CALIFORNIA COASTAL COMMISSION
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W12b

MEMORANDUM

Date: December 10, 2013

To: Commissioners and Interested Parties

From: Charles Lester, Executive Director
Alison Dettmer, Deputy Director
Robert S. Merrill, District Manager – North Coast District
James R. Baskin AICP, Coastal Program Analyst – North Coast District

Subject: **Addendum to Commission Meeting for Wednesday, December 11, 2013**
North Coast District Item W12b, CDP No. 1-13-0616
(Lavagnino and Simoni)

STAFF NOTE

At the behest of the applicants, the staff is making certain changes to the staff recommendation on Coastal Development Permit Application No. 1-13-0616, primarily revising one of the special conditions that, as currently written, would restrict the construction of requisite subdivision improvements to the period of April 15 to October 31. Following consultation with the Water Quality Unit, staff is modifying Special Condition No. 5 to instead allow for construction to occur outside of these time constraints, but requiring that other measures to protect coastal water quality be undertaken. This change would allow the applicants to finalize the subdivision improvements such that recordation of the final parcel map could be expedited while ensuring that all feasible mitigation measures are included to ensure adequate protections are afforded to coastal water quality. Staff is also making corresponding changes to the findings to reflect the revisions to Special Condition No. 5.

Staff continues to recommend that the Commission approve the project with the special conditions included in the staff recommendations of November 22, 2013 as modified by the revisions described below.

I. REVISIONS TO STAFF RECOMMENDATION

The revisions to the staff report dated November 22, 2013, namely the modification to the language of Special Condition No. 5 as presented below.

Text to be deleted is shown in ~~**bold double-strikethrough**~~, text to be added appears in **bold double-underline**.

- **Revise Special Condition 5 on page 6 to read as follows:**

5. **Best Management Practices and Construction Responsibilities.** The permittee shall comply with the following construction-related requirements:

A. ~~**Fiber**~~ **Erosion and sediment control products such as fiber** rolls, and/or an erosion control blanket with weed-free straw shall be installed as proposed prior to, and maintained throughout, the construction period to ~~**contain**~~ **control** runoff from construction areas, **minimize erosion, and** trap entrained sediment and other pollutants, and **to** prevent **the** discharge of sediment and pollutants to coastal waters and wetlands**. The Sediment control measures shall be approved and inspected by the City of Arcata Public Works Department**;

B. To minimize wildlife entanglement and plastic debris pollution, temporary rolled erosion and sediment control products (such as fiber rolls, erosion control blankets, and mulch control netting) incorporating plastic netting (such as polypropylene, nylon, polyethylene, polyester, or other synthetic fibers) shall not be used. Acceptable alternatives include erosion and sediment control products without netting, products made with loose-weave natural fiber netting, and unreinforced silt fences;

C. Erosion and sediment control measures shall be in place at the end of each work day, including fiber roll placement down-slope of the construction site as needed for effective sediment control;

~~**B.**~~ **D.** Any excess excavated material and other construction debris resulting from construction activities shall be removed immediately upon completion of component construction and shall be disposed of at a disposal site outside the coastal zone or within the coastal zone pursuant to a valid coastal development permit;

~~**C.**~~ **E.** On-site **non-invasive** vegetation**, including trees, native vegetation, and root structures,** shall be maintained to the maximum extent possible during construction activities;

~~**D.**~~ **F.** All ground disturbing activity shall be limited to ~~**the**~~ dry ~~**season between April 15th and October 31st**~~ **weather periods, and not during storm events or when the National Weather Service predicts a chance of measureable precipitation of 40% or more**;

G. Best Management Practices shall be implemented to minimize the discharge of other pollutants resulting from staging, storage, use, and disposal of construction chemicals and materials (such as paints, solvents, vehicle fluids, asphalt and cement compounds, trash, and debris) into runoff or coastal waters;

~~**E.**~~ **H.** All on-site stockpiles of soil and construction debris shall be contained at all times**, and shall be covered during storm events if necessary to minimize discharge of sediment and other pollutants**; and

~~**F.**~~ **I.** Concrete paving and grinding operations, and storm drain inlet protection best management practices shall be employed to prevent concrete grindings, cutting slurry, and paving rinsate from entering drop inlets.

- **Revise the fourth paragraph of the "Protection and Enhancement of Adjacent Environmentally Sensitive Riparian Habitat Area" sub-part of Findings Section IV.F on pages 13-14 to read as follows:**

To avoid such impacts, the applicants propose to implement general erosion control measures during and following construction, including the use of standard Best Management Practices (BMPs) such as installing fiber rolls or straw wattles, revegetating disturbed soils, and limiting ground disturbance during the rainy season. The implementation of these types of Best Management Practices (BMPs) would result in the interception and containment of sediment during the construction of the project and would also reduce potential erosion prior to the full establishment of vegetation along the fence construction corridor. To ensure that Best Management Practices (BMPs) are implemented during the project, the Commission imposes Special Condition No. 5, which sets forth construction-related responsibilities. These required BMPs include: (a) installing fiber rolls and/or an erosion control blanket with weed-free straw prior to, and maintained throughout, the construction period to contain runoff from construction areas, trap entrained sediment and other pollutants, and prevent discharge of sediment and pollutants to coastal waters and wetlands; (b) removing and disposing of any excess excavated material and construction debris resulting from construction activities at a disposal site outside the coastal zone or within the coastal zone pursuant to a valid coastal development permit; (c) maintaining on-site vegetation to the maximum extent possible during construction activities; (d) limiting all ground disturbing activity to ~~**the**~~ dry ~~**season between April 15th and October 31st**~~ **dry periods when significant rainfall is not anticipated;** (e) containing all on-site stockpiles of soil and construction debris at all times; (f) replanting any disturbed areas with native vegetation immediately following project completion; and (g) utilizing concrete paving and grind operational constraints and the use of inlet protection barriers around stormwater grates.

Attachment: Letter dated December 5, 2013, received December 6, 2013, from applicants' representative requesting modification to Special Condition 5.D.

OMSBERG & PRESTON
SURVEYORS ENGINEERS

December 5, 2013

Jim Baskin
c/o California Coastal Commission
North Coast District Office
1385 8th Street, Suite 130
Arcata, CA 95521

RE: Request for Modification to Recommended Special Conditions
Application No. 1-13-0616 (Lavagnino & Simoni)

Dear Mr. Baskin:

On behalf of our clients, Angelo Lavagnino and Irene Simoni, we are respectfully requesting a modification to Special Condition #5D, listed under Section III in the 10/22/13 Staff Report for the above referenced application, which limits construction to the "dry" season between April 15th and October 15th. Our requested modification would allow for year-round construction with the following provisions:

- Construction shall be limited to sidewalk replacement, installation of sewer cleanouts in the sidewalk, and installation of grease trap at the V&N Burger Bar,
- Erosion and sediment control measures shall be in place at the end of each work day, including fiber roll placement down-slope of the construction site as needed for effective sediment control,
- Erosion and sediment control measures shall be approved and inspected by the City of Arcata, Public Works Department.
- Construction shall not be allowed during a storm event, or when the National Weather Service predicts the chance of measurable precipitation is greater than 40%.

With this modification, the Special Conditions contained within the above-referenced Staff Report are acceptable to Mr. Lavagnino and Ms. Simoni.

Thank you, and please do not hesitate to contact me with any questions you may have.

Omsberg & Preston

Signature on File

Stephen G. Nesvold, P.E.
RCE 25681

cc: Angelo Lavagnino
Irene Simoni

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W12b

Filed:	10/22/13
180th day:	4/20/14
Staff:	J. Baskin-A
Staff Report:	11/22/13
Hearing Date:	12/11/13

STAFF REPORT: REGULAR CALENDAR

Application No.:	**1-13-0616**
Applicant:	**Angelo Lavagnino and Irene Simoni**
Location:	491 H Street, 885 Fifth Street, and 460 I Street, Arcata, Humboldt County (APN 021-184-002).
Project Description:	Divide a 0.95-acre parcel into three parcels ranging in size from 8,870 square-feet to 21,850 square-feet with associated sidewalk, commercial kitchen grease-trap, and sewer clean-out improvements; after-the-fact demolition of a small shed, and the planting of riparian corridor habitat restoration and buffer enhancement vegetation.
Staff Recommendation:	Approval with conditions.

SUMMARY OF STAFF RECOMMENDATION

Commission staff recommends **approval** of coastal development application 1-13-0616 subject to the attached recommended special conditions.

The applicants propose to divide an approximately 0.95-acre property in south-central Arcata into three separate lots of approximately 8,870 square-feet, 10,600 square-feet, and 21,859 square-feet in size (**Exhibit 4**). The parent parcel is currently developed with two one- and two-story single-family residences of approximately 1,200 and 750 square feet in size, respectively, and a commercial restaurant. The two residences and one commercial restaurant would each be located on a separate lot of the proposed land division. Sidewalk and sewage system improvements are proposed and/or required as part of the City's approval of the tentative subdivision map. These improvements entail repairs and replacements to the existing sidewalk,

curb, and gutter along the Fifth and H Street frontages, and installation of sewer clean-outs and upgrades to the commercial restaurant grease trap. In addition, the applicants propose to restore riparian corridor vegetation within and along the stream banks of Jolly Giant Creek which bisects the property in coordination with the City's Department of Environmental Services.

The major issue raised by this application include whether the land division would allow future development on the divided parcel to be sited and designed to prevent impacts and avoid degradation of the stream course that runs through the property consistent with the provisions of the Coastal Act. Staff believes that with recommended special conditions requiring an open space deed restriction to limit development within and adjacent to the stream course, the land division would be consistent with all applicable provisions of the Coastal Act.

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I. MOTION AND RESOLUTION

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve coastal development permit 1-13-0616 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 amount 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. **Open Space Restrictions.** A. No development, as defined in Section 30106 of the Coastal Act, shall occur in the open space area generally depicted in Exhibit 8, comprising all areas of the subject parcel depicted as the "Open Space Deed Restriction Area," except for:
   i. The following development approved by the Coastal Commission herein under Coastal Development Permit No. 1-13-0616: (a) installation of authorized stormwater drainage facilities as required by the City of Arcata or the California Department of Transportation to meet drainage and flood control standards; (b) the removal of non-native vegetation and the planting and maintenance of required riparian corridor vegetation enhancements pursuant to **Special Condition No. 4**; (c) installation of stormwater runoff and erosion control measures installed pursuant to **Special Condition No. 5**; and (d) erection of protective fencing pursuant to a rare plant mitigation plan; and
   ii. The following development, if approved by the Coastal Commission as an amendment to this coastal development permit: (a) maintenance of existing utilities and community services infrastructure; (b) removal of windthrow and other forms of debris; and (c) additional riparian corridor restoration improvements.

   B. PRIOR TO ISSUANCE BY THE EXECUTIVE DIRECTOR OF THE NOTICE OF INTENT TO ISSUE COASTAL DEVELOPMENT PERMIT NO. 1-13-0616, the applicants shall submit for the review and approval of the Executive Director, and upon such approval, for attachment as an Exhibit to the NOI, a formal metes and bounds legal description and corresponding graphic depiction drawn to scale and prepared by a licensed surveyor of the portions of the subject property affected by this condition, as generally described above and generally shown on Exhibit 8, attached to this staff report.

2. **Deed Restriction.** PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-13-0616, the applicants shall submit for the Executive Director's review and approval documentation demonstrating that the applicants have executed and recorded against the parcels governed by this permit 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; and (2) imposing the 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 entire parcel or parcels governed by this permit. 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. **Parcel Map Review and Approval.** PRIOR TO RECORDATION OF THE FINAL PARCEL MAP, the permittee shall submit a copy of the final map for review by the Executive Director. The permittees shall demonstrate, to the satisfaction of the Executive Director, that the final map: (a) shall be recorded consistent with all terms and conditions of CDP1-13-0616; and (b) will depict all restricted areas consistent with the terms and conditions of CDP 1-13-0616. If the permittee does not demonstrate to the satisfaction of the Executive Director that the final map will be so recorded consistent with all terms and conditions of Coastal Development Permit No. 1-13-0616, the permittee shall secure a coastal development permit or permit amendment from the Commission prior to the recordation of the final map

4. **Development in Accordance with Approved Restoration Plan.** The permittee shall ensure that all streambank revegetation along Jolly Giant Creek is performed in accordance with the proposed "Lavagnino Subdivision Planting Plan" approved by the City of Arcata dated October 16, 2013, and attached hereto as Exhibit 5, and as modified by the special conditions. No substantive changes to the approved Restoration Plan shall occur without a Commission approved amendment to this coastal development permit unless the Executive Director determines no amendment is legally required.

5. **Best Management Practices and Construction Responsibilities.** The permittee shall comply with the following construction-related requirements:

   A. Fiber rolls, and/or an erosion control blanket with weed-free straw shall be installed as proposed prior to, and maintained throughout, the construction period to contain runoff from construction areas, trap entrained sediment and other pollutants, and prevent discharge of sediment and pollutants to coastal waters and wetlands;
   B. Any excess excavated material and other construction debris resulting from construction activities shall be removed immediately upon completion of component construction and shall be disposed of at a disposal site outside the coastal zone or within the coastal zone pursuant to a valid coastal development permit;
   C. On-site vegetation shall be maintained to the maximum extent possible during construction activities;
   D. All ground disturbing activity shall be limited to the dry season between April 15th and October 31st;
   E. All on-site stockpiles of soil and construction debris shall be contained at all times; and
   F. Concrete paving and grinding operations, and storm drain inlet protection best management practices shall be employed to prevent concrete grindings, cutting slurry, and paving rinsate from entering drop inlets.

6. **Final Encroachment Permit.** PRIOR TO COMMENCEMENT OF SIDEWALK REPAIRS AND SEWAGE IMPROVEMENTS CONSTRUCTION, the permittee shall submit a copy of encroachment permits issued by the City of Arcata and the California Department of Transportation or evidence that no permits are required. The applicants

shall inform the Executive Director of any changes to the project required by the City. Such changes shall not be incorporated into the project until the permittee obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

7. **Protection of Archaeological Resources.** If an area of cultural deposits or human remains is discovered during the course of the project, all construction shall cease and shall not re-commence until a qualified cultural resource specialist analyzes the significance of the find and prepares a supplementary archaeological plan for the review and approval of the Executive Director, and either: (a) the Executive Director approves the Supplementary Archaeological Plan and determines that the Supplementary Archaeological Plan's recommended changes to the proposed development or mitigation measures are *de minimis* in nature and scope, or (b) the Executive Director reviews the Supplementary Archaeological Plan, determines that the changes proposed therein are not *de minimis*, and the permittee has thereafter obtained an amendment to Coastal Development Permit 1-13-0616 approved by the Commission.

IV. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares as follows:

A. PROJECT DESCRIPTION

The applicants propose to divide an approximately 0.95-acre property into three separate lots of approximately 8,870 square feet, 10,800 square feet, and 21,850 square feet in size (**Exhibit 4**). In acting on the tentative parcel map, the City of Arcata conditioned its approval upon certain repairs and upgrades being made to the sidewalks along the property's Fifth and H Street frontages, the installation of new sewer cleanouts for each of the residences, and the installation of a commercial kitchen grease trap interceptor. In addition, as the City conditioned the tentative map to require the applicants to grant an easement to the City that would allow the City to enter the property to perform and maintain streambank restoration work, the applicants have included as part of this CDP application a request for authorization of the revegetation planting that would be installed by the City along the portion of Jolly Giant Creek passing through the property. The proposed riparian planting would entail the planting of a combination of red alder (*Alnus rubra*), silk-tassel (*Garrya eliptica*), and coast redwood (*Sequoia sempervirons*) along both sides of the creek segment (**Exhibit 5**). Finally, for meeting minimum side yard area requirements for the new lots resulting from the subdivision, a small shed would be demolished along the southern side of proposed Parcel Two. Other than the proposed division of land, the City-mandated street, the drainage and wastewater pre-treatment improvements, the removal of the small shed, and the riparian vegetation restoration work, no other development is proposed.

B. ENVIRONMENTAL SETTING

The roughly one-acre project site is located within the City of Arcata's municipal boundaries, between Samoa Boulevard (State Route 255) to the south, Fifth Street to the north, I Street to the west, and the one-way sub-collector H Street to the east, on the periphery of Arcata's central business district grid. The subject site occupies two-thirds of platted City Block 88 of the township map (Book 5 of Maps, Page 31) for "Union," the former name of Arcata. Although the

property is approximately ¼-mile northward from the current shoreline of Arcata Bay, the northern lobe of Humboldt Bay, the "L"-shaped parcel is diagonally bisected by the lower reaches of Jolly Giant Creek / Butchers Slough (**Exhibits 1-3**). In the 1860s, this former tidal slough ran to the base of the Brizard Company warehouse situated on the present day Arcata Plaza and served as a canal for small vessel drayage alongside the Union Wharf, Rail Track, and Plank Walk Company's railroad trestle that once extended over 1½ miles across the mudflats to the then-deepwater channels of Arcata Bay. The slough has subsequently been tide-gated and channelized, with much of the watercourse now passing through culverts beneath the City's streets. A small portion of the railway right-of-way lies adjacent to the project site at the southeast corner of I and Fifth Streets, within the occupied yard area of proposed Parcel Two.

With the exception of the short 240-foot-long daylighted reach of Jolly Giant Creek that passes through the property, the majority of the site is generally flat in topography. The existing property in its undivided state is currently developed with a 2,300-square-foot, two-story, single-family primary residence and a 1,400-square-foot, one-story secondary residence. Each residence has associated municipal water and sewage disposal system connections. A roughly 10,000-square-foot area on the parcel's southwestern side is developed with a small commercial restaurant and associated off-street parking lot. In addition to the restaurant and two houses, the property is developed with an assortment of accessory storage sheds, canopy coverings, and firewood enclosures, and a 750-square-foot detached garage on the grounds of proposed Parcel Two, constructed over a depression on the property. Portions of the existing residence and accessory structures on proposed Parcel One are situated within 10 feet of the outer edge of the riparian wetlands bracketing Jolly Giant Creek.

The project site is bisected by the boundary between the Residential Medium Density and General Commercial zoning districts. Adjoining land uses comprise a mixture of other single- and multi-family residences and a variety of commercial-industrial development, including several light manufacturing firms, auto repair shops, professional offices, a thrift store, a small restaurant, an auto rental agency, and a plumbing supply/contracting firm.

Based upon a site assessment performed by the applicants' biological consultant, approximately 9,000 square-feet of riverine and riparian emergent wetlands occur on a south-southwest to northeast trending band across the middle of the property along Jolly Giant Creek / Butchers Slough (**Exhibit 6**). Prevalent vegetation canopy cover on this portion of the site is comprised of coast redwood (*Sequoia sempervirons*), Sitka spruce (*Picea sitchensis*), and big-leaf maple (*Acer macrofolium*), and, with a thick attending shrub layer and understory dominated by willows (*Salix* sp.), Himalaya blackberry (*Rubus armeniacus*) and canary reed grass (*Phalaris arundinacea*). A variety of horticultural landscaping species are also intermixed with the riparian species along the periphery of the existing residences, including Monterey pine, weeping willow, fig, dogwood, and rhododendron. Further to the south, the slough enters the Arcata Marsh and Wildlife Sanctuary before its flows enter Arcata Bay.

No coastal access and recreational amenities exist along Jolly Giant Creek, though the Arcata Marsh and Wildlife Sanctuary, the Butcher Slough Restoration Project, and the Arcata Marsh Interpretative Center are situated approximately ¼ mile to the south.

The property is visible from State Route 255 as it passes through Arcata as Samoa Boulevard, and from along abutting Fifth, H, and I Streets. The project area is not located within a designated highly scenic area.

C. STANDARD OF REVIEW

The project site is bisected by the boundary between the Coastal Commission's retained permit jurisdiction and the City of Arcata's coastal permit jurisdiction delegated to the City by the Commission through certification of the City's LCP. The portions of the property within the Commission's retained jurisdiction include filled former tidelands corresponding to the reclaimed former margins of the tidal slough reaches of Jolly Giant Creek / Butchers Slough that are subject to the public trust. These portions correspond roughly to the eastern half of the property that would contain the whole of the Jolly Giant Creek watercourse and the majority of proposed Parcel One (**Exhibit 4**). All other portions of the project site are within the City of Arcata's permit jurisdiction.

Coastal Act Section 30601.3 authorizes the Commission to process a consolidated coastal development permit, when requested by the local government and the applicant and approved by the Executive Director, for projects that would otherwise require coastal development permits from both the Commission and a local government with a certified LCP. In this case, the City Council of the City of Arcata adopted a resolution, and both the applicant and the City submitted letters requesting consolidated processing of the coastal development permit application by the Commission for the subject project, which was approved by the Executive Director.

The policies of Chapter 3 of the Coastal Act provide the legal standard of review for a consolidated coastal development permit application submitted pursuant to Section 30601.3. The local government's certified LCP may be used as guidance.

D. OTHER AGENCY APPROVALS

City Streets and State Highway Rights-of-Way Encroachment Permits

The requisite sidewalk repairs and installation of the sewer clean-out apparatus project site are located in areas immediately adjacent to the property within the City of Arcata's Fifth, H, and I Streets rights-of-way. In addition, portions of the cadastral and construction surveying will likely entail entry into the state highway right-of-way along the property's southern boundary. Therefore, to ensure that the applicants have the necessary authority to undertake all aspects of the project on these public lands, the Commission attaches **Special Condition 6**, which requires that the applicants provide copies of the encroachment permits issued by the City and/or the California Department of Transportation for such development, or evidence that no encroachment permits are required, prior to the commencement of construction of the sidewalk, drainage improvements and related project surveying.

City Final Parcel Map Approval and Acceptance of Dedications

To complete the land division, the City will ultimately need to approve a final parcel map for recordation with the County Recorder. This action will be taken only after all required improvements have been constructed, bonded for, or otherwise indemnified, all survey and monument work has been completed, instruments dedicating the required easements and deeding the property as separate parcels have been prepared, and necessary certifications and

acknowledgements as to ownership interests, tax and assessment liens, and the examination of the map and survey have been executed. Moreover, the City Engineer must determine that the final parcel map is in "substantial conformance" to the approved tentative map. The Subdivision Map Act allows for minor deviation in the dimensions and configurations of the lots being created. To ensure that the lots depicted on the final map are consistent with the terms and conditions of the CDP, the Commission attaches **Special Condition No. 3**. **Special Condition No. 3** requires the permittees to submit the locally approved final parcel map for review by the Executive Director prior to its recordation and to demonstrate that the final map to be recorded is consistent with the terms and conditions of the CDP.

E. LOCATING AND PLANNING NEW DEVELOPMENT

Section 30250 of the Coastal Act states, in applicable part:

> *(a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources…*

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 within the urban area of the City of Arcata. The southern side of the property along Samoa Boulevard is zoned Coastal General Commercial (C-G-C), extending to a depth of approximately 85 feet onto the parcel. The northern two-thirds of the property is designated in the land use plan and implementing coastal zoning regulations as Coastal Residential Medium Density (C-R-M). Thus, the project site is located within a transitional area between areas designated for a wide variety of highway oriented commercial uses along State Route 255 and moderately dense single- and multi-family residential development (up to 42 persons per net acre) to the north toward the central business district. The site is currently developed with two single-family residences, which are principally permitted uses in the C-R-M district in which they are located. The restaurant spans the plan/zone boundary with the majority of its parking lot lying within the C-G-C district and the restaurant itself lying within the C-R-M zoning district. The portion of the restaurant within the C-R-M district is considered to be a legal non-conforming use.

The subject property is served by municipal sewer and water services. As discussed in Project Description Findings Section IV.A above, the project primarily entails the parcelization of the property into three lots and the construction of associated sidewalk, drainage, and wastewater pre-treatment improvements. Each of the two existing houses and the restaurant would be located on separate parcels to be created and each would require no additional services. Parcelization could result in the potential for future increases in the development density of the

property as the multi-parcel configuration would allow for the development of up to two secondary dwelling units on Parcels One and Two, whereas the current configuration would not allow for any additional secondary dwelling units to be built on the subject property. The municipal sewer and water systems have sufficient capacity to accommodate all otherwise permissible new development that would be facilitated by the land division. However, no specific additional residential or commercial development is being sought at this time.

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, it has adequate water and sewer capability to accommodate it and it will not cause significant adverse effects, either individually or cumulatively, to coastal resources.

F. PROTECTION OF ESHA AND WATER QUALITY

Section 30231 of the Coastal Act states that:

> *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.*

Section 30240 of the Coastal Act states:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) 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.*

Jolly Giant Creek / Butcher's Slough is one of Arcata's six principal watersheds and drains approximately 1.7 square miles of rural and urban landscape. Originating east of the city in the Arcata Community Forest, the watercourse flows for six miles before discharging into Arcata Bay. The stream has undergone significant realignment and other modifications as the area was developed as a mining supply port and later a lumber production hub beginning in the 1850s. The majority of the lower half of the creek which flows through the Humboldt State University campus, beneath Highway 101, and through the City's urbanized core is culverted and enclosed below street level. Such confined streams typically exhibit declining water quality because of their lack of exposure to air, sunlight, soil, and vegetation to filter and process entrained pollutants.

Since 1991 there have been several efforts made to restore the stream and remedy the damage from its urbanization. To date, over 570 feet of surface channel upstream of the project site has

been "day-lighted" and/or has had bank and in-stream restoration work performed on it to improve water quality. In addition, beginning in the early-2000s, the Jolly Giant / Butcher's Slough Enhancement Project reestablished over-bank and floodplain areas lost to channelization, returned hydrologic complexity to the stream by increasing channel sinuosity on artificially straightened reaches creating off-channel refugia alcoves, replaced large wood vegetation cover elements within the stream channel and along the banks, and re-established the native riparian corridor vegetation on denuded reaches or those dominated by invasive, exotic plants along a reach of the stream beginning approximately 325 feet south the project site (see Coastal Development Permit No. 1-02-020, City of Arcata, Applicant).

Further to the south, the slough enters the Arcata Marsh and Wildlife Sanctuary, where the watercourse winds around a restored freshwater log pond, before passing through a series of railroad underdrains and entering Arcata Bay between the City's municipal wastewater treatment plant and the tertiary treatment ponds of the marsh complex. Comprising some 307 acres of bayfront marshes, mudflats, and grasslands, the combination of treated, fresh, and saltwater marshes provide habitat to over 270 species of birds throughout the year, including visitations by hundreds of migratory waterfowl.

Based upon information contained in a biological site assessment prepared for the project, the roughly 240-foot-long segment of Jolly Giant Creek that runs through the project site is comprised of a five- to ten-foot-wide channel cross-section bracketed by a riparian corridor of 30 to 50 feet in overall width (**Exhibit 6**). The vegetation along the Jolly Giant Creek / Butchers Slough watercourse in the project area vicinity is comprised of a mixture of ruderal species that are generally found along disturbed streams, including Himalayan blackberry (*Rubus armeniacus*), canary reed grass (*Phalaris arundinacea*), and rushes (*Juncus* sp.). Given the dominance of invasive pioneering plant species and the relatively low level of fish and wildlife species use of the stream as compared to other coastal streams of this size, the habitat value of this streambank area can be considered to be severely degraded. Notwithstanding this degraded condition, Jolly Giant Creek/Butcher's Slough provides cover and forage to a variety of fish species such as the *coho* salmon (*Oncorhynchus kisutch*), a federally-listed endangered species, listed as endangered federally, threatened in California, steelhead (*Oncorhynchus mykiss*) a state-listed threatened species, the federally-listed tidewater goby (*Eucyclogobius newberryi*), and coastal cutthroat trout (*Oncorhynchus clarki*).

Protection and Enhancement of Environmentally Sensitive Riparian Habitat

The proposed project involves a land division of an approximately one-acre parcel into three lots ranging from one-fifth to one-half acre in size. As discussed in the preceding findings section, other than minor sidewalk, drainage, and wastewater pre-treatment repairs and/or improvements, the demolition of a small shed, and the installation of habitat restoration plantings, no other new development is proposed. With the exception of the restoration plantings, a resource dependent use, all other project elements would be located entirely outside of the riparian ESHA, within existing paved and developed areas of the site, and would not require any new or extensive excavation or other ground disturbance. To ensure that the restoration planting does not result in significant disruption of habitat values consistent with Section 30240(a), the Commission attaches **Special Condition 4**. **Special Condition 4** requires the permittees to install the proposed riparian corridor restoration plantings pursuant to an approved revegetation

enhancement plan. The plan shall require the applicants to utilize only native and/or non-invasive plant species, obtained for local genetic stocks, whenever feasible.

The establishment of new property lines would not compel future development to be sited within ESHA. Each proposed parcel is already developed with an economic use that is located outside of the environmentally sensitive creek and riparian corridor areas. Therefore, proposed future development within the environmentally sensitive habitat areas on the property can be limited to resource dependent restoration work required to be conducted in a manner that would protect against any significant disruption of habitat values, consistent with Coastal Act Sections 30231 and 30240(a).

Protection and Enhancement of Adjacent Environmentally Sensitive Riparian Habitat Area

Coastal Act section 30240(b) requires that new development adjacent to environmentally sensitive habitat areas be sited and designed in a manner so as to prevent impacts which would significantly degrade adjoining habitat, and to be compatible with the continuance of those habitat areas. Typically, non-development buffer areas are established around the periphery of environmentally sensitive areas to provide a spatial setback between the ESHA resources and development sites. However, with the substantial existing pre-Coastal Act development adjoining or located within a few feet of the ESHA, establishment of a traditional buffer perimeter around the creek and riparian corridor is precluded.

Other than the parcelization of the property into three lots, only relatively minor sidewalk and sewer system improvements and the demolition of a small shed are currently proposed for the project site. While the sidewalk and sewer improvements and shed demolition would be situated approximately 50 feet from the creek and riparian corridor resources, they must nonetheless be both sited and designed to prevent impacts that would significantly degrade the adjacent ESHA.

With respect to potential project impacts to coastal water quality, sediment generated by ground disturbance is considered a pollutant that affects visibility through the water, and affects plant productivity, animal behavior (such as foraging) and reproduction, and the ability of animals to obtain adequate oxygen from the water. Sediments may physically alter or reduce the amount of habitat available in a wetland or watercourse by replacing the pre-existing habitat structure with a bottom habitat composed of substrate materials unsuitable for the pre-existing aquatic community. In addition, sediment is the medium by which many other pollutants are delivered to aquatic environments, as many pollutants are chemically or physically associated with these sediment particles. Moreover, the grinding and sawing of Portland cement concrete associated with the sidewalk repairs can generate construction debris in the form of a slurry containing soil metal concentrations and elevated pH levels harmful to aquatic resources that could flow into the creek through drop inlets if measures to prevent and intercept such discharges are not included in the design of the development.

To avoid such impacts, the applicants propose to implement general erosion control measures during and following construction, including the use of standard Best Management Practices (BMPs) such as installing fiber rolls or straw wattles, revegetating disturbed soils, and limiting ground disturbance during the rainy season. The implementation of these types of Best Management Practices (BMPs) would result in the interception and containment of sediment during the construction of the project and would also reduce potential erosion prior to the full

establishment of vegetation along the fence construction corridor. To ensure that Best Management Practices (BMPs) are implemented during the project, the Commission imposes **Special Condition No. 5**, which sets forth construction-related responsibilities. These required BMPs include (a) installing fiber rolls and/or an erosion control blanket with weed-free straw prior to, and maintained throughout, the construction period to contain runoff from construction areas, trap entrained sediment and other pollutants, and prevent discharge of sediment and pollutants to coastal waters and wetlands; (b) removing and disposing of any excess excavated material and construction debris resulting from construction activities at a disposal site outside the coastal zone or within the coastal zone pursuant to a valid coastal development permit; (c) maintaining on-site vegetation to the maximum extent possible during construction activities; (d) limiting all ground disturbing activity to the dry season between April 15th and October 31st; (e) containing all on-site stockpiles of soil and construction debris at all times; (f) replanting any disturbed areas with native vegetation immediately following project completion; and (g) utilizing concrete paving and grind operational constraints and the use of inlet protection barriers around stormwater grates.

With respect to the effects of parcelization, as all three of the proposed parcels are currently developed with an economic use, neither the City nor the Commission would need to approve additional future development that might threaten the ESHA to avoid an uncompensated taking of property. However, certain additions or improvements to the existing structures or additional development on each of the new parcels might in fact be proposed in the future (e.g., second units on Parcels One and Two, expansion of the restaurant seating area on Parcel Three) that could degrade the environmentally sensitive habitat areas if located in certain undeveloped areas adjacent to the creek and riparian corridor. The division of the subject property into three lots will result in new minimum yard areas and setbacks which will further constrain where otherwise permissible development that might be proposed could be located, especially between the existing buildings, along the street frontages, and near the new property lines. Indeed, the establishment of a new rear yard setback on proposed Parcel Two was the impetus for demolition of the shed that would become a nonconforming encroachment upon the adjoining restaurant. Since it is more likely that undeveloped areas immediately adjacent to the ESHA that currently serve a buffering function will be proposed for development, it is important to restrict development in undeveloped areas immediately adjacent to the ESHA that are necessary to protect the adjacent environmentally sensitive areas from development impacts that would significantly degrade the habitat resources.

Site-Specific Investigation

An assessment of the biological resources on the parcel and the potential effects the proposed development could have on those resources was prepared by the applicants' consultant (**Exhibit 6**). The Commission's ecologist, John Dixon PhD, has reviewed the biological assessment prepared by the applicants' consultant and visited the project site. While in agreement with the assessment that establishing a conventional buffer would be infeasible due to the existing development on the parcel, Dr. Dixon identifies other feasible measures that would assure that adequate protection for the ESHA resources on the property is provided. These measures entail selective restriction of development over the following particular areas which are biologically linked and currently insulate the environmentally sensitive creek and riparian areas from adjacent development or would be particularly vulnerable to impacts from development:

Biologically Significant Upland Areas

The portions of the project parcel adjacent to the riverine wetlands and riparian corridor habitat areas are composed of a combination of grass-covered yards, paved parking lot and driveways, and fenced in residential backyard areas (**Exhibit 7**). Beyond these areas, the property is surrounded by high intensity urban development, including various retail sales and services establishments, professional offices, and single- and multi-family residences.

As discussed above, certain portions of the parcel beyond the immediate creek channel, namely the lands beneath the drip line of the established major vegetation canopy, are delineated in the biological assessment as part of the riparian corridor ESHA. These areas are biologically significant insofar as they contribute to the habitat structure of the stream by providing shade and cover and shielding the creekside areas from raptor predators and the desiccating effects of the wind. Therefore, their inclusion within the proposed protection zone buffer is warranted.[1]

For certain species utilizing the wetlands and riparian areas, functional relationships may exist between these ESHAs and the adjoining open grassy and upland tree and brush covered areas. For example, while the more hydric/mesic resource-dependent species, such as amphibians or waterfowl may restrict their habitat use to the immediate wetland and riparian vegetated areas where they are dependent upon such areas during breeding seasons, these species also require adjacent uplands for wintering habitat. In addition, species with broader ecological niches, such as raptors and passerine songbirds, raccoons, skunks, or opossums may spend a significant portion of their lifecycles traversing these adjoining upland areas hunting or browsing for food. In such instances where significant functional relationship exists, the land supporting this relationship serves to biologically protect the adjacent environmentally sensitive habitat area.

Areas Susceptible to Erosion and Needed for Bio-Filtration of Adjoining Development

Currently, approximately 30% of the project parcel is paved or otherwise covered with impervious structures with the drainage from these areas and adjoining streets directed toward the creek as sheet flow or through curbside drop inlets. The undeveloped portions of the property site adjoining the wetland and riparian vegetation habitat areas are relatively flat and underlain with silty and sandy clay soils reflective of the area's reclaimed history (**Exhibit 9**). Under certain conditions (i.e., exposed slopes, seismic shaking when saturated), these soils can be problematic in terms of being prone to erosion or liquefaction-related subsidence. In addition, some of these currently open grassy areas provide an area where surface drainage with entrained sediment and other pollutants from the adjoining restaurant parking lot and driveway surfaces can undergo bio-filtration before entering the creek waters. Furthermore, an intensification of stormwater runoff from new impervious paved and structure-covered areas could have

[1] The biological study also identified another riparian canopy ESHA that would not be included within the bounds of the proposed Wetland and Creek Protection Zone Easement, namely the tree covered areas in the back yard of the residences on proposed Parcels One and Two. However, given the fenced and human occupied character of these areas and their long-standing use as residential curtilage, the Commission's staff ecologist did not include these areas in his recommendation for areas warranting restrictions on future development.

significant adverse erosional and water quality impacts to both the onsite ESHAs and to areas further down slope of the property if such significant runoff were not properly addressed and mitigated in any future project's design and siting. Accordingly, the lawn area to the east of the creek on Parcel One's Samoa Boulevard frontage, and the area to the west of the creek between the restaurant parking lot on Parcel Three and the top of the stream bank, comprise moderately sloped areas providing biological infiltration and retention functions protecting the adjacent riverine and riparian vegetation resources within the lower Jolly Giant Creek / Butchers Slough watershed.

Areas with Development in Very Close Proximity to the Live Waters of Jolly Giant Creek

Development associated with the restaurant use on proposed Parcel Three is situated within ten feet of the live waters of Jolly Giant Creek where it takes a bend from a northeast to southeast flow direction to one more north to south in orientation near the middle of the property. Uses in the immediate vicinity of the creek in this area include a covered outdoor seating, picnic table, and the path between the rear entry to the kitchen and the solid waste storage enclosure on the edge of the parking lot. Future expansions in restaurant related uses in this area, such as additional outdoor seating and/or the storage of cleaning materials and equipment, or additional solid waste containers, could result in the introduction of litter and the release of hazardous materials into the creek. Thus, maintaining the area as an open undeveloped buffer between the existing developed restaurant use areas and the open waters of the creek is necessary to protect the water quality of Jolly Giant Creek from the introduction of solid wastes and the release of hazardous materials, such as cleaning compounds.

Therefore, based on the foregoing, the following upland areas adjacent to the riparian corridor must be restricted from future development to protect the adjacent ESHA:

- An approximately 30-foot-wide by 70-foot-deep rectangular portion of the lawn area located between the Samoa Boulevard frontage of Parcel One and extending back to the back yard fence adjoining the east side of the creek;
- An approximately 10-foot-wide by 130-foot-deep triangular portion of the lawn area located between the parking lot and the west side of the creek, extending from the property line between Parcels Two and Three and tapering out to the Samoa Boulevard frontage of Parcel Three; and
- An approximately 10-foot-wide by 100-foot-deep triangular portion of the lawn area located between the garage on Parcel Two lot and the west side of the creek, extending from the backyard fence on Parcel Two and tapering out to the Fifth Street frontage.

Avoidance of future development of these areas would protect the adjacent ESHA against significant disruption because it would limit future development of biologically significant adjacent lands, areas susceptible to erosion, and areas providing water quality ecosystem services. Moreover, these buffer areas would formally establish a spatial development setback throughout areas of the property that have the greatest potential future development impacts, namely the areas adjoining the restaurant parking lot and the driveway entrance to Parcel One where the adverse effects of vehicular related noise and light impacts upon sensitive habitat areas would be the most pronounced.

Review of Extensive Site Redevelopment

Finally, the Commission notes that, given the somewhat dated age of the residences and commercial structures on the property, extensive renovations of these site improvements may be considered in a relatively short timeframe. Such future replacement site development might likely consider expansion beyond the existing building envelopes. However, any future wholesale redevelopment of any of the three parcels involving the replacement of the existing structures would be separately evaluated at the time that such development is proposed through the coastal development permit process to ensure any approved development would be sited and designed to prevent impacts to the creek ESHA consistent with 30240(b).

Based on all of the foregoing, the Commission finds that it is necessary to limit future development on certain undeveloped areas on the parcel within and adjacent to ESHA in order to prevent significant disruption of the ESHA. Accordingly, to assure compliance with the Coastal Act section 30231 and 30240(b), the Commission attaches **Special Condition 1**. **Special Condition 1** requires the applicants to prohibit development over all wetland and riparian vegetation ESHA on the site as well as all areas within 15 to 35 feet from the outer boundary of all wetlands and riparian vegetation ESHAs on the property as generally depicted in **Exhibit 8**. **Special Condition 2** requires that a deed restriction be recorded against all lots created by the subdivision informing future owners of the conditions attached to the approval of the subdivision, including the requirements of **Special Condition 1** that the ESHA area and all areas within the adjoining buffer be restricted as open space.

Conclusion

Based upon the analysis presented above, and as proposed and conditioned to require: (1) that installation of all riparian vegetation restoration plants be performed pursuant to an approved planning plan (**Special Condition 4**); (2) specific mitigation measures to further protect the environmentally sensitive areas from the construction of subdivision improvements, including the required use of specified water quality best management practices (**Special Condition 5**); (3) prohibitions on development, with certain specified exceptions, over all identified environmentally sensitive habitat areas and over adjacent areas which functionally protect such habitat areas (**Special Condition 1**); and (4) a deed restriction to be recorded against the parcel informing future owners of the conditions attached to the approval of the development (**Special Condition 2**), the Commission finds that the proposed development, as conditioned, is consistent with Coastal Act Sections 30231 and 30240, as the division of land will protect against any significant disruption of habitat values and limit uses to those dependent on those aquatic habitat resources, be sited and designed to prevent impacts which would significantly degrade coastal water quality and adjacent ESHA, and be compatible with the continuance of those adjacent habitat areas.

G. GEOLOGIC AND FLOOD HAZARDS

Section 30251 of the Coastal Act 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.*

> *(b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area…*

The project site is located on the south-central side of Arcata in the commercial-residential transitional area lying north of State Route 255. The property is bisected by the lower reaches of Jolly Giant Creek / Butchers Slough, approximately 3,000 feet from the open waters of Arcata Bay, at an elevation of 4 to 12 feet above mean sea level (msl) referenced from the 1929 National Geodetic Vertical Datum (NGVD). Notwithstanding the proximity of the watercourse and low elevation, the site is not within any mapped flood zones. The primary natural hazards issues raised by the proposed project relate to tsunami inundation, as may be exacerbated overtime by sea level rise, and liquefaction related ground failures.

Tsunami Inundation

Portions of the subject property, along with many others around Humboldt Bay, are 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.

Compounding this potential risk exposure is the compounding effect of sea level rise. 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.

No new residential or commercial development is being proposed as part of this land division project. However, in consideration of other development projects, the Commission has reviewed the implications a land division project may have on increasing the potential exposure of persons and property to risks from natural hazards. The primary way to ensure that the proposed development would be safe from tsunami wave run-up would be to require that any habitable living spaces be positioned only above tsunami inundation levels. The Commission notes that the existing structures on the property, the two residences along Fifth and H Streets, and the restaurant on I Street, were developed in the 1940s and 1960s, respectively, and likely will be coming to the end of their economic lives within the next couple of decades. Consequently, redevelopment of the site with new dwelling units is possible.

The precise maximum depth of inundation for a tsunami for a given seismic event has not been determined for the project site. While other development sites with direct beach frontage or proximity to open ocean waters have been assessed as being potentially subject to modeled inundation of 30 feet or more above mean sea level, given the project site's distance from the mouth of Humboldt Bay and the large mudflat and marsh plain configuration of Arcata Bay and

surrounding lands, such a wave height would be expected to attenuate before reaching the subject property. Further, utilizing a 30-foot elevation above mean sea level given the approximately 10-foot elevation of the subject property, any potentially approvable future residential development could be proposed and designed in a manner that would locate the human-occupiable living spaces above the maximum tsunami inundation level and meet the 35-foot height limit of the C-R-M zoning district.

With respect to ground failure related hazards, the project is identified on the City general plan's hazard map as having the "high" liquefaction potential. In addition to losses associated with seismic shaking, structures located in liquefaction prone areas can be further damaged by uneven foundation settlement and subsidence. However, as observed in the geologic soils report prepared for the project site (**Exhibit 9**), these risks can typically be mitigated by the incorporation of specific design features within the foundations and framing of any new structures that may be developed at the site. Such design measures, depending upon the size and type of structure, may include the use of mat slab or a stiffened slab on grade with continuous concrete perimeter footing in combination with isolated interior spread footings, and shear wall bracing.

As discussed above, other than parcelization of the property into three lots, no new residences or commercial site improvements are being proposed that would result in an increase in risks to life and property from geologic and flood hazards. In addition, feasible mitigation measures necessary to minimize the ground failure and coastal flooding risks have been identified that could be incorporated into any future otherwise permissible development at the site. Therefore, the Commission finds that the proposed project will minimize risk to life and property from hazards, consistent with Section 30253 of the Coastal Act.

H. ARCHAEOLOGICAL RESOURCES

Section 30244 of the Coastal Act states:

> *Where development would adversely impact archeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

The project area includes lands formerly occupied by the Wiki division of the Wiyot tribe. The tribe is understood to have been composed of three tribal divisions (Patawat, Wiki, and Wiyot), each associated with a water-related resource (the Mad River, Humboldt Bay, and the lower Eel River, respectively) and each speaking a common language (Selateluk). The ancestral Wiyot territory extended from the Little River (near McKinleyville) to the Bear River Mountains (near Ferndale) and inland approximately 15 miles to the first mountain ridgeline. Humboldt Bay (Wiki) was the central division of the territory. The pattern of Wiyot settlements, located along river terraces, the Humboldt Bay margin, and tidewater sloughs, means that much of the bay margin, tributary sloughs, and adjacent uplands have the potential to hold archaeological resources.

To ensure protection of any cultural resources that may be discovered at the site during construction of the physical development authorized as part of the proposed project, the

Commission attaches **Special Condition 7**. This condition requires that if an area of cultural deposits is discovered during the course of the project, all construction must cease, and a qualified cultural resource specialist must analyze the significance of the find. To recommence construction following discovery of cultural deposits, the permittee is required to submit a supplementary archaeological plan for the review and approval of the Executive Director to determine whether the changes are de minimis in nature and scope, or whether an amendment to this permit is required.

Therefore, the Commission finds that the proposed project is consistent with Coastal Act Section 30244, as the proposed development includes reasonable mitigation measures to ensure that construction activities within the project area will not result in significant adverse impacts to archaeological resources.

I. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Concurrent with conditional approval of the tentative parcel map, on June 20, 2013, the City of Arcata adopted a Negative Declaration pursuant to CEQA requirements for the proposed project (SCH 2013042078).

Section 13906 of the Commission's administrative regulations 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 approval of a proposed development 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. 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 and to conform to CEQA.

APPENDIX A: SUBSTANTIVE FILE DOCUMENTS

Application file for Coastal Development Permit (CDP) Application No. 1-13-0616

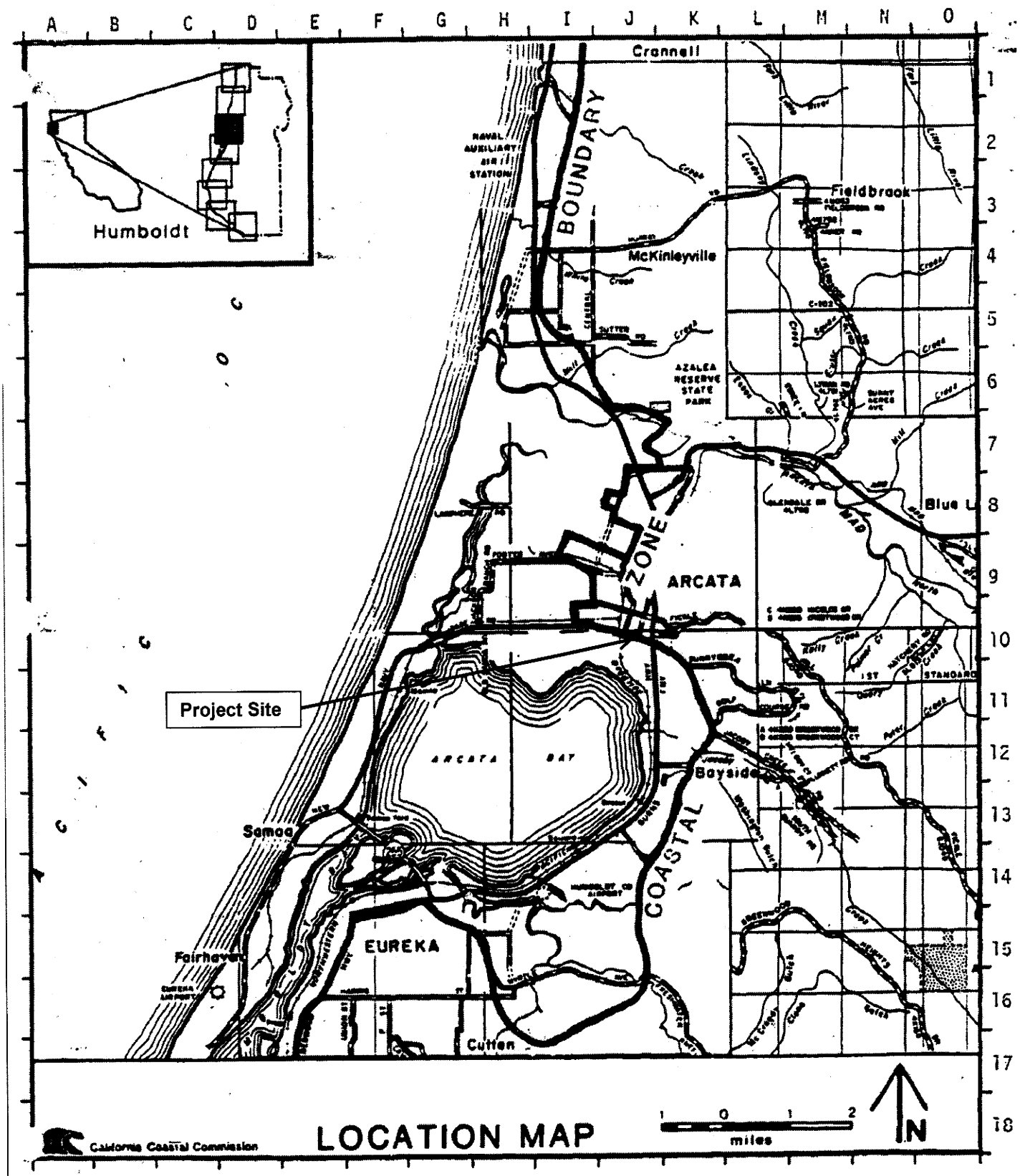
FEMA Flood Insurance Rate Map Community Panel Number 060061-004E

Arcata General Plan 2020 and Local Coastal Land Use Plan – Draft and Final Program Environmental Impact Report

Tsunami Inundation Map for Emergency Planning – Arcata South Quadrangle

City of Arcata Local Coastal Program

Arcata Creeks Management Plan



County of Humboldt

EXHIBIT NO. 1

APPLICATION NO.

1-13-0616 - LAVAGNINO & SIMONI

REGIONAL LOCATION MAP

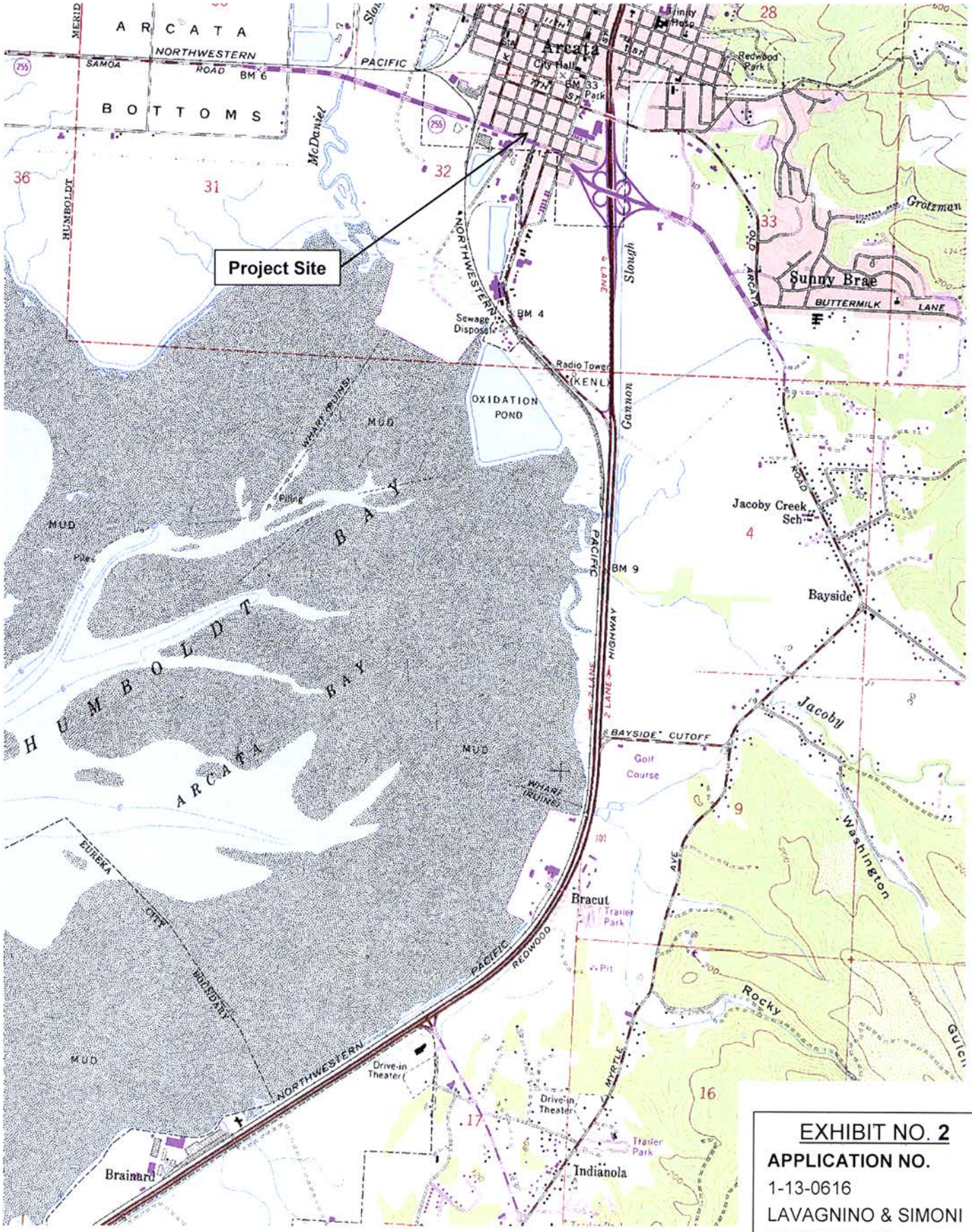


EXHIBIT NO. **2**

APPLICATION NO.

1-13-0616

LAVAGNINO & SIMONI

VICINITY MAP

EXHIBIT NO. 3

APPLICATION NO.

1-13-0616 - LAVAGNINO & SIMONI

PROJECT SITE AERIAL

EXHIBIT NO. 4

APPLICATION NO.

1-13-0616 - LAVAGNINO & SIMONI

PROJECT NARRATIVE DESCRIPTION, TENTATIVE MAP, & IMPROVEMENT PLANS (1 of 3)

GENERAL NOTES

1. This Tentative Parcel Map proposes a subdivision of APN 021-184-02, a 41,320± square foot parcel, into 3 parcels being 21,850± square feet, 8,870± square feet and 10,600± square feet in size.

   A Coastal Development Permit (CDP) will be required from both the City of Arcata and the California Coastal Commission, due to the project being located in the Coastal Zone.

2. There are existing single-family residences on proposed Parcels One and Two. Proposed Parcel Three is developed as the "V & N Burger Bar" (Burger Bar). No new development is proposed. Parcels adjacent the subdivision are currently developed for Residential, Industrial Commercial and General Commercial uses. Structures within 50 feet of the subdivision boundaries are shown hereon.

3. Parcels One and Three have split zoning and general plan designations. The northern portion is Residential-Medium Density (R-M), the southern portion General Commercial (G-C). The general plan designation and zoning are to remain split following the subdivision. Parcel Two has a general plan designation and zoning of Residential-Medium Density (R-M).

4. The existing shed between the Burger Bar and the Parcel One residence will be removed in order to obtain the required 10 foot setback from the new property line to the Burger Bar. A 1200-gallon grease trap shall be installed at the Burger Bar prior to the recordation of the Parcel Map.

5. Existing streets around the project site (H Street, I Street, 5th Street and Samoa Boulevard) are presently developed. Portions of the existing sidewalk along 5th and H Streets are in disrepair and are to be reconstructed as part of the subdivision. Sidewalk along Samoa Blvd. has been upgraded (by the City of Arcata) with planter areas since the drafting of this Tentative Map, and not all upgrading improvements are being shown hereon.

6. Sewer and water services are provided by the City of Arcata. A sewer cleanout will be installed in the sidewalk area on all three proposed parcels.

7. PG&E supplies gas and electricity, AT&T California provides telephone service, and Suddenlink Communications provides cable television.

8. The parcel is relatively flat. Contours shown hereon are at 2 foot intervals and are based on information from the City of Arcata 50 scale mapping (photo 1967).

9. Per FIRM Community-Panel Number 060061-0045, the property is not mapped within any flood zones. Jolly Giant Creek runs through the property. A Streamside Management easement will be created to allow the City of Arcata access for maintenance of the channel, with no development allowed within the easement. The width of the easement will equal the creek's width, plus 25 feet each side of the creek, setback from the top of bank. The City of Arcata has indicated that the easement may be somewhat less than the 25 foot setback from top of bank in some areas in order to accommodate existing site development. The California Department of Fish & Game has preliminarily indicated that they may require additional planting of riparian vegetation along the creek to provide additional shading if it is determined that doing so would enhance the creek's habitat.

10. Per research of the California Department of Fish & Game database, the property is not within 400 feet of any endangered plant or animal species, and no other sensitive habitat areas are known to exist on the property. The property does not contain any known historical buildings (per the Historic Preservation Element of the Arcata General Plan: 2020), and no archeological or paleontological resources are known to exist.

11. All easements of record are shown or referenced hereon, and will appear on the recorded Parcel Map.

12. Owner(s)/Subdivider(s):

Angelo Lavagnino	Irene Simoni
1323 Purvis Circle	891 H Street
Clovis, CA 93611	Arcata, CA 95521
(559) 298-3625	(707) 822-0777

LEGEND

Proposed Parcel Line	Existing Storm Drain
Proposed Easement	Existing Sidewalk (Samoa Blvd. sidewalk with planter areas)
Existing Joint Power Pole	Existing Driveway
Existing Waterline	Parking Space
Existing Waterline Valve	Contour (2' intervals)
Existing Water Meter	Existing Vegetation
Existing Fire Hydrant	Existing Fence
Existing Sanitary Sewer Line	Deciduous Tree
Existing Sanitary Sewer Line Manhole	Evergreen Tree
Existing Sanitary Sewer Line Cleanout	Rhododendron

Property Description:

That real property situate in the City of Arcata, County of Humboldt, State of California, described as follows:

All of Block [illegible] of the City of Arcata according to the Map of said city filed in the Recorder's Office of Humboldt County in Book 5 of Maps, Page 31;

EXCEPTING THEREFROM a portion thereof described as follows:

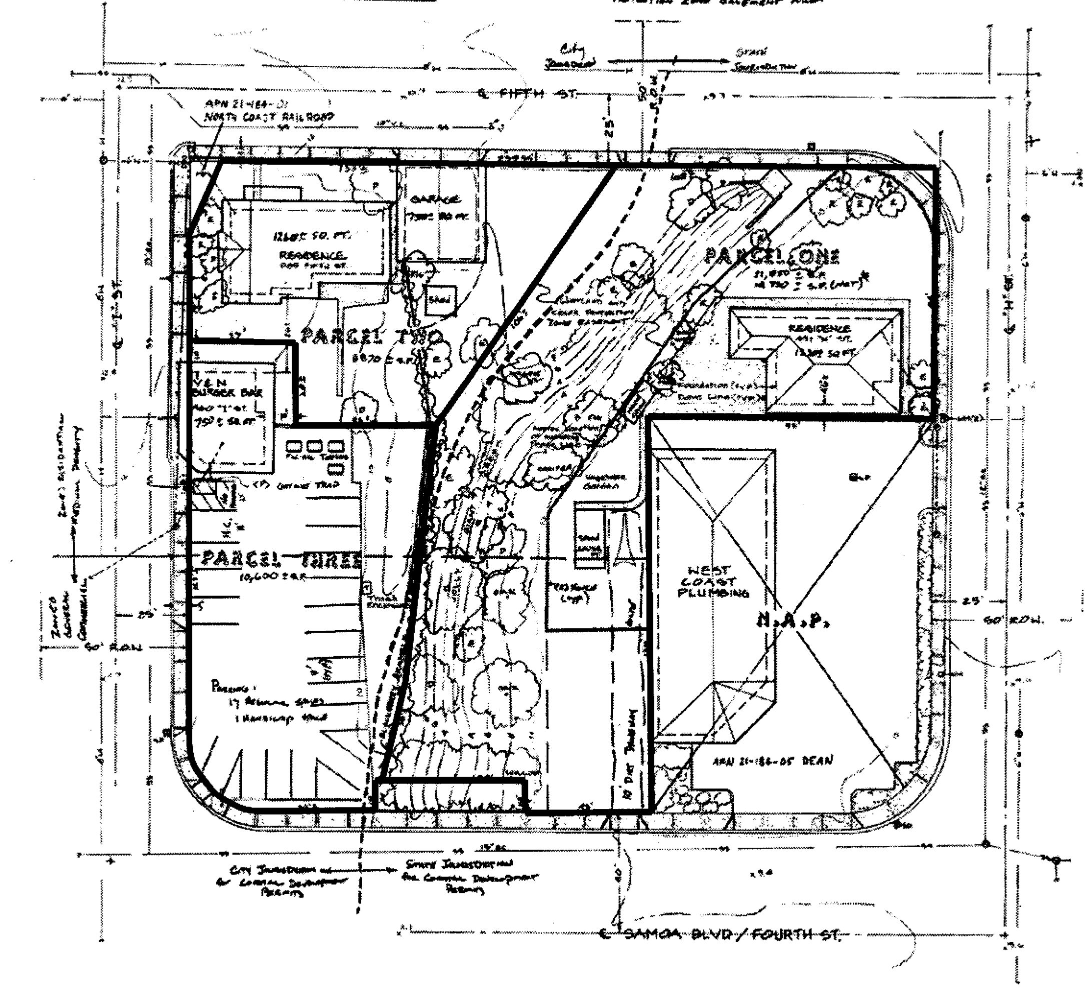
BEGINNING at the Southeast corner of said block; and running
thence Westerly along the North line of Fourth Street [illegible] feet;
thence at right angles Northerly and parallel with H Street [illegible] feet;
thence at right angles Easterly and parallel with Fourth Street [illegible] feet; and
thence Southerly along the Westerly line of H Street [illegible] feet to the place of beginning; and also

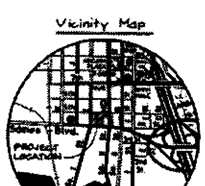
ALSO EXCEPTING THEREFROM a portion thereof described as follows:

BEGINNING at the Northwest corner of said block, and running
thence Easterly along the Southerly line of Fifth Street [illegible] feet;
thence South [illegible] degrees [illegible] minutes West to the point of intersection with the Easterly line of I Street, and
thence Northerly along the Easterly line of I Street to the place of beginning.

ALSO EXCEPTING THEREFROM that portion described in Deed executed by Angelo P. Lavagnino to the County of Humboldt, dated June [illegible], 1961 and recorded June 14, 1961 in Book [illegible] of Official Records, Page 120, for the widening of Fourth Street.

ZONING AREAS			
PARCEL NO.	TOTAL PARCEL AREA (S.F.)	GENERAL COMMERCIAL AREA (S.F.)	RESIDENTIAL MEDIUM DENSITY AREA (S.F.)
ONE	21,850	6,320	15,530
TWO	8,870	0	8,870
THREE	10,600	6,040	4,560





Scale: 1"=20'

A Subdivision of APN 021-184-02

TENTATIVE PARCEL MAP

LAVAGNINO & SIMONI

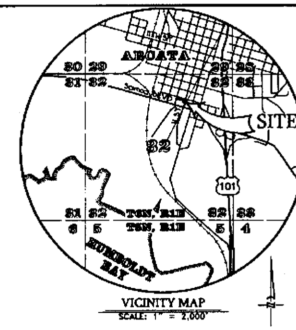
NE 1/4 Section 32, T6N, R1E, H.M.

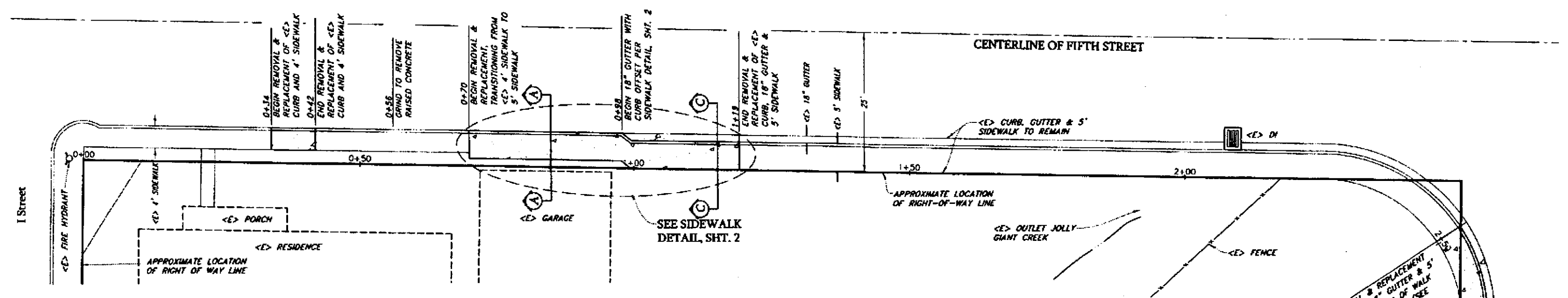
b-

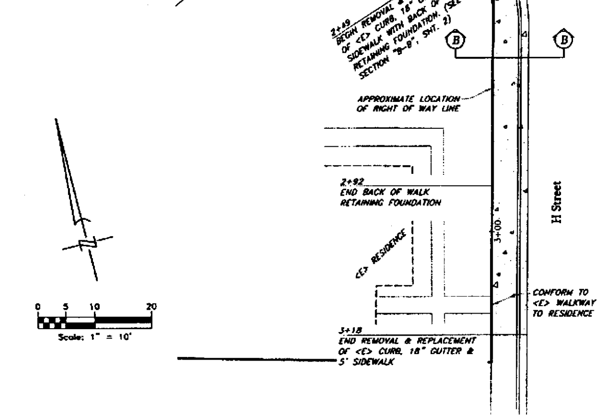
IMPROVEMENT PLANS

Lavagnino Subdivision

Fifth Street, Arcata, California







CAUTION:
UNAUTHORIZED CHANGES & USES

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL AND CITY OF ARCATA HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONALS.

CONSTRUCTION NOTES

GENERAL

1. THE INFORMATION AND ELEVATIONS PERTAINING TO EXISTING UNDERGROUND FACILITIES, AS SHOWN HEREIN, ARE FROM RECORD INFORMATION ONLY, AND IS PRESENTED HEREON FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL AGENCIES INVOLVED AND SHALL LOCATE THE EXISTING UNDERGROUND FACILITIES PRIOR TO EXCAVATION AND CONSTRUCTION IN ANY AREA. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (USA) AT 811 AT LEAST TWO (2) WORKING DAYS IN ADVANCE OF ANY EXCAVATION, AND SHALL NOTIFY THE ENGINEER AND DEVELOPER OF ANY APPARENT DISCREPANCIES IN THE RECORD INFORMATION SHOWN HEREIN.
2. MATERIALS AND WORK SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND STANDARD PLANS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION (CALTRANS), LATEST EDITION, AND THE IMPROVEMENT STANDARDS, LATEST REVISION, OF THE CITY OF ARCATA.
3. REFERENCE TO CALTRANS STANDARD PLANS AND STANDARD SPECIFICATIONS MADE HEREON REFERS TO THE 2010 EDITION OF THE STANDARD PLANS AND STANDARD SPECIFICATIONS ISSUED BY CALTRANS, AND ANY REVISIONS.
4. ALL TRENCHES FOR WATER, SEWER, STORM DRAIN AND OTHER UTILITIES SHALL BE COMPACTED TO 95% WHEN INSTALLED IN THE ROADWAY.
5. WHEREVER REQUIRED, TRENCH SHORING MEASURES SHALL MEET THE REQUIREMENTS OF CAL-OSHA. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEETING THESE REQUIREMENTS AND FOR OVERALL JOB SITE SAFETY AT ALL TIMES.
6. ALL BRUSH AND SHRUBS SHALL BE TAKEN TO MAD RIVER COMPOST, 6380 WEST END ROAD, ARCATA. ALL OTHER DEBRIS THAT CAN BE RECYCLED SHALL BE TAKEN TO AN APPROVED SITE ACCEPTABLE TO THE CITY ENGINEER. OTHER DEBRIS NOT RECYCLABLE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT A LOCATION WHICH IS ACCEPTABLE TO THE CITY ENGINEER, AT THE CONTRACTOR'S EXPENSE.
7. THE CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS ON OR ADJACENT TO THE PROJECT SITE, INCLUDING BUT NOT LIMITED TO FENCES, CONCRETE CURBS AND GUTTERS, CONCRETE SLABS, UNDERGROUND CONDUITS, STRUCTURES, DECKS, LANDSCAPING, ETC. WHERE DAMAGE TO ADJACENT IMPROVEMENTS IS UNAVOIDABLE, THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE PROPERTY OWNER TO REPLACE OR REPAIR THE DAMAGED IMPROVEMENTS.
8. UNLESS SPECIFICALLY AGREED TO OTHERWISE BETWEEN THE CONTRACTOR AND DEVELOPER, THE CONTRACTOR IS RESPONSIBLE FOR PAYING FOR ANY SOILS OR COMPACTION TESTS, OR OTHER TESTS THAT MAY BE REQUIRED BY THE CITY OF ARCATA.
9. DUST CONTROL DURING CONSTRUCTION:
   A. WATER ALL ACTIVE CONSTRUCTION AREAS TWICE PER DAY AND USE EROSION CONTROL MEASURES TO PREVENT WATER RUNOFF CONTAINING SILT AND DEBRIS FROM ENTERING THE STORM DRAIN SYSTEM.
   B. COVER TRUCKS HAULING SOIL, SAND, AND OTHER LOOSE MATERIAL.
   C. PAVE, WATER, OR APPLY NON-TOXIC SOIL STABILIZERS ON UNPAVED ACCESS ROADS AND PARKING AREAS.
   D. SWEEP PAVED ACCESS ROADS AND PARKING AREAS DAILY.
   E. SWEEP STREETS DAILY IF VISIBLE MATERIAL IS CARRIED ONTO ADJACENT PUBLIC STREETS.
10. SANITARY FACILITIES SHALL BE MAINTAINED ON THE SITE DURING CONSTRUCTION.
11. ALL WORK SHALL BE INSPECTED BY THE CITY OF ARCATA DEPARTMENT OF PUBLIC WORKS.
12. AN ENCROACHMENT PERMIT FROM CITY OF ARCATA DEPARTMENT OF PUBLIC WORKS IS REQUIRED FOR ANY WORK PERFORMED WITHIN A CITY RIGHT-OF-WAY.
13. CONSTRUCTION HOURS. THE GENERAL PLAN NOISE ELEMENT POLICY N-5D, LIMITS THE OPERATION OF TOOLS OR EQUIPMENT USED IN CONSTRUCTION, DRILLING, REPAIR, ALTERATION OR DEMOLITION TO THE HOURS BETWEEN 8 A.M. AND 7 P.M. MONDAY THROUGH FRIDAY, AND BETWEEN 9 A.M. AND 7 P.M. ON SATURDAYS. NO HEAVY EQUIPMENT RELATED CONSTRUCTION ACTIVITIES SHALL BE ALLOWED ON SUNDAYS OR HOLIDAYS.

GENERAL (CONTINUED)

14. DISCOVERY OF PREHISTORIC OR ARCHAEOLOGICAL RESOURCES. IF CULTURAL RESOURCES ARE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, THE CONTRACTOR ON SITE SHALL CEASE ALL WORK IN THE IMMEDIATE AREA AND WITHIN A 50 FOOT BUFFER OF THEC DISCOVERY LOCATION. A QUALIFIED ARCHAEOLOGIST, AS WELL AS THE TRIBAL HISTORIC PRESERVATION OFFICERS FOR THE BEAR RIVER BAND ROHNERVILLE RANCHERIA, BLUE LAKE RANCHERIA, AND WIYOT TRIBE ARE TO BE CONTACTED TO EVALUATE THE DISCOVERY AND, IN CONSULTATION WITH THE APPLICANT AND LEAD AGENCY, DEVELOP A TREATMENT PLAN IN ANY INSTANCE WHERE SIGNIFICANT IMPACTS CANNOT BE AVOIDED. PREHISTORIC MATERIALS MAY INCLUDE OBSIDIAN OR CHERT FLAKES, TOOLS, LOCALLY DARKENED MIDDEN SOILS, GROUNDSTONE ARTIFACTS, SHELLFISH OR FAUNAL REMAINS, AND HUMAN BURIALS. IF HUMAN REMAINS ARE FOUND, CALIFORNIA HEALTH AND SAFETY CODE 7050.5 REQUIRES THAT THE COUNTY CORONER BE CONTACTED IMMEDIATELY AT 707-445-7242. IF THE CORONER DETERMINES THE REMAINS TO BE NATIVE AMERICAN, THE NATIVE AMERICAN HERITAGE COMMISSION WILL THEN BE CONTACTED BY THE CORONER TO DETERMINE APPROPRIATE TREATMENT OF THE REMAINS PURSUANT TO PRC 5097.98. VIOLATORS SHALL BE PROSECUTED IN ACCORDANCE WITH PRC SECTION 5097.99.
15. STREET LANE CLOSURES REQUIRED FOR THIS CONSTRUCTIONS SHALL BE SIGNED AND CONED AS SHOWN IN THE CITY OF ARCATA'S STANDARD PLANS ST30, ST31, AND ST32 AND ANY REQUIREMENTS IN THE ENCROACHMENT PERMIT ISSUED BY THE CITY OF ARCATA.

GRADING

16. ALL EARTHWORK AND GRADING SHALL BE COMPLETED IN ACCORDANCE WITH SECTION 19 OF CALTRANS STANDARD SPECIFICATIONS, AND THE "ENGINEERING-GEOLOGIC SOILS REPORT" FOR THE PROPOSED SUBDIVISION OF APN 021-184-002 PREPARED LINDBERG GEOLOGIC CONSULTING, DATED AUGUST 14, 2012.
17. CUT AND FILL SLOPES SHALL BE 2:1 MAXIMUM, UNLESS OTHERWISE SHOWN ON THIS PLAN.
18. THE CONSTRUCTION CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES AT THE JOB SITE PRIOR TO THE ONSET OF CONSTRUCTION. CONTRACTOR TO CONTACT THE ENGINEER OF WORK IMMEDIATELY WITH ANY DISCREPANCIES.
19. FINISHED GRADING SHALL BE AS INDICATED ON THIS PLAN, AND TO THE SATISFACTION OF THE CITY ENGINEER.
20. ALL FILL SHALL BE COMPACTED TO A MINIMUM OF 90% RELATIVE COMPACTION, EXCEPT WHERE 95% RELATIVE COMPACTION IS REQUIRED WITHIN 2.5' OF FINISH GRADE AS SPECIFIED IN SECTION 19-5.03 OF CALTRANS STANDARD SPECIFICATIONS.
21. NO CONSTRUCTION OF THE STREETS, DRAINAGE FACILITIES OR OTHER UTILITIES SHALL OCCUR BETWEEN OCTOBER 15TH AND APRIL 15TH WITHOUT PRIOR APPROVAL OF THE CITY OF ARCATA DEPARTMENT OF PUBLIC WORKS.
22. STREET LANE CLOSURES REQUIRED FOR THIS CONSTRUCTIONS SHALL BE SIGNED AND CONED AS SHOWN IN THE CITY OF ARCATA'S STANDARD PLANS ST30, ST31 AND ST32 AND ANY REQUIREMENTS IN THE ENCROCHMENT PERMIT ISSUED BY THE CITY OF ARCATA.
23. TWELVE (12) FILLED GRAVEL BAGS SHALL BE KEPT AT THE CONSTRUCTION SITE FOR EROSION AND SEDIMENT CONTROL. IF A 40% CHANCE OF RAINFALL IS FORECASTED BY THE NATIONAL WEATHER SERVICE THE GRAVEL BAGS SHALL BE DEPLOYED AROUND THE DI AND ALONG THE FLOW LINE OF THE CURB TO TRAP SEDIMENT, OTHER BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AS NECESSARY TO CONTROL SEDIMENT LEAVING THE CONSTRUCTION SITE.

STREET

24. SURFACE PAVING FOR ALL ROADWAYS SHALL CONFORM TO CALTRANS STANDARD SPECIFICATIONS (SECTION 39, LATEST EDITION) FOR TYPE "B" ASPHALT CONCRETE.
25. BASE MATERIAL USED IN ROADWAY AREAS SHALL CONFORM TO CALTRANS STANDARD SPECIFICATIONS (SECTION 26, LATEST EDITION) FOR CLASS 2 AGGREGATE BASE.
26. SUBBASE MATERIAL USED FOR FILL MATERIAL IN ROADWAY AREAS SHALL CONFORM TO CALTRANS STANDARD SPECIFICATIONS (SECTION 25, LATEST EDITION) FOR CLASS 3 AGGREGATE SUBBASE, WITH A SAND EQUIVALENT OF NO LESS THAN 21.
27. CONCRETE USED FOR SIDEWALKS, CURBS AND GUTTERS TO CONFORM TO CITY OF ARCATA SPECIFICATIONS (5 SACK MIX MEETING 2500 PSI REQUIREMENTS).

SANITARY SEWER SYSTEM

28. CITY OF ARCATA TO INSTALL INDIVIDUAL SEWER CLEANOUTS AT EACH EXISTING SEWER SERVICE LATERAL.

OWNER / APPLICANT

Angelo Lavagnino
1323 Purvis Circle
Clovis, CA 93611
(559) 298-3625

Irene Simoni
491 H Street
Arcata, CA 95521
(707) 822-0777

CITY OF ARCATA APPROVAL

R. CHARLES CLASS, Department of Public Works Director — DATE ______
LARRY OETKER, Community Development Dept. Director — DATE ______
MARK ANDRE, Environmental Services Dept. Director — DATE ______

NO.	REVISION	DATE	BY

OMSBERG & PRESTON — SURVEYORS – PLANNERS – ENGINEERS

OMSBERG & PRESTON
SURVEYORS-ENGINEERS
DATE ______ STEPHEN G. NESVOLD, PE RCE 25681

APN 021-184-002

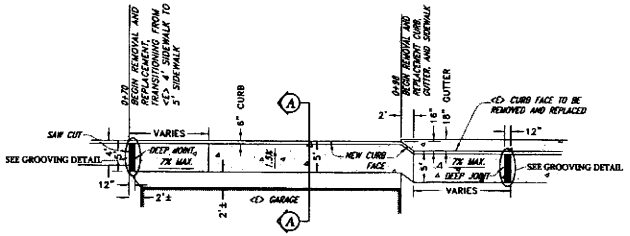
DESIGNED BY: SGN	DATE 8/8/13	
DRAWN BY: LJB	DATE 8/8/13	
CHECKED BY: KDP	DATE 9/6/13	

IMPROVEMENT PLANS for LAVAGNINO SUBDIVISION IN THE CITY OF ARCATA NE1/4 OF SECTION 32, T.6N., R.1E., H.M.

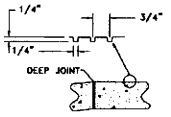
1"=10' | 12-1262-1 | 1 | 2

O:\Projects_Civil3D\12-1262-1_Lavagnino\Drawing\1262-1_IPLN01.dwg 8/8/2013 9:07:17 AM PDT

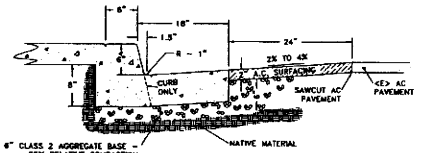
2 of 3



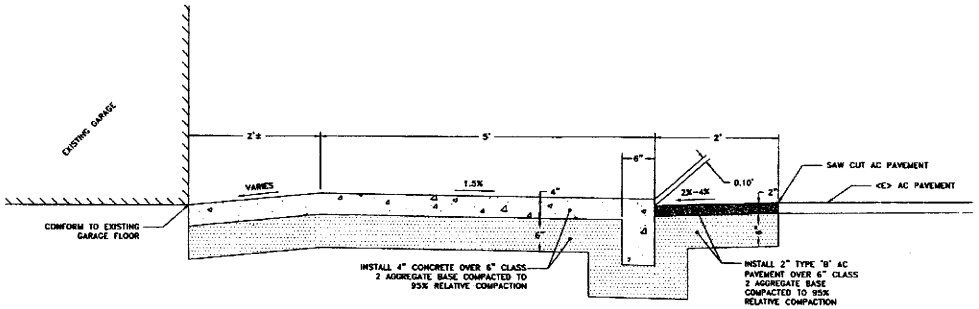
SIDEWALK DETAIL
Not to Scale



GROOVING DETAIL
Not to Scale



SECTION "C-C"
Not to Scale



SECTION "A-A"
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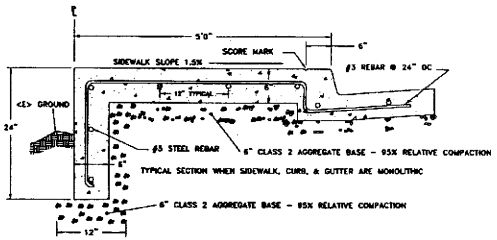


NOTES

1. SEE STANDARD ST 05 FOR LOCATION OF WEAKENED PLANES.
2. DESIGN SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.
3. CONCRETE SHALL BE 5 SACK MEETING 2500 PSI REQUIREMENTS.
4. ALL ROUNDED CORNERS TO BE 1/2" RADIUS UNLESS OTHERWISE SPECIFIED.
5. INSPECTION OF FORMS AND FINISHED WORK REQUIRED. SCHEDULE INSPECTION 24 HOURS IN ADVANCE.
6. BACK OF SIDE WALK RETAINING WALL TO BE INSTALLED FROM STA. 2+40 TO STA. 2+92.

SECTION "B-B"
CURB, GUTTER & 5' SIDEWALK
(WEST SIDE H STREET)
Not to Scale

3 of 3

CITY OF ARCATA APPROVAL

R. CHARLES CLASS, Department of Public Works Director — DATE
LARRY OETKER, Community Development Dept. Director — DATE
MARK ANDRE, Environmental Services Dept. Director — DATE

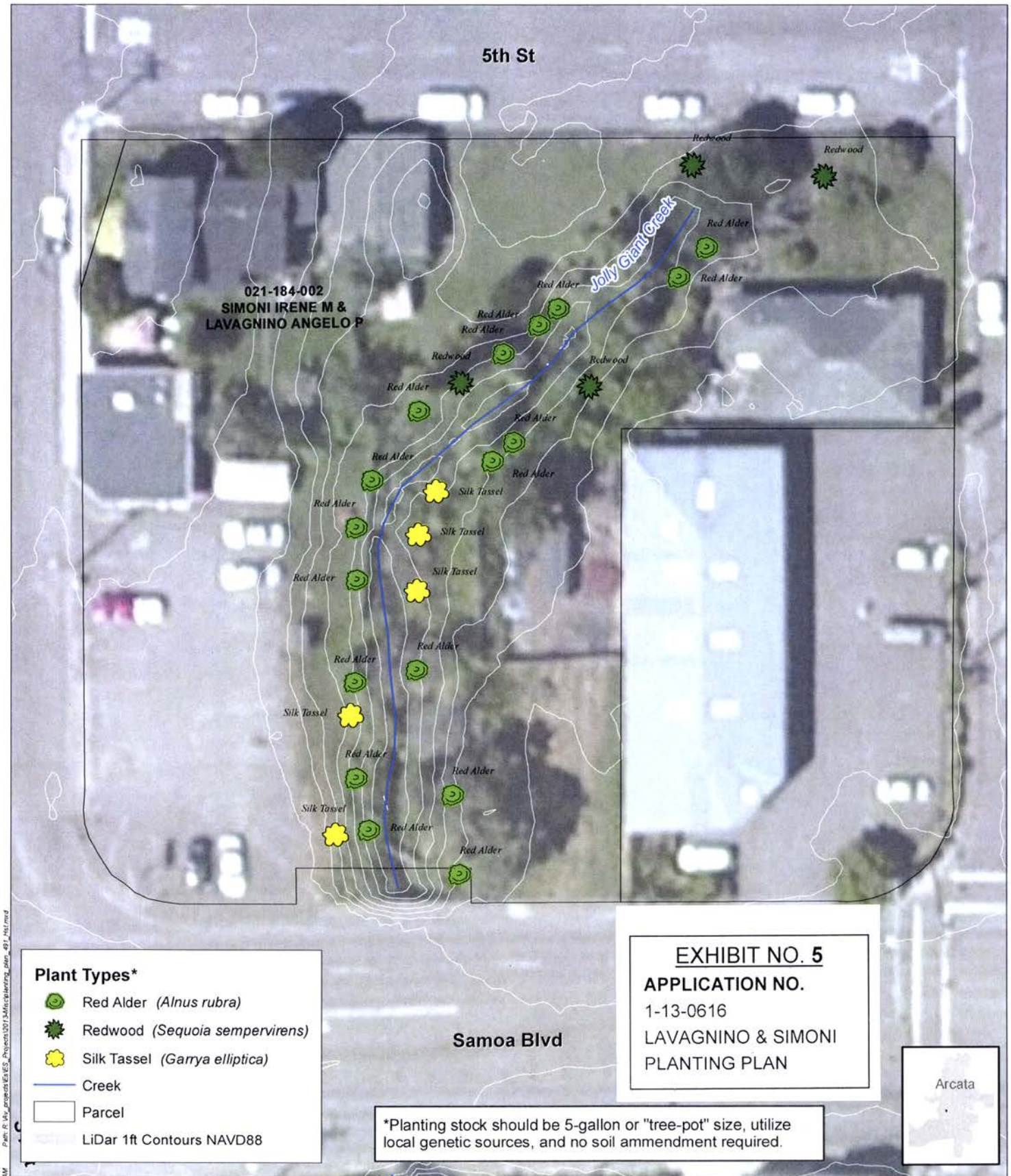
NO.	REVISION	DATE	BY

MISBERG & DESTON
SURVEYORS PLANNERS ENGINEERS

APN 021-184-002

GRADING, DRAINAGE & EROSION CONTROL
FOR
LAVAGNINO SUBDIVISION
IN THE CITY OF ARCATA
NE1/4 OF SECTION 35, T.8N., R.1E., H.M.

NO SCALE | 12-1262-1 | 2 | 2



Plant Types*

- Red Alder *(Alnus rubra)*
- Redwood *(Sequoia sempervirens)*
- Silk Tassel *(Garrya elliptica)*
- Creek
- Parcel
- LiDar 1ft Contours NAVD88

*Planting stock should be 5-gallon or "tree-pot" size, utilize local genetic sources, and no soil ammendment required.

EXHIBIT NO. **5**
APPLICATION NO.
1-13-0616
LAVAGNINO & SIMONI
PLANTING PLAN

Arcata

CITY OF ARCATA
Environmental Services

REVISIONS		
NO.	ITEM	DATE

DESIGNED BY: M. A.
DRAWN BY: B.K.
CHECKED BY: M.A.
EXPIRES:
APPROVED BY:
FILE DATE: 10/16/2013
FILE: planting_plan_491_Hst

LAVAGNINO SUBDIVISION
PLANTING PLAN
491 H STREET

NORTH

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

0 15 30
Feet

SHEET
1 OF 1

Plot Date: 10/16/2013 Time: 10:51:36 AM Path: R:\Av_projects\Es\ES_Projects\2013\Misc\planting_plan_491_Hst.mxd

Streamline Planning Consultants

• PLANNING • PERMITTING • ENVIRONMENTAL CONSULTING

Reduced Buffer Request/Biological Study

Simoni-Lavagnino Subdivision

460 I Street, 885 5th Street, 491 H Street, Arcata, CA 95521
APN 021-184-002

March 4, 2013

View looking north across the proposed subdivision site on February 5, 2013. Photograph shows lawn jutting up next to stream bank running along the upper right corner of the picture. Riparian vegetation shown consists primarily of reed canary grass and Himalayan blackberries.

Prepared by:
Streamline Planning Consultants

For:
The Simoni-Lavagnino Subdivision

EXHIBIT NO. **6**
APPLICATION NO. 1-13-0616
LAVAGNINO & SIMONI
EXCERPTS, REDUCED BUFFER REQUEST / BIOLOGICAL STUDY (1 of 8)

STREAMLINE PLANNING CONSULTANTS
www.streamlineplanning.net 1062 G St. Suite I, Arcata, CA 95521 Ph (707) 822-5785 Fax (707) 822-5786

Reduced Buffer Request/Biological Study
Simoni-Lavagnino Subdivision

Introduction
The California Coastal Commission generally requires a 100-foot-wide buffer from the outward upward edge of riverine wetlands and/or the canopy dripline of riparian vegetation, unless a greater or reduced buffer width is warranted. This document is an analysis of the conditions existing at the proposed Simoni-Lavagnino Subdivision located on APN 021-184-02 between H, I, 5th Street and Samoa Boulevard at 491 H Street, 885 5th Street and 460 I Streets, in Arcata, California.

A buffer area provides essential open space between the proposed development and adjacent ESHA. The existence of the open space ensures that the type and scale of development proposed will not materially degrade the habitat area. A buffer area is not in itself a part of the ESHA, but a "buffer" or "screen" that protects the ESHA from potential adverse environmental impacts caused by the development. For a wetland, the buffer area is measured from the landward edge of the wetland (riparian woodlands are considered wetland habitats). For a stream or river, the buffer area is measured landward from the landward edge of riparian vegetation or from the top edge of the bank.

An application for a Coastal Development Permit for proposed development within the Coastal zone that includes a reduced buffer width (i.e., less than 100 feet) must include maps and the following supplemental information that demonstrates that a reduced buffer width is consistent with the City of Arcata LCP (California Coastal Commission 1981).

Background
The proposed Simoni-Lavagnino Subdivision in Arcata, California, is a 41,320 ft² parcel slated to be divided into three parcels (Attachment 1). This subdivision is a logical division of the site since it is built out and currently houses a single-family residence, a second single-family residence with garage and the V & N Burger Bar with its associated parking lot. The residence on parcel two has existed for over 60 years. No structural development is proposed for this subdivision. Since all structures are existing, no wetland delineation or formal biological assessment beyond this document are required. Since subdivision is defined as development by the Coastal Act, a reduced buffer request/biological report has been requested by the Coastal Commission. After project approval, the creek will be surveyed to locate a Wetland & Creek Protection Zone Easement on the final parcel map (see below).

The site is bissected by Jolly Giant Creek, which is a Class I fish bearing stream. This stream has an approximate, average 15-foot wide riparian vegetation strip running along both sides of the length of the stream. This strip is predominantly a combination of lawn with overhanging planted trees and Himalayan blackberry patches. At the northern end of the creek, this area consists of lawn with scattered trees and rhododendrons that have been planted for shade. Buildings jut into this vegetated area at three locations on the east side of the stream, with two fences entering the buffer on each side, as well as a retaining wall along the northeastern edge of the stream. The existing stream corridor, including the combined vegetation, is approximately 33 feet wide,

covering nearly 9,000 ft², or an approximate 0.20 acres. Human disturbance is already present on both sides of the stream and along its entire length. The stream is highly impacted from the surrounding urban setting and upstream impacts, including oil sheens, rapid volume increases and trash. Jolly Giant Creek has shown consistently high levels of fecal coliforms (Humboldt Baykeeper 2012). However, efforts to improve stream health and flood control have been successful, as with the section upstream near Arcata High School (Virginia 2007)

A Wetland & Creek Protection Zone Easement (PZE), extending 25 feet out from the outside edge of the stream corridor vegetation on each side of the stream, or to hardscape where applicable, will be designated at this site. This document justifies why a 100-foot-wide buffer is infeasible at this site and why a 25-foot buffer with several points of infringement is adequate. Additionally, the City of Arcata General Plan 2020 Section RC-2b.1 calls for a minimum 25-foot buffer in developed areas (Arcata 2000) The following seven criteria will help describe the applicable conditions that justify this reduced buffer.

1. Biological Significance of Adjacent Lands. √
Lands adjacent to a wetland, stream, or riparian habitat area vary in the degree to which they are functionally related to these habitat areas. That is, functional relationships may exist if species associated with such areas spend a significant portion of their life cycle on adjacent lands. The degree of significance would depend upon the habitat requirements of the species in the habitat area (e.g., nesting, feeding, breeding or resting). This determination requires the expertise of an ecologist, wildlife biologist, ornithologist or botanist who is familiar with the particular type of habitat involved. Where a significant functional relationship exists, the land supporting this relationship should also be considered to be part of the environmentally sensitive habitat area, and the buffer area should be measured from the edge of these lands and be sufficiently wide to protect these functional relationships. Where no significant functional relationships exist, the buffer should be extended from the edge of the wetland, stream or riparian habitat (for example) which is adjacent to the proposed development (as opposed to the adjacent area which is significantly related ecologically).

Discussion: The environmentally sensitive habitat area (ESHA) at this site consists of the approximate 33-foot-wide riparian corridor, which includes the stream channel, stream bank and riparian or planted vegetation. The surrounding area is urban development including residential and commercial uses along with their associated streets and parking areas. This developed area provides virtually no wildlife habitat or hydrologic protection for the adjacent stream. There is no functional relationship between the area surrounding the stream corridor and the corridor itself.

Wetland buffer zones provide habitat and valuable protective screening for many amphibian, reptile and migratory bird species. Since the existing encroachment into the buffer area is adjacent to existing development, and no new development is proposed, the project will not fragment any habitat or disconnect any wildlife corridors, nor is it likely that it is heavily used for cover or foraging habitat. The impact on likely species that occur in this project area is not significant. Amphibians and aquatic invertebrates require shade and moisture, therefore they are restricted to habitat found in the riparian areas. Bird species on-site were observed resting in the riparian trees and flying over.

The existing vegetated corridor helps to protect the stream from impacts caused by the existing development by shading the stream and stabilizing the stream bank, while filtering runoff from surrounding developments by infiltrating stormwater, trapping sediment and absorbing nutrients. The buffer area will be designated as a Wetland & Creek Protection Zone Easement (PZE).

2. Sensitivity of Species to Disturbance. √

The width of the buffer area should be based, in part, on the distance necessary to ensure that the most sensitive species of plants and animals will not be disturbed significantly by the permitted development. Such a determination should be based on the following:

(a) Nesting, feeding, breeding, resting or other habitat requirements of both resident and migratory fish and wildlife species.

(b) An assessment of the short-term and long-term adaptability of various species to human disturbance.

Discussion: The dominant wildlife species observed on site visits between February 5th and March 5th, 2013, were native birds. Observed species included House Finches (*Carpodacus mexicanus),* Lesser Goldfinch *(Spinus psaltria),* White-crowned Sparrow *(Zonotrichia leucophrys),* Black-capped Chickadee *(Poecile atricapillus),* Lincoln's Sparrow *(Melospiza lincolnii)* and Yellow-rumped warbler *(Dendroica coronata).*

Expected species include the Lesser Goldfinch (*Spinus psaltria),* American Goldfinch (*Spinus tristis),* Pine Siskin *(Carduelis pinus),* House Finch *(Carpodacus mexicanus),* Song Sparrow (*Melospiza melodia),* White-crowned Sparrow (*Zonotrichia leucophrys*), Fox sparrow *(Passerella iliaca),* American Robin (*Turdus migratorius),* Black-capped Chickadee *(Poecile atricapillus),* Yellow-rumped warbler (*Dendroica coronata)* and hummingbirds. No nests were observed within the project area. These species are readily adaptable to human development and are familiar town and city birds, often seen in urban backyard and vegetated settings. Amphibians and fish were not observed in the stream during these site visits. Expected species will typically remain within the riparian corridor, where shade, vegetation and moisture are available year-round. Since these species were observed under the existing conditions (continual human presence and built-in habitat disruption), it is reasonable to conclude that these species are adapted to existing development.

The vegetation is a mosaic of native and non-native herbaceous species and grasses along the creek, as well as maintained (mowed) lawn and planted trees (see cover photo). The non-native species are successfully competing due to their adaptability to local climatic conditions. Some of the species include fruit and ornamental trees in the residential backyards. The present plant species, including Himalayan blackberries and Reed Canary Grass are also often found on roadsides, disturbed areas, and other riparian habitats in the vicinity. Trees including a redwood, Douglas fir, shore pine, fig, apples and a number of willows are the primary attraction for birds. Additionally, a backyard finch feeder and hummingbird feeder are expected to attract the finches and hummingbirds.

3. Susceptibility of Parcel to Erosion. √

The width of the buffer area should be based, in part, on an assessment of the slope, soils, impervious surface coverage, runoff characteristics, and vegetative cover of the parcel and to what

degree the development will change the potential for erosion. A sufficient buffer to allow for interception of any additional material eroded as a result of the proposed development should be provided.

Discussion: No development is proposed for this subdivision. A visual estimate of the site reveals roughly 1/4 of the site to be under hardscape, 1/4 under riparian vegetation/stream channel and 1/2 lawn. The riparian quarter contains approximately 15 feet of vegetation outward from the three-foot-wide stream channel and each inside edge of the buffer, comprising 30 feet of permeable riparian land between the western and eastern borders of the stream corridor. Beyond these 15-foot buffers lies an approximate 63 feet of lawn, for a total of 96 feet of permeable, vegetated land along this stream corridor. The soils onsite have a loamy texture, which is ideal for infiltration and treatment of stormwater. This infiltration, combined with vegetation, will resist erosion. All existing development lies on the flat uplands where runoff velocities are the least. The trees mentioned under criterion number one, above, combined with rhododendrons, help stabilize the soils.

No change in hydrology or runoff flow is expected at this site as a result of dividing the parcel. Additionally, no new development is proposed. If future building additions, rebuilding or improvements (such as sidewalks or driveways) occur, appropriate construction site best management practices (BMPs) are to be used in accordance with standard BMP fact sheets such as EPA or CASQA BMP handbooks. Since no construction is proposed or planned, no BMPs are planned for use at this site.

4. Use of Natural Topographic Features to Locate Development. √
Hills and bluffs adjacent to environmentally sensitive habitat areas should be used, where feasible, to buffer habitat areas. Where otherwise permitted, development should be located on the sides of hills away from environmentally sensitive habitat areas. Similarly, bluff faces should not be developed, but should be included in the buffer area.

Discussion: No development is proposed for this subdivision. Since the project is built out and Jolly Giant Creek runs through the middle of the site, a 25-foot wide buffer from the outside of the stream corridor eliminates the potential to further develop the site. Restrictions on activities allowed in ESHAs not only preclude further development, but the ESHA itself makes further development infeasible due to the presence of the stream and steep banks. With the exception of the stream channel, no topographic features exist onsite. The only future building activities that could take place on the project site would be renovation or rebuilding the existing structures, or the erection of storage sheds. These activities would take place outside the PZE in accordance with standard Stormwater BMPs.

5. Use of Existing Cultural Features to Locate Buffer Zones. √
Cultural features (e.g., roads and dikes) should be used, where feasible, to buffer habitat areas. Where feasible, development should be located on the side of roads, dikes, irrigation canals, flood control channels, etc., away from the environmentally sensitive habitat area.

Discussion: No cultural features exist on this site.

6. Lot Configuration and Location of Existing Development. √
Where an existing subdivision or other development is largely built-out and the buildings are a uniform distance from a habitat area, at least that same distance will be required as a buffer area for any new development permitted. However, if that distance is less than 100 feet, additional mitigation measures (e.g., planting of native vegetation which grows locally) should be provided to ensure additional protection. Where development is proposed in an area which is largely undeveloped, the widest and most protective buffer area feasible should be required.

Discussion: This lot is already built out. At the closest point, a building juts within eight feet of the stream channel. Two buildings, a shed and several fences lie less than 20 feet from the stream channel. The area adjacent to the creek is largely residential backyard turf with landscape plants or planted trees (see criteria #2 discussion above). A hundred-foot buffer is impossible since the entire site contains development within 100 feet of the stream. By creating a 25-foot buffer, except where buildings or development already jut closer to the stream, nearly the maximum buffer available will be retained to protect the stream from further development, while still allowing normal residential use of the existing development.

7. Type and Scale of Development Proposed. √
The type and scale of the proposed development will, to a large degree, determine the size of the buffer area necessary to protect the environmentally sensitive habitat area. For example, due to domestic pets, human use and vandalism, residential developments may not be as compatible as light industrial developments adjacent to wetlands, and may therefore require wider buffer areas. However, such evaluations should be made on a case-by-case basis, depending upon the resources involved, and the type and density of development on adjacent lands.

Discussion: 25-foot buffers are the maximum practical buffers available on this built-out site. No erosion or other environmental impacts were observed onsite as a result of the residential or retail (burger bar) uses. As mentioned under the parameter #1 and #2 discussions above, it is reasonable to conclude that the bird species frequenting this site are adapted to the existing development.

Any future entitlements (changes to the site), such as demolition and reconstruction of the buildings on parcel 2 to build a house with a second unit, will be required to be constructed outside the PZE, to use appropriate BMPs and to be in compliance with the Coastal Act.

Finally, the easement description, parcel maps and deeds should delineate the ESHAs and describe prohibitions within the ESHAs as well as within their associated buffers. Prohibitions in the ESHAs would include activities such as erecting new structures, disposal of green waste or lighting fires.

Conclusion

The Simoni-Lavagnino Subdivision is a simple splitting of one lot into three. With no construction planned, there will be no adverse impact on Jolly Giant Creek or the associated ESHA. The Wetland & Creek Protection Zone Easement, as set forth in this request, including the 25-foot buffer extending outward from the stream corridor vegetation, will solidify the maximum amount of environmental protection available under the existing developed conditions at the proposed

subdivision site, while allowing the continued residential and retail uses in their respective locations.

Referenes

Arcata, City of. 2000. General plan 2020.

California Coastal Commission. 1981. Statewide interpretive guidelines for wetlands and other wet environmentally sensitive habitat areas.

Humboldt Baykeeper. 2012. First flush 2012: Jolly Giant Creek. Available at: http://humboldtbaykeeper.org/programs/water-quality/713-first-flush-2012-jolly-giant-creek.html

Virginia Water Resources Research Center. 2007. Urban stream daylighting case study evaluations. Available at: http://vwrrc.vt.edu/pdfs/specialreports/sr352007.pdf


5th Street
PARCEL TWO
25' Buffer Area
Jolly Giant Creek Riparian Corridor
PARCEL ONE
H Street
I Street
PARCEL THREE
© 2013 Google
Samoa Blvd
Imagery Date 8/23/2012
1989
40°51'56.25" N 124°05'19.17" W elev
Simoni-Lavagnino Subdivision
Attachment 1: Aerial Photo
APN: 02118402
491 H Street, 885 5th Street & 460 I Steet
Arcata, CA, 95521
N
Scale = Approx 1"=40'
Date: 3/7/2013
Source: GoogleMaps
Drawn By: Brian Issa
Streamline
Planning Consultants
1062 G St. Suite I Arcata CA 95521 707 822-5785

Photo 1: **View Looking Southwest across Proposed Parcel One from Southwest Corner of H and Fifth St**

EXHIBIT NO. **7**

APPLICATION NO.

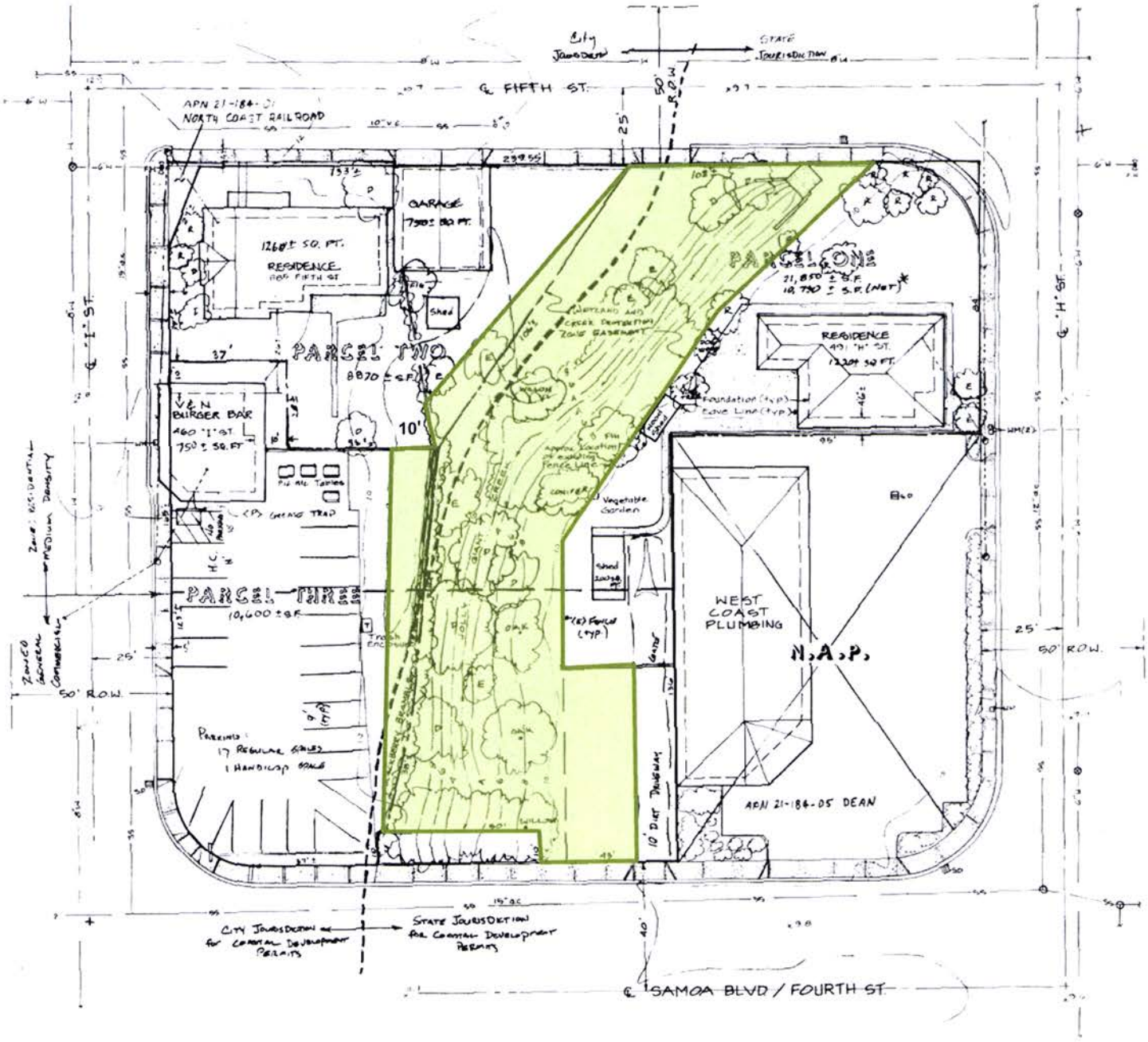
1-13-0616 – LAVAGNINO & SIMONI

SITE PHOTOS (1 of 4)

Photo 2: **View Looking South across Proposed Parcel Two from Mid-Block of Fifth Street between H an**

Photo 3: **View Looking Northeast across Proposed Parcel Three from Northeast Corner of Fourth and I**

Photo 4: **View Looking North along Jolly Giant Creek from Mid-Block of Fourth Street between H and I**



Open Space Deed Restricted Area

EXHIBIT NO. 8

APPLICATION NO.

1-13-0616 – LAVAGNINO & SIMONI

OPEN SPACE DEED RESTRICTED AREA

Copy

LINDBERG GEOLOGIC CONSULTING
David N. Lindberg, Certified Engineering Geologist

ENGINEERING-GEOLOGIC SOILS REPORT

Proposed Subdivision of APN 021-184-002

885 Fifth Street, 491 H Street, and 480 I Street,
Arcata, California

Prepared for:

Mr. Angelo Lavagnino
And
Ms. Irene Simoni

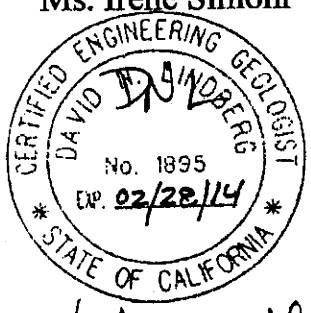


EXHIBIT NO. 9
APPLICATION NO.
1-13-0616 - LAVAGNINO & SIMONI
ENGINEERING-GEOLOGIC SOILS REPORT (1 of 23)

David N. Lindberg, CEG 1895, Exp. 02/28/14

August 14, 2012
LGC Project No. 0044.00

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ENGINEERING GEOLOGIC SOILS REPORT

Proposed Subdivision of APN 021-184-002
885 Fifth Street, 491 H Street, and 480 I Street,
Arcata, California

1.0 INTRODUCTION

1.1 Site and Project Description

This report presents the results of soils exploration conducted on the property located in Arcata, California (Figure 1). The parcel assigned by the assessor is APN 021-184-002 (Figure 2). Pertinent project site location information is listed in Table 1 below.

TABLE 1 - PROJECT LOCATION INFORMATION

Latitude and Longitude*	40.8656° N and 124.0885° W
Legal Description	NE ¼ of Section 32 Township 6 N, Range 1 E; HB&M.
Parcel Size	0.9413 acre
USGS Quadrangle	Arcata South 7.5-minute topographic quadrangle.

* Centroid of parcel per Humboldt County Web GIS

Lindberg Geologic Consulting (LGC) was retained by the property owners who are proposing to subdivide the site, presently one parcel, into three new parcels. Each new lot will include one of the existing major site developments. At 491 H Street (Proposed Parcel One) there is an existing single story, single family residence. At 885 Fifth Street (Proposed Parcel Two) there is an existing two-story single family residence. At 460 I Street (Parcel Three) is the existing V & N Burger Bar Restaurant, apparently a wood framed single story structure, with parking. Parking will continue be provided as at present. Local utilities (water, sewer, power, etc.) are available through the City of Arcata, PG&E and other local service providers. Ingress and egress to the new parcels will be from existing city streets, Fifth Street, H Street and I Street. To our knowledge, at present, there are no new developments proposed for the parcel(s).

Included in this report are assessments of the potential geologic hazards associated with the site, and recommendations to help mitigate some of the potential effects of such hazards. Also provided in this report are recommendations for design professionals (architects and engineers), to utilize for planning and design of future site developments.

1.2 Scope of Work

The Scope of Services for this investigation included identifying potential geologic hazards that could affect the proposed development, characterizing the subgrade soils, developing recommendations, and preparation of this Report. The following information, recommendations, and design criteria are presented in this report:

- Description of site terrain and local geology.
- An interpretation of subsurface soil and groundwater conditions based on our exploration.
- Logs of soil profile characteristics observed within test boring locations.
- Assessment of potential earthquake-related geologic and geotechnical hazards including surface fault rupture, liquefaction, differential settlement, and site slope instability.
- Discussion of potential geo-hazard mitigation measures, as appropriate.
- Seismic design parameters per the applicable sections of the 2010 California Building Code (CBC), including Seismic Design Category, Site Class, and Spectral Response Accelerations.
- Discussion of appropriate foundation design options.
- Recommendations regarding foundation elements, including:
    - Allowable bearing pressures (dead, live, and seismic loads)
    - Evaluation of potential foundation settlement
    - Minimum foundation embedment
- Recommendations for earthwork; site and subgrade preparation; fill material; fill placement and compaction requirements; and criteria for temporary excavation support.
- Recommendations for construction materials testing and inspection, as appropriate.

An environmental site assessment for the presence or absence of any hazardous materials was specifically excluded from our scope of work. Although we have explored subsurface conditions, we have not conducted any analytical laboratory testing for the presence of hazardous material of samples obtained.

1.3 Limitations

This report has been prepared for the exclusive use of Mr. Angelo Lavagnino and Ms. Irene Simoni, their consultants and subcontractors, and appropriate public authorities for specific application to this proposed project. LGC has endeavored to comply with generally accepted engineering geologic practice common to the local area at the time this report was prepared. LGC makes no other warranty, express, or implied.

The analyses and recommendations contained in this report are based on data obtained from subsurface exploration. Our methods indicate subsurface conditions only at specific locations where samples were obtained, only at the time they were obtained, and only to the depths penetrated. Samples cannot always be relied on to accurately reflect stratigraphic variations that commonly exist between sampling locations, nor do they necessarily represent conditions at any other time. Results of any laboratory analysis of samples obtained during this project (if any) are attached and will be retained on-file in our office.

The recommendations included in this report are based, in part, on assumptions about subsurface conditions that may only be verified during earthwork for any construction which may be proposed in the future. Accordingly, the validity of these recommendations is contingent upon

LGC being retained to provide a complete professional service. LGC cannot assume responsibility or liability for the adequacy of the recommendations when they are applied in the field unless LGC is retained to observe construction. We will be glad to discuss a schedule of such observations required to provide assurance of the validity of our recommendations.

Do not apply any of this report's conclusions or recommendations until the nature, design, or location of any proposed new developments are known. When new developments are contemplated, LGC should be consulted to review their impact on the applicability of the recommendations in this report. LGC is not responsible for any claims, damages, or liability associated with any third party's interpretation of the subsurface data, or reuse of this report for future projects or at other locations without our express written authorization.

2.0 FIELD EXPLORATION

2.1 Field Exploration Program

A Certified Engineering Geologist from our office visited the project site on August 2, 2012. The field investigation was performed to assess the *in-situ* soil and groundwater conditions, and to estimate the engineering characteristics of the subsurface materials at the project site. Our exploration included two hand auger borings in the north and south central parts of APN 012-184-002. The hand auger borings were placed in areas not presently obscured by pavement or buildings, to provide insight into subsurface conditions on this parcel. Soils observed in the test boring were field-logged and classified in general accordance with ASTM D-2488 visual-manual procedures. The hand auger boring locations are depicted on the site plan included as Figure 3, and soil profile logs are attached as Figures 6 and 7.

2.2 Laboratory Testing

Due to the uniform nature of the subsurface soils; soft to stiff fine grained materials consisting primarily of clay and silty to sandy clay, no laboratory analysis was performed for this project. LGC will archive the soil samples collected for this project for 30 days following the issuance of this report. Unless directed otherwise by our client, all samples may be discarded after the 30 day archive period.

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Topography and Site Conditions

The existing subject parcel is approximately 0.9 gently-sloping acres and is situated in a residential and commercial area on the south side of Arcata at an elevation of approximately 10 feet above mean sea level, according to the USGS Arcata South topographic map. A small water course bisects the parcel on a north south axis. The majority of the parcel is flat, generally with few slopes with gradients greater than 10 percent outside of the creek banks.

3.2 Geologic Setting

This parcel is located within California's northern Coast Ranges Geomorphic Province, a

seismically active region in which large earthquakes are expected to occur during the economic life span (50 years) of any developments on the subject property. As mapped by McLaughlin *et al.*, (2000), the site is underlain by Quaternary alluvial deposits (Figure 4). The near-surface soils are composed of silt and clay. Soils, based on our hand auger borings, are interpreted to be generally flat-lying and uniform across most the subject parcel. Within areas that appear to approximate the ground surface prior to development, the soil profile consists of more than 6.0 feet of soft to stiff silt and silty clay. Our hand auger borings extended to 6.0 feet below ground surface (bgs), at which point the soils became saturated.

3.3 Seismicity

This project site is located within a seismically active region in which large earthquakes from a variety of sources have the potential to occur during the economic life span (50-years) of a typical structure. North of Cape Mendocino and the Mendocino triple junction, the regional tectonic framework is controlled by the Cascadia subduction zone (CSZ), wherein the Gorda and Juan de Fuca oceanic plates are being actively subducted beneath the North American continental plate.

The surface trace of the Fickle Hill fault (FHF) is located north of the subject parcel, and is the closest recognized active fault (CDMG, 2000). The FHF is part of the Mad River fault zone, and is mapped as a northwest-striking, northeast-dipping, low-angle thrust fault that is mapped crossing the area less than 1/2 mile north of the subject parcel. The upper-bound earthquake considered likely to occur on the Fickle Hill fault has an estimated maximum moment magnitude (M_W) of 6.9 (CDMG, 1996).

The Cascadia subduction zone marks the boundary between the North American plate and the subducting Gorda and Juan De Fuca plates. Recent and ongoing research into the seismicity of the Pacific Northwest has shown that the CSZ is capable of generating great earthquakes which would affect this parcel. The CSZ, which extends from offshore of Cape Mendocino in Humboldt County, California, to Victoria Island in British Columbia, is considered capable of generating an upper-bound earthquake with a M_w of 8.3 on its southern Gorda segment. Based on Japanese tsunami records, the CSZ has been interpreted to have ruptured over its entire length in the year 1700 A.D. in a 9.0 M_w earthquake event (Satake, *et. al.*, 2003).

Based on the record of historical earthquakes (~150 years), faults within the plate boundary zone and internally-deforming Gorda Plate have produced numerous small-magnitude and several moderate to large (i.e. M>6) earthquakes affecting the project area. Several active regional seismic sources, in addition to the FHF and CSZ, are proximal to the project site and have the potential to produce relatively strong ground motions. These seismic sources include the following:

- The Mad River fault zone and other similar low-angle reverse or thrust faults (Blue Lake fault, Trinidad fault, and others) associated with the subduction of the oceanic plates and the accretion of marine sediments onto the leading edge of the North American plate.
- The Mendocino fault, an offshore, high-angle (near vertical), east-west trending, right-lateral strike-slip fault that forms the boundary between the Gorda to the north and the and Pacific plate to the south.
- Faults within the internally-deforming Gorda plate consisting of high-angle, northeast-trending, left-lateral, strike-slip faults.

3.4 Subsurface Conditions

On the day of our field investigation, two hand auger borings were drilled to maximum depths of 6.0 feet below ground surface (bgs) to explore soil and groundwater conditions. The soil profile as exposed in the test borings was described in general accordance with ASTM D 2488 standards. A detailed description of the subsurface stratigraphy encountered within our test boring is provided in the attached boring logs (Figure 6 and 7).

Stratigraphy within the upper 6.0 feet of the soil profile consists of a uniform profile of silty and sandy, soft to stiff, gray clay with occasional fine to coarse gravel. Our hand auger borings exposed an intact soil profile without notable modification of the original ground surface due to past grading or filling. The sod and topsoil in the vicinity of the hand auger borings was approximately 0.5 foot thick.

The native soil profile consists of soft to stiff clay (CL) with variable proportions of sand and silt. In general, the following conditions were encountered in our hand borings:

- In general, the site soils are composed of silty and sandy clay.
- The native topsoil consists of loose, low plasticity, granular soil composed primarily of loose sandy silt (ML/CL).

3.5 Groundwater Conditions

Groundwater was encountered at a depth of 5.5 feet bgs in hand boring HB-1 and more than 6.0 feet bgs in HB-2 during our field investigation. Secondary porosity was observed to be well-developed in the soil above the water table. Some soil mottling, indicative of transient high groundwater conditions, was also observed above the water table. Groundwater levels may fluctuate with seasonal or long-term climatic variations and changes in land use. However, due to the subject parcel being underlain by soil materials with well-developed secondary porosity, groundwater is not expected to be encountered at foundation depths during dry-season (May through September) earthwork to depths up to approximately 5 feet below the ground surface (bgs). Earthwork during the wet season (October through May) could be adversely affected by saturated soils at typical foundation depths. Groundwater conditions are not anticipated to negatively affect foundation construction during the dry season.

4.0 GEOLOGIC HAZARDS

The focus of our geologic hazard assessment for this project site primarily included seismic ground shaking due to near and far seismic sources, potential for liquefaction of the shallow saturated soils, tsunami, and differential settlement due to undocumented fill soils. Our assessment of these and other common potential geologic hazards is presented below.

4.1 Seismic Ground Shaking and Surface Fault Rupture

As noted in Section 3.3, the project site is situated within a seismically active area proximal to several seismic sources capable of generating moderate to strong ground motions. Given the proximity of the Fickle Hill fault and other significant active faults (the Little Salmon fault to the southwest, the Mad River fault zone to the north, and the Cascadia subduction zone offshore to the west), as well as other active faults within and offshore of northern California, the project site will experience strong ground shaking during the economic life span of the proposed development.

The Fickle Hill fault is located less than 0.5 miles northeast of the subject parcel (Figure 4), and is the closest recognized active fault (CDMG, 1998 and 2000). The subject parcel, however, is not located within an Alquist-Priolo earthquake fault zone, in which the State requires special studies for structures for human occupancy. Due to the distance from the project site to the nearest recognized active fault, and based on the information available, the potential for ground surface fault rupture to occur at the project site is considered low.

4.2 Liquefaction

Liquefaction is the loss of soil strength, resulting in fluid mobility through the soil. Liquefaction typically occurs when loose, uniformly-sized, saturated sands or silts that are subjected to repeated shaking in areas where the groundwater is less than 50 feet bgs. In addition to the necessary soil and groundwater conditions, the ground acceleration must be high enough, and the duration of the shaking must be sufficient, for liquefaction to occur. Given strong ground shaking, these conditions appear to have been met at this site.

Based on the planning scenario (CDMG, 1995), the site is located in an area of high liquefaction potential. Within our hand auger borings we encountered soft to stiff silty clay soils at and below foundation load bearing depths. Groundwater was encountered approximately 5.5 feet below the ground surface in our hand auger borings. If loose saturated sands occur in the shallow subsurface deeper than our hand auger borings, and based on the geologically-youthful age and density of the native soils at the site, the potential for liquefaction-related settlement is significant at this site. Earthquake related liquefaction could result in sand boils and minor differential settlement on this site. Lateral spreading due to liquefaction is not anticipated to effect the site given there are no free faces of significance.

4.3 Settlement

Significant undocumented, non-engineered fill soils do not appear to be present. If encountered, undocumented, non-engineered fill soils should be considered unsuitable as foundation load bearing soils due to the potential for excessive total and differential settlement. An apparent lack of fill soils on the site suggests that all present-day foundation elements are founded on shallow, in-place and undisturbed native soils; any future construction planned should confirm the depth to suitably-dense material early in the planning stages.

Earthquake-related liquefaction settlement on the site may be mitigated through foundation design. For a foundation system designed in accordance with our recommendations, and the standard of care for civil engineering, we estimate that total and differential settlement can be limited through design and construction.

4.4 Landsliding

The subject property is located on a generally flat-lying surface ground surface at an elevation of approximately 10 feet above mean sea level. There are no significant slopes in the vicinity of the project, therefore slope instability or landsliding is not anticipated to have any impact on the proposed project.

4.5 Flooding

The subject parcel is located adjacent to a small watercourse that drains south toward Arcata Bay. The property is shown on the FEMA Flood Insurance Rate Map (FIRM Panel 0004) as within Flood Zone B, outside of the 100 year flood zone. The hazard of flooding of the existing parcel, and the new parcels being created by this subdivision is low.

4.6 Tsunami

As mapped by the State and County, this site is just outside of the Tsunami Hazard zone (Figure 5). Based on the published mapping, the hazard of tsunami inundation is low.

4.7 Soil Swelling or Shrinkage Potential

Subsurface soils at foundation load bearing depths consist predominantly of low-plasticity silt and clay. Soils were damp to moist by approximately 1 foot below existing grade. Soils are permeable and well-drained. Despite the clay, these soils do not appear to be subject to shrink - swell associated with cyclic seasonal wetting and desiccation because the soils do not appear to desiccate to a depth sufficient to affect a typical foundation system built according to current building codes. The hazard to any future structures associated with potential swelling or shrinkage of the soils beneath a spread footing foundation is therefore low.

5.0 CONCLUSIONS AND DISCUSSION

Based on the results of our exploration, it is our opinion that the project site may be suitable for its intended use as described in Section 1.1 of this report. The subject parcel is only being

subdivided at present. There are no plans for any new construction that this office has been made aware of. The proposed subdivision will create three new parcels which if the existing developments are removed, will be suitable for construction of lightly-loaded, one or two story wood framed structures supported on a foundation system that consists of a reinforced, monolithic slab on grade with continuous concrete perimeter footing, and interior spread footings and pads. Due to the soft soils in the shallow subsurface, a stiffened or mat slab foundation is recommended for any new construction, and should be designed by an engineer familiar with such. At such time as new construction may be considered on the parcels created by this subdivision, this office should be notified to review the proposed plans and update this report as necessary and appropriate.

6.0 RECOMMENDATIONS

6.1 Setback Recommendations

From an engineering geologic viewpoint, there are no setback recommendations to mitigate the potential geologic hazards. The existing and proposed parcels are situated on essentially flat ground, apart from the banks of the small stream which flows through the parcel. Other developed parcels and streets surround the subject parcel. There are no descending slopes, again apart from the stream banks. There are no ascending slopes near this parcel although the ground does climb gently to the north and northeast. The proposed project consists of subdivision only; therefore, we have no slope or other setback recommendations.

6.2 Site Preparation

If at some future date, new construction is proposed on any of the parcels created by this subdivision, then to the extent feasible, all earthwork, including, but not limited to, site clearing, grubbing, and stripping should be conducted during dry weather conditions. Any undocumented fill soils, all sod, vegetation and topsoil, and any other debris encountered at or below the existing ground surface should be removed from within the building footprint, and from an area 5 feet beyond the building perimeter. To the extent permitted by existing developments, also remove undocumented fill soils, topsoil and debris from an area extending 5 feet beyond the perimeter of the proposed building footprint. Topsoil should be stockpiled on-site for later use as landscaping material or other nonstructural fill. If wet-weather construction is to occur, approved erosion and sediment controls should be emplaced, and care should be taken to avoid rutting and mixing of disturbed soils or topsoil with the underlying native bearing soils.

6.3 Subgrade Preparation

If at some future date, new construction is proposed on any of the parcels created by this subdivision, then areas to receive fill should be graded to provide a smooth flat bearing surface, stripped of all topsoil, scarified to a depth of 8 inches, moisture conditioned and compacted to firm and unyielding surface. If the subgrade soil is soft or disturbed, or if it proves difficult to compact, it should be excavated to expose more-competent native soils. The resulting subgrade

should be scarified and conditioned as recommended above. The excavated material should be replaced with compacted engineering fill as necessary.

6.4 Temporary Excavations

While no earthwork is contemplated at the present time, whenever excavation does occur, all temporary construction slopes should be designed and excavated in strict compliance with applicable local, state, and federal safety regulations including the current OSHA Excavation and Trench Safety Standards.

Construction equipment, building materials, excavated soil, vehicular traffic, and other similar loads should not be allowed near the top of any unshored or unbraced excavation. Where the stability of adjoining buildings, walls, pavements, or other similar improvements is, or may be endangered by excavation operations, support systems such as shoring, bracing, or underpinning, may be required to provide structural stability and to protect personnel working in the excavation.

Since excavation operations are dependent on construction methods and scheduling, the contractor should be solely responsible for the design, installation, maintenance, and performance of all shoring, bracing, underpinning, and other similar systems. LGC assumes no responsibility for temporary excavations, the safety thereof, or the design, installation, maintenance, and performance of any shoring, bracing, underpinning, or other similar systems.

6.5 Cut and Fill Slopes

No cut or fill slopes are anticipated for this site. Structural fill on sloping ground (if any) should be placed on a suitably prepared "benched" subgrade surface with a slope of no greater than 4H:1V and should be compacted mechanically to reduce the potential for excessive settlement.

6.6 Fill Materials

Aggregate Base

If in the future new construction should be proposed, then aggregate base material may be used for pavement subgrade, placed beneath footings or floor slabs, or used as trench backfill. This material should meet the requirements in the Caltrans Standard Specifications for Class 2 Aggregate Base (3/4-inch maximum particle size).

Select Fill

In the case of new construction requiring select fill, that should consist of granular material that may be used as non-expansive fill beneath floor slabs and for the upper portion of pavement subgrade. Select fill should be a soil/rock mixture free of organic material and other deleterious material; some on-site native soils may be suitable for use as select fill. Select fill material should contain low plasticity clay, well-graded sand, and/or gravel. The material should contain

no rocks larger than 3 inches in greatest dimension, nor more than 15 percent larger than 2-inches. Additionally, the material should meet the following specifications:

Plasticity index (PI):	<12
Liquid Limit (LL):	<30
Percent passing No. 200 sieve:	50 maximum, 5 minimum

6.7 Compaction Standard

If compacted fill is required for some future project, then the structural fill and backfill material shall be compacted in accordance with the specifications listed in Table 3 below. Material should be placed in horizontal lifts that do not exceed 8-inches in uncompacted thickness. A qualified field technician should be present to observe fill placement and to perform field density tests at random locations throughout each lift to verify that the specified compaction is being achieved by the contractor.

Where trenches closely parallel a footing and the trench bottom is within a two horizontal to one vertical plane, projected outward and downward from any structural element, concrete slurry should be utilized to backfill that portion of the trench below this plane. The use of slurry backfill is not required where a narrow trench crosses a footing at or near a right angle.

TABLE 3 – STRUCTURAL FILL PLACEMENT SPECIFICATIONS

Fill Placement Location	Compaction Recommendation (ASTM D 1557-Modified Proctor)	Moisture Content (Percent of Optimum)
Granular cushion beneath Floor Slab	90%	-1 to +3 percent
Structural fill supporting Footings	90%	-1 to +3 percent
Structural fill placed within 5-feet beyond the perimeter of the building pad	90%	-1 to +3 percent
Roadway fill placed within 2.5-feet of the base of the Pavement	95%	-1 to +3 percent
Structural fill placed below the base of the Pavement Subgrade	90%	-1 to +3 percent
Utility trenches within building and pavement areas	95%	-1 to +3 percent
Utility trenches beneath Landscape Areas	90%	-1 to +3 percent

6.8 Seismic Design Parameters

Based on the 2010 CBC, the project site is classified as a Site Class D consisting of "a stiff soil profile" (Section 1613.5.2, CBC, 2010). The following parameters listed in Table 4 below are based on this classification and were determined in accordance with the ASCE 7 Standard, Minimum Design Loads for Buildings and Other Structures (USGS, 2012).

TABLE 4: SPECTRAL RESPONSE ACCELERATIONS

Site Location - Latitude: 40.8656° N Longitude: -124.0885° W	
Occupancy Category – II	
Seismic Design Category – E	
Site Class – D	
S_s	**2.418**
S_1	**0.839**
Spectral Response Accelerations (F_a=1.0, F_v=1.5):	
S_{MS}	**2.418**
S_{M1}	**1.258**
S_{DS}	**1.612**
S_{D1}	**0.839**

6.9 Foundation Design

No new construction is planned therefore, specific foundation plan was provided to us. The following foundation recommendations assume that at some future date, a two-story residential structure may be constructed on this site. In our opinion, the proposed structure can be supported by a mat slab or a stiffened slab on grade with continuous concrete perimeter footing in combination with isolated interior spread footings. A foundation of this type is suitable for site conditions provided that it is constructed in accordance with our recommendations and specifications, and designed to meet the standards of the current edition CBC at the time a permit is applied for.

Footings

- Foundations are not anticipated to be located in areas of undocumented fill soils, however there is a possibility that unobserved, undocumented fills could exist on the site. A foundation system for this site should be rigid to limit potential structural damage due to differential settlement resulting from liquefaction.
- If necessary to mitigate undocumented fill soils excavate and replace with suitable engineered fill, placed and compacted as recommended. Alternately, footings may be built on controlled low strength material (CLSM, e.g. concrete slurry) backfilled footing trenches, excavated into the bearing soil indicated in this report.

- Foundations should be embedded a minimum of 12 inches into suitably dense, undisturbed native bearing soils. Based on the soil profile observed in the building footprint, the base of footings should therefore be approximately 18 inches below existing grade, at minimum.
- Minimum width of footings should be 15 inches, and the minimum thickness should be 6 inches, per CBC Section 1809.

Floor Slab Design

- The stiffened concrete floor slab-on-grade or mat slab should have a minimum thickness as specified by the engineer, and should be reinforced. Floor slabs should be underlain by at least 7 inches of compacted select fill consisting of 6 inches of Class 1, Type A permeable material (per Caltrans), or an approved equivalent, to act as a capillary moisture break, and 1 inch of sand as described below.
- To reduce the possibility of moisture migration through any floor slab-on-grade, a minimum 6 mil plastic membrane (vapor retarder) should be placed on the prepared of Class 1, Type A gravel subgrade.
- Joints between the sheets and utility piping openings should be lapped and taped.
- Care should be taken during construction to protect the plastic membrane against punctures. To protect the membrane during steel and concrete placement, and to provide for a better concrete finish, cover the membrane within at least 1 inch of clean sand.
- The difference, if any, between the 8 inches of select fill and sand under the slab and the depth to firm undisturbed native soil may be made up with additional select fill or engineered fill that is placed as specified in the Structural Fill section of this report.

Allowable Soil Bearing Pressures

- For design of foundation elements embedded into suitably-dense undisturbed firm granular soils encountered at recommended footing depths, we recommend an allowable bearing pressure of 1,500 pounds per square foot for dead load plus long-term live load, in accordance with Table 1806.2 (CBC, 2010). Lateral bearing pressure is 100 pounds per square foot per foot below native grade and the coefficient of friction for lateral sliding resistance is 130 pounds per square foot.
- The allowable bearing pressure may be increased by one-third when using alternate load combinations in Section 1605.3.2 (CBC, 2010) that include wind or earthquake loads. At minimum, all footings should be designed and sized to be not less than 18 inches wide and 8 inches thick per Section 1809.7 (CBC, 2010).

6.10 Grading, Drainage and Erosion Control

For any future construction, this site should be graded to provide positive drainage away from the structure's foundation elements. No water should be allowed to pond anywhere on the site, nor to migrate beneath any structure.

- A minimum gradient of two percent away from foundations should be maintained for all hardscaped areas. At minimum, a five percent gradient should be maintained for landscaped areas within 10-feet of the structure. Where feasible, finish grading the site to promote sheet runoff rather then concentrated runoff.
- All roof storm drainage should be controlled with the installation of gutters and downspouts. Downspouts should be connected to tightlines to convey roof storm runoff away from the foundation to a suitable outlet point.
- Runoff from hardscaped areas, including sidewalks and parking areas, and other impermeable surfaces should be contained, controlled, and directed to suitable outlet points.

6.11 Pavement Design Recommendations

Future pavement subgrades should be proof-rolled with a minimum 10-ton vibratory steel drum roller or with an approved equivalent. As outlined in Table 3 above, compact the upper 8 inches of the native subgrade to a minimum of 95 percent of the maximum dry density (per ASTM D698-91). Moisture content should be controlled to -1 to +3 percent of optimum. The subgrade should be tested and approved for placement of the select fill.

Any pavement structural section should be designed to withstand the anticipated loads, and may in general consist of reinforced concrete (AC) placed over compacted Class 2 Aggregate Base (AB). Class 2 AB materials should be underlain by compacted native subgrade or engineered fill that is placed, compacted, and tested as recommended above.

7.0 ADDITIONAL SERVICES

7.1 Review of Grading, Foundation, and Drainage Plans

The conclusions and recommendations provided in this report are based on the assumption that soil conditions encountered during grading and/or foundation construction will be essentially as exposed during our site exploration, and that the general nature of the grading and use of the property will be as described above. At the election of the owner, the author of this report can provide inspection services to assure conformance with the specific recommendations contained within this report including:

- Review of the foundation drawings, prior to them being issued for construction.
- Observation of the site following demolition and clearing.
- Observation of foundation excavations prior to placement of fill, forms or reinforcing steel.

8.0 REFERENCES

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Satake, K., Wang, K., Atwater, B., 2003, Fault slip and seismic moment of the 1700 Cascadia earthquake inferred from Japanese tsunami descriptions. Journal of Geophysical Research, Vol. 108, No. B11, 2535.

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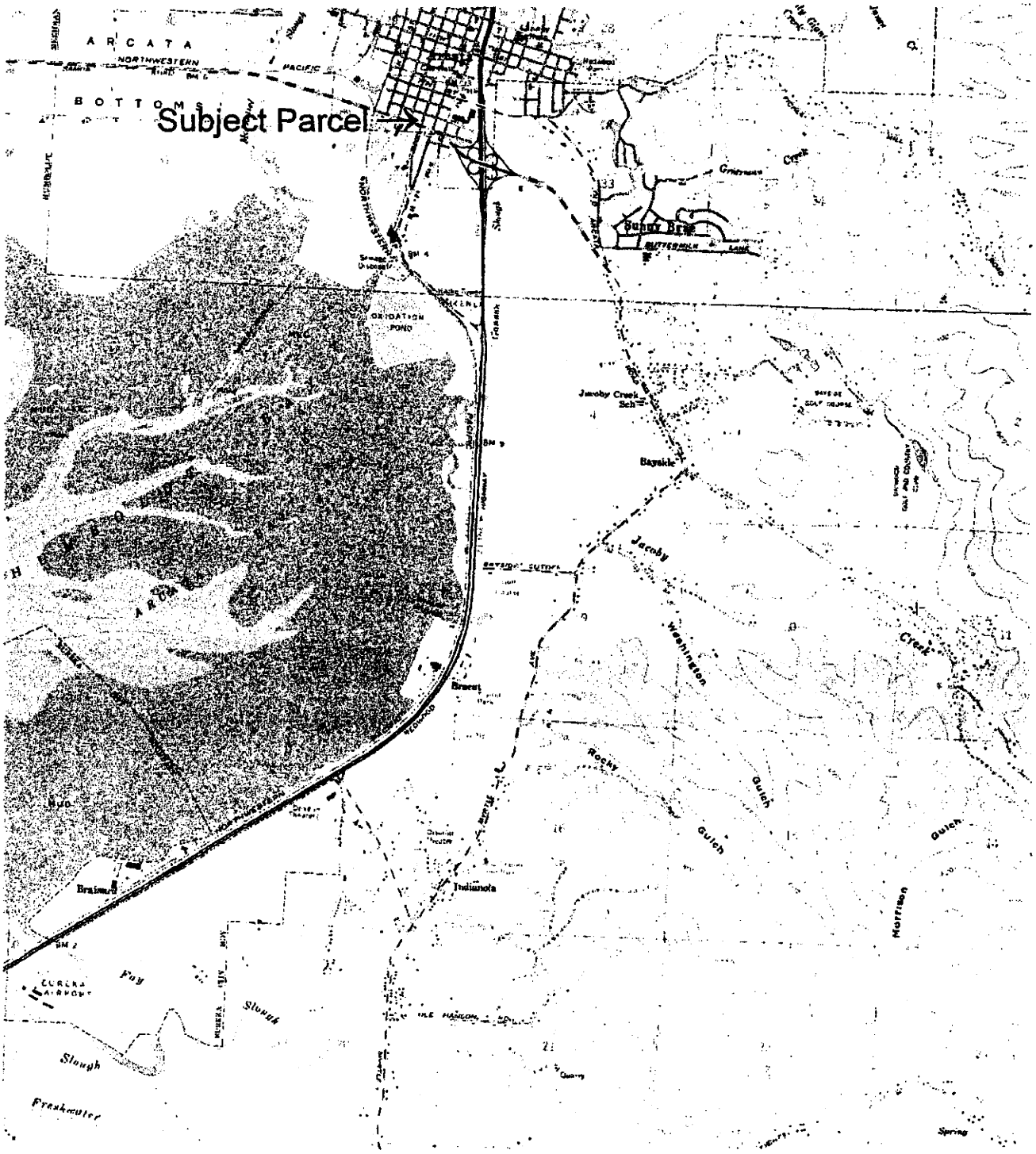
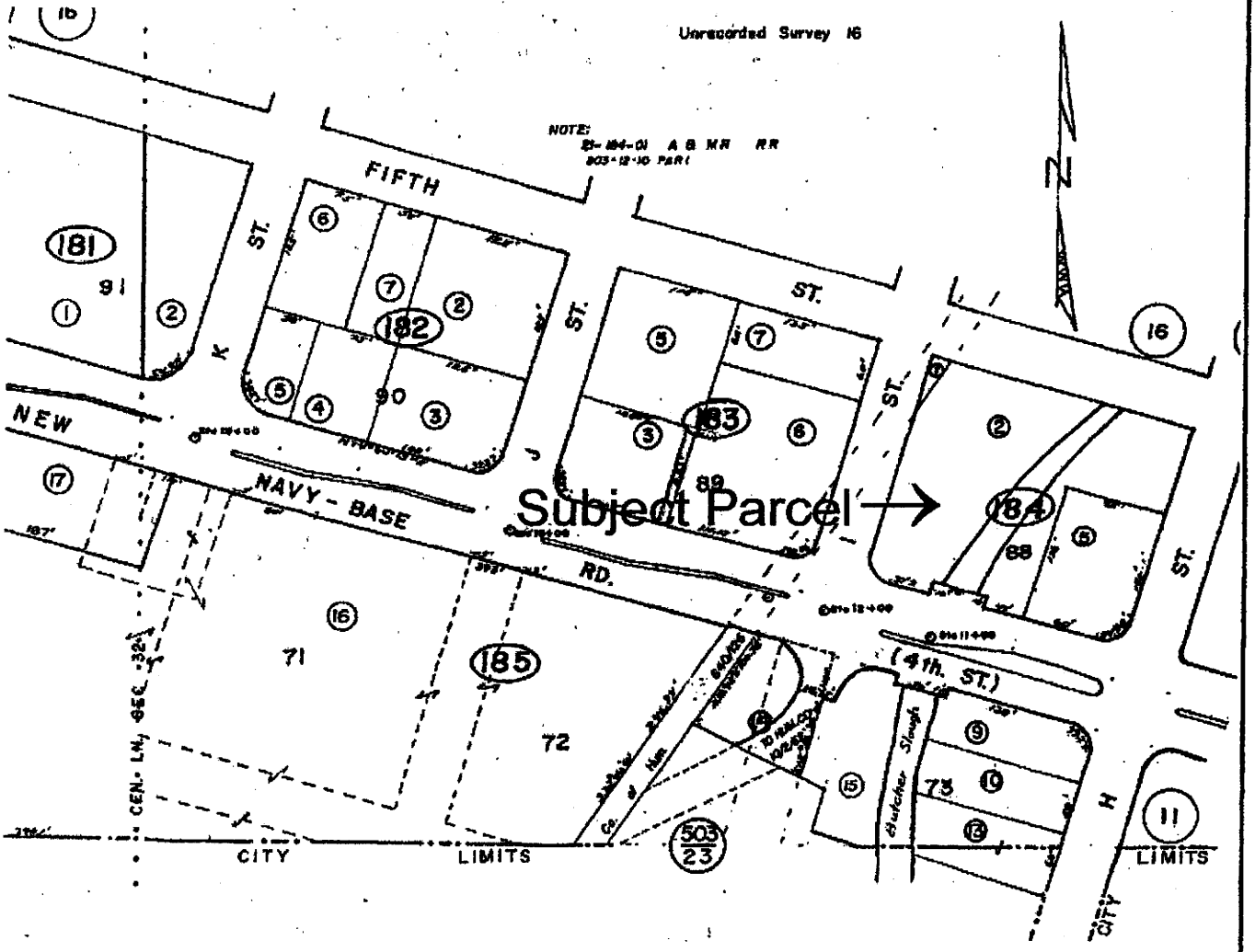
9.0 LIST OF FIGURES AND APPENDICES

Figure 1: Location Map
Figure 2: Assessor's Parcel Map
Figure 3: Aerial Site View Map
Figure 4: Geologic Map
Figure 5: Tsunami Inundation Map
Figure 6: Hand Auger Boring Log HB-1
Figure 7: Hand Auger Boring Log HB-2

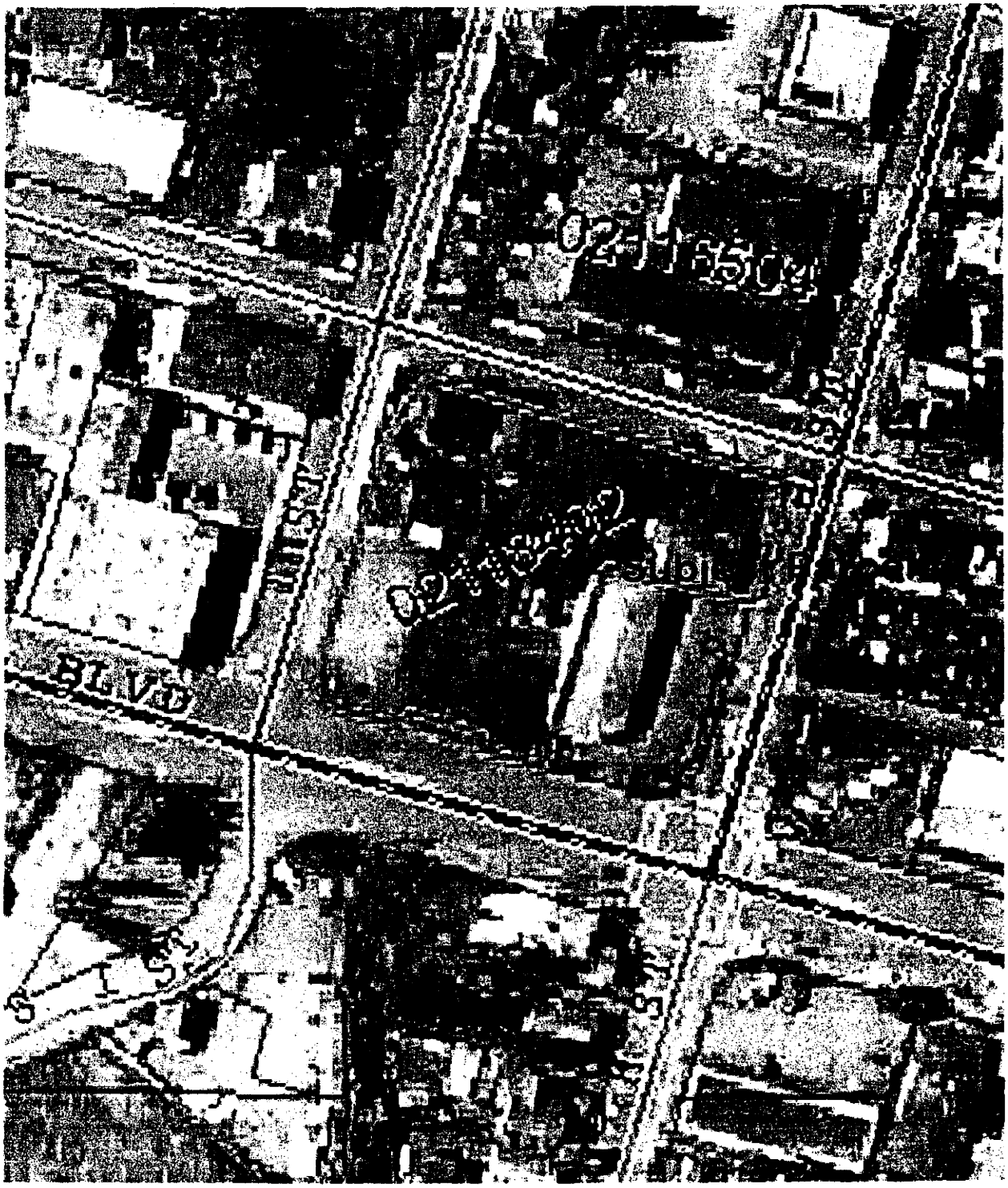
Lindberg Geologic Consulting	Engineering Geologic Soils Report	Fig. No. 1
P. O. Box 306	491 H Street, 885 Fifth Street and 460 I Street, Arcata, California	Date: July 30, 2012
Cutten, CA 95534	Angelo Lavagnino and Irene Simoni	Proj. 0044.00
(707) 442-6000	Location Map, 1" ≅ 3,500'	



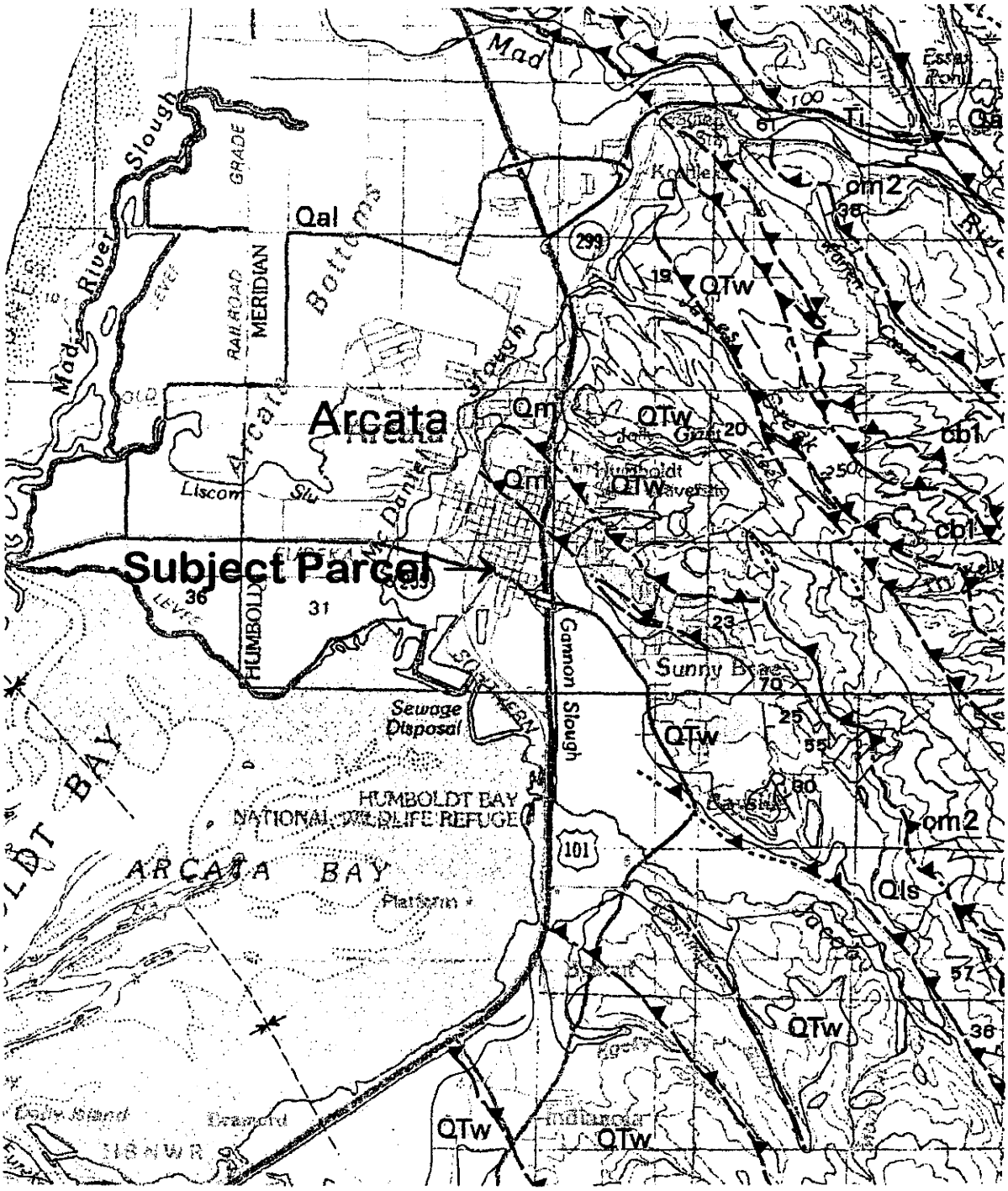
Lindberg Geologic Consulting	Engineering Geologic Soils Report	Fig. No. 2
P. O. Box 306	491 H Street, 885 Fifth Street and 460 I Street, Arcata, California	Date: July 30, 2012
Cutten, CA 95534	Angelo Lavagnino and Irene Simoni	Proj. 0044.00
(707) 442-6000	Assessor's Parcel Map, Not To Scale	



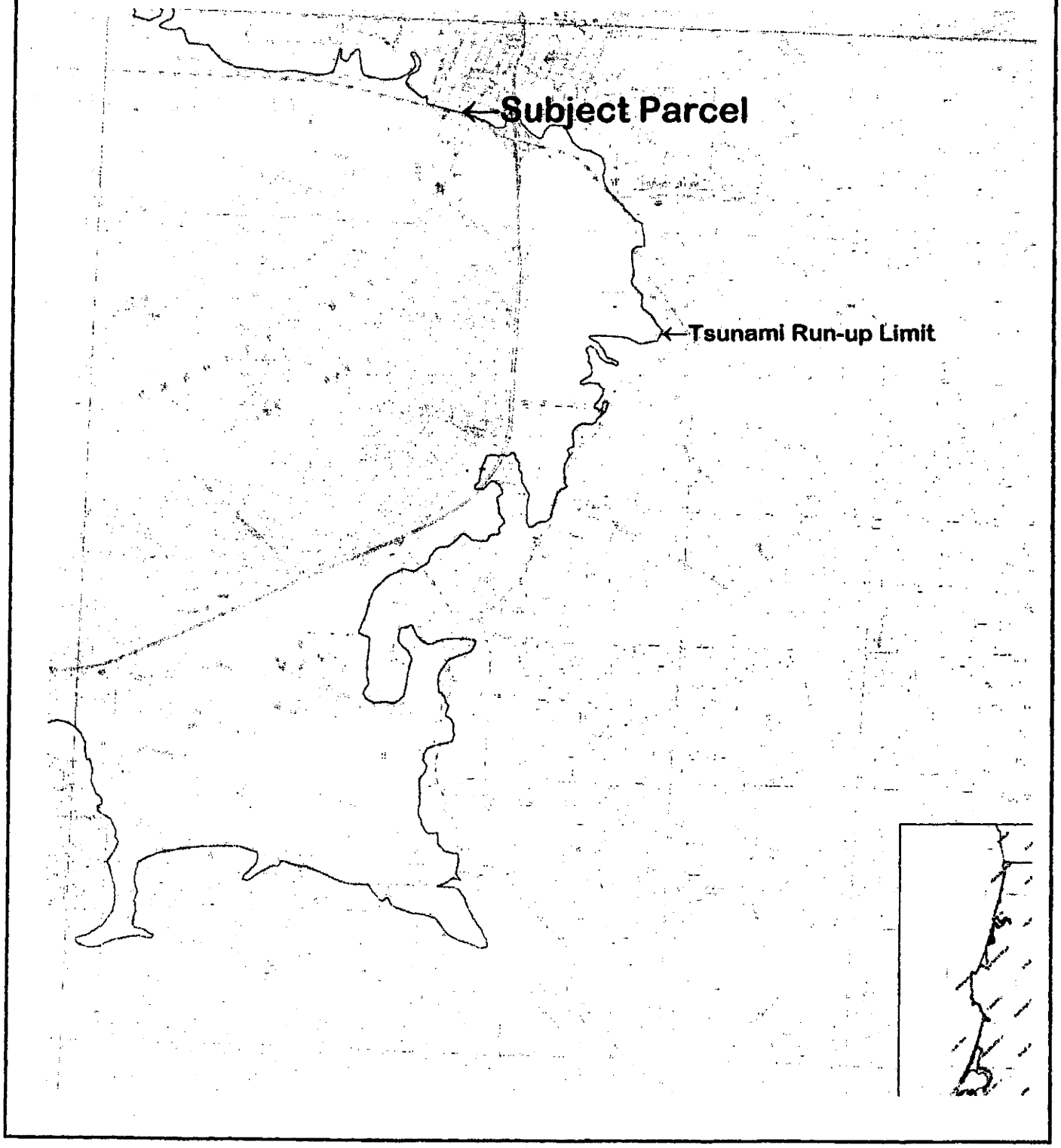
Lindberg Geologic Consulting	Engineering Geologic Soils Report	Fig. No. 3
P. O. Box 306	491 H Street, 885 Fifth Street and 460 I Street, Arcata, California	Date: July 30, 2012
Cutten, CA 95534	Angelo Lavagnino and Irene Simoni	Proj. 0044.00
(707) 442-6000	Aerial Site View, Not To Scale (from Humboldt Co. Web GIS)	



Lindberg Geologic Consulting	Engineering Geologic Soils Report	Fig. No. 4
P. O. Box 306	491 H Street, 885 Fifth Street and 460 I Street, Arcata, California	Date: July 30, 2012
Cutten, CA 95534	Angelo Lavagnino and Irene Simoni	Proj. 0044.00
(707) 442-6000	Geologic Map, 1" ≅ 1 mile, (from McLaughlin et at, 2000)	



Lindberg Geologic Consulting	Engineering Geologic Soils Report	Fig. No. 5
P. O. Box 306	491 H Street, 885 Fifth Street and 460 I Street, Arcata, California	Date: July 30, 2012
Cutten, CA 95534	Angelo Lavagnino and Irene Simoni	Proj. 0044.00
(707) 442-6000	Tsunami Inundation Map, 1" ≅ 4,400'	



LABORATORY				FIELD						SOIL DESCRIPTION
Dry Density (pcf)	Moisture Content (%)	Cohesion; Friction Angle (psf; degrees)	Other Tests	Blows/foot*	Sample	Depth (feet)	Graphic Lithology	U.S.C.S. Designation	
								ML	Turf and Sod. Topsoil. Sandy Silt, gray brown, loose, dry.
								ML	Sandy Silt, dark gray brown, loose, dry, organic-rich occasional fine gravel.
						1			
						2		ML	Sandy Silt, very dark brown, loose/soft, dry to damp, common fine roots.
						3			
								ML	Sandy Silt, gray mottled with brown, damp to moist, becomes firm, common fine roots.
						4		CL	Clay with Silt and Sand, dark yellowish brown withg light gray mottling, occasional fine roots and organic materials.
						5		CL	Lean Clay, gray, firm, moist to wet, silty with minor sand fraction.
						6			Boring backfilled with cuttings upon completion.
						7			

* The blow counts have been converted to standard N-value blow counts

SURFACE ELEVATION: 14 Feet

TOTAL DEPTH: 6 Feet

GROUNDWATER DEPTH: 5.5 Feet

LOGGED BY: David N. Lindberg

BOREHOLE DIAMETER: 3.5 Inches

EQUIPMENT: Hand Auger

HAMMER TYPE: N/A

LINDBERG GEOLOGIC CONSULTING

PROJECT NUMBER: 0044 DATE: August 2, 2012

LOG OF EXPLORATORY BORING/EXCAVATION

HB-1 Lavagnino Subdivision

Figure No. 6

LABORATORY				FIELD					
Dry Density (pcf)	Moisture Content (%)	Cohesion; Friction Angle (psf; degrees)	Other Tests	Blows/foot*	Sample	Depth (feet)	Graphic Lithology	U.S.C.S. Designation	SOIL DESCRIPTION
						1			
						2		ML	Sandy Silt, Brown, occasional gravel, loose to medium dense, dry to damp
						3			
						4			
						5		ML	Sandy silt, very dark brown, medium dense, damp to moist, grades to soft silty clay with sand.
						6		CL	Silty Clay with Sand, dark yellowish brown, mottled with light gray,
						7			Boring Backfilled with cuttings upon compeltion

* The blow counts have been converted to standard N-value blow counts

SURFACE ELEVATION: 13 Feet

TOTAL DEPTH: 6 Feet

GROUNDWATER DEPTH: >6 Feet

LOGGED BY: David N. Lindberg

BOREHOLE DIAMETER: 3.5 Inches

EQUIPMENT: Hand Auger

HAMMER TYPE: N/A

LINDBERG GEOLOGIC CONSULTING

PROJECT NUMBER: 0044 DATE: August 2, 2012

LOG OF EXPLORATORY BORING/EXCAVATION

HB-2 Lavagnino Subdivision

Figure No. **7**