Mitigation Measure AIR-1 (Construction Impacts):

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
8. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
9. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AIR-2 (Use of construction equipment during the demolition and grading phases that have low diesel particulate matter exhaust emissions):

Implement a feasible plan to reduce diesel particulate matter emissions during the demolition and grading phases of construction such that increased cancer risk and annual $PM_{2.5}$ concentrations from construction would be reduced below TAC significance levels as follows:

1. All construction equipment larger than 25 horsepower used at the site during the demolition and grading phases for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 emission standards for PM (PM_{10} and $PM_{2.5}$), if feasible, otherwise,
    a. If use of Tier 4 equipment is not available, alternatively use equipment that meets U.S. EPA emission standards for Tier 2 or 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve a 10 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment; alternatively (or in combination),
    b. Use of electrical or non-diesel fueled equipment.

2. Alternatively, the applicant may develop another construction operations plan demonstrating that the construction equipment used on-site during demolition and grading would achieve a reduction in construction diesel particulate matter emissions by 10 percent or greater. Elements of the plan could include a combination of some of the following measures:

- Implementation of No. 1 above to use Tier 4 or alternatively fueled equipment,
- Installation of electric power lines during early construction phases to avoid use of diesel generators and compressors,
- Use of electrically-powered equipment,
- Forklifts and aerial lifts used for exterior and interior building construction shall be electric or propane/natural gas powered,
- Change in construction build-out plans to lengthen phases, and
- Implementation of different building techniques that result in less diesel equipment usage.

Such a construction operations plan would be subject to review by an air quality expert and approved by the Town prior to construction.

Mitigation Measure BIOLOGICAL-1 (Nesting Bird Avoidance): If any active nests are established within the vicinity of proposed grading in the future, they shall be avoided until young birds are able to leave the nest (fledge) and forage on their own. Avoidance will be accomplished by scheduling grading and tree removal during the non-nesting period (August 15 through February 1) or, if this is not feasible, by conducting a pre-grading survey for nesting birds. Provisions of the pre-grading survey effort, if necessary, will include the following:

a) If grading is scheduled during the nesting period (January 15 through August 14), a qualified wildlife biologist shall conduct a pre-grading bird survey to confirm the presence or absence of active nests in the vicinity of proposed construction activities. The survey area will include the complete Project Area and adjacent areas up to 300 feet for raptors.

b) If active nests are encountered, the biologist will prepare and implement species-specific measures to prevent abandonment of the active nest(s). At a minimum, grading in the vicinity of a nest's tree shall be deferred until the young birds have fledged, and a construction-disturbance within a distance determined by the biologist will be provided based on the species, visual and auditory buffers, and presence of non-project activity disturbance. Grading or other project-related disturbance in the vicinity of the nest will not be permitted until the biologist confirms that the young birds have fledged. The biologist will submit a survey report to the City verifying that the young have fledged before grading in the construction-disturbance setback area is initiated.

c) If project construction is halted for more than 14 days during the nesting season, another survey will be conducted to ensure nests are not built within that time period.

Mitigation Measure BIOLOGICAL-2 (Roosting Bat Avoidance): Potential impacts to roosting bats will be avoided by avoiding disturbance to active roost sites.

a) Tree removal or trimming will take place between September and October. This window falls outside of both the maternity and hibernation period for bats and avoids the breeding bird window. Tree removal can take place during this period without a breeding bird or bat roost survey.
If removal of trees (DBH >12 inches) occurs during the bat roosting season (November through August), these trees will be inspected by a qualified biologist for the presence of bat roosts. Potential bat roosts include large oak trees, broad leafed trees, exfoliating bark, tree cavities, and snags. If a maternity roost is detected, a 200-foot buffer will be placed around the maternity site until the bats

are no longer utilizing the site. Non-maternity roost sites can be removed under the direction of the biologist.

b) Any large tree (DBH >12 inches) that will be removed shall be left on the ground for 24 hours before being taken offsite or chipped. This period will allow any day roosting bats the opportunity to leave before the tree is either removed from the area or chipped.

Mitigation Measure CULTURAL-1 (Archaeological Monitor During Ground Disturbance/Project Construction): A certified archaeologist shall monitor all ground-disturbing activities and project construction.

Mitigation Measure CULTURAL – 2 (Archaeological Resources):

a. The following practices shall be followed during all phases of site preparation and construction activities: If archaeological resources are encountered during construction, construction personnel should be instructed to immediately suspend all activity in the immediate vicinity of the suspected resources, and the Town and a licensed archaeologist should be contacted to evaluate the situation. Project personnel should not collect cultural resources. A licensed archaeologist should be retained to inspect the discovery and make any necessary recommendations to evaluate the find under current CEQA guidelines, prior to the submittal of a resource mitigation plan and monitoring program to the Town for review and approval; and prior to the continuation of any on-site construction activity. Native American resources include, but are not limited to chert or obsidian flakes, projectile points, mortars, and pestles; and dark, friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include stone or adobe foundations or walls; remains and structures with square nails; and refuse deposits or bottle dumps, often located in old wells or privies.
b. Any identified cultural resources shall be recorded on DPR 523 historic resource recordation forms available from the Office of Historic Preservation.

Mitigation Measure CULTURAL-3 (Construction Impacts - Cultural Resources): In the event a human burial or skeletal element is identified during excavation or construction, work in that location should stop immediately until the find can be properly treated. The Town of Woodside and the San Mateo County Coroner's office should be notified. If deemed prehistoric, the Coroner's office would notify the Native American Heritage Commission which would identify a "Most Likely Descendant (MLD)." The archeological consultant and MLD, in conjunction with the project sponsor, should formulate an appropriate treatment plan for the find, which might include, but not be limited to, respectful scientific recording and removal, being left in place, or removal and reburial on site or elsewhere. Associated grave goods are to be treated in the same manner (See also Mitigation Measure CULTURAL-1). If a human burial or skeletal element is identified procedures in Mitigation Measure TRIBAL CULTURAL-4 shall be followed.

Mitigation Measure GEO-1 (Seismic and Geotech Control): Improvements to the site, including those associated with the proposed subdivision and future residential structures shall be designed and constructed in accordance with design-level geotech report and plans prepared by a California registered engineer, submitted as part of the building permit and improvement plan process with the Town of Woodside. The Geotech investigation or investigations for the private road and individual properties shall be based on preliminary development plans that show building sites, driveways, retaining walls, and initial details of future residences and a pertinent structures. The investigation shall include additional subsurface exploration along the alignment of the private road, around proposed homes, a pertinent structures, retaining walls, and areas of significant grading. The investigation shall include laboratory testing to evaluate the engineering properties of soil and bedrock samples, and analysis to develop project-specific geotechnical

design criteria and recommendations for the grading, foundations, and control of surface and subsurface drainage.

Mitigation Measure GEO-2 (Erosion Control): Erosion control measures including: erosion control fabric, wattles, fiber rolls, silt fences, berms, and other measures, shall be installed to ensure stabilization of soils at the project site during and following the construction period.

Mitigation Measure NOISE – 1 (Construction Noise):

- Construction activities shall be limited to weekdays between 7:30 a.m. and 5:30 p.m., and Saturdays between 8:00 a.m. and 1:00 p.m. No construction should take place on Sundays or holidays. At all times, broadcast, recorded, or amplified music is not allowed to be audible beyond the property lines of any construction site.
- All construction equipment with internal combustion engines used on the project site shall be properly muffled and maintained in good working condition.
- Unnecessary idling of internal combustion engines shall be strictly prohibited.
- All stationary noise-generating construction equipment, such as air compressors and portable power generators, shall be located as far as possible from noise-sensitive receptors such as existing residences.
- Prior to the issuance of Building Permits, the project site shall be posted with the name and contact number of the lead contractor in a location visible from the public street so that the contractor can be made aware of noise complaints.
- Construction equipment, vehicles, and workers associated with the development of the project shall not be permitted to park on any residential streets.
- A Construction Staging Plan shall be submitted with a schedule that includes materials storage locations and parking.

Mitigation Measure TRIBAL CULTURAL-1 (Culturally Affiliated Native American Monitor During Ground Disturbance/Project Construction): A culturally affiliated Native American with knowledge of cultural resources shall monitor all ground-disturbing activities and project construction.

Mitigation Measure TRIBAL CULTURAL-2 (Ground Disturbance): Planning for construction shall include avoidance of any encountered resources and protection of the cultural and natural context. Native American resources include but are not limited to: chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human remains.

Mitigation Measure TRIBAL CULTURAL-3 (Disposition of Recovered Cultural Items): Any resource encountered shall require stopping of construction to consult with any Native American tribe culturally affiliated with the area for recommendations to appropriately care for the discovered resources. Any resource encountered shall be treated with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to:

- Protecting the cultural character and integrity of the resource;
- Protecting the traditional use of the resource; and,
- Protecting the confidentiality of the resource.

Mitigation Measure TRIBAL CULTURAL-4 (Inadvertently Discovered Native American Human Remains): Any Native American human remains and associated grave artifacts shall be repatriated in consultation with any Native American tribe culturally affiliated with the area. The process outlined below shall be followed to be consistent California Health and Safety Code §7050.5 and Public Resources Code §5097.98:

Specifically, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the corner of the county in which the human remains are discovered has been determined and that the remains are not subject to the provisions of Section 27491 of the Government Code or another related provision of law concerning investigation of the circumstances, manner or cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation or to his or her authorized representative (Health and Safety Code Section 7050.5).

The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains.

If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC).

(a) Whenever the NAHC receives notification of a discovery of Native American human remains from a county coroner, pursuant to Health and Safety Code Section 7050.5(c), it shall immediately notify those persons it believes to be most likely descended from the deceased Native American (Most Likely Descendant (MLD)). The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American human remains and may recommend to the owner, or the person responsible for the excavation work, means for treatment or disposition, with appropriate dignity of the human remains and any associated grave goods. The descendants shall complete their inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site (Public Resources Code Section 5097.98).
(b) Upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section, with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains. The landowner shall discuss and confer with the descendants all reasonable options regarding the descendants' preferences for treatment.
    1. The descendants' preferences for treatment may include the following:
        A. The nondestructive removal and analysis of human remains, and items associated with Native American human remains.
        B. Preservation of Native American human remains and associated items in place.
        C. Relinquishment of Native American human remains and associated items to the descendants for treatment.
        D. Other culturally appropriate treatment.
    2. The parties may also mutually agree to extend discussions, taking into account the possibility that additional or multiple Native American human remains, as defined in this section, are located in the project area, providing a basis for additional treatment measures.
(c) For purposes of this section, "conferral" or "discuss and confer" means the meaningful and timely discussion and careful consideration of the views of each party, in a manner that is cognizant of

all parties' cultural values, and where feasible, seeking agreement. Each party shall recognize the other's needs and concerns for confidentiality of information provided to the other.

(d) Human remains of a Native American may be an inhumation or cremation, and in any state of decomposition or skeletal completeness. Any items associated with human remains that are placed or buried with the Native American human remains are to be treated in the same manner as the remains, but do not by themselves constitute human remains.

(e) Whenever the NAHC is unable to identify a descendent, or the descendants identified fail to make a recommendation, or the landowner or his or her authorized representative rejects the recommendations of the descendants and the mediation provided for (in subdivision (k) of Section 5097.94) fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall reinter the human remains and items associated with the Native American human remains with appropriate dignity on the property in a location not subject to further and future subsurface disturbance. To protect these sites, the landowner should do one or more of the following:

1. Record the site with the NAHC or the appropriate information Center.
2. Utilize an open-space or conservation zoning designation or easement.
3. Record a document with the County in which the property is located. The document shall be titled "Notice of Reinternment of Native American Remains" and shall include a legal description of the property, the name of the owner of the property, and the owner's acknowledged signature, in addition to any other information required by this section. The document shall be indexed as a notice under the name of the owner.

(f) Upon the discovery of multiple Native American human remains during a ground disturbing land development activity, the landowner may agree that additional conferral with the descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally appropriate treatment of the discovery may be ascertained from a review of the site utilizing cultural and archeological standards. Where the parties are unable to agree on the appropriate treatment measures, the human remains and items associated and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to subdivision (e).

(g) Measures taken to address human remains found would be exempt from review under the California Environmental Quality Act (CEQA).

End of mitigation measures

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
DEL NORTE
HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLARA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
1400 Valley House Drive, Suite 210
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
https://nwic.sonoma.edu

May 9, 2023 NWIC File No.: 22-1482

Sarah Filipe
Town of Woodside
P.O. Box 620005
Woodside, CA 94062

Re: Record search results for the proposed Subdivision at 1101 Cañada Road, Woodside, CA

Dear Sarah Filipe:

Per your request received by our office on 23rd of March, 2023, a records search was conducted for the above referenced project by reviewing pertinent Northwest Information Center (NWIC) base maps that reference cultural resources records and reports, historic-period maps, and literature for San Mateo County. Please note that use of the term cultural resources includes both archaeological resources and historical buildings and/or structures.

The proposed project includes a Subdivision of one 7.79-acre parcel into seven parcels of approximately one acre each. The project also includes the demolition of an existing single-family residence and grading for the construction of a new road.

Review of the information at our office indicates that there has been no cultural resource studies that cover the Subdivision at 1101 Cañada Road project area. This Subdivision at 1101 Cañada Road project area contains no recorded archaeological resources. The State Office of Historic Preservation Built Environment Resources Directory (OHP BERD), which includes listings of the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places, lists no recorded buildings or structures within or adjacent to the proposed Subdivision at 1101 Cañada Road project area. In addition to these inventories, the NWIC base maps show no recorded buildings or structures within the proposed Subdivision at 1101 Cañada Road project area.

At the time of Euroamerican contact, the Native Americans that lived in the area were speakers of the Ramaytush language, which is part of the Costanoan language family (Levy 1978:485). Using Milliken's study of various mission records, the proposed Subdivision at 1101 Cañada Road project area is located within the lands of the Lamchin tribe, whose territory was located the portion of the bay shore of the San Francisco Peninsula from present day Belmont south to present day Redwood City, and adjacent interior valleys to the west (Milliken 1995: 246-7).

Based on an evaluation of the environmental setting and features associated with known sites, Native American resources in this part of San Mateo County have been found on ridges, midslope benches, in valleys, near intermittent and perennial watercourses and near areas populated by oak, buckeye, manzanita, and pine, as well as near a variety of plant and animal resources. The Subdivision at 1101 Cañada Road project area is located in San Mateo County in the Town of Woodside, in the neighborhood of Woodside Glens. The project area is located

ATTACHMENT 2

on gently sloping midslope benches between two creeks or tributaries off of Redwood Creek and West Union Creek, formerly known as Monte Redondo Creek. Aerial maps indicate one building, a driveway, a possible cement foundation or parking area, low grasses, scattered trees. Given the similarity of these environmental factors and the ethnographic sensitivity of the area, there is a moderate potential for unrecorded Native American resources to be within the proposed Subdivision at 1101 Cañada Road project area.

Review of historical literature and maps indicated historic-period activity within the Subdivision at 1101 Cañada Road project area. Early Rancho maps indicate a fence, field, and a house within or adjacent to the project area. According to early San Mateo County maps, the project area appears to be located within the landholdings of F.W. Billings (Bromfield 1894). With this information in mind, there is a moderate to high potential for unrecorded historic-period archaeological resources to be within the proposed Subdivision at 1101 Cañada Road project area.

The 1961 Half Moon Bay USGS 15-minute topographic quadrangle depicts a church within the project area, and one other building within and adjacent to the Subdivision at 1101 Cañada Road project area. If present, these unrecorded buildings or structures meet the Office of Historic Preservation's minimum age standard that buildings, structures, and objects 45 years or older may be of historical value.

RECOMMENDATIONS:

1) There is a moderate potential for Native American archaeological resources and a moderate to high potential for historic-period archaeological resources to be within the project area. We recommend a qualified archaeologist conduct further archival and field study to identify cultural resources. Field study may include, but is not limited to, pedestrian survey, hand auger sampling, shovel test units, or geoarchaeological analyses as well as other common methods used to identify the presence of archaeological resources. Please refer to the list of consultants who meet the Secretary of Interior's Standards at http://www.chrisinfo.org.

2) We recommend the lead agency contact the local Native American tribe(s) regarding traditional, cultural, and religious heritage values. For a complete listing of tribes in the vicinity of the project, please contact the Native American Heritage Commission at 916/373-3710.

3) The 1961 Half Moon Bay USGS 15-minute topographic quadrangle depicts a church within the project area, and one other building within and adjacent to the Subdivision at 1101 Cañada Road project area. If the proposed project area contains buildings or structures that meet the minimum age requirement, prior to commencement of project activities, it is recommended that these resources be assessed by a professional familiar with the architecture and history of San Mateo County. Please refer to the list of consultants who meet the Secretary of Interior's Standards at http://www.chrisinfo.org.

4) Review for possible historic-period buildings or structures has included only those sources listed in the attached bibliography and should not be considered comprehensive.

5) If archaeological resources are encountered **during construction,** work should be temporarily halted in the vicinity of the discovered materials and workers should avoid altering the materials and their context until a qualified professional archaeologist has evaluated the situation and provided appropriate recommendations. Project personnel should not collect cultural resources. Native American resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, often located in old wells or privies.

6) It is recommended that any identified cultural resources be recorded on DPR 523 historic resource recordation forms, available online from the Office of Historic Preservation's website: https://ohp.parks.ca.gov/?page_id=28351

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

Thank you for using our services. Please contact this office if you have any questions, (707) 588-8455.

Sincerely,

Jillian Guldenbrein
Researcher

LITERATURE REVIEWED

In addition to archaeological maps and site records on file at the Northwest Information Center of the Historical Resources Information System, the following literature was reviewed:

Barrows, Henry D., and Luther A. Ingersoll
2005 *Memorial and Biographical History of the Coast Counties of Central California*. Three Rocks Research, Santa Cruz (Digital Reproduction of The Lewis Publishing Company, Chicago: 1893.)

Bowman, J.N.
1951 *Adobe Houses in the San Francisco Bay Region*. In Geologic Guidebook of the San Francisco Bay Counties, Bulletin 154. California Division of Mines, Ferry Building, San Francisco, CA.

Brabb, Earl E., Fred A. Taylor, and George P. Miller
1982 *Geologic, Scenic, and Historic Points of Interest in San Mateo County, California*. Miscellaneous Investigations Series, Map I-1257-B, 1:62,500. Department of the Interior, United States Geological Survey, Washington, D.C.

Bromfield, Davenport
1894 Official Map of San Mateo County, California

General Land Office
1856 Survey Plat for Rancho Pulgas
1856 Survey Plat for Rancho Canada de Raymundo.

Heizer, Robert F., editor
1974 *Local History Studies*, Vol. 18., "The Costanoan Indians." California History Center, DeAnza College, Cupertino, CA.

Helley, E.J., K.R. Lajoie, W.E. Spangle, and M.L. Blair
1979 *Flatland Deposits of the San Francisco Bay Region - Their Geology and Engineering Properties, and Their Importance to Comprehensive Planning*. Geological Survey Professional Paper 943. United States Geological Survey and Department of Housing and Urban Development.

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2005 *Caltrans Statewide Historic Bridge Inventory Update*. Caltrans, Division of Environmental Analysis, Sacramento, CA.

Kroeber, A.L.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology, Bulletin 78, Smithsonian Institution, Washington, D.C. (Reprint by Dover Publications, Inc., New York, 1976)

Levy, Richard
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Milliken, Randall
1995 *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810*. Ballena Press Anthropological Papers No. 43, Menlo Park, CA.

Myers, William A. (editor)
1977 *Historic Civil Engineering Landmarks of San Francisco and Northern California*. Prepared by The History and Heritage Committee, San Francisco Section, American Society of Civil Engineers. Pacific Gas and Electric Company, San Francisco, CA.

Postel, Mitchell P.
1994 *San Mateo, A Centennial History.* Scottwall Associates, San Francisco, CA.

San Mateo County Historic Resources Advisory Board
1984 San Mateo County: Its History and Heritage. Second Edition. Division of Planning and Development Department of Environmental Management.

San Mateo County Planning and Development Department
n.d. "Historical and Archaeological Resources, Section 5" from the *San Mateo CountyGeneral Plan*.

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1976 *California Inventory of Historic Resources*. State of California Department of Parks and Recreation, Sacramento.

State of California Department of Parks and Recreation and Office of Historic Preservation
1988 *Five Views: An Ethnic Sites Survey for California*. State of California Department of Parks and Recreation and Office of Historic Preservation, Sacramento.

State of California Office of Historic Preservation **
2022 *Built Environment Resources Directory*. Listing by City (through September 23, 2022). State of California Office of Historic Preservation, Sacramento.

Thornton, Mark V.
1993 An Inventory and Historical Significance Evaluation of CDF Fire Lookout Stations. CDF Archaeological Reports No. 12.

Woodbridge, Sally B.
1988 *California Architecture: Historic American Buildings Survey*. Chronicle Books, San Francisco, CA.

**Note that the Office of Historic Preservation's *Historic Properties Directory* includes National Register, State Registered Landmarks, California Points of Historical Interest, and the California Register of Historical Resources as well as Certified Local Government surveys that have undergone Section 106 review.

Native American Heritage Commission
Tribal Consultation List
San Mateo County
12/1/2022

Amah MutsunTribal Band of Mission San Juan Bautista
Irene Zwierlein, Chairperson
3030 Soda Bay Road — Costanoan
Lakeport, CA, 95453
Phone: (650) 851 - 7489
Fax: (650) 332-1526
amahmutsuntribal@gmail.com

Costanoan Rumsen Carmel Tribe
Tony Cerda, Chairperson
244 E. 1st Street — Costanoan
Pomona, CA, 91766
Phone: (909) 629 - 6081
Fax: (909) 524-8041
rumsen@aol.com

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28 — Costanoan
Hollister, CA, 95024
Phone: (831) 637 - 4238
ams@indiancanyons.org

Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods, MLD Contact
1615 Pearson Court — Costanoan
San Jose, CA, 95122
Phone: (408) 673 - 0626
kanyon@kanyonkonsulting.com

Muwekma Ohlone Indian Tribe of the SF Bay Area
Charlene Nijmeh, Chairperson
20885 Redwood Road, Suite 232 — Costanoan
Castro Valley, CA, 94546
Phone: (408) 464 - 2892
cnijmeh@muwekma.org

Muwekma Ohlone Indian Tribe of the SF Bay Area
Monica Arellano, Vice Chairwoman
20885 Redwood Road, Suite 232 — Costanoan
Castro Valley, CA, 94546
Phone: (408) 205 - 9714
monicavarellano@gmail.com

The Ohlone Indian Tribe
Andrew Galvan, Chairperson
P.O. Box 3388 — Bay Miwok
Fremont, CA, 94539 — Ohlone
Phone: (510) 882 - 0527 — Patwin
Fax: (510) 687-9393 — Plains Miwok
chochenyo@AOL.com

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct. — Foothill Yokut
Salinas, CA, 93906 — Mono
Phone: (831) 443 - 9702
kwood8934@aol.com

Tamien Nation
Quirina Luna Geary, Chairperson
PO Box 8053 — Costanoan
San Jose, CA, 95155
Phone: (707) 295 - 4011
qgeary@tamien.org

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Government Code Sections 65352.3, 65352.4 et seq. and Public Resources Code Sections 21080.3.1 for the proposed Woodside Housing Element Update Project, San Mateo County.

ATTACHMENT 3

March 3, 2023

Monica Arellano
20885 Redwood Road, Suite 232
Castro Valley, CA, 94546

Re: 1101 Cañada Road Woodside, CA – Proposed Subdivision
Native American and Tribal Consultation under AB 52

Dear Ms. Arellano,

The Town of Woodside is processing an application for a Subdivision Tentative Map to divide one 7.79-acre parcel into seven (7) parcels that would each be approximately 1-acre located at 1101 Cañada Road in Woodside, CA. The proposed project includes demolition of an existing residence, and construction of a new road to serve the new lots. The proposed project also includes changing the General Plan land use designation from Institutional to Residential since the existing residence was formally used as a church. The Planning Area for the project includes the property at 1101 Cañada Road as shown in the attached maps. Figure 1 depicts the 7.79-acre project site. Figure 2 shows the USGS 7.5" topographic quadrangles that covers the Planning Area.

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Best Regards,

ATTACHMENT 4

Sarah Filipe

Sarah Filipe, Associate Planner
Town of Woodside
Tel. 650-530-3436
Sfilipe@woodsidetown.org

Attachments:

- Figure 1 – Project Site
- Figure 2 - USGS 7.5' Quadrangle Map
- Figure 3 – Project Plans, received January 9, 2023

March 3, 2023

Tony Cerda
Chairperson
244 E. 1st Street
Pomona, CA, 91766

Re: 1101 Cañada Road Woodside, CA – Proposed Subdivision
Native American and Tribal Consultation under AB 52

Dear Mr. Cerda,

The Town of Woodside is processing an application for a Subdivision Tentative Map to divide one 7.79-acre parcel into seven (7) parcels that would each be approximately 1-acre located at 1101 Cañada Road in Woodside, CA. The proposed project includes demolition of an existing residence, and construction of a new road to serve the new lots. The proposed project also includes changing the General Plan land use designation from Institutional to Residential since the existing residence was formally used as a church. The Planning Area for the project includes the property at 1101 Cañada Road as shown in the attached maps. Figure 1 depicts the 7.79-acre project site. Figure 2 shows the USGS 7.5" topographic quadrangles that covers the Planning Area.

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Sfilipe@woodsidetown.org

Attachments:

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- Figure 2 - USGS 7.5' Quadrangle Map
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March 3, 2023

Johnathan Costillas
PO Box 866
Clearlake Oaks, CA 95423

Re: 1101 Cañada Road Woodside, CA – Proposed Subdivision
Native American and Tribal Consultation under AB 52

Dear Mr. Costillas,

The Town of Woodside is processing an application for a Subdivision Tentative Map to divide one 7.79-acre parcel into seven (7) parcels that would each be approximately 1-acre located at 1101 Cañada Road in Woodside, CA. The proposed project includes demolition of an existing residence, and construction of a new road to serve the new lots. The proposed project also includes changing the General Plan land use designation from Institutional to Residential since the existing residence was formally used as a church. The Planning Area for the project includes the property at 1101 Cañada Road as shown in the attached maps. Figure 1 depicts the 7.79-acre project site. Figure 2 shows the USGS 7.5" topographic quadrangles that covers the Planning Area.

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Attachments:

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March 3, 2023

Andrew Galvan,
P.O. Box 3388
Fremont, CA, 94539

Re: 1101 Cañada Road Woodside, CA – Proposed Subdivision
Native American and Tribal Consultation under AB 52

Dear Mr. Galvan,

The Town of Woodside is processing an application for a Subdivision Tentative Map to divide one 7.79-acre parcel into seven (7) parcels that would each be approximately 1-acre located at 1101 Cañada Road in Woodside, CA. The proposed project includes demolition of an existing residence, and construction of a new road to serve the new lots. The proposed project also includes changing the General Plan land use designation from Institutional to Residential since the existing residence was formally used as a church. The Planning Area for the project includes the property at 1101 Cañada Road as shown in the attached maps. Figure 1 depicts the 7.79-acre project site. Figure 2 shows the USGS 7.5" topographic quadrangles that covers the Planning Area.

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Attachments:

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March 3, 2023

Quirina Luna Geary
PO Box 8053
San Jose, CA, 95155

Re: 1101 Cañada Road Woodside, CA – Proposed Subdivision
Native American and Tribal Consultation under AB 52

Dear Ms. Geary,

The Town of Woodside is processing an application for a Subdivision Tentative Map to divide one 7.79-acre parcel into seven (7) parcels that would each be approximately 1-acre located at 1101 Cañada Road in Woodside, CA. The proposed project includes demolition of an existing residence, and construction of a new road to serve the new lots. The proposed project also includes changing the General Plan land use designation from Institutional to Residential since the existing residence was formally used as a church. The Planning Area for the project includes the property at 1101 Cañada Road as shown in the attached maps. Figure 1 depicts the 7.79-acre project site. Figure 2 shows the USGS 7.5" topographic quadrangles that covers the Planning Area.

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March 3, 2023

California Native American Heritage Commission
Laura Miranda
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691

Re: 1101 Cañada Road Woodside, CA – Proposed Subdivision
Native American and Tribal Consultation under AB 52

Dear Ms. Miranda,

The Town of Woodside is processing an application for a Subdivision Tentative Map to divide one 7.79-acre parcel into seven (7) parcels that would each be approximately 1-acre located at 1101 Cañada Road in Woodside, CA. The proposed project includes demolition of an existing residence, and construction of a new road to serve the new lots. The proposed project also includes changing the General Plan land use designation from Institutional to Residential since the existing residence was formally used as a church. The Planning Area for the project includes the property at 1101 Cañada Road as shown in the attached maps. Figure 1 depicts the 7.79-acre project site. Figure 2 shows the USGS 7.5" topographic quadrangles that covers the Planning Area.

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Sfilipe@woodsidetown.org

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March 3, 2023

Charlene Nijmeh
Chairperson
20885 Redwood Road, Suite 232
Castro Valley, CA, 94546

Re: 1101 Cañada Road Woodside, CA – Proposed Subdivision
Native American and Tribal Consultation under AB 52

Dear Ms. Nijmeh,

The Town of Woodside is processing an application for a Subdivision Tentative Map to divide one 7.79-acre parcel into seven (7) parcels that would each be approximately 1-acre located at 1101 Cañada Road in Woodside, CA. The proposed project includes demolition of an existing residence, and construction of a new road to serve the new lots. The proposed project also includes changing the General Plan land use designation from Institutional to Residential since the existing residence was formally used as a church. The Planning Area for the project includes the property at 1101 Cañada Road as shown in the attached maps. Figure 1 depicts the 7.79-acre project site. Figure 2 shows the USGS 7.5" topographic quadrangles that covers the Planning Area.

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March 3, 2023

Ann Marie Sayers
Chairperson
P.O. Box 28
Hollister, CA, 95024

Re: 1101 Cañada Road Woodside, CA – Proposed Subdivision
Native American and Tribal Consultation under AB 52

Dear Ms. Sayers,

The Town of Woodside is processing an application for a Subdivision Tentative Map to divide one 7.79-acre parcel into seven (7) parcels that would each be approximately 1-acre located at 1101 Cañada Road in Woodside, CA. The proposed project includes demolition of an existing residence, and construction of a new road to serve the new lots. The proposed project also includes changing the General Plan land use designation from Institutional to Residential since the existing residence was formally used as a church. The Planning Area for the project includes the property at 1101 Cañada Road as shown in the attached maps. Figure 1 depicts the 7.79-acre project site. Figure 2 shows the USGS 7.5" topographic quadrangles that covers the Planning Area.

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March 3, 2023

Kanyon Sayers-Roods
1615 Pearson Court
San Jose, CA, 95122

Re: 1101 Cañada Road Woodside, CA – Proposed Subdivision
Native American and Tribal Consultation under AB 52

Dear Ms. Sayers-Roods,

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March 3, 2023

Kenneth Woodrow
1179 Rock Haven Ct.
Salinas, CA, 93906

Re: 1101 Cañada Road Woodside, CA – Proposed Subdivision
Native American and Tribal Consultation under AB 52

Dear Mr. Woodrow,

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March 3, 2023

Irenne Zwierlein
Chairperson
789 Canada Road
Woodside, CA, 94062

Re: 1101 Cañada Road Woodside, CA – Proposed Subdivision
Native American and Tribal Consultation under AB 52

Dear Ms. Zwierlein,

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The Amah Mutsun Tribal Band of San Juan Bautista
&
A.M.T.B. Inc.

Letter of Response

To whom it may concern:

It is our pride and privilege to be of service for any Native American Cultural Resource Monitoring, Consulting and/ or Sensitivity Training you may need or require. We take our Heritage and History seriously and are diligent about preserving as much of it as we can. Construction is a constant in the Bay Area and with that new discoveries are bound to happen. If you choose our services we will gladly guide all personnel through proper procedures to safely protect and preserve: Culture, Heritage, and History.

It is highly recommended, if not previously done, to search through Sacred Lands Files (SLF) and California Historical Resource Information Systems (CHRIS) as well as reaching out to the Native American Heritage Commission (NAHC) In order to determine whether you are working in a Cultural and/ or Historic sensitivity.

If you have received any positive cultural or historic sensitivity within 1 mile of the project area here is A.M.T.B Inc's and Amah Mutsun Tribal Band of San Juan Bautista's recommendations:

- All Crews, Individuals and Personnel who will be moving any earth be Cultural Sensitivity Trained.
- A Qualified California Trained Archaeological Monitor is present during any earth movement.
- A Qualified Native American Monitor is present during any earth movement.

If further Consultation, Monitoring or Sensitivity Training is needed please feel free to contact A.M.T.B. Inc. or Myself Directly.

Sincerely, Irenne Zwierlein

Irenne Zwierlein

3030 Soda Bay Road, Lakeport
CA 95453
amtbinc21@gmail.com
(650)851-7489

ATTACHMENT 5

Amah Mutsun Tribal Band of San Juan Bautista
&
AMTB Inc.

3030 Soda Bay Road Lakeport, CA 95453

Our rates for 2023

$250.00 per hour.

4 hours minimum

Cancellations not 48 hours (about 2 days) prior will be charged a 4-hour minimum. There is a round trip mileage charge if canceled after they have traveled to site.

Anything over 8 hours a day is charged as time and a half.

Weekends are charged at time and a half.

Holidays are charged at double time.

For fiscal year (FY) 2023, standard per diem rate of $329 ($255 lodging, $74 M&IE).

M&IE Breakdown FY 2023

M&IE Total[1]	Continental Breakfast/ Breakfast[2]	Lunch[2]	Dinner[2]	Incidental Expenses	First & Last Day of Travel[3]
$74.00	$17.00	$18.00	$34.00	$5.00	$55.50

Beginning on July 1st, 2022, the standard mileage rates for the use of a car round trip (also vans, pickups or panel trucks) will be: $62.50 cents per mile driven for business use or what the current federal standard is at the time.

Our Payment terms are 5 days from date on invoice.

Our Monitors are Members of the Amah Mutsun Tribal Band of Mission San Juan Bautista.

If you have any questions, please feel free to contact the A.M.T.B. Inc. at the below contact information.

Sincerely,

Irenne Zwierlein

Irenne Zwierlein

3030 Soda Bay Rd, Lakeport
CA 95453
amtbinc21@gmail.com
(650)851-7489

State of California ♉ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Review Code | Reviewer | Date | Listings

Page 1 **of** 12 ***Resource Name or #:** (Assigned by recorder) 1101 Canada Road , Woodside
P1. Other Identifier:

***P2. Location:** ϒ **Not for Publication** ☒ **Unrestricted**

***a. County** San Mateo **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** **Date** **T** ; **R** ; ϒ **of** ϒ **of Sec** ; **B.M.**

c. Address 1101 Canada Road City Woodside Zip 94062

d. UTM: (Give more than one for large and/or linear resources) Zone 10S , 565066.15 mE/ 4144093.66 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
APN 073-011-270

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The property is located in an area of single-family homes west of I280 on a relatively flat lot off Canada Road. There is one building on the site, a contemporary style, rectangular plan with window walls on two sides. The clear glass panes are set in wood frames stacked vertically and horizontally. The low sloping roof extends with broad eaves to cover the porch and ends of the building to provide sun protection to the interior (sides) and a design element on the ends. The structure is a post and beam with exaggerated beams that extend under the eaves. One end wall extend in a "v" and both ends are vertical grooved panels set in frames.



***P3b. Resource Attributes:** (List attributes and codes) HP 2 Single Family

***P4. Resources Present:** ✠ Building ϒ Structure ϒ Object ϒ Site ϒ District ϒ Element of District ϒ Other (Isolates, etc.)

P5b. Description of Photo: (view, date, accession #) Front façade,

***P6. Date Constructed/Age and Source:** ✠ Historic ϒ Prehistoric ϒ Both
1958 Assessor's records

***P7. Owner and Address:**
USA Putnam c/o Jpse[h Putma,
3 California Drive
Burlingame CA 94010

***P8. Recorded by:** (Name, affiliation, and address) Bonnie Bamburg
Urban Programmers
10710 Ridgeview Ave.
San Jose CA 95127

***P9. Date Recorded:** Jan 20,2022

***P10. Survey Type:** (Describe) Primary Survey

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") none

***Attachments:** ϒNONE ϒLocation Map ☒Continuation Sheet ☒Building, Structure, and Object Record
ϒArchaeological Record ϒDistrict Record ϒLinear Feature Record ϒMilling Station Record ϒRock Art Record
ϒArtifact Record ϒPhotograph Record ϒ Other (List):

ATTACHMENT 6

P3 Description continued.

The main entrance is toward the north end under the overhanging eaves. The design belies the original use as a single building elementary school. The building was extended adding an alter area when it became a satellite chapelin the mid 1960s. The architect was not identified.

Photographs:





Photograph 2 1101 Canada Road,Woodside
View: Front facing facade
Date: December 4, 2021



Photograph 3 1101 Canada Road,Woodside
View: End of the building. Note the rafter tails and broad overhang above the flat end wall.
Date: December 4, 2021



CONTINUATION SHEET





Photograph 6 1101 Canada Road, Woodside
View: Front facing façade -detail of exaggerated post and beam construction.
Date: December 4, 2021



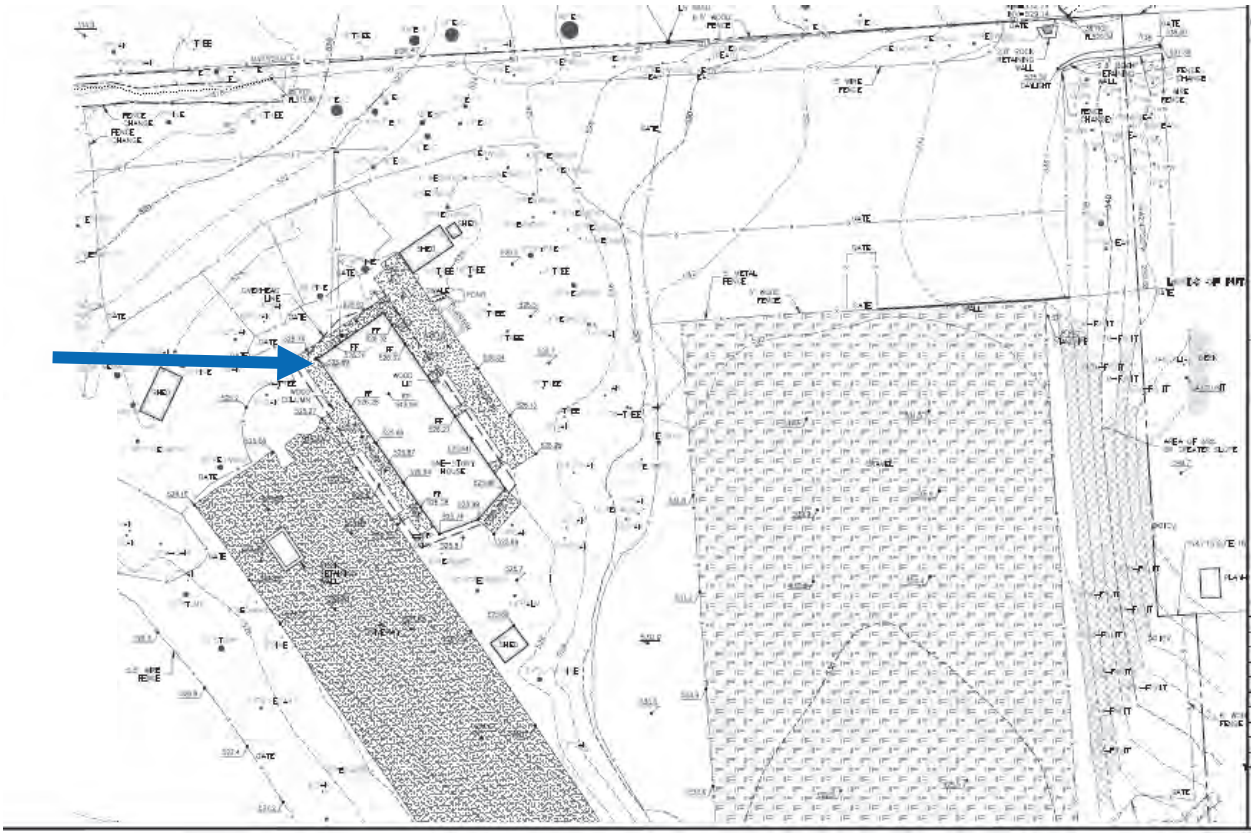


Figure 1 Topographical Map (portion) 1101 Canada Road, Woodside

Arrow points to the building area.

Source Lea and Braze Engineering, April 22, 2021

State of California ♄ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # _____
HRI# _____

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) 1101 Canada Road, Woodside ***NRHP Status Code** 6Z
Page 8 **of** 12

B1. Historic Name: Catholic Elementary School
B2. Common Name: Putnam Property
B3. Original Use: Private School B4. Present Use: Artist Studio and home
***B5. Architectural Style:** Contemporary variation of International Style
***B6. c.1960Construction History:** (Construction date, alterations, and date of alterations)
Constructed c. 1958 as a school building. Modifications to a chapel
c. 1963 modification to a residence and art studio, c.1995

***B7. Moved?** ΞNo ϒYes ϒUnknown **Date:** _____ **Original Location:** _____
***B8. Related Features:** Mature trees

B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** Architecture-School **Area** Woodside

Period of Significance 1957-1965 **Property Type** _____ **Applicable Criteria**
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The building is not a significant historic resource in Woodside and is not eligible for listing in the California Register of Historic Resources

Background

In 1950 the property was part pf a larger parcel owned by Marcella and her brother Charles C. Fox. They were the niece and nephew of Michael C. Byrne, a long-time rancher in Woodside who died in 1933, leaving his estate to his sister Mary and her children; twins Marcella and Mary, and Thomas and Charles Fox, who were all residents of San Francisco. After her uncle's death, the family divided their time between San Francisco and Woodside, moving to Woodside permanently in the early 1950s when Marcella became a real estate developer subdividing her uncles land. (continued)

B11. Additional Resource Attributes: (List attributes and codes) _____
***B12. References:**
Official Records of San Mateo County (on-line)
B13. Remarks:
Due to limitations on research by Covid protocols specific dates and remodeling plans were not found.
***B14. Evaluator:** Bonnie Bamburg
***Date of Evaluation:** 1/20/2022

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



B 10 Significance Continued:

In several of the City Directories beginning in 19 2, Mary and Marcella Fox lived in Woodside at Route 1 box 989 (1101 Canada Road 65 Mission Trail), part of the original subdivision. or planned unit developments that were proposed for the Fox property. This sub ect parcel became 7.88 acre, more or less, Parcel A of the Parcel Map olume 23 page 16.

In 1955, the Fox Family transferred the 7.88 acres to the Roman Catholic Archbishop of San Francisco. The property was to become a Catholic elementary School. In 1957-58, One building was constructed and the school operated for a few years. It appears there were not enough families who wanted to send their children to the private school and appears to have closed in the mid-1960s. The building was modified and became Saint Marcella's Mission Church, a satellite for religious services under the auspices of another Catholic Church. It appears there was not enough participation to retain the religious operations. In 1995, the 7.88 acre property and former school building were sold by the Fox Family and the Archbishop of San Francisco to San Mateo E uity Corporation whose president was Merrill Emerick.[1] The next transfer occurred in 2000 when the San Mateo E uity Corporation transferred the property to the Putnam Trust.[2] Interfamily transfers have occurred with the last in 2012 when the property transferred from the oseph D. Putnam Trust to 1101 Canada Road C.[3] The Putnam family owned automobile dealerships on the San Francisco Peninsula. After the sale in 1995, the building was leased and eventually modified to become a residence with 3 bedroom, 3 bathrooms, a kitchen and living spaces. In 2008 eil Cohen operated ight Owl cookies from the building. The house has been used as a residence within the Putnam family. It is currently the home of David and eda Putnam. David is an artist, and the residence is also his studio.

The building was constructed during the historic era of Incorporation, at a time when the population of Woodside was growing, and several small subdivisions were providing homes for the new permanent residents. The property's history shows the development environment in the late-1950s with speculation that the population would grow even more uickly, and a private school would be successful. This individual property has an interesting history, yet it does not represent an individually significant example of architectural design from the Mid-century period of development in Woodside. Alterations have been made to change the original design from an elementary school building to a

[1] Deed 10/25/1995, Document# 0000113516 /State Secretary of State, Corporation files
[2] Deed 02/29/2000, Document # 0000024410
[3] Deed 12/27/2012 Document # 0000196118
[4] Internet business listing

residence.

The original use, Religious school and then Saint Marcella's Mission Church are religious in nature. Religious property is not generally eligible for listing in the California Register of Historical Resources unless it has high artistic architectural design, was the work of a master designer, or has associations other than as a religious facility. The sub ect property is not associated with events or people important in the history of Woodside and is not an outstanding example of the International (Modern) design. The property does not meet the criteria of the California Register of Historical Resources or the Woodside eneral Plan 2012.

GEOLOGIC & PRELIMINARY GEOTECHNICAL INVESTIGATION SUBDIVISION FEASIBILITY 1101 CAÑADA ROAD LLC PROPERTY 1101 CAÑADA ROAD WOODSIDE, CALIFORNIA

THIS REPORT HAS BEEN PREPARED FOR:

1101 CAÑADA ROAD LLC

ATTN: MR. JOSEPH PUTNAM

3 CALIFORNIA DRIVE

BURLINGAME, CALIFORNIA 94010

MARCH 2022

MURRAY ENGINEERS INC
GEOTECHNICAL SERVICES

ATTACHMENT 7

MURRAY ENGINEERS INC
GEOTECHNICAL SERVICES

March 28, 2022
Project No. 3469-1R1

1101 Cañada Road LLC
c/o Mr. Joseph Putnam
3 California Drive
Burlingame, California 94010

RE: GEOLOGIC & PRELIMINARY GEOTECHNICAL INVESTIGATION SUBDIVISION FEASIBILITY 1101 CAÑADA ROAD LLC PROPERTY 1101 CAÑADA ROAD WOODSIDE, CALIFORNIA

Ladies & Gentlemen:

As requested, we are pleased to present the results of our geologic and preliminary geotechnical investigation to evaluate the feasibility of the proposed subdivision and future development of your property at 1101 Cañada Road in Woodside, California. The purpose of our investigation was to evaluate the geologic conditions, preliminarily evaluate the site geotechnical conditions, and assess the feasibility of the proposed subdivision. This report summarizes the scope of our investigation and presents conclusions relating to the feasibility of the proposed subdivision and recommendations for future investigations that should be conducted prior to development of the property.

If you have any questions concerning our investigation, please contact this office.

Sincerely,
MURRAY ENGINEERS, INC.

Thomas Strider, G.I.T.
Senior Staff Geologist

Mark F. Baumann, C.E.G.
Principal Engineering Geologist

CERTIFIED ENGINEERING GEOLOGIST
MARK F. BAUMANN
1787
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
JOHN A. STILLMAN
No. GE2523
STATE OF CALIFORNIA

John A. Stillman, G.E., C.E.G. 1868
Principal Geotechnical Engineer

TS:MFB:JAS

Copies: Addressee (email)
Lea & Braze Engineering, Inc. (email)
Attn: Mr. Chris Phan, P.E.

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GEOLOGIC & PRELIMINARY GEOTECHNICAL INVESTIGATION
SUBDIVISION FEASIBILITY
1101 CAÑADA ROAD LLC PROPERTY
1101 CAÑADA ROAD
WOODSIDE, CALIFORNIA

INTRODUCTION

This report presents the results of our geologic and preliminary geotechnical investigation of the property at 1101 Cañada Road in Woodside, California. The project location is shown on Figure A-1, Vicinity Map. As currently proposed, the property will be subdivided into seven, residential lots. The purpose of our investigation was to explore the geologic and geotechnical conditions on the property and to evaluate the feasibility of the proposed subdivision and future development.

PROJECT DESCRIPTION

The 7.88-acre gently sloping property is developed with a single-family residence, which was formerly a church building, located in the central portion of the property. An asphalt driveway extends up the southeastern side of the property and leads to a broad parking area in front of the residence. A riding arena and paddocks are located in the northeastern portion of the site. According to the conceptual grading and drainage plan by Lea and Braze Engineering, Inc., the existing improvements will be demolished and the property will be subdivided into seven residential lots. Access to the proposed lots will be provided off a new private road that will enter the property off Cañada Road and lead to a cul-de-sac in the central portion of the property. A cut up to 10 to 12 feet deep is proposed along the western portion of the private road. Cuts up to approximately 10 feet deep and minor fills are planned for Lots 1 and 7 located along the downhill (southwest) side of the property. Minor cuts and fills up to approximately 4 feet are planned for Lots 2 and 6 located in the central portion of the site. Very minor grading is planned for Lots 3 and 4 located in the uphill portion of the site and a cut up to approximately 5 feet deep planned for Lot 5 located in the uphill portion of the site. The existing structure, the layout of the proposed private road and the configuration of the proposed lots, and the conceptual building locations and driveways are shown on Figure A-2, Site Plan and Engineering Geologic Map.

SCOPE OF SERVICES

We performed the following services in accordance with our agreements dated January 11, 2022 (executed on January 13, 2022):

- Reviewed geologic and seismic conditions in the area and evaluated geologic hazards that could potentially impact the site and future improvements
- Performed an engineering geologic reconnaissance to evaluate the surficial site conditions
- Explored the subsurface conditions by advancing, sampling, and logging nine exploratory borings on the property
- Performed laboratory testing and analysis on selected soil and bedrock samples for soil classification and to evaluate engineering properties of the subsurface materials
- Prepared this report presenting a summary of our investigation and our engineering geologic conclusions relating to the geologic hazards that could potentially impact the site and proposed improvements, a preliminary evaluation of the site geotechnical conditions, and recommendations for future investigations

GEOLOGIC & SEISMIC CONDITIONS

Geologic Overview

The subject property is located in the low foothills along the northeast side of the Santa Cruz Mountains, a northwest-trending range within the California Coast Ranges geomorphic province. The site is situated at an elevation of approximately 460 feet above mean sea level. According to the Town's geologic map (Cotton, Shires, and Associates, 2017), the site is located in an area underlain by Franciscan Complex greenstone bedrock (Kfg), which is composed of Cretaceous and Jurassic age (approximately 66 to 200 million years old), dark green to reddish brown, altered basaltic rock. In the northwestern portion of the property, the greenstone is overlain by colluvium (Qc), a soil deposit derived from the weathering of the underling bedrock. To the southwest of the site, the greenstone is overlain by alluvium (Qal), a stream-laid soil deposit. According to the map, the greenstone bedrock is in depositional contact with bedrock of the Whiskey Hill Formation immediately southeast of the site. The Whiskey Hill Formation bedrock generally consists of upper to lower Eocene age (approximately 34 to 55 million years old) pale yellowish-orange to pale yellowish-brown, poorly cemented to very well cemented, sandstone, siltstone, and claystone. Highly expansive clays are common in Whiskey Hill Formation claystone and soil derived from the claystone. These highly expansive materials have caused extensive damage to structures in this area of Woodside, the nearby Sharon Heights area of Menlo Park, and a portion of Atherton to the southwest of Alameda de las Pulgas. No landslides are mapped on or adjacent to the site (see Figure A-3, Woodside Geologic Map).

According to the State seismic hazard zones map for the Woodside quadrangle (California Geological Survey, 2019), the site is not located in an area that is susceptible to earthquake-induced landsliding or liquefaction (see Figure A-4, State Landslide Hazard Zones Map and Figure A-5, State Liquefaction Hazard Zones Map).

Faulting & Seismicity

Geologists and seismologists recognize the San Francisco Bay Area as one of the most active seismic regions in the United States. There are three major faults that trend in a northwest direction through the Bay Area. These faults have generated about 12 earthquakes per century large enough to cause significant structural damage. The faults along which these earthquakes occur are part of the San Andreas fault system that extends for at least 700 miles along the California Coast and include the San Andreas, Hayward, and Calaveras faults. According to the Town's map, the active San Andreas fault is located approximately 4,150 feet southwest of the site and the Hermit fault, a fault of unknown activity, is located approximately 1,500 feet west of the site (see Figure A-3). The Hayward and Calaveras faults are located approximately 18 and 24 miles northeast of the site, respectively.

According to the State earthquake fault zones map for the Woodside quadrangle (California Geological Survey, 2019), the southwestern third of the property is located in an earthquake fault zone associated with the Hermit/Cañada fault system (see Figure A-6, State Fault Hazard Zones Map). According to the map, the Cañada fault is located approximately 400 feet southwest of the site. We note that the Cañada fault was removed from the Town's geologic map during a 2017 map revision based on an absence of evidence to indicate that it was an active fault (see Figure A-3). The State earthquake fault zone map has not been updated since 1974.

Seismologic and geologic experts convened by the U. S. Geological Survey, California Geological Survey, and the Southern California Earthquake Center conclude that there is a 72 percent probability for at least one "large" earthquake of magnitude 6.7 or larger in the Bay Area before the year 2043. The northern portion of the San Andreas fault is estimated to have a 6 percent probability of producing a magnitude 6.7 or larger earthquake by the year 2043 and the Hayward and Calaveras faults are estimated to have a 14 percent and 7 percent probability of producing a similar magnitude earthquake during the same time period (Working Group on California Earthquake Probabilities, 2014).

SITE EXPLORATION & RECONNAISSANCE

Exploration Program

An initial site reconnaissance was performed by our principal engineering geologist on October 7, 2021 and a more detailed reconnaissance was performed by our principal engineering geologist and senior staff geologist on January 19, 2022. Our subsurface investigation was performed on February 1 and 2, 2022 and included the excavation, sampling, and logging of nine exploratory borings to depths of approximately 11 to 31 feet at the locations shown on the site plan (see Figure A-2). The boring locations were approximately determined by measuring distances from known points on the supplied site plan using a tape measure and should be considered accurate only to the degree implied by the mapping technique used.

The exploratory borings were advanced using a track-mounted Geoprobe 7822DT drill rig equipped with hollow-stem augers. Soil samples were collected with split-spoon samplers that were driven with a 140-pound hammer repeatedly dropped from a height of 30 inches. The split-spoon samplers included 3-inch and 2.5-inch outside diameter (O.D.) samplers, and a 2-inch O.D. standard penetration test sampler. The sampler types used are indicated on the logs at the appropriate depths. The number of hammer blows required to drive the samplers were recorded in 6-inch increments for the length of the 18-inch-long sampler barrels. The associated blow count data, which is the sum of the second and third 6-inch increments, is presented on the boring logs as sampling resistance in blows per foot. The field blow counts for the 2.5-inch and 3-inch O.D. samples have been adjusted to standard penetration test blow counts based on sampler diameter; however, the blow count data has not been adjusted for other factors such as hammer efficiency. Logs of the boring are presented in Appendix B as Figures B-1 through B-9 and a key to the boring logs is presented on Figure B-10.

Our field engineer logged the borings in general accordance with the Unified Soil Classification System presented on Figure B-11 and the Key to Bedrock Description and Key to Bedrock Descriptions presented on Figure B-12. The boring logs show our interpretation of the subsurface conditions at the locations and on the dates indicated and it is not warranted that these conditions are representative of the subsurface conditions at other locations and times. In addition, the stratification lines shown on the logs represent approximate boundaries between the soil and bedrock materials and the transitions may be gradual. Soil and bedrock samples recovered from the borings were retained for laboratory testing and classification and for review by our principal engineering geologist and senior staff geologist.

Site Description

The approximately 7.88-acre, gently sloping property is located on the northeast side of Cañada Road in a rural-residential area of Woodside. The rectangular-shaped property measures approximately 525 feet wide and 660 feet deep and is bounded by Cañada Road to the southwest and developed residential properties on all other sides. A single-family residence, which was formerly a church building, is located in the central portion of the property and a riding arena and paddocks are located in the northeastern portion. A large, gently sloping pasture is located in the southwestern portion of the property. The site is accessed by an asphalt driveway that extends along the southeastern side of the property and leads to a broad parking area in front of the residence in the central portion of the property.

The ground surface across the property slopes down to the southwest with a maximum vertical relief of approximately 40 feet over a distance of approximately 660 feet from the northeastern property boundary to the southwestern property boundary. The natural ground surface across the site slopes down moderately to the southwest with gradients ranging from approximately 6:1 (horizontal to vertical) to relatively level. There is a cut slope along the uphill side of the riding arena in the northeastern portion of the property with a slope of approximately 2:1 (horizontal to vertical) (see Figure A-2; Figure A-7, Geologic Cross-Section A-A'; and Figure A-8, Geologic Cross-Section B-B').

Drainage across the site is characterized as uncontrolled sheet flow to the southwest. The property is vegetated with seasonal grasses in the southwestern pasture and around the riding arena, and various young and mature trees are located along the driveway, around the parking area, and along the property lines.

Subsurface Conditions

Nine exploratory borings were excavated on the property to evaluate the subsurface conditions, including a single boring on each of the proposed lots and two additional borings along the downhill side of the property in the State earthquake fault zone to evaluate possible changes in the subsurface conditions that could indicated the presence of a fault or fault-related features. With the exception of Boring B-9, the exploratory borings encountered colluvial soil underlain by Franciscan Complex greenstone bedrock at relatively shallow depths. Boring B-9 encountered siltstone bedrock that appears to be a unit of the Whiskey Hill Formation. The locations of the borings are shown on Figure A-2, schematic representations of the subsurface conditions are presented on the cross-sections on Figures A-7 and A-8, and a detailed log of each boring is presented in Appendix B.

Borings B-1, B-2, and B-3 were located in the uphill portion of the property. Boring B-1 was located on Lot 4 and encountered greenstone bedrock from grade to the full depth explored

of 11.1 feet, where effective sampling refusal was encountered. Boring B-2, located on Lot 3, encountered approximately 7 feet of brown to grayish brown, medium stiff to stiff, lean clay colluvium underlain by greenstone bedrock to the bottom of the boring at a depth of 19.5 where effective sampling refusal was encountered. Boring B-3, located on Lot 5, encountered approximately 6 feet of brown, stiff lean clay colluvium underlain by greenstone bedrock which persisted to the bottom of the boring. Effective sampling refusal was encountered at a depth of approximately 18.7 feet.

Borings B-4 and B-5 were located in the central portion of the site on Lots 2 and 6, respectively. Boring B-4 was located in the parking area in front of the existing residence and encountered approximately 3 inches of asphalt and 6 inches of road base. The road base is underlain by greenstone bedrock, which persisted to the bottom of the boring at a depth of 19.1 feet where effective sampling refusal was encountered. Boring B-5 encountered approximately 11 feet of colluvium consisting of reddish brown to grayish brown, soft to stiff lean clay, fat clay, and sandy clay underlain by greenstone bedrock, which persisted to the bottom of the boring at a depth of 19.1 feet where effective sampling refusal was encountered.

Borings B-6, B-7, B-8, and B-9 were located in the downhill portion of the property. Boring B-6, located on Lot 1, encountered approximately 15.5 feet of colluvium consisting of brown, soft to medium stiff sandy clay. At a depth of 15.5 feet, the colluvium is underlain by greenstone bedrock, which persisted to the bottom of the boring at 21.5 feet where effective sampling refusal was encountered. Boring B-7, also located on Lot 1, encountered approximately 7 feet of reddish brown to grayish brown, medium stiff to stiff fat clay and lean clay colluvium. At a depth of 7 feet, the colluvium is underlain by greenstone bedrock, which persisted to the bottom of the boring at a depth of approximately 23.5 feet where effective sampling refusal was encountered. Boring B-8, located on Lot 7, encountered 4 feet of reddish brown, medium stiff to stiff lean clay with sand and gravel colluvium underlain by greenstone bedrock. The greenstone bedrock persisted to the bottom of the boring at a depth of 17.1 feet where effective sampling refusal was encountered. Boring B-9, also located on Lot 7, encountered approximately 5 feet of dark grayish brown fat clay colluvium underlain by yellowish brown, severely weathered siltstone bedrock. The siltstone bedrock persisted to the bottom of the boring at a depth of approximately 31.5 feet.

Laboratory Test Results

Atterberg limits testing was performed on samples of the surficial clayey colluvium encounter in Boring B-2 and Boring B-9. The testing on the colluvium encountered in Boring B-2 between depths of 1.5 to 3 feet yielded a plasticity index of 22 percent and liquid limit of 44 percent indicating that this material has a moderate potential for expansion and contraction with changes in moisture content. The testing on the colluvium encountered in Borings B-9 between depths of 0 to 1.5 feet yielded a plasticity index of 43 percent and a liquid limit of 70

percent indicating that this material has a very high potential for expansion (see Figure C-1, Liquid & Plastic Limits Test Report).

Free swell tests were performed on samples of the siltstone bedrock encountered in Boring B-9 at depths of approximately 8, 15, and 20 feet. The testing yielded free swells varying from 50 to 80 percent. The results of the free swell tests are presented on the boring log at the appropriate depth (see Figure B-9). Ellen and Wentworth (1995) have correlated free swell values with values of loaded swell of the Uniform Building Code's Expansion Index Test. These relationships resulted in terminology, including "severely expansive" for materials having free swells greater than 80 percent and described as surely capable of damaging light loads; "significantly expansive" for materials having free swells between 45 percent and 80 percent and described as capable of producing damage; and "un-expansive" for materials having free swells less than 45 percent and described as not swelling sufficiently to be of concern. Based on the results of the free swell testing, the siltstone bedrock is classified as significantly expansive.

Groundwater

Groundwater was encountered in Borings B-1, B-2, B-5, and B-7 at depths of approximately 3.5, 7, 9.5, and 5.5 feet, respectively. B-1 was located within the existing riding arena and the sand footing material that the arena is surface with is periodically watered. In the other borings, it appears that the groundwater may be perched on the bedrock. We note that fluctuations in the level of groundwater can occur due to variations in rainfall, landscaping, and other factors that may not have been evident at the time our measurements were made.

CONCLUSIONS & RECOMMENDATIONS

Based on our preliminary evaluation, it is our opinion that the proposed subdivision is feasible from a geologic and geotechnical perspective. In our opinion, the primary geologic and geotechnical constraints to the project include the potential for expansion and contraction of clayey colluvial soil blanketing the site, the potential for downhill creep of the colluvial soil blanketing the steeper portions of the site, the potential for expansion of the siltstone bedrock underlying portions of the site, the potential for shallow landsliding, and the potential for very strong ground shaking during a moderate to large earthquake on the San Andreas fault or one of the nearby active faults.

Based on our investigation, the clayey surficial soil is prone to expansion and contraction with changes in moisture content. Specifically, when wetted, as during the rainy season, these materials can expand; and when dried, as during the summer months, these materials can contract or shrink. Structures and flatwork bearing in expansive soil tend to experience

seasonal heave and settlement. In our opinion, expansion and contraction of the surficial soil should not have a significant impact on future improvements provided that the improvements are designed to mitigate the effects of expansive soil through the use of drilled pier foundations for structures and relatively thick baserock sections beneath flatwork.

Where located on or adjacent to the steeper portions of the site the colluvial soil may be prone to downhill creep under the force of gravity. In our opinion, the colluvium should not be relied on for support of future structures. In our opinion, downhill creep of the colluvial soil should not have a significant impact on future improvements provided that the improvements are designed to mitigate the effects of downhill creep through the use of drilled pier foundations, retaining walls, and/or grading.

Based on our investigation, it appears that the majority of the site is underlain by Franciscan Complex greenstone bedrock at relatively shallow depths; however, Whiskey Hill Formation bedrock was encountered in the southern portion of Lot 7 and the siltstone may extend onto the southern-most corner of Lot 6 (see Figure A-2). In our opinion, the bedrock should provide adequate support for the foundations of future improvements. The siltstone bedrock is potentially expansive. In our opinion, expansion of the siltstone bedrock should not have a significant impact on future improvements provided that the improvements are supported on piers that are properly embedded in the bedrock.

Based on our site reconnaissance and subsurface investigation, we did not observe any evidence of active landsliding on the property. Although we did not observe any active landsliding on the property, given the highly expansive colluvium and the moderately steep slopes, the occurrence of a new shallow landslide on or adjacent to the property within the colluvial soils cannot be excluded. A new shallow landslide could be triggered by excessive precipitation, erosion, and/or strong ground shaking associated with an earthquake. In our opinion, a new landslide should not pose a significant hazard to the proposed improvements provided that the proposed improvements are designed and constructed in accordance with the recommendations of a design-level geotechnical report.

It should be noted that although our knowledge of the causes and mechanisms of landslides has greatly increased in recent years, it is not yet possible to predict with certainty exactly when and where all landslides will occur. At some time over the span of thousands of years, most hillsides will experience landslide movement as mountains are reduced to plains. Therefore, an unknown level of risk is always present to structures located in hilly terrain. Owners of property located in these areas must be aware of and be willing to accept this risk.

Based on our review of published maps, no active or potentially active faults cross the property. Based on our subsurface exploration, the site is underlain by Franciscan Complex

greenstone bedrock with the exception of the southern corner, which is underlain by Whiskey Hill Formation bedrock. According to the Town's geologic map, the Whiskey Hill Formation is in depositional contact with the Franciscan Complex greenstone. Based on our subsurface investigation, we did not observe any indication of faulting, such as shearing or disturbed zones in the soil or bedrock. Therefore, it is our opinion that the potential for primary fault rupture at the site is low. As noted in the Faulting and Seismicity section above, moderate to large earthquakes are probable along several active faults in the greater Bay Area. Therefore, strong ground shaking should be expected at some time during the design life of the future improvements. The improvements should be designed in accordance with current earthquake resistant standards, including the latest California Building Code and design parameters presented in a design-level geotechnical report.

Based on our investigation, we anticipate that basements for future residences can be supported on mat slab foundations and at-grade portion of the residences and appurtenant structures should be supported on drilled pier foundations with piers extending through any non-supportive surficial soil and gaining adequate support in the underlying competent bedrock. Where greenstone bedrock is exposed at pad grade, spread footings may potentially be feasible for structures without basements. However, the actual foundation design will depend on the location and configuration of future structures.

We recommend that future development of the private road and individual parcels be preceded by a design-level geotechnical investigation or investigations. The investigation(s) should be based on preliminary development plans that show building sites, driveways, retaining walls, and preliminary details of future residences and appurtenant structures. The investigation should include additional subsurface exploration along the alignment of the private road, around proposed residences, appurtenant structures, retaining walls, and areas of significant grading. The investigation should include laboratory testing to evaluate the engineering properties of soil and bedrock samples, and analyses to develop project-specific geotechnical design criteria and recommendations for the grading, foundations, and control of surface and subsurface drainage.

LIMITATIONS

This report has been prepared for the sole use of 1101 Cañada Road, LLC to evaluate the feasibility of the proposed subdivision of the property at 1101 Cañada Road in Woodside, California. The opinions presented in this report are based upon our review of the geologic maps, site reconnaissance, exploratory borings, and upon local experience and geologic and geotechnical judgment. Our opinions have been formulated in accordance with generally accepted engineering geologic and geotechnical principles and practices that exist in the San Francisco Bay Area at the time this report was prepared. Our conclusions are based on the assumption that geologic conditions across the site do not deviate substantially from those

encountered in the exploratory borings. No warranty, either expressed or implied, is made or should be inferred. This report should not be used for and is not applicable to any property other than that evaluated.

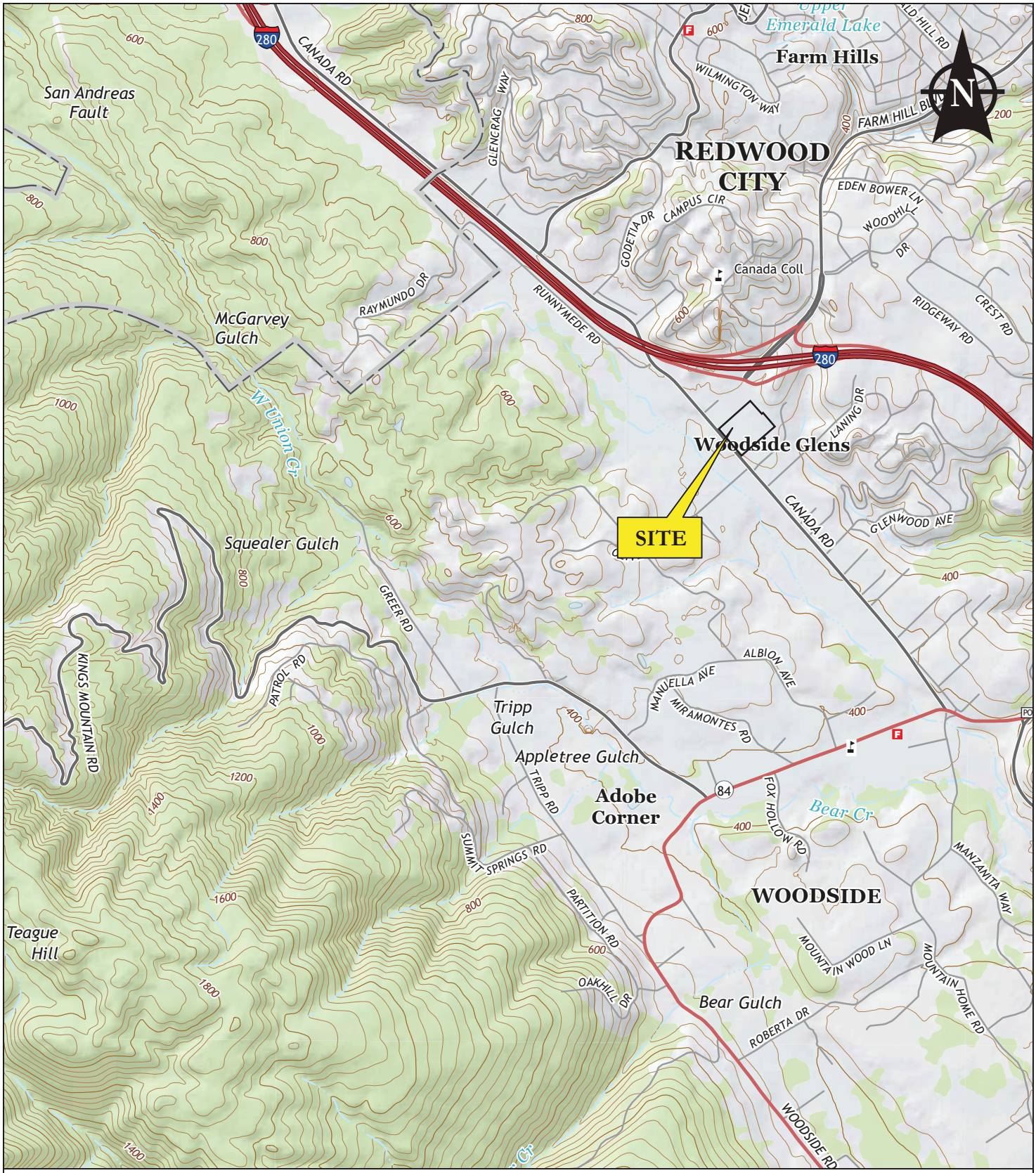
REFERENCES

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Ellen, Stephen D. and Wentworth, Carl M., 1995, *Hillside Materials and Slopes of the San Francisco Bay Region, California*, U.S. Geological Survey Professional Paper 1357.

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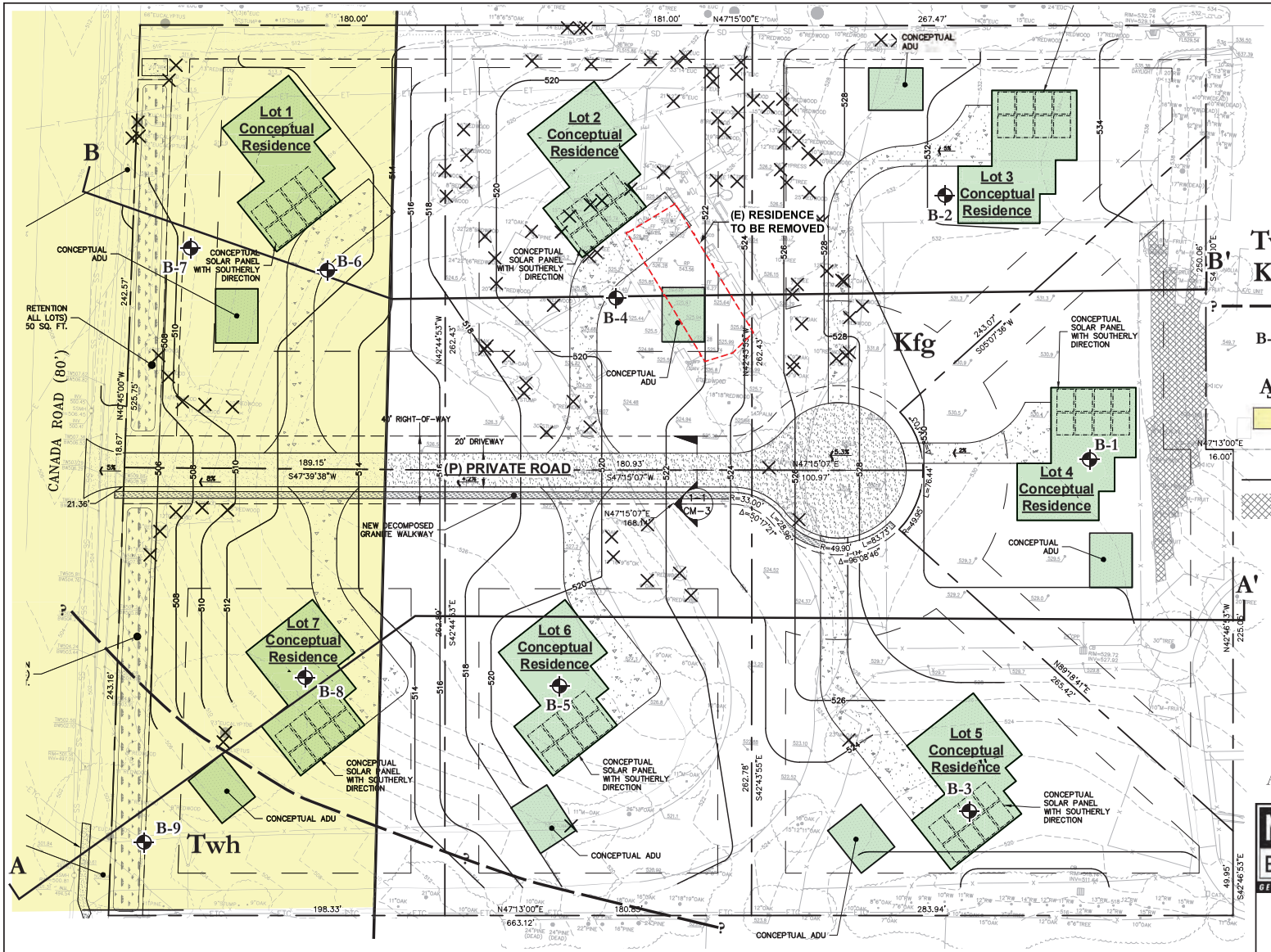
Base: USGS Woodside Topographic Quadrangle, 7.5-Minute Series, 2015. Scale: 1 inch = 2,000 feet

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VICINITY MAP

PROJECT NO. 3469-1R1	MARCH 2022	FIGURE A-1



LEGEND

- **Twh** Whiskey Hill Formation
- **Kfg** Franciscan Greenstone
- Approximate Geologic Contact
- **B-2** Approximate Location of Soil Boring by Murray Engineers, Inc., February 1 & 2, 2022
- **A A'** Location of Cross-Sections (see Figures A-7 & 8)
- State Earthquake Fault Zone
- (E) Contour
- (P) Contour
- Slope >50%

Approximate Scale: 1 inch = 60 feet

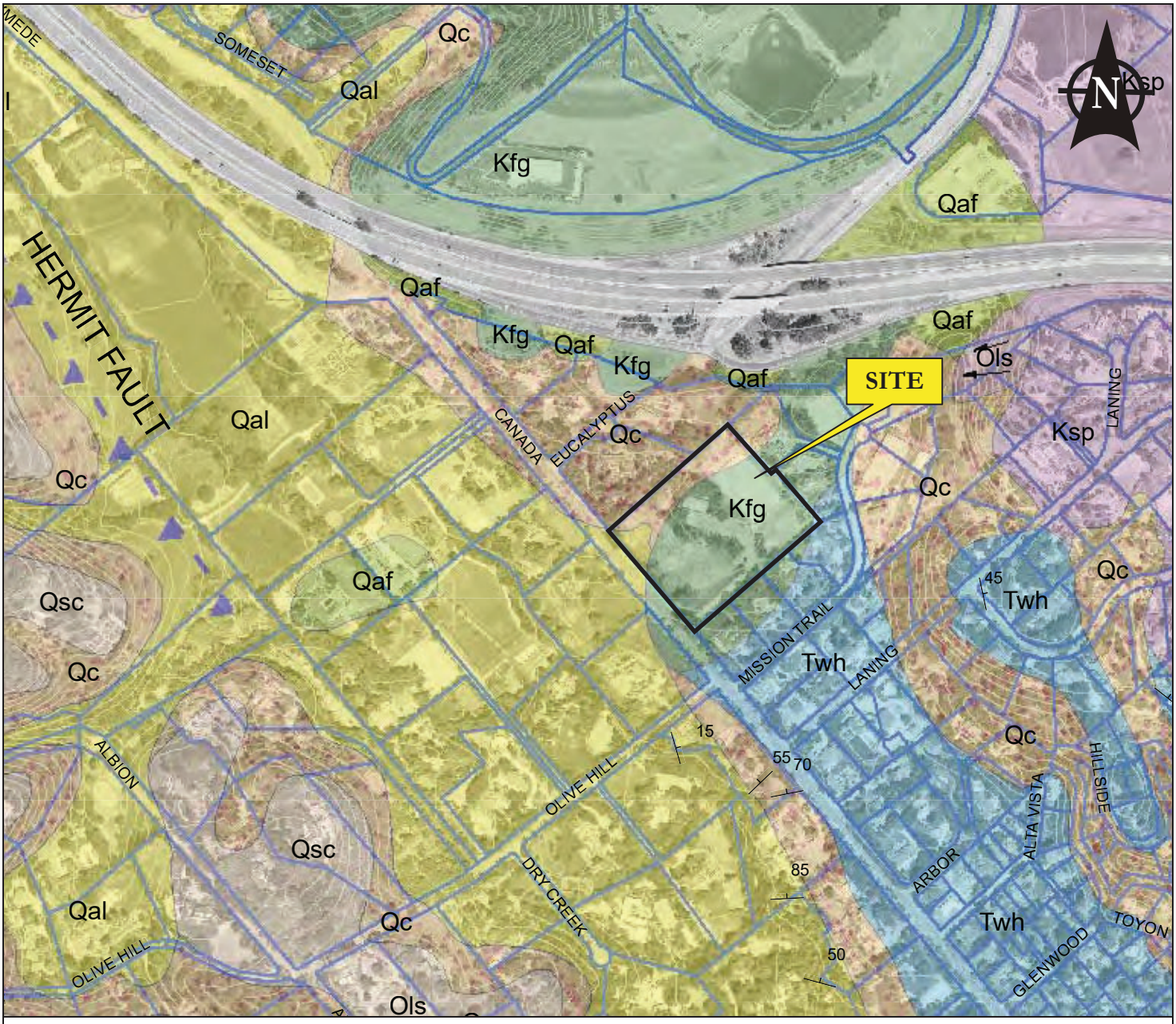
Base: Conceptual Grading & Drainage Plan by Lea & Braze Engineering, Inc., September 15, 2021

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SITE PLAN & ENGINEERING GEOLOGIC MAP

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PROJECT NO.		
3469-1R1	MARCH 2022	FIGURE A-2



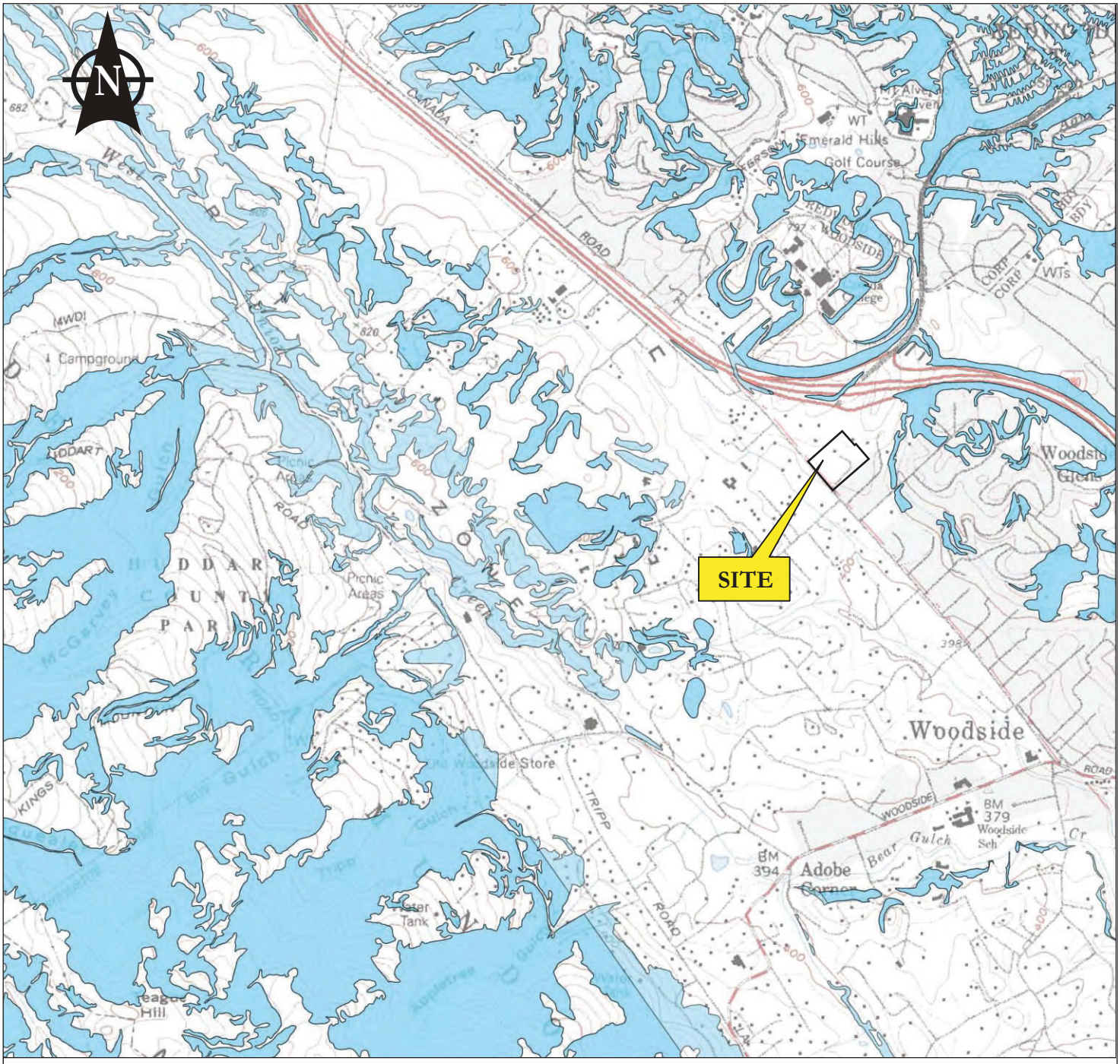
LEGEND & SELECTED MAP SYMBOLS

Qaf	Artificial Fill	Twh	Whiskey Hill Formation
Qal	Alluvium	Kfg	Greenstone
Qc	Colluvium	Ksp	Serpentine

Hermit Fault of undetermined activity, dashed where inferred, barbs are located on upthrown side of fault

Base: Geologic Map of the Town of Woodside, San Mateo County, by Cotton, Shires and Associates, February 2017
Scale: 1 inch = 600 feet

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PROJECT NO. 3469-1R1	**MARCH 2022**	**FIGURE A-3**



LEGEND

Earthquake-Induced Landslide Zones

Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements

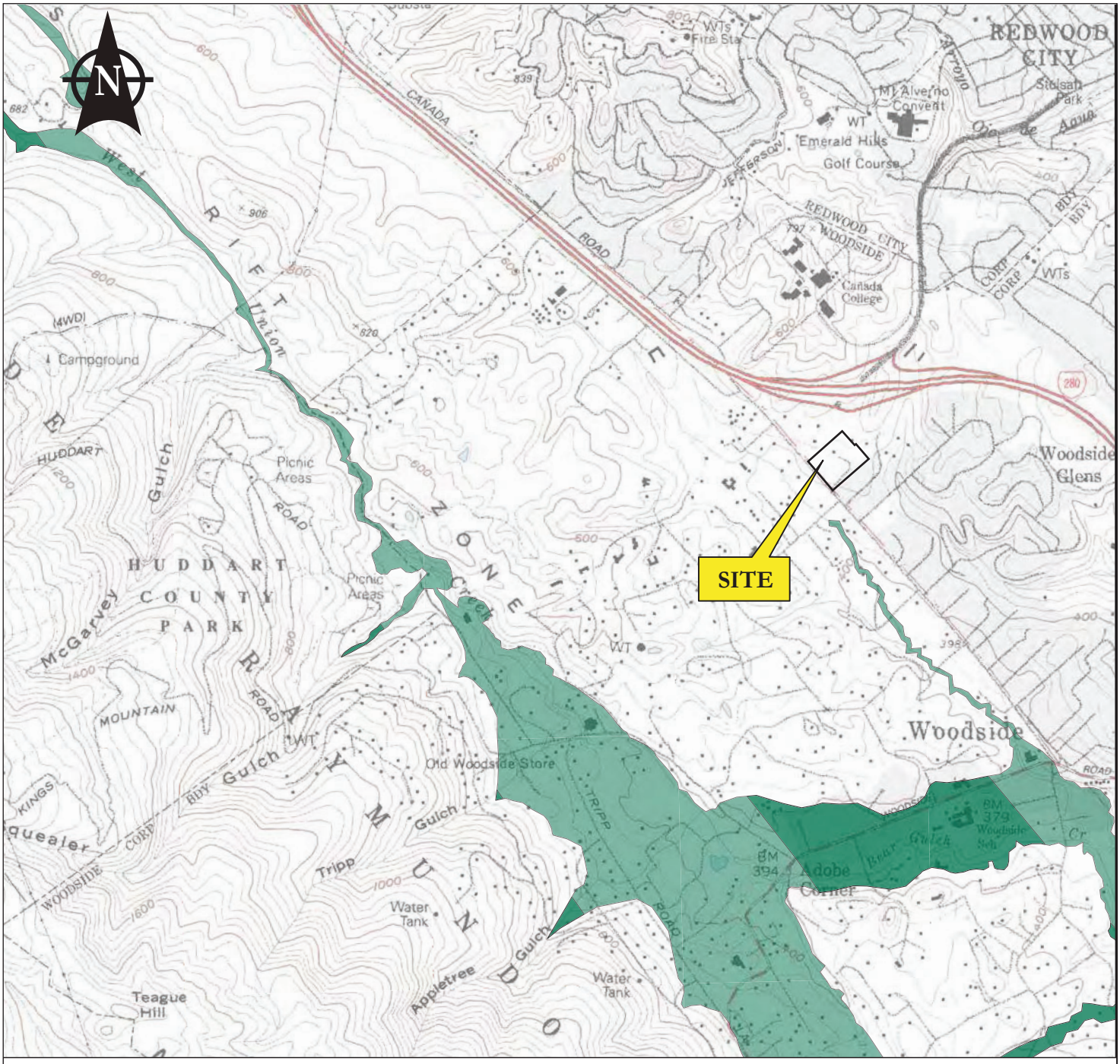
Base: California Geologic Survey, Earthquake Zones of Required Investigation, Seismic Hazard Zones, Woodside Quadrangle, 2019. Approximate Scale: 1 inch = 2,000 feet

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STATE LANDSLIDE HAZARD ZONES MAP

PROJECT NO. 3469-1R1	MARCH 2022	FIGURE A-4

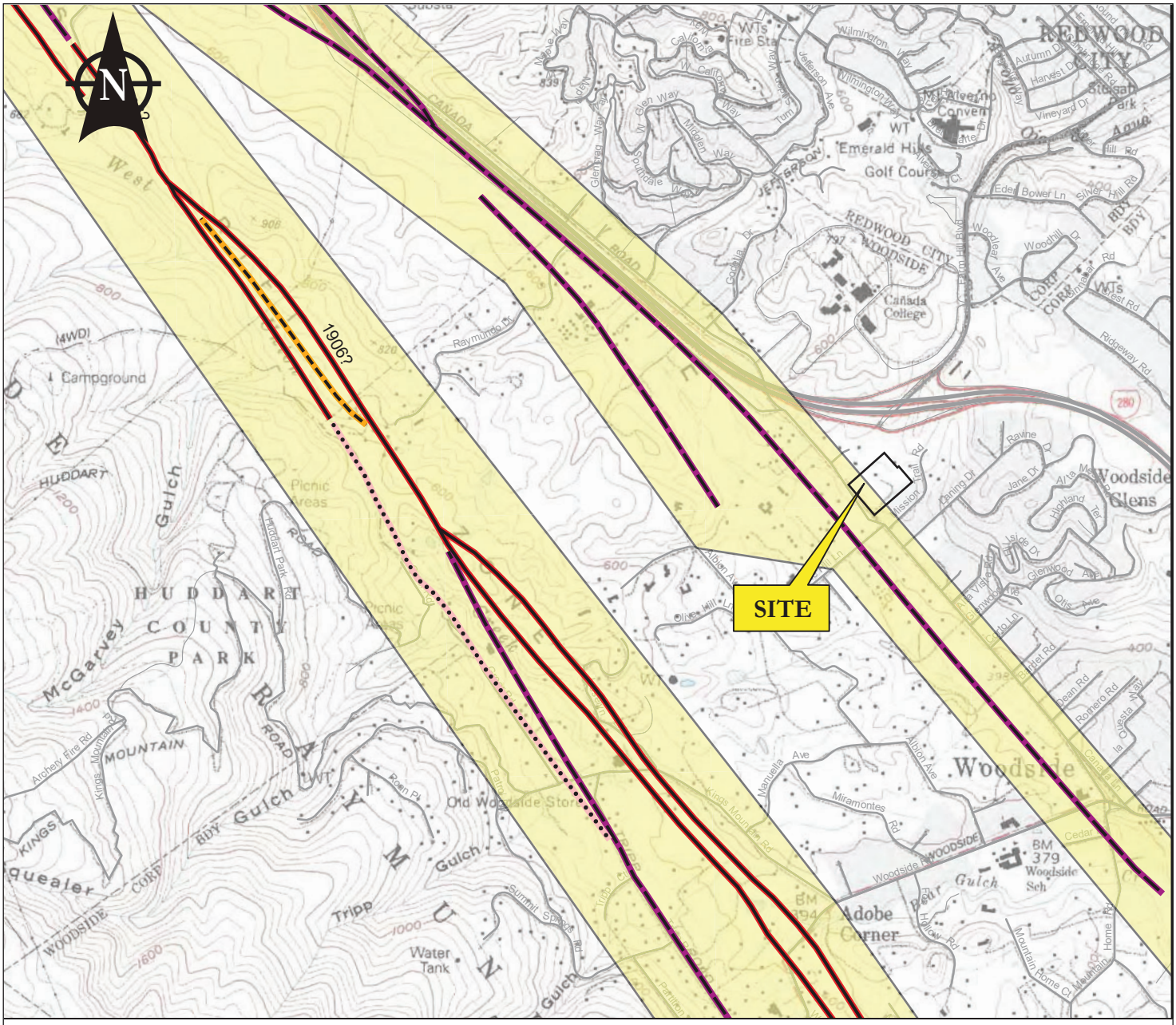


LEGEND

Liquefaction Zones
Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground water conditions indicate a potential for permanent ground displacements

Base: California Geologic Survey, Earthquake Zones of Required Investigation, Seismic Hazard Zones, Woodside Quadrangle, 2019. Approximate Scale: 1 inch = 2,000 feet

MURRAY ENGINEERS INC GEOTECHNICAL SERVICES	**1101 CAÑADA ROAD LLC 1101 CAÑADA ROAD WOODSIDE, CALIFORNIA**	**STATE LIQUEFACTION HAZARD ZONES MAP**
PROJECT NO. 3469-1R1	**MARCH 2022**	**FIGURE A-5**



LEGEND

Zone boundaries are delineated by straight-line segments; the boundaries define the zone encompassing active faults that constitue a potential hazard to structures from surface faulting or fault creep

Faults considered to have been active during Holocene time and to have potential for surface rupture: Solid Line in Black or Red where Accurately Located; Long Dash in Black or Solid Line in Purple where Approximately Located; Short Dash in Black or Solid Orange where Inferred; Dotted Line in Black or Solid Line in Rose where Concealed; Query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event

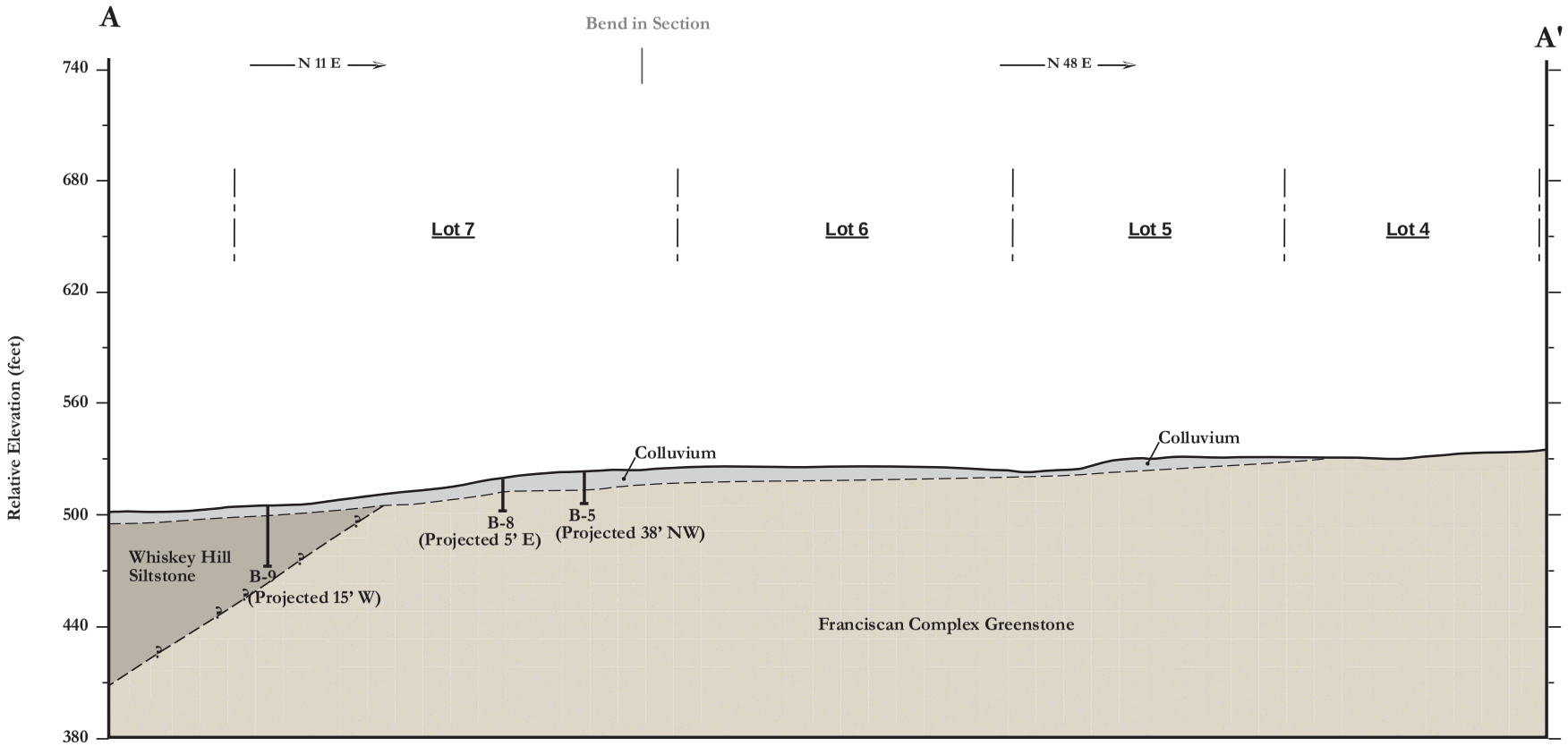
Base: California Geological Survey, Earthquake Zones of Required Investigation, Earthquake Fault Zones, Woodside Quadrangle, 1974 Approximate Scale: 1 inch = 2,000 feet

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STATE FAULT HAZARD ZONES MAP

PROJECT NO. 3469-1R1 | **MARCH 2022** | **FIGURE A-6**



LEGEND

B-8 Approximate Location of Soil Boring by Murray Engineers, Ivnc.

Approximate Geologic Contact, Queried (?) Where Uncertain

Base: Conceptual Grading & Drainage Plan by Lea & Braze Engineering, Inc., September 15, 2021

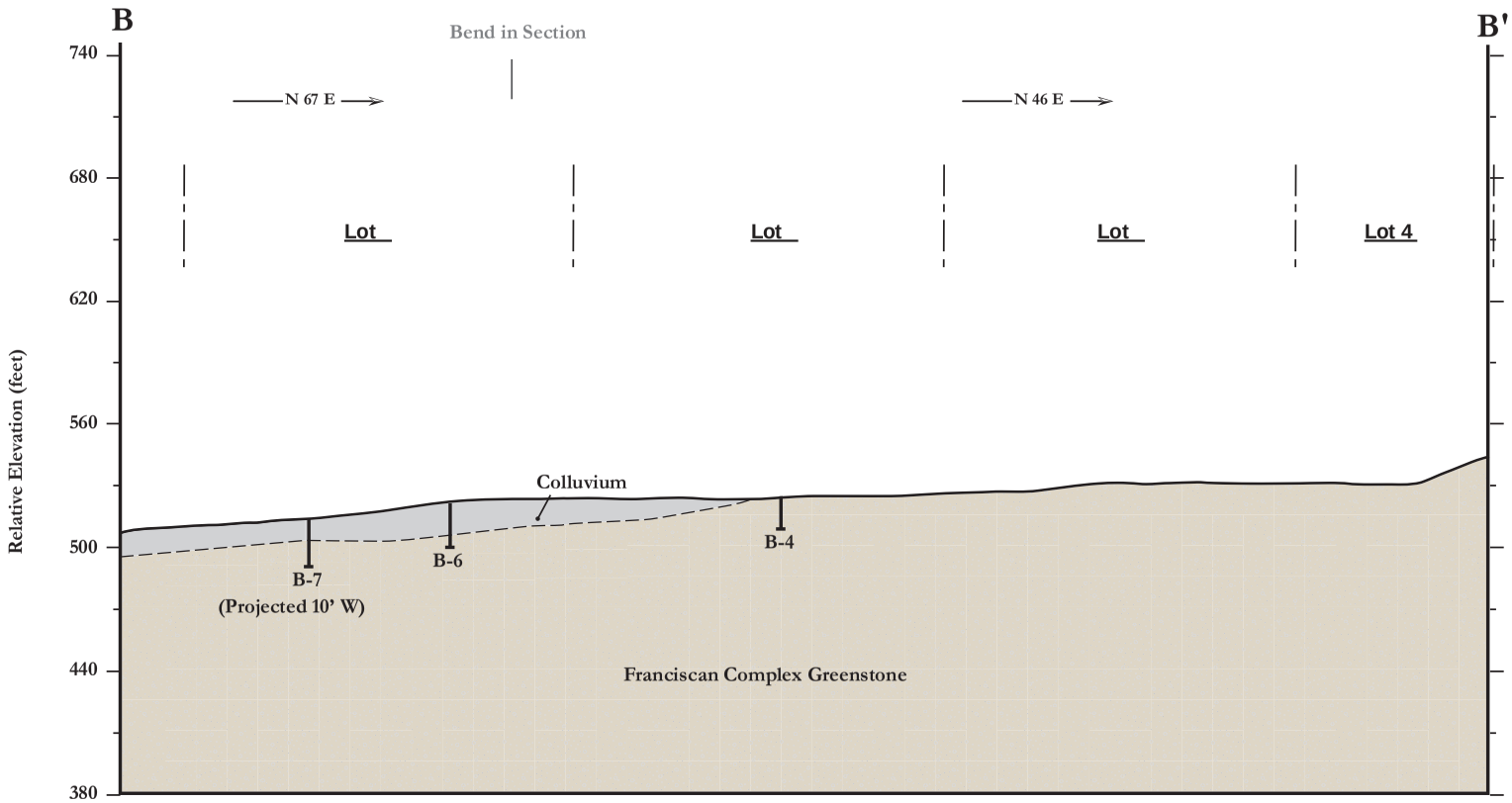
Approximate Scale: 1 inch = 60 feet

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GEOLOGIC CROSS-SECTION A-A'

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PROJECT NO.		
3469-1R1	MARCH 2022	FIGURE A-7



LEGEND

B-8 Approximate Location of Soil Boring by Murray Engineers, Inc.

Approximate Geologic Contact

Base: Conceptual Grading & Drainage Plan by Lea & Braze Engineering, Inc., September 15, 2021

Approximate Scale: 1 inch = 60 feet

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GEOLOGIC CROSS-SECTION B-B'

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PROJECT NO.		
3469-1R1	MARCH 2022	FIGURE A-8

Date(s) Drilled **February 1, 2022**	Logged By **BR**	Checked By **TS**
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **6 inch diameter**	Total Depth of Borehole **11.1 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **Cenozoic**	Approximate Surface Elevation **530 feet (relative)**
Groundwater Level and Date Measured **3.5 feet ATD**	Sampling Method(s) **3" OD, 2.5" OD, & 2" OD SPT Split Spoon Samplers**	Hammer Data **140 lb, 30 in drop, rope & cathead**
Borehole Backfill **Lean Cement Grout**	Location **Proposed Lot 4**	

Elevation, feet	Depth, feet	Sample Type	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	MATERIAL DESCRIPTION	Water Content, %
530	0		33/5"	Soft*	BR	GREENSTONE, dark brown, severely weathered, friable, moist (Franciscan Complex)	8
			38/4"				13
			50/3"			*designates hardness of bedrock (see Figure B-12)	
526						(ATD) ▽	
	5		25/0"				4
521							
	10		50/1"				4
			50/1"				6
						Refusal at 11.1 feet bgs	
516	15						
511	20						
506	25						
501	30						
496							

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LOG OF BORING B-1

PROJECT NO. 3469-1R1 | **MARCH 2022** | **FIGURE B-1**

Date(s) Drilled **February 1, 2022**	Logged By **BR**	Checked By **TS**
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **6 inch diameter**	Total Depth of Borehole **19.5 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **Cenozoic**	Approximate Surface Elevation **532 feet (relative)**
Groundwater Level and Date Measured **7 feet ATD**	Sampling Method(s) **3" OD, 2.5" OD, & 2" OD SPT Split Spoon Samplers**	Hammer Data **140 lb, 30 in drop, rope & cathead**
Borehole Backfill **Lean Cement Grout**	Location **Proposed Lot 3**	

Elevation, feet	Depth, feet	Sample Type	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	MATERIAL DESCRIPTION	Water Content, %
532	0		14	Stiff	CL	LEAN CLAY with SAND, brown, homogeneous, medium to high plasticity, minor medium- to coarse-grained sand, trace subangular gravels, moist (Colluvium)	12
			10				16
528			4	Medium Stiff	CL	PI=22%; LL=44% (sample from 1.5 to 3 feet)	22
	5					LEAN CLAY, dark grayish brown, homogeneous, medium plasticity, trace subangular gravels, moist (Colluvium)	
						(ATD)	
				Soft*	BR	GREENSTONE, dark brown and yellowish brown, severely weathered, moist (Franciscan Complex)	
523			48				12
	10						
518			73				8
	15					coloration change to reddish brown	
513			50/6"				8
	20					Refusal at 19.5 feet bgs	
508	25						
503	30						
498							

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LOG OF BORING B-2

PROJECT NO. 3469-1R1 | **MARCH 2022** | **FIGURE B-2**

Date(s) Drilled **February 1, 2022**	Logged By **BR**	Checked By **TS**
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **6 inch diameter**	Total Depth of Borehole **18.7 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **Cenozoic**	Approximate Surface Elevation **521 feet (relative)**
Groundwater Level and Date Measured **Not Encountered ATD**	Sampling Method(s) **3" OD, 2.5" OD, & 2" OD SPT Split Spoon Samplers**	Hammer Data **140 lb, 30 in drop, rope & cathead**
Borehole Backfill **Lean Cement Grout**	Location **Proposed Lot 5**	

Elevation, feet	Depth, feet	Sample Type	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	MATERIAL DESCRIPTION	Water Content, %
521	0		9	Stiff	CL	LEAN CLAY, brown, homogeneous, medium to high plasticity, minor medium- to coarse-grained sand, trace subangular gravels, moist (Colluvium)	13
			8				21
517			8				23
	5			Soft*	BR	GREENSTONE, yellowish brown, severely weathered, friable, moist (Franciscan Complex)	
512			42			*designates hardness of bedrock (see Figure B-12)	17
	10						
			67				16
507	15						
			50/3"				
502						Refusal at 18.7 feet bgs	
	20						
497							
	25						
492							
	30						
487							

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LOG OF BORING B-3

PROJECT NO. 3469-1R1 | **MARCH 2022** | **FIGURE B-3**

Date(s) Drilled **February 1, 2022**	Logged By **BR**	Checked By **TS**
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **6 inch diameter**	Total Depth of Borehole **19.1 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **Cenozoic**	Approximate Surface Elevation **525 feet (relative)**
Groundwater Level and Date Measured **Not Encountered ATD**	Sampling Method(s) **3" OD, 2.5" OD, & 2" OD SPT Split Spoon Samplers**	Hammer Data **140 lb, 30 in drop, rope & cathead**
Borehole Backfill **Lean Cement Grout**	Location **Proposed Lot 2**	

Elevation, feet	Depth, feet	Sample Type	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	MATERIAL DESCRIPTION	Water Content, %
525	0					3" ASPHALT over 6" of AB	
			27	Soft*	BR	GREENSTONE, reddish brown and yellowish brown, severely weathered, friable, moist (Franciscan Complex)	17
			26				14
521			74			*designates hardness of bedrock (see Figure B-12)	14
	5						
516			50/3"				9
	10						
511			50/4"				10
	15						
506			50/1"				
	20					Refusal at 19.1 feet bgs	
501							
	25						
496							
	30						
491							

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LOG OF BORING B-4

PROJECT NO. 3469-1R1 | **MARCH 2022** | **FIGURE B-4**

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Date(s) Drilled **February 2, 2022**	Logged By **BR**	Checked By **TS**
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **6 inch diameter**	Total Depth of Borehole **19.1 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **Cenozoic**	Approximate Surface Elevation **525 feet (relative)**
Groundwater Level and Date Measured **9.5 feet ATD**	Sampling Method(s) **3" OD, 2.5" OD, & 2" OD SPT Split Spoon Samplers**	Hammer Data **140 lb, 30 in drop, rope & cathead**
Borehole Backfill **Lean Cement Grout**	Location **Proposed Lot 6**	

Elevation, feet	Depth, feet	Sample Type	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	MATERIAL DESCRIPTION	Water Content, %
525	0						
			5	Medium Stiff to Soft	CL	LEAN CLAY, reddish brown, homogeneous, medium plasticity, trace rootlets, trace medium-grained sand, trace subangular gravels, moist (Colluvium)	18
			3				19
521			9				25
	5			Stiff	CH	FAT CLAY, grayish brown to reddish brown, homogeneous, trace medium-grained sand, medium to high plasticity, trace subangular gravels, moist (Colluvium)	
				Stiff	CL	SANDY CLAY, reddish brown, medium plasticity, trace subangular gravels, moist (Colluivum)	
516			14			(ATD) ▽	22
	10			Soft*	BR	GREENSTONE, reddish brown and yellowish brown, severely weathered, friable, moist (Franciscan Complex)	
511			50/1"			*designates hardness of bedrock (see Figure B-12)	
	15						
506			50/1"			Refusal at 19.1 feet bgs	
	20						
501							
	25						
496							
	30						
491							

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LOG OF BORING B-5

PROJECT NO. 3469-1R1 | **MARCH 2022** | **FIGURE B-5**

Date(s) Drilled **February 2, 2022**	Logged By **BR**	Checked By **TS**
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **6 inch diameter**	Total Depth of Borehole **21.5 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **Cenozoic**	Approximate Surface Elevation **521 feet (relative)**
Groundwater Level and Date Measured **Not Encountered ATD**	Sampling Method(s) **3" OD, 2.5" OD, & 2" OD SPT Split Spoon Samplers**	Hammer Data **140 lb, 30 in drop, rope & cathead**
Borehole Backfill **Lean Cement Grout**	Location **Proposed Lot 1**	

Elevation, feet	Depth, feet	Sample Type	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	MATERIAL DESCRIPTION	Water Content, %
	0		5	Medium Stiff to Soft	CL	SANDY CLAY with GRAVELS, brown, heterogeneous, medium plasticity, fine to coarse grained sands, subangular gravels, moist (Colluvium)	17
			2				16
517			2				16
	5						
512			6	Soft to Medium Stiff	CL	SANDY CLAY, reddish brown, homogeneous, medium plasticity, trace subangular gravels, moist (Colluivum)	24
	10						
507			7				24
	15			Soft*	BR	GREENSTONE, yellowish brown and reddish brown, severely weathered, friable, moist (Franciscan Complex) *designates hardness of bedrock (see Figure B-12)	
502			86				16
	20		66				19
						Bottom of Boring at 21.5 feet bgs	
497	25						
492	30						
487							

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WOODSIDE , CALIFORNIA

LOG OF BORING B-6

PROJECT NO. 3469-1R1 | **MARCH 2022** | **FIGURE B-6**

Date(s) Drilled **February 2, 2022**	Logged By **BR**	Checked By **TS**
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **6 inch diameter**	Total Depth of Borehole **23.5 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **Cenozoic**	Approximate Surface Elevation **512 feet (relative)**
Groundwater Level and Date Measured **5.5 feet ATD**	Sampling Method(s) **3" OD, 2.5" OD, & 2" OD SPT Split Spoon Samplers**	Hammer Data **140 lb, 30 in drop, rope & cathead**
Borehole Backfill **Lean Cement Grout**	Location **Downhill portion of proposed Lot 1**	

Elevation, feet	Depth, feet	Sample Type	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	MATERIAL DESCRIPTION	Water Content, %
	0		7	Medium Stiff to Stiff	CH	FAT CLAY with SAND, reddish brown, homogeneous, medium to high plasticity, minor subangular gravels, moist (Colluvium)	22
			10				17
508			7	Medium Stiff	CL	LEAN CLAY, grayish brown, homogeneous, low plasticity, subangular gravels, trace rootlets, moist (Colluvium)	25
	5					(ATD) ▽	
				Soft*	BR	GREENSTONE, reddish brown and yellowish brown, severely weathered, friable, moist (Franciscan Complex)	
503			22				19
	10					*designates hardness of bedrock (see Figure B-12)	
			20				22
498							
	15		14				17
493							
	20		80				17
			68				13
488						Bottom of Boring at 23.5 feet bgs	
	25						
483							
	30						
478							

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LOG OF BORING B-7

PROJECT NO. 3469-1R1 | **MARCH 2022** | **FIGURE B-7**

Date(s) Drilled **February 2, 2022**	Logged By **BR**	Checked By **TS**
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **6 inch diameter**	Total Depth of Borehole **17.1 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **Cenozoic**	Approximate Surface Elevation **519 feet (relative)**
Groundwater Level and Date Measured **Not Encountered ATD**	Sampling Method(s) **3" OD, 2.5" OD, & 2" OD SPT Split Spoon Samplers**	Hammer Data **140 lb, 30 in drop, rope & cathead**
Borehole Backfill **Lean Cement Grout**	Location **Proposed location of Lot 7**	

Elevation, feet	Depth, feet	Sample Type	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	MATERIAL DESCRIPTION	Water Content, %
515	0		5 7	Medium Stiff to Stiff	CL	LEAN CLAY with SAND and GRAVEL, reddish brown, heterogeneous, medium plasticity, medium- to coarsed-grained sands, subangular gravels, moist (Colluvium)	19 20
			13				18
	5			Soft*	BR	GREENSTONE, yellowish brown and reddish brown, severely weathered, friable, moist (Franciscan Complex) *designates hardness of bedrock (see Figure B-12)	
510			20				15
	10						
505			50/4"				9
	15						
						Refusal at 17.1 feet bgs	
500	20						
495	25						
490	30						
485							

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1101 CAÑADA ROAD LLC
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LOG OF BORING B-8

PROJECT NO. 3469-1R1 | **MARCH 2022** | **FIGURE B-8**

Date(s) Drilled **February 2, 2022**	Logged By **BR**	Checked By **TS**
Drilling Method **Hollow Stem Auger**	Drill Bit Size/Type **6 inch diameter**	Total Depth of Borehole **31.5 feet bgs**
Drill Rig Type **Geoprobe 7822DT**	Drilling Contractor **Cenozoic**	Approximate Surface Elevation **503 feet (relative)**
Groundwater Level and Date Measured **Not Encountered ATD**	Sampling Method(s) **3" OD, 2.5" OD, & 2" OD SPT Split Spoon Samplers**	Hammer Data **140 lb, 30 in drop, rope & cathead**
Borehole Backfill **Lean Cement Grout**	Location **Downhill portion of proposed Lot 8**	

Elevation, feet	Depth, feet	Sample Type	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	MATERIAL DESCRIPTION	Water Content, %
	0		4	Soft to Medium Stiff	CH	FAT CLAY, dark grayish brown, homogeneous, high plasticity, moist (Colluvium)	32
			8				29
						PI=43%; LL=70% (sample from 0 to 1.5 feet)	
499			4				25
	5			Soft*	BR	SILTSTONE, yellowish brown to olive brown to dark grayish brown, severely weathered, trace sandstones, moist (Whiskey Hill Formation)	
						Free Swell=80% (sample from 3 to 4.5 feet)	
494			22				21
	10					*designates hardness of bedrock (see Figure B-12)	
			32				18
489						Free Swell=50% (sample from 13 to 15 feet)	
	15						
484			37			Free Swell=70% (sample from 18.5 to 20 feet)	18
	20						
479							
	25		36				18
474							
	30		41				17
469						Bottom of Boring at 31.5 feet bgs	

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LOG OF BORING B-9

PROJECT NO. 3469-1R1 | **MARCH 2022** | **FIGURE B-9**

Elevation, feet	Depth, feet	Sample Type	Sampling Resistance, blows/foot	Relative Consistency	USCS Symbol	MATERIAL DESCRIPTION	Water Content, %
1	2	3	4	5	6	7	8

COLUMN DESCRIPTIONS

1 **Elevation, feet:** Elevation (MSL, feet)

2 **Depth, feet:** Depth in feet below the ground surface.

3 **Sample Type:** Type of soil sample collected at the depth interval shown.

4 **Sampling Resistance, blows/foot:** Number of blows required to advance the sampler 12 inches or the distance shown. Blow counts for the 3.0-inch O.D. and 2.5-inch O.D. samplers have been corrected for sampler size to SPT values using conversion factors of 0.65 and 0.77, respectively.

5 **Relative Consistency:** Relative consistency of the subsurface material.

6 **USCS Symbol:** USCS symbol of the subsurface material.

7 **MATERIAL DESCRIPTION:** Description of material encountered. May include consistency, moisture, color, and other descriptive text.

8 **Water Content, %:** Water content of the soil sample, expressed as percentage of dry weight of sample.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

TYPICAL MATERIAL GRAPHIC SYMBOLS

- Sandstone
- Well graded GRAVEL (GW)
- Poorly graded GRAVEL (GP)
- Well graded GRAVEL with Silt (GW-GM)
- Well graded GRAVEL with Clay (GW/GC)
- Poorly graded GRAVEL with Silt (GP-GM)
- Poorly graded GRAVEL with Clay (GP-GC)
- Silty GRAVEL (GM)
- Clayey GRAVEL (GC)
- Well graded SAND (SW)
- Poorly graded SAND (SP)
- Well graded SAND with Silt (SW-SM)
- Well graded SAND with Clay (SW/SC)
- Poorly graded SAND with Silt (SP-SM)
- Poorly graded SAND with Clay (SP-SC)
- Silty SAND (SM)
- Clayey SAND (SC)
- SILT, SILT w/SAND, SANDY SILT (ML)
- Lean CLAY, CLAY w/SAND, SANDY CLAY (CL)
- SILT, SILT w/SAND, SANDY SILT (MH)
- Fat CLAY, CLAY w/SAND, SANDY CLAY (CH)
- SILT, SILT with SAND, SANDY SILT (ML-MH)
- Lean-Fat CLAY, CLAY w/SAND, SANDY CLAY (CL-CH)
- SILTY CLAY (CL-ML)
- Lean CLAY/PEAT (CL-OL)
- Fat CLAY/SILT (CH-MH)
- Fat CLAY/PEAT (CH-OH)
- Silty SAND to Sandy SILT (SM-ML)
- Silty SAND to Sandy SILT (SM-MH)
- Sandy CLAY to Clayey SAND (CL/SC)
- Clayey SAND to Sandy CLAY (SC-CH)
- SILT to CLAY (CL/ML)
- Silty to Clayey SAND (SC/SM)

TYPICAL SAMPLER GRAPHIC SYMBOLS

- 2 inch-OD Unlined Split Spoon (SPT)
- 2.5 inch-OD Unlined Split Spoon
- 3 inch-OD Unlined Split Spoon
- Shelby Tube (thin-walled, fixed head)
- Grab Sample
- Bulk Sample
- Pitcher Sample
- Other Sampler

OTHER GRAPHIC SYMBOLS

- Water level (at time of drilling, ATD)
- Water level (after waiting a given time)
- Minor change in material properties within a stratum
- Inferred or gradational contact between strata
- Queried contact between strata

GENERAL NOTES

1. Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2. Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

PRIMARY DIVISIONS			SOIL TYPE	SECONDARY DIVISIONS
COARSE GRAINED SOILS *(<50% Fines)*	GRAVEL	CLEAN GRAVEL *(<5% Fines)*	**GW**	Well graded gravel, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravel or gravel-sand mixtures, little or no fines.
		GRAVEL *with* FINES	**GM**	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SAND	CLEAN SAND *(<5% Fines)*	**SW**	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SAND *with* FINES	**SM**	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS *(>50% Fines)*	SILT AND CLAY *Liquid limit <50%*		**ML**	Inorganic silts and very fine sands, with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, lean clays.
			OL	Organic silts and organic clays of low plasticity.
	SILT AND CLAY *Liquid limit >50%*		**MH**	Inorganic silt, micaceous or diatomaceous fine sandy or silty soil.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			**Pt**	Peat and other highly organic soils.

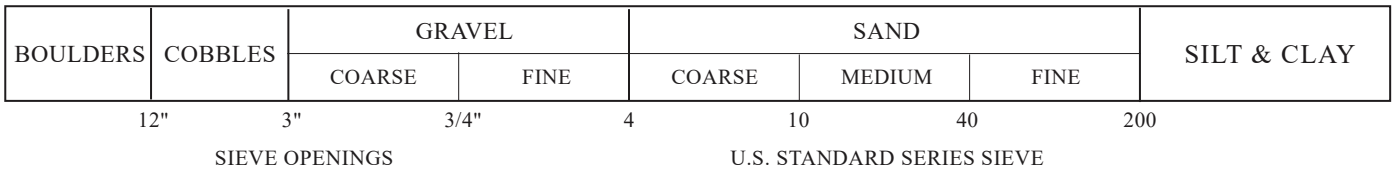
RELATIVE DENSITY

SAND & GRAVEL	BLOWS/FOOT*
VERY LOOSE	0 to 4
LOOSE	4 to 10
MEDIUM DENSE	10 to 30
DENSE	30 to 50
VERY DENSE	OVER 50

CONSISTENCY

SILT & CLAY	STRENGTH^	BLOWS/FOOT*
VERY SOFT	0 to 0.25	0 to 2
SOFT	0.25 to 0.5	2 to 4
MEDIUM STIFF	0.5 to 1	4 to 8
STIFF	1 to 2	8 to 16
VERY STIFF	2 to 4	16 to 32
HARD	OVER 4	OVER 32

GRAIN SIZES



Classification is based on the Unified Soil Classification System; fines refer to soil passing a No. 200 sieve.

*Standard penetration test (SPT) resistance using a 140-pound hammer falling 30 inches on a 2-inch outside diameter split spoon sampler; blow counts for the 3.0-inch O.D. and 2.5-inch O.D. samplers have been corrected for sampler size to SPT values using conversion factors of 0.65 and 0.77, respectively.

^ Shear strength in tons/sq. ft. as estimated by SPT resistance, field and laboratory tests, and/or visual observation.

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WOODSIDE , CALIFORNIA

UNIFIED SOIL CLASSIFICATION SYSTEM

PROJECT NO. 3469-1R1 | **MARCH 2022** | **FIGURE B-11**

WEATHERING

Fresh
Rock fresh, crystals bright, few joints may show slight staining. Rock rings under hammer if crystalline.

Very Slight
Rock generally fresh, joints stained, some joints may show thin clay coatings, crystals in broken face show bright. Rock rings under hammer if crystalline.

Slight
Rock generally fresh, joints stained, and discoloration extends into rock up to 1 inch. Joints may contain clay. In granitoid rocks some occasional feldspar crystals are dull and discolored. Crystalline rocks ring under hammer.

Moderate
Significant portions of rock show discoloration and weathering effects. In granitoid rocks, most feldspars are dull and discolored; some are clayey. Rock has dull sound under hammer and shows significant loss of strength as compared with fresh rock.

Moderately Severe
All rock excepts quartz discolored or stained. In granitoid rocks, all feldspars dull and discolored and majority show kaolinization. Rock shows severe loss of strength and can be excavated with geologist's pick. Rock goes "clunk" when struck.

Severe
All rock except quartz discolored or stained. Rock "fabric" clear and evident, but reduced in strength to strong soil. In granitoid rocks, all feldspars kaolinized to some extent. Some fragments of strong rock usually left.

Very Severe
All rock except quartz discolored and stained. Rock "fabric" discernible, but mass effectively reduced to "soil" with only fragments of strong rock remaining.

Complete
Rock reduced to "soil". Rock fabric not discernible or discernible only in small scattered locations. Quartz may be present as dikes or stringers.

HARDNESS

Very Hard
Cannot be scratched with knife or sharp pick. Hand specimens requires several hard blows of geologist's hammer.

Hard
Can be scratched with knife or pick only with difficulty. Hard blow of hammer required to detach hand specimen.

Moderately Hard
Can be scratched with knife or pick. Gouges or grooves to 1/4 inch deep can be excavated by hard blow of point of a geologist's pick. Hard specimen can be detached by moderate blow.

Medium
Can be grooved or gouged 1/16 inch deep by firm pressure on knife or pick point. Can be excavated in small chips to pieces about 1 inch maximum size by hard blows of the point of geologist's pick.

Soft
Can be gouged or grooved readily with knife or pick point. Can be excavated in chips to pieces several inches in size by moderate blows of a pick point. Small thin pieces can be broken by finger pressure.

Very Soft
Can be carved with knife. Can be excavated readily with point of pick. Pieces 1 inch or more in thickness can be broken with finger pressure. Can be scratched readily by fingernail.

JOINT BEDDING & FOLIATION SPACING

Spacing	Joints	Bedding & Foliation
Less than 2 in.	Very Close	Very Thin
2 in to 1 ft.	Close	Thin
1 ft. to 3 ft.	Moderately Close	Medium
3 ft. to 10 ft.	Wide	Thick
More than 10 ft.	Very Wide	Very Thick

ROCK QUALITY DESIGNATOR (RQD)

RQD, as a percentage	Descriptor
Exceeding 90	Excellent
90 to 75	Good
75 to 50	Fair
50 to 25	Poor
Less than 25	Very Poor

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WOODSIDE , CALIFORNIA

KEY TO BEDROCK DESCRIPTIONS

PROJECT NO. 3469-1R1 | **MARCH 2022** | **FIGURE B-12**

APPENDIX C

LABORATORY TESTS

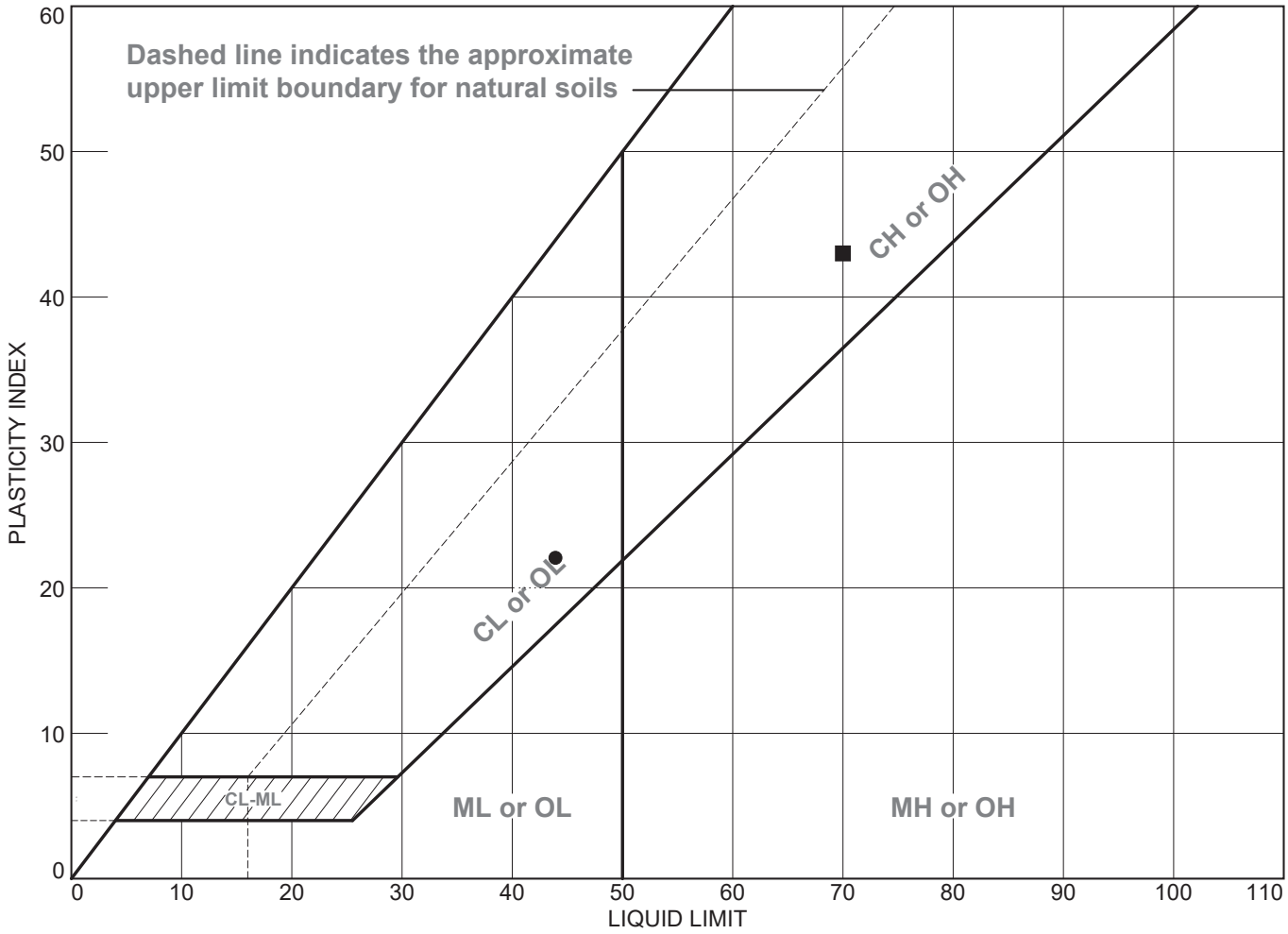
Samples from the subsurface exploration were selected for tests to evaluate moisture content and the physical and engineering properties of the soils. The tests performed are briefly described below.

Natural moisture content was determined on most samples recovered from the borings. The samples were initially trimmed to obtain volume and wet weight measurements and subsequently dried in accordance with ASTM D2216. After drying, the weight of each sample was obtained to determine the moisture content of field conditions and time the samples were collected. The results are presented on the boring logs at the appropriate sample depths.

The Atterberg limits were determined on two samples in accordance with ASTM D 4318. The Atterberg limits are the moisture content within which the soil is workable or plastic. The results of this test are presented in Figure C-1 and on the boring logs at the appropriate sample depth.

Free swell tests were performed on three samples of the bedrock to evaluate the potential for expansion of the material. The results are presented on the boring logs at the appropriate depths.

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-2	1	1.5-3'	15.6	22	44	22	CL
■	B-9	2	0-1.5'	31.6	27	70	43	CH

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WOODSIDE , CALIFORNIA

LIQUID & PLASTIC LIMITS TEST REPORT

PROJECT NO. 3469-1R1 | MARCH 2022 | FIGURE C-1

MURRAY ENGINEERS INC
GEOTECHNICAL SERVICES

November 21, 2022
Project No. 3469-1L1

1101 Cañada Road LLC
c/o Mr. Joseph Putnam
3 California Drive
Burlingame, California 94010

RE: SUPPLEMENTAL GEOLOGIC INVESTIGATION
FAULT EXPLORATION TRENCH
1101 CAÑADA ROAD
WOODSIDE, CALIFORNIA

Ladies & Gentlemen:

As requested, we have performed a supplemental investigation to assess the potential for surface fault rupture and ground deformation in the southern corner of the property at 1101 Cañada Road in Woodside. We previously completed a geologic and preliminary geotechnical investigation to evaluate the feasibility of subdividing the property. The results of the investigation were presented in our report dated March 28, 2022. Since the release of our report, the layout of the proposed subdivision was modified. The modifications include shifting the proposed private road from the central portion of the property along Cañada Road to the southeast in approximately the same location as the existing driveway. The proposed road will extend along the southeastern property line and then curve to the northwest and end in a cul-de-sac in the central portion of the property (see Figure A-1, Site Plan and Engineering Geologic Map).

As discussed in the report, we identified different bedrock materials in Borings B-8 and B-9, which were located approximately 135 feet apart, in the southern corner of the property. The northern boring, Boring B-8 encountered Franciscan greenstone bedrock. The southern boring encountered siltstone bedrock, which was interpreted as Whiskey Hill Formation. In their geologic peer review letter dated July 15, 2022, the Town Geotechnical Consultant recommended that a supplemental subsurface investigation be completed to better assess the potential for surface fault rupture and the ground deformation hazard associated with the contact between the two bedrock types.

Our services for this supplemental investigation have included consultation with the Town Geotechnical Consultant, excavation and logging an approximately 74-foot long fault trench in the southern corner of the property in between Borings B-8 and B-9, and the preparation of this supplemental letter.

SUPPLEMENTAL SUBSURFACE EXPLORATION

On October 17, 2022, an approximately 74-foot long by 30-inch-wide fault exploration trench was excavated on the site with a backhoe to depths ranging from approximately 8 to 9 feet. The trench was located in the southern corner of the property at the location shown on the Site Plan and Engineering Geologic Map (see Figure A-1). The trench location was determined by measuring distance and bearing from a nearby eucalyptus tree using a tape measure and compass and should be accurate to the degree implied by the mapping

technique utilized. The trench was located and oriented to intercept the contact between the greenstone encountered in Boring B-8 and the siltstone encountered in Boring B-9.

Following excavation, the trench walls were shored to permit safe entry to allow for examination and logging of the subsurface exposures. Between October 17 and 19, 2022, our senior staff geologist and principal engineering geologist examined the subsurface exposures within the trench and prepared a detailed log of the western trench wall. A schematic representation of the subsurface exposures observed in the trench is presented on Figure 2, Log of Fault Exploration Trench T-1. The trench log shows our interpretation of the subsurface conditions at the trench location at the time of excavation, and it is not warranted that these conditions are representative of the subsurface conditions at other locations or times. On October 19, 2022, our senior staff geologist and principal engineering geologist met with the Town Geotechnical Consultant at the site to examine the subsurface exposures within the trench.

Following our exploration, the trench was backfilled by replacing the excavated soil. The trench backfill was placed and compacted in approximately 12- to 18-inch-thick lifts. Compaction was achieved using a trench-wheel compactor attached to a backhoe.

FAULT EXPLORATION TRENCH

A thin wedge of silty clay fill (Unit 1) was exposed at the north end of the trench from Sta. 0+60 to the end of the trench at Sta. 0+74. Below the fill and across the length of the trench, the excavation exposed an approximately 3-foot-thick layer of silty clay topsoil (Unit 2). The topsoil is underlain by greenstone bedrock (Unit 3) across the length of the trench. The greenstone is generally dark yellowish brown, but varies to pale yellow and red. It is highly fractured and varies from moderately weathered to very highly weathered. White caliche stringers are prevalent in the greenstone along the length of the trench. Between Sta. 0+00 to 0+18, the greenstone bedrock is underlain by siltstone bedrock. The contact between the two units dips to the east. The siltstone bedrock is mottled dark gray to reddish brown and exhibits an undulating, faintly sheared fabric. The unit contains hard graywacke sandstone inclusions at the base of the trench, a fragment of greenstone near the overlying, and abundant white caliche at contact with the overlying greenstone. The sheared fabric does not extend up into the overlying greenstone.

CONCLUSIONS

Based on our supplemental subsurface exploration, it is our opinion that the siltstone encountered in Boring B-9 was misinterpreted as Whiskey Hill Formation bedrock. Based on the exposures in the fault exploration trench, in our opinion, the siltstone is a subunit of the Franciscan Complex. Although the siltstone exhibited a faintly sheared fabric, the shearing does not extend up into the overlying greenstone and is not related to active or potentially active faulting. Based on our supplemental investigation, it is our opinion that the potential for primary surface ground rupture or ground deformation through the property is low.

LIMITATIONS

Our supplemental investigation was performed and our conclusions developed in accordance with engineering geologic principles and practices generally accepted at this time and location. We make no warranty, either expressed or implied.

If you have any questions about our supplemental investigation, please contact this office.

Sincerely,

MURRAY ENGINEERS, INC.

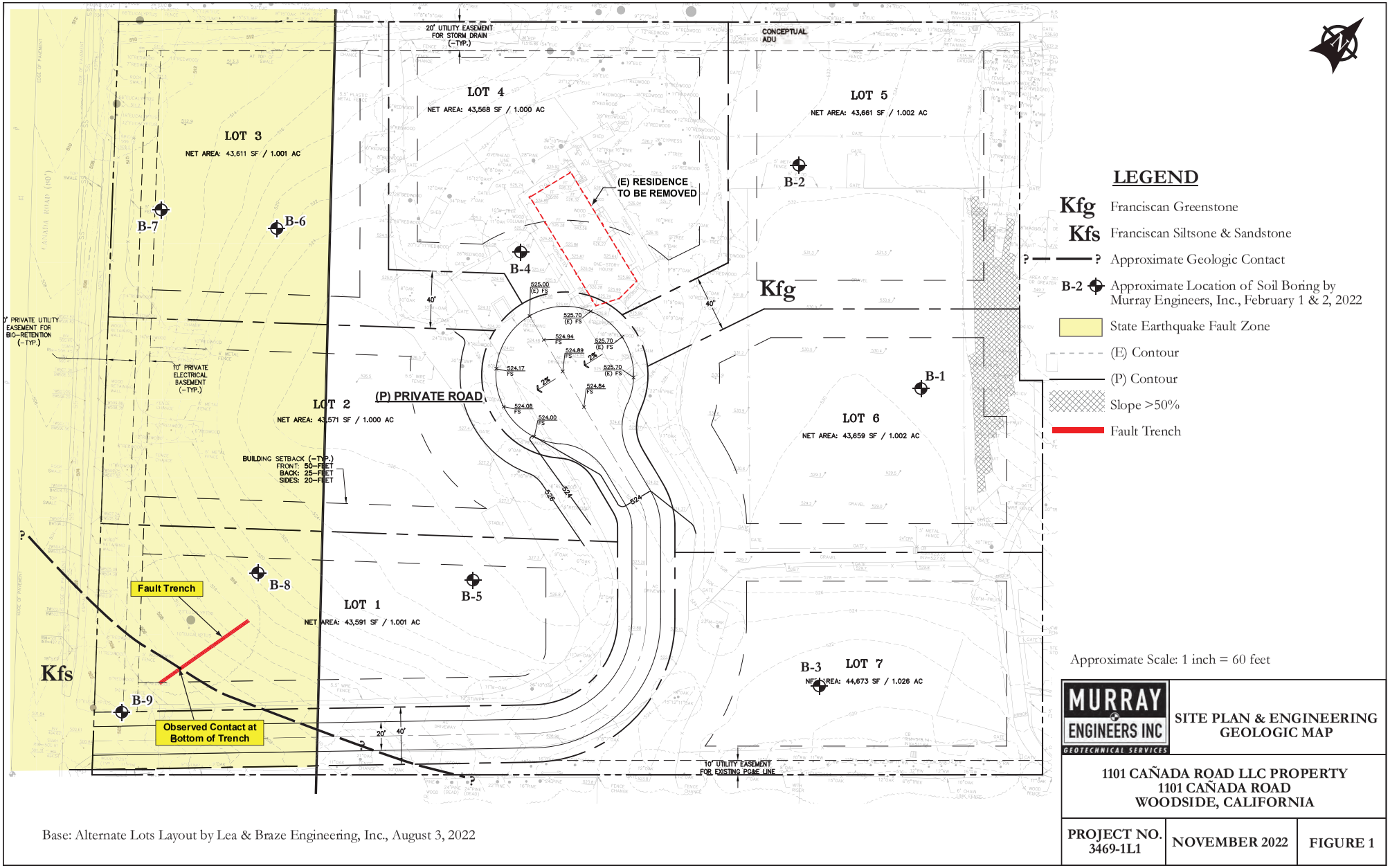
Thomas Strider, G.I.T.
Senior Staff Geologist

Mark F. Baumann, C.E.G.
Principal Engineering Geologist



Copies: Addressee (email)
Lea & Braze Engineering, Inc. (email)
Attn: Mr. Chris Phan, P.E.

Attachments: Figure 1 – Site Plan and Engineering Geologic Map
Figure 2 – Log of Fault Exploration Trench T-1



LEGEND

- Kfg — Franciscan Greenstone
- Kfs — Franciscan Siltsone & Sandstone
- ? — ? — Approximate Geologic Contact
- B-2 — Approximate Location of Soil Boring by Murray Engineers, Inc., February 1 & 2, 2022
- State Earthquake Fault Zone
- (E) Contour
- (P) Contour
- Slope >50%
- Fault Trench

Approximate Scale: 1 inch = 60 feet

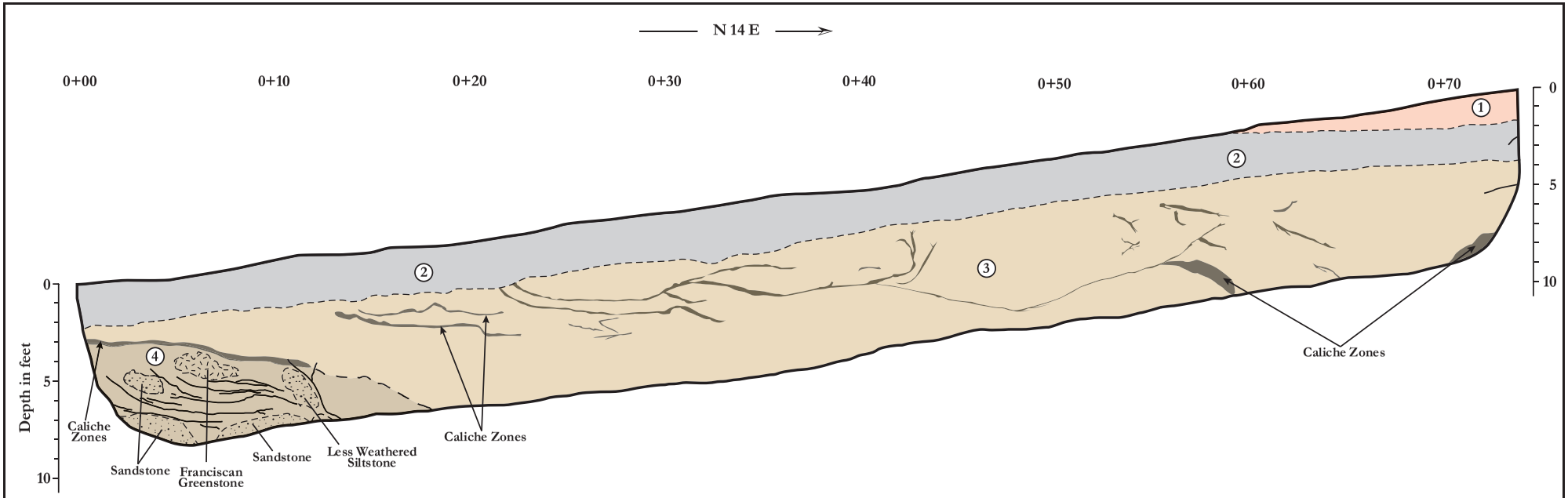
Base: Alternate Lots Layout by Lea & Braze Engineering, Inc., August 3, 2022

MURRAY ENGINEERS INC
GEOTECHNICAL SERVICES

SITE PLAN & ENGINEERING GEOLOGIC MAP

1101 CAÑADA ROAD LLC PROPERTY
1101 CAÑADA ROAD
WOODSIDE, CALIFORNIA

PROJECT NO.		
3469-1L1	NOVEMBER 2022	FIGURE 1



Material Description

1. FILL: SILTY CLAY, brown (10YR 4/3), homogeneous, moderately plastic, trace greenstone fragments, scattered roots
2. SILTY CLAY, very dark grayish brown (10YR 3/2), homogeneous, moderately to highly plasticity, trace sand, trace fine-gravel, dry, abundant roots under eucalyptus tree
3. GREENSTONE, dark yellowish brown (10YR/ 4/4) to pale yellow (5Y 7/4) to red (10Y 4/6). on fresh surfaces, highly fractured, moderatly to very highly weathered, abundant white caliche stringers, dry to very slightly moist (Bedrock)
4. SILTSTONE, mottled dark gray (5Y 4/1) to reddish brown (2.5 YR 4/3), very highly weathered, undulating sheared fabric, abundant white caliche deposits at contact with overlying greenstone, hard gray sandstone inclusions at base of trench, moist, scattered roots (Bedrock)

Logged by T. Strider and M. Baumann

Approximate Scale: 1 inch = 5 feet (horizontal = vertical)

MURRAY ENGINEERS INC
GEOTECHNICAL SERVICES

LOG OF FAULT EXPLORATION TRENCH T-1

1101 CAÑADA ROAD LLC PROPERTY
1101 CAÑADA ROAD
WOODSIDE, CALIFORNIA

PROJECT NO. 3469-1L1	NOVEMBER 2022	FIGURE 2

Hexagon Transportation Consultants, Inc.

Memorandum

Date: February 14, 2023

To: Ms. Lisa Putnam

From: Gary Black
Jonathan Wong

Subject: Vehicle Miles Traveled (VMT) Analysis and Driveway Safety Analysis for Residential Development at 1101 Cañada Road in Woodside, California

Hexagon Transportation Consultants, Inc. has completed a transportation study for the proposed residential development in the town of Woodside, California. The project proposes to demolish the existing uses on the site to build 7 single family homes at 1101 Cañada Road. According to State and Town policies, it would be possible to build one accessory dwelling unit (ADU) and one junior accessory dwelling unit (JADU) on each lot. Thus, it would be allowable to build up to 21 total units. ADUs typically have one bedroom and accommodate one or two persons. JADUs are an extra bedroom with an exterior door within the main house. They may be used by an au pair or other domestic staff. Access to the site would be provided via one driveway on Cañada Road.

VMT Analysis

Currently, the town of Woodside has not adopted a vehicle-miles-travelled (VMT) analysis policy Therefore, the project's VMT was analyzed based on the VMT guidelines set by the County of San Mateo. On September 23, 2020, San Mateo County adopted VMT interim guidelines to be used with new development projects. The County's VMT interim guidelines are intended to satisfy the California Environmental Quality Act (CEQA) VMT impact analysis requirements. The County's VMT guidelines provide VMT thresholds, baselines, and criteria to evaluate VMT impacts for new development projects. The guidelines also provide screening criteria for new developments.

Small Projects

San Mateo County's VMT interim guidelines provide screening criteria that exempt developments from further CEQA transportation impact analysis. Per these guidelines, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact. Based on the number of trips generated by the project (see next section), the project would generate fewer than 110 daily trips. The project would meet the threshold for the small project screening criterion set forth in the San Mateo County VMT guidelines. Therefore, the project would have a less-than-significant transportation impact.

Project Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by common land uses. Thus, for the most common land uses there are standard trip generation rates that can be applied to help predict the future traffic increases that would result from a new development. The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The trip

generation rates published in the Institute of Transportation Engineers' (ITE) manual entitled *Trip Generation, 11th Edition (*2021) were used for this study. The single-family detached housing rates (Land Use 210) were used to represent the main residences. Since ADU and JADU are not classifications included in the ITE manual, ITE rates that represent comparable categories were used. The multifamily housing rates were used to represent the ADU's, and the off-campus student apartment rates were used to represent the JADU's. It was assumed that approximately half of the JADU's would be used by an au pair or other live-in person. Typically, an au pair would not own a car and would not travel out of the project site except with the family living in the main residence.

As shown in the Table 1, after crediting the existing single-family home, the project could generate up to 100 new daily vehicle trips, assuming each lot built an ADU and JADU along with the main house. This small number of trips would create no discernable change to the traffic operations on Cañada Road.

Table 1
Project Trip Generation Estimates

Land Use	Size	Daily Rate	Daily Trips	AM Peak Hour Pk-Hr Rate	AM In	AM Out	AM Total	PM Peak Hour Pk-Hr Rate	PM In	PM Out	PM Total
Proposed Uses											
Single-Family Detached Housing [1]	7 DU	9.43	66	0.70	1	4	5	0.94	4	3	7
ADU [2]	7 DU	4.54	32	0.37	1	2	3	0.39	2	1	3
JADU [3]	3 Bedrooms	3.57	11	0.12	0	0	0	0.24	1	0	1
Proposed Trips			**109**		**2**	**6**	**8**		**7**	**4**	**11**
Existing Uses											
Single-Family Detached Housing [1]	1 DU	9.43	(9)	0.70	(0)	(1)	(1)	0.94	(1)	0	(1)
Net New Trips:			**100**		**2**	**5**	**7**		**6**	**4**	**10**

Notes:
[1] Trip generation based on average rates contained in the *ITE Trip Generation Manual, 11th Edition* , for Single-Family Detached Housing (Land Use 210) located in a General Urban/Suburban setting. Rates are expressed in trips per dwelling unit (DU).
[2] Trip generation based on average rates contained in the *ITE Trip Generation Manual, 11th Edition* , for Multifamily Housing (Mid-Rise) Not Close to Rail Transit (Land Use 221) located in a General Urban/Suburban setting. Rates are expressed in trips per dwelling unit (DU).
[3] Trip generation based on average rates contained in the *ITE Trip Generation Manual, 11th Edition* , for Off-Campus Student Apartment (Low-Rise) Adjacent to Campus (Land Use 225) located in a General Urban/Suburban setting. Rates are expressed in trips per bedroom.

Site Access and Sight Distance

A review of the project site plan was performed to determine if adequate site access and driveway safety would be provided and to identify any access or driveway issues that should be improved. This review is based on the site plan prepared by Lea & Braze Engineering, Inc., dated September 23, 2022, presented on Figure 1, and in accordance with generally accepted traffic engineering standards.

Site Access

Access to the project would be provided via one two-way driveway that connects to Cañada Road. The driveway would be located at the south end of the project site, approximately 200 feet south of Olive Hill Lane. The site plan shows that the driveway would connect to the proposed cul-de-sac that leads to the proposed single-family homes. The internal roadway would be 20 feet wide, and the cul-de-sac diameter would be 96 feet wide, both of which can accommodate passenger vehicles and trucks, including emergency vehicles. The site plan indicates the driveway width along Cañada Road to be approximately 30 feet, which is wide enough to accommodate all vehicle types.

A pedestrian access path would also be provided adjacent to the roadway. The pathway would connect to the existing pedestrian paths on Cañada Road.

Sight Distance

Stopping sight distance is the length of roadway ahead that is visible to drivers. This distance allows drivers to see an object or oncoming vehicle on the road and stop their vehicle before colliding with it. The stopping sight distance varies depending on the speed on the road. Typically, the design speed for sight distance is assumed to be 5 MPH over the speed limit. The speed limit on Cañada Road is 35 mph, so the design speed is 40 mph. According to the Caltrans Highway Design Manual, the stopping sight distance for a 40 MPH road is 300 feet. Vehicles exiting the project would require at least 300 feet to see oncoming vehicles. The proposed project driveway should be free and clear of any obstructions to optimize sight distance. Providing the appropriate sight distance reduces the likelihood of a collision at the driveway and provides drivers with the ability to locate sufficient gaps in traffic and exit the site. The driveway location is along a straight section of Cañada Road, so the sight distance is in excess of 1,000 feet in each direction. There are no landscaping features shown on the site plan that would impede vision at the driveway. Therefore, the project would provide adequate sight distance at the driveway.

Figures 2 and 3 show the sight distance in the north and south direction at the driveway location.

Conclusions

The proposed project is estimated to generate fewer than 110 trips per day. Therefore, the proposed project would meet the threshold for the Small Projects screening criterion set forth in the VMT guidelines and would have a less-than-significant transportation impact. This small number of trips would create no discernable change to the traffic operations on Cañada Road. Access to the project would be provided via one driveway that connects to Cañada Road. The project would provide adequate sight distance for vehicles entering and exiting the driveway.

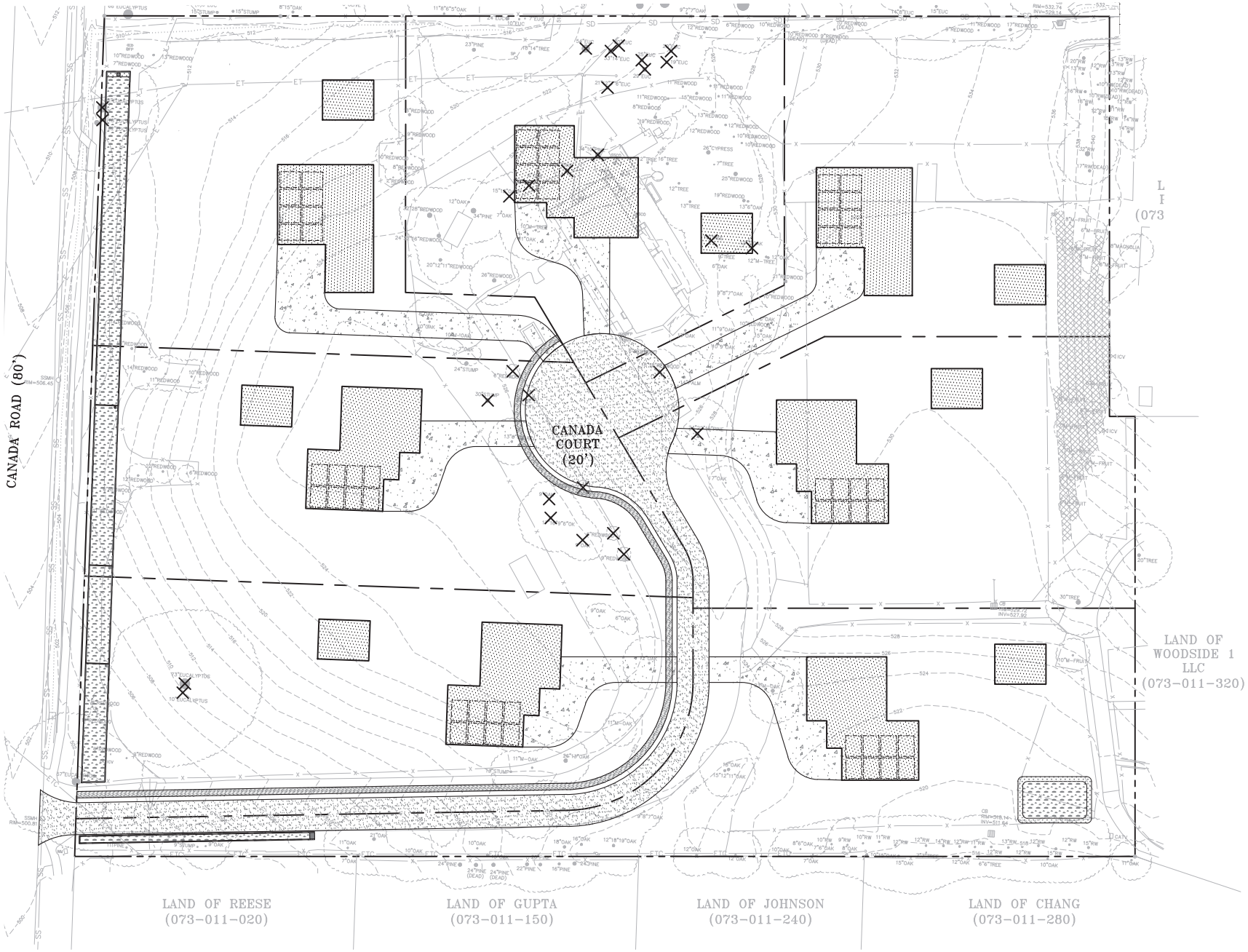


Figure 1
Site Plan

NORTH
Not to Scale



Figure 2
North Direction Sight Distance from Driveway



Figure 3
South Direction Sight Distance from Driveway

Biological Resources Assessment

1101 Cañada Road Residential Subdivision Project

Woodside, California

November 18, 2021

Prepared for:

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SUNSET ECOLOGICAL SOLUTIONS
BIOLOGY, PERMITTING, AND COMPLIANCE

ATTACHMENT 10

Executive Summary

This assessment of biological resources was prepared by Sunset Ecological Solutions for the proposed residential subdivision project at 1101 Cañada Road in the Town of Woodside, California. It was prepared to determine the potential for sensitive biological communities and special-status species to occur in the Project Area based on a field site visit and review of background literature. All sensitive biological communities or special-status species observed during the site visit are noted. However, this assessment does not constitute full protocol-level surveys for sensitive biological communities and special-status species. As part of this assessment, potentially significant impacts on biological resources were assessed and avoidance measures for any potential impacts have been recommended and incorporated into the Project.

Based on the results of this biological assessment, no sensitive biological communities are present in the Project Area, and the Project Area contains suitable habitat for two special-status plant species and two special-status wildlife species. No special-status plant or wildlife species were observed in the Project Area during the field site visit. A focused-level special-status plant survey during the blooming season will be provided to assure no special-status plants are present prior to the start of work. Avoidance of the nesting bird season and roosting bat season or pre-construction surveys to protect bird nests and bat roosts will be conducted to avoid impacts to nesting birds and roosting bats.

Introduction

The purpose of this report is to inform you of the results of the biological resources assessment background search and site visit for the 7.8-acre Project Area located at 1101 Cañada Road in the Town of Woodside, in San Mateo County, California on Assessor's Parcels Number 073-011-270 (Project Area). This site visit and assessment was conducted to fulfill the need for a determination of the presence or potential occurrence of protected habitats or special-status species and identify potential impacts to those resources that could occur from the 1101 Cañada Road Residential Subdivision Project (Project) activities.

Based on the site visit and review of background literature and databases, the Project Area does not contain sensitive biological communities, however there is moderate potential to support two special-status wildlife species; Cooper's hawk and pallid bat. Additionally, there is also potential for two special-status plants to occur. Additionally, non-special-status nesting birds may be present during the breeding season. Avoidance of construction starting during the breeding bird and roosting bat season or conducting pre-construction surveys to confirm absence will assure no impacts to these wildlife species will occur. Focused-level surveys during the blooming season for the two special-status plants species will assure no impacts to these wildlife species will occur.

Project Description

The 1101 Cañada Road Residential Subdivision Project involves the demolition and removal of the existing driveways, residential structures, accessory structures, and horse arena to subdivide the property into seven separate residential lots each just over an acre in size (see Project Plans in Appendix A). The Project consists of an approximately 7.8-acre area running along Cañada Road for approximately 505 feet and extending 630 feet to the northeast. A private road and cul-de-sac will be built for access from Cañada Road. Utilities will be installed from Cañada Road to serve the subdivision. Bioretention infrastructure serving the entire subdivision will be constructed between Cañada Road and the subdivision lots. Although there may be portions of certain lots that may remain undisturbed, for simplicity and the purpose of this assessment, we assume all areas within the Study are will incur ground disturbance. The Project will also include the recommended avoidance measures as presented in this report for nesting birds and roosting bats.

Methods

On October 19, 2021, Sunset Ecological Solutions biologist Sean Avent conducted a field assessment of the Project Area and areas immediately surrounding it to evaluate the potential presence of sensitive habitat, sensitive vegetation communities, and aquatic features. On-site habitats were additionally assessed to determine the potential for occurrence of special-status plant and wildlife species. Observed plant communities, aquatic features, and plant and wildlife species were noted. Site conditions were noted as they relate to habitat requirements of special-

status plant and wildlife species known to occur in the vicinity as determined by the background literature research.

Prior to the site visit, background literature was reviewed to determine the potential presence of sensitive vegetation types, aquatic communities, and special-status plant and wildlife species. Resources reviewed for sensitive vegetation communities and aquatic features include aerial photography, the California Native Plant Society (CNPS) Online Database (2021), the Information for Planning and Consultation database (USFWS 2021), and the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB, CDFW 2021). For database queries, the 'Palo Alto' and 'Woodside' U.S. Geological Survey (USGS) 7.5-minute quadrangles were included as the focal search area.

Regulatory Background

Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal regulations such as the Clean Water Act; state regulations such as the Porter-Cologne Act, the CDFW Streambed Alteration Program, and CEQA; or local ordinances or policies such as city or county tree ordinances, Special Habitat Management Areas, and General Plan Elements.

Waters of the US

Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (CWA) applies to all waters including wetlands that have sufficient nexus to interstate commerce. The landward limits of Section 10 jurisdiction in tidal waters extends to the mean high water (MHW) line in tidal (navigable) waters of the U.S while the Section 404 landward limits extend to the high tide line and extent of any adjacent wetlands. Additionally, CWA Section 401 requires an applicant for any federal permit that proposes an activity which may result in a discharge to "waters of the United States" to obtain certification from the state that the discharge will comply with other provisions of the Act. Certification is provided by the Central Valley Regional Water Quality Control Board (RWQCB).

Waters of the State

The Porter-Cologne Act (Division 7 of the California Water Code) is the primary state regulation that addresses water quality standards. Under the act, State Water Regional Control Board has the ultimate authority over water rights and water quality policy. The state and regional boards regulate all pollutant or nuisance discharges that may affect either surface water or groundwater.

Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of California Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration

Agreement. The term "stream", which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life…[including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). "Riparian" is defined as "on, or pertaining to, the banks of a stream." Riparian vegetation is defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

Critical Habitat

Critical habitat is a term defined in the ESA as a specific, formally-designated geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or Projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or Projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, designated critical habitat areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification.

Town of Woodside Sensitive Resources

The Town of Woodside Municipal Code affords protection of stream corridors and trees, among other environmental resources.

Streams and Stream Corridors

Areas designated as stream corridors on the General Plan diagram and other streams, creeks, and waterways as may be designated from time to time by the Planning Commission. The Town defines a stream or creek bank as the point at which the break in slope occurs, and a stream corridor is defined as a horizontal distance of 50 feet, measured from each side of the center line of the stream, or a horizontal distance of 25 feet, measured from the top of the stream or creek bank, whichever is greater. The Planning Commission may establish greater horizontal measurements for specific stream corridors. Permitted uses in the stream corridors designated on the General Plan and other streams, creeks, and waterways as may be designated by the Planning Commission include trails and emergency flood control measures, subject to the approval of the Town Engineer. Conditional uses permitted on approval of a use permit by the Planning Commission include crop and tree farming, nurseries, bridges and roads; utility transmission lines, pastures, and other uses as determined by the Planning Commission to be of

the same general character as those previously listed and which will not alter the natural upstream or downstream regimen or impair the current or potential uses of adjacent properties. Except for the previous uses, the following action are not permitted: removal of riparian vegetation; filling or dumping of slash, debris, residue from parking or recreation areas, fertilizers, pesticides, herbicides, or liquid or solid waste; agricultural waste drainage; alteration of, or work in, the stream corridor, or the removal of material which obstructs the normal flow of water within the stream channel, construction of structures including fences. In addition, no channelization or damming of streams or creeks are permitted, unless required or allowed by the Planning Commission.

Significant Trees

A permit is required prior to the removal or destruction of a significant tree. Significant trees may be removed as may be required to permit construction authorized by a valid building or grading permit which specifies such removal. Factors that may be considered in support of a tree destruction permit may include, size of the significant trees, number of trees remaining on the lot, number of same species trees in close proximity whose removal would significantly impact the surrounding ecosystem, timing of the cut, and potential for excessive and unnecessary scarring of the natural landscape through removal of vegetation. Where significant trees are removed, the Planning Director may require tree replacement. A significant tree is defined as any living tree that has a trunk circumference, measured 48 inches above mean natural grade, greater than the size in inches in the Table 1 below.

Table 1. Significant Tree Species and Measurements

Tree Category / Species	**Circumference**	**Diameter**
Slower growing natives	24 in.	7.6 in.
Alder (*Alnus rhombifolia*)		
Big Leaf Maple (*Acer macrophyllum*)		
Blue Oak (*Quercus douglasii*)		
Buckeye (*Aesculus californica*)		
Fremont Cottonwood (*Populus fremontii*)		
Madrone (*Arbutus menziesii*)		
Tan Bark Oak (*Lithocarpus densiflorus*)		
Faster growing natives	30 in.	9.5 in.
Black Oak (*Quercus kelloggii*)		
California Bay Laurel (*Umbellularia californica*)		
Coast Live Oak (*Quercus agrifolia*)		
Coast Redwood (*Sequoia sempervirens*)		
Douglas Fir (*Pseudotsuga menziesii*)		
Valley Oak (*Quercus lobata*)		
Western Sycamore (*Platanus racemosa*)		
Other	36 in.	11.5 in.

Special-Status Species

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and those that are formal candidates for listing. In addition, CDFW Species of Special Concern (SSCs; species/taxa that face extirpation in California if current population and habitat trends continue), and CDFW California Fully Protected Animals (species for which CDFW will not authorize take) are all considered special-status species. Although SSCs generally have no special legal status, they are given special consideration under CEQA. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Rank) of 1, 2, and 3 (CNPS 2020b) are also considered special-status plant species and must be considered under CEQA.

In addition to regulations for special-status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (CFGC). Under these laws, deliberately destroying active bird nests, eggs, and/or young is illegal.

Bat species designated as "High Priority" by the Western Bat Working Group (WBWG) are afforded legal protection under Section 15380(d) of the CEQA Guidelines. Species designated "High Priority" are defined as "imperiled or are at high risk of imperilment based on available information on distribution, status, ecology, and known threats. California Fish and Game Code continues to protect non-listed bat species and their roosting habitat, including individual roosts and maternity colonies. Relevant regulations include CFGC Section 86; 2000; 2014; 3007; 4150, along with Title 14 of California Code of Regulations.

Results

Existing Conditions

The Project site has been, and is currently, a single residential home with accessory buildings and infrastructure for horses, such as gazing pastures and a large horse arena (see Figure 1 in Appendix B). Surrounding land uses in the area include mainly low-density rural residential properties with equestrian facilities, small agriculture (e.g., vineyards), and swimming pools. Interstate 280 lies roughly 500 feet to the north of the Project Area. The Project Area contains approximately 7.8-acres in total consisting of developed land, ruderal areas, grazed non-native annual grasslands, and mixed woodlands consisting of a variety of native, non-native and ornamental tree species. Soils within the Project Area are composed of Accelerator-Fagan-Urban land complex with 5 to 15 percent slopes (USDA, 2021). Elevations are between approximately 500 feet NAVD88 at Cañada Road to 540 feet NAVD88 at the north corner of the Project Area.

Biological Communities

Sensitive vegetation communities were not observed in the Project Area during the survey, as the area is a largely composed of grazed non-native grasslands, developed and ruderal habitats and areas of mixed woodland communities. The Project Area itself contains many mature trees within the mixed woodland community, consisting of both non-native ornamental species and some native species. Table 2 below provides the areas of each habitat within the Project Area.

Table 2. Areas of Vegetation Communities and Habitats within the Project Area

Vegetation Communities and Habitats	**Area (ac)**
Ruderal and Developed	2.36
Non-Native Annual Grassland	3.33
Mixed Coastal Oak and Redwood Woodland	2.06
Total	**7.75**

Non-Sensitive Biological Communities

Developed and Ruderal Vegetation

Developed and ruderal areas comprise approximately 2.36 acres within the Project Area (Figure 1, Appendix B and Photos 2, 4 and 6 in Appendix C). Developed areas are all areas with hardscape or lack of vegetation due to disturbance. These areas include driveways, roads, bare ground, structures, dog kennels, and the equestrian arena. Although some minor vegetation may appear, for the most part vegetation that exists consists of only opportunistic invasive species, ornamental plants, or overhanging trees.

Although not described in the literature, ruderal areas typically occur on land that has been previously disturbed and was subsequently colonized by non-native or invasive plant species. Within the Project Area, ruderal areas occur in previously disturbed portions of the site in all areas grazed by horses, on roadsides, and adjacent to residential structures. The vegetation within the ruderal communities includes geranium (*Geranium* sp.), French broom (*Genista monspessulana*), wild radish (*Raphanus raphanistrum*), Himalayan blackberry (*Rubus armeniacus*), Italian thistle (*Carduus pycnocephalus*), stinkwort (*Dittrichia graveolens*), bristly oxtongue (*Helminthotheca echioides*), black mustard (*Brassica nigra), and curly dock (Rumex crispus)*.

Non-Native Annual Grassland

The majority of the Project Area (approximately 3.33 acres) is characterized as non-native grassland (see Figure 1 in Appendix B and Photos 1 and 6 in Appendix C). Non-native grasslands within the Project Area contain elements of several non-native grassland alliances described by CNPS (2016a), including: wild oats grassland (*Avena* spp. Herbaceous Semi-*Natural Alliance*). Areas mapped as non-native grassland are dominated by non-native slim oat (*Avena barbata*) and foxtail barley (*Hordeum murinum*) with occurrences of stinkwort, bristly oxtongue, Italian

thistle, and curly dock. All of the non-native grasslands within the Project Area are actively grazed by horses.

Mixed Coastal Oak and Redwood Woodland
Mixed coastal oak and redwood woodland (approximately 2.06 acres) occurs along the periphery of the Project Area on the northwest, southeast, and southwest sides as linear features separating the project site from the neighboring residences and Cañada Road (see Figure 1, Appendix B and Photographs 1, 2, 3, 5 and 6 in Appendix C). Although not meeting the description of a particular woodland as described in described in the literature, this has components of many different woodland habitats such as coast redwood woodland, mixed oak woodland, broad-leafed upland forest, and cismontane woodland, and also contains ruderal vegetation as well. Historically, the area was likely mixed oak woodland that has been disturbed and planted with native ornamental and also colonized by invasive tree species. Dominant species observed included coast redwoods (*Sequoia sempervirens*), blue gum eucalyptus, coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), California buckeye (*Aesculus californica*), toyon (*Heteromeles arbutifolia*), Chinese sumac (*Ailanthus altissima*) and European olive (*Olea europaea*). Many of the redwood trees were small and young and presumably planted as ornamental specimens. This community has a varied understory of shrubs and herbs, including French broom, poison oak (*Toxicodendron diversilobum*), cape ivy (*Delairea odorata*), English ivy (*Hedera helix*), fennel (*Foeniculum vulgare*) hedge parsley (*Torilis arvensis*), Himalayan blackberry, and non-native grasses including foxtail barley, ripgut brome and slim oat.

Sensitive Biological Communities

The CNDDB has occurrences for three sensitive natural communities: northern coastal saltmarsh (located over 4.5 miles east in San Francisco Bay), serpentine bunchgrass (closest occurrence located 1.9 miles to the north in Edgewood Park) and Valley Oak Woodland (solo occurrence 5.4 miles east at St. Patrick's Seminary), but none are present in the Project Area.

Waters of the US
The Project Area does not contain any features that would be considered as a Waters of the US. All portions of the Project Area land are flat and dry. A linear depressional swale which appears to convey stormwater runoff lies along the northwest edge of the Project Area (see Figure 1, Appendix B and Photograph 3 in Appendix C), however hydrophytic is not prevalent and the feature does not have a bed or a bank or indication of sediment sorting. This feature would not qualify as a jurisdictional water.

Waters of the State
The Project Area does not contain any features that would be considered as a Waters of the State. All portions of the Project Area land are flat and dry. A linear depression which may convey stormwater runoff lies along the northwest boundary of the Project Area, however hydrophytic, nor signs of active hydrology are readily present (see Figure 1 in Appendix B and Photograph 3 in Appendix C). This feature would not qualify as a jurisdictional water.

Streams, Lakes, and Riparian Habitat

There are no features present onsite that would be considered a stream or lake, nor is there any riparian habitat present. A small linear depressional swale which may convey stormwater runoff along the northwest boundary of the Project Area is present, however the feature does not have a bed or a bank or indication of sediment sorting (see Figure 1 in Appendix B and Photograph 3 in Appendix C). It also does not have a preponderance of riparian vegetation associated with it.

Outside the Project Area, a hardened stormwater ditch is present that parallels Canada Road and lies between the northeast side of the road and the walkway (see Photograph 6 in Appendix C). This feature is outside the Project Area and is not anticipated to be impacted by the Project.

Critical Habitat

The Project Area is not within any designated critical habitat. Designated critical habitat for marbled murrelet (*Brachyramphus marmoratus*) critical habitat lies just over 1 mile to the west, bay checkerspot butterfly (*Euphydryas editha baensis*) critical habitat is located 1.6 miles to the northwest and 2.86 miles to the southeast, and California red-legged frog (*Rana draytonii*) critical habitat lies over 3 miles to the southwest and 2.6 miles to the northwest.

Town of Woodside Sensitive Resources

The Town of Woodside Municipal Code affords protection of stream corridors and trees, among other environmental resources.

Streams and Stream Corridors

The Project Area does not contain any stream or stream corridor as designated by the Town of Woodside General Plan and no other streams are present.

Significant Trees

A number of trees are present in the Project Area that are proposed for removal and will require a permit from the City of Woodside. Significant tree species include buckeye (*Aesculus californica*) California bay laurel (*Umbellularia californica*), coast live oak (*Quercus agrifolia*), coast redwood (*Sequoia sempervirens*), and valley oak (*Quercus lobata*). The Town of Woodside Planning Director may require tree replacement as a compensatory mitigation for removal of these significant trees and may require an arborist survey and report to support the Town of Woodside permit.

Special-Status Plant Species

A CNDDB search resulted in 25 special-status plant species occurring within the Palo Alto and Woodside 7.5-minute USGS quads. These are listed in Appendix D. Some of these species are extirpated or require specific habitats that do not occur on the property. The habitats within the property have the potential to support at least two special-status plant species which may be considered sensitive under CEQA. No special-status plant species were observed on the Project Area during the field visits, but the visits occurred outside the typical blooming period of most plant species, and no focused surveys were conducted.

The presence or absence of two special-status plant species, western leatherwood and fragrant fritillary, could not definitively determined because: (1) they would not likely have been identifiable in October, when the field work was conducted; (2) the Project Area supports some habitat components required by each species; and (3) there are documented occurrences of each species in the Project Area region. These species are discussed below.

*Western leatherwood (*Dirca occidentalis*). Status: CNPS List 1B.*
Western leatherwood is a deciduous shrub in the Mezereum family (Thylemaceae) that blooms from January through March and is endemic to California, specifically the San Francisco Bay Area. It primarily occurs on moist slopes in all types of forest- or shrub- dominated communities at elevations of 50 to 395 meters. This species has a moderate potential to occur in woodlands within the Project Area. There are eight occurrences within CNDDB (CDFW 2021) in the Palo Alto and Woodside USGS 7.5-minute quadrangles, the closest located 1.3 miles to the northeast in Edgewood County Park. This species was not observed during the site assessment, however it occurred during the non-blooming period of western leatherwood. Without a focused-level survey, this species has a moderate potential to occur.

*Fragrant fritillary (*Fritillaria *liliacea); Status: CNPS List 1B*
Fragrant fritillary is bulbiferous herb in the Liliaceae family. It has no federal or state status, but is listed on CNPS List lB.2 (plants rare, threatened, or endangered in California and elsewhere! fairly endangered in California). It typically occurs in cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland (often serpentinite grassland), between 10 and 1,345 feet elevation, blooming February-April (CNPS 2021). The nearest documented occurrence is 0.6 miles north south of Eden Bower Lane and east of Farm Hill Boulevard on Obispo series serpentine soils with grasslands present. Occurrences also occur at Edgewood County Park 1.9 miles north of the Project Area, also within serpentine grasslands (CDFW 2021). The Project Area does not support high quality habitat for the species due to past and continuing disturbance, but the field visits occurred outside the species recorded blooming period, and therefore a spring plant survey would be necessary to determine the presence or absence of fragrant fritillary. Without a focused-level survey, this species has a moderate potential to occur.

Special-Status Wildlife Species

Twenty-eight special-status wildlife species were found to occur within the Palo Alto and Woodside 7.5-minute USGS quads (CDFW 2021, USFWS 2021a). The special-status species occurrence table, (Appendix D) summarizes the potential for each of these species to occur in the Project Area. No special-status wildlife species were observed in the Project Area during the site assessment.

Twenty-six special-status wildlife species documented in the vicinity have no or low potential to occur within the Project Area due to lack of suitable habitat, previous and repeated site disturbance, adjacent urbanization, and barriers to wildlife movement. Given the Project Area's

ongoing equestrian use residential occupancy and the presence of multiple dogs, and chiefly ruderal vegetation, it is unlikely to provide suitable or essential habitat for any terrestrial species afforded protections. However, one social-status bat, the pallid bat, and one special-status bird, Cooper's hawk, have moderate potential to occur within the Project Area and are discussed below.

Cooper's Hawk *(Accipiter cooperi*), CDFG Species of Special Concern.

Cooper's hawks are well distributed and occur in varied habitats including; deciduous, mixed, and evergreen forests and riparian woodlands. This species is tolerant of human disturbance and habitat fragmentation and has been found to increasingly breed in suburban and urban areas (Curtis et al. 2006). This species nests in extensive forests, woodlots of 4-8 ha, and occasionally in isolated trees in more open areas. Nests are typically in more mature trees which have relatively more canopy cover than what is locally available (Curtis et al. 2006). However, mature trees within the Project Area may provide suitable nesting habitat for Cooper's hawk, and this species may forage in the Project Area as well. Therefore, Cooper's hawk has a moderate potential to occur within the Project Area. The avoidance measure proposed by the applicant to protect nesting birds as discussed below will allow the proposed project to avoid impacts to any nesting Cooper's hawks.

Pallid Bat *(Antrozous pallidus),* CDFG Species of Special Concern, WBWG High Priority.

The pallid bat is found in a variety of low elevation habitats throughout California. It selects a variety of day roosts including rock outcrops, mines, caves, hollow trees, buildings, and bridges. Night roosts are usually found under bridges, but also in caves, mines, and buildings. Pallid bats are sensitive to roost disturbance. Unlike most bats, pallids primarily feed on large ground-dwelling arthropods and prey is typically taken on the ground (Zeiner et al. 1990). Hollow trees in the woodlands provide potential roost habitat for this species; therefore, there is a moderate potential for occurrence for this bat within the Project Area. Avoidance measures proposed by the applicant, discussed below, will allow the proposed Project to avoid impacts to pallid bat.

Impacts and Avoidance and Minimization Measures

Plant Species Impacts

Grading of the site will remove much of the vegetation and if special-status plant species are present they will be directly impacted.

Plant Species Avoidance and Minimization Measures

The applicant proposes to conduct a focused-level rare plant survey within the overlapping months of the blooming period for fragrant fritillary and western leatherwood (February -April 2022) to assess whether these two species are present within the Project Area. A memo report will be prepared and submitted to the City of Woodside prior to any construction actions occurring to document the absence of these species. If one or both species are observed, the Applicant will consult with CDFW to determine appropriate avoidance and or compensatory mitigation measures.

Potential Nesting Bird Impacts

The proposed project would remove and directly disturb many mature trees and vegetation suitable for use by nesting birds; additionally, construction noise could temporarily adversely affect nesting birds off site within disturbance distances for a specific during nesting bird season, if present.

Nesting Bird Avoidance Measures

The following measure would be provided to avoid impacts to both special-status and non-special-status nesting bird species. If any active nests are established within the vicinity of proposed grading in the future, they shall be avoided until young birds are able to leave the nest (fledge) and forage on their own. Avoidance will be accomplished either by scheduling grading and tree removal during the non-nesting period (August 15 through February 1) or, if this is not feasible, by conducting a pre-grading survey for nesting birds. Provisions of the pre-grading survey effort, if necessary, will include the following:

- If grading is scheduled during the nesting period (January 15 through August 14), a qualified wildlife biologist shall conduct a pre-grading bird survey to confirm the presence or absence of active nests in the vicinity of proposed construction activities. The survey area will include the complete Project Area and adjacent areas up to 300 feet for raptors.
- If active nests are encountered, the biologist will prepare and implement species-specific measures to prevent abandonment of the active nest(s). At a minimum, grading in the vicinity of a nest's tree shall be deferred until the young birds have fledged, and a construction-disturbance within a distance determined by the biologist will be provided based on the species, visual and auditory buffers, and presence of non-project activity disturbance. Grading or other project-related disturbance in the vicinity of the nest will not be permitted until the biologist confirms that the young birds have fledged. The biologist will submit a survey report to the City verifying that the young have fledged before grading in the construction-disturbance setback area is initiated.
- If project construction is halted for more than 14 days during the nesting season, another survey will be conducted to assure nests are not bult within that time period.

Implementation of the above measures will avoid impacts to special-status and non-special status nesting birds should they occur on-site.

Roosting Bat Impacts

The proposed project would remove and directly disturb many mature trees and structures suitable for use by roosting bats; additionally, construction noise could temporarily adversely affect roosting bats both on-site and off-site within disturbance distances for a specific during roosting bat season, if present, and roost abandonment could potentially occur.

Roosting Bat Avoidance Measures

Potential impacts to roosting bats will be avoided by avoiding disturbance to active roost sites. Tree removal or trimming will take place between September and October. This window falls

outside of both the maternity and hibernation period for bats and avoids the breeding bird window. Tree removal can take place during this period without a breeding bird or bat roost survey.

If removal of trees (DBH >12 inch) occurs during the bat roosting season (November through August), these trees will be inspected by a qualified biologist for the presence of bat roosts. Potential bat roosts include large oak trees, broad leafed trees, exfoliating bark, tree cavities, and snags. If a maternity roost is detected, a 200-foot buffer will be placed around the maternity site until the bats are no longer utilizing the site. Non-maternity roost sites can be removed under the direction of the biologist.

Any large tree (DBH >12 inch) that will be removed shall be left on the ground for 24 hours before being taken offsite or chipped. This period will allow any day roosting bats the opportunity to leave before the tree is either removed from the area or chipped.

Implementation of the above measures will avoid impacts to special-status and non-special status bats should they occur on-site.

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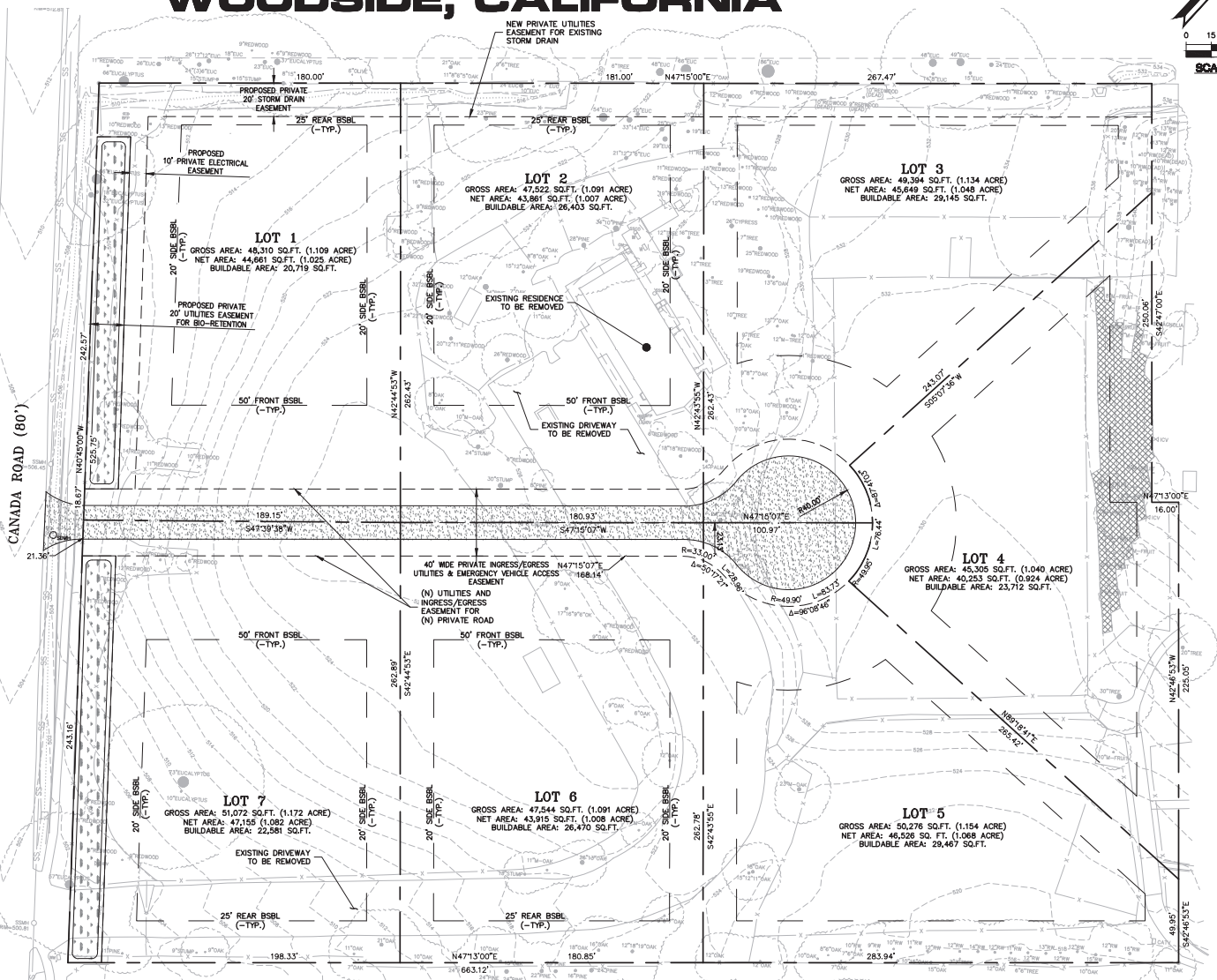
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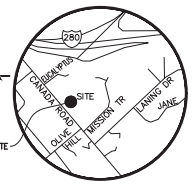
APPENDIX A. PROJECT PLANS

CONCEPTUAL MAP
1101 CANADA ROAD
WOODSIDE, CALIFORNIA



0 15 30 60 PROJECT SITE

SCALE: 1" = 30'



VICINITY MAP
NTS

LEGEND AND NOTES

- BOUNDARY LINE
- FLOW LINE
- BENCHMARK
- XXX.XX SPOTGRADE
- 50% SLOPE OR MORE
- BSBL BUILDING SETBACK LINE

TREE NOTE

TREE SIZE, TYPE AND DRIPLINES ARE BASED ON A VISUAL OBSERVATION. FINAL DETERMINATION SHOULD BE MADE BY THE PROJECT ARBORIST.

FEMA FLOOD NOTE

PROPERTY COMPLETELY OUT OF SPECIAL FLOOD HAZARD AREA (SFHA) PER CURRENT FLOOD INSURANCE RATE MAP.

EASEMENT NOTE

NO EASEMENTS ARE LISTED IN TITLE REPORT ISSUED BY LAWYERS TITLE COMPANY, TITLE NO. FLMF-006210323-AB, DATED AS OF FEBRUARY 22, 2021.

SITE BENCHMARK

SURVEY CONTROL POINT
MAG AND SHINER SET IN ASPHALT
ELEVATION = 500.00'
(ASSUMED)

OWNER'S INFORMATION

OWNERS:
JOSEPH PUTNAM
3 CALIFORNIA DRIVE
BURLINGAME, CA 94010

APN: 073-011-270
ATTN: LISA PUTNAM
THIS GRADING AND DRAINAGE PLAN IS SUPPLEMENTAL TO:
1) TOPOGRAPHIC SURVEY BY LEA & BRAZE ENGINEERING INC.
ENTITLED:
"TOPOGRAPHIC SURVEY"
1101 CANADA ROAD
WOODSIDE, CA
DATED: 04/22/2021
JOB#: 2210244

SUBDIVIDER STATEMENT

1) OWNER / DEVELOPERS:
1101 CANADA ROAD LLC
JOSEPH PUTNAM
3 CALIFORNIA DRIVE
BURLINGAME, CA 94010

2) APPLICANT NAME: LISA PUTNAM
3) EXISTING USAGE: SINGLE FAMILY RESIDENTIAL
4) PROPOSED USAGE: SINGLE FAMILY RESIDENTIAL
5) EXISTING WELLS: NONE
6) FLOOD ZONE: ZONE X, PER PANEL 06081C0285E (LESS THAN 0.2% CHANGE OF FLOODING)
7) STREETS: ALL PROPOSED STREET MODIFICATIONS WILL BE IMPROVED TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORK
8) EXISTING USE OF ADJACENT PROPERTIES: SINGLE FAMILY RESIDENTIAL
9) WATER: CALIFORNIA WATER SERVICE COMPANY
10) FIRE PROTECTION: WOODSIDE FIRE DEPARTMENT
11) SANITARY SEWER: FAIR OAKS SANITARY DISTRICT
12) POWER AND GAS: PACIFIC GAS AND ELECTRIC
13) TELEPHONE / CABLE: SBC / COMCAST
14) STREET TREES: NONE
15) EASEMENT: PRIVATE
16) CONTOUR ELEVATION: LOCAL DATUM AND MONUMENTS
17) ALL DIMENSIONS ARE APPROXIMATE
18) NO NEW STREET NAME
19) TREES PROPOSED FOR REMOVAL WITH THIS APPLICATION
20) EXISTING ZONING: SR
21) PROPOSED ZONING: SR

SHEET INDEX

CM-1 TITLE SHEET (OVERALL SITE PLAN)
CM-2 PROPOSED LOTS BOUNDARY AND EASEMENTS
CM-3 CONCEPTUAL GRADING, DRAINAGE & UTILITIES PLAN
CM-4 ACCESS ROAD SECTION

REGISTERED PROFESSIONAL ENGINEER JAMES TOBY No. 63127 CIVIL STATE OF CALIFORNIA
LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS | LAND SURVEYORS
MAIN OFFICE: 2495 INDUSTRIAL PKWY WEST HAYWARD, CALIFORNIA 94545 (510) 887-4086
REGIONAL OFFICES: RICHMOND DUBLIN SAN JOSE
WWW.LEABRAZE.COM

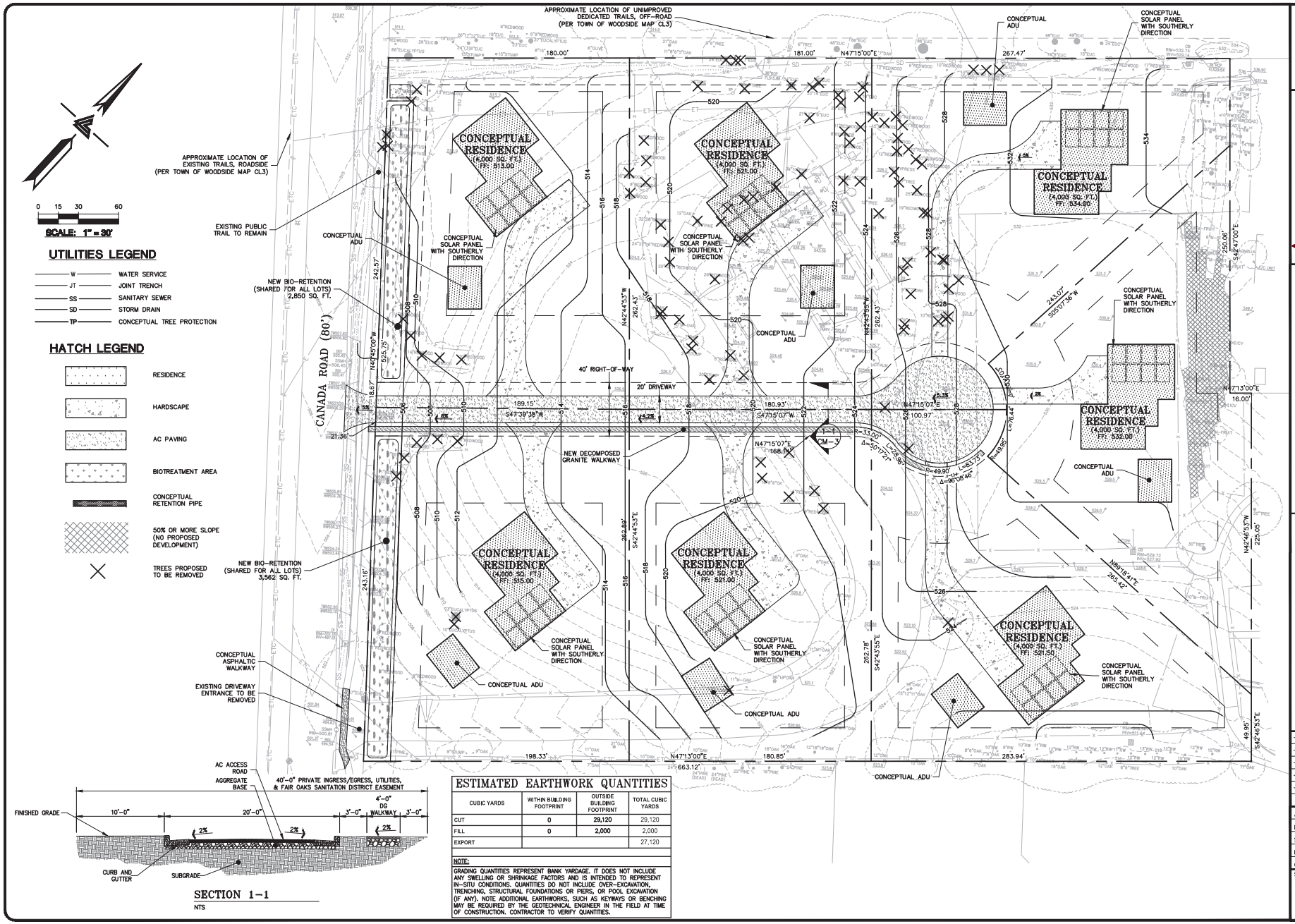
RESIDENTIAL SUBDIVISION
1101 CANADA ROAD
WOODSIDE, CALIFORNIA
APN: 073-011-270
SAN MATEO COUNTY

TITLE SHEET
(OVERALL SITE PLAN)

REVISIONS	BY
-	-
-	-
-	-
-	-
-	-

JOB NO:	2210245
DATE:	09-15-21
SCALE:	AS NOTED
DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	CM-1

1 OF 4 SHEETS



UTILITIES LEGEND

W	WATER SERVICE
JT	JOINT TRENCH
SS	SANITARY SEWER
SD	STORM DRAIN
TP	CONCEPTUAL TREE PROTECTION

HATCH LEGEND

- RESIDENCE
- HARDSCAPE
- AC PAVING
- BIOTREATMENT AREA
- CONCEPTUAL RETENTION PIPE
- 50% OR MORE SLOPE (NO PROPOSED DEVELOPMENT)
- TREES PROPOSED TO BE REMOVED

SECTION 1-1
NTS

ESTIMATED EARTHWORK QUANTITIES

CUBIC YARDS	WITHIN BUILDING FOOTPRINT	OUTSIDE BUILDING FOOTPRINT	TOTAL CUBIC YARDS
CUT	0	29,120	29,120
FILL	0	2,000	2,000
EXPORT			27,120

NOTE:
GRADING QUANTITIES REPRESENT BANK YARDAGE. IT DOES NOT INCLUDE ANY SWELLING OR SHRINKAGE FACTORS AND IS INTENDED TO REPRESENT IN-SITU CONDITIONS. QUANTITIES DO NOT INCLUDE OVER-EXCAVATION, TRENCHING, STRUCTURAL FOUNDATIONS OR PIERS, OR POOL EXCAVATION (IF ANY). NOTE ADDITIONAL EARTHWORKS, SUCH AS KEYWAYS OR BENCHING MAY BE REQUIRED BY THE GEOTECHNICAL ENGINEER IN THE FIELD AT TIME OF CONSTRUCTION. CONTRACTOR TO VERIFY QUANTITIES.

REGISTERED PROFESSIONAL ENGINEER JAMES TODD No. 63127 CIVIL STATE OF CALIFORNIA
LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS | LAND SURVEYORS
MAIN OFFICE: 2495 INDUSTRIAL PKWY WEST HAYWARD, CALIFORNIA 94545 (510) 887-4086
REGIONAL OFFICES: RICHMOND DUBLIN SAN JOSE
WWW.LEABRAZE.COM

RESIDENTIAL SUBDIVISION
1101 CANADA ROAD
WOODSIDE, CALIFORNIA

APN: 073-011-270
SAN MATEO COUNTY

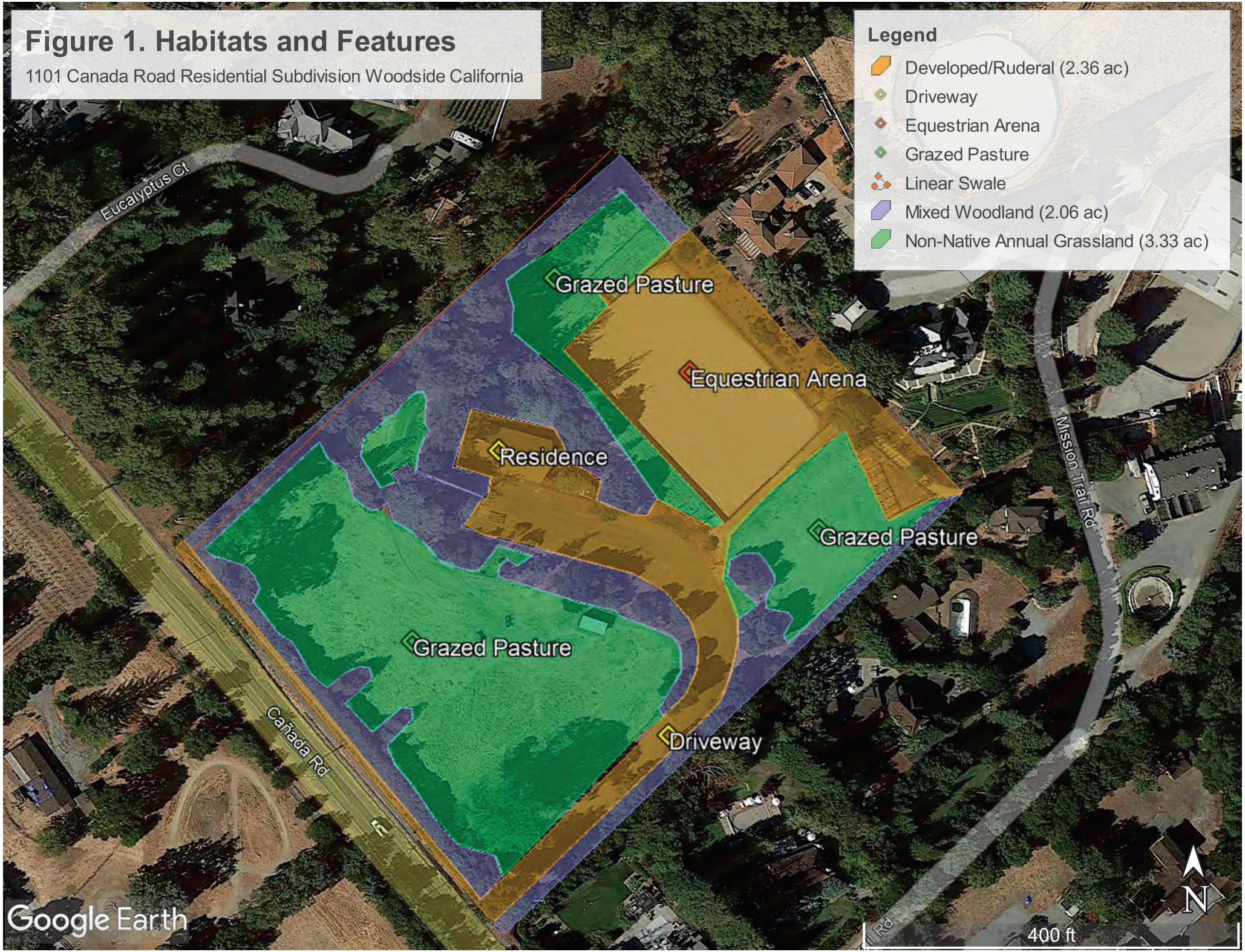
CONCEPTUAL GRADING & DRAINAGE PLAN

REVISIONS	BY

JOB NO:	2210245
DATE:	09-15-21
SCALE:	AS NOTED
DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	CM-3

3 OF 4 SHEETS

APPENDIX B. FIGURES


Figure 1. Habitats and Features
1101 Canada Road Residential Subdivision Woodside California
Legend
Developed/Ruderal (2.36 ac)
Driveway
Equestrian Arena
Grazed Pasture
Linear Swale
Mixed Woodland (2.06 ac)
Non-Native Annual Grassland (3.33 ac)
Eucalyptus Ct
Grazed Pasture
Equestrian Arena
Residence
Grazed Pasture
Grazed Pasture
Driveway
Cañada Rd
Mission Trail Rd
Google Earth
N
400 ft

APPENDIX C. PHOTOGRAPHS

Appendix C – Photographs



Photograph 1. Grazed non-native annual grasslands looking southwest from center of Project Area.



Photograph 2. Developed residential and woodland with ruderal and ornamental vegetation.

Appendix C – Photographs



Photograph 3. Photo of the swale in woodland running along the northwest edge of the Project Area. Note lack of bed or bank and dominated by upland vegetation.



Photograph 4. Photo of the equestrian area with surrounding ornamental landscaping. Photo taken from the northwest edge of arena looking east.



Photograph 5. Non-native annual grassland and edge of woodland southwest of equestrian arena. Photo looking southeast.



Photograph 6. The walking path separating the drainage and Cañada Road from the frontage of property with ornamental landscaping and mixed woodland.

APPENDIX D. SPECIAL-STATUS SPECIES TABLE

Common Name	Status	Habitat Requirements	Potential to Occur	Recommended Actions
PLANTS				
Common Name	**Federal Status**	**Habitat Requirements**	**Potential to Occur in Project Area**	**Recommendations**
San Mateo thorn-mint *Acanthomintha duttonii*	FE, SE	Chaparral, valley and foothill grassland (very uncommon serpentinite vertisol clays), 50-300 m. Blooms April-June.	Low. No suitable serpentinite habitat present on Project Area.	No further action recommended
Franciscan onion *Allium peninsulare var. franciscanum*	List 1B.2	Cismontane woodland, valley and foothill grassland (clay, often on serpentine), dry hillsides, 100-300 m. Blooms May-June.	Low. No suitable micro habitat (serpentine or clay soils) present on the Project Area.	No further action recommended
bent-flowered fiddleneck *Amsinckia lunaris*	List 1B.2	Coastal bluff scrub, Cismontane woodland. Valley and foothill grassland Gravelly slopes, grassland, openings in woodland, often serpentine. 5-800m. Blooms Mar--Jun.	Low. No suitable serpentinite habitat present on Project Area.	No further action recommended
Anderson's manzanita *Arctostaphylos andersonii*	List 1B.2	Broadleafed upland forest, chaparral, North Coast coniferous forest (openings, edges), 60-730 m. Blooms November-April.	Low. Suitable habitat present Species should have been identifiable during field visits and was not observed.	No further action recommended
Kings Mountain manzanita *Arctostaphylos regismontana*	List 1B.2	Broadleafed upland forest, chaparral, north coast coniferous forest, 305-730 m. Blooms January-April.	Low. Suitable habitat present. Species should have been identifiable during field visits and was not observed.	No further action recommended
coastal marsh milk-vetch *Astragalus pycnostachyus var. pycnostachyus*	List 1B.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt, streamsides), 0-30 m. Blooms April-October.	None. No suitable habitat present in Project Area.	No further action recommended
Congdon's tarplant *Centromadia parryi ssp. congdonii*	List 1B.1	Valley 811d foothill grassland (alkaline/heavy white clay), 1- 230 m. Blooms May-October.	Low. No suitable alkaline habitat present on Project Area.	No further action recommended

fountain thistle *Cirsium fontinale var. fontinale*	FE, ST, List 1B.1	Chaparral (openings), valley and foothill grassland (serpentinite seeps), 40-175 m Blooms May-October.	None. No suitable habitat present on Project Area.	No further action recommended
lost thistle *Cirsium praeteriens*	List 1A	Collected from the Palo Alto area at the turn of the 20th century. Not seen since 1901, Presumed extirpated.	None. Presumed extirpated.	No further action recommended
round-headed Chinese-houses *Collinsia corymbose*	List 1B.2	Collected from the Palo Alto area in 1893. Presumed extirpated.	None. Presumed extirpated.	No further action recommended
San Francisco collinsia *Collinsia multicolor*	List 1B.2	Closed-cone coniferous forest, coastal scrub, On decomposed shale (mudstone) mixed with humus; sometimes on serpentine. 10-275 m	None. No suitable habitat is present on Project Area.	No further action recommended
western leatherwood *Dirca occidentalis*	List 1B.2	Broad leafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, riparian woodland/mesic. 50-395m. Blooms January - April.	Moderate Potential. Suitable habitat may be present within woodlands in the Project Area. However, western leatherwood was not observed during the site visit.	Focused-level botanical survey in February - April.
Hoover's button-celery *Eryngium aristulatum var. hooveri*	List 1B.1	Alkaline depressions, vernal pools, roadside ditches and other wet places near the coast. 1-50 m. Last seen in 1897.	None. No suitable habitat present on Project Area.	No further action recommended
Jepson's coyote-thistle *Eryngium jepsonii*	List 1B.2	Vernal pools, valley and foothill grassland. Clay. 3-305 m. Last collected in 1926.	None. No suitable habitat present on Project Area.	No further action recommended
Marin western flax *Hesperolinon congestum*	FT, ST, List 1B.2	Chaparral, valley and foothill grassland. In serpentine barrens and in serpentine grassland and chaparral. 60-400 m.	None. No suitable serpentinite habitat present on Project Area.	No further action recommended
Crystal Springs lessingia *Lessingia arachnoidea*	List 1B.2	Coastal sage scrub, valley and foothill grassland, cismontane woodland. Grassy slopes on serpentine; sometimes on roadsides. 90-200 m.	Low. No suitable serpentinite habitat present on Project Area.	No further action recommended

arcuate bush-mallow *Malacothamnus arcuatus*	List 1B.2	Gravelly alluvium in chaparral and cismontane woodland. 15-355 m. Blooms April-September.	Low. No suitable gravelly alluvium habitat present on Project Area.	No further action recommended
woodland woollythreads *Monolopia gracilens*	List 1B.2	Serpentine grassland. 60-1,360 m. Blooms March-July.	None. No suitable serpentinite habitat present on Project Area.	No further action recommended
white-rayed pentachaeta *Pentachaeta bellidiflora*	FE, SE, List 1B.1	Valley and foothill grassland. Open dry rocky slopes and grassy areas, often on soils derived from serpentine bedrock. 35-620m. Blooms March-May.	Low. No suitable serpentinite habitat present on Project Area.	No further action recommended
Choris' popcorn flower *Plagiobothrys chorisianus var. chorisianus*	List 1B.2	Chaparral, coastal scrub, coastal prairie. Mesic sites. 15-100m. Blooms March-June.	None. No suitable habitat present on Project Area.	No further action recommended
chaparral ragwort *Senecio aphanactis*	List 2B.2	Drying alkaline flats in chaparral, cismontane woodland, coastal scrub. 20-1020 m.	None. No suitable habitat present on Project Area.	No further action recommended
San Francisco campion *Silene verecunda ssp. verecunda*	List 1B.2	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, valley and foothill grassland (sandy mudstone or shale), 30·645 m. Blooms March-June (sometimes into August).	Low. No suitable micro habitat present on Project Area.	No further action recommended
two-fork clover *Trifolium amoenum*	List 1B.1	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 0-300m. Blooms April-June.	None. No suitable habitat present on Project Area.	No further action recommended
fragrant fritillary *Fritillaria liliacea*	List 1B.2	Coastal scrub, valley and foothill grassland, coastal prairie. Often on serpentine, various soils reported though usually clay, in grassland. 3-410m. Blooms February-April.	Moderate. Although no serpentinite habitat is present, this species may utilize other habitats within the Project Area.	Focused-level botanical survey in February - April.
slender-leaved pondweed *Stuckenia filiformis ssp. alpina*	List 2B.2	Marshes and swamps (assorted shallow freshwater), 300-2150 m. Blooms May-July.	None. No suitable aquatic habitat present	No further action recommended

		WILDLIFE		
Invertebrates				
Bay checkerspot butterfly *Euphydryas editha bayensis*	FT	Restricted to native grasslands on outcrops of serpentine soil near SF Bay. *Plantago erecta* primary host plant, with *Orthocarpus densiflorus* and 0. p*urpurscens* secondarv.	None. There are no serpentine habitats present for host plants.	No further action recommended.
Fishes				
steelhead-central CA coast ESU *Oncorhynchus mykiss*	FT	From Russian River south to Soquel Creek and Pajaro River. Also San Francisco and San Pablo Bay Basins.	None. There are no suitable nearby streams or water bodies	No further action recommended.
longfin smelt *Spirinchus thaleichthys*	CSC,	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found incompletely freshwater to almost pure seawater.	None. There are no suitable nearby streams or water bodies	No further action recommended.
Amphibians				
California tiger salamander *Ambystoma californiense*	FT, ST	Need underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	Low. There are no suitable nearby streams or water bodies or breeding ponds without barriers.	No further action recommended
Santa Cruz black salamander *Aneides niger*	CSC	Occurs in mixed deciduous woodland, coniferous forests, coastal grasslands. Found under rocks near streams, in talus, under damp logs, and other objects.	Low. There are no suitable nearby streams or water bodies. Project Area is north of species documented distribution	No further action recommended
California giant salamander *Dicamptodon ensatus*	CSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year	Low. The Project Area does not contain streams to support breeding. Additionally, the site is surrounded by dispersal barriers (roads, buildings) from suitable habitat.	No further action recommended

foothill yellow-legged frog *Rana boylii*	SE	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	None. No suitable high gradient streams are present or nearby.	No further action recommended
California red-legged frog *Rana draytonii*	FT, CSC	Breeds in semi-permanent and perennial water sources often with dense, shrubby or emergent riparian vegetation including stock ponds and marshes; uses a variety of wetland habitats including streams during the summer months.	Low; No water bodies are present onsite and barriers and distance from offsite water bodies minimize potential.	No further action recommended
Reptiles				
western pond turtle *Emys marmorata*	CSC	Inhabits permanent or nearly permanent bodies of water in many habitat types below 6000 ft. elevation. Typically nests in grassy, open habitat.	Low. There are no suitable nearby streams or water bodies.	No further action recommended.
San Francisco gartersnake *Thamnophis sirtalis tetrataenia*	FT, ST	Requires freshwater marshes, ponds and slow-moving streams. Prefers dense cover & water depths of at least one foot. Upland areas near water are also very important.	Low. There are no nearby aquatic features.	No further action recommended.
Birds				
marbled murrelet *Brachyramphus marmoratus*	FT, SE	(Nesting) Feeds near shore; nests inland along the Pacific coast, from Eureka to Oregon border, and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland. Nests often built in Douglas-fir or redwood stands containing platform-like branches.	Low. Tall trees are present but existing disturbance minimizes potential	No further action recommended
Western Snowy Plover *Charadrius alexandrines nivosus*	FT, CSC	Federal listing applies only to the Pacific coastal population. Found on sandy beaches, salt pond levees and shores of large alkali lakes. Requires sandy, gravelly or friable soils for nesting.	None. No suitable habitat is present.	No further action recommended

yellow rail *Coturnicops noveboracensis*	CSC	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	None. Marsh habitat is not present.	No further action recommended.
saltmarsh common yellowthroat *Geothlypis trichas nuosa*	BCC, CSC	Requires fresh or salt water marshes. Requires thick, continuous cover down to water surface for foraging, tall grasses, tule patches, willows for nesting.	None. Marsh habitat is not present.	No further action recommended.
bald eagle *Haliaeetus leucocephalus*	FD, SE	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches,	Low. Tall trees are present but existing disturbance and lack of water bodies minimize potential.	No further action recommended
California black rail *Laterallus jamaicensis coturniculus*	ST, CFP	Rarely seen resident of saline, brackish, and fresh emergent wetlands in the San Francisco Bay area. Nest in dense stands of pickleweed	None. Salt marsh habitat is not present.	No further action recommended.
Alameda song sparrow *Melospiza melodia pusillula*	CSC	Resident of *Salicornia* salt marshes bordering south arm of San Francisco Bay.	None. Salt marsh habitat is not present.	No further action recommended.
Cooper's hawk	CSC	Nests in varied habitats including deciduous, mixed, and evergreen forests and riparian woodlands. Tolerant of human disturbance and habitat fragmentation. Nests are typically in mature trees with high canopy cover.	Moderate. Suitable nesting habitat is present in woodlands.	Removal of trees outside the nesting season or conduct pre-construction nest surveys.
Ridgway's rail *Rallus obsoletus*	FE, SE	Found in tidal salt marshes of the San Francisco Bay. Requires mudlfats for foraging and dense vegetation on higher ground for nesting.	None. Salt marsh habitat is not present.	No further action recommended.
California least tern *Sterna antillarium browni*	FE, SE	Breeding colonies in San Francisco Bay found in abandoned salt ponds and along estuarine shores. Nests on barren to sparsely vegetated site near water.	None. Suitable habitat is not present.	

Mammals				
pallid bat *Antrozous pallidus*	CSC	Occupies a variety of habitats at low elevation including grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting.	Moderate Potential. Suitable roost habitat may be present in tree hollows, and species may forage over the site.	Removal of trees outside the bat roosting season.
Townsend's big-eared bat *Corynorhinus townsendii*	CSC	More common in wet habitats. Roosting sites include caves, lava tubes and mine tunnels, as well as other human-made structures such as buildings, bridges and water diversion tunnels.	Low. Suitable roost habitat is not present on site. Buildings do not have appropriate cavities and human disturbance near buildings is high.	No further action recommended.
Santa Cruz kangaroo rat *Dipodomys venustus venustus*	CSC	Occurs in chaparral habitat in the low foothills of the Santa Cruz Mountains, on substrates of sands, loams, and sandy loams.	Low. Suitable chaparral habitat is not present in the Project Area.	No further action recommended.
hoary bat *Lasiurus cinereus*		Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Low. Although appropriate vegetation is present, no water sources ae nearby.	No further action recommended.
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	CSC	Typically occurs in forest habitats of moderate canopy and moderate to dense understory. Also found in chaparral habitats. Feeds mainly on woody plants, such as live oak, maple, coffeeberry, alder, and elderberry.	Low. Although adequate cover and vegetation is present within the woodlands, no stick nests were observed on site.	No further action recommended.
Salt marsh harvest mouse *Reithrodontomys raviventris*	FE, SE,CFP	Found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat. Do not burrow, build loosely organized nests. Require higher areas for flood escape.	None. No suitable habitat is located in the project area.	No further action recommended.

Saltmarsh wandering shrew *Sorex vagrans halicoetes*	CSC	Found in salt marshes of the South Arm of San Francisco Bay. Prefer medium to high marsh 6-8ft above sea level.	None. No suitable habitat is located in the project area.	No further action recommended.
American badger *Taxidea taxus*	CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable, uncultivated soils. Preys on burrowing rodents.	Low. There are no burrows of appropriate size onsite.	No further action recommended.

Status codes abbreviations:

FE	Federal Endangered
FT	Federal Threatened
FPD	Federal Proposed for De-listing
FP	Federal Proposed for listing
NMFS	Species under the Jurisdiction of the National Marine Fisheries Service
RP	Sensitive species included in a USFWS Recovery Plan or Draft Recovery Plan
SE	State Endangered
ST	State Threatened
SR	State Rare
CSC	CDFG Species of Special Concern
CFP	CDFG Fully Protected Animal
SSI	CDFG Special Status Invertebrates
List 1B	CNPS List 1B: Plants rare, threatened or endangered in California and elsewhere
List 2	CNPS List 2: Plants rare, threatened, or endangered in California, but more common elsewhere
List 3	CNPS List 3: Plants about which CNPS needs more information (a review list)

SUNSET ECOLOGICAL SOLUTIONS
BIOLOGY, PERMITTING, AND COMPLIANCE

MEMORANDUM

To:	Joseph Putnam Lisa Putnam	From:	Sean Avent Principal Biologist sean@sunsetecological.com
Date:	March 15, 2022		
Subject:	Rare Plant Survey Results, 1101 Canada Road, Woodside		

The purpose of this memo is to inform you of the results of the rare plant survey conducted for leatherwood (*Dirca occidentalis*) and fragrant fritillary (*Fritillaria liliacea*) on the proposed residential subdivision project at 1101 Cañada Road in the Town of Woodside, California.

On March 11, 2022, Sean Avent of Sunset Ecological Solutions and Diane Benner Vegetation Ecologist with The Watershed Nursery, conducted a rare plant survey on the entirety of the 7.8-acres site consisting of developed land, ruderal areas, grazed non-native annual grasslands, and mixed woodlands.

Prior to the survey a reference site visit was conducted at a known population at Edgewood Park in Redwood City, where fragrant fritillary was positively identified and in full bloom.

Neither leatherwood, nor fragrant fritillary were observed during the survey. Based on these results, we conclude that no special-status plants are present at the project site and no mitigation regarding special-status plants is necessary. Additionally, consultation with California Department of Fish and Wildlife is not required.

Please feel free to contact me if you have any questions regarding this survey or the Biological Resources Assessment report in general.

Enclosure: Attachment A - The Watershed Nursery Survey Results Letter

ATTACHMENT 11

The Watershed Nursery
601-A Canal Blvd.
Richmond, Ca. 94804
(510) 234-2222 ph
(510) 234-2242 fx
www.thewatershednursery.com

DATE: March 11, 2022

CLIENT: Sunset Ecological Solutions
PROJECT: 1101 Canada Rd. Woodside, CA. site survey

Diana Benner, Vegetation Ecologist with The Watershed Nursery was brought on by Sean Avent, Principal Biologist with Sunset Ecological Solutions to assist with the botanical survey for rare plants on the project site of 1101 Canada Road in Woodside, California. The rare plants identified by Sunset Ecological Solutions with potential to occur at the project site were leatherwood (*Dirca occidentalis*) and fragrant fritillary (*Fritillaria liliacea).*

Because leatherwood is a perennially shrub possible to identify throughout the year, a reference site was not required for this species, but a known population of leatherwood was visited in the week prior to this site visit. For the fragrant fritillary, a flowering perennial bulb that goes seasonally dormant, it was planned to use a population identified at Edgewood Park in Redwood City, ~ 2 miles from the project site, as a reference site for this species.

On March 11th, 2022 Diana Benner and Sean Avent met at the Sunset Trailhead in Edgewood Park and proceeded to identify the fragrant fritillary blooming at the reference site. After positive identification of the species and confirmation of blooming, a subsequent survey was made of the project site. Scouting for leatherwood was targeted in the vegetated areas primarily bordering the site, and the grassy, open areas were surveyed for the fragrant fritillary.

The border areas of the site are dominated by live oak (*Quercus agrifolia*), toyon (*Heteromeles arbutifolia*), glossy privet (*Ligustrum lucidum*), French broom (*Genista monspessulana*), Himalayan blackberry (*Rubus armeniacus*), and redwood (*Sequoia sempervirens*). No leatherwood was detected at the site and site conditions were not typical of where this species is usually found.

The grassy areas of the site were dominated with ruderal, non-native species. In addition to the non-native species in these habitat areas of the site, a few annual lupine plants (likely *L. affinis*) were seen in the western field, primarily in the southern portion, and some narrow-leaf milkweed (*Asclepias fascicularis)* plants were observed in the southeastern field. No fragrant fritillary was found on site.

CAÑADA COURT SUBDIVISION CONSTRUCTION HEALTH RISK & GREENHOUSE GAS ASSESSMENT

Woodside, California

July 18, 2023

Prepared for:

Steve Flint
Lead Planning Advisor
Regional Government Services Authority
P.O Box 1350
Carmel Valley, CA 93924

Prepared by:

Zachary Palm
Jordyn Bauer

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
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I&R Project#: 23-072

Introduction

The purpose of this report is to address the potential health risk and greenhouse gas (GHG) impacts associated with the construction and operation of a proposed residential development located at 1101 Cañada Road in Woodside, California. Air quality and GHG impacts would be associated with demolition of existing uses and construction of the residential buildings. Air pollutant emissions associated with the construction of the project were predicted using appropriate computer models. In addition, the potential health risk impacts from existing toxic air contaminant (TAC) sources affecting the nearby and proposed sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The existing 7.8-acre project site is made up of a single-family home and associated structures. The project proposes to demolish the existing use of the site to develop 7 single family residences, a private street, and infrastructure throughout the project site. It is currently unknown what the exact site plans will be as floor plans for specific homes were not made available for this analysis.

Setting

The project is located in San Mateo County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High ozone concentrations in the air basin are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form ozone. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ambient ozone concentrations. The highest ozone concentrations in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone concentrations aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant in the air basin. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter concentrations aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

[1] Bay Area Air Quality Management District, *2022 CEQA Guidelines*, April 2023

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality, often because they cause cancer. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure of TACs can result in adverse health effects, they are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This makes the evaluation of health effects from diesel exhaust exposure a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs. Health risks from TACs are estimated using the Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines, which were published in February of 2015 and incorporated into BAAQMD's current CEQA guidance.[2]

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are the residents in the single-family housing surrounding the project site. This project would introduce new sensitive receptors (i.e., residents) to the area.

Bay Area Air Quality Management District (BAAQMD)

BAAQMD has jurisdiction over an approximately 5,600-square mile area, commonly referred to as the San Francisco Bay Area (Bay Area). The District's boundary encompasses the nine San Francisco Bay Area counties, including Alameda County, Contra Costa County, Marin County, San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County, and southern Sonoma County.

[2] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.

BAAQMD is the lead agency in developing plans to address attainment and maintenance of the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[3] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program has been implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses has been used to develop emission reduction activities in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. Seven areas have been identified by BAAQMD as impacted communities. They include Eastern San Francisco, Richmond/San Pablo, Western Alameda, San José, Vallejo, Concord, and Pittsburgh/Antioch. The project site is not within any of the BAAQMD CARE areas.

Overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.[4] The BAAQMD has identified several overburdened areas within the air district's boundaries. However, the project site is not within an overburdened area as identified by BAAQMD as the Project site is scored at the 10th percentile on CalEnviroScreen.[5]

BAAQMD CEQA Air Quality Guidelines

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. In 2023, the BAAQMD revised the *California Environmental Quality Act* (*CEQA) Air Quality Guidelines* that included the original significance thresholds to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The thresholds contained in this CEQA guidance are designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA.

[3] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program.
[4] See BAAQMD: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en.
[5] OEHAA, CalEnviroScreen 4.0 Maps https://experience.arcgis.com/experience/11d2f52282a54ceebcac7428e6184203/page/CalEnviroScreen-4_0/

The updated guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They include assessment methodologies for air toxics, odors, and GHG emissions. The current BAAQMD guidelines and thresholds were used in this analysis and are summarized in Table 1.[6] Air quality impacts and health risks are considered potentially significant if they exceed these thresholds.

[6] Bay Area Air Quality Management District, 2023. *2022 CEQA Guidelines*. April.

Table 1. BAAQMD CEQA Significance Thresholds

Criteria Air Pollutant	Construction Thresholds Average Daily Emissions (lbs./day)			
ROG	54			
NO_x	54			
PM_{10}	82 (Exhaust)			
$PM_{2.5}$	54 (Exhaust)			
CO	Not Applicable			
Fugitive Dust (PM_{10}/$PM_{2.5}$)	Best Management Practices (BMPs)*			
Health Risks and Hazards	**Single Sources/ Individual Project**		**Combined Sources (Cumulative from all sources within 1000-foot zone of influence)**	
Excess Cancer Risk	>10 in a million	OR Compliance with Qualified Community Risk Reduction Plan	>100 in a million	OR Compliance with Qualified Community Risk Reduction Plan
Hazard Index	>1.0		>10.0	
Incremental annual $PM_{2.5}$	>0.3 µg/m^3		>0.8 µg/m^3	
Greenhouse Gas Emissions				
Land Use Projects – (Must Include A or B)	1. Buildings a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development). b. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines. 2. Transportation a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA: i. Residential projects: 15 percent below the existing VMT per capita ii. Office projects: 15 percent below the existing VMT per employee iii. Retail projects: no net increase in existing VMT a. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2. B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).			

Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less. GHG = greenhouse gases.

* BAAQMD strongly recommends implementing all feasible fugitive dust management practices especially when construction projects are located near sensitive communities, including schools, residential areas, or other sensitive land uses.

Source: Bay Area Air Quality Management District, 2022

Town of Woodside General Plan

The following goals and policies relevant to air quality and the proposed project are contained in the Town's General Plan in the *Conservation Element, Sustainability Element, Public Utilities Element, and Housing Element*.[7]

Conservation Element Implementing Policies.

Goal CV1: Maintain a healthy natural environment.

- **Policy CV1.1**- Plan development to be sensitive to preservation of natural features and landscape.
    1. The natural features of a site proposed for the development shall be the primary planning factor determining the scope and magnitude of development, and appropriateness of site use. Conservation of the natural landscape shall be an overriding consideration in the design of any land development or land division project, paying particular attention to its protection and the preservation of natural features and existing native vegetation.
    2. Those areas rich in wildlife, or of a fragile ecological nature (e.g., areas of rare, endangered, or threatened species, riparian areas, etc.), shall be avoided in land development.
    3. All projects that may have a significant impact on the Woodside environment shall be reviewed by qualified professionals. The results of such review should be analyzed and, where necessary, mitigation measures implemented to insure against significant alteration or damage to the natural environment.

    Strategies:

    a. Design Review- Update the Residential Design Guidelines to stress conservation of the natural landscape in the site planning and design of residential projects.
    b. Preliminary Concept Review- Consider requirements for preliminary concept review of site plans at an early stage in the review of development proposals to ensure that development intensity and the type and location of the proposed use are sensitive to the conservation of natural features.
    c. Biotic Report- For development projects with the potential for impacts to species of concern or riparian habitat, the Town shall consult with CDFG to identify appropriate action. Additionally, where habitat (e.g., wetlands) or evidence of the presence of species of concern is identified, the Town shall require preparation of biotic reports and pre-construction surveys by a professional biological consultant in order to identify and mitigate potential impacts.

[7] Town of Woodside, 2012. *Town of Woodside General Plan 2012.*

d. Environmental Review- Review and update the Town's environmental review procedures to ensure compliance with the California Environmental Quality Act (CEQA). Consider adopting Town CEQA Guidelines to establish and communicate Town environmental procedures for requiring technical studies, biotic reports, and procedures for monitoring and reporting programs.

- **Policy CV1.5**- Protect Air Quality

  Strategies:

  a. Construction Management- For projects requiring a Site Development Permit or excavation, or involving significant demolition of structures or portions thereof, the following best management practices (BMPs) shall continue to be required:
     1. Use dust-proof chutes for loading construction debris into trucks;
     2. Water, or cover, stockpiles of debris, soil, and other material that can be blown by the wind;
     3. Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least two feet of freeboard;
     4. Sweep daily (with water sweepers) all paved roads, parking areas, and staging areas at the construction site;
     5. Sweep adjacent public roads daily (with water sweepers) if soil material is visible, as directed by the Town Engineer;
     6. Enclose, cover, water twice daily, or apply non-toxic soil stabilizers to exposed stockpiles of dirt, sand, and other materials;
     7. Install erosion control measures to prevent runoff from the project site, from October 15th to April 15th; and,
     8. Limit grading.

Public Utilities Element Implementing Policies.

Goal PU2: Promote installation of alternative power sources.

- **Policy PU2.1**- Promote Energy Conservation

  Strategies:

  a. Energy audits- Encourage high energy users to do audits. Advertise the availability of energy audit programs, such as the High Energy Home Project.
  b. Green building code- Consider adopting green building standards, which increase along with project size.

Housing Element Implementing Policies.

Goal H2- Conserve & rehabilitate the existing housing stock & develop new housing stock.

- **Policy H2.4-** Promote Sustainability Including Energy Efficient Housing [PC]

  Programs:

  a. Promote and enforce energy efficiency and sustainability- Continue to require compliance with Title 24 of the State's building regulations. In addition, disseminate energy conservation information available from other agencies, such as PG&E's solar subsidy program and energy audits.
  b. Building design and materials- Continue to encourage the inclusion if energy savings siting, features and materials in the retrofit of existing units, the construction of new units and the development of new subdivisions.
  c. Sustainable services and development- Continue to implement the Town's Sustainability Element of the General Plan. Staff anticipates that energy conservation requirements will continue to be enforced consistent with Title 24 of the California Code of Regulations. Conservation practices are also guided by the provision of the Sustainability Element and voluntary green building provisions. The Town will also:

     -Continue to subsidize the plan review and building inspection of roof-mounted and ground-mounted solar panel installations in order to encourage energy saving features in retrofits.

     -Continue to encourage staff to attend training in energy building techniques in order to assist applicants in designing and incorporating energy efficient new homes and remodel projects. The Town attends the Build It Green Bay Area Public Agency Council meetings and San Mateo County Green Building meetings regularly, and a member of the planning staff is certified through the Build It Green Certified Green Building Professional training,

     -Continue to pool resources with neighboring jurisdictions. The Town has helped advertise Portola Valley's green speaker series in order to facilitate homeowners' education of energy conservation techniques.
  d. Update design review- Continue to implement the requirements of Title 24 of the California Code of Regulations and the provisions of the Sustainability Element of the General Plan and the Residential Design Guidelines related to sustainability.
  e. Green building incentives- Explore adoption green building regulations and incentives.

Construction Health Risk Impacts and Mitigation Measures

Project impacts related to increased health risk occur either by generating emissions of TACs and air pollutants in proximity to sensitive receptors. Temporary project construction activity would generate emissions of DPM from equipment and trucks and also generate dust on a temporary basis that could affect nearby sensitive receptors. A construction health risk assessment was prepared to address project construction impacts on the surrounding off-site sensitive receptors.

Health risk impacts are addressed by predicting increased lifetime cancer risk, the increase in annual $PM_{2.5}$ concentrations, and computing the Hazard Index (HI) for non-cancer health risks. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust emissions pose health risks for sensitive receptors such as surrounding residents. The primary health risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[8] This assessment included dispersion modeling to predict the offsite and onsite concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2022 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CalEEMod model output along with construction inputs are included in *Attachment 1*.

CalEEMod Modeling

Land Use Inputs

The proposed project land uses were entered into CalEEMod as described in Table 2.

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Single Family Housing	7	Dwelling Unit	13,650*	7.8
*CalEEMod Default Used				

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size, and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction build-out scenario,

[8] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

including equipment list and schedule, were provided by the project applicant. The provided build-out scenario did not include construction phases for construction of the seven single-family homes. To account for the homes that would be constructed on the project site in the future, the building construction phase was based on CalEEMod defaults that were adjusted to provide a more realistic construction scenario.

Within each of the CalEEMod construction phases, the quantity of equipment to be used along with the average hours per day and total number of workdays were provided by the applicant. The construction schedule assumed that the earliest possible start date would be March 2024 and would be completed over a period of approximately 8 months, or 181 construction workdays.[9]

Construction Truck Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the demolition material to be exported. Haul trips for cement were estimated based on the CalEEMod default square footages for the single-family homes. The haul trips for asphalt were provided by the applicant. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for worker and vendor trips were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition were estimated by CalEEMod using the provided demolition volume provided. The number of concrete deliveries was estimated for the project based on CalEEMod default single-family home square footages, and the number of asphalt deliveries were provided by the client and converted to daily one-way trips, assuming two trips per delivery. These values are shown in the project construction equipment worksheet included in *Attachment 1*.

Summary of Computed Construction Period Emissions

Since project construction would occur for less than one-year, average daily emissions were computed by dividing the total construction emissions by the number of construction days (181 workdays). Table 3 shows average daily construction emissions of ROG, NOx, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 3, the predicted construction period emissions would not exceed the BAAQMD significance thresholds.

[9] The project applicant noted that the construction of the project was expected to be from January 2024 through June 2024 and that during this time no building construction or interior/architectural coating would occur. However, in order to account for future construction of the single-family homes, building construction and architectural coating phases were modeled using CalEEMod defaults. This is accounts for all construction of the project.

Table 3. Construction Period Emissions

Year	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Construction Emissions (Tons)				
2024	0.20	0.92	0.04	0.04
Average Daily Construction Emissions (pounds/day)				
2024 (171 construction workdays)	2.31	10.80	0.45	0.41
BAAQMD Thresholds (pounds per day)	*54* lbs./day	*54* lbs./day	*82* lbs./day	*54* lbs./day
Exceed Threshold?	No	No	No	No

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD recommends all projects include a "basic" set of best management practices (BMPs) to manage fugitive dust and consider impacts from dust (i.e., fugitive PM_{10} and $PM_{2.5}$) to be less than significant if BMPs are implemented.

Mitigation Measure AQ-1: **Include measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

8. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.

9. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

BAAQMD strongly encourages enhanced BMPs for construction sites near schools, residential areas, or other sensitive land uses. Enhanced measures include:

- Limit the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities.
- Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Plant vegetative ground cover (e.g., fast-germinating native grass seed) in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Minimize the amount of excavated material or waste materials stored at the site.
- Hydroseed or apply non-toxic soil stabilizers to construction areas, including previously graded areas, that are inactive for at least 10 calendar days.

Effectiveness of Mitigation Measure AQ-1

Mitigation Measure AQ-1 represents standard mitigation measures that would achieve greater than a 50 percent reduction in on-site fugitive $PM_{2.5}$ emissions. The measures above are consistent with BAAQMD-recommended "best management practices" for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

Health Risk from Project Construction

The primary health risk impact issue associated with diesel exhaust (i.e., DPM), which is a known TAC, and exposure to high ambient concentrations of dust (i.e., $PM_{2.5}$). DPM poses both a potential health and nuisance impact to nearby receptors. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[10] This assessment included dispersion modeling to predict the offsite concentrations resulting from project construction, so that increased cancer risks and non-cancer health effects could be estimated.

[10] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

Construction Period Emissions

The CalEEMod model provided total uncontrolled annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles. Total DPM emissions were estimated to be 0.04 tons (75 pounds) and fugitive dust emissions ($PM_{2.5}$) to be 0.06 tons (118 pounds) from all construction stages. The on-road emissions are a result of haul truck travel during grading activities, worker travel, and vendor deliveries during construction. A trip length of half a mile was used to represent vehicle travel while at or near the construction site. It was assumed that the emissions from on-road vehicles traveling at or near the site would occur at the construction site.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict DPM and $PM_{2.5}$ concentrations at sensitive receptors (i.e., residences, daycare, preschool) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[11] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

Construction Sources

To represent the construction equipment exhaust emissions, an area source emission release height of 20 feet (6 meters) was used for the area source.[12] The release height incorporates both the physical release height from the construction equipment (i.e., the height of the exhaust pipe) and plume rise after it leaves the exhaust pipe. Plume rise is due to both the high temperature of the exhaust and the high velocity of the exhaust gas. It should be noted that when modeling an area source, plume rise is not calculated by the AERMOD dispersion model as it would do for a point source (exhaust stack). Therefore, the release height from an area source used to represent emissions from sources with plume rise, such as construction equipment, should be based on the height the exhaust plume is expected to achieve, not just the height of the top of the exhaust pipe.

For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 7 feet (2 meters) was used for the area source. Fugitive dust emissions at construction sites come from a variety of sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exits the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were

[11] BAAQMD, 2023, *Appendix E of the 2022 BAAQMD CEQA Guidelines.* April.
[12] California Air Resource Board, 2007. *Proposed Regulation for In-Use Off-Road Diesel Vehicles, Appendix D: Health Risk Methodology*. April. Web: https://ww3.arb.ca.gov/regact/2007/ordiesl07/ordiesl07.htm

distributed throughout the modeled area sources. Figure 1 shows the project construction site and receptors.

AERMOD Inputs and Meteorological Data

The modeling used a five-year data set (2011-2015) of hourly meteorological data from San Carlos Airport prepared for use with the AERMOD model by BAAQMD. Construction emissions were modeled as occurring daily between 7:00 a.m. 4:00 p.m., per the construction schedule provided by the applicant. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2024 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Receptor heights of 5 feet (1.5 meters) were used to represent the breathing height on the first floor of nearby single-family residences. [13]

Figure 1. Locations of Project Construction Site, Off-Site Sensitive Receptors, and Maximum TAC Impacts (MEI)



[13] Bay Area Air Quality Management District, 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0. May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

Summary of Construction Health Risk Impacts at the Off-Site MEIs

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with BAAQMD CEQA guidance for age sensitivity factors and exposure parameters. Age-sensitivity factors reflect the greater sensitivity of infants and children to cancer causing TACs. Third-trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period.

Non-cancer health hazards (HI) and maximum $PM_{2.5}$ concentrations were also calculated and identified. The maximum modeled annual $PM_{2.5}$ concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI value was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation reference exposure level of 5 $\mu g/m^3$.

The modeled maximum annual DPM and $PM_{2.5}$ concentrations were identified at nearby sensitive receptors (as shown in Figure 1) to find the maximally exposed individuals (MEI). Results of this assessment indicated that the construction MEI was located on the first floor of an adjacent single-family home southeast of the project site. Table 4 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and HI for project's construction activities at the MEI. *Attachment 2* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

As shown in Table 4, the maximum cancer risks exceeds the BAAQMD single-source threshold at the MEI. The annual $PM_{2.5}$ concentration and HI from uncontrolled (i.e., unmitigated) construction activities do not exceed their respective BAAQMD single-source significance thresholds at the MEI. With the incorporation of *Mitigation Measures AQ-1 and AQ-2*, the cancer risk is reduced below the BAAQMD single-source significance threshold at the MEI.

Table 4. Construction Risk Impacts at the Off-Site MEIs

Source		Cancer Risk[1] (per million)	Annual $PM_{2.5}$[1] ($\mu g/m^3$)	Hazard Index
Project Construction	Unmitigated	**10.33 (infant)**	0.18	0.01
	Mitigated	6.47 (infant)	0.09	<0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated	*No*	*No*	*No*

Cumulative Health Risks of all TAC Sources at the Off-Site Project MEI

Cumulative health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site (i.e., influence area). These sources include rail lines, highways, busy surface streets, and existing stationary sources identified by BAAQMD.

A review of the project area based on provided traffic information indicated that traffic on Interstate 280 (I-280) would exceed 10,000 vehicles per day. Other nearby streets would have less than 10,000 vehicles per day. A review of BAAQMD's stationary source geographic

information systems (GIS) map tool identified no stationary sources with the potential to affect the project site and MEI. Figure 2 shows the region included within the influence area and the off-site MEI. Details of the modeling and health risk calculations are included in *Attachment 3*.

Highways – I-280

The project MEI is located near I-280. Highway health risk screening data provided by BAAQMD was incorporated into this analysis. BAAQMD raster files provide screening-level cancer risk, $PM_{2.5}$ concentrations, and HI for roadways within the Bay Area and were produced using AERMOD and 20x20-meter emissions grid.

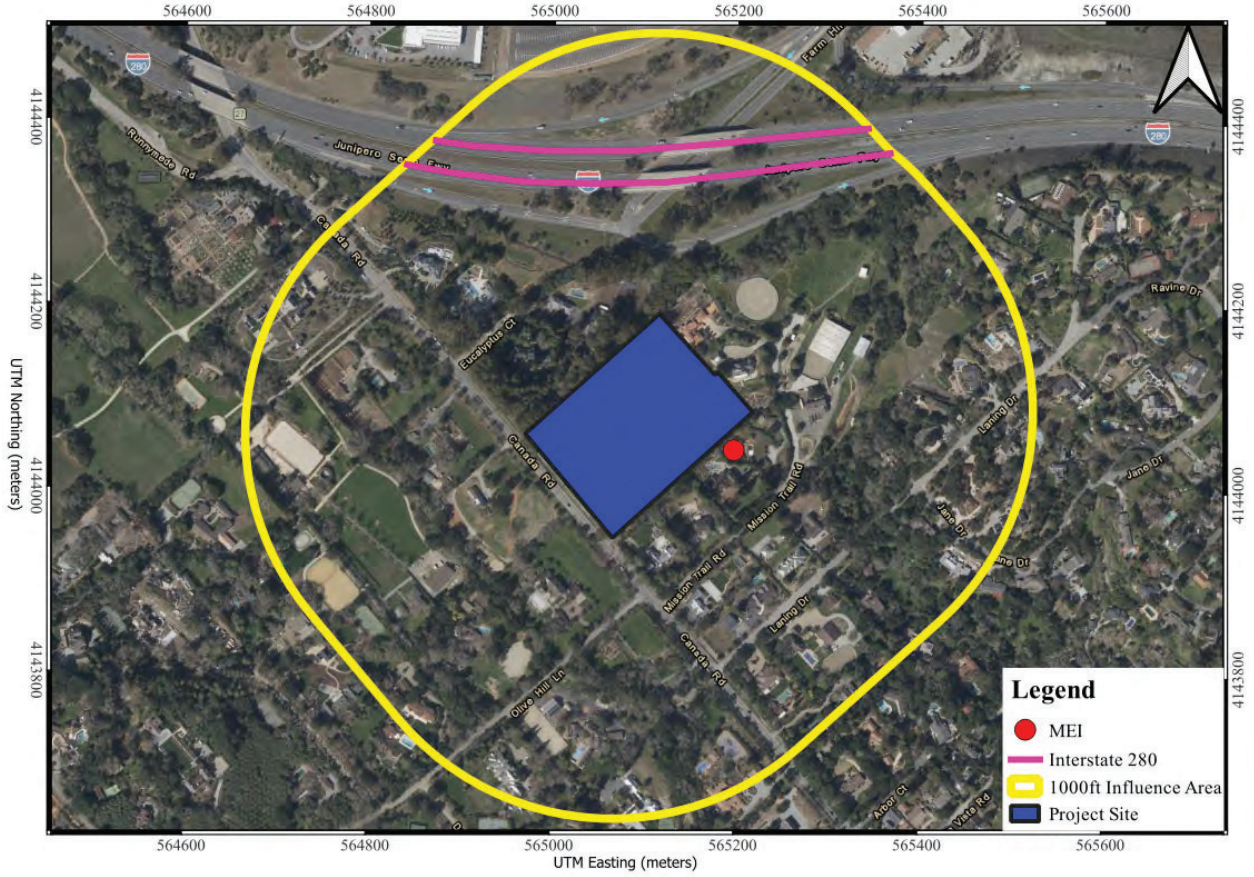
Screening-level cancer risk, $PM_{2.5}$ concentration, and HI at the project MEIs were identified using GIS software and are listed in Table 5 and included in *Attachment 3*. Refined modeling of the highway would have resulted in even lower risk values. Note that these values are not adjusted for age sensitivity or exposure duration and are considered higher than values that would be obtained with refined modeling methods.

BAAQMD Permitted Stationary Sources

There were no identified sources within the project's 1,000-foot influence area found using the BAAQMD's *Permitted Stationary Sources 2021* geographic information system (GIS) map website.[14] This mapping tool identifies the location of nearby stationary sources and their estimated risk and hazard impacts.

[14] BAAQMD, *Stationary Source Screening Map*, 2023. Web: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3

Figure 2. Project Site, Project MEIs, and Nearby TAC Sources



Summary of Cumulative Risks at the Project MEI

Table 5 reports both the project and cumulative health risk impacts at the sensitive receptors most affected by construction and operation (i.e., the MEI). The project would have an exceedance with respect to health risk caused by project construction activities since the maximum unmitigated cancer risk exceed the BAAQMD single-source threshold. With the implementation of *Mitigation Measure AQ-1 and AQ-2*, the project's cancer risk would be lowered to a level below the single-source threshold. The annual $PM_{2.5}$ concentrations and HI risk values, which include unmitigated and mitigated, do not exceed the BAAQMD single-source thresholds. In addition, the combined unmitigated cancer risk, $PM_{2.5}$ concentration, and HI values would not exceed their respective cumulative thresholds.

Table 5. Impacts from Combined Sources at Project MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	Unmitigated	**10.33 (infant)**	0.18	0.01
	Mitigated	6.47 (infant)	0.09	<0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	*No*	*No*
	Mitigated	*No*	*No*	*No*
Cumulative Impacts				
I-280 - BAAQMD Raster data		3.45	0.13	0.02
Cumulative Total	Unmitigated	13.78	0.31	0.03
	Mitigated	9.92	0.22	<0.03
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
	Mitigated	*No*	*No*	*No*

Mitigation Measure AQ-2: **Use construction equipment during the demolition and grading phases that have low diesel particulate matter exhaust emissions.**

Implement a feasible plan to reduce diesel particulate matter emissions during the demolition and grading phases of construction such that increased cancer risk and annual $PM_{2.5}$ concentrations from construction would be reduced below TAC significance levels as follows:

1. All construction equipment larger than 25 horsepower used at the site during the demolition and grading phases for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 emission standards for PM (PM_{10} and $PM_{2.5}$), if feasible, otherwise,

    a. If use of Tier 4 equipment is not available, alternatively use equipment that meets U.S. EPA emission standards for Tier 2 or 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control devices that altogether achieve a 10 percent reduction in particulate matter exhaust in comparison to uncontrolled equipment; alternatively (or in combination),

    b. Use of electrical or non-diesel fueled equipment.

2. Alternatively, the applicant may develop another construction operations plan demonstrating that the construction equipment used on-site during demolition and grading would achieve a reduction in construction diesel particulate matter emissions by 10 percent or greater. Elements of the plan could include a combination of some of the following measures:
    - Implementation of No. 1 above to use Tier 4 or alternatively fueled equipment,
    - Installation of electric power lines during early construction phases to avoid use of diesel generators and compressors,
    - Use of electrically-powered equipment,

- Forklifts and aerial lifts used for exterior and interior building construction shall be electric or propane/natural gas powered,
- Change in construction build-out plans to lengthen phases, and
- Implementation of different building techniques that result in less diesel equipment usage.

Such a construction operations plan would be subject to review by an air quality expert and approved by the Town prior to construction.

Effectiveness of Mitigation Measure AQ-2

CalEEMod was used to compute emissions associated with this mitigation measure assuming that all equipment used during the demolition and grading phases met U.S. EPA Tier 4 interim engines standards and BAAQMD best management practices for construction were included for all construction phases. With these measures implemented, the project's cancer risk levels (assuming infant exposure) would be reduced by 37 percent to 6.47 chances per million. As a result, the project's construction risk impacts would be reduced to levels below the BAAQMD single-source threshold.

GREENHOUSE GAS EMISSIONS

Setting

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2, CH_4, and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e).

An expanding body of scientific research supports the theory that global climate change is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California are adversely affected by the global warming trend. Increased precipitation and sea level rise will increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Federal and Statewide GHG Emissions

The U.S. EPA reported that in 2022, total gross nationwide GHG emissions were 5,215.6 million metric tons (MMT) carbon dioxide equivalent (CO_2e).[15] These emissions were lower than peak

[15] United States Environmental Protection Agency, 2022. *Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2020*. February. Web: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

levels of 7,416 MMT that were emitted in 2007. CARB updates the statewide GHG emission inventory on an annual basis where the latest inventory includes 2000 through 2020 emissions.[16] In 2020, GHG emissions from statewide emitting activities were 369.2 MMT CO_2e. The 2020 emissions have decreased by 25 percent since peak levels in 2004 and are 35.3 MMT CO_2e lower than 2019 emissions level and almost 62 MMT CO_2e below the State's 2020 GHG limit of 431 MMT CO_2e. Per capita GHG emissions in California have dropped from a 2001 peak of 13.8 MT CO_2e per person to 9.3 MT CO_2e per person in 2020.

Recent Regulatory Actions for GHG Emissions

Executive Order S-3-05 – California GHG Reduction Targets

Executive Order (EO) S-3-05 was signed by Governor Arnold Schwarzenegger in 2005 to set GHG emission reduction targets for California. The three targets established by this EO are as follows: (1) reduce California's GHG emissions to 2000 levels by 2010, (2) reduce California's GHG emissions to 1990 levels by 2020, and (3) reduce California's GHG emissions by 80 percent below 1990 levels by 2050.

Assembly Bill 32 – California Global Warming Solutions Act (2006)

Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, codified the State's GHG emissions target by directing CARB to reduce the State's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, the CARB, CEC, California Public Utilities Commission (CPUC), and Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05, which has a target of reducing GHG emissions 80 percent below 1990 levels.

The first Scoping Plan for AB 32 was adopted by CARB in December 2008. Its most recent update was completed in December of 2022[17]. It contains the State's main strategies to achieve carbon neutrality by 2045. This plan extends and expands upon the earlier versions with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. It also takes the step of adding carbon neutrality as a science-based guide and touchstone for California's climate work. Measures to achieve carbon neutrality include rapidly moving to zero emission vehicles (ZEV), removing natural gas as an option for space conditioning, increasing the number of solar arrays and wind turbines, and scaling up renewable hydrogen for hard-to-electrify end uses.

Senate Bill 375 – California's Regional Transportation and Land Use Planning Efforts (2008)

California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 provides incentives for local governments and applicants to implement new conscientiously planned growth patterns. This includes incentives

[16] CARB. 2022. *California Greenhouse Gas Emission for 2000 to 2020*. Web: https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/2000-2020_ghg_inventory_trends.pdf
[17] CARB. 2022. Final 2022 Scoping Plan Update and Appendices. Web: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents

for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows applicants to bypass certain environmental reviews under CEQA if they build projects consistent with the new sustainable community strategies. Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, would be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB works with the metropolitan planning organizations (e.g., ABAG and MTC) to align their regional transportation, housing, and land use plans to reduce VMT and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

Senate Bill 350 - Renewable Portfolio Standards

In September 2015, the California Legislature passed SB 350, which increases the states Renewables Portfolio Standard (RPS) for content of electrical generation from the 33 percent target for 2020 to a 50 percent renewables target by 2030.

Executive Order B-30-15 & Senate Bill 32 GHG Reduction Targets – 2030 GHG Reduction Target

In April 2015, Governor Brown signed EO B-30-15, which extended the goals of AB 32, setting a GHG emissions target at 40 percent of 1990 levels by 2030. On September 8, 2016, Governor Brown signed Senate Bill (SB) 32, which legislatively established the GHG reduction target of 40 percent of 1990 levels by 2030. In November 2017, CARB issued *California's 2017 Climate Change Scoping Plan*. [18] While the State is on track to exceed the AB 32 scoping plan 2020 targets, this plan is an update to reflect the enacted SB 32 reduction target.

SB 32 was passed in 2016, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. CARB has drafted a 2022 Scoping Plan Update to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32. The 2022 draft plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 or earlier.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as a driving principle.
- Incorporates the contribution of natural and working lands to the state's GHG emissions, as well as its role in achieving carbon neutrality.

[18] California Air Resource Board, 2017. *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Targets.* November. Web: https://ww2.arb.ca.gov/sites/default/files/classic//cc/scopingplan/scoping_plan_2017.pdf

- Relies on the most up to date science, including the need to deploy all viable tools, including carbon capture and sequestration as well a direct air capture.
- Evaluates multiple options for achieving our GHG and carbon neutrality targets, as well as the public health benefits and economic impacts associated with each.

The Scoping Plan was updated in 2022 and lays out how the state can get to carbon neutrality by 2045 or earlier. It is the first Scoping Plan that adds carbon neutrality as a science-based guide and touchstone beyond statutorily established emission reduction targets.[19]

The mid-term 2030 target is considered critical by CARB on the path to obtaining an even deeper GHG emissions target of 80 percent below 1990 levels by 2050, as directed in Executive Order S-3-05. The 2022 Scoping Plan outlines the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure, providing a blueprint to continue driving down GHG emissions and to not only obtain the statewide goals, but cost-effectively achieve carbon-neutrality by 2045 or earlier. In the 2022 Scoping Plan, CARB recommends:

- VMT per capita reduced 12% below 2019 levels by 2030 and 22% below 2019 levels by 2045.
- 100% of Light-duty vehicle sales are zero emissions vehicles (ZEV) by 2035.
- 100% of medium duty/heavy duty vehicle sales are ZEV by 2040.
- 100% of passenger and other locomotive sales are ZEV by 2030.
- 100% of line haul locomotive sales are ZEV by 2035.
- All electric appliances in new residential and commercial building beginning 2026 (residential) and 2029 (commercial).
- 80% of residential appliance sales are electric by 2030 and 100% of residential appliance sales are electric by 2035.
- 80% of commercial appliance sales are electric by 2030 and 100% of commercial appliance sales are electric by 2045.

SB 743 Transportation Impacts

Senate Bill 743 required lead agencies to abandon the old "level of service" metric for evaluating a project's transportation impacts, which was based solely on the amount of delay experienced by motor vehicles. In response, the Governor's Office of Planning and Research (OPR) developed a VMT metric that considered other factors such as reducing GHG emissions and developing multimodal transportation[20]. A VMT-per-capita metric was adopted into the CEQA Guidelines Section 15064.3 in November 2017. Given current baseline per-capita VMT levels computed by CARB in the 2030 Scoping Plan of 22.24 miles per day for light-duty vehicles and 24.61 miles per day for all vehicle types, the reductions needed to achieve the 2050 climate goal are 16.8 percent for light-duty vehicles and 14.3 percent for all vehicle types combined. Based on

[19] https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents
[20] Governor's Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December.

this analysis (as well as other factors), OPR recommended using a 15-percent reduction in per capita VMT as an appropriate threshold of significance for evaluating transportation impacts.

Executive Order B-55-18 – Carbon Neutrality

In 2018, a new statewide goal was established to achieve carbon neutrality as soon as possible, but no later than 2045, and to maintain net negative emissions thereafter. CARB and other relevant state agencies are tasked with establishing sequestration targets and create policies/programs that would meet this goal.

Senate Bill 100 – Current Renewable Portfolio Standards

In September 2018, SB 100 was signed by Governor Brown to revise California's RPS program goals, furthering California's focus on using renewable energy and carbon-free power sources for its energy needs. The bill would require all California utilities to supply a specific percentage of their retail sales from renewable resources by certain target years. By December 31, 2024, 44 percent of the retails sales would need to be from renewable energy sources, by December 31, 2026 the target would be 40 percent, by December 31, 2027 the target would be 52 percent, and by December 31, 2030 the target would be 60 percent. By December 31, 2045, all California utilities would be required to supply retail electricity that is 100 percent carbon-free and sourced from eligible renewable energy resource to all California end-use customers.

California Building Standards Code – Title 24 Part 11 & Part 6

The California Green Building Standards Code (CALGreen Code) is part of the California Building Standards Code under Title 24, Part 11.[21] The CALGreen Code encourages sustainable construction standards that involve planning/design, energy efficiency, water efficiency resource efficiency, and environmental quality. These green building standard codes are mandatory statewide and are applicable to residential and non-residential developments. The most recent CALGreen Code (2022 California Building Standard Code) was effective as of January 1, 2023.

The California Building Energy Efficiency Standards (California Energy Code) is under Title 24, Part 6 and is overseen by the California Energy Commission (CEC). This code includes design requirements to conserve energy in new residential and non-residential developments, while being cost effective for homeowners. This Energy Code is enforced and verified by cities during the planning and building permit process. The current energy efficiency standards (2022 Energy Code) replaced the 2019 Energy Code as of January 1,2023. Under the 2019 standards, single-family homes are predicted to be 53 percent more efficient than homes built under the 2016 standard due more stringent energy-efficiency standards and mandatory installation of solar photovoltaic systems. For nonresidential developments, it is predicted that these buildings will use 30 percent less energy due to lightening upgrades.[22]

[21] See: https://www.dgs.ca.gov/BSC/Resources/Page-Content/Building-Standards-Commission-Resources-List-Folder/CALGreen#:~:text=CALGreen%20is%20the%20first%2Din,to%201990%20levels%20by%202020.
[22] See: https://www.energy.ca.gov/sites/default/files/2020-03/Title_24_2019_Building_Standards_FAQ_ada.pdf

Requirements for electric vehicle (EV) charging infrastructure are set forth in Title 24 of the California Code of Regulations. The CALGreen standards consist of a set of mandatory standards required for new development, as well as two more voluntary standards known as Tier 1 and Tier 2. The CalGreen 2022 standards require deployment of additional EV chargers in various building types, including multifamily residential and nonresidential land uses. They include requirements for both EV capable parking spaces and the installation of Level 2 EV supply equipment for multifamily residential and nonresidential buildings. The 2022 CALGreen standards include requirements for both EV readiness, installation of EV chargers, and include both mandatory requirements and more aggressive voluntary Tier 1 and Tier 2 provisions. Providing EV charging infrastructure that meets current CALGreen requirements will not be sufficient to power the anticipated more extensive level of EV penetration in the future that is needed to meet SB 30 climate goals.

CEC studies have identified the most aggressive electrification scenario as putting the building sector on track to reach the carbon neutrality goal by 2045.[23] Installing new natural gas infrastructure in new buildings will interfere with this goal. To meet the State's goal, communities have been adopting "Reach" codes that prohibit natural gas connections in new and remodeled buildings.

Advanced Clean Cars

The Advanced Clean Cars Program, originally adopted by CARB in 2012, was designed to bring together CARB's traditional passenger vehicle requirements to meet federal air quality standards and also support California's AB 32 goals to develop and implement programs to reduce GHG emissions back down to 1990 levels by 2020, a goal achieved in 2016 as a result of numerous emissions reduction programs.

Advanced Clean Cars II (ACC II) is phase two of the original rule. ACC II establishes a year-by-year process, starting in 2026, so all new cars and light trucks sold in California will be zero-emission vehicles by 2035, including plug-in hybrid electric vehicles. The regulation codifies the light-duty vehicle goals set out in Governor Newsom's Executive Order N-79-20. Currently, 16 percent of new light-duty vehicles sold in California are zero emissions or plug-in hybrids. By 2030, 68 percent of new vehicles sold in California would be zero emissions and 100 percent by 2035.

Town of Woodside General Plan

The following goals and policies relevant to air quality and the proposed project are contained in the Town's General Plan in the *Conservation Element, Sustainability Element, Public Utilities Element, and Housing Element*.[24]

Goal S1- Conserve resources

[23] California Energy Commission. 2021. F*inal Commission Report: California Building Decarbonization Assessment. Publication Number CEC-400-2021-006-CMF*.August
[24] Town of Woodside, 2012. *Town of Woodside General Plan 2012.*

- **Policy S1.2***:* Encourage and support renewable clean energy

  Strategies:

  a. Promote green energy- Periodically review and update Town regulations to ensure compliance with State and federal law related to sustainability, such as California Solar Rights Act and Shade Control Act. Consider removing barriers to new technologies which are environmentally beneficial, while taking into account other environmental impacts such as noise, aesthetics, and the natural environment.

Clean energy incentives- Consider incentives for solar, water harvesting systems, green building through reduced permitting fees or expedited processing.

Goal S2: Reduce greenhouse gas emissions- Reduce carbon emissions to 1990 levels by the year 2020 and to 80% below 1990 levels by 2050 as mandated by Assembly Bill 32. Encourage the use of renewable resources and minimize the use of non-renewable resources and encourage the principles of "green building" in building projects.

- **Policy S2.1***:* Encourage increased building energy efficiency.

  Strategies:

  a. Green building requirements- Consider revisions to the Municipal Code to achieve a specified level of sustainability based on an accepted "green" rating system, with the green building requirements increasing with project size.
  b. Energy efficient features and practices- Encourage the use of energy efficient features and practices, and the use of "green building" design standards.
  c. Local source materials – Encourage the use of materials produced or manufactured within 500 miles of the project site.
  d. Review and reporting- Continue to discuss project considerations for sustainability in staff reports for discretionary projects. Consider developing commensurate procedures to ensure all projects (i.e., ministerial and discretionary) that come before the Town are received with respect to sustainability and make recommendations to help achieve sustainability strategies.
  e. Model projects – Encourage residents who have remodeled their homes to make them more energy efficient to make their homes available at times for the education of other residents, or to provide date on their homes that can be posted on, or linked by, the Town website.

- **Policy S2.2-** Encourage the reuse of buildings and building material

  Strategies:

  a. Reuse of buildings- Encourage residents to consider remodeling instead of demolishing a home in order to replace it with a new building. Suggest a cost-benefit analysis to aid in deciding between a complete tear down and a remodel.

b. Reuse of materials- Encourage persons considering demolition of their homes for replacement to reuse the building materials by employing methods such as deconstruction and reuse; or the use of recycled materials.
c. Recycled/reused building materials- Encourage the use of recycled/reused materials.

- **Policy S2.4**- Reduce Vehicle Trips

  Strategies:

  a. Local-serving commercial- Encourage convenience retail and personal service uses in the Town Center which meet the reoccurring needs of residents to help minimize the number and length of vehicular trips.
  b. Promote alternative transportation- Provide multi-modal pathways, consistent with the rural character of the Town, within a one-half mile radius of the Town Center and the Woodside Elementary School to encourage biking and walking,
  c. Alternative vehicles – Encourage the use of alternative vehicles with higher fuel efficiency (e.g., hybrid vehicles).
  d. Reduce school-related vehicular trips- Analyze options to reduce school-related vehicular traffic and resulting greenhouse gas emissions. Improve the school district and parents in this program.

Town of Woodside Climate Action Plan

In 2015, the Town adopted its Climate Action Plan.[25] As part of the plan, the Town developed a GHG emissions reduction plan that provides mitigation measures for four areas: Energy, Transportation and Land Use, Solid Waste, and Water. The following goals are applicable to the proposed project:

Goal 3.1.2 Residential Green Building Ordinance – Continue to adopt all new State Residential Building Codes, Encourage and incentivize achievement of CALGreen Tier 1 energy performance. Continue to encourage the integration of sustainable design features and elements, such as passive heating and cooling, solar, green roofs, geothermal as described in the Building Design section of the Residential Design Guidelines and the General Plan Sustainability Element. Seek to harmonize with regional Green Building Ordinances. Revise the WMC to require that any new residence seeking a Maximum Residence Size Exception achieve CALGreen Tier 1 energy performance.

Goal 3.1.11 Electric Vehicle (EV) Chargers – Encourage the installation of electric vehicle chargers and use of electric vehicles to reduce GHG emissions. Comply with the State Building

[25]Available at: https://www.woodsidetown.org/sites/default/files/fileattachments/planning/page/4631/town_of_woodside_-_final_climate_action_plan.pdf. Accessed on June 21, 2023.

Code by supplying adequate electric service in new residential garage construction to serve electric vehicles.

Goal 3.2.1 Walkable/Bikeable Street Landscape – Continue to promote complete streets concepts (walking, biking, equestrian trails, hitching posts, bike lanes, bike parking, traffic calming, beautification, etc.) appropriate for the Town's rural setting, and recognizing the physical constraints of existing rights-of-way and easements including winding roads, adequate sight distance, and steep terrain.

Goal 3.4.1 Water Conservation Incentives and Requirements – Promote existing and/or new rebates for water efficient appliances and fixtures. Continue to promote drought tolerant and native landscaping, efficient irrigation systems, and gray water/rainwater collection systems; during planning entitlement as described in the Woodside Residential Design Guidelines, Landscape Elements, Sustainability section. Implement Resolution No. 2015-7048 the Town's endorsement of the California Water Service Company's regulations, and continue to implement the State WELO program.

<u>BAAQMD GHG Significance Thresholds</u>

On April 20, 2022, BAAQMD adopted new thresholds of significance for operational GHG emissions from land use projects for projects beginning the CEQA process. The current thresholds of significance are:

A. Projects must include, at a minimum, the following project design elements:
    a. Buildings
        i. The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).
        ii. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
    b. Transportation
        i. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) <u>or meet a locally adopted Senate Bill 743 VMT target</u>, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
            1. Residential Projects: 15 percent (16.8 percent in Petaluma) below the existing VMT per capita
            2. Office Projects: 15 percent (16.8 percent in Petaluma) below the existing VMT per employee
            3. Retail Projects: no net increase in existing VMT
        ii. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

B. Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

New land use projects are required to meet either section A or B from the above list, not both, to be considered less than significant.

Impact GHG-1: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed project are discussed below.

CalEEMod Modeling

CalEEMod was used to predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described below. CalEEMod output is included in *Attachment 1*.

Land Uses

All project land uses were subject to CalEEMod as described above in the construction criteria pollutant section.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest full year of operation would be 2025. Emissions associated with build-out later than 2025 would be lower.

Traffic Information

CalEEMod allows the user to enter specific vehicle trip generation rates. However, project specific trip generation data was not provided for the project. As a result, the default CalEEMod trip generation rates were utilized for this analysis. The default trip lengths and trip types specified by CalEEMod were used as well.

Energy

The PG&E CalEEMod default intensity factors for GHG pollutants were used for the analysis, as the project plans specified that PG&E will be used instead of Peninsula Clean Energy (PCE). An emission factor of 160 pounds of CO_2 per megawatt of electricity produced was entered into

CalEEMod, which is based on PG&E's reported 2020 emissions rate. [26] Since the project plans do not include natural gas hookups, all of the natural gas usage was included in the electricity usage of the project.

Wood-Burning Devices

CalEEMod default inputs assume new residential construction would include wood-burning fireplaces and stoves. The project would not include wood-burning devices, as these devices are prohibited by BAAQMD Regulation 6, Rule 3.[27] Therefore, the number of woodstoves and woodburning fireplaces in CalEEMod were set to zero.

Other Inputs

Default model assumptions for emissions associated with solid waste generation were used. Wastewater treatment was changed to 100-percent aerobic conditions to represent the use of town services (i.e., the project would not send wastewater to septic tanks or facultative lagoons).

Existing Use

The project site is currently developed with a single-family home and associated structures. Because of the expected small emissions from the current site, an existing use CalEEMod run was not developed.

Construction GHG Emissions

GHG emissions associated with construction were computed at 165 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the Town nor BAAQMD have an adopted threshold of significance for construction related GHG emissions, though the California Office of Planning and Research (OPR) recommends quantifying emissions and disclosing that GHG emissions would occur during construction, even in cases where BAAQMD does not. BAAQMD encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable.

Operational GHG Emissions

The CalEEMod model was used to estimate daily emissions associated with operation of the proposed project. As shown in Table 6 for informational purposes, net annual GHG emissions resulting from operation of the proposed project are predicted to be 88 MT of CO_2e in 2025.

[26] PG&E, 2022. *PG&E Climate Strategy Report, June 2022*.
[27] Bay Area Air Quality Management District, https://www.baaqmd.gov/~/media/dotgov/files/rules/regulation-6-rule-3/documents/20191120_r0603_final-pdf.pdf?la=en

Table 6. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Proposed Project in 2025
Mobile	76
Area	0
Energy Consumption	10
Water Usage	0
Solid Waste Generation	2
Refrigerants	0
Total (MT CO_{2e}/year)	88

For this impact to be considered less than significant, it must be consistent with a local GHG reduction strategy (Threshold B) or meet the minimum project design elements recommended by BAAQMD (Threshold A). Threshold A is being applied to the analysis of this project as Threshold B is not applicable. Threshold A requires the project:

1. Avoid construction of new natural gas connections,
    - Conforms – the project plans do not include new natural gas hookups.
2. Avoid wasteful or inefficient use of electricity,
    - Conforms – the project would have to meet the Town's building code which meet CALGreen Building Standards Code requirements.
3. Include electric vehicle (EV) charging infrastructure that meets current Building Code CALGreen Tier 2 compliance, and
    - Conforms – the garage at each single-family home would be equipped with EV charging.
4. Reduce VMT per service population by 15 percent over regional average.
    - Conforms – the project is expected to generate 100 net new daily trips. Because this is lower than the San Mateo County VMT interim guidelines screening threshold of 110 trips for a VMT analysis, the project is exempt from this VMT requirement of Threshold A and would be less-than-significant for emissions from mobile sources[28].

The project is anticipated to comply with four of the four requirements of Threshold A. This would lead to a less-than-significant impact for the project's GHG emissions.

Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The Town of Woodside has a CAP and enforces its building codes, which aim to reduce GHG emissions. Therefore, if individual projects conform to Town building Codes, they will conform with the CAP and would not conflict with local plans, policies, or regulations applicable to GHG emissions. The project is anticipated to be constructed in conformance with at minimum the 2022 CalGreen and the Title 24 Building Codes, which requires high-efficiency water fixtures, water-efficient irrigation systems, and compliance with current energy efficiency standards.

[28] Hexagon Transportation Consultants, Inc., VMT Analysis and Driveway Safety Analysis for Residential Development at 1101 Cañada Road in Woodside, California. File: *Updated Traffic Study.pdf*

Compliance with these standards ensures compliance with State and federal plans, policies, and regulations applicable to GHG emissions.

Supporting Documentation

Attachment 1 includes the CalEEMod output for project construction and operation emissions. Also included are any modeling assumptions.

Attachment 2 is the health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction. The AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format.

Attachment 3 includes the cumulative health risk calculations from existing sources affecting the construction MEI.

Attachment 1: CalEEMod Modeling Inputs and Outputs

Air Quality/Noise Construction Information Data Request

Project Name: 1101 Canada Road Sudivision, Woodside

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size	7	Dwelling Units	7.8 total project acres disturbed
	n/a	s.f. residential	
	n/a	s.f. retail	
	n/a	s.f. office/commercial	
	n/a	s.f. other, specify:	
	n/a	s.f. parking garage	n/a spaces
	n/a	s.f. parking lot	n/a spaces
Construction Days (i.e, M-F)	Monday	to	Friday
Construction Hours	7 am	to	4 pm

Pile Driving? N

Project include on-site GENERATOR OR FIRE PUMP during project OPERATION (not construction)? Y/N? _N_

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _____

Fuel Type: _____

Location in project (Plans Desired if Available):

DO NOT MULTIPLY EQUIPMENT HOURS/DAY BY THE QUANTITY OF EQUIPMENT

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
	Demolition	**Start Date:**	**3/1/2024**	**Total phase:**	**21**			**Overall Import/Export Volumes**
		End Date:	**3/31/2024**					
1	Concrete/Industrial Saws	81	0.73	8	1	0.38095238	473	**Demolition Volume**
1	Excavators	158	0.38	8	21	8	10087	Square footage of buildings to be demolished
1	Rubber-Tired Dozers	247	0.4	8	21	8	16598	(*or* total tons to be hauled)
2	Tractors/Loaders/Backhoes	97	0.37	8	21	8	12059	**3,874** square feet *or*
	Other Equipment?							**n/a** Hauling volume (tons)
								Any pavement demolished and hauled? **1,970 tons** (average unit weight 150 lbs/cf)
	Site Preparation	**Start Date:**	**4/1/2024**	**Total phase:**	**10**			
		End Date:	**4/14/2024**					
1	Graders	187	0.41	8	10	8	6134	
1	Rubber Tired Dozers	247	0.4	8	10	8	7904	
1	Tractors/Loaders/Backhoes	97	0.37	8	10	8	2871	
1	*Other Equipment?* Scrapers	423	0.48	8	10	8	16243	
	Grading / Excavation	**Start Date:**	**4/15/2024**	**Total phase:**	**24**			
		End Date:	**5/15/2024**					**Soil Hauling Volume**
1	Excavators	158	0.38	8	24	8	11528	Export volume = **0** cubic yards
1	Graders	187	0.41	8	24	8	14721	Import volume = **0** cubic yards
1	Rubber Tired Dozers	247	0.4	8	24	8	18970	(Note: Balance on site)
1	Concrete/Industrial Saws	81	0.73	8	1	0.33333333	473	
2	Tractors/Loaders/Backhoes	97	0.37	8	24	8	13782	
	Other Equipment?							
	Trenching/Foundation	**Start Date:**	**5/16/2024**	**Total phase:**	**5**			
	(for utilties only; no foundation works)	**End Date:**	**5/23/2024**					
1	Tractor/Loader/Backhoe	97	0.37	8	5	8	1436	
1	Excavators	158	0.38	8	5	8	2402	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**5/24/2024**	**Total phase:**	**100**			**Cement Trucks? _Est 61_ Total Round-Trips**
		End Date:	**10/10/2024**					
0	Cranes	231	0.29	0	0	0	0	Electric? (Y/N) **Y** Otherwise assumed diesel
2	Forklifts	89	0.2	7	100	7	24920	Liquid Propane (LPG)? (Y/N) **N** Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	100	8	49728	Or temporary line power? (Y/N) ___
1	Tractors/Loaders/Backhoes	97	0.37	6	100	6	21534	
3	Welders	46	0.45	8	100	8	49680	
	Other Equipment?							
	Building - Interior/Architectural Coating	**Start Date:**	**10/11/2024**	**Total phase:**	**10**			
		End Date:	**10/24/2024**					
1	Air Compressors			6	10	6	0	
	Aerial Lift					0	0	
	Other Equipment?							
	Paving	**Start Date:**	**10/25/2024**	**Total phase:**	**10**			
		End Date:	**11/7/2024**					
1	Cement and Mortar Mixers	9	0.56	8	10	8	403	
1	Pavers	130	0.42	8	10	8	4368	**Asphalt? _790__ cubic yards or __n/a__ round trips?**
1	Paving Equipment	132	0.36	8	10	8	3802	
2	Rollers	80	0.38	8	10	8	4864	
1	Tractors/Loaders/Backhoes	97	0.37	8	10	8	2871	
	Other Equipment?							
	Additional Phases	**Start Date:**		**Total phase:**				
		Start Date:						
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	

Equipment types listed in "Equipment Types" worksheet tab.

Equipment listed in this sheet is to provide an example of inputs

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Complete one sheet for each project component

Construction Criteria Air Pollutants							
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	PM2.5 Fugitive	**CO2e**	
Year	Tons					MT	
Construction Equipment							
2024	0.20	0.92	0.04	0.04	0.06	164.84	
	Total Construction Emissions						
Tons	0.20	0.92	0.04	0.04		164.84	
Pounds/Workdays	*Average Daily Emissions*					Workdays	
2024	2.31	10.80	0.45	0.41			**171**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			
	Total Construction Emissions						
Pounds	2.31	10.80	0.45	0.41		0.00	
Average	2.31	10.80	0.45	0.41		0.00	171.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**			
Category	**CO2e**						
	Project	Existing	Project 2030	Existing			
Mobile	76.20						
Area	0.09						
Energy	10.15						
Water	0.28						
Waste	1.54						
Refrig.	0.02						
TOTAL	88.27	0.00	0.00	0.00			
Net GHG Emissions		88.27		0.00			

23-072 1101 Canada Road, Woodside T4i 2025 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	23-072 1101 Canada Road, Woodside T4i 2025
Construction Start Date	3/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.70
Precipitation (days)	3.20
Location	1101 Cañada Rd, Woodside, CA 94062, USA
County	San Mateo
City	Woodside
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1265
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Single Family Housing	7.00	Dwelling Unit	7.80	13,650	0.00	0.00	20.0	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	2.41	23.2	1.02	8.23	9.25	0.94	3.56	4.50	4,230
Mit.	2.41	23.2	1.02	3.26	4.28	0.94	1.40	2.34	4,230
% Reduced	—	—	—	60%	54%	—	61%	48%	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	19.4	16.5	0.62	0.69	1.31	0.57	0.16	0.73	3,988
Mit.	19.4	9.72	0.36	0.69	0.84	0.33	0.16	0.46	3,988
% Reduced	—	41%	42%	—	36%	42%	—	37%	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	1.08	5.06	0.21	0.77	0.97	0.19	0.34	0.53	996
Mit.	0.92	4.15	0.13	0.35	0.48	0.12	0.14	0.27	996
% Reduced	15%	18%	37%	55%	51%	37%	58%	50%	—

Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.20	0.92	0.04	0.14	0.18	0.04	0.06	0.10	165
Mit.	0.17	0.76	0.02	0.06	0.09	0.02	0.03	0.05	165
% Reduced	15%	18%	37%	55%	51%	37%	58%	50%	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2024	2.41	23.2	1.02	8.23	9.25	0.94	3.56	4.50	4,230
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2024	19.4	16.5	0.62	0.69	1.31	0.57	0.16	0.73	3,988
Average Daily	—	—	—	—	—	—	—	—	—
2024	1.08	5.06	0.21	0.77	0.97	0.19	0.34	0.53	996
Annual	—	—	—	—	—	—	—	—	—
2024	0.20	0.92	0.04	0.14	0.18	0.04	0.06	0.10	165

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—
2024	2.41	23.2	1.02	3.26	4.28	0.94	1.40	2.34	4,230
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—
2024	19.4	9.72	0.36	0.69	0.84	0.33	0.16	0.46	3,988

Average Daily	—	—	—	—	—	—	—	—	—
2024	0.92	4.15	0.13	0.35	0.48	0.12	0.14	0.27	996
Annual	—	—	—	—	—	—	—	—	—
2024	0.17	0.76	0.02	0.06	0.09	0.02	0.03	0.05	165

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.57	0.14	< 0.005	0.45	0.45	< 0.005	0.11	0.12	565
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.53	0.17	< 0.005	0.45	0.45	< 0.005	0.11	0.12	542
Average Daily (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.54	0.16	< 0.005	0.44	0.44	< 0.005	0.11	0.11	533
Annual (Max)	—	—	—	—	—	—	—	—	—
Unmit.	0.10	0.03	< 0.005	0.08	0.08	< 0.005	0.02	0.02	88.3

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.19	0.14	< 0.005	0.45	0.45	< 0.005	0.11	0.12	492
Area	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.07
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	61.3
Water	—	—	—	—	—	—	—	—	1.67

Waste	—	—	—	—	—	—	—	—	9.30
Refrig.	—	—	—	—	—	—	—	—	0.10
Total	0.57	0.14	< 0.005	0.45	0.45	< 0.005	0.11	0.12	565
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.19	0.17	< 0.005	0.45	0.45	< 0.005	0.11	0.12	469
Area	0.34	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	61.3
Water	—	—	—	—	—	—	—	—	1.67
Waste	—	—	—	—	—	—	—	—	9.30
Refrig.	—	—	—	—	—	—	—	—	0.10
Total	0.53	0.17	< 0.005	0.45	0.45	< 0.005	0.11	0.12	542
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	0.18	0.15	< 0.005	0.44	0.44	< 0.005	0.11	0.11	460
Area	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.53
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	61.3
Water	—	—	—	—	—	—	—	—	1.67
Waste	—	—	—	—	—	—	—	—	9.30
Refrig.	—	—	—	—	—	—	—	—	0.10
Total	0.54	0.16	< 0.005	0.44	0.44	< 0.005	0.11	0.11	533
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.03	< 0.005	0.08	0.08	< 0.005	0.02	0.02	76.2
Area	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.09
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	10.1
Water	—	—	—	—	—	—	—	—	0.28
Waste	—	—	—	—	—	—	—	—	1.54
Refrig.	—	—	—	—	—	—	—	—	0.02
Total	0.10	0.03	< 0.005	0.08	0.08	< 0.005	0.02	0.02	88.3

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.19	0.14	< 0.005	0.45	0.45	< 0.005	0.11	0.12	492
Area	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.07
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	61.3
Water	—	—	—	—	—	—	—	—	1.67
Waste	—	—	—	—	—	—	—	—	9.30
Refrig.	—	—	—	—	—	—	—	—	0.10
Total	0.57	0.14	< 0.005	0.45	0.45	< 0.005	0.11	0.12	565
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Mobile	0.19	0.17	< 0.005	0.45	0.45	< 0.005	0.11	0.12	469
Area	0.34	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	61.3
Water	—	—	—	—	—	—	—	—	1.67
Waste	—	—	—	—	—	—	—	—	9.30
Refrig.	—	—	—	—	—	—	—	—	0.10
Total	0.53	0.17	< 0.005	0.45	0.45	< 0.005	0.11	0.12	542
Average Daily	—	—	—	—	—	—	—	—	—
Mobile	0.18	0.15	< 0.005	0.44	0.44	< 0.005	0.11	0.11	460
Area	0.36	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.53
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	61.3
Water	—	—	—	—	—	—	—	—	1.67
Waste	—	—	—	—	—	—	—	—	9.30
Refrig.	—	—	—	—	—	—	—	—	0.10

Total	0.54	0.16	< 0.005	0.44	0.44	< 0.005	0.11	0.11	533
Annual	—	—	—	—	—	—	—	—	—
Mobile	0.03	0.03	< 0.005	0.08	0.08	< 0.005	0.02	0.02	76.2
Area	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.09
Energy	0.00	0.00	0.00	—	0.00	0.00	—	0.00	10.1
Water	—	—	—	—	—	—	—	—	0.28
Waste	—	—	—	—	—	—	—	—	1.54
Refrig.	—	—	—	—	—	—	—	—	0.02
Total	0.10	0.03	< 0.005	0.08	0.08	< 0.005	0.02	0.02	88.3

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.40	13.7	0.60	—	0.60	0.55	—	0.55	2,119
Demolition	—	—	—	0.20	0.20	—	0.03	0.03	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.79	0.03	—	0.03	0.03	—	0.03	122
Demolition	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.14	0.01	—	0.01	0.01	—	0.01	20.2
Demolition	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.00	0.10	0.10	0.00	0.02	0.02	101
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	2.80	0.02	0.39	0.41	0.02	0.11	0.12	1,768
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.16	< 0.005	0.02	0.02	< 0.005	0.01	0.01	102
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.96
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	16.9

3.2. Demolition (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.27	6.89	0.07	—	0.07	0.07	—	0.07	2,119
Demolition	—	—	—	0.20	0.20	—	0.03	0.03	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.40	< 0.005	—	< 0.005	< 0.005	—	< 0.005	122
Demolition	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	20.2
Demolition	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.00	0.10	0.10	0.00	0.02	0.02	101
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.04	2.80	0.02	0.39	0.41	0.02	0.11	0.12	1,768
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.16	< 0.005	0.02	0.02	< 0.005	0.01	0.01	102
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.96
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	16.9

3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.38	23.2	1.02	—	1.02	0.94	—	0.94	4,144
Dust From Material Movement	—	—	—	8.14	8.14	—	3.54	3.54	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.64	0.03	—	0.03	0.03	—	0.03	114
Dust From Material Movement	—	—	—	0.22	0.22	—	0.10	0.10	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.01	—	0.01	< 0.005	—	< 0.005	18.8
Dust From Material Movement	—	—	—	0.04	0.04	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.00	0.08	0.08	0.00	0.02	0.02	85.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Site Preparation (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.38	23.2	1.02	—	1.02	0.94	—	0.94	4,144
Dust From Material Movement	—	—	—	3.18	3.18	—	1.38	1.38	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.64	0.03	—	0.03	0.03	—	0.03	114
Dust From Material Movement	—	—	—	0.09	0.09	—	0.04	0.04	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.12	0.01	—	0.01	< 0.005	—	< 0.005	18.8
Dust From Material Movement	—	—	—	0.02	0.02	—	0.01	0.01	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.00	0.08	0.08	0.00	0.02	0.02	85.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.37
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.79	17.1	0.79	—	0.79	0.72	—	0.72	2,686

Dust From Material Movement	—	—	—	7.08	7.08	—	3.42	3.42	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	1.12	0.05	—	0.05	0.05	—	0.05	177
Dust From Material Movement	—	—	—	0.47	0.47	—	0.23	0.23	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.21	0.01	—	0.01	0.01	—	0.01	29.2
Dust From Material Movement	—	—	—	0.08	0.08	—	0.04	0.04	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.00	0.12	0.12	0.00	0.03	0.03	128
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	7.98
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Grading (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	9.17	0.08	—	0.08	0.08	—	0.08	2,686
Dust From Material Movement	—	—	—	2.76	2.76	—	1.34	1.34	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.60	0.01	—	0.01	0.01	—	0.01	177
Dust From Material Movement	—	—	—	0.18	0.18	—	0.09	0.09	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.11	< 0.005	—	< 0.005	< 0.005	—	< 0.005	29.2
Dust From Material Movement	—	—	—	0.03	0.03	—	0.02	0.02	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.00	0.12	0.12	0.00	0.03	0.03	128

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	7.98
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.92	7.24	0.30	—	0.30	0.27	—	0.27	1,215
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.92	7.24	0.30	—	0.30	0.27	—	0.27	1,215
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	1.98	0.08	—	0.08	0.07	—	0.07	333
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.36	0.01	—	0.01	0.01	—	0.01	55.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.02	0.02	0.00	< 0.005	< 0.005	21.6
Vendor	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	23.0
Hauling	< 0.005	0.16	< 0.005	0.02	0.02	< 0.005	0.01	0.01	103
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.02	0.02	0.00	< 0.005	< 0.005	20.3
Vendor	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	22.9
Hauling	< 0.005	0.16	< 0.005	0.02	0.02	< 0.005	0.01	0.01	103
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.59
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	6.29
Hauling	< 0.005	0.04	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	28.3
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.93
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.04
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	4.69

3.8. Building Construction (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.92	7.24	0.30	—	0.30	0.27	—	0.27	1,215
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.92	7.24	0.30	—	0.30	0.27	—	0.27	1,215
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	1.98	0.08	—	0.08	0.07	—	0.07	333
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.36	0.01	—	0.01	0.01	—	0.01	55.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.02	0.02	0.00	< 0.005	< 0.005	21.6
Vendor	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	23.0
Hauling	< 0.005	0.16	< 0.005	0.02	0.02	< 0.005	0.01	0.01	103
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.02	0.02	0.00	< 0.005	< 0.005	20.3
Vendor	< 0.005	0.03	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	22.9
Hauling	< 0.005	0.16	< 0.005	0.02	0.02	< 0.005	0.01	0.01	103
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.59
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	6.29

Hauling	< 0.005	0.04	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	28.3
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.93
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.04
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	4.69

3.9. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	6.87	0.34	—	0.34	0.32	—	0.32	1,274
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.19	0.01	—	0.01	0.01	—	0.01	34.9
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.78
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.00	0.12	0.12	0.00	0.03	0.03	121
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	2.54	0.02	0.35	0.37	0.02	0.10	0.11	1,607
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	44.1
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	7.30

3.10. Paving (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.78	6.87	0.34	—	0.34	0.32	—	0.32	1,274
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.19	0.01	—	0.01	0.01	—	0.01	34.9

Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.78
Paving	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.00	0.12	0.12	0.00	0.03	0.03	121
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	2.54	0.02	0.35	0.37	0.02	0.10	0.11	1,607
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	3.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.07	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	44.1
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	7.30

3.11. Architectural Coating (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.91	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	19.2	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.67
Architectural Coatings	0.53	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.61
Architectural Coatings	0.10	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Architectural Coating (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.91	0.03	—	0.03	0.03	—	0.03	134
Architectural Coatings	19.2	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.67
Architectural Coatings	0.53	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.61
Architectural Coatings	0.10	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	4.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Trenching (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	2.05	0.08	—	0.08	0.08	—	0.08	434
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.94

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.98
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.04	0.04	0.00	0.01	0.01	42.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Trenching (2024) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	2.05	0.08	—	0.08	0.08	—	0.08	434

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	5.94
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.98
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.00	0.04	0.04	0.00	0.01	0.01	42.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	0.19	0.14	< 0.005	0.45	0.45	< 0.005	0.11	0.12	492
Total	0.19	0.14	< 0.005	0.45	0.45	< 0.005	0.11	0.12	492
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	0.19	0.17	< 0.005	0.45	0.45	< 0.005	0.11	0.12	469
Total	0.19	0.17	< 0.005	0.45	0.45	< 0.005	0.11	0.12	469
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	0.03	0.03	< 0.005	0.08	0.08	< 0.005	0.02	0.02	76.2
Total	0.03	0.03	< 0.005	0.08	0.08	< 0.005	0.02	0.02	76.2

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	0.19	0.14	< 0.005	0.45	0.45	< 0.005	0.11	0.12	492
Total	0.19	0.14	< 0.005	0.45	0.45	< 0.005	0.11	0.12	492
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	0.19	0.17	< 0.005	0.45	0.45	< 0.005	0.11	0.12	469

Total	0.19	0.17	< 0.005	0.45	0.45	< 0.005	0.11	0.12	469
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	0.03	0.03	< 0.005	0.08	0.08	< 0.005	0.02	0.02	76.2
Total	0.03	0.03	< 0.005	0.08	0.08	< 0.005	0.02	0.02	76.2

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	61.3
Total	—	—	—	—	—	—	—	—	61.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	61.3
Total	—	—	—	—	—	—	—	—	61.3
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	10.1
Total	—	—	—	—	—	—	—	—	10.1

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	61.3
Total	—	—	—	—	—	—	—	—	61.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	61.3
Total	—	—	—	—	—	—	—	—	61.3
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	10.1
Total	—	—	—	—	—	—	—	—	10.1

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Total	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.29	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—

Landscape Equipment	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.07
Total	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.07
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.29	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—
Total	0.34	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.05	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.09
Total	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.09

4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.29	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—

Landscape Equipment	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.07
Total	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.07
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.29	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	—	—	—	—	—	—	—	—
Total	0.34	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00
Consumer Products	0.05	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.09
Total	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.09

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	1.67
Total	—	—	—	—	—	—	—	—	1.67

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	1.67
Total	—	—	—	—	—	—	—	—	1.67
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	0.28
Total	—	—	—	—	—	—	—	—	0.28

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	1.67
Total	—	—	—	—	—	—	—	—	1.67
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	1.67
Total	—	—	—	—	—	—	—	—	1.67
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	0.28
Total	—	—	—	—	—	—	—	—	0.28

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	9.30
Total	—	—	—	—	—	—	—	—	9.30
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	9.30
Total	—	—	—	—	—	—	—	—	9.30
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	1.54
Total	—	—	—	—	—	—	—	—	1.54

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	9.30
Total	—	—	—	—	—	—	—	—	9.30
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	9.30
Total	—	—	—	—	—	—	—	—	9.30
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	1.54

Total	—	—	—	—	—	—	—	—	1.54

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	0.10
Total	—	—	—	—	—	—	—	—	0.10
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	0.10
Total	—	—	—	—	—	—	—	—	0.10
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	0.02
Total	—	—	—	—	—	—	—	—	0.02

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	0.10
Total	—	—	—	—	—	—	—	—	0.10

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	0.10
Total	—	—	—	—	—	—	—	—	0.10
Annual	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	0.02
Total	—	—	—	—	—	—	—	—	0.02

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	3/1/2024	3/31/2024	5.00	21.0	—
Site Preparation	Site Preparation	4/1/2024	4/14/2024	5.00	10.0	—
Grading	Grading	4/15/2024	5/16/2024	5.00	24.0	—
Building - Exterior	Building Construction	5/24/2024	10/10/2024	5.00	100	—
Paving	Paving	10/25/2024	11/7/2024	5.00	10.0	—
Building - Interior/Architectural Coating	Architectural Coating	10/11/2024	10/24/2024	5.00	10.0	—

Trenching	Trenching	5/16/2024	5/22/2024	5.00	5.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	0.38	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Demolition	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Concrete/Industrial Saws	Diesel	Average	1.00	0.30	33.0	0.73
Building - Exterior	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building - Exterior	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building - Exterior	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building - Exterior	Welders	Diesel	Average	3.00	8.00	46.0	0.45

Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Building - Interior/Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Trenching	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Trenching	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1.00	0.38	33.0	0.73
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Grading	Graders	Diesel	Tier 4 Interim	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	2.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Interim	1.00	8.00	36.0	0.38

Grading	Concrete/Industrial Saws	Diesel	Tier 4 Interim	1.00	0.30	33.0	0.73
Building - Exterior	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building - Exterior	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building - Exterior	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building - Exterior	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Building - Interior/Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
Trenching	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Trenching	Excavators	Diesel	Average	1.00	8.00	36.0	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	20.9	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	10.0	11.7	LDA,LDT1,LDT2

Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	19.0	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT
Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT
Building - Exterior	—	—	—	—
Building - Exterior	Worker	2.52	11.7	LDA,LDT1,LDT2
Building - Exterior	Vendor	0.75	8.40	HHDT,MHDT
Building - Exterior	Hauling	1.22	20.0	HHDT
Building - Exterior	Onsite truck	—	—	HHDT
Building - Interior/Architectural Coating	—	—	—	—
Building - Interior/Architectural Coating	Worker	0.50	11.7	LDA,LDT1,LDT2
Building - Interior/Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Building - Interior/Architectural Coating	Hauling	0.00	20.0	HHDT

Building - Interior/Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	12.5	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	20.9	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	10.0	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	19.0	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trenching	—	—	—	—
Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Trenching	Vendor	—	8.40	HHDT,MHDT

Trenching	Hauling	0.00	20.0	HHDT
Trenching	Onsite truck	—	—	HHDT
Building - Exterior	—	—	—	—
Building - Exterior	Worker	2.52	11.7	LDA,LDT1,LDT2
Building - Exterior	Vendor	0.75	8.40	HHDT,MHDT
Building - Exterior	Hauling	1.22	20.0	HHDT
Building - Exterior	Onsite truck	—	—	HHDT
Building - Interior/Architectural Coating	—	—	—	—
Building - Interior/Architectural Coating	Worker	0.50	11.7	LDA,LDT1,LDT2
Building - Interior/Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Building - Interior/Architectural Coating	Hauling	0.00	20.0	HHDT
Building - Interior/Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Building - Interior/Architectural Coating	27,641	9,214	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)

Demolition	0.00	0.00	0.00	3,874	—
Site Preparation	—	—	20.0	0.00	—
Grading	—	—	24.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.08

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.08	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	66.1	66.8	59.9	23,831	629	636	570	226,820

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	66.1	66.8	59.9	23,831	629	636	570	226,820

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0

Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
27641.25	9,214	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	138,100	160	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	138,100	160	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	253,865	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	253,865	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	4.93	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	4.93	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	10.6	annual days of extreme heat
Extreme Precipitation	9.15	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	23.6	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	7.52
AQ-PM	13.0
AQ-DPM	27.5
Drinking Water	53.9
Lead Risk Housing	42.9
Pesticides	25.4
Toxic Releases	28.0
Traffic	75.5
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	48.5
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	33.2
Solid Waste	0.00
Sensitive Population	—
Asthma	5.91
Cardio-vascular	1.46

Low Birth Weights	93.0
Socioeconomic Factor Indicators	—
Education	3.87
Housing	12.3
Linguistic	7.38
Poverty	17.2
Unemployment	28.2

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	93.68664186
Employed	44.86077249
Median HI	99.87167971
Education	—
Bachelor's or higher	96.02207109
High school enrollment	100
Preschool enrollment	84.56306942
Transportation	—
Auto Access	87.47593995
Active commuting	47.61965867
Social	—
2-parent households	88.10470935
Voting	92.86539202
Neighborhood	—
Alcohol availability	92.01847812

Park access	16.55331708
Retail density	21.71179263
Supermarket access	28.65392018
Tree canopy	98.60130887
Housing	—
Homeownership	98.65263698
Housing habitability	95.00834082
Low-inc homeowner severe housing cost burden	45.32272552
Low-inc renter severe housing cost burden	99.08892596
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	90.15783395
Arthritis	0.0
Asthma ER Admissions	87.6
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	97.0
Cognitively Disabled	90.0
Physically Disabled	81.6
Heart Attack ER Admissions	94.5
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0

Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	18.4
SLR Inundation Area	0.0
Children	93.4
Elderly	4.2
English Speaking	98.1
Foreign-born	34.1
Outdoor Workers	55.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	94.0
Traffic Density	65.1
Traffic Access	23.0
Other Indices	—
Hardship	2.4
Other Decision Support	—
2016 Voting	93.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	10.0

Healthy Places Index Score for Project Location (b)	99.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Utility Information	PG&E 2020 rate is 160 lbs/MWh. Provided project plans say that the power and gas will be provided by PG&E.
Construction: Construction Phases	Construction schedule provided by project applicant. No building construction or interior/arc coating phase.
Construction: Off-Road Equipment	Defaults revised by project applicant. Included default building const and arc coating to account for future construction on site.
Land Use	Total number of units and lot acreage provided by project applicant. Default square footage.
Construction: Trips and VMT	Demolition = 1,970 tons of pavement hauled (18.76 trips/day), Building Const = Est 61 concrete truck round trips (1.22 trips/day), Paving = 790 cubic yards of asphalt (19 trips/day).
Operations: Hearths	No hearths.
Operations: Water and Waste Water	Wastewater treatment 100% aerobic - no septic tanks or lagoons.
Operations: Energy Use	Natural gas usage included in electricity usage since no natural gas hookups are included on project plans.

2. Emissions Summary - HRA

2.2 Construction Emissions by Year, Unmitigated

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO_2e
Daily - Summer (Max)									
2024	2.4041011	23.196690	1.0202336	8.1466195	9.1668531	0.9386149	3.5400738	4.4786887	4149.7299868182145
Daily - Winter (Max)									
2024	19.360713	14.094559	0.6007639	0.2113443	0.8121082	0.5527765	0.0335553	0.5863318	2206.2203487393535
Average Daily									
2024	1.0789269	4.8125926	0.2066900	0.7023059	0.9089960	0.1901588	0.3244179	0.5145768	799.7039064752389
Annual									
2024	0.1969041	0.8782981	0.0377209	0.1281708	0.1658917	0.0347039	0.0592062	0.0939102	132.40010789317986

2. Emissions Summary - HRA

2.3 Construction Emissions by Year, Mitigated

Year	ROG	NOx	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO_2e
Daily - Summer (Max)									
2024	2.4041011	23.196690	1.0202336	3.1793365	4.1995701	0.9386149	1.3811339	2.3197488	4149.7299868182145
Daily - Winter (Max)									
2024	19.360713	7.2753110	0.3445564	0.2113443	0.3586620	0.3170589	0.0335553	0.3207121	2206.2203487393535
Average Daily									
2024	0.9191257	3.8994143	0.1298288	0.2821364	0.4119653	0.1198791	0.1279041	0.2477833	799.7039064752389
Annual									
2024	0.1677404	0.7116431	0.0236937	0.0514898	0.0751836	0.0218779	0.0233425	0.0452204	132.40010789317986

5.2. Off-Road Equipment - HRA

5.2.2 Mitigated

Phase Nam	Equipment	Fuel Type	Engine Tier	Number pe	Hours Per I	Horsepow	Load Factor
Demolitior	Concrete/I	Diesel	Tier 4 Inter	1	0.38	33	0.73
Demolitior	Rubber Tir	Diesel	Tier 4 Inter	1	8	367	0.4
Demolitior	Tractors/L	Diesel	Tier 4 Inter	2	8	84	0.37
Demolitior	Excavators	Diesel	Tier 4 Inter	1	8	36	0.38
Site Prepar	Tractors/L	Diesel	Average	1	8	84	0.37
Site Prepar	Rubber Tir	Diesel	Average	1	8	367	0.4
Site Prepar	Graders	Diesel	Average	1	8	148	0.41
Site Prepar	Scrapers	Diesel	Average	1	8	423	0.48
Grading	Graders	Diesel	Tier 4 Inter	1	8	148	0.41
Grading	Rubber Tir	Diesel	Tier 4 Inter	1	8	367	0.4
Grading	Tractors/L	Diesel	Tier 4 Inter	2	8	84	0.37
Grading	Excavators	Diesel	Tier 4 Inter	1	8	36	0.38
Grading	Concrete/I	Diesel	Tier 4 Inter	1	0.3	33	0.73
Building - E	Forklifts	Diesel	Average	2	7	82	0.2
Building - E	Generator	Diesel	Average	1	8	14	0.74
Building - E	Tractors/L	Diesel	Average	1	6	84	0.37
Building - E	Welders	Diesel	Average	3	8	46	0.45
Paving	Cement an	Diesel	Average	1	8	10	0.56
Paving	Pavers	Diesel	Average	2	8	81	0.42
Paving	Paving Equ	Diesel	Average	1	8	89	0.36
Paving	Rollers	Diesel	Average	2	8	36	0.38
Building - I	Air Compre	Diesel	Average	1	6	37	0.48
Trenching	Tractors/L	Diesel	Average	1	8	84	0.37
Trenching	Excavators	Diesel	Average	1	8	36	0.38

5.3. Construction Vehicles - HRA

5.3.2 Mitigated

Phase Nam	Trip Type	One-Way T	Miles per T	Vehicle Mix
Demolition				
Demolitior	Worker	12.5	0.5	LDA,LDT1,LDT2
Demolitior	Vendor		0.5	HHDT,MHDT
Demolitior	Hauling	20.902	0.5	HHDT
Demolitior	Onsite truc			HHDT
Site Preparation				
Site Prepar	Worker	10	0.5	LDA,LDT1,LDT2
Site Prepar	Vendor		0.5	HHDT,MHDT
Site Prepar	Hauling	0	0.5	HHDT
Site Prepar	Onsite truc			HHDT
Grading				
Grading	Worker	15	0.5	LDA,LDT1,LDT2
Grading	Vendor		0.5	HHDT,MHDT
Grading	Hauling	0	0.5	HHDT
Grading	Onsite truc			HHDT
Paving				
Paving	Worker	15	0.5	LDA,LDT1,LDT2
Paving	Vendor		0.5	HHDT,MHDT
Paving	Hauling	19	0.5	HHDT
Paving	Onsite truc			HHDT
Trenching				
Trenching	Worker	5	0.5	LDA,LDT1,LDT2
Trenching	Vendor		0.5	HHDT,MHDT
Trenching	Hauling	0	0.5	HHDT
Trenching	Onsite truc			HHDT
Building - Exterior				
Building - E	Worker	2.52	0.5	LDA,LDT1,LDT2
Building - E	Vendor	0.7483	0.5	HHDT,MHDT
Building - E	Hauling	1.22	0.5	HHDT
Building - E	Onsite truc			HHDT
Building - Interior/Architectural Coating				
Building - I	Worker	0.504	0.5	LDA,LDT1,LDT2
Building - I	Vendor		0.5	HHDT,MHDT
Building - I	Hauling	0	0.5	HHDT
Building - I	Onsite truc			HHDT

Attachment 2: Project Construction Emissions and Health Risk Calculations

1101 Canada Road, Woodside, CA
Construction Health Impact Summary

Maximum Impacts at MEI Location - Without Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2024	0.0581	0.1246	10.33	0.17	0.01	0.18
Total	-	-	**10.33**	**0.17**		-
Maximum	0.0581	0.1246	**-**	**-**	**0.01**	**0.18**

Maximum Impacts at MEI Location - With Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2024	0.0364	0.0490	6.47	0.10	0.01	0.09
Total	-	-	**6.47**	**0.10**	-	-
Maximum	0.0364	0.0490	**-**	**-**	**0.01**	**0.09**

1101 Canada Road, Woodside, CA

DPM Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2024	Construction	0.0377	CON_DPM	75.4	0.02297	2.89E-03	29,542	9.79E-08
Total		***0.0377***		***75.4***	***0.0230***	***0.0029***		

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2024	Construction	0.0237	CON_DPM	47.4	0.01443	1.82E-03	29,542	6.15E-08
Total		***0.0237***		***47.4***	***0.0144***	***0.0018***		

1101 Canada Road, Woodside, CA

PM2.5 Fugitive Dust Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2024	Construction	CON_FUG	0.0592	118.4	0.03605	4.54E-03	29,542	1.54E-07
Total			***0.0592***	***118.4***	***0.0360***	***0.0045***		

Construction Hours

hr/day =	9	(7am - 4pm)
days/yr =	365	
hours/year =	3285	

PM2.5 Fugitive Dust Construction Emissions for Modeling - With Mitigation

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2024	Construction	CON_FUG	0.0233	46.7	0.01421	1.79E-03	29,542	6.06E-08
Total			***0.0233***	***46.7***	***0.0142***	***0.0018***		

1101 Canada Road, Woodside, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
							Modeled						
Exposure	Exposure Duration		DPM Conc (ug/m3)		Age Sensitivity	Infant/Child Cancer Risk	DPM Conc (ug/m3)		Age Sensitivity	Adult Cancer Risk	Hazard	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	Index	PM2.5	PM2.5
0	0.25	-0.25 - 0*	2024	0.0581	10	0.79	2024	0.0581	-	-			
1	1	0 - 1	2024	0.0581	10	9.54	2024	0.0581	1	0.17	0.01	0.125	0.18
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**10.33**				**0.17**			

* Third trimester of pregnancy

1101 Canada Road, Woodside, CA - Construction Impacts - With Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

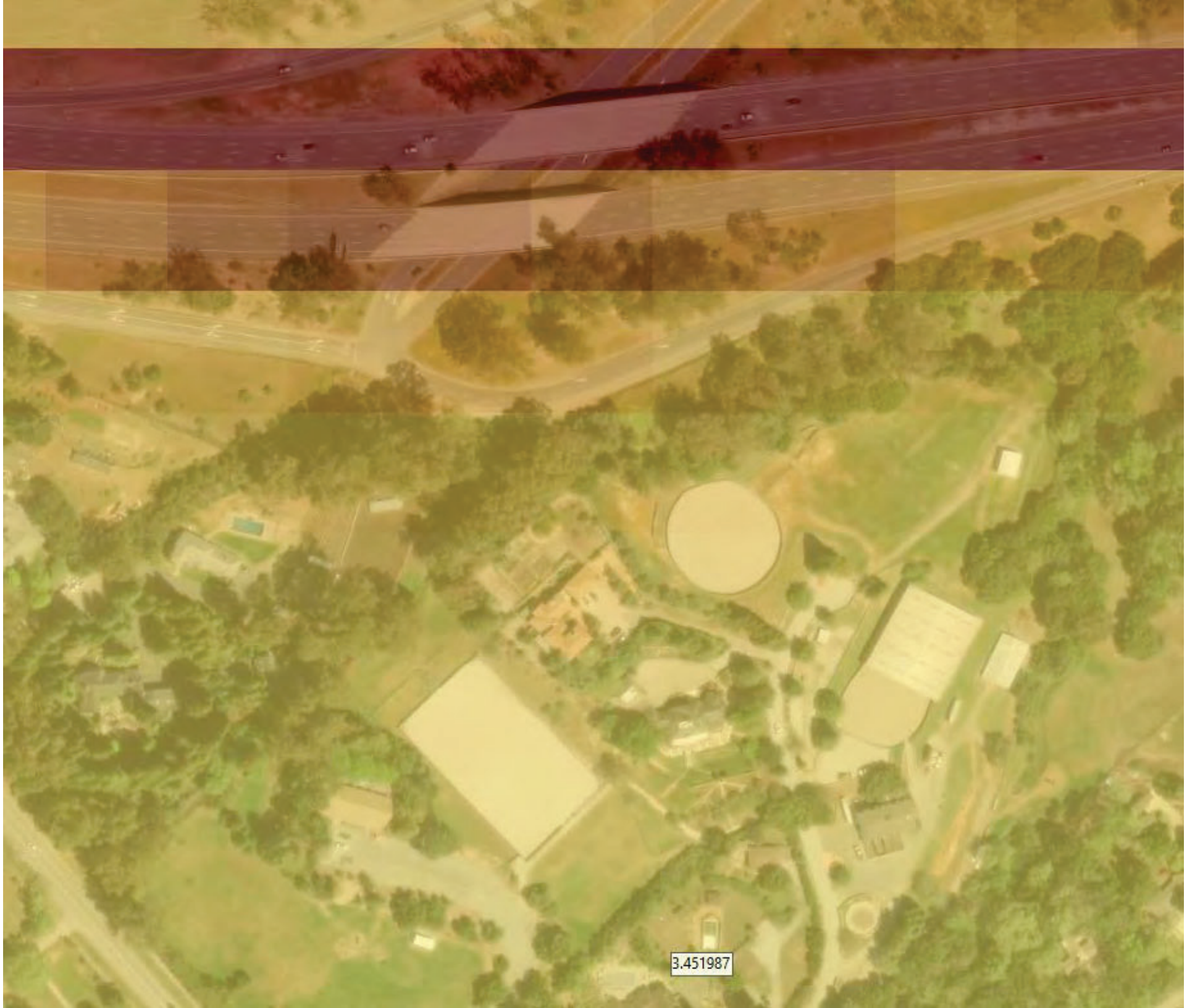
Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
							Modeled						
Exposure Year	**Exposure Duration (years)**	**Age**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Infant/Child Cancer Risk (per million)**	**DPM Conc (ug/m3) Year**	**DPM Conc (ug/m3) Annual**	**Age Sensitivity Factor**	**Adult Cancer Risk (per million)**	**Hazard Index**	**Fugitive PM2.5**	**Total PM2.5**
0	0.25	-0.25 - 0*	2024	0.0364	10	0.50	2024	0.0364	-	-			
1	1	0 - 1	2024	0.0364	10	5.98	2024	0.0364	1	0.10	0.007	0.049	0.09
2	1	1 - 2		0.0000	10	0.00		0.0000	1	0.00			
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
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24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**6.47**				**0.10**			

* Third trimester of pregnancy

Attachment 3: Health Risk Modeling Information and Calculations

BAAQMD Cancer Risk Raster
BAAQMD PM2.5 Raster
BAAQMD Hazard Index Raster


3.451987


0.131347


0.015335

11 February 2022

Joseph Putnam
1101 Canada Road, LLC
3 California Drive
Burlingame, CA 94010
c/o Lisa Putnam (lisaputnam65@gmail.com)

Subject: **1101 Cañada Road Site Environmental Noise Study, Woodside, CA**
Salter Project 21-0586

Dear Mr. Putnam:

As requested, we performed an environmental noise study for the proposed subdivision of 1101 Cañada Road in Woodside, California. This letter summarizes our on-site acoustical measurements and analysis, and preliminary recommendations to meet applicable City and State requirements.

EXECUTIVE SUMMARY

1. Sound-rated windows and exterior door assemblies will need to be provided to meet the Town of Woodside's residential interior noise criterion of DNL 40 dB.
2. Noise in outdoor-use spaces can be reduced to meet the Town of Woodside's exterior noise criterion of DNL 55 dB by siting outdoor-use spaces behind other buildings (e.g. main house, guesthouse/ADU, garage, etc.) and/or sound barriers to shield them from I-280.

NOISE CRITERIA

The Woodside Noise Element[1] states the Town's objective to keep ambient noise levels at residential uses lower than DNL[2] 40 dB at interior spaces, and DNL 55 dB at exterior spaces. Example exterior spaces include patios, swimming pools, and tennis courts.

[1] Noise Element is a part of the Town of Woodside General Plan 2012.

[2] Day-Night Average Sound Level (DNL or Ldn) --A descriptor established by the U.S. Environmental Protection Agency to describe the average day-night level with a penalty applied to noise occurring during the nighttime hours (10 pm - 7 am) to account for the increased sensitivity of people during sleeping hours.

ATTACHMENT 13

SETTING

Your property at 1011 Cañada Road is in Woodside, with Cañada Road located to the Southwest, Highway 280 to the North, and residential properties to the East, West, and South. In general, the site grade slopes up towards the northeast. The portion of the site near Cañada Road forms a hill that is above the elevation of the roadway. The northeast portion of the site is below the highway. Acoustical shielding is provided by the terrain between the site and I-280.

The site currently has one single-family house on it. Seven detached single-family homes are proposed for the site per the plan from Lea & Braze dated 15 September 2021. Each site has both a main house and a "conceptual ADU" (accessory dwelling unit).

EXISTING ENVIRONMENT

We conducted two continuous long-term noise measurements from 12 through 14 January 2022 along with three simultaneous short-term[3] spot measurements to quantify the existing noise environment. The results are summarized in Table 1 below:

Monitor	Location	Noise Level (DNL)
LT-1	Approximately 35 feet northeast of the center of Cañada Road, approximately 86-feet southeast from the property line of proposed Lot 7, 12 feet above grade.	65 dB
LT-2	Approximately 340 feet south of the I-280 on-ramp, on the property line of proposed Lot 4, 12- feet above grade.	57 dB
ST-1	Approximately 209 feet northeast of the center of Cañada Road, on the property line of proposed Lot 6, 6 feet above grade.	50 dB*
ST-2	Approximately 282 feet northeast of the center of Cañada Road, in the center of proposed Lot 2, 6 feet above grade.	51 dB*
ST-3	Approximately 484 feet south of the I-280 on-ramp, in the center of proposed Lot 4, 6 feet above grade.	55 dB*

** Estimated daily average noise level based on simultaneous measurements at short and long-term locations.*

[3] Short-term measurement locations and duration: S1 – 10 minutes, S2 and S3 – 15 minutes.

The locations and associated noise measurement results are shown on Figure 1. Noise levels vary at the site because of several conditions:

- Distance from the roadways
- Elevation, and therefore "exposure" to the roadway traffic
- Acoustical shielding provided by the terrain from some or all the roadway traffic

INTERIOR NOISE

We understand that the site and interior layouts and facade designs for the main houses on all lots have not been finalized. To develop a preliminary noise mitigation scheme to meet the interior noise criterion, we calculated exterior noise intrusion based on assumed room size and construction (listed below). As estimated from our measurements, our analysis is based on a maximum outdoor noise level of DNL 65 dB at the homes (i.e., at the southwest facade facing Cañada Road).

- 15-foot x 15-foot bedroom or 20-foot by 25-foot living room
- Windows on two adjacent walls up to 50-percent of the facade area
    - Exterior wall
    - Exterior sheathing and siding (equal in mass to three-coat stucco)
    - 2x4 or 2x6 stud framing
    - Batt insulation in stud cavities
    - One layer of interior gypsum board

Based on our analysis we expect that the interior noise criterion can be met by incorporating windows and exterior door assemblies. With the above assumptions, we calculate that the minimum STC ratings for those elements required to meet DNL 40 dB indoors will be as follows:

- Lots 2, 3, 4, 5, 6: STC 28
- Lots 1 and 7: STC 30

STC ratings are for the entire assembly (frame, glass, and seals), not just the glass. Ratings are derived from ASTM E90. Once the buildings have been designed, this analysis should be refined to address specific room designs, layouts, and details of the building envelope design. We can be available to provide more specific recommendations as the design is developed.

Windows will need to be closed for the interior environment to be DNL 40 dB. Mechanical ventilation will need to be provided. This should be discussed with your mechanical engineer.

EXTERIOR NOISE

The conceptual site layout shows backyard areas shielded from highway traffic noise by buildings and the terrain. We assume that these buildings are at a sufficient elevation to break line-of-site between occupants and the highway. Therefore, we expect that traffic noise would be reduced to meet the exterior noise criterion in much of these areas.

As the project progresses, portions of outdoor use spaces that are found to have line-of-sight to the highway (e.g., potentially the backyard of Lot 3). A sound barrier can be provided as needed to reduce noise. The need for and design of supplementary barriers would be determined as the grading and site plans are further developed. If needed, a sound barrier would need to break line-of-sight between the occupants and the highway traffic. The barrier would also need to have a minimum surface weight of 3-psf with no gaps, cracks, or leaks between boards/panels or at the intersection with the ground. Materials such as marine-grade plywood, cement board, earth, and others could satisfy this requirement.

While sound barriers can effectively reduce environmental noise, the approach taken with this project, of siting of buildings for noise reduction, generally has greater effectiveness since these structures are typically much taller than a practical sound barrier. Combining careful site layout with strategically located sound barriers is often a cost-effective approach.

* * *

This concludes our comments on environmental noise for 1101 Cañada Road. Please contact us with any questions.

Best,

SALTER



Austin Zambito-Valente
Consultant



Ethan Salter, PE, LEED AP
Vice President

CC: Chris Pham (cphan@leabraze.com)

Enclosures as noted

Salter

San Francisco

San Jose

Los Angeles

Honolulu

Seattle

www.salter-inc.com



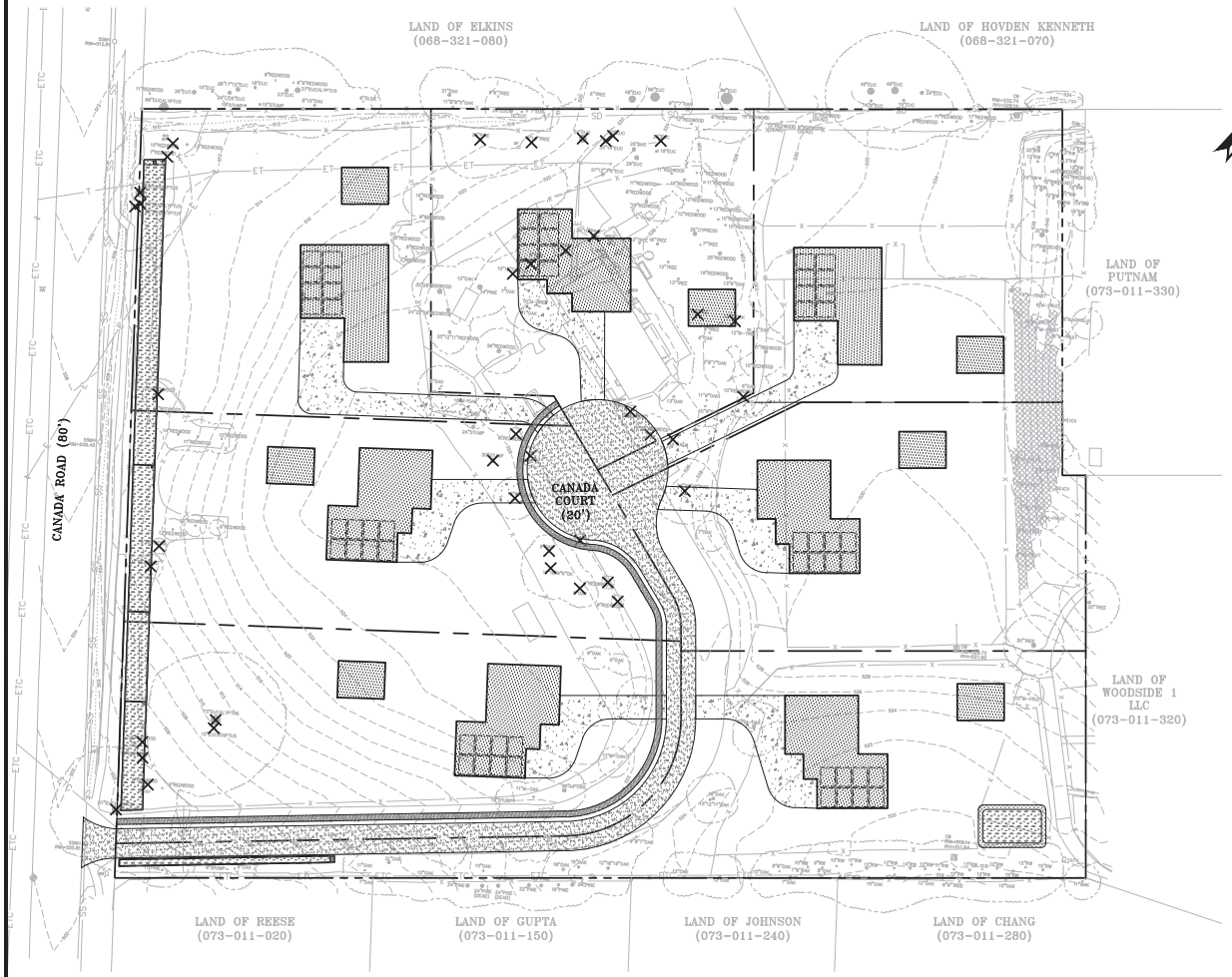
SALTER © 2022
FOR ACOUSTICAL DESIGN INFORMATION ONLY

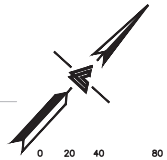
1101 CANADA ROAD
MEASUREMENT LOCATIONS AND MEASURED NOISE LEVELS

FIGURE 1

Salter #	ECS
21-0586	02.11.22

TENTATIVE MAP - CANADA COURT SUBDIVISION
1101 CANADA ROAD, WOODSIDE



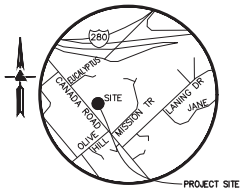


OWNERS:
JOSEPH PUTNAM
3 CALIFORNIA DRIVE
BURLINGAME, CA 94010

APN: 073-011-270
ATTN: LISA PUTNAM
THIS GRADING AND DRAINAGE PLAN IS SUPPLEMENTAL TO:
1) TOPOGRAPHIC SURVEY BY LEA & BRAZE ENGINEERING INC. ENTITLED:
"TOPOGRAPHIC SURVEY"
1101 CANADA ROAD
WOODSIDE, CA
DATED: 04/22/2021
JOB#: 2210244

SUBDIVIDER STATEMENT

1) OWNER / DEVELOPERS:
1101 CANADA ROAD LLC
JOSEPH PUTNAM
3 CALIFORNIA DRIVE
BURLINGAME, CA 94010
2) APPLICANT NAME: LISA PUTNAM
3) EXISTING USAGE: SINGLE FAMILY RESIDENTIAL
4) PROPOSED USAGE: SINGLE FAMILY RESIDENTIAL
5) EXISTING WELLS: NONE
6) FLOOD ZONE: ZONE X, PER PANEL 06081C0285E (LESS THAN 0.2% CHANGE OF FLOODING)
7) STREETS: ALL PROPOSED STREET MODIFICATIONS WILL BE IMPROVED TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORK
8) EXISTING USE OF ADJACENT PROPERTIES: SINGLE FAMILY RESIDENTIAL
9) WATER: CALIFORNIA WATER SERVICE COMPANY
10) FIRE PROTECTION: WOODSIDE FIRE DEPARTMENT
11) SANITARY SEWER: FAIR OAKS SANITARY DISTRICT
12) ELECTRIC POWER: PG&E (NO NATURAL GAS CONNECTION)
13) TELEPHONE / CABLE: SBC / COMCAST
14) STREET TREES: NONE
15) EASEMENT: PRIVATE
16) CONTOUR ELEVATION: LOCAL DATUM AND MONUMENTS
17) ALL DIMENSIONS ARE APPROXIMATE
18) PROPOSED NEW STREET NAME: CAÑADA COURT
19) TREES PROPOSED FOR REMOVAL WITH THIS APPLICATION
20) EXISTING ZONING: SR
21) PROPOSED ZONING: SR



VICINITY MAP
NTS

TREE NOTE
TREE SIZE, TYPE AND DRIPLINES ARE BASED ON A VISUAL OBSERVATION. FINAL DETERMINATION SHOULD BE MADE BY THE PROJECT ARBORIST.

FEMA FLOOD NOTE
PROPERTY COMPLETELY OUT OF SPECIAL FLOOD HAZARD AREA (SFHA) PER CURRENT FLOOD INSURANCE RATE MAP.

EASEMENT NOTE
NO EASEMENTS ARE LISTED IN TITLE REPORT ISSUED BY LAWYERS TITLE COMPANY, TITLE NO. FLNP-006210032S-AB, DATED AS OF FEBRUARY 22, 2021.

SITE BENCHMARK
SURVEY CONTROL POINT
MAG AND SHINER SET IN ASPHALT
ELEVATION = 500.00'
(ASSUMED)

SHEET INDEX

TM-1.0	TENTATIVE MAP TITLE SHEET
TM-2.0	TENTATIVE MAP PROPOSED LOTS BOUNDARY AND EASEMENTS
TM-2.1	TENTATIVE MAP OVERALL MAP OF AREA
TM-3.0	TENTATIVE MAP GRADING AND DRAINAGE PLAN
TM-3.1	TENTATIVE MAP ROADWAY SECTION
TM-4.0	TENTATIVE MAP UTILITIES PLAN
TM-5.0	TENTATIVE MAP GRADING SPECIFICATIONS
TM-6.0	TENTATIVE MAP DETAILS
ER-1	TENTATIVE MAP EROSION CONTROL PLAN
ER-2	TENTATIVE MAP EROSION CONTROL DETAIL

1101 CANADA SUBDIVISION
PROPOSED LOTS AVERAGE WIDTH & DEPTH

	AVERAGE WIDTH (FEET)	AVERAGE DEPTH (FEET)
PROPOSED LOT 1	142	384
PROPOSED LOT 2	145	338
PROPOSED LOT 3	210	201
PROPOSED LOT 4	194	221
PROPOSED LOT 5	200	211
PROPOSED LOT 6	170	309
PROPOSED LOT 7	155	277

ATTACHMENT 14

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS | LAND SURVEYORS
MAIN OFFICE:
5620 STONERIDGE MALL PKWY, WEST
PLEASANTON, CALIFORNIA 94545
(510) 887-4086
REGIONAL OFFICES:
RICHMOND
DUBLIN
SAN JOSE
WWW.LEABRAZE.COM

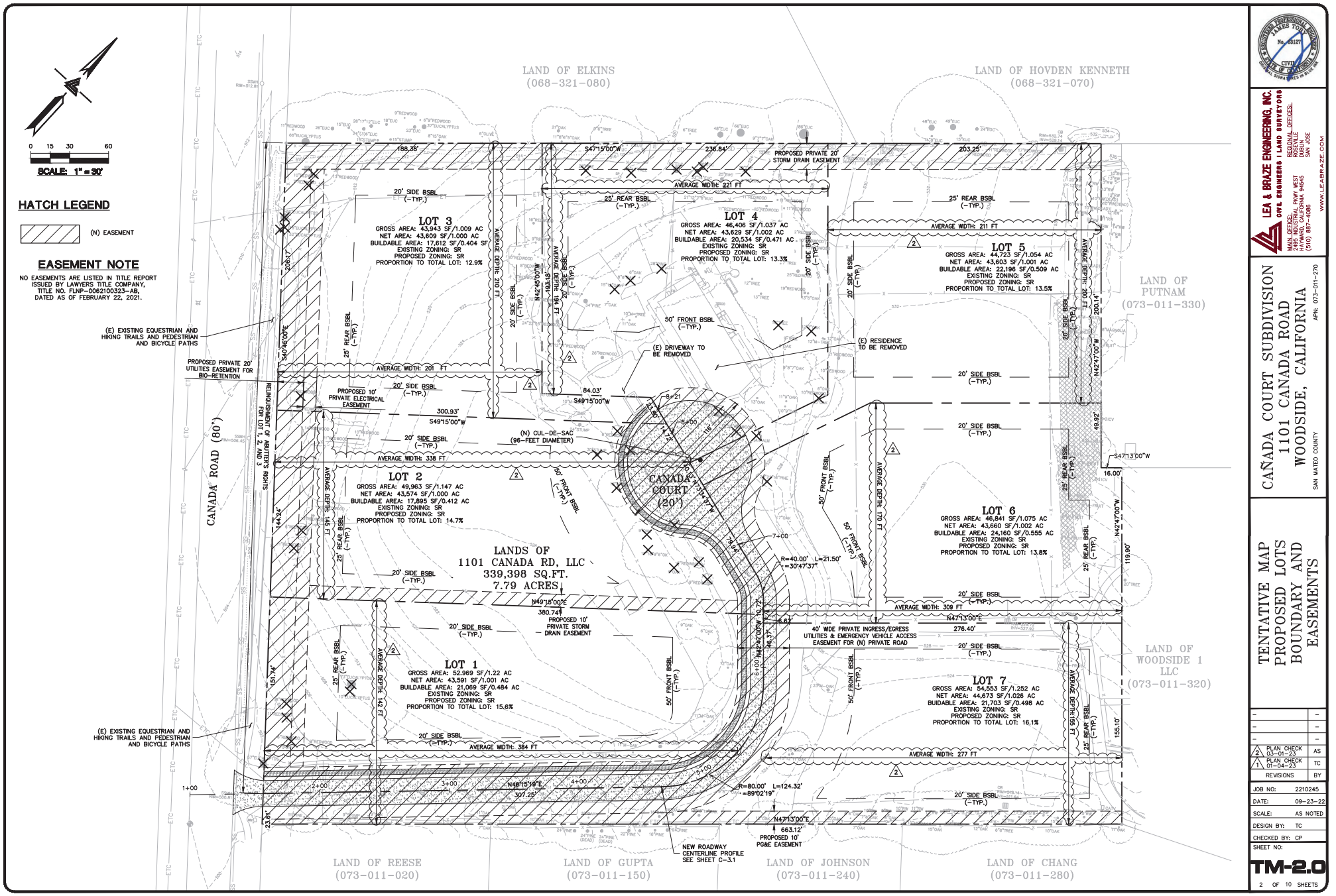
CAÑADA COURT SUBDIVISION
1101 CANADA ROAD
WOODSIDE, CALIFORNIA
APN: 073-011-270
SAN MATEO COUNTY

TENTATIVE MAP
TITLE SHEET

3	PLAN CHECK 07-31-23	CP
2	PLAN CHECK 03-01-23	AS
1	PLAN CHECK 01-04-23	TC
	REVISIONS	BY

JOB NO:	2210245
DATE:	09-23-22
SCALE:	AS NOTED
DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	TM-1.0

1 OF 10 SHEETS



HATCH LEGEND

(N) EASEMENT

EASEMENT NOTE

NO EASEMENTS ARE LISTED IN TITLE REPORT ISSUED BY LAWYERS TITLE COMPANY, TITLE NO. FLNP-0062100323-AB, DATED AS OF FEBRUARY 22, 2021.

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS | LAND SURVEYORS
6500 DEPOT, 2ND FLOOR
MAIN INDUSTRIAL PKWY, WEST
HAYWARD, CALIFORNIA 94545
(510) 887-4086
REGIONAL OFFICES:
ROSEVILLE
BAKERSFIELD
DUBLIN
SAN JOSE
WWW.LEABRAZE.COM

CAÑADA COURT SUBDIVISION
1101 CANADA ROAD
WOODSIDE, CALIFORNIA
APN: 073-011-270
SAN MATEO COUNTY

TENTATIVE MAP
PROPOSED LOTS
BOUNDARY AND
EASEMENTS

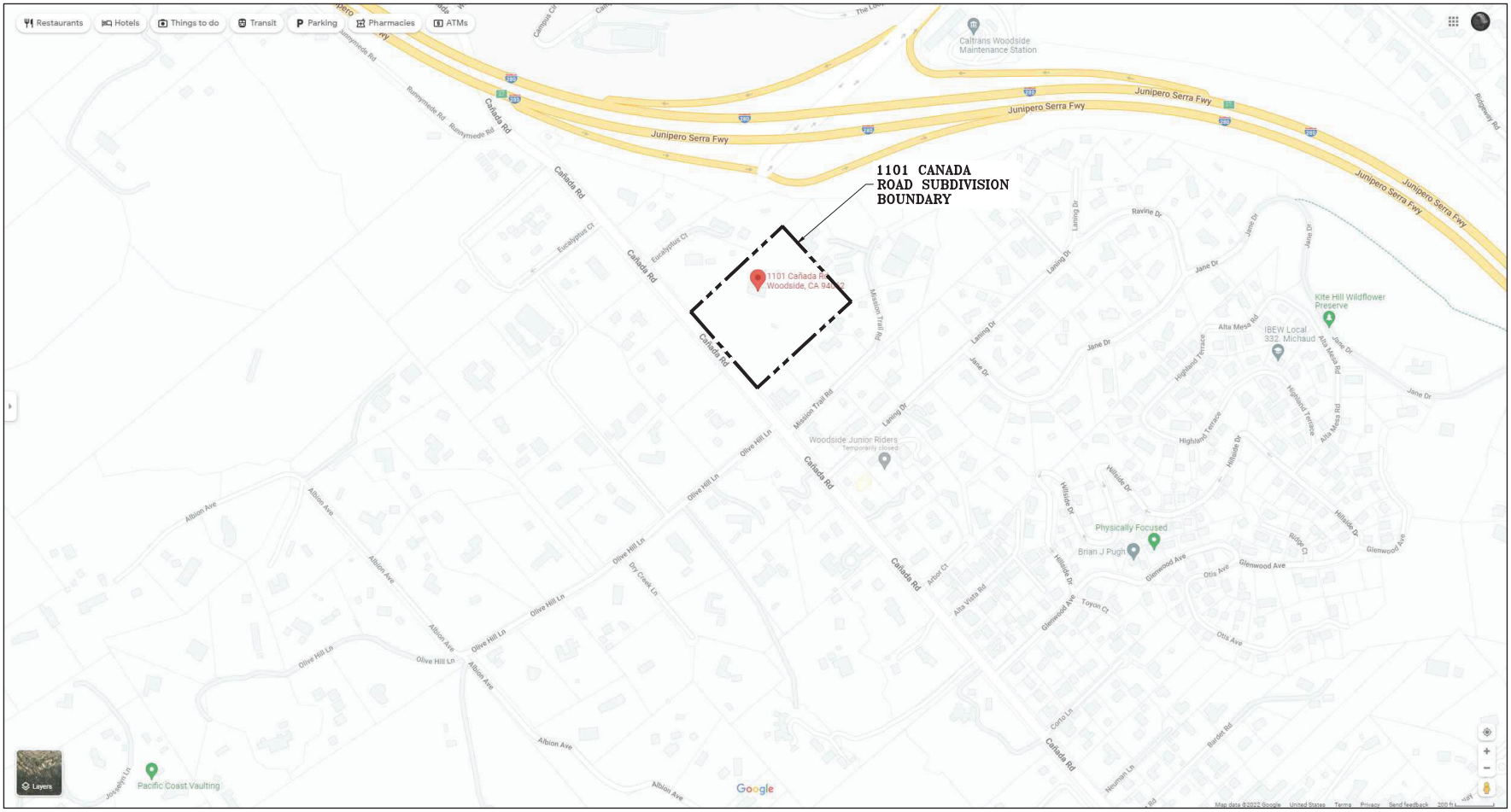
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1 PLAN CHECK 01-04-23	TC
REVISIONS	BY
JOB NO:	2210245
DATE:	09-23-22
SCALE:	AS NOTED
DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	

TM-2.0

2 OF 10 SHEETS

SUBDIVISION STATEMENTS:

- NO TREES PLANTING OR OTHER PLANTINGS ARE BEING PROPOSED AT THIS STAGE OF THE TENTATIVE MAP APPLICATION.
- ALL COMMUNAL IMPROVEMENTS ON-SITE (DRIVEWAY, BIO-RETENTION AREAS, RETAINING WALL, ETC.) SHALL BE BUILT BY THE OWNER OF THE SUBDIVISION.
- ALL ON-SITE UTILITIES IMPROVEMENTS WILL BE BUILT BY THE OWNER OF THE SUBDIVISION WITH WILL-SERVE LETTERS AND INSTRUCTIONS FROM PUBLIC OR PRIVATE UTILITIES COMPANIES.



LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS | LAND SURVEYORS
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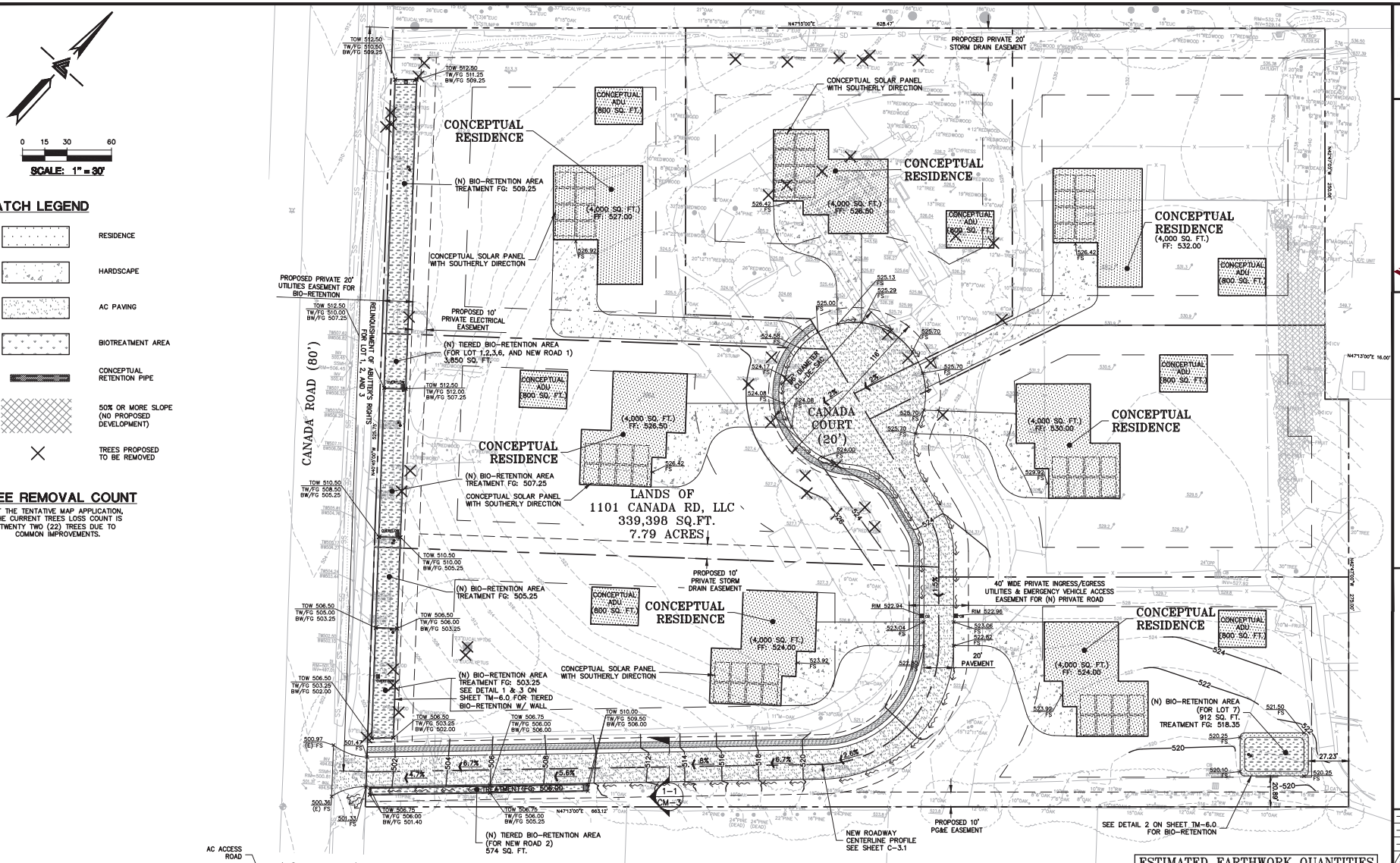
CAÑADA COURT SUBDIVISION
1101 CANADA ROAD
WOODSIDE, CALIFORNIA
SAN MATEO COUNTY
APN: 073-011-270

TENTATIVE MAP
OVERALL MAP
OF AREA

2	PLAN CHECK 03-01-23	AS
1	PLAN CHECK 01-04-23	TC
	REVISIONS	BY

JOB NO:	2210245
DATE:	09-23-22
SCALE:	AS NOTED
DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	TM-2.1

3 OF 10 SHEETS



ESTIMATED EARTHWORK QUANTITIES

CUBIC YARDS	WITHIN BUILDING FOOTPRINT	OUTSIDE BUILDING FOOTPRINT	TOTAL CUBIC YARDS
CUT	0	830	830
FILL	0	830	830
EXPORT			Ø

NOTE:
GRADING QUANTITIES REPRESENT BANK YARDAGE. IT DOES NOT INCLUDE ANY SWELLING OR SHRINKAGE FACTORS AND IS INTENDED TO REPRESENT IN-SITU CONDITIONS. QUANTITIES DO NOT INCLUDE OVER-EXCAVATION, TRENCHING, STRUCTURAL FOUNDATIONS OR PIERS, OR POOL EXCAVATION (IF ANY). NOTE ADDITIONAL EARTHWORKS, SUCH AS KEYWAYS OR BENCHING MAY BE REQUIRED BY THE GEOTECHNICAL ENGINEER IN THE FIELD AT TIME OF CONSTRUCTION. CONTRACTOR TO VERIFY QUANTITIES.

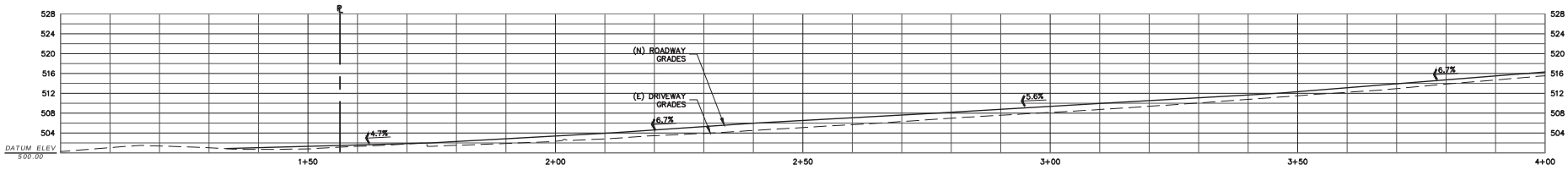
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SAN JOSE
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1101 CANADA ROAD
WOODSIDE, CALIFORNIA
APN: 073-011-270
SAN MATEO COUNTY

TENTATIVE MAP GRADING & DRAINAGE PLAN

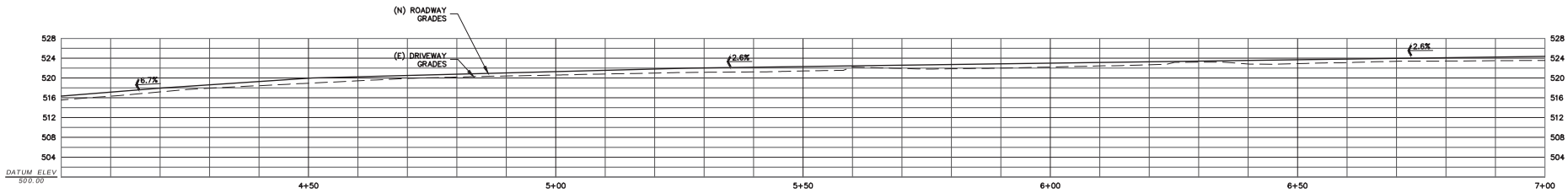
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REVISIONS	BY
JOB NO:	2210245
DATE:	09-23-22
SCALE:	AS NOTED
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CHECKED BY:	CP
SHEET NO:	TM-3.0

4 OF 10 SHEETS



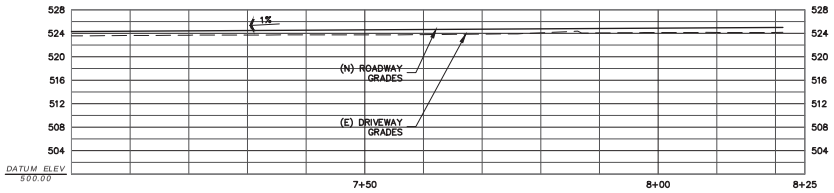
NEW ROADWAY PROFILE

SCALE: 1" = 10' HORIZ & VERT



NEW ROADWAY PROFILE

SCALE: 1" = 10' HORIZ & VERT



NEW ROADWAY PROFILE

SCALE: 1" = 10' HORIZ & VERT

LEA & BRAZE ENGINEERING, INC.
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1101 CANADA ROAD
WOODSIDE, CALIFORNIA
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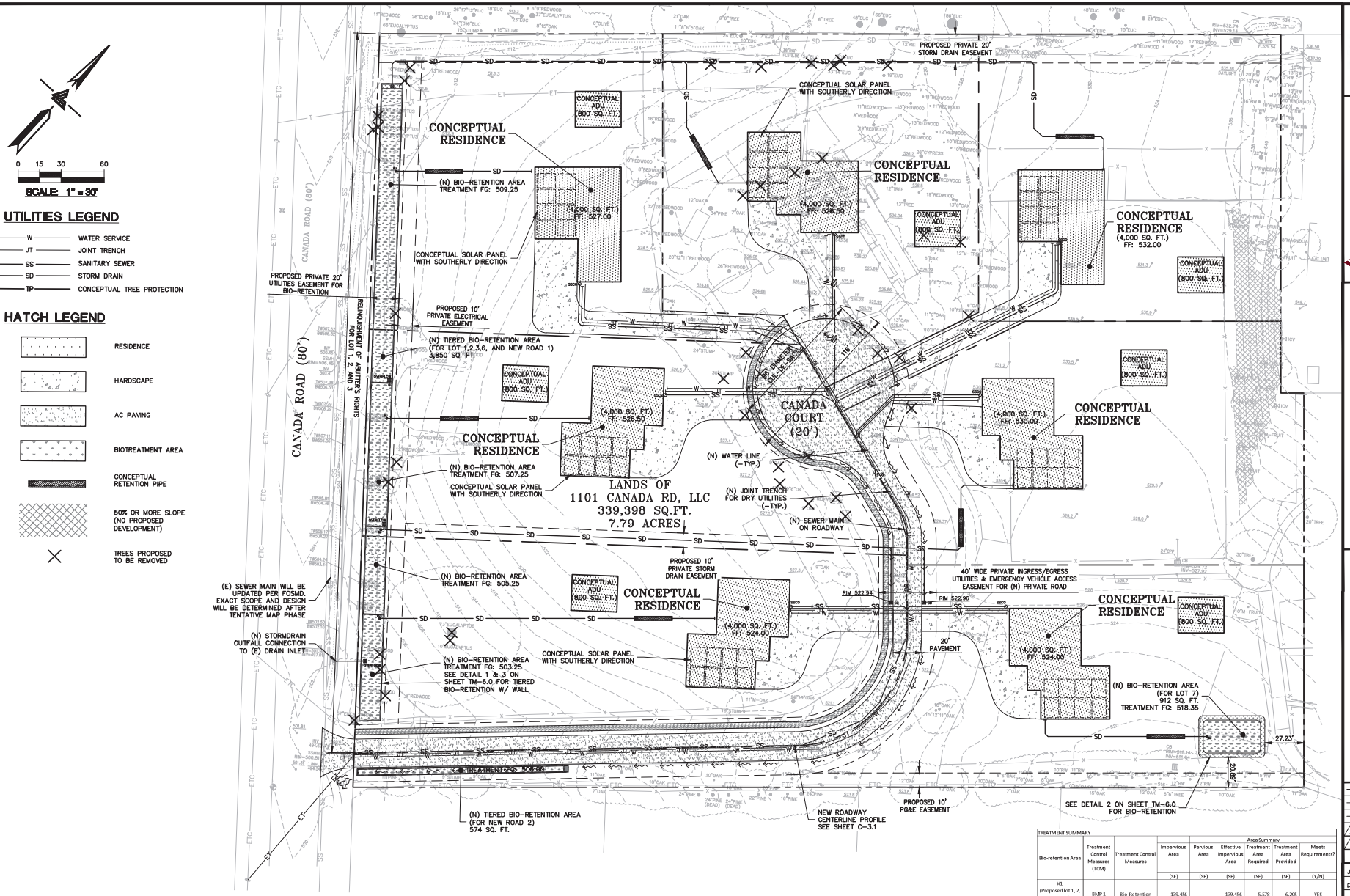
TENTATIVE MAP
ROADWAY SECTION

–		–
–		–
–		–
2	PLAN CHECK 03-01-23	AS
1	PLAN CHECK 01-04-23	TC
	REVISIONS	BY

JOB NO:	2210245
DATE:	09-23-22
SCALE:	AS NOTED
DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	

TM-3.1

5 OF 10 SHEETS



TREATMENT SUMMARY								
			Area Summary					
Bio-retention Area	Treatment Control Measures (TCM)	Treatment Control Measures	Impervious Area	Pervious Area	Effective Impervious Area	Treatment Area Required	Treatment Area Provided	Meets Requirements?
			(SF)	(SF)	(SF)	(SF)	(SF)	(Y/N)
#1 (Proposed lot 1, 2, 3, 4, 5, 6, and new road 1)	BMP 1	Bio-Retention	139,456	-	139,456	5,578	6,205	YES
#2 (Proposed lot 7)	BMP 2	Bio-Retention	21,600	-	21,600	864	912	YES
#3 (New road 2)	BMP 3	Bio-Retention	8,952	-	8,952	358	574	YES
TOTAL			170,008					

*Set under the condition that the ponding depth is 5.41", as shown in the Worksheet For Calculating the Combination Flow and Volume Method

Impervious area on proposed lot: 4,000 SF (Main House) + 800 SF (ADU) + 15,000 SF (Impervious Area, excluding Primary Driveway) + 1,800 SF (Primary Driveway outside of 50' radius) = 21,600 SF

LEA & BRAZE ENGINEERING, INC.
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CAÑADA COURT SUBDIVISION
1101 CANADA ROAD
WOODSIDE, CALIFORNIA
APN: 073-011-270
SAN MATEO COUNTY

TENTATIVE MAP
UTILITIES PLAN

2	PLAN CHECK 03-01-23	AS
1	PLAN CHECK 01-04-23	TC
	REVISIONS	BY

JOB NO:	2210245
DATE:	09-23-22
SCALE:	AS NOTED
DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	TM-4.0

GENERAL NOTES

ALL GENERAL NOTES, SHEET NOTES, AND LEGEND NOTES FOUND IN THESE DOCUMENTS SHALL APPLY TYPICALLY THROUGHOUT. IF INCONSISTENCIES ARE FOUND IN THE VARIOUS NOTATIONS, NOTIFY THE ENGINEER IMMEDIATELY IN WRITING REQUESTING CLARIFICATION.

THESE DRAWINGS AND THEIR CONTENT ARE AND SHALL REMAIN THE PROPERTY OF LEA AND BRAZE ENGINEERING, INC. WHETHER THE PROJECT FOR WHICH THEY ARE PREPARED IS EXECUTED OR NOT. THEY ARE NOT TO BE USED BY ANY PERSONS ON OTHER PROJECTS OR EXTENSIONS OF THE PROJECT EXCEPT BY AGREEMENT IN WRITING AND WITH APPROPRIATE COMPENSATION TO THE ENGINEER.

ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND TRADE STANDARDS WHICH GOVERN EACH PHASE OF WORK INCLUDING, BUT NOT LIMITED TO, CALIFORNIA MECHANICAL CODE, CALIFORNIA PLUMBING CODE, CALIFORNIA ELECTRICAL CODE, CALIFORNIA FIRE CODE, CALTRANS STANDARDS AND SPECIFICATIONS, AND ALL APPLICABLE STATE AND/OR LOCAL CODES AND/OR LEGISLATION.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND ALL SUBCONTRACTORS TO CHECK AND VERIFY ALL CONDITIONS, DIMENSIONS, LINES AND LEVELS INDICATED. PROPER FIT AND ATTACHMENT OF ALL PARTS IS REQUIRED. SHOULD THERE BE ANY DISCREPANCIES, IMMEDIATELY NOTIFY THE ENGINEER FOR CORRECTION OR ADJUSTMENT THE EVENT OF FAILURE TO DO SO, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTION OF ANY ERROR.

ALL DIMENSIONS AND CONDITIONS SHALL BE CHECKED AND VERIFIED ON THE JOB BY EACH SUBCONTRACTOR BEFORE HE/SHE BEGINS HIS/HER WORK. ANY ERRORS, OMISSION, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER/CONTRACTOR BEFORE CONSTRUCTION BEGINS.

COMMENCEMENT OF WORK BY THE CONTRACTOR AND/OR ANY SUBCONTRACTOR SHALL INDICATE KNOWLEDGE AND ACCEPTANCE OF ALL CONDITIONS DESCRIBED IN THESE CONSTRUCTION DOCUMENTS, OR EXISTING ON SITE, WHICH COULD AFFECT THEIR WORK.

WORK SEQUENCE

IN THE EVENT ANY SPECIAL SEQUENCING OF THE WORK IS REQUIRED BY THE OWNER OR THE CONTRACTOR, THE CONTRACTOR SHALL ARRANGE A CONFERENCE BEFORE ANY SUCH WORK IS BEGUN.

SITE EXAMINATION: THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL THOROUGHLY EXAMINE THE SITE AND FAMILIARIZE HIM/HERSELF WITH THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. THE CONTRACTOR SHALL VERIFY AT THE SITE ALL MEASUREMENTS AFFECTING HIS/HER WORK AND SHALL BE RESPONSIBLE FOR THE CORRECTIONS OF THE SAME. NO EXTRA COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR EXPENSES DUE TO HIS/HER NEGLECT TO EXAMINE, OR FAILURE TO DISCOVER, CONDITIONS WHICH AFFECT HIS/HER WORK.

LEA AND BRAZE ENGINEERING, INC. EXPRESSLY RESERVES ITS COMMON LAW COPYRIGHT AND OTHER PROPERTY RIGHTS IN THESE PLANS. THESE PLANS ARE NOT TO BE REPRODUCED, CHANGED OR COPIED IN ANY FORM OR MANNER WHATSOEVER, NOR ARE THEY TO BE ASSIGNED TO A THIRD PARTY WITHOUT FIRST OBTAINING THE WRITTEN PERMISSION AND CONSENT OF LEA AND BRAZE ENGINEERING, INC. IN THE EVENT OF UNAUTHORIZED REUSE OF THESE PLANS BY A THIRD PARTY, THE THIRD PARTY SHALL HOLD HARMLESS LEA AND BRAZE ENGINEERING, INC.

CONSTRUCTION IS ALWAYS LESS THAN PERFECT SINCE PROJECTS REQUIRE THE COORDINATION AND INSTALLATION OF MANY INDIVIDUAL COMPONENTS BY VARIOUS CONSTRUCTION INDUSTRY TRADES. THESE DOCUMENTS CANNOT PORTRAY ALL COMPONENTS OR ASSEMBLIES EXACTLY. IT IS THE INTENTION OF THESE ENGINEERING DOCUMENTS THAT THEY REPRESENT A REASONABLE STANDARD OF CARE IN THEIR CONTENT. IT IS ALSO PRESUMED BY THESE DOCUMENTS THAT CONSTRUCTION REVIEW SERVICES WILL BE PROVIDED BY THE ENGINEER. SHOULD THE OWNER NOT RETAIN THE ENGINEER TO PROVIDE SUCH SERVICES, OR SHOULD HE/SHE RETAIN THE ENGINEER TO PROVIDE ONLY PARTIAL OR LIMITED SERVICES, THEN IT SHALL BE THE OWNER'S AND CONTRACTOR'S RESPONSIBILITY TO FULLY RECOGNIZE AND PROVIDE THAT STANDARD OF CARE.

IF THE OWNER OR CONTRACTOR OBSERVES OR OTHERWISE BECOMES AWARE OF ANY FAULT OR DEFECT IN THE PROJECT OR NONCONFORMANCE WITH THE CONTRACT DOCUMENTS, PROMPT WRITTEN NOTICE THEREOF SHALL BE GIVEN BY THE OWNER AND/OR CONTRACTOR TO THE ENGINEER.

THE ENGINEER SHALL NOT HAVE CONTROL OF OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES, OR FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

SITE PROTECTION

PROTECT ALL LANDSCAPING THAT IS TO REMAIN. ANY DAMAGE OR LOSS RESULTING FROM EXCAVATION, GRADING, OR CONSTRUCTION WORK SHALL BE CORRECTED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING SITE UTILITIES AND SHALL COORDINATE THEIR REMOVAL OR MODIFICATIONS (IF ANY) TO AVOID ANY INTERRUPTION OF SERVICE TO ADJACENT AREAS. THE GENERAL CONTRACTOR SHALL INFORM HIM/HERSELF OF MUNICIPAL REGULATIONS AND CARRY OUT HIS/HER WORK IN COMPLIANCE WITH ALL FEDERAL AND STATE REQUIREMENTS TO REDUCE FIRE HAZARDS AND INJURIES TO THE PUBLIC.

STORMWATER POLLUTION PREVENTION NOTES

1) STORE, HANDLE, AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES PROPERLY, SO AS TO PREVENT THEIR CONTACT WITH STORMWATER.

2) CONTROL AND PREVENT THE DISCHARGE OF ALL POTENTIAL POLLUTANTS, INCLUDING SOLID WASTES, PAINTS, CONCRETE, PETROLEUM PRODUCTS, CHEMICALS, WASH WATER OR SEDIMENT, AND NON-STORMWATER DISCHARGES TO STORM DRAINS AND WATER COURSES.

3) USE SEDIMENT CONTROL OR FILTRATION TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT.

4) AVOID CLEANING, FUELING, OR MAINTAINING VEHICLES ON SITE, EXCEPT IN A DESIGNATED AREA IN WHICH RUNOFF IS CONTAINED AND TREATED.

5) DELINEATE CLEARING LIMITS, EASEMENTS, SETBACKS, SENSITIVE OR CRITICAL AREAS, BUFFER ZONES, TREES AND DISCHARGE COURSE WITH FIELD MARKERS.

6) PROTECT ADJACENT PROPERTIES AND UNDISTURBED AREAS FROM CONSTRUCTION IMPACTS USING VEGETATIVE BUFFER STRIPS, SEDIMENT BARRIERS OF FILTERS, DIKES, MULCHING, OR OTHER MEASURES AS APPROPRIATE.

7) PERFORM CLEARING AND EARTH MOVING ACTIVITIES DURING DRY WEATHER TO THE MAXIMUM EXTENT PRACTICAL.

8) LIMIT AND TIME APPLICATIONS OF PESTICIDES AND FERTILIZERS TO PREVENT POLLUTED RUNOFF.

9) LIMIT CONSTRUCTION ACCESS ROUTES AND STABILIZE DESIGNATED ACCESS POINTS.

10) AVOID TRACKING DIRT OR MATERIALS OFF-SITE; CLEAN OFF-SITE PAVED AREAS AND SIDEWALKS USING DRY SWEEPING METHODS TO THE MAXIMUM EXTENT PRACTICAL.

SUPPLEMENTAL MEASURES

A. THE PHRASE "NO DUMPING – DRAINS TO BAY" OR EQUALLY EFFECTIVE PHRASE MUST BE LABELED ON STORM DRAIN INLETS (BY STENCILING, BRANDING, OR PLAQUES) TO ALERT THE PUBLIC TO THE DESTINATION OF STORM WATER AND TO PREVENT DIRECT DISCHARGE OF POLLUTANTS INTO THE STORM DRAIN.

B. USING FILTRATION MATERIALS ON STORM DRAIN COVERS TO REMOVE SEDIMENT FROM DEWATERING EFFLUENT.

C. STABILIZING ALL DENUDED AREAS AND MAINTAINING EROSION CONTROL MEASURES CONTINUOUSLY FROM OCTOBER 15 AND APRIL 15.

D. REMOVING SPOILS PROMPTLY, AND AVOID STOCKPILING OF FILL MATERIALS, WHEN RAIN IS FORECAST. IF RAIN THREATENS, STOCKPILED SOILS AND OTHER MATERIALS SHALL BE COVERED WITH A TARP OR OTHER WATERPROOF MATERIAL.

E. STORING, HANDLING, AND DISPOSING OF CONSTRUCTION MATERIALS AND WASTES SO AS TO AVOID THEIR ENTRY TO THE STORM DRAIN SYSTEMS OR WATER BODY.

F. AVOIDING CLEANING, FUELING, OR MAINTAINING VEHICLES ON-SITE, EXCEPT IN AN AREA DESIGNATED TO CONTAIN AND TREAT RUNOFF.

GRADING & DRAINAGE NOTES:

1. SCOPE OF WORK

THESE SPECIFICATIONS AND APPLICABLE PLANS PERTAIN TO AND INCLUDE ALL SITE GRADING AND EARTHWORK ASSOCIATED WITH THE PROJECT INCLUDING, BUT NOT LIMITED TO THE FURNISHING OF ALL LABOR, TOOLS AND EQUIPMENT NECESSARY FOR SITE CLEARING AND GRUBBING, SITE PREPARATION, DISPOSAL OF EXCESS OR UNSUITABLE MATERIAL, STRIPPING, KEYING, EXCAVATION, OVER EXCAVATION, RECOMPACTION PREPARATION FOR SOIL RECEIVING FILL, PAVEMENT, FOUNDATION OF SLABS, EXCAVATION, IMPORTATION OF ANY REQUIRED FILL MATERIAL, PROCESSING, PLACEMENT AND COMPACTION OF FILL AND SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING TO CONFORM TO THE LINES, GRADING AND SLOPE SHOWN ON THE PROJECT GRADING PLANS.

2. GENERAL

A. ALL SITE GRADING AND EARTHWORK SHALL CONFORM TO THE RECOMMENDATIONS OF THESE SPECIFICATIONS, THE SOILS REPORT BY MURRAY ENGINEERS; AND THE TOWN OF WOODSIDE.

B. ALL FILL MATERIALS SHALL BE DENSIFIED SO AS TO PRODUCE A DENSITY NOT LESS THAN 90% RELATIVE COMPACTION BASED UPON ASTM TEST DESIGNATION D1557. FIELD DENSITY TEST WILL BE PERFORMED IN ACCORDANCE WITH ASTM TEST DESIGNATION 2922 AND 3017. THE LOCATION AND FREQUENCY OF THE FIELD DENSITY TEST WILL BE AS DETERMINED BY THE SOIL ENGINEER. THE RESULTS OF THESE TEST AND COMPLIANCE WITH THE SPECIFICATIONS WILL BE THE BASIS UPON WHICH SATISFACTORY COMPLETION OF THE WORK WILL BE JUDGED BY THE SOIL ENGINEER. ALL CUT AND FILL SLOPES SHALL BE CONSTRUCTED AS SHOWN ON PLANS, BUT NO STEEPER THAN TWO (2) HORIZONTAL TO ONE (1) VERTICAL.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SATISFACTORY COMPLETION OF ALL THE EARTHWORK IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. NO DEVIATION FROM THESE SPECIFICATIONS SHALL BE MADE EXCEPT UPON WRITTEN APPROVAL BY THE SOILS ENGINEER. BOTH CUT AND FILL AREAS SHALL BE SURFACE COMPLETED TO THE SATISFACTION OF THE SOILS ENGINEER AT THE CONCLUSION OF ALL GRADING OPERATIONS AND PRIOR TO FINAL ACCEPTANCE. THE CONTRACTOR SHALL NOTIFY THE SOILS ENGINEER AT LEAST TWO (2) WORKING DAYS PRIOR TO DOING ANY SITE GRADING AND EARTHWORK INCLUDING CLEARING.

3. CLEARING AND GRUBBING

A. THE CONTRACTOR SHALL ACCEPT THE SITE IN ITS PRESENT CONDITION. ALL EXISTING PUBLIC IMPROVEMENTS SHALL BE PROTECTED. ANY IMPROVEMENTS DAMAGED SHALL BE REPLACED BY THE CONTRACTOR AS DIRECTED BY THE LOCAL JURISDICTION WITH NO EXTRA COMPENSATION.

B. ALL ABANDONED BUILDINGS AND FOUNDATIONS, TREE (EXCEPT THOSE SPECIFIED TO REMAIN FOR LANDSCAPING PURPOSES), FENCES, VEGETATION AND ANY SURFACE DEBRIS SHALL BE REMOVED AND DISPOSED OF OFF THE SITE BY THE CONTRACTOR.

C. ALL ABANDONED SEPTIC TANKS AND ANY OTHER SUBSURFACE STRUCTURES EXISTING IN PROPOSED DEVELOPMENT AREAS SHALL BE REMOVED PRIOR TO ANY GRADING OR FILL OPERATION. ALL APPURTENANT DRAIN FIELDS AND OTHER CONNECTING LINES MUST ALSO BE TOTALLY REMOVED.

D. ALL ABANDONED UNDERGROUND IRRIGATION OR UTILITY LINES SHALL BE REMOVED OR DEMOLISHED. THE APPROPRIATE FINAL DISPOSITION OF SUCH LINES DEPEND UPON THEIR DEPTH AND LOCATION AND THE METHOD OF REMOVAL OR DEMOLITION SHALL BE DETERMINED BY THE SOILS ENGINEER. ONE OF THE FOLLOWING METHODS WILL BE USED:

(1) EXCAVATE AND TOTALLY REMOVE THE UTILITY LINE FROM THE TRENCH.

(2) EXCAVATE AND CRUSH THE UTILITY LINE IN THE TRENCH.

(3) CAP THE ENDS OF THE UTILITY LINE WITH CONCRETE TO PREVENT THE ENTRANCE OF WATER. THE LOCATIONS AT WHICH THE UTILITY LINE WILL BE CAPPED WILL BE DETERMINED BY THE UTILITY DISTRICT ENGINEER. THE LENGTH OF THE CAP SHALL NOT BE LESS THAN FIVE FEET, AND THE CONCRETED MIX EMPLOYED SHALL HAVE MINIMUM SHRINKAGE.

4. SITE PREPARATION AND STRIPPING

A. ALL SURFACE ORGANICS SHALL BE STRIPPED AND REMOVED FROM BUILDING PADS, AREAS TO RECEIVE COMPACTED FILL AND PAVEMENT AREAS.

B. UPON THE COMPLETION OF THE ORGANIC STRIPPING OPERATION, THE GROUND SURFACE (NATIVE SOIL SUBGRADE) OVER THE ENTIRE AREA OF ALL BUILDING PADS, STREET AND PAVEMENT AREAS AND ALL AREAS TO RECEIVE COMPACTED FILL SHALL BE PLOWED OR SCARIFIED UNTIL THE SURFACE IS FREE OF RUTS, HUMMOCKS OR OTHER UNEVEN FEATURES WHICH MAY INHIBIT UNIFORM SOIL COMPACTION. THE GROUND SURFACE SHALL THEN BE DISCED OR BLADED TO A DEPTH OF AT LEAST 6 INCHES. UPON ENGINEER'S SATISFACTION, THE NEW SURFACE SHALL BE WATER CONDITIONED AND RECOMPACTED PER REQUIREMENTS FOR COMPACTING FILL MATERIAL.

5. EXCAVATION

A. UPON COMPLETION OF THE CLEARING AND GRUBBING, SITE PREPARATION AND STRIPPING, THE CONTRACTOR SHALL MAKE EXCAVATIONS TO LINES AND GRADES NOTED ON THE PLAN. WHERE REQUIRED BY THE SOILS ENGINEER, UNACCEPTABLE NATIVE SOILS OR UNENGINEERED FILL SHALL BE OVER EXCAVATED BELOW THE DESIGN GRADE. SEE PROJECT SOILS REPORT FOR DISCUSSION OF OVER EXCAVATION OF THE UNACCEPTABLE MATERIAL. RESULTING GROUND LINE SHALL BE SCARIFIED, MOISTURE-CONDITIONED AND RECOMPACTED AS SPECIFIED IN SECTION 4 OF THESE SPECIFICATIONS. COMPACTED FILL MATERIAL SHALL BE PLACED TO BRING GROUND LEVEL BACK TO DESIGN GRADE.

B. EXCAVATED MATERIALS SUITABLE FOR COMPACTED FILL MATERIAL SHALL BE UTILIZED IN MAKING THE REQUIRED COMPACTED FILLS. THOSE NATIVE MATERIALS CONSIDERED UNSUITABLE BY THE SOILS ENGINEER SHALL BE DISPOSED OF OFF THE SITE BY THE CONTRACTOR.

6. PLACING, SPREADING AND COMPACTING FILL MATERIAL

A. FILL MATERIALS

THE MATERIALS PROPOSED FOR USE AS COMPACTED FILL SHALL BE APPROVED BY THE SOILS ENGINEER BEFORE COMMENCEMENT OF GRADING OPERATIONS. THE NATIVE MATERIAL IS CONSIDERED SUITABLE FOR FILL; HOWEVER, ANY NATIVE MATERIAL DESIGNATED UNSUITABLE BY THE SOILS ENGINEER SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR. ANY IMPORTED MATERIAL SHALL BE APPROVED FOR USE BY THE SOILS ENGINEER, IN WRITING, BEFORE BEING IMPORTED TO THE SITE AND SHALL POSSESS SUFFICIENT FINES TO PROVIDE A COMPETENT SOIL MATRIX AND SHALL BE FREE OF VEGETATIVE AND ORGANIC MATTER AND OTHER DELETERIOUS MATERIALS. ALL FILL VOIDS SHALL BE FILLED AND PROPERLY COMPACTED. NO ROCKS LARGER THAN THREE INCHES IN DIAMETER SHALL BE PERMITTED.

B. FILL CONSTRUCTION

THE SOILS ENGINEER SHALL APPROVE THE NATIVE SOIL SUBGRADE BEFORE PLACEMENT OF ANY COMPACTED FILL MATERIAL. UNACCEPTABLE NATIVE SOIL SHALL BE REMOVED AS DIRECTED BY THE SOILS ENGINEER. THE RESULTING GROUND LINE SHALL BE SCARIFIED MOISTURE CONDITIONED AND RECOMPACTED AS SPECIFIED IN SECTION 4 OF THESE SPECIFICATIONS. COMPACTED FILL MATERIAL SHALL BE PLACED TO BRING GROUND LEVEL BACK TO DESIGN GRADE. GROUND PREPARATION SHALL BE FOLLOWED CLOSELY BY FILL PLACEMENT TO PREVENT DRYING OUT OF THE SUBSOIL BEFORE PLACEMENT OF THE FILL.

THE APPROVED FILL MATERIALS SHALL BE PLACED IN UNIFORM HORIZONTAL LAYERS NO THICKER THAN 8" IN LOOSE THICKNESS. LAYERS SHALL BE SPREAD EVENLY AND SHALL BE THOROUGHLY BLADE MIXED DURING THE SPREADING TO ENSURE UNIFORMITY OF MATERIAL IN EACH LAYER. THE SCARIFIED SUBGRADE AND FILL MATERIAL SHALL BE MOISTURE CONDITIONED TO AT LEAST OPTIMUM MOISTURE. WHEN THE MOISTURE CONTENT OF THE FILL IS BELOW THAT SPECIFIED, WATER SHALL BE ADDED UNTIL THE MOISTURE DURING THE COMPACTION PROCESS. WHEN THE MOISTURE CONTENT OF THE FILL IS ABOVE THAT SPECIFIED, THE FILL MATERIAL SHALL BE AERATED BY BLADING OR OTHER SATISFACTORY METHODS UNTIL THE MOISTURE CONTENT IS AS SPECIFIED.

AFTER EACH LAYER HAS BEEN PLACED, MIXED, SPREAD EVENLY AND MOISTURE CONDITIONED, IT SHALL BE COMPACTED TO AT LEAST THE SPECIFIED DENSITY.

THE FILL OPERATION SHALL BE CONTINUED IN COMPACTED LAYERS AS SPECIFIED ABOVE UNTIL THE FILL HAS BEEN BROUGHT TO THE FINISHED SLOPES AND GRADES AS SHOWN ON THE PLANS. NO LAYER SHALL BE ALLOWED TO DRY OUT BEFORE SUBSEQUENT LAYERS ARE PLACED.

COMPACTION EQUIPMENT SHALL BE OF SUCH DESIGN THAT IT WILL BE ABLE TO COMPACT THE FILL TO THE SPECIFIED MINIMUM COMPACTION WITHIN THE SPECIFIED MOISTURE CONTENT RANGE. COMPACTION OF EACH LAYER SHALL BE CONTINUOUS OVER ITS ENTIRE AREA UNTIL THE REQUIRED MINIMUM DENSITY HAS BEEN OBTAINED.

7. CUT OR FILL SLOPES

ALL CONSTRUCTED SLOPES, BOTH CUT AND FILL, SHALL BE NO STEEPER THAN 2 TO 1 (HORIZONTAL TO VERTICAL). DURING THE GRADING OPERATION, COMPACTED FILL SLOPES SHALL BE OVERFILLED BY AT LEAST ONE FOOT HORIZONTALLY AT THE COMPLETION OF THE GRADING OPERATIONS, THE EXCESS FILL EXISTING ON THE SLOPES SHALL BE BLADED OFF TO CREATE THE FINISHED SLOPE EMBANKMENT. ALL CUT AND FILL SLOPES SHALL BE TRACK WALKED AFTER BEING BROUGHT TO FINISH GRADE AND THEN BE PLANTED WITH EROSION CONTROL SLOPE PLANTING. THE SOILS ENGINEER SHALL REVIEW ALL CUT SLOPES TO DETERMINE IF ANY ADVERSE GEOLOGIC CONDITIONS ARE EXPOSED. IF SUCH CONDITIONS DO OCCUR, THE SOILS ENGINEER SHALL RECOMMEND THE APPROPRIATE MITIGATION MEASURES AT THE TIME OF THEIR DETECTION.

8. SEASONAL LIMITS AND DRAINAGE CONTROL

FILL MATERIALS SHALL NOT BE PLACED, SPREAD OR COMPACTED WHILE IT IS AT AN UNSUITABLY HIGH MOISTURE CONTENT OR DURING OTHERWISE UNFAVORABLE CONDITIONS. WHEN THE WORK IS INTERRUPTED FOR ANY REASON THE FILL OPERATIONS SHALL NOT BE RESUMED UNTIL FIELD TEST PERFORMED BY THE SOILS ENGINEER INDICATE THAT THE MOISTURE CONDITIONS IN AREAS TO BE FILLED ARE AS PREVIOUSLY SPECIFIED. ALL EARTH MOVING AND WORKING OPERATIONS SHALL BE CONTROLLED TO PREVENT WATER FROM RUNNING INTO EXCAVATED AREAS. ALL EXCESS WATER SHALL BE PROMPTLY REMOVED AND THE SITE KEPT DRY.

9. DUST CONTROL

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY FOR THE ALLEVIATON OR PREVENTION OF ANY DUST NUISANCE ON OR ABOUT THE SITE CAUSED BY THE CONTRACTOR'S OPERATION EITHER DURING THE PERFORMANCE OF THE GRADING OR RESULTING FROM THE CONDITON IN WHICH THE CONTRACTOR LEAVES THE SITE. THE CONTRACTOR SHALL ASSUME ALL LIABILITY INCLUDING COURT COST OF CO-DEFENDANTS FOR ALL CLAIMS RELATED TO DUST OR WIND-BLOWN MATERIALS ATTRIBUTABLE TO HIS WORK. COST FOR THIS ITEM OF WORK IS TO BE INCLUDED IN THE EXCAVATION ITEM AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

10. INDEMNITY

THE CONTRACTOR WILL HOLD HARMLESS, INDEMNIFY AND DEFEND THE ENGINEER, THE OWNER AND HIS CONSULTANTS AND EACH OF THEIR OFFICERS AND EMPLOYEES AND AGENTS, FROM ANY AND ALL LIABILITY CLAIMS, LOSSES OR DAMAGE ARISING OR ALLEGED TO HEREIN, BUT NOT INCLUDING THE SOLE NEGLIGENCE OF THE OWNER, THE ARCHITECT, THE ENGINEER AND HIS CONSULTANTS AND EACH OF THEIR OFFICERS AND EMPLOYEES AND AGENTS.

11. SAFETY

IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE. INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

THE DUTY OF THE ENGINEERS TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN, ON OR NEAR THE CONSTRUCTION SITE.

12. GUARANTEE

NEITHER THE FINAL PAYMENT, NOR THE PROVISIONS IN THE CONTRACT, NOR PARTIAL, NOR ENTIRE USE OR OCCUPANCY OF THE PREMISES BY THE OWNER SHALL CONSTITUTE AN ACCEPTANCE OF THE WORK NOT DONE IN ACCORDANCE WITH THE CONTRACT OR RELIEVES THE CONTRACTOR OF LIABILITY IN RESPECT TO ANY EXPRESS WARRANTIES OR RESPONSIBILITY FOR FAULTY MATERIAL OR WORKMANSHIP.

THE CONTRACTOR SHALL REMEDY ANY DEFECTS IN WORK AND PAY FOR ANY DAMAGE TO OTHER WORK RESULTING THERE FROM WHICH SHALL APPEAR WITHIN A PERIOD OF ONE (1) CALENDAR YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK.

13. TRENCH BACKFILL

EITHER THE ON-SITE INORGANIC SOIL OR APPROVED IMPORTED SOIL MAY BE USED AS TRENCH BACKFILL. THE BACKFILL MATERIAL SHALL BE MOISTURE CONDITIONED PER THESE SPECIFICATIONS AND SHALL BE PLACED IN LIFTS OF NOT MORE THAN SIX INCHES IN HORIZONTAL UNCOMPACTED LAYERS AND BE COMPACTED BY MECHANICAL MEANS TO A MINIMUM OF 90% RELATIVE COMPACTION. IMPORTED SAND MAY BE USED FOR TRENCH BACKFILL MATERIAL PROVIDED IT IS COMPACTED TO AT LEAST 90% RELATIVE COMPACTION. WATER JETTING ASSOCIATED WITH COMPACTION USING VIBRATORY EQUIPMENT WILL BE PERMITTED ONLY WITH IMPORTED SAND BACKFILL WITH THE APPROVAL OF THE SOILS ENGINEER. ALL PIPES SHALL BE BEDDED WITH SAND EXTENDING FROM THE TRENCH BOTTOM TO TWELVE INCHES ABOVE THE PIPE. SAND BEDDING IS TO BE COMPACTED AS SPECIFIED ABOVE FOR SAND BACKFILL.

14. EROSION CONTROL

A. ALL GRADING, EROSION AND SEDIMENT CONTROL AND RELATED WORK UNDERTAKEN ON THIS SITE IS SUBJECT TO ALL TERMS AND CONDITIONS OF THE COUNTY GRADING ORDINANCE AND MADE A PART HEREOF BY REFERENCE.

B. THE CONTRACTOR WILL BE LIABLE FOR ANY AND ALL DAMAGES TO ANY PUBLICLY OWNED AND MAINTAINED ROAD CAUSED BY THE AFORESAID CONTRACTOR'S GRADING ACTIVITIES, AND SHALL BE RESPONSIBLE FOR THE CLEANUP OF ANY MATERIAL SPILLED ON ANY PUBLIC ROAD ON THE HAUL ROUTE.

C. THE EROSION CONTROL MEASURES ARE TO BE OPERABLE DURING THE RAINY SEASON, GENERALLY FROM OCTOBER FIRST TO APRIL FIFTEENTH. EROSION CONTROL PLANTING IS TO BE COMPLETED BY OCTOBER FIRST. NO GRADING OR UTILITY TRENCHING SHALL OCCUR BETWEEN OCTOBER FIRST AND APRIL FIFTEENTH UNLESS AUTHORIZED BY THE LOCAL JURISDICTION.

D. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED AND CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS ONLY WITH THE APPROVAL OF OR AT THE DIRECTION OF THE SOILS ENGINEER.

E. DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT-LADEN RUNOFF TO ANY STORM DRAINAGE SYSTEM.

F. ALL EROSION CONTROL FACILITIES MUST BE INSPECTED AND REPAIRED AT THE END OF EACH WORKING DAY DURING THE RAINY SEASON.

G. WHEN NO LONGER NECESSARY AND PRIOR TO FINAL ACCEPTANCE OF DEVELOPMENT, SEDIMENT BASINS SHALL BE REMOVED OR OTHERWISE DEACTIVATED AS REQUIRED BY THE LOCAL JURISDICTION.

H. A CONSTRUCTION ENTRANCE SHALL BE PROVIDED AT ANY POINT OF EGRESS FROM THE SITE TO ROADWAY. A CONSTRUCTION ENTRANCE SHOULD BE COMPOSED OF COARSE DRAIN ROCK (2" TO 3") MINIMUM DIAMETER) AT LEAST EIGHT INCHES THICK BY FIFTY (50) FEET LONG BY TWENTY (20) FEET WIDE UNLESS SHOWN OTHERWISE ON PLAN AND SHALL BE MAINTAINED UNTIL THE SITE IS PAVED.

I. ALL AREAS SPECIFIED FOR HYDROSEEDING SHALL BE NOZZLE PLANTED WITH STABILIZATION MATERIAL CONSISTING OF FIBER, SEED, FERTILIZER AND WATER, MIXED AND APPLIED IN THE FOLLOWING PROPORTIONS:

FIBER, 2000 LBS/ACRE
SEED, 200 LBS/ACRE (SEE NOTE J, BELOW)
FERTILIZER (11-8-4), 500 LBS/ACRE
WATER, AS REQUIRED FOR APPLICATION

J. SEED MIX SHALL BE PER CALTRANS STANDARDS.

K. WATER UTILIZED IN THE STABILIZATION MATERIAL SHALL BE OF SUCH QUALITY THAT IT WILL PROMOTE GERMINATION AND STIMULATE GROWTH OF PLANTS. IT SHALL BE FREE OF POLLUTANT MATERIALS AND WEED SEED.

L. HYDROSEEDING SHALL CONFORM TO THE PROVISIONS OF SECTION 20, EROSION CONTROL AND HIGHWAY PLANTING", OF THE STANDARD SPECIFICATIONS OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, AS LAST REVISED.

M. A DISPERSING AGENT MAY BE ADDED TO THE HYDROSEEDING MATERIAL, PROVIDED THAT THE CONTRACTOR FURNISHES SUITABLE EVIDENCE THAT THE ADDITIVE WILL NOT ADVERSELY AFFECT THE PERFORMANCE OF THE SEEDING MIXTURE.

N. STABILIZATION MATERIALS SHALL BE APPLIED AS SOON AS PRACTICABLE AFTER COMPLETION OF GRADING OPERATIONS AND PRIOR TO THE ONSET OF WINTER RAINS, OR AT SUCH OTHER TIME AS DIRECTED BY THE COUNTY ENGINEER. THE MATERIAL SHALL BE APPLIED BEFORE INSTALLATION OF OTHER LANDSCAPING MATERIALS SUCH AS TREES, SHRUBS AND GROUND COVERS.

O. THE STABILIZATION MATERIAL SHALL BE APPLIED WITHIN 4-HOURS AFTER MIXING. MIXED MATERIAL NOT USED WITHIN 4-HOURS SHALL BE REMOVED FROM THE SITE.

P. THE CONTRACTOR SHALL MAINTAIN THE SOIL STABILIZATION MATERIAL AFTER PLACEMENT. THE COUNTY ENGINEER MAY REQUIRE SPRAY APPLICATION OF WATER OR OTHER MAINTENANCE ACTIVITIES TO ASSURE THE EFFECTIVENESS OF THE STABILIZATION PROCESS. APPLICATION OF WATER SHALL BE ACCOMPLISHED USING NOZZLES THAT PRODUCE A SPRAY THAT DOES NOT CONCENTRATE OR WASH AWAY THE STABILIZATION MATERIALS.

15. CLEANUP

THE CONTRACTOR MUST MAINTAIN THE SITE CLEAN, SAFE AND IN USABLE CONDITION. ANY SPILLS OF SOIL, ROCK OR CONSTRUCTION MATERIAL MUST BE REMOVED FROM THE SITE BY THE CONTRACTOR DURING CONSTRUCTION AND UPON COMPLETION OF THE PROJECT. COST FOR THIS ITEM OF WORK SHALL BE INCLUDED IN THE EXCAVATION AND COMPACTION ITEM AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

NOTE:
THESE NOTES ARE INTENDED TO BE USED AS A GENERAL GUIDELINE. THE REFERENCED SOILS REPORT FOR THE PROJECT AND GOVERNING AGENCY GRADING ORDINANCE SHALL SUPERSEDE THESE NOTES. THE SOILS ENGINEER MAY MAKE ON-SITE RECOMMENDATIONS DURING GRADING OPERATIONS.

REGISTERED PROFESSIONAL ENGINEER · JAMES TOBY · No. 63127 · CIVIL · STATE OF CALIFORNIA · ORIGINAL SIGNATURES IN BLUE INK

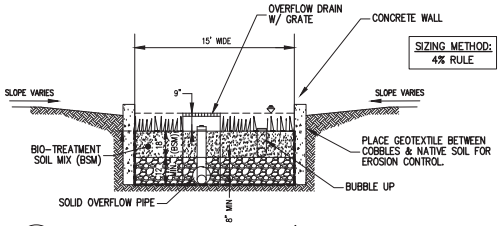
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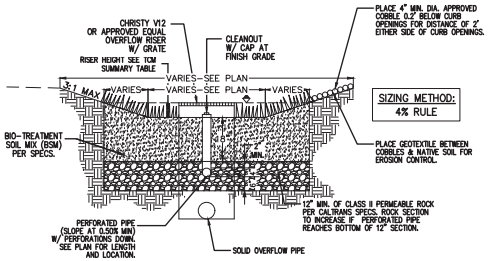
TENTATIVE MAP
GRADING
SPECIFICATIONS

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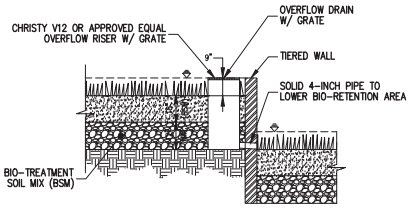
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DATE: 09-23-22
SCALE: NO SCALE
DESIGN BY: TC
CHECKED BY: CP
SHEET NO:
TM-5.0
7 OF 10 SHEETS



1 TM-6.0 **BIO-RETENTION BASIN W/ WALL**
NTS



2 TM-6.0 **BIO-RETENTION BASIN**
NTS



3 TM-6.0 **BIO-RETENTION TIERED BASIN**
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TENTATIVE MAP
DETAILS

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1	PLAN CHECK 01-04-23	TC
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DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	

TM-6.0

8 OF 10 SHEETS

PURPOSE:

THE PURPOSE OF THIS PLAN IS TO STABILIZE THE SITE TO PREVENT EROSION OF GRADED AREAS AND TO PREVENT SEDIMENTATION FROM LEAVING THE CONSTRUCTION AREA AND AFFECTING NEIGHBORING SITES, NATURAL AREAS, PUBLIC FACILITIES OR ANY OTHER AREA THAT MIGHT BE AFFECTED BY SEDIMENTATION. ALL MEASURES SHOWN ON THIS PLAN SHOULD BE CONSIDERED THE MINIMUM REQUIREMENTS NECESSARY. SHOULD FIELD CONDITIONS DICTATE ADDITIONAL MEASURES, SUCH MEASURES SHALL BE PER CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL AND THE CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION. LEA & BRAZE ENGINEERING SHOULD BE NOTIFIED IMMEDIATELY SHOULD CONDITIONS CHANGE.

EROSION CONTROL NOTES:

1. IT SHALL BE THE OWNER'S/CONTRACTOR'S RESPONSIBILITY TO MAINTAIN CONTROL OF THE ENTIRE CONSTRUCTION OPERATION AND TO KEEP THE ENTIRE SITE IN COMPLIANCE WITH THIS EROSION CONTROL PLAN.
2. THE INTENTION OF THIS PLAN IS FOR INTERIM EROSION AND SEDIMENT CONTROL ONLY. ALL EROSION CONTROL MEASURES SHALL CONFORM TO CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL, THE CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION, AND THE LOCAL GOVERNING AGENCY FOR THIS PROJECT.
3. OWNER/CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO, DURING, AND AFTER STORM EVENTS. PERSON IN CHARGE OF MAINTAINING EROSION CONTROL MEASURES SHOULD WATCH LOCAL WEATHER REPORTS AND ACT APPROPRIATELY TO MAKE SURE ALL NECESSARY MEASURES ARE IN PLACE.
4. SANITARY FACILITIES SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
5. DURING THE RAINY SEASON, ALL PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT-LADEN RUNOFF TO ANY STORM DRAINAGE SYSTEM, INCLUDING EXISTING DRAINAGE SWALES AND WATERCOURSES.
6. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION WILL BE MINIMIZED. COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS CONCERNING POLLUTION SHALL BE MAINTAINED AT ALL TIMES.
7. CONTRACTOR SHALL PROVIDE DUST CONTROL AS REQUIRED BY THE APPROPRIATE FEDERAL, STATE AND LOCAL AGENCY REQUIREMENTS.
8. ALL MATERIALS NECESSARY FOR THE APPROVED EROSION CONTROL MEASURES SHALL BE IN PLACE BY OCTOBER 15TH.
9. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE RAINY SEASON, OR FROM OCTOBER 15TH THROUGH APRIL 15TH, WHICHEVER IS LONGER.
10. IN THE EVENT OF RAIN, ALL GRADING WORK IS TO CEASE IMMEDIATELY AND THE SITE IS TO BE SEALED IN ACCORDANCE WITH THE APPROVAL EROSION CONTROL MEASURES AND APPROVED EROSION CONTROL PLAN.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND REPAIRING EROSION CONTROL SYSTEMS AFTER EACH STORM.
12. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY LOCAL JURISDICTION'S ENGINEERING DEPARTMENT OR BUILDING OFFICIALS.
13. MEASURES SHALL BE TAKEN TO COLLECT OR CLEAN ANY ACCUMULATION OR DEPOSIT OF DIRT, MUD, SAND, ROCKS, GRAVEL OR DEBRIS ON THE SURFACE OF ANY STREET, ALLEY OR PUBLIC PLACE OR IN ANY PUBLIC STORM DRAIN SYSTEMS. THE REMOVAL OF AFORESAID SHALL BE DONE BY STREET SWEEPING OR HAND SWEEPING. WATER SHALL NOT BE USED TO WASH SEDIMENTS INTO PUBLIC OR PRIVATE DRAINAGE FACILITIES.
14. EROSION CONTROL MEASURES SHALL BE ON-SITE FROM SEPTEMBER 15TH THRU APRIL 15TH.
15. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE RAINY SEASON OR FROM OCTOBER 1 THROUGH APRIL 30, WHICHEVER IS GREATER.
16. PLANS SHALL BE DESIGNED TO MEET C3 REQUIREMENTS OF THE MUNICIPAL STORMWATER REGIONAL PERMIT("MRP") NPDES PERMIT CAS 612008.
17. THE CONTRACTOR TO NPDES (NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM) BEST MANAGEMENT PRACTICES (BMP) FOR SEDIMENTATION PREVENTION AND EROSION CONTROL TO PREVENT DELETERIOUS MATERIALS OR POLLUTANTS FROM ENTERING THE TOWN OR COUNTY STORM DRAIN SYSTEMS.
18. THE CONTRACTOR MUST INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO THE INCEPTION OF ANY WORK ONSITE AND MAINTAIN THE MEASURES UNTIL THE COMPLETION OF ALL LANDSCAPING.
19. THE CONTRACTOR SHALL MAINTAIN ADJACENT STREETS IN A NEAT, CLEAN DUST FREE AND SANITARY CONDITION AT ALL TIMES AND TO THE SATISFACTION OF THE TOWN INSPECTOR. THE ADJACENT STREET SHALL AT ALL TIMES BE KEPT CLEAN OF DEBRIS. WITH DUST AND OTHER NUISANCE BEING CONTROLLED AT ALL TIMES. THE CONTRACTOR BE RESPONSIBLE FOR ANY CLEAN UP ON ADJACENT STREETS AFFECTED BY THE BY THEIR CONSTRUCTION, METHOD OF STREET CLEANING SHALL BE BY DRY SWEEPING OF ALL PAVED AREAS. NO STOCKPILING OF BUILDING MATERIALS WITHIN THE TOWN RIGHT-OF-WAY.
20. SEDIMENTS AND OTHER MATERIALS SHALL NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONTRACTOR SHALL INSTALL A STABILIZED CONSTRUCTION ENTRANCE PRIOR TO THE INSPECTION OF ANY WORK ONSITE AND MAINTAIN IT FOR THE DURATION OF THE CONSTRUCTION PROCESS SO AS TO NOT INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC RIGHT-OF-WAY UNTIL THE COMPLETION OF ALL LANDSCAPING.
21. THE CONTRACTOR SHALL PROTECT DOWN SLOPE DRAINAGE COURSES, STREAMS AND STORM DRAINS WITH ROCK FILLED SAND BAGS, TEMPORARY SWALES, SILT FENCES, AND EARTH PERMS IN CONJUNCTION OF ALL LANDSCAPING.
22. STOCKPILED MATERIALS SHALL BE COVERED WITH VISQUEEN OR A TARPAULIN UNTIL THE MATERIAL IS REMOVED FROM THE SITE. ANY REMAINING BARE SOIL THAT EXISTS AFTER THE STOCKPILE HAS BEEN REMOVED SHALL BE COVERED UNTIL A NATURAL GROUND COVER IS ESTABLISHED OR IT IS SEEDED OR PLANTED TO PROVIDE GROUND COVER PRIOR TO THE FALL RAINY SEASON.
23. EXCESS OR WASTE CONCRETE MUST NOT BE WASHED INTO THE PUBLIC RIGHT-OF-WAYOR ANY OTHER DRAINAGE SYSTEM. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ON SITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
24. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION AND DISPERSAL BY WIND

EROSION CONTROL NOTES CONTINUED:

24. FUELS, OILS, SOLVENTS AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOIL AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MUST NOT BE WASHED INTO THE DRAINAGE SYSTEM,
25. DUST CONTROL SHALL BE DONE BY WATERING AND AS OFTEN AS REQUIRED BY THE TOWN INSPECTOR.
26. SILT FENCE(S) AND/OR FIBER ROLL(S) SHALL BE INSTALLED PRIOR TO SEPTEMBER 15TH AND SHALL REMAIN IN PLACE UNTIL THE LANDSCAPING GROUND COVER IS INSTALLED. CONTRACTOR SHALL CONTINUOUSLY MONITOR THESE MEASURES, FOLLOWING AND DURING ALL RAIN EVENTS,TO PUBLIC OWNED FACILITIES.

EROSION CONTROL MEASURES:

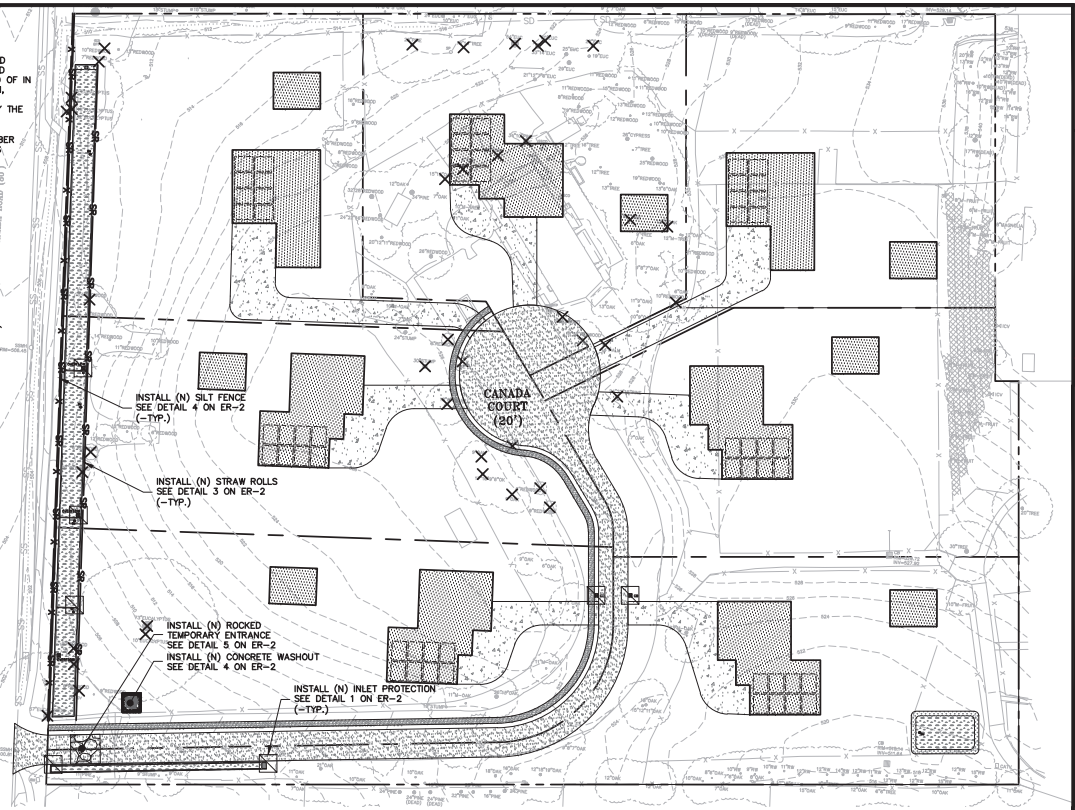
1. THE FACILITIES SHOWN ON THIS PLAN ARE DESIGNED TO CONTROL EROSION AND SEDIMENT DURING THE RAINY SEASON, OCTOBER 15TH TO APRIL 15. EROSION CONTROL FACILITIES SHALL BE IN PLACE PRIOR TO OCTOBER 15TH OF ANY YEAR. GRADING OPERATIONS DURING THE RAINY SEASON WHICH LEAVE DENUDED SLOPES SHALL BE PROTECTED WITH EROSION CONTROL MEASURES IMMEDIATELY FOLLOWING GRADING ON THE SLOPES.
2. SITE CONDITIONS AT TIME OF PLACEMENT OF EROSION CONTROL MEASURES WILL VARY. APPROPRIATE ACTION INCLUDING TEMPORARY SWALES, INLETS, HYDROSEEDING, STRAW BALES, ROCK SACKS, ETC. SHALL BE TAKEN TO PREVENT EROSION AND SEDIMENTATION FROM LEAVING SITE. EROSION CONTROL MEASURES SHALL BE ADJUSTED AS THE CONDITIONS CHANGE AND THE NEED OF CONSTRUCTION SHIFT.
3. CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF GRADING. ALL CONSTRUCTION TRAFFIC ENTERING ONTO THE PAVED ROADS MUST CROSS THE STABILIZED CONSTRUCTION ENTRANCES. CONTRACTOR SHALL MAINTAIN STABILIZED ENTRANCE AT EACH VEHICLE ACCESS POINT TO EXISTING PAVED STREETS. ANY MUD OR DEBRIS TRACKED ONTO PUBLIC STREETS SHALL BE REMOVED DAILY AND AS REQUIRED BY THE GOVERNING AGENCY.
4. ALL EXPOSED SLOPES THAT ARE NOT VEGETATED SHALL BE HYDROSEEDED. IF HYDROSEEDING IS NOT USED OR IS NOT EFFECTIVE BY OCTOBER 15, THEN OTHER IMMEDIATE METHODS SHALL BE IMPLEMENTED, SUCH AS EROSION CONTROL BLANKETS, OR A THREE-STEP APPLICATION OF 1) SEED, MULCH, FERTILIZER 2) BLOWN STRAW 3) TACKIFIER AND MULCH. HYDROSEEDING SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF SECTION 20" EROSION CONTROL AND HIGHWAY PLANTING" OF THE STANDARD SPECIFICATION OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, AS LAST REVISED. REFER TO THE EROSION CONTROL SECTION OF THE GRADING SPECIFICATIONS THAT ARE A PART OF THIS PLAN SET FOR FURTHER INFORMATION.
5. INLET PROTECTION SHALL BE INSTALLED AT OPEN INLETS TO PREVENT SEDIMENT FROM ENTERING THE STORM DRAIN SYSTEM. INLETS NOT USED IN CONJUNCTION WITH EROSION CONTROL ARE TO BE BLOCKED TO PREVENT ENTRY OF SEDIMENT. MINIMUM INLET PROTECTION SHALL CONSIST OF A ROCK SACKS OR AS SHOWN ON THIS PLAN
6. THIS EROSION AND SEDIMENT CONTROL PLAN MAY NOT COVER ALL THE SITUATIONS THAT MAY ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. VARIATIONS AND ADDITIONS MAY BE MADE TO THIS PLAN IN THE FIELD. A REPRESENTATIVE OF LEA & BRAZE ENGINEERING SHALL PERFORM A FIELD REVIEW AND MAKE RECOMMENDATIONS AS NEEDED. CONTRACTOR IS RESPONSIBLE TO NOTIFY LEA & BRAZE ENGINEERING AND THE GOVERNING AGENCY OF ANY CHANGES.
7. THE EROSION CONTROL MEASURES SHALL CONFORM TO THE LOCAL JURISDICTION'S STANDARDS AND THE APPROVAL OF THE LOCAL JURISDICTION'S ENGINEERING DEPARTMENT.
8. STRAW ROLLS SHALL BE PLACED AT THE TOE OF SLOPES AND ALONG THE DOWN SLOPE PERIMETER OF THE PROJECT. THEY SHALL BE PLACED AT 25 FOOT INTERVALS ON GRADED SLOPES. PLACEMENT SHALL RUN WITH THE CONTOURS AND ROLLS SHALL BE TIGHTLY END BUTTED. CONTRACTOR SHALL REFER TO MANUFACTURES SPECIFICATIONS FOR PLACEMENT AND INSTALLATION INSTRUCTIONS.

REFERENCES:

1. CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD'S FIELD MANUAL FOR EROSION AND SEDIMENTATION CONTROL
2. CALIFORNIA STORM WATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES HANDBOOK FOR CONSTRUCTION

PERIODIC MAINTENANCE:

1. MAINTENANCE IS TO BE PERFORMED AS FOLLOWS:
   - A. DAMAGES CAUSED BY SOIL EROSION OR CONSTRUCTION SHALL BE REPAIRED AT THE END OF EACH WORKING DAY.
   - B. SWALES SHALL BE INSPECTED PERIODICALLY AND MAINTAINED AS NEEDED.
   - C. SEDIMENT TRAPS, BERMS, AND SWALES ARE TO BE INSPECTED AFTER EACH STORM AND REPAIRS MADE AS NEEDED.
   - D. SEDIMENT SHALL BE REMOVED AND SEDIMENT TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A DEPTH OF 1' FOOT.
   - E. SEDIMENT REMOVED FROM TRAP SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
   - F. RILLS AND GULLIES MUST BE REPAIRED.
2. GRAVEL BAG INLET PROTECTION SHALL BE CLEANED OUT WHENEVER SEDIMENT DEPTH IS ONE HALF THE HEIGHT OF ONE GRAVEL BAG.
3. STRAW ROLLS SHALL BE PERIODICALLY CHECKED TO ASSURE PROPER FUNCTION AND CLEANED OUT WHENEVER THE SEDIMENT DEPTH REACHED HALF THE HEIGHT OF THE ROLL.
4. SILT FENCE SHALL BE PERIODICALLY CHECKED TO ASSURE PROPER FUNCTION AND CLEANED OUT WHENEVER THE SEDIMENT DEPTH REACHES ONE FOOT IN HEIGHT.
5. CONSTRUCTION ENTRANCE SHALL BE REGRAVELED AS NECESSARY FOLLOWING SILT/SOIL BUILDUP.
6. ANY OTHER EROSION CONTROL MEASURES SHOULD BE CHECKED AT REGULAR INTERVALS TO ASSURE PROPER FUNCTION



EROSION CONTROL LEGEND

- GRAVEL BAG
- SEDIMENTATION BASIN
- INLET PROTECTION
- STRAW ROLL (SR)
- SILT FENCE (X)
- CONCRETE WASHOUT
- CONSTRUCTION ENTRANCE
- TREE PROTECTION
- EROSION CONTROL BLANKET / MATTING

NOTE:
SEAL ALL OTHER INLETS NOT INTENDED TO ACCEPT STORM WATER AND DIRECT FLOWS TEMPORARILY TO FUNCTIONAL SEDIMENTATION BASIN INLETS. -TYP

0 20 40 80
SCALE: 1" = 40'

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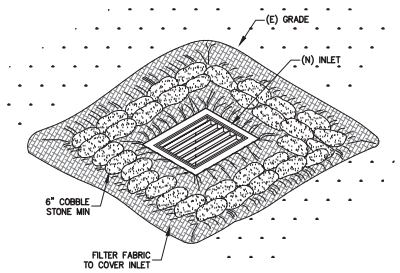
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TENTATIVE MAP
EROSION CONTROL
PLAN

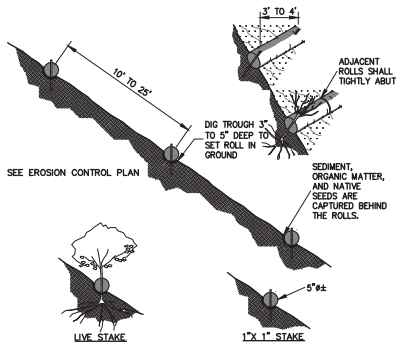
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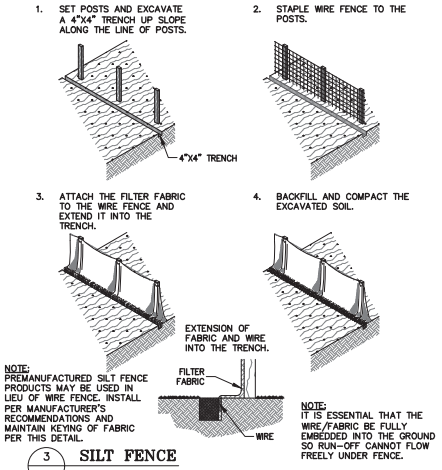


1 ER-2 **INLET PROTECTION**
NTS



NOTE:
1. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3" TO 5" DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.
2. CONTRACTOR IS RESPONSIBLE FOR REGULAR MAINTENANCE AND INSPECTION. THE SILT SHALL BE CLEANED OUT WHEN IT REACHES HALF THE HEIGHT OF THE ROLL.

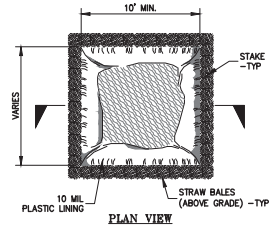
2 ER-2 **STRAW ROLLS**
NTS

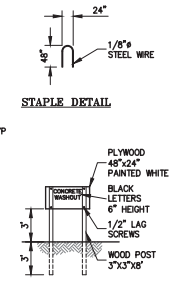


NOTE:
PREMANUFACTURED SILT FENCE PRODUCTS MAY BE USED IN LIEU OF WIRE FENCE. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND MAINTAIN KEYING OF FABRIC PER THIS DETAIL.

NOTE:
IT IS ESSENTIAL THAT THE WIRE/FABRIC BE FULLY EMBEDDED INTO THE GROUND SO RUN-OFF CANNOT FLOW FREELY UNDER FENCE.

3 ER-2 **SILT FENCE**
NTS

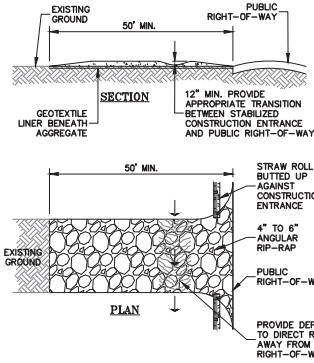




NOTES:
ACTUAL LAYOUT DETERMINED IN FIELD.

THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 10' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

4 ER-2 **CONCRETE WASHOUT**
NTS



NOTES:

STABILIZED CONSTRUCTION SITE ACCESS SHALL BE CONSTRUCTED OF 3" TO 4" WASHED, FRACTURED STONE AGGREGATE.

MATERIAL SHALL BE PLACED TO A MINIMUM THICKNESS OF 12". LENGTH OF ENTRANCE SHALL BE A MINIMUM OF 50'.

WIDTH SHALL BE A MIN. OF 15' OR GREATER IF NECESSARY TO COVER ALL VEHICULAR INGRESS AND EGRESS. PROVIDE AMPLE TURNING RADII.

THE ENTRANCE SHALL BE KEPT IN GOOD CONDITION BY OCCASIONAL TOP DRESSING WITH MATERIAL AS SPECIFIED IN ABOVE NOTE.

ACCESSES SHALL BE INSPECTED WEEKLY DURING PERIODS OF HEAVY USAGE, MONTHLY DURING NORMAL USAGE, AND AFTER EACH RAINFALL, WITH MAINTENANCE PROVIDED AS NECESSARY.

PERIODIC TOP DRESSING SHALL BE DONE AS NEEDED.

5 ER-2 **CONSTRUCTION ENTRANCE**
NTS

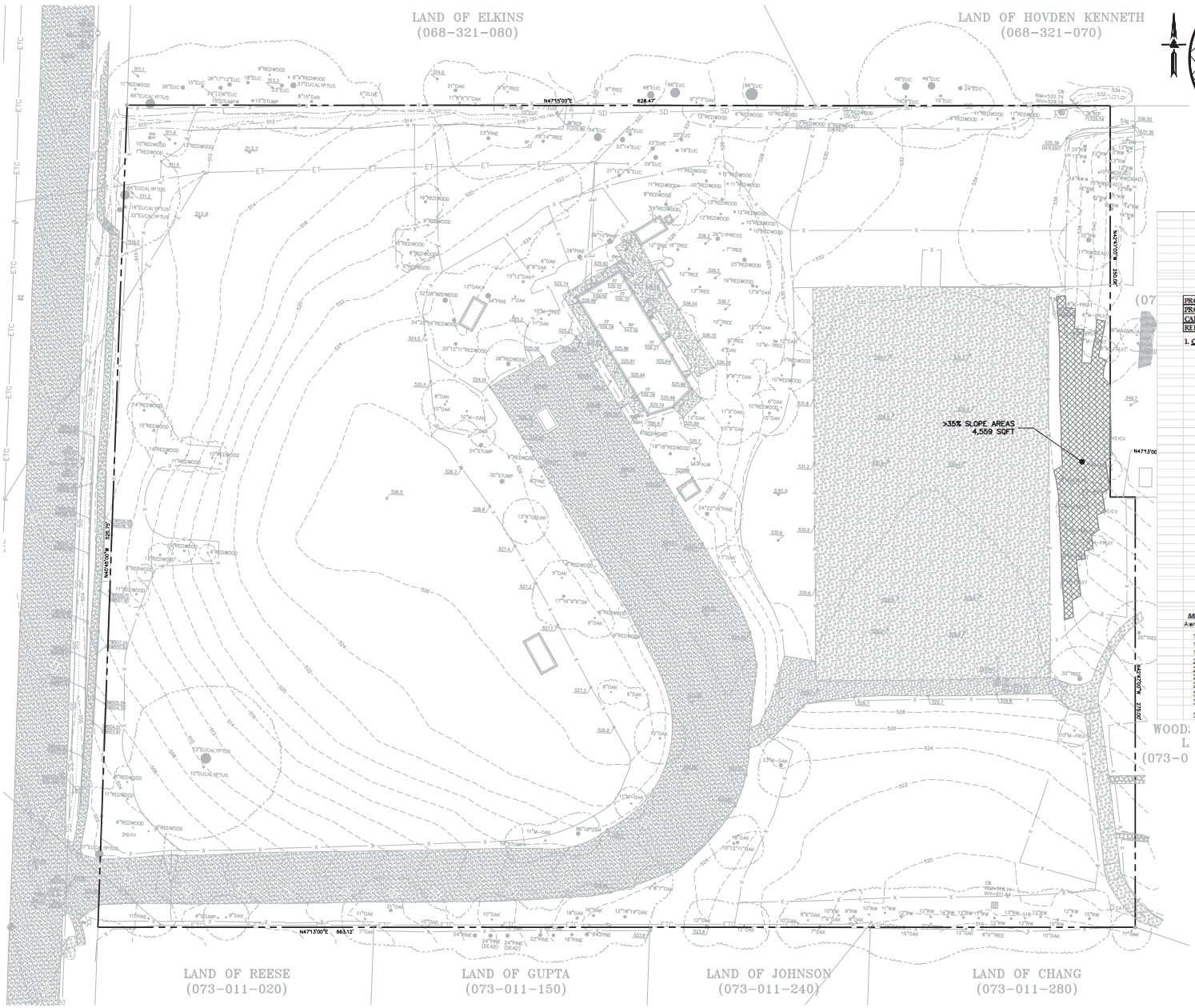
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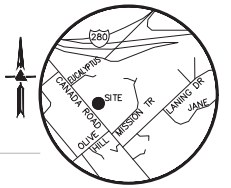
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ER-2
10 OF 10 SHEETS





VICINITY MAP
NO SCALE

0 15 30 60
SCALE: 1" = 30'

TOWN OF WOODSIDE

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS LAND SURVEYORS

CALCULATIONS BY LEA & BRAZE ENGINEERING (510) 887-4086

CALCULATION OF AVERAGE SLOPE

PROPERTY OWNER(S)	1101 CANADA ROAD LLC		
PROPERTY ADDRESS	1101 CANADA ROAD, WOODSIDE		
CALCULATED BY	TONY C.	DATE	April 14, 2021
REFERENCE MAPS	2210244 SU	JOB#	2210245 CE

1. CALCULATION OF AVERAGE SLOPE

A. NET AREA (An)= 7.69 ACRES B. CONTOUR INTERVAL (I) 2.0 FT.
C. DRAWING SCALE 1" = 80'
D. CONTOUR LENGTH WITHIN NET AREA OF LOT (An)

CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)
480	0.0	526	54.6	562	0.0	598	0.0
482	0.0	528	22.9	564	0.0	600	0.0
484	0.0	530	26.2	566	0.0	602	0.0
486	0.0	532	23.0	568	0.0	604	0.0
488	0.0	534	14.4	570	0.0	606	0.0
500	0.0	536	6.1	572	0.0	608	0.0
502	2.1	538	6.0	574	0.0	610	0.0
504	5.5	540	5.5	576	0.0	612	0.0
506	7.8	542	4.7	578	0.0	614	0.0
508	8.6	544	1.2	580	0.0	616	0.0
510	18.2	546	0.0	582	0.0	618	0.0
512	25.6	548	0.0	584	0.0	620	0.0
514	26.8	550	0.0	586	0.0	622	0.0
516	30.0	552	0.0	588	0.0	624	0.0
518	31.8	554	0.0	590	0.0	626	0.0
520	36.2	556	0.0	592	0.0	628	0.0
522	42.8	558	0.0	594	0.0	630	0.0
524	56.9	560	0.0	596	0.0	632	0.0
						TOTAL	458.0

CONVERT INCHES TO FEET (MULTIPLY BY MAP SCALE) = (L) = 13739.9 FT.

E. AVERAGE SLOPE WITHIN NET AREA OF LOT

S= 0.00229 (2 FT) 13739.9 = 32%
7.69 ACRES

Minimum Percent of Portion of Lot Less Than 35%

Average Slope (%)	% To Remain in Natural State
12.5-14.9	32.5%
15.0-17.4	40.0%
17.5-19.9	47.5%
20.0-22.4	55.0%
22.5-24.9	62.5%
25.0-27.4	70.0%
27.5-29.9	77.5%
30.0-32.4	85.0%
32.5-34.9	92.5%
35.0 and above	100.0%

*Net Area does not include areas greater than 35%, access easements, public utility easements (noncontiguous to property line), or any areas outside of property line.

% of net area excluding 35% areas to remain in natural state:

0.0%

LEA & BRAZE ENGINEERING, INC.
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HAYWARD, CALIFORNIA 94545
(510) 887-4086
REGIONAL OFFICES:
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WWW.LEABRAZE.COM

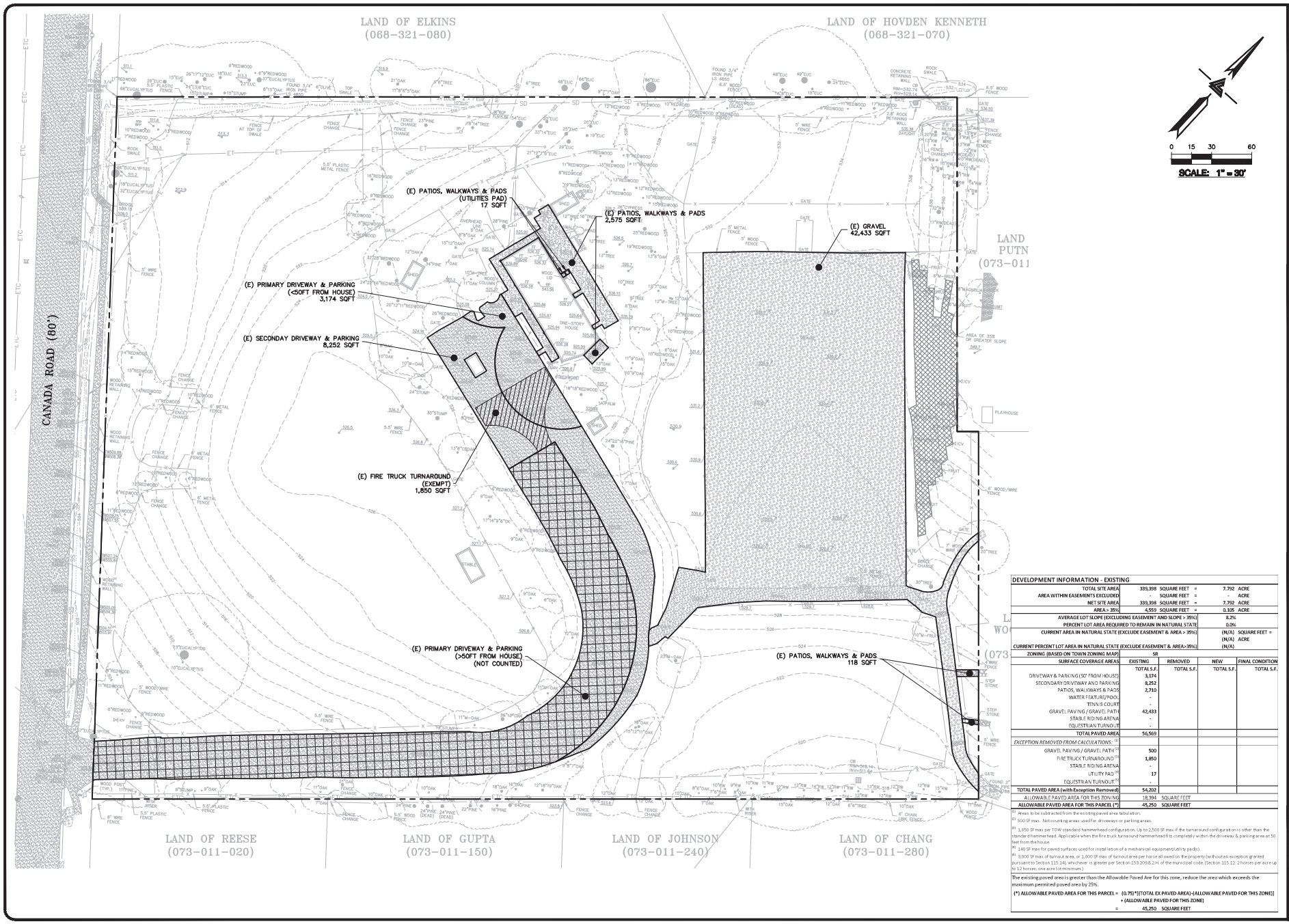
1101 CANADA ROAD
WOODSIDE, CALIFORNIA
APN: 073-011-270
SAN MATEO COUNTY

AVERAGE LOT SLOPE EXHIBIT (EXISTING LOT)

REVISIONS	BY

JOB NO:	2210245
DATE:	09-23-22
SCALE:	AS NOTED
DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	EXH-1

1 OF 2 SHEETS



DEVELOPMENT INFORMATION - EXISTING					
TOTAL SITE AREA	339,398	SQUARE FEET	=	7.792	ACRE
AREA WITHIN EASEMENTS EXCLUDED	-	SQUARE FEET	=	-	ACRE
NET SITE AREA	339,398	SQUARE FEET	=	7.792	ACRE
AREA > 35%	4,555	SQUARE FEET	=	0.105	ACRE
AVERAGE LOT SLOPE (EXCLUDING EASEMENT AND SLOPE > 35%)				8.2%	
PERCENT LOT AREA REQUIRED TO REMAIN IN NATURAL STATE				0.0%	
CURRENT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA > 35%)				(N/A)	SQUARE FEET =
				(N/A)	ACRE
CURRENT PERCENT LOT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA>35%)				(N/A)	
ZONING (BASED ON TOWN ZONING MAP)	SR				

SURFACE COVERAGE AREAS	EXISTING	REMOVED	NEW	FINAL CONDITION
	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.
DRIVEWAY & PARKING (50' FROM HOUSE)	3,174			
SECONDARY DRIVEWAY AND PARKING	8,252			
PATIOS, WALKWAYS & PADS	2,710			
WATER FEATURE/POOL	-			
TENNIS COURT	-			
GRAVEL PAVING / GRAVEL PATH	42,433			
STABLE RIDING ARENA	-			
EQUESTRIAN TURNOUT	-			
TOTAL PAVED AREA	56,569			
EXCEPTION REMOVED FROM CALCULATIONS: [1]				
GRAVEL PAVING / GRAVEL PATH [2]	500			
FIRE TRUCK TURNAROUND [3]	1,850			
STABLE RIDING ARENA	-			
UTILITY PAD [4]	17			
EQUESTRIAN TURNOUT [5]	-			
TOTAL PAVED AREA (with Exception Removed)	54,202			
ALLOWABLE PAVED AREA FOR THIS ZONING	18,394	SQUARE FEET		
ALLOWABLE PAVED AREA FOR THIS PARCEL (*)	45,250	SQUARE FEET		

[1] Areas to be subtracted from the existing paved area tabulation.
[2] 500 SF max. Not counting areas used for driveways or parking areas.
[3] 1,850 SF max per TOW standard hammerhead configuration. Up to 2,500 SF max if the turnaround configuration is other than the standard hammerhead. Applicable when the fire truck turnaround hammerhead fit is completely within the driveway & parking area at 50 feet from the house.
[4] 140 SF max for paved surfaces used for installation of a mechanical equipment/utility pad(s).
[5] 3,000 SF max of turnout area, or 1,000 SF max of turnout area per horse all owed on the property (without an exception granted pursuant to Section 115.14), whichever is greater per Section 153.209B.2.H. of the municipal code. (Section 115.12: 2 horses per acre up to 12 horses, one acre lot minimum.)

The existing paved area is greater than the Allowable Paved Are for this zone, reduce the area which exceeds the maximum permited paved area by 25%.

(*) ALLOWABLE PAVED AREA FOR THIS PARCEL = (0.75)*[(TOTAL EX PAVED AREA)-(ALLOWABLE PAVED FOR THIS ZONE)] + (ALLOWABLE PAVED FOR THIS ZONE)
= 45,250 SQUARE FEET

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1101 CANADA ROAD
WOODSIDE, CALIFORNIA
APN: 073-011-270
SAN MATEO COUNTY

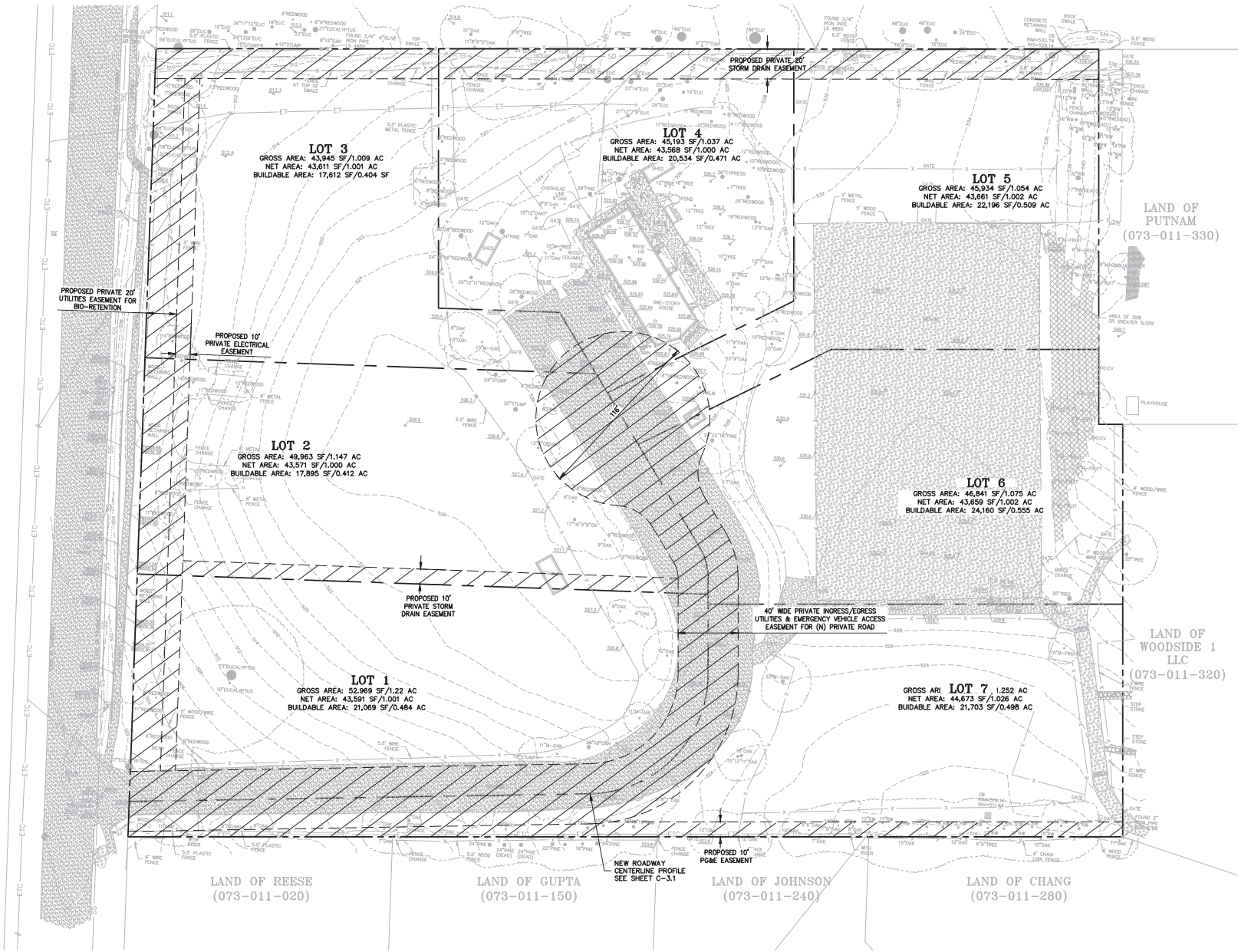
EXISTING PAVED AREA EXHIBIT (EXISTING LOT)

REVISIONS	BY
-	-
-	-
-	-
-	-
-	-

JOB NO: 2210245
DATE: 09-23-22
SCALE: AS NOTED
DESIGN BY: TC
CHECKED BY: CP
SHEET NO:

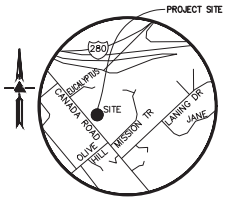
EXH-2

2 OF 2 SHEETS



0 15 30 60

SCALE: 1" = 30'



VICINITY MAP

NTS

LEGEND

>35% SLOPE AREA

PROPOSED EASEMENT AREA

LEA & BRAZE ENGINEERING, INC.
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1101 CANADA ROAD
WOODSIDE, CALIFORNIA

APN: 073-011-270

SAN MATEO COUNTY

SLOPE EXHIBITS
CALCULATION
(PROPOSED LOTS)

REVISIONS	BY
-	-
-	-
-	-
-	-
-	-

JOB NO:	2210245
DATE:	09-23-22
SCALE:	AS NOTED
DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	EX-1.0

1 OF 4 SHEETS

TOWN OF WOODSIDE

CALCULATIONS BY LEA & BRAZE ENGINEERING (510) 887-4086

CALCULATION OF AVERAGE SLOPE

PROPERTY OWNER(S)	1101 CANADA ROAD LLC		
PROPERTY ADDRESS	1101 CANADA ROAD, WOODSIDE		
CALCULATED BY	ALBERTO S.	**DATE**	September 7, 2022
REFERENCE MAP:	2210244 SU	**JOB#**	2210245 CI

1. CALCULATION OF AVERAGE SLOPE

A. NET AREA (An)* 1.000 ACRES B. CONTOUR INTERVAL (I) 2.0 FT.
C. DRAWING SCALE 1" = 30'
D. CONTOUR LENGTH WITHIN NET AREA OF LOT (An)

CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)
490	0.0	526	8.6	562	0.0	598	0.0
492	0.0	528	0.0	564	0.0	600	0.0
494	0.0	530	0.0	566	0.0	602	0.0
496	0.0	532	0.0	568	0.0	604	0.0
498	0.0	534	0.0	570	0.0	606	0.0
500	0.0	536	0.0	572	0.0	608	0.0
502	0.6	538	0.0	574	0.0	610	0.0
504	2.8	540	0.0	576	0.0	612	0.0
506	4.4	542	0.0	578	0.0	614	0.0
508	5.9	544	0.0	580	0.0	616	0.0
510	6.3	546	0.0	582	0.0	618	0.0
512	6.6	548	0.0	584	0.0	620	0.0
514	6.9	550	0.0	586	0.0	622	0.0
516	7.1	552	0.0	588	0.0	624	0.0
518	7.5	554	0.0	590	0.0	626	0.0
520	8.3	556	0.0	592	0.0	628	0.0
522	9.7	558	0.0	594	0.0	630	0.0
524	9.7	560	0.0	596	0.0	632	0.0
						TOTAL	84.4

CONVERT INCHES TO FEET (MULTIPLY BY MAP SCALE) = (L) = 2532.0 FT.

E. AVERAGE SLOPE WITHIN NET AREA OF LOT

S= 0.00229 (2 FT) 2532 = **11.6%**
1.00 ACRES

Minimum Percent of Portion of Lot Less Than 35%

Average Slope (%)	% To Remain in Natural State
12.5-14.9	32.5%
15.0-17.4	40.0%
17.5-19.9	47.5%
20.0-22.4	55.0%
22.5-24.9	62.5%
25.0-27.4	70.0%
27.5-29.9	77.5%
30.0-32.4	85.0%
32.5-34.9	92.5%
35.0 and above	100.0%

*Net Area does not include areas greater than 35%, access easements, public utility easements (noncontiguous to property line) or any areas outside of property line.

% of net area excluding 35% areas to remain in natural state:

0.0%

PROPOSED LOT 1

TOWN OF WOODSIDE

CALCULATIONS BY LEA & BRAZE ENGINEERING (510) 887-4086

CALCULATION OF AVERAGE SLOPE

PROPERTY OWNER(S)	1101 CANADA ROAD LLC		
PROPERTY ADDRESS	1101 CANADA ROAD, WOODSIDE LOT 2		
CALCULATED BY	ALBERTO S.	**DATE**	September 7, 2022
REFERENCE MAP:	2210244 SU	**JOB#**	2210245 CI

1. CALCULATION OF AVERAGE SLOPE

A. NET AREA (An)* 1.000 ACRES B. CONTOUR INTERVAL (I) 2.0 FT.
C. DRAWING SCALE 1" = 30'
D. CONTOUR LENGTH WITHIN NET AREA OF LOT (An)

CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)
490	0.0	526	11.7	562	0.0	598	0.0
492	0.0	528	0.0	564	0.0	600	0.0
494	0.0	530	0.0	566	0.0	602	0.0
496	0.0	532	0.0	568	0.0	604	0.0
498	0.0	534	0.0	570	0.0	606	0.0
500	0.0	536	0.0	572	0.0	608	0.0
502	0.0	538	0.0	574	0.0	610	0.0
504	0.0	540	0.0	576	0.0	612	0.0
506	0.0	542	0.0	578	0.0	614	0.0
508	0.1	544	0.0	580	0.0	616	0.0
510	3.2	546	0.0	582	0.0	618	0.0
512	5.1	548	0.0	584	0.0	620	0.0
514	5.2	550	0.0	586	0.0	622	0.0
516	5.2	552	0.0	588	0.0	624	0.0
518	5.2	554	0.0	590	0.0	626	0.0
520	5.2	556	0.0	592	0.0	628	0.0
522	5.4	558	0.0	594	0.0	630	0.0
524	8.1	560	0.0	596	0.0	632	0.0
						TOTAL	54.3

CONVERT INCHES TO FEET (MULTIPLY BY MAP SCALE) = (L) = 1628.1 FT.

E. AVERAGE SLOPE WITHIN NET AREA OF LOT

S= 0.00229 (2 FT) 1628.1 = **7.5%**
1.00 ACRES

Minimum Percent of Portion of Lot Less Than 35%

Average Slope (%)	% To Remain in Natural State
12.5-14.9	32.5%
15.0-17.4	40.0%
17.5-19.9	47.5%
20.0-22.4	55.0%
22.5-24.9	62.5%
25.0-27.4	70.0%
27.5-29.9	77.5%
30.0-32.4	85.0%
32.5-34.9	92.5%
35.0 and above	100.0%

*Net Area does not include areas greater than 35%, access easements, public utility easements (noncontiguous to property line) or any areas outside of property line.

% of net area excluding 35% areas to remain in natural state:

0.0%

PROPOSED LOT 2

TOWN OF WOODSIDE

CALCULATIONS BY LEA & BRAZE ENGINEERING (510) 887-4086

CALCULATION OF AVERAGE SLOPE

PROPERTY OWNER(S)	1101 CANADA ROAD LLC		
PROPERTY ADDRESS	1101 CANADA ROAD, WOODSIDE LOT 3		
CALCULATED BY	ALBERTO S.	**DATE**	September 7, 2022
REFERENCE MAP:	2210244 SU	**JOB#**	2210245 CI

1. CALCULATION OF AVERAGE SLOPE

A. NET AREA (An)* 1.000 ACRES B. CONTOUR INTERVAL (I) 2.0 FT.
C. DRAWING SCALE 1" = 30'
D. CONTOUR LENGTH WITHIN NET AREA OF LOT (An)

CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)
490	0.0	526	4.7	562	0.0	598	0.0
492	0.0	528	0.0	564	0.0	600	0.0
494	0.0	530	0.0	566	0.0	602	0.0
496	0.0	532	0.0	568	0.0	604	0.0
498	0.0	534	0.0	570	0.0	606	0.0
500	0.0	536	1.8	572	0.0	608	0.0
502	0.0	538	1.9	574	0.0	610	0.0
504	0.0	540	1.5	576	0.0	612	0.0
506	0.0	542	1.3	578	0.0	614	0.0
508	0.0	544	1.3	580	0.0	616	0.0
510	0.0	546	0.9	582	0.0	618	0.0
512	0.0	548	0.0	584	0.0	620	0.0
514	0.0	550	0.0	586	0.0	622	0.0
516	0.0	552	0.0	588	0.0	624	0.0
518	0.0	554	0.0	590	0.0	626	0.0
520	0.0	556	0.0	592	0.0	628	0.0
522	0.0	558	0.0	594	0.0	630	0.0
524	0.0	560	0.0	596	0.0	632	0.0
						TOTAL	39.9

CONVERT INCHES TO FEET (MULTIPLY BY MAP SCALE) = (L) = 1195.8 FT.

E. AVERAGE SLOPE WITHIN NET AREA OF LOT

S= 0.00229 (2 FT) 1195.8 = **5.5%**
1.00 ACRES

Minimum Percent of Portion of Lot Less Than 35%

Average Slope (%)	% To Remain in Natural State
12.5-14.9	32.5%
15.0-17.4	40.0%
17.5-19.9	47.5%
20.0-22.4	55.0%
22.5-24.9	62.5%
25.0-27.4	70.0%
27.5-29.9	77.5%
30.0-32.4	85.0%
32.5-34.9	92.5%
35.0 and above	100.0%

*Net Area does not include areas greater than 35%, access easements, public utility easements (noncontiguous to property line) or any areas outside of property line.

% of net area excluding 35% areas to remain in natural state:

0.0%

PROPOSED LOT 3

TOWN OF WOODSIDE

CALCULATIONS BY LEA & BRAZE ENGINEERING (510) 887-4086

CALCULATION OF AVERAGE SLOPE

PROPERTY OWNER(S)	1101 CANADA ROAD LLC		
PROPERTY ADDRESS	1101 CANADA ROAD, WOODSIDE LOT 4		
CALCULATED BY	ALBERTO S.	**DATE**	September 7, 2022
REFERENCE MAP:	2210244 SU	**JOB#**	2210245 CI

1. CALCULATION OF AVERAGE SLOPE

A. NET AREA (An)* 1.000 ACRES B. CONTOUR INTERVAL (I) 2.0 FT.
C. DRAWING SCALE 1" = 30'
D. CONTOUR LENGTH WITHIN NET AREA OF LOT (An)

CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)
490	0.0	526	13.2	562	0.0	598	0.0
492	0.0	528	6.8	564	0.0	600	0.0
494	0.0	530	4.4	566	0.0	602	0.0
496	0.0	532	0.0	568	0.0	604	0.0
498	0.0	534	0.0	570	0.0	606	0.0
500	0.0	536	0.0	572	0.0	608	0.0
502	0.0	538	0.0	574	0.0	610	0.0
504	0.0	540	0.0	576	0.0	612	0.0
506	0.0	542	0.0	578	0.0	614	0.0
508	0.0	544	0.0	580	0.0	616	0.0
510	0.0	546	0.0	582	0.0	618	0.0
512	0.0	548	0.0	584	0.0	620	0.0
514	1.5	550	0.0	586	0.0	622	0.0
516	4.7	552	0.0	588	0.0	624	0.0
518	4.0	554	0.0	590	0.0	626	0.0
520	4.7	556	0.0	592	0.0	628	0.0
522	6.0	558	0.0	594	0.0	630	0.0
524	9.2	560	0.0	596	0.0	632	0.0
						TOTAL	54.5

CONVERT INCHES TO FEET (MULTIPLY BY MAP SCALE) = (L) = 1634.1 FT.

E. AVERAGE SLOPE WITHIN NET AREA OF LOT

S= 0.00229 (2 FT) 1634.1 = **7.5%**
1.00 ACRES

Minimum Percent of Portion of Lot Less Than 35%

Average Slope (%)	% To Remain in Natural State
12.5-14.9	32.5%
15.0-17.4	40.0%
17.5-19.9	47.5%
20.0-22.4	55.0%
22.5-24.9	62.5%
25.0-27.4	70.0%
27.5-29.9	77.5%
30.0-32.4	85.0%
32.5-34.9	92.5%
35.0 and above	100.0%

*Net Area does not include areas greater than 35%, access easements, public utility easements (noncontiguous to property line) or any areas outside of property line.

% of net area excluding 35% areas to remain in natural state:

0.0%

PROPOSED LOT 4

TOWN OF WOODSIDE

CALCULATIONS BY LEA & BRAZE ENGINEERING (510) 887-4086

CALCULATION OF AVERAGE SLOPE

PROPERTY OWNER(S)	1101 CANADA ROAD LLC		
PROPERTY ADDRESS	1101 CANADA ROAD, WOODSIDE LOT 5		
CALCULATED BY	ALBERTO S.	**DATE**	September 7, 2022
REFERENCE MAP:	2210244 SU	**JOB#**	2210245 CI

1. CALCULATION OF AVERAGE SLOPE

A. NET AREA (An)* 1.002 ACRES B. CONTOUR INTERVAL (I) 2.0 FT.
C. DRAWING SCALE 1" = 30'
D. CONTOUR LENGTH WITHIN NET AREA OF LOT (An)

CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)
490	0.0	526	1.5	562	0.0	598	0.0
492	0.0	528	2.8	564	0.0	600	0.0
494	0.0	530	5.0	566	0.0	602	0.0
496	0.0	532	16.2	568	0.0	604	0.0
498	0.0	534	9.1	570	0.0	606	0.0
500	0.0	536	3.6	572	0.0	608	0.0
502	0.0	538	4.1	574	0.0	610	0.0
504	0.0	540	4.0	576	0.0	612	0.0
506	0.0	542	4.2	578	0.0	614	0.0
508	0.0	544	0.6	580	0.0	616	0.0
510	0.0	546	0.5	582	0.0	618	0.0
512	0.0	548	0.2	584	0.0	620	0.0
514	0.0	550	0.0	586	0.0	622	0.0
516	0.0	552	0.0	588	0.0	624	0.0
518	0.0	554	0.0	590	0.0	626	0.0
520	0.0	556	0.0	592	0.0	628	0.0
522	0.0	558	0.0	594	0.0	630	0.0
524	0.0	560	0.0	596	0.0	632	0.0
						TOTAL	52.0

CONVERT INCHES TO FEET (MULTIPLY BY MAP SCALE) = (L) = 1558.5 FT.

E. AVERAGE SLOPE WITHIN NET AREA OF LOT

S= 0.00229 (2 FT) 1558.5 = **7.1%**
1.00 ACRES

Minimum Percent of Portion of Lot Less Than 35%

Average Slope (%)	% To Remain in Natural State
12.5-14.9	32.5%
15.0-17.4	40.0%
17.5-19.9	47.5%
20.0-22.4	55.0%
22.5-24.9	62.5%
25.0-27.4	70.0%
27.5-29.9	77.5%
30.0-32.4	85.0%
32.5-34.9	92.5%
35.0 and above	100.0%

*Net Area does not include areas greater than 35%, access easements, public utility easements (noncontiguous to property line) or any areas outside of property line.

% of net area excluding 35% areas to remain in natural state:

0.0%

PROPOSED LOT 5

TOWN OF WOODSIDE

CALCULATIONS BY LEA & BRAZE ENGINEERING (510) 887-4086

CALCULATION OF AVERAGE SLOPE

PROPERTY OWNER(S)	1101 CANADA ROAD LLC		
PROPERTY ADDRESS	1101 CANADA ROAD, WOODSIDE LOT 6		
CALCULATED BY	ALBERTO S.	**DATE**	September 7, 2022
REFERENCE MAP:	2210244 SU	**JOB#**	2210245 CI

1. CALCULATION OF AVERAGE SLOPE

A. NET AREA (An)* 1.002 ACRES B. CONTOUR INTERVAL (I) 2.0 FT.
C. DRAWING SCALE 1" = 30'
D. CONTOUR LENGTH WITHIN NET AREA OF LOT (An)

CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)
490	0.0	526	4.7	562	0.0	598	0.0
492	0.0	528	5.1	564	0.0	600	0.0
494	0.0	530	14.9	566	0.0	602	0.0
496	0.0	532	4.7	568	0.0	604	0.0
498	0.0	534	1.9	570	0.0	606	0.0
500	0.0	536	1.8	572	0.0	608	0.0
502	0.0	538	1.9	574	0.0	610	0.0
504	0.0	540	1.5	576	0.0	612	0.0
506	0.0	542	1.3	578	0.0	614	0.0
508	0.0	544	1.3	580	0.0	616	0.0
510	0.0	546	0.9	582	0.0	618	0.0
512	0.0	548	0.0	584	0.0	620	0.0
514	0.0	550	0.0	586	0.0	622	0.0
516	0.0	552	0.0	588	0.0	624	0.0
518	0.0	554	0.0	590	0.0	626	0.0
520	0.0	556	0.0	592	0.0	628	0.0
522	0.0	558	0.0	594	0.0	630	0.0
524	0.0	560	0.0	596	0.0	632	0.0
						TOTAL	39.9

CONVERT INCHES TO FEET (MULTIPLY BY MAP SCALE) = (L) = 1195.8 FT.

E. AVERAGE SLOPE WITHIN NET AREA OF LOT

S= 0.00229 (2 FT) 1195.8 = **5.5%**
1.00 ACRES

Minimum Percent of Portion of Lot Less Than 35%

Average Slope (%)	% To Remain in Natural State
12.5-14.9	32.5%
15.0-17.4	40.0%
17.5-19.9	47.5%
20.0-22.4	55.0%
22.5-24.9	62.5%
25.0-27.4	70.0%
27.5-29.9	77.5%
30.0-32.4	85.0%
32.5-34.9	92.5%
35.0 and above	100.0%

*Net Area does not include areas greater than 35%, access easements, public utility easements (noncontiguous to property line) or any areas outside of property line.

% of net area excluding 35% areas to remain in natural state:

0.0%

PROPOSED LOT 6

TOWN OF WOODSIDE

CALCULATIONS BY LEA & BRAZE ENGINEERING (510) 887-4086

CALCULATION OF AVERAGE SLOPE

PROPERTY OWNER(S)	1101 CANADA ROAD LLC		
PROPERTY ADDRESS	1101 CANADA ROAD, WOODSIDE		
CALCULATED BY	ALBERTO S.	**DATE**	September 7, 2022
REFERENCE MAP:	2210244 SU	**JOB#**	2210245 CI

1. CALCULATION OF AVERAGE SLOPE

A. NET AREA (An)* 1.026 ACRES B. CONTOUR INTERVAL (I) 2.0 FT.
C. DRAWING SCALE 1" = 30'
D. CONTOUR LENGTH WITHIN NET AREA OF LOT (An)

CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)	CONTOUR	LENGTH (INCHES)
490	0.0	526	9.0	562	0.0	598	0.0
492	0.0	528	8.3	564	0.0	600	0.0
494	0.0	530	2.0	566	0.0	602	0.0
496	0.0	532	0.7	568	0.0	604	0.0
498	0.0	534	0.0	570	0.0	606	0.0
500	0.0	536	0.0	572	0.0	608	0.0
502	0.1	538	0.0	574	0.0	610	0.0
504	0.2	540	0.0	576	0.0	612	0.0
506	0.4	542	0.0	578	0.0	614	0.0
508	0.3	544	0.0	580	0.0	616	0.0
510	0.6	546	0.0	582	0.0	618	0.0
512	0.4	548	0.0	584	0.0	620	0.0
514	0.4	550	0.0	586	0.0	622	0.0
516	1.5	552	0.0	588	0.0	624	0.0
518	5.4	554	0.0	590	0.0	626	0.0
520	9.4	556	0.0	592	0.0	628	0.0
522	10.9	558	0.0	594	0.0	630	0.0
524	15.3	560	0.0	596	0.0	632	0.0
						TOTAL	64.8

CONVERT INCHES TO FEET (MULTIPLY BY MAP SCALE) = (L) = 1943.7 FT.

E. AVERAGE SLOPE WITHIN NET AREA OF LOT

S= 0.00229 (2 FT) 1943.7 = **8.7%**
1.03 ACRES

Minimum Percent of Portion of Lot Less Than 35%

Average Slope (%)	% To Remain in Natural State
12.5-14.9	32.5%
15.0-17.4	40.0%
17.5-19.9	47.5%
20.0-22.4	55.0%
22.5-24.9	62.5%
25.0-27.4	70.0%
27.5-29.9	77.5%
30.0-32.4	85.0%
32.5-34.9	92.5%
35.0 and above	100.0%

*Net Area does not include areas greater than 35%, access easements, public utility easements (noncontiguous to property line) or any areas outside of property line.

% of net area excluding 35% areas to remain in natural state:

0.0%

PROPOSED LOT 7

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS | LAND SURVEYORS
2495 INDUSTRIAL PKWY. WEST
HAYWARD, CALIFORNIA 94545
(510) 887-4086
WWW.LEABRAZE.COM
ROSEVILLE OFFICE:
DUBLIN
SAN JOSE

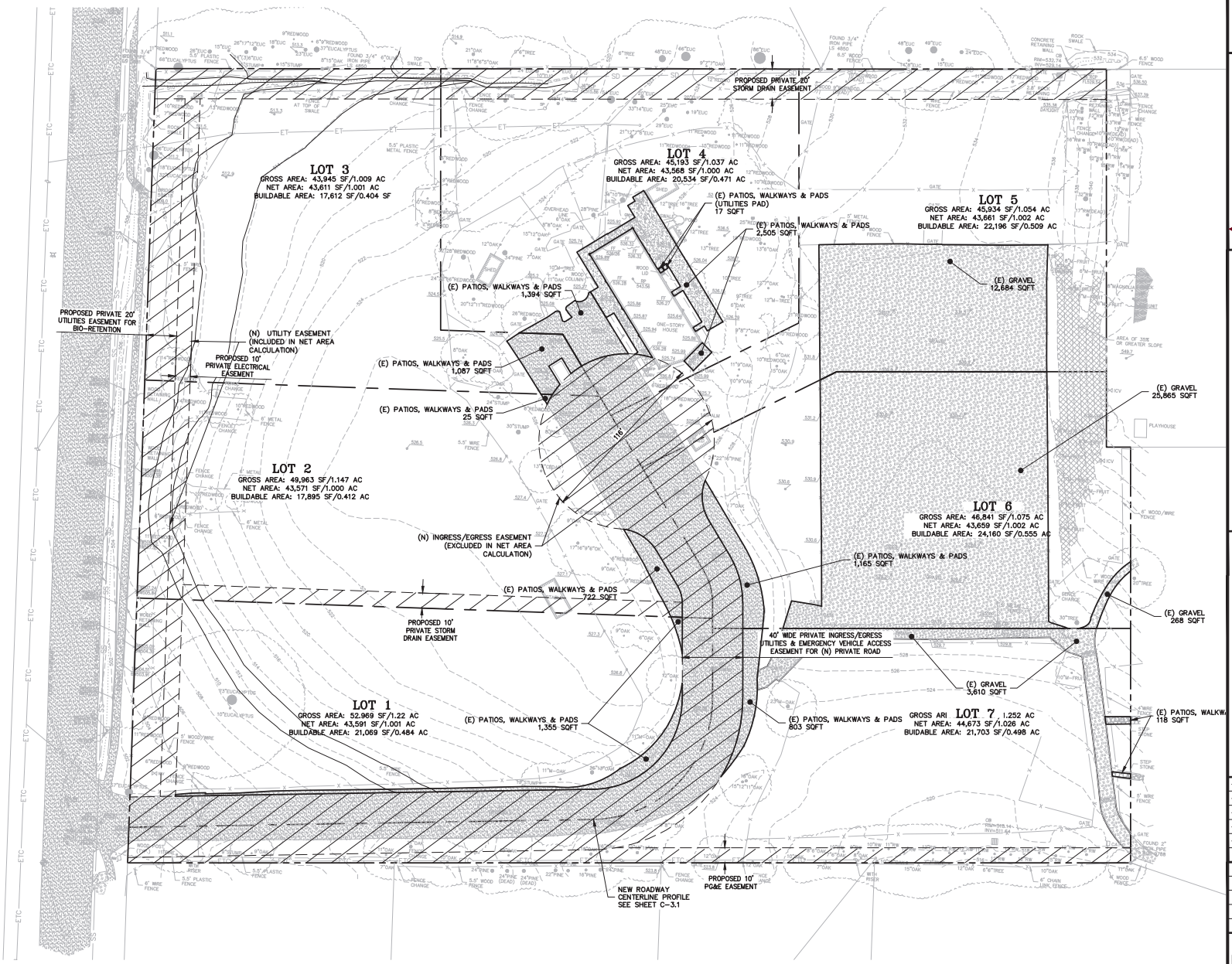
1101 CANADA ROAD
WOODSIDE, CALIFORNIA
APN: 073-011-270
SAN MATEO COUNTY

SLOPE EXHIBITS
CALCULATION
(PROPOSED LOTS)

–	–
–	–
–	–
–	–
–	–
REVISIONS	BY
JOB NO:	2210245
DATE:	09-23-22
SCALE:	AS NOTED
DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	

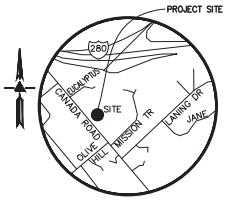
EX-1.1

2 OF 4 SHEETS



0 15 30 60

SCALE: 1" = 30'



VICINITY MAP

NTS

LEGEND

>35% SLOPE AREA

PROPOSED EASEMENT AREA

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS | LAND SURVEYORS
2495 INDUSTRIAL PKWY. WEST
HAYWARD, CALIFORNIA 94545
(510) 887-4086
REGIONAL OFFICES:
ROSEVILLE
BRENTWOOD
DUBLIN
SAN JOSE
WWW.LEABRAZE.COM

1101 CANADA ROAD
WOODSIDE, CALIFORNIA

APN: 073-011-270

SAN MATEO COUNTY

EXISTING PAVED AREA EXHIBIT (PROPOSED LOTS)

REVISIONS	BY
-	-
-	-
-	-
-	-
-	-

JOB NO:	2210245
DATE:	09-23-22
SCALE:	AS NOTED
DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	EX-2.0

3 OF 4 SHEETS

DEVELOPMENT INFORMATION - EXISTING (PROPOSED LOT 1)

TOTAL SITE AREA	52,969	SQUARE FEET =	1.216	ACRE
AREA WITHIN EASEMENTS EXCLUDED	9,378	SQUARE FEET =	0.215	ACRE
NET SITE AREA	43,591	SQUARE FEET =	1.001	ACRE
AREA > 35%	-	SQUARE FEET =	-	ACRE
AVERAGE LOT SLOPE (EXCLUDING EASEMENT AND SLOPE > 35%)			11.6%	
PERCENT LOT AREA REQUIRED TO REMAIN IN NATURAL STATE			0.0%	
CURRENT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA > 35%)			(N/A) (N/A)	SQUARE FEET = ACRE
CURRENT PERCENT LOT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA>35%)			(N/A)	
ZONING (BASED ON TOWN ZONING MAP)	SR			

SURFACE COVERAGE AREAS	EXISTING	REMOVED	NEW	FINAL CONDITION
	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.
DRIVEWAY & PARKING (50' FROM HOUSE)	-			
SECONDARY DRIVEWAY AND PARKING	-			
PATIOS, WALKWAYS & PADS	1,355			
WATER FEATURE/POOL	-			
TENNIS COURT	-			
GRAVEL PAVING / GRAVEL PATH	-			
STABLE RIDING ARENA	-			
EQUESTRIAN TURNOUT	-			
TOTAL PAVED AREA	1,355			
EXCEPTION REMOVED FROM CALCULATIONS: [1]				
GRAVEL PAVING / GRAVEL PATH [2]	-			
FIRE TRUCK TURNAROUND [3]	-			
STABLE RIDING ARENA	-			
UTILITY PAD [4]	-			
EQUESTRIAN TURNOUT [5]	-			
TOTAL PAVED AREA (with Exception Removed)	1,355			
ALLOWABLE PAVED AREA FOR THIS ZONING	15,000	SQUARE FEET		
ALLOWABLE PAVED AREA FOR THIS PARCEL (*)	15,000	SQUARE FEET		

[1] Areas to be subtracted from the existing paved area tabulation.
[2] 500 SF max. Not counting areas used for driveways or parking areas.
[3] 1,850 SF max per TOW standard hammerhead configuration. Up to 2,500 SF max if the turnaround configuration is other than the standard hammerhead. Applicable when the fire truck turnaound hammerhead fits completely within the driveway & parking area at 10 feet from the house.
[4] 140 SF max for paved surfaces used for installation of a mechanical equipment/utility pad(s).
[5] 3,000 SF max of turnout area, or 1,000 SF max of turnout area per horse allowed on the property (without an exception granted pursuant to Section 115.14), whichever is greater per Section 153.209.B.2.H. of the municipal code. (Section 115.12: 2 horses per acre up to 12 horses; one acre lot minimum.)

PROPOSED LOT 1

DEVELOPMENT INFORMATION - EXISTING (PROPOSED LOT 2)

TOTAL SITE AREA	49,963	SQUARE FEET =	1.147	ACRE
AREA WITHIN EASEMENTS EXCLUDED	4,392	SQUARE FEET =	0.101	ACRE
NET SITE AREA	45,571	SQUARE FEET =	1.046	ACRE
AREA > 35%	-	SQUARE FEET =	-	ACRE
AVERAGE LOT SLOPE (EXCLUDING EASEMENT AND SLOPE > 35%)			7.5%	
PERCENT LOT AREA REQUIRED TO REMAIN IN NATURAL STATE			0.0%	
CURRENT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA > 35%)			(N/A) (N/A)	SQUARE FEET = ACRE
CURRENT PERCENT LOT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA>35%)			(N/A)	
ZONING (BASED ON TOWN ZONING MAP)	SR			

SURFACE COVERAGE AREAS	EXISTING	REMOVED	NEW	FINAL CONDITION
	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.
DRIVEWAY & PARKING (50' FROM HOUSE)	-			
SECONDARY DRIVEWAY AND PARKING	-			
PATIOS, WALKWAYS & PADS	747			
WATER FEATURE/POOL	-			
TENNIS COURT	-			
GRAVEL PAVING / GRAVEL PATH	-			
STABLE RIDING ARENA	-			
EQUESTRIAN TURNOUT	-			
TOTAL PAVED AREA	747			
EXCEPTION REMOVED FROM CALCULATIONS: [1]				
GRAVEL PAVING / GRAVEL PATH [2]	-			
FIRE TRUCK TURNAROUND [3]	-			
STABLE RIDING ARENA	-			
UTILITY PAD [4]	-			
EQUESTRIAN TURNOUT [5]	-			
TOTAL PAVED AREA (with Exception Removed)	747			
ALLOWABLE PAVED AREA FOR THIS ZONING	15,000	SQUARE FEET		
ALLOWABLE PAVED AREA FOR THIS PARCEL (*)	15,000	SQUARE FEET		

[1] Areas to be subtracted from the existing paved area tabulation.
[2] 500 SF max. Not counting areas used for driveways or parking areas.
[3] 1,850 SF max per TOW standard hammerhead configuration. Up to 2,500 SF max if the turnaround configuration is other than the standard hammerhead. Applicable when the fire truck turnaound hammerhead fits completely within the driveway & parking area at 10 feet from the house.
[4] 140 SF max for paved surfaces used for installation of a mechanical equipment/utility pad(s).
[5] 3,000 SF max of turnout area, or 1,000 SF max of turnout area per horse allowed on the property (without an exception granted pursuant to Section 115.14), whichever is greater per Section 153.209.B.2.H. of the municipal code. (Section 115.12: 2 horses per acre up to 12 horses; one acre lot minimum.)

PROPOSED LOT 2

DEVELOPMENT INFORMATION - EXISTING (PROPOSED LOT 3)

TOTAL SITE AREA	43,945	SQUARE FEET =	1.009	ACRE
AREA WITHIN EASEMENTS EXCLUDED	334	SQUARE FEET =	0.008	ACRE
NET SITE AREA	43,611	SQUARE FEET =	1.001	ACRE
AREA > 35%	-	SQUARE FEET =	-	ACRE
AVERAGE LOT SLOPE (EXCLUDING EASEMENT AND SLOPE > 35%)			8.7%	
PERCENT LOT AREA REQUIRED TO REMAIN IN NATURAL STATE			0.0%	
CURRENT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA > 35%)			(N/A) (N/A)	SQUARE FEET = ACRE
CURRENT PERCENT LOT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA>35%)			(N/A)	
ZONING (BASED ON TOWN ZONING MAP)	SR			

SURFACE COVERAGE AREAS	EXISTING	REMOVED	NEW	FINAL CONDITION
	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.
DRIVEWAY & PARKING (50' FROM HOUSE)	-			
SECONDARY DRIVEWAY AND PARKING	-			
PATIOS, WALKWAYS & PADS	1,087			
WATER FEATURE/POOL	-			
TENNIS COURT	-			
GRAVEL PAVING / GRAVEL PATH	-			
STABLE RIDING ARENA	-			
EQUESTRIAN TURNOUT	-			
TOTAL PAVED AREA	1,087			
EXCEPTION REMOVED FROM CALCULATIONS: [1]				
GRAVEL PAVING / GRAVEL PATH [2]	-			
FIRE TRUCK TURNAROUND [3]	-			
STABLE RIDING ARENA	-			
UTILITY PAD [4]	-			
EQUESTRIAN TURNOUT [5]	-			
TOTAL PAVED AREA (with Exception Removed)	1,087			
ALLOWABLE PAVED AREA FOR THIS ZONING	15,000	SQUARE FEET		
ALLOWABLE PAVED AREA FOR THIS PARCEL (*)	15,000	SQUARE FEET		

[1] Areas to be subtracted from the existing paved area tabulation.
[2] 500 SF max. Not counting areas used for driveways or parking areas.
[3] 1,850 SF max per TOW standard hammerhead configuration. Up to 2,500 SF max if the turnaround configuration is other than the standard hammerhead. Applicable when the fire truck turnaound hammerhead fits completely within the driveway & parking area at 10 feet from the house.
[4] 140 SF max for paved surfaces used for installation of a mechanical equipment/utility pad(s).
[5] 3,000 SF max of turnout area, or 1,000 SF max of turnout area per horse allowed on the property (without an exception granted pursuant to Section 115.14), whichever is greater per Section 153.209.B.2.H. of the municipal code. (Section 115.12: 2 horses per acre up to 12 horses; one acre lot minimum.)

PROPOSED LOT 3

DEVELOPMENT INFORMATION - EXISTING (PROPOSED LOT 4)

TOTAL SITE AREA	45,193	SQUARE FEET =	1.037	ACRE
AREA WITHIN EASEMENTS EXCLUDED	1,625	SQUARE FEET =	0.037	ACRE
NET SITE AREA	43,568	SQUARE FEET =	1.000	ACRE
AREA > 35%		SQUARE FEET =	-	ACRE
AVERAGE LOT SLOPE (EXCLUDING EASEMENT AND SLOPE > 35%)			7.5%	
PERCENT LOT AREA REQUIRED TO REMAIN IN NATURAL STATE			0.0%	
CURRENT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA > 35%)			(N/A) (N/A)	SQUARE FEET = ACRE
CURRENT PERCENT LOT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA>35%)			(N/A)	
ZONING (BASED ON TOWN ZONING MAP)	SR			

SURFACE COVERAGE AREAS	EXISTING	REMOVED	NEW	FINAL CONDITION
	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.
DRIVEWAY & PARKING (50' FROM HOUSE)	-			
SECONDARY DRIVEWAY AND PARKING	-			
PATIOS, WALKWAYS & PADS	3,916			
WATER FEATURE/POOL	-			
TENNIS COURT	-			
GRAVEL PAVING / GRAVEL PATH				
STABLE RIDING ARENA	-			
EQUESTRIAN TURNOUT	-			
TOTAL PAVED AREA	3,916			
EXCEPTION REMOVED FROM CALCULATIONS: [1]				
GRAVEL PAVING / GRAVEL PATH [2]	-			
FIRE TRUCK TURNAROUND [3]	-			
STABLE RIDING ARENA	-			
UTILITY PAD [4]	17			
EQUESTRIAN TURNOUT [5]	-			
TOTAL PAVED AREA (with Exception Removed)	3,899			
ALLOWABLE PAVED AREA FOR THIS ZONING	15,000	SQUARE FEET		
ALLOWABLE PAVED AREA FOR THIS PARCEL (*)	15,000	SQUARE FEET		

[1] Areas to be subtracted from the existing paved area tabulation.
[2] 500 SF max. Not counting areas used for driveways or parking areas.
[3] 1,850 SF max per TOW standard hammerhead configuration. Up to 2,500 SF max if the turnaround configuration is other than the standard hammerhead. Applicable when the fire truck turnaound hammerhead fits completely within the driveway & parking area at 10 feet from the house.
[4] 140 SF max for paved surfaces used for installation of a mechanical equipment/utility pad(s).
[5] 3,000 SF max of turnout area, or 1,000 SF max of turnout area per horse allowed on the property (without an exception granted pursuant to Section 115.14), whichever is greater per Section 153.209.B.2.H. of the municipal code. (Section 115.12: 2 horses per acre up to 12 horses; one acre lot minimum.)

The existing paved area is greater than the Allowable Paved Are for this zone, reduce the area which exceeds the maximum permited paved area by 25%.

(*) ALLOWABLE PAVED AREA FOR THIS PARCEL = (0.75)*[(TOTAL EX PAVED AREA)-(ALLOWABLE PAVED FOR THIS ZONE)] + (ALLOWABLE PAVED FOR THIS ZONE)
= 15,000 SQUARE FEET

PROPOSED LOT 4

DEVELOPMENT INFORMATION - EXISTING (PROPOSED LOT 5)

TOTAL SITE AREA	45,934	SQUARE FEET =	1.054	ACRE
AREA WITHIN EASEMENTS EXCLUDED	522	SQUARE FEET =	0.012	ACRE
NET SITE AREA	43,661	SQUARE FEET =	1.002	ACRE
AREA > 35%	1,751	SQUARE FEET =	0.040	ACRE
AVERAGE LOT SLOPE (EXCLUDING EASEMENT AND SLOPE > 35%)			7.1%	
PERCENT LOT AREA REQUIRED TO REMAIN IN NATURAL STATE			0.0%	
CURRENT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA > 35%)			(N/A) (N/A)	SQUARE FEET = ACRE
CURRENT PERCENT LOT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA>35%)			(N/A)	
ZONING (BASED ON TOWN ZONING MAP)	SR			

SURFACE COVERAGE AREAS	EXISTING	REMOVED	NEW	FINAL CONDITION
	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.
DRIVEWAY & PARKING (50' FROM HOUSE)	-			
SECONDARY DRIVEWAY AND PARKING	-			
PATIOS, WALKWAYS & PADS				
WATER FEATURE/POOL	-			
TENNIS COURT	-			
GRAVEL PAVING / GRAVEL PATH	12,684			
STABLE RIDING ARENA	-			
EQUESTRIAN TURNOUT	-			
TOTAL PAVED AREA	12,684			
EXCEPTION REMOVED FROM CALCULATIONS: [1]				
GRAVEL PAVING / GRAVEL PATH [2]	500			
FIRE TRUCK TURNAROUND [3]	-			
STABLE RIDING ARENA	-			
UTILITY PAD [4]	-			
EQUESTRIAN TURNOUT [5]	-			
TOTAL PAVED AREA (with Exception Removed)	12,184			
ALLOWABLE PAVED AREA FOR THIS ZONING	15,000	SQUARE FEET		
ALLOWABLE PAVED AREA FOR THIS PARCEL (*)	15,000	SQUARE FEET		

[1] Areas to be subtracted from the existing paved area tabulation.
[2] 500 SF max. Not counting areas used for driveways or parking areas.
[3] 1,850 SF max per TOW standard hammerhead configuration. Up to 2,500 SF max if the turnaround configuration is other than the standard hammerhead. Applicable when the fire truck turnaound hammerhead fits completely within the driveway & parking area at 10 feet from the house.
[4] 140 SF max for paved surfaces used for installation of a mechanical equipment/utility pad(s).
[5] 3,000 SF max of turnout area, or 1,000 SF max of turnout area per horse allowed on the property (without an exception granted pursuant to Section 115.14), whichever is greater per Section 153.209.B.2.H. of the municipal code. (Section 115.12: 2 horses per acre up to 12 horses; one acre lot minimum.)

PROPOSED LOT 5

DEVELOPMENT INFORMATION - EXISTING (PROPOSED LOT 6)

TOTAL SITE AREA	46,841	SQUARE FEET =	1.075	ACRE
AREA WITHIN EASEMENTS EXCLUDED	372	SQUARE FEET =	0.009	ACRE
NET SITE AREA	43,659	SQUARE FEET =	1.002	ACRE
AREA > 35%	2,810	SQUARE FEET =	0.065	ACRE
AVERAGE LOT SLOPE (EXCLUDING EASEMENT AND SLOPE > 35%)			5.5%	
PERCENT LOT AREA REQUIRED TO REMAIN IN NATURAL STATE			0.0%	
CURRENT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA > 35%)			(N/A) (N/A)	SQUARE FEET = ACRE
CURRENT PERCENT LOT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA>35%)			(N/A)	
ZONING (BASED ON TOWN ZONING MAP)	SR			

SURFACE COVERAGE AREAS	EXISTING	REMOVED	NEW	FINAL CONDITION
	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.
DRIVEWAY & PARKING (50' FROM HOUSE)	-			
SECONDARY DRIVEWAY AND PARKING	-			
PATIOS, WALKWAYS & PADS	1,165			
WATER FEATURE/POOL	-			
TENNIS COURT	-			
GRAVEL PAVING / GRAVEL PATH	26,133			
STABLE RIDING ARENA	-			
EQUESTRIAN TURNOUT	-			
TOTAL PAVED AREA	27,298			
EXCEPTION REMOVED FROM CALCULATIONS: [1]				
GRAVEL PAVING / GRAVEL PATH [2]	500			
FIRE TRUCK TURNAROUND [3]	-			
STABLE RIDING ARENA	-			
UTILITY PAD [4]	-			
EQUESTRIAN TURNOUT [5]	-			
TOTAL PAVED AREA (with Exception Removed)	26,798			
ALLOWABLE PAVED AREA FOR THIS ZONING	15,000	SQUARE FEET		
ALLOWABLE PAVED AREA FOR THIS PARCEL (*)	23,849	SQUARE FEET		

[1] Areas to be subtracted from the existing paved area tabulation.
[2] 500 SF max. Not counting areas used for driveways or parking areas.
[3] 1,850 SF max per TOW standard hammerhead configuration. Up to 2,500 SF max if the turnaround configuration is other than the standard hammerhead. Applicable when the fire truck turnaound hammerhead fits completely within the driveway & parking area at 10 feet from the house.
[4] 140 SF max for paved surfaces used for installation of a mechanical equipment/utility pad(s).
[5] 3,000 SF max of turnout area, or 1,000 SF max of turnout area per horse allowed on the property (without an exception granted pursuant to Section 115.14), whichever is greater per Section 153.209.B.2.H. of the municipal code. (Section 115.12: 2 horses per acre up to 12 horses; one acre lot minimum.)

PROPOSED LOT 6

DEVELOPMENT INFORMATION - EXISTING (PROPOSED LOT 7)

TOTAL SITE AREA	54,553	SQUARE FEET =	1.252	ACRE
AREA WITHIN EASEMENTS EXCLUDED	9,880	SQUARE FEET =	0.227	ACRE
NET SITE AREA	44,673	SQUARE FEET =	1.026	ACRE
AREA > 35%	-	SQUARE FEET =	-	ACRE
AVERAGE LOT SLOPE (EXCLUDING EASEMENT AND SLOPE > 35%)			8.7%	
PERCENT LOT AREA REQUIRED TO REMAIN IN NATURAL STATE			0.0%	
CURRENT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA > 35%)			(N/A) (N/A)	SQUARE FEET = ACRE
CURRENT PERCENT LOT AREA IN NATURAL STATE (EXCLUDE EASEMENT & AREA>35%)			(N/A)	
ZONING (BASED ON TOWN ZONING MAP)	SR			

SURFACE COVERAGE AREAS	EXISTING	REMOVED	NEW	FINAL CONDITION
	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.	TOTAL S.F.
DRIVEWAY & PARKING (50' FROM HOUSE)	-			
SECONDARY DRIVEWAY AND PARKING	-			
PATIOS, WALKWAYS & PADS	921			
WATER FEATURE/POOL	-			
TENNIS COURT	-			
GRAVEL PAVING / GRAVEL PATH	3,610			
STABLE RIDING ARENA	-			
EQUESTRIAN TURNOUT	-			
TOTAL PAVED AREA	4,531			
EXCEPTION REMOVED FROM CALCULATIONS: [1]				
GRAVEL PAVING / GRAVEL PATH [2]	500			
FIRE TRUCK TURNAROUND [3]	-			
STABLE RIDING ARENA	-			
UTILITY PAD [4]	-			
EQUESTRIAN TURNOUT [5]	-			
TOTAL PAVED AREA (with Exception Removed)	4,031			
ALLOWABLE PAVED AREA FOR THIS ZONING	15,000	SQUARE FEET		
ALLOWABLE PAVED AREA FOR THIS PARCEL (*)	15,000	SQUARE FEET		

[1] Areas to be subtracted from the existing paved area tabulation.
[2] 500 SF max. Not counting areas used for driveways or parking areas.
[3] 1,850 SF max per TOW standard hammerhead configuration. Up to 2,500 SF max if the turnaround configuration is other than the standard hammerhead. Applicable when the fire truck turnaound hammerhead fits completely within the driveway & parking area at 10 feet from the house.
[4] 140 SF max for paved surfaces used for installation of a mechanical equipment/utility pad(s).
[5] 3,000 SF max of turnout area, or 1,000 SF max of turnout area per horse allowed on the property (without an exception granted pursuant to Section 115.14), whichever is greater per Section 153.209.B.2.H. of the municipal code. (Section 115.12: 2 horses per acre up to 12 horses; one acre lot minimum.)

PROPOSED LOT 7

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS | LAND SURVEYORS
MAIN OFFICE:
2495 INDUSTRIAL PKWY. WEST
HAYWARD, CALIFORNIA 94545
(510) 887-4086
REGIONAL OFFICES:
ROSEVILLE
DUBLIN
SAN JOSE
WWW.LEABRAZE.COM

1101 CANADA ROAD
WOODSIDE, CALIFORNIA
APN: 073-011-270
SAN MATEO COUNTY

EXISTING PAVED AREA EXHIBIT (PROPOSED LOTS)

REVISIONS	BY
JOB NO:	2210245
DATE:	09-23-22
SCALE:	AS NOTED
DESIGN BY:	TC
CHECKED BY:	CP
SHEET NO:	EX-2.1

4 OF 4 SHEETS