

**CALIFORNIA COASTAL COMMISSION**

NORTH COAST DISTRICT OFFICE  
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# Th8c

## MEMORANDUM

**Date:** August 13, 2013

**To:** Commissioners and Interested Persons

**From:** Alison Dettmer, Deputy Director  
Bob Merrill, District Manager  
Nicholas Dreher, Coastal Planner

**Subject:** Addendum to Commission Meeting for Thursday, August 15, 2013  
North Coast District Item Th8c, CDP Application 1-13-005 (Frink, Humboldt County)

The purpose of this staff report addendum is to update the information contained within the findings of the staff report to: (1) incorporate the projections of the recently issued 2013 updated state sea level rise guidance document; and (2) correct a height reference. The new sea level rise projections are consistent with the projections used in the staff report based on the 2010 state sea level rise interim guidance document and the 2012 National Academy of Science (NAS) Report issued in 2012. The addition of the new sea level rise projections does not alter the conclusions of the report. In addition, staff is making a correction in the findings to a reference to the height of the second and third floor habitable living space within the same finding. Staff continues to recommend that the Commission approve the project with the same special conditions included in the staff recommendation of July 26, 2013.

### I. REVISIONS TO FINDINGS

Staff is recommending modifications to Finding F, "Flood Hazards," of the July 26, 2013 staff report as follows (text to be deleted is shown in ~~strike through~~; text to be added appears in **bold double underline**):

- 1. Revise the first three full paragraphs on page 10 of the Flood Hazard finding discussing sea level rise projections as follows:***

Extreme high tide events in conjunction with future sea-level rise will increase the vulnerability of the subject site and the entire King Salmon community. According to the State's 2010 sea-

level rise interim guidance document, sea level is projected to rise 5 to 8 inches by 2030, 10 to 17 inches by 2050, 17 to 32 inches by 2070, and 31 to 69 inches by 2100. The ranges in the projections of sea level rise are based on a range of modeling results. For dates after 2050, the ranges of sea level rise also are based on low, medium, and high future greenhouse gas emission scenarios. The State Coastal Conservancy and the State Lands Commission have adopted the use of 55 inches (140 cm) of sea level rise for 2100 which is consistent with the average of the models of sea level rise for 2100 based on a high future greenhouse gas emission scenario.

Throughout the first half of the 21<sup>st</sup>-century, sea-level rise alone is not expected to cause significant flooding, inundation, or erosion, but rather the highest probability and most damaging events likely will take place when increasingly elevated sea-level occurs simultaneously with high tides and large waves (e.g., during El Niños). Between 2050 and 2100, the effects of sea level rise alone (flooding and inundation) and the combined effects of sea-level rise and large waves (e.g., damage to coastal structures, cliff erosion, beach loss) are projected to have much greater impacts.

The most recent National Academy of Science (NAS) Report issued in 2012 takes into account estimates of vertical land movement resulting from tectonic activity and land subsidence along the west coast of the United States and projects somewhat lesser amounts of sea level rise than the State's 2010 sea level rise interim guidance document in areas of California north of Cape Mendocino. For example, the NAS report reduces the projection of relative sea level rise in the Eureka area 75 to 100 years from now by approximately 5-7 inches due to assumed vertical uplift of the land over that period.

**In 2013, following both the 2012 NAS report and the Commission's receipt of this application, the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT) published updated state sea level rise guidance and recommendations that reflect the updated science provided in the NAS report. The 2013 guidance states that the differences in sea-level rise projections north and south of Cape Mendocino are due mainly to vertical land movement. North of Cape Mendocino, geologic forces are causing much of the land to uplift, resulting in a lower rise in sea level, relative to the land, than has been observed farther south<sup>1</sup>. This uplift is evidenced by a tide gage location 65 miles north of Crescent City which has recorded an annual drop in sea level of -0.21 feet per year. However, the 2013 report indicates that there are variations within areas north of the Cape Mendocino. A tide gage located on the North Spit of Humboldt Bay has recorded an average sea level rise of since 1977 of 1.55 feet per year. This result is larger than the global average and suggests significant subsidence in the gage location. However, In addition, according to a 2012 Humboldt Bay area sea level rise data synthesis report prepared for the Humboldt Bay Initiative, the North Spit of Humboldt Bay actually appears to be subsiding while other locations around the Bay appear to be rising, and little is known about the rate of uplift of subsidence in different locations in and around Humboldt Bay. The report**

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<sup>1</sup> **As updated, the sea level rise projections are as follows: North of Cape Mendocino, -1.56 to 9 inches by 2030, -1.2 to 19 inches by 2050, and 3.6 to 56 inches by 2100; South of Cape Mendocino, 1.56 to 12 inches by 2030, 5 to 24 inches by 2050, and 17 to 66 inches by 2100.**

recommends that additional studies be done to determine how the rate of sea level rise varies with respect to different locations around Humboldt Bay.

Given the uncertain knowledge with respect to rates of uplift or subsidence at different locations around Humboldt Bay and how those rates of uplift or subsidence would affect relative sea level rise, the Commission applies a global 55 inches by 2100 projection of sea level rise to the subject development that is consistent with the global sea level rise projections of the State's 2010 interim guidance document, the 2012 NAS report, and applies the State's updated 2010 range of global sea level rise projections interim guidance document projections to the subject development.

***2. Correct Reference to Height of Second and Third Floor Habitable Living Space in the second full paragraph on page 11 of the Flood Hazard finding as follows:***

In addition to the risk of flood hazards associated with extreme high tides and future sea level rise, the subject property, along with many others around Humboldt Bay, is shown on emergency planning maps published in 2009 by the California Emergency Management Agency, California Geologic Survey, and University of Southern California as being within the zone of potential inundation by a tsunami. If the region were to suffer a major earthquake along the Cascadia Subduction Zone, a local tsunami could hit the Humboldt Bay shoreline within minutes. The primary way to ensure that the proposed development would be safe from tsunami wave run-up would be to require that the habitable living spaces be positioned only above tsunami inundation levels. The applicant is proposing to locate an attached garage as the first-story with the habitable living space on the second and third stories, at least 15.3 feet above ~~finished grade~~ sea level, which will help reduce the severity of flooding impacts to the residence from smaller tsunamis.

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# Th8c

Filed:	3/13/13
180 <sup>th</sup> day:	9/9/13
Staff:	M. Kraemer-A
Staff Report:	7/26/13
Hearing Date:	8/15/13

## STAFF REPORT: REGULAR CALENDAR

<b>Application No.:</b>	<b>1-13-005</b>
<b>Applicant:</b>	<b>Tony Frink</b>
<b>Agent:</b>	Sarah Atkins, Atkins Drafting
<b>Location:</b>	Crab Street, King Salmon, Humboldt County (APN 305-231-16).
<b>Project Description:</b>	Develop a 1,345-square-foot, one bedroom, three-story, 35-foot-tall single family residence with an attached 320-square-foot single-car garage as the first story.
<b>Staff Recommendation:</b>	Approval with conditions.

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## SUMMARY OF STAFF RECOMMENDATION

Commission staff recommends **approval** of coastal development application 1-13-005 subject to the attached recommended special conditions.

The applicant proposes to develop a 1,345-square-foot, one bedroom, three-story, 35-foot-tall single family residence with an attached 320-square-foot single-car garage as the first story on a vacant, undeveloped 2,625-square-foot residential lot on Crab Street in the King Salmon area of Humboldt County (**Exhibits 1-3**). The standard of review for the proposed CDP application is the Coastal Act.

The King Salmon subdivision, located on the shores of Humboldt Bay a few miles south of Eureka directly across from the bay entrance channel, consists of former tidelands that were partially filled during the mid-1900s and later subdivided into approximately 200 small lots. The community originally was envisioned as a fishing enclave for summer or vacation cabins. The tidelands were filled in a manner that created interior tidal channels within the subdivision, all of which connect to Fisherman's Channel, which ultimately leads to the open waters of Humboldt Bay. Most of the lots within the subdivision, including the subject lot, include tidal and shoreline areas of the channel. Many of the lots contain private boat docks, although the vacant subject lot does not, and none is proposed under this CDP application. The neighborhood is densely developed primarily with single-family residences of varying sizes and heights that display a variety of architectural styles.

The subject site is located within a densely developed neighborhood, inland of a County road and other County infrastructure that serves the King Salmon subdivision, which to some degree buffers the property from wave attack. However, the site is still subject to various flooding risks. Coastal Act Section 30253 requires that development minimize risks to life and property in areas of high flood hazard. In other regions of the California Coast, some Local Coastal Programs (LCPs) such as the San Mateo County and Newport Beach LCPs further restrict or prohibit development in flood hazard areas. In this case, however, the development is located on historic tidelands within the Commission's retained jurisdiction and the Coastal Act is the standard of review. Therefore, the subject development is not subject to additional LCP requirements more restrictive or numerically specific than the requirement of Section 30253 that new development minimize risks to life and property in areas of high flood hazard.

The application was originally scheduled for a hearing at the June 12, 2013 Commission meeting. After publication of the staff recommendation on May 24, 2013, staff revisited the question of whether all feasible mitigation measures to minimize flood hazard risks to the project associated with sea level rise and tsunami inundation had been fully evaluated. Staff postponed the hearing to further evaluate whether other feasible mitigation measures to reduce such hazards exist and should be incorporated into the staff recommendation. The applicant provided additional information and preliminary plans clarifying previously proposed flood hazard mitigation measures and incorporating new measures into the project to reduce the flood hazard risks. The staff recommendation has been revised to reflect this information. Special Condition No. 7 has been added to require the submittal of final plans demonstrating that the identified feasible mitigation measures to minimize flood hazards will be incorporated into the final plans prepared for the project. In addition, the flood hazards finding has been supplemented to more comprehensively address the flood hazard issue.

Staff believes that the project, if conditioned as recommended below, includes all feasible mitigation measures necessary to find the project consistent with the Coastal Act's policies requiring minimization of flood hazards risks and the protection of visual resources, nearby environmentally sensitive habitat areas, public access, and water quality.

## TABLE OF CONTENTS

<b>I.</b>	<b>MOTION AND RESOLUTION</b>	<a href="#"><u>4</u></a>
<b>II.</b>	<b>STANDARD CONDITIONS</b>	<a href="#"><u>4</u></a>
<b>III.</b>	<b>SPECIAL CONDITIONS</b>	<a href="#"><u>5</u></a>
<b>IV.</b>	<b>FINDINGS AND DECLARATIONS</b>	<a href="#"><u>7</u></a>
	<b>A. PROPOSED PROJECT DESCRIPTION</b>	<a href="#"><u>7</u></a>
	<b>B. ENVIRONMENTAL SETTING</b>	<a href="#"><u>7</u></a>
	<b>C. OTHER AGENCY APPROVALS</b>	<a href="#"><u>8</u></a>
	<b>D. STANDARD OF REVIEW</b>	<a href="#"><u>8</u></a>
	<b>E. LOCATING AND PLANNING NEW DEVELOPMENT</b>	<a href="#"><u>8</u></a>
	<b>F. FLOOD HAZARDS</b>	<a href="#"><u>9</u></a>
	<b>G. VISUAL RESOURCES</b>	<a href="#"><u>13</u></a>
	<b>H. ENVIRONMENTALLY SENSITIVE HABITAT AREAS</b>	<a href="#"><u>14</u></a>
	<b>I. WATER QUALITY PROTECTION</b>	<a href="#"><u>15</u></a>
	<b>J. PUBLIC ACCESS</b>	<a href="#"><u>16</u></a>
	<b>K. CALIFORNIA ENVIRONMENTAL QUALITY ACT</b>	<a href="#"><u>16</u></a>

### APPENDICES

[Appendix A – Substantive File Documents](#)

### EXHIBITS

- Exhibit 1 – Regional location map
- Exhibit 2 – Project vicinity maps/aerial photos
- Exhibit 3 – Project plans
- Exhibit 4 – Tsunami Evacuation Map

## I. MOTION AND RESOLUTION

The staff recommends that the Commission adopt the following resolution:

### **Motion:**

*I move that the Commission approve coastal development permit 1-13-005 pursuant to the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

### **Resolution:**

*The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.*

## II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment:** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration:** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. **Interpretation:** Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.
4. **Assignment:** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land:** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

### III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Assumption of Risk, Waiver of Liability, and Indemnity Agreement.** By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from earthquakes, erosion, flooding, inundation, extreme high tide events, and tsunami wave run-up; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.
2. **Deed Restriction.** PRIOR TO ISSUANCE OF THIS COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval documentation demonstrating that the landowner has executed and recorded a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property (hereinafter referred to as the "Standard and Special Conditions"); and (2) imposing all Standard and Special Conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the applicant's entire parcel or parcels. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the subject property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.
3. **Lighting Limitations.** All exterior lighting attached to the authorized structures shall be low-wattage and downcast shielded such that no glare will be directed beyond the bounds of the property or into adjoining coastal waters.
4. **Landscaping Restrictions.** The permittee shall comply with the following landscaping-related requirements:
  - A. Only native and/or non-invasive plant species shall be planted. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California



- Invasive Plant Council, or as may be identified from time to time by the State of California, shall be employed or allowed to naturalize or persist on the site. No plant species listed as a “noxious weed” by the governments of the State of California or the United States shall be utilized within the bounds of the property; and
- B. The use of rodenticides containing any anticoagulant compounds, including but not limited to, Bromadiolone, Brodifacoum, or Diphacinone, shall not be used.
5. **Drainage.** Downspouts and other drainage features shall be designed to direct roof runoff away from the tidal channel and into a grassy swale and detention basin near the front of the property as proposed by the applicant.
6. **Construction Responsibilities.** The permittee shall adhere to various construction-related best management practices (BMPs) including, but not limited to, the following:
- A. No construction materials, debris, or waste shall be placed or stored where it may be subject to entering coastal waters or environmentally sensitive areas;
  - B. Any and all debris resulting from construction activities shall be removed from the project site and disposed of properly;
  - C. During the course of the project work, all trash shall be properly contained, removed from the work site on a regular basis, and properly disposed of to avoid contamination of habitat during demolition and construction activities;
  - D. All on-site stockpiles of construction debris and soil or other earthen materials shall be covered and contained whenever there is a potential for rain to prevent polluted water runoff from the site; and
  - E. BMPs shall be used to prevent the entry of polluted stormwater runoff into coastal waters and wetlands during construction and post-construction, including the use of BMPs to control sediment and to capture and clean up any accidental releases of oil, grease, fuels, lubricants, or other hazardous materials. In addition, relevant BMPs as detailed in the current California Storm Water Quality Best Management Handbooks (<http://www.cabmphandbooks.com>) shall be used including, but not limited to, construction BMPs for the use of silt fencing and protection of storm drain inlets and post-construction BMPs for site design and landscape planning, roof runoff controls, alternative building materials, vegetated buffer strips, and bioretention.
7. **Final Project Plans.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and written approval of the Executive Director, full-size scaled Final Project plans in substantial compliance with those submitted to the Commission on July 11, 2013.
- (1) The residential design, including the first floor elevations, shall be consistent with draft plans submitted to the Commission on July 11, 2013.
  - (2) The plans shall incorporate the following proposed hazard mitigation measures:
    - (a) Installation of the first floor slabs on grade at 7.3 feet (1.3 feet above FEMA base flood elevation of 6.0 feet);
    - (b) Use of 8-inch concrete block wall construction for the first floor level walls engineered to withstand the force of flood waters;

- (c) Installation of first floor wall flood vents substantially similar to the SMART VENT ® Model 1540 510 submitted by the Applicant on July 11, 2013;
- (d) Storage of hazardous materials (e.g., paint) at elevations above anticipated flood levels that take into account future sea level rise (10.6 feet or above); and
- (e) Positioning of all mechanical and utility installations at elevations above anticipated flood levels that take into account future sea level rise (10.6 feet or above).

The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

#### **IV. FINDINGS AND DECLARATIONS**

The Commission hereby finds and declares as follows:

##### **A. PROPOSED PROJECT DESCRIPTION**

The subject property is located on the south side of Crab Street in the unincorporated community of King Salmon in Humboldt County (APN 305-231-16) (**Exhibits 1-2**). The existing approximately 2,625-square-foot lot is vacant and undeveloped.

The applicant proposes to develop a 1,345-square-foot, one bedroom, three-story, 35-foot-tall single family residence with an attached 320-square-foot single-car garage as the first story. Project plans are attached as **Exhibit 3**.

##### **B. ENVIRONMENTAL SETTING**

The King Salmon subdivision, located on the shores of Humboldt Bay a few miles south of Eureka directly across from the bay entrance channel, consists of former tidelands that were partially filled during the mid-1900s and later subdivided into approximately 200 small lots. The community originally was envisioned as a fishing enclave for summer or vacation cabins. The tidelands were filled in a manner that created interior tidal channels within the subdivision, all of which connect to Fisherman's Channel, which ultimately leads to the open waters of Humboldt Bay. Most of the lots within the subdivision, including the subject lot, include tidal and shoreline areas of the channel. Many of the lots contain private boat docks. The subject lot does not have a dock, nor is one proposed under this CDP application.

Most of the lots in King Salmon are planned and zoned for either Residential Single Family (RS) or Commercial Recreation (CR) uses under the Humboldt County LCP. The subject lot, which is ~25-feet-wide and ~105 feet long/deep, is planned and zoned for single-family residential uses. Most of the lots in the surrounding area have been developed with single-family homes of varying sizes and heights that display a variety of architectural styles.

On the upland portion of the subject lot, there are no wetlands or environmentally sensitive habitats. Vegetation consists of mostly nonnative grasses and other ruderal species. The lot boundaries extend to the middle of the tidal channel. Some of the tidal channels in the King Salmon area contain eelgrass beds, which function as important marine habitat for various fish species. The proposed new residence would be located less than 10 feet from the edge of the tidal channel, which, due to the constrained size of the subdivision lots, is consistent with the setback distances on most of the surrounding lots in the King Salmon area.

Buhne Drive flanks the northwest and western sides of the King Salmon subdivision, separating the developed residential and commercial areas of the subdivision from mudflat and dune areas that border the open waters of Humboldt Bay. This dune and bay shoreline area is accessible to the public, and there is ample public parking along Buhne Drive.

### **C. OTHER AGENCY APPROVALS**

The proposed project requires a special permit from Humboldt County to allow for a parking exception to allow the on-street parking space to be located as a tandem space within the front yard setback, in front of the garage. The County approved the special permit (SP-12-24) on December 6, 2012.

### **D. STANDARD OF REVIEW**

The proposed project is located in the Commission's retained jurisdiction. Humboldt County has a certified local coastal program (LCP), but the site is within an area shown on State Lands Commission maps over which the state retains a public trust interest. Therefore, the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

### **E. LOCATING AND PLANNING NEW DEVELOPMENT**

Section 30250(a) of the Coastal Act states that new development shall be located within or near existing developed areas able to accommodate it or in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. The intent of this policy is to channel development toward more urbanized areas where services are provided and potential impacts to resources are minimized.

The subject property is located in a densely developed community that is planned and zoned for single family residential use and some commercial development. The community contains over one hundred developed residences and commercial businesses. According to the County, of the 177 individually assessor parcels in the King Salmon subdivision, only 43 remain vacant at this time. Approximately two-thirds of the lots on Crab Street where the subject lot is located have already been developed with residential structures.

The subject property is served by community water and sewer systems provided by the Humboldt Community Services District. Thus, there are adequate services to accommodate the proposed new one-bedroom residence. Although the subject site is located in a designated flood hazard combining zone, as discussed in Finding IV.F below, the development has been conditioned to minimize flood hazards consistent with the requirements of Section 30253 of the

Coastal Act. Furthermore, as discussed in the below findings, the project has been conditioned to protect visual resources, nearby environmentally sensitive habitat areas, and water quality.

Therefore, the Commission finds that as conditioned, the proposed development is consistent with Coastal Act Section 30250(a), in that it is located in a developed area, has adequate water and sewer capability to accommodate it, and will not cause significant adverse effects, either individually or cumulatively, to coastal resources.

## **F. FLOOD HAZARDS**

Section 30253 states, in applicable part:

*New development shall do all of the following:*

- (a) *Minimize risks to life and property in areas of high geologic, flood, and fire hazard...*

The primary natural hazard affecting development of the subject property is flooding. The entire King Salmon subdivision lies within the FEMA-mapped 100-year flood zone and is subject to flooding from extreme high tides and tsunamis. The elevation at the site is approximately 5 feet above mean sea level. Development in this subdivision is common as vacant lots and older homes are redeveloped. The Commission has approved three residential developments within this subdivision just in the past three years (see CDP 1-10-034 (Kinori), CDP 1-11-043 (Needham) and CDP 1-12-010 (Kinori)).

Coastal Act Section 30253 requires that development minimize risks to life and property in areas of high flood hazard. In other regions of the California Coast, some Local Coastal Programs (LCPs) such as the San Mateo County and Newport Beach LCPs further restrict or prohibit development in flood hazard areas. In this case, however, the development is located on historic tidelands within the Commission's retained jurisdiction and the Coastal Act is the standard of review. Therefore, the subject development is not subject to additional LCP requirements more restrictive or numerically specific than the requirement of Section 30253 that new development minimize risks to life and property in areas of high flood hazard.

The subject site is located within a densely developed neighborhood, inland of a County road and other County infrastructure that serves the King Salmon subdivision, which to some degree buffers the property from wave attack. However, the site is still subject to various flooding risks. The primary way to minimize flooding risks from extreme high tides is to site proposed structures above flood elevations. According to the County Building Department, the 100-year Base Flood Elevation (BFE) in the King Salmon area as established by the Federal Emergency Management Agency's National Flood Insurance Program is estimated to be +6 feet NGVD29. In implementing the federal flood protection program, Humboldt County building permit regulations require new residences to have a finished floor elevation at least one-foot above BFE. The applicant has submitted a flood elevation certificate based on surveys by a licensed land surveyor stating that the finished floor elevation of the proposed structure will be above +7.3 feet NGVD29. Therefore, the development as proposed will minimize the risk of flooding associated

with extreme high tides consistent with the County's building permit regulations as it will be sited no less than 1.3 feet above BFE.

Extreme high tide events in conjunction with future sea-level rise will increase the vulnerability of the subject site and the entire King Salmon community. According to the State's 2010 sea-level rise interim guidance document, sea level is projected to rise 5 to 8 inches by 2030, 10 to 17 inches by 2050, 17 to 32 inches by 2070, and 31 to 69 inches by 2100. The ranges in the projections of sea level rise are based on a range of modeling results. For dates after 2050, the ranges of sea level rise also are based on low, medium, and high future greenhouse gas emission scenarios. The State Coastal Conservancy and the State Lands Commission have adopted the use of 55 inches (140 cm) of sea level rise for 2100 which is consistent with the average of the models of sea level rise for 2100 based on a high future greenhouse gas emission scenario.

Throughout the first half of the 21<sup>st</sup>-century, sea-level rise alone is not expected to cause significant flooding, inundation, or erosion, but rather the highest probability and most damaging events likely will take place when increasingly elevated sea-level occurs simultaneously with high tides and large waves (e.g., during El Niños). Between 2050 and 2100, the effects of sea level rise alone (flooding and inundation) and the combined effects of sea-level rise and large waves (e.g., damage to coastal structures, cliff erosion, beach loss) are projected to have much greater impacts.

The most recent National Academy of Science (NAS) Report issued in 2012 takes into account estimates of vertical land movement resulting from tectonic activity and land subsidence along the west coast of the United States and projects somewhat lesser amounts of sea level rise than the State's 2010 sea level rise interim guidance document in areas of California north of Cape Mendocino. For example, the NAS report reduces the projection of relative sea level rise in the Eureka area 75 to 100 years from now by approximately 5-7 inches due to assumed vertical uplift of the land over that period. However, according to a 2012 Humboldt Bay area sea level rise data synthesis report prepared for the Humboldt Bay Initiative, the North Spit of Humboldt Bay actually appears to be subsiding and little is known about the rate of uplift or subsidence in different locations in and around Humboldt Bay. The report recommends that additional studies be done to determine how the rate of sea level rise varies with respect to different locations around Humboldt Bay. Given the uncertain knowledge with respect to rates of uplift or subsidence at different locations around Humboldt Bay and how those rates of uplift or subsidence would affect relative sea level rise, the Commission applies the State's 2010 sea level rise interim guidance document projections to the subject development.

The design life of the proposed new structure is presumed to be 75-100 years. Using the state adopted projection of sea level rise for 2100, it is presumed that the base flood elevation for the project site of 6.0 feet will increase 55 inches (4.6 feet) to 10.6 feet in 2100. The finished floor elevation of the proposed garage would be at approximately 7.3 feet, or approximately three feet below base flood elevation incorporating the projected minimum sea level elevation in 2100. Using the National Academy of Science Report, the finished floor elevation of the proposed garage would also be below base flood elevation incorporating the projected minimum sea level elevation in 2100. In either case, the siting and design of the proposed structure at one foot

above BFE will not fully account for sea-level rise projected during the proposed residence's economic life.

The applicant has incorporated certain design components into the proposed residence to minimize risks from flooding and storm surge combined with sea level rise. First, the first-floor walls of each residence are to be constructed of 8" reinforced concrete blocks. The proposed walls exceed the County building code standards and are intended to withstand the additional force of flood waters. These walls will extend from the finished garage slab elevation (+7.3 ft.) up to the bottom of the framing for the first floor of living space (+15.3 ft.). While breakaway walls were considered, such walls are more appropriate along river flood plains where high water flow speeds are anticipated, rather than in this location. While sea levels would rise during storm events and inundate the neighborhood, the flows are not expected to reach the flow speed breakaway walls are designed to address. Second, the proposed concrete block walls will be equipped with automatic Smartvent flood louvers to return flood waters that enter the home to the outside of the structure. Rapidly rising floodwater can put extreme pressure on house foundation walls causing improperly vented structures to buckle and collapse. The Smartvent flood louvers quickly equalize the pressure and minimize damage. Third, to prevent hazardous materials from entering the water during higher tide storm and flooding events, the applicant is proposing elevated storage cabinets within the first floor to contain storage for all paints and cleaners, as well as all mechanical and utility installations. The storage cabinets will be attached to the concrete reinforced masonry walls at no less than 42" (3.5 feet) above the slab height, or at 10.8 feet, 0.2 feet above the presumed base flood elevation in 2100. based on projected sea level rise projections consistent with the state-adopted projection for the year 2100). Similarly, the applicant proposes that all mechanical and utility installations such as electrical panels, on-demand hot water heaters, and force air furnaces be attached to the first floor walls above the base flood elevation in 2100. As proposed and conditioned to include feasible flood hazard mitigation measures, the flood risks associated with sea level rise over design life of the structure will be minimized as required by Section 30253. Therefore, Special Condition 7 requires that final construction plans for the house that incorporate these flood hazard mitigation measures be submitted for the review and approval of the Executive Director prior to issuance of the permit.

In addition to the risk of flood hazards associated with extreme high tides and future sea level rise, the subject property, along with many others around Humboldt Bay, is shown on emergency planning maps published in 2009 by the California Emergency Management Agency, California Geologic Survey, and University of Southern California as being within the zone of potential inundation by a tsunami. If the region were to suffer a major earthquake along the Cascadia Subduction Zone, a local tsunami could hit the Humboldt Bay shoreline within minutes. The primary way to ensure that the proposed development would be safe from tsunami wave run-up would be to require that the habitable living spaces be positioned only above tsunami inundation levels. The applicant is proposing to locate an attached garage as the first-story with the habitable living space on the second and third stories, at least 15.3 feet above finished grade, which will help reduce the severity of flooding impacts to the residence from smaller tsunamis.

However, it is not feasible to design a structure in this location that would position all of the habitable living space above maximum tsunami inundation levels, which are believed to be at least 30 feet above mean sea level (the maximum height of the proposed structure is proposed to

be 35 feet). The proposed house is designed as a three story structure with two floors of habitable space above a garage floor. Even though the structure is three stories, the area of the house is a very modest 1,345 square feet. The floor area available for each story is very limited because of the narrow 25-foot-wide width and small overall size of the lot. Thus, at least two stories of habitable space are required to support even the modestly sized house that is proposed. Constructing a building where the floor area is at least 30 feet above mean sea level would be inconsistent with zoning code restrictions, which limit maximum building heights in the RS district to 35 feet. In addition, positioning the habitable living space of the two floors above the 30-foot-high tsunami wave run-up elevation would require the construction of an approximately 50-60 foot tall structure, the equivalent of a five story building. Further, construction of a new structure at a design elevation high enough to minimize the hazard of tsunami wave run-up from all potential tsunamis would be glaringly out of character with the surrounding area, where most existing structures are below 30 feet in height. Given the zoning standards requiring five-foot wide side yard setbacks, the structure can only be 15 feet wide. A 15-foot-wide, 50-60-foot tall structure would be greatly out of character with the other development in the area.

Aside from construction mitigation measures, the National Weather Service, in combination with other agencies, has developed a community tsunami readiness program. A tsunami siren has been installed, there is a clearly marked tsunami evacuation route and a sheltering location has been established on higher ground on the adjoining PG&E power plant site. Evacuation drills have also been conducted (see Exhibit 4).

Therefore, the Commission finds that there are no further feasible mitigation measures available to minimize the flood risk from tsunami wave run-up at the site.

The Commission further finds that if the applicant and future landowners receive notification of the flood risks associated with the property, then the applicant and future landowners of the property can decide whether to implement development on the site despite the risks. Therefore, the Commission attaches Special Conditions 1 and 2. [Special Condition 1](#) requires the landowner to assume the risks of flooding hazards to the property and to waive any claim of liability on the part of the Commission. Given that the applicant has chosen to implement the project despite flooding risks, the applicant must assume the risks. In this way, the applicant is notified that the Commission is not liable for damage as a result of approving the permit for development. The condition also requires the applicant to indemnify the Commission in the event that third parties bring an action against the Commission as a result of the failure of the development to withstand hazards. To ensure that all future owners of the property are aware of the flood hazard present at the site, the Commission's immunity from liability, and the indemnity afforded the Commission, [Special Condition 2](#) requires recordation of a deed restriction that imposes the special conditions of the permit as covenants, conditions, and restrictions on the use of the property.

As discussed above, the project as conditioned will not eliminate all risk to life and property from flood hazards. However, all feasible mitigation measures necessary to minimize the flood risks have been incorporated into the project as conditioned. Therefore, the Commission finds that the proposed project, as conditioned, will minimize risk to life and property from hazards, consistent with Section 30253 of the Coastal Act.

## G. VISUAL RESOURCES

Section 30251 of the Coastal Act states that the scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. The Section requires, in applicable part, that permitted development be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, and to be visually compatible with the character of surrounding areas.

The project site is located in a densely developed residential neighborhood. No public views of Humboldt Bay or the shoreline are afforded through the property, which is a developed lot located in the midst of other developed lots on Crab Street. Expansive and unobstructed public views of Humboldt Bay and coastal dunes are available for motorists and pedestrians from Buhne Drive approximately 500 feet northwest of the subject site. In addition, public parking is available along Buhne Drive for access to the dunes and shoreline. Thus, the proposed development will not have a significant adverse impact on views to or along the shoreline as seen from publicly-accessible vantage points.

As the site is relatively flat and does not require significant grading that would change the basic topography of the site, the proposed project minimizes the alteration of natural landforms.

As proposed, the design of the residence will be visually compatible with the residential character of the surrounding area, which is largely defined by a bay-shore setting and predominantly single-family residential and commercial composition. The community consists of a diversity of architectural styles and sizes of structures ranging from small old cabins and manufactured homes to larger two- and three-story homes. The proposed three-story structure would be a maximum of 35 feet tall and would be of similar size, scale, and architectural style to other development in this neighborhood of diverse structures.

Although the development pattern is very compact in the King Salmon area, the overall nighttime character of the area in terms of outside illumination is largely suburban in nature, with very little exterior lighting evident. As a result, with the exception of nominally shielded street lighting along Buhne Drive and security lighting within the parking areas of commercial properties in the community, King Salmon has less glare from external nighttime lighting than many communities of similar size and density. Accordingly, to protect the character of the area as well as prevent the cumulative impacts of glare to the visual resources of the area, the Commission attaches [Special Condition 3](#), which requires that all exterior lighting associated with the proposed development be low-wattage and downcast shielded such that no glare is directed beyond the bounds of the property or into adjoining coastal waters or environmentally sensitive areas.

In summary, the proposed project as conditioned will be consistent with Section 30251, as the development will not adversely affect views to or along the coast, result in major landform alteration, or be incompatible with the character of the surrounding area.



## **H. ENVIRONMENTALLY SENSITIVE HABITAT AREAS**

Section 30240(b) of the Coastal Act requires that environmentally sensitive habitat areas (ESHAs) be protected against any significant disruption of habitat values potentially resulting from adjacent development. Section 30240(b) of the Coastal Act states, in applicable part, the following:

*Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

The subject property, which is an undeveloped grassy lot, does not contain any known environmentally sensitive habitat. However, the site is located approximately 500 feet from coastal dune habitat adjacent to Humboldt Bay. Coastal dune habitats in the North Coast region in general often support populations of rare, threatened, and endangered plant species, including beach layia (*Layia carnosa*), Humboldt Bay wallflower (*Erysimum menziesii* ssp. *eurekaense*), pink sand verbena (*Abronia umbellata* var. *breviflora*), dark-eyed gilia (*Gilia millefoliata*), and other rare species. Both the Commission and the County in past permitting actions for projects in the region have considered these rare plant habitat areas to be ESHA under the Coastal Act and certified LCP. Additionally, the Commission has considered coastal dune habitat in and of itself in the absence of rare species to be ESHA, since the habitat in general is both rare and especially valuable because of its special nature and role in an ecosystem and could be easily disturbed or degraded by human activities and developments.

The Commission finds that the coastal dunes located across the street from the proposed development do constitute ESHA, and the ESHA could be adversely affected if nonnative, invasive plant species were introduced in landscaping at the subject site. If any of the proposed landscaping were to include introduced invasive exotic plant species, the weedy landscaping plants could colonize (e.g., via wind or wildlife dispersal) the nearby dune ESHA over time and displace native dune vegetation, thereby disrupting the functions and values of the dune ESHA. The applicant has proposed to landscape the site with grasses, and the Commission attaches [Special Condition 4](#) to ensure that only native and/or non-invasive plant species are planted on the subject property. As conditioned, the proposed project will ensure that the ESHA near the site is not significantly degraded by any future landscaping that would contain invasive exotic species.

In addition, the Commission notes that certain rodenticides, particularly those utilizing blood anticoagulant compounds such as brodifacoum, bromadiolone and diphacinone, have been found to pose significant primary and secondary risks to non-target wildlife present in urban and urban/wildland interface areas. As these target species are preyed upon by raptors or other environmentally sensitive predators and scavengers, the pest control compounds can bio-accumulate in the animals that have consumed the rodents to concentrations toxic to the ingesting non-target species. To avoid this potential cumulative impact to environmentally sensitive wildlife species, Special Condition 4 also contains a prohibition on the use of such anticoagulant-based rodenticides.

With the mitigation measures discussed above, which are designed to minimize any potential impacts to the adjacent ESHA, the project as conditioned will not significantly degrade adjacent ESHA and will be compatible with the continuance of the habitat area. Therefore, the Commission finds that the project as conditioned is consistent with Section 30240(b) of the Coastal Act.

## **I. WATER QUALITY PROTECTION**

Section 30230 of the Coastal Act states, in applicable part, as follows:

*Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states as follows:

*The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

As cited above, Coastal Act Sections 30230 and 30231 require, in part, that marine resources and coastal wetlands and waters be maintained, enhanced, and where feasible restored. These policies specifically call for the maintenance of the biological productivity and quality of marine resources, coastal waters, streams, wetlands, and estuaries necessary to maintain optimum populations of all species of marine organisms and for the protection of human health.

The applicant has proposed to direct roof runoff from the proposed new home away from the tidal channel and into a proposed grassy swale along the western property boundary towards a proposed detention basin near the front of the property adjacent to the paved road shoulder. In addition, the applicant proposes to install pervious pavers along a proposed walkway along the western side of the new residence. These proposed features will help protect water quality by providing for the biofiltration of roof runoff and the minimization of impervious surfaces that generate surface runoff. The Commission attaches [Special Condition 5](#) to require that the proposed drainage features be implemented as proposed.

In addition, the Commission attaches [Special Condition 6](#) to require that the project implement various construction-related measures to protect adjacent marine waters including such measures as placing and storing construction materials and debris where it will not enter the tidal channel,

containing and properly disposing of debris, covering stockpiles of construction materials prior to storms, using silt fencing, and providing for cleanup of accidental releases of oils, grease, fuels, or other hazardous substances.

Thus, as conditioned, the Commission finds that the proposed project will maintain the biological productivity and quality of coastal waters appropriate to maintain optimum populations of marine organisms, and protect human health as mandated by the requirements of Sections 30230 and 30231 of the Coastal Act.

## **J. PUBLIC ACCESS**

Section 30210 of the Coastal Act requires that maximum public access shall be provided consistent with public safety needs and the need to protect natural resource areas from overuse. Section 30212 of the Coastal Act requires that access from the nearest public roadway to the shoreline be provided in new development projects, except where it is inconsistent with public safety, military security, or protection of fragile coastal resources, or where adequate access exists nearby. Section 30211 of the Coastal Act requires that development not interfere with the public's right to access gained by use or legislative authorization. Section 30214 of the Coastal Act provides that the public access policies of the Coastal Act shall be implemented in a manner that takes into account the capacity of the site and the fragility of natural resources in the area. In applying Sections 30210, 30211, 30212, and 30214, the Commission is also limited by the need to show that any denial of a permit application based on these sections or any decision to grant a permit subject to special conditions requiring public access is necessary to avoid or offset a project's adverse impact on existing or potential access.

The proposed project will not adversely affect public access. The project site does not front directly on Humboldt Bay, as it is separated from the Bay shoreline by Buhne Drive. As noted previously, the entire bay front of the subdivision, along the west side of Buhne Drive, is open and available for public access use. Although an interior tidal channel of the subdivision that connects to Humboldt Bay extends on to the property, no development is proposed within the tidal channel, and use of the channel will not be blocked. Further, there are several points in the immediate vicinity where boats can be launched in order to publicly access the tidal channel.

Therefore, the Commission finds that the proposed project does not have any significant adverse effect on public access, and that the project as proposed without new public access is consistent with the requirements of Coastal Act Sections 30210, 30211, and 30212.

## **K. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)**

Humboldt County served as the lead agency for the project for CEQA purposes in its processing of the special permit. The County found the project to be categorically exempt from environmental review pursuant to Section 15303 of the CEQA Guidelines.

Section 13906 of the Commission's administrative regulation requires Coastal Commission approval of coastal development permit applications to be supported by a finding showing the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are any feasible

alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect the proposed development may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. As discussed above, the proposed project has been conditioned to be consistent with the policies of the Coastal Act. The findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As specifically discussed in these above findings, which are hereby incorporated by reference, mitigation measures that will minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no other feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impacts which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act to conform to CEQA.

**APPENDIX A  
SUBSTANTIVE FILE DOCUMENTS**

Application File for Coastal Development Permit No. 1-13-005

Humboldt County Special Permit No. SP-12-24

County of Humboldt Local Coastal Program

Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present , and Future,  
National Academy of Sciences (2012)

Humboldt Bay Region Sea Level Rise Data Synthesis, Humboldt County, California, Pacific  
Watershed Associates Report No. 11096601, May 2012

CDP 1-10-034 (Kinori)

CDP 1-11-043 (Needham)

CDP 1-12-010 (Kinori)

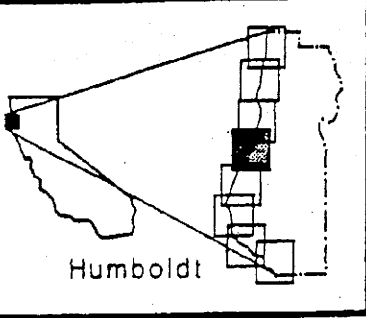
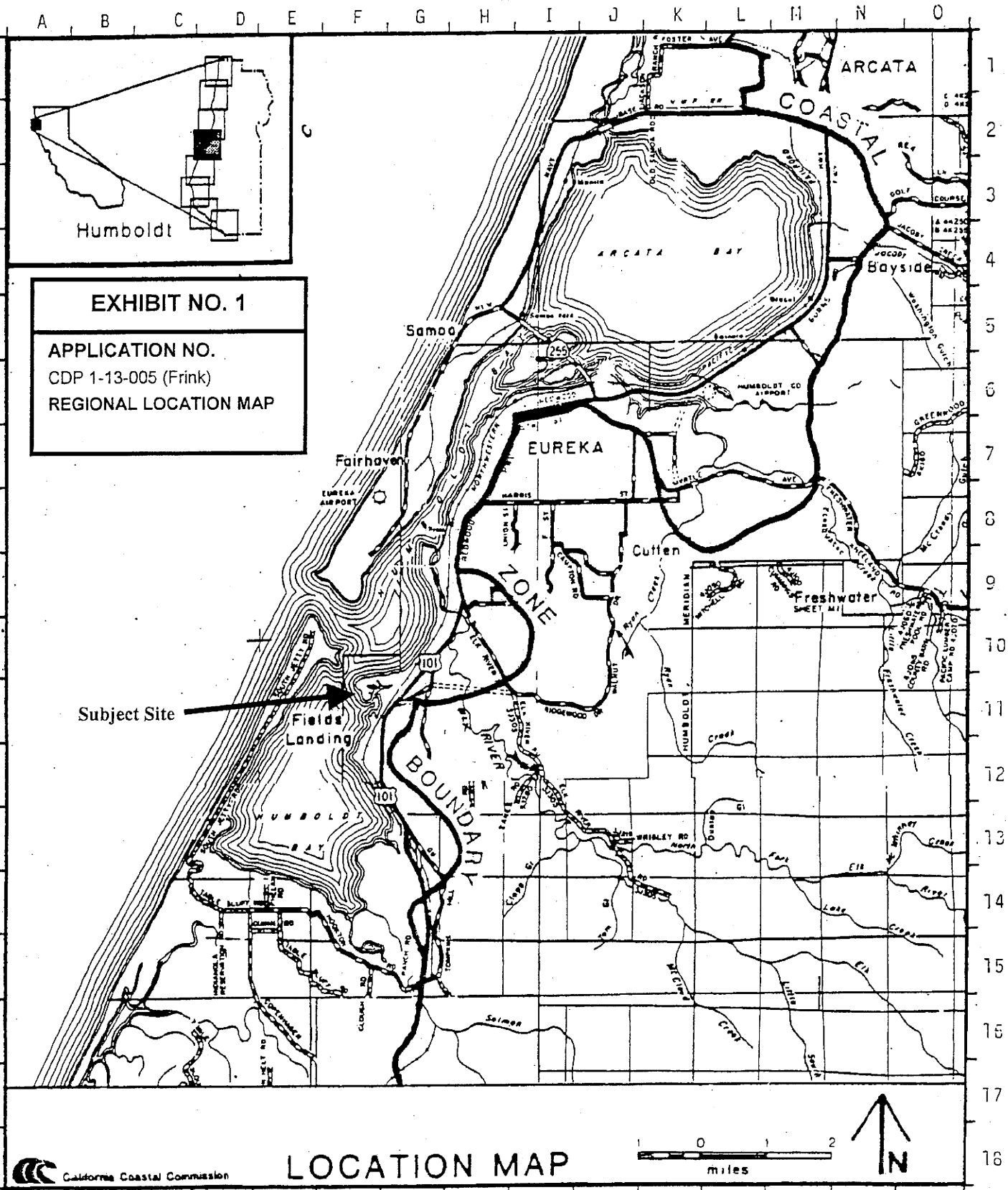


EXHIBIT NO. 1

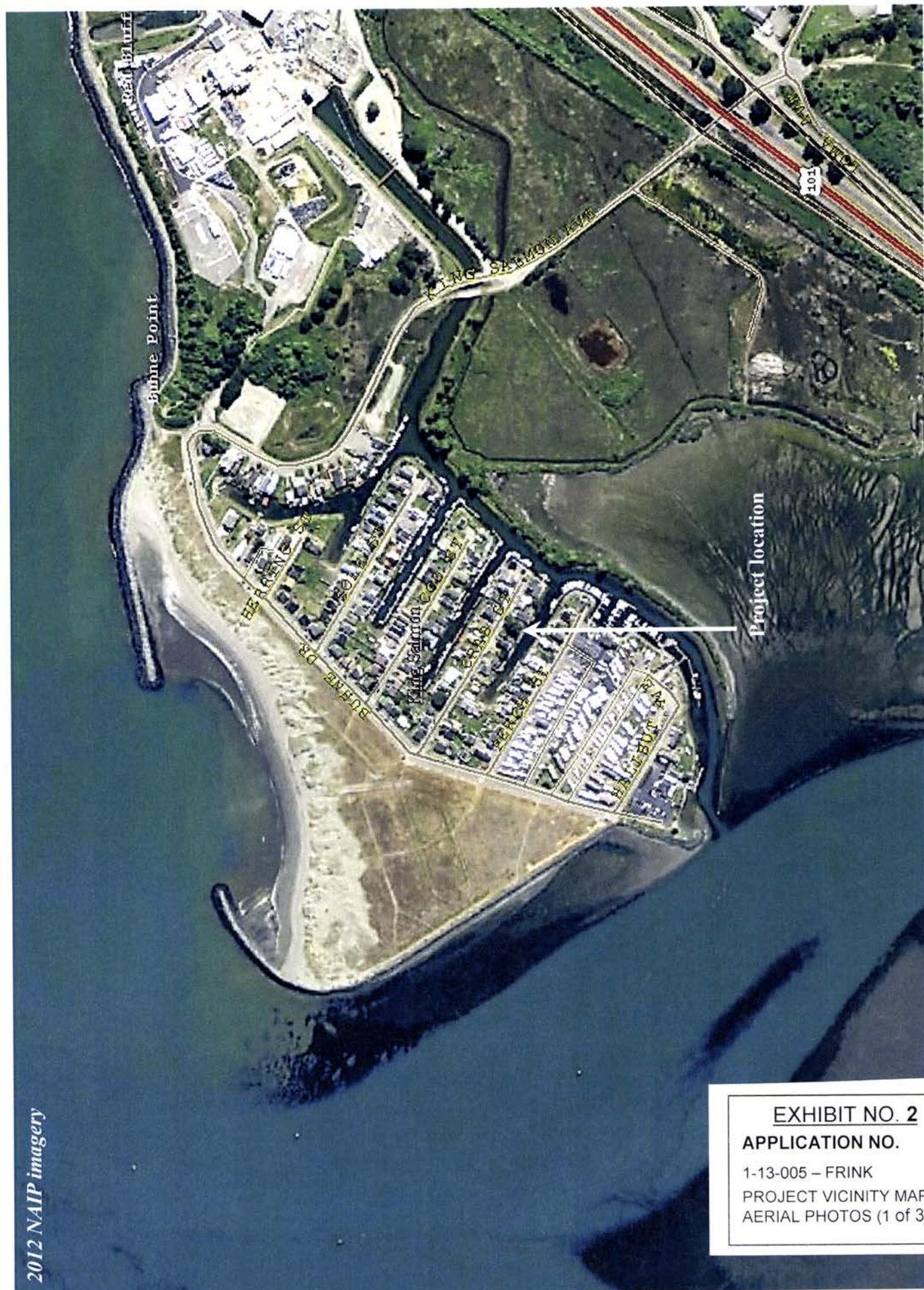
APPLICATION NO.  
CDP 1-13-005 (Frink)  
REGIONAL LOCATION MAP

Subject Site

LOCATION MAP

County of Humboldt





**EXHIBIT NO. 2**

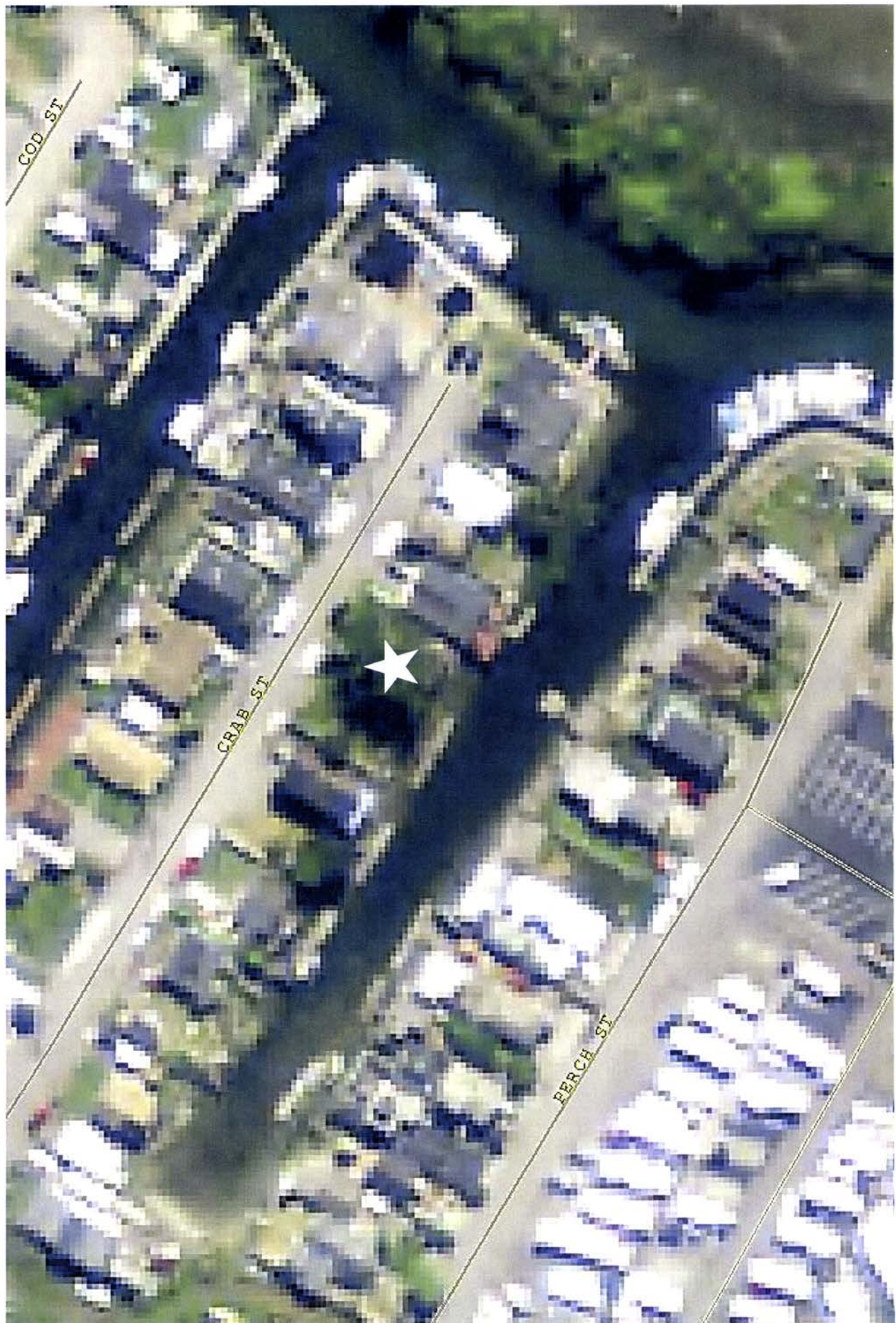
**APPLICATION NO.**

1-13-005 – FRINK  
PROJECT VICINITY MAPS /  
AERIAL PHOTOS (1 of 3)



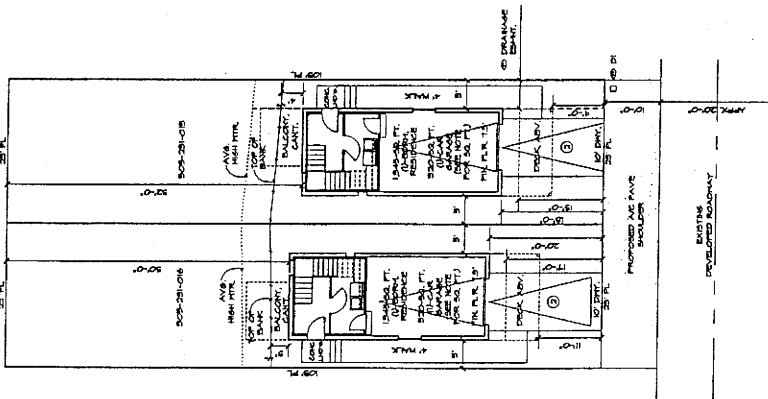






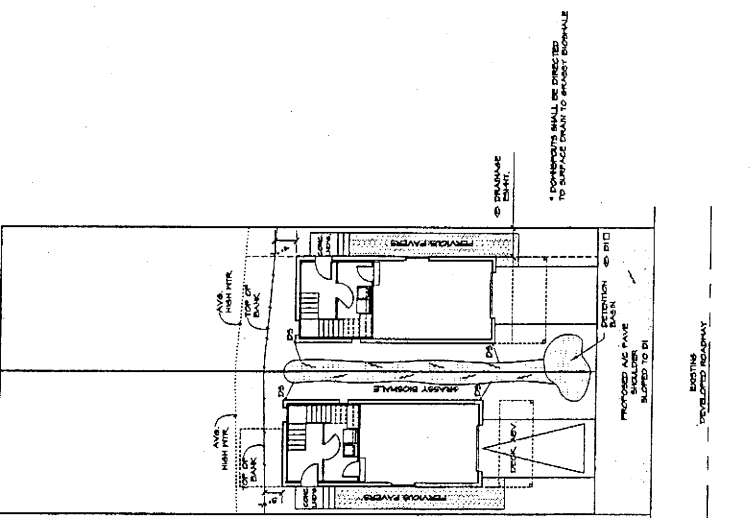
**EXHIBIT NO. 3**  
**APPLICATION NO.**  
 1-13-005 – FRINK  
 PROJECT PLANS (1 of 5)

**SITE PLAN**  
 1"=10'-0"



SEE EXHIBIT NO. 1 FOR SITE PLAN. CONSTRUCTION OF THIS PROJECT SHALL BE IN ACCORDANCE WITH THE CITY OF PHOENIX ZONING ORDINANCE. THE SQUARE FOOTAGE LISTED AS "GROSS INTERNAL FLOOR SPACE" IS BASED ON THE FOLLOWING: 1. 100% OF THE TOTAL FLOOR AREA. 2. 100% OF THE TOTAL FLOOR AREA. 3. 100% OF THE TOTAL FLOOR AREA.

**DRAINAGE**  
 1"=10'-0"



CONCRETE SHALL BE DIRECTED TO SURFACE DRAIN TO STREET DRAINAGE

REVISIONS	BY	DATE	DESCRIPTION
1	SA	10/22/12	SA

**PROPOSED RESIDENCE**  
**SITE PLANS**

Atkins Drafting - Sarah J. Atkins  
 1125 16th Street, STE. 205  
 PHOENIX, AZ 85018  
 PH: (602) 952-1100  
 FAX: (602) 952-1100





July 10, 2013

Sarah Atkins Drafting  
2814 "G" Street  
Eureka, California 95501

Dear Sarah,

As we have discussed, your updated drawings now include several clarifications and additional notations, which should serve to mitigate / answer questions raised by *California Coastal Commission* staff regarding the proposed Crab Street residences. The following notes should serve to summarize the most pertinent details in your drawings...

1. The proposed height of the first floor slabs-on grade in both homes is to be at + 7.3 ft (1.3 ft. above the *FEMA Base Flood Elevation* of 6.0 ft., which has been assumed to be the 100 year flood height). In our discussions with *Coastal Commission* staff, we were advised that an additional 55" of assumed Sea-Level-Rise (SLR) over the next 100 years should be added to our base flood elevation, which we have done, and you have noted on the attached plans & elevations. That calculated line for Sea-Level-Rise Flooding is to now be just under 10.6 ft. in elevation. This uses the SLR figure which has been adopted for planning purposes by the *California Coastal Commission*.
2. The first-floor-level walls of each residence are to be constructed of 8" reinforced concrete block construction (engineered to act as the building's foundation walls, and to withstand the additional force of flood waters). These walls will extend from the finished garage slab elevation of +7.3 ft., up to the bottom of the framing for the first floor of living space (+15.3" ft. elevation).
3. These masonry walls are to be equipped with automatic "SmartVent" flood louvers (see attached specifications) which are sized & approved to protect 800 sq. ft. of floor area, or about 1.75 times the actual ground floor area of 460 sq. ft. in each residence. They will be installed in the east and west first-level / garage walls of the structures, to allow flow-thru in case of a flooding event.
4. All mechanical & utility installations (electrical panels, on-demand-HWHs, and forced-air furnaces) will be located on the masonry walls at 42" min. above the slab ht., and above the calculated SLR flood elevation.

4 of 5

5. Similarly, storage cabinets / lockers for paints, cleaning agents, & household compounds often stored in home garages, will be located well above the calculated SLR elevation.

6. The location of these two parcels in the King Salmon neighborhood affords the two proposed residences with a substantial amount of buffering-protection from future storm surges, since there are multiple lines of dune structure, reinforced seawalls, and several built-up streets along the more-seaward-canals in the development (which are nearly built out with other structures). Each of these elements offers protection from storm-related, breaking waves in any future flooding events.

7. These will be the first structures built at King Salmon (including some constructed just within the past year), and possibly in all of coastal Humboldt County, which have included these sorts of mitigation measures in an effort to protect against Sea Level Rise.

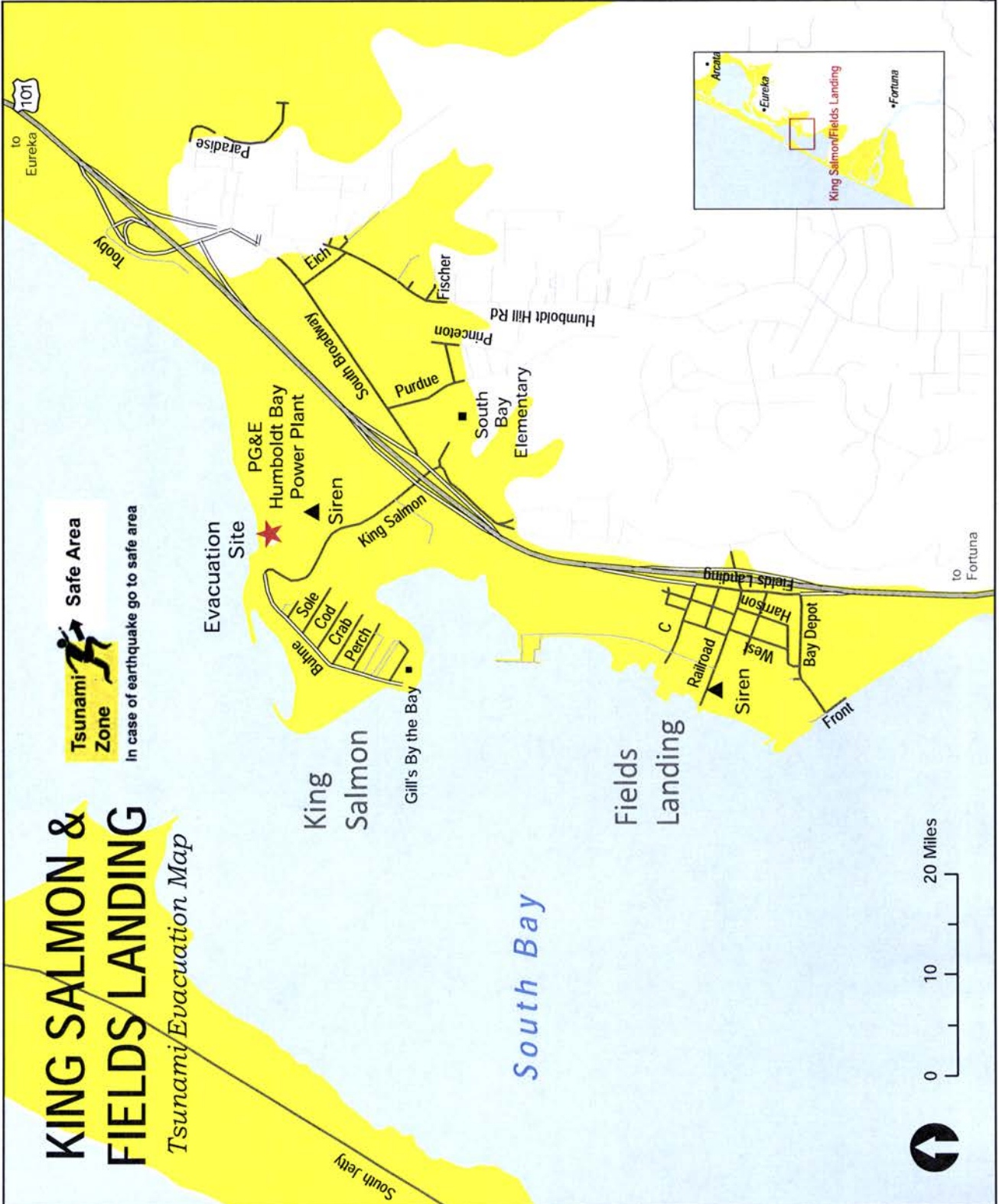
Please include these notes with your packet of information for the Coastal Commission staff, and as always, thanks for your help with the project.

Sincerely,

Doug Frink

5 of 5





**EXHIBIT NO. 4**  
**APPLICATION NO.**  
1-13-005 – FRINK  
TSUNAMI EVACUATION  
MAP