

CALIFORNIA COASTAL COMMISSION

NORTH COAST DISTRICT OFFICE
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Th8a

1-22-0319

(PAPSTEIN)

October 13, 2022

EXHIBITS

Exhibit 1 – Vicinity Map

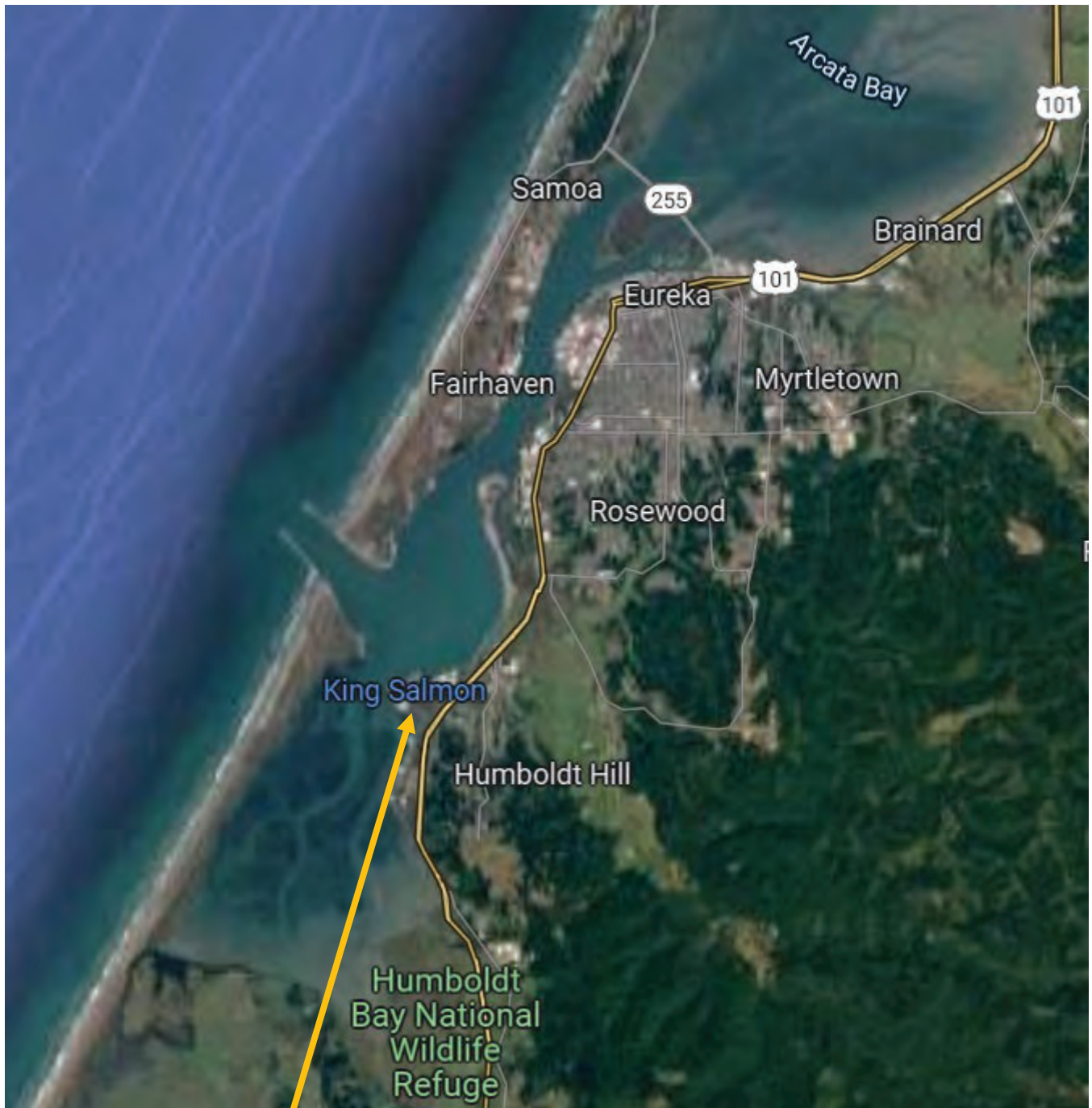
Exhibit 2 – Mapped Hazard Areas

Exhibit 3 – Site Plan

Exhibit 4 – Design Plans

Exhibit 5 – Elevations

Exhibit 6 – Soils Report (excerpt)



Project Location

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VICINITY MAP (page 1 of 2)



Project Location

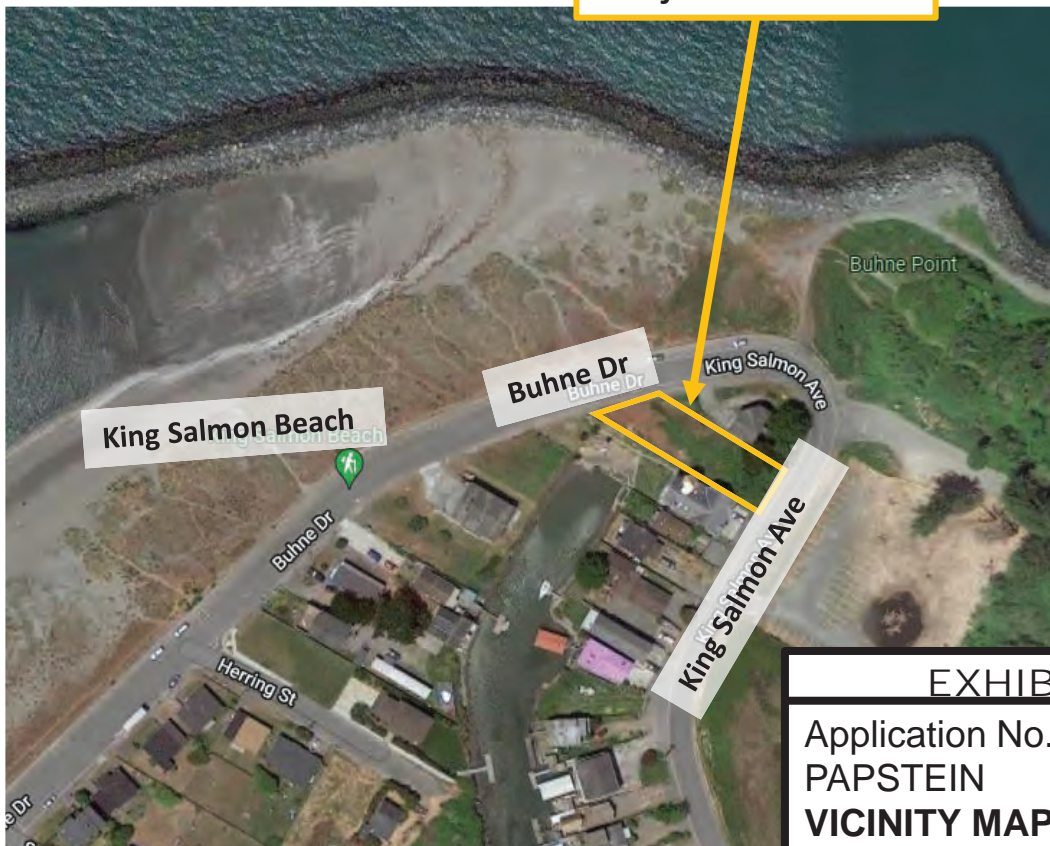
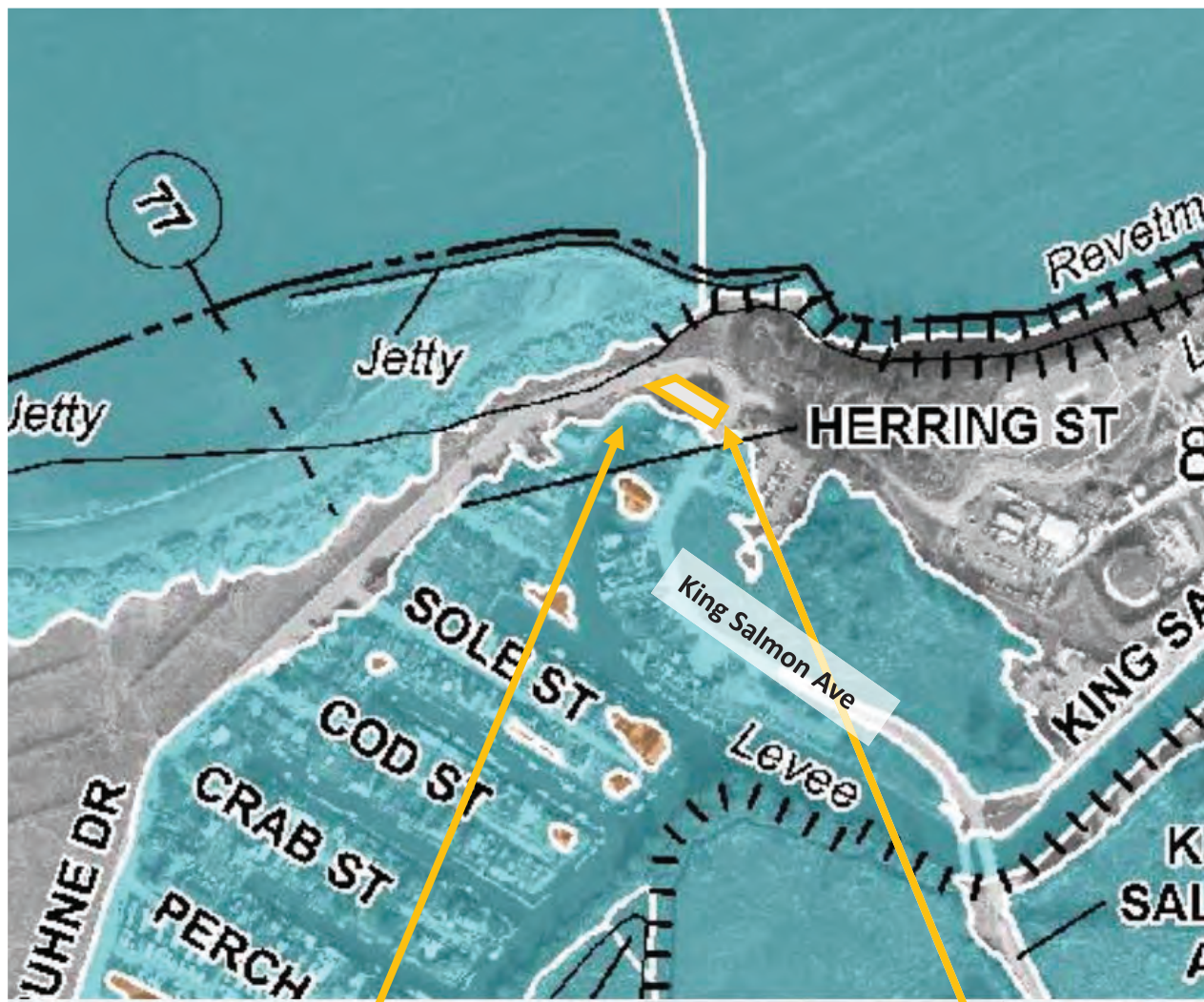


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VICINITY MAP (page 2 of 2)



FEMA Flood Zone
(BFE 10 ft NAVD88)

Subject Property

EXHIBIT NO. 2

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Mapped Hazards (1 of 2)



Mapped Area of
Potential Liquefaction

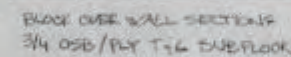
Subject Property

EXHIBIT NO. 2

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Mapped Hazards (2 of 2)

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NORTH COAST DISTRICT



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Design Plans (Page 1 of 3)

[illegible]

REVISIONS	BY

PAPSTEIN 2ND FLOOR

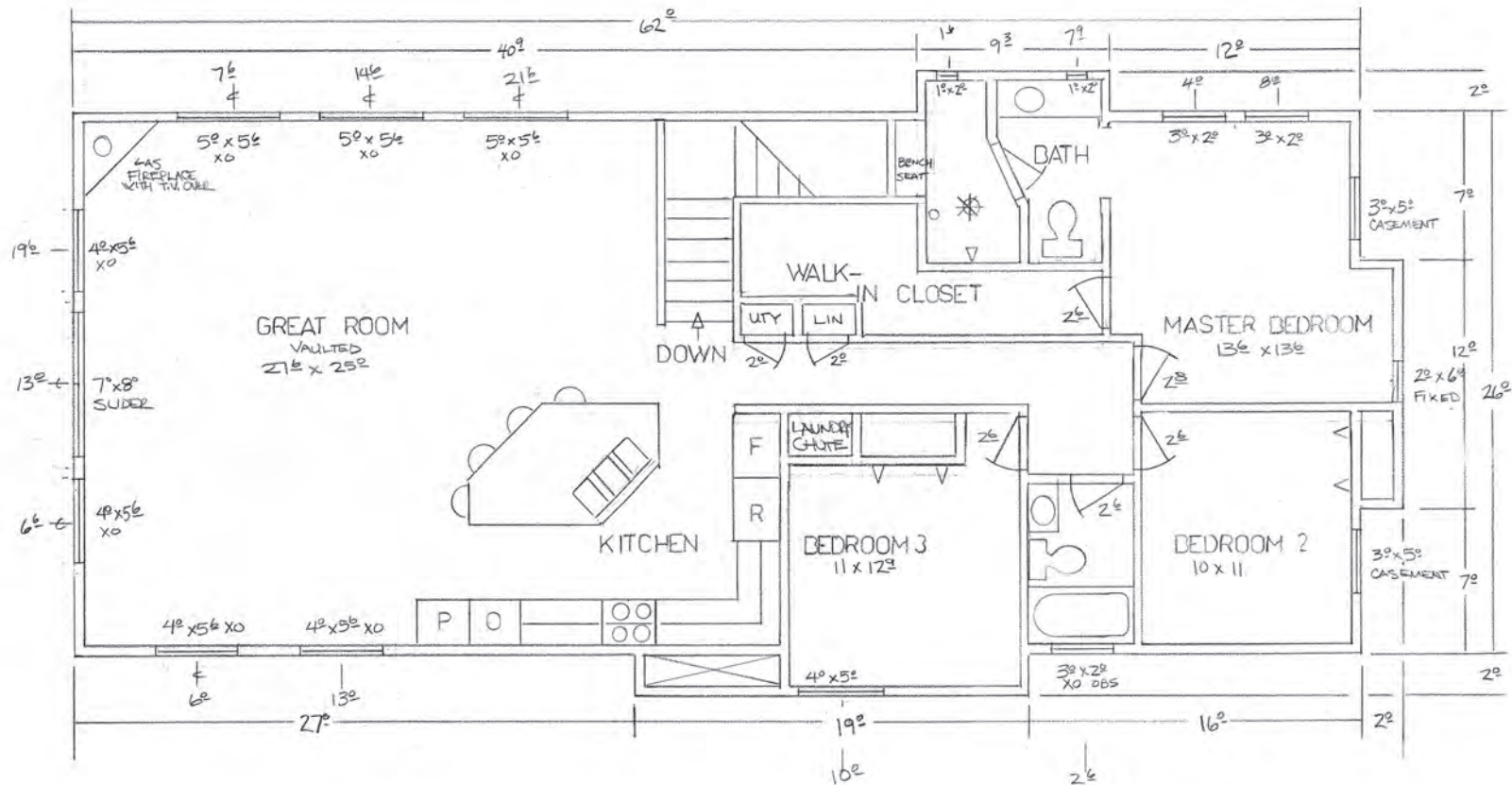


EXHIBIT NO. 4
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 Design Plans (Page 2 of 3)

Date	AUG '21
Scale	1/4" = 1'
Drawn	K.P.
Job	
Sheet	
Of	Sheets

REVISIONS	BY

PAPSTEIN ROOF PLAN

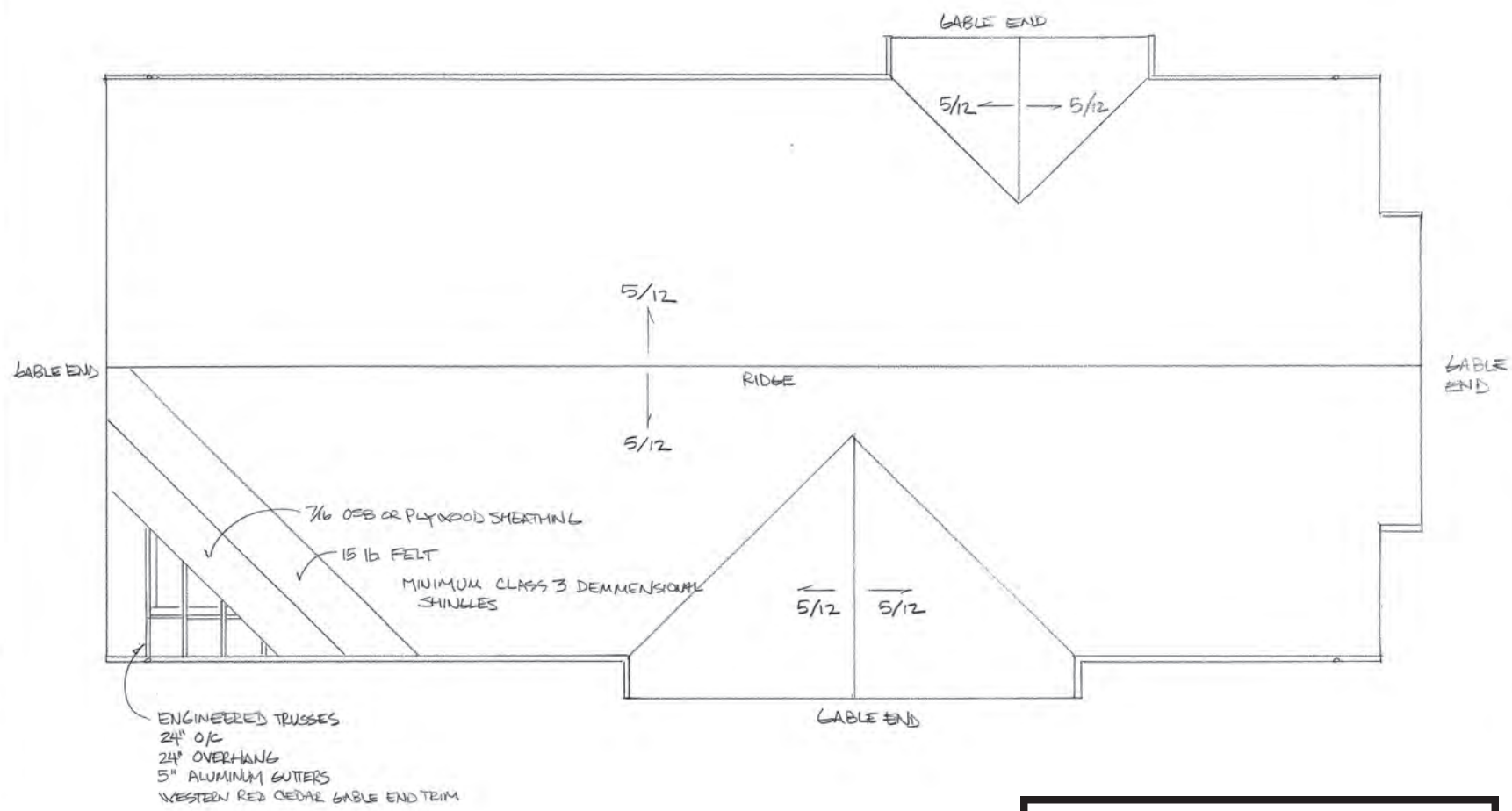
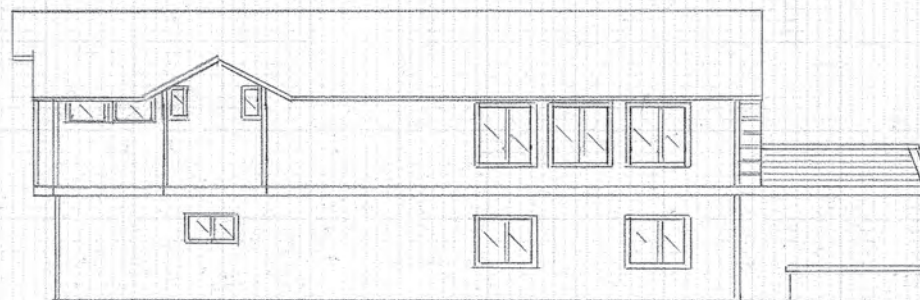


EXHIBIT NO. 4
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 Design Plans (Page 3 of 3)

Date	AUG '21
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Drawn	K.P.
Job	
Sheet	
Of	Sheets

**EXHIBIT NO. 5**

Application No. 1-22-0319
PAPSTEIN
Elevations

[illegible]

SOILS STUDY
FOR PAPSTEIN RESIDENCE
KING SALMON, EUREKA, CA
APN 305-073-003

This report presents the results of the geotechnical investigation conducted by S. E. E. Engineering at the site of the proposed residence located in King Salmon between King Salmon and Buhne Dr.. This is just a short distance South of Eureka, California.

The purpose of the study was to determine the types and extent of the materials to be encountered during construction with recommendations for their utilization and site development criteria for the proposed project.

FIELD INVESTIGATION

S. E. E. Engineering field investigations were limited to reconnaissance of the project site and drilling and sampling. Two exploratory borings were advanced to a maximum depth of 48 inches below ground surface in Boring No.1 and 44 inches below ground surface in Boring No.2. No ground water was encountered in any of the borings. A total of 6 moisture samples were taken with the results as follows:

Bore No.1 = 11.2% at 21 inch depth
Bore No.1 = 14.0% at 24 inch depth
Bore No.1 = 8.7% at 43 inch depth
Bore No.1 = 16.9% at 48 inch depth
Bore No.2 = 8.0% at 24 inch depth
Bore No.2 = 15.1 % at 44 inch depth

The borings were logged in accordance with the Unified Soil Classification system and were rated GP and SW. The borings were advanced using a hand auger.

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Soils Report (Page 1 of 5)

SITE CONDITIONS AND MATERIALS PRESENT

The project site is located on a former sand bar and salt marsh that was reclaimed, subdivided and developed as a residential/resort community by the mid-1960's. Several canals connecting to the Humboldt Bay Power plant cooling water channel were dug in King Salmon to provide dock side access to the bay from many of the King Salmon lots. The subject property does not adjoin any of these canals. The site is approximately flat, with a depressed area of about 30 inches in depth along the length of the lot in a utility easement.

Specific descriptions of the site soils encountered in the borings are presented on the attached boring logs.

Most of the materials encountered in the borings were damp and firm in nature. The material was a medium brown gravelly silty sand. The borings were 4 feet in depth in Boring No.1 and 44 inches in depth in Boring No.2. In both borings the material was the same for the total length of bore.

The test taken with the pocket penetrometer was 2.5tons/square foot at -24 ches in Boring No.1.

The site is approximately 3.2 kilometers north of the Little Salmon fault (which is a type A earthquake fault) and is 3.5 kilometers west of the Freshwater fault (a type B fault), based on the 2019 CBC Seismic Design Category is "E", site classification of "D" with site coefficients F_a and F_v equal to 1.0 and 1.5 respectively. We estimate a soil profile type S_d for the site. The calculated Seismic Response Coefficient -0.24.

The site is mapped in a "Co" area by the Humboldt County General Plan geologic map (Humboldt County 1984). This a generalized map, and it indicates the site is in a relatively stable area with respect land sliding, that it is composed of alluvial deposits near the surface, and that it is in a potential liquefaction area. It is also mapped in a potential liquefaction area by the California Division of Mines and Geology, Special Publication 115 (CDMG 1995).

It is mapped outside potential tsunami inundation zones by Special Publication 115 (CDMG, 1995), which is based on a Tsunami Inundation Model Study of Eureka and Crescent City, California by Bernard, Mader, Curtis, and Satake, 1994. According locally authored tsunami safety map; it is also outside a potential tsunami inundation areas (Patton and Dengler, 2004). Alquist-Priolo study zones are not located near the project site and the site is not included within this Special Studies Zones Official Map (California State Geologist, 1983).

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GEOLOGY

The site is underlain by Quaternary alluvial deposits. The near-surface soils are composed of poorly graded fine sand or "beach" sand. The borings indicate that gravelly fill has been incorporated into the native soil.

As stated earlier the project is located between the Little Salmon and Freshwater faults. These are all thrust faults and are considered active. Thrust faults are low angle faults (30 degrees to 40 degrees) that build up considerable horizontal stress before they fail and can generate a large event.

A fault zone is a zone of related faults that commonly are braided and sub parallel, but may be branching and divergent. A fault zone has significant width ranging from a few feet to several miles.

An active fault is defined by the Mining and Geology Board as one which has "had surface displacement within Holocene time (about the last 11,000 years)"

The project area is subject to strong seismic motion as is a good part of Humboldt County, but the incidence of damage could be rare. Due to the sites location, it would be considered in a relatively stable area with respect to land sliding. Liquefaction should not be a problem except in the event of a relatively rare, major earthquake. For example, we are not aware of liquefaction or co-seismic settlement occurring in this area as a result of the 1992 Petrolia earthquakes, which had a maximum movement magnitude of approximately 7.

Due to its elevation and location the site would be considered a tsunami risk.

TSUNAMI RISK

Tsunami Risk is indicated in the two publications cited under "Site Conditions" above.

The December 26, 2004 tsunami in Sumatra resulted in west coast shoreline tsunami heights in Sumatra (approximately opposite the epicenter) on the order of 20 to 35 meters (66 to 115 feet), per the U. S. Geological Survey (USGS) web page <http://walrus.wr.usgs.gov/tsunami/sumatra05/> as of January 18, 2006. The causative subduction zone geology in Sumatra is generally analogous to that existing at Humboldt County's off shore Cascadia subjection zone, which may indicate higher wave height potentials than considered in previous publications.

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Using the most current Tsunami Hazard Map publish by the Redwood Coast Tsunami Work Group, the proposed site is in a Tsunami Hazard Zone and Tsunami Evacuation Area. Risk is considered speculative in a rare, extreme causative event and commensurate with the surrounding structures.

LIQUEFACTION, CO-SEISMIC SETTLEMENT, LATERAL SPREADING

Relatively strong, prolonged earthquakes are the common source of dynamic loading causing liquefaction. During shaking, the soil structure tends to collapse, while pore groundwater pressure builds up in the soils until shear strength is lost, and soil/groundwater mixture temporarily act as liquid slurry until excess pore pressures dissipate.

Co-seismic settlement of moderately consolidate, sandy, relatively cohesion less soils can occur above or below groundwater, and is characterized by soil densification resulting from dynamic loading of relatively loose or moderately consolidate granular soils, resulting in settlement of the ground surface.

Lateral spreading is considered a risk at the subject site. For this report, risk of potentially liquefiable soils and soils subject to co-seismic compaction is a decided possibility.

For this report, risk of potentially liquefiable soils, and soils subject to co-seismic compaction, is assumed, and that in a relatively rare, very strong or prolonged seismic event, liquefaction of underlying sandy soils could occur, along with co-seismic compaction. It is likely that this risk is commensurate with existing structures on similar ground conditions in the site vicinity.

GENERAL SEISMIC DESIGN

The minimum standard for construction of the structure should be in accordance with latest edition of the CBC for the most seismically active areas.

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CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of this study it is our opinion that the project can be developed as proposed. The potential for compressible soil is limited, liquefaction is possible and tsunami risk is a potential speculative in a rare, extreme causative event. No high plasticity soils strata were encountered or generally anticipated in the geologic formation comprising the site and risk of adverse consequences to the structure from expansive soil is considered low.

The foundation can be constructed on a proposed mat slab foundation. The bearing pressure used for design is 1000 PSF.

Drainage shall be directed away from the foundation using ditches and sloping the grade at 2% and piping gutter drains away from the structure.

There is no conflict with any Alquist-Priolo study zones.

LIMITATIONS OF REPORT

The analysis, conclusions, and recommendations contained in this report are based on the site conditions at the time of the investigation. We have assumed that the information obtained from our subsurface investigation is representative of the subsurface conditions throughout both sites.

If there is a substantial change in the scope of the proposed work or if during construction the subsurface conditions differ significantly, then SEE ENGINEERING should be contacted to re-evaluate the applicability of our conclusions and recommendations.

The conclusions and recommendations contained in this report are professional opinions based on current standards of professional practice. The recommendations are based on the assumption that design improvements will conform to their intent. Assumptions about other site characteristics, such as hazardous materials, contamination, or environmentally sensitive areas should not be made from this report. This report is only applicable to the site and proposed project studied. No warranty or guarantee is expressed or implied.

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