

SUPPLEMENTAL INFORMATION

No. 1

For Zoning Administrator Agenda of:
January 23, 2020

Re:	Applicant:	Barbara Bryant
	Case Number:	PLN-2019-15838
	APN:	514-152-019

Attached for the Zoning Administrator's record and review is (are) the following supplementary information item(s):

1. An Informational Note to be added to the Recommended Conditions of Approval based upon comments received from California Coastal Commission regarding the stability of the coastal bluff on Scenic Drive. The note is described as followed:

Informational Notes:

5. A Qualitative Coastal Bluff Stability Assessment report was prepared on January 16, 2020 by Giovanni A. Vadurro, Engineering Geologist at SHN Engineers and Geologists. The report documents the results of an assessment of the geologic conditions for an existing and developed coastal bluff parcel. Using aerial photographs, Google satellite imagery, a Record of Survey, site evaluation, and geologic mapping, the report identifies the rate of coastal bluff retreat at less than 10 feet over a 72-year period (1948 to the present day). No erosion of the bluff face directly below the project site has been observed in the recent day. Based upon the findings in the report, it has been determined that the location of the existing residence and the proposed improvements will neither create nor contribute to erosion, geologic instability, or destruction of the site and surrounding areas or in any way require the construction of protective devices that would substantially alter natural landforms along the buffs and cliffs.
2. Report titled: Qualitative Coastal Bluff Stability Assessment for Permitting of an Existing Residence, 160 Loop Place, Westhaven, Humboldt County; Assessor's Parcel Number 514-152-019 (prepared by SHN Engineers and Geologists, dated January 16, 2020). This report is to be added to Attachment 3, Applicant's Evidence in Support of the Required Findings, of the project staff report.



Phone: (707) 441-8855 Email: info@shn-engr.com Web: shn-engr.com
812 W. Wabash Avenue, Eureka, CA 95501-2138

Reference: 019131

January 16, 2020

Barbara Bryant
P.O. Box 741
Trinidad, CA 95570

Subject: Qualitative Coastal Bluff Stability Assessment for Permitting of an Existing Residence, 160 Loop Place, Westhaven, Humboldt County; Assessor's Parcel Number 514-152-019

Introduction

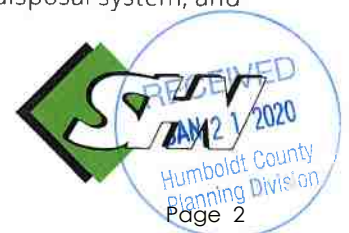
This report documents the results of an assessment of geologic conditions for an existing and developed coastal bluff parcel. The project location is as shown in Figure 1 (Attachment 1). The parcel currently contains a one-bedroom residence with an attached garage and a wastewater disposal system. The owner is proposing to retroactively permit the existing residence. Proposed improvements include a new covered entryway to the structure and new wastewater disposal leach lines. The wastewater disposal system upgrades are intended to increase the disposal field capacity in order to bring the wastewater system into compliance with current Humboldt County Division of Environmental Health (HCDEH) standards and regulations. An engineered design of the wastewater system prepared by SHN and dated September 12, 2019, was previously submitted to HCDEH by the owner.

The work performed by SHN as part of this site investigation included a characterization of subsurface materials and a qualitative assessment of coastal bluff slope stability conditions in the immediate vicinity of the parcel. In addition to the field review, SHN has examined historic time-series stereo-pair aerial photographs, low-angle aerial photographic imagery from the California Coastal Records Project, and Google Earth satellite imagery to determine past and current coastal bluff edge locations, defined as the line of intersection between the relatively steeply sloping bluff face and the flat or more gently sloping bluff top.

The findings contained in this report are intended to provide reasonable assurance that the existing residential structure and proposed improvements will not be subject to risk of damage from coastal erosion and bluff retreat during their design life.

Project Location and Description

The subject parcel is located on the coastal bluff top to the south of the intersection of Loop Place with 6th Avenue and directly upslope of Scenic Drive. A site plan depicting existing site features relative to Loop Place and the property boundaries is included in Attachment 2. The residence is served by the Westhaven Community Services District water system, a private onsite wastewater disposal system, and local utilities.



The structure was reportedly constructed in the mid-1960s and was used as a boathouse. The boat house was converted to the current one-bedroom residence and attached single-car garage sometime during the mid to late 1980s by the previous owners.

Site Conditions and Geologic Setting

The developed portion of the subject parcel consists of a near-level to very gently sloping, uplifted Pleistocene age marine terrace surface situated at an elevation of 260 feet relative to sea level and about 110 feet in elevation above Scenic Drive. The underlying shallow marine deposits are predominantly composed of poorly graded sand with thin and discontinuous gravel lenses. The marine deposits unconformably overlie much older Cretaceous age Franciscan Complex bedrock. The depositional contact of the sandy and gravelly marine deposits with the underlying Franciscan Complex occurs along a gently seaward-sloping bedrock abrasion platform that is visible in the lower bluff exposure as viewed from the beach at Houda Cove. The surface of the bedrock abrasion platform is approximately 60 to 70 feet above the beach and about 80 feet downslope of Scenic Drive.

Field review and published geologic mapping indicates the underlying bedrock to be locally composed of hard, coherent blocks of hard meta-basalt and meta-sandstone that are generally resistant to wave erosion and coastal retreat. The coherent blocks of bedrock are in fault contact more than 500 feet north of the site with penetratively sheared, clay-rich earth materials. The sheared earth materials are visible in bluff exposures to the north of the Houda Point (also known as Camel Rock) parking area and continues north toward Tepona Point and Luffenholtz Beach. The active slump earthflows in and around Trinidad Bay north of Houda Point continue to at least McConnahais Creek and are attributable to these low-strength clay-rich materials. The slump earthflows are readily identifiable by the ongoing deformation to Scenic Drive. No evidence of slump earthflows is present in the immediate vicinity of the project site.

Recent Bluff Erosion

Coastal bluff exposures in the vicinity of the project site reveal a 10- to 15-foot-thick deposit of highly indurated and strongly cemented silt-rich sediment. The top of the deposit is approximately 20 feet below the bluff top ground surface. The deposit appears to extend the entire length of Loop Lane and has been observed to act as an impermeable perching layer during the winter and spring wet season. Perched groundwater at this location has been observed to emerge from the upper bluff face, which has resulted in sloughing and surface erosion of the soil immediately above this deposit. Over the past few winters, surface erosion of the bluff face has occurred approximately 250 feet south of the project site and has resulted in saturated soil being deposited onto Scenic Drive. However, no erosion of the bluff face directly below the project site has been observed during this time.

Historical Bluff Retreat

Vertical and oblique-angle aerial photographs, Google Earth satellite imagery, and record of survey maps were reviewed to determine past and current coastal bluff edge locations relative to Loop Place and the existing residence following its construction.



Bedrock outcrops, trees, road edges, and road intersections were used as landmarks to compare the bluff edge location as it appeared in successive photo years beginning in 1948 and continuing to the present.

The position of the bluff edge at the project site and neighboring parcels was determined for each stereo-pair photograph by using a stereoscope with magnifying lenses. Further analysis was conducted by orthorectifying the digital images in GIS and overlaying successive photo years for comparison. The bluff edge position for each photo year was then compared to the current position of the bluff edge visible on the April 2019 Google Earth imagery, which in turn was compared to site conditions observed in the field during January 2020.

Lastly, a record of survey map dated 1980 and filed by Winzler & Kelly Consulting Engineers was also reviewed and is included in Attachment 3 for reference. The map depicts the surveyed location of the bluff edge in December 1979 relative to a survey monument at the project site's southern property boundary. The horizontal distance between the bluff edge and the survey monument was scaled from the map and provides a highly accurate measurement of bluff retreat during the past 40 years.

Conclusions

Based upon our collective review, we conclude the coastal bluff edge at the project site has retreated less than 10 feet between the year 1948 and the present. The geometry of the bluff edge in map view generally appears to be unchanged, indicating bluff edge retreat to be relatively uniform in the vicinity of the project site and neighboring parcels to the north and south. Assuming a scaling accuracy of ± 5 feet, we conservatively allow for the possibility of up to 15 feet of bluff edge retreat during that time, which yields an average historical retreat rate of about 0.14 feet per year to as much as 0.21 feet per year since 1948.

A comparison of the bluff edge location surveyed in December 1979 relative to its current-day locations indicates approximately 4 feet of bluff edge retreat occurred during this time, resulting in an average retreat rate of 0.1 feet per year during the past 40 years.

It is further concluded that little to no retreat of the lower bedrock shoreline or overlying section of sandy coastal bluff below Scenic Drive has occurred during the past 100 years in the areas seaward of the project site. We base this conclusion on the alignment of Scenic Drive, which was originally constructed at its current location around the year 1920 to serve as the coastal highway. Areas of past slope failure to the north of the project site and to the north of the Houda Point parking area are evidenced by narrowing sections of Scenic Drive. However, the section of coastline and bluff immediately downslope of the project site appear to have remained largely unaffected by historic or recent slope failures.

In closing, it is our professional opinion the location of the existing residence and proposed site improvements will neither create nor contribute to erosion, geologic instability, or destruction of the site or surrounding areas or in any way require the construction of protective devices that would substantially alter natural landforms along the bluffs and cliffs.



The horizontal distance of the residence to the nearest bluff edge is currently 38 feet. Using the maximum bluff retreat rate of 0.21 feet per year, we estimate up to an additional 16 feet of bluff retreat may occur during the next 75 years.

Sincerely,

SHN



Giovanni A. Vadurro, CEG 2554
Engineering Geologist



GAV:ame

- Attachments:
1. Project Location Map
 2. Site Plan
 3. Record of Survey Map (Winzler & Kelly, 1980)

Aerial Photographic Reference

1948 U.S. Forest Service, 1948, black and white photographs, flight CDF2, frames 16-58 and 59, nominal scale 1:26,400.

1954 California Department of Natural Resources, Division of Forestry, 1954, black and white photographs, flight CVL, frames 13N-98 and 99, nominal scale 1:20,000.

1962 Humboldt County Assessor, 1962, black and white photographs, flight HCN-2, frames 13B-24 and 25, nominal scale 1:12,000.

1965 U.S. Department of Agriculture, Soil Conservation Service, 1965, black and white photographs, flight CVL, frames 18FF-219 and 220, 19FF-34 and 35, nominal scale 1:20,000, dated August 29, 1965.

1981 California Department of Forestry, 1981, black and white photographs, flight CDF-ALL-CR, frames 4-3 and 4, nominal scale 1:24,000, dated June 15, 1981.

1988 WAC Inc., black and white photographs, flight WAC-88CA, frames 2-50 and 51, nominal scale 1:31,680, dated March 30, 1988.

1996 WAC Inc., black and white photographs, flight WAC-96CA, frames 30-272 and 273, nominal scale 1:24,000, dated September 7, 1996.

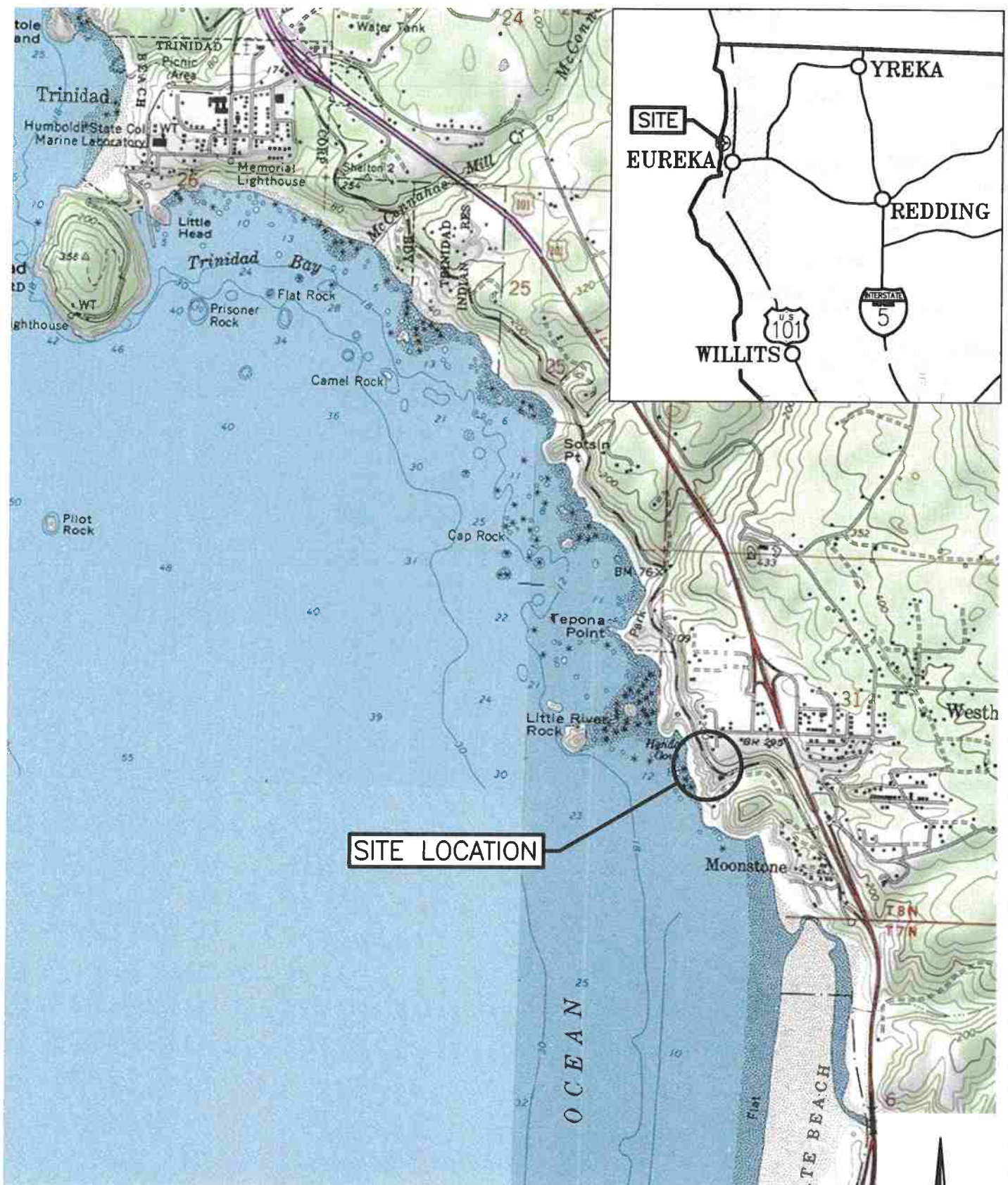
2000 WAC Inc., black and white photographs, flight WAC-00-CA, frames 7-126 and 127, nominal scale 1:24,000, dated March 31, 2000.

2019 Google Earth Imagery, color photographs, variable scale, dated April 30, 2019.



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GeoHaz.docx

Project Location Map



SOURCE: TRINIDAD AND CRANNELL
USGS 7.5 MINUTE QUADRANGLES



Barbara Bryant
Coastal Bluff Stability Assessment
160 Loop Place, Westhaven, California

Site Location Map

SHN 019131

PLN-2019-15838

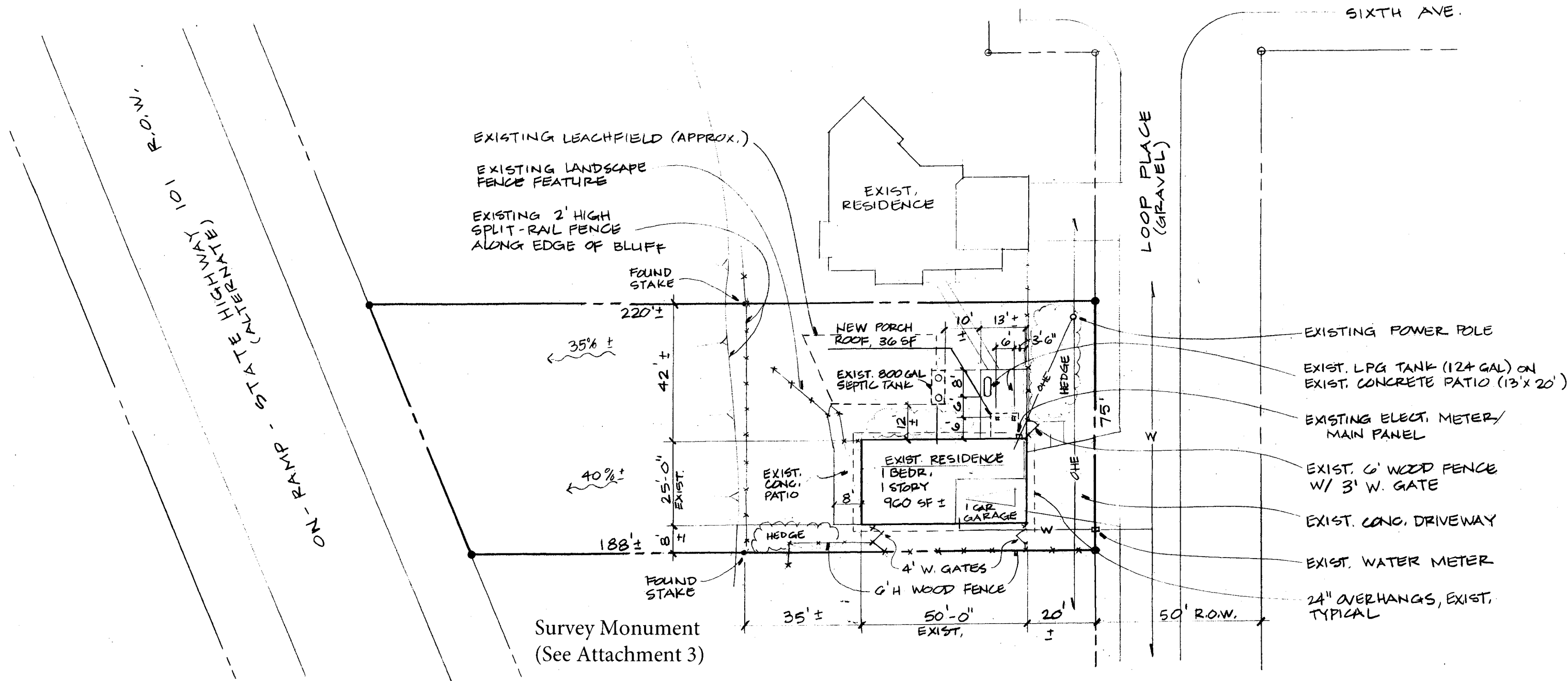
Barbara Bryant CDP

ZA Supplemental # 1-23.2020

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Figure 1

Site Plan

2



PLOT PLAN DATA

LOT AREA: 15300 SF. (APPROX.)

LOT ZONING: COASTAL ZONE
RS-X

EXISTING STRUCTURES:

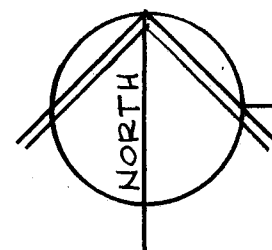
CONDITIONED AREA: 960 SF ±
UNCOND. GARAGE: 290 SF

TOTAL: 1250 SF.

MAXIMUM BUILDING HEIGHT: 13'

NEW PORCH ROOF: 36 S.F.

PLN-2019-15838 Barbara Bryant CDP



PLOT PLAN

SCALE: 1" = 30'-0"



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(707) 839-8829
bonnie.l.oliver.architect@gmail.com

ZA Supplemental #1 1.23.20

A.P.N. 514-152-019

EXISTING
RESIDENCE

OWNER: BARBARA BRYANT

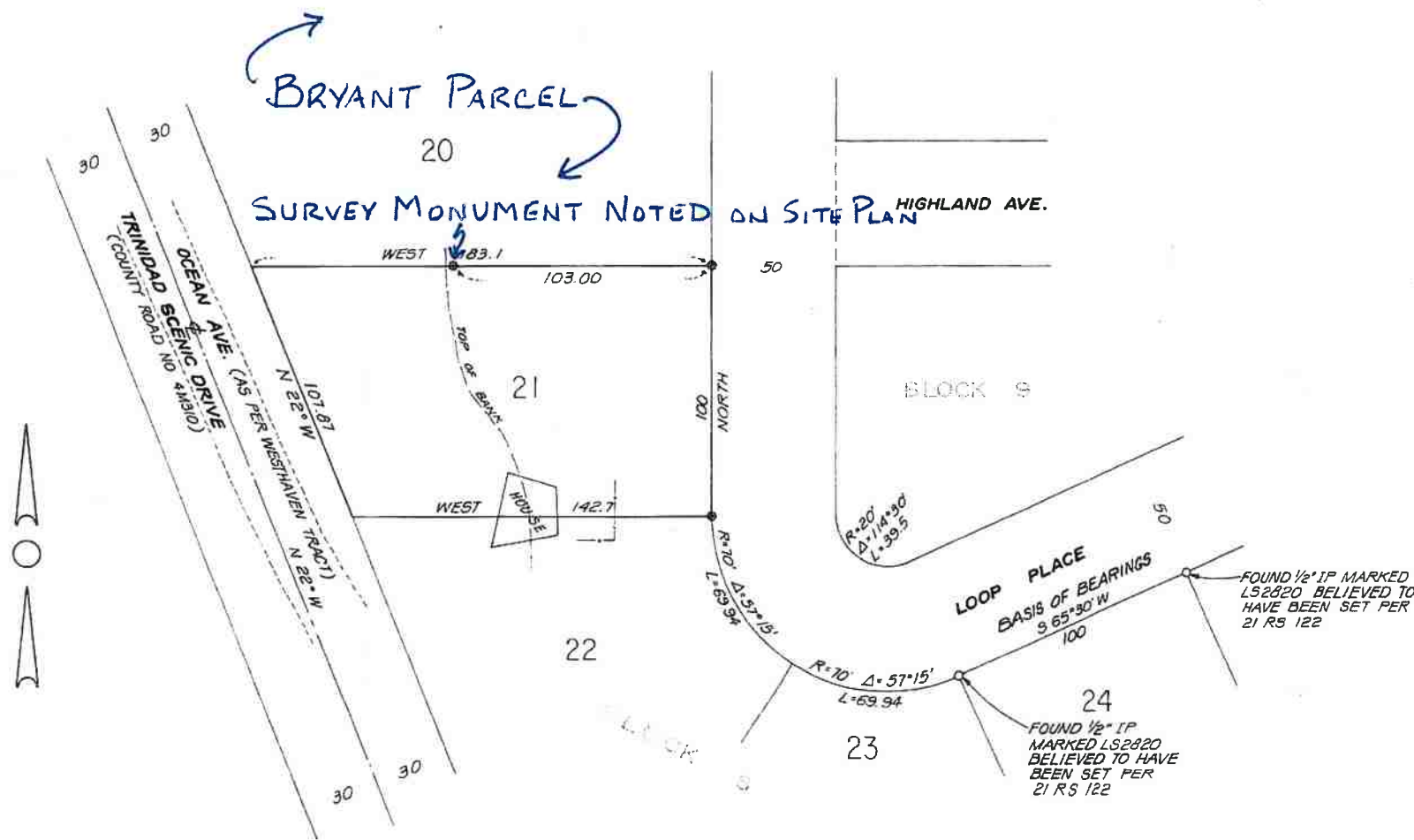
AT: 100 LOOP PLACE
WESTHAVEN, CA 95570

DATE
7/22/19

SHEET
A1

Record of Survey Map

3



NOTE
THIS MAP IS A RETRACEMENT OF A PORTION OF BLOCK 9, WESTHAVEN TRACT, BOOK 11 OF MAPS PG 19 to 22 HCR.

- LEGEND**
- | SYMBOL | INDICATES |
|--------|--|
| • | 3/4" G.I.P. WITH PLASTIC PLUG MARKED LS3431 SET DURING THIS SURVEY |
| ○ | I.P. FOUND AS NOTED |
| — | EXISTING FENCE |

SURVEYOR'S CERTIFICATE

This map represents a survey made by me or under my direction in conformance with the requirements of the Land Surveyors Act at the request of CHRIS JOHNSON in DEC, 1979.

Raymond G. Haberstock



COUNTY SURVEYOR'S CERTIFICATE

This map has been examined for conformance with the requirements of the Land Surveyor's Act this 16 day of April, 1980.

Guy C. Kulstad
John K. Facey
Deputy County Surveyor

9314

RECORDER'S CERTIFICATE

Filed this 12th day of May, 1980, at 8:33 M. in book 37 of SURVEYS 130 Humboldt County Records, at the request of Winzler & Kelly, Consulting Engineers.

Grace Jackson
County Recorder

By _____
Fee \$5.00

RECORD OF SURVEY
FOR

CHRIS JOHNSON

SEC 31 T 8 N. R 1 E HB&M
COUNTY OF HUMBOLDT, STATE OF CALIFORNIA
JANUARY, 1980

Scale 1" = 40'

All distances were measured in feet and decimal of feet.

W H WINZLER & KELLY, CONSULTING ENGINEERS
633 THIRD STREET, EUREKA, CALIFORNIA

SHEET 1 OF 1