City of Los Angeles

Department of City Planning•Central Project Planning Division
City Hall • 200 N. Spring Street, Room 750 • Los Angeles, CA 90012

# Initial Study

# Silver Lake-Echo Park- Elysian Valley Community Plan Area

## 3627 Landa and 1888 Lucile Residential Project

Case Number: ZA-2015-1567-ZAD-ZAA; ZA-2015-1569-ZV-ZAD

**Project Location:** 3627 West Landa Street, Los Angeles, California, 90039; 1888 North Lucile Avenue, Los Angeles, California, 90026

**Community Plan Area:** Silver Lake - Echo Park - Elysian Valley

**Council District:** 4 – David E. Ryu

**Project Description:** The Project involves the demolition of an existing single-family dwelling and the construction of two new single-family residences and associated two-car garages. A two-story, 2,471-square-foot dwelling unit and two new two-car garages would be located on 1888 North Lucile Avenue. A two-story, 1,931-square-foot single-family residence would be located on the adjacent lot at 3267 West Landa Street.

**PREPARED FOR:**
The City of Los Angeles
Department of City Planning

**PREPARED BY:**
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**APPLICANT:**
Thomas A. Porter

# TABLE OF CONTENTS

## List of Figures



## List of Tables



## List of Appendices

# 1 INTRODUCTION

This Initial Study (IS) document evaluates potential environmental effects resulting from construction and operation of the proposed 3627 Landa and 1888 Lucile Project ("Project"). The Project is subject to the guidelines and regulations of the California Environmental Quality Act (CEQA). Therefore, this document has been prepared in compliance with the relevant provisions of CEQA and the CEQA Guidelines as implemented by the City of Los Angeles (City). Based on the analysis provided within this IS, the City has concluded that the Project will not result in significant impacts on the environment. This IS is intended as an informational document.

## 1.1 PURPOSE OF THIS INITIAL STUDY

An IS is a preliminary analysis prepared by and for the City as lead agency to determine whether a proposed project can qualify for an applicable Categorical Exemption (CEQA Guidelines Sections 15300 through 15333), or whether an environmental impact report (EIR), a negative declaration, or mitigated negative declaration must be prepared for the proposed project.

Sections 15300 to 15333 of the CEQA Guidelines provide classes of projects that have been determined not to have a significant effect on the environment and that are exempt from further CEQA requirements. CEQA Guidelines Section 15332 defines "Class 32" projects, which are projects characterized as infill development, as meeting the following conditions:

- The project is consistent with the applicable general plan designation and all applicable general plan policies, as well as with applicable zoning designation and regulations.
- The project occurs within city limits on a project site of no more than 5 acres substantially surrounded by urban uses.
- The project site has no value as habitat for endangered, rare or threatened species.
- Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.
- The project site can be adequately served by all required utilities and public services.

In addition, Section 15300.2 of the CEQA Guidelines provides several exceptions that would otherwise preclude the use of a Categorical Exemption:

- All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.
- A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.
- A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway.

- A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.
- A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.

This IS has been completed to support the findings that the Project is consistent with the definition and parameters of a Class 32 (Infill Development) Categorical Exemption (CEQA Guidelines Section 15332) and that none of the exceptions listed in Section 15300.2 of the CEQA Guidelines apply to the Project. This IS has been prepared in accordance with CEQA (Public Resources Code 21000 et seq.), the CEQA Guidelines (Title 14, California Code of Regulations, 15000 et seq.), and the City of Los Angeles CEQA Guidelines (1981, amended 2006).

## 1.2. ORGANIZATION OF THE INITIAL STUDY

This IS is organized into four sections as follows:

1 INTRODUCTION

Describes the purpose and organization of the IS.

2 EXECUTIVE SUMMARY

Provides Project information, identifies key areas of environmental concern, and includes a determination whether the Project may have a significant effect on the environment.

3 PROJECT DESCRIPTION

Provides a description of the environmental setting and the Project, including Project characteristics and a list of discretionary actions.

4 EVALUATION OF ENVIRONMENTAL IMPACTS

Contains the completed IS Checklist and discussion of the environmental factors that would be potentially affected by the Project.

# 2 Executive Summary

| | |
|---|---|
| **PROJECT TITLE** | **3627 LANDA AND 1888 LUCILE RESIDENTIAL PROJECT** |
| ENVIRONMENTAL CASE NO. | **ZA-2015-1567-ZAD-ZAA; ZA-2015-1569-ZV-ZAD** |
| RELATED CASES | None |

| | |
|---|---|
| **PROJECT LOCATION** | **3627 WEST LANDA STREET LOS ANGELES, CALIFORNIA 90039, AND 1888 NORTH LUCILE AVENUE, LOS ANGELES, CALIFORNIA 90026** |
| COMMUNITY PLAN AREA | SILVER LAKE – ECHO PARK – ELYSIAN VALLEY |
| GENERAL PLAN DESIGNATION | LOW RESIDENTIAL |
| ZONING | ONE-FAMILY ZONE (R1), VERY LIMITED HEIGHT DISTRICT (1VL) |
| COUNCIL DISTRICT | 4 |

| | |
|---|---|
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## PROJECT DESCRIPTION

The Project involves the demolition of an existing single-family residence and the construction of two new single-family residences and associated two-car garages. A two-story, 2,471-square-foot dwelling unit and two new two-car garages would be located on 1888 North Lucile Avenue. A two-story, 1,931-square-foot single-family residence would be located on the adjacent lot at 3267 West Landa Street.

For the property located at 1888 North Lucile Avenue (ZA-2015-1567-ZAD-ZAA), the Project applicant requests a Zoning Administrator's Determination (ZAD) pursuant to Los Angeles Municipal Code (LAMC) Section 12.24.X.28 to allow: (1) two off-street parking spaces designated for the subject property in lieu of the three required parking spaces for the construction of any main building and accessory use exceeding 2,400 square feet in size; (2) three retaining walls in lieu of the maximum permitted two retaining walls. The Project also requires a Zoning Administrator's Adjustment (ZAA) pursuant to LAMC 12.28 to allow for an 8- foot- wide passageway from the street to the proposed dwelling in lieu of the 10- foot- wide passageway.

For the property located at 3627 West Landa Street (ZA-2015-1569-ZV-ZAD), the Project applicant requests a ZAD pursuant to LAMC Section 12.24.X.28 to allow: (1) the construction of a single-family residence fronting on two Substandard Hillside Limited Streets that are improved to less than 20 feet wide; and (2) vehicular access by way of the street that is not continuously improved to a minimum 20 feet wide from the driveway apron to the next non-hillside boundary. The Project also requires a Zone Variance (ZV) pursuant to LAMC 12.27 to allow off-site parking in a two-car private garage on an adjacent lot at 1888 North Lucile Avenue.

(For additional detail, see "Section 3. PROJECT DESCRIPTION.")

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## ENVIRONMENTAL SETTING

The Project site consists of two parcels and two addresses. The parcel (Assessor's Parcel Number (APN) 543-101-2003) associated with 3627 West Landa Street is located on the southern portion of the Project site and totals approximately 5,000 square feet. The parcel (APN 543-101-2015) associated with 1888 North Lucile Avenue is located on the northern portion of the Project site and totals approximately 4,935 square feet. There is an existing single-family residence located on the northern parcel. The highest point of the Project site is at its southern boundary with Landa Street, sloping downwards towards Lucile Avenue located to the north. The Project site is designated by the Silver Lake–Echo Park–Elysian Valley Community Plan as Low Residential and is zoned R1-1VL.

The Project is located within a largely urbanized area of the City. The Project site is surrounded by single-family residential properties in the Silver Lake neighborhood. The Project site is bordered to the north by Lucile Avenue, which is accessible to vehicles, and Landa Avenue to the south, which is a staircase connecting Landa Avenue on the west to Maltman Avenue to the east. The parcels on both sides of the Project site, across Lucile Avenue to the north, and across Landa Street to the south, contain single-family residential uses.

(For additional detail, see "Section 3. PROJECT DESCRIPTION").

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**OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED (E.G., PERMITS, FINANCING APPROVAL, OR PARTICIPATION AGREEMENT)**

None.

**CALIFORNIA NATIVE AMERICAN CONSULTATION**

Have California Native American tribes traditionally and culturally affiliated with the Project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

Public Resources Code Section 21080.3.1(b) states:

> Prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, the lead agency shall begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if…

Assembly Bill (AB) 52 tribal consultation applies to any project for which a Notice of Preparation (NOP) or a Notice of Intent (NOI) is filed on or after July 1, 2015. (Stats. 2114, Ch. 532, Section 11 (c)). This IS has been prepared as an informational document to support the findings of a Class 32 (Infill Development) Categorical Exemption, and neither a NOI nor a NOP are required to be filed for the Project. Thus, tribal consultation under AB 52 is not required for this Project.

## ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

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

## EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of a mitigation measure has reduced an effect from "Potentially Significant Impact" to "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analysis," as described in (5) below, may be cross referenced).
5) Earlier analysis must be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR, or negative declaration. Section 15063 (c)(3)(D). In this case, a brief discussion should identify the following:
    a) Earlier Analysis Used. Identify and state where they are available for review.
    b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c) Mitigation Measures. For effects that are "Less Than Significant With Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated
7) Supporting Information Sources: A sources list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whichever format is selected.
9) The explanation of each issue should identify:
10) The significance criteria or threshold, if any, used to evaluate each question; and
11) The mitigation measure identified, if any, to reduce the impact to less than significance.

# 3 PROJECT DESCRIPTION

## 3.1 PROJECT SUMMARY

The Project involves the demolition of an existing single-family residence and the construction of two new single-family residences and associated two-car garages. A two-story, 2,471-square-foot dwelling unit and two new two-car garages would be located on 1888 North Lucile Avenue. A two-story, 1,931-square-foot single-family residence would be located on the adjacent lot at 3267 West Landa Street.

## 3.2 ENVIRONMENTAL SETTING

### 3.2.1 Project Location

The Project is located within the Silver Lake–Echo Park–Elysian Valley Community Plan (Community Plan) Area in the City of Los Angeles (City). Generally, the Project site is located within urban neighborhood of Silver Lake. Silver Lake is bordered by the neighborhood of Los Feliz to the north, the neighborhoods of Hollywood and Wilshire to west, and the neighborhood of Echo Park to the south and east. Specifically, the Project site is located at 3627 West Landa Street and 1888 North Lucile Avenue, roughly 0.53 miles northwest of Silverlake Boulevard, 0.5 miles west of the Silver Lake Reservoir, 0.16 miles east of the Hyperion Avenue/Fountain Avenue intersection, and 0.4 miles northeast of the Santa Monica Boulevard/Sunset Boulevard intersection.

Regional access to the Project site is provided by Silver Lake Boulevard and Sunset Boulevard from the Hollywood Freeway (U.S. Route 101). The Hollywood Freeway runs north–south and is located east of the Project site. The Project site is also accessible from Hyperion Avenue via Interstate 5. Local access is primarily provided by the street system surrounding the Project site (Figure 1, Project Location).

### 3.2.2 Existing Conditions

The Project is located within the Silver Lake–Echo Park–Elysian Valley Community Plan Area. The intent of the Silver Lake–Echo Park–Elysian Valley Community Plan is the promotion of an arrangement of land uses, streets, and services which will encourage and contribute to the economic, social and physical health safety, welfare, and conveniences of the people who live and work in the community. Through the Silver Lake–Echo Park–Elysian Valley Community Plan, the City can inform these groups of its goals, policies, and development standards, thereby communicating what is expected of the City government and private sector to meet its objectives.

The Project site has a General Plan land use designation of Low Residential and is zoned R1-1VL (City of Los Angeles 2019a). The Project site is designated Low Residential under the Silver Lake–Echo Park–Elysian Valley Community Plan (City of Los Angeles 2004) (see Figure 3, General Plan Land Use). The corresponding zone for this designation is R1, which is consistent with the Project site's existing zoning. The last comprehensive update of the Silver Lake–Echo Park–Elysian Valley Community Plan was completed in 2004.

The Project site is currently zoned R1-1VL (see Figure 4, Zoning). As such, the Project site is subject to the requirements of LAMC Section 12.08, "R1" One-Family Zone. Per Section 12.08 of the LAMC, the R1 zoning allows for one-family dwellings; parks, playgrounds, or community

centers, owned and operated by a government agency; truck gardening; two-family dwellings; accessory buildings; accessory uses; name plates and signs; and backyard beekeeping. The R1 Zone has a minimum lot width of 50 feet and minimum area of 5,000 square feet. The maximum allowable Residential Floor Area (RFA) for lots in the Hillside Area is determined based on the slope band. For lots outside the Hillside Area or Coastal Zone, the maximum RFA is 45% of the lot area (City of Los Angeles 2018a).

The Project site consists of two parcels and two addresses. The parcel (APN 543-101-2003) associated with 3627 West Landa Street is located on the southern portion of the Project site and totals approximately 5,000 square feet. The parcel (APN 543-101-2015) associated with 1888 North Lucile Avenue is located on the northern portion of the Project site and totals approximately 4,935 square feet. There is an existing single-family residence located on the northern parcel. The highest point of the Project site is at its southern boundary with Landa Street, sloping downwards towards Lucile Avenue located to the south.

### 3.2.3 Surrounding Land Uses

The Project is located within a largely urbanized area of the City. The Project site is surrounded by single-family residential properties in the Silver Lake neighborhood. The Project site is bordered to the north by Lucile Avenue, which is accessible to vehicles, and Landa Avenue to the south, which is a staircase connecting Landa Avenue on the west to Maltman Avenue to the east. The parcels on both sides of the Project site, across Lucile Avenue to the north, and across Landa Street to the south, contain single-family residential uses (Figure 2, Surrounding Land Uses).

## 3.3 DESCRIPTION OF PROJECT

### 3.3.1 Project Overview

The Project includes the construction of two new single-family residences located at 3627 West Landa Street and 1888 North Lucile Avenue. A proposed two-story, single-family residence totaling 1,931 square feet would be located on 3627 West Landa Street. A proposed two-story, single-family residence totaling 2,471 square feet and two new two-car garages would be located on 1888 North Lucile Avenue (see Figures 5a and 5b, Site Plan).

For the property located at 1888 North Lucile Avenue (ZA-2015-1567-ZAD-ZAA), the Project applicant requests a ZAD pursuant to LAMC Section 12.24.X.28 to allow: (1) two off-street parking spaces designated for the subject property in lieu of the three required parking spaces for the construction of any main building and accessory use exceeding 2,400 square feet in size; (2) three retaining walls in lieu of the maximum permitted two retaining walls. The Project also requires a ZAA pursuant to LAMC 12.28 to allow for an 8- foot- wide passageway from the street to the proposed dwelling in lieu of the 10 foot wide passageway.

For the property located at 3627 West Landa Street (ZA-2015-1569-ZV-ZAD), the Project applicant requests a ZAD pursuant to LAMC Section 12.24.X.28 to allow: (1) the construction of a single-family residence fronting on two Substandard Hillside Limited Streets that are improved to less than 20 feet wide; and (2) vehicular access by way of the street that is not continuously improved to a minimum 20 feet wide from the driveway apron to the next non-hillside boundary. The Project also requires a ZV pursuant to LAMC 12.27 to allow off-site parking in a two-car private garage on an adjacent lot at 1888 North Lucile Avenue.

### 3.3.2 Design and Architecture

Based on the existing zoning and LAMC Section 12.21.C.10.d, the height restriction of the Project site is 33 feet when the roof has a slope of 25% or greater, and 28 feet when the roof has a slope of less than 25%. The maximum envelope height for the parcels at 3627 West Landa Street and 1888 North Lucile Avenue would each be 28 feet as both of their roofs have a slope of less than 25%.

The proposed structures at 3627 West Landa Street and 1888 North Lucile Avenue would be designed to include geometric elements into the overall aesthetic of the building. The Project would include vertical and horizontal elements that would break up the overall massing of the buildings and provide visual interest. The residential buildings and associated improvements were designed with a strong and appropriately scaled framework of architectural and landscape elements. The building mass throughout the Project site was designed to create a sense of unity within on-site elements, including the adjacent hillside. High-quality features would be provided through site design (e.g., building orientation and screening), architecture (e.g., mass, scale, form, style, material, and color), and streetscape elements (e.g., paving materials) (Figures 6a, and 6b, Architectural Elevations).

### 3.3.3 Open Space and Landscaping

Per the requirements of LAMC Section 12.40, the Project's landscaping plans identify a variety of trees and shrubs that would completely hide the proposed retaining walls in excess of 8 feet. The landscaping plans will be subject to the approval of the Director of Planning, in accordance with LAMC Sections 12.40 through 12.43, and will follow the Landscape Guidelines that have been established by the City's Planning Commission.

### 3.3.4 Access, Circulation, and Parking

Vehicles would access the Project site via Lucile Avenue, an existing paved roadway. From Lucile Avenue, vehicles would enter into one of the two-car garages located on 1888 North Lucile Avenue. Lucile Avenue is designated as a Substandard Hillside Limited Street improved to less than 20 feet wide. Landa Street and Lucile Avenue are designated by the City's Mobility Element as Local/Other Streets (City of Los Angeles 2016a).

Pursuant to LAMC Section 12.24.X.28, the property at 1888 North Lucile Avenue requests a ZAD to allow two off-street parking spaces designated for the subject property in lieu of the three required parking spaces for the construction of any main building and accessory use exceeding 2,400 square feet in size. Pursuant to LAMC Section 12.24.X.28, the Project applicant requests a ZAD to permit construction of a single-family residence at 3627 West Landa Street on a lot fronting on a Substandard Hillside Limited Street improved to less than 20 feet wide and vehicular access by way of the street that is not continuously improved to a minimum 20 feet wide from the driveway apron to the next non-hillside boundary.

### 3.3.5 Lighting

The Project would comply with LAMC Section 12.21, which requires that all lights used to illuminate a parking area be located so as to reflect light away from any street and any adjacent premises.

### 3.3.6 Sustainability Features

The Project will comply with the 2017 Los Angeles Green Building Code (LA Green Building Code), which is based on the 2016 California Green Building Standards Code (CALGreen). The

proposed single-family residences will meet the Tier 1 standards for under the City's Green Building designation. The sustainability features incorporated into the Project design range from water-permeable surfaces to the use of environmentally friendly lighting and insulation, thus fulfilling the General Plan Housing Element's goal of promoting "Energy Efficient Housing."

### 3.3.7 Construction

Construction of the Project would take approximately 18 months, commencing approximately summer 2019 and ending approximately late 2020 The construction phases required for the Project would include demolition, site preparation, grading/excavation, building construction, paving, and architectural coatings. Grading quantities at 1888 North Lucile Avenue include 996 cubic yards (cy) of cut, 20 cy of fill, and 976 cy of export. Grading quantities at 3627 West Landa Street include 1 cy of cut, 91 cy of fill, equating 90 cy of import (which will come from the Lucile site).

All demolition and construction materials will be stored on site within a staging/laydown area and not within the public right-of-way during demolition, hauling, and construction operations. Approximately 60 workers would access the Project site throughout a typical 8-hour construction workday during peak construction phasing. Construction parking will occur on the Project site.

**Project Applicant-Proposed Construction Measures**

Due to the close proximity of surrounding single-family residential land uses, construction of the Project will include several Project applicant-proposed noise control features:

- Restricted construction hours. Project construction activities that generate noise will be confined to daytime hours only, as defined by the City of Los Angeles Construction Noise Ordinance (7:00 a.m.–9:00 p.m., Monday through Friday, 8:00 a.m.–6:00 p.m. Saturdays). Construction activities that generate noise will also be prohibited on Sundays and all federal holidays.

- Demolition procedures. Demolition of the existing single-family residence will be conducted in a manner that limits noise impacts to the most impacted receptors. Demolition activities will be conducted starting on the west side of the structure and progressing to the east. The east-facing wall of the structure will be preserved for as long as feasible, which will help to attenuate construction noise to the east.

- Mufflers. All heavy construction equipment that is able to use mufflers will do so.

- Temporary Noise Barriers. In specific circumstances, temporary noise barriers can be effective at reducing noise impacts associated with construction. Noise barriers are not practical for phases of construction that require constant mobility around the site, such as site preparation and grading. In addition, noise barriers are not necessary during demolition because the walls of the existing building themselves serve the same purpose. Similarly, once the new building's walls are erected, the effectiveness of noise barriers is again reduced.

  Temporary noise barriers are ideally suited for controlling noise from construction equipment that remains stationary, such as drill rigs. For this reason, the Project will use temporary noise barriers to control noise impacts from the drill rig during drilling of the caissons. The noise barriers will be placed on both the east and west side of the drill rig

in an orientation that breaks line-of-site between the drill rig's engine and the nearest neighbors to both the east and west. The noise barrier will be located as close to the drill rig as possible to maximize effectiveness.

## 3.4 REQUESTED PERMITS AND APPROVALS

The list below includes the anticipated requests for approval of the Project. The discretionary entitlements, reviews, permits, and approvals required to implement the Project include, but are not necessarily limited to, the following:

1888 North Lucile Avenue

- Pursuant to LAMC Section 12.24.X.26, a ZAD to allow two off-street parking spaces in lieu of the three required parking spaces for the construction of any main building and accessory use exceeding 2,400 square feet in size required by Section 12.21.C.10(g).
- Pursuant to LAMC Section 12.24.26, a ZAD to allow three retaining walls in lieu of the maximum number of three retaining walls allowed by LAMC Section 12.21.C.8(a).
- Pursuant to LAMC Section 12.28, a ZAA to allow for an 8- foot- wide passageway from the street to the proposed dwelling in lieu of the 10- foot- wide passageway required by LAMC Section 12.21.C.10(a).

3627 West Landa Street

- Pursuant to LAMC Section 12.24.X.28, a ZAD to allow the construction of a single-family residence fronting on two Substandard Hillside Limited Streets that are improved to less than 20 feet wide, as otherwise not allowed by LAMC Section 12.21.C.10(i)(2).
- Pursuant to LAMC Section 12.24.X.28, a ZAD to allow vehicular access by way of the street that is not continuously improved to a minimum 20 feet wide from the driveway apron to the next non-hillside boundary, as required by LAMC Section 12.21.C.10(i)(3).
- Pursuant to LAMC Section 12.27, a Zoning Variance to allow off-site parking in a two-car private garage on an adjacent lot at 1888 North Lucile Avenue in lieu of two off-street parking spaces to be provided on site as otherwise required by LAMC Section 12.21.A.4(a).

1888 North Lucile Avenue and 3627 West Landa Street

- Other discretionary and ministerial permits and approvals that may be deemed necessary, including, but not limited to, temporary street closure permits, grading permits, excavation permits, foundation permits, building permits, and sign permits.

# 4 ENVIRONMENTAL IMPACT ANALYSIS

## I. AESTHETICS

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

### a) Have a substantial adverse effect on a scenic vista?

**Less-Than-Significant Impact.** A significant impact may occur if a project were to introduce incompatible visual elements within a field of view containing a scenic vista or substantially block views of a scenic vista.

The Project site generally lacks natural features of substantial scenic value, such as rugged or prominent terrain, rock outcroppings, knolls, ridgelines, natural bodies of water, and public parks. The Silver Lake–Echo Park–Elysian Valley Community Plan considers open space as a scenic resource, such as the Silver Lake Reservoir, located approximately 0.5 miles east of the Project site (City of Los Angeles 2004). Because of the intervening natural topography, mature trees, and manmade structures between the reservoir and the Project site, the Project would not be located within the viewshed of this scenic resource. Further, these same intervening features also block direct views of any scenic resource in the broader Project area, including the surrounding developed foothills areas.

The Project site is partially visible to vehicles from Lucile Avenue and to pedestrians along Landa Street. Under the existing conditions, there is currently a single-family residence located on 1888 North Lucile Avenue (APN543-101-2015), and the parcels on either side of the Project site are developed with existing single-family residences. As such, construction of the proposed single-family residences would not introduce an incompatible visual element onto the Project site; therefore, impacts associated with scenic vistas would be less than significant.

**b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, or other locally recognized desirable aesthetic natural feature within a state scenic highway?**

**No Impact.** A significant impact may occur only if scenic resources within the viewshed of a designated scenic highway were to be damaged or removed by a project.

The Project site is not located within or along a designated scenic highway. The nearest officially designated state scenic highway is State Route 2, located approximately 8.3 miles northeast of the Project site (Caltrans 2011). Due to the relatively large distance between State Route 2 and the Project site, as well as the presence of intervening development and terrain, the Project would not damage views within a state scenic highway.

In addition, the Silver Lake–Echo Park–Elysian Valley Community Plan designates Hyperion Avenue from Sunset Boulevard to Rowena Avenue as an Avenue II Scenic Highway, Santa Monica Boulevard from Hoover Street to Sunset Boulevard as an Avenue I Scenic Highway, and Silver Lake Boulevard from Duane Street to Armstrong Avenue as an Avenue II Scenic Highway (City of Los Angeles 2017b). These segments are located approximately 0.16 miles west of the Project site, 0.40 miles southwest of the Project site, and 0.60 miles to the east of the Project site, respectively. The areas between these locally designated scenic routes and the Project site include intervening topography, trees, and development that eliminate a direct line of sight between these roadways and the Project; therefore, impacts associated with scenic highways would not occur.

**c) In non-urbanized areas, substantially degrade the existing visual character or quality of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?**

**Less-Than-Significant Impact.** A significant impact may occur if a project would introduce incompatible visual elements onto a site that would be incompatible with the character of the area surrounding the site.

In an effort to ensure that any future changes related to visual character and quality do not result in adverse impacts, and to ensure the proposed residential structures are visually compatible with surrounding land uses, the Project would be designed in accordance with LAMC Section 12.21, which sets forth development standards for the R1 zone. In addition, the Project would be subject to review by the zoning administrator to ensure that design of the proposed structures is consistent with all applicable design requirements, standards, and regulations set forth in the LAMC.

The Silver Lake–Echo Park–Elysian Valley Community Plan has identified goals and policies guiding the aesthetic qualities of existing and future development in the Silver Lake–Echo Park–Elysian Valley Community Plan Area. The following goals and policies applicable to the Project include:

- Policy 1-1.3: Protect existing single family residential neighborhoods from out-of-scale development.
- Policy 1-1.4: Encourage new infill residential development that complements existing development and architectural style.
- Policy 1-1.7: Promote the unique quality and functionality of the Community Plan Area's mixed single and multiple family residential neighborhoods by encouraging infill development that continues to offer a variety of housing opportunities that capitalize on the eclectic character and architectural styles of existing development.
- Policy 1-3.1: Seek a higher degree of architectural compatibility and landscaping for new infill development to protect the character and scale of existing residential neighborhoods.
- Policy 1-3.2: Preserve existing views in hillside areas.
- Policy 1-6.4: Ensure that any proposed development be designed to enhance and be compatible with adjacent development.

The Project site is within an urbanized area surrounded in all directions by single-family residences. Under the existing conditions, there is currently a single-family residence located on 1888 North Lucile Avenue (APN543-101-2015), and the parcels on either side of the Project site are developed with existing single-family residences. As such, construction of the proposed single-family residences would not introduce an incompatible visual element onto the Project site. The Project would be consistent with the single-family residential character as viewed from the surrounding properties.

In addition, the landscape setbacks and high-quality architectural features (i.e., mass, scale, form, style, material, and color) would integrate the hillside and provide visual interest. Further, in lieu of conducting a substantial amount of earthwork to flatten the site and pour new at-grade foundations, the Project has been designed to be supported largely by piers, which helps to retain much of the existing topography on site.

As the Project would comply with all applicable design standards and policies, it would not degrade the existing visual character or quality of the site and its surroundings. Therefore, impacts associated with conflicts with applicable zoning regulations governing scenic quality would be less than significant.

**d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?**

**Less-Than-Significant Impact.** A significant impact may occur if a project introduces new sources of light or glare that would be incompatible with the areas surrounding the project site.

### Construction

Throughout the duration of Project construction, construction activities would occur during hours permitted by LAMC Section 41.40, between 7:00 a.m. and 9:00 p.m. on weekdays and between 8:00 a.m. and 6:00 p.m. on Saturdays and federal holidays, with no construction permitted on Sundays. As such, given that no nighttime construction is permissible on site, nighttime lighting would not be required during Project construction. Therefore, construction-related impacts associated with light and glare would be less than significant.

### Operation

The Project would include the installation of new lighting on the proposed residential structure. For example, new exterior lighting, interior building lighting, and some landscape and nighttime security lighting would be installed. Because the Project site is located within an urbanized setting surrounded by existing sources of light, including lighting from the adjacent residential uses located on either side of the Project site, on-site nighttime lighting would not represent a new or significant source of lighting in the Project area.

The Project would be required to comply with all applicable regulations as set forth in the City's General Plan, the Silver Lake–Echo Park–Elysian Valley Community Plan, and the LAMC. These regulations require that exterior lighting be adequately shielded and oriented to avoid glare impacts, as well as light trespass impacts on adjacent properties. Specifically, LAMC Chapter 9, Article 3, Section 93.0017 states "no exterior light source may cause more than two foot-candles of lighting intensity or receive direct glare from the light course" (City of Los Angeles 2016b). As such, all new exterior lighting is required to be designed and installed with shielding such that the light source cannot be seen from adjacent residential properties, from the public right-of-way, or from above.

In addition, in terms of daytime glare, the exterior of the proposed single-family residences will be comprised of materials such as non-reflective tinted glass and pre-cast concrete or fabricated wall surfaces to minimize glare and reflected heat; therefore, impacts associated with light and glare would be less than significant.

# II. AGRICULTURE AND FORESTRY RESOURCES

*In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.*

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ☐ | ☒ |
| b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? | ☐ | ☐ | ☐ | ☒ |
| c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | ☐ | ☐ | ☐ | ☒ |
| d. Result in the loss of forest land or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ |
| e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ |

**a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

**No Impact.** A significant impact may occur if a project were to result in the conversion of state-designated agricultural land from agricultural use to another non-agricultural use.

The Project site is located within a developed area of the Silver Lake–Echo Park–Elysian Valley Community Plan in the City of Los Angeles. No farmland or agricultural uses are present within the Project site or surrounding area. Located within the urban region of Los Angeles County, the Project site and surrounding area are not included in the California Department of Conservation Farmland Mapping and Monitoring Program (DOC 2016a). As such, the Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (collectively "Important Farmland") to non-agricultural use. Therefore, impacts associated with Important Farmland would not occur.

**b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?**

**No Impact.** A significant impact may occur if a project were to result in the conversion of land zoned for agricultural use or under a Williamson Act contract from agricultural use to another non-agricultural use.

The Los Angeles County Williamson Act 2015/2016 Map designates the Project site and surrounding land as non-Williamson Act Land (DOC 2016b). In addition, the Project site is zoned R1 (One-Family Zone) (City of Los Angeles 2019a). The Project site is not zoned for agricultural use or under a Williamson Act contract, and the surrounding area does not support agricultural uses. Therefore, impacts associated with Williamson Act land and agricultural zoning would not occur.

**c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?**

**No Impact.** A significant impact may occur if a project were to result in the conversion of forest land or timberland to non-timberland production use.

The Project site is not located on or adjacent to land zoned for forest land or timberland, including timberland zoned Timberland Production. The Project site is surrounded by urban development primarily consisting of residential uses. Therefore, impacts associated with forestland and timberland would not occur.

**d) Result in the loss of forest land or conversion of forest land to non-forest use?**

**No Impact.** A significant impact may occur if a project were to result in the conversion of forest land or timberland to non-timberland production use.

The Project site is not located on or in the vicinity of land zoned for forest use and would not have impacts related to loss or conversion of forest lands. Therefore, impacts associated with loss or conversion of forestland would not occur.

**e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?**

**No Impact.** A significant impact may occur if a project were to convert existing agricultural land or forestland into non-agricultural or forest use.

The Project site is not located on or adjacent to any agricultural or forest land. For this reason, the Project would not involve changes to the existing environment that could cause conversion of Farmland or forest land to non-agricultural use. Therefore, impacts associated with conversion of agricultural land or forestland would not occur.

# III. AIR QUALITY

*Where available, the significance criteria established by the South Coast Air Quality Management District (SCAQMD) may be relied upon to make the following determinations.*

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ☒ | ☐ |
| b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? | ☐ | ☐ | ☒ | ☐ |
| c. Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ☒ | ☐ |
| d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? | ☐ | ☐ | ☒ | ☐ |

The following section summarizes and incorporates the reference information from the Air Quality and Noise Impact Assessment prepared by Z Consulting Company, dated April 8, 2019, and included as Appendix A.

**a) Conflict with or obstruct implementation of the applicable air quality plan?**

**Less-Than-Significant Impact.** A significant air quality impact may occur if a project is not consistent with the applicable Air Quality Management Plan (AQMP), or would in some way represent a substantial hindrance to employing the policies, or obtaining the goals, of that plan.

The purpose of a consistency finding is to determine whether a project is inconsistent with the assumptions and objectives of the regional air quality plans and whether it would therefore interfere with the region's ability to comply with federal and state air quality standards. Specifically, SCAQMD recommends that environmental documents should discuss the Project's consistency with the current AQMP, which is the 2016 AQMP, including several of the underlying key assumptions for the air quality plans, such as the number and location of population, housing units, and employment from the Southern California Association of Governments (SCAG) growth projections and plans, as well as consistency with a local government's air quality element or air quality-related policies in other general plan elements, if the local government has adopted such policies.

In general, projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors is consistent with the underlying regional plans used to develop the AQMP. SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by SCAG for its Regional Transportation Plan/Sustainable Communities Strategy (SCAG 2016), which is based on general plans for cities and counties in the South Coast Air Basin (SCAB), for the development of the AQMP emissions inventory (SCAQMD 2017).[1] The SCAG 2016 Regional Transportation Plan/Sustainable Communities Strategy and the associated Regional Growth Forecast are generally consistent with the local plans. Therefore, the 2016 AQMP is generally consistent with local government plans.

If a project is inconsistent, the SCAQMD recommends that local governments should consider project modifications or inclusion of mitigation to eliminate the inconsistency. The SCAQMD CEQA Air Quality Handbook (SCAQMD 2015) states:

> It is important to note that even if a project is found consistent it could still have a significant impact on air quality under CEQA. For example, if the analysis demonstrates a project is consistent with the regional air plans and local Air Quality Element that does not mean that the project could not also have a significant effect on air quality by exceeding the significance thresholds.

There are two key indicators of consistency with the AQMP:

- Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.
- Whether the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Given that the Project is an allowable use within the R1-1VL zone and Low Residential General Plan land use designation, the Project would be consistent with the growth projections assumed in the 2016 AQMP. To address the criterion regarding the Project's potential to result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP, an air quality modeling analysis that identified the Project's impact on air quality was performed. As discussed under Question b, the Project would result in a minimal

[1] Information necessary to produce the emission inventory for the SCAB is obtained from the SCAQMD and other governmental agencies, including the California Air Resources Board (CARB), California Department of Transportation, and SCAG. Each of these agencies is responsible for collecting data (e.g., industry growth factors, socio-economic projections, travel activity levels, emission factors, emission speciation profile, and emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into their Travel Demand Model for estimating/projecting vehicle miles traveled and driving speeds. SCAG's socio-economic and transportation activities projections in their 2016 Regional Transportation Plan/Sustainable Communities Strategy are integrated in the 2016 AQMP (SCAQMD 2017).

increase in air pollutant emissions and would not result in a significant and unavoidable impact associated with the violation of an air quality standard.

Based on the above considerations, impacts related to the Project's potential to conflict with or obstruct implementation of the applicable air quality plan would be less than significant.

**b) Result in a cumulatively considerable net increase of any criteria pollutant for which the air basin is non-attainment under an applicable federal or state ambient air quality standard?**

**Less-Than-Significant Impact.** A significant impact may occur if a project would add a considerable cumulative contribution to federal or state non-attainment pollutant.

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, proposed project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a proposed project's individual emissions would have a cumulatively significant impact on air quality. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD 2003).

SCAQMD has established Air Quality Significance Thresholds, depicted in Table 1, that set forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality under existing and cumulative conditions (SCAQMD 2015).

**Table 1**
**SCAQMD Air Quality Significance Thresholds**

| Criteria Pollutants Mass Daily Thresholds | | |
|---|---|---|
| *Pollutant* | *Construction (Pounds per Day)* | *Operation (Pounds per Day)* |
| ROGs | 75 | 55 |
| $NO_x$ | 100 | 55 |
| CO | 550 | 550 |
| $SO_x$ | 150 | 150 |
| $PM_{10}$ | 150 | 150 |
| $PM_{2.5}$ | 55 | 55 |
| Lead[a] | 3 | 3 |

**Source:** SCAQMD 2015.
**Notes:** SCAQMD = South Coast Air Quality Management District; ROG = reactive organic gas; $NO_x$ = oxides of nitrogen; CO = carbon monoxide; $SO_x$ = sulfur oxides; $PM_{10}$ = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
[a] The phaseout of leaded gasoline started in 1976. Since gasoline no longer contains lead, the Project is not anticipated to result in impacts related to lead. Therefore, it is not discussed in this analysis.

To evaluate the potential for the Project to violate any air quality standard or contribute substantially to an existing or projected air quality violation, this analysis applies SCAQMD's

construction and operational criteria pollutants mass daily thresholds, as shown in Table 1. A project would result in a substantial contribution to an existing air quality violation of the National Ambient Air Quality Standards or California Ambient Air Quality Standards for ozone ($O_3$), which is a nonattainment pollutant, if the project's construction or operational emissions would exceed the SCAQMD reactive organic gas (ROG) or oxides of nitrogen ($NO_x$) thresholds shown in Table 1. These emissions-based thresholds for $O_3$ precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse $O_3$ impacts to occur). This approach is used because $O_3$ is not emitted directly, and the effects of an individual project's emissions of $O_3$ precursors (ROG and $NO_x$) on $O_3$ levels in ambient air cannot be readily determined through air quality models or other quantitative methods.

**Project-Specific Construction Emissions**

Construction of the Project would result in the addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and, for dust, the prevailing weather conditions. Thus, such emissions levels can only be estimated, with a corresponding uncertainty in precise ambient air quality impacts. Fugitive dust, which includes particulate matter with an aerodynamic diameter less than or equal to 10 microns ($PM_{10}$, or coarse particulate matter) and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$, or fine particulate matter), would primarily result from site preparation and grading activities. $NO_x$ and carbon monoxide (CO) emissions would primarily result from the use of construction equipment and motor vehicles. ROG emissions would primarily result from architectural coatings.

The Project involves the demolition of an existing single-family residence and the construction of two new single-family residences. The Project would result in emissions of CO, $NO_x$, fine and coarse particulate matter ($PM_{2.5}$ and PM10), sulfur oxides ($SO_x$), and ROGs during Project construction. The California Emissions Estimator Model (CalEEMod) was used to estimate Project construction emissions based on SCAQMD guidelines (Appendix A). Project-specific information was used where possible, and CalEEMod default assumptions were used where necessary and appropriate. Construction phases assumed in the modeling included demolition, site preparation, grading, and building construction (Phase 1 and Phase 2). Table 2 provides the total regional emissions generated during Project construction.

**Table 2**
**Regional Criteria Pollutant Emissions**

| Phase | Pollutant Emissions (pounds per day) | | | | | |
|---|---|---|---|---|---|---|
| | CO | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ | $SO_x$ | ROG |
| Demolition | 10.0 | 10.1 | 0.8 | 0.6 | 0.0 | 1.2 |
| Site Preparation | 4.2 | 3.8 | 0.4 | 0.2 | 0.0 | 0.5 |
| Grading | 7.1 | 10.3 | 2.0 | 1.0 | 0.0 | 0.9 |

## Table 2
## Regional Criteria Pollutant Emissions

| Phase | Pollutant Emissions (pounds per day) | | | | | |
|---|---|---|---|---|---|---|
| | CO | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ | $SO_x$ | ROG |
| Building Construction Phase 1 | 9.7 | 11.8 | 0.9 | 0.7 | 0.0 | 1.3 |
| Building Construction Phase 2 | 8.7 | 9.6 | 0.8 | 0.6 | 0.0 | 1.2 |
| Significance Threshold | 550 | 100 | 150 | 55 | 150 | 75 |
| **Significant Emissions?** | **No** | **No** | **No** | **No** | **No** | **No** |

**Source:** Appendix A.
**Notes:** CO = carbon monoxide; $NO_x$ = nitrogen oxides; $PM_{10}$ = particulate matter less than 10 microns in size; $PM_{2.5}$ = particulate matter less than 2.5 microns in size; $SO_x$ = sulfur oxides; ROG= reactive organic gases.

As shown in Table 2, construction emissions would not exceed the SCAQMD's significance thresholds for CO, $NO_x$, $PM_{10}$, $PM_{2.5}$, $SO_x$, or ROG. Construction-generated emissions would be temporary and would not represent a long-term source of criteria air pollutant emissions. Therefore, significant construction impacts associated with criterial air pollutant emissions would be less than significant.

### Project-Specific Operational Emissions

Once operational, the Project would generate nominal air emissions from area sources, energy, and mobile source emissions. The Project's operational emissions would be minimal due to the non-commercial/non-industrial nature of residential uses, which do not generate substantial amounts stationary and mobile emissions due to the nominal amount of on-site users. As previously discussed, the Project would be consistent with the 2016 AQMP and would not conflict with or obstruct implementation of the AQMP or SCAQMD rules or regulations. Therefore, long-term significant impacts associated with criterial air pollutant emissions would be less than significant.

### Cumulative Construction Emissions

Based on information from the City, there are a total of eight construction projects currently active or in the permitting pipeline, not including the Project (Figure 7, Related Projects). Cumulative air quality impacts from Project construction, based on SCAQMD guidelines, are analyzed in a manner similar to Project-specific air quality impacts. By grouping nearby projects together and treating them as one larger construction project, the same method for analyzing localized criteria pollutant impacts can be used to determine the significance of cumulative localized criteria pollutants. Two different groupings of projects were considered for this cumulative localized criteria pollutant analysis: (1) two single-family residences under construction at the same time in a 1-acre project area; and (2) five single-family residences under construction at the same time in a 5-acre area. These are shown in Figure 7.

Table 3 presents the cumulative localized criteria pollutant emissions impacts associated with these two scenarios. Only the grading/excavation phase is included because it is the most polluting phase. This phase is the most polluting part of construction, so if it produces less-than-significant emissions impacts, all other phases will also produce less-than-significant emissions impacts.

**Table 3**
**Grading/Excavation Phase Cumulative Emissions Impacts**

| arameter | Pollutant Emissions (pounds per day) | | | |
|---|---|---|---|---|
| | CO | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
| *Cumulative Scenario 2: Two Projects in 1 Acre* | | | | |
| Cumulative Emissions | 11.9 | 13.7 | 3.3 | 1.7 |
| Significance Threshold[1] | 562 | 103 | 4 | 3 |
| **Significant Emissions?** | **No** | **No** | **No** | **No** |
| *Cumulative Scenario 1: Five Projects in 5 Acres* | | | | |
| Cumulative Emissions | 29.8 | 34.3 | 8.4 | 4.4 |
| Significance Threshold[1] | 1,531 | 221 | 13 | 6 |
| **Significant Emissions?** | **No** | **No** | **No** | **No** |

**Source:** Appendix A.
**Notes:** CO = carbon monoxide; $NO_x$ = nitrogen oxides; $PM_{10}$ = particulate matter less than 10 microns in size; $PM_{2.5}$ = particulate matter less than 2.5 microns in size.

[1] The nearest residential receptor is located less than 25 meters from the Project site. Therefore, per localized significance threshold guidance, the smallest available source-receptor distance of 25 meters is used to determine the applicable thresholds.

Table 3 shows that the Project does not cause or contribute to a cumulative exceedance of the localized criteria pollutant significance thresholds; therefore, construction impacts associated with a cumulatively considerable net increase of non-attainment criteria pollutants would not occur.

### Cumulative Operational Emissions

Related projects could contribute to an existing or projected air quality exceedance because SCAB is currently in nonattainment for $PM_{10}$ and $PM_{2.5}$. SCAQMD published the White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution regarding how to address cumulative impacts from air pollution. In this document, the SCAQMD states the following (SCAQMD 2003):

> The AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts.
>
> Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and

cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.

Thus, this analysis assumes that individual projects that do not generate operational or construction emissions that exceed the SCAQMD's recommended daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the SCAB is in nonattainment and, as such, would not be considered to have a significant, adverse air quality impact. Alternatively, individual project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable. The Project will not exceed the applicable SCAQMD regional threshold for construction and operational-source emissions. Therefore, significant long-term impacts associated with a cumulatively considerable net increase of nonattainment criteria pollutants would not occur.

**c) Expose sensitive receptors to substantial pollutant concentrations?**

**Less-Than-Significant Impact.** A significant impact may occur if the construction or operation of a project exceeds an Ambient Air Quality Standard at a sensitive receptor location.

Sensitive receptors are people who are highly sensitive to air pollution or environmental contaminants. SCAQMD states that locations where sensitive receptors are likely to occur include health care facilities, rehabilitation centers, residences, schools, playgrounds, child care centers, and athletic facilities. The Project site is located near multiple existing and potential future residential receptors. The nearest residential receptor is located less than 25 meters from the Project site. Therefore, per localized significance threshold (LST) guidance, the smallest available source-receptor distance of 25 meters is used to determine the applicable thresholds.

**Construction**

A localized criteria pollutant impacts analysis was undertaken to determine potential impacts to nearby sensitive receptors during Project construction. The Project could emit pollutants, including particulate matter, CO, and $NO_x$, during Project construction that would impact sensitive receptors near the Project site. As a localized impact, only emissions generated on site are included in the significance determination. Emissions from on-road vehicles and architectural coatings (architectural coatings only emit ROG emissions) are not included in the assessment of the localized impacts. The SCAQMD has established localized significance thresholds for $PM_{10}$, $PM_{2.5}$, CO, and $NO_x$ to describe a project's on-site emission impacts to nearby sensitive receptors. Table 4 presents the emissions calculated for each construction phase using CalEEMod to determine the significance of the Project's localized construction emissions.

**Table 4**
**Localized Criteria Pollutant Impacts**

| Phase | Pollutant Emissions (pounds per day) |
|---|---|

| | CO | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|
| Demolition | 9.2 | 10 | 0.64 | 0.59 |
| Site Preparation | 3.8 | 3.7 | 0.26 | 0.22 |
| Grading | 6 | 6.9 | 1.67 | 0.87 |
| Building Construction Phase 1 | 8.8 | 11.7 | 0.65 | 0.60 |
| Building Construction Phase 2 | 7.8 | 9.5 | 0.56 | 0.53 |
| Significance Threshold[1] | 562 | 103 | 4 | 3 |
| **Significant Emissions?** | **No** | **No** | **No** | **No** |

**Source:** Appendix A.
**Notes:** CO = carbon monoxide; $NO_x$ = nitrogen oxides; $PM_{10}$ = particulate matter less than 10 microns in size; $PM_{2.5}$ = particulate matter less than 2.5 microns in size.
[1] The nearest residential receptor is located less than 25 meters from the Project site. Therefore, per LST guidance, the smallest available source-receptor distance of 25 meters is used to determine the applicable thresholds.

As shown in Table 4, the Project would not exceed the SCAQMD's localized significance thresholds for Project construction. Therefore, construction impacts associated with exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

### Operation

Upon completion of the Project, the Project would generate nominal air emissions from area sources, energy, and mobile source emissions. The Project's operational emissions would be minimal due to the non-commercial/non-industrial nature of residential uses, which do not generate substantial amounts of stationary and mobile emissions due to the nominal amount of on-site users. Therefore, significant long-term impacts associated with exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

### d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

**Less Than Significant Impact.** A significant impact may occur if a project would generate substantial odors.

Typical sources of odor include manufacturing plants, rendering plants, coffee roasters, wastewater treatment plants, sanitary landfills, and solid waste transfer stations.

### Construction

During construction, the various diesel-powered vehicles and equipment used on the Project site could create localized odors; however, these odors would be temporary and would not likely be noticeable for extended periods of time beyond the Project's site boundaries. In addition, SCAQMD Rule 113, which is applicable to Project construction, limits the amount of ROGs that may be used during the architectural coating phase of construction activities. Therefore, construction impacts associated with odors would be less than significant.

### Operations

The Project would involve the construction of two new single-family residences. Because the Project would not involve activities associated with industrial projects involving chemicals, solvents, petroleum products, and other strong-smelling elements used in manufacturing processes, no odors of these types are anticipated. Residential trash receptacles used by the future residents would be typical of all other receptacles used in the surrounding area, which are closed receptacles with lids that help to minimize odor impacts. The Project would not include uses that would have potential sources of objectionable odors. Therefore, long-term impacts associated with odors would be less than significant.

# IV. BIOLOGICAL RESOURCES

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

**a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to remove or modify habitat for any species identified or designated as a candidate, sensitive, or special-status

species in local or regional plans, policies, or regulations, or by the state or federal regulatory agencies previously cited.

No native habitat is located on the Project site or in the immediately surrounding area. On-site plant species are limited to non-native, ornamental species located along the Project frontages. These non-native, ornamental plant species form a non-cohesive plant community that is not known to support any candidate, sensitive, or special-status plant species. Based on the developed nature of the Project site and surrounding area, wildlife species that could occur on site include common species typically found in urbanized settings, such as house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*), and western fence lizard (*Sceloporus occidentalis*). Based on specific habitat requirements, none of these, or any other wildlife species that can reasonably be expected to occur on the Project site, are candidate, sensitive, or special-status wildlife species.

Ornamental landscape trees that are currently located on the Project site would require removal prior to construction of the proposed Project. Because of the highly disturbed nature of the Project site and the residential activity around the site, it is unlikely that the existing trees would provide desirable nesting opportunities for bird/raptor species, especially considering that more suitable nesting options likely occur within the broader Project area. Therefore, no impacts associated with candidate, sensitive, or special-status species would occur.

**b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?**

**No Impact.** A significant impact may occur if riparian habitat or any other sensitive natural community identified locally, regionally, or by the state and federal regulatory agencies cited would be adversely modified by a project.

No special-status vegetation communities occur within the Project site, and there are no riparian or wetland areas on the Project site (USFWS 2019). Therefore, impacts associated with riparian habitat or other sensitive natural communities would not occur.

**c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

**No Impact.** A significant impact may occur if state or federally protected wetlands were to be modified or removed by a project.

No jurisdictional wetlands or non-wetland waters occur within the Project site (USFWS 2019). Therefore, no impacts associated with federally protected wetlands would occur.

**d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to interfere or remove access to a migratory wildlife corridor or impede the use of native wildlife nursery sites.

**Nesting Birds**

Existing trees and shrubs located on the Project site have the potential to support nesting birds. In addition, the surrounding Project area, outside of the Project site, has the potential to support nesting and foraging raptors. Direct and indirect impacts to migratory nesting birds must be avoided for compliance with the Migratory Bird Treaty Act. Nesting birds could be affected by direct impacts due to vegetation removal and indirect impacts from short-term construction-related noise, resulting in decreased reproductive success or abandonment of an area as nesting habitat.

Consistent with both the Migratory Bird Treaty Act and the California Fish and Game Code, if Project construction must start during the breeding season (i.e., February 1 through August 31), standard measures will be implemented prior to ground-disturbing and vegetation trimming/removal activities to ensure that any potential nesting birds are not adversely effected by construction activities. These measures may include, but are not limited to, conducting a pre-construction nesting bird survey prior to ground-disturbing and vegetation trimming/removal activities, and, if an active nest is detected, delineating an appropriate avoidance buffer around the active nest and avoiding the nest until the nesting cycle is complete. Therefore, with compliance with existing regulatory requirements (Migratory Bird Treaty Act and the California Fish and Game Code), impacts to nesting and migratory birds would be less than significant.

**Wildlife Corridors and Habitat Linkages**

Wildlife corridors are linear, connected areas of natural open space that provide avenues for migration of animals. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as stepping stones for wildlife dispersal.

Although local movement of wildlife is expected to occur within the City, the neighborhood of Silver Lake is not recognized as an existing or proposed Significant Ecological Area that links migratory populations, as designated by the County of Los Angeles. The nearest designated Significant Ecological Area is at Griffith Park, located approximately 1.8 miles north of the Project site (County of Los Angeles 2019a). Due to the distance and intervening development, and because the Project site is located within a highly urbanized area, the Project would not interfere with the movement of any native residents, migratory fish, or wildlife species.

In addition, Project activities would occur primarily during daytime hours as specified in LAMC Section 41.40, limiting the potential noise and lighting impacts during the nighttime hours when most wildlife species likely to traverse the area would be active. Further, lighting would be directed toward the Project impact area and away from the surrounding habitats to minimize potential impacts to wildlife movement in the area. As such, direct and/or indirect impacts to wildlife corridors and habitat connectivity are anticipated to be minimal; therefore, impacts to wildlife movement would be less than significant.

**e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

**No Impact.** A significant impact may occur if a project were to cause an impact that would be inconsistent with local regulations pertaining to biological resources, such as the City Protected Tree Ordinance (Ordinance No. 177404).

The City Protected Tree Ordinance (Ordinance 177404) regulates the relocation and replacement of protected trees. Protected trees include oak (*Quercus* spp.), Southern California black walnut, western sycamore (*Platanus racemosa*), and California bay (*Umbellularia californica*) that measure 4 inches or more in cumulative diameter at 4.5 feet above the ground level at the base of the tree. There are no City-Protected Tree species located on the Project site, and none would be disturbed upon implementation of the Project; therefore, no impacts related to tree protection policies or ordinances would occur.

**f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

**No Impact.** A significant impact would occur if a project were inconsistent with policies in any draft or adopted conservation plan.

The Silver Lake–Echo Park–Elysian Valley Community Plan does not designate any portions of the Community Plan Area as being within a habitat conservation plan (City of Los Angeles 2004). In addition, the Project area is not within any of the regional conservation plans designated by the state (CDFW 2017). As such, implementation of the Project would not conflict with the provisions of an adopted habitat conservation plan; natural community conservation plan; or other approved local, regional, or state habitat conservation plan; therefore, impacts associated with inconsistency with an adopted plan would not occur.

# V. CULTURAL RESOURCES

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? | ☐ | ☐ | ☒ | ☐ |
| b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5? | ☐ | ☐ | ☒ | ☐ |
| c. Disturb any human remains, including those interred outside of dedicated cemeteries? | ☐ | ☐ | ☒ | ☐ |

**a) Cause a substantial adverse change in the significance of a historical resource as pursuant to State CEQA Guidelines Section 15064.5?**

**Less-Than-Significant Impact.** A significant impact may occur if grading or excavation activities associated with a project would disturb historic resources that presently exist within the Project site.

A historical resource is defined by California Public Resources Code (PRC) Section 21084.1 and CEQA Guidelines Section 15064.5 as any resource listed or determined to be eligible for listing in the National Register of Historic Places (NRHP) as well as some California State Landmarks and Points of Historical Interest. In addition, historical resources are evaluated against the California Register of Historical Resources (CRHR) criteria prior to making a finding as to the project's impacts on historical resources. Generally, resources must be at least 50 years old to be considered for listing in the CRHR as a historical resource. A significant adverse effect would occur if a project were to adversely affect a historical resource as defined by PRC Section 21084.1 and Section 15064.5 of the CEQA Guidelines.

There is an existing single-family residence and carport located on the parcel associated with 1888 North Lucile Avenue. The existing building, totaling approximately 1,009 square feet, was built in 1925 (City of Los Angeles 2019a). Despite the age of this structure, structural changes have been made, and the original historical integrity of the property is no longer intact. As such, the structure would not be eligible for listing in the NRHP or CRHR, and thus, would not be considered a historical resource as defined by CEQA. A review of the NRHP digital archive and the list of California Historical Resources indicated there are no listed sites located on the Project site (NRHP 2019; OHP 2019). In addition, no local properties are found on the NRHP or CRPR, therefore, impacts associated with historical resources would be less than significant.

**b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5?**

**Less-Than-Significant Impact.** A significant impact may occur if grading or excavation activities associated with a project would disturb archaeological resources which presently exist within the Project site.

Due to the heavy disturbance that has occurred on the Project site as a result of previous development activities, it is unlikely that grading and excavation activities will encounter intact archaeological deposits. For these reasons, the Project site should be treated as not sensitive for archaeological resources. In addition, similar to many other development projects proposed throughout the City, the Project will be conditioned to ensure that, in the unlikely event that archaeological and/or tribal cultural resources (i.e., sites, features, or artifacts) are exposed during construction activities, that all construction work occurring within the vicinity of the find shall stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, and/or a tribal cultural resources specialist can evaluate the significance of the find and determine whether additional study is warranted. Therefore, with compliance with this standard condition of approval, impacts to archaeological resources would be less than significant.

**c) Disturb any human remains, including those interred outside of formal cemeteries?**

**Less-Than-Significant Impact.** A project-related significant adverse effect may occur if grading or excavation activities associated with a project would disturb previously interred human remains. In the highly unlikely event that human remains are uncovered during ground-disturbing activities, there are regulatory provisions to address the handling of human remains in California Health and Safety Code, Section 7050.5; PRC Section 5097.98; and CEQA Guidelines, Section 15064.5(e). Pursuant to these codes, in the event that human remains are discovered, disturbance of the site shall remain halted until the Los Angeles County Coroner (Coroner) has conducted an investigation into the circumstances, manner, and cause of 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, in the manner provided in Section 5097.98 of the PRC. The Coroner is required to make a determination within 2 working days of notification of the discovery of the human remains. If the Coroner determines that the remains are not subject to his or her authority and if he or she recognizes or has reason to believe the human remains to be those of a Native American, he or she shall consult with the Native American Heritage Commission by telephone within 24 hours, to designate a Most Likely Descendant who shall recommend appropriate measures to the landowner regarding the treatment of the remains. If the owner does not accept the Most Likely Descendant's recommendations, the owner or the Most Likely Descendant may request mediation by the Native American Heritage Commission. Therefore, with compliance with this existing state law, impacts associated with human remains would be less than significant.

# VI. ENERGY

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

**a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?**

**Less-Than-Significant Impact.** A significant impact would occur if the project would substantially increase demand for energy resources, exceeding the available supply.

**Construction**

Construction of the Project would require the use of electric power for as-necessary lighting and electronic equipment. The amount of electricity used during construction would be minimal because typical energy demand stems from the use of electrically powered equipment. This electricity demand would be temporary and would cease upon completion of construction. Therefore, the Project would not adversely impact the available electricity supply. During construction, natural gas would typically not be consumed on the Project site. The majority of the energy used during construction would be from petroleum.

Petroleum would be consumed throughout construction of the Project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and VMT associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. While construction activities would consume petroleum-based fuels, consumption of such resources would be temporary and would cease upon completion of construction. In addition, construction activities would be subject to compliance with applicable requirements designed to reduce the consumption of energy resources. Specifically, the Project would be required to comply with the California Air Resources Board (CARB) Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Compliance with the Airborne Toxics Control Measure would reduce the Project's reliance on petroleum-based fuel during construction activities, and the Project's consumption of petroleum-based fuels would not have an adverse impact on the available supply. Therefore, impacts would be less than significant.

## Operational

The Project would require electricity, natural gas, and petroleum during operations. For the reasons discussed below, the Project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources.

### *Electricity*

Upon completion, the Project's operational phase would require electricity for building operation (appliances, lighting, etc.). The Project would be required to comply with the 2016 Title 24 standards or the most recent standards at the time of building permit issuance. The energy-using fixtures in the Project would likely be newer technologies, using less electric power. In addition, the Los Angeles Department of Water and Power (LADWP) is required to procure at least 33% of their energy portfolio from renewable sources by 2020. The current renewable energy sources used by LADWP include wind, solar, and geothermal sources. These sources account for 29% of LADWP's overall energy mix in 2016, the most recent year for which data are available (CEC 2018). As such, the Project's estimated electricity consumption would likely be lower than that forecasted. Therefore, the Project would not result in the inefficient or wasteful use of electricity.

### *Natural Gas*

Although the Project would require natural gas for building heating, the Project would comply with 2016 Title 24 building energy efficiency standards, reducing energy used in the state. In general, single-family homes built to the 2016 standards are anticipated to use approximately 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards (CEC 2016). In addition, the Project would implement all applicable mandatory measures within the LA Green Building Code, which would have the effect of reducing the Project's energy use. The Project would generate a need for natural gas that is consistent with single-family homes, and due to compliance with energy-reducing measures and improvements in technology, the Project would likely require less energy than existing single-family homes in the surrounding area. Based on compliance with California Public Utilities Commission (CPUC) regulations, Title 24, and the LA Green Building Code, the Project would not result in wasteful, inefficient, or unnecessary consumption of energy. Therefore, the Project would not result in the inefficient or wasteful use of electricity.

### *Petroleum*

During operation of the Project, the majority of fuel consumption would involve the use of motor vehicles traveling to and from the Project site. According to the California Energy Commission (CEC), transportation accounted for 38.5% of California's total energy consumption in 2015 (CEC 2018). In 2017, California consumed 15.6 billion gallons of gasoline and 2.82 billion gallons of diesel fuel (California Board of Equalization 2018). However, the state is now working on developing flexible strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and greenhouse gases (GHGs) from the transportation sector, and reduce vehicle miles traveled. Accordingly, gasoline consumption in California has declined. The CEC predicts that the demand for gasoline will continue to decline over the next 10 years, and there will be an increase in the use of alternative fuels (CEC 2016).

Over the lifetime of the Project, the fuel efficiency of vehicles being used by residents is expected to increase. As such, the amount of petroleum consumed as a result of vehicle trips to and from the Project site is expected to decrease during the lifetime of the Project. Therefore, the Project would not result in the inefficient or wasteful use of petroleum.

**b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?**

**Less-Than-Significant Impact.** The Project would not result in wasteful, inefficient, and unnecessary consumption of energy during construction or operation. The Project would comply with CARB's Airborne Toxics Control Measure, Title 24 standards, and the LA Green Building Code. The use of energy provided by renewable energy resources is constrained by the energy portfolio mix managed by LADWP. As previously addressed, LADWP is required to procure at least 33% of their energy portfolio from renewable sources by 2020. As of 2012, the most recent year for which data is available, its existing renewable energy resources included small hydro, wind, solar, and biogas, which accounted for 20% of its overall energy mix. This represents the available off-site renewable sources of energy that would meet the Project demand. However, it should be noted that the proposed single-family residence's energy demand represents only 0.07% of LADWP's instantaneous peak demand. As such, the Project would not conflict with LADWP's renewable energy plan. Therefore, impacts associated with conflict with a state or local renewable energy or energy efficiency plan would be less than significant.

# VII. GEOLOGY AND SOILS

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

In 2015, in *California Building Industry Association v. Bay Area Air Quality Management District* (*CBIA v. BAAQMD*), the California Supreme Court held that CEQA generally does not require a lead agency to consider the impacts of the existing environment on the future residents or users of the Project. The decision held that an impact from the existing environment to the Project,

including future users and/or residents, is not an impact for purposes of CEQA; however, if the Project, including future users and residents, exacerbates existing conditions, that impact must be assessed, including how it might affect future users and/or residents of the Project. Thus, in accordance with Appendix G of the CEQA Guidelines and the *CBIA v. BAAQMD* decision, the Project would have a significant impact related to geology and soils if it would result in any of the following impacts.

The following section summarizes and incorporates the reference information from the Geologic and Soils Engineering Investigation prepared by Robles Engineering, dated January 21, 2013 (Appendix B).

**a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:**

**i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

**No Impact.** A significant impact may occur if a project site is located within a state-designated Alquist-Priolo Zone or other designated fault zone.

The Alquist-Priolo Earthquake Fault Zoning Act requires the state geologist to establish regulatory zones, known as “earthquake fault zones,” around the surface traces of active faults and to issue appropriate maps to cities or counties for planning and zoning purposes. According to the California Department of Conservation Seismic Hazard Zones Map, the Project site is not located within an Alquist-Priolo Earthquake Fault Zone (CGS 2019). No known active faults cross the Project site.

The nearest known active fault is the Hollywood Fault, located approximately 1.32 miles to the north of the Project site. The Hollywood Fault has not produced any damaging earthquakes during the historical period and has had relatively minor micro-seismic activity. Notwithstanding, based on geomorphic evidence, exploratory borings, and fault trenching studies, this fault is classified as active.

Given that no known active faults underlie the Project site, the potential for on-site surface rupture is low. The Project would not exacerbate existing environmental conditions by bringing people or structures into areas potentially susceptible to substantial adverse effects, including fault rupture. Therefore, no impacts associated with fault rupture would occur.

**ii) Strong seismic ground shaking?**

**Less-Than-Significant Impact.** A significant impact may occur if a project represents an increased risk to public safety or destruction of property by exposing people, property, or infrastructure to seismically induced ground-shaking hazards.

The potentially significant impacts related to seismic ground shaking at the Project site would not be exacerbated by the Project because the Project would not involve mining operations, deep excavation into the earth, or boring of large areas, all of which have the potential to create unstable seismic conditions that could be exacerbated by seismic ground shaking. In addition, no known active faults with the potential for surface fault rupture are known to pass directly beneath the

Project site. Therefore, impacts associated with seismic ground shaking would be less than significant.

**iii) Seismic-related ground failure, including liquefaction?**

**No Impact.** A significant impact may occur if a Project site is located in an area that is identified as having a high risk of liquefaction and associated ground failure.

Soil liquefaction most commonly occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, thus becoming similar to quicksand. Liquefaction may also occur in the absence of a seismic event, when unconsolidated soil above a hardpan becomes saturated with water. Factors determining the liquefaction potential are the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. Loose sands and peat deposits, uncompacted fill and other Holocene materials deposited by sedimentation in rivers and lakes (fluvial or alluvial deposits), and debris or eroded material (colluvial deposits) are the most susceptible to liquefaction.

Based on the California Geological Survey mapped earthquake hazard zones, the Project site is not located within an area of liquefaction (CGS 2019). This classification is consistent with the Geologic and Soils Engineering Investigation (Appendix B), which indicates no groundwater seepage was observed on the site or in the exploratory excavations. The groundwater levels appear to be substantially below the level of the proposed grading, and would impact the underlying soils resulting in liquefaction. Therefore, no impacts associated with groundwater would occur.

**iv) Landslides?**

**Less-Than-Significant Impact.** A significant impact may occur if a Project site is located in a hillside area with soil conditions that would suggest a high potential for landslides.

The California Geologic Survey indicates the Project site is located within a landslide zone (CGS 2019). However, the Geologic and Soils Engineering Investigation prepared for the Project site (Appendix B), determined, ancient or recent landslides had not occurred on the property. In addition, an examination of the slopes did not reveal the presence of past surficial slope failures. Further, the Project would comply with the site plan review and permitting requirements of the Los Angeles Department of Building and Safety. Through compliance with applicable regulatory requirements, the Project would not exacerbate, cause, or acceleration geologic hazards related to landslides. As such, the likelihood for landslide occurrence is considered low. Therefore, impacts associated with landslides would be less than significant.

**b) Result in substantial soil erosion or the loss of topsoil?**

**Less-Than-Significant Impact.** A significant impact may occur if a project exposes large areas to the erosion-inducing effects of wind or water for an extended period of time.

Project construction would involve activities such as excavation and grading that could result in soil erosion. The Project would comply with the applicable requirements of the California Building Code, Los Angeles Uniform Building Code (UBC), and Los Angeles Regional Water Quality Control Board during Project construction and operation. The Project would be required to implement a stormwater pollution prevention plan, which requires adoption of an erosion control

plan to reduce the potential for erosion and sedimentation to occur during Project construction. Furthermore, Ordinance 172.673 of the City's UBC requires that best management practices (BMPs) be incorporated into plan documents to control stormwater pollution from sediments, erosion, and construction materials leaving the construction site. Lastly, similar to many other development projects proposed throughout the City, the Project will be conditioned to provide signage at the Project site containing contact information for the Street Senior Use Inspector (Department of Public Works), the Senior Grading Inspector, and the hauling or general contractor, so that if evidence of erosion is apparent, the public could contact the appropriate individuals who can address the issue. Therefore, impacts associated with soil erosion and topsoil loss would be less than significant.

**c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?**

**Less-Than-Significant Impact**. A significant impact may occur if a project were to be built in an unstable area without proper site preparation or design features to provide adequate foundations for project buildings, thus posing a hazard to life and property.

The Geologic and Soils Engineering Investigation determined that based on the existing gentle slope gradients (2:1), and favorable geologic conditions, the Project site is considered grossly and surficially stable (Appendix B). In addition, all required excavations would be sloped or properly shored in accordance with the provisions of the California Building Code and additional Los Angeles UBC requirements, as applicable to the Project. Compliance with regulatory requirements would ensure that building design and construction is attuned to site-specific conditions, including building foundation requirements. Therefore, impacts associated with on-site soil stability would be less than significant.

**d) Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?**

**Less-Than-Significant Impact**. A significant impact may occur if a project is built on expansive soils without proper site preparation or design features to provide adequate foundations for project buildings, thus posing a hazard to life and property.

Expansive soils shrink and swell as a result of moisture change. These volume changes can result in damage over time to building foundations, underground utilities, and other subsurface facilities and infrastructure if they are not designed and constructed appropriately to resist the damage associated with changing soil conditions. Expansive soils are often associated with soils with high clay materials content.

According to the Geologic and Soils Engineering Investigation (Appendix B), the Project site consists of residual soil (sandy silt) and bedrock. None of these underlying soil materials contain high percentages of clay; as such, they are less likely to be susceptible to expansion. The residual soils are not considered suitable for foundation or slab support. Thus, the Geologic and Soils Engineering Investigation recommends the foundation bear entirely into the bedrock. In addition,

all required excavations would be sloped or properly shored in accordance with the provisions of the California Building Code and additional Los Angeles UBC requirements, as applicable to the Project. Compliance with regulatory requirements would ensure that building design and construction is attuned to site-specific conditions, including building foundation requirements. Therefore, impacts associated with expansive soils would be less than significant.

**e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?**

**No Impact.** This question would apply to a project only if it were located in an area not served by an existing sewer system.

The Project site is located within a developed area, and the Project would connect directly to the municipal sanitary sewer system. No septic tanks or alternative wastewater disposal systems would be used on the Project site. Therefore, impacts associated with the underlying soils' ability to support a septic system would not occur.

**f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

**Less-Than-Significant Impact.** A significant impact may occur if grading activities associated with a project were to disturb paleontological resources or geologic features that presently exist within the Project site.

As shown on Figures CR-2 and CR-3 of the Los Angeles Citywide General Plan Framework Draft Environmental Impact Report, there are no known vertebrate paleontological resources on or around the Project site; however, the bedrock on the Project site is where fossils are likely to be found (City of Los Angeles 1995). The bedrock underlying the soils is shale, which is a geologic unit capable of producing fossils (Appendix B). As such, similar to many other development projects proposed throughout the City, the Project will be conditioned to ensure that, in the unlikely event that paleontological resources (i.e., fossils) are exposed during construction activities, that all construction work occurring within the vicinity of the find shall stop until a qualified paleontologist, as defined by the Society of Vertebrate Paleontology's 2010 guidelines, can assess the nature and importance of the find. Therefore, with compliance with this standard condition of approval, impacts associated with paleontological resources would be less than significant.

# VIII. GREENHOUSE GAS EMISSIONS

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

The following section summarizes and incorporates the reference information from the Air Quality and Noise Impact Assessment prepared by Z Consulting Company, dated April 8, 2019.

**a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

**Less-Than-Significant Impact.** A project would have a significant impact with respect to GHG emissions and global climate change if it would generate substantial gas emissions, either directly or indirectly, that may have a significant impact on the environment.

**Construction**

For GHG emissions and global warming, there is not, at this time, one established, universally agreed-upon "threshold of significance" by which to measure an impact; however, the SCAQMD has convened a GHG CEQA Significance Threshold Working Group to provide guidance to lead agencies in determining whether GHG impacts resulting from new development projects are significant. On December 5, 2008, the SCAQMD established interim GHG significance thresholds through its document Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans (SCAQMD 2008). The primary objective of this document was to establish thresholds for use in CEQA analyses that would help achieve a performance standard or target GHG reduction objective, which would ultimately reduce GHG emissions. The interim guidance indicates that a GHG emissions threshold of 3,000 metric tons (MT) of carbon dioxide equivalent ($CO_2e$) per year is appropriate for residential projects. While the SCAQMD recommends that GHG emissions from construction should be amortized over 30 years and added to operational GHG emissions to determine the overall Project impact, this approach is not suitable for residential projects, as they produce extremely low amounts operational GHG emissions; instead, the GHG emissions that occur in the peak year of construction are compared directly to the threshold, resulting in a more conservative significance determination.

Construction phase GHG emissions are also calculated by CalEEMod. Maximum daily $CO_2e$ emissions are multiplied by the total number of construction days to determine the annual

emissions. Table 5 presents the construction phase $CO_2e$ emissions and compares them to the significance threshold of 3,000 MT $CO_2e$/year. Although the significance threshold is meant to be applied to a single year of emissions, emissions from the entire duration of construction (i.e., more than 1 year) are conservatively utilized to determine significance.

**Table 5**
**Project Construction Greenhouse Gas Emissions**

| Source | Total $CO_2e$ Emissions (MT/year) |
|---|---|
| Project Construction Phase | 282 |
| Significance Threshold (Residential) | 3,000 |
| **Significant Emissions?** | **No** |

**Sources:** Appendix A; SCAQMD 2008.
**Notes:** $CO_2e$ = carbon dioxide equivalent; MT = metric tons.

As shown in Table 5, the Project would generate approximately 282 MT CO2e/year in total for peak year of construction. This amount is less than the SCAQMD threshold of 3,000 MT/year $CO_2e$. Therefore, construction impacts associated with generation of GHG emissions would be less than significant.

### Operational

Once operational, the Project would generate nominal GHG emissions from area sources, energy, and mobile source emissions. The Project's operational emissions would be minimal due to the non-commercial/non-industrial nature of residential uses, which do not generate substantial amounts stationary and mobile emissions due to the nominal amount of on-site users. In addition, the Project would comply with applicable requirements set forth by the LA Green Building Code (Ordinance 181480), which serves to increase energy conservation and efficiency within the City by regulating projects that involve construction of new buildings, additions, alterations with building valuations of $200,000 or more, and residential alterations that increase the building's conditioned volume. The LA Green Building Code also incorporates applicable provisions of CALGreen. Adherence to the LA Green Building Code would help ensure that the GHG emissions generated by the Project would be minimized to the extent feasible. Therefore, long-term impacts associated with generation of GHG emissions would be less than significant.

### b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

**Less-Than-Significant Impact.** A project would have a significant impact with respect to GHG emissions and global climate change if it would substantially conflict with the provisions of Section 15064.4(b) of the CEQA Guidelines.

In May 2007, the City adopted Green LA – An Action Plan to Lead the Nation in Fighting Global Warming (Green LA Climate Action Plan), which set forth the goal of reducing City GHGs by up to 35% below 1990 levels by 2030 (City of Los Angeles 2007). The City's Green LA Climate Action Plan GHG reductions are based on actions in key sectors, including energy, water, transportation,

waste, the Port of Los Angeles, airports, open space and greening, green economy, and adaptation strategies.

The City adopted the Los Angeles Sustainable City pLAn on April 8, 2015, to achieve GHG emissions reductions within the City by providing specific short-term and longer-term targets that relate to the environment, economy, and social equity (City of Los Angeles 2015). The plan is made up of short-term (by 2017) and longer-term (by 2025 and 2035) targets in 14 categories. The plan sets GHG emissions reduction targets of 45% by 2025, 60% by 2035, and 80% by 2050, all against a 1990 baseline, and GHG efficiency targets for the City's economy of improvement by 55% in 2025 and 75% in 2035 from 2009 baseline levels (City of Los Angeles 2015). The plan also incorporates strategies and initiatives to achieve these targets and specifies a framework for collaboration between jurisdictions and engagement with the City's residents. Focus areas targeted within the Sustainable City pLAn related to GHG emissions include local solar power, energy-efficient buildings, carbon and climate leadership, housing and development, mobility and transit, and air quality. The plan includes strategies and priority initiatives, including advancing energy-efficiency and green-building programs, preparing for energy code upgrades, de-carbonizing the City's electrical grid, reducing individual and citywide energy consumptions through education and retrofitting, and improving pedestrian and bicycle infrastructure (City of Los Angeles 2015).

As mentioned previously, the LA Green Building Code (Ordinance 181480) also serves to increase energy conservation and efficiency within the City by regulating projects that involve construction of new buildings, additions, alterations with building valuations of $200,000 or more, and residential alterations that increase the building's conditioned volume. The LA Green Building Code also incorporates applicable provisions of CALGreen.

The Climate Change Scoping Plan, approved by CARB in 2008 and updated in 2014 and 2017, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations. Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-global-warming-potential GHGs in consumer products) and changes to the vehicle fleet (hybrid, electric, and more fuel-efficient vehicles) and associated fuels, among others. To the extent that these regulations are applicable to the Project, its inhabitants, or uses, the Project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law.

Regarding consistency with post-2020 statewide targets, specifically Senate Bill 32 (goal of reducing GHG emissions to 40% below 1990 levels by 2030) and Executive Order S-3-05 (goal of reducing GHG emissions to 80% below 1990 levels by 2050), there are no established protocols or thresholds of significance for that future-year analysis. However, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory to meet these long-

term GHG goals, although the specific path to compliance is unknown (CARB 2014). The Project would not interfere with implementation of any of the above-described GHG emissions reduction goals for 2030 or 2050 because the Project's GHG emissions would not exceed SCAQMD's draft interim threshold of 3,000 MT $CO_2e$ per year. This threshold was established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. Because the Project would not exceed the threshold, this analysis provides support for the conclusion that the Project would not impede the state's trajectory toward the above-described statewide GHG reduction goals for 2030 or 2050.

In summary, the Project would be required to comply with all applicable provisions, including sustainability features, set forth by the LA Green Building Code, Green LA Climate Action Plan, and Sustainable City pLAn. Adherence with these applicable regulations would be confirmed by the City during the plan check phase prior to issuance of building permits. Further, the Project would not conflict with the state's Scoping Plan or GHG reduction goals for 2030 or 2050. Therefore, impacts associated with conflicts with applicable GHG plans, policies, and regulations would be less than significant.

# IX. HAZARDS AND HAZARDOUS MATERIALS

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

As previously discussed, in 2015, in *CBIA v. BAAQMD*, the California Supreme Court held that CEQA generally does not require a lead agency to consider the impacts of the existing environment on the future residents or users of the Project. The revised thresholds are intended to comply with this decision. Specifically, the decision held that an impact from the existing environment on the Project, including future users and/or residents, is not an impact for the purposes of CEQA; however, if the Project, including future users and residents, exacerbates existing conditions, that impact must be assessed, including how it might affect future users and/or

residents of the Project. For example, if Project construction on a hazardous waste site would cause the potential dispersion of hazardous waste into the environment, the EIR should assess the impacts of that dispersion on the environment, including on the Project's residents. Thus, in accordance with Appendix G of the CEQA Guidelines and the *CBIA v. BAAQMD* decision, the Project would have a significant impact related to hazards and hazardous materials if it would result in any of the following impacts:

**a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

**Less-Than-Significant Impact.** A significant impact may occur if a project involves use or disposal of hazardous materials as part of its routine operations and would have the potential to generate toxic or otherwise hazardous emissions that could adversely affect sensitive receptors.

**Construction**

Construction of the Project would involve the use of potentially hazardous materials associated with the construction of residential development, including vehicle fuels, oils, and transmission fluid, on the Project site. These materials would include gasoline, diesel fuel, lubricants, and other petroleum-based products to operate and maintain construction equipment. Handling these potentially hazardous materials would be temporary and would coincide with the short-term construction phase of the Project.

Although these materials would likely be stored on the Project site, storage would be required to comply with the guidelines set forth by each product's manufacturer, as well as in accordance with all applicable federal, state, and local regulations pertaining to the storage of hazardous materials. Consistent with federal, state, and local requirements, the transport of hazardous materials to and from the Project site would be conducted by a licensed contractor. Any handling, transport, use, or disposal of hazardous materials would comply with all relevant federal, state, and local agencies and regulations, including the U.S. Environmental Protection Agency (EPA), the California Department of Toxic Substances Control, California Occupational Safety and Health Administration, California Department of Transportation, SCAQMD, Los Angeles Fire Department (LAFD), and the Resource Conservation and Recovery Act. Therefore, construction impacts associated with the transport, use, or disposal of hazardous materials would be less than significant.

**Operations**

During the operation of the Project, no hazardous materials other than typical household cleaning supplies and solvents used for housekeeping and maintenance activities would routinely be used on the Project site. Although these materials would vary, they would generally include cleaning products, solvents, paints, fertilizers, and herbicides and pesticides. Many of these materials are considered household hazardous wastes, common wastes, and universal wastes by the EPA, which considers these types of wastes common to businesses and households and to pose a lower risk to people and the environment than other hazardous wastes when properly handled, transported, used, and disposed of (EPA 2018). Federal, state, and local regulations typically

allow these types of wastes to be handled and disposed of under less-stringent standards than other hazardous wastes, and many of these wastes do not need to be managed as hazardous waste. Therefore, long-term impacts associated with the use, transport, and disposal of hazardous materials would be less than significant.

**b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

**Less Than Significant Impact.** A significant impact may occur if a project could pose a hazard to nearby sensitive receptors by releasing hazardous materials into the environment through accident or upset conditions.

**Construction**

Construction at the Project site would involve the temporary use of hazardous and/or flammable materials, including diesel fuel, gasoline, and other oils and lubricants. Although use of these hazardous materials during Project construction could result in their being released into the environment, the use, storage, transport, and disposal of these materials would comply with all existing federal, state, and local regulations, as previously described. In addition, LAFD regulates the use and storage of hazardous substances and responds to hazardous materials release incidents in the City. In the event that services are required, the LAFD Hazardous Materials Unit would dispatch members to ensure that any spill or unauthorized releases would be properly removed, handled, transported, and disposed of (LAFD 2019a). Therefore, construction impacts associated with the accidental release of hazardous materials would be less than significant.

**Operations**

Potentially hazardous materials associated with operation of the Project, as a residential land use, would include those materials typically associated with cleaning and maintenance activities. Although these materials would vary, they would generally include household cleaning products, solvents, paints, fertilizers, and herbicides and pesticides. Many of these materials are considered household hazardous wastes, common wastes, and universal wastes by the EPA, which considers these types of wastes common to businesses and households and to pose a lower risk to people and the environment than other hazardous wastes when properly handled, transported, used, and disposed of (EPA 2018). Federal, state, and local regulations typically allow these types of wastes to be handled and disposed of under less-stringent standards than other hazardous wastes, and many of these wastes do not need to be managed as hazardous waste. Therefore, long-term impacts associated with the accidental release of hazardous materials would be less than significant.

**c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

**Less Than Significant Impact.** A significant impact may occur if a Project site is located within 0.25 miles of an existing or proposed school site and is projected to release toxic emissions that pose a health hazard beyond regulatory thresholds.

Land uses and activities typically associated with hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste include heavy commercial, manufacturing, research, and industrial uses. The Project would not include any such uses or activities.

The nearest schools to the Project site are Kid's World School (2132 Hyperion Avenue), Saint Francis of Assisi School (1550 Maltman Avenue), and Thomas Starr King Middle School (4201 Fountain Avenue), located approximately 0.25 miles to the north, 0.30 miles to the south, and 0.30 miles to the west of the Project site, respectively. Although these schools are within close proximity to the Project, compliance with applicable regulations governing the use, storage, transport, and disposal of hazardous materials would ensure the Project does not emit hazardous emissions. In addition, as a residential use, the Project would not handle hazardous materials that pose a significant threat to human health. Therefore, impacts related to hazardous materials and schools would be less than significant.

**d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

**No Impact.** California Government Code Section 65962.5 requires various state agencies to compile lists of hazardous waste disposal facilities, unauthorized releases from underground storage tanks, contaminated drinking water wells, and solid waste facilities from which there is known migration of hazardous waste, and submit such information to the Secretary for Environmental Protection on at least an annual basis. A significant impact may occur if a Project site were included on any of the above lists and posed an environmental hazard to surrounding sensitive uses.

Based on a review of the City's Zimas web application, the Project site is not located on a hazardous waste property, methane hazard site, or oil well (City of Los Angeles 2019a). A search of federal, state, and local databases regarding hazardous material releases and site cleanup lists was conducted for the Project site and determined that the Project site was not located on a hazardous materials site. According to EnviroStor, there are no cleanup sites, permitted sites, or SLICS (Spills, Leaks, Investigation, and Cleanup Sites) on, in, or under the Project (DTSC 2019). According to GeoTracker, there are no other cleanup sites, land disposal sites, military sites, waste discharge requirement sites, permitted underground storage tank facilities, monitoring wells, or California Department of Toxic Substance Control cleanup sites or hazardous materials permits on, in, or under the Project Site (SWRCB 2019). The Project would not create a significant hazard to the public or the environment. Therefore, impacts associated with hazardous materials sites would not occur.

**e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?**

**No Impact.** A significant project-related impact may occur if a project were placed within a public airport land use plan area, or within 2 miles of a public airport, and subject to a safety hazard.

Based on a review of the City's Zimas web application, the Project site is not located within an airport hazard area (City of Los Angeles 2019a). The nearest airport to the Project site is the Hollywood Burbank Airport (2627 North Hollywood Way), which is located approximately 8.6 miles north of the Project site. The Project would not be located within an airport land use plan or within 2 miles of a public airport or public use airport (County of Los Angeles 2019b). Therefore, no impacts associated with public airport hazards would occur.

**f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

**Less Than Significant Impact.** A significant impact may occur if a project were to interfere with roadway operations used in conjunction with an emergency response plan or emergency evacuation plan or would generate sufficient traffic to create traffic congestion that would interfere with the execution of such a plan.

The City's Emergency Operations Organization Master Plan and individual agency Emergency Response Plans set forth procedures for City personnel to follow in the event of an emergency situation stemming from natural disasters, technological incidents, nuclear defense operations, and other unforeseeable disasters or crises. The City Department of Transportation and LAFD would be responsible for ensuring that future development does not impair or physically interfere with an adopted emergency response or evacuation plan. As part of standard development procedures, plans would be submitted to the City Department of Transportation and LAFD for review and approval to ensure that all new development has adequate emergency access and escape routes in compliance with City regulations. Specifically, LAFD would review the site plans and Project ingress/egress, and, if any concerns are raised, LAFD may require that the Project applicant develop an emergency response plan or similar document that identifies mapping of emergency exits, evacuation routes, and the location of nearest hospitals and fire stations.

Overall, due to the proposed low intensity land use, and because the City Department of Transportation and LAFD will thoroughly review the site plans prior to Project implementation, the Project would not introduce any features that would preclude implementation of or alter these policies or procedures. Therefore, impacts associated with an adopted emergency response or emergency evacuation plan would be less than significant.

**g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?**

**Less Than Significant Impact.** A significant impact may occur if a project is located in proximity to wildland areas and poses a potential fire hazard that could affect persons or structures in the area in the event of a fire.

The Project is located within a Very High Fire Hazard Severity Zone (VHFHSZ) (City of Los Angeles 2019a). VHFHSZs are defined as lands designated by LAFD pursuant to California Government Code 51178 that were identified and recommended to local agencies by the Director of the California Department of Forestry and Fire Protection (CAL FIRE) based on criteria that includes fuel loading, slope, fire weather, and other relevant factors. These areas must comply

with the Brush Clearance Requirements of the Fire Code. The VHFHSZ was first established in the City in 1999 and replaced the older “Mountain Fire District” and “Buffer Zone.” According to the Safety Element of the City General Plan, the Project site is not within a selected wildfire hazard area (City of Los Angeles 1996).

Fire suppression services in the Project area would be provided by LAFD. In addition, the City has entered into mutual aid agreements with other jurisdictions for cooperative response and management of wildfires (City of Los Angeles 1996). The nearest fire units, regardless of jurisdictional boundaries, are able to respond to fire events under these agreements. Although the Project site is within a VHFHSZ, the Project would be required to conform with all applicable fire code regulations to reduce the Project’s potential for exacerbating existing environmental conditions. Further, as previously discussed, the LAFD would review the site plans and Project ingress/egress, and, if any concerns are raised, LAFD may require that the Project applicant develop an emergency response plan or similar document that identifies mapping of emergency exits, evacuation routes, and the location of nearest hospitals and fire stations. Therefore, impacts associated with wildland fires would be less than significant.

# X. HYDROLOGY AND WATER QUALITY

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? | ☐ | ☐ | ☒ | ☐ |
| b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? | ☐ | ☐ | ☒ | ☐ |
| c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: | ☐ | ☐ | ☒ | ☐ |
| i. Result in substantial erosion or siltation on- or off-site; | | | | |
| ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; | | | | |
| iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or | | | | |
| iv. Impede or redirect flood flows? | | | | |
| d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? | ☐ | ☐ | ☒ | ☐ |
| e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? | ☐ | ☐ | ☒ | ☐ |

**a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to discharge water that does not meet the quality standards of agencies that regulate surface or groundwater quality and water discharge into stormwater drainage systems.

### Construction

Three general sources of potential short-term, construction-related stormwater pollution associated with the Project include (1) the handling, storage, and disposal of construction materials containing pollutants; (2) the maintenance and operation of construction equipment; and (3) earthmoving activities that, when not controlled, may generate soil erosion via stormwater runoff or mechanical equipment.

Construction materials would be handled, stored, and disposed of in accordance with all applicable regulations to reduce the potential release of pollutants into the environment. Other construction-related impacts would not be considered significant upon compliance with water quality standards of agencies that regulate surface water quality and water discharge into stormwater drainage systems. Applicable regulations with regard to surface water quality are governed by the State Water Resources Control Board and its nine regional boards. The Project site lies within the Los Angeles Regional Water Quality Control Board; however, the Project is not required to obtain a National Pollutant Discharge Elimination System Permit because the site discharge will be sent to the City's stormwater system and not directly to surface waters.

Construction activities associated with the Project are subject to City inspection and implementation of stormwater BMPs. The City's Development Best Management Practices Handbook contains specific minimum BMP requirements for all construction activities. Implementation of BMPs to minimize erosion and sedimentation would ensure that Project construction would not substantially degrade surface or groundwater quality. Therefore, short-term impacts associated with violation of water quality standards or waste discharge requirements would be less than significant.

### Operations

Under the existing conditions, there is an existing single-family residence located on the northern parcel, associated with 1888 North Lucile Avenue, and the southern parcel associated with 3627 West Landa Street is vacant. The highest point of the Project site is at its southern boundary with Landa Street, sloping downwards towards Lucile Avenue located to the south. Thus, stormwater flows from south to north of the Project site. Construction of the single-family residence on 3627 West Landa Street would increase the amount of impervious surface on the Project site and has the potential to generate increased surface water runoff. However, the Project's potential impacts on surface water or groundwater runoff would be reduced to a less than significant level by incorporating stormwater pollution control measures that would regulate the amount and water quality of stormwater leaving the Project site.

The Project would be required to comply with the City Stormwater and Urban Runoff Pollution Control Ordinance (Ordinance No. 172176, October 1998), which established LAMC Sections 64.70 through 64.70.13 and set the foundation for stormwater management in the City. Since the adoption of the Stormwater and Urban Runoff Pollution Control Ordinance, many additional ordinances have passed to keep LAMC Article 4.4, Stormwater and Urban Runoff Pollution Control, up to date. Approved in October 2011, the Low Impact Development (LID) Ordinance

(Ordinance No. 181899) expanded LAMC Article 4.4. Chapter VI, Article 4.4 of the LAMC contains City stormwater and urban runoff pollution control regulations that specify requirements for management of stormwater pollutants during construction and operation of projects through LID and BMPs. LAMC Article 4.4, including LID requirements, was amended in August 2015 with the approval of Ordinance No. 183833, which incorporates the requirements of the Municipal Separate Storm Sewer System (MS4) Permit. The City's LID Ordinance expanded the applicability of the existing Standard Urban Stormwater Mitigation Plan requirements by imposing rainwater LID strategies on projects that require building permits. Because the Project is less than 1 acre, it is not subject to the Standard Urban Stormwater Mitigation Plan requirements. However, since there will be an addition/replacement of more than 500 square feet of impervious surface, the Project would be required to prepare a LID plan and demonstrate compliance with the LID requirements and standards, and retain or treat the first 0.75 inches of rainfall in a 24-hour period or the rainfall from an 85th percentile 24-hour runoff event, whichever is greater (City of Los Angeles 2016c).

To ensure that all stormwater-related BMPs are constructed and/or installed in accordance with the approved LID Plan, the City requires a stormwater observation report to be submitted to the City prior to the issuance of the certificate of occupancy. All projects reviewed and approved would require a stormwater observation report that would be prepared, signed, and stamped by the engineer of record responsible for the approved LID Plan. With approval and issuance of a certificate of occupancy from the LA Department of Building and Safety, the Project would be determined to be in compliance with all applicable codes, ordinances, and other laws (City of Los Angeles 2016c).

Full compliance with the LID requirements and implementation of design-related BMPs would ensure that the operation of the Project would not violate any water quality standards or discharge requirements or otherwise substantially degrade water quality. Therefore, long-term impacts associated with violation of water quality standards or waste discharge requirements would be less than significant.

**b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**

**Less Than Significant Impact.** A significant impact may occur if a project would change potable water levels sufficiently to (a) reduce the ability of a water utility to use the groundwater basin for public water supplies, conjunctive use purposes, storage of important water, summer/winter peaking, or responding to emergencies and drought; (b) reduce yields of adjacent wells or well fields (public or private); (c) adversely change the rate or direction of flow of groundwater; or (d) result in a demonstrable and sustained reduction in groundwater recharge capacity.

According to the Geology and Soils Engineering Investigation (Appendix B), groundwater was not encountered during the exploration. As such, the Project would not interfere with the use of the groundwater basin, nor reduce yields of wells. In addition, the Project would involve the construction of two single-family residences, which would slightly increase the demand for water

supply on the Project site; however, the proposed residential structures would introduce a negligible number of residents to the Project area, which would not result in an adverse change in the rate of water flows by substantially increasing water demand for the Project site and surrounding area. The Project would not substantially deplete groundwater. Therefore, impacts associated with groundwater supplies would be less than significant.

The Project site does contain pervious areas on the southern parcel; thus, development of the Project would increase the amount of pervious surface on the Project site. However, the Project site is underlain by bedrock, and no groundwater was encountered during exploration. As such, the Project site is not considered a significant recharge area. In addition, the Project would incorporate strategies to reduce surface runoff and encourage retention of stormwater in compliance with the City's LID requirements. Therefore, impacts associated with groundwater recharge would be less than significant.

**c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:**

**i) Result in substantial erosion or siltation on- or off-site;**

**Less-Than-Significant Impact.** A significant impact may occur if a project would substantially alter drainage patterns, resulting in a significant increase in erosion or siltation during construction or operation of a project.

There are no streams or rivers located on or near the Project site. Project construction would involve some earth-disturbing activities, including grading, that could expose on-site soils to erosion and surface water runoff. However, inclusion of Project BMPs would reduce erosion and siltation from the Project site occurring from construction activities. Although the Project would increase the amount of impervious area on the Project site, compliance with the City's LID requirements would control surface runoff. In addition, the Project site is located within a developed area, with single-family residences located on either side of the Project; as such, the development of the Project would not cause a significant change to surface bodies of water in a manner that could cause siltation or erosion. Therefore, impacts associated with altering of the existing drainage patterns and erosion would be less than significant.

**ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to substantially alter drainage patterns, resulting in a significant increase in potential flooding.

As previously discussed, there are no streams or rivers located on or near the Project site. The Project would comply with LID requirements and implementation of design-related BMPs to reduce off-site stormwater flows. The Project would not substantially change the drainage pattern on site or increase the rate or amount of surface runoff such that flooding would result on site or off site. Therefore, impacts associated with altering the existing drainage patterns and flooding would be less than significant. No further analysis required.

**iii) Create or contribute runoff water which would exceed the capacity of existing or**

**planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or**

**Less Than Significant Impact.** A significant impact may occur if a project were to substantially alter drainage patterns, resulting in a significant increase in potential flooding.

As addressed earlier, there are no streams or rivers located on or near the Project site. The Project would comply with City LID requirements and implementation of design-related BMPs to reduce off-site stormwater flows. The Project would not substantially change the drainage pattern on site or increase the rate or amount of surface runoff such that flooding would result on site or off site. Therefore, impacts associated with altering the existing drainage patterns and flooding would be less than significant.

**iv) Impede or redirect flood flows?**

**Less-Than-Significant Impact.** A significant impact may occur if a project would impede or redirect flood flows.

Under the existing conditions, there are no streams or rivers located on the Project site. In addition, the Project site is located outside the 100-year floodplain (FEMA 2008). Therefore, the Project would not impede or redirect flood flows, and impacts would be less than significant.

**d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?**

**Less-Than-Significant Impact.** A significant impact could only occur if a project were to be located in a tsunami or seiche zone.

The Project site is located outside of the 100-year floodplain and thus is not located in a flood hazard zone (FEMA 2008). According to the Safety Element of the City General Plan, the Project site is not within a potential inundation area (City of Los Angeles 1996). Exhibit G, Inundation and Tsunami Hazard Areas Map, of the Safety Element does not designate the Project site as being within a tsunami impact area or potential inundation area (City of Los Angeles 1996). Although the Project site is located approximately 0.5 miles to the west of the Silver Lake Reservoir, mitigation of potential seiche action has been implemented by the Department of Water and Power through regulation of the level of water in its storage facilities and providing walls of extra height to contain seiches and prevent overflow. Therefore, the Project would not result in release of pollutants due to inundation, and no impacts would occur.

**e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?**

**Less-Than-Significant Impact.** The Project would comply with regional and local regulations related to water quality control plans, and would not obstruct existing plans. In addition, as discussed in Section 4.X(b), the Project would increase the amount of impervious surface on the Project site. However, the Project site is underlain by bedrock, and no groundwater was encountered during exploration. Therefore, the Project site is not considered a significant groundwater recharge area. Therefore, impacts associated with conflict with a water quality control plan or sustainable groundwater management plan would be less than significant.

# XI. LAND USE AND PLANNING

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

**a) Physically divide an established community?**

**No Impact.** A significant impact may occur if a project were sufficiently large enough or otherwise were configured in such a way as to create a physical barrier within an established community (a typical example would be a project that involved a continuous right-of-way, such as a roadway, which would divide a community and impede access between parts of the community).

Projects that typically have the potential to physically divide an established community are projects such as railroads, highways, airports, stadiums, etc., none of which are proposed as part of the Project. The Project is located within an urbanized area in the City. The existing Project site is currently undeveloped and is surrounded by single-family residential homes. Construction of the two new single-family residences would not physically divide this community. No separation of uses or disruption of access between land use types would occur as a result of the Project. Accordingly, implementation of the Project would not disrupt or divide the physical arrangement of the established community. Therefore, impacts associated with division of an established community would not occur.

**b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?**

**Less-Than-Significant Impact.** A significant impact may occur if a project is inconsistent with the City General Plan or other applicable land use plans, policies, or regulations and would cause adverse environmental effects that the General Plan or other plan is designed to avoid or mitigate.

The legal standard that governs consistency determinations is that a project must only be in "harmony" with the applicable land use plan to be consistent with that plan. (See *Sequoyah Hills Homeowners Assn. v. City of Oakland,* 23 Cal.App.4th 704, 717-18 (1993), upholding a city's determination that a subdivision project was consistent with the applicable general plan.) As the Court explained in *Sequoyah*, "state law does not require an exact match between a proposed subdivision and the applicable general plan." To be "consistent" with the general plan, a project must be "compatible with the objectives, policies, general land uses, and programs specified in the applicable plan," meaning the project must be "in agreement or harmony with the applicable

plan." (See also *Greenebaum v. City of Los Angeles*, 153 Cal.App.3d 391, 406 (1984); *San Franciscans Upholding the Downtown Plan, supra*, 102 Cal.App.4th at p. 678.) Further, "[a]n action, program, or project is consistent with the general plan if, considering all its aspects, it will further the objectives and policies of the general plan and not obstruct their attainment" (*Friends of Lagoon Valley v. City of Vacaville,* 154 Cal.App.4th 807, 817 (2007)). Courts also recognize that general plans "ordinarily do not state specific mandates or prohibitions," but instead provide "policies and set forth goals" (*Friends of Lagoon Valley*).

**Zoning Code**

The Project site is located within the Silver Lake–Echo Park–Elysian Valley Community Plan Area within the City. The Project site has a General Plan land use designation of Low Residential and is zoned R1-1VL (City of Los Angeles 2019a). If approved, the Project would allow a ZV, a ZAA, and a ZAD. For the property located at 1888 North Lucile Avenue, a ZAD is requested to allow (1) two off-street parking spaces designated for the subject property in lieu of the three required parking spaces for the construction of any main building and accessory use exceeding 2,400 square feet in size; (2) three retaining walls in lieu of the maximum permitted two retaining walls. The Project also requires a ZAA to allow for an 8-foot-wide passageway from the street to the proposed dwelling in lieu of the 10-foot-wide passageway.

For the property located at 3627 West Landa Street, a ZAD is requested to allow (1) the construction of a single-family residence fronting on two Substandard Hillside Limited Streets that are improved to less than 20 feet wide; and (2) vehicular access by way of the street that is not continuously improved to a minimum 20 feet wide from the driveway apron to the next non-hillside boundary. The Project also requires a ZV to allow off-site parking in two-car private garage on an adjacent lot at 1888 North Lucile Avenue.

The Project site is currently zoned R1-1VL. As such, the Project site is subject to the requirements of the LAMC Section 12.08, "R1" One-Family Zone. Per Section 12.08 of the LAMC, the R1 zoning allows for one-family dwellings; parks, playgrounds, or community centers, owned and operated by a government agency; truck gardening; two-family dwellings; accessory buildings; accessory uses; name plates and signs; and backyard beekeeping. The R1 Zone has a minimum lot width of 50 feet and minimum area of 5,000 square feet. The maximum allowable RFA for lots in the Hillside Area is determined based on the slope band (City of Los Angeles 2018a). Through the plan check process, the City would thoroughly review all plans for the Project to ensure compliance with all applicable development standards set forth in the LAMC. With approval of the ZV, ZAD, and ZAA, the Project would be consistent with applicable land use plans, policies, and regulations; therefore, impacts would be less than significant.

**General Plan**

According to the City's General Plan Framework, Chapter 3, Land Use, "Single-Family Residential" is identified in the community plans under Minimum, Very Low, Very Low I, Very Low II, and Low. The Project involves the construction of two new single-family residences on an approximately 0.2-acre property. The Project would be designed in compliance with the goals and objectives for Single-Family Residential. Therefore, the Project would be consistent with the General Plan. Specifically, development of the Project would be in substantial conformance with the following goals of the City's General Plan:

- Housing Element. Goal 1: A City where housing production and preservation result in an adequate supply of ownership and rental housing that is safe, healthy, sanitary and affordable to people of all income levels, races, ages, and suitable for their various needs.
- Framework Element. Goal 4A: An equitable distribution of housing opportunities by type and cost accessible to all residents of the City.

The General Plan's Housing Element is driven by what is described as "an unprecedented housing crisis" due to the high demand for housing and the lack of affordable options. The Housing Element recognizes that the City must use its regulatory powers to ensure that a diverse assortment of housing choices exists for residents of all income levels. Accordingly, the Project would allow housing in the City within an area zoned for single-family units. In addition to providing needed housing stock, the Project will also result in safer streets. The Project's residential use is compatible with the goals and objectives of the City's General Plan. Therefore, impacts would be less than significant.

**Silver Lake–Echo Park–Elysian Valley Community Plan**

The Project site is designated by Silver Lake–Echo Park–Elysian Valley Community Plan Land Use Map as Residential Single Family, which is consistent with the Low Residential Lands Use Category. Consequently, the proposed use of the Project site for a single-family residence is consistent with the provisions of the Silver Lake–Echo Park–Elysian Valley Community Plan. Therefore, impacts would be less than significant.

**Land Use Consistency Summary**

Based on the above analysis, the Project would not conflict or obstruct the implementation of any applicable land use plans, policies, or regulations. Therefore, impacts related to significant environmental impacts caused by conflicts with applicable plans would be less than significant.

# XII. MINERAL RESOURCES

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

**a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

**No Impact.** A significant impact may occur if a project site were located in an area used or available for the extraction of a regionally important mineral resource and a project would convert an existing or potential future regionally important mineral extraction use to another use, or if the project would affect access to a site used or potentially available for regionally important mineral resource extraction. Mineral Resource Zone-2 (MRZ-2) sites contain potentially significant sand and gravel deposits, which are to be conserved. Any proposed development plan must consider access to the deposits for purposes of extraction.

According to the Safety Element of the City's General Plan, the Project site is not located within an Oil Field/Drilling Area (City of Los Angeles 1996). In addition, the Conservation Element of the City's General Plan did not identify the Project site as a Mineral Resource Zone (City of Los Angeles 2001). Further, the Project site is not located in an MRZ-2 (DOC 1979). Therefore, no impacts associated with loss of availability of a known mineral resource would occur.

**b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?**

**No Impact.** A significant impact would occur if a project site were located in an area used or available for extraction of a locally important mineral resource and a project would convert an existing or potential future locally important mineral extraction use to another use, or if the project would affect access to a site used or potentially available for locally important mineral resource extraction. The Project site is not identified as a locally important mineral resource site delineated on a local general plan, specific plan, or other land use plan (City of Los Angeles 1996, 2001). Therefore, no impacts associated with loss of availability of a locally important mineral resource recovery site would occur.

# XIII. NOISE

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

The following section summarizes and incorporates the reference information from the Air Quality and Noise Impact Assessment prepared by Z Consulting Company, dated April 8, 2019.

**a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

**Less-Than-Significant Impact**. A significant impact may occur if either construction or operation of a project results in exposure of persons to or generation of noise levels in excess of applicable standards.

Following the general practice used in the City for analysis of construction noise impacts from residential projects, the Noise Ordinance is used as the significance threshold for this assessment. The Noise Ordinance, which is found in the LAMC, presents noise standards applicable to construction and demolition operations occurring within the City. Specifically, LAMC Section 41.40 prohibits construction activities that entail the use of any machine, tool, device or equipment between the hours of 9:00 p.m. and 7:00 a.m. that could disturb sleeping persons in any dwelling, apartment, or other place of residence.

In addition, Section 112.05 of the LAMC prohibits the operation of any power equipment/tool that produces a maximum noise level that exceeds the applicable noise limit from the following list at a distance of 50 feet between the hours of 7:00 a.m. to 10:00 p.m.:

- 75 dB(A) [A-weighted decibels] for construction machinery (e.g. tractors, dozers, drills, loaders, shovels/cranes, etc.);
- 75 dB(A) for powered equipment 20 HP [horsepower] or less intended for infrequent use; and
- 65 dB(A) for powered equipment intended for repetitive use in residential areas (e.g. mowers, blowers, riding tractors, etc.).

Per the LAMC, these noise limitations shall not apply where compliance is technically infeasible. Technically infeasible means that these noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers, and/or other noise reduction devices/techniques during the operation of the equipment

To quantify the existing ambient noise environment in the Project's vicinity, two measurements were collected on the Project site on March 8, 2019 (Figure 8, Noise Measurement Locations). Table 6 presents the measured ambient noise levels at the Project site. Noise measurement logs are included in Appendix A.

**Table 6**
**Ambient Noise Levels – dBA**

| Measurement | Location | Noise Level ($L_{eq}$ dBA) |
|---|---|---|
| M1-SE | Southwest portion of the Project site | 55.7 |
| M2-NW | Northwest portion of the Project site | 55.7 |

**Source:** Appendix A.
**Notes:** dBA = A-weighted decibel; $L_{eq}$ = equivalent continuous noise level.

Noise impacts associated with the heavy equipment utilized for Project construction are determined using equipment data and equations from the Federal Highway Administration's Roadway Construction Noise Model. The noise calculations can be found in Appendix A.

As previously outlined in Section 3.3.7, above, due to the close proximity of surrounding single-family residential land uses, construction of the Project will include several Project applicant-proposed noise control features:

- Restricted construction hours. Project construction activities that generate noise will be confined to daytime hours only, as defined by the City of Los Angeles Construction Noise Ordinance (7:00 a.m.–9:00 p.m., Monday through Friday, 8:00 a.m.–6:00 p.m. Saturdays). Construction activities that generate noise will also be prohibited on Sundays and all federal holidays.

- Demolition procedures. Demolition of the existing single-family residence will be conducted in a manner that limits noise impacts to the most impacted receptors. Demolition activities will be conducted starting on the west side of the structure and progressing to the east. The east-facing wall of the structure will be preserved for as long as feasible, which will help to attenuate construction noise to the east.

- Mufflers. All heavy construction equipment that is able to use mufflers will do so.

- Temporary Noise Barriers. In specific circumstances, temporary noise barriers can be effective at reducing noise impacts associated with construction. Noise barriers are not practical for phases of construction that require constant mobility around the site, such as site preparation and grading. In addition, noise barriers are not necessary during demolition because the walls of the existing building themselves serve the same purpose. Similarly, once the new building's walls are erected, the effectiveness of noise barriers is again reduced.

  Temporary noise barriers are ideally suited for controlling noise from construction equipment that remains stationary, such as drill rigs. For this reason, the Project will use temporary noise barriers to control noise impacts from the drill rig during drilling of the caissons. The noise barriers will be placed on both the east and west side of the drill rig in an orientation that breaks line-of-site between the drill rig's engine and the nearest neighbors to both the east and west. The noise barrier will be located as close to the drill rig as possible to maximize effectiveness.

These noise control measures are collectively assumed to reduce noise impacts by 10 dBA. This is a conservative estimate of total noise reduction, as evidenced by the following:

- The EPA's Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances (see excerpt in Appendix A) indicates that mufflers result in a noise reduction of 10 dBA.

- The Federal Highway Administration's Noise Barrier Design Handbook (see excerpt in Appendix A) indicates that 10 dBA of reduction is "attainable" from a noise barrier.

Table 7 presents the calculated noise levels for each type of construction equipment and compared then to a significance threshold of 75 dBA.

**Table 7**
**Construction Noise Impacts – dBA**

| Construction Phase | Equipment Types | Noise Level ($L_{eq}$ at 50 feet) | Significance Threshold ($L_{eq}$ at 50 feet) | Exceeds Threshold? |
|---|---|---|---|---|
| Demolition | Excavator | 67 | 75 | No |
| | Jackhammer | 72 | | No |
| | Tractor/Loader/Backhoe | 65 | | No |
| | Dump Truck | 62 | | No |
| Site Preparation | Excavator | 67 | | No |
| | Tractors/Loaders/Backhoes | 65 | | No |
| | Dump Truck | 62 | | No |
| Grading | Dozer | 68 | | No |
| | Tractors/Loaders/Backhoes | 66 | | No |
| | Dump Truck | 62 | | No |

**Table 7**
**Construction Noise Impacts – dBA**

| Construction Phase | Equipment Types | Noise Level ($L_{eq}$ at 50 feet) | Significance Threshold ($L_{eq}$ at 50 feet) | Exceeds Threshold? |
|---|---|---|---|---|
| Building Construction Phase 1 | Drill Rig | 67 | | No |
| | Crane | 63 | | No |
| | Concrete Truck | 65 | | No |
| | Concrete Pump Truck | 64 | | No |
| | Excavator | 67 | | No |
| | Tractor/Loader/Backhoe | 65 | | No |
| Building Construction Phase 1 | Crane | 63 | | No |
| | Concrete Truck | 65 | | No |
| | Concrete Pump Truck | 64 | | No |
| | Excavator | 67 | | No |
| | Tractor/Loader/Backhoe | 65 | | No |

**Source:** Appendix A.
**Notes:** dBA = A-weighted decibel; $L_{eq}$ = equivalent continuous noise level.

As shown on Table 7, the Project would not exceed thresholds set forth in LAMC Section 112.05, which prohibits the operation of any power equipment/tool that produces a maximum noise level that exceeds the applicable noise limit from the following list at a distance of 50 feet between the hours of 7:00 a.m.–10:00 p.m. In addition, the Project is required to comply with the City's Noise Ordinance from which the noise significance threshold is derived. Similar to other applicable City regulations, the Project is required to comply with the Noise Ordinance and all applicable provisions set forth in the Noise Ordinance. Therefore, short-term construction impacts associated with construction noise levels would be less than significant.

### Operational

Once operational, noise generated during operation of the Project would be consistent with the noise generated by the surrounding residential properties. The Project would result in some use of nearby roadways to access the Project site, which would generate noise; however, the Project would only result in the increase of approximately 18 daily passenger vehicle trips. This nominal increase in trips would not result in substantial traffic noise increase. The Project would generate noise typically associated with single-family residential uses, which would be barely perceivable to nearby residences. Therefore, long-term impacts associated with operational noise levels would be less than significant.

### b) Generation of, excessive groundborne vibration or groundborne noise levels?

**Less-Than-Significant Impact.** A significant impact may occur if a project were to generate excessive vibration during construction or operation.

### Construction

Construction activities can generate various degrees of vibration, depending on the construction procedures and the type of construction equipment used. Operation of construction equipment causes ground vibrations that spread through the ground and diminish with distance. High levels of vibration may cause physical injury or damage to buildings; however, vibrations rarely affect human health. Typically, potential building and structural damages are the foremost concern when considering the impacts of construction-related vibrations.

Although construction activities associated with the Project would result in temporary increases in groundborne vibration in the immediate Project area, vibration levels from conventional construction methods are not anticipated to reach substantial levels. No blasting, pile driving, or other special construction methods associated with excessive groundborne vibration are anticipated during Project construction. As such, it is anticipated that vibration generated during construction of the Project would not cause damage to buildings nor affect sensitive receptors. Therefore, construction impacts associated with vibration would be less than significant.

### Operational

As a residential land use, operation of the Project will not involve any activities that are typically associated with groundborne noise or vibrations. Therefore, operational impacts associated with vibration would be less than significant.

**c) For a project located within the vicinity of a private airstrip or an airport land use plan, or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

**No Impact.** Based upon the criteria established in the City's CEQA Thresholds Guide, a significant impact on ambient noise levels would normally occur if noise levels at a noise sensitive use attributable to airport operations exceed 65 dBA Community Noise Equivalent Level (CNEL) and the project increases ambient noise levels by 1.5 dBA CNEL or greater (City of Los Angeles 2006).

The Project site is not located in the vicinity of a private airstrip, and as such, the Project would not expose people residing or working in the Project area to excessive noise related to private airstrips. In addition, the nearest airport to the Project site is the Hollywood Burbank Airport, which is located approximately 8.6 northwest of the Project site. The Project would not be located within an airport land use plan or within 2 miles of a public airport or public use airport (County of Los Angeles 2019b). Therefore, impacts associated with public airport noise would not occur.

# XIV. POPULATION AND HOUSING

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | ☐ | ☐ | ☒ | ☐ |
| b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |

**a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

**Less-Than-Significant Impact.** A potentially significant impact would occur if a project were to locate new commercial, industrial, or residential development within the City that would induce unplanned population growth, or if a project would indirectly induce residential development in previously undeveloped areas through the extension of infrastructure.

The Project involves the construction of two new single-family residences. According to SCAG's 2017 local profile for the City, the average household size is 2.9, and the total population is 4,040,904 (SCAG 2017). It is anticipated that the Project would introduce six people to the City, compared to the existing population of 4,040,904. Thus, the proposed residential structure would introduce only a negligible number of residents to the Project site, which would not result in substantial unplanned population growth in the Project area. The Project would introduce residential uses that are consistent with the allowable uses and density as permitted by the LAMC, the Zoning Code, and the General Plan land use designations. In addition, SCAG's 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (SCAG 2016) projects that the City's population will increase from 4,404,904 to 4,609,400 by Year 2040. The Project's six additional residents would be consistent with SCAG's growth projections, and the Project would not induce substantial unplanned population growth. Further, the Project site is within a developed area and is surrounded by other single-family residences. The Project would not involve extension of roads or infrastructure, which could result in substantial population growth in an undeveloped area. Therefore, impacts related to population growth would be less than significant.

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

**No Impact.** A significant impact may occur if a project would result in displacement of existing occupied housing units or housing, necessitating construction of replacement housing elsewhere.

There is one existing single-family residence on the northern parcel; however, it is currently occupied by the Project applicant, who would continue to reside at one of the Project's two new residences following Project implementation. As such, the Project would not displace existing people. In addition, the Project would result in the demolition of one housing unit but the construction of two new dwelling units, and thus, would not displace a substantial number of existing housing. Therefore, impacts associated with displacing substantial numbers of people or housing would not occur.

# XV. PUBLIC SERVICES

*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Fire protection? | ☐ | ☐ | ☒ | ☐ |
| b. Police protection? | ☐ | ☐ | ☒ | ☐ |
| c. Schools? | ☐ | ☐ | ☒ | ☐ |
| d. Parks? | ☐ | ☐ | ☒ | ☐ |
| e. Other public facilities? | ☐ | ☐ | ☒ | ☐ |

**a) Fire protection?**

**Less-Than-Significant Impact.** A significant impact may occur if the City Fire Department could not adequately serve a project, necessitating a new or physically altered station.

Fire protection for the Project site is provided by LAFD. More specifically, the Project site would be served by Fire Station 56, located approximately 0.96 miles northeast of the Project site at 2759 Rowena Avenue, Los Angeles (LAFD 2019b). From January 2018 to December 2018, operational response times for Fire Station 56 for Emergency Medical Services averaged 7 minutes, 27 seconds (LAFD 2019c). The Project consists of infill development of two new single-family residences located within the existing fire protection service boundaries of the LAFD. The Project site is located within 1.5 miles of the primary responder station, which has an engine company and meets City standards for fire response distance in neighborhoods. There are additional fire stations located nearby that could also serve the Project.

Emergency vehicle access to the Project site would continue to be provided from local and major roadways. All circulation improvements proposed would be in compliance with the Fire Code, including any additional access requirements of the LAFD. Emergency access to the Project site would be maintained during Project operation. In addition, the building construction and occupancy would be required to comply with fire department codes and regulations. As discussed in Section 4.IX(h), the Project site is within a VHFHSZ, and the Project would be required to conform with all applicable fire code regulations.

During the plan check phase, the LAFD would review the site plans to ensure that all applicable recommendations previously made by LAFD staff relative to fire safety have been incorporated into the building plans. This review by LAFD includes submittal of a plot plan for approval by the LAFD either prior to the recordation of a final map or the approval of a building permit. LAFD requires that the plot plan include the minimum design features, including but not limited to fire lane widths, distances to the nearest approved fire hydrant, and distances between dwelling unit entrances to the closest improved street or approved fire lane. In addition, the Project applicant would submit a request to LADWP to determine whether the pressure in the Project area is sufficient. If it is not, then the Project applicant shall be required to make on-site or off-site upgrades to the existing infrastructure as determined necessary by LADWP and LAFD.

The Project would comply with the required regulations and feasible recommendations of LAFD relative to fire safety and emergency access, and these shall be incorporated into the building plans, including the submittal of a plot plan for approval by LAFD prior to the approval of a building permit. This allows LAFD to ensure that the Project would not increase demand on LAFD to the extent that a new or expanded facility is needed, the construction of which may cause a significant impact on the environment. Therefore, impacts would be less than significant.

**b) Police protection?**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to create the need for new or physically altered police facilities to maintain acceptable service ratios, response times, or other performance objectives, the construction of which could cause significant environmental impacts.

Police protection for the Project site is provided by the Los Angeles Police Department (LAPD). Specifically, the Project site is served by the Northeast Police Station (City of Los Angeles 2019a), which is located approximately 2.2 miles northeast of the Project site at 3353 North San Fernando Road, Los Angeles.

The Project would result in an increase of approximately six new residents to the Silver Lake neighborhood, which is not an increase that would substantially increase the number of police calls. Thus, the Project would not generate the need for additional police services that would require new or physically altered facilities. In addition, the adjacent single-family residential properties are already being served by LAPD, so no service area expansion is necessary. Further, the Project would contribute property taxes to the City's General Fund, which can be used to fund additional resources in accordance with the planning and deployment strategies of LAPD. The Project would not require the construction of a new or expanded police station. Therefore, impacts associated with police protection facilities would be less than significant.

**c) Schools?**

**Less-Than-Significant Impact.** A significant impact may occur if a project includes substantial employment or population growth, which could generate a demand for school facilities that would exceed the capacity of the Los Angeles Unified School District.

The Project would introduce approximately six new residents to the Project site, which would not result in substantial population growth in the Project area. The Project would not generate a demand for school services such that the construction of new facilities are required. Nonetheless, the Project applicant would be required to pay all applicable developer fees to the Los Angeles Unified School District to offset the Project's demands upon local schools. Prior to issuance of a building permit, the General Manager of the LA Department of Building and Safety or their designee shall ensure that the Project applicant has paid all applicable school facility development fees in accordance with California Government Code, Section 65995. Pursuant to California Government Code, Section 65995, payment of development fees authorized by Senate Bill 50 are deemed to be "full and complete school facilities mitigation." Therefore, impacts associated with school facilities would be less than significant.

**d) Parks?**

**Less-Than-Significant Impact**. A significant impact to parks may occur if a project were to include a new or physically altered park or would create the need for a new or physically altered park, the construction of which could cause substantial adverse environmental impacts.

The Project would introduce approximately six new residents to the Project site, which would not create a substantial increase of park users. It is anticipated that these new residents would patronize park facilities within the Project area; however, the negligible increase in new residents would not generate a demand such that the construction of new or physically altered parks would be required. Nonetheless, pursuant to LAMC Section 12.33, authorized under the Quimby Act, the Project applicant would be required to pay applicable fees per dwelling unit for any future recreational facilities. In addition, the Project would be subject to a tax of $200 per dwelling unit pursuant to LAMC Section 21.10.3(a)(1) (Dwelling Unit Construction Tax). This tax, payable to the LA Department of Building and Safety, shall be deposited into a "Park and Recreational Sites and Facilities Fund" to be used exclusively for the acquisition and development of park and recreational sites. In accordance with LAMC Section 21.10.3(a)(1), this tax may be offset or reduced based on the amount of on-site open space and recreational amenities provided. While these residents could slightly increase use of nearby parks, the on-site recreational areas and applicable fees would help to offset the increased demand and provide a fund for future recreational facilities. Therefore, impacts associated with parks and recreational facilities would be less than significant.

**e) Other public facilities?**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to generate a demand for other public facilities (such as libraries) that exceeds the capacity available.

The Los Angeles Public Library provides library services to the City. The library branch nearest to the Project site is the Cahuenga Branch Library (1623 Ivar Avenue), located 1.1 miles southwest of the Project site. In addition, the Silver Lake Library, located at 2411 Glendale Boulevard, is approximately 1.8 miles northeast of the Project site via local roads.

As the Project would result in approximately six new residents to the Project site, it would not result in substantial population growth and the Los Angeles Public Library Hollywood Region libraries would not experience an exceedance of available capacity. The Project would not directly necessitate the need for a new library. Further, property taxes collected from the Project would be collected and applied toward the City's General Fund, which could be applied toward the provision of new library facilities, as deemed appropriate. It is not anticipated that the Project would result in substantial adverse impacts associated with the provision of new or physically altered library facilities, or need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for library services. Therefore, impacts associated with library services would be less than significant.

# XVI. RECREATION

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | ☐ | ☐ | ☒ | ☐ |
| b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | ☐ | ☐ | ☒ | ☐ |

**a) Would the project Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?**

**Less-Than-Significant Impact**. A significant impact may occur if a project were to include substantial employment or population growth, which could generate an increased demand for public park facilities that exceeds the capacities of existing parks and causes premature deterioration of the park facilities.

The Project would introduce approximately six new residents to the Project site, a negligible number of residents, which would result in similarly nominal increase in the use of nearby parks and recreational areas. Therefore, impacts associated with increased usage of parks and recreational facilities would be less than significant.

**b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?**

**Less-Than-Significant Impact**. A significant impact may occur if a project were to generate a need for the construction or expansion of park facilities and such construction would have a significant adverse effect on the environment.

The Project involves the construction of a single-family residence and does not include construction of a recreational facility. Although the approximately six residents associated with the Project could slightly increase use of nearby parks, this increase in the use of nearby parks and recreational areas would be negligible and not require the construction of new or expansion of existing facilities. Therefore, impacts associated with new or expanded parks and recreational facilities would be less than significant.

# XVII. TRANSPORTATION

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? | ☐ | ☐ | ☒ | ☐ |
| b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? [2] | ☐ | ☐ | ☒ | ☐ |
| c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | ☐ | ☐ | ☒ | ☐ |
| d. Result in inadequate emergency access? | ☐ | ☐ | ☒ | ☐ |

**a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to result in substantial increases in traffic volumes in the vicinity of the project such that the existing street capacity experiences a decrease in the existing volume-to-capacity ratios or experiences increased traffic congestion exceeding Los Angeles Department of Transportation's recommended level of service (LOS), and if a project conflicted with adopted policies or would involve modification of existing alternative transportation facilities located on or off site.

**Construction**

The Project would require approximate 976 cy of soil export, which would equate to roughly 61 haul truck trips during the grading phase of Project construction. The grading phase would take approximately 10 days to complete (see the CalEEMod modeling outputs included in Appendix A), resulting in a nominal temporary increase of haul truck trips on local roads of about 6 haul trips per day, or less than one per hour during a typical construction workday.

[2] Until the City has adopted new Transportation thresholds (or July 1, 2020, whichever is sooner), question b will remain unchanged. Once new thresholds have been adopted, the Initial Study will be updated to reflect the 2019 Appendix G for question b.

In addition, approximately 60 workers would access the Project site throughout a typical 8-hour construction workday during peak construction phasing. Worker and vendor trips would be scattered throughout the construction workday, and construction parking will occur on the Project site. Therefore, impacts associated with construction circulation would be less than significant.

**Operational**

Trip rates for the Project were obtained from the Institute of Transportation Engineers' Trip Generation Manual, 10th Edition (ITE 2017). Based on the trip rate for "Single-Family Detached Housing," the Project would generate 18 daily trips (including one AM and one PM peak-hour trip). According to the City's CEQA Thresholds, further study is not warranted or required (City of Los Angeles 2006), and it is assumed that the Project would not conflict with an applicable plan, ordinance, or policy established to measure effectiveness of the circulation system. Therefore, long-term impacts associated with performance of the circulation system would be less than significant.

In addition, the Project would not include site improvements that would extend into the public right-of-way or interfere with existing public transit, bicycle, or pedestrian facilities, or impede the construction of new or the expansion of such existing facilities in the future. The Project would not disrupt public transportation services, alter public transportation routes, or interfere with the operation of public bikeway or pedestrian systems. The Project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. Therefore, impacts associated with alternative transit policies, plans, or programs would be less than significant.

**b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

**Less-Than-Significant Impact.** A significant traffic impact occurs when a project increases traffic demand on a Congestion Management Program (CMP) facility by 2% of capacity, causing or worsening LOS F.

The County CMP was adopted to monitor regional traffic growth and related transportation improvements. The CMP designated a transportation network including all state highways and some arterials within the County to be monitored by local jurisdictions. If LOS standards deteriorate on the CMP network, then local jurisdictions must prepare a deficiency plan to be in conformance with the CMP. Local jurisdictions found to be in nonconformance with the CMP risk the loss of state gas tax funding.

As previously discussed in Section 4.XVII(a), the Project would generate 18 daily trips (including one AM and one PM peak hour trip). Based on the nominal level of net new Project-related trip generation, the Project would not produce significant impacts on the CMP network. According to the City's CEQA Thresholds, further study is not warranted or required (City of Los Angeles 2006), and it is assumed that the Project would not conflict with a CMP intersection or roadway segment. Therefore, impacts associated with CMP facilities would be less than significant.

**c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to include new roadway design or introduce a new land use or project features into an area with specific transportation requirements and characteristics that have not been previously experienced in that area.

The Project would be required to submit final driveway plans and internal circulation plans to the City Department of Public Works and Bureau of Engineering and the Department of Transportation for review and approval, ensuring that site driveway access and internal site vehicular movement are designed in accordance with City design requirements. The Project applicant would also be required to submit final driveway plans and internal circulation plans to the City Department of Transportation. During this review, City staff may require additional measures be implemented on and/or adjacent to the Project should any concerns arise regarding roadway hazards. Such measures may include, but are not limited to, installing signage around the Project site to ensure pedestrian, bicycle, and vehicle safety and preparing a parking and driveway plan that incorporates design features that reduce accidents. Therefore, impacts associated with hazardous design features would be less than significant.

**d) Result in inadequate emergency access?**

**Less-Than-Significant Impact.** A significant impact may occur if the project design would not provide emergency access meeting the requirements of the local fire department, or in any other way threaten the ability of emergency vehicles to access and serve the Project site or adjacent uses.

The Project would be required to submit final driveway plans and internal circulation plans to the City Department of Public Works for review and approval, ensuring that site driveway access and internal site vehicular movement are designed in accordance with City design requirements related to emergency vehicle access. As previously discussed, the Project would be required to submit final driveway plans and internal circulation plans to the City Department of Public Works and Bureau of Engineering and the Department of Transportation for review and approval, ensuring that site driveway access and internal site vehicular movement are designed in accordance with City design requirements. The Project applicant would also be required to submit final driveway plans and internal circulation plans to the City Department of Transportation. During this review, City staff may require additional measures be implemented on and/or adjacent to the Project should any concerns arise regarding roadway hazards. Such measures may include, but are not limited to, installing signage around the Project site to ensure pedestrian, bicycle, and vehicle safety and preparing a parking and driveway plan that incorporates design features that reduce accidents.

In addition, construction parking will be contained to the Project site. As such, no impacts related to the on-street parking of construction vehicles is expected. Nonetheless, if any intermittent on-street parking is necessary, construction parking would comply with Sections 80.72, 80.76.2, and 89.60 of Chapter VIII of the Los Angeles Municipal Code, which prohibits or limits parking on

streets within the Very High Fire Hazard Severity Zone on Red Flag Alert Days. Further, all demolition and construction materials will be stored on-site within a staging/laydown area and not within the public right-of-way during demolition, hauling, and construction operations. Therefore, impacts associated with emergency access would be less than significant.

# XVIII. TRIBAL CULTURAL RESOURCES

*Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | ☐ | ☐ | ☒ | ☐ |
| a. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | ☐ | ☐ | ☒ | ☐ |

**a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k).

There is an existing single-family residence and carport located on the parcel associated with 1888 North Lucile Avenue. The existing building, totaling approximately 1,009 square feet, was built in 1925 (City of Los Angeles 2019a). Despite the age of this structure, structural changes have been made to the structure, and the original historical integrity of the property is no longer intact. As such, the structure would not be eligible for listing in the NRHP or CRHR, and thus, would not be considered a historical resource as defined by CEQA.

A review of the NRHP digital archive and the list of California Historical Resources indicated there are no listed sites located on the Project site (NRHP 2019; OHP 2019). In addition, no local properties are found on the CRHR or NRHP; therefore, impacts associated with historical resources would be less than significant.

**b) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to cause a substantial adverse change in the significance of a Tribal Cultural Resource determined to be significant pursuant to criteria set forth in subdivision(c) of PRC Section 5024.1.

Public Resources Code Section 21080.3.1(b) states:

> Prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, the lead agency shall begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project …"

AB 52 tribal consultation applies to any project for which an NOP or an NOI is filed on or after July 1, 2015. (Stats. 2114, Ch. 532, Section 11 (c)). This IS has been prepared as an informational document to support the findings of a Class 32 (Infill Development) Categorical Exemption, and neither an NOI nor an NOP are required to be filed for the Project. Thus, tribal consultation under AB 52 is not required for this Project.

Due to the heavy disturbance that has occurred on the Project site as a result of previous development activities, it is unlikely that grading and excavation activities will encounter intact archaeological deposits. For these reasons, the Project site should be treated as not sensitive for archaeological or tribal cultural resources. In addition, similar to many other development projects proposed throughout the City, the Project will be conditioned to ensure that, in the unlikely event that archaeological and/or tribal cultural resources (i.e., sites, features, or artifacts) are exposed during construction activities, that all construction work occurring within the vicinity of the find shall stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, and/or a tribal cultural resources specialist can evaluate the significance of the find and determine whether additional study is warranted. Therefore, impacts associated with tribal cultural resources would be less than significant.

# XIX. UTILITIES AND SERVICE SYSTEMS

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| Would the project: | | | | |
| a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | ☐ | ☐ | ☒ | ☐ |
| b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? | ☐ | ☐ | ☒ | ☐ |
| c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | ☐ | ☐ | ☒ | ☐ |
| d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? | ☐ | ☐ | ☒ | ☐ |
| e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? | ☐ | ☐ | ☒ | ☐ |

**a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to increase water consumption, wastewater, stormwater, electricity, or natural gas generation, or increased telecommunication services to such a degree that the capacity of facilities currently serving the site would be exceeded.

**Water Facilities**

LADWP provides potable water to the City, and thus to the Project site (LADWP 2015). The LADWP 2015 Urban Water Management Plan (UWMP) provides normal year, single dry year, and multiple dry year supply-and-demand analysis for LADWP's domestic water service area. As

shown in the 2015 UWMP, LADWP's supplies can meet demand for multiple dry years. According to the 2015 UWMP, in the 2013/2014 fiscal year, LADWP supplied 565,259 acre-feet per year (LADWP 2015). The Project involves the construction of two new single-family residences. Based on the City's 2006 CEQA Thresholds Guide sewage generation factor of 275 gallons per day (gpd)/unit, the Project would generate a demand of approximately 550 gpd, or 0.31 acre-feet per year.[3] This estimated water demand represents a nominal percentage of the total water supplied by LADWP, and would not result in an adverse change in the rate of water flows by substantially increasing water demand to the Project site and surrounding area. In addition, the Project would implement water conservation measures such as use of reclaimed and grey water; installation of low-flow bathroom and kitchen faucets, toilets, and showers; and use of water-efficient irrigation systems. Therefore, impacts associated with water facilities would be less than significant.

**Wastewater Treatment Facilities**

Wastewater generated at the site would be treated at the Hyperion Water Reclamation Plant (HWRP), which is owned and operated by LADWP. The HWRP is the oldest and largest of the City's wastewater treatment plants, with an average dry-weather flow capacity of 450 million gallons per day (mgd), with an average wastewater flow of 253 mgd for 2014–2015 (LADWP 2015).

Based on the City's CEQA Thresholds Guide, residential single-family use generates 275 gpd/unit (City of Los Angeles 2006). As such, the proposed single-family residence would generate approximately 275 gpd. Given that HWRP has a remaining capacity to treat 320 mgd of wastewater, the Project would not exceed treatment capacity of the HWRP. In addition, the Project would generate the same types of municipal wastewater that are currently generated throughout the City. The Project would not include industrial uses or activities that would require unique wastewater treatment processes. Further, the LA Green Building Code requires projects to achieve a 20% reduction in potable water use and wastewater generation, meet and exceed Title 24 Standards adopted by CEC, and meet 50% construction waste recycling levels. Therefore, impacts associated with wastewater treatment facilities would be less than significant.

**Stormwater Drainage Facilities**

There are several existing catch basins located on Fernwood Avenue and Griffith Park Avenue approximately 400 feet to the north of the Project site, and there are several catch basins on Landa Street near Griffith Park Boulevard approximately 470 feet to the southwest of the Project site (City of Los Angeles 2019b). The Project site is topographically situated on the northern flank of an east–west trending secondary ridge. The slope ascends from Lucile Avenue for approximately 50 to 60 feet to Landa Street. The front portion of the slope is partially terraced by walkways and small landscape retaining walls.

The Project would continue to generate surface water runoff, and runoff would be directed to existing stormwater inlets in a similar manner as under existing conditions. Although Project construction would increase the amount of impervious area on the undeveloped, northern portion

[3] Sewage rates assume that all potable water (water from toilets, sinks, showers, etc.) would be conveyed to the local sewer system.

Project site, the Project would comply with the City's LID requirements to reduce surface water runoff. As such, the Project would not create or contribute runoff water that would exacerbate any existing deficiencies in the storm drain system or provide substantial additional sources of polluted runoff. Therefore, impacts associated with stormwater drainage facilities would be less than significant.

**Electric Power Facilities**

As previously discussed in Section 4.VI, Energy, LADWP provides electrical service throughout the City and to the Project site. Upon completion, the Project's operational phase would require electricity for building operation (appliances, lighting, etc.). According to the SCAQMD Air Quality Handbook, residential land uses use 5,626 kilowatt-hours (kWh) per unit (SCAQMD 1993). As such, it is anticipated the Project would result in 11,252 kWh/year or 11.25 megawatts per year, representing approximately 0.18% of LADWP's instantaneous peak demand. Thus, there is adequate generation supply capacity to serve the Project. In addition, the Project would be required to comply with the 2016 Title 24 standards or the most recent standards at the time of building permit issuance. The energy-using fixtures within the Project would likely be newer technologies, using less electrical power. In addition, LADWP is required to procure at least 33% of their energy portfolio from renewable sources by 2020. The current sources for power procured by LADWP include wind, solar, and geothermal sources. These sources account for 29% of LADWP's overall energy mix in 2016, the most recent year for which data are available (CEC 2018). As such, the reliance on electrical power facilities would be reduced. Therefore, impacts associated with electrical power facilities would be less than significant.

**Natural Gas Facilities**

As previously discussed in Section 4.VI, SoCalGas provides natural gas to the Project site. CPUC regulates California natural gas rates and natural gas services, including in-state transportation over transmission and distribution pipeline systems, storage, procurement, metering, and billing. Most of the natural gas used in California comes from out-of-state natural gas basins (CPUC 2019).

Although the Project would require natural gas for building heating, the Project would comply with 2016 Title 24 building energy efficiency standards, reducing energy used in the state. In general, single-family homes built to the 2016 standards are anticipated to use approximately 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards (CEC 2016). Based on compliance with Title 24 and CPUC regulations, the Project would generate a need for natural gas that is consistent with single-family homes, and due to the newer technology, would require less energy than existing single-family homes in the surrounding area. Therefore, impacts associated with natural gas facilities would be less than significant.

**Telecommunications Facilities**

The City's local internet, TV, and phone services are provided by AT&T, Charter Communications, DirecTV, Dish Network, Frontier Communications, Charter Spectrum, and Verizon. Since the Project site is in an urbanized area and is surrounded by other single-family residential uses, there

are existing telecommunication facilities that would be able to serve the Project site. Once the Project is completed, the residents of the Project would be able to connect to existing telecommunication services without the need for expansion or construction of new facilities. Therefore, impacts associated with telecommunications facilities would be less than significant.

**b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to increase water consumption to such a degree that new water sources would need to be identified, or that existing resources would be consumed at a pace greater than planned for by purveyors, distributors, and service providers.

LADWP provides potable water to the City and thus to the Project site (LADWP 2015). The LADWP 2015 UWMP provides normal year, single dry year, and multiple dry year supply-and-demand analysis for LADWP's domestic water service area. As shown in the 2015 UWMP, LADWP's supplies can meet demand for multiple dry years (LADWP 2015). The Project involves the construction of two new single-family residences, which could result in an additional 550 gpd of water demand. However, this slight increase would not result in an adverse change in the rate of water flows by substantially increasing water demand to the Project site and surrounding area. The Project is not expected to have a substantial increase in water demand. Therefore, impacts associated with water supplies would be less than significant.

**c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

**Less-Than-Significant Impact**. A significant impact would occur if the wastewater treatment provider indicates that a project would increase wastewater generation to such a degree that the capacity of the facilities currently serving the Project site would be exceeded.

Wastewater generated at the Project site would be treated at the HWRP, which is owned and operated by LADWP. The HWRP is the oldest and largest of the City's wastewater treatment plants, with an average dry-weather flow capacity of 450 mgd, with an average wastewater flow of 253 mgd for 2014–2015 (LADWP 2015). Wastewater generated by the proposed Project would represent only a nominal percentage of the HWRP average dry-weather flow capacity and average wastewater flow. Therefore, impacts associated with wastewater treatment capacity would be less than significant.

**d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to increase solid waste generation to such a degree that existing and projected landfill capacities would be insufficient to accommodate the additional solid waste.

Solid waste generated by single-family residential uses in the City is collected by LA Sanitation. Solid waste transported from the Project site would be recycled, reused, transformed at a waste-to-energy facility, or disposed of at a landfill. Solid waste generated within the City is disposed of at landfill facilities located throughout the County. While LA Sanitation provides waste collection services to single-family and some small multifamily developments, private haulers provide waste collection services for most multifamily residential and commercial developments within the City. Solid waste transported by both public and private haulers is recycled, reused, transformed at a waste-to-energy facility, or disposed of at a landfill. The Chiquita Canyon Landfill and the Sunshine Canyon Landfill serve existing land uses within the City. Both landfills are Class III and accept residential, commercial, and construction nonhazardous waste. When waste is received at Class III landfills and transformation facilities, some is recycled for on-site use, such as alternative daily cover, and some is sent off site for recycling or processing. The remaining waste is landfilled or transformed into energy. As of October 2018, the Chiquita Canyon Landfill reported a remaining permitted capacity of 8,617,126 cy, with an estimated closure date of November 24, 2019 (CalRecycle 2018a). Although the remaining life of the existing facility would end around the time of construction, a proposed expansion of the Chiquita Canyon Landfill would increase the permitted maximum daily disposal tonnage from 6,000 to 12,000 tons, add capacity, and extend the life of the facility for an additional 21–38 years (County of Los Angeles 2014). As of December 2014, the Sunshine Canyon Landfill reported a remaining capacity of 96,800,000 cy, with an estimated closure date of December 31, 2037 (CalRecycle 2018b).

The Project involves the construction of two new single-family residences. Project construction would involve some generation of waste during demolition; however, pursuant to the City's Construction and Demolition Waste Recycling Ordinance, the Project would have to reuse/recycle all of its "C" and "D" construction/demolition waste (e.g., concrete and asphalt, bricks, gypsum/wallboard, scrap metal). The remaining demolition/construction waste requiring disposal at a landfill facility would represent a nominal percentage of the permitted maximum daily disposal tonnage at the Chiquita Canyon Landfill and the Sunshine Canyon Landfill facilities.

Once operational, the Project would result in waste typically associated with single-family residences. According to the California Department of Resources Recycling and Recovery, single-family residences generate approximately 10 pounds per dwelling unit per day (CalRecycle 2018c). Thus, it is anticipated the Project would generate approximately 20 pounds of solid waste per day, or 3.65 tons per year. This number is nominal compared to the 6,000 daily disposal tonnage at Chiquita Canyon Landfill. In addition, this amount does not factor in any recycling or waste diversion programs. Solid waste generated by the Project would not generate waste in excess of state or local standards. Therefore, impacts associated with landfill capacity would be less than significant.

**e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

**Less-Than-Significant Impact.** A significant impact may occur if a project were to generate solid waste that is not disposed of in accordance with applicable regulations.

Under the City's RENEW LA Plan, the City committed to reaching zero waste by diverting 90% of the solid waste generated in the City by 2025 (City of Los Angeles 2014). State law currently requires at least 50% solid waste diversion and establishes a statewide goal of 75% diversion by 2020. LA Sanitation collects more than 1 million tons of refuse annually from 750,000 customers, including single-family and small multifamily residences. Since the Project involves the construction of two new single-family residences, the amount of waste generated would not result in a substantial increase in waste generated from the Project area. The Project would follow all applicable solid waste policies and objectives that are required by law, statute, or regulation. Further, the City implemented the Construction and Demolition Waste Recycling Ordinance, to meet the waste diversion goals of AB 939 and Senate Bill 1374, pertaining to demolition and construction waste (City of Los Angeles 2018b). Required compliance with these regulations would reduce the Project's solid waste generation during construction. Therefore, impacts associated with solid waste regulations would be less than significant.

# XX. WILDFIRE

*If located in or near state responsibility areas or lands classified as very high fire hazard severity zones:*

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

**a) Substantially impair an adopted emergency response plan or emergency evacuation plan?**

**Less-Than-Significant Impact.** According to CAL FIRE's Fire Hazard Severity Zone Viewer, the Project site and surrounding area is within a VHFHSZ (CAL FIRE 2019). However, as discussed in Section 4.IX, Hazards and Hazardous Materials, as part of standard development procedures, plans would be submitted for review and approval to ensure that all new development has adequate emergency access and escape routes in compliance with City regulations. In addition, the Project would not cause permanent alterations to vehicular circulation routes and patterns or impede public access or travel on public rights-of-way. Therefore, impacts associated with an adopted emergency response or emergency evacuation plan would be less than significant.

**b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?**

**Less-Than-Significant Impact.** The Project site is located on two parcels, one which is currently occupied with a single-family residence, and one which is vacant in the Silver Lake neighborhood. The Project site is surrounded by similar single-family residential uses. Although the Project site is within a hillside area, the Project would not exacerbate wildfire risks due to slope or prevailing

winds, as there are existing single-family residences adjacent to the Project site. In the unlikely event of a wildfire, the pollutant concentration resulting from the wildfire would be similar before and after Project construction. A vegetation fire on the two parcels would have a relatively short burn time, since the existing structures are not located within a wildland area. As such, the proposed project would not exacerbate wildfire risks due to slope, prevailing winds, and other factors. Therefore, impacts would be less than significant.

**c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?**

**Less-Than-Significant Impact.** The Project involves the construction of two new single-family residences within an existing area zoned for single-family uses. The Project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk. In addition, utility connections associated with the Project would occur within a surrounding developed area, which would not exacerbate fire risk. Therefore, impacts associated with installation or maintenance of associated infrastructure resulting in exacerbated fire risk would be less than significant.

**d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?**

**Less-Than-Significant Impact.** According to the Geologic and Soils Engineering Investigation prepared for the Project site (Appendix B), an examination of the slopes did not reveal the presence of past surficial slope failures. Further, the Project would comply with the site plan review and permitting requirements of the Los Angeles Department of Building and Safety. As such, the likelihood for landslide occurrence is considered low. Through compliance with applicable regulatory requirements and site-specific geotechnical recommendations, the Project would not exacerbate, cause, or accelerate geologic hazards related to landslides. As such, the Project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Therefore, impacts would be less than significant.

# XXI. MANDATORY FINDINGS OF SIGNIFICANCE

| | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | ☐ | ☐ | ☒ | ☐ |
| b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | ☐ | ☐ | ☒ | ☐ |
| c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☐ | ☒ | ☐ |

**a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?**

**Less-Than-Significant Impact.** As previously discussed in Section 4.IV, Biological Resources, and Section 4.V, Cultural Resources, the Project would not degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory.

**b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?**

**Less-Than-Significant Impact.** As addressed throughout, the Project would have no impact or less than significant impacts with respect to all environmental impact areas. Cumulative impacts related to air quality and GHG emissions have already been addressed in their respective sections. Cumulative impacts for the other resource areas are discussed as follows.

### Aesthetics

Development of the Project in conjunction with related projects would result in an intensification of development in the Silver Lake neighborhood. Development of the related projects is expected to occur in accordance with adopted plans and regulations. Related projects would be similar in use to the Project and would not be prominent features within the field of view from the Project site. With respect to the overall visual quality of the surrounding neighborhood, related projects would be subject to site plan review by the Department of City Planning. Each related project would be subject to the City's design guidelines and the Silver Lake–Echo Park–Elysian Valley Community Plan, ensuring consistency and compatibility with the surrounding area. Through regulatory code compliance and applicable site plan review, each related project would be constructed as approved and in a manner that is consistent with and compatible with the existing urban form and character of the surrounding environment. The analysis of the Project's impacts to aesthetics concluded that the Project would not have a significant impact. Therefore, the Project's incremental contribution to a cumulative impact would not be considerable, and cumulative impacts to aesthetics would be less than significant.

### Agriculture

Implementation of the Project, in combination with the related projects in the Project vicinity, would result in the continued development of the surrounding area. Impacts to agricultural resources tend to be site specific and are assessed on a site-by-site basis. The analysis of the Project's impacts to agricultural resources concluded that the Project would not have a significant impact. Therefore, the Project's incremental contribution to a cumulative impact would not be considerable, and cumulative impacts to agriculture would be less than significant.

### Biological Resources

The geographic scope of the cumulative biological resources impact analysis takes into consideration related projects within the Silver Lake neighborhood. Although impacts of the Project are primarily localized to the impact areas, loss of vegetation types or fragmentation of wildlife corridors would combine with similar impacts of other projects and may extend beyond these limited impact areas. Due to the distance, intervening development, and because the Project site is located within an urbanized area, the Project would not interfere with the movement of any native residents, migratory fish, or wildlife species.

The Project alone would not result in significant impacts to special-status biological resources. A significant impact to biological resources is typically based on consideration of the Project's impact on known sensitive species and/or the loss of valued habitat. Due to the fact that the Project would not affect any rare, threatened, or endangered species, and would not result in the removal of any special-status native habitat, the majority of resultant cumulative impacts would also be considered less than significant. Therefore, the Project's incremental contribution to a cumulative impact would not be considerable, and cumulative impacts on biological resources would be less than significant.

**Cultural Resources and Tribal Cultural Resources**

Development of the Project in conjunction with related projects would result in the continued development of the surrounding area. Impacts to cultural resources tend to be site specific and are assessed on a site-by-site basis. The analysis of the Project's impacts on cultural resources concluded that the Project would have a less than significant impact. Therefore, the Project's incremental contribution to a cumulative impact would not be considerable, and cumulative impacts to cultural resources and Tribal cultural resources would be less than significant.

**Energy**

The Project and related projects would cumulatively increase the demand for electricity, natural gas, and petroleum. The Project's development would comply with existing regulations requiring energy conservation features to reduce the Project's contribution. As with the Project, other future development projects would be expected to incorporate CALGreen and state energy standards under Title 24, and incorporate regulations governing energy conservation. Since the Project involves the construction of two new single-family residence units, any increase in energy demand would be nominal. Therefore, the Project's incremental contribution to a cumulative impact would not be considerable, and cumulative impacts to energy would be less than significant.

**Geology and Soils**

Geotechnical hazards are site specific and are assessed on a site-by-site basis. There is little, if any, cumulative geological relationship between the Project and related projects. Similar to the Project, potential impacts related to geology and soils would be assessed on a case-by-case basis, and if necessary, the applicants of the related projects would be required to adhere to appropriate regulatory compliance measures. The Project site has been determined to be suitable for the development of the Project provided the conclusions and recommendations stated in the Geologic and Soils Engineering Investigation prepared for the Project site (Appendix B) are incorporated to the satisfaction of the City. Therefore, the Project's incremental contribution to a cumulative impact would not be considerable, and cumulative impacts on geology and soils would be less than significant.

### Hazards and Hazardous Materials

Development of the Project in combination with the related projects has the potential to increase to some degree the risks associated with the use and accidental release of hazardous materials. However, the Project site is not known to contain hazardous materials, and the Project would not pose a significant hazard to the public or the environment through the use or transport of hazardous materials or substances. In addition, Project impacts associated with emergency evacuation would be less than significant and thus would not be cumulatively considerable. With respect to the related projects, the presence of hazardous substances would require evaluation on a case-by-case basis, in conjunction with the development proposals for each of those properties. In addition, local municipalities are required to follow federal, state, and local laws regarding hazardous materials, which would further reduce impacts associated with the related projects. Therefore, the Project's incremental contribution to a cumulative impact would not be considerable, and cumulative impacts on hazards and hazardous materials would be less than significant.

### Hydrology and Water Quality

Implementation of the Project, in combination with the related projects in the Project vicinity, would result in the continued development of the surrounding area. The Project site and the surrounding areas are served by the existing City storm drain system. Under the existing conditions, stormwater runoff from the Project site and adjacent urban uses is typically directed into the adjacent streets, where it flows to the nearest drainage improvements. It is likely that most, if not all, of the related projects would also drain to the surrounding street system.

Pursuant to the City's LID requirements, each related project would be required to implement stormwater BMPs to retain or treat the runoff from a storm event producing 0.75 inches of rainfall in a 24-hour period or the rainfall from an 85th percentile 24-hour runoff event, whichever is greater. In addition, required BMPs would reduce erosion and siltation from construction activities, decrease potential surface water or groundwater contamination, and decrease the potential for flooding. Therefore, the Project's incremental contribution to a cumulative impact would not be considerable, and cumulative impacts on hydrology and water quality would be less than significant.

### Land Use and Planning

The geographic scope of this analysis is in the Silver Lake–Echo Park–Elysian Valley Community Plan Area. With respect to community division and habitat conservation plans, the Project would have no impact. Similarly to the Project, related projects could request a ZV, ZAD, ZAA, or modification from regulations in the LAMC. However, approvals of these requests would not result in a conflict with an applicable land use plan, policy, or regulations. Thus, development of any related project is expected to occur in accordance with the City's adopted land use plans, policies, and regulations. It is also expected that the related projects would be compatible with the zoning and land use designations of each related Project site and its existing surrounding uses. In addition, it is reasonable to assume that the related projects would implement and support local

and regional planning goals and policies. Therefore, the Project's incremental contribution to a cumulative impact would not be considerable, and cumulative impacts on land use and planning would be less than significant.

**Mineral Resources**

Implementation of the Project, in combination with the related projects in the Project vicinity, would result in the continued development of the surrounding area. Impacts on mineral resources tend to be site specific and are assessed on a site-by-site basis. The Project site does not contain any known mineral resources. The analysis of the Project's impacts on mineral resources concluded that the Project would not have significant impacts. Therefore, the Project's incremental contribution to a cumulative impact would not be considerable, and cumulative impacts on mineral resources would be less than significant.

**Noise**

Noise is measured and experienced on a logarithmic scale. This causes some unexpected properties, such as the following rule of thumb: if two simultaneous noises have volumes at least 10 dBA apart, the louder noise will entirely drown out the lower volume noise. Stated another way, if you add a 50-dBA noise to a 60-dBA noise, the resulting noise level remains 60 dBA.

Any substantial material (buildings, terrain, walls, etc.) that breaks line-of-site between a noise source and the receptor will reduce the noise level experienced by that receptor by at least 10 dBA. In addition, as the distance between a source and receptor increases, the noise level experienced by that receptor decreases. Because this Project is not located in very close proximity to any of the other related projects (the nearest project is 220 feet away, whereas the noise impacts calculated in this report are based on a 50 foot distance) and because a large amount of shielding exists in the area due to the extreme elevation variations and density of existing single-family residences, the Project is not expected to cause or contribute to any significant cumulative noise impacts. Therefore, the Project's incremental contribution to a cumulative impact would not be considerable, and cumulative impacts on noise would be less than significant.

**Public Services and Recreation**

***Fire Protection***

The geographic scope of the cumulative impacts study area is the related projects within the service area of LAFD Fire Station 56, located at 2759 Rowena Avenue, Los Angeles. Development of the Project in combination with the related projects would increase the cumulative demand for fire services. LAFD would continue to monitor population growth and land development throughout the City and identify additional resource needs and station expansions or new station construction that may become necessary to achieve the desired LOS. Through the City's regular budgeting process, LAFD's facility needs would be identified according to the priorities at the time, changes in service population, and demand factors. Any new or expanded

fire station would be funded via existing mechanisms (e.g., property and sales taxes), to which the Project and related projects would contribute.

If there were a fire protection impact due to the combined impacts of the related projects, the Project would not make a cumulatively considerable contribution to the impact for the reasons previously described. The Project and each of the related projects also would be individually subject to LAFD review and would be required to comply with all applicable LAFD, LA Department of Building and Safety, and other City fire safety requirements, including hydrant and access improvements, if necessary, to adequately mitigate fire protection impacts. Therefore, the Project's contribution to cumulative impacts on fire protection would be less than significant.

***Police Protection***

The geographic scope of the cumulative impacts study area is the related projects within the service area of the Northeast Police Station, located at 3353 North San Fernando Road, Los Angeles. The Project and the related projects would increase the demand for police services. This cumulative increase in demand for police services would increase demand for additional LAPD staffing, equipment, and facilities over time. LAPD would continue to monitor population growth and land development throughout the City and identify additional resource needs, including staffing, equipment, vehicles, and potential station expansions or new station construction that may become necessary to achieve the desired LOS.

Through the City's regular budgeting process, LAPD's resource needs would be identified and funds allocated according to the priorities at the time. Any new or expanded police stations would be funded via existing mechanisms (e.g., property and sales taxes), to which the Project and related projects would contribute. Furthermore, the Project and related projects would be required to consult with LAPD during the plan check phase to ensure that sufficient security measures are implemented to reduce potential impacts to police protection services. It is anticipated that related projects would implement design features similar to the Project and other necessary measures, which would reduce cumulative impacts to police protection services.

The Project and each of the related projects also would be individually subject to compliance with all applicable state, LAPD, LA Department of Building and Safety, and other City requirements regarding emergency access. As is the case under the existing conditions, emergency vehicles would access the Project site and each of the related projects directly from surrounding roadways. As such, emergency access to the Project vicinity would be maintained at all times, and cumulative traffic would not significantly impact emergency vehicle response. Therefore, the cumulative police protection impacts would be less than significant.

***Schools***

The geographic scope of cumulative impacts to the Los Angeles Unified School District includes the related projects within the service area of the Los Angeles Unified School District schools serving the Project site. The Project and related projects would be required to pay all applicable developer fees to the Los Angeles Unified School District to offset the demands on local schools.

Prior to issuance of a building permit, the general manager of the LA Department of Building and Safety or their designee shall ensure that the Project applicant has paid all applicable school facility development fees in accordance with California Government Code, Section 65995. Pursuant to California Government Code, Section 65995, payment of development fees authorized by Senate Bill 50 are deemed to be "full and complete school facilities mitigation." Therefore, cumulative impacts associated with school facilities would be less than significant.

***Parks and Recreation***

The Project, in combination with related projects, could increase the demand for parks and recreational facilities in the Project area. However, as previously discussed in Section 4.XIV, Parks and Recreation, the proposed residential structures would introduce a negligible number of residents to the Project site, which would not result in substantial population growth in the Project area. Thus, the Project would not generate a substantial need for additional parks and recreational facilities, which in turn would require the construction of new or the expansion of existing recreational facilities.

The Project and residential-related projects in the Silver Lake–Echo Park–Elysian Valley Community Plan Area would generate a Dwelling Unit Tax that could be applied toward the provision of new parks and recreation facilities serving the Project area, as deemed appropriate. These revenues would help offset any increase in the demand for parks and recreation services as a result of implementing the Project and other related projects. Therefore, cumulative impacts related to parks and recreation services would be less than significant.

***Other Public Facilities***

The geographic scope of the cumulative impacts is the service area of Los Angeles Public Libraries' Hollywood Area libraries, which includes 1 regional branch library and 12 neighborhood branch libraries. The related projects could increase the demand upon library services. However, the City Charter requires libraries to be funded from property taxes, including those assessed against the Project and related projects. The Project and the related projects would be required to pay these fees as applicable. The population increase resulting from the related projects would not be sufficient to result in a substantial increase in demand for library services compared to the expected LOS such that new or physically expanded libraries would be needed. Therefore, cumulative impacts associated with library services would be less than significant.

**Transportation**

Similar to the currently proposed Project, the other nearby projects would have to adhere to all applicable requirements set forth by the City to minimize, to the extent feasible, impacts to existing adjacent residential users during construction of residential projects in hillside areas. Construction of the Project would resulting in a nominal temporary increase of haul truck trips on local roads of about 6 haul trips per day, or less than one per hour during a typical construction workday. In addition, approximately 60 workers would access the Project site throughout a typical 8-hour construction workday during peak construction phasing. Worker and vendor trips would be

scattered throughout the construction workday, and construction parking will occur on the Project site. The Project's construction traffic would be intermittent and short-term, ceasing upon completion of construction activities.

Further, during the operational phase, the Project would generate 18 daily trips (including one AM and one PM peak-hour trip). According to the City's CEQA Thresholds, further study is not warranted or required (City of Los Angeles 2006), and it is assumed that the Project would not conflict with an applicable plan, ordinance, or policy established to measure effectiveness of the circulation system. Based on these considerations, the currently proposed Project's construction- and operational-related traffic, coupled with the short-term construction and long-term operational vehicle trips generated by the other projects, would still not result in adverse effects on the local street system. Therefore, cumulative impacts would be less than significant.

**Utilities and Service Systems**

***Water***

Development of the Project, development of related projects, and the cumulative growth throughout the City would further increase the demand for potable water in the surrounding area. Through the 2015 UWMP, LADWP has demonstrated that it can provide adequate water supplies for the City through the Year 2040, with implementation of conservation strategies and proper supply management. This estimate is based in part on demographic projections obtained for the LADWP service area from the Metropolitan Water District of Southern California (Metropolitan). Metropolitan uses a land-use based planning tool that allocates projected demographic data from SCAG into water service areas for each of Metropolitan's member agencies. As previously discussed in Section 4.XIV, the Project would not cause a substantial increase in population growth in the Project area. Any direct population growth generated by the Project would be small and would not exceed SCAG's growth projections. Thus, the Project-related growth would be consistent with SCAG's growth projections for the Los Angeles subregion. As such, the additional water demands generated by the Project are accounted for in the 2015 UWMP. Therefore, the Project's cumulative impact on water utilities would be less than significant.

***Wastewater***

Development of the Project in conjunction with the related projects would further increase regional demands on the HWRP's capacity. The impact of the continued growth of the region would likely have the effect of diminishing the daily excess capacity of the HWRP's service to the City and the surrounding area. However, the HWRP has a remaining capacity to treat 175 mgd of wastewater. Therefore, the cumulative impact on wastewater treatment facilities would be less than significant.

With respect to sewer lines, the need for the related projects to upgrade sewer lines to accommodate their wastewater needs is site specific. Similar to the Project, the City would require detailed gauging and evaluation of the related projects' wastewater connection point at the time of connection to the system to ensure that the infrastructure has sufficient capacity to convey

wastewater flows. Therefore, the Project's cumulative impacts on wastewater utilities would be less than significant.

***Stormwater***

Implementation of the Project, in combination with the related projects in the Project vicinity, would result in the continued development of the surrounding area. The Project site and the surrounding areas are served by the existing City storm drain system. Under the existing conditions, stormwater runoff from the Project site and adjacent urban uses is typically directed into the adjacent streets, where it flows to the nearest drainage improvements. It is likely that most, if not all, of the related projects would also drain to the surrounding street system.

Pursuant to the City's LID requirements, each related project would be required to implement stormwater BMPs to retain or treat the runoff from a storm event producing 0.75 inches of rainfall in a 24-hour period or the rainfall from an 85th percentile 24-hour runoff event, whichever is greater. In addition, required BMPs would reduce erosion and siltation from construction activities, decrease potential surface water or groundwater contamination, and decrease the potential for flooding. Therefore, the Project's cumulative impacts on stormwater utilities would be less than significant.

***Solid Waste***

Implementation of the Project in conjunction with the related projects would further increase demand on area landfills. The impact of the continued growth of the region would likely have the effect of diminishing the daily excess capacity of the existing landfills serving the City. The Project would contribute approximately 20 pounds of solid waste a day, or 3.65 tons per year. As with the Project, the related projects would be required to participate in regional source reduction and recycling programs, significantly reducing the number of tons deposited in area landfills. Therefore, the Project's cumulative impacts on solid waste would be less than significant.

**Wildfire**

The Project site is located within a VHFHSZ. Therefore, there is a potential for wildlands fires to occur. However, the Project and related projects would comply with site plan review and permitted requirements of the LA Department of Building and Safety. The Project and related projects require approval from the LAFD prior to issuance of building permits to ensure conformance with all applicable fire code regulations. In addition, the Project and cumulative projects would not result in an increased population within an undeveloped area. Therefore, the Project's cumulative impacts on wildfire would be less than significant.

**Cumulative Impact Summary**

For all resource areas analyzed, with compliance with existing local, state, and federal regulatory requirements that would apply to construction and operation of the Project, the Project's individual-level impacts would be reduced to less than significant levels, which would, in turn,

reduce the potential for these impacts to be considered part of any possible cumulative impact. In addition, these other related projects would presumably be bound by their applicable lead agency to (1) comply with the all applicable federal, state, and local regulatory requirements; and (2) incorporate all feasible mitigation measures, consistent with CEQA, to further ensure that their potentially cumulative impacts would be reduced to less than significant levels. Therefore, the Project would not result in individually limited but cumulatively considerable impacts.

**c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?**

**Less-Than-Significant Impact.** As evaluated throughout this document, environmental impacts associated with the Project would be less than significant or would result in no impact. Thus, the Project would not directly or indirectly cause substantial adverse effects on human beings.

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# 6 REFERENCES, ACRONYMS AND ABBREVIATIONS

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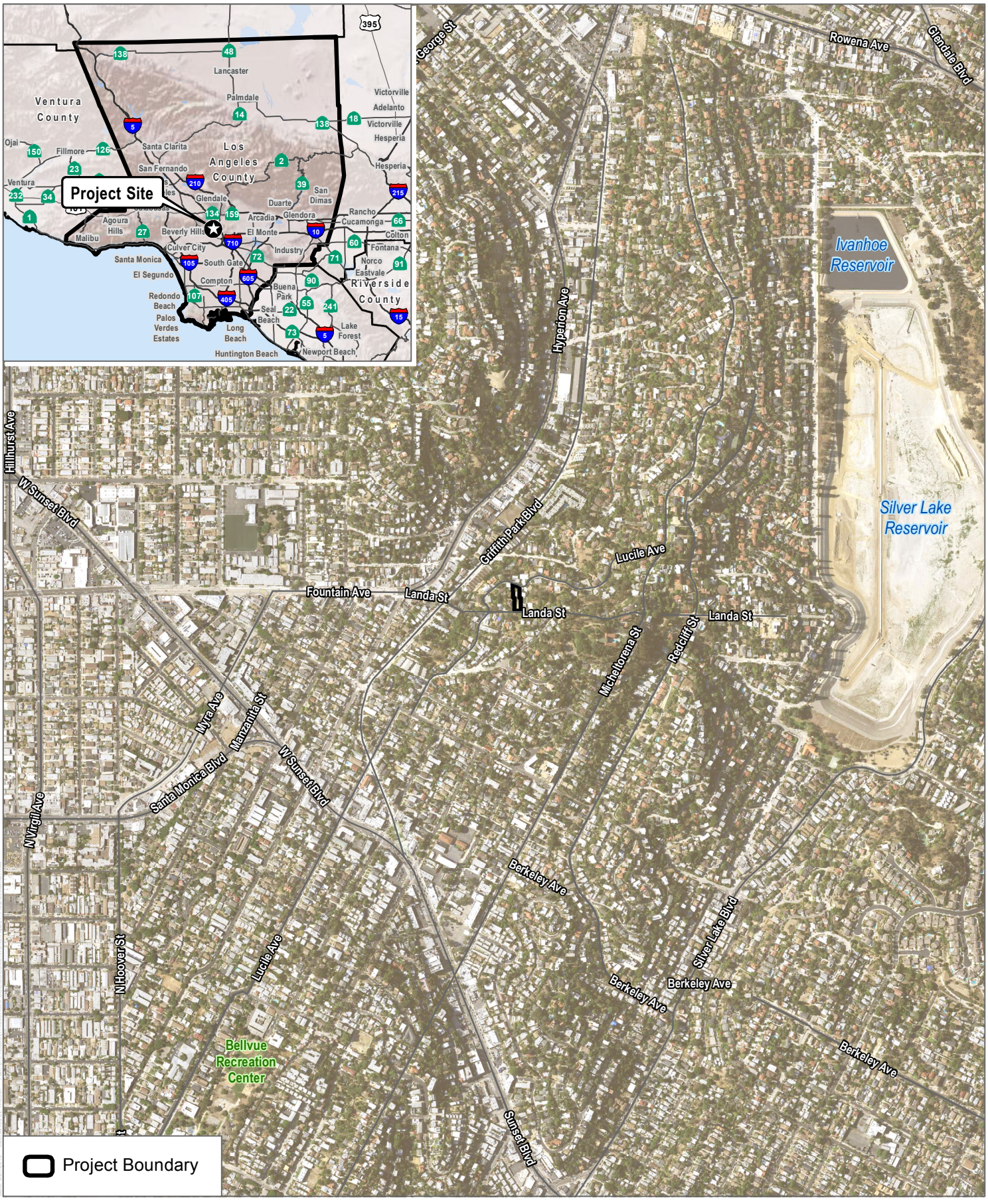
## 6.2 ACRONYMS AND ABBREVIATIONS

| Acronym | Definition |
|---|---|
| | |
| AB | Assembly Bill |
| amsl | above mean sea level |
| APN | Assessor's Parcel Number |
| AQMP | Air Quality Management Plan |
| BMP | best management practice |
| CalEEMod | California Emissions Estimator Model |
| CAL FIRE | California Department of Forestry and Fire Protection |
| CALGreen | California Green Building Standards Code |
| CARB | California Air Resources Board |
| CBIA v. BAAQMD | California Building Industry Association v. Bay Area Air Quality |
| CEC | California Energy Commission |
| CEQA | California Environmental Quality Act |
| City | City of Los Angeles |
| CMP | Congestion Management Program |
| CNEL | Community Noise Equivalent Level |
| CO | carbon monoxide |
| $CO_2e$ | carbon dioxide equivalent |
| CPUC | California Public Utilities Commission |
| CRHR | California Register of Historical Resources |
| cy | cubic yard |
| dBA | decibel |
| DU | dwelling unit |
| EIR | environmental impact report |
| EPA | Environmental Protection Agency |
| GHG | greenhouse gas |
| gpd | gallons per day |
| HCR | Hillside Construction Regulation |
| HWRP | Hyperion Water Reclamation Plant |
| IS | initial study |
| ITE | Institute of Transportation Engineers |
| kWh | kilowatt-hour |
| LADWP | Los Angeles Department of Water and Power |
| LAFD | Los Angeles Fire Department |
| LAMC | Los Angeles Municipal Code |
| LAPD | Los Angeles Police Department |
| LID | Low Impact Development |
| LOS | level of service |
| Metropolitan | Metropolitan Water District of Southern California |

| Acronym | Definition |
|---|---|
| mgd | million gallons per day |
| MT | metric tons |
| $NO_x$ | nitrogen oxides |
| NOI | Notice of Intent |
| NOP | Notice of Preparation |
| NPDES | National Pollutant Discharge Elimination System |
| NRHP | National Register of Historic Places |
| $PM_{10}$ | particulate matter less than or equal to 10 microns in diameter |
| $PM_{2.5}$ | particulate matter less than or equal to 2.5 microns in diameter |
| PRC | Public Resources Code |
| Project | 3627 Landa and 1888 Lucile Residential Project |
| RFA | Residential Floor Area |
| ROG | reactive organic gas |
| RWQCB | Regional Water Quality Control Board |
| SCAB | South Coast Air Basin |
| SCAG | Southern California Association of Governments |
| SCAQMD | South Coast Air Quality Management District |
| $SO_x$ | sulfur oxides |
| SWPPP | Stormwater Pollution Prevention Plan |
| UBC | Uniform Building Code |
| UWMP | Urban Water Management Plan |
| V/C | volume to capacity |
| VHFHSZ | Very High Fire Hazard Severity Zone |
| ZAA | Zoning Administrator's Adjustment |
| ZAD | Zoning Administrator's Determination |
| ZV | Zoning Variance |




SOURCE: NAIP 2016

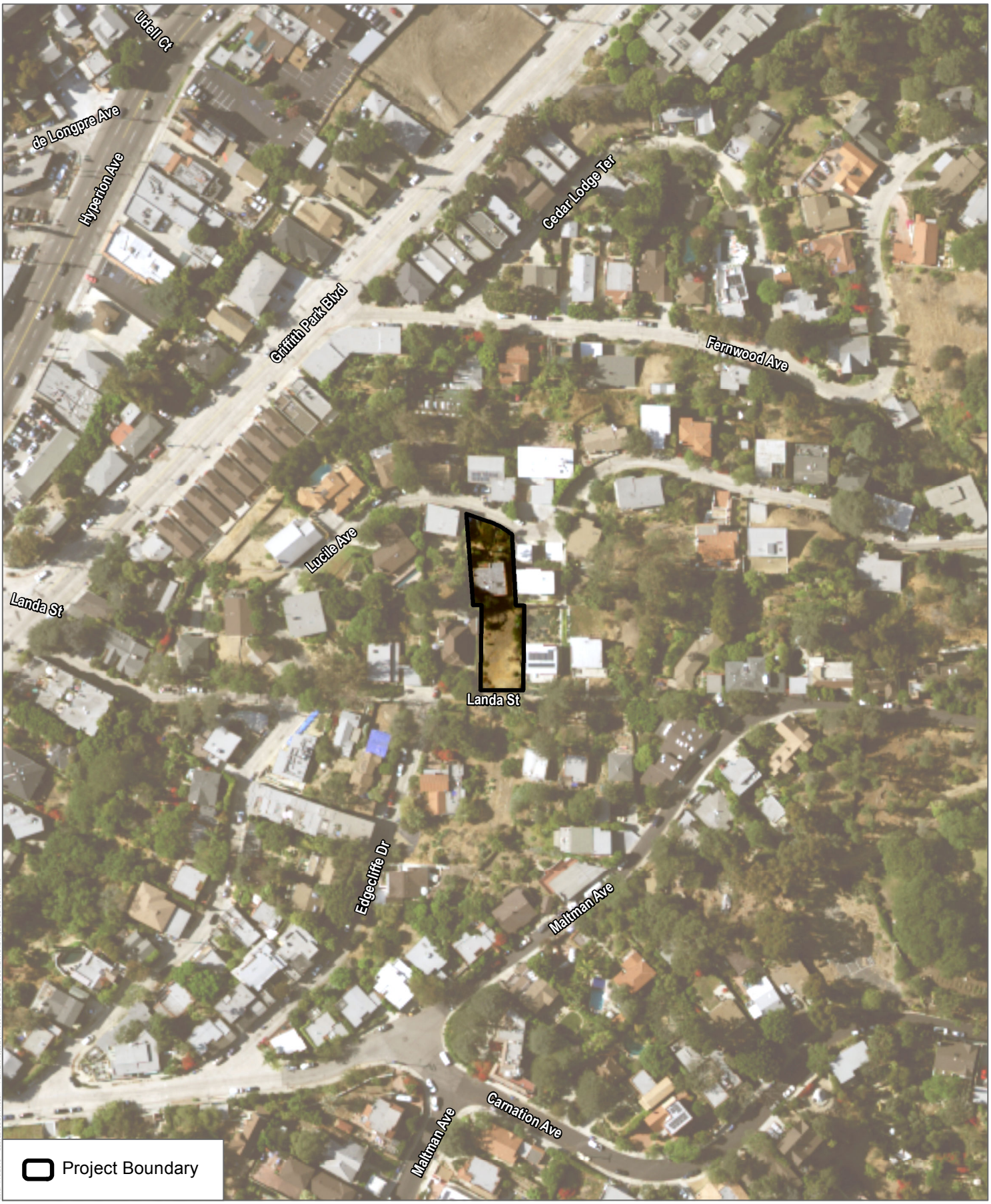
**FIGURE 1**

Project Location

Landa and Lucile Residential Project

DUDEK

0 500 1,000 Feet




SOURCE: NAIP 2016

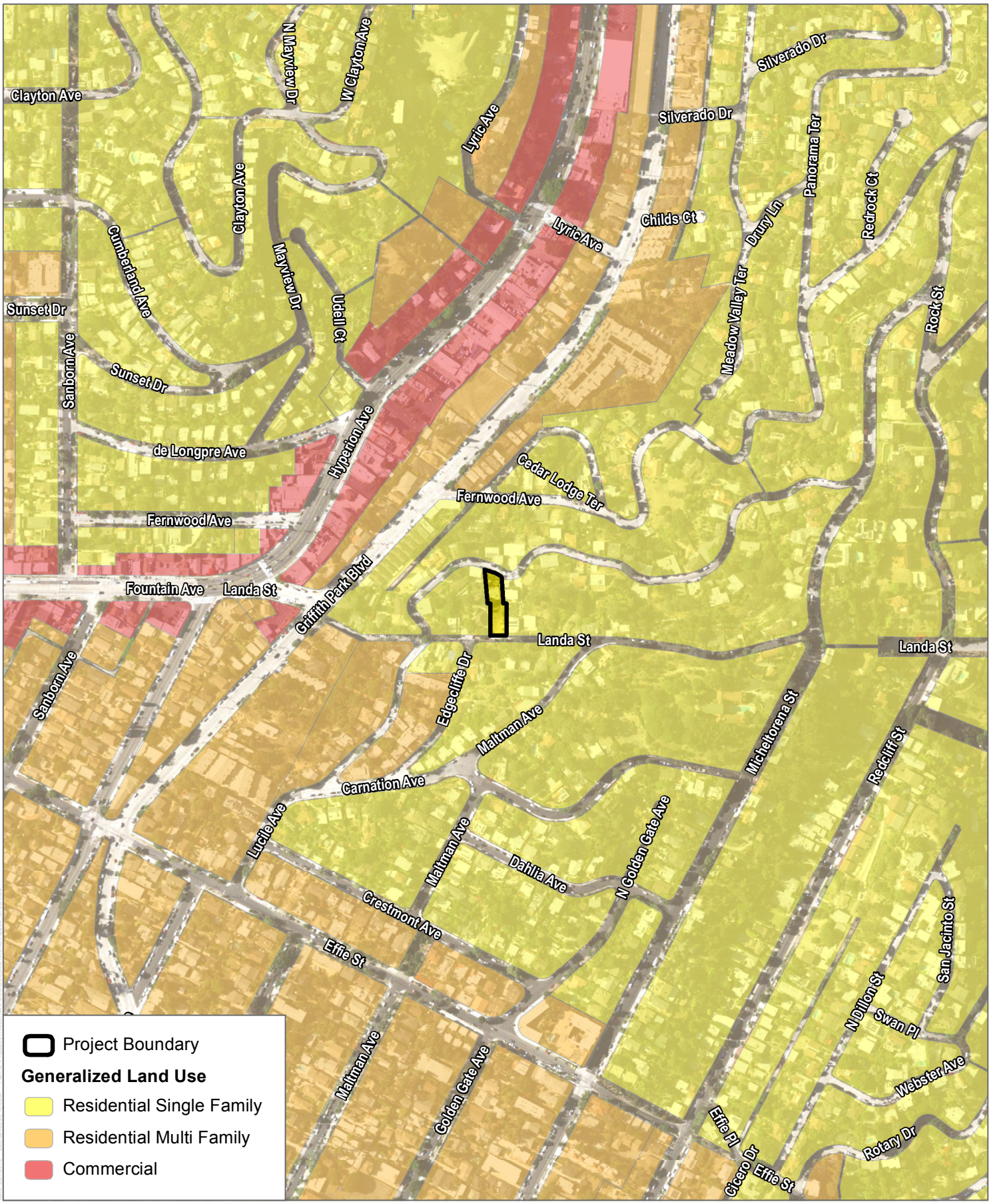
DUDEK

0 75 150 Feet

**FIGURE 2**

Surrounding Land Uses

Landa and Lucile Residential Project




SOURCE: NAIP 2016, City of Los Angeles 2013

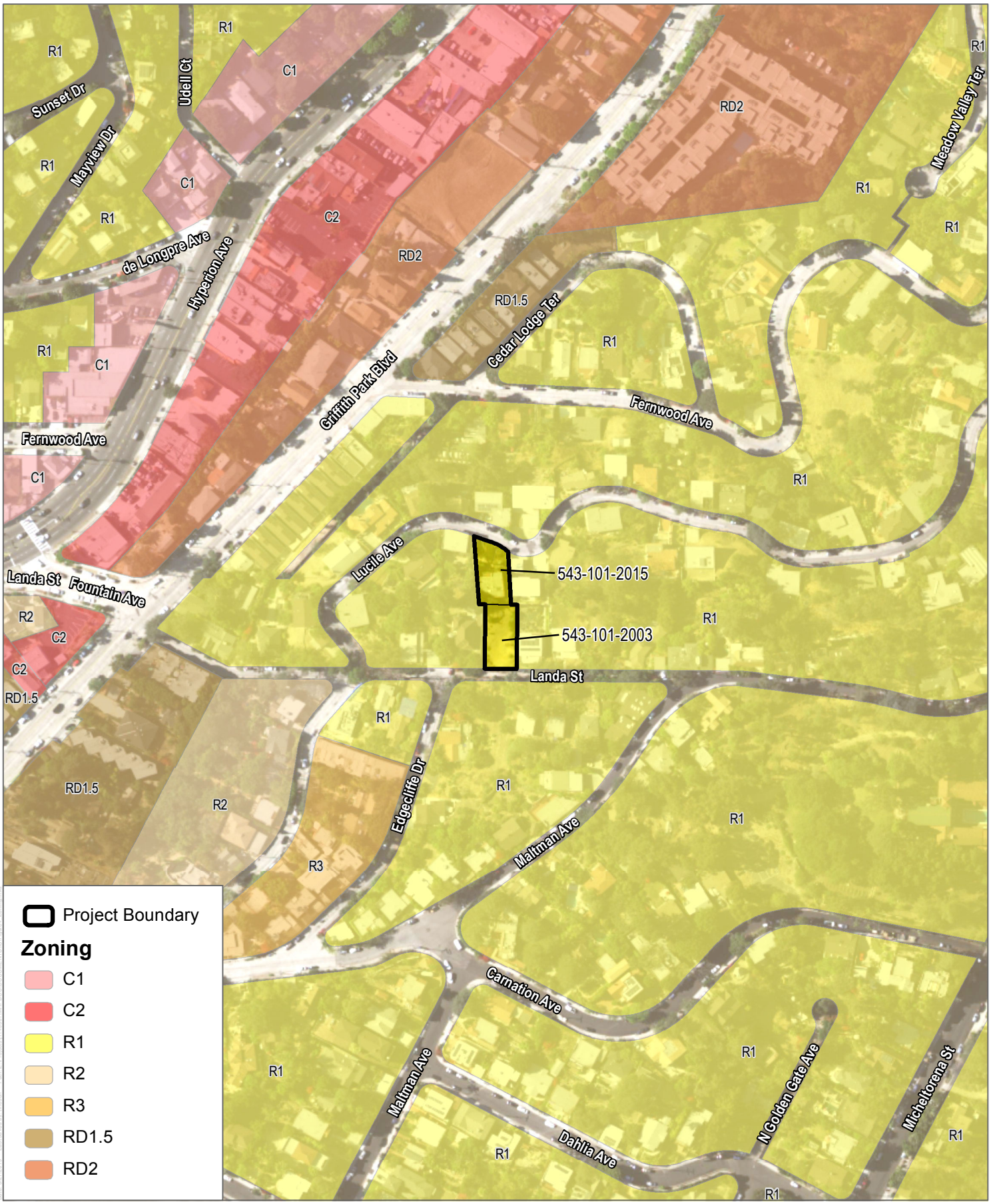
DUDEK

0 200 400 Feet

**FIGURE 3**

General Plan Land Use

Landa and Lucile Residential Project




SOURCE: NAIP 2016, City of Los Angeles 2013

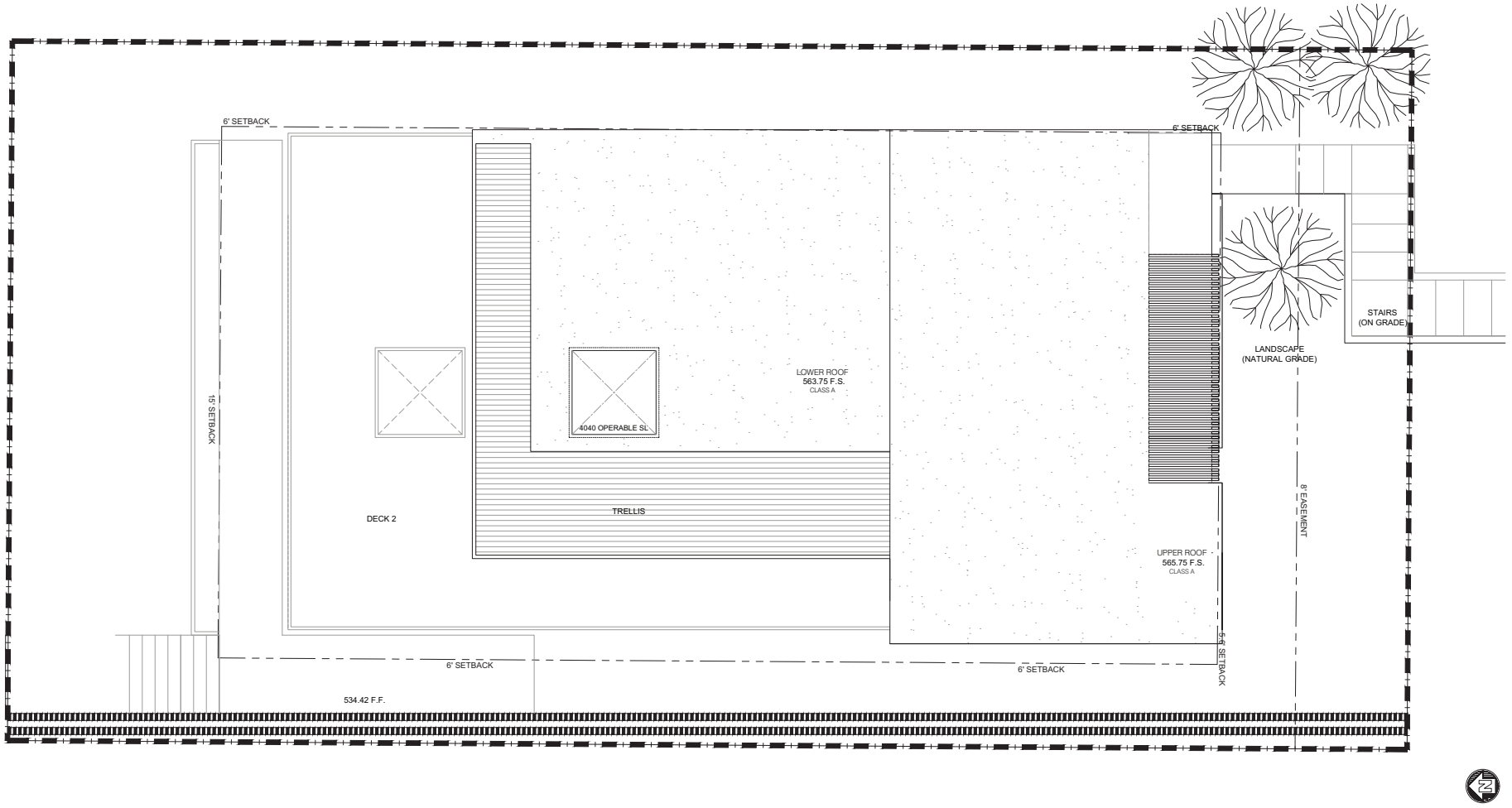
DUDEK

0 100 200 Feet

**FIGURE 4**

Zoning

Landa and Lucile Residential Project



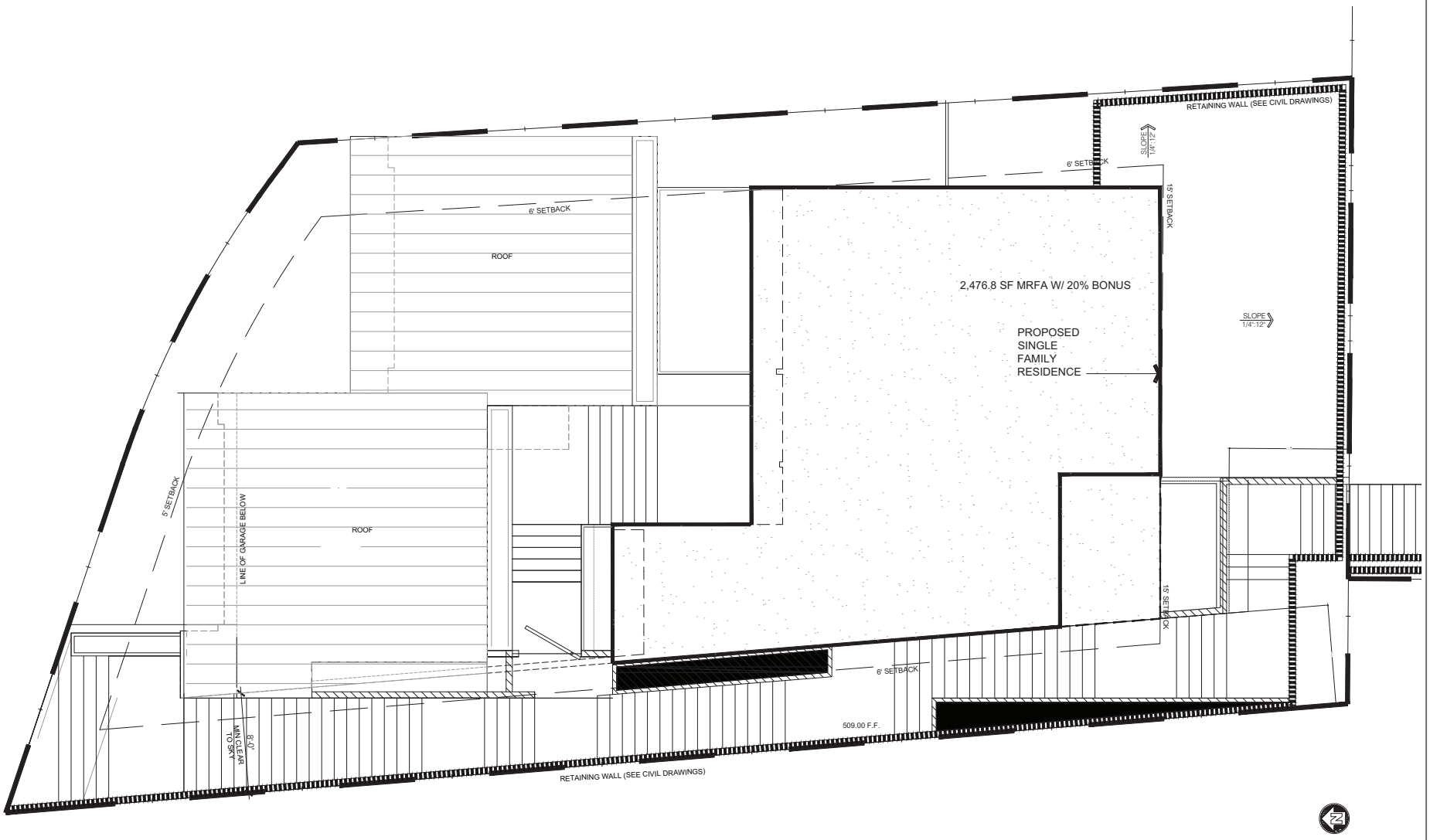

SOURCE: Tellus Design and Build 2019

**FIGURE 5A**

3627 West Landa Street Site Plan

Landa and Lucile Residential Project

DUDEK




SOURCE: Tellus Design and Build 2019

**FIGURE 5B**

1888 North Lucile Avenue Site Plan

Landa and Lucile Residential Project

DUDEK

## Western Elevations

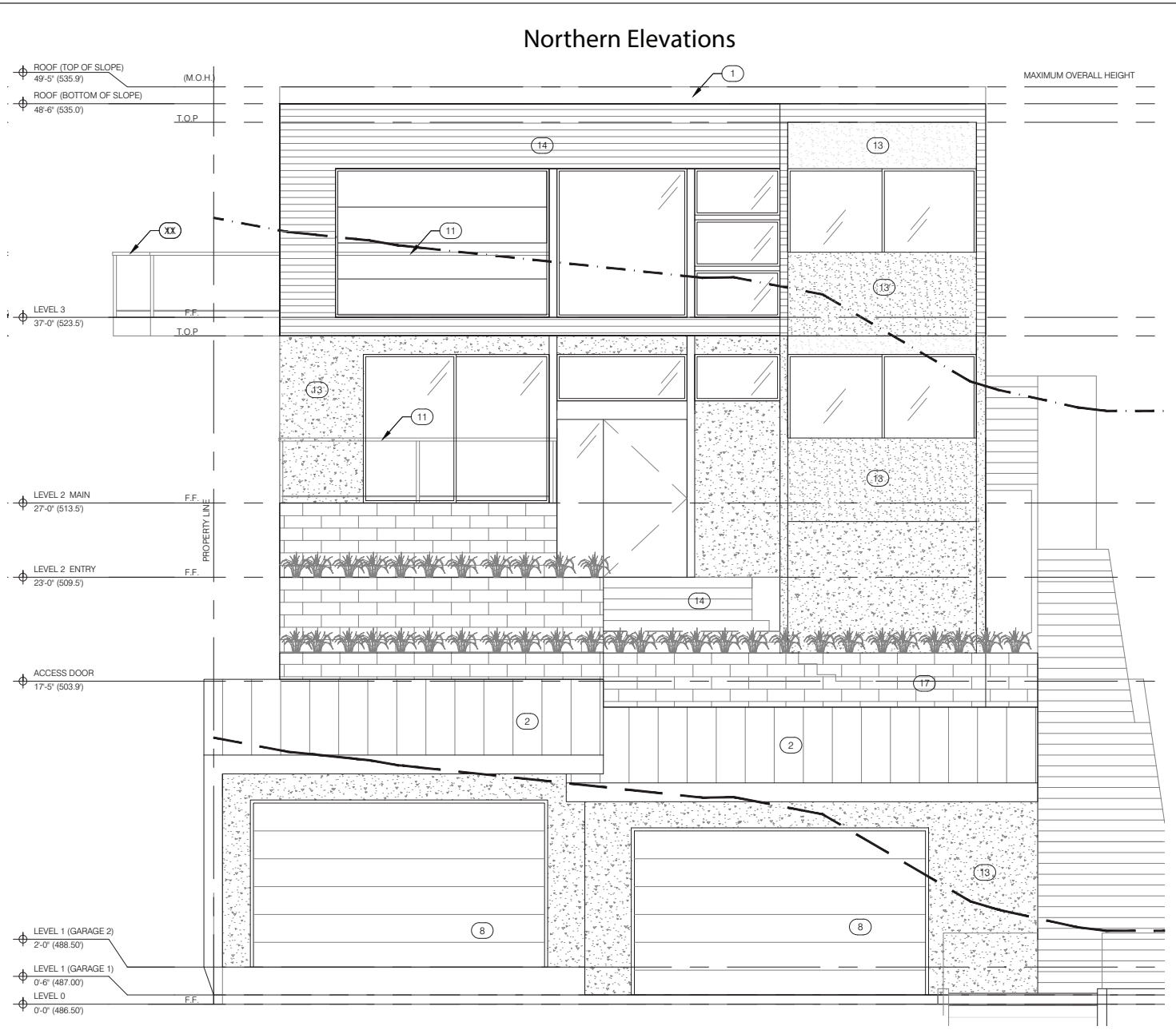

SOURCE: Tellus Design and Build 2019

**FIGURE 6A**

3627 West Landa Street Proposed Elevations

Landa and Lucile Residential Project

DUDEK




SOURCE: Tellus Design and Build 2019

**FIGURE 6B**

1888 North Lucile Avenue Proposed Elevations

Landa and Lucile Residential Project

DUDEK


SOURCE: NAIP 2016, Z Consulting Company 2019

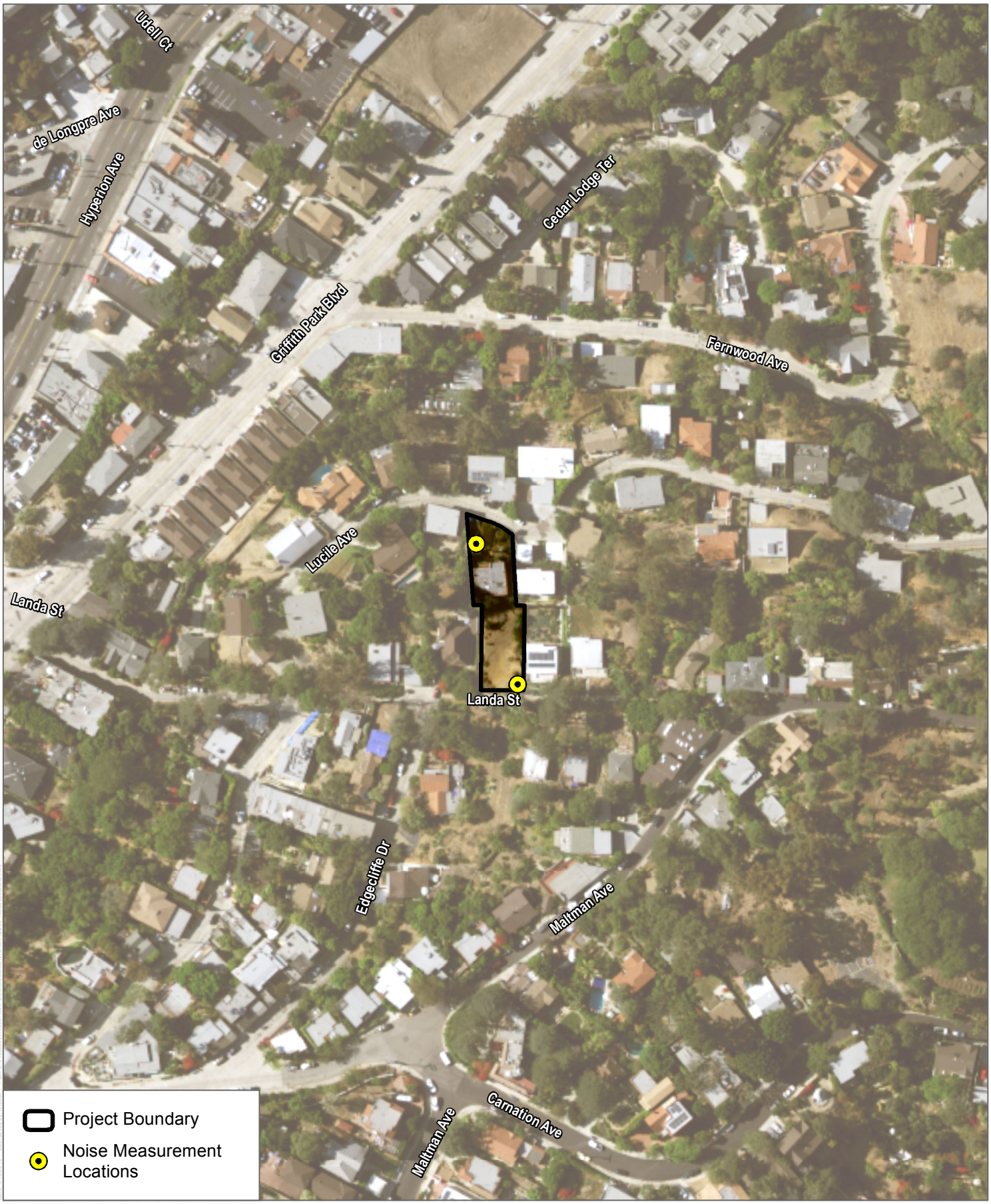
DUDEK

0 150 300 Feet

**FIGURE 7**

Related Projects

Landa and Lucile Residential Project




SOURCE: NAIP 2016, Z Consulting Company 2019

DUDEK

0 75 150 Feet

**FIGURE 8**

Noise Measurement Locations

Landa and Lucile Residential Project

# Appendix A

## Air Quality and Greenhouse Gas Calculations

CONSULTING COMPANY
ENVIRONMENTAL & SAFETY

# AIR QUALITY AND NOISE IMPACT ASSESSMENT

1888 Lucile Avenue & 3627 Landa Street
Los Angeles, CA 90039

April 8, 2019

Prepared for: Tom Porter
Project Applicant

Prepared by:

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# AIR QUALITY AND NOISE IMPACT ASSESSMENT

1888 Lucile Avenue & 3627 Landa Street

April 8, 2019

# AIR QUALITY AND NOISE IMPACT ASSESSMENT

1888 Lucile Avenue & 3627 Landa Street
Los Angeles, CA 90039

April 8, 2019

## SECTION 1 INTRODUCTION

This Air Quality and Noise Impact Assessment (Assessment) quantifies and determines the significance of air quality and noise impacts associated with the construction of two (2) single family residences (SFR) located at 1888 Lucile Avenue & 3627 Landa Street in the City of Los Angeles (Project). This Assessment quantifies criteria pollutant emissions impacts, greenhouse gas (GHG) emissions impacts, and noise impacts associated with the Project's construction phase. Cumulative impacts from nearby residential construction projects currently in Los Angeles City's pipeline are also addressed.

South Coast Air Quality Management District (SCAQMD) methodologies and significance thresholds form the basis of the air analysis within this Assessment. Specifically, the following references were utilized:

- Air Quality Analysis Handbook (2015);
- CEQA Air Quality Handbook (1993);
- Localized Significance Threshold Methodology (July 2008) and example calculation spreadsheets;
- Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans (December 2008); and
- CalEEMod model (version 2016.3.2) with supporting documentation.

The noise analysis within this Assessment follows the methodologies and significance thresholds outlined in the following reference:

- Los Angeles *Construction Noise Ordinance* (Sec. 41.40 and Sec. 112.03 through 112.05).

## SECTION 2 PROJECT DESCRIPTION

The Project includes the construction of two (2) new SFRs on adjacent lots: one on a 0.11-acre lot that currently has an SFR and one on a 0.11-acre lot that is currently undeveloped. Although this Assessment focuses on the residences planned for 1888 Lucile Avenue & 3627 Landa Street, the cumulative impacts of multiple residential development projects in the area are quantified and compared to appropriate significance thresholds (Section 5). See the Project Vicinity and Site Plan figures in Appendix A for the location and design of the Project as well as the locations of nearby construction projects.

The following Project specifications have been provided by the Applicant:

- The Project site is 0.23 acres (9,936 sf) in total and currently includes one 1,009-sf residence;
- The Project includes the demolition of the existing residence and the construction of two SFRs (2,463 sf and 1,958 sf, total of 4,421 sf);
- The approximate construction schedule is from August 2019 to June 2021;
- Total material cut is 997 cy and fill is 111 cy;
- Total material to be transported from the Project site is 886 cy; and
- The approximate schedule and equipment list presented in Table 1.

### Table 1 Construction Schedule and Equipment

| Construction Phase | Timeframe | | Duration (work days) | Equipment List |
|---|---|---|---|---|
| | Phase Start | Phase Stop | | |
| Demolition | 8/1/2019 | 9/21/2019 | 45 | 1x Mini Excavator<br>2x Tractors/Loaders/Backhoes<br>1x Dump Truck<br>3x Manual Jackhammers |
| Site Preparation | 9/22/2019 | 10/8/2019 | 14 | 1x Tractor/Loader/Backhoe<br>1x Mini Excavator<br>1x Dump Truck |
| Grading | 10/9/2019 | 10/19/2019 | 10 | 1x Tractor/Loader/Backhoe<br>1x Dozer<br>1x Dump Truck |
| Building Construction Phase 1 (caissons, retaining walls, footings, etc.) | 10/20/2019 | 12/28/2019 | 60 | 1x Drilling Rig<br>1x Crane<br>1x Concrete Truck<br>1x Concrete Pump Truck<br>1x Mini Excavator<br>1x Tractor/Loader/Backhoe |
| Building Construction Phase 2 (framing, utilities, finishing, paving, etc.) | 12/29/2019 | 6/17/2021 | 460 | 1x Crane<br>1x Concrete Truck<br>1x Concrete Pump Truck<br>1x Mini Excavator<br>1x Tractor/Loader/Backhoe |

Project construction will include the following noise control features:

- **Restricted construction hours.** Project construction activities that generate noise will be confined to daytime hours only, as defined by the City of Los Angeles *Construction Noise Ordinance* (7:00 AM-9:00 PM, Monday through Friday, 8:00 AM-6:00 PM Saturdays). Construction activities that generate noise will also be prohibited on Sundays and all federal holidays.
- **Demolition procedures.** Demolition of the existing structure will be conducted in a manner that limits noise impacts to the most impacted receptors. Due to the steep terrain in the area, receptors on the uphill side of the Project (to the east) will experience higher noise impacts than the receptors on the downhill side of the Project (to the west). Demolition activities will be conducted starting on the west side of the structure and progressing to the east. In other words, the east facing wall of the structure will be preserved for as long as possible. Following this procedure, much of the demolition noise will be shielded from the receptors to the east.
- **Mufflers.** All heavy construction equipment that is able to utilize mufflers will do so. As engine noise is the predominant source of noise associated with most construction equipment, utilization of mufflers will substantially reduce noise impacts.
- **Temporary Noise Barriers.** In specific circumstances, temporary noise barriers can be effective at reducing noise impacts associated with construction. Noise barriers are not practical for phases of construction that require constant mobility around the site, such as site preparation and grading. Additionally, noise barriers are not necessary during demolition because the walls of the existing building themselves serve the same purpose (see the demolition procedures noise control item above). Similarly, once the new building's walls are erected, the effectiveness of noise barriers is again reduced.

  Temporary noise barriers are ideally suited for controlling noise from construction equipment that remains stationary, such as drill rigs. For this reason, the Project will utilize temporary noise barriers to control noise impacts from the drill rig during drilling of the caissons. The noise barriers will be placed on the east side of the drill rig in an orientation that breaks line of site between the drill rig's engine and the nearest neighbor to the east. The noise barrier should be located as close to the drill rig as possible to maximize effectiveness.

# SECTION 3 SIGNIFICANCE THRESHOLDS

## 3.1 Air Quality Standards

SCAQMD has established thresholds of significance for use in air quality assessments. The SCAQMD *Air Quality Analysis Handbook* (2015), the *Localized Significance Threshold* Methodology (July 2008), and the *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans* (December 2008), contain the significance thresholds utilized for this Project. The following sections present and discuss these significance thresholds in more detail.

### 3.1.1 Localized Criteria Pollutant Thresholds (LST)

SCAQMD's LST Methodology presents a method by which a project's onsite emissions of CO, NOx, $PM_{10}$, and $PM_{2.5}$ can be compared to screening thresholds that the SCAQMD derived from air dispersion models. The following information was utilized to determine the LST thresholds for this Project:

- **Project size**: As presented in Section 2, this Project site is approximately 0.23 acres. . This is less than the 1-acre project size category in the SCAQMD's LST methodology. Therefore, per LST guidance, a Project size of 1-acre is used to determine the applicable thresholds.

- **Distance to the nearest receptor**: The Project site is located near multiple existing and potential future residential receptors. The nearest residential receptor is located less than 25 meters from the Project site. Therefore, per LST guidance, the smallest available source-receptor distance of 25 meters is used to determine the applicable thresholds.

- **The source receptor (SR) area**: This Project is near Silver Lake in the City of Los Angeles, which is in SR Area 2 – Northwest Coastal Los Angeles County.

Table 2 presents the construction significance thresholds applicable to the Project, as specified in the SCAQMD LST Tables.

**Table 2 LST Construction Significance Threshold**

| Parameter | CO (lbs/day) | NOx (lbs/day) | $PM_{10}$ (lbs/day) | $PM_{2.5}$ (lbs/day) |
|---|---|---|---|---|
| Construction Thresholds | 562 | 103 | 4.0 | 3.0 |

### 3.1.2 Regional Criteria Pollutants Thresholds (Mass Daily Thresholds)

To determine the regional significance of criteria pollutant emissions, they must also be compared to the Mass Daily Thresholds found in the SCAQMD's *Air Quality Analysis Handbook* (2015) and *CEQA Air Quality Handbook* (1993). The emissions compared to these regional thresholds should include emissions generated both onsite and offsite. Table 3 presents the mass daily thresholds that are used to determine the significance of emission impacts in this assessment.

**Table 3 Regional Criteria Pollutant Significance Thresholds (Mass Daily Thresholds)**

| Parameter | CO (lbs/day) | NOx (lbs/day) | $PM_{10}$ (lbs/day) | $PM_{2.5}$ (lbs/day) | ROG (lbs/day) | SOx (lbs/day) |
|---|---|---|---|---|---|---|
| Construction Thresholds | 550.0 | 100.0 | 150.0 | 55.0 | 75.0 | 150.0 |

### 3.1.3 Greenhouse Gas (GHG) Emissions Thresholds

The Thresholds Manual does not include thresholds for GHG impacts. However, the SCAQMD has released *Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans* (December 2008), which indicates that a GHG emissions threshold of 3,000 MT $CO_2e$/year is appropriate for residential projects. While the SCAQMD recommends that GHG emissions from construction should be amortized over 30 years and added to operational GHG emissions to determine the overall Project impact, this approach is not suitable for residential projects, as they produce extremely low amounts operational GHG emissions. Instead of this approach, the GHG emissions that occur in the peak year of construction are compared directly to the threshold, resulting in a more conservative significance determination.

Please note that "$CO_2$ equivalents" ($CO_2e$) is the quantity of $CO_2$ that would cause the same level of climate change as a given type and quantity of a GHG emissions. This variation of effect between gases is also known as global warming potential (GWP). For example, one unit of methane emissions has the same GWP as 21 units of carbon dioxide. Therefore, one (1) metric ton of methane is equivalent to 21 metric tons of $CO_2$. Emissions of multiple types of GHGs are represented collectively in units of $CO_2e$.

## 3.2 Noise Standards

This section discusses the noise standard applicable to the Project, the City of Los Angeles' *Noise Ordinance*. The following technical terms are utilized in this standard and in this Assessment:

- **Decibel (dB):** A unit division, on a logarithmic scale, whose base is the tenth root of ten, used to represent ratios of quantities proportional to power. In simple terms, if the power is multiplied by a factor of ten, then ten is added to the representation of the power on the decibel scale. If 0 dB represents 1 unit of power, 30 dB represents one thousand units, 60 dB represents one million units, etc.

- **A-Weighted Sound Level – dBA:** Sound pressure level measured using the A-weighting network, a filter which discriminates against low and very high frequencies in a manner similar to the human hearing mechanism at moderate sound levels. The A-weighted sound level is generally used when discussing environmental noise impacts.

- **Equivalent Continuous Noise Level ($L_{eq}$):** The noise level, in decibels, of the mean sound pressure averaged over a specific duration, generally one hour. This is often referred to as the "equivalent sound level" (hence the "eq" subscript). The "equivalence" is a sound of constant level that has the same total acoustic energy content as the measurement.

### 3.2.1 Los Angeles Noise Ordinance

Following the general practice used in Los Angeles for analysis of construction noise impacts from residential projects, the *Noise Ordinance* is used as the significance threshold for this Assessment. The *Noise Ordinance*, which is found within the Los Angeles Municipal Code (Municipal Code), presents noise standards applicable to construction and demolition operations occurring within Los Angeles. Specifically, Section 41.40 of the Municipal Code prohibits construction activities that entail the use of any machine, tool, device or equipment between the hours of 9:00 PM – 7:00 AM that could disturb sleeping persons in any dwelling, apartment or other place of residence.

Additionally, Section 112.05 of the Municipal Code prohibits the operation of any power equipment/tool that produces a maximum noise level that exceeds the applicable noise limit from the following list at a distance of 50 feet between the hours of 7:00 AM – 10:00 PM:

- 75 dB(A) for construction machinery (e.g. tractors, dozers, drills, loaders, shovels/cranes, etc.);
- 75 dB(A) for powered equipment 20 HP or less intended for infrequent use; and
- 65 dB(A) for powered equipment intended for repetitive use in residential areas (e.g. mowers, blowers, riding tractors, etc.).

Per the Municipal Code, these noise limitations shall not apply where compliance is technically infeasible. Technically infeasible means that these noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers, and/or other noise reduction devices/techniques during the operation of the equipment.

# SECTION 4 PROJECT IMPACTS

## 4.1 Air Quality Impacts

This section presents the emissions calculation methodologies and results. Significance of the impacts is determined by comparing calculated emissions to the appropriate significance threshold from Section 3.

Two categories of emissions have been quantified for this Assessment: criteria pollutants and GHGs. The criteria pollutants included in this Assessment are CO, NOx, $PM_{10}$, and $PM_{2.5}$, ROG, and $SO_x$. GHGs are presented in terms of $CO_2e$, which includes emissions of $CO_2$, $CH_4$, and $N_2O$ (see Section 3.1.3). The emissions are utilized to determine the significance of three types of impacts: localized criteria pollutants, regional criteria pollutants, and GHG impacts.

Emissions have been calculated for each phase of construction using SCAMQD's CalEEMod model. Project specific information has been used where possible and CalEEMod default assumptions are utilized where necessary and appropriate. The following sources of emissions are included: off-road equipment operations, on-road vehicle travel (haul trucks and passenger vehicles), fugitive dust (grading/clearing, material handling, and stockpile wind erosion), and architectural coatings. For more information, see the CalEEMod output files in Appendix B.

### 4.1.1 Localized Criteria Pollutant Impacts

Localized criteria pollutant significance thresholds exist for emissions of CO, NOx, $PM_{10}$, and $PM_{2.5}$ (not for ROG or $SO_x$). As a localized impact, only emissions generated onsite are included in the significance determination. Emissions from on-road vehicles and architectural coatings (architectural coatings only emit ROG emissions) are not included in the assessment of the localized impacts.

Table 4 presents the emissions calculated for each construction phase using SCAMQD's CalEEMod model. All phases are compared to the significance thresholds from Section 3.1.1 to determine the significance of the Project's localized construction emissions. Please note that all localized criteria pollutant impacts from construction are less than significant.

**Table 4 Localized Criteria Pollutant Impacts (lbs/day)**

| Phase | CO | NOx | $PM_{10}$ | $PM_{2.5}$ | Significant? |
|---|---|---|---|---|---|
| Demolition | 9.2 | 10.0 | 0.64 | 0.59 | **No** |
| Site Preparation | 3.8 | 3.7 | 0.26 | 0.22 | **No** |
| Grading | 6.0 | 6.9 | 1.67 | 0.87 | **No** |
| Building Construction Phase 1 | 8.8 | 11.7 | 0.65 | 0.60 | **No** |
| Building Construction Phase 2 | 7.8 | 9.5 | 0.56 | 0.53 | **No** |
| **Significance Threshold** | **562** | **103** | **4.0** | **3.0** | **---** |

### 4.1.2 Regional Criteria Pollutant Impacts

Regional criteria pollutant impacts include all onsite and offsite criteria pollutant emissions generated by Project construction. Regional emissions are the same as the localized emissions except for the addition of offsite emissions (vehicle travel) and ROG/$SO_x$. The addition of ROG emissions necessitates the inclusion of the architectural coatings emissions source because architectural coatings emit ROG emissions.

Table 5 presents the total regional emissions for each construction phase using SCAMQD's CalEEMod model. All phases are compared to the significance thresholds from Section 3.1.2 to determine the significance of the Project's regional construction emissions. Please note that all construction phases result in less-than-significant regional criteria pollutant impacts.

**Table 5 Regional Criteria Pollutant Impacts (lbs/day)**

| Phase | CO | NOx | $PM_{10}$ | $PM_{2.5}$ | $SO_x$ | ROG | Significant? |
|---|---|---|---|---|---|---|---|
| Demolition | 10.0 | 10.1 | 0.8 | 0.6 | 0.0 | 1.2 | **No** |
| Site Preparation | 4.2 | 3.8 | 0.4 | 0.2 | 0.0 | 0.5 | **No** |
| Grading | 7.1 | 10.3 | 2.0 | 1.0 | 0.0 | 0.9 | **No** |
| Building Construction Phase 1 | 9.7 | 11.8 | 0.9 | 0.7 | 0.0 | 1.3 | **No** |
| Building Construction Phase 2 | 8.7 | 9.6 | 0.8 | 0.6 | 0.0 | 1.2 | **No** |
| **Significance Threshold** | **550.0** | **100.0** | **150.0** | **55.0** | **150.0** | **75.0** | **---** |

### 4.1.3 Greenhouse Gas Impacts

Construction phase GHG emissions are also calculated by CalEEMod. Maximum daily $CO_2e$ emissions are multiplied by the total number of construction days to determine the annual emissions. Table 6 presents the construction phase $CO_2e$ emissions and compares them to the significance threshold from Section 3.1.3. Please note that the peak year GHG emissions impacts are less than significant.

**Table 6 Construction GHG Emissions**

| Source | $CO_2e$ Emissions (MT) |
|---|---|
| Project Construction Phase | 282 |
| Significance Threshold (Industrial / Residential) | 10,000 / 3,000 |
| **Significant?** | **No** |

## 4.2 Noise Impacts

This section presents the noise assessment methodologies and results. Significance of noise impacts are determined by comparing Project noise levels to the significance threshold presented in Section 3.2.1. In addition, this section briefly describes noise monitoring conducted to quantify the existing ambient noise environment in and around the Project site. For additional detail regarding the noise monitoring and impact calculations, see Appendix C and the noise reference materials in Appendix D.

### 4.2.1 Ambient Noise Environment

To quantify the existing ambient noise environment in the Project's vicinity, two (2) noise measurements were collected on the Project site on March 8, 2019. The noise measurements were recorded using a Quest DL SoundPro Type 2 noise meter programmed to "slow" mode and "A" weighting. The microphone was equipped with a windscreen during the measurements and the noise meter was calibrated using a Quest QC-10 field calibrator before the measurements were taken. The noise meter and field calibrator were professionally calibrated by Engineering Dynamics, Inc., within the previous 1-year period.

Table 7 presents the measured ambient noise levels at the Project. Noise measurement logs are included in Appendix C and a figure showing the monitoring locations is included in Appendix A. Because the ambient noise levels are lower than the significance thresholds presented in Section 3.2.1, the significance thresholds do not need to be adjusted for ambient noise.

**Table 7 Ambient Noise Levels**

| Measurement | Location | Noise Level ($L_{eq}$ dBA) |
|---|---|---|
| M1-SE | Southeast Portion of Project | 55.7 |
| M2-NW | Northwest Portion of Project | 55.7 |

### 4.2.2 Construction Noise Impacts

Noise impacts associated with the heavy equipment utilized for Project construction are determined using equipment data and equations from the Federal Highway Administration's (FHWA) *Roadway Construction Noise Model* (see excerpt in Appendix D). The noise calculations can be found in Appendix C.

The Project includes multiple noise control measures that reduce the noise impacts from construction activities, as described in SECTION 2. These noise control measures, which include restricted construction hours, demolition procedures, mufflers, and temporary noise barriers, are collectively assumed to reduce noise impacts by 10 dBA. This is a conservative estimate of total noise reduction, as evidenced by the following:

- The Environmental Protection Agency's (EPA) *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances* (see excerpt in Appendix D) indicates that mufflers result in a noise reduction of 10 dBA.
- The Federal Highway Administration's *Noise Barrier Design Handbook* (see excerpt in Appendix D) indicates that 10 dBA of reduction is "attainable" from a noise barrier.

Table 8 presents the calculated noise level for each type of construction equipment and compares them to significance threshold of 75 dBA. Please note that all noise impacts are less than significant.

**Table 8 Construction Noise Impacts – dBA**

| Construction Phase | Equipment Type | Noise Level ($L_{eq}$ @ 50') | Sig. Threshold ($L_{eq}$ @ 50') | Exceeds Threshold? |
|---|---|---|---|---|
| Demolition Phase | Excavator | 67 | 75 | No |
| | Jackhammer | 72 | | No |
| | Tractor/Loader/Backhoe | 65 | | No |
| | Dump Truck | 62 | | No |
| Site Preparation | Excavator | 67 | | No |
| | Tractor/Loader/Backhoe | 65 | | No |
| | Dump Truck | 62 | | No |
| Grading | Dozer | 68 | | No |
| | Tractor/Loader/Backhoe | 65 | | No |
| | Dump Truck | 62 | | No |
| Building Construction Phase 1 | Drill Rig | 67 | | No |
| | Crane | 63 | | No |
| | Concrete Truck | 65 | | No |
| | Concrete Pump Truck | 64 | | No |
| | Excavator | 67 | | No |
| | Tractor/Loader/Backhoe | 65 | | No |
| Building Construction Phase 2 | Crane | 63 | | No |
| | Concrete Truck | 65 | | No |
| | Concrete Pump Truck | 64 | | No |
| | Excavator | 67 | | No |
| | Tractor/Loader/Backhoe | 65 | | No |

Please note that the Project will be required to comply with the Los Angeles Noise Ordinance from which the noise significance threshold was derived. This provides additional confidence that the construction noise impacts will be less than significant.

# SECTION 5 CUMULATIVE IMPACTS

This section addresses the potential for cumulative impacts occurring from the simultaneous construction of multiple projects in this area. Cumulative impacts are considered for each of the four impact classifications included in Section 4.

Based on information from Los Angeles City, there are a total of eight construction projects currently active or in the permitting pipeline, not including the Project. The nearby Projects are shown on Figure 1.

## 5.1 Air Quality Impacts

Cumulative air quality impacts are addressed in this section.

### 5.1.1 Localized Criteria Pollutant Impacts

By grouping nearby projects together and treating them as one larger construction project, the same method for analyzing localized criteria pollutant impacts presented in Section 4.1.1 can be used to determine the significance of cumulative localized criteria pollutant impacts. The following two pieces of information are required to do this:

- **The total emissions from the group of projects.** The nearest construction projects are generally of similar size or smaller than the Project. As size is the primary factor that influences the amount of emissions a project generates during construction, it is reasonable to assume that, on average, each of the projects will produce the same amount of emissions.

- **The appropriate significance threshold.** According to SCAQMD guidelines, the significance thresholds for localized emissions impacts are based on the size of the project (e.g., the $PM_{2.5}$ threshold is 3.0 lbs/day for a 1-acre project, 4.0 lbs/day for a 2-acre project, and 6 lbs/day for a 5-acre project). Therefore, cumulative localized emissions impacts from multiple projects should be compared to the appropriate significance threshold for the collective size of the considered Projects.

Two (2) different groupings of projects were considered for this cumulative localized criteria pollutant analysis:

- **Cumulative Scenario 1** – Two (2) SFRs are under construction at the same time in a one-acre area, the Project and SFR D. This 1-acre area is shown in yellow on Figure 1.
- **Cumulative Scenario 2** – Five (5) SFRs are under construction at the same time in a five-acre area, the Project and SFRs B, C, D, and F. This 5-acre area is shown in green on Figure 1.

Table 9 presents the cumulative localized criteria pollutant emissions impacts associated with these two scenarios. Only the grading/excavation phase is included because it is the most polluting phase (i.e., if the grading/excavation emissions are less than significant, all other phases will be less than significant).

**Table 9 Grading/Excavation Phase Cumulative Emissions Impacts (lbs/day)**

| Scenario | Parameter | CO | NOx | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|
| Cumulative Scenario 1 – Two Projects in One Acre | Cumulative Emissions | 11.9 | 13.7 | 3.3 | 1.7 |
| | Significance Threshold | 562 | 103 | 4.0 | 3.0 |
| | Significant? | No | No | No | No |
| Cumulative Scenario 2 – Five Projects in Five Acres | Cumulative Emissions | 29.8 | 34.3 | 8.4 | 4.4 |
| | Significance Threshold | 1,531 | 221 | 13.0 | 6.0 |
| | Significant? | No | No | No | No |

The results in Table 9 demonstrate that the Project does not cause or contribute to a cumulative exceedance of the localized criteria pollutant significance thresholds.

### 5.1.2 Regional Criteria Pollutant Impacts

Regional impacts are cumulative impacts by their nature. The regional significance thresholds were selected to ensure that a project does not disproportionately impact the cumulate air quality of the air basin. If a project has less than significant impacts for regional criteria pollutants, its cumulative impacts on a regional basis are also less than significant.

### 5.1.3 Greenhouse Gas Impacts

GHG impacts are global in their effects. For the same reason as the regional criteria pollutant impacts, if a project has a less than significant GHG emissions impact based on the SCAQMD's thresholds, it also has less-than-significant cumulative GHG impacts.

## 5.2 Noise Impacts

This section discusses the potential for cumulative noise impacts from the Project. The noise significance threshold utilized in this Assessment is applied to each piece of equipment individually, so it cannot be utilized to determine the cumulative impacts of multiple projects. Instead, the physics of sound will be utilized to show that the Project will generate less than significant cumulative noise impacts.

Noise is measured and experienced on a logarithmic scale. This causes some unexpected properties, such as the following rule of thumb: if two simultaneous noises have volumes at least 10 dBA apart, the louder noise will entirely drown out the lower volume noise. Stated another way, if you add a 50-dBA noise to a 60-dBA noise, the resulting noise level remains 60 dBA.

Any substantial material (buildings, terrain, walls, etc.) that breaks line-of-site between a noise source and the receptor will reduce the noise level experienced by that receptor by at least 10 dBA. Additionally, as the distance between a source and receptor increases, the noise level experienced by that receptor decreases. Because this Project is not located too close to any of the other projects (the nearest project is 220 feet away, whereas the noise impacts calculated in this report are based on a 50 foot distance) and because a large amount of shielding exists in the area due to the extreme elevation variations and density of houses, this Project is not expected to cause or contribute to any significant cumulative noise impacts. Therefore, this Project has less than significant cumulative noise impacts.

## SECTION 6 MITIGATIONS

All construction air quality and noise impacts are less than significant without mitigation. Therefore, no mitigation is necessary.

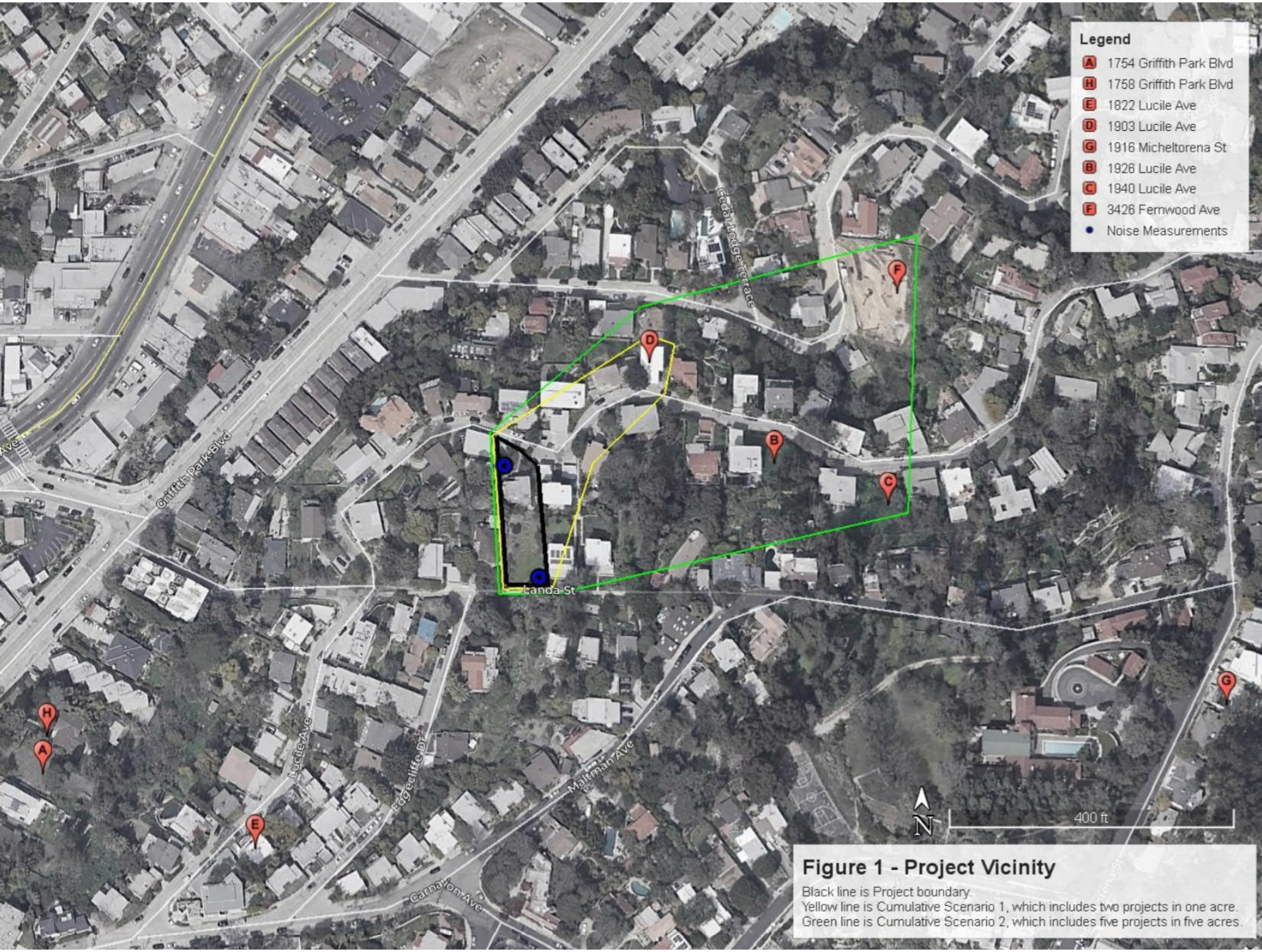
## SECTION 7 CONCLUSION

The Assessment finds that this Project's construction will have the following impacts on an individual and cumulative basis:

- Less than significant impacts from **localized criteria pollutant emissions**;
- Less than significant impacts from **regional criteria pollutant emissions**;
- Less than significant impacts from **GHG emissions**; and
- Less than significant impacts from **noise**.

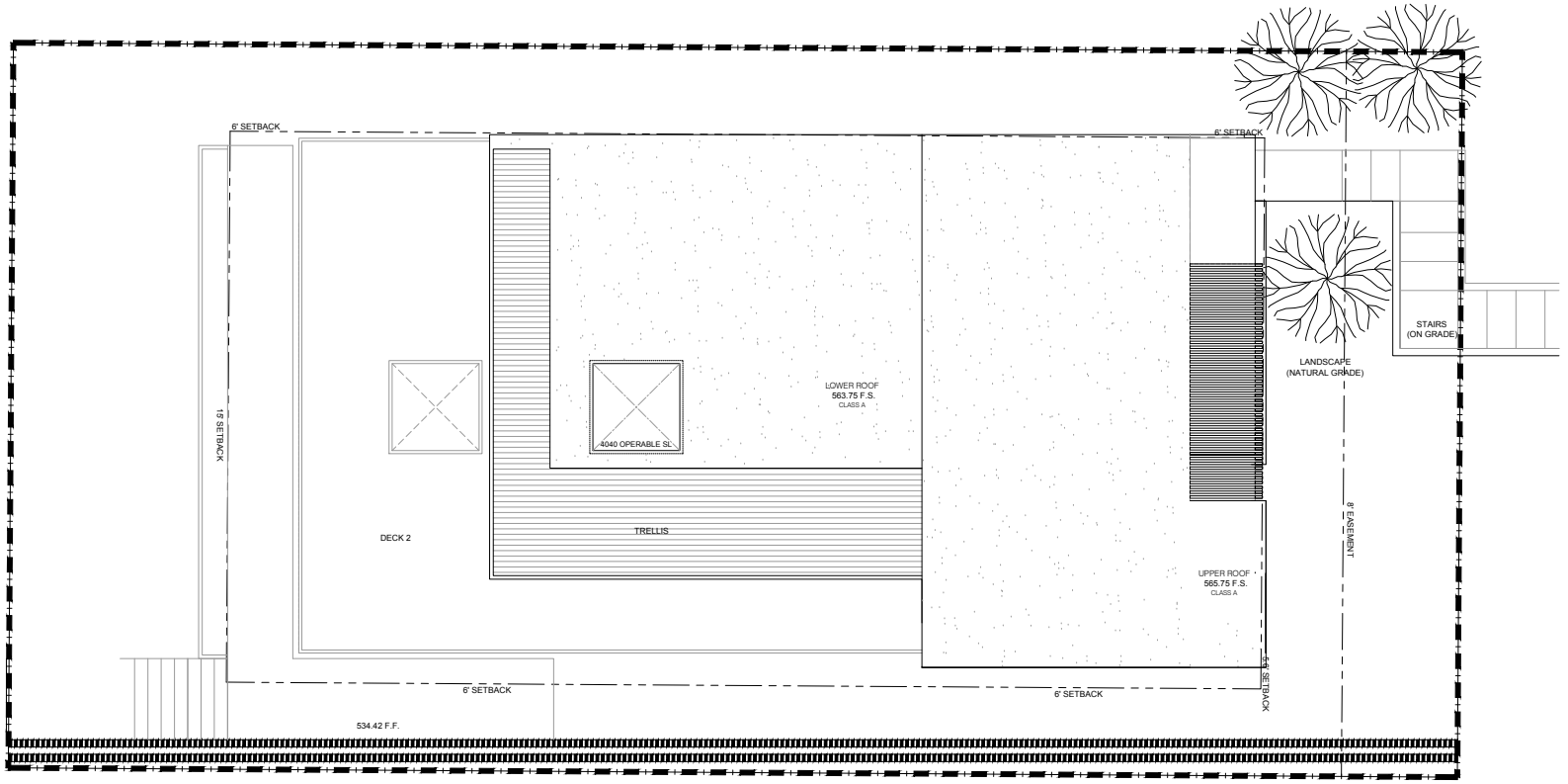
# APPENDIX A - FIGURES

Figure 1 – Site Location Map
Figures 2 and 3 – Construction Site Plans




## Figure 1 - Project Vicinity

Black line is Project boundary.
Yellow line is Cumulative Scenario 1, which includes two projects in one acre.
Green line is Cumulative Scenario 2, which includes five projects in five acres.




PROPOSED SITE PLAN

SCALE 1/8"=1'-0"

1

## SITE PLAN GENERAL NOTES

SEE SHEET A0.2 & A.02a FOR GENERAL NOTES

## SITE PLAN NOTES

CONTRACTOR TO PROVIDE ALL TEMPORARY BRACING, SHORING, GUYING, OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL, AND PLUMBING WITH APPROPRIATE TRADES, DRAWINGS, AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

THE STRUCTURAL ENGINEER AND ARCHITECTURAL DESIGNER SHALL NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES 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 IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

FOR CONNECTIONS, SEE DETAILS.

ANY ENGINEER DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF CALIFORNIA.

VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS AND FIELD CONDITIONS. CONTRACTOR SHALL VERIFY IN FIELD ALL EXISTING CONDITIONS SHOWN ON DRAWINGS.

LANDA BUILDING COVERAGE

| | AREA |
|---|---|
| LEVEL 1 W/EAVES | 1217 SF |
| LEVEL 2 W/EAVES | 723 SF |
| TOTAL BUILDING COVERAGE | 1940 SF |
| | |
| LOT AREA | 5000 SF |
| BUILDING COVERAGE % | 38.8 % |
| MAX. ALLOWABLE | 40% |

LANDA SQUARE FOOTAGE ANALYSIS

| | TALLY | TALLY 2 | TALLY 3 | TALLY 4 | NET | EXEMPTIONS | TOTAL |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| LEVEL 1 | 896.7 | | | | 896.7 | | 896.7 |
| LEVEL 1 (+14' CEILING) | 142 (LIGHT WELL VOLUME) | | | | 142 | (100)+(42 X2) | 184 |
| STAIRS (LEVEL 1 TO 2) | 62 | | | | 62 | | 62 |
| LEVEL 2 | 960 (3/22/19) | | | | 960 | | 960 |
| COVERED PORCH | 26 (ENTRY-LEVEL 1) | | | | 26 | -250 | 0 |
| TOTAL NET | | | | | 1941.7 | | |
| TOTAL DESIGNED ZONING AREA (RFA) | | | | | | | 2060.7 |
| TOTAL RESIDENCE (LIVING AREA)(CFA) | | | | | | | 2060.7 |
| | | | | | | | |
| SLOPE BAND ALLOWABLE | 2110 | | | | | | |
| 20% BONUS (TIER 1 GREEN) | N/A | | | | | | |
| TOTAL ALLOWABLE | 2110 | COMPLIANT WITH TOTAL ALLOWABLE ZONING AREA | | | | | |

TELLUS
DESIGN + BUILD

2020 PLACENTIA SUITE B
COSTA MESA,CA 92627
T 844.283.5587
F 866.678.9964
Costa Mesa . Los Angeles . Santa Barbara

PROJECT:

LANDA AND LUCILE DEVELOPMENT
NEW CONSTRUCTION
ZA 2015-1569(ZV)(ZAD)

3627 W. LANDA
LOS ANGELES, CA 90039

SEAL AND STAMP:

INFORMATION:

(Preliminary-Not for Construction)
Case Number
ZA 2015-1567(ZAD)(ZAA)
Address
1888 North Lucile Avenue, Los Angeles, CA 90039

Case Number
ZA 2015-1569(ZV)(ZAD)
Address
3627 West Landa Street, Los Angeles, CA 90039

This plan set expresses the general design intent for the proposed improvements to 1888 Lucile and 3627 Landa with the sole purppose to express the design intent and zoning application measures only. The plans and information attached are not final and may be updated pending further development, engineering, and building and safety plan check.

ISSUE DATES

| No. | DATE | DESCRIPTION |
|---|---|---|
| 1 | 09/01/16 | CREATIVE DESIGN |
| 2 | 09/19/16 | CREATIVE DESIGN II |
| 3 | 10/14/16 | ZONING PRE-REVIEW |
| 4 | 10/21/16 | ZONING SUBMITTAL |
| 5 | 06/14/17 | CASE MGMT FINDINGS |
| 6 | 07/19/17 | CD 4 MEETING |
| 7 | 03/22/19 | DETAIL DESIGN (70%) |



DATE:
DRAWN:
REVIEWED:
PROJECT NO:

ISSUE: DETAIL DESIGN (70%) 3-22-19

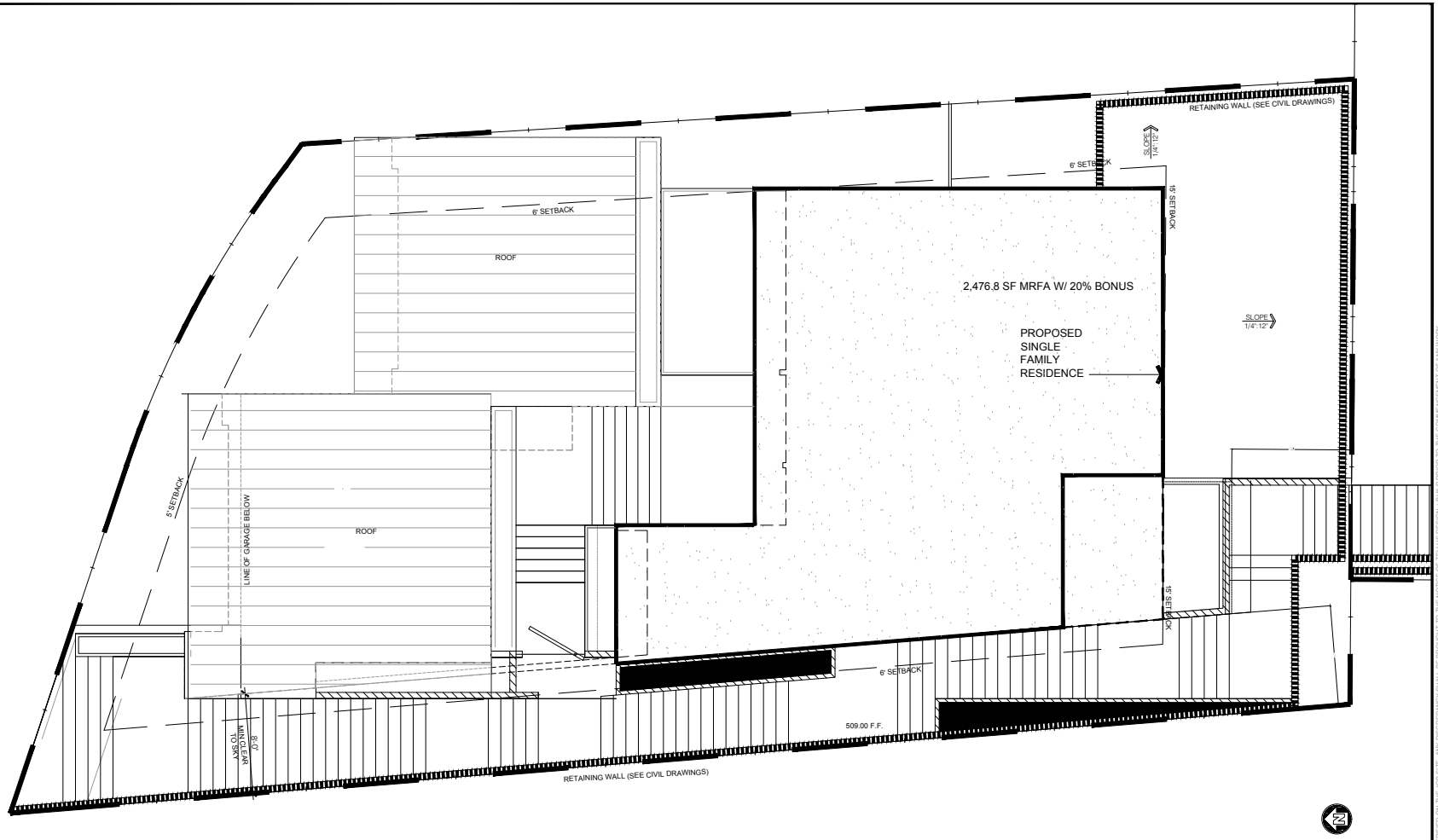
SHEET TITLE:

SITE PLAN

SHEET NO:

A1.0

WRITTEN DIMENSIONS SHALL TAKE PREFERENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED ON THE JOB SITE. ANY DISCREPANCY SHALL BE BROUGHT TO THE NOTICE OF TELLUS DESIGN + BUILD PRIOR TO THE COMMENCEMENT OF ANY WORK




PROPOSED SITE PLAN

SCALE 1/8"=1'-0" 1

## SITE PLAN GENERAL NOTES

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## SITE PLAN NOTES

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LUCILE SQUARE FOOTAGE ANALYSIS

| | TALLY | NOTES | NET | EXEMPTIONS | TOTAL |
|---|---|---|---|---|---|
| GARAGE(S)-LEVEL 1 | 836 SERVING BOTH LOTS | ASSUMING ONLY 1 EXEMPTION | 836 | -400 | 436 |
| | | | | | |
| LEVEL 2 | 853 | | 853 | | 853 |
| LEVEL 2 (+14' CEILING) | 75.6 ENTRY | | 75.6 | (75.6/100) | 75.6 |
| LEVEL 3 | 1029 | | 1029 | | 1029 |
| STAIR SYSTEM (LEVELS 2 TO 3) | 69.4 | | 69.4 | | 69.4 |
| TOTAL NET | | | 2863 | | |
| TOTAL DESIGNED ZONING AREA (RFA) | | | | | 2463 |
| TOTAL RESIDENCE (LIVING AREA)(CFA) | | | | | 2063 |
| | | | | | |
| SLOPE BAND ALLOWABLE | 2064 | | | | |
| 20% BONUS (TIER 1 GREEN) | 412.8 | | | | |
| TOTAL ALLOWABLE | 2476.8 | COMPLIANT WITH TOTAL ALLOWABLE ZONING AREA | | | |

LUCILE BUILDING COVERAGE

| | AREA |
|---|---|
| HOUSE TOTAL FOOT PRINT | 1217 SF |
| BASEMENT GARAGE 1 AREA ABOVE 6' ABOVE N.G. | 4 SF |
| BASEMENT GARAGE 2 AREA ABOVE 6' ABOVE N.G. | 238 SF |
| TOTAL BUILDING COVERAGE | 1459 SF |
| | |
| LOT AREA | 4935.5 SF |
| BUILDING COVERAGE % | 29.56 % |
| MAX. ALLOWABLE | 40% |

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2020 PLACENTIA SUITE B
COSTA MESA,CA 92627
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Costa Mesa . Los Angeles . Santa Barbara

PROJECT:

# LANDA AND LUCILE DEVELOPMENT

NEW CONSTRUCTION
ZA 2015-1567(ZAD)(ZAA)
3627 W. LANDA
1888 N. LUCILE
LOS ANGELES, CA 90039

SEAL AND STAMP:

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(Preliminary-Not for Construction)
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| 5 | 6/8/17 | CASE MANAGEMENT |
| 6 | 6/14/17 | CASE MGMT FINDINGS |
| 7 | 7/19/17 | CD4 MEETING |
| 8 | 11/29/18 | DESIGN DEVELOPMENT |
| 9 | 3/22/19 | DETAIL DESIGN (70%) |

ISSUE: DETAIL DESIGN (70%) 3/22/19



DATE:
DRAWN:
REVIEWED:
PROJECT NO:

SHEET TITLE:

SITE PLAN

SHEET NO:

A1.0

# APPENDIX B – CALEEMOD OUTPUT

# Lucile & Landa

**Los Angeles-South Coast County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Single Family Housing | 2.00 | Dwelling Unit | 0.23 | 4,421.00 | 6 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 33 |
| **Climate Zone** | 11 | | | **Operational Year** | 2021 |
| **Utility Company** | Los Angeles Department of Water & Power | | | | |
| **CO2 Intensity (lb/MWhr)** | 1227.89 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Note: CalEEMod used to calculate construction emissions only. Operation phase emissions information redacted to avoid confusion.

Project Characteristics -

Land Use - per project plans

Off-road Equipment -

Off-road Equipment - Provided by Applicant. Excavator = mini excavator (eg Cat 306). Crushing/Proc. Equipment used for jackhammers. Dump trucks included in on-road section. CalEEMod default used for hours/load factors/horsepower where specific info is not available.

Off-road Equipment - Provided by Applicant. Dump trucks included in on-road section. CalEEMod default used for hours/load factors/horsepower where specific info is not available.

Off-road Equipment - Provided by Applicant. Excavator = mini excavator (eg Cat 306). Dump trucks included in on-road section. CalEEMod default used for hours/load factors/horsepower where specific info is not available.

Construction Phase - Based on information provided by Applicant.

Off-road Equipment - Provided by Applicant. Excavator = mini excavator (eg Cat 306). Pump represents concrete pump truck. Concrete trucks included in on-road section. CalEEMod default used for hours/load factors/horsepower where specific info is not available.

Off-road Equipment - Provided by Applicant. Excavator = mini excavator (eg Cat 306). Pump represents concrete pump truck. Concrete trucks included in on-road section. CalEEMod default used for hours/load factors/horsepower where specific info is not available.

Grading - Material export from Applicant. Entire size of site assumed to be disturbed once during site prep phase. Entire size of site assumed to be disturbed twice per day of grading phase (2 x 0.23 x 10 = 4.6) acres

Demolition - Provided by Applicant.

Trips and VMT - # worker trips estimated based on manpower intensive construction practices necessary for this Project (due to steep terrain and access limitations). Haul truck trips represent dump trucks and concrete trucks.

Architectural Coating - Per applicant

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | ConstArea_Residential_Exterior | 2,984.00 | 1,000.00 |
| tblArchitecturalCoating | ConstArea_Residential_Interior | 8,953.00 | 4,421.00 |
| tblConstructionPhase | NumDays | 10.00 | 45.00 |
| tblConstructionPhase | NumDays | 1.00 | 14.00 |
| tblConstructionPhase | NumDays | 2.00 | 10.00 |
| tblConstructionPhase | NumDays | 100.00 | 60.00 |
| tblConstructionPhase | NumDays | 5.00 | 460.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |

| | | | |
|---|---|---|---|
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblConstructionPhase | NumDaysWeek | 5.00 | 6.00 |
| tblGrading | AcresOfGrading | 0.00 | 4.60 |
| tblGrading | AcresOfGrading | 0.00 | 0.23 |
| tblGrading | MaterialExported | 0.00 | 886.00 |
| tblLandUse | LandUseSquareFeet | 3,600.00 | 4,421.00 |
| tblLandUse | LotAcreage | 0.65 | 0.23 |
| tblOffRoadEquipment | HorsePower | 158.00 | 50.00 |
| tblOffRoadEquipment | HorsePower | 85.00 | 5.00 |
| tblOffRoadEquipment | HorsePower | 158.00 | 50.00 |
| tblOffRoadEquipment | HorsePower | 158.00 | 50.00 |
| tblOffRoadEquipment | HorsePower | 158.00 | 50.00 |
| tblOffRoadEquipment | OffRoadEquipmentType | | Excavators |
| tblOffRoadEquipment | OffRoadEquipmentType | | Bore/Drill Rigs |
| tblOffRoadEquipment | OffRoadEquipmentType | | Cranes |
| tblOffRoadEquipment | OffRoadEquipmentType | | Pumps |
| tblOffRoadEquipment | OffRoadEquipmentType | | Crushing/Proc. Equipment |
| tblOffRoadEquipment | OffRoadEquipmentType | | Excavators |
| tblOffRoadEquipment | OffRoadEquipmentType | | Excavators |
| tblOffRoadEquipment | OffRoadEquipmentType | | Tractors/Loaders/Backhoes |
| tblOffRoadEquipment | OffRoadEquipmentType | | Excavators |
| tblOffRoadEquipment | OffRoadEquipmentType | | Pumps |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 1.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |

| | | | |
|---|---|---|---|
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 2.00 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 10.00 |
| tblTripsAndVMT | HaulingTripNumber | 0.00 | 10.00 |
| tblTripsAndVMT | WorkerTripNumber | 20.00 | 16.00 |
| tblTripsAndVMT | WorkerTripNumber | 5.00 | 8.00 |
| tblTripsAndVMT | WorkerTripNumber | 1.00 | 20.00 |
| tblTripsAndVMT | WorkerTripNumber | 0.00 | 20.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2019 | 1.2971 | 11.8191 | 10.0109 | 0.0195 | 1.5341 | 0.6472 | 1.9674 | 0.5449 | 0.6002 | 0.9623 | 0.0000 | 1,985.6449 | 1,985.6449 | 0.4828 | 0.0000 | 1,991.0836 |
| 2020 | 1.1025 | 8.7896 | 8.4946 | 0.0148 | 0.2241 | 0.4833 | 0.7074 | 0.0594 | 0.4577 | 0.5171 | 0.0000 | 1,430.5051 | 1,430.5051 | 0.2832 | 0.0000 | 1,437.5858 |
| 2021 | 1.0094 | 8.0277 | 8.3062 | 0.0147 | 0.2246 | 0.4181 | 0.6427 | 0.0596 | 0.3957 | 0.4553 | 0.0000 | 1,423.1258 | 1,423.1258 | 0.2793 | 0.0000 | 1,430.1073 |
| **Maximum** | **1.2971** | **11.8191** | **10.0109** | **0.0195** | **1.5341** | **0.6472** | **1.9674** | **0.5449** | **0.6002** | **0.9623** | **0.0000** | **1,985.6449** | **1,985.6449** | **0.4828** | **0.0000** | **1,991.0836** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2019 | 1.2971 | 11.8191 | 10.0109 | 0.0195 | 1.5341 | 0.6472 | 1.9674 | 0.5449 | 0.6002 | 0.9623 | 0.0000 | 1,985.6449 | 1,985.6449 | 0.4828 | 0.0000 | 1,991.0836 |
| 2020 | 1.1025 | 8.7896 | 8.4946 | 0.0148 | 0.2241 | 0.4833 | 0.7074 | 0.0594 | 0.4577 | 0.5171 | 0.0000 | 1,430.5051 | 1,430.5051 | 0.2832 | 0.0000 | 1,437.5858 |
| 2021 | 1.0094 | 8.0277 | 8.3062 | 0.0147 | 0.2246 | 0.4181 | 0.6427 | 0.0596 | 0.3957 | 0.4553 | 0.0000 | 1,423.1258 | 1,423.1258 | 0.2793 | 0.0000 | 1,430.1073 |
| **Maximum** | **1.2971** | **11.8191** | **10.0109** | **0.0195** | **1.5341** | **0.6472** | **1.9674** | **0.5449** | **0.6002** | **0.9623** | **0.0000** | **1,985.6449** | **1,985.6449** | **0.4828** | **0.0000** | **1,991.0836** |

Lucile & Landa - Los Angeles-South Coast County, Summer

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 8/1/2019 | 9/21/2019 | 6 | 45 | |
| 2 | Site Preparation | Site Preparation | 9/22/2019 | 10/8/2019 | 6 | 14 | |
| 3 | Grading | Grading | 10/9/2019 | 10/19/2019 | 6 | 10 | |
| 4 | Building Construction Phase 1 | Building Construction | 10/20/2019 | 12/28/2019 | 6 | 60 | |
| 5 | Building Construction Phase 2 | Architectural Coating | 12/29/2019 | 6/17/2021 | 6 | 460 | Architectural coating used so that model will include ROC emissions type from coatings. |

**Acres of Grading (Site Preparation Phase): 0.23**

**Acres of Grading (Grading Phase): 4.6**

**Acres of Paving: 0**

**Residential Indoor: 4,421; Residential Outdoor: 1,000; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Lucile & Landa - Los Angeles-South Coast County, Summer

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Excavators | 1 | 8.00 | 50 | 0.38 |
| Building Construction Phase 1 | Bore/Drill Rigs | 1 | 4.00 | 221 | 0.50 |
| Demolition | Tractors/Loaders/Backhoes | 2 | 6.00 | 97 | 0.37 |
| Site Preparation | Graders | 0 | 0.00 | 187 | 0.41 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Building Construction Phase 1 | Pumps | 1 | 2.00 | 84 | 0.74 |
| Grading | Rubber Tired Dozers | 1 | 1.00 | 247 | 0.40 |
| Grading | Tractors/Loaders/Backhoes | 1 | 6.00 | 97 | 0.37 |
| Building Construction Phase 1 | Cranes | 1 | 4.00 | 231 | 0.29 |
| Building Construction Phase 2 | Cranes | 1 | 4.00 | 231 | 0.29 |
| Building Construction Phase 1 | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Demolition | Crushing/Proc. Equipment | 3 | 8.00 | 5 | 0.78 |
| Demolition | Excavators | 1 | 8.00 | 50 | 0.38 |
| Building Construction Phase 1 | Excavators | 1 | 8.00 | 50 | 0.38 |
| Building Construction Phase 2 | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Building Construction Phase 2 | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Building Construction Phase 2 | Excavators | 1 | 8.00 | 50 | 0.38 |
| Building Construction Phase 2 | Pumps | 1 | 2.00 | 84 | 0.74 |
| Demolition | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Grading | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Building Construction Phase 1 | Forklifts | 2 | 6.00 | 89 | 0.20 |
| Demolition | Rubber Tired Dozers | 1 | 1.00 | 247 | 0.40 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 8 | 16.00 | 0.00 | 5.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 2 | 8.00 | 0.00 | 2.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 3 | 8.00 | 0.00 | 111.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction Phase 1 | 7 | 20.00 | 0.00 | 10.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction Phase 2 | 5 | 20.00 | 0.00 | 10.00 | 14.70 | 6.90 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.0221 | 0.0000 | 0.0221 | 3.3400e-003 | 0.0000 | 3.3400e-003 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.1666 | 10.0109 | 9.2322 | 0.0138 | | 0.6210 | 0.6210 | | 0.5897 | 0.5897 | | 1,339.5781 | 1,339.5781 | 0.2780 | | 1,346.5288 |
| **Total** | **1.1666** | **10.0109** | **9.2322** | **0.0138** | **0.0221** | **0.6210** | **0.6430** | **3.3400e-003** | **0.5897** | **0.5930** | | **1,339.5781** | **1,339.5781** | **0.2780** | | **1,346.5288** |

## 3.2 Demolition - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 1.0400e-003 | 0.0340 | 7.2600e-003 | 9.0000e-005 | 1.9400e-003 | 1.2000e-004 | 2.0700e-003 | 5.3000e-004 | 1.2000e-004 | 6.5000e-004 | | 9.6057 | 9.6057 | 6.6000e-004 | | 9.6222 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0799 | 0.0587 | 0.7715 | 1.9500e-003 | 0.1788 | 1.5400e-003 | 0.1804 | 0.0474 | 1.4200e-003 | 0.0489 | | 194.0725 | 194.0725 | 6.6700e-003 | | 194.2391 |
| **Total** | **0.0810** | **0.0928** | **0.7787** | **2.0400e-003** | **0.1808** | **1.6600e-003** | **0.1825** | **0.0480** | **1.5400e-003** | **0.0495** | | **203.6782** | **203.6782** | **7.3300e-003** | | **203.8613** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.0221 | 0.0000 | 0.0221 | 3.3400e-003 | 0.0000 | 3.3400e-003 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.1666 | 10.0109 | 9.2322 | 0.0138 | | 0.6210 | 0.6210 | | 0.5897 | 0.5897 | 0.0000 | 1,339.5781 | 1,339.5781 | 0.2780 | | 1,346.5288 |
| **Total** | **1.1666** | **10.0109** | **9.2322** | **0.0138** | **0.0221** | **0.6210** | **0.6430** | **3.3400e-003** | **0.5897** | **0.5930** | **0.0000** | **1,339.5781** | **1,339.5781** | **0.2780** | | **1,346.5288** |

## 3.2 Demolition - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 1.0400e-003 | 0.0340 | 7.2600e-003 | 9.0000e-005 | 1.9400e-003 | 1.2000e-004 | 2.0700e-003 | 5.3000e-004 | 1.2000e-004 | 6.5000e-004 | | 9.6057 | 9.6057 | 6.6000e-004 | | 9.6222 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0799 | 0.0587 | 0.7715 | 1.9500e-003 | 0.1788 | 1.5400e-003 | 0.1804 | 0.0474 | 1.4200e-003 | 0.0489 | | 194.0725 | 194.0725 | 6.6700e-003 | | 194.2391 |
| **Total** | **0.0810** | **0.0928** | **0.7787** | **2.0400e-003** | **0.1808** | **1.6600e-003** | **0.1825** | **0.0480** | **1.5400e-003** | **0.0495** | | **203.6782** | **203.6782** | **7.3300e-003** | | **203.8613** |

## 3.3 Site Preparation - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.0174 | 0.0000 | 0.0174 | 1.8800e-003 | 0.0000 | 1.8800e-003 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4464 | 3.7444 | 3.8431 | 4.9200e-003 | | 0.2399 | 0.2399 | | 0.2207 | 0.2207 | | 487.4629 | 487.4629 | 0.1542 | | 491.3186 |
| **Total** | **0.4464** | **3.7444** | **3.8431** | **4.9200e-003** | **0.0174** | **0.2399** | **0.2574** | **1.8800e-003** | **0.2207** | **0.2226** | | **487.4629** | **487.4629** | **0.1542** | | **491.3186** |

## 3.3 Site Preparation - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 1.3400e-003 | 0.0438 | 9.3300e-003 | 1.1000e-004 | 2.5000e-003 | 1.6000e-004 | 2.6600e-003 | 6.8000e-004 | 1.5000e-004 | 8.4000e-004 | | 12.3502 | 12.3502 | 8.5000e-004 | | 12.3714 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0400 | 0.0294 | 0.3857 | 9.7000e-004 | 0.0894 | 7.7000e-004 | 0.0902 | 0.0237 | 7.1000e-004 | 0.0244 | | 97.0362 | 97.0362 | 3.3300e-003 | | 97.1196 |
| **Total** | **0.0413** | **0.0731** | **0.3951** | **1.0800e-003** | **0.0919** | **9.3000e-004** | **0.0929** | **0.0244** | **8.6000e-004** | **0.0253** | | **109.3864** | **109.3864** | **4.1800e-003** | | **109.4910** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.0174 | 0.0000 | 0.0174 | 1.8800e-003 | 0.0000 | 1.8800e-003 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.4464 | 3.7444 | 3.8431 | 4.9200e-003 | | 0.2399 | 0.2399 | | 0.2207 | 0.2207 | 0.0000 | 487.4629 | 487.4629 | 0.1542 | | 491.3186 |
| **Total** | **0.4464** | **3.7444** | **3.8431** | **4.9200e-003** | **0.0174** | **0.2399** | **0.2574** | **1.8800e-003** | **0.2207** | **0.2226** | **0.0000** | **487.4629** | **487.4629** | **0.1542** | | **491.3186** |

## 3.3 Site Preparation - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 1.3400e-003 | 0.0438 | 9.3300e-003 | 1.1000e-004 | 2.5000e-003 | 1.6000e-004 | 2.6600e-003 | 6.8000e-004 | 1.5000e-004 | 8.4000e-004 | | 12.3502 | 12.3502 | 8.5000e-004 | | 12.3714 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0400 | 0.0294 | 0.3857 | 9.7000e-004 | 0.0894 | 7.7000e-004 | 0.0902 | 0.0237 | 7.1000e-004 | 0.0244 | | 97.0362 | 97.0362 | 3.3300e-003 | | 97.1196 |
| **Total** | **0.0413** | **0.0731** | **0.3951** | **1.0800e-003** | **0.0919** | **9.3000e-004** | **0.0929** | **0.0244** | **8.6000e-004** | **0.0253** | | **109.3864** | **109.3864** | **4.1800e-003** | | **109.4910** |

## 3.4 Grading - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 1.2506 | 0.0000 | 1.2506 | 0.4680 | 0.0000 | 0.4680 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.7784 | 6.8509 | 5.9647 | 9.6500e-003 | | 0.4201 | 0.4201 | | 0.4048 | 0.4048 | | 929.0006 | 929.0006 | 0.1481 | | 932.7038 |
| **Total** | **0.7784** | **6.8509** | **5.9647** | **9.6500e-003** | **1.2506** | **0.4201** | **1.6707** | **0.4680** | **0.4048** | **0.8728** | | **929.0006** | **929.0006** | **0.1481** | | **932.7038** |

## 3.4 Grading - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.1043 | 3.3997 | 0.7249 | 8.8700e-003 | 0.1941 | 0.0125 | 0.2066 | 0.0532 | 0.0119 | 0.0651 | | 959.6081 | 959.6081 | 0.0661 | | 961.2602 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0400 | 0.0294 | 0.3857 | 9.7000e-004 | 0.0894 | 7.7000e-004 | 0.0902 | 0.0237 | 7.1000e-004 | 0.0244 | | 97.0362 | 97.0362 | 3.3300e-003 | | 97.1196 |
| **Total** | **0.1443** | **3.4291** | **1.1106** | **9.8400e-003** | **0.2835** | **0.0133** | **0.2967** | **0.0769** | **0.0127** | **0.0896** | | **1,056.6443** | **1,056.6443** | **0.0694** | | **1,058.3798** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 1.2506 | 0.0000 | 1.2506 | 0.4680 | 0.0000 | 0.4680 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.7784 | 6.8509 | 5.9647 | 9.6500e-003 | | 0.4201 | 0.4201 | | 0.4048 | 0.4048 | 0.0000 | 929.0006 | 929.0006 | 0.1481 | | 932.7038 |
| **Total** | **0.7784** | **6.8509** | **5.9647** | **9.6500e-003** | **1.2506** | **0.4201** | **1.6707** | **0.4680** | **0.4048** | **0.8728** | **0.0000** | **929.0006** | **929.0006** | **0.1481** | | **932.7038** |

## 3.4 Grading - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.1043 | 3.3997 | 0.7249 | 8.8700e-003 | 0.1941 | 0.0125 | 0.2066 | 0.0532 | 0.0119 | 0.0651 | | 959.6081 | 959.6081 | 0.0661 | | 961.2602 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0400 | 0.0294 | 0.3857 | 9.7000e-004 | 0.0894 | 7.7000e-004 | 0.0902 | 0.0237 | 7.1000e-004 | 0.0244 | | 97.0362 | 97.0362 | 3.3300e-003 | | 97.1196 |
| **Total** | **0.1443** | **3.4291** | **1.1106** | **9.8400e-003** | **0.2835** | **0.0133** | **0.2967** | **0.0769** | **0.0127** | **0.0896** | | **1,056.6443** | **1,056.6443** | **0.0694** | | **1,058.3798** |

## 3.5 Building Construction Phase 1 - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1956 | 11.6947 | 8.7597 | 0.0164 | | 0.6450 | 0.6450 | | 0.5982 | 0.5982 | | 1,619.4374 | 1,619.4374 | 0.4735 | | 1,631.2751 |
| **Total** | **1.1956** | **11.6947** | **8.7597** | **0.0164** | | **0.6450** | **0.6450** | | **0.5982** | **0.5982** | | **1,619.4374** | **1,619.4374** | **0.4735** | | **1,631.2751** |

## 3.5 Building Construction Phase 1 - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 1.5700e-003 | 0.0511 | 0.0109 | 1.3000e-004 | 2.9100e-003 | 1.9000e-004 | 3.1000e-003 | 8.0000e-004 | 1.8000e-004 | 9.8000e-004 | | 14.4085 | 14.4085 | 9.9000e-004 | | 14.4333 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0999 | 0.0734 | 0.9643 | 2.4400e-003 | 0.2236 | 1.9300e-003 | 0.2255 | 0.0593 | 1.7800e-003 | 0.0611 | | 242.5906 | 242.5906 | 8.3300e-003 | | 242.7989 |
| **Total** | **0.1015** | **0.1245** | **0.9752** | **2.5700e-003** | **0.2265** | **2.1200e-003** | **0.2286** | **0.0601** | **1.9600e-003** | **0.0620** | | **256.9991** | **256.9991** | **9.3200e-003** | | **257.2322** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1956 | 11.6947 | 8.7597 | 0.0164 | | 0.6450 | 0.6450 | | 0.5982 | 0.5982 | 0.0000 | 1,619.4374 | 1,619.4374 | 0.4735 | | 1,631.2751 |
| **Total** | **1.1956** | **11.6947** | **8.7597** | **0.0164** | | **0.6450** | **0.6450** | | **0.5982** | **0.5982** | **0.0000** | **1,619.4374** | **1,619.4374** | **0.4735** | | **1,631.2751** |

## 3.5 Building Construction Phase 1 - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 1.5700e-003 | 0.0511 | 0.0109 | 1.3000e-004 | 2.9100e-003 | 1.9000e-004 | 3.1000e-003 | 8.0000e-004 | 1.8000e-004 | 9.8000e-004 | | 14.4085 | 14.4085 | 9.9000e-004 | | 14.4333 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0999 | 0.0734 | 0.9643 | 2.4400e-003 | 0.2236 | 1.9300e-003 | 0.2255 | 0.0593 | 1.7800e-003 | 0.0611 | | 242.5906 | 242.5906 | 8.3300e-003 | | 242.7989 |
| **Total** | **0.1015** | **0.1245** | **0.9752** | **2.5700e-003** | **0.2265** | **2.1200e-003** | **0.2286** | **0.0601** | **1.9600e-003** | **0.0620** | | **256.9991** | **256.9991** | **9.3200e-003** | | **257.2322** |

## 3.6 Building Construction Phase 2 - 2019

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 0.0273 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.0824 | 9.5417 | 7.7763 | 0.0124 | | 0.5555 | 0.5555 | | 0.5261 | 0.5261 | | 1,210.2749 | 1,210.2749 | 0.2788 | | 1,217.2443 |
| **Total** | **1.1098** | **9.5417** | **7.7763** | **0.0124** | | **0.5555** | **0.5555** | | **0.5261** | **0.5261** | | **1,210.2749** | **1,210.2749** | **0.2788** | | **1,217.2443** |

## 3.6 Building Construction Phase 2 - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 2.0000e-004 | 6.6600e-003 | 1.4200e-003 | 2.0000e-005 | 0.0662 | 2.0000e-005 | 0.0662 | 0.0163 | 2.0000e-005 | 0.0163 | | 1.8794 | 1.8794 | 1.3000e-004 | | 1.8826 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0999 | 0.0734 | 0.9643 | 2.4400e-003 | 0.2236 | 1.9300e-003 | 0.2255 | 0.0593 | 1.7800e-003 | 0.0611 | | 242.5906 | 242.5906 | 8.3300e-003 | | 242.7989 |
| **Total** | **0.1001** | **0.0801** | **0.9658** | **2.4600e-003** | **0.2898** | **1.9500e-003** | **0.2917** | **0.0756** | **1.8000e-003** | **0.0773** | | **244.4700** | **244.4700** | **8.4600e-003** | | **244.6815** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 0.0273 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 1.0824 | 9.5417 | 7.7763 | 0.0124 | | 0.5555 | 0.5555 | | 0.5261 | 0.5261 | 0.0000 | 1,210.2749 | 1,210.2749 | 0.2788 | | 1,217.2443 |
| **Total** | **1.1098** | **9.5417** | **7.7763** | **0.0124** | | **0.5555** | **0.5555** | | **0.5261** | **0.5261** | **0.0000** | **1,210.2749** | **1,210.2749** | **0.2788** | | **1,217.2443** |

## 3.6 Building Construction Phase 2 - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 2.0000e-004 | 6.6600e-003 | 1.4200e-003 | 2.0000e-005 | 0.0662 | 2.0000e-005 | 0.0662 | 0.0163 | 2.0000e-005 | 0.0163 | | 1.8794 | 1.8794 | 1.3000e-004 | | 1.8826 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0999 | 0.0734 | 0.9643 | 2.4400e-003 | 0.2236 | 1.9300e-003 | 0.2255 | 0.0593 | 1.7800e-003 | 0.0611 | | 242.5906 | 242.5906 | 8.3300e-003 | | 242.7989 |
| **Total** | **0.1001** | **0.0801** | **0.9658** | **2.4600e-003** | **0.2898** | **1.9500e-003** | **0.2917** | **0.0756** | **1.8000e-003** | **0.0773** | | **244.4700** | **244.4700** | **8.4600e-003** | | **244.6815** |

## 3.6 Building Construction Phase 2 - 2020

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 0.0273 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.9830 | 8.7179 | 7.6175 | 0.0124 | | 0.4814 | 0.4814 | | 0.4559 | 0.4559 | | 1,193.4220 | 1,193.4220 | 0.2757 | | 1,200.3142 |
| **Total** | **1.0103** | **8.7179** | **7.6175** | **0.0124** | | **0.4814** | **0.4814** | | **0.4559** | **0.4559** | | **1,193.4220** | **1,193.4220** | **0.2757** | | **1,200.3142** |

## 3.6 Building Construction Phase 2 - 2020

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 1.9000e-004 | 6.2500e-003 | 1.3900e-003 | 2.0000e-005 | 5.1000e-004 | 2.0000e-005 | 5.3000e-004 | 1.4000e-004 | 2.0000e-005 | 1.6000e-004 | | 1.8605 | 1.8605 | 1.3000e-004 | | 1.8637 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0920 | 0.0655 | 0.8757 | 2.3600e-003 | 0.2236 | 1.8700e-003 | 0.2254 | 0.0593 | 1.7200e-003 | 0.0610 | | 235.2226 | 235.2226 | 7.4200e-003 | | 235.4080 |
| **Total** | **0.0922** | **0.0717** | **0.8771** | **2.3800e-003** | **0.2241** | **1.8900e-003** | **0.2260** | **0.0594** | **1.7400e-003** | **0.0612** | | **237.0831** | **237.0831** | **7.5500e-003** | | **237.2717** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 0.0273 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.9830 | 8.7179 | 7.6175 | 0.0124 | | 0.4814 | 0.4814 | | 0.4559 | 0.4559 | 0.0000 | 1,193.4220 | 1,193.4220 | 0.2757 | | 1,200.3142 |
| **Total** | **1.0103** | **8.7179** | **7.6175** | **0.0124** | | **0.4814** | **0.4814** | | **0.4559** | **0.4559** | **0.0000** | **1,193.4220** | **1,193.4220** | **0.2757** | | **1,200.3142** |

## 3.6 Building Construction Phase 2 - 2020

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 1.9000e-004 | 6.2500e-003 | 1.3900e-003 | 2.0000e-005 | 5.1000e-004 | 2.0000e-005 | 5.3000e-004 | 1.4000e-004 | 2.0000e-005 | 1.6000e-004 | | 1.8605 | 1.8605 | 1.3000e-004 | | 1.8637 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0920 | 0.0655 | 0.8757 | 2.3600e-003 | 0.2236 | 1.8700e-003 | 0.2254 | 0.0593 | 1.7200e-003 | 0.0610 | | 235.2226 | 235.2226 | 7.4200e-003 | | 235.4080 |
| **Total** | **0.0922** | **0.0717** | **0.8771** | **2.3800e-003** | **0.2241** | **1.8900e-003** | **0.2260** | **0.0594** | **1.7400e-003** | **0.0612** | | **237.0831** | **237.0831** | **7.5500e-003** | | **237.2717** |

## 3.6 Building Construction Phase 2 - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 0.0273 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.8962 | 7.9630 | 7.4993 | 0.0124 | | 0.4163 | 0.4163 | | 0.3941 | 0.3941 | | 1,193.5318 | 1,193.5318 | 0.2724 | | 1,200.3423 |
| **Total** | **0.9235** | **7.9630** | **7.4993** | **0.0124** | | **0.4163** | **0.4163** | | **0.3941** | **0.3941** | | **1,193.5318** | **1,193.5318** | **0.2724** | | **1,200.3423** |

## 3.6 Building Construction Phase 2 - 2021

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 1.8000e-004 | 5.8300e-003 | 1.3700e-003 | 2.0000e-005 | 1.0100e-003 | 2.0000e-005 | 1.0300e-003 | 2.6000e-004 | 2.0000e-005 | 2.8000e-004 | | 1.8401 | 1.8401 | 1.2000e-004 | | 1.8432 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0857 | 0.0589 | 0.8056 | 2.2900e-003 | 0.2236 | 1.8100e-003 | 0.2254 | 0.0593 | 1.6600e-003 | 0.0610 | | 227.7540 | 227.7540 | 6.7100e-003 | | 227.9217 |
| **Total** | **0.0859** | **0.0648** | **0.8069** | **2.3100e-003** | **0.2246** | **1.8300e-003** | **0.2264** | **0.0596** | **1.6800e-003** | **0.0612** | | **229.5941** | **229.5941** | **6.8300e-003** | | **229.7650** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 0.0273 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.8962 | 7.9630 | 7.4993 | 0.0124 | | 0.4163 | 0.4163 | | 0.3941 | 0.3941 | 0.0000 | 1,193.5318 | 1,193.5318 | 0.2724 | | 1,200.3423 |
| **Total** | **0.9235** | **7.9630** | **7.4993** | **0.0124** | | **0.4163** | **0.4163** | | **0.3941** | **0.3941** | **0.0000** | **1,193.5318** | **1,193.5318** | **0.2724** | | **1,200.3423** |

## 3.6 Building Construction Phase 2 - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 1.8000e-004 | 5.8300e-003 | 1.3700e-003 | 2.0000e-005 | 1.0100e-003 | 2.0000e-005 | 1.0300e-003 | 2.6000e-004 | 2.0000e-005 | 2.8000e-004 | | 1.8401 | 1.8401 | 1.2000e-004 | | 1.8432 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0857 | 0.0589 | 0.8056 | 2.2900e-003 | 0.2236 | 1.8100e-003 | 0.2254 | 0.0593 | 1.6600e-003 | 0.0610 | | 227.7540 | 227.7540 | 6.7100e-003 | | 227.9217 |
| **Total** | **0.0859** | **0.0648** | **0.8069** | **2.3100e-003** | **0.2246** | **1.8300e-003** | **0.2264** | **0.0596** | **1.6800e-003** | **0.0612** | | **229.5941** | **229.5941** | **6.8300e-003** | | **229.7650** |

# APPENDIX C – NOISE CALCULATIONS AND MEASUREMENT LOGS

# Session Report

**4/5/2019**

## Northwest Measurement

| Description | Meter | Value | Description | Meter | Value |
|---|---|---|---|---|---|
| Leq | 1 | 55.7 dB | Lmax | 1 | 63.9 dB |
| Weighting | 1 | A | Response | 1 | SLOW |

## Information Panel

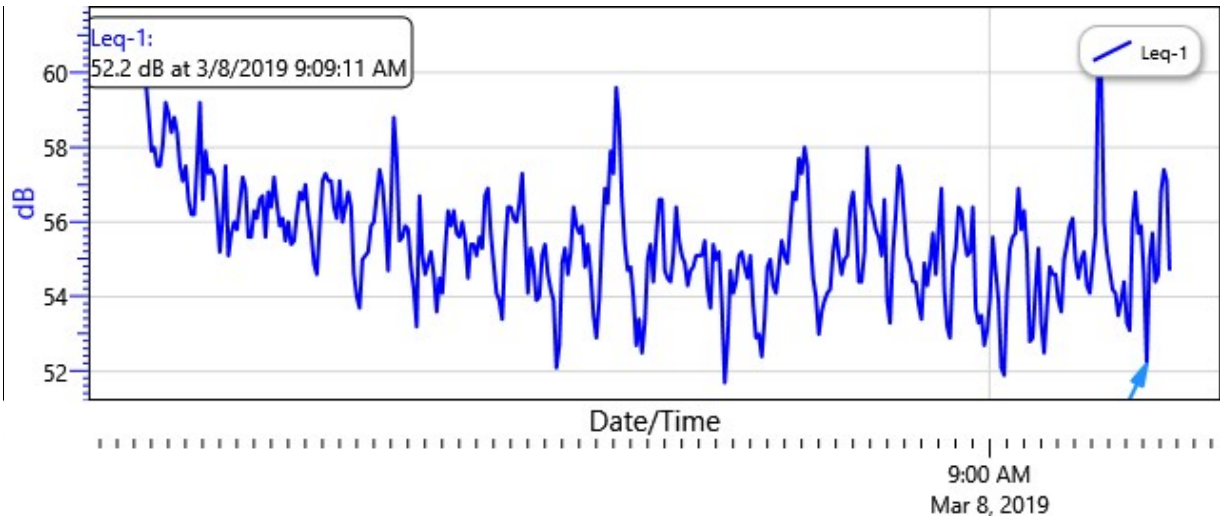
| | |
|---|---|
| Name | M2-NW |
| Model Type | SoundPro DL |
| Device Name | BIP030004 |
| Start Time | 3/8/2019 8:10:11 AM |
| Stop Time | 3/8/2019 9:10:36 AM |
| Run Time | 01:00:25 |
| Serial Number | BIP030004 |
| Device Firmware Rev | R.13H |

## Calibration History

| Date | Calibration Action | Level | Cal. Model Type | Serial Number | Cert. Due Date |
|---|---|---|---|---|---|
| 3/8/2019 7:00:28 AM | Calibration | 114.0 | | | |
| 3/8/2019 9:12:07 AM | Verification | 114.6 | | | |

## Logged Data Chart

M2-NW: Logged Data Chart



## Logged Data Table

| Date/Time | Leq-1 |
|---|---|
| 3/8/2019 8:11:11 AM | 59.7 |
| 8:12:11 AM | 58.3 |
| 8:13:11 AM | 57.7 |
| 8:14:11 AM | 57.4 |
| 8:15:11 AM | 56.7 |
| 8:16:11 AM | 56.2 |
| 8:17:11 AM | 56.3 |
| 8:18:11 AM | 56.6 |
| 8:19:11 AM | 55.9 |
| 8:20:11 AM | 56.4 |
| 8:21:11 AM | 56 |
| 8:22:11 AM | 56.7 |
| 8:23:11 AM | 55.5 |
| 8:24:11 AM | 55.7 |
| 8:25:11 AM | 56.9 |
| 8:26:11 AM | 56 |
| 8:27:11 AM | 54.9 |
| 8:28:11 AM | 54.6 |
| 8:29:11 AM | 56 |
| 8:30:11 AM | 55.3 |
| 8:31:11 AM | 55.7 |
| 8:32:11 AM | 55.4 |
| 8:33:11 AM | 55.9 |
| 8:34:11 AM | 54.7 |
| 8:35:11 AM | 54 |
| 8:36:11 AM | 55.7 |
| 8:37:11 AM | 54.3 |
| 8:38:11 AM | 57.5 |
| 8:39:11 AM | 56 |
| 8:40:11 AM | 53.9 |
| 8:41:11 AM | 55.5 |
| 8:42:11 AM | 55.3 |
| 8:43:11 AM | 54.9 |
| 8:44:11 AM | 54.9 |
| 8:45:11 AM | 53.7 |

| Date/Time | Leq-1 |
|---|---|
| 8:46:11 AM | 54.8 |
| 8:47:11 AM | 53.7 |
| 8:48:11 AM | 54.8 |
| 8:49:11 AM | 57.1 |
| 8:50:11 AM | 55 |
| 8:51:11 AM | 54.8 |
| 8:52:11 AM | 55.7 |
| 8:53:11 AM | 56 |
| 8:54:11 AM | 55.2 |
| 8:55:11 AM | 56.3 |
| 8:56:11 AM | 54.3 |
| 8:57:11 AM | 55.5 |
| 8:58:11 AM | 54.6 |
| 8:59:11 AM | 55.5 |
| 9:00:11 AM | 53.8 |
| 9:01:11 AM | 53.8 |
| 9:02:11 AM | 56 |
| 9:03:11 AM | 53.6 |
| 9:04:11 AM | 54.2 |
| 9:05:11 AM | 55.4 |
| 9:06:11 AM | 54.9 |
| 9:07:11 AM | 57.5 |
| 9:08:11 AM | 53.7 |
| 9:09:11 AM | 55.4 |
| 9:10:11 AM | 55.8 |

# Session Report

**4/5/2019**

## Southeast Measurement

| Description | Meter | Value | Description | Meter | Value |
|---|---|---|---|---|---|
| Leq | 1 | 55.7 dB | Lmax | 1 | 62.7 dB |
| Weighting | 1 | A | Response | 1 | SLOW |

## Information Panel

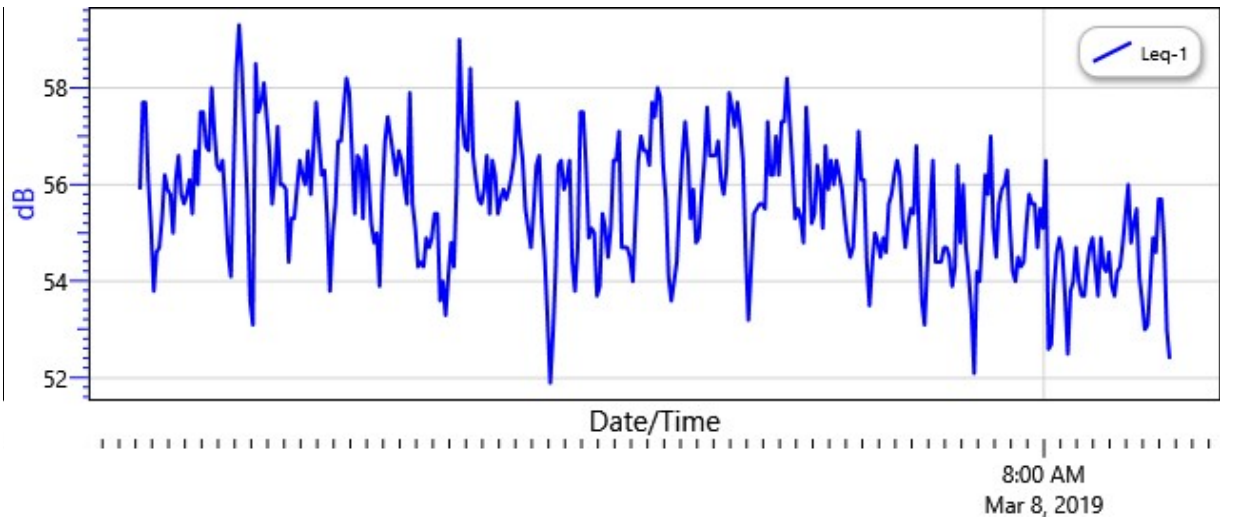
| | |
|---|---|
| Name | M1-SE |
| Model Type | SoundPro DL |
| Device Name | BIP030004 |
| Start Time | 3/8/2019 7:05:07 AM |
| Stop Time | 3/8/2019 8:07:42 AM |
| Run Time | 01:02:35 |
| Serial Number | BIP030004 |
| Device Firmware Rev | R.13H |

## Calibration History

| Date | Calibration Action | Level | Cal. Model Type | Serial Number | Cert. Due Date |
|---|---|---|---|---|---|
| 3/8/2019 7:00:28 AM | Calibration | 114.0 | | | |

## Logged Data Chart

M1-SE: Logged Data Chart



## Logged Data Table

| Date/Time | Leq-1 |
|---|---|
| 3/8/2019 7:06:07 AM | 56.3 |
| 7:07:07 AM | 55.5 |
| 7:08:07 AM | 55.8 |
| 7:09:07 AM | 56.6 |
| 7:10:07 AM | 56.9 |
| 7:11:07 AM | 56.2 |
| 7:12:07 AM | 56.8 |
| 7:13:07 AM | 57.7 |
| 7:14:07 AM | 56.2 |
| 7:15:07 AM | 55.7 |
| 7:16:07 AM | 56.7 |
| 7:17:07 AM | 55.4 |
| 7:18:07 AM | 57.4 |
| 7:19:07 AM | 56.2 |
| 7:20:07 AM | 55.4 |
| 7:21:07 AM | 56.8 |
| 7:22:07 AM | 55.9 |
| 7:23:07 AM | 54.8 |
| 7:24:07 AM | 54.3 |
| 7:25:07 AM | 56.9 |
| 7:26:07 AM | 56.5 |
| 7:27:07 AM | 56 |
| 7:28:07 AM | 56.4 |
| 7:29:07 AM | 55.8 |
| 7:30:07 AM | 55 |
| 7:31:07 AM | 55.5 |
| 7:32:07 AM | 56 |
| 7:33:07 AM | 54.9 |
| 7:34:07 AM | 55.6 |
| 7:35:07 AM | 55.1 |
| 7:36:07 AM | 56.5 |
| 7:37:07 AM | 57.2 |
| 7:38:07 AM | 54.8 |
| 7:39:07 AM | 55.9 |
| 7:40:07 AM | 56.6 |

| Date/Time | Leq-1 |
|---|---|
| 7:41:07 AM | 56.8 |
| 7:42:07 AM | 56.3 |
| 7:43:07 AM | 55.3 |
| 7:44:07 AM | 56.7 |
| 7:45:07 AM | 56.8 |
| 7:46:07 AM | 55.9 |
| 7:47:07 AM | 56.1 |
| 7:48:07 AM | 55.8 |
| 7:49:07 AM | 55.8 |
| 7:50:07 AM | 54.5 |
| 7:51:07 AM | 55.7 |
| 7:52:07 AM | 55.4 |
| 7:53:07 AM | 54.9 |
| 7:54:07 AM | 54.9 |
| 7:55:07 AM | 55.1 |
| 7:56:07 AM | 53.8 |
| 7:57:07 AM | 55.7 |
| 7:58:07 AM | 55.6 |
| 7:59:07 AM | 54.7 |
| 8:00:07 AM | 55.5 |
| 8:01:07 AM | 54 |
| 8:02:07 AM | 53.8 |
| 8:03:07 AM | 54.3 |
| 8:04:07 AM | 54.3 |
| 8:05:07 AM | 54.8 |
| 8:06:07 AM | 54.5 |
| 8:07:07 AM | 54.8 |

## CONSTRUCTION EQUIPMENT NOISE DATA – dBA

| Construction Phase | Equipment Type | $L_{max}$ @ 50-feet[A] | Usage Factor (%)[B] | $L_{eq}$ @ 50-feet[C] | Noise Controls[D] | $L_{eq}$ @ 50-feet |
|---|---|---|---|---|---|---|
| Demolition | Excavator | 81 | 40 | 77 | -10 | 67 |
| | Jackhammer | 89 | 20 | 82 | -10 | 72 |
| | Tractor/Loader/Backhoe | 79 | 40 | 75 | -10 | 65 |
| | Dump Truck | 76 | 40 | 72 | -10 | 62 |
| Site Preparation | Excavator | 81 | 40 | 77 | -10 | 67 |
| | Tractor/Loader/Backhoe | 79 | 40 | 75 | -10 | 65 |
| | Dump Truck | 76 | 40 | 72 | -10 | 62 |
| Grading | Dozer | 82 | 40 | 78 | -10 | 68 |
| | Tractor/Loader/Backhoe | 79 | 40 | 75 | -10 | 65 |
| | Dump Truck | 76 | 40 | 72 | -10 | 62 |
| Building Construction Phase 1 (caissons, retaining walls, footings, etc.) | Drill Rig | 84 | 20 | 77 | -10 | 67 |
| | Crane | 81 | 16 | 73 | -10 | 63 |
| | Concrete Truck | 79 | 40 | 75 | -10 | 65 |
| | Concrete Pump Truck | 81 | 20 | 74 | -10 | 64 |
| | Excavator | 81 | 40 | 77 | -10 | 67 |
| | Tractor/Loader/Backhoe | 79 | 40 | 75 | -10 | 65 |
| Building Construction Phase 2 (framing, utilities, finishing, paving, etc.) | Crane | 81 | 16 | 73 | -10 | 63 |
| | Excavator | 81 | 40 | 77 | -10 | 67 |
| | Tractor/Loader/Backhoe | 79 | 40 | 75 | -10 | 65 |
| | Concrete Truck | 79 | 40 | 75 | -10 | 65 |
| | Concrete Pump Truck | 81 | 20 | 74 | -10 | 64 |

**Footnotes:**

A - Maximum ($L_{max}$) equipment noise levels are the "actual measured Lmax" from the FHWA's *Roadway Construction Noise Model* reference document (see Appendix D).

B - Usage factor (UF) is "percentage of time during the work period that the equipment is operating under full load or near full power."
The UF's presented above are the default factors (%) taken form the FHWA's *Roadway Construction Noise Model*.

C - Per the FHWA, the $L_{eq} = L_{max} + 10*\log(UF\%/100)$.

D - The Project will utilize a number of noise controls, including restricted hours, demolition procedures, mufflers, and temporary noise barriers.
Collectively, these controls are assumed to reduce noise impacts by 10 dBA, as explained in the Assessment text.

# APPENDIX D – NOISE REGULATORY REFERENCES

**Table 1.** CA/T equipment noise emissions and acoustical usage factors database.

| CA/T Noise Emission Reference Levels and Usage Factors | | | | | |
|---|---|---|---|---|---|
| filename: EQUIPLST.xls | | | | | |
| revised: 7/26/05 | | Acoustical | Spec 721.560 | Actual Measured | No. of Actual |
| | Impact | Use Factor | Lmax @ 50ft | Lmax @ 50ft | Data Samples |
| Equipment Description | Device ? | ( % ) | (dBA, slow) | (dBA, slow) | (Count) |
| | | | | (samples averaged) | |
| All Other Equipment > 5 HP | No | 50 | 85 | -- N/A -- | 0 |
| Auger Drill Rig | No | 20 | 85 | 84 | 36 |
| Backhoe | No | 40 | 80 | 78 | 372 |
| Bar Bender | No | 20 | 80 | -- N/A -- | 0 |
| Blasting | Yes | -- N/A -- | 94 | -- N/A -- | 0 |
| Boring Jack Power Unit | No | 50 | 80 | 83 | 1 |
| Chain Saw | No | 20 | 85 | 84 | 46 |
| Clam Shovel (dropping) | Yes | 20 | 93 | 87 | 4 |
| Compactor (ground) | No | 20 | 80 | 83 | 57 |
| Compressor (air) | No | 40 | 80 | 78 | 18 |
| Concrete Batch Plant | No | 15 | 83 | -- N/A -- | 0 |
| Concrete Mixer Truck | No | 40 | 85 | 79 | 40 |
| Concrete Pump Truck | No | 20 | 82 | 81 | 30 |
| Concrete Saw | No | 20 | 90 | 90 | 55 |
| Crane | No | 16 | 85 | 81 | 405 |
| Dozer | No | 40 | 85 | 82 | 55 |
| Drill Rig Truck | No | 20 | 84 | 79 | 22 |
| Drum Mixer | No | 50 | 80 | 80 | 1 |
| Dump Truck | No | 40 | 84 | 76 | 31 |
| Excavator | No | 40 | 85 | 81 | 170 |
| Flat Bed Truck | No | 40 | 84 | 74 | 4 |
| Front End Loader | No | 40 | 80 | 79 | 96 |
| Generator | No | 50 | 82 | 81 | 19 |
| Generator (<25KVA, VMS signs) | No | 50 | 70 | 73 | 74 |
| Gradall | No | 40 | 85 | 83 | 70 |
| Grader | No | 40 | 85 | -- N/A -- | 0 |
| Grapple (on backhoe) | No | 40 | 85 | 87 | 1 |
| Horizontal Boring Hydr. Jack | No | 25 | 80 | 82 | 6 |
| Hydra Break Ram | Yes | 10 | 90 | -- N/A -- | 0 |
| Impact Pile Driver | Yes | 20 | 95 | 101 | 11 |
| Jackhammer | Yes | 20 | 85 | 89 | 133 |
| Man Lift | No | 20 | 85 | 75 | 23 |
| Mounted Impact Hammer (hoe ram) | Yes | 20 | 90 | 90 | 212 |
| Pavement Scarafier | No | 20 | 85 | 90 | 2 |
| Paver | No | 50 | 85 | 77 | 9 |
| Pickup Truck | No | 40 | 55 | 75 | 1 |
| Pneumatic Tools | No | 50 | 85 | 85 | 90 |
| Pumps | No | 50 | 77 | 81 | 17 |
| Refrigerator Unit | No | 100 | 82 | 73 | 3 |
| Rivit Buster/chipping gun | Yes | 20 | 85 | 79 | 19 |
| Rock Drill | No | 20 | 85 | 81 | 3 |
| Roller | No | 20 | 85 | 80 | 16 |
| Sand Blasting (Single Nozzle) | No | 20 | 85 | 96 | 9 |
| Scraper | No | 40 | 85 | 84 | 12 |
| Shears (on backhoe) | No | 40 | 85 | 96 | 5 |
| Slurry Plant | No | 100 | 78 | 78 | 1 |
| Slurry Trenching Machine | No | 50 | 82 | 80 | 75 |
| Soil Mix Drill Rig | No | 50 | 80 | -- N/A -- | 0 |
| Tractor | No | 40 | 84 | -- N/A -- | 0 |
| Vacuum Excavator (Vac-truck) | No | 40 | 85 | 85 | 149 |
| Vacuum Street Sweeper | No | 10 | 80 | 82 | 19 |
| Ventilation Fan | No | 100 | 85 | 79 | 13 |
| Vibrating Hopper | No | 50 | 85 | 87 | 1 |
| Vibratory Concrete Mixer | No | 20 | 80 | 80 | 1 |
| Vibratory Pile Driver | No | 20 | 95 | 101 | 44 |
| Warning Horn | No | 5 | 85 | 83 | 12 |
| Welder / Torch | No | 40 | 73 | 74 | 5 |

TABLE V. NOISE CONTROL FOR CONSTRUCTION EQUIPMENT

| Source | Control Techniques | Probable Noise Reduction in dB(A)* |
|---|---|---|
| Engine | | |
| exhaust | improved muffler | 10 |
| casing | improved design of block | 2 |
| | enclosure | 10 |
| fan (cooling) | redesign | 5 |
| | silencers, ducts and mufflers | 5 |
| intake | silencers | 5 |
| Transmission | redesign, new materials | 7 |
| | enclosure | 7 |
| Hydraulics | redesign, new materials | 7 |
| | enclosure | 10 |
| Exhaust | | |
| (pneumatic) | muffler | 5-10 |
| Tool-Work | | |
| interaction | enclosure | 7-20 |
| | change in principle | 10-30 |

*Note that noise reductions are not additive. Incremental reductions can be realized only by simultaneous quieting of all sources of equal strength.

Typically, a 5-dB(A) IL can be expected for receivers whose line-of-sight to the roadway is just blocked by the barrier. A general rule-of-thumb is that each additional 1 m of barrier height above line-of-sight blockage will provide about 1.5 dB(A) of additional attenuation (see Figure 13).

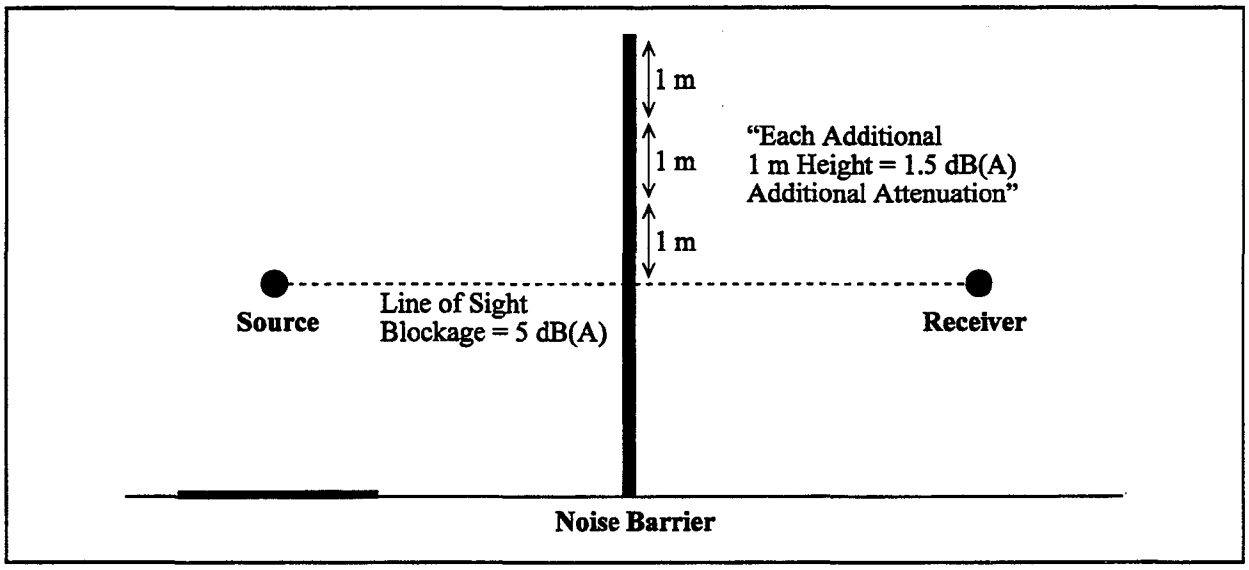



**Figure 13. Line-of-sight.**

Properly-designed noise barriers should attain an IL approaching 10 dB(A), which is equivalent to a perceived halving in loudness for the first row of homes directly behind the barrier. For those residents not directly behind the barrier, a noise reduction of 3 to 5 dB(A) can typically be provided, which is just slightly perceptible to the human ear. Table 4 shows the relationship between barrier IL and design feasibility.[1]

**Table 4. Relationship between barrier insertion loss and design feasibility.**

| Barrier Insertion Loss | Design Feasibility | Reduction in Sound Energy | Relative Reduction in Loudness |
|---|---|---|---|
| 5 dB(A) | Simple | 68% | Readily perceptible |
| 10 dB(A) | Attainable | 90% | Half as loud |
| 15 dB(A) | Very difficult | 97% | One-third as loud |
| 20 dB(A) | Nearly impossible | 99% | One-fourth as loud |

**3.5.2 Barrier Length.** Noise barriers should be tall enough and long enough so that only a small portion of sound diffracts around the edges. If a barrier is not long enough, **degradations** in barrier performance of up to 5 dB(A) less than the barrier's design noise reduction may be seen for those receivers near the barrier ends. A rule-of-thumb is that a barrier should be long enough such that the distance between a receiver and a barrier end is at least four times the perpendicular distance from the receiver to the barrier along a line drawn between the receiver and the roadway (see Figure 14). Another way of looking at

# Appendix B

## Geology and Soils Engineering Exploration

Robles Engineering, Inc.
Geotechnical Consultants

# GEOLOGIC AND SOILS ENGINEERING INVESTIGATION FOR PROPOSED RESIDENCES AND GARAGES LOTS 4 AND 17, TRACT 5720 1888 N. LUCILE AVENUE AND 3627 W. LANDA STREET LOS ANGELES, CALIFORNIA

**JANUARY 21, 2013 RE 08-304-R**

**FOR**

**MR. TOM PORTER**
**1888 N. LUCILE AVENUE**
**SILVERLAKE, CA 90026**

**GEOLOGIC AND SOILS ENGINEERING**

**INVESTIGATION FOR PROPOSED RESIDENCES**

**AND GARAGES**

**LOTS 4 AND 17, TRACT 5720**

**1888 N. LUCILE AVENUE AND 3627 W. LANDA STREET**

**LOS ANGELES, CALIFORNIA**

## INTRODUCTION

The following report summarizes the findings of our geologic and soils engineering investigation performed at the site located at 1888 N. Lucile Avenue and 3627 W. Landa Street in the Silverlake district of the City of Los Angeles. The report includes a description and an evaluation of the soil and geologic materials, discusses the geologic structural conditions, and provides geologic and soils engineering recommendations for the construction of the proposed residences and garages.

This report is intended for submittal to the appropriate governmental authorities that control the issuance of necessary permits and to aid in the design and completion of the proposed development by providing recommendations for site preparation, foundations, on-grade slabs, retaining walls, and surface drainage control.

## Purpose

The primary purpose of this investigation was to provide our best estimate of the geotechnical factors that pertain to the gross stability of the proposed residences and garages, and to evaluate alternatives for a foundation system.

## SCOPE OF WORK

The scope of our investigation involved the completion of the following:

**1**. Review of available general geologic data including:

**a)** Lamar, D.L., 1970, Geology of the Elysian Park-Repetto Hills area, Los Angeles County, California: California Division of Mines and Geology, Special Report 101, 45pp.

**b)** Dibblee, T.W., Jr., 1991, Geologic Map of the Hollywood and Burbank Quad-rangles, Los Angeles County, California; Dibblee Geological Foundation, Map DF-30, Scale = 1:24,000.

**c)** California Division of Mines and Geology, Special Publication 117A, 2008, Guidelines for Evaluating and Mitigating Seismic Hazards in California, 108 p.

**d)** Probabilistic Seismic Hazard Assessment for the State of California, California Division of Mines and Geology Open File-Report 98-17, 1998, 33 p., and Appendixes A and B.

**e)** State of California, Seismic Hazard Zones, Hollywood Quadrangle, California Department of Conservation, Division of Mines and Geology, Released March 25, 1999, Scale 1"=2000'.

**2.** Research and review of the public record file, available geologic reports and review agency correspondence prepared for the subject and neighboring properties. Other geologic documents may be present for the area which could alter the findings and recommendations presented herein. Research of the public record system is not a guarantee all available geologic data was reviewed or present at the time of our research. A list of reviewed documents is provided below.

According to the review agency database "No Matching Records Found" for the subject properties.

**a)** Geologic and Soils Engineering Exploration for Proposed Two Residences, Lots 5, 6 and 16, Tract 5720, 1892 N. Lucile Avenue, Los Angeles, California; prepared by Schick Geotechnical, Inc., SG 5641-W, report dated June 14, 2004 and Addendums dated January 14, 2007 and June 20, 2007.

**b)** City of Los Angeles, Department of Building and Safety, Grading Division, Approval Letter, Los Angeles, California; letters dated August 19, 2004 (Log #44516), June 6, 2007 (Log #57849) and September 27, 2007 (Log #59915).

**3.** Excavation and detailed logging of nine (9) exploratory test pits.

**4.** Geotechnical analysis of field and laboratory data.

**5.** Preparation of a Geotechnical Map, Geologic Cross-Sections, and various graphs.

**6.** Presentation of our procedures, findings, and recommendations.

## PROPOSED DEVELOPMENT

The findings and recommendations contained in this report are based on information provided by the client and project designer. The proposed development will consist of the demolition of the existing residence, carport and retaining walls at 1888 N. Lucile Avenue and construction of a new residence in the same location and garage in same location as carport (see Plates 1, CS-1 and CS-2). In addition, a new residence is proposed at 3627 Landa Street with its garage at 1888 Lucile Avenue. New retaining walls up to 18-feet in height will be necessary for the proposed development. All structures should be founded on conventional spread footings and/or friction piles bearing into competent bedrock. Final site development plans await the

recommendations of this report.

## SITE LOCATION & DESCRIPTION

The property is located on the south side of Lucile Avenue, in the Silverlake district of the City of Los Angeles. The site is legally described as Lots 4 and 17, Tract 5720.

The property is topographically situated on the northern flank of an east-west trending secondary ridge in the Silverlake area of the city of Los Angeles, California. The property consists of an ascending slope which has been partially terraced. The site is currently occupied by a multi-story single-family residence and carport on Lot 17 (1888 N. Lucile Avenue) while Lot 4 (3627 W. Landa Street) is undeveloped.

The slope ascends from Lucile Avenue at an average slope ratio of 2:1 to 5.5:1 (H:V) for approximately 50- to 60-feet to Landa Street. The toe of slope is supported by retaining walls up to 10-feet in height fronting Lucile Avenue. The front portion of the slope is partially terraced by walkways and small landscape retaining walls.

The existing carport has been notched into the ascending slope at the front of the property. The retaining walls supporting the vertical excavations for the carport and those along the front of the property are heavily distressed with numerous vertical, horizontal and diagonal open cracks. Portions of the face of the concrete have deteriorated and broken away from the walls. The existing residence foundation system also shows signs of distress. The distress appears to be due to the depth and bearing material of the existing foundation system.

Vegetation on the site consists of sporadic ground cover, shrubs and scattered mature

trees. Drainage of the slope is via uncontrolled sheet flow down the natural gradient and infiltration to the subsurface soils.

## NEIGHBORING PROPERTIES HISTORY

During our records search at the City of Los Angeles several documents were encountered. A geotechnical investigation was conducted for the neighboring (adjacent) properties to the east (1892 Lucile Avenue) of the subject site. The investigations was conducted in 2004 by Schick Geotechnical, Inc. (SG). The reports were approved by the City of Los Angeles, Department of Building and Safety, Grading Division in 2004 and 2007.

The geotechnical investigation was conducted for the proposed residences on the neighboring properties. These properties were considered suitable for the proposed structures. The proposed development has since been completed.

## FIELD EXPLORATION

The site was explored on March 22, 2004 and December 20, 2012 by excavation and field mapping of 9 hand-dug test pits, utilizing an electric shovel and hand auger, to a maximum depth of 10-feet. Residual soil and bedrock samples were obtained for laboratory testing. The earth materials were logged in detail and are presented in the Log of Test Pits (Plates TP-1 and TP-2). The approximate distribution of the earth materials on the site and vicinity and the test pit locations are shown on Plate 1.

## EARTH MATERIALS

The earth materials encountered in the area of the proposed structures at the site consist of residual soil and bedrock.

**Residual Soil (Rs)**

Residual soil consisting of dark brown sandy silt mantles the site. The soil is moist, firm and contains small bedrock fragments and clay binder. The maximum observed thickness of the soil is approximately 5-feet, although this thickness may vary across the site. The residual soil is not considered suitable for foundation or slab support or as a base to receive certified compacted fill.

**Bedrock (Tp)**

Bedrock consisting of interbedded shale and siltstone assigned to the Puente Formation was encountered in the exploratory excavations and is partially exposed above the existing carport. The bedrock is orange brown to brown, hard, well indurated and well laminated. The bedrock is considered suitable for foundation support of the proposed structures.

## ENGINEERING GEOLOGY

The engineering geologic factors evaluated include geologic planes of weakness, excavation characteristics, landslides, and groundwater.

**Geologic Planes of Weakness**

Bedding planes observed in the exploratory test pits indicate that the predominant orientation is a general north-south strike and a west dip ranging from 19- to 32-degrees. This geometric relationship is supported with respect to the existing slope on the site, which is considered to be favorable from the standpoint of the gross stability of the slope.

However, any component of west-facing temporary excavations, such as for the new garage retaining walls, may present a component of unsupported bedding ("daylighted bedding condition"), which would require mitigation during construction. Recommendations for excavations exposing favorably-oriented and daylighted bedding conditions are provided in the Temporary Excavations section of this report.

**Joints and Fractures**

Bedrock at the site was observed to be slightly to moderately fractured. Fractures are steeply dipping, randomly oriented, and discontinuous where observed. Fractures are not expected to adversely effect the development of the site.

**Excavation Characteristics**

Bedrock at the site was observed to be hard and slightly fractured. It is anticipated that these materials can be excavated using standard excavation equipment, although jackhammering and/or coring may be required locally.

**Landslides**

Ancient or recent landslides were not observed on the property. In addition, our examination of slopes on the property did not reveal the presence of past surficial slope failures.

**Groundwater**

No groundwater seepage was observed on the site or in our exploratory excavations. The groundwater level appears to be substantially below the level of the proposed development and grading. It should be understood that localized perched groundwater may exist at shallower depths depending upon seasonal rainfall amounts.

## SEISMIC CONDITIONS

The site is not underlain by any known fault or located within an Alquist-Priolo Earthquake Fault Zone.

The site appears to lie within a Zone of Required Investigation (potential seismically-induced landslide) defined by the State of California per the Seismic Hazards Mapping Act of 1990. However, the proposed structures do not meet the definition of a "project" which require a detailed analysis or mitigation in accordance with the code.

**Seismic Design**

It is our opinion that future structures should be designed in accordance with the current seismic building code as determined by the structural engineer. The subject site is located within **Site Class C** per the 2007 California Building Code. Based on the United States Geologic Survey mapping (USGS, 2002), the following values of short and long period accelerations are recommended for the Maximum Considered Earthquake (MCE). The Design Basis Earthquake (DBE) spectral acceleration parameters presented on the following table for **Site Class C**, generated by the computer program Earthquake Ground Motion Parameter Calculator by the USGS, may be utilized for seismic design:

| **Site location (latitude, longitude) : (34.095309, 118.275383)** | | | | |
|---|---|---|---|---|
| Spectral Period, T (second) | Site Class B MCE spectral acceleration (g) | Site Class C MCE spectral acceleration (g) | | **Site Class C DBE spectral acceleration (g)** |
| 0.2 | $S_s$ = 2.083 | Fa = 1.0 | $S_{MS}$ = 2.083 | **$S_{DS}$ = 1.389** |
| 1.0 | $S_1$ = 0.747 | $F_V$ = 1.3 | $S_{M1}$ = 0.971 | **$S_{D1}$ = 0.647** |

Ground shaking resulting from a moderate to major earthquake (Magnitude 6.0 or greater) can be expected during the life span of the proposed structure. Property owners and the general public should be aware that any structure or slope in the southern California region could be subject to significant damage as a result of a moderate or major earthquake. The potential exists throughout southern California for strong ground motion similar to that which struck the Los Angeles region during the January 17, 1994, Northridge Earthquake. Several such destructive earthquakes have struck southern California during the span of recorded history.

Present building codes and construction practices, and the recommendations presented in this report are intended to minimize structural damage to buildings and loss of life as a result of a moderate or a major earthquake. They <u>are not</u> intended to totally prevent damage to structures, graded slopes and natural hillsides due to moderate or major earthquakes. While it may be possible to design structures and graded slopes to withstand strong ground motion, the construction costs associated with such designs are usually prohibitive, and the design restrictions may be severely limiting. Earthquake insurance is often the only economically feasible form of protection for your property against major earthquake damage. Damage to

sidewalks, steps, decks, patios and similar exterior improvements can be expected as these are not normally controlled by the building code.

Major foundation problems are not anticipated as a result of earthquake induced liquefaction, fault ground rupture or displacement, and differential settlement of natural earth materials, provided the foundation system is constructed as herein recommended, within the limitations presented above.

## LABORATORY TESTING

Laboratory tests were conducted on representative samples by TechnoSoils, Inc., to determine certain physical properties of the earth materials. Field moisture content, in-situ density, and shear strength characteristics were determined from these tests. The laboratory test results are presented in the Appendix B.

We have reviewed and concur with the laboratory data conducted by TechnoSoils, Inc. (Appendix B). We are accepting geotechnical responsibility for use of the referenced laboratory data.

## SLOPE STABILITY

Based on the existing gentle slope gradients (2:1 or less) and favorable geologic conditions, gross and surficial stability analyses are not considered warranted. The site is considered grossly and surficially stable.

## CONCLUSION

Based on the findings of our investigation, the site is considered to be suitable from a geologic and soils engineering standpoint for construction of the proposed residences and garages, provided that the recommendations included herein are followed and integrated into the final development/grading plans.

The existing residual soil (1- to 5-feet thick) is not suitable for foundation or slab support. All foundations should penetrate these unsuitable materials and bear entirely into competent bedrock.

## RECOMMENDATIONS

### Foundation and Building Setback

Setbacks from the top or toe of slopes steeper than 3:1 in ratio should comply with the minimum requirements of the controlling governmental agency.

The base of all new footing should be set back a minimum horizontal distance equivalent to one-third of the slope height (H/3). This horizontal distance should be measured from the outer face of the footing to the competent face of the adjacent descending slope. Foundation setback distance should be at least 5-feet, but needs not exceed 40-feet.

All structures should be set back from the toe of the ascending slope a minimum horizontal distance equivalent to one-half of the height of the ascending slope (H/2). Building setback distance should be a minimum of 3-feet, but needs not exceed 15 feet.

## Foundations

### *Spread Footings*

Spread footings are adequate for foundation support of the proposed structures where the depth to bedrock is shallow (less than 5-feet) and the required foundation setback distance is not an issue. All footings should bear entirely in competent bedrock. Continuous footings may be designed using a bearing pressure of 2000 psf for bedrock. They should be a minimum of 15-inches in width and 12- and 18-inches (one-story and two-story, respectively) into bearing material.

Independent footings may be designed using a bearing pressure of 3000 psf. The dimensions on independent footings should be a minimum of 2-feet square and founded at least 2-feet into bearing material. A 20 percent increase is allowable for each additional foot of excavation depth and 10 percent increase for each additional foot of excavation width up to a maximum value of 6000 psf.

### *Caissons*

A caisson and grade beam system may be used to support the proposed structures. Caissons should be a minimum of 3-feet into bedrock or that depth necessary to achieve the required foundation setback distance (whichever is deeper) and 30-inches in diameter to facilitate cleanout. Caissons may be designed for a bearing pressure of 3000 psf. The base and entire bell of all caissons excavations should be cleaned of all loose material. All caissons should be tied with grade beams and designed within a tolerable deflection determined by the structural engineer.

### *Friction Piles*

As an alternative to caissons, friction piles may be used to support the proposed structures. Piles should be a minimum of 24-inches in diameter and a minimum of 10-feet into bedrock or that depth necessary to achieve the required foundation setback distance (whichever is deeper). Piles may be assumed fixed at 3-feet into bedrock. The piles may be designed for a skin friction of 600 psf for that portion of pile in contact with the bedrock. All piles should be connected with grade beams and designed within a tolerable amount of deflection, determined by the structural engineer. All friction pile excavations should be periodically observed by a representative of this firm.

### General

The bearing pressure given is for the total of dead and frequently applied live loads and may be increased by one-third for short duration loading which includes the effects of wind or seismic forces.

**Lateral Design**

The residual soil on the slope is subject to downhill creep and pile shafts are subject to lateral loads due to the creep forces. That portion of the pile shafts exposed to creep-prone material should be designed for a minimum lateral load of 1000 pounds per linear foot or 30 pcf equivalent fluid pressure times the pile spacing, whichever is greater.

Resistance to lateral loading may be provided by friction acting at the base of foundations and by passive earth pressure within the bearing material. An allowable coefficient of friction of and 0.3 may be used with the dead load forces.

Passive earth pressure may be computed as an equivalent fluid having a density of 300 pcf for bedrock with a maximum earth pressure of 4500 psf . When combining passive and friction for lateral resistance, the passive component should be reduced by one-third. For friction piles, the recommended passive earth pressure may be doubled provided that the pile spacing exceeds 2.5 pile diameters on center.

**Foundation Settlement**

Settlement of the new foundation system is expected to occur on initial load application. The maximum settlement is expected to be ½-inch. Differential settlement is not expected to exceed ¼-inch within a span of 30-feet. These values may be exceeded for that portion of the existing structure not underpinned into the recommended bearing material.

**Retaining Walls**

It should be understood by the client that based on a new ordinance by the city of Los Angeles Planning Department (Ordinance No. 176445), a maximum of one free-standing wall may be built on a lot with a maximum height of 12-feet, or two stacked walls with a maximum height of 10-feet each.

Based on our active pressure analysis (Plates AP-1 & AP-2) all retaining walls should be designed for active pressures per the following table:

| Surface Slope of Retained Material Horizontal to Vertical | Equivalent Fluid Weight (pcf) |
|---|---|
| LEVEL | 45 |
| 5 to 1 | 48 |

| | |
|---|---|
| 4 to 1 | 57 |
| 3 to 1 | 59 |
| 2 to 1 | 65 |
| 1 ½ to 1 | 83 |

In accordance with present day building codes an additional seismic load should be added to the retaining wall design for walls higher than 12-feet, as measured from the top of the foundation. For restrained walls, the additional loading should be applied at the mid point of the wall. For freestanding walls the additional loading should be applied at 0.4H below the top of the wall. Our earth pressure distribution diagram is attached (Plate PD-1).

All walls should be effectively waterproofed, provided with a subdrain, and backfilled to within 24-inches of the top of the wall with a 1-foot wide column of gravel. We recommend you hire a waterproofing expert to determine your waterproofing requirements and to provide inspection and approval for the same. Waterproofing details, application methods or effectiveness in preventing moisture intrusion are beyond the scope of our work authorization and not the responsibility of *Robles Engineering, Inc*. Where the backfill area is confined, the use of Caltrans Class II permeable material is recommended. The surface of the backfill should be covered by an approved filter fabric and 24-inches of compacted soil (Plates RD-1 and RD-2). The subdrainage system, including outlet locations, should be clearly shown on the building or grading plans. The contractor is responsible to insure that all subdrain outlets are constructed per plan and remain unobstructed. While all backfill should be compacted to the required density, care should be taken when working close to new walls to prevent excessive lateral pressure.

Retaining walls supporting ascending slopes should be provided with a minimum free-

board of 1-foot. An open "V" drain should be placed behind the walls so that all up slope flows are directed around the proposed structures to the street or other approved disposal area.

**Temporary Excavation**

Excavations will be required for proposed retaining walls at the subject site. The excavations are expected to be up to 18-feet in height and will expose primarily residual soil overlying bedrock. The excavations in favorably-oriented bedrock are suitable for non-surcharged vertical excavations up to 10-feet (Plate TS-1). Excavations exceeding 10- vertical feet, and that portion exposing soil, should be trimmed to a 1:1 ratio backslope, where space is available.

Any component of west-facing temporary excavations may present a component of unsupported bedding ("daylighted bedding condition"), which would require mitigation during construction. West-facing excavations exposing significant amounts of bedrock (5-feet or greater) should be temporarily shored.

A temporary shoring system consisting of soldier piles spaced at 8-feet on center may be used. An active pressure of 25 pcf can be used for temporary shoring design (Plate AP-1a). Soldier piles should be at least 24-inches in diameter, and may be constructed for temporary support only or may be incorporated into the permanent wall design. The deflection of soldier piles should be design by the project structural engineer to within the tolerable limit. Temporary shoring piles or permanent piles should be embedded a minimum of 10-feet below the lowest proposed grade.

Removal of the existing carport retaining wall, along the western property line should be shored or removed in a slot cut procedure. Where shoring is not an option excavations (removal

of existing retaining wall) should be proceeded with "A-B-C" slot cutting method with a maximum width of 8 -feet (Plate SC-1). The excavation (removal) continue with alternating slot cuts of 8-feet in width.

All excavations shall be made in accordance with the regulations of the State of California, Division of Industrial Safety. These recommended temporary excavation slopes do not preclude local raveling and sloughing.

All excavations should be stabilized within 30 days of initial excavation. Water should not be allowed to pond on the top of the excavation nor to flow towards it. No vehicular surcharge should be allowed within 8-feet of the top of cut.

It is recommended that a pre-excavation site meeting be attended by the grading contractor, the soils engineer and an agency representative to discuss methods and sequence of subterranean excavation.

**Floor Slabs**

We recommend that all interior floor slabs be designed as a structural unit which transfers all loads to the foundation system. As an alternative, a raised wood floor is suggested. This, however, should also transfer all loads to the foundation system.

A minimum 4-inch-thick capillary break consisting of compacted clean graded 3/4-inch gravel should be placed below the vapor retarder/barrier if the slab level is below the surrounding finished grade.

If moisture vapor transmission is a concern to the facility owner, an expert should be consulted to provide additional recommendations for the design and construction of slabs in moisture sensitive flooring areas. Waterproofing details, application methods or effectiveness in

preventing moisture intrusion are beyond the scope of our work authorization and not the responsibility of *Robles Engineering, Inc*.

**Patio Slabs and Hardscape**

It may be desirable to replace slabs on the existing surficial soils. These structures are not normally subject to building code requirements for structural support. In order to reduce the potential for distress due to potential settlement, it may be desirable to provide additional subgrade preparation and additional steel and concrete thickness for the slabs. At a minimum, we recommend that slabs be reinforced with a minimum of #4 rebar placed at 16-inches on center, each way. The upper 12 inches of existing soil to be used for slab support should be removed and recompacted to 90 percent of the maximum dry density, as determined by ASTM Method D1557. It should be noted that slabs constructed to the preceding specification may be subject to distress and settlement over time. Periodic maintenance or replacement may be necessary.

**Drainage Protection**

All pad and roof drainage should be collected and transferred to the street or an approved location in non-erosive drainage devices. Drainage should not be allowed to descend any slope in a concentrated manner, pond on the pad or against any foundation or retaining wall.

It is the responsibility of the contractor and ultimately the developer and/or property owner to insure that all drainage devices are installed and maintained in accordance with the approved plans, our recommendations, and the requirements of all applicable municipal agencies. This includes installation and maintenance of all subdrain outlets and surface drainage devices.

**Drainage Control**

Final grading shall provide positive drainage away from the footings and from the lot. Proper drainage shall also be provided away from the building footing and from the lot during construction. Maintaining a proper drainage system will minimize the shrink/swell potential of the subsoils.

**Preventive Slope Maintenance**

To reduce the risk of problems relating to slope instability, a program of continual slope maintenance is necessary. This maintenance program should include but need not be limited to annual cleanout of existing drainage ways, sealing of any cracks, elimination of gophers and earth burrowing rodents, maintaining low water consumptive, fire retardant, deep rooted ground cover and proper irrigation.

Hillside properties are typically subject to potential geotechnical hazards including settlement, slope failures, slumping, spalling of slopes, erosion and concentrated slopes. It must be emphasized that responsible maintenance of these slopes, and the property in general, by the owner, using proper methods, can reduce the risk of these hazards significantly.

**Approval**

A set of building plans should be submitted to this firm for review and approval prior to initiation of construction.

Any fill which is placed should be tested for compaction if used for engineering purposes. All cut slopes and temporary excavations should be observed by this firm. Should the observation reveal any unforeseen hazard, appropriate treatment will be recommended.

We will observe work in progress, and observe excavations and trenches. It should be

understood that the contractor or others shall supervise and direct the work and they shall be solely responsible for all construction means, methods, techniques, sequences and procedures, and shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during the performance of the work.

**Remarks**

The conclusions contained herein are based on the findings and observations made at the subject properties and any referenced soils report. While no great variations in subsurface conditions are anticipated, if conditions are encountered during construction which appear to differ from those disclosed, *Robles Engineering, Inc.*, should be notified, so as to consider the need for modifications.

This report has been compiled for the exclusive use of **Mr. Tom Porter** and his authorized representatives. It shall not be transferred to, or used by, a third party, to another project or applied to any other project on this site, other than as described herein, without consent and/or thorough review by this firm.

Should the project be delayed beyond the period of **one year** after the date of this report, the site should be observed and the report reviewed to consider possible changed conditions.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to assure that the information and recommendations contained herein are called to the attention of the designers and builders for the project.

The limits of our liability for data contained in this report and warranty is presented on the following page.

Please call if you have any questions.

Gustavo Robles, Soils Engineer & Geologist
RCE 66797, Exp. 9/30/14
CEG 2422, Exp. 10/31/14

Attachments:

Appendix A: 5 Plates (geologic maps, sections and logs)
Appendix A-1: 9 Plates (calculations, analyses and details)
Appendix B: Laboratory Test Results (TechnoSoil, Inc., 2008)

CC: 1 Hard Copy (client) & 3 Hard Copies/1 Electronic Copy (review agency)

## LIMITATIONS

This report is based on the development plans provided to our office. In the event that any significant changes in the design or location of the structure(s); as outlined in this report are planned, the conclusions and recommendations contained in this report may not be considered valid unless the changes are reviewed and the conclusions of this report are modified or approved by the soil engineer and geologist.

The subsurface conditions, excavations, characteristics and geologic structure described herein and shown on the enclosed cross-section(s) have been projected from individual borings or test pits placed on the subject property. The subsurface conditions and excavation characteristics, and geologic structure shown should in no way be construed to reflect any variations which may occur between these borings or test pits.

It should be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, and other factors not evident at the time measurements were made and reported herein. *Robles Engineering, Inc.*, assumes no responsibility for variations which may occur across the site.

If conditions encountered during construction appear to differ from those disclosed, this firm shall be notified so as to consider the need for modifications. No responsibility for construction compliance with the design concepts, specifications or recommendations is assumed unless on-site construction review is performed during the course of construction which pertains to the specific recommendations contained herein.

This report has been prepared in accordance with generally accepted practice. No warranties, either expressed or implied, are made as to the professional advice provided under the terms of the agreement and included in this report.

## GRADING GUIDELINES

### Site Clearing

Any existing brush, loose fill and porous soils shall be excavated to competent native materials. Prior to the placement of any fill soils, the exposed surface shall be scarified, cleansed of debris and recompacted to 90 percent of the laboratory standard under the direction of the Soils Engineer in accordance with the following "Placing, Spreading, and Compacting Fill Materials".

### Preparation

After the foundation for the fill has been cleared, and scarified, it shall be brought to a proper moisture content and compaction to not less than 90 percent of the maximum dry density in accordance with ASTM D1557.

### Materials

On-site materials may be used in the fill if cleansed of debris. Imported fill materials shall be approved by the Soils Engineer and may be obtained from any other approved source. The materials used should be free of excessive organic matter and other deleterious substances and shall not contain rocks or lumps greater than 6 inches in maximum dimension.

### Placing, Spreading and Compacting Fill Materials

Fill materials shall be placed in layers which when compacted shall not exceed 6 inches in thickness. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to ensure uniformity of material and moisture of each layer.

Where the moisture content of the fill material is below the optimum value determined by the Soils Engineer, water shall be uniformly added to obtain the approximate optimum moisture content.

Where the moisture content of the fill materials is higher than the optimum value determined by the Soils Engineer, the fill materials shall be aerated by blading disking or mixing with dry materials until the optimum moisture content is obtained.

After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted to not less than 90 percent of the maximum dry density in accordance with ASTM D1557. Cohesionless soil having less than 15 percent finer than 0.005 millimeters (such as base material or pea gravel) shall be compacted to a minimum of 95 percent of the maximum dry density.

Compaction shall be by sheepfoot roller, tract rolling or other types of acceptable compaction equipment of such design that they will be able to compact the fill material to the specified density. Rolling shall be accomplished while the fill material is at the specified moisture content, to ensure that the desired density has been obtained. The final surface of the areas to review slabs-on-grade should be rolled to a dense smooth surface.

## GRADING GUIDELINES *(Continued)*

Field density tests shall be made by the Soils Engineer at intervals not to exceed 2 feet of fill height. Where sheepfoot rollers are used, the soil may be disturbed to a depth of several inches and density reading shall be taken in the compaction material below the disturbed surface. When these readings indicate the density of any fill or portion thereof is below the required 90 percent density, the particular layer of portion shall be reworked until the required density has been obtained.

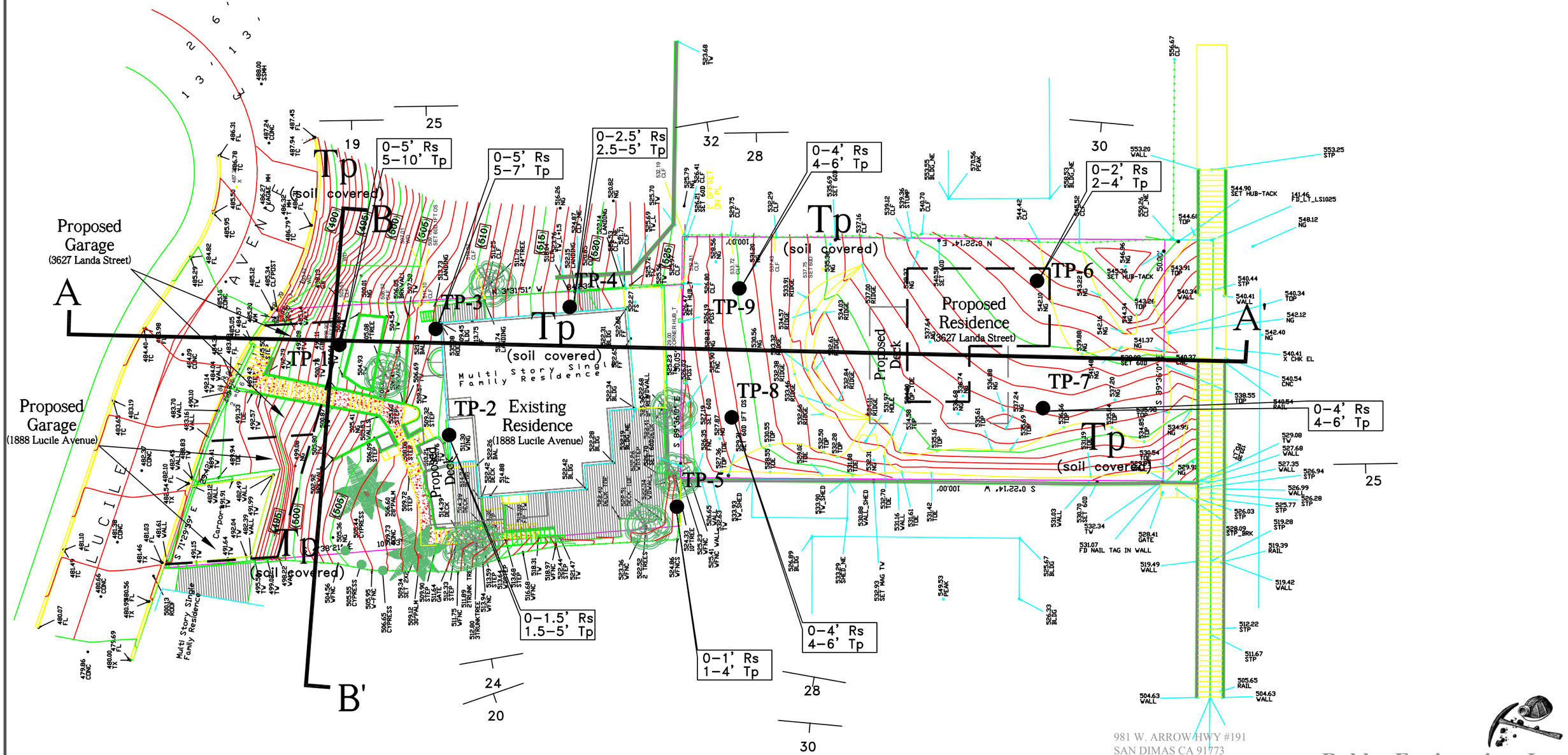
The grading specifications should be a part of the project specifications.

The Soils Engineer shall review the grading plan prior to grading.

_____

# APPENDIX A

(geologic maps, sections and logs)




## EXPLANATION

| | |
|---|---|
| Rs | RESIDUAL SOIL |
| Tp | BEDROCK – PUENTE FORMATION |
| TP–1 ● | TEST PIT LOCATION |
| 15 | STRIKE AND DIP OF BEDDING |
| — — — | APPROXIMATE GEOLOGIC CONTACT |
| A A' | LINE OF GEOLOGIC CROSS SECTION |

NORTH

SCALE: 1" = 20'

0 10 20 30 40

Reference: Topographic Survey, prepared by TDR Engineering, dated 10–2–09, Sheet 1.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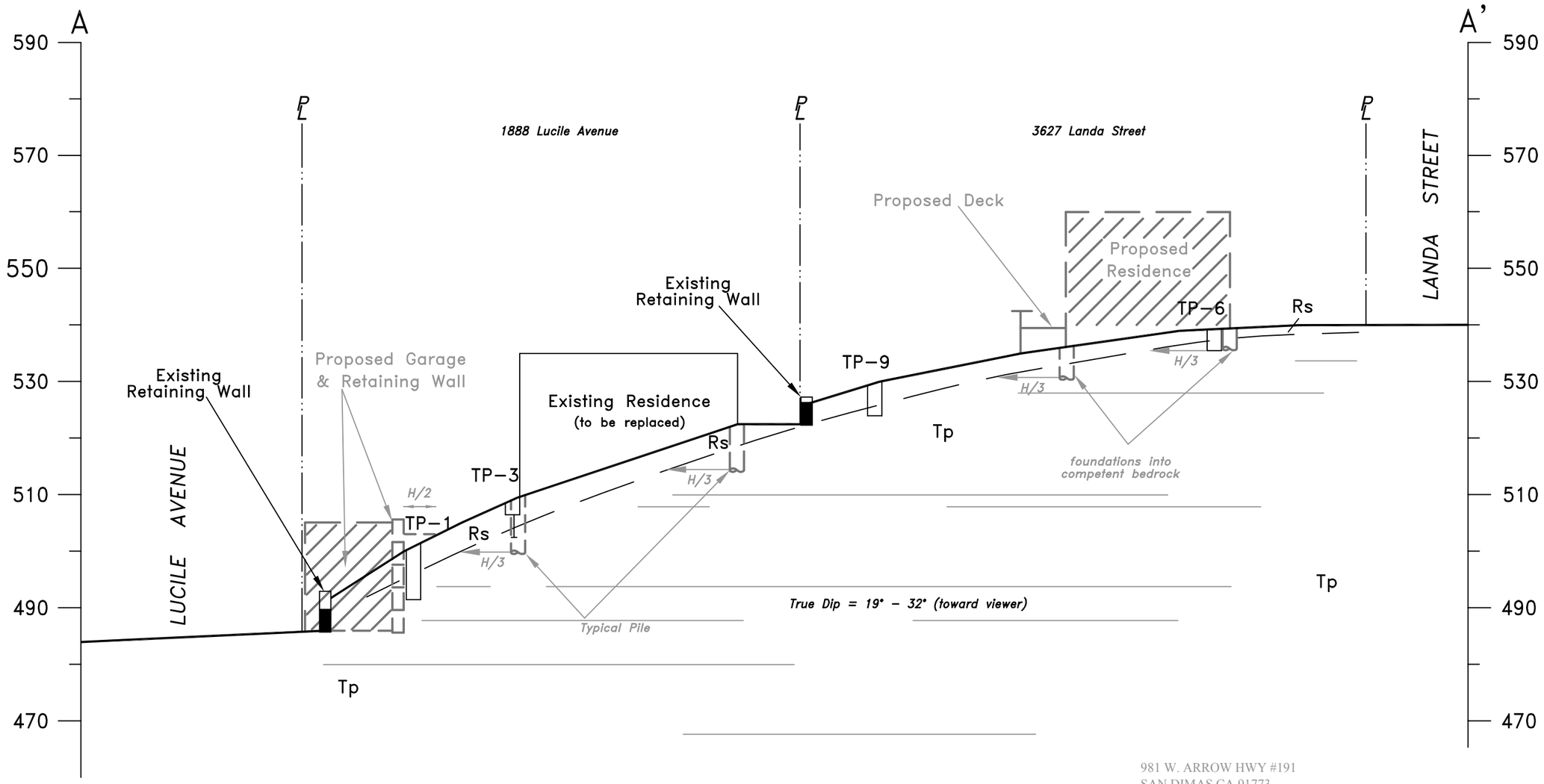
Robles Engineering, Inc.
Geotechnical Consultants


# GEOTECHNICAL MAP

1888 Lucile Avenue & 3627 Landa Street
Los Angeles, California

| RE 08-304-R | DATE: Jan, 2012 | PLATE 1 |
|---|---|---|

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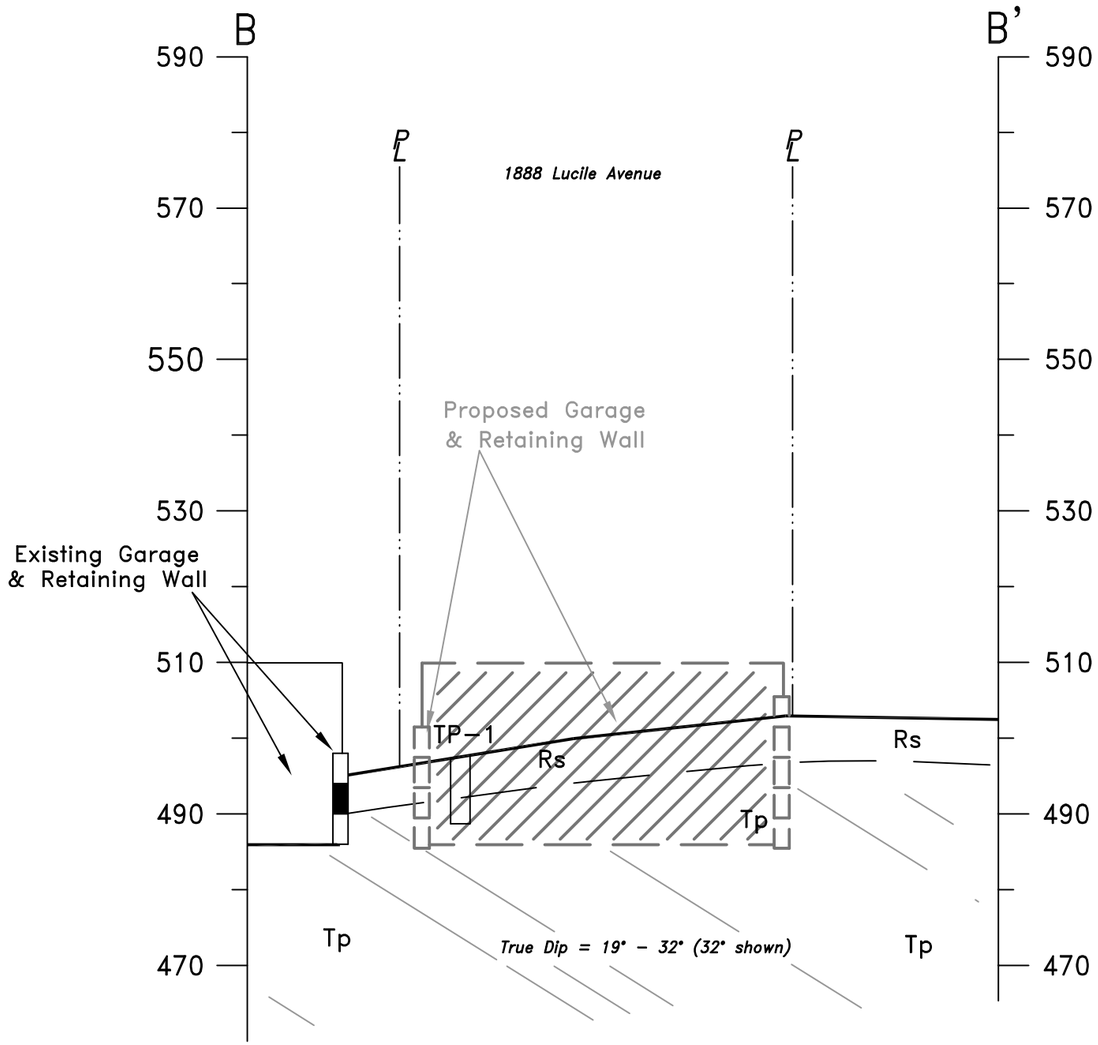
# GEOLOGIC CROSS SECTION A-A'

1888 Lucile Avenue & 3627 Landa Street
Los Angeles, California

SCALE: 1"=20'

| RE 08-304-R | DATE: Jan, 2013 | PLATE CS-1 |
|---|---|---|

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# GEOLOGIC CROSS SECTION B-B'

1888 Lucile Avenue & 3627 Landa Street
Los Angeles, California

SCALE: 1"=20'

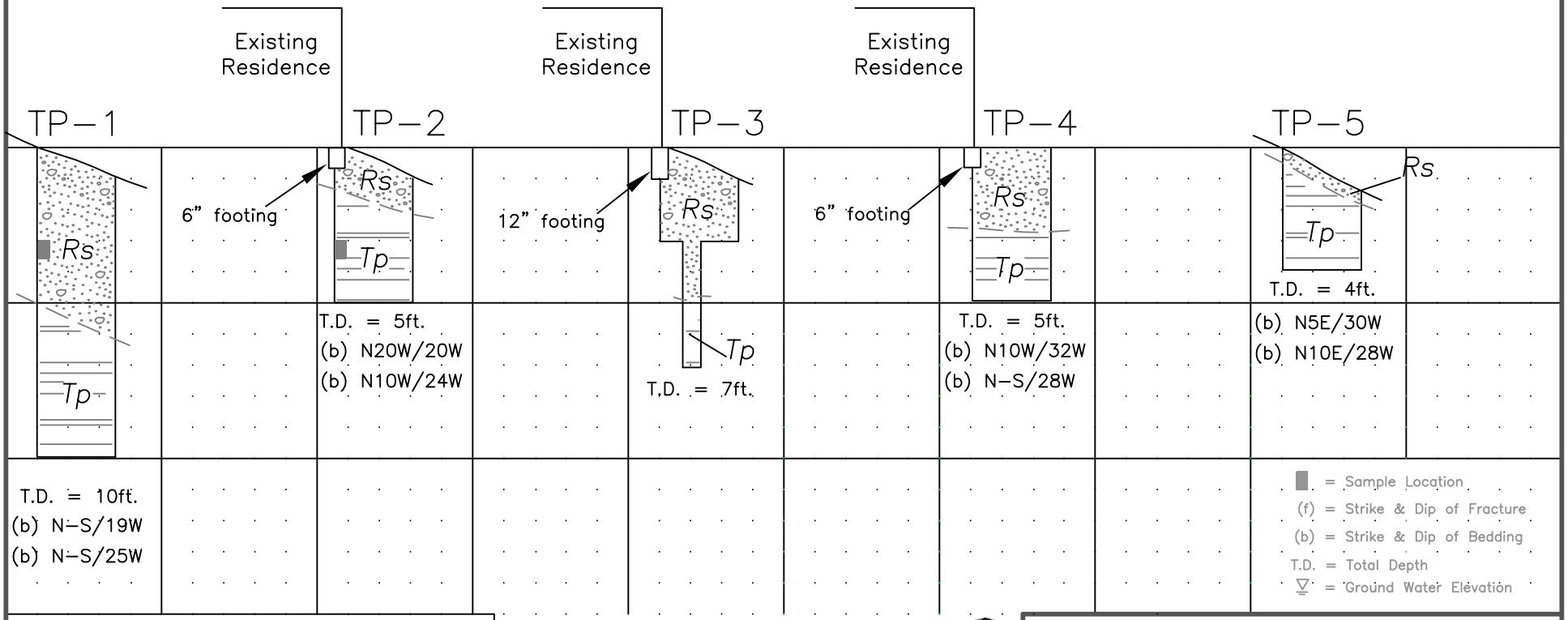
| RE 08-304-R | DATE: Jan, 2013 | PLATE CS-2 |
|---|---|---|

# TEST PIT LOG NO. TP-1 thru TP-5

## LITHOLOGIC DESCRIPTION

(Rs) RESIDUAL SOIL: Sandy Silt, dark brown, moist, firm, with small bedrock fragments, clay binder and roots.

(Tp) BEDROCK – PUENTE FORMATION: Interbedded Shale and Siltstone, orange brown to brown, hard, well bedded, well indurated, well laminated, fractures (tight/random).




*This log of subsurface conditions applies only at the specific location and the date indicated. Subsurface conditions may differ at other locations and times.*

SCALE: 1"=5'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Project: 1888 Lucile Ave & 3627 Landa St, L.A.
Date Logged: 3/22/08
Excavation Method: Hand Labor
Logged By: GR
RE No: 08–304–R

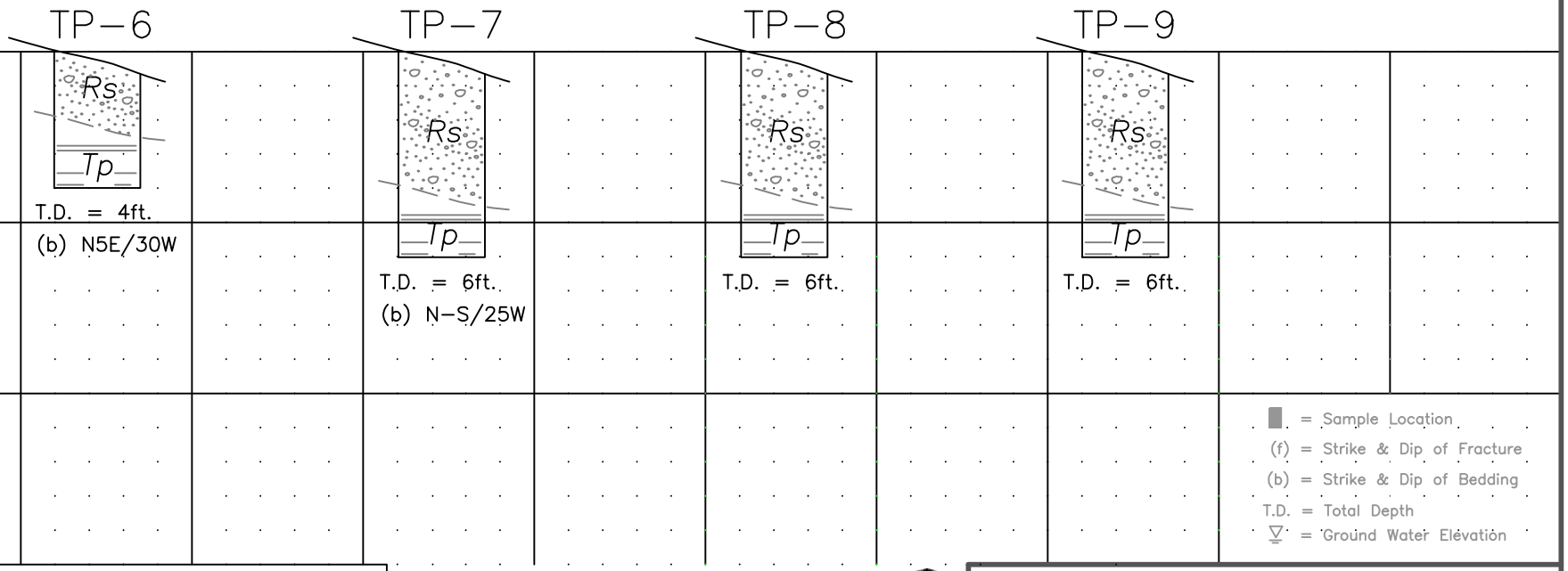
PLATE TP-1

# TEST PIT LOG NO. TP-6 thru TP-9

## LITHOLOGIC DESCRIPTION

(Rs) RESIDUAL SOIL: Sandy Silt, dark brown, moist, firm, with small bedrock fragments, clay binder and roots.

(Tp) BEDROCK – PUENTE FORMATION: Interbedded Shale and Siltstone, orange brown to brown, hard, well bedded, well indurated, well laminated, fractures (tight/random).




*This log of subsurface conditions applies only at the specific location and the date indicated. Subsurface conditions may differ at other locations and times.*

SCALE: 1"=5'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Geotechnical Consultants

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Project: 1888 Lucile Ave & 3627 Landa St, L.A.
Date Logged: 12/20/12
Excavation Method: Hand Labor
Logged By: GR
RE No: 08-304-R

PLATE TP-2

# APPENDIX A-1

(calculations, analyses and details)

## Active Pressure Analysis: Search for Maximum Value (Vector Method)

| | | |
|---|---|---|
| Height of wall, H = | 12.0 | feet |
| Angle of back slope, $\beta$ = | 0.0 | degrees |
| Surcharge, q = | 0.0 | psf |

**Soil parameters**

| Cohesion C (psf) | Friction angle $\phi$ (deg) | Unit weight $\gamma$ (pcf) | Factor of Safety, F.S. | Design Cohesion $C_d$ (psf) | Design Friction angle $\phi_d$ (deg) |
|---|---|---|---|---|---|
| 270.0 | 24.0 | 111.0 | 1.50 | *180.0* | *16.5* |

| Failure plane angle (deg) | Tension crack (ft) | Failure plane length (ft) | Weight of soil wedge (lb/ft) | Active Force (lb/ft) | EFP (pcf) |
|---|---|---|---|---|---|
| 19 | *9.8* | *6.8* | *7730.4* | *-833.9* | *-11.6* |
| 20 | *9.8* | *6.4* | *7313.2* | *-668.8* | *-9.3* |
| 21 | *9.8* | *6.1* | *6934.2* | *-520.7* | *-7.2* |
| 22 | *9.8* | *5.9* | *6588.1* | *-387.4* | *-5.4* |
| 23 | *9.8* | *5.6* | *6270.8* | *-266.9* | *-3.7* |
| 24 | *9.8* | *5.4* | *5978.5* | *-157.6* | *-2.2* |
| 25 | *9.6* | *5.7* | *6170.0* | *-72.1* | *-1.0* |
| 26 | *9.6* | *5.5* | *5899.0* | *26.0* | *0.4* |
| 27 | *9.6* | *5.3* | *5640.4* | *115.6* | *1.6* |
| 28 | *8.9* | *6.7* | *6845.2* | *209.4* | *2.9* |
| 29 | *8.2* | *7.8* | *7631.5* | *314.2* | *4.4* |
| 30 | *7.7* | *8.6* | *8132.1* | *424.2* | *5.9* |
| 31 | *7.3* | *9.2* | *8433.6* | *535.7* | *7.4* |
| 32 | *6.9* | *9.7* | *8593.8* | *646.0* | *9.0* |

**Use EFP = 45 pcf**

*Garage Eastern Retaining Wall (day-lighted bedding condition)*

**Robles Engineering, Inc.**
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**ACTIVE PRESSURE ANALYSIS**

**1888 Lucile Avenue & 3627 Landa Street**

**Los Angeles, California**

| DATE: | Jan, 2013 | RE | 08-304-R | PLATE | AP-1 |
|---|---|---|---|---|---|

## Active Pressure Analysis: Search for Maximum Value (Vector Method)

| | | |
|---|---|---|
| Height of wall, H = | 12.0 | feet |
| Angle of back slope, $\beta$ = | 0.0 | degrees |
| Surcharge, q = | 0.0 | psf |

**Soil parameters**

| Cohesion C (psf) | Friction angle $\phi$ (deg) | Unit weight $\gamma$ (pcf) | Factor of Safety, F.S. | Design Cohesion $C_d$ (psf) | Design Friction angle $\phi_d$ (deg) |
|---|---|---|---|---|---|
| 270.0 | 24.0 | 111.0 | 1.25 | *216.0* | *19.6* |

| Failure plane angle (deg) | Tension crack (ft) | Failure plane length (ft) | Weight of soil wedge (lb/ft) | Active Force (lb/ft) | EFP (pcf) |
|---|---|---|---|---|---|
| 19 | *9.8* | *6.8* | *7730.4* | *-1456.7* | *-20.2* |
| 20 | *9.8* | *6.4* | *7313.2* | *-1258.5* | *-17.5* |
| 21 | *9.8* | *6.1* | *6934.2* | *-1080.7* | *-15.0* |
| 22 | *9.8* | *5.9* | *6588.1* | *-920.5* | *-12.8* |
| 23 | *9.8* | *5.6* | *6270.8* | *-775.7* | *-10.8* |
| 24 | *9.8* | *5.4* | *5978.5* | *-644.4* | *-8.9* |
| 25 | *9.6* | *5.7* | *6170.0* | *-578.0* | *-8.0* |
| 26 | *9.6* | *5.5* | *5899.0* | *-459.8* | *-6.4* |
| 27 | *16.0* | *-8.8* | *-12146.5* | *224.5* | *3.1* |
| 28 | *14.2* | *-4.7* | *-6077.6* | *76.0* | *1.1* |
| 29 | *12.8* | *-1.7* | *-2088.1* | *11.7* | *0.2* |
| 30 | *11.7* | *0.5* | *612.8* | *1.3* | *0.0* |
| 31 | *10.8* | *2.3* | *2478.4* | *25.7* | *0.4* |
| 32 | *10.1* | *3.6* | *3782.6* | *72.7* | *1.0* |

**Use EFP = 25 pcf**

*Garage Excavations/Temporary Shoring (day-lighted bedding condition)*

**Robles Engineering, Inc.**
Geotechnical Consultants

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**ACTIVE PRESSURE ANALYSIS**

**1888 Lucile Avenue & 3627 Landa Street**

**Los Angeles, California**

| DATE: | Jan, 2013 | RE | 08-304-R | PLATE | AP-1a |
|---|---|---|---|---|---|

## Active Pressure Analysis: Search for Maximum Value (Vector Method)

| | | |
|---|---|---|
| Height of wall, H = | 19.0 | feet |
| Angle of back slope, $\beta$ = | 0.0 | degrees |
| Surcharge, q = | 25.0 | psf |

**Soil parameters**

| Cohesion C (psf) | Friction angle $\phi$ (deg) | Unit weight $\gamma$ (pcf) | Factor of Safety, F.S. | Design Cohesion $C_d$ (psf) | Design Friction angle $\phi_d$ (deg) |
|---|---|---|---|---|---|
| 380.0 | 26.0 | 111.0 | 1.50 | *253.3* | *18.0* |

| Failure plane angle (deg) | Tension crack (ft) | Failure plane length (ft) | Weight of soil wedge (lb/ft) | Active Force (lb/ft) | EFP (pcf) |
|---|---|---|---|---|---|
| 45 | *9.8* | *13.0* | *14705.3* | *3983.9* | *22.1* |
| 46 | *9.8* | *12.8* | *14200.7* | *4070.8* | *22.6* |
| 47 | *9.8* | *12.6* | *13712.9* | *4146.6* | *23.0* |
| 48 | *9.8* | *12.4* | *13240.7* | *4211.7* | *23.3* |
| 49 | *9.8* | *12.2* | *12783.1* | *4266.4* | *23.6* |
| 50 | *9.8* | *12.0* | *12339.2* | *4311.0* | *23.9* |
| 51 | *9.6* | *12.1* | *12082.5* | *4384.9* | *24.3* |
| 52 | *9.6* | *11.9* | *11657.3* | *4410.2* | *24.4* |
| 53 | *6.3* | *15.9* | *13443.4* | *4746.3* | *26.3* |
| 54 | *6.3* | *15.7* | *12964.3* | *4753.2* | *26.3* |
| 55 | *6.3* | *15.5* | *12491.7* | *4747.8* | *26.3* |
| 56 | *6.3* | *15.3* | *12025.4* | *4730.3* | *26.2* |
| 57 | *6.3* | *15.1* | *11565.2* | *4700.5* | *26.0* |
| 58 | *6.4* | *14.9* | *11110.8* | *4658.4* | *25.8* |
| 59 | *6.4* | *14.7* | *10661.9* | *4603.8* | *25.5* |
| 60 | *6.5* | *14.4* | *10218.3* | *4536.7* | *25.1* |
| 61 | *6.6* | *14.2* | *9779.6* | *4456.8* | *24.7* |
| 62 | *6.7* | *14.0* | *9345.4* | *4364.0* | *24.2* |
| 63 | *6.8* | *13.7* | *8915.4* | *4258.1* | *23.6* |
| 64 | *6.9* | *13.5* | *8489.1* | *4138.8* | *22.9* |
| 65 | *7.0* | *13.2* | *8066.0* | *4005.9* | *22.2* |
| 66 | *7.2* | *12.9* | *7645.8* | *3859.0* | *21.4* |
| 67 | *7.4* | *12.6* | *7227.9* | *3698.1* | *20.5* |
| 68 | *7.6* | *12.3* | *6811.7* | *3522.7* | *19.5* |
| 69 | *7.8* | *12.0* | *6396.6* | *3332.8* | *18.5* |
| 70 | *8.1* | *11.6* | *5981.9* | *3128.2* | *17.3* |

**Use EFP = 45 pcf**

*Garage Southern & Western Retaining Walls*

**Robles Engineering, Inc.**
Geotechnical Consultants

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PHONE 818-314-8166 gus@roblesengineering.com

**ACTIVE PRESSURE ANALYSIS**

**1888 Lucile Avenue & 3627 Landa Street**

**Los Angeles, California**

| DATE: | Jan, 2013 | RE | 08-304-R | PLATE | AP-2 |
|---|---|---|---|---|---|

## Active Pressure Analysis: Search for Maximum Value (Vector Method)

| | | |
|---|---|---|
| Height of wall, H = | 19.0 | feet |
| Angle of back slope, $\beta$ = | 0.0 | degrees |
| Surcharge, q = | 25.0 | psf |

**Soil parameters**

| Cohesion C (psf) | Friction angle $\phi$ (deg) | Unit weight $\gamma$ (pcf) | Factor of Safety, F.S. | Design Cohesion $C_d$ (psf) | Design Friction angle $\phi_d$ (deg) |
|---|---|---|---|---|---|
| 380.0 | 26.0 | 111.0 | 1.25 | *304.0* | *21.3* |

| Failure plane angle (deg) | Tension crack (ft) | Failure plane length (ft) | Weight of soil wedge (lb/ft) | Active Force (lb/ft) | EFP (pcf) |
|---|---|---|---|---|---|
| 45 | *9.8* | *13.0* | *14705.3* | *2437.9* | *13.5* |
| 46 | *9.8* | *12.8* | *14200.7* | *2552.2* | *14.1* |
| 47 | *9.8* | *12.6* | *13712.9* | *2654.0* | *14.7* |
| 48 | *9.8* | *12.4* | *13240.7* | *2743.6* | *15.2* |
| 49 | *9.8* | *12.2* | *12783.1* | *2821.5* | *15.6* |
| 50 | *9.8* | *12.0* | *12339.2* | *2887.9* | *16.0* |
| 51 | *9.6* | *12.1* | *12082.5* | *2958.8* | *16.4* |
| 52 | *9.6* | *11.9* | *11657.3* | *3004.0* | *16.6* |
| 53 | *8.1* | *13.7* | *12373.2* | *3098.6* | *17.2* |
| 54 | *8.0* | *13.5* | *11951.4* | *3124.9* | *17.3* |
| 55 | *8.0* | *13.4* | *11529.3* | *3139.4* | *17.4* |
| 56 | *8.0* | *13.2* | *11107.6* | *3141.9* | *17.4* |
| 57 | *8.0* | *13.1* | *10686.7* | *3132.5* | *17.4* |
| 58 | *8.1* | *12.9* | *10267.1* | *3111.2* | *17.2* |
| 59 | *8.1* | *12.7* | *9848.7* | *3077.9* | *17.1* |
| 60 | *8.2* | *12.5* | *9431.8* | *3032.7* | *16.8* |
| 61 | *8.2* | *12.3* | *9016.3* | *2975.5* | *16.5* |
| 62 | *8.3* | *12.1* | *8602.2* | *2906.2* | *16.1* |
| 63 | *8.5* | *11.8* | *8189.1* | *2824.8* | *15.6* |
| 64 | *8.6* | *11.6* | *7777.0* | *2731.3* | *15.1* |
| 65 | *8.7* | *11.3* | *7365.5* | *2625.6* | *14.5* |
| 66 | *8.9* | *11.0* | *6954.1* | *2507.8* | *13.9* |
| 67 | *9.1* | *10.7* | *6542.5* | *2378.0* | *13.2* |
| 68 | *9.4* | *10.4* | *6130.0* | *2236.3* | *12.4* |
| 69 | *9.6* | *10.0* | *5716.0* | *2082.9* | *11.5* |
| 70 | *9.9* | *9.7* | *5299.7* | *1918.2* | *10.6* |

**Use EFP = 25 pcf**

*Garage Excavations/Temporary Shoring*


**Robles Engineering, Inc.**
Geotechnical Consultants

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**ACTIVE PRESSURE ANALYSIS**

**1888 Lucile Avenue & 3627 Landa Street**

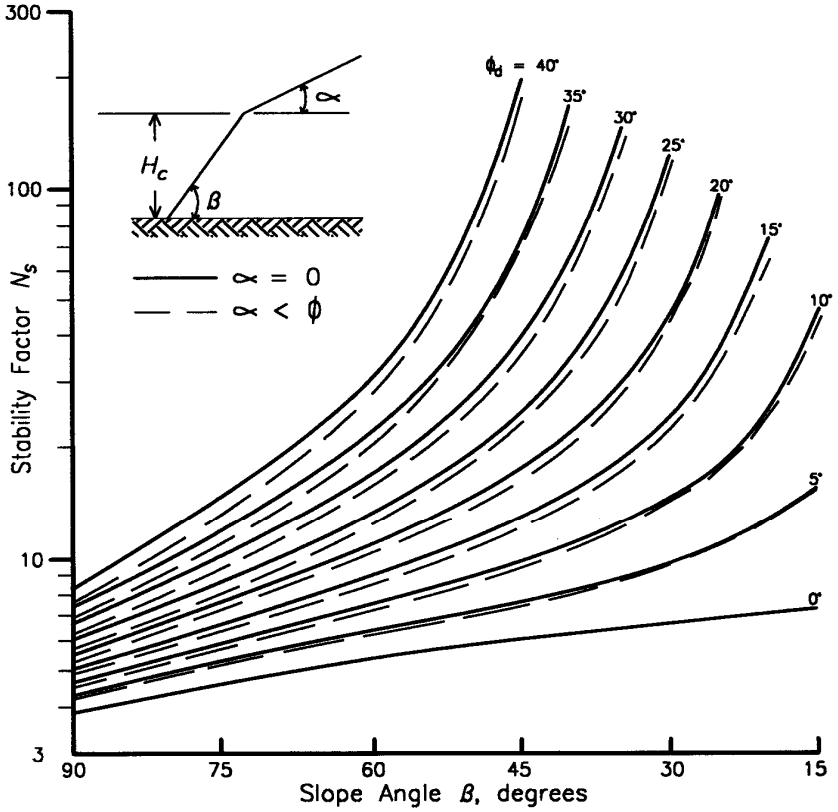
**Los Angeles, California**

| DATE: | Jan, 2013 | RE | 08-304-R | PLATE | AP-2a |
|---|---|---|---|---|---|

# STABILITY OF TEMPORARY EXCAVATIONS

| | | |
|---|---|---|
| Cohesion of soil, C = | 380.0 | psf |
| Friction angle of soil, $\phi$ = | 26.0 | degree |
| Unit weight of soil, $\gamma$ = | 111.0 | pcf |
| Back slope angle, $\alpha$ = | 45.0 | degree |
| Slope angle, $\beta$ = | 90.0 | degree |
| Factor of Safety, F.S. = | 1.25 | |
| | | |
| Design cohesion, $C_d$ = | *304.0* | psf |
| Design fricition angle, $\phi_d$ = | *21.3* | degree |
| Stability factor, $N_s$ = | 5.5 | (from Chart) |
| Critical Height, $H_c = \frac{N_s C_d}{\gamma}$ = | *15.1* | feet |

**The recommended height of vertical temporary excavations in Bedrock is 10-feet**
**The portion of excavation over 10-feet should be trimmed to a 1:1 gradient.**




Reference: Fang, H.-Y. (1991) Foundation Engineering Handbook, 2nd Ed., Van Nostrand Reinhold, New York, 397-398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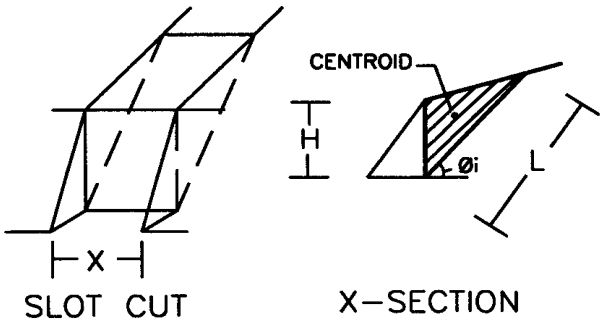
## TEMPORARY STABILITY ANALYSIS

**1888 Lucile Avenue & 3627 Landa Street**

**Los Angeles, California**

| DATE: Jan, 2013 | RE 08-304-R | PLATE TS-1 |
|---|---|---|

# SLOT CUT ANALYSIS




| | | | |
|---|---|---|---|
| Height of Slot cut, H = | 19 | ft | |
| Width of Slot cut, X = | 8 | ft | |
| Surcharge, q = | 1 | kips/ ft | *2 story residence |
| Friction angle of soil, $\phi$ = | 24 | degree | |
| Cohesion of soil, C = | 270 | psf | |
| Unit weight of soil, $\gamma$ = | 111 | pcf | |
| Angle of Influence, $\phi_i$ = | *57.0* | degree | |
| Length of Failure surface, L = | *22.7* | ft | |
| Depth of Centroid from surface, d = | *6.3* | ft | |

**1) FORCES ALONG BEDDING FOR UNIT WIDTH (Base of Wedge)**

| | | |
|---|---|---|
| Area of Failure, A = | *117.2* | $ft^2$ |
| Weight, W = | *13.0* | kips/ ft |
| W+q = | *14.0* | kips/ ft |
| Tangent Force, $F_T$ = | *11.8* | kips/ ft |
| Normal Force, $F_N$ = | *7.6* | kips/ ft |
| $R = F_N \tan \phi + L \times C$ = | *9.5* | kips/ ft |

**2) RESISTING FORCES ALONG SIDES OF WEDGE**

| | | |
|---|---|---|
| Area in X-section, $A_s$ = | *117.2* | $ft^2$ |
| Average Intergranular stress, $\tau$ = | *455.7* | psf |
| $R_s = 2 \tau A_s$ = | *106.8* | kips |

**3) FACTOR OF SAFETY**

F. S. = ( R X + $R_s$) / ($F_T$ X) = ***1.9*** > 1.25 O.K.

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Geotechnical Consultants

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## ANALYSIS OF SLOT CUT

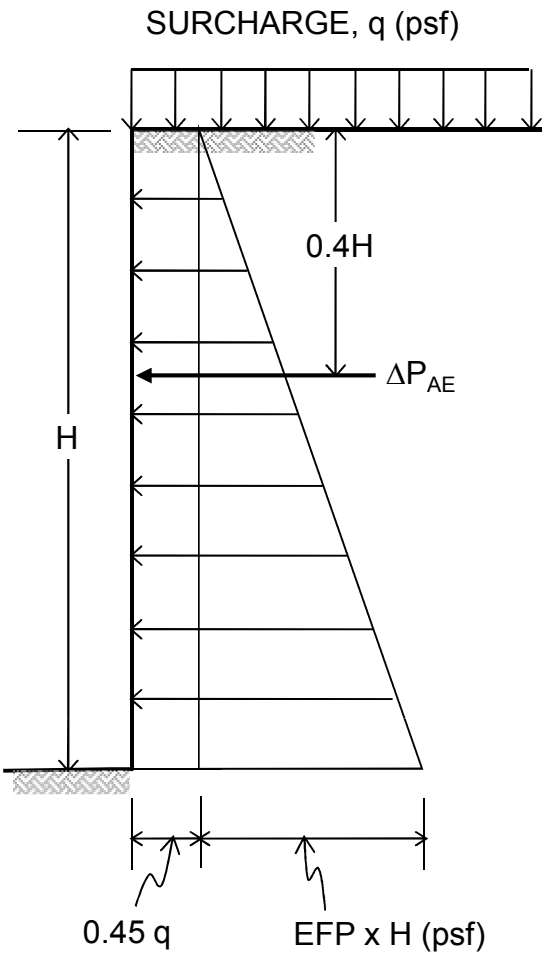
**1888 Lucile Avenue & 3627 Landa Street**

**Los Angeles, California**

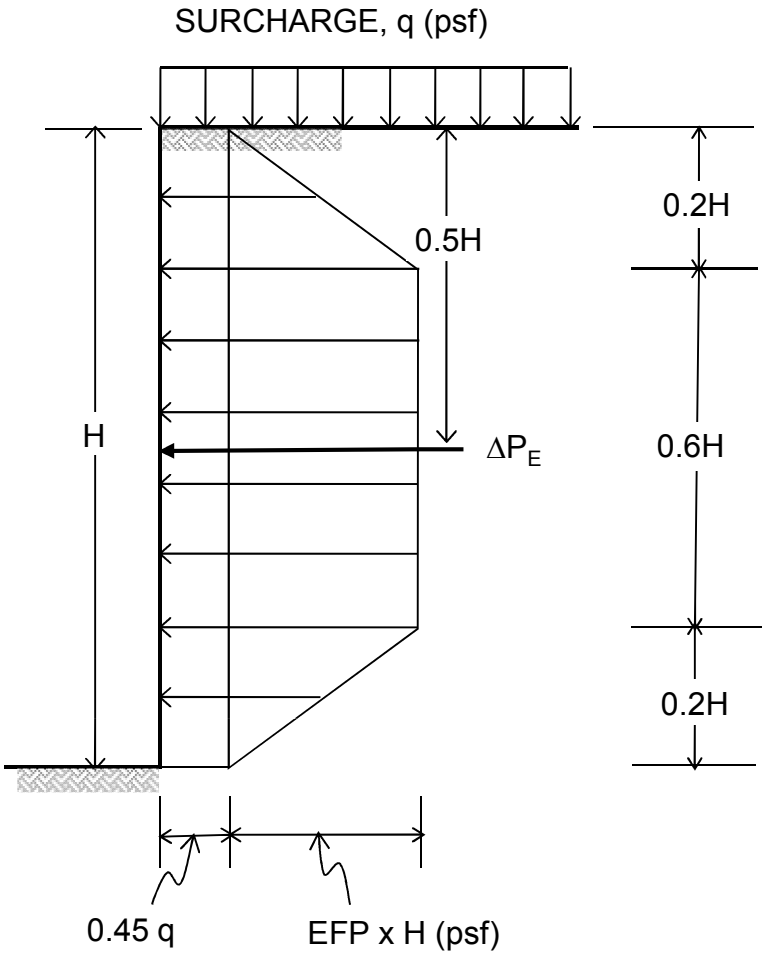
| DATE: Jan, 2013 | RE 08-304-R | PLATE SC-1 |
|---|---|---|

# EARTH PRESSURE DISTRIBUTION OF RETAINING WALL

## Free Standing (Yielding) Wall




## Restrained (Non-Yielding) Wall




**Seismic Earth Pressure Calculations**

| | | |
|---|---|---|
| $\gamma$ = | 111.0 | pcf |
| $S_{DS}$ = | 1.39 | g |
| PGA = $S_{DS}$/2.5 = | *0.56* | g |
| $k_h$ = PGA/2 = | *0.28* | ($k_h$ >= 0.15) |
| $\Delta P_{AE} = 3/8\ k_h\ \gamma\ H^2$ = | *11.6* | $H^2$ (lb) |
| $\Delta P_E = k_h\ \gamma\ H^2$ = | *30.8* | $H^2$ (lb) |

Reference: 1. FEMA 369 commentary Part 2 (2000)
2. NEHRP Workshop (2006)


**Robles Engineering, Inc.**
Geotechnical Consultants

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**EARTH PRESSURE DISTRIBUTION**
**STATIC & SEISMIC LOADS**

**1888 Lucile Avenue & 3627 Landa Street**

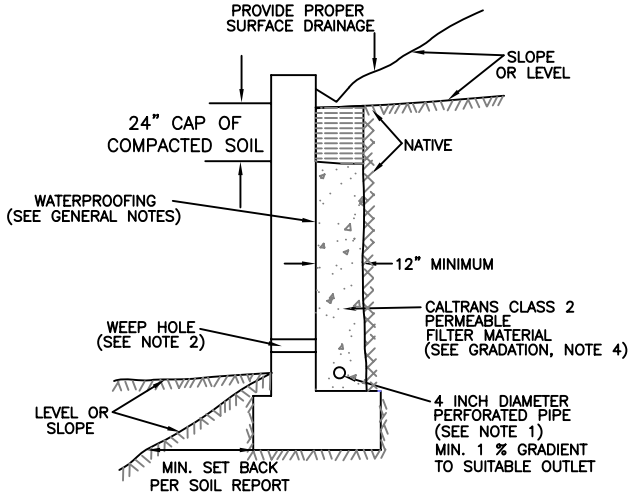
**Los Angeles, California**

| DATE: Jan, 2013 | RE 08-304-R | PLATE PD-1 |
|---|---|---|

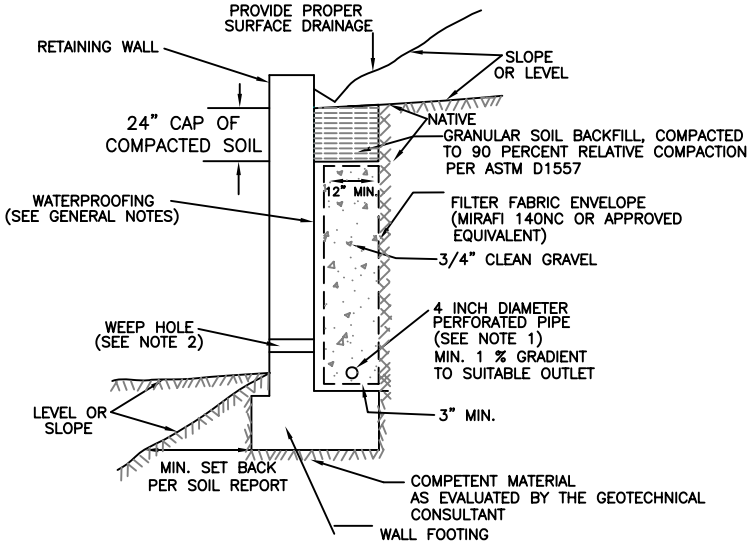
# CONFINED BACKFILL AND SUBDRAIN OPTIONS FOR RETAINING WALLS

(Space between back of wall and face of excavation is less than 24–inches)

OPTION 1: PIPE SURROUNDED WITH CLASS 2 PERMEABLE MATERIAL




OPTION 2: GRAVEL WRAPPED IN FILTER FABRIC




## GENERAL NOTES:

*Retaining wall plans should be reviewed and approved by the geotechnical engineer.

*Walls over 12 feet in height are subject to a special review by the geotechnical engineer and modifications to the above requirements may be necessary (see text of report).

*Waterproofing should be provided where moisture intrusion through the wall is undesirable.

*Waterproofing of the walls is not under purview of the geotechnical engineer or geologist.

*All drains should have a gradient of 1 percent minimum.

*Outlet portion of the subdrain should have a 4–inch diameter solid pipe discharged into a suitable disposal area designed by the project engineer. The subdrain pipe should be accessible for maintenance (rodding) and must remain clear at all times.

*Other subdrain backfill options are subject to the review by the geotechnical engineer and modification of design parameters.

## NOTES:

1) Pipe type should be ASTM D1527 Acrylonitrile Butadiene Styrene (ABS) SDR35 or ASTM D1785. Polyvinyl chloride plastic (PVC), Schedule 40, Armco A2000 PVC, or approved equivalent. Pipe should be installed with perforations down. Perforations should be 3/8 inch in diameter placed at the ends of a 120–degree arc in two rows at 3–inch on center (staggled).

2) Weepholes should be 3–inch minimum diameter and provided at 10–foot maximum intervals. If exposure is permitted, weepholes should be located 12–inches above finished grade. If exposure is not permitted, such as for a wall adjacent to a sidewalk/curb, a pipe under the sidewalk discharging through the curb face or equivalent should be provided. For a basement–type wall, a proper subdrain outlet system should be provided.

3) All Caltrans Class 2 Permeable Material and gravel backfill should be densified by vibratory compaction.

4) Gradation:

Caltrans Class 2 Filter Permeable Material Gradation
Per Caltrans Specifications

| Sieve Size | Percent Passing |
|---|---|
| 1" | 100 |
| 3/4" | 90–100 |
| 3/8" | 40–100 |
| No. 4 | 25–40 |
| No. 8 | 18–33 |
| No. 30 | 5–15 |
| No. 50 | 0–7 |
| No. 200 | 0–3 |


Robles Engineering, Inc.
Geotechnical Consultants

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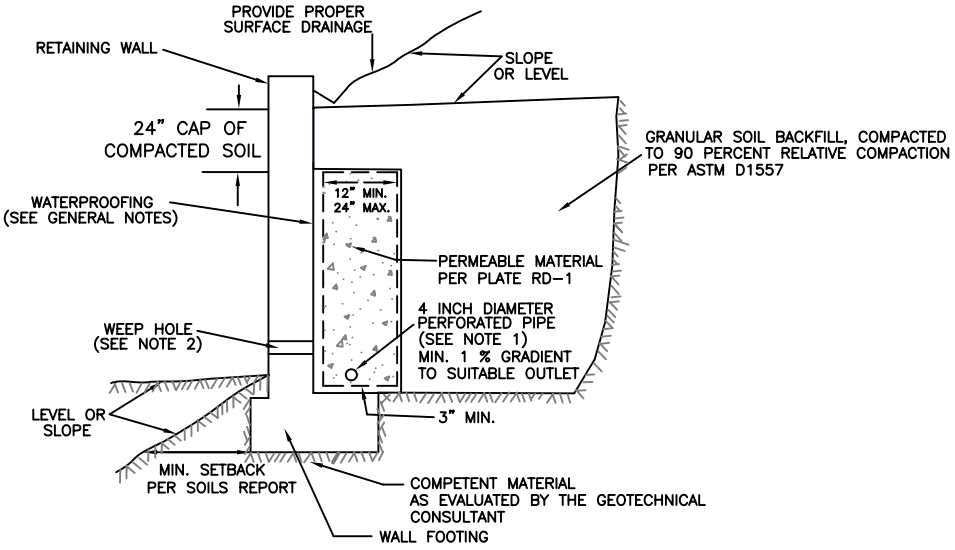
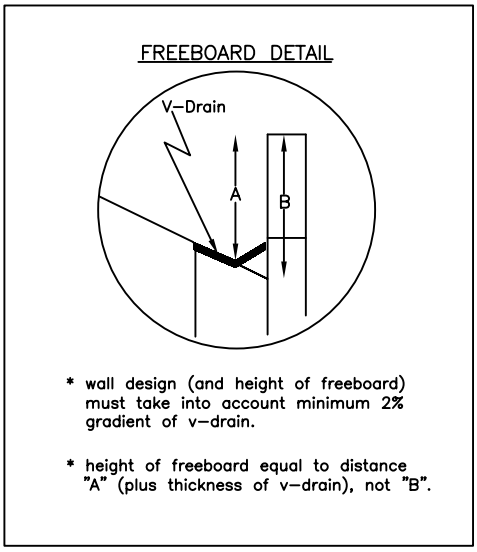
# RETAINING WALL BACKFILL AND SUBDRAIN

PLATE RD-1

# UNCONFINED BACKFILL AND SUBDRAIN OPTIONS FOR RETAINING WALLS

(Space between back of wall and face of excavation is greater than 24–inches)




## GENERAL NOTES:

*Retaining wall plans should be reviewed and approved by the geotechnical engineer.

*Walls over 12 feet in height are subject to a special review by the geotechnical engineer and modifications to the above requirements may be necessary (see text of report).

*Waterproofing should be provided where moisture intrusion through the wall is undesirable.

*Waterproofing of the walls is not under purview of the geotechnical engineer or geologist.

*All drains should have a gradient of 1 percent minimum.

*Outlet portion of the subdrain should have a 4–inch diameter solid pipe discharged into a suitable disposal area designed by the project engineer. The subdrain pipe should be accessible for maintenance (rodding) and must remain clear at all times.

*Other subdrain backfill options are subject to the review by the geotechnical engineer and modification of design parameters.

## NOTES:

1) Pipe type should be ASTM D1527 Acrylonitrile Butadiene Styrene (ABS) SDR35 or ASTM D1785. Polyvinyl chloride plastic (PVC), Schedule 40, Armco A2000 PVC, or approved equivalent. Pipe should be installed with perforations down. Perforations should be 3/8–inch in diameter placed at the ends of a 120–degree arc in two rows at 3–inch on center (staggered).

2) Weepholes should be 3–inch minimum diameter and provided at 10–foot maximum intervals. If exposure is permitted, weepholes should be located 12–inches above finished grade. If exposure is not permitted, such as for a wall adjacent to a sidewalk/curb, a pipe under the sidewalk discharging through the curb face or equivalent should be provided. For a basement–type wall, a proper subdrain outlet system should be provided.

3) All Caltrans Class 2 Permeable Material and gravel backfill should be densified by vibratory compaction.

Robles Engineering, Inc.
Geotechnical Consultants

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# RETAINING WALL BACKFILL AND SUBDRAIN

PLATE RD-2

# APPENDIX B

(Laboratory Test Results)

TECHNOSOIL, INC.
GEOTECHNICAL ENGINEERING / ENGINEERING GEOLOGY
341 West Arden Ave., Glendale, CA 91203 (818) 500-4995 Fax: (818) 500-4986

March 31, 2008

Project: G–2382–T

Gustavo Robles Engineering
981 West Arrow Highway #191
San Dimas, CA 91773

Re: Laboratory Testing
1888 Lucile Avenue
Los Angeles, California

Ladies/Gentlemen:

This is to report the results of laboratory tests performed on soil samples delivered to our laboratory on March 25, 2008. Laboratory testing included the determination of the natural moisture content, in–place dry density and shear strength on selected samples.

Samples were visually classified and dry unit weight and moisture contents were determined (see Plate A).

Direct shear tests were conducted on the specified undisturbed samples at saturated–drained condition using controlled rate of strain where each sample was sheared under a load equivalent to the expected overburden pressure. By varying the load on each sample, several data points were obtained from which cohesion and angle of

internal friction were computed. Residual shear strength parameters were determined by re–shearing each sample a number of times until no appreciable change in the shear strength of the material was observed. Results of the direct shear tests are presented on Plates B and C.

All laboratory testing were performed in accordance with the ASTM standard method.

Thank you for the opportunity to be of service.

Respectfully submitted,

TECHNOSOIL, INC.

REGISTERED PROFESSIONAL ENGINEER
ANDRE M. MINASSIAN
No. 33813
CIVIL
EXP. 6-30-08
STATE OF CALIFORNIA

Andre M. Minassian, RCE #33813

AMM:si

# Laboratory Test Results

## Undisturbed Samples

| Sample No. | Location | Depth (ft) | Moisture Content (%) | Dry Unit Weight (pcf) | Description |
|---|---|---|---|---|---|
| 1 | Test Pit 1 | 3 | 23.3 | 76 | Brown SILTY SANDY CLAY |
| 2 | Test Pit 2 | 3 | 24.4 | 79 | Olive-Brown FINE SANDY CLAYEY SILTSTONE |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

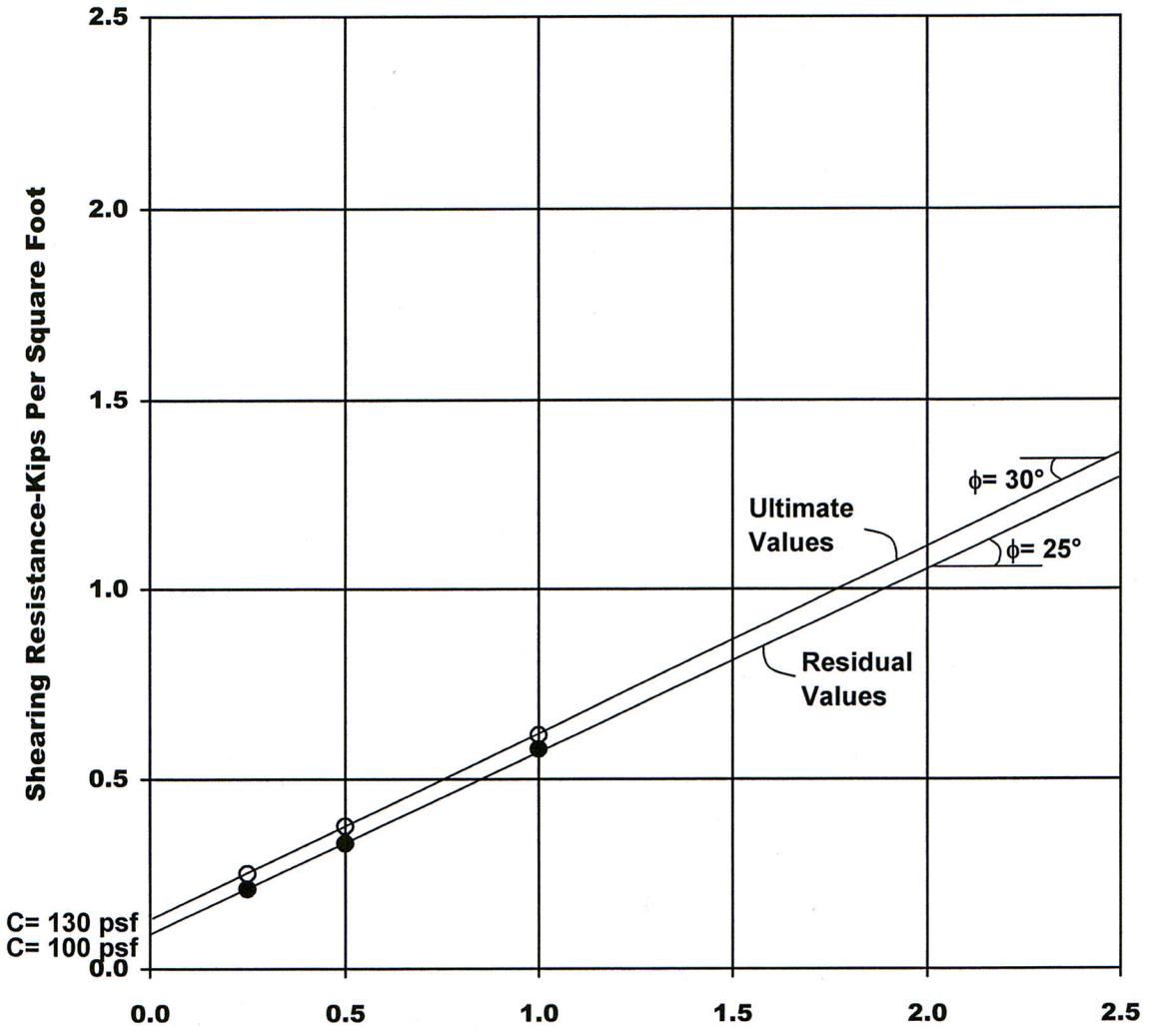
Laboratory Testing
1888 Lucile Avenue
Los Angeles, California

| | |
|---|---|
| **PROJECT NO. :** | G-2382-T |
| **PLATE:** | A |

TECHNOSOIL,INC.

# Direct Shear Tests

## Test Pit 1 @ 3 Feet




| Sample | Normal Load (ksf) | Dry Density (pcf) | Field Moisture Content (%) | Saturated Moisture Content (%) |
|---|---|---|---|---|
| Test Pit 1 @ 3' | 0.25 | 76 | 23..3 | 42.3 |
| Test Pit 1 @ 3' | 0.50 | 76 | 23.3 | 42.6 |
| Test Pit 1 @ 3' | 1.00 | 76 | 23.3 | 43.1 |

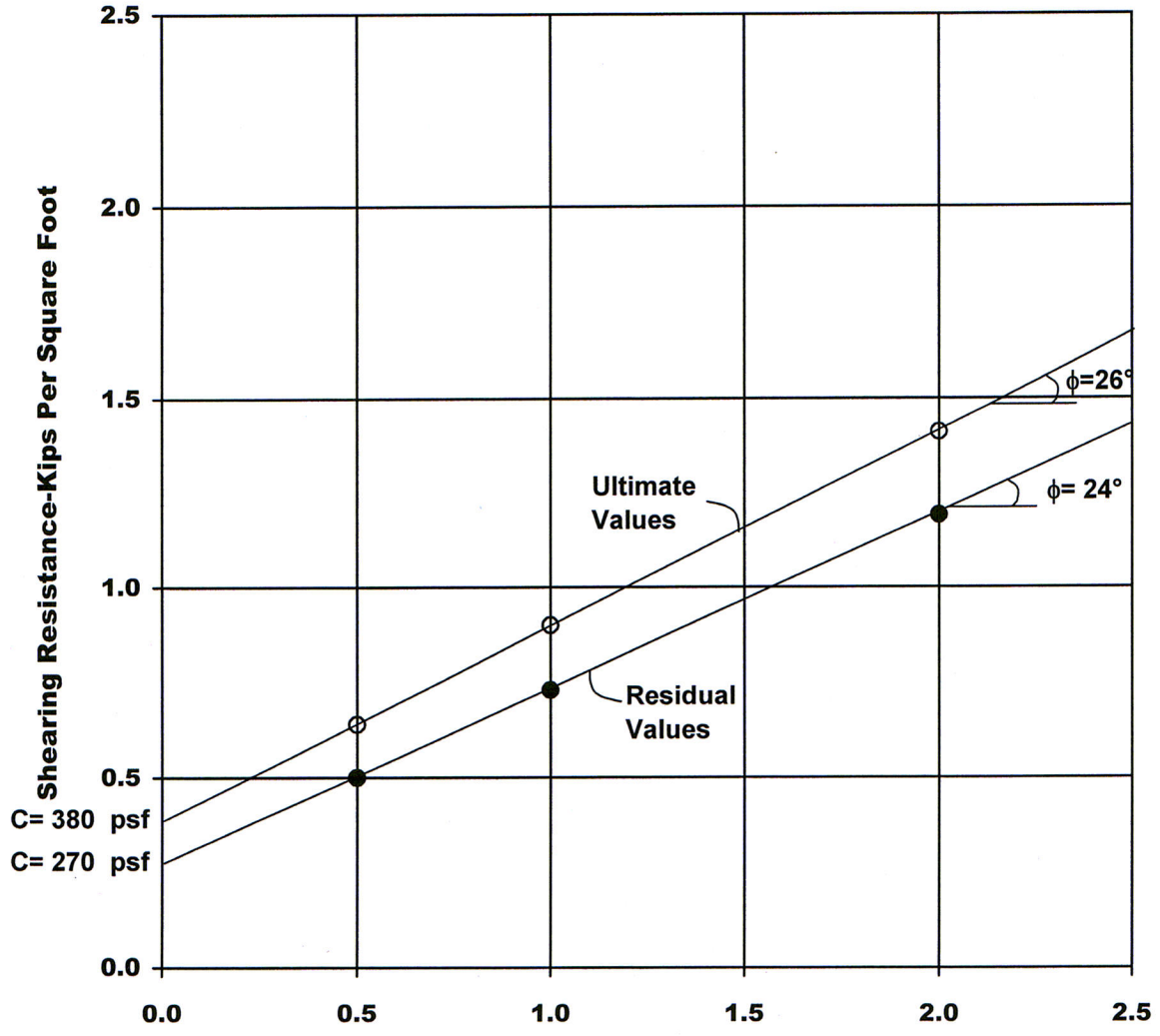
Note: Test performed under saturated-drained condition

| | | |
|---|---|---|
| Laboratory Testing<br>1888 Lucile Avenue<br>Los Angeles, California | PROJECT NO.: | G-2382-T |
| | PLATE: | B |

TECHNOSOIL, INC.

## Direct Shear Tests

### Test Pit 2 @ 3 Feet




| Sample | Normal Load (ksf) | Dry Density (pcf) | Field Moisture Content (%) | Saturated Moisture Content (%) |
|---|---|---|---|---|
| Test Pit 2 @ 3' | 0.50 | 79 | 24.4 | 39.4 |
| Test Pit 2 @ 3' | 1.00 | 79 | 24.4 | 39.8 |
| Test Pit 2 @ 3' | 2.00 | 79 | 24.4 | 40.1 |

Note: Test performed under saturated-drained condition

| | | |
|---|---|---|
| Laboratory Testing<br>1888 Lucile Avenue<br>Los Angeles, California | PROJECT NO.: | G-2382-T |
| | PLATE: | C |

TECHNOSOIL, INC.