 Dynamic cone penetration resistance; number of blows/inch.
6 Reference: George F. Sowers et. al. "Dynamic Cone for Shallow In-Situ Penetration Testing of In-Situ Soils, ASTM STP 399, ASTM, , pg. 29. 1966.

2. COLOR

Use common colors. For combinations use hyphens. To describe tint use modifiers: pale, light, and dark. For color variations use adjectives such as "mottled" or "streaked". Soil color charts may be required by client. **Examples:** red-brown; or orange-mottled pale green; or dark brown.

3. GRAIN SIZE

DESCRIPTION		SIEVE*	OBSERVED SIZE
boulders		–	>12"
cobbles		–	3" – 12"
gravel	coarse	¾" – 3"	¾" – 3"
	fine	#4 – ¾"	4.75 mm (0.19") – ¾"
sand	coarse	#10 – #4	2.0 – 4.75 mm
	medium	#40 – #10	0.425 – 2.0 mm
	fine	#200 – #40	0.075 – 0.425 mm
fines		<#200	<0.075 mm

4. CLASSIFICATION NAME

* Use of #200 field sieve encouraged for estimating percentage of fines.

	NAME AND MODIFIER TERMS	CONSTITUENT PERCENTAGE	CONSTITUENT TYPE
Coarse grained	GRAVEL, SAND, COBBLES, BOULDERS	>50%	PRIMARY
	sandy, gravelly, cobbley, bouldery	30 – 50%	secondary
	silty, clayey*	15 – 50%	
	with (gravel, sand, cobbles, boulders)	15 – 30%	additional
	with (silt, clay)*	5 – 15%	
	trace (gravel, sand, cobbles, boulders)		
	trace (silt, clay)*	<5%	
Fine grained	CLAY, SILT*	>50%	PRIMARY
	silty, clayey*	30 – 50%	secondary
	sandy, gravelly		
	with (sand, gravel, cobbles, boulders)	15 – 30%	additional
	with (silt, clay)*		
	trace (sand, gravel, cobbles, boulders)	5 – 15%	
	trace (silt, clay)*		
Organic	PEAT	50 – 100%	PRIMARY
	organic (soil name)	15 – 50%	secondary
	(soil name) with some organics	5 – 15%	additional

* For classification and naming fine-grained soil: dry strength, dilatancy, toughness, and plasticity testing are performed (see Describing Fine-Grained Soil page 2). Confirmation requires laboratory testing (Atterberg limits and hydrometer).

TABLE 1
FIELD CLASSIFICATIONS

SOILS

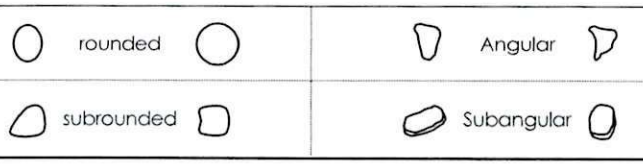
5. MOISTURE

TERM	FIELD TEST
dry	absence of moisture, dusty, dry to touch
moist	contains some moisture
wet	visible free water, usually saturated

6. PLASTICITY OF FINES

See "Describing fine-grained Soil" on Page 2.

7. ANGULARITY



8. Shape

TERM	OBSERVATION
flat	particles with width/thickness ratio >3
elongated	particles with length/width ratio >3
flat and elongated	particles meet criteria for both flat and elongated

9. STRUCTURE

TERM	OBSERVATION
stratified	alternating layers >1 cm thick, describe variation
laminated	alternating layers <1 cm thick, describe variation
fissured	contains shears and partings along planes of weakness
slickensides	partings appear glossy or striated
blocky	breaks into lumps, crumbly
lensed	contains pockets of different soils, describe variation
homogenous	same color and appearance throughout

10. CEMENTATION

TERM	FIELD TEST
weak	breaks under light finger pressure
moderate	breaks under hard finger pressure
strong	will not break with finger pressure

11. REACTION TO HCL

TERM	FIELD TEST
none	no visible reaction
weak	bubbles form slowly
strong	vigorous reaction

12. ODOR

Describe odor as organic; or potential non-organic*
*Needs further investigation

13. GROUNDWATER SEEPAGE

Describe occurrence (i.e. from soil horizon, fissures with depths) and rate:
slow (<1 gpm); moderate (1-3 gpm); fast (>3 gpm)

14. CAVING

Describe occurrence (depths, soils) and amount with term

Test Pits	minor (<1 ft³)	moderate (1-3 ft³)	Severe (>3 ft³)

15. (UNIT NAME/ORIGIN)

Name of stratigraphic unit (e.g. Willamette Silt), and/or origin of deposit (Topsoil, Alluvium, Colluvium, Decomposed Basalt, Loess, Fill, etc.).

DESCRIBING FINE-GRAINED SOIL

	FIELD TEST			
NAME	PLASTICITY (A BELOW)	DRY STRENGTH (B BELOW)	DILATANCY REACTION (C BELOW)	TOUGHNESS OF THREAD (D BELOW)
SILT	non-plastic, low	none, low	rapid	low
SILT with some clay	low	low, medium	rapid, slow	low, medium
clayey SILT	low, medium	medium	slow	medium
silty CLAY	medium	medium, high	slow, none	medium, high
CLAY with some silt	high	High	none	high
CLAY	high	very high	none	high
organic SILT	non-plastic, low	low, medium	slow	low, medium
organic CLAY	medium, high	medium to very high	none	medium, high

A. PLASTICITY

TERM	OBSERVATION
non-plastic	A 1/8" (3-mm) thread cannot be rolled at any water content.
low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be re-rolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
high	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be re-rolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

B. DRY STRENGTH

TERM	OBSERVATION
none	Dry specimen crumbles into powder with mere pressure of handling.
low	Dry specimen crumbles into powder with some finger pressure.
medium	Dry specimen breaks into pieces or crumbles with considerable finger pressure.
high	Dry specimen cannot be broken with finger pressure. Will break into pieces between thumb and a hard surface.
very high	Dry specimen cannot be broken between thumb and a hard surface.

C. DILATANCY REACTION

TERM	OBSERVATION
none	No visible change in the specimen.
slow	Water appears slowly on surface of specimen during shaking and doesn't disappear or disappears slowly upon squeezing.
rapid	Water appears quickly on the surface of the specimen during shaking and disappears quickly upon squeezing.

D. TOUGHNESS OF THREAD

TERM	OBSERVATION
low	Only slight hand pressure is required to roll the thread near the plastic limit. The thread and lump are weak and soft.
medium	Medium pressure is required to roll the thread to near the plastic limit. The thread and lump have medium stiffness.
high	Considerable hand pressure is required to roll the thread to near the plastic limit. The thread and lump have very high stiffness.

TABLE 1
FIELD CLASSIFICATIONS

ROCKS

Rock Descriptions

Scale of Rock Strength

Description	Designation	Unconfined Compressive Strength, psi	Unconfined Compressive Strength, MPa	Field Identification
Extremely weak rock	R0	35 – 150	0.25 – 1	Indented by thumbnail.
Very weak rock	R1	150 – 725	1 – 5	Crumbles under firm blows with point of geology pick; can be peeled by a pocket knife.
Weak rock	R2	725 – 3,500	5 – 25	Can be peeled with a pocket knife; shallow indentation made by firm blow with point of geological hammer.
Medium weak rock	R3	3,500 – 7,000	25 – 50	Cannot by scraped or peeled with a pocket knife; specimen can be fractured with a single firm blow of geological hammer.
Strong rock	R4	7,000 – 15,000	50 – 100	Specimen requires more than one blow with a geological hammer to fracture it.
Very strong rock	R5	15,000 – 36,000	100 – 250	Specimen requires many blows of geological hammer to fracture it.
Extremely strong rock	R6	> 36,000	> 250	Specimen can only be chipped with geological hammer.

Descriptive Terminology for Joint Spacing or Bedding

Descriptive Term	Spacing of Joints	
Very close	Less than 2 inches	< 50 mm
Close	2 inches - 1 foot	50 mm – 300 mm
Moderately close	1 foot - 3 feet	300 mm – 1 m
Wide	3 feet -10 feet	1 m – 3 m
Very wide	Greater than 10 feet	> 3 m

Descriptive Terminology for Vesicularity

Descriptive Term	Percent voids by volume
Dense	< 1%
Slightly vesicular	1 – 10%
Moderately vesicular	10 – 30%
Highly vesicular	30 – 50%
Scoriaceous	> 50%

Correlation of RQD and Rock Quality

Rock Quality Descriptor	RQD Value
Very poor	0 – 25
Poor	25 - 50
Fair	50 - 75
Good	75 – 90

TABLE 1
FIELD CLASSIFICATIONS

ROCKS

Scale of Rock Weathering		
Stage	**Description**	**Quality Distinction**
Fresh	Rock is fresh, crystals are bright, few joints may show slight staining as a result of ground water.	No discoloration
Very Slight	Rock is generally fresh, joints are stained, some joints may have thin clay coatings, crystals in broken face show bright.	Discoloration only on major discontinuity surfaces [1]
Slight	Rock is generally fresh, joints are stained and discoloration extends into rock up to 1 in. Joints may contain clay. In granitoid rocks some feldspar crystals are dull and discolored. Rocks ring under hammer if crystalline.	Discoloration on all discontinuity surfaces and on rock
Moderate	Significant portions of rock show discoloration and weathering effects. In granitoid rocks, most feldspars are dull and discolored; some are clayey. Rock has dull sound under hammer and shows significant loss of strength as compared with fresh rock.	Decomposition and/or disintegration < 50% of rock [2]
Moderately Severe	All rock, except quartz discolored or stained. In granitoid rocks, all feldspars dull and discolored and majority show kaolinization. Rock shows severe loss of strength and can be excavated with geologist's pick. Rock goes "clunk" when struck.	Decomposition and/or disintegration > 50%, but not complete
Severe	All rock, except quartz, discolored or stained. Rock "fabric" is clear and evident, but reduced in strength to strong soil. In granitoid rocks, all feldspars kaolinized to some extent. Some fragments of harder rock usually left, such as corestones in basalt.	
Very Severe	All rock, except quartz, discolored or stained. Rock "fabric" is discernible, but mass effectively reduced to "soil" with only fragments of harder rock remaining.	Decomposition and/or disintegration 100% with structure/fabric intact
Complete	Rock is reduced to "soil". Rock "fabric" is not discernible, or only in small scattered locations. Quartz may be present as dikes or stringers.	Decomposition and/or disintegration 100% with structure/fabric destroyed

NOTES: [1] Discontinuities consist of any natural break (joint, fracture or fault) or plane of weakness (shear or gouge zone, bedding plane) in a rock mass

[2] Decomposition refers to chemical alteration of mineral grains; disintegration refers to mechanical breakdown

[3] Stage and description from ASCE Manual No. 56 (1976), quality distinction from Murray (1981)

Rock strength scale taken from Duncan C. Wyllie, "Foundations on Rock, Second Edition, 1999".

TABLE 2
KEY TO TEST PIT AND BORING LOG SYMBOLS

SAMPLE NUMBER ACRONYMS/WATER SYMBOLS

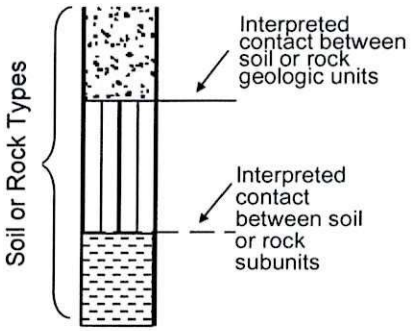
DM - Dames & Moore Sampler
GR - Grab or Bulk Samples
OS - Osterberg (Piston) Sampler
C - Rock Core
SA - Screen Air Sampling
SW - Screen Water Sampling
SS - SPT Standard Penetration Drive Sampler (ASTM D1586)
ST - Shelby Tube Push Sampler (ASTM D1587)

Water Level During Drilling/ Excavation

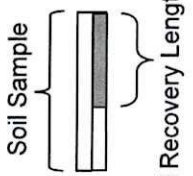
Water Level on Date Measured

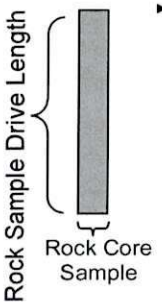
LOG GRAPHICS/INSTALLATIONS

Soil and Rock

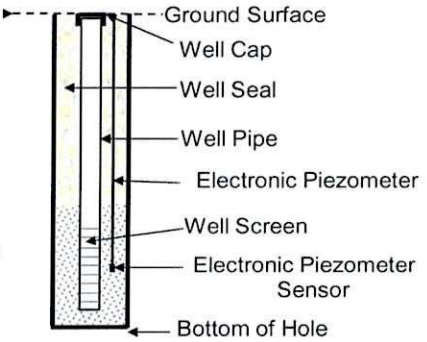


Soil and Rock Sampling Symbols





Instrumentation Detail



GEOTECHNICAL FIELD & LABORATORY TESTING/ACRONYM EXPLANATIONS

ATT	Atterberg Limits	OC	Organic Content
AMSL	Above Mean Sea Level	OD	Outside Diameter
BGS	Below ground surface	P200	Percent Passing U.S. Standard No. 200 Sieve
CBR	California Bearing Ratio	PI	Plasticity Index
CON	Consolidation	PL	Plasticity Limit
DCP	Dynamic Cone Penetrometer	PP	Pocket Penetrometer
DD	Dry Density	RES	Resilient Modulus
DS	Direct Shear	SC	Sand Cone
GPS	Global Positioning System	SIEV	Sieve Gradation
HCL	Hydrochloric Acid	SP	Static Penetrometer
HYD	Hydrometer Gradation	TOR	Torvane
kPa	kiloPascal	UC	Unconfined Compressive Strength
LL	Liquid Limit	VS	Vane Shear

ENVIRONMENTAL TESTING/ACRONYM EXPLANATIONS

ATD	At Time of Drilling	ND	Not Detected
BGS	Below ground surface	NS	No Sheen
CA	Sample Submitted for Chemical Analysis	PID	Photoionization Detector Headspace Analysis
HS	High Sheen		
MS	Moderate Sheen	PPM	Parts Per Million

Rev. 3/2019

BORING B-1

KLEIN RESIDENCE
54182 GOULD ROAD
BANDON, OREGON

COORDINATES/LOCATION:
60' from edge of sea cliff
Lat: 43 05.114 Long: -124 26.071 (See Figure 2)

CASCADIA GEOSERVICES
PROJECT NUMBER:
19045

Cascadia Geoservices
190 6th Street
Mail: PO Box 1026
Port Orford, Oregon 97465
Direct: 541-332-0433
Cell: 541-655-0021
Email: eric@cascadiageoservices.com
Web: www.cascadiageoservices.com

DEPTH (FEET)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (FEET)	TESTING	SAMPLE TYPE / SAMPLE ID	COMMENTS
		SURFACE CONDITIONS: Dry				
0.0		Loose, tan, fine SAND; dry	0.0			
		QUATERNARY MARINE TERRACE DEPOSITS				
		becomes poorly graded at 2.5 feet bgs			SS-1 (6)	
5.0		becomes medium dense; damp at 5.0 feet bgs		P200	SS-2 (12)	P200 = 2% W% = 3.6%
					SS-3 (13)	
10.0		becomes medium stiff, tan, CLAY, grading to coarse-grained, rounded sand; moist from 10.0 to 11.0 feet bgs	10.0		SS-4 (7)	
		becomes coarse-grained, SAND; moist, rounded at 11.0 feet bgs	11.0			Harder drilling at 13.0 feet bgs
15.0		Very dense, gray, coarse, SANDSTONE; dry	15.0		SS-5 (15-50/5")	Boring left open for 1 hour to check groundwater level (no groundwater was observed).
		SIXES RIVER MELANGE BEDROCK	16.0			
		Final depth 16.0 feet bgs; boring left open for 1 hour to measure groundwater (no groundwater was observed) then boring backfilled with bentonite chips				
20.0						
25.0						
30.0						
35.0						

SAMPLE TYPE / SAMPLE ID:
- ◇ DYNAMIC CONE PENETROMETER (DP/DCP)
- ▬ STATIC PENETROMETER (SP)
- ● MOISTURE CONTENT (%)
- ▲ BLOW COUNT (N-VALUE)
- INDEX PROPERTIES (IP)
- NUCLEAR DENSITY (ND)
- DRY DENSITY (DD)
- SIEVE (SIEV)

0 25 50

DRILLING METHOD: Auger
DRILLED BY: Dan J. Fischer Excavating, Inc.
LOGGING COMPLETED: 4/11/19
LOGGED BY: E. Oberbeck

BORING B-1
Page 1 of 1

ALL EXPLORATIONS KLEIN RES B1-2 073019.GPJ PRINT DATE 9/12/19

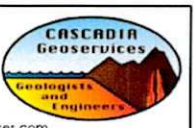
BORING B-2

KLEIN RESIDENCE
54182 GOULD ROAD
BANDON, OREGON

COORDINATES/LOCATION:
6' S. of house; distance to edge of sea cliff is 58'
Lat: 43 05.109 Long: -124 26.072 (See Figure 2)

CASCADIA GEOSERVICES
PROJECT NUMBER:
19045

Cascadia Geoservices
190 6th Street
Mail: PO Box 1026
Port Orford, Oregon 97465
Direct: 541-332-0433
Cell: 541-655-0021
Email: eric@cascadiageoservices.com
Web: www.cascadiageoservices.com



DEPTH (FEET)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (FEET)	TESTING	SAMPLE TYPE / SAMPLE ID	SAMPLE DATA	COMMENTS
		SURFACE CONDITIONS: Dry				◇ DYNAMIC CONE PENETROMETER (DP/DCP) H STATIC PENETROMETER (SP) ● MOISTURE CONTENT (%) ▲ BLOW COUNT (N-VALUE) INDEX PROPERTIES (IP) NUCLEAR DENSITY (ND) DRY DENSITY (DD) SIEVE (SIEV) 0 25 50	
0.0		Loose, tan, fine-grained SAND; dry, poorly graded	0.0				
		QUATERNARY MARINE TERRACE DEPOSITS			SS-6	3 ▲	
5.0		becomes loose to medium dense; moist at 5.0 feet bgs			SS-7	10 ▲	
					SS-8	7 ▲	
10.0		becomes medium dense at 10.0 feet bgs becomes medium dense, gray, clayey fine-grained SAND; damp at 10.5 feet bgs becomes gray, clayey coarse-grained SAND at 11.0 feet bgs			SS-9	12 ▲	W% = 13.1% Harder drilling at 12.0 feet bgs
15.0		Very dense, tan, fine- to medium-grained SANDSTONE; dry	15.5		SS-10	14-50/3" ▲	
		SIXES RIVER MELANGE BEDROCK	16.3				
		Final depth 16.3 feet bgs; boring backfilled with bentonite					
20.0							
25.0							
30.0							
35.0							

DRILLING METHOD: Auger
DRILLED BY: Dan J. Fischer Excavating, Inc.
LOGGING COMPLETED: 4/11/19
LOGGED BY: E. Oberbeck

BORING B-2
Page 1 of 1

ALL EXPLORATIONS KLEIN RES B1-2 073019.GPJ PRINT DATE 9/12/19

BORING B-3

KLEIN RESIDENCE
54182 GOULD ROAD
BANDON, OREGON

COORDINATES/LOCATION:
Lat: 43.00529 Long: 124.43475 (See Figure 2)

CASCADIA GEOSERVICES
PROJECT NUMBER:
19045

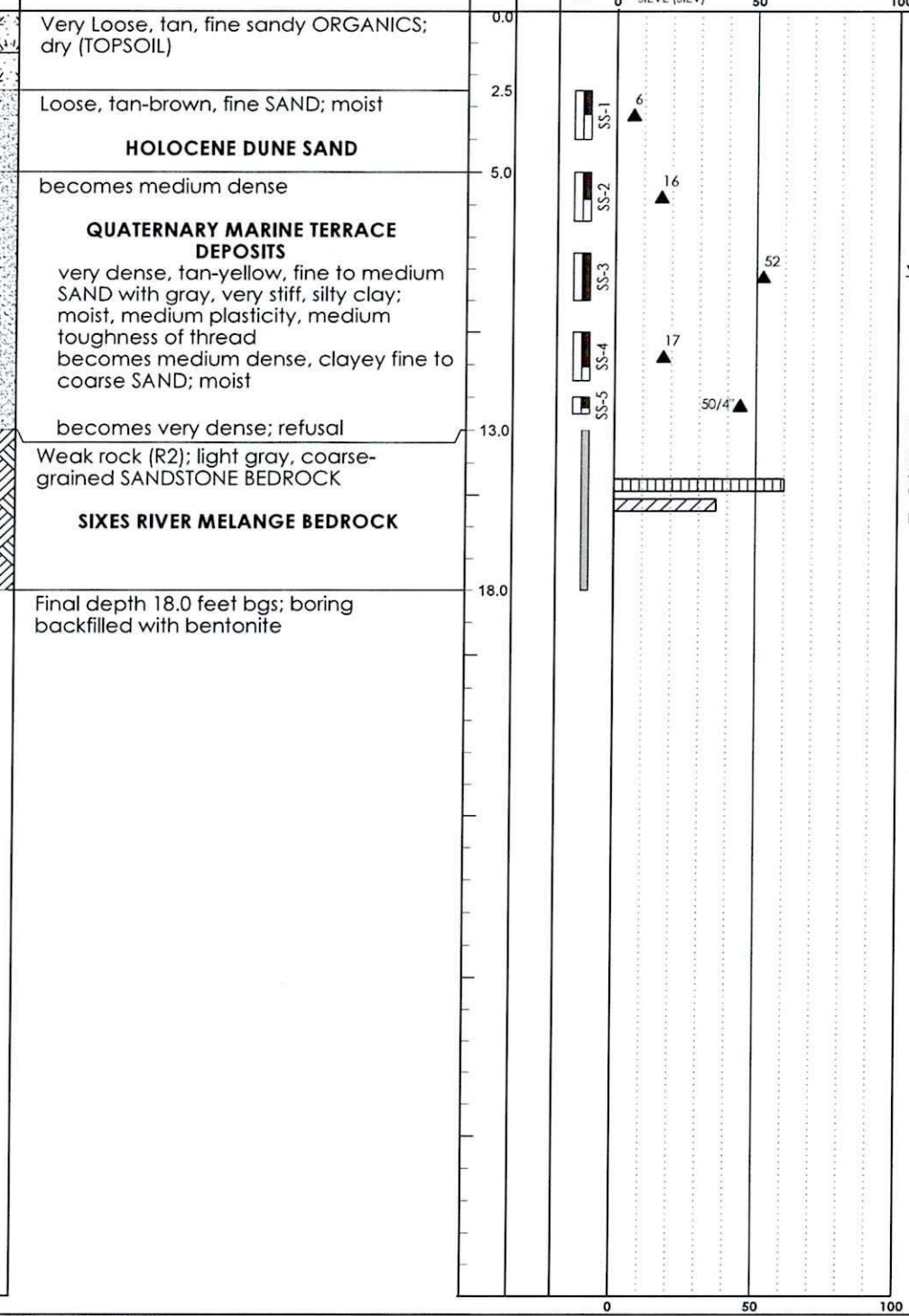
Cascadia Geoservices
190 6th Street
Mail: PO Box 1026
Port Orford, Oregon 97465
Direct: 541-332-0433
Cell: 541-655-0021
Email: eric@cascadiageoservices.com
Web: www.cascadiageoservices.com

DEPTH (FEET)	GRAPHIC LOG	MATERIAL DESCRIPTION SURFACE CONDITION: Dry
0.0		Very Loose, tan, fine sandy ORGANICS; dry (TOPSOIL)
2.5		Loose, tan-brown, fine SAND; moist **HOLOCENE DUNE SAND**
5.0		becomes medium dense **QUATERNARY MARINE TERRACE DEPOSITS** very dense, tan-yellow, fine to medium SAND with gray, very stiff, silty clay; moist, medium plasticity, medium toughness of thread becomes medium dense, clayey fine to coarse SAND; moist
13.0		becomes very dense; refusal Weak rock (R2); light gray, coarse-grained SANDSTONE BEDROCK **SIXES RIVER MELANGE BEDROCK**
18.0		Final depth 18.0 feet bgs; boring backfilled with bentonite

TESTING

SAMPLE TYPE / SAMPLE ID: SS-1, SS-2, SS-3, SS-4, SS-5

DYNAMIC CONE PENETROMETER (DCP)
STATIC PENETROMETER (SP)
MOISTURE CONTENT (%)
BLOW COUNT (N-VALUE)
INDEX PROPERTIES (IP)
NUCLEAR DENSITY (ND)
DRY DENSITY (DD)
SIEVE (SIEV)



COMMENTS

RQD% CORE REC%

▽ Groundwater at 8.3 feet bgs

becomes hard drilling at 12.0 feet bgs
Refusal at 12.5 feet bgs
Switch to rock core drilling at 13.0 feet bgs

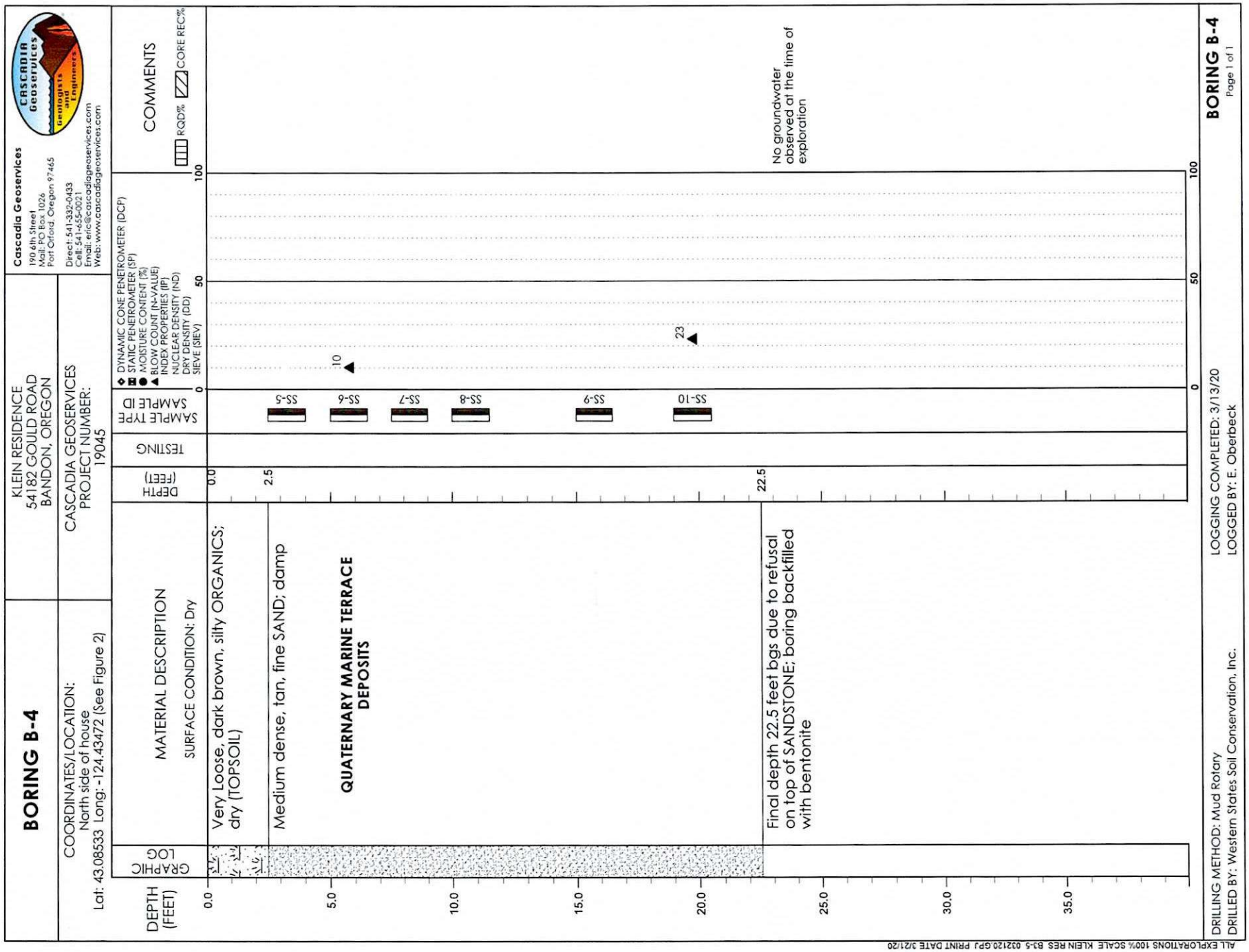
No sample taken

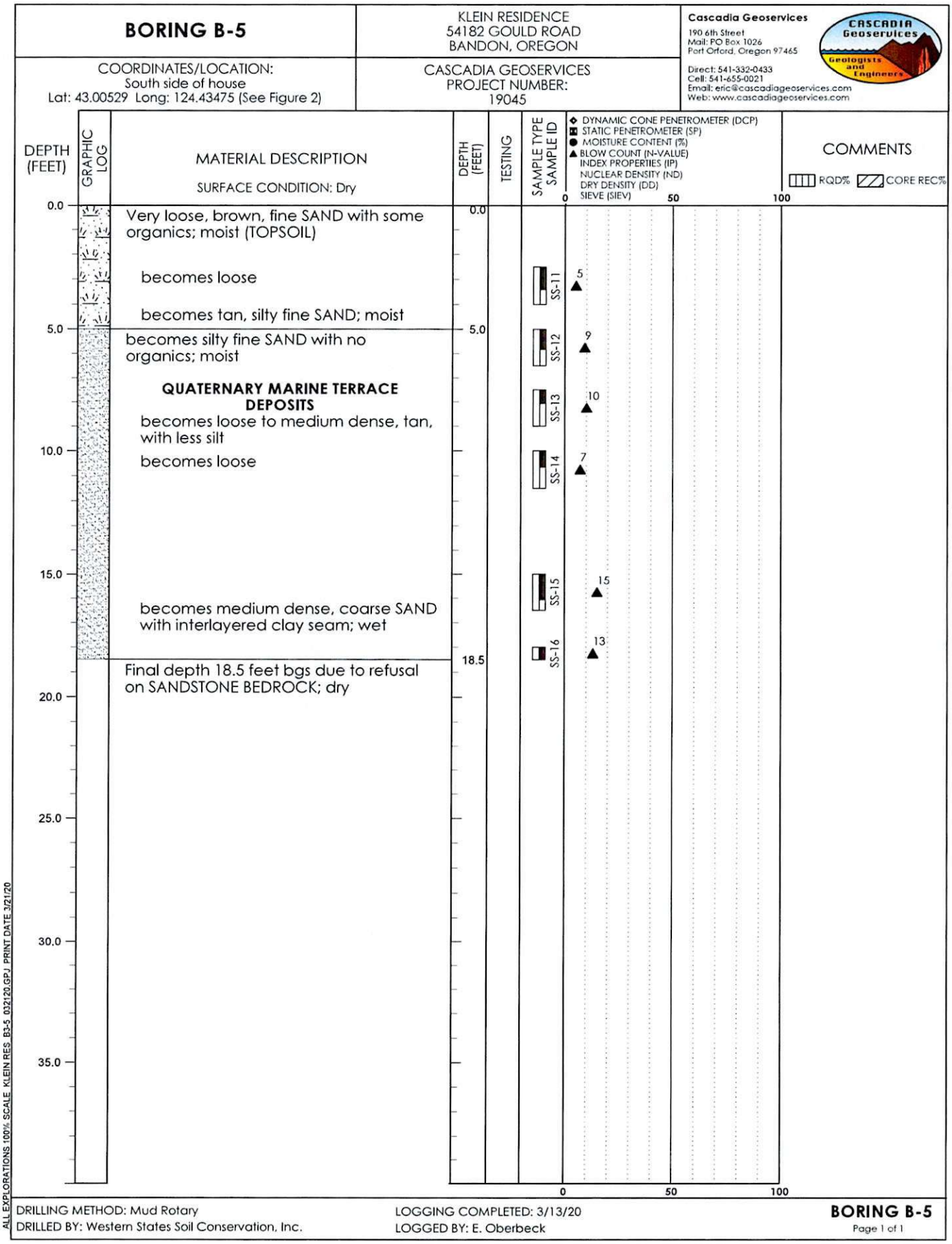
ALL EXPLORATIONS 100% SCALE KLEIN RES B3-5 032120.GPJ PRINT DATE 3/21/20

DRILLING METHOD: Mud Rotary & Rock Coring
DRILLED BY: Western States Soil Conservation, Inc.

LOGGING COMPLETED: 3/13/20
LOGGED BY: E. Oberbeck

BORING B-3
Page 1 of 1


BORING B-4
KLEIN RESIDENCE
54182 GOULD ROAD
BANDON, OREGON
CASCADIA GEOSERVICES
PROJECT NUMBER: 19045
COORDINATES/LOCATION:
North side of house
Lat: 43.08533 Long: -124.43472 (See Figure 2)
Cascadia Geoservices
190 6th Street
Mail: PO Box 1026
Port Orford, Oregon 97465
Direct: 541-332-0433
Cell: 541-655-0021
Email: eric@cascadiageoservices.com
Web: www.cascadiageoservices.com
CASCADIA Geoservices
Geologists and Engineers
DEPTH (FEET)
GRAPHIC LOG
MATERIAL DESCRIPTION
SURFACE CONDITION: Dry
DEPTH (FEET)
TESTING
SAMPLE TYPE
SAMPLE ID
DYNAMIC CONE PENETROMETER (DCP)
STATIC PENETROMETER (SP)
MOISTURE CONTENT (%)
BLOW COUNT (N-VALUE)
INDEX PROPERTIES (IP)
NUCLEAR DENSITY (ND)
DRY DENSITY (DD)
SIEVE (SIEV)
COMMENTS
RQD%
CORE REC%
Very Loose, dark brown, silty ORGANICS; dry (TOPSOIL)
Medium dense, tan, fine SAND; damp
QUATERNARY MARINE TERRACE DEPOSITS
Final depth 22.5 feet bgs due to refusal on top of SANDSTONE; boring backfilled with bentonite
SS-5
SS-6
SS-7
SS-8
SS-9
SS-10
10
23
No groundwater observed at the time of exploration
DRILLING METHOD: Mud Rotary
DRILLED BY: Western States Soil Conservation, Inc.
LOGGING COMPLETED: 3/13/20
LOGGED BY: E. Oberbeck
BORING B-4
Page 1 of 1
ALL EXPLORATIONS 100% SCALE KLEIN RES B3-5 032120.GPJ PRINT DATE 3/21/20


BORING B-5
KLEIN RESIDENCE
54182 GOULD ROAD
BANDON, OREGON
COORDINATES/LOCATION:
South side of house
Lat: 43.00529 Long: 124.43475 (See Figure 2)
CASCADIA GEOSERVICES
PROJECT NUMBER:
19045
Cascadia Geoservices
190 6th Street
Mail: PO Box 1026
Port Orford, Oregon 97465
Direct: 541-332-0433
Cell: 541-655-0021
Email: eric@cascadiageoservices.com
Web: www.cascadiageoservices.com
DEPTH (FEET)
GRAPHIC LOG
MATERIAL DESCRIPTION
SURFACE CONDITION: Dry
DEPTH (FEET)
TESTING
SAMPLE TYPE
SAMPLE ID
DYNAMIC CONE PENETROMETER (DCP)
STATIC PENETROMETER (SP)
MOISTURE CONTENT (%)
BLOW COUNT (N-VALUE)
INDEX PROPERTIES (IP)
NUCLEAR DENSITY (ND)
DRY DENSITY (DD)
SIEVE (SIEV)
COMMENTS
RQD%
CORE REC%
Very loose, brown, fine SAND with some organics; moist (TOPSOIL)
becomes loose
becomes tan, silty fine SAND; moist
becomes silty fine SAND with no organics; moist
QUATERNARY MARINE TERRACE DEPOSITS
becomes loose to medium dense, tan, with less silt
becomes loose
becomes medium dense, coarse SAND with interlayered clay seam; wet
Final depth 18.5 feet bgs due to refusal on SANDSTONE BEDROCK; dry
SS-11
SS-12
SS-13
SS-14
SS-15
SS-16
5
9
10
7
15
13
0.0
5.0
10.0
15.0
18.5
20.0
25.0
30.0
35.0
0
50
100
ALL EXPLORATIONS 100% SCALE KLEIN RES B3-5 032120.GPJ PRINT DATE 3/21/20
DRILLING METHOD: Mud Rotary
DRILLED BY: Western States Soil Conservation, Inc.
LOGGING COMPLETED: 3/13/20
LOGGED BY: E. Oberbeck
BORING B-5
Page 1 of 1

CONSULTING ENGINEERS & GEOLOGISTS, INC.
275 Market Avenue • Coos Bay, OR 97420-2219 • Telephone: 541/266-9890 • FAX: 541/266-9496 Email: shninfo@shn-engr.com

DAILY FIELD REPORT

		Job No. 619034	
		Page 1 Of 1	
Project Name: 19045-19037-19040	Client/Owner: Cascadia Geoservices, Inc.	Daily Field Report Sequence No	
General Location Of Work: In Lab	Owner/Client Representative: Eric Oberbeck, RG, CEG	Date: 7/19/2019	Day Of Week: Friday
General Contractor: Cascadia Gerservices, Inc.	Grading Contractor	Project Engineer	
Type Of Work: Moistures, P200, Atterberg Limits	Grading Contractor, Superintendent, Or Foreman	Supervisor	
Source & Description Of Fill Material	Weather: Clear	Technician: Dennis Edwards	
	Key Persons Contacted (Civil Engr, Architect, Developer, Etc)		

Describe Equipment Used For Hauling, Spreading, Watering, Conditioning, & Compacting

On 7/19/2019 Eric Oberbeck dropped off 10 samples of materials wanting moistures on all 10 samples and P200 on samples marked SS-2, SS-4, and SS-27. Also wanting Atterberg Limits on sample marked SS-5.

Results: 19045
Sample SS-2: Wet sample = 566.1g Dry sample = 546.2g % moisture = 3.6% After wash = 535.4g
P200 = 546.2g – 535.4 = 10.8g % Washed out = 2%

Sample SS-8: Wet sample = 631.4g Dry sample = 558.5g % moisture = 13.1%

Results: 19037
Sample SS-5: Wet sample = 447.1g Dry sample = 374.2g % moisture = 19.5%
Atterberg Limits: PL = 22% LL = 33% PI = 33 – 22 = 11

Sample SS-9: Wet sample = 516.2g Dry sample = 427.7g % moisture = 20.7%

Sample SS-11: Wet sample = 431.4g Dry sample = 330.1g % moisture = 30.7%

Results: 19040
Sample SS-4: Wet sample = 980.4g Dry sample = 771.3g % moisture = 27.1% After wash = 754.5g
P200 = 771.3 – 754.5 = 16.8g % Washed out = 2.2%

Sample SS-10: Wet sample = 885.9g Dry sample = 723.1g % moisture = 22.5%

Sample SS-12: Wet sample = 839.2g Dry sample = 646.0g % moisture = 29.9%

Sample SS-14: Wet sample = 837.6g Dry sample = 676.9g % moisture = 23.7%

Sample SS-27: Wet sample = 508.5g Dry sample = 421.3g % moisture = 20.7% After wash = 411.3g
P200 = 421.3 – 411.3 = 10.0g % Washed out = 2.4%

43099	Copy given to:	Reported By: Dennis Edwards

\\coosbay\Projects\2019\619034-InLabRockTest\Data\MatLab\20190719-moist-P200-LL-PL.doc

Attachment 3

DRILLED MICROPILES SPECIFICATIONS

PART 1 GENERAL

1.1 Summary

A. This section includes micropiles; furnished all design, labor, materials and equipment, necessary to load, handle, assemble and install at the locations indicated on the Drawings, and tested in accordance with the contract documents.

B. The micropiles will consist of a grouted steel casing below the pile cap and a grouted shaft below the cased elevation, with steel reinforcement placed in the center of the micropile.

1.2 References

A. Codes and Standards

1. Work shall comply with all municipal, state and federal regulations regarding safety including the requirements of the Williams-Steiger Occupational Safety and Health Act of 1970.

2. Post-Tensioning Institute (PTI), most current edition, "Recommendations for Prestressed Rock and Soil Anchors."

3. Federal Highway Administration (FHWA), FHWA-SA-97-070, Micropile – Design and Construction Guidelines.

4. American Society for Testing and Materials (ASTM). This project is subject to all of the applicable standards listed below.

ASTM	Specification/test
A36, A572	Structural Steel
A82	Cold-Drawn Steel Wire for Concrete Reinforcement
A252	Welded and Seamless Steel Pipe Piles
A615	Deformed and Plain Billet Steel Bars for Concrete Reinforcement
A706	Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement

ASTM	Specification/test
A722	Uncoated High-Strength Steel Bar for Prestressing Concrete
C150	Portland Cement
C494	Chemical Admixtures for Concrete
C942	Standard test method for compressive strength grouts for replaced aggregate concrete in the laboratory.
C1019	Sampling and Testing Grout

5. American Welding Society (AWS)

6. American Institute of Steel Construction, AISC.

7. Where provisions of pertinent codes and standards conflict with this specification, the more stringent provisions shall govern.

B. API American Petroleum Institute

1.3 Definitions

A. Admixture: Substance added to the grout to control bleed and/or shrinkage, improve flowability, reduce water content, or retard setting time.

B. Alignment Load (AL): A minimum initial load (5 percent DL maximum) applied to micropile during testing to keep the testing equipment correctly positioned.

C. Allowable Geotechnical Bond Load: For Design Load (DL), computed as the nominal grout-to-ground bond strength divided by the geotechnical safety factor of 2.5 and then multiplied by the grouted bond length.

D. Bonded Length: The length of the micropile that is bonded to the ground or rock and conceptually used to transfer the applied axial loads to the surrounding soil. Also known as load transfer length.

E. Casing: Steel pipe introduced during the drilling process in overburden soil to temporarily stabilize the drill hole. This is usually withdrawn as the micropile is grouted, although in certain types of micropiles, some casing is permanently left in place to provide

added micropile reinforcement. This project does require partial permanent casing.

F. Centralizer: A device to support and position the reinforcing steel in the drill hole and/or casing so that a minimum grout cover is provided.

G. Coupler: The means by which the micropile load capacity can be transmitted from one partial length of reinforcement to another.

H. Creep Movement: The movement that occurs during the creep test of a micropile under a constant load.

I. Design Load (DL): The maximum allowable load expected to be applied to the micropile during its service life. The design load includes appropriate safety factors to ensure that the overall structure has adequate capacity for its intended use. Often limited by the geotechnical grout-to soil bond strength. Design loads are shown on Drawings.

J. Micropile: A small-diameter, bored, cast-in-place composite pile, in which the applied load is resisted by steel casing, a central reinforced bar, cement grout and frictional grout/ground bond.

K. Maximum Test Load: The maximum load to which the micropile is subjected during testing, 2.5 x DL for verification tests and as 1.67 x DL for proof load tests. For this project only proof load tests are specified.

L. Overburden: Material, natural or placed, that may require cased drilling methods to provide an open borehole to underlying strata.

M. Post-grouting: The injection of additional grout into the load transfer length of a micropile after the primary grout has set. Also known as regrouting or secondary grouting.

N. Proof Load Test: Incremental loading of a production micropile, recording the total movement at each increment.

O. Reinforcement: The steel component of the micropile that accepts and/or resists applied loads.

P. Sheathing: Smooth or corrugated piping or tubing that protects the reinforcement to ensure full bond development of each steel element.

Q. Spacer: A device to separate elements of a multiple-element reinforcement to ensure full bond development of each steel element.

R. Verification Load Test: Non-production micropile load test performed to verify the design of the micropile system and the construction methods proposed, prior to installation of production micropiles. For this project verification load test is not specified.

1.4 Submittals

A. Action Submittals

1. Equipment as follows:

   a. Casing drill system including casing advanced by rotary or rotary percussive drilling methods.

   b. Micropile testing equipment including details of the jacking frame and jacks

2. Product data as follows:

   a. Steel Pipe
   b. Micropile Bar with epoxy coating
   c. Micropile Bar installation components
   d. Grout mix design including mixtures
   e. Concrete mix design including admixtures

3. Shop Drawings: Submit shop drawings and structural design calculations for the micropile system or systems intended for use, including the micropile components and bond length details. Micropile installation depth shall be a minimum 27-ft below existing grade with casing plunge to be a minimum of 2-ft below the top of stiff clay – an estimated depth of 20-feet below grade. A no-load zone should extend a minimum of 10 ft below the bottom of the pile cap. The minimum casing diameter should be 5 1/2 in outside diameter. Drawings and design calculations shall bear seal and signature of professional engineer registered in State Of Oregon and include the following:

   a. Pile Description: Estimate pile capacity, pipe size, grade and wall thickness, length of bond zone, see structural drawings for design criteria.
   b. Pile Spacing: See structural plans for location of piles.
   c. Description of micro pile installation method.
   d. Pile Testing Plan: Detailed plans for testing of piles as specified in Article 3.3 & 3.4.

e. Description of equipment and methods to be utilized in installation of micropiles including drilling equipment, grout mixes and pumps, drilling and grouting procedures.

B. Information Submittals

1. Submit a detailed description of the construction procedure proposed:

   a. Submit manufacturer's information, model, size, and type of equipment to be used for installing micropiles with appropriate manufacturer's literature.
   b. Equipment Data: Description of drilling and grout-pumping equipment including the following:

      1) Type and make of drilling rig, rated capacity, and boom lengths.
      2) Torque of drilling machine and horsepower of hydraulic power unit.
      3) Pressure and discharge capacity of grout pump.
      4) Automated monitoring equipment to be used.

2. Submit a micropile installation schedule giving:

   a. Micropile number.
   b. Micropile design load.
   c. Type and size of reinforcing steel.
   d. Total bond length for each micropile.
   e. Total length of each micropile.

3. Submit certified mill test reports, properly marked, for the reinforcing steel. The ultimate strength, yield strength, elongation, and material properties shall be shown.

4. Submit the procedures and equipment for placing and measuring the quantities of the grout.

5. Submit the procedures and placing and measuring quantities of the concrete.

6. Testing procedures:

a. Submit detailed descriptions of methods proposed to be followed for testing as specified in Article 3.4 below, prior to beginning tests. Include Drawings and details to clearly describe methods.

b. Submit calibration reports and data for each test jack, pressure gauge, grout flow meter, and master pressure gauge to be used.

1) The calibration test shall have been performed by an independent testing laboratory, and tests shall have been performed within 60 calendar days of the date submitted.

2) Testing shall not commence until the Owner's Representative has accepted the jack, pressure gauge, and master pressure gauge calculations.

1.5 Quality Assurance

A. Before commencing work, the micropile Contractor shall submit to the Owner's Representative for approval a description of the micropile drilling and pumping equipment to be utilized and the proposed micropile grout design mix and descriptions of materials to be used. These shall be in sufficient detail to indicate their compliance with the specifications.

B. The grout mix shall be tested by making a minimum of six 2-inch cubes for each day during which the micropiles are placed. A set of six cubes shall consist of two cubes to be tested at three days, two cubes to be tested at seven days, one cube to be tested at 28 days, and one cube held in reserve. Test cubes shall be cured and tested in accordance with ASTM C 109. Cube specimens may be restrained from expansion as described in ASTM C 942.

1.6 Qualifications

A. Experience: Personnel performing this work shall have installed micropiles on at least ten projects over a period of the last five (5) years.

B. Before commencing work, the micropile Contractor shall submit to the Owner's Representative a list identifying the drill operators and

on-site supervisors who will be assigned to the project. The list shall contain a summary of each individual's experience, and shall be complete enough for the Owner's Representative to determine whether or not each individual has satisfied the following qualifications:

1. Drill operators and on-site supervisors shall have a minimum of three (3) year experience installing micropiles with the Contractor's organization.

PART 2 PRODUCTS

2.1 Materials

A. Steel Casing Pipe: Shall conform to ASTM A519 with a 36,000-psi minimum yield strength.

B. Micropile Bar and Couplers: Deformed billet steel conforming to ASTM A615, ASTM A311 and A722, Grade 150, or ASTM F1554, Grade 105 as indicated on the Drawings.

C. Micropile bars and couplers shall have fusion bounded epoxy coating. The epoxy coating shall be along the entire bar length and shall be a minimum 16 mils thick according to ASTM A 775.

D. Misc. Steel (plates and shapes): Shall conform to ASTM A36, A572, Grade 50, or A992, as indicated on the Drawings.

E. Centralizers: Fabricate from plastic, steel, or other material that is not detrimental to the reinforcing steel. Wood shall not be used. The centralizers shall be capable of positioning the anchor in the drill hole such that the minimum grout cover is achieved and secured

F. Cement: Portland cement conforming to ASTM C150, Type I or Type II, and shall be the product from one manufacturer.

G. Grout: Neat cement grout or sand cement mixture consisting of Portland cement, sand, and water, and may also contain a mineral admixture and approved fluidifier. The components shall be proportioned and mixed to produce a grout capable of maintaining the solids in suspension, which may be pumped without difficulty and will penetrate and fill open voids in the adjacent soils. The grout shall be non-shrink, high bond value, crack resistant and capable of

4,000-psi minimum compressive strength in 7 days. The grout shall be mixed with potable water only.

H. Admixtures: Conform to the requirements of ASTM C494.

1. Admixtures which control bleed, improve flowability, reduce water content, and retard set may be used in grout subject to the review and acceptance of the Owner's Representative.

2. Accelerators will not be permitted.

3. Admixtures shall be compatible with the grout and pumping methods proposed for use and mixed in accordance with the admixture manufacturer's recommendations.

I. Micropile installation equipment shall be maintained and operated in full compliance with the manufacturer's written instructions.

2.2 Handling And Storage

A. Steel casing and bars shall be stored and handled such as to avoid damages to the micropiles. Bent, rusted or kinked casing or bars which, in the opinion of the Owner's Representative, cannot be straightened without injury to the metal, will be rejected. Damage to corrosion protection, heavy corrosion, or pitting of bars shall be repaired or be a cause for rejection by the Owner's Representative. Repair damaged epoxy coating in accordance with ASTM A 775 and the coater's recommendations using an epoxy field repair kit approved by the epoxy manufacturer. Repaired areas shall have a minimum 0.012 inch epoxy coating thickness.

PART 3 EXECUTION

3.1 General

A. Select the drilling method, the grouting procedure, and the grouting pressure used for the installation of the micro-piles.

B. The Contractor shall provide adequate notice to allow all micropile installation activities to be observed and recorded the Owner's Representative and agents. The Contractor shall keep independent records of each micropile installation including the micropile

components and dimensions, the final set, tip elevation, and grout pressures throughout the installation and proof testing.

C. Drilling operations shall only be conducted in the presence of the Owner's Geotechnical Engineer. The Owner's Geotechnical Engineer will observe the Contractor's drilling operations and establish required micropile embedment depths based upon visual observation of drilling spoils.

3.2 Micropile Placement

A. Micropile diameter shall be as shown on the Drawings.

B. Installation Tolerances: Install piles within the following maximum tolerances. (Any pile deviated in final position more than the limits specified will be automatically rejected).

1. Location: 3 inches from location indicated for center of gravity of each micropile and micropile group, to be measured at finish pile top elevation

2. Plumbness: Maintain 1 inch in 10 feet-0 inches from the vertical, or a maximum of 4 inches, measured when the pile is above ground.

3. Drilling shall be accomplished so that the micropile is not moved out of horizontal alignment.

C. Install micropiles with flush joints. Advance micropile casing to the bottom of the borehole prior to pressure grouting lower bond zone.

D. Flushing and drilling of pile shall be employed. The drilling shall be accomplished so that the pile is not moved out of horizontal alignment. Provide necessary pumps and piping.

E. Determine the micropile casing size and bond length and central tendon reinforcement steel sizing necessary to develop the design load requirements.

F. Provide centralizers at 10-foot centers maximum. The uppermost centralizer shall be located a maximum of 5 feet from the top of the micropile. Centralizers shall permit the free flow of grout without misalignment of the central reinforcing bar.

G. Lower the central reinforcing steel, size indicated on Drawings, with centralizers spaced at 10-foot maximum centers into the pipe casing and set. The reinforcing bar shall be inserted into the drill hole to the desired depth without difficulty. Partially inserted reinforcing bars shall not be driven or forced into the hole.

H. Inject grout beginning at the lower end of the drilled borehole. The pipe casing shall be filled with a 4,000-psi minimum compressive strength grout without voids from bottom to top of the micropile.

I. Secondary grout tubes shall be installed with all micropiles.

J. Check pile top elevations and adjust all installed micropiles to the planned elevations.

K. Grouting:

1. Provide means and methods of measuring the grout quantity during grout operations. The Contractor shall keep records showing the quantities placed for each micropile and provide information to the Owner's Representative.

2. The grouting process shall produce a grout free of lumps and undisposed cement. A positive displacement grout pump shall be used. The grouting equipment shall be sized to enable the grout to be pumped in one continuous operation. The mixer shall be capable of continuously agitating the grout.

3. The grout pump shall be equipped with a pressure gauge to monitor grout pressures. A second pressure gauge shall be placed at the point of injection into the micropile top. The pressure gauges shall be capable of measuring pressures of at least 150 psi or twice the actual grout pressures used, whichever is greater.

4. The grout shall be injected under pressure into the drilled hole and injection shall continue until uncontaminated grout flows from the top of the pile.

5. During grouting, casing shall be extracted in stages ensuring that, after each length of casing is removed the grout level is brought back up to the ground level before the next length is removed.

6. The grout pressures and grout takes shall be controlled to prevent excessive heave or fracturing of rock or soil formations.

L. Check micropile elevations and adjust all installed micropiles to the planned elevations.

M. Grout within the micropiles shall be allowed to attain adequate strength prior to load testing.

N. Micropile splices shall develop the full strength of the micropile section.

O. Lengths of micropile spliced shall be secured in proper alignment and in such a manner that no eccentricity between the axis of the two lengths to be spliced, or angle between them, results.

P. The grout bond and steel pipe casing shall be in compliance with the Drawings and exhibit flush joints.

Q. Any micropile, which is damaged or misplaced by improper handling, shall be removed and replaced or, where directed by the Owner's Representative, a replacement micropile shall be installed adjacent thereto at no additional expense to the Owner.

3.3 Pre-Production Pile Load Verification Testing

A. A verification pile load test shall be performed to verify the micropile bond strength used to design the micropile. The micropile test result shall verify the Contractor's design and be reviewed and accepted by the Owner prior to beginning production micropiles. The test shall be performed at a location to be determined by the Owner. The verification load test shall be performed to establish the design strength capacities of the micropiles and determination of the length of the micropile lower bond zone.

B. The drilling method and casing diameter for the verification test shall be identical as for the production piles. The depth of embedment for the verification test shall be determined by the contractor and may be less than that of the production piles. The central bar or tendon shall be proportioned such that the maximum stress does not exceed 80% of the ultimate strength of the steel.

C. One battered and one vertical verification test pile shall be constructed prior to the commencement of the installation of the production micropiles. The verification test piles shall be tension load tested to a force resulting in a bond stress of 200% of the design capacity indicated on the Drawings, in accordance with ASTM D 3689 and as indicated herein.

D. Submit for review and acceptance the micropile verification load testing program. The testing program submittal shall be provided two weeks prior to starting the load testing. The micropile verification load testing program shall indicate the minimum following information:

1. Type of apparatus for measuring the load.
2. Type of apparatus for applying the load.
3. Type of apparatus for measuring the pile deformation.
4. Type of reaction load system.
5. Hydraulic jack calibration report.

E. If the micropile verification load test fails to meet the design requirements, the Contractor shall revise the micropile design and retest the new system.

3.4 Production Pile Load Verification Testing

A. The Contractor shall perform proof tension tests on a minimum of 20% of the total production micropiles as indicated on the Drawings, but on no less than one vertical pile and two battered piles. The micropiles to be tested will be selected by the Geotechnical Engineer.

1. The Contractor shall submit for review and acceptance the proposed production micropile proof load testing procedure.

B. Load Test Equipment:

1. The load test equipment shall be capable of increasing or decreasing the applied load incrementally. The incremental control shall allow for small adjustments, which may be necessary to maintain the applied load for a sustained hold period.
2. The reaction system shall be designed to have sufficient strength and capacity to distribute the test loads to the ground. It should also be designed to minimize its movement under load and to prevent applying an eccentric load to the pile head. Test loads are normally higher than the design loads on the structure. The direction of the applied load shall be collinear with the micropile at all times.
3. Dial gauge(s) shall be used to measure micropile movement. The dial gauge shall have an accuracy of at least +/-0.0001-in. and a minimum travel sufficient to measure all micropile movements without requiring resetting the gauge. The dial gauge shall be positioned so its stem is parallel with the axis of the micropile. The stem may rest on a smooth plate located at the pile head. Said plate shall be positioned perpendicular to the axis of the micropile. The dial gauge shall be supported by a reference apparatus to provide an independent fixed reference point. Said reference apparatus shall be independent of the reaction system and shall not be affected by any movement of the reaction system.
4. The load test equipment shall be recalibrated if, in the opinion of the Owner and/or Contractor, reasonable doubt exists as to the accuracy of the load or deflection measurements.

C. Proof Test Program:

1. The hydraulic jack shall be positioned at the beginning of the test such that the unloading and repositioning of the jack during the test shall not be required. The jack shall also be positioned co-axially with respect to the pile-head so as to minimize eccentric loading. The hydraulic jack shall be capable of applying a load not less than 150% of the design load (DL) indicated on the contract drawings. The pressure gauge shall be graduated in 100 psi increments or less. The stroke of the jack shall not be less than the theoretical elastic shortening of the total micropile length at the maximum test load.

2. An alignment load (AL) shall be applied to the micropile prior to setting the deflection measuring equipment to zero or a reference position. The AL shall be no more than 10% of the design load (i.e., 0.1 DL). After AL is applied, the test set-up shall be inspected carefully to ensure it is safe to proceed.
3. Axial tension load tests shall be conducted by loading the micropile in step-wise fashion in accordance with the following schedule. The central reinforcing bar shall be proportioned such that the maximum stress does not exceed 80% of the ultimate strength of the steel.

Load Step	Hold Time	Max. Vertical Deflection
AL (Alignment Load)	0 min.	
0.25 DL (Design Load)	1 min.	
0.75 DL	1 min.	
1.00 DL	1 min.	
1.25 DL	1 min.	
1.50 DL	10 min.	0.5 - inches
1.25 DL	1 min.	
0.75 DL	1 min.	
0.50 DL	1 min.	
0.25 DL	1 min.	
AL	0 min.	

4. Pile head deflection shall be recorded at the beginning of each step and after the end of the hold time. Measurement of pile movement shall be obtained to within 0.01-inch at each load increment. The beginning of the hold time shall be defined as the moment when the load equipment achieves the required load step.
5. Test loads shall be applied until continuous jacking is required to maintain the load step or until the test load increment equals 150% of the design load (DL) (i.e., 1.5 DL), whichever occurs first.

D. Both of the following criteria must be met for the test to be considered successful:

1. The pile shall sustain the tension design capabilities at 1.50 DL with no more than 0.5inch total vertical movement at the pile

head as measured relative to the top of the micropile prior to the start of testing.

2. Total movement between the 1 minute and the 10 minute reading shall be 0.04-inch or less. If the movement between 1 and 10 minutes exceeds 0.04-inch, the load may be held an additional 50 minutes and a creep curve plotted of movement versus the logarithm of time. If the creep curve shows a decreasing creep rate that is less than 0.08-inch, the test is successful. If the creep rate exceeds 0.08-inch per log cycle of time, then the load capacity of the pile shall be downgraded to a value of 65% of the load that the pile can support without excessive creep. Additional production piles may need to be installed for the reduced load capacity.

E. If a production micropile that is tested fails to meet the acceptance criteria, the Contractor shall be directed to proof test another micropile in the vicinity. For failed micropiles, the Contractor shall propose modifications to the design, the construction procedure, or both. These modifications may include, but are not limited to, installing replacement micropiles, modifying the installation methods, increasing the embedment length or changing the micropile diameter. Any modification which requires changes to the structure shall have prior review and acceptance of the Owner and Architect. Any modification of design or construction procedures shall be at the Contractor's expense.

F. The Contractor shall submit copies of the field test reports, confirming micropile configuration and construction details within 24 hours after completion of the load tests. This written documentation shall either confirm the load capacity as required on the construction drawings or propose changes based upon the results of the tests.

3.5 Cleanup

A. A. Within seven (7) days of completion of the work. The Contractor shall remove any and all material, equipment, tools, building materials, concrete forms, debris or any other items belonging to the Contractor or used under the Contractor's direction.

END OF SECTION

Stuntzner Engineering & Forestry, LLC

TELEPHONE (541) 267-2872
FAX (541) 267-0588
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705 South 4th Street – PO Box 118
Coos Bay, Oregon 97420

COOS BAY • FOREST GROVE • DALLAS

September 17, 2021

Coos County Planning Department
60 East 2nd Street
Coquille Oregon, 97423

RE: SHAKIN/KLEIN VARIANCE ADDENDUM V-21-001 (ACU-21-033 and ACU 21-034)

We are submitting this Addendum in support of the variance setback applications submitted by Nicholas Klein and Diane Shakin as identified above by providing additional facts that are relevant to their request for a five foot setback at the north property line, as detailed below:

Septic System/ DEQ Approval Requires Variance: After several site visits and multiple test pits, the Oregon Department of Environmental Quality identified only one suitable area to place a bottomless sand filter system to place a single family dwelling. This system will require a large above ground structure that cannot be hidden from view. If a variance is not approved, it will significantly impact the applicant's ability to develop the property as follows:

1. Unsightly View: To accommodate the DEQ's requirements under current setbacks, a unsightly structure would be prominently visible. As detailed below, a variance would allow for landscaping, hiding the septic structure, and eliminating an eyesore and hazardous gorse.
2. Previously Submitted Diagram Now Obsolete: A previous site diagram showing a home design possible within the current setbacks is now obsolete because it was created prior to (1) the DEQ's specifications for the type of system and its location (2) our knowledge of a second side yard setback requirement from Juno Lane's centerline and (3) the geotechnical engineer's report.

Geotechnical Impact: Current setbacks demand an unusually narrow footprint with additional height, requiring a significantly larger foundation to accommodate a single family dwelling. A 5 foot setback would allow for an increase of the structure's footprint while maintaining the same square footage, reducing the structural load and need for mitigation.

View Shed Benefits: If the variance is granted, it will allow an increase in the width of the building footprint and allow the architect opportunities to reduce the building height (from 3 to 2 stories) to maintain viewsheds for surrounding properties.

Gorse Management/Fire Danger Mitigated: A variance will allow a home to permanently eliminate gorse management. If the variance is granted, the applicants will pursue a right-of-way use permit to perpetually mow the gorse in the remaining portion of Juno Lane that abuts their property (the strip of dense vegetated land owned, but not maintained, by the County) as a fire safety buffer.

Areas of Enjoyment: When consideration is given to the property location and exposure to the harsh pacific conditions, it is only practical to develop the residence along the northerly property boundary and utilize the protected easterly and southerly segments for landscaping, courtyards, decks and outdoor recreational purposes.

No Impact on Future Beach Path:. Under Coos County Code Chapter 7, the Juno right-of-way is unsuitable for vehicle and will only be used as a footpath to the beach, its intended use. Approving the variance will not impact this future use.

Thank you for your consideration of these factors.

Sincerely,
STUNTZNER ENGINEERING AND FORESTRY, LLC

Chris Hood