Lang Minor Subdivision Map

Final Subdivision (PLN-2021-17184)

Initial Study/Mitigated Negative Declaration

April 2022

Prepared By:

County of Humboldt
Humboldt County Planning Department
3015 H Street
Eureka, CA 95501

Project Information

Project Title: Lang Minor Subdivision Map (PLN-2021-17184)

Lead Agency
Humboldt County Planning and Building Department – Planning Division
3015 H Street
Eureka, CA 95501
(707) 445-7541

Property Owners
Raven Lang
6243 Rohnerville Road
Hydesville, CA 95547

Project Applicant
Nikki Lang
3386 Church Street
Fortuna, CA 95540

Project Location
The project is located in Humboldt County, in the Hydesville area, on the east side of Rohnerville Road, approximately 0.88 miles from the intersection of State Highway 36 and Rohnerville Road, on the property known as 6243 Rohnerville Road. (APN: 204-131-016)

General Plan Designation
Residential Agriculture (RA) 5 – 20 acres

Zoning
Agriculture General Zone, Special Building Site Combining District (AG-B-5(5))

Project Description
The project requests a Minor Subdivision to divide an approximately 13.2-acre parcel into two parcels of approximately 7.5 acres and 5.7 acres. The parcel being divided is currently developed with two residences, a barn, sheds, and a greenhouse. All existing development will be located on Parcel 1 with Parcel 2 being vacant for future development. Access will be provided by a 20-foot non-exclusive access easement, portions of which include use of the existing driveway access of the site currently serving the existing residences. Pursuant to Section 325-9 of the Humboldt County Code, an exception to right of way width and improvements has been requested to reduce the private road width from 40 feet to 20 feet. The property currently receives water service from the Hydesville Community Water District and sewage disposal is handled by an existing on-site waste treatment system (OWTS). Septic testing has been completed for parcel 2. A Cal-Fire exception request may be needed. Additionally, a Lake or Streambed Alteration Agreement may be required for the installation of a culvert within a Class III watercourse.

Baseline Conditions: Surrounding Land Uses and Setting

The project is located in Humboldt County, in the Hydesville area, on the East side of Rohnerville Road, on the property known as 6243 Rohnerville Road. The project site encompasses 13.2 acres of Agriculture General zoned land with an uphill sloping grade to the east. The parcel being divided is currently developed with two residences, a barn, sheds and a greenhouse. Vegetation on the site consists of a mix of grasses, shrubs, and mature trees.

Surrounding land use and setting:
North: Agriculture General B-10: Single Family Residence
East: Agriculture General B-10: Single Family Residence
South: Agriculture General B-5 (5): Single Family Residence
West: Agriculture General B-6; Agriculture General B-5 (10): Single Family Residence.

Other Public Agencies Whose Approval Is or May Be Required (permits, financing approval, or participation agreement): Hydesville Community Services District, Humboldt County Public Works Department, Division of

Environmental Health, Building Division, Fortuna Fire District and CalFire.

Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1?

No. The project was initially referred to the Northwest Information Center and the Bear River Band, Blue Lake Rancheria and Wiyot Tribes. No Tribes requested consultation and only one referral comment was received. The Bear River Band commented that there were no known cultural resources at the project site and requested that the Inadvertent Archaeological Discovery Protocol" be provided as a condition of approval. AB52 consultation was offered to local tribes on July 21, 2022 and none of the tribes requested consultation on this project.

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to dicuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

Environmental Factors Potentially Affected: The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

❑ Aesthetics	❑ Agricultural and Forestry Resources	❑ Air Quality
❒ Biological Resources	❒ Cultural Resources	❑ Energy
❑ Geology/Soils	❑ Greenhouse Gas Emissions	❑ Hazards/Hazardous Materials
❑ Hydrology/Water Quality	❑ Land Use/Planning	❑ Mineral Resources
❑ Noise	❑ Population/Housing	❑ Public Services
❑ Recreation	❑ Transportation	❑ Tribal Cultural Resources
❑ Utilities/Service	❑ Wildfire	❑ Mandatory Findings of Significance

Determination: On the basis of this initial evaluation:

☑ I find that although the proposed project could have a significant effect on the environment there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **Mitigated Negative Declaration** will be prepared.

❑ I find that the proposed project **may** have a significant effect on the environment, and an **Environmental Impact Report** (EIR) is required.

❑ I find that the proposed project **may** have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **Environmental Impact Report** is required, but it must analyze only those effects that remain to be addressed.

❑ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier **EIR** or **Negative Declaration** pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **Negative Declaration**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

4/08/2022
Date

Robby Thacker, Contract Planner
Printed Name

Humboldt County Planning and Building Department

Evaluation of Environmental Impacts

(1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project -specific screening analysis).

(2) All answers must take account of the whole action involved, including off-site as well as on -site, cumulative as well as project -level, indirect as well as direct, and construction as well as operational impacts.

(3) Once the lead agency has determined that a particular physic al impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

(4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

(5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. (California Code of Regulations, title 14 Section 15063(c) (3) (D)). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review. **N/A**

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis. **N/A**

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project. **N/A**

Environmental Checklist

Checklist and Evaluation of Environmental Impacts: An explanation for all checklist responses is included, and all answers take into account the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts. The explanation of each issue identifies (a) the significance criteria or threshold, if any, used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significance. In the **Checklist,** the following definitions are used:

"**Potentially Significant Impact**" means there is substantial evidence that an effect may be significant.

"**Potentially Significant Unless Mitigation Incorporated** " means the incorporation of one or more mitigation measures can reduce the effect from potentially significant to a less than significant level.

"**Less Than Significant Impact"** means that the effect is less than significant and no mitigation is necessary to reduce the impact to a lesser level.

"**No Impact"** means that the effect does not apply to the proposed project, or clearly will not impact nor be impacted by the project.

I. Aesthetics. Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?			X	

Discussion:

(a-c) Less Than Significant Impact: The project site is not within an area mapped or designated with scenic vistas or resources, nor is it in the Coastal Zone where specified areas of scenic values are mapped and certified by the state. The site is located in a rural residential area located just outside of the community of Hydesville and surrounded by large estate residential properties on all sides. The proposed subdivision is consistent with the current Zoning and General Plan designation and is consistent with the planned buildout of the area. The project would result in the creation of one additional lot intended for future residential development. The buildable portion of the new lot intended to accommodate future residential development would have limited to no visibility from Rohnerville Road, and would not degrade the existing character of the surrounding area. Future development of the lots would also be required to comply with County setback, building height, and lot coverage standards. The subdivision of the parcel within the area will not have

substantial adverse aesthetic impacts, and will not significantly increase light or glare or affect nighttime views in the vicinity.

(d) Less Than Significant Impact: The project, a Minor Subdivision to divide an approximately 13.2-acre parcel into two parcels of approximately 7.5 acres and 5.7 acres, is currently developed with 2 residences, a barn, sheds, and greenhouse. Future residential development of Parcel 2 is anticipated to have limited light sources however no further development is proposed at this time. The project will not significantly increase light or glare or effect nighttime views in the vicinity of the project site.

II. Agriculture and Forestry Resources. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

Discussion:

(a-e) No Impact: The project will result in any impacts or loss to farmland resources. The project site does not have an active Williamson Act Contract. The site does not contain prime farmland soils, nor does the site contain unique farmland. The proposed subdivision is intended to allow the future construction of a single-family dwelling, which is a permitted use of the Agriculture General Zone (AG). There is no timberland of land zoned Timberland Production Zone on the parcel.

III. Air Quality. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?				X
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?				X

Discussion:

(a- b) Less than Significant: The project site is located within the North Coast Air Basin and the jurisdiction of the North Coast Unified Air Quality Management District (NCUAQMD). The North Coast Air Basin generally enjoys good air quality but has been designated non-attainment (does not meet federal minimum ambient air quality standards) for particulate matter less than ten microns in size (PM_{10}). To address this, the NCUAQMD adopted a Particulate Matter Attainment Plan in 1995. This plan presents available information about the nature and causes of PM_{10} standard exceedance and identifies cost effective control measures to reduce PM_{10} emissions, to levels necessary to meet California Ambient Air Quality Standards. These include transportation measures (e.g., public transit, ridesharing, vehicle buy-back programs, traffic flow improvements, bicycle incentives, etc.), land use measures (infill development, concentration of higher density adjacent to highways, etc.), and combustion measures (open burning limitations, hearth/wood burning stove limitations; NCUAQMD 1995). The project site is identified for residential agricultural development as part of the General Plan and is proposed and are expected to be built-out with an additional single-family dwelling. Emissions resulting from the subdivision of the parcel into two parcels will be limited to the improvements for access to the parcel and other frontage improvements and will be less than significant. Therefore, the project would not result in a significant impact regarding a conflict with an applicable air quality plan and would have a less than significant impact regarding a cumulatively considerable net increase of a criteria pollutant for which the region is in non-attainment (i.e.PM_{10}).

(c-d) No Impact: The project is a Minor Subdivision of a 13.2-acre parcel into two parcels of approximately 7.5 acres and 5.7 acres and does not include any further development. The project will result in the construction of minor roadway improvements within a rural residential area and will not subject sensitive receptors to substantial concentrations of pollutants. Therefore, it will not result in emissions that adversely affect a substantial number of people.

IV. Biological Resources. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?			X	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of and Game or U.S. Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

Discussion:

(a, d-e) Less than Significant. The proposed project is the subdivision of a 13.2-acre parcel into two lots of approximately 7.5 and 5.7 acres. The project site contains several mature trees and grassland throughout the site around the existing development. The site has been previously disturbed due to the existing residential development and accessory structures. The site is also improved with an actively used access driveway that traverses through the site. The project will require the construction of minor improvements in order to record the parcel map. An analysis of the site characteristics does not indicate the presence of any candidate, sensitive, or special status species nor have any been identified within the project site. The project site is not located within/or adjacent to any riparian habitat or other sensitive natural community, nor is it located within/or adjacent to any identified wetlands. The project was referred for comment to the California Department of Fish and Wildlife, but no comment was received.

(b) **Less than Significant.** There is an unmapped ephemeral watercourse that runs generally along the boundary of the proposed division line of the parcel. To provide vehicular access to the proposed new parcel this watercourse will likely be required to be crossed, requiring the construction of a culvert. A site visit was conducted by County staff and California Department of Fish and Wildlife staff where it was determined that no riparian habitat would be impacted by the construction of the culvert. Accordingly, the impact on riparian habitat and/or other sensitive

resources is less than significant.

(c) **Less than Significant with Mitigation Incorporated.** There is what appears to be a large (over 1,000 square feet) wetland in the general center of the proposed new parcel. Development of this area has the potential to impact wetlands if not outside of the defined wetland and wetland buffer areas. Field verification by county and CDFW staff determined that there is significant upland area on the parcel where development can be accommodated without impacting wetlands. This upland area is demonstrated in the figure below. With mitigation measure MM-BIO-1 the project will have a less than significant impact on protected wetlands.

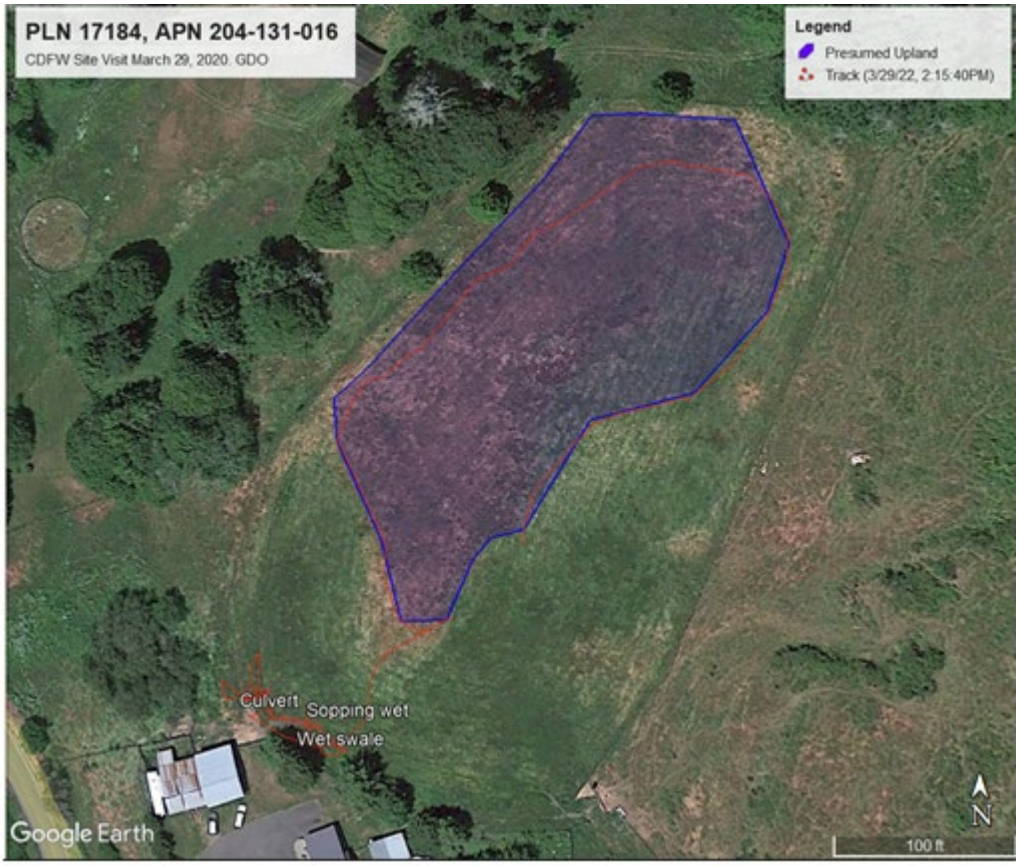


Figure 1

(f) No Impact. The proposed project does not conflict with any adopted Habitat Conservation Plan or Natural Community Conservation Plan.

Mitigation Measures

MM-BIO-1: Prior to filing the map the applicant shall record a Notice of Development Plan with a Development Plan Map identifying the development envelope as determined by county and CDFW staff. The Development Plan Map shall specify that all development must be located within this envelope unless a wetland delineation prepared by a qualified biologist has been submitted and approved by the Planning Director showing that all development is outside of wetland and regulatory wetland buffer areas.

V. Cultural Resources. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigatio	Less Than Significant Impac	No Impact

		n Incorporated	t	
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		
c) Disturb any human remains, including those interred outside of formal cemeteries?		X		

Discussion:

(a) No Impact: No historical resources have been documented on the site. Therefore, the project will have no impact on historical resources defined in California Environmental Quality Act (CEQA) §15064.5.

(b, c) Less Than Significant Impact with Mitigation: Pursuant to AB52, the project was initially referred to local Tribes for comment and/or consultation. Based on the referral response from the Bear River Band Preservation Officer (THPO), no known cultural resources are located on the project site. At the request of the THPO, an "Inadvertent Archaeological Discovery Protocol" condition will be placed on the project. The inadvertent discovery protocol will ensure that impacts to cultural and archaeological resources are less than significant.

Mitigation Measures

MM-CU-1: 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 the discovery location. A qualified archaeologist and the appropriate Tribal Historic Preservation Officer are to be contacted to evaluate the discovery and, in consultation with the applicant and the planning Department, develop a treatment plan in any instance where 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, the County Coroner must be contacted immediately at 707-445-7242.

VI. Energy. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

Discussion:

(a-b) Less than Significant: The project proposes the subdivision of one 13.2-acre parcel into two parcels of approximately 7.5 acres and 5.7 acres with no additional development proposed. The project will result in short-term energy consumption during the construction phase, with long-term energy consumption associated with the new parcel that will support a future single-family home. The construction phase is not anticipated to utilize excessive energy, and the new home that could be constructed on Parcel Two lot will be required to comply with the energy requirements of Title 24 of the Building Code. Solar access will be reviewed and planned for future development on each new lot to ensure natural solar heating is available. The layout of the parcel map and the buildable footprint of Parcel Two will allow for adequate solar access opportunities to serve the site and reduce energy consumption.

VII. Geology and Soils. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			X	
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic -related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?			X	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	

Discussion:

(a) Less Than Significant Impact: There are no known earthquake faults located within the project site.

(i–iv) Less Than Significant impact: The project site is located outside an Alquist-Priolo Earthquake Fault Zone. The project parcel is located in an area prone to moderate seismic ground shaking or liquefaction. The site is located approximately two miles south of the Little Salmon fault, and there are no active faults located on the parcel, therefore the risk of surface rupture appears low. Risks associated with potential strong ground motions within proximity to the site can be mitigated and resist deformation during a seismic event with code compliant construction design. The project parcel is not identified as an area of historic landslides.

(b) Less Than Significant impact: Any future construction or additional road improvements will utilize appropriate Best Management Practices (BMPs) which will prevent soil erosion and loss of topsoil.

(c) Less Than Significant impact: The project parcel is located in soils that are classified as having moderate instability. According to the "Engineering Geologic Soils Exploration Report" prepared for the project, while debris sliding and patterned ground and land sliding is mapped in the vicinity of the site to the north, exploration of the parcel revealed no obvious areas of active or dormant slope instability. The existing 13.2-acre parcel will be subdivided into parcels of approximately 7.5 acres (Parcel One) and 5.7 acres (Parcel Two). Parcel One is currently developed with two residences, a barn, sheds, and greenhouse. Parcel Two is currently undeveloped pasture. There is no new development proposed as part of this project. Any future construction activities either

parcel the would be required to adhere to County grading, Building Code and Environmental Health Division requirements. The project is not anticipated to result in the creation of new unstable areas either on or off site due to physical changes in a hill slope affecting mass balance or material strength.

(d) No impact: The project parcel is not located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994); therefore, the project will not create substantial risks to life or property.

(e) No Impact: The property currently receives water service from the Hydesville Community Water District, and sewage disposal is handled by an existing on-site waste treatment system (OWTS). Septic testing has been completed for proposed Parcel Two.

(f) No Impact: There are no known paleontological resources or unique geologic features on site.

VIII. Greenhouse Gas Emissions. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Discussion:

(a-b) Less Than Significant Impact: In 2002 the California legislature declared that global climate change was a matter of increasing concern for the state's public health and environment, and enacted law requiring the California Air Resources Board (CARB) to control GHG emissions from motor vehicles (Health & Safety Code §32018.5 *et seq*.). In 2006, the California Global Warming Solutions Act (Assembly Bill 32) definitively established the state's climate change policy and set GHG reduction targets (health & Safety Code §38500 *et seq*.), including setting a target of reducing GHG emissions to 1990 levels by 2020. AB 32 requires local governments to take an active role in addressing climate change and reducing greenhouse gas (GHG) emissions. While methodologies to inventory and quantify local GHG emissions are still being developed, recommendations to reduce residential GHG emissions include promoting energy efficiency in new development.

The proposed project is a Minor Subdivision to divide an approximately 13.2-acre parcel into 2 parcels of approximately 7.5 acres and 5.7 acre, is currently developed with two residences, a barn, sheds, and greenhouse. However, there is the potential for development at a later date. The General Plan Land Use designation and zoning allows a single-family residential unit on the proposed parcels. Therefore, the proposed project would not have a significant impact on the environment, nor conflict with applicable plan, policy, or regulation for the purposes of reducing greenhouse gas emissions.

IX. Hazards and Hazardous Materials. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			X	
f) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?			X	

Discussion:

(a-d) Less Than Significant impact: The project site is not included on a list of hazardous material sites, nor does the proposed subdivision involve routine transport, use or disposal of hazardous materials. There is no existing or proposed school within one-quarter mile of the project parcel.

(e) Less Than Significant impact: The project site is located approximately 1.5 miles from the Rohnerville Airport. A small portion of the western edge of proposed Parcel one is located within Safety Compatibility Zone 6 (Airport Traffic Pattern Zone), and both Parcels 1 and 2 are within Review Area 2. Review Area 2 represents the area in which airspace protection and overflight notification policies are applicable. The proposed project is the subdivision of a 13.2-acre parcel into 2 parcels of 7.5 and 5.7 acres and would result in all existing development contained to Parcel One. The General Plan land use designation and zoning allows a single-family residential unit on the proposed parcels. Therefore, the proposed project would not have a significant impact

(f-g) Less Than Significant impact: According to the Humboldt County Fire Hazard Severity map, the parcel is located in the high fire hazard severity area. The site is within the CalFire State Responsibility Area (SRA) and Fortuna Fire Protection District for fire protection. The existing buildings will maintain required fire safety setbacks of 30 feet to each property line. Future development of Parcel Two will allow significant buffer to perimeter boundary lines exceeding 100 feet. The site will have a 20-foot access easement that will support emergency vehicle access to the site with a turn-around at the terminus as depicted on the tentative map. The site will not result in unanticipated risk to the occupants of the site. Calfire was referred the project for comment

and responded with no comment. The project was referred to Fortuna Fire Protection District who also responded with no comment. The Department finds no evidence that the project will create, or expose people or property to, hazardous materials, or impair implementation of, or physically interfere with, an adopted emergency response plan.

XI. Land Use and Planning. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect ?				X

Discussion:

(a-b) No Impact: The project site has a General Plan Land Use designation of Residential Agriculture 5-20 and a zoning designation of Agriculture General B-5. The subdivision of a 13.2-acre parcel into 2 parcels of 7.5 and 5.7 acres will not physically divide an established community nor cause a conflict with any land use plan, policy, or regulation.

The permitted density range is a minimum of one dwelling unit per five acres as established by the General Plan. The General Plan and Zoning support single-family development and parcel sizes larger than five acres. The proposed project will create 2 lots (7.5 acres and 5.7 acres) consistent with the General Plan and Zoning. The newly created lots will be accessed by an existing private road that will be extended to Parcel Two. The proposed subdivision is consistent with the established goals and policies of the 2017 Humboldt County General Plan and the AG-B-5(5) zone district. The existing structures will meet requires State Responsibility Area (SRA) setbacks of 30 feet from all property lines and future development on Parcel Two will be required to meet these setbacks and will be verified during building permit plan check. The proposed parcels both have lot widths exceeding 60 feet and do not exceed lot coverage of 35 percent. The project will maintain the intended use of the RA land use designation for the site and will be appropriate with the rural residential development and parcel sizes of adjacent properties in the surrounding communities. The project will be served by utilities and and on-site waste-water system and will result in the creation of a buildable lot that will have adequate utilities and emergency access.

XII. Mineral Resources. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

Discussion:

(a-b) No Impact: On-site soils and geologic resources are not suitable as commodity materials that would be of value to the region or the state. The site is not designated as an important mineral resource recovery site by the Humboldt County General Plan, specific plan, or other land use plan.

XIII. Noise. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Generation of excessive ground borne vibration or ground borne noise levels?			X	
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	

Discussion:

(a-b Less Than Significant: This parcel is not located within a Noise Impact combining zone and the project will not generate a substantial increase in ambient noise levels in the vicinity of the project in excess of local standards. Noises generated by the proposed project development will result in a temporary increase during road/access driveway and residence construction as the project may require the use of heavy equipment (excavator, grader, loader, and backhoe). The County limits the construction hours, which will ensure the temporary noise increases do not create a significant impact. Construction of the project does not include equipment that would result in significant ground borne vibration. No significant permanent change in noise from the existing conditions would result from this project. The project site is located within the Overflight Notification Area of the Rohnerville Airport but is outside a "N" (Noise) Combining District, and therefore future residential construction on proposed Parcel Two does not require mitigation to reduce noise levels to a maximum of 45-db for all habitable rooms and will be subject to the adopted standards of the Humboldt County Building Code.

(c) Less Than Significant Impact: The project area is approximately 1.5 miles from Rohnerville Airport, however, the project site is not within the noise contours for this airport. The noise impacts associated with the airport are not anticipated to present a significant impact to the project site. Therefore, noise impacts will remain less than significant.

XIV. Population and Housing. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and/or businesses) or indirectly (e.g., through extension of roads or other infrastructure)?			X	

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

Discussion:

(a) Less Than Significant impact: The subdivision of the 13.2-acre parcel into 2 parcels of 7.5 and 5.7 acres will not induce substantial unplanned population growth. Although no development is proposed as part of this project, the current General Plan Land Use and zoning designations would allow the construction of a single-family residential unit on Parcel Two. There will be no expansion to existing Rohnerville Road and extension of a private driveway to provide access to the proposed lot. These improvements will not spur unanticipated development growth in the surrounding area.

(b) No Impact. The subdivision of the 13.2-acre parcel into 2 parcels of 7.5 and 5.7 acres will not displace substantial numbers of existing people or housing or necessitate the construction of replacement housing. The Department finds no evidence that the project will result in any impact on population and housing.

XV. Public Services. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?			X	
d) Parks?			X	
e) Other public facilities?			X	

Discussion:

(a- e) Less Than Significant:

No new or physically altered government facilities are required as a result of the project. The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, or other public facilities. Fire protection would continue to be available to the project site from the Fortuna Fire District, who has recommended project approval. Police protection would be provided by the Humboldt County Sheriff's Office. The project would be required to pay appropriate parks fees as part of compliance with the County's Quimby Act standards, ensuring fair share contribution towards community parks. Impacts to the School District are anticipated to be less than significant with the proposed subdivision however the developer will be required to pay school impact fees prior to issuance of a building permit for any future residential dwellings to be constructed on the site. Therefore, a less than significant impact would occur.

XVI. Recreation. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	

Discussion:
(a-b) Less Than Significant Impact: The project is the subdivision of a 13.2-acre parcel into two parcels of 7.5 and 5.7 acres. No impacts to recreation are anticipated. The project will be conditioned upon payment of parkland fees. There are no existing local or neighborhood park facilities that would be substantially impacted by increased use from the development of one residential lot. The Department finds no evidence that the project will require construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

XVII. Transportation. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
d) Result in inadequate emergency access?			X	

Discussion:
(a-c) Less Than Significant Impact: The minor subdivision project will not conflict with any program plan, ordinance or policy for the circulation system and is consistent with CEQA Guidelines Section 15064.3b. The project and proposed roadway improvements do not feature any hazardous design features and will not involve any incompatible uses that will utilize the road system. With the creation of the new parcels for single-family residential use, the proposed development is not anticipated to generate or attract more than 110 trips per day (110 is the number of trips used as a Screening Threshold for Small Projects in the State's Technical Advisory on Evaluating Transportation Impacts in CEQA). Additionally, the project will not conflict with adopted policies supporting transportation.

(d) Less Than Significant Impact: The proposed project is located in a State Responsibility Area. Per Fire Safe Regulations, (County Code Section 31112-3) a Road Category 4 road is required for properties with more than one dwelling unit. Proposed Parcel One contains two existing dwelling units. To provide adequate emergency access, the project has been conditioned to require a 40-foot-wide category 4 road consistent with Fire Safe Regulations. The applicant has requested an Exception to allow a 20-foot paved access road and easement through Parcel 1 which is shown on the tentative map. The proposed 20-foot access road will run approximately 500 feet to the boundary line of Parcel 2 and will be paved. The access is sized to accommodate the limited traffic anticipated to utilize the private road and is sufficient to allow emergency vehicles to access both parcels. Strict adherence of the County Standard of a 40-foot roadway is not required based on the proposed density and traffic of the proposed subdivision and a 20-foot paved road is the more suitable alternative to serve the project.

XVIII. Tribal Cultural Resources.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resource Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is :		X		
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as de fined in Public Resource Code section 5020.1(k), or		X		
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?		X		

Discussion:
(a-i, ii) Less Than Significant Impact with Mitigation: Pursuant to AB52, the project was initially referred to the Northwest Information Center and the Bear River Band, Blue Lake Rancheria, and Wiyot Tribes and a Tribal Consultation letter was sent. No consultation was requested. The only comment received from local tribes during the referral period was from the Bear River THPO, which stated that he was not aware of any known cultural resources on the subject parcel. No further action was deemed necessary. The standard inadvertent discovery of cultural/archaeological resources is required as mitigation to ensure that there are no potentially significant impacts as a result of an inadvertent discovery of resources. With Mitigation Measure CU-1 the impact to Tribal Cultural Resources is less than significant.

XIX. Utilities and Service Systems. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

Discussion:
(a-e) Less than significant: The Department finds there is no evidence that the proposed minor subdivision will result in significant adverse impacts to utilities and service systems. The project is located within an area that relies upon on-site wastewater systems to serve new development and did not identify any potential environmental impacts with the installation of these systems within the project site. The applicant has submitted a soils test report for the installation of septic system/leach field for the proposed new lot. In response to referrals sent, Pacific Gas and Electric Company commented that there would be no impact to their existing facilities or easement rights. The Department finds the project impact to be less than significant. The County's landfill has capacity to serve the proposed project and anticipated future residential development and the project impact has been determined to be less than significant.

XX. Wildfire. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?			X	
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire?			X	
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?			X	
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?			X	

Discussion:

(a-d) Less than significant: The project is served by the Fortuna Fire Protection District and CalFire SRA. The Humboldt Fire Severity Hazard Map determination for the project site is in a high fire hazard severity area. CalFire's response to the referral letter for the project stated they had no comment and recommended approval of the proposed subdivsion. The minor subdivision project will not impair an adopted emergency response plan or emergency evacuation plan. Future development of the newly created parcel will be required to comply with CalFire SRA setbacks of 30 feet from property lines and will be verified during building permit plan check.

XXI. Mandatory Findings of Significance.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects).			X	
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Discussion:
(a through c) Less Than Significant Impact: The project proposes a minor subdivision of a 13.2-acre parcel into 2 parcels of 7.5 and 5.7 acres. Staff finds no evidence that the proposed project will significantly degrade the quality of the environment, nor will it have impacts that are individually limited but cumulatively considerable. Based on the project as described in the administrative record, comments from reviewing agencies, a review of the applicable regulations, and discussed herein, the Department finds there is no significant evidence to indicate the proposed project will have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

MITIGATION MONITORING AND REPORTING PROGRAM CHECKLIST

MM-BIO-1: Prior to filing the map the applicant shall record a Notice of Development Plan with a Development Plan Map identifying the development envelope as determined by County and CDFW staff. The Development Plan Map shall specify that all development must be located within this envelope unless a wetland delineation prepared by a qualified biologist has been submitted and approved by the Planning Director showing that all development is outside of wetland and regulatory wetland buffer areas.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
Prior to filing the subdivision map.	Once		HC Planning		

MM-CU-1: 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 the discovery location. A qualified archaeologist and the appropriate Tribal Historic Preservation Officer are to be contacted to evaluate the discovery and, in consultation with the applicant and the planning Department, develop a treatment plan in any instance where 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, the County Coroner must be contacted immediately at 707-445-7242.

Implementation Time Frame	Monitoring Frequency	Date Verified	To Be Verified By	Compliance Yes | No	Comments / Action Taken
During grading and project construction.	Continuous		HC Planning		

NORTH

GRAPHIC SCALE

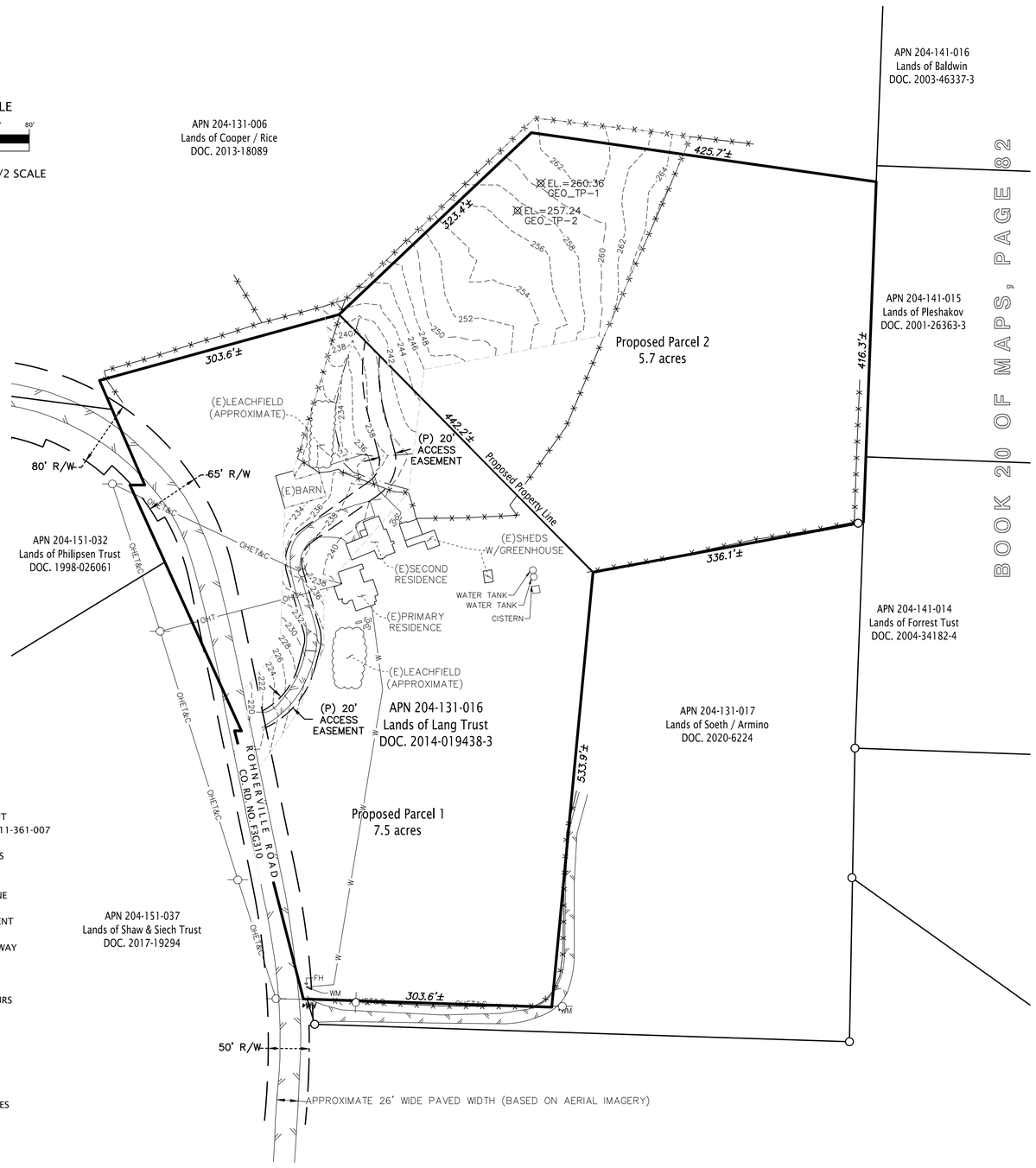
-80' 0 40' 80'

1 inch = 80 ft.

17"x11" PRINTS ARE 1/2 SCALE

PROPOSED PARCEL AREAS:

PARCEL 1 7.5 Acres +/-
PARCEL 2 5.7 Acres +/-



LEGEND

- RECORD SURVEY MONUMENT
- BOUNDARY LINES OF APN 511-361-007
- PROPOSED LOT LINES
- ADJACENT BOUNDARY LINES
- EXISTING EASEMENT LINE
- PROPOSED EASEMENT LINE
- EXISTING RIGHT OF WAY LINE
- EDGES OF ASPHALT PAVEMENT
- GRAVEL ROADWAY / DRIVEWAY
- FENCE LINE
- EXISTING GROUND CONTOURS
- DRAINAGE FLOWLINE
- G — GAS LINE
- SS — SANITARY SEWER LINE
- W — WATER LINE
- OHET&C — OVERHEAD ELECTRIC, TELEPHONE AND CABLE LINES
- JP — JOINT UTILITY POLE
- FH — FIRE HYDRANT
- SEPTIC TANK

PROJECT NOTES

1) This Tentative Map illustrates a proposed subdivision of APN 204-131-016 into 2 parcels. Access to the proposed parcels will be via Rohnerville Road and a 20 foot wide non-exclusive access easement to be granted to proposed Parcel 2 on the Parcel Map to be recorded as part of this project.

2) No trees are proposed to be removed. Grading would occur for the new access road to proposed Parcel 2 and construction of a future single family residence.

3) The parcel is zoned Agricultural General and has a general plan designation of Residential Agriculture (RA) in the Humboldt County General Plan. Adjacent properties are similarly zoned and planned.

4) The property is shown on official maps as Zone C, areas of minimal flooding (Firm Community Panel No. 060060 1240). No hazardous areas, historic buildings, or archaeological sites are known to exist on or immediately adjacent to the property.

5) Parcel creation: The subject property was created as the Remainder parcel in the subdivision for Hobart Davis, as recorded in Book 15 of Parcel Maps, Page 46, HCR.

6) Boundary lines and existing easements of record shown based a Preliminary Title Report by Fidelity National Title Company, Order No. FFHO-FTO210280HV, dated 1/8/2021. See Easement Notes below for specifics of easements not mapped hereon. ***All easements of record are shown on this tentative map and will appear on the recorded subdivision map.***

7) Topography is shown at 2 foot intervals based on a field survey performed by Points West Surveying in February 2021. Elevations are NAVD 88 datum based on OPUS solution utilizing the GEOID 18 model and an elevation of 236.97 feet measured at Control Point 50.

8) The subject parcel is currently served by community water from Hydesville Community Water District and the district has indicated they have the capacity to serve an additional parcel. PG&E provides electricity and AT&T provides telephone services. Gas is provided by on-site LPG tanks. The nearest fire hydrant is located on the frontage of the subject property as shown hereon. Sewage disposal is provided to the two existing residences by on-site septic tank and leachfield areas. Septic testing has been completed for proposed Parcel 2 in the locations of the test pits shown hereon.

9) Existing underground water and sewage disposal locations are shown based on information provided by the owner to Points West Surveying Company in combination with utility appurtenances observed on site.

10) Two small drainage courses are shown hereon and no other drainage courses, creeks, or other wet areas are known to exist on the property.

EASEMENT NOTES

Item 8: Rights to the public to any portion of Land lying within the area commonly known as Rohnerville Road.

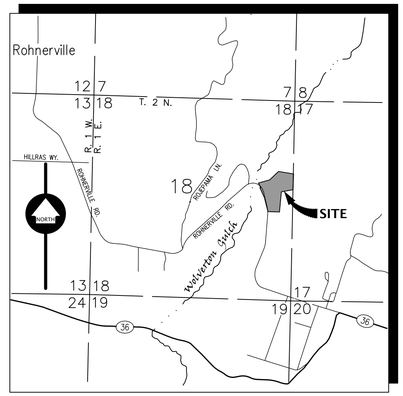
Item 9: Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:
Granted to: County of Humboldt
Purpose: Public Highway
Recording Date: May 20, 1950
Recording No.: Book 131, Page 1, of Official Records
Affects: Westerly portion

Item 11. The effect of notes set forth on Parcel Map No. 1729 recorded in Book 15, Page 46 of Parcel Maps, related to:

(a) Additional on-site and off-site improvement of roads in the event of further subdivision of parcels created by said Parcel Map.

(b) A Soils Report was prepared for this subdivision by H.A. Davis, RCE 10337 in December 1979, and is on file with the Humboldt County Building Department.

Item 12: Easement(s) for the purpose(s) shown below and rights incidental thereto, as delineated or as offered for dedication, on the map of said tract/plat;
Purpose: Public Road
Affects: Westerly portion
Recording Date: February 20, 1980
Recording No.: Book 15 of Parcel Maps, Page 46



VICINITY MAP
SCALE: 1" = 2,000'

SURVEYOR'S STATEMENT

This map was prepared by me, or under my direction, and is based upon a field survey.

SIGNED _____

DATED 6/3/2021

Jesse N. Buffington
L.S. No. 9339

LICENSED LAND SURVEYOR
JESSE N. BUFFINGTON
No. 9339
STATE OF CALIFORNIA

PROJECT DATA

Applicant: Nikki Lang
Mailing Address: 3386 Church Street
Fortuna, CA 95540
Phone: 707-599-2496

APN: 204-131-016
Owner: Raven Lang
Site Address: 6243 Rohnerville Road
Hydesville, CA 95547

General Plan: RA5-20
Zoning: AG-B-5(5)

Building Setbacks: Front: 20'
Side: 6'
Rear: 20'

Agent: Jesse Buffington
Mailing Address: Points West Surveying Company
5201 Carlson Park Drive, Suite 3
Arcata, CA 95521
Phone: (707) 840-9510
Fax: (707) 840-9542
Email: buffington@pointswestsurveying.com

APN 204-131-017 TENTATIVE MAP

for

Nikki Lang

SE 1/4 NE 1/4 SECTION 18, T2N, R1E, HUMBOLDT MERIDIAN

IN THE UNINCORPORATED AREA OF HYDESVILLE, HUMBOLDT COUNTY, STATE OF CALIFORNIA
Date: FEBRUARY 2021

SCALE: 1" = 80' SHEET 1 OF 1

POINTS WEST SURVEYING CO.
5201 Carlson Park Dr., Suite 3 - Arcata, CA 95521
707·840·9510 · Phone 707·840·9542 · Fax

LINDBERG GEOLOGIC CONSULTING
David N. Lindberg, Certified Engineering Geologist

ENGINEERING GEOLOGIC R-2
SOILS EXPLORATION REPORT

New Residence
6243 Rohnerville Road
Hydesville, California

Assessor's Parcel Number:
204-131-016

Prepared for:
Mr. Joshua Schuster

David N. Lindberg, CEG 1895, Exp. 02/28/2022

December 1, 2020 Project No. 0380.001

Post Office Box 306 **Cutten, California 95534** **(707) 442-6000**

LINDBERG GEOLOGIC CONSULTING
David N. Lindberg, CEG
Post Office Box 306
Cutten, California 95534
707-442-6000

CONTENTS:

LINDBERG GEOLOGIC CONSULTING
707-442-6000

ENGINEERING GEOLOGIC R-2 SOILS EXPLORATION
New Residence for Mr. Joshua Schuster, Client
6243 Rohnerville Road, APN 204-131-016
Hydesville, Humboldt County, California

1.0 INTRODUCTION
1.1 Site and Project Description

Presented in this report are the results of our site-specific, engineering-geologic soils reconnaissance conducted by Lindberg Geologic Consulting (LGC) at 6243 Rohnerville Road near the point where the road crosses the creek in Wolverton Gulch (Figure 1). The subject property is in Wolverton Gulch, which drains toward the Van Duzen River approximately two miles south of the subject property. Our explorations were limited to the location of a proposed new residence on parcel 204-131-016 (Figure 2). A satellite view of the subject property and vicinity is attached as Figure 3. A geologic map is attached as Figure 4. Pertinent project location information is presented in Table 1.

TABLE 1 - PROJECT LOCATION INFORMATION	
Assessor's Parcel Number: 204-131-016	
Address	6243 Rohnerville Road, Hydesville
Latitude and Longitude:	40.5566° N and 124.1037° W
Legal Description	SE ¼ of NE ¼ Section 18, T.2N. – R.1E.
Parcel Size:	~13 acres

* Centroid of parcel estimated per Google Earth, November 2020.

This parcel is presently developed with a residence, barn, garage, and storage buildings. The owners are proposing to split the parcel so the new residence will be on its own, newly-created, parcel. The new residence will be built at the location shown approximately in Figure 3, which also shows the approximate new property line. Google earth satellite imagery since 1998 shows the current buildings to be already on-site. Based on the available Google-Earth satellite imagery since 1998, there appears to have been no substantive changes to the property.

Elevations on the parcel range from approximately 200 feet near Rohnerville road, to approximately 350 feet at the highest point, along the eastern boundary of the parcel. None of the existing structures will be on the new parcel. This parcel is approximately 4 miles south-southeast of Fortuna, and approximately 0.7 mile northwest of Hydesville.

Included in our report are brief assessments of the site geology, subsurface soil conditions, and potential geologic hazards associated with this proposed residential construction project. Recommendations are provided as necessary and where appropriate, to mitigate potential negative effects of geologic hazards on the proposed new residence, and to minimize the potential effects this project might have on exacerbating existing geologic hazards. Recommendations are also provided, again where necessary and appropriate, for drainage and erosion control.

LGC understands that the property owner requires an engineering-geologic exploration and review of this proposed building site for permitting purposes. A Certified Engineering Geologist from our office examined the site and conducted a subsurface soils exploration on October 15, 2020.

1.2 Scope of Work

LGC was retained to observe and characterize the proposed building site (Figure 3) for foundation design, and hazard mitigation. We assessed potential geologic hazards and prepared this brief engineering geologic soils report. The specific scope of this investigation included the following:

- Review pertinent published geologic maps and reports of this area.
- Conduct a reconnaissance-level field exploration program of the existing building sites.
- Prepare this soils report to provide an assessment of suitability and stability.
- Provide earthwork, foundation and drainage recommendations.

Excluded from our scope of work were other proposed or existing site developments, and any environmental assessment for the presence or absence of any hazardous waste, toxic, or corrosive materials. Although we assessed subsurface conditions in this investigation, we conducted no laboratory testing of any samples for the presence of hazardous material(s).

1.3 Limitations

This report has been prepared for the exclusive use of the Mr. Joshua Schuster, his surveyors, engineers, contractors and subcontractors, and appropriate public authorities, for specific application to the site of the proposed new building on the new parcel to be created. We have endeavored to perform our services within the engineering-geologic standard of care common to the local area at the time this work was performed. LGC makes no other warranty, express or implied.

Analyses and recommendations contained in this report are based on data obtained from existing maps and reports, field observations and limited subsurface explorations. Methods indicate subsurface conditions only at locations explored, only at the time any exposures were available, and only to the depths penetrated. Soil observations and sampling cannot always be relied on to accurately reflect all stratigraphic or lithologic variations that commonly exist between sampling locations, nor do they necessarily represent conditions at any other point in time.

Recommendations included in this report are based, in part, on assumptions about subsurface conditions which may only be tested during actual earthwork. Accordingly, the validity of our recommendations is contingent upon how they are applied in the field during construction. Experienced surveyors, engineers and equipment operators should be retained to provide a complete professional service. LGC cannot assume responsibility or liability for the adequacy of our recommendations when they are applied in the field, unless we are retained to observe those phases of the construction work applicable to our recommendations (e.g., earthworks). We are available to discuss the extent that observations may provide assurance of the validity of our recommendations.

Do not apply any of this report's conclusions or recommendations if the nature, design, or location of proposed site developments are changed, or if other aspects of the project are modified, added or removed from the work. If changes are contemplated, LGC should be contacted and consulted to review the impact of the changes on the applicability of the recommendations in this report. Note that LGC is not responsible for any claims, damages, or liability associated with any other party's interpretation of the subsurface data or reuse of this report for other projects or at other locations without our express written authorization. There is no warranty, express or implied.

2.0 FIELD EXPLORATION AND LABORATORY TESTING

2.1 Field Exploration Program

The site, and the in-situ soil conditions, were assessed during our site visit on October 15, 2020. Our explorations utilized three exploratory backhoe test excavations to assess the in-situ soil profiles (two excavations were made for the onsite wastewater treatment system). Soil profiles were consistent and generally uniform throughout the three excavations. Soil stratigraphy was observed and interpreted in the field in general accordance with ASTM standards. At the proposed building site, the soil profile consisted of thin turf, sod, and rocky topsoil, over well-graded sand with silt, gravel, and clay (SW), which is Sand, and Sandy Loam per the USDA classification system. Soil profiles were sandy and gravelly, with no free water or soil mottling to the depths explored. Logs of the test excavations are attached (Figures 5 and 6).

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Topography and Site Conditions

This existing parcel is located on an ancient abandoned fluvial terrace of the Van Duzen River, now more than 200 feet above the modern Van Duzen River channel (Figure 3). This building site is located on a relatively-flat to gently-sloping terrace surface at an elevation of approximately 250 feet. It appears that the new residence will be sited on the most gently sloping areas of the parcel being created. The proposed building site is in an area where the ground slopes at 10 percent or less. Slopes have a generally west-southwest aspect. More broadly, portions of this existing parcel have maximum slope gradients greater than 30 percent. Steeper slopes exist on the property; however, the proposed new residence will be located in a flat to gently-sloping part of this property.

The U.S. Geologic Survey (USGS, 1979) 7.5-minute topographic “Hydesville, Calif.” quadrangle indicates that the subject parcel is at elevations ranging between approximately 200 to 350 feet above mean sea-level (NAD83) with few slopes exceeding 30 percent, and these only in the steepest portions of the parcel. Northwest of the parcel and the proposed building site, slopes descend at 30 to 50 percent, to the stream in Wolverton Gulch. To the east, slopes of approximately 30 percent climb to the existing eastern property line. Based on our review of satellite imagery since September 1998, the undisturbed slopes on this parcel appeared unmodified by grading. Existing slopes in the vicinity of the proposed new building site appeared stable in their present condition.

3.2 Geologic Setting

This parcel is located within the Coast Ranges Geologic Province, and is underlain by Quaternary river terrace deposits which rest on late Pleistocene to middle Miocene marine and nonmarine overlap deposits of the Wildcat Group (Figure 4). The USGS (1989) described the Wildcat group as follows: “Thin-bedded to massive, weakly lithified siltstone, fine- to medium-grained sandstone, silty to diatomaceous mudstone and locally soft, scaly mudstone. Locally includes lenses of pebble to boulder conglomerate, carbonate concretions, abundant molluscan fossils, woody debris, and horizons of rhyolitic volcanic ash that are greater than 1 meter thick in some areas; includes the Wildcat Group (Ogle, 1953).”

This parcel is located east of the southerly-flowing stream in Wolverton Gulch, which, as noted, is a tributary to Van Duzen River two miles to the south (Figure 1). Based on our field review of the site,

subsurface explorations, review of the satellite imagery, and published geologic and geomorphic maps, we have concluded that this site is underlain by Quaternary alluvium overlying Wildcat Group deposits of the Coastal Belt of the Franciscan Complex (Figure 4). Quaternary landslide deposits, and other geomorphic features related to landsliding exist off-site; these features, however, are well-away from the proposed building site (Figure 3).

Native subgrade consists of medium dense to dense, gravelly sand with silt and clay (SW), which was classified by USDA textural analysis as Sand, and Sandy Loam. Native topsoil is thin, typically six-inches. Undisturbed native soil below the existing ground surface at this site appeared suitable as bearing material for supporting footings and foundations for a typical residential structure. Where observed, the undisturbed soil profile consisted of thin dark gravelly topsoil over medium dense, to dense brown, gravelly sand with silt and clay. Native soils on-site were dry at the surface in October, and were observed to become more moist, and dense, with depth.

3.3 Seismicity

This parcel is located within California's Northern Coast Ranges Geomorphic Province (CGS, 2002), a seismically active region in which large earthquakes are expected to occur during the assumed economic life span (50 years) of the site developments (Heaton and Kanamori, 1984). The Little Salmon fault, which is mapped less than two miles to the north, and which has a secondary trace less than one quarter mile southeast, is the nearest active fault, as defined by the State of California. The Little Salmon fault is a northwest-striking, northeast dipping, thrust (or reverse) fault. The upper-bound earthquake considered likely to occur on the Little Salmon fault (onshore segment) has an estimated maximum moment magnitude (Mw) of 7.0 (Petersen et al., 1996). This parcel is outside of the Special Studies Zone delineated by the State around the Little Salmon fault: there appears to be little risk of fault rupture on-site.

Based on the record of historical earthquakes (approximately 150 years), faults within the North American plate boundary zone and internally-deforming, subducting Gorda and Juan de Fuca plates have produced numerous small-magnitude and several moderate to large (i.e. magnitude 6.0 or greater) earthquakes affecting the northwestern California region. The Cascadia subduction zone (CSZ) is located approximately 40 miles west of the subject property and is estimated to be capable of producing earthquakes of magnitude 9.0 when its entire length ruptures from Cape Mendocino to Vancouver Island in British Columbia (Satake, et al, 2003). Several active regional seismic sources in addition to the CSZ, and the Northern San Andreas fault, are proximal to the project site and have the potential to produce strong ground motions.

These seismic sources include:

- Mendocino fault offshore: a high-angle, east-west trending, right-lateral strike-slip fault between the Gorda plate and Pacific plate approximately 20 miles to the southwest.
- Faults within the internally-deforming Gorda and Juan de Fuca plates often consisting of high-angle, northeast-trending, left-lateral, strike-slip faults.

3.4 Subsurface Conditions and Description of the Site Soils

Our site explorations indicate soils within the upper several feet of the soil profile to consist of brown, gravelly sand with silt and clay (SW). Only thin topsoil was observable in our excavations.

Native soils appeared medium dense to dense (with depth) in the soil profiles observable. Based on our observations of the soil conditions, site soils do not appear to be subject to high groundwater conditions; no soil mottling or free groundwater was encountered to 10 feet below grade in October 2020. The new residential building site on this parcel drains primarily south, and west to Wolverton Gulch. Late in the dry season in October, no emergent groundwater flow was notable in the vicinity of the proposed building site.

Native, brown, gravelly sand with silt and clay (SW), (Sand and Sandy Loam) continued to more than 10 feet, the maximum depth exposed. Soil structure is weakly developed. Materials below ten feet are interpreted to grade at some depth to more-dense bedrock of the Wildcat Group (QTw) of the Coastal Belt of the Franciscan Complex.

3.5 Groundwater Conditions

Late in the dry-weather season, no groundwater was observed during our exploratory excavations. No emergent groundwater flow was observable in the developed areas on-site. Soil mottling, considered indicative of seasonally-saturated or high groundwater conditions, was not observed. It is unlikely that groundwater rises to within 10 feet of the ground surface except perhaps briefly in winter during the most-intense storm events.

4.0 GEOLOGIC AND SOIL HAZARDS

Potential geologic and soil hazards associated with the region and the proposed building site on the new parcel to be created include strong seismic ground shaking, surface fault rupture, liquefaction and related phenomena, settlement, slope instability, flooding and high groundwater, and swelling or shrinking soils. Brief assessments of these potential hazards are presented below.

4.1 Seismic Ground Shaking

As noted above, this parcel is within a seismically active area proximal to seismic sources capable of generating moderate to strong ground motions. Given the presence of significant regional active faults within and offshore of northern California, it is likely that the subject parcel will experience strong ground shaking during the economic life span (50 years) of any developments thereon.

Site-specific seismic Spectral Response Accelerations, obtained from the SEA (Structural Engineers Association of California) and OSHPD (2020) are presented in Table 2, below. The SEA/USGS on-line ground motion parameter calculator provides spectral acceleration values (S_s and S_1) based on the site specific geographic coordinates, the latest available seismic database maintained by the USGS, the site classification, site coefficients, and adjusted maximum considered earthquake values (F_a, F_v, SM_s and SM_1).

Based on site conditions, and assumptions of the soils and geologic materials within 100 feet of the ground surface, we conservatively classify this site as Site Class D consisting of a “Stiff soil” profile (Section 1613.3.2, 2019 CBC). The parameters in Table 2 below were based on this classification and were determined using the 2016 ASCE Standard 7, minimum design loads for buildings and other structures.

TABLE 2, SPECTRAL RESPONSE ACCELERATIONS		
Situs Information: APN 204-131-016 6243 Rohnerville Road	Latitude / Longitude	40.5566° N / 124.1037° W
	Risk/Occupancy Category	II
	Seismic Design Category	E
	Site Class	D
Spectral Acceleration	S_S (Site Class B)	2.117
	S_1 (Site Class B)	1.065
Site Coefficients	F_a / F_v	1.0 / Null per sect. 11.4.8
Response Accelerations (g)	S_{MS}	2.117
	S_{M1}	Null per sect. 11.4.8
	S_{DS}	1.411
	S_{D1}	Null per sect. 11.4.8

4.2 Surface Fault Rupture

The subject parcel is not located within an Alquist-Priolo earthquake fault zone where the State of California anticipates potential surface rupture. There are active faults mapped near the site, but no faults are mapped on the subject property. Based on the distance to the nearest active fault trace, the potential for surface fault rupture on the subject property is low.

4.3 Liquefaction

Liquefaction is a loss of soil strength that results in fluid mobility through the soil. Liquefaction typically occurs when uniformly-sized, loose, saturated sands or silts that are subjected to strong shaking in areas where the groundwater is less than 50 feet below ground surface. 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.

Based on our subsurface explorations, and interpolation of Special Publication 115 (CDMG, 1995), this property is not located within an area of recognized liquefaction potential. Based on the lack of groundwater saturation, or loose, poorly-graded (well-sorted) sand or silt in the soil profile, the potential for liquefaction to occur at these building locations is low. Site-specific quantitative evaluation of liquefaction potential was deemed unnecessary, and therefore was not performed.

4.4 Settlement

Shallow native bearing soils at the proposed building site are medium dense. Foundations built to the current building code standards (2019 CBC), and sufficiently-embedded into undisturbed native soil as recommended herein, appear suitable to support the foundation loads imposed by typical, light wood or metal framed structures, such as the residence proposed at this time.

4.5 Landsliding

Landslide mapping has been published by the CDMG (now CGS) for the Hydesville Quadrangle (Kilbourne, 1985)), and shows no areas of instability on the proposed new parcel on the subject property. Proposed developments are not located on mapped unstable slopes. Debris sliding and patterned ground and landsliding is mapped in the vicinity, but well away from the proposed building site. Kilbourne shows disrupted ground, suggestive of soil creep, on the steep slopes north of (but not

within) the subject parcel. Exploration of the parcel revealed no obvious areas of active or dormant slope instability.

4.6 Flooding and Groundwater

4.6.1 Flooding

This proposed building site is located on high ground well-above the adjacent creek in Wolverton Gulch. The potential for flooding to affect the building site on the subject property appears to be low. This entire parcel is well-above, and outside of the flood zone.

4.6.2 Groundwater

In our opinion, based on our dry season field exploration, and our professional experience, seasonally high groundwater conditions have little potential to occur on the subject parcel. During our field investigation, our observation of the lack of free groundwater and soil mottling, suggests groundwater is unlikely to rise to within 10 feet of the ground surface during a typical winter wet season. Shallow groundwater conditions appear unlikely to have an adverse effect on the performance of the proposed residential foundations, provided our recommendations and those of the project engineer adhered to.

4.7 Soil Swelling or Shrinkage Potential

Bearing soils consist generally of gravelly sand with silt and clay (SW), also called Sand or Sandy Clay Loam by the USDA classification system. In October soils were dry at the ground surface to a depth of approximately one foot. Soils appeared well-drained by intergranular porosity.

The low clay content makes these soils unlikely to exhibit shrink-swell behavior associated with cyclic seasonal wetting and desiccation. In any case, in our opinion, it appears unlikely that these soils desiccate to a sufficient depth to affect foundations embedded according to current building codes, and our recommendations. The potential soil shrink-swell hazard appears to be low.

5.0 CONCLUSIONS AND DISCUSSION

1) Slope instability, does not appear to be a significant hazard at this site.

2) The proposed building site on the subject parcel is underlain by medium dense to dense soils at depth. The materials at approximately 1.5-feet below grade appeared to be a suitably-firm subgrade in which to embed reinforced-concrete foundation elements.

3) In the dry season, our field explorations found no free groundwater, or features suggestive of seasonally-high groundwater at the proposed building site. Perched groundwater, or soil mottling suggestive of seasonal high groundwater conditions were not encountered. Site soils appear well-drained and permeable.

4) The nearest fault to this parcel is the active Little Salmon fault less than two miles north of the subject parcel. Due to the fact that there are no recognized active faults on the parcel, the risk of fault surface rupture at the proposed building site appears low.

5) Strong seismic ground shaking, however, is likely to occur during the anticipated economic life of any developments on this parcel (50 years). Risks associated with strong ground motions are typical of the region and as such, these risks, as mitigated by prudent, code-compliant design and

construction, are assumed by owners and developers in the area. In our opinion, the foundations of the proposed structures can be constructed resist deformation during most strong seismic shaking.

6) For the native gravelly silty sand with clay (SW), or Sand and Sandy Loam soils, a presumptive load-bearing value of 1,500 pounds per square foot (psf) for vertical foundation pressure should be used for design. For lateral bearing, 100 psf per foot of embedment below grade would be applicable. For lateral sliding resistance, use a cohesion of 130 pounds per square foot multiplied by the contact area.

7) The undisturbed native soils at a depth of 18-inches appeared suitable to support reinforced concrete foundations built in compliance with current building code requirements.

8) In our professional opinion, and provided our recommendations are implemented, the proposed new residential development is not expected to contribute to, nor be subject to, any site-specific geologic hazards.

9) Fills (if any) should be constructed and compacted as recommended to be stable.

10) Erosion control should be implemented concurrently as earthwork commences.

6.0 RECOMMENDATIONS

6.1 Slope Setback Considerations

There do not appear to be any site-specific areas of geologic hazards from which the proposed construction should be set back. No streamside management areas appear to be proximal to the proposed building site. All county and state regulatory setbacks should be accounted for.

We recommend structures and grading generally be set back a minimum eight (8) feet from slopes equal to, or steeper than 2 to 1 (50 percent). To provide access for repairs should unforeseen problems occur, we recommend space be allowed between any developments and slopes steeper that 30 percent, to permit access by a small “Bobcat” or “Skid Steer” type tractors to perform repairs.

6.2 Site Preparation

For the new residential foundations, remove any existing sod and topsoil (6-inches minimum), and any undocumented fill, (imported gravel or road base, rubble, and any other debris) encountered at or below the ground surface the building footprint, and from an area five feet beyond its perimeter. Excavated sod and topsoil may be stockpiled for later use as landscaping fill, or other non-structural fill material.

Earthwork, including but not limited to, site clearing, grubbing and stripping should be conducted during dry weather conditions; generally May through October. Failure to comply with this recommendation could result in detrimental erosion or sedimentation. Erosion and sediment control recommendations are provided later in this report to be implemented concurrently with earth work.

6.3 Temporary Excavations

Temporary construction slopes are not anticipated for this project. However, if any temporary construction slopes are proposed, they should be designed and excavated in strict compliance with applicable safety regulations including the OSHA Excavation and Trench Safety Standards.

All construction equipment, building materials, excavated soil, vehicular traffic, and other similar loads should never be allowed near the top of any unshored or unbraced excavations. Where the stability of adjoining embankments, cut slopes, buildings, walls, pavements, or any other similar improvements may be endangered by excavation operations, support systems such as shoring, bracing, tiebacks, or underpinning may be necessary and should be provided to provide structural stability and to protect any personnel working in the excavation.

Since excavation operations are dependent on construction methods and scheduling, the owner, his engineer and contractors shall be solely responsible for the design, installation, maintenance, and performance of all shoring, bracing, underpinning, and other similar systems. Under no circumstances should any comments provided herein be inferred to mean that LGC is assuming any responsibility for temporary excavations or the safety thereof. LGC assumes no responsibility for the design, installation, maintenance, and performance of any shoring, bracing, underpinning, or other similar systems.

6.4 Cut and Fill Slopes

Cut slopes, and fills of compacted soils (if any) should be no steeper than 2:1, horizontal to vertical (H:V). Unrestrained cut slopes with heights in excess of four feet should be retained, or should slope no steeper than 2:1. Grading should be designed by a licensed civil engineer in accordance with County and CBC grading requirements, ideally by a locally-experienced State-licensed contractor.

6.5 Structural Fills

Structural fills should be constructed as controlled and compacted engineered fills. Structural fill should be free of organic materials and may be composed of low plasticity clay, sand, or well graded gravel. Native soils below the topsoil appeared potentially-suitable for use as general engineered fill for this earthwork, provided they were moisture conditioned, free of organic or deleterious materials, and free of particles larger than approximately 3-inches in diameter.

Imported fill material is not anticipated to be required to achieve acceptable finished grades on this project site; if needed, sufficient material sources appeared likely to be available on the property, although we did not evaluate any specific materials or locations. If additional fills are used, there are native site soils which may be suitable for such use. Structural fills should consist of select, non-expansive engineered fill. The material for select, engineered fill should be free of organic material and particles larger than approximately 3-inches in diameter, and should meet the following minimum criteria:

- Plasticity Index: 15 or less,
- Liquid Limit: 35 or less,
- Percent Passing #200 sieve: 10 to 40%,
- Maximum Particle Size: 3 inches

Avoid fill placement on sloping ground. Fills should be placed on level, suitably prepared subgrade surfaces with the toes of the fill prisms keyed in to the subgrade. Fills should be compacted mechanically as described below to minimize the potential for settlement and enhance stability.

Structural fills should be placed on level, benched, suitably prepared subgrade surfaces and should be compacted mechanically to minimize potential settlement, seepage, piping, and erosion. Fill material should be placed in loose lifts no more than 8 inches thick. Moisture content of fill materials should be at or near optimum, and fills should be compacted mechanically.

Structural fill under human-occupancy structures should be subject to compaction testing and inspection by the project engineer during construction. It is prudent to monitor the suitability of fill materials as they are placed, and to assure compliance with the recommended compaction standards. Structural fills should be compacted as specified in the "Compaction Standard" Section, below.

6.6 Compaction Standard

To minimize consolidation and settlement, fills should be compacted mechanically to 90 percent relative compaction. Vibratory mechanical compactors should be employed to achieve the recommended compaction. Within small shallow excavations such as around pipes, we recommend that vibrating plate compactors (e.g., "wacker packers") be used. If no other compaction is performed, at minimum fill materials should be compacted, under the observation of the project engineer (or his designated representative), to be firm and unyielding under the wheels of a loaded 10-yard dump truck, or large bulldozer (e.g., Caterpillar D-9).

For granular fill material such as sand and gravel, smooth-drum vibratory compactors should be used. Flooding of granular materials should never be employed to consolidate backfill in trenches.

We recommend that any structural fills and trench backfill material be compacted in accordance with the specifications of Table 3 below. A qualified person should be present to observe fill placement and affirm the field density throughout each lift to verify that the specified compaction is being achieved by the contractor.

TABLE 3 – STRUCTURAL FILL PLACEMENT SPECIFICATIONS

Fill Placement Location	Compaction Recommendation	Moisture Content (Percent of Optimum)
Structural fills	90 percent	-1 to +3 percent
Utility trenches within building and driveway/parking areas	90 percent	-1 to +3 percent
Landscape and grass areas	Compact such that no settlement will occur	-1 to +3 percent
Driveways and Pavements (within 24" of finished grade)	95 percent	-1 to +3 percent

6.7 Drainage

Grading should be performed to create gentle, uniform surface gradients adequate to provide for positive drainage by sheet flow. Grading design and construction should be such that no water is allowed to pond anywhere on-site, or to migrate beneath any fills or structures. Runoff should not be allowed to concentrate and drain across any fill slopes, or to otherwise cause any erosion.

Runoff from the proposed new residence should be controlled and discharged such that no erosion, sedimentation or discharge of turbid water to perennial streams can occur. Storm water runoff should be controlled with the installation of gutters and downspouts. Runoff should be discharged at suitable outlet points where runoff can flow to native drainage courses, such that no erosion or sedimentation will occur. Armor stormwater runoff outlet points with a well-graded mix of small boulders, cobbles and coarse gravel, to prevent any erosion, sedimentation, or ponding.

6.8 Erosion and Sediment Control Recommendations

Wet weather conditions can occur at any time at the subject property but may be assumed from November through April. Storm water erosion and pollution prevention measures should be initiated and installed concurrently with any ground disturbing earthwork. We strongly recommend that earthworks and their associated erosion control measures be completed prior to the winter rains.

Except in an emergency, we recommend avoiding all wet-season earthworks and grading. To the extents feasibly applicable, Humboldt County Erosion Control Standards should be incorporated into any earthwork designs, and strictly adhered to during construction; a current edition should be readily obtainable from the County. We recommend extra attention specifically to the following erosion and sedimentation control measures:

- Prevent discharge of suspended sediment; contain all sediment on-site.
- Re-vegetate all disturbed soils and replace topsoil concurrently with earthwork.
- Seed and mulch exposed flat soil areas with straw, at minimum, to protect against erosion.
- Straw should be punched into the soil surface, or a tacifier employed to minimize potential wind disturbance.
- Exposed sloping cut or fill slopes, may not be protected adequately with only seeded straw mulch, and should have pre-seeded straw mats or fiber netting (over straw and seed) securely staked to these slopes. Place straw wattles at crests and mid-slopes of fill slopes, and place silt fencing at the bases of all new cut and fill slopes.
- Seed and mulch bare ground surfaces as soon as possible; if necessary, water to establish new vegetation.
- Prevent wind disturbance by covering stockpiles with securely-anchored plastic sheeting.
- Drive no vehicles on the native soils on-site when they are wet; at minimum use six inches of compacted, crushed aggregate or road base gravel to pave driveways, parking areas, and other areas accessed by vehicles during wet weather.
- Monitor site conditions before and after runoff-generating rainfall events to verify proper functioning of erosion control measures; repair them promptly whenever necessary.
- Repair malfunctioning or failing erosion control measures immediately.

6.9 Additional Services

6.9.1 Review of Grading and Drainage Plans

The conclusions and recommendations provided in this report are based on the assumption that soil conditions encountered during grading will be essentially as exposed during our evaluation, and that

the nature of the grading and use of the property will be as described above. We recommend that final drafts of any grading plans be reviewed by this office prior to implementation.

6.9.2 Observation and Testing

To assure applicability of, and conformance with, the specific recommendations in this report, and to assure that the assumptions made in the preparation of this report are valid, LGC, or another qualified professional engineering geologist should be retained to review design plans. Sufficient testing and observation by the project engineer should be performed during earthwork to ensure that the compaction standards specified above are adhered to.

7.0 REFERENCES

CBC [California Building Code], 2019, California Code of Regulations, Title 24, Part 2, Volume 2. California Building Standards Commission.

CDMG, 1995, Planning Scenario in Humboldt and Del Norte Counties, California, for a Great Earthquake on the Cascadia Subduction Zone, Special Publication 115.

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Petersen, M. D. et al., 1996, Probabilistic seismic hazard assessment for the state of California. DMG, Sacramento. OFR 96-08 (USGS OFR 96-706), 33 pp. + two appends.

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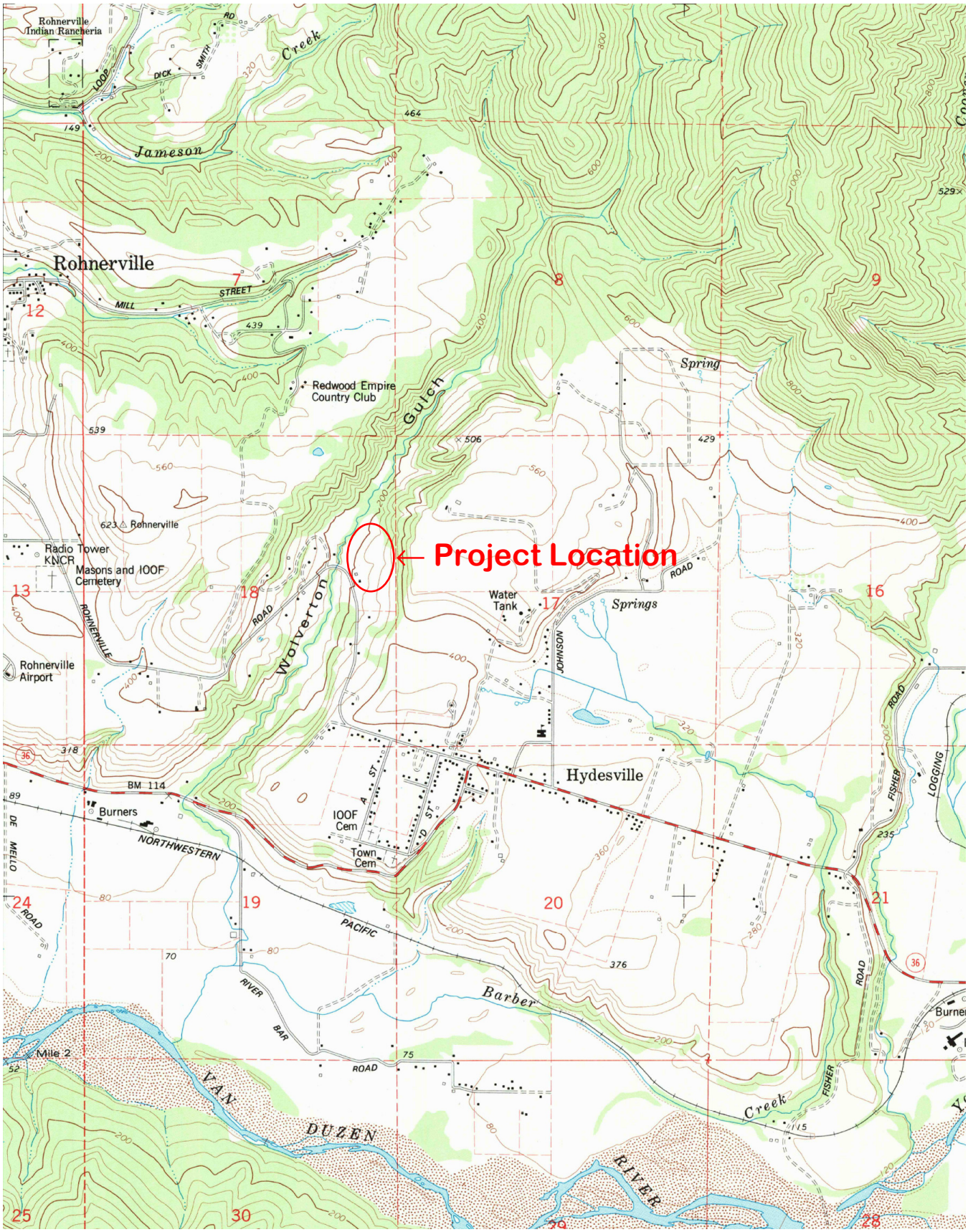
Kilbourne, R.T., 1985, DMG Open-File Report 85-02, Geology and Geomorphic Features Related to Landsliding, Hydesville 7.5' Quadrangle, Humboldt County, California, Scale 1:24,000

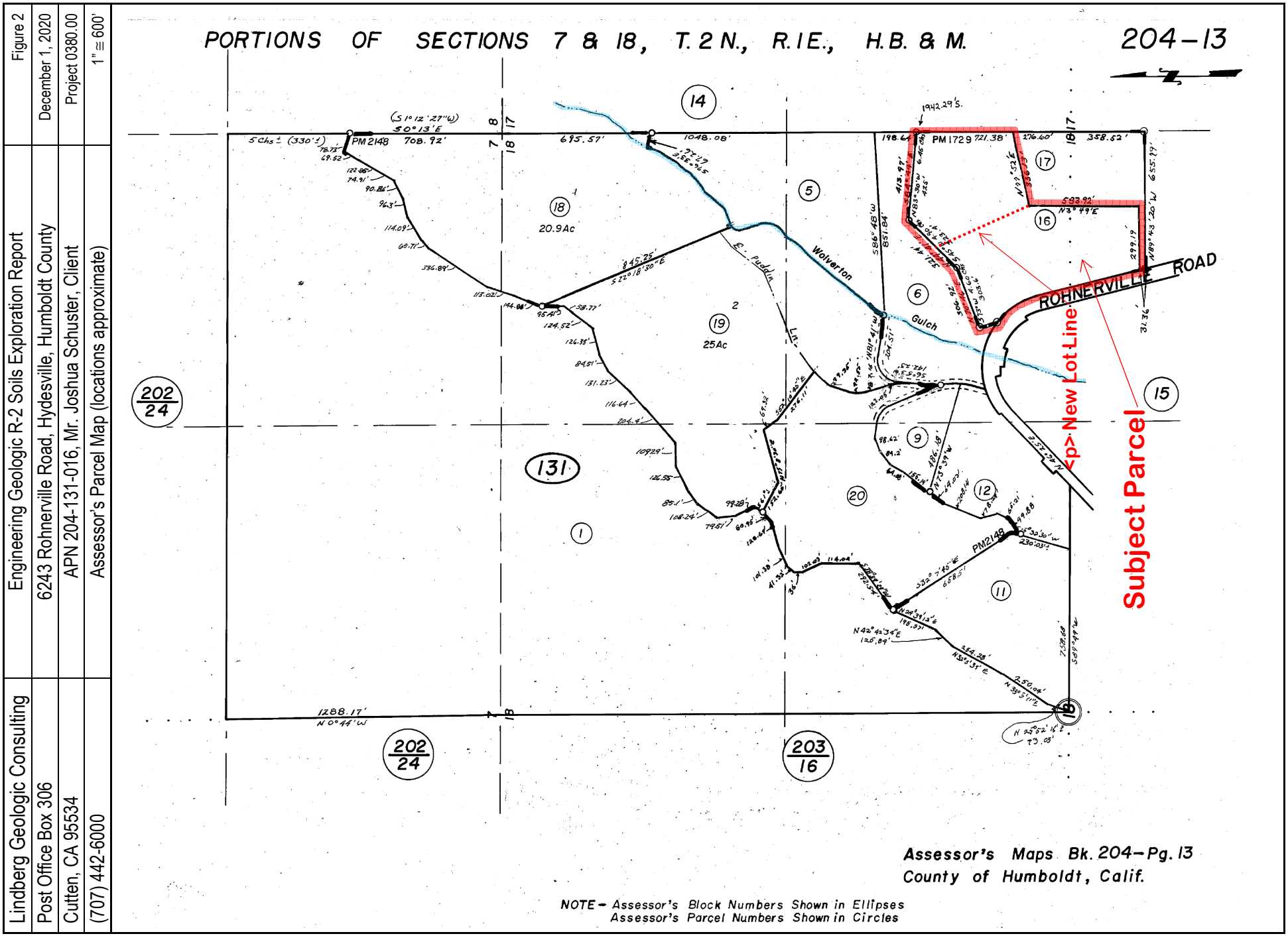
McLaughlin, R. J., S. D. Ellen, M. C. Blake Jr., A. S. Jayko, W. P. Irwin, K. R. Aalto, G. A. Carver, and S. H. Clarke, Jr., 2000, Geology of the Cape Mendocino, Eureka, Garberville, and Southwestern Part of the Hayfork 30 x 60 Minute Quadrangles and Adjacent Offshore Area, Northern California.

USGS, 1979, Hydesville, Calif. 7.5’ Quadrangle Map, Humboldt County, California.

8.0 LIST OF FIGURES

Lindberg Geologic Consulting	Engineering Geologic R-2 Soils Exploration Report	Figure 1
Post Office Box 306	6243 Rohnerville Road, Hydesville, Humboldt County	December 1, 2020
Cutten, CA 95534	APN 204-131-016, Mr. Joshua Schuster, Client	Project 0380.00
(707) 442-6000	Topographic Location Map (locations approximate)	1" ≅ 2300'



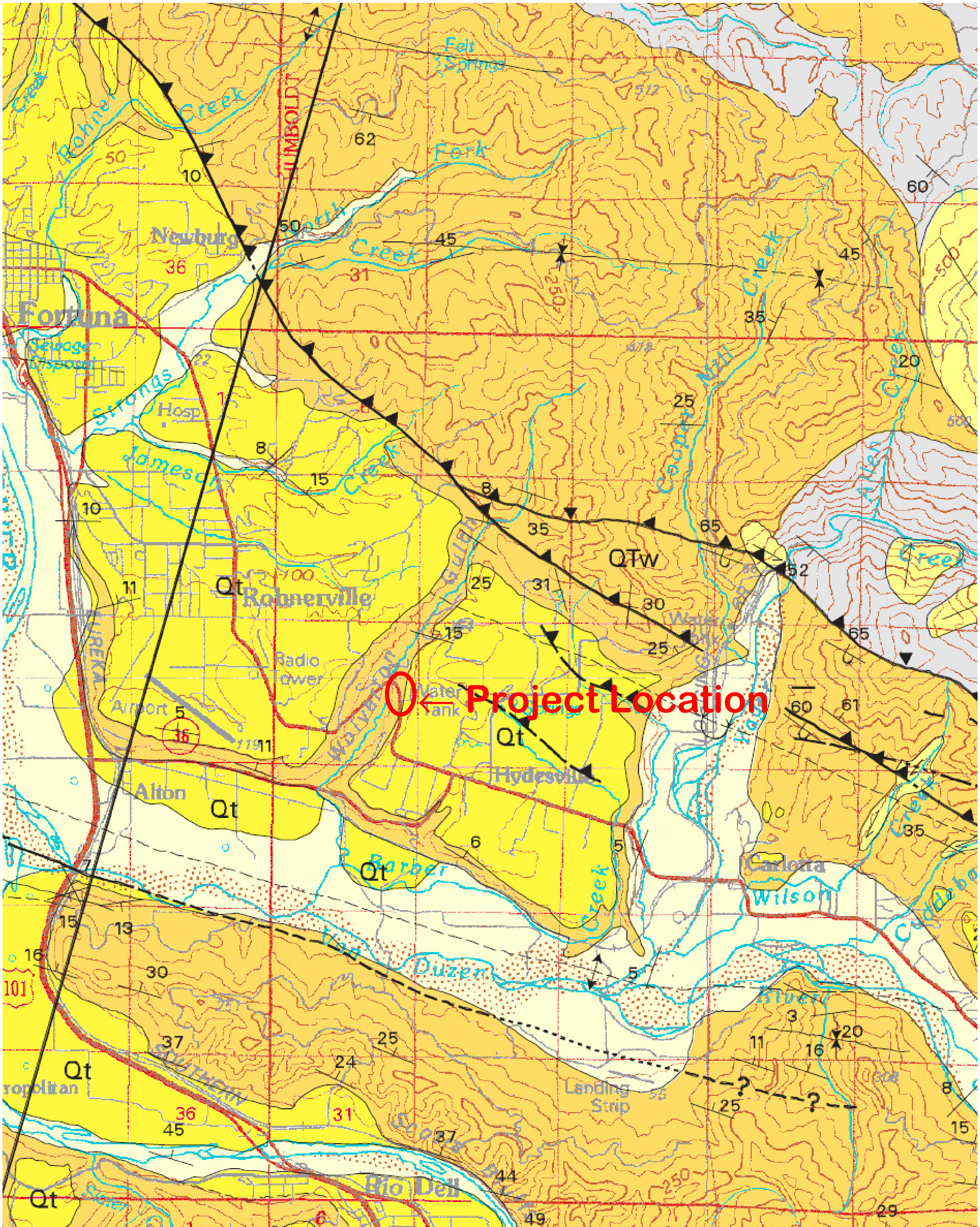


Lindberg Geologic Consulting	Engineering Geologic R-2 Soils Exploration Report
Post Office Box 306	6243 Rohnerville Road, Hydesville, Humboldt County
Cutten, CA 95534	APN 204-131-016, Mr. Joshua Schuster, Client
(707) 442-6000	Assessor's Parcel Map (locations approximate)
Figure 2	
December 1, 2020	
Project 0380.00	
1" ≅ 600'	

Lindberg Geologic Consulting	Engineering Geologic R-2 Soils Exploration Report	Figure 3
Post Office Box 306	6243 Rohnerville Road, Hydesville, Humboldt County	December 1, 2020
Cutten, CA 95534	APN 204-131-016, Mr. Joshua Schuster, Client	Project 0380.00
(707) 442-6000	Satellite Image Site Plan (all locations approximate)	1" ≅ 125'

Modified from: Google Earth Imagery dated April 21, 2019. N

Lindberg Geologic Consulting	Engineering Geologic R-2 Soils Exploration Report	Figure 4
Post Office Box 306	6243 Rohnerville Road, Hydesville, Humboldt County	December 1, 2020
Cutten, CA 95534	APN 204-131-016, Mr. Joshua Schuster, Client	Project 0380.00
(707) 442-6000	Geologic Map of Project Area (locations approximate)	1" ≅ 4,800'



Modified from: McLaughlin, *et al.*, 2000. N ≅

Lindberg Geologic Consulting	Engineering Geologic R-2 Soils Exploration Report	Figure 4a
P. O. Box 306	6243 Rohnerville Road, Hydesville, Humboldt County	December 1, 2020
Cutten, CA 95534	APN 204-131-016, Mr. Joshua Schuster, Client	Project 0380.00
(707) 442-6000	Geologic Map Explanation	No Scale

DESCRIPTION OF MAP UNITS

QUATERNARY AND TERTIARY OVERLAP DEPOSITS

- Qal — Alluvial deposits (Holocene and late Pleistocene?)
- Qm — Undeformed marine shoreline and aolian deposits (Holocene and late Pleistocene)
- Qt — Undifferentiated nonmarine terrace deposits (Holocene and Pleistocene)
- Qls — Landslide deposits (Holocene and Pleistocene)
- QTog — Older alluvium (Pleistocene and [or] Pliocene)
- QTw — Marine and nonmarine overlap deposits (late Pleistocene to middle Miocene)
- Ti — Volcanic rocks of Fickle Hill (Oligocene)

COAST RANGES PROVINCE

FRANCISCAN COMPLEX

-- Coastal Belt --

Coastal terrane(Pliocene to Late Cretaceous)

Sedimentary, igneous, and metamorphic rocks of the Coastal terrane (Pliocene to Late Cretaceous):

- co1 — Melange
- co2 — Melange
- co3 — Broken sandstone and argillite
- co4 — Intact sandstone and argillite
- cob — Basaltic Rocks (Late Cretaceous)
- cols — Limestone (Late Cretaceous)
- m — Undivided blueschist (Jurassic?)

King Range terrane (Miocene to Late Cretaceous)

- Krp — Igneous and sedimentary rocks of Point Delgada (Late Cretaceous)
- m — Undivided blueschist blocks (Jurassic?)

Sandstone and argillite of King Peak (middle Miocene to Paleocene[?]):

- krk1 — Melange and (or) folded argillite
- krk2 — Highly folded broken formation
- krk3 — Highly folded, largely unbroken rocks
- krl — Limestone
- krc — Chert
- krb — Basalt

False Cape terrane (Miocene? to Oligocene?)

- fc — Sedimentary rocks of the False Cape terrane (Miocene? to Oligocene?)

Yager terrane (Eocene to Paleocene?)

Sedimentary rocks of the Yager terrane (Eocene to Paleocene?):

- y1 — Sheared and highly folded mudstone
- y2 — Highly folded broken mudstone, sandstone, and conglomeratic sandstone
- y3 — Highly folded, little-broken sandstone, conglomerate, and mudstone
- Ycgl — Conglomerate

-- Central belt --

Melange of the Central belt (early Tertiary to Late Cretaceous):

Unnamed Metasandstone and meta-argillite (Late Cretaceous to Late Jurassic):

- cm1 — Melange
- cm2 — Melange
- cb1 — Broken formation
- cb2 — Broken formation
- cwr — White Rock metasandstone of Jayko and others (1989) (Paleogene and [or] Late Cretaceous)
- chr — Haman Ridge graywacke of Jayko and others (1989) (Cretaceous?)
- cfs — Fort Seward metasandstone (age unknown)
- cls — Limestone (Late to Early Cretaceous)
- cc — Chert (Late Cretaceous to Early Jurassic)
- bs — Basaltic rocks (Cretaceous and Jurassic)
- m — Undivided blueschist blocks (Jurassic?)
- gs — Greenstone
- c — Metachert
- yb — Metasandstone of Yolla Bolly terrane, undivided
- b — Melange block, lithology unknown

-- Eastern Belt --

Pickett Peak terrane (Early Cretaceous or older)

Metasedimentary and metavolcanic rocks of the Pickett Peak terrane (Early Cretaceous or older):

- ppsm — South Fork Mountain Schist
- mb — Chinquapin Metabasalt Member (Irwin and others, 1974)
- ppv — Valentine Springs Formation
- mv — Metabasalt and minor metachert

Yolla Bolly terrane (Early Cretaceous to Middle Jurassic?)

Metasedimentary and metaigneous rocks of the Yolla Bolly terrane (Early Cretaceous to Middle Jurassic?):

- ybt — Taliaferro Metamorphic Complex of Suppe and Armstrong (1972) (Early Cretaceous to Middle Jurassic?)
- ybc — Chicago Rock melange of Blake and Jayko (1983) (Early Cretaceous to Middle Jurassic)
- gs — Greenstone
- c — Metachert
- ybh — Metagraywacke of Hammerhorn Ridge (Late Jurassic to Middle Jurassic)
- c — Metachert
- gs — Greenstone
- sp — Serpentinite
- ybd — Devils Hole Ridge broken formation of Blake and Jayko (1983) (Early Cretaceous to Middle Jurassic)
- c — Radiolarian chert
- ybi — Little Indian Valley argillite of McLaughlin and Ohlin (1984) (Early Cretaceous to Late Jurassic)

Yolla Bolly terrane

- yb — Rocks of the Yolla Bolly terrane, undivided

GREAT VALLEY SEQUENCE AND COAST RANGE OPHIOLITE

Elder Creek(?) terrane

- ecms — Mudstone (Early Cretaceous)

Coast Range ophiolite (Middle and Late Jurassic):

- ecg — Layered gabbro
- ecsp — Serpentinite melange

Del Puerto(?) terrane

Rocks of the Del Puerto(?) terrane:

- dpms — Mudstone (Late Jurassic)

Coast Range ophiolite (Middle and Late Jurassic):

- dpt — Tuffaceous chert (Late Jurassic)
- dpb — Basaltic flows and keratophyric tuff (Jurassic?)
- dpd — Diabase (Jurassic?)
- dpsp — Serpentinite melange (Jurassic?)
- sp — Undivided Serpentinized peridotite (Jurassic?)

KLAMATH MOUNTAINS PROVINCE

Undivided Great Valley Sequence:

- Ks — Sedimentary rocks (Lower Cretaceous)

GREAT VALLEY SEQUENCE OVERLAP ASSEMBLAGE

Hayfork terrane

Eastern Hayfork subterrane:

- eh — Melange and broken formation (early? Middle Jurassic)
- ehls — Limestone
- ehsp — Serpentinite

Western Hayfork subterrane:

- whu — Hayfork Bally Meta-andesite of Irwin (1985), undivided (Middle Jurassic)
- whwg — Wildwood (Chanchelulla Peak of Wright and Fahan, 1988) pluton (Middle Jurassic)
- whwp — Clinopyroxenite
- whji — Diorite and gabbro plutons (Middle? Jurassic)

Rattlesnake Creek terrane

- rcm — Melange (Jurassic and older)
- rcls — Limestone
- rcc — Radiolarian chert
- rcis — Volcanic Rocks (Jurassic or Triassic)
- rcic — Intrusive complex (Early Jurassic or Late Triassic)
- rcp — Plutonic rocks (Early Jurassic or Late Triassic)
- rcum — Ultramafic rocks (age uncertain)
- rcpd — Blocky peridotite

Western Klamath terrane

Smith River subterrane:

- srs — Galice? formation (Late Jurassic)
- srv — Pyroclastic andesite
- srgb — Glen Creek gabbro-ultramafic complex of Irwin and others (1974)
- srpd — Serpentinized peridotite

MAP SYMBOLS

- Contact
- Fault
- Thrust fault
- Trace of the San Andreas fault associated with 1906 earthquake rupture

Strike and dip of bedding:

- Inclined (10/20)
- Vertical
- Horizontal
- Overturned (10/20)
- Approximate (20)
- Joint (10)
- Strike and dip of cleavage (10)

Shear foliation:

- Inclined (10)
- Vertical

Folds:

- Synclinal or synformal axis
- Anticlinal or antiformal axis
- Overturned syncline
- Landslide (Qls)

Melange Blocks:

- Serpentinite
- Chert
- Blueschist
- Greenstone
- Fossil locality and number (10)

GEOLOGY OF THE CAPE MENDOCINO, EUREKA, GARBERVILLE, AND SOUTHWESTERN PART OF THE HAYFORK 30 X 60 MINUTE QUADRANGLES AND ADJACENT OFFSHORE AREA, NORTHERN CALIFORNIA (McLaughlin et al., 2000)

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	Topsoil, dark brown, fine roots.	
						1				
						2		SW	Silty sand with gravel, dark brown, loose to medium dense, dry to moist, friable, cobbles<six inches in diameter. Zone 1 sand at 3-feet.	
			Sand 86.5%, Silt 9.2%, Clay 4.3%`			3				
						4				
			Sand 81.2%, Silt 11.9%, Clay 6.9%			5		SW	Silty sand with gravel, yellowish brown, medium dense, moist, friable, common small cobbles in coarse sand. Zone 1 Sand at 5-feet.	
						6				
						7		SW	Silty sand with gravel, strong brown, medium dense, moist, friable, gravel grades to coarse sand, clay content increases.	
						8				
						9		SW	Silty sand with gravel, grayish brown, dense, moist, friable, clay content desceases.	
						10			Exacavtion backfilled on completion. No free water or soil mottling encountered.	

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

SURFACE ELEVATION: 250 Feet

TOTAL DEPTH: 10 Feet

GROUNDWATER DEPTH: >10 Feet

LOGGED BY: David N. Lindberg, CEG

BOREHOLE DIAMETER: 18 Inches

EQUIPMENT: Mini-Excavator

HAMMER TYPE: None

LINDBERG GEOLOGIC CONSULTING

PROJECT NUMBER: 0380.00 DATE: October 15, 2020

LOG OF TEST EXCAVATION / BORING

Test Pit 1 **Schuster R-2 Soils**

Figure No. **5**

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	Topsoil, dark brown, abundant fine roots	
						1		SW	Silty sand with gravel, brown to yellowish brown, loose to friable, medium dense, dry to moist, common gravel to 3-inches.	
						2				
			Sand 65.8%, Silt 19.7%, Clay 14.5%`			3				
						4		SW	Silty sand with gravel, yellowish brown, medium dense, moist, friable, cobble to ~8-inches. Zone 2 Sandy Loam at 3 feet and 5 feet.	
			Sand 60.5%, Silt 23.5%, Clay 16.0%			5				
						6				
						7		SM	Silty sand, yellowish brown, medium dense, moist, friable, grades from gravelly to coarse sand, particles to ~3-inches.	
						8				
						9		SW	Silty sand with gravel, strong brown and gray brown, medium dense to dense, moist, grades to yellowish brown sand with gravel at 9.5 feet.	
						10			Excavation backfilled on completion. No free water or soil mottling encountered.	

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

SURFACE ELEVATION: 250 Feet

TOTAL DEPTH: 10 Feet

GROUNDWATER DEPTH: >10 Feet

LOGGED BY: David N. Lindberg, CEG

BOREHOLE DIAMETER: 18 Inches

EQUIPMENT: Mini-Excavator

HAMMER TYPE: None

LINDBERG GEOLOGIC CONSULTING

PROJECT NUMBER: 0380.00 DATE: October 15, 2020

LOG OF TEST EXCAVATION / BORING

Test Pit 2 **Schuster R-2 Soils**

Figure No. **6**