GARDEN GROVE

AGENDA

GARDEN GROVE PLANNING COMMISSION

November 17, 2022 - 7:00 PM

COMMUNITY MEETING CENTER
11300 STANFORD AVENUE

COVID-19 Information: Masks are not required, however, the public is encouraged to wear face masks in City facilities. Please do not attend this meeting if you have had direct contact with someone who has tested positive for COVID-19, or if you are experiencing symptoms such as coughing, sneezing, fever, difficulty breathing or have other flu-like symptoms.

Meeting Assistance: Any person requiring auxiliary aids and services, due to a disability, to address the Planning Commission, should contact the Department of Community & Economic Development at (714) 741-5312 or email planning@ggcity.org 72 hours prior to the meeting to arrange for special accommodations. (Government Code §5494.3.2).

Agenda Item Descriptions: Are intended to give a brief, general description of the item. The Planning Commission may take legislative action deemed appropriate with respect to the item and is not limited to the recommended action indicated in staff reports or the agenda.

Documents/Writings: Any revised or additional documents/writings related to an item on the agenda distributed to all or a majority of the Planning Commission within 72 hours of a meeting, are made available for public inspection at the same time (1) in the Planning Services Division Office at 11222 Acacia Parkway, Garden Grove, CA 92840, during normal business hours; and (1) at the Community Meeting Center at the time of the meeting.

Public Comments: Members of the public who attend the meeting in-person and would like to address the Planning Commission are requested to complete a yellow speaker card indicating their name and address, and identifying the subject matter they wish to address. This card should be given to the Recording Secretary before the meeting begins. General comments are made during "Oral Communications" and are limited to three (3) minutes and to matters the Planning Commission has jurisdiction over. Persons wishing to address the Planning Commission regarding a Public Hearing matter will be called to the podium at the time the matter is being considered. Members of the public who wish to comment on matters before the Commission, in lieu of doing so in person, may submit comments by emailing public-comment@ggcity.org no later than 3:00 p.m. the day of the meeting. The comments will be provided to the Commission as part of the meeting record.

PLEASE SILENCE YOUR CELL PHONES DURING THE MEETING.

REGULAR MEETING AGENDA

ROLL CALL: CHAIR RAMIREZ, VICE CHAIR LINDSAY
COMMISSIONERS ARESTEGUI, CUNNINGHAM, LEHMAN, PEREZ

PLEDGE OF ALLEGIANCE TO THE FLAG OF THE UNITED STATES OF AMERICA

A. ORAL COMMUNICATIONS - PUBLIC

B. APPROVAL OF MINUTES – September 1, 2022

C. PUBLIC HEARING(S) (Authorization for the Chair to execute Resolution shall be included in the motion.)

C.1. SITE PLAN NO. SP-117-2022

APPLICANT: ZBT GROUP
LOCATION: SOUTH SIDE OF STANFORD AVENUE, WEST OF LORNA STREET, AT 12771 LORNA STREET

REQUEST: Site Plan approval to construct six (6) three-story, multi-family residential units with two-car garages on a 16,329 square foot lot currently improved with a two-story, single-family dwelling, a detached second unit, and a detached garage. Also, minor land deviation to exceed the required number of bathrooms and allow an additional half-bath on units 1, 3, 4, and 6. The site is in the R-3 (Multiple-Family Residential) zone. The project is exempt from the CEQA pursuant to Government Code Section 15332 – In-Fill Development Projects – of the State CEQA Guidelines.

STAFF RECOMMENDATION: Approval of Site Plan No. SP-117-2022, subject to the recommended conditions of approval.

C.2. SITE PLAN NO. SP-119-2022
TENTATIVE TRACT MAP NO. TT-19129

APPLICANT: NRI PORTFOLIOS, LLC
LOCATION: SOUTH SIDE OF GARDEN GROVE BOULEVARD, BETWEEN NEWLAND STREET AND YOCKEY STREET, AT 8722 GARDEN GROVE BOULEVARD

REQUEST: A request for Site Plan approval to construct a three-story, townhome residential project consisting of twenty (20) units, which includes one (1) affordable housing unit for "very low-income" households on a 36,945 square-foot (0.85 acres) site currently improved with a vacant auto dealership. Pursuant to the State Density Bonus law, the applicant is requesting one (1) concession and one (1) waiver from the GGMU-2 (Garden Grove Mixed Use 2) zone development standards: (1) a concession to allow the building to be constructed within the 45-degree encroachment plane required for mixed use zoned properties abutting residentially zoned lots along the side yard setback; and

(2) a waiver to deviate from the requirement of a boulevard garden plaza for properties in the GGMU zones for properties abutting the Garden Grove Boulevard right-of-way. In accordance with the State Subdivision Map Act, the applicant is also requesting approval of a Tentative Tract Map to subdivide the existing property into two (2) lots for the purpose of selling each townhome unit as a condominium. The site is in the GGMU-2 (Garden Grove Boulevard Mixed Use 2) zone. The project is exempt from the CEQA pursuant to Government Code Section 15332 – In-Fill Development Projects – of the State CEQA Guidelines.

STAFF RECOMMENDATION: Approval of Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129, subject to the recommended conditions of approval.

D. MATTERS FROM COMMISSIONERS

E. MATTERS FROM STAFF

F. ADJOURNMENT

GARDEN GROVE PLANNING COMMISSION
Community Meeting Center
11300 Stanford Avenue, Garden Grove, CA 92840

Meeting Minutes
Thursday, September 1, 2022

CALL TO ORDER: 7:00 p.m.

ROLL CALL:

Chair Ramirez
Vice Chair Lindsay
Commissioner Arestegui
Commissioner Cunningham
Commissioner Lehman
Commissioner Perez
Commissioner Soeffner

Absent: Lehman, Perez, Ramirez

PLEDGE OF ALLEGIANCE: Led by Commissioner Soeffner.

ORAL COMMUNICATIONS – PUBLIC – This comment applies to this meeting's proposed amendments to be considered for the Landscape Section of the Garden Grove Municipal Code under Amendment No. A-035-2022. Mr. Robert Young submitted three letters and on the subject, and spoke in regard to achieving consistency for measuring setbacks for odd-shaped lots that have unknown side and/or front property lines. For odd-shaped lots, he suggested measuring the front or side setback from the back of the sidewalk, or street dedication line, into the lot, rather than measure from the property line into the lot. He also suggested the public parkway areas, between the curb and sidewalk, be fully landscaped.

August 4, 2022 MINUTES:

Action: Received and filed.

Motion: Cunningham Second: Lindsay

Ayes:	(4)	Arestegui, Cunningham, Lindsay, Soeffner
Noes:	(0)	None
Absent:	(3)	Lehman, Perez, Ramirez

PUBLIC HEARING – SITE PLAN NO. SP-084-2020TE1 AND TENTATIVE PARCEL MAP NO. PM-2020-112TE1 FOR PROPERTY LOCATED BETWEEN MACMURRAY AND MAGNOLIA STREETS, NORTH OF CHAPMAN AVENUE AT 11841 MAGNOLIA STREET.

Applicant: ANH MINH THAI
Date: September 1, 2022

Request: Approval of a one-year time extension for the entitlements approved under Site Plan No. SP-084-2020 and Tentative Parcel Map No. PM-2020-112 for the construction of two (2) new single-family residences and the subdivision of the existing property into two (2) equal parcels of 7,776 square feet each. The site is in the R-1 (Single-Family Residential) zone. The City of Garden Grove recognizes that this project was previously categorically exempt from the California Environmental Quality Act (CEQA).

Action: Resolution No. 6050-22 was approved.

Motion: Arestegui Second: Lindsay

Ayes:	(4)	Arestegui, Cunningham, Lindsay, Soeffner
Noes:	(0)	None
Absent:	(3)	Lehman, Perez, Ramirez

PUBLIC HEARING – AMENDMENT NO. A-035-2022, CITY OF GARDEN GROVE, CITYWIDE.

Applicant: CITY OF GARDEN GROVE
Date: September 1, 2022

Request: A request by the City of Garden Grove to amend Title 9 (Land Use) of the Garden Grove Municipal Code to make focused zoning amendments to implement various policies and programs set forth in the General Plan Housing Element and Land Use Element and to ensure compliance with applicable State housing laws. Focused zoning text amendments to Chapters 9.04 (General Provisions), 9.08 (Single-Family Residential Development Standards), 9.12 (Multifamily Residential Development Standards), 9.16 (Commercial, Office Professional, Industrial, and Open Space Development Standards), 9.18 (Mixed Use Regulations and Development Standards), and 9.32 (Procedures and Hearings) of Title 9 of the Municipal Code are proposed to update the definitions, development standards, and land use action procedures pertaining to single-family residential, multiple-family residential, mixed use, landscaping standards, supportive housing, and single room occupancy housing. The addition of a new Chapter in Title 9 of the Municipal Code containing and consolidating special regulations pertaining specifically to housing development projects is also proposed. The proposed focused zoning amendments are intended to implement recent updates to the City's General Plan Housing Element and Land Use Element and to ensure the City of Garden Grove's Land Use Code is consistent with all applicable State housing laws, including, but not limited to, the

Housing Accountability Act, the Housing Crisis Act, the State Density Bonus Law, and the Housing Element Law.

In conjunction with this request, the City of Garden Grove will consider a determination that no further review under the California Environmental Quality Act ("CEQA") is required pursuant to Public Resources Code Section 21166 and CEQA Guidelines Section 15162 because the proposed focused zoning amendments implement the General Plan update analyzed in the City of Garden Grove Focused General Plan Update and Zoning Amendments Environmental Impact Report, State Clearinghouse No. 2021060714 ("Garden Grove General Plan Update and Focused Zoning Amendments"), potential impacts of the focused zoning amendments fall within the scope of the General Plan Update EIR, and the focused zoning amendments will not result in any new significant impacts or a substantial increase in the severity of previously identified significant impacts. The Planning Commission will make a recommendation to the Garden Grove City Council.

Action: Resolution No. 6051-22 was approved. Staff provided an Exhibit C (Multifamily Residential) 'yellow' document, which included additional red-lined revisions inadvertently left out of the original agenda packet. See 'Oral Communications' for public comment on this item.

Motion: Lindsay Second: Arestegui

Ayes:	(4)	Arestegui, Cunningham, Lindsay, Soeffner
Noes:	(0)	None
Absent:	(3)	Lehman, Perez, Ramirez

MATTERS FROM COMMISSIONERS: None.

MATTERS FROM STAFF: Staff stated the September 15th and October 6th meetings would be cancelled.

ADJOURNMENT: At 7:30 p.m. to the next Meeting of the Garden Grove Planning Commission on Thursday, October 20, 2022, at 7:00 p.m. in the Community Meeting Center, 11300 Stanford Avenue, Garden Grove.

Judith Moore
Recording Secretary

COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT PLANNING STAFF REPORT

AGENDA ITEM NO.: C.1.	**SITE LOCATION:** South side of Stanford Avenue, west of Lorna Street, at 12771 Lorna Street
HEARING DATE: November 17, 2022	**GENERAL PLAN:** Medium Density Residential (MDR)
CASE NOS.: Site Plan No. SP-117-2022	**ZONE:** R-3 (Multiple-Family Residential)
APPLICANT: Binh Tran, ZBT Group	**APN:** 133-463-14
PROPERTY OWNER: Dan Vy Ngoc Nguyen	**CEQA DETERMINATION:** Exempt-Section 15332 "In-Fill Development Projects"

REQUEST:

The applicant is requesting Site Plan approval to construct six (6) three-story, multi-family residential units with two-car garages on a 16,329 square-foot (0.37 acres) lot currently improved with a two-story, single-family dwelling, a detached second unit, and a detached garage. The applicant also requested approval of a minor land deviation to exceed the required number of bathrooms and allow an additional half-bath on Units 1, 3, 4, and 6.

BACKGROUND:

The project site is approximately 16,329 square feet (0.37 acres) and is located on the south side of Stanford Avenue, west of Lorna Street, and is currently improved with a two-story, 2,188 square-foot single-family dwelling, a detached second unit, and a detached 600 square-foot garage. The existing improvements were constructed in 1935, prior to Garden Grove's incorporation. The subject site has a General Plan Land Use designation of Medium Density Residential (MDR), and is zoned R-3 (Multiple-Family Residential). The property abuts R-3 zoned properties to the north, south, and west, and to the east across Lorna Street, that are improved with single-family and multiple-family developments.

The property owner purchased the property in November 2019 and currently occupies the unit. The applicant is requesting Site Plan approval to demolish the existing improvements to construct six (6), three-story, multi-family residential units with individual two-car garages and a detached ADU. Each unit is proposed to consist of a kitchen, a dining area, a living room, two (2) bedrooms, two (2) full bathrooms, a study area, a private deck with a storage room, and a two-car garage. Units 1, 3, 4, and 6 will also be improved with an additional half-bath. The site is proposed to be improved

with four (4) covered guest parking spaces, one (1) handicap open parking stall, a trash enclosure, and a BBQ area in a common recreation area. Additionally, the applicant is proposing a detached Accessory Dwelling Unit (ADU) on the northwest corner of the site that consists of one (1) bathroom, a kitchen, and an open living/sleeping area.

As shown on the project plans, the applicant is proposing a detached 446 square-foot ADU. The ADU is being shown for reference only, as it does not require discretionary approval. Pursuant to State legislation, the ADU will be processed ministerially during the plan check phase of the project.

The project site has a General Plan land use designation of Medium Density Residential (MDR). The City's General Plan 2030 establishes that the MDR land use designation is intended for the development of mainly multi-family residential neighborhoods that: 1) provide a variety of housing types, 2) provide access to schools, parks, and other community services, 3) provide a high-quality architectural design that preserves privacy, 4) provide common spaces, recreation areas and services convenient to residents, 5) provide an excellent environment for family life, and 6) preserve residential property values. The MDR land use designation is intended to create, maintain, and enhance residential areas characterized by mostly traditional multi-family apartments, condominiums, townhomes, and single-family small-lot subdivisions. Densities for the MDR land use designation are intended to range from 21.1 to 32.0 dwelling units per acre, and are implemented by the R-3 zone. The Land Use Element provides that where density is expressed in ranges, the top of the range is the maximum density permitted, however, densities below the bottom of the range are permitted. The project is proposed to be developed at a density of 16 dwelling units per acre, which is permitted by the General Plan Land Use Element and R-3 zone. The proposed project has been designed to satisfy the goals and policies of the General Plan, including:

1. Goal LU-4: The City seeks to develop uses that are compatible with one another.

2. LU-IMP-2B: New development shall be similar in scale to the adjoining residential neighborhood to preserve its character.

3. LU-IMP-3D: Front multi-family housing on local streets with appropriate setbacks to be consistent with neighborhood development patterns.

4. Policy LU-2.4: Assure that the type and intensity of land use shall be consistent with that of the immediate neighborhood.

Note: The project application was filed prior to the adoption of objective development standards under Amendment No. A-035-2022, which became effective on November 10, 2022. Thus, the project was designed in accordance with the requirements of the R-3 zone prior to the Code Amendment, with the exception of the additional half-baths in Units 1, 3, 4 and 6, which previously required approval of a minor deviation, but which now are permitted without the need for a minor modification approval. In compliance with Cal Gov. Code § 65941.1, the applicant has provided the

City's Housing Development Pre-Application prior to November 10, 2022, which allows applicants for housing developments to vest zoning regulations for 180 days.

PROJECT STATISTICS:

	Provided	Code Requirement
Lot Size	16,329 S.F. (0.37 acres)	7,200 S.F.
Density[1]	6 units	32 units per acre
Lot Coverage	39%	50% maximum
Building Height	32'-2"	35'-0"
Third Story Building Area[1]	41.4%	50% maximum
Residential Unit Separation to Driveway[1]	10'-0"	10'-0" minimum
Parking Total	17 spaces	17 spaces (2.75 spaces / unit = 16.5 ~ 17 spaces)
Two-Car Garage (x6)	12 spaces	
Carport	4 spaces	
Open	1	
Recreation Area Total	2,697 S.F.	1,800 S.F. (6 units x 300 S.F. = 1,800 S.F.)
Common Area - Active	1,219 S.F.	
Private Decks	1,488 S.F.	
Active Recreation Area Dimensions[1]	30'-4" x 35'-3"	30'-0" minimum
Building Setbacks[1]		
Front (east)	20'-0"	20'-0" minimum
Sides		
north	11'-4"	11'-3"
south	10'-8"	8'-9"
Rear (west)	30'-4"	12'-6"

1. The project application was filed prior to the adoption of objective development standards under Amendment No. A-035-2022, which became effective on November 10, 2022. The project was designed to follow the requirements of the R-3 zone prior to the Code Amendment.

DISCUSSION:

SITE PLAN:

Site Design and Circulation

The proposed design consists of two (2) separate three-story apartment buildings, each containing three (3) units, setback 20'-0" from the front property line along Lorna Street. The two (2) separate structures run in a east-west direction with a shared 28'-0" wide drive aisle that runs in between the structures. The drive aisle is accessed from a drive approach that is centrally located on the easterly side of the property along Lorna Street, making it the only vehicular access point to the site. Building 1, the building located to the south of the site, is comprised of Units 1, 2, and 3, and is setback 10'-8" from the southerly property line, and Building 2, the building located to the north of the site, is comprised of Units 4, 5 and 6, and is setback 11'-4" from the northerly property line, which exceeds the building separation standards of the R-3 zone per Municipal Code Section 9.12.040.050 (Special Requirements – Multiple Family Residential).

Each unit is proposed to be improved with an enclosed two-car garage that faces the interior of the site and the shared drive aisle. Four (4) open tuck-under guest parking spaces, located at the ends of each building, also have access from the shared drive aisle. A handicap open guest parking space is located at the rear of the site, directly west of Building 2. An active recreation area improved with a BBQ, an outdoor picnic table, benches, and an overhead shade trellis, is located on the southwest corner of the site directly west of Building 1. A trash enclosure is also proposed along the westerly side of the property, adjacent to the common recreational area. The new drive approach, drive aisle, trash enclosure, and parking layout have been designed in accordance with City standards to provide adequate access for trash trucks and emergency vehicles.

Each unit may be accessed from its attached two-car garage, or from the public right-of-way via internal pedestrian walkways leading to each units' front entry off of the north and south side yards. Units 1 and 4 have front entries that face the front of the site, Units 1 and 5 have front entries facing the north and south side yards, and Units 3 and 6 have entries facing the rear of the site. Although not part of the discretionary approval process, a detached ADU is being shown on the plans for reference on the northwest corner of the site, which can be accessed via the internal pedestrian walkway along the northerly side of the site.

Unit Design

The proposed project will consist of six (6) apartment units. Each unit is proposed to consist of a kitchen, a dining area, a living room, two (2) bedrooms, two (2) bathrooms, a study area, a private deck with a storage room, and a two-car garage. Units 1, 3, 4, and 6 will also provide a third bathroom as a half-bath.

Units 1, 3, 4, and 6 are the end units of each building and will be 1,601 square feet. Units 1 and 3 are located in Building 1, and Units 4 and 6 are located in Building 2. Each of these units consists of a 430 square-foot two-car garage, a kitchen, a dining area, and laundry closet on the ground floor. The second story consists of a living room, one (1) bedroom, one (1) full bathroom, one (1) half-bath, an open study area, an outdoor 278 square-foot deck, and a storage room with access off of the deck with 306 cubic feet of storage space capacity. The third story consists of the primary bedroom, which has one (1) bathroom and a closet.

Units 2 and 5 are the interior units of each building and will be 1,256 square feet. Unit 2 is located in Building 1, and Unit 5 is located in Building 2. Each of these units consists of a 471 square-foot two-car garage with washer and dryer hookups, a kitchen, and a dining area on the ground floor. The second story consists of a living room, one (1) bedroom, one (1) full bathroom, an outdoor 188 square-foot deck, and a storage room with access off of the deck with 306 cubic feet of storage space capacity. The third story consists of the primary bedroom, which has one (1) bathroom and a closet.

Unit Types

Unit Plan Types	Bedrooms	Bathrooms	Living Area
Building 1			
Unit 1	2	3	1,601 S.F.
Unit 2	2	2	1,256 S.F.
Unit 3	2	3	1,601 S.F.
Building 2			
Unit 4	2	3	1,601 S.F.
Unit 5	2	2	1,256 S.F.
Unit 6	2	3	1,601 S.F.
Total			**8,916 S.F.**

Parking

The residential units have been parked per the parking requirements of the R-3 zone, which establishes the minimum parking requirement for residential units based on the bedroom count of each unit. The six (6) proposed units consist of two (2) bedrooms each. Accounting for guest and resident parking, the Code requires 2.75 parking spaces per every two-bedroom unit. Therefore, the project is required to provide 17 parking spaces per the following breakdown:

Parking Spaces Required per Unit

Unit Number	Number of Bedrooms	Required parking spaces
Unit 1	2 Bedrooms	2.75
Unit 2	2 Bedrooms	2.75
Unit 3	2 Bedrooms	2.75
Unit 4	2 Bedrooms	2.75
Unit 5	2 Bedrooms	2.75
Unit 6	2 Bedrooms	2.75
Total		**16.5 spaces (~17 spaces)**

Per the proposed design, twelve (12) parking spaces will be provided in the form of six (6) enclosed two-car garages. Guest parking will be provided in the form of four (4) open tuck-under parking spaces, and one (1) open handicap parking space to ensure ADA compliance. With a total of 17 parking spaces, the project meets the minimum required parking for a six (6) bedroom multi-family development per Municipal Code Section 9.12.040.180 (Parking Spaces Required).

Open Space and Recreational Area

Section 9.12.040.050.K of the Municipal Code requires that the proposed development provide a minimum of 1,800 square feet of recreation area, which is calculated at 300 square feet per unit. Since the site is over 14,400 square feet, and will be improved

with more than five (5) units, the Municipal Code also requires a common active recreation area that has minimum dimensions of 30'-0" by 30'-0". The project will provide the required recreation area in the form of both private and active open space. Each private recreation area is required to be at least 90 square feet and have minimum dimensions of 9'-0" by 9'-0" when located on an upper level. Units 1, 3, 4, and 6 are proposed to provide 278 square-foot second-story decks that have a minimum dimension of 10'-0". Units 2 and 5 are proposed to provide 188 square-foot second-story decks that have a minimum dimension of 10'-0". The private decks have access from the living rooms located on the second story of each unit. The combined area of the decks is approximately 1,488 square feet and face the interior of the project site. Therefore, the project exceeds the minimum requirements for private recreation area, as required by the Municipal Code, per the following breakdown:

Private Recreation Area

Unit Number	Second Story Deck Area	Total
Units 1, 3, 4, 6:	278 S.F. x4	1,112 S.F.
Units 2, 5:	188 S.F. x2	376 S.F.
	Total	**1,488 S.F.**

In addition to the private recreation areas, the project proposes an active recreation area to satisfy the open space requirements. The recreation area is approximately 1,219 square feet and has clear dimensions of 30'-4" x 35'-3". The area and dimensions exceed the minimum threshold established for active recreation areas in the R-3 zone under Municipal Code Section 9.12.040.050.K.4. The recreation area will be improved with amenities that include a BBQ, an outdoor picnic table, benches, and an overhead shade trellis. Since the project was designed and filed prior to the adoption of objective development standards under Amendment No. A-035-2022, it is not required to comply with the amenity types recently adopted for multi-family developments.

Inclusive of the 1,488 square-foot private recreation space, and 1,219 square feet of active recreational area, the proposed development will provide a combined area of 2,697 square feet of recreation space. Thus, the project exceeds the minimum open space requirement of the Municipal Code for a six (6) unit multi-family development in the R-3 zone by 897 square feet.

Landscaping

Section 9.12.040.090 (Landscaping Requirements) of the Municipal Code requires all areas that are not designated for walkways, parking spaces, drive aisles, and private recreation areas, to be fully landscaped and irrigated. In addition, the applicant is required to provide a landscape and irrigation plan that complies with the requirements of the Municipal Code. The project proposes landscaping in all required setbacks including front, side, and rear, with the exception of areas designated for the drive aisle or walkways, using a variety of plant materials. All of the landscaped areas will be fitted with automatic irrigation systems that comply with the City's Water Efficiency Guidelines.

Building Architecture

The multi-family apartment buildings will be three (3) stories in height and will incorporate a contemporary architectural style. The building design includes stucco exteriors, fiber cement siding, and varied flat roofs that are common characteristics found in modern contemporary architectural design. Per Section 9.12.040.050.A.4 of the Municipal Code, third stories are allowed in the R-3 zone, not to exceed 50% of the building footprint, to encourage articulation of the building massing and to be architecturally sensitive to both on-site and abutting off-site residential structures. The design proposes a third story that is 41.4% of the building footprint, which also creates a visual illusion of different building massing to eliminate the appearance of a boxed-shaped design, and enhances the curb appeal of the property while being sensitive to adjacent residential uses.

Minor Land Deviation

The project was designed prior to the adoption of objective development standards under Amendment No. A-035-2022, which became effective November 10, 2022. However, the project may follow the bathroom standards recently adopted applicable to residential dwelling units, which no longer limits the number of bathrooms per bedroom count. Previously, Section 9.12.040.020.H.2 of the Municipal Code, limited the number of bathrooms for a two (2) bedroom unit to two (2) bathrooms, with at least one (1) bathroom having access from a common living area. The Code allowed for a minor land use deviation to allow an additional half-bath, for a total of three (3) bathrooms, for a two (2) bedroom unit. Since the amended Code is already in effect, a minor land deviation is no longer required for the project to propose three (3) bathrooms for a two (2) bedroom dwelling unit, which applies to Units 1, 3, 4, and 6.

California Environmental Quality Act

The proposed development has been determined to be exempt from the California Environmental Quality Act ("CEQA"), pursuant to Section 15332 (In-Fill Development Projects) of the CEQA Guidelines (14 Cal. Code Regs., Section 15303). As set forth in the Class 32 exemption, the proposed project is: (1) consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations; (2) the proposed development occurs within City limits on a project site of no more than five acres substantially surrounded by urban uses; (3) the project site has no value as habitat for endangered, rare or threatened species; (4) approval of the project would not result in any significant effects relating to traffic, noise, air quality or water quality; and (5) the site can be adequately served by all required utilities and public services.

No Net Loss

Government Code Section 65863 requires jurisdictions to maintain adequate sites to accommodate their remaining unmet Regional Housing Needs Allocation (RHNA) by each income category at all times throughout the Housing Element planning period. A jurisdiction may not take any action to reduce a parcel's residential density unless it

makes findings that the reduction is consistent with the General Plan, including the Housing Element, and that the remaining sites identified in its Housing Element sites inventory can accommodate its remaining unmet RHNA by each income category or it identifies additional sites so that there is no net loss of residential unit capacity.

In addition, if a jurisdiction approves a development on a parcel identified in its Housing Element sites inventory with fewer units than shown in the Housing Element, the jurisdiction must either make findings that the Housing Element's remaining sites have sufficient capacity to accommodate the remaining unmet RHNA by each income level, or identify and make available additional adequate sites to accommodate the remaining unmet RHNA for each income category. However, a jurisdiction may not disapprove a housing development project on the basis that approval of the development would trigger the identification or zoning of additional adequate sites to accommodate the remaining RHNA.

The City's 6th Cycle RHNA requires the City to plan for 19,168 housing units for all income levels. A component of preparing the City's Housing Element is the identification of vacant and underutilized sites suitable for residential development, and an evaluation of the housing development potential of these sites in fulfilling the City's RHNA. The project site is identified in the City's Housing Element sites inventory as having a realistic capacity to accommodate a total of eight (8) "above moderate income" units. The project proposes a total of six (6) "above moderate income" units. Because the proposed project includes fewer units than shown in the Housing Element sites inventory, the City must determine whether the remaining Housing Element inventory sites have sufficient capacity to accommodate the City's remaining unmet RHNA by income level if the project is approved as proposed. Staff has evaluated the housing projects that have been permitted or approved during the current planning period, or which are otherwise not accounted for in the Housing Element site analysis, and has determined that the remaining sites identified in the sites inventory have sufficient capacity to accommodate the City's remaining unmet RHNA need for each income level.

At the time the Housing Element was prepared and adopted, the City's *unmet* RHNA was calculated to be 18,208 units, broken down as follows: 6,567 low and very low-income units, 3,087 moderate-income units, and 8,554 above moderate-income units. The sites identified in the adopted Housing Element were determined adequate to accommodate a total of 18,291 units, including 401 more units than the City's unmet RHNA in the low and very low-income categories and 240 more units than the City's unmet RHNA for the moderate-income category. Sites deemed adequate to accommodate the lower and moderate-income categories are also adequate to accommodate above-moderate income units. Overall, the sites inventory in the adopted Housing Element reflected a total capacity surplus of 83 units. Due to this surplus, the proposed project will not create a reduction to the City's total required RHNA allocation.

Excluding ADUs, single-family dwellings, and SB 9 units, Staff has identified recently permitted or approved new housing units not accounted for in the Housing Element site capacity analysis. Some of these units were developed on sites not included in the Housing Element sites inventory. After accounting for these permitted and entitled units, and the six (6) units in the proposed project, the City's total remaining unmet

RHNA would be 18,127 units[1], broken down as follows: 6,562 low and very low-income units, 3,087 moderate-income units, and 8,478 above-moderate income units. The remaining capacity of the sites identified in the Housing Element would be 18,207 units, resulting in a total capacity surplus of 80 units. The remaining sites are also adequate to accommodate a surplus of low and very low-income units (406) and moderate-income units (240), and such sites are also adequate to accommodate the City's remaining unmet above moderate-income RHNA. Due to this surplus, the overall residential capacity on sites identified in the Housing Element will still be sufficient to accommodate the City's total remaining unmet RHNA if the proposed project is approved. The required No Net Loss findings can be made and are included in Resolution No. 6052-22.

1. Value does not reflect non-approved housing projects that are currently agendized.

SB 330 Compliance:

In 2019, the Legislature adopted and the Governor approved Senate Bill 330 (SB 330) enacting the Housing Crisis Act of 2019 (Government Code § 66300). Among its provisions, SB 330 imposed new requirements when a proposed new housing development would require the demolition of existing residential units. Pursuant to Government Code § 66300(d)(1), the City may not approve a housing development project that will require the demolition of residential dwelling units unless the project will create at least as many residential dwelling units as will be demolished. This proposed project satisfies this requirement because it will replace two (2) existing units with six (6) new dwellings.

In order to prevent new housing projects from displacing existing lower income rental households, SB 330 also imposes several requirements that the City must require a developer to comply with when a proposed housing development project will require the demolition of occupied or vacant "protected units". "Protected units" include residential dwelling units that are or were occupied by lower or very low income households within the past five (5) years. The City requires applicants for housing development projects to complete a Replacement Housing Determination Form providing the information necessary for the City to determine if any "protected units" will be demolished. The Form completed by this Applicant indicates that the existing units have not been rental units in the past five (5) years and are owner occupied. Therefore, the project is not required to replace any "protected units".

RECOMMENDATION:

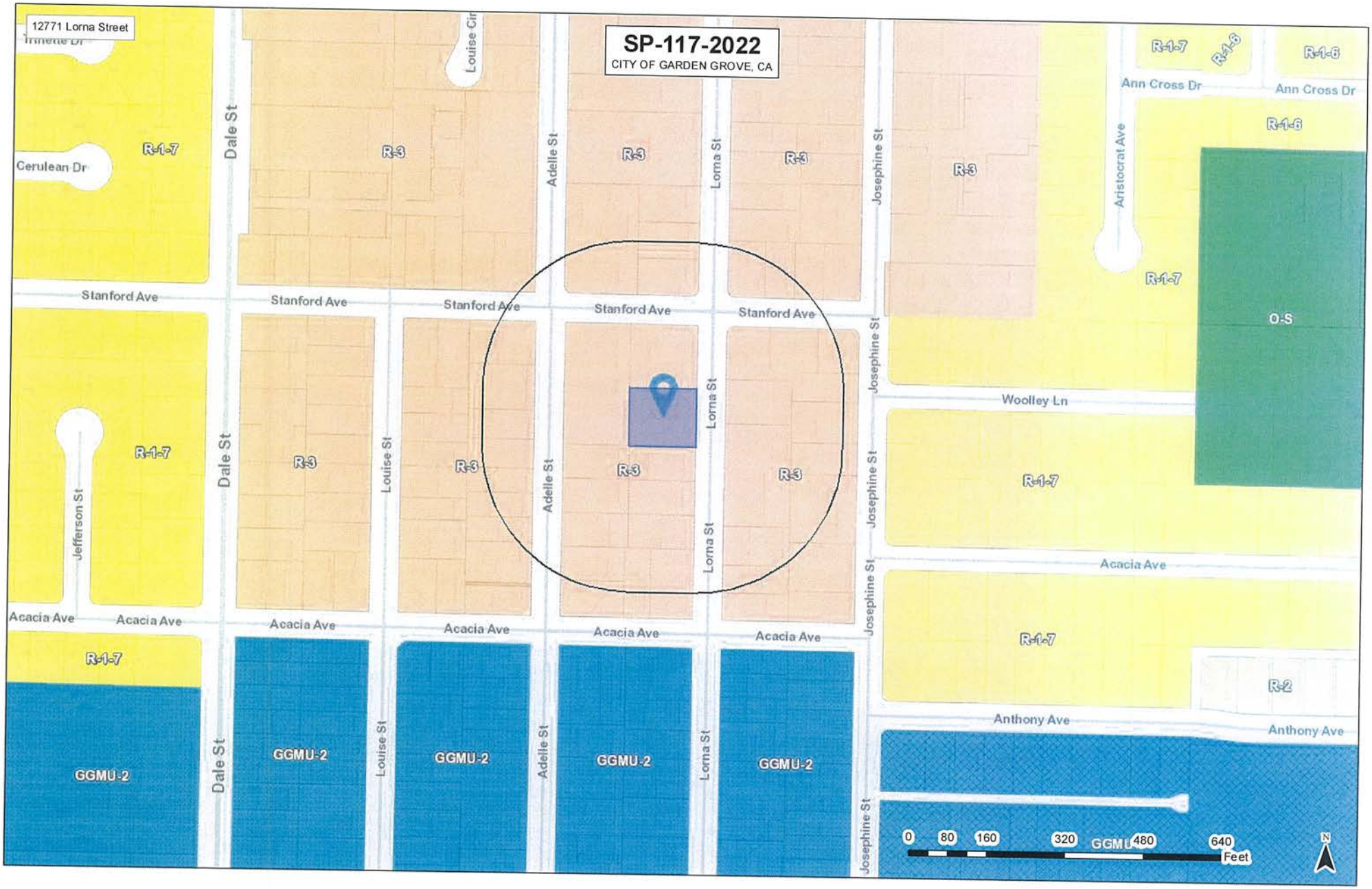
Staff recommends that the Planning Commission take the following action:

1. Adopt Resolution No. 6052-22 approving Site Plan No. SP-117-2022, subject to the recommended Conditions of Approval.

Lee Marino
Planning Services Manager

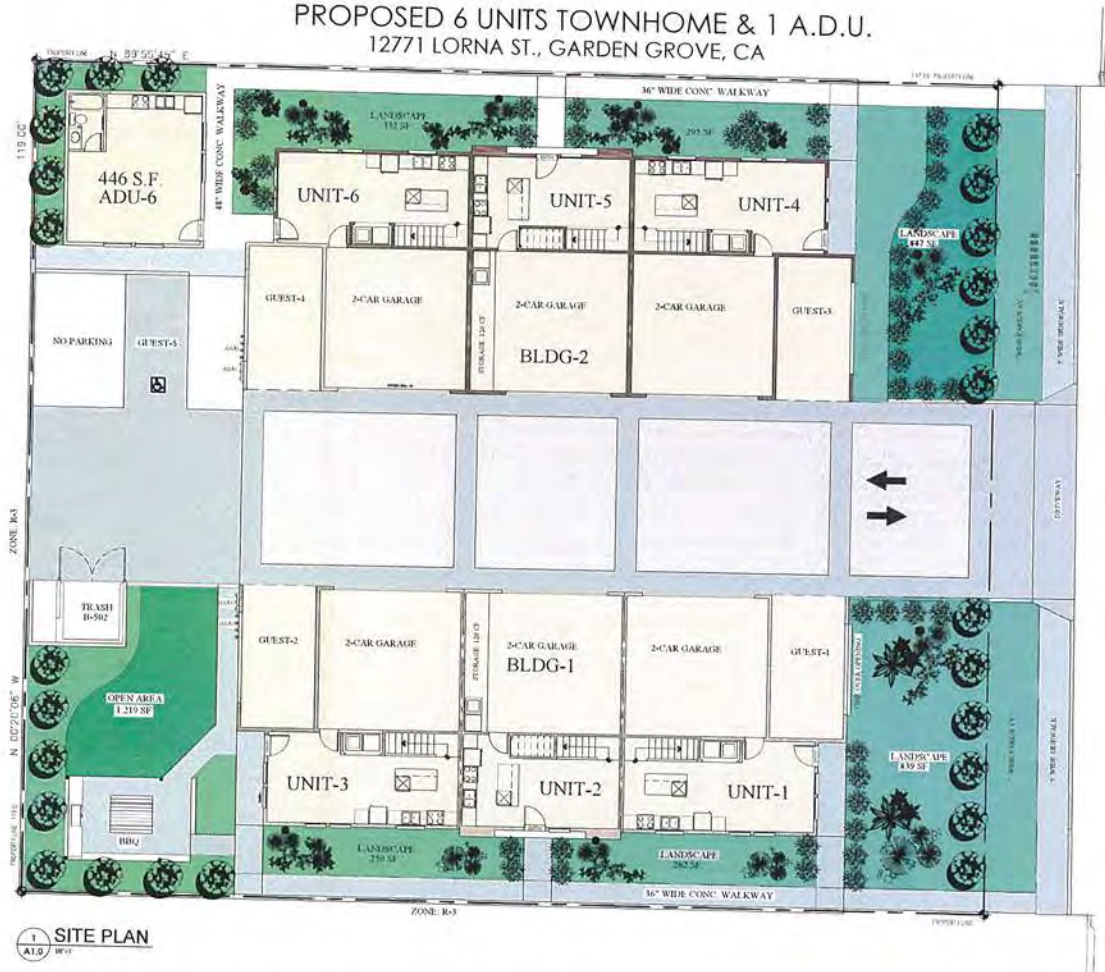
By: Mary Martinez
Associate Planner

Attachment: Exhibit "A" – Technical Studies


12771 Lorna Street
SP-117-2022
CITY OF GARDEN GROVE, CA
Trinette Dr
Cerulean Dr
R-1-7
Dale St
R-3
Louise Cir
Adelle St
Lorna St
Josephine St
Aristocrat Ave
R-1-6
Ann Cross Dr
O-S
Stanford Ave
Woolley Ln
Jefferson St
Louise St
Acacia Ave
R-2
Anthony Ave
GGMU-2
0
80
160
320
480
640
Feet
N

PROPOSED 6 UNITS TOWNHOME & 1 A.D.U.

12771 LORNA ST., GARDEN GROVE, CA



1 A1.0 SITE PLAN

1 A1.0 SIDE & UNIT ENTRANCE ELEVATION

1 A1.0 SIDE & GARAGE ELEVATION

1 A1.0 FRONT & REAR ELEVATION

1 A1.0 FRONT & REAR ELEVATION

EXTERIOR FINISH MATERIAL SPECIFICATIONS

1. STUCCO
2. SIDING
3. WINDOW
4. GARAGE DOOR

1. STUCCO
LA HABRA STUCCO PRODUCTS.
DOVE GREY, 50 (66) BASE 200

2. FIBER CEMENT
FIBER CEMENT EXTERIOR CLADDING BY NICHIHA OR EQUAL
VINTAGE WOOD SERIES. COLOR TO BE SELECTED BY OWNER

3. WINDOW-VINYL
WHITE, DUAL PANE GLASS, THERMASTAR BY PELLA

4. GARAGE DOOR
LINCOLN 3138 BY AMARR- 3 LAYER INSULATED DOOR

5. PREFINISHED METAL COPING
WHITE, MIN. 22 GA. GALVANIZED SHEET METAL W/KYNAR 500 COATING FINISH

6. PREFINISHED METAL CANOPY
GRAY, PREFINISHED ROUTE AND RETURN COMPOSITE METAL PANEL SYSTEM
WITH KYNAR 500 METALLIC COATING FINISH

7. ROOF
30 YEAR ARCHITECTURAL FIBERGLASS BASE ASPHALT ROOF

SP-117-2022

ZBT GROUP

A

PROPOSED 6 UNITS TOWNHOME & 1 A.D.U.

12771 LORNA ST., GARDEN GROVE, CA

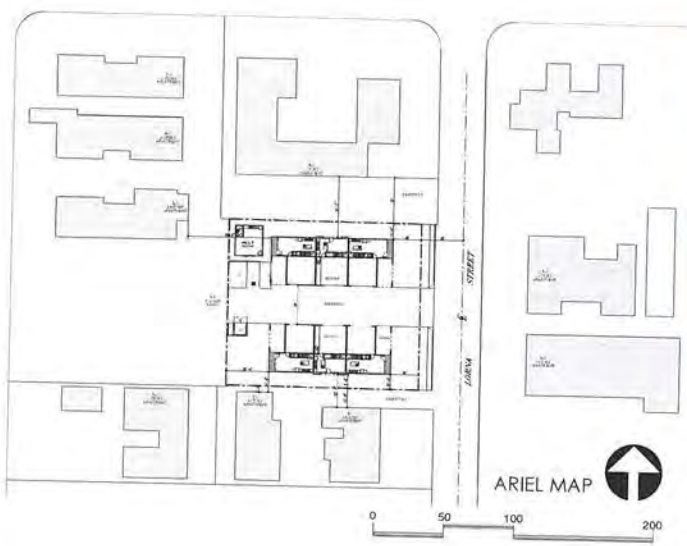
PROJECT SUMMARY

OWNER	VIVIAN NGUYEN		
PROJECT ADDRESS	12771 LORNA ST GARDEN GROVE, CA		
ZONE	R-3		
NUMBER OF STORIES	3 STORIES		
CONSTRUCTION TYPE	V-B		
OCCUPANCY TYPE	R-3 (CRC) TOWNHOUSE (ONE FIRE RATED ASSEMBLY PARTY WALL)		
FIRE SPRINKLER	NFPA 13R		
NUMBER OF UNITS	6 TOWNHOMES AND DETACHED ADU		
REAR LANDSCAPE SCAPE AREA	1,775	25%	
FRONT LANDSCAPE	1,084	15%	
DRIVEWAY, PARKING & TRASH	4,442	27%	
BUILDING COVERAGE 39%	6,432	39%	
PROJECT DESCRIPTION	**PROPOSED**	**REQUIRED**	**NOTES**
LOT AREA (TAX MAP)	16,356	16,330	
BUILDING COVERAGE (%)	6,432 (39%)	8,165 (50%)	INCLUDED ADU
DENSITY (/AC)	6 UNITS + ADU	6	(1) UNIT PER 2,720 SF LOT AREA
PARKING			
2 CAR GARAGE	12		
COVERED/ADU SPACES	1		
GUEST/ACCESS	4		
TOTAL PARKING SPACES	17	15.5	2.5 PER 3 TO 4 UNITS
OPEN SPACE			
COMMON AREA	2,481	1,300	300 SF AT 6 UNITS
SETBACKS	**BLDG-1**	**BLDG-2**	**ADU**
FRONT	20'	20'	5' FROM BLDG-2
REAR	10'-4"	10'	4'-0"
SIDE	10'-8"	10'-8"	4'-0"

PLAN TYPES	**GARAGE**	**CARPORT**	**1ST FLR**	**2ND FLR**	**3RD FLR**	**LIVING**	**DECK**	**STOR**	**BEDS**	**BATHS**
UNIT-1 (2 BEDS & 2.5/4 BATHS)	430	227	395	771	436	1,601	278	304 CF	2	2.75
UNIT-2 (2 BEDS & 2.5/4 BATHS)	471		330	973	361	1,254	188	304 CF	2	2.75
UNIT-3 (2 BEDS & 2.5/4 BATHS)	430	227	395	771	436	1,601	278	304 CF	2	2.75
UNIT-4 (2 BEDS & 2.5/4 BATHS)	430	227	395	771	436	1,601	278	304 CF	2	2.75
UNIT-5 (2 BEDS & 2.5/4 BATHS)	471		330	973	361	1,254	188	304 CF	2	2.75
UNIT-6 (2 BEDS & 2.5/4 BATHS)	430	227	395	771	436	1,601	278	304 CF	2	2.75
ADU (1 BED & 1 BATH)			440							
TOTAL	2,662	908	2,678	4,230	2,464	9,916	1,488			

VICINITY MAP

0 50 100 200



ARIEL MAP

0 50 100 200

FRONT VIEW

REAR VIEW

TEAM

LAND DEVELOPMENT CONSULTANTS

ZBT GROUP

401 MASON LEVEL FOSTER CITY, CA 94404

ZBTGROUP@GMAIL.COM 714.422.7726

OWNER

VIVIAN NGUYEN

12771 LORNA ST. GARDEN GROVE, CA

VIVIANNGUYEN2224@HOTMAIL.COM

SHEET INDEX

ARCHITECTURAL

A - COVER SHEET & PROJECT SUMMARY

A1 - SITE PLAN

A2 - 1ST & 2ND FLOOR PLANS (TYP. BUILDING)

A3 - 3RD FLOOR & ROOF PLANS (TYP. BUILDING)

A4 - BUILDING ELEVATIONS (TYP. BUILDING)

A5 - BUILDING ELEVATIONS (TYP. BUILDING)

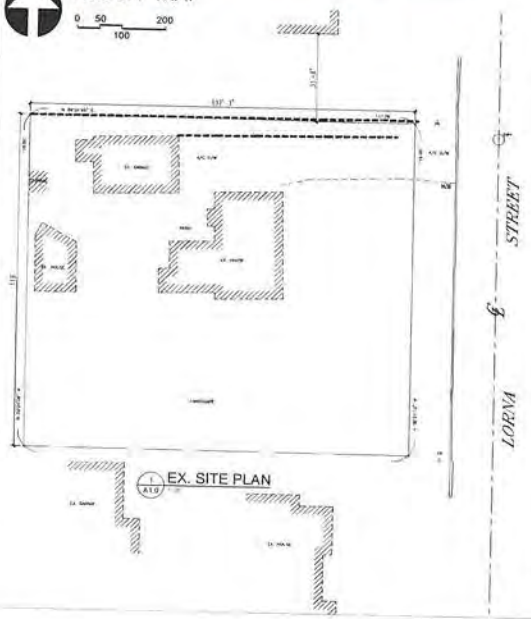
A6 - ADU FLOOR PLAN AND BUILDING ELEVATIONS

CIVIL

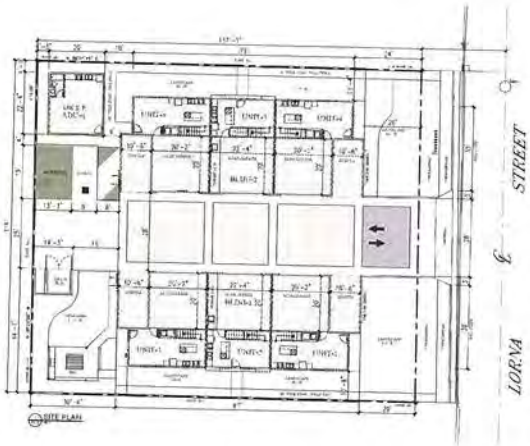
C1 - PRELIMINARY GRADING PLAN

LANDSCAPE

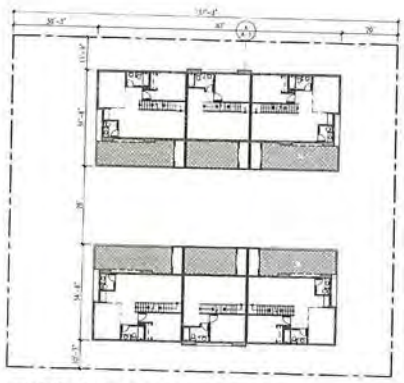
L1 - LANDSCAPING PLAN



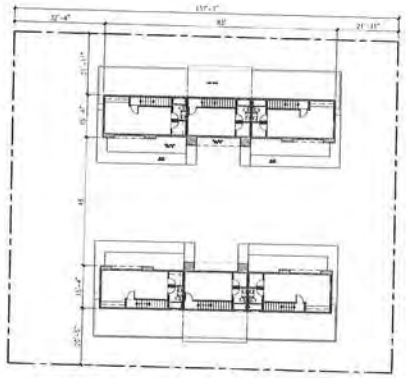
1 A1.0 EX. SITE PLAN



SITE PLAN



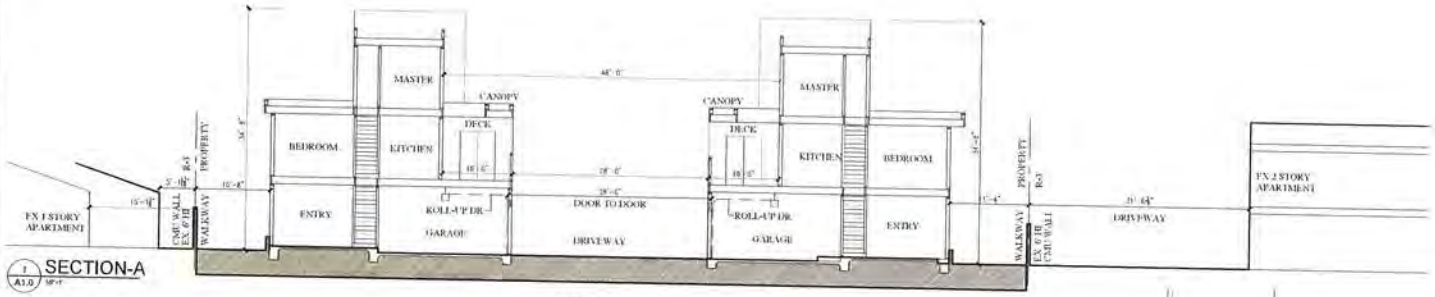
1 A1.0 2ND LEVEL SITE



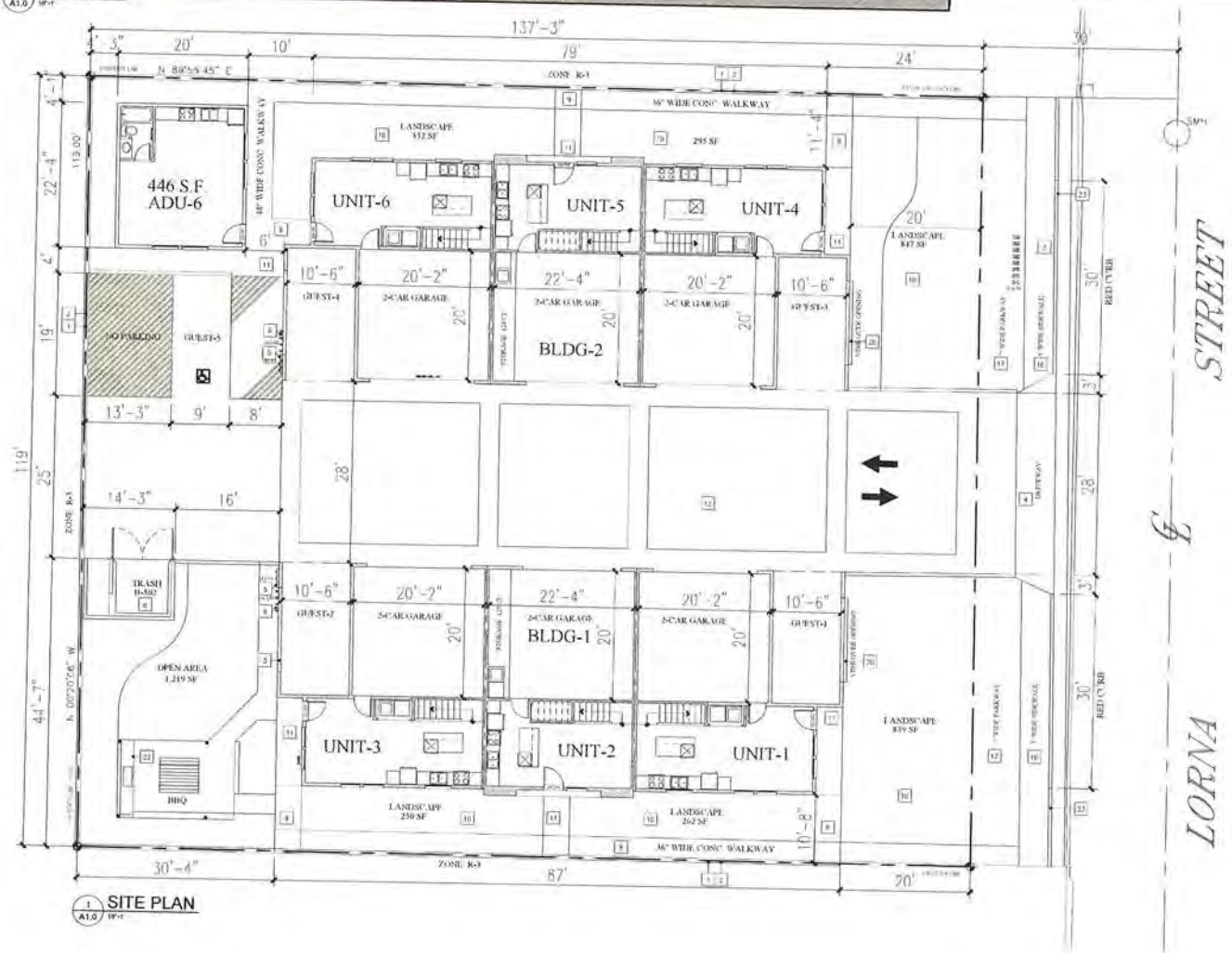
1 A1.0 3RD LEVEL SITE

ZBT GROUP

A.0



1 SECTION-A
A1.0 3/16"=1'



1 SITE PLAN
A1.0 1/8"=1'

ABBREVIATIONS

ACOUST	ACOUSTICAL	HORIZ	HORIZONTAL
ADD	ADDITIONAL	HVAC	HEATING, VENTILATION AND AIR CONDITIONING
ADJ	ADJACENT	INSUL	INSULATION
AL	ALUMINUM	INT	INTERIOR
BD	BOARD	JST	JOIST
BLDG	BUILDING	LAM	LAMINATE
BLKG	BLOCKING	LAV	LAVATORY
BM	BEAM	LT	LIGHT
BOT	BOTTOM	LT WT	LIGHTWEIGHT
CAB	CABINET	MAS	MASONRY
CL	CENTERLINE	MAT	MATERIAL
CLG	CEILING	MAX	MAXIMUM
CT	CERAMIC TILE	MECH	MECHANICAL
COL	COLUMN	MIN	MINIMUM
CONC	CONCRETE	MISC	MISCELLANEOUS
CONT	CONTINUOUS	MTL	METAL
CONTR	CONTRACTOR	M.O.	MASONRY OPENING
DET	DETAIL	N.I.C.	NOT IN CONTRACT
DF	DRINKING FOUNTAIN	NO.	NUMBER
DIA	DIAMETER	N.T.S.	NOT TO SCALE
DIM	DIMENSION	OCC	OCCUPANCY
DN	DOWN	O.C.	ON CENTER
D.S.	DOWN SPOUT	O.D.	OVERFLOW DRAIN
DWG	DRAWING	O.F.C.	OWNER FURNISHED CONTRACTOR INSTALLED
EA	EACH	O.F.I.	
EL	ELEVATION	OPNG	OPENING
ELEC	ELECTRICAL	P.L.	PROPERTY LINE
EXT	EXTERIOR	PLYWD	PLYWOOD
EXISTG	EXISTING	PLAST	PLASTER
F.A.U.	FORCED AIR UNIT	PL	PLATE
F.D.	FLOOR DRAIN	P.T.	PRESSURE TREATED
F.E.	FIRE EXTINGUISHER	R	RISER
FIN	FINISH	RD	ROOF DRAIN
F.F.	FINISH FLOOR	REINF	REINFORCED
F.H.C.	FIRE HOSE CAB.	REM	REMOVE
FLR	FLOOR	R.O.	ROUGH OPENING
FT	FEET	SC	SOLID CORE
FTG	FOOTING	SHT	SHEET
F.S.	FLOOR SINK	SIM	SIMILAR
GA	GAUGE	STRUCT	STRUCTURAL
GI	GALVANIZED IRON	SQ FT	SQUARE FEET
GL	GLASS	TYP	TYPICAL
GRD	GRADE	U.N.O.	UNLESS NOTED OTHERWISE
GYP BD	GYPSUM BD.	VCT	VINYL COMPOSITION TILE
H.B.	HOSE BIBB	VERT	VERTICAL
HDWR	HARDWARE	V.I.F.	VERIFY IN FIELD
H.C.	HOLLOW CORE	W.I.	WROUGHT IRON
HDR	HEADER	W/	WITH
HGT	HEIGHT	WD	WOOD
H.M.	HOLLOW METAL	WDW	WINDOW
		W.H.	WATER HEATER

REFERENCE SYMBOLS

DETAIL REFERENCE — DETAIL NUMBER / SHEET NUMBER

SECTION REFERENCE — SECTION LETTER / SHEET NUMBER

ELEVATION REFERENCE — ELEVATION NUMBER / SHEET NUMBER

DOOR REFERENCE — DOOR NUMBER

WINDOW REFERENCE — WINDOW LETTER

NOTE REFERENCE — NOTE NUMBER

STOREFRONT REFERENCE — STOREFRONT LETTER

REVISION REFERENCE — REVISION NUMBER

ROOM NUMBER AND INTERIOR ELEVATION REFERENCE — WALL NUMBER; ROOM NUMBER; INTERIOR ELEVATION SHEET NUMBER

PLAN KEYS

FLOOR PLAN LEGEND

INTERIOR ELEVATIONS

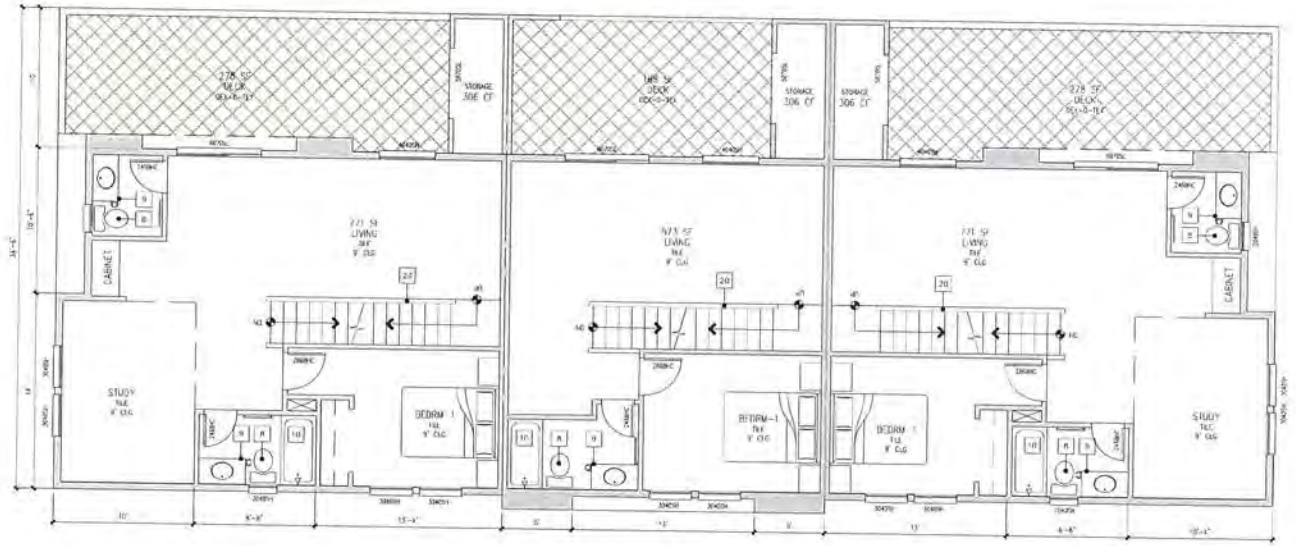
PLAN NOTES

1. PROPERTY LINE
2. CMU WALL 6'-0" HIGH (EXC WHERE NOTED) STUCCO FINISH TO MATCH BUILDING COLOR
3. 5'-0" HI CMU WALL - STUCCO FINISH TO MATCH BUILDING COLOR
4. NEW DRIVEWAY APPROACH PER CITY STANDARD. SEE CIVIL PLAN
5. GAS METER FOR TENANT USE
6. GAS METER FOR SOLAR PER GAS APPROVAL LOCATION
7. WATER METER
8. PAVING PER CITY STANDARD
9. COLOR STAMP CONCRETE WALKWAY SEE LANDSCAPE PLAN
10. LANDSCAPE
11. UNIT ENTRY
12. COLOR STAMP CONCRETE DRIVEWAY
13. LOW VOLTAGE MOTION DETECTOR
14. LOW VOLTAGE HOUSE ADDRESS SIGN
15. GAS METER LOCATION PER GAS COMPANY
16. CONCRETE WALKWAY PER CITY STANDARD
17. HANDRAIL PER CITY STANDARD
18. 2ND FLOOR LINE ABOVE
19. LOW VOLTAGE WALKWAY LIGHTING
20. VINE GROW OVER NON-COMBUSTION METAL SCREEN. LANDSCAPING PLAN
21. MAIL BOX
22. WING FENCE WITH WOOD TRELLIS ON TOP
23. CURB & GUTTER PER CITY STANDARDS. SEE CIVIL PLAN

ZBT GROUP

A.1

1 A1.0 1st FLOOR PLAN



1 A1.0 2ND FLOOR PLAN

TYPICAL BUILDING

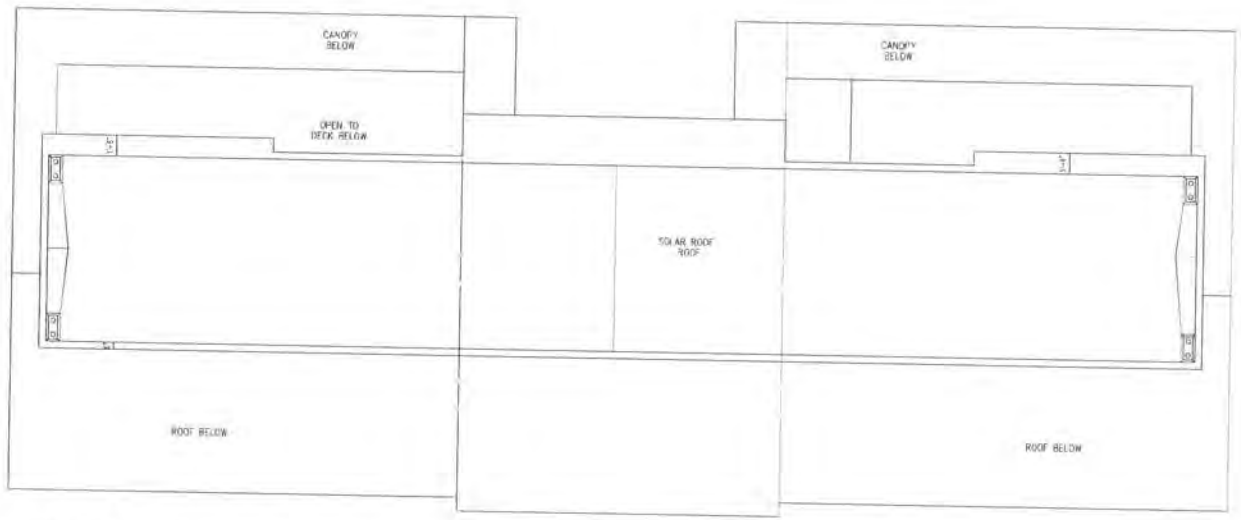
PLAN NOTES

1. KOHLER #K5824T-0 DROP-IN CAST IRON 33" X 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 10L BOARDERIGHT MODEL# 5695-1/2BP CONTINUOUS FLOW GARBAGE DISPOSAL MODEL# ANS2000
2. WHIRLPOOL FRONT CONTROL DISHWASHER, STAINLESS STEEL MODEL# WDT530PAHM
3. AMERICAN STANDARD TOP MOUNT CAST IRON 19x29x10 3-HOLE SINGLE BOWL ISLAND SINK
4. WHIRLPOOL 36"W 19.7CF FRENCH DOOR REFRIGERATOR, STAINLESS STEEL - MODEL# WRF560SEHV
5. WHIRLPOOL 30" RADIANT ELECTRIC COOKTOP MODEL# WCE97034HS
WHIRLPOOL GOLD 30" CONVERTIBLE RANGE HOOD, STAINLESS STEEL, MODEL# GW4530XPS
6. WHIRLPOOL 1.9CF OVER THE RANGE MICROWAVE, STAINLESS STEEL MODEL# WMH31017HS
7. WHIRLPOOL 30" SINGLE LUXCORE WALL OVEN, SELF-CLEANING, STAINLESS STEEL MODEL#WOS51EC0AS
8. GLACIER BAY 1-PIECE HIGH EFFICIENCY DUAL FLUSH ELONGATED TOILET, WHITE MODEL#N2400
9. TRACER 37"W×21.5"D VANITY, WHITE WITH SOLID SURFACE VANITY TOP IN GREY MODEL#041174W4G
10. 60"×36" WATERPROOFING SUBPAN FLOOR W/CERAMIC TILE SURROUND TO 72" ABOVE FLOOR TEMPERED GLASS FOR SHOWER DOOR, TYPICAL
11. 60"×32" ACRYLIC TUB/SHOWER WITH INTEGRAL SURROUND TO 72" ABOVE, LOOSE WITH HOWER HEAD AT +80" A.F.F. TEMPERED GLASS FOR SHOWER DOOR, TYPICAL
12. 60"×45" FIBERGLASS OVAL TUB ON 18" HIGH MOISTURE RESISTANT PLATFORM TEMPERED GLASS FOR SHOWER DOOR, TYPICAL
13. RHEEM CORETEMP 95 GPM NATURAL GAS HIGH EFFICIENCY INDOOR TANKLESS GAS WATER HEATER MODEL# RTGH95DVLN (INSTALL PER MFR'S INSTRUCTION AND LOCAL CODES)
14. PANTRY CABINET WITH ADJUSTABLE SHELVES
15. KITCHEN CABINET/SHELF ABOVE WITH CERAMIC COUNTERTOP KITCHEN ISLAND WITH GRANITE COUNTERTOP
16. WHIRLPOOL 4.3CF HIGH EFFICIENCY FRONT LOAD WASHER, WHITE MODEL#WFW8620HW 96"×24" PAN WITH 2" PVC DRAIN PIPE TO OUTSIDE
17. WHIRLPOOL DUET 7.3CF GAS DRYER, WHITE MODEL#WGD92HEBW 4" DIA. GALVANIZED DRYER VENT TO O.S.A.I. AND VENT HOOD
18. GLACIER BAY 27.5"×21.5"D COMPOSITE LAUNDRY SINK MODEL#GBCT2322M-WH
19. ENCLOSED USABLE SPACE UNDER STAIR SHALL BE PROTECTED WITH 2" TYPE "X" GYPSUM BD.
20. 35" HIGH HANDRAIL, CLEAR FINISHED WOOD, PAINTED WHITE
21. 42" HIGH GUARDRAIL, CLEAR FINISHED WOOD, PAINTED WHITE
22. OPTIONAL SITE-FAB METAL FIREPLACE
23. WALL W/ 24" HIGH WINDOW SEAT
24. 108" WIDE 42" HIGH MIN. W/ HOE WOOD CAP AND FILLED W/ BOOK CASES /STORAGE BELOW
25. 54" HIGH COMPUTER DESK
26. SHELF AND POLE, CLOSET PAINTED WHITE
27. 22"x30" ATTIC ACCESS FOR HORIZONTAL FORCED AIR UNIT IN ATTIC
28. 42" HIGH INTERIOR GUARD RAIL, PAINTED BLACK
29. CONCRETE STOOP, 3'-0" DEEP × 6" BELOW GRADE SEE SITE PLAN FOR FINAL FIELD VERIFICATION
30. DUCT CHASE, FIELD VERIFICATION
31. ELECTRIC SERVICE MAIN, PROVIDE WITH GROUND, FIELD VERIFICATION WITH UTILITY COMPANY
32. GAS CO. SERVICE METER, FIELD VERIFICATION WITH UTILITY COMPANY
33. 5/8" TYPE "X" GYP. BD. AT GARAGE SIDE OF WALLS, STAIR AND CEILING TO SEPARATING RUN CONTINUOUS TO UNDER SIDE OF ROOF SHEATHING WHEN APPLICABLE
34. TRASH AND RECYCLE BINS PER MSWMP REQUIREMENT

ZBT GROUP

A.2

1 A1.0 3RD FLOOR PLAN



1 A1.0 ROOF PLAN

PLAN NOTES

1. KOHLER ROOSEVELT GROUP-IN CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0 WITH KOHLER CLEAR FLOW STRAINER, MODEL# K-8801-CP
2. KOHLER DISHWASHER, MODEL# K-6489-4-0
3. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
4. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
5. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
6. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
7. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
8. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
9. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
10. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
11. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
12. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
13. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
14. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
15. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
16. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
17. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
18. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
19. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
20. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
21. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
22. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0
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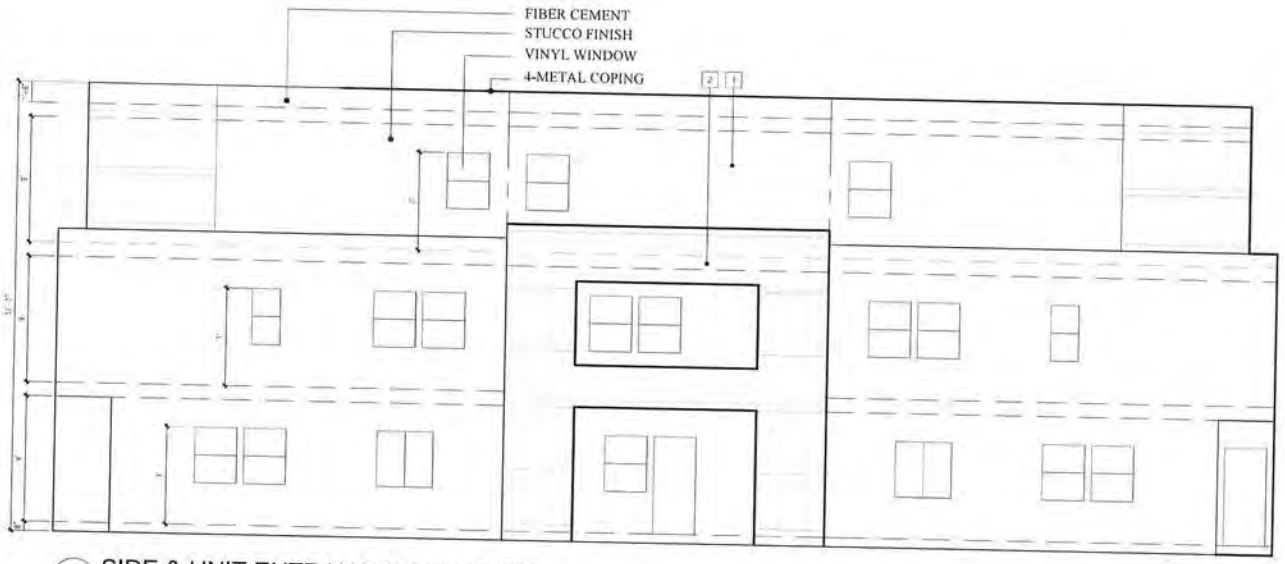
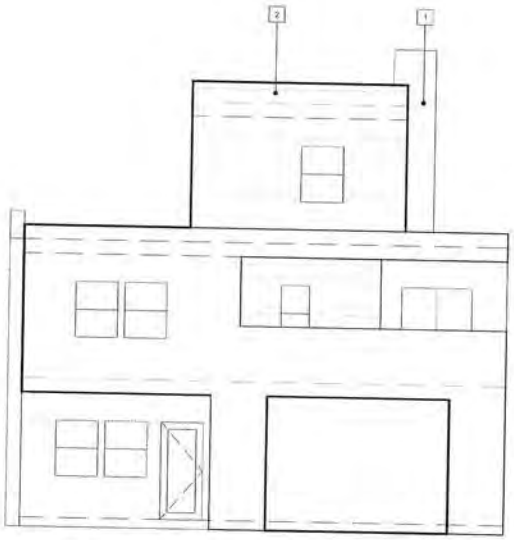
34. KOHLER CAST IRON 33" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 9" DEEP BOWLS AND 10" DEEP DRAINBOARDS, MODEL# K-6489-4-0

ZBT GROUP

A.3



1 A1.0 SIDE & UNIT ENTRANCE ELEVATION 1/8"=1'



1 A1.0 FRONT & REAR ELEVATION 1/8"=1'

TYPICAL BUILDING

EXTERIOR FINISH MATERIAL SPECIFICATIONS

1. STUCCO

2. SIDING

3. WINDOW

4. GARAGE DOOR

1. STUCCO
LA HABRA STUCCO PRODUCTS
DOVE GREY, 50 (66) BASE 200

2. FIBER CEMENT
FIBER CEMENT EXTERIOR CLADDING BY NICHIHA OR EQUAL
VINTAGE WOOD SERIES. COLOR TO BE SELECTED BY OWNER

3. WINDOW-VINYL
WHITE, DUAL PANE GLASS, THERMASTAR BY PELLA

4. GARAGE DOOR
LINCOLN 3138 BY AMARR- 3 LAYER INSULATED DOOR

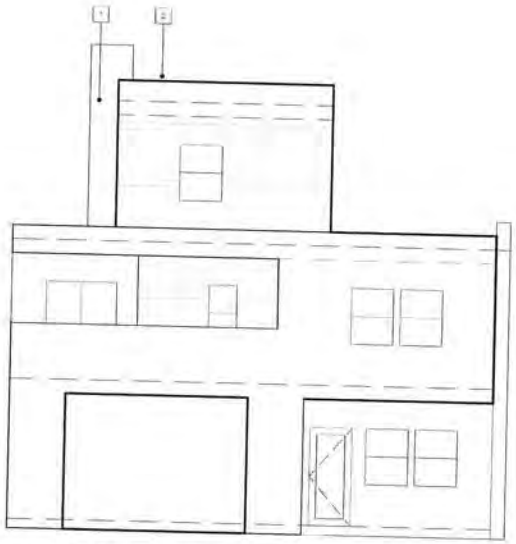
5. PREFINISHED METAL COPING
WHITE, MIN. 22 GA. GALVANIZED SHEET METAL W/ KYNAR 500 COATING FINISH

6. PREFINISHED METAL CANOPY
GRAY, PREFINISHED ROUTE AND RETURN COMPOSITE METAL PANEL SYSTEM WITH KYNAR 500 METALLIC COATING FINISH

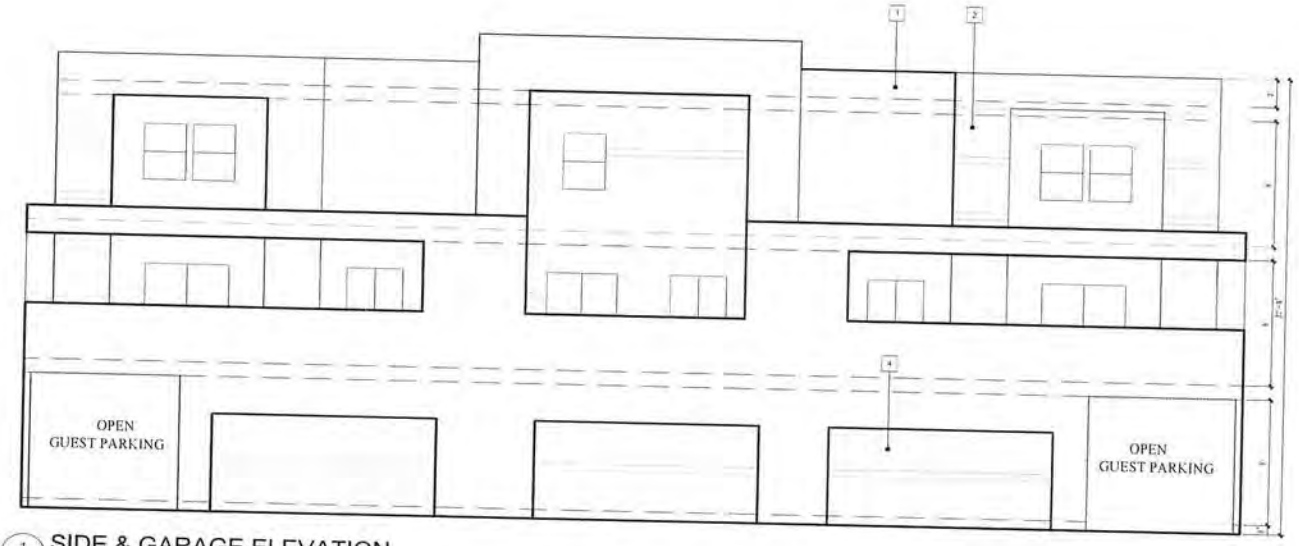
7. ROOF
30 YEAR ARCHITECTURAL FIBERGLASS BASE ASPHALT ROOF

ZBT GROUP

A.4



1 A1.0 FRONT & REAR ELEVATION 1/8"=1'



1 A1.0 SIDE & GARAGE ELEVATION 1/8"=1'

TYPICAL BUILDING

EXTERIOR FINISH MATERIAL SPECIFICATIONS

1. STUCCO

2. SIDING

3. WINDOW

4. GARAGE DOOR

1. STUCCO
LA HABRA STUCCO PRODUCTS
DOVE GREY, 50 (66) BASE 200

2. FIBER CEMENT
FIBER CEMENT EXTERIOR CLADDING BY NICHIHA OR EQUAL
VINTAGE WOOD SERIES, COLOR TO BE SELECTED BY OWNER

3. WINDOW-VINYL
WHITE, DUAL PANE GLASS, THERMASTAR BY PELLA

4. GARAGE DOOR
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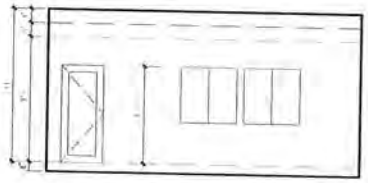
WITH KYNAR 500 METALLIC COATING FINISH

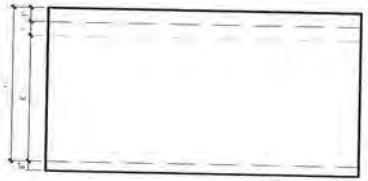
7. ROOF
30 YEAR ARCHITECTURAL FIBERGLASS BASE ASPHALT ROOF

ZBT GROUP

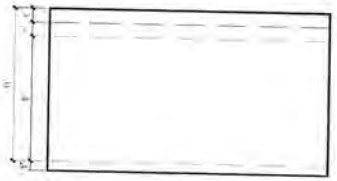
1 A1.0 ADU FLOOR PLAN 1/4"=1'



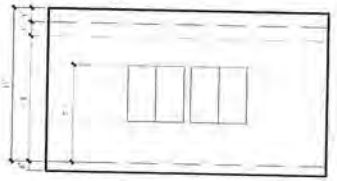
1 A1.0 EAST ELEVATION - ADU 1/4"=1'



1 A1.0 WEST ELEVATION - ADU 1/4"=1'



1 A1.0 NORTH ELEVATION - ADU 1/4"=1'



1 A1.0 SOUTH ELEVATION - ADU 1/4"=1'

PLAN NOTES

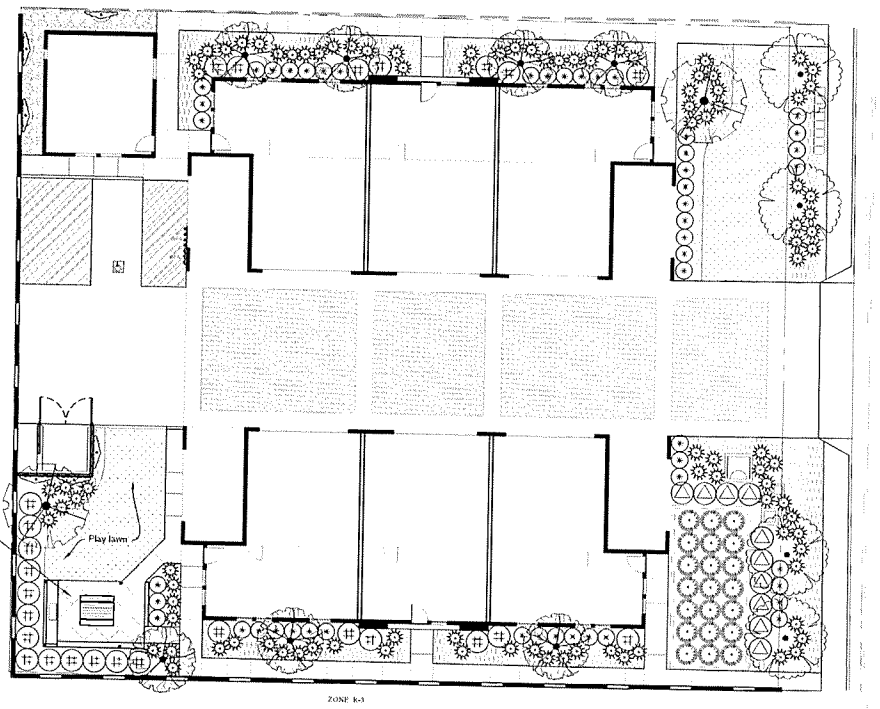
1. KOHLER KPD2800CG3 DROP-IN CAST IRON 22" 4-HOLE DOUBLE BOWL KITCHEN SINK W/ 10" HIGH DIVIDER BASKET 500-1720H CONTAINER FEED GARBAGE DISPOSAL MODEL# KBDF900
2. WHIRLPOOL FRONT CONTROL DISHWASHER, STAINLESS STEEL, MODEL# WDT550SAPKM
3. AMERICAN STANDARD TOP MOUNT CAST IRON 19x22x10" 2-HOLE TANGLE BOWL 18GA SINK
4. WHIRLPOOL 36"W 19.7 CF FRENCH DOOR REFRIGERATOR, STAINLESS STEEL MODEL# WRF560SEHM
5. WHIRLPOOL 30" PIANO* ELECTRIC COOKTOP MODEL# WCE55US0HS0
WHIRLPOOL GOLD 30" CONVERTIBLE RANGE HOOD, STAINLESS STEEL MODEL# GVW5330DPS
6. WHIRLPOOL 1.7CF OVER THE RANGE MICROWAVE, STAINLESS STEEL MODEL# WMH31017HS
7. WHIRLPOOL 30" SINGLE ELECTRIC WALL OVEN, SELF-CLEANING, STAINLESS STEEL MODEL#WOS51EC0AS
8. GLACIER BAY 1-PIECE HIGH EFFICIENCY DUAL FLUSH ELONGATED TOILET, WHITE, MODEL#N2316AWH
9. FINGER 21"W×13.5"D VANITY, WHITE WITH SOLID CERAMIC WHITE TOP & GREY MODEL#VW2121D-10
10. 60"×36" MICROTHAZONE SHOWER FLOOR W/CERAMIC TILE SURROUND TO 72" ABOVE FLOOR TEMPERED GLASS FOR SHOWER DOOR, TYPICAL
11. 60"×32" ACRYLIC (WHITE/BISQUE WITH WHILPOOL SURROUND) TO 72" ABOVE FLOOR W/SHOWER HEAD AT +80" A.F.F. TEMPERED GLASS FOR SHOWER DOOR, TYPICAL
12. 60"×72" FIBERGLASS DBAL TUB ON 18" HIGH MOISTURE RESISTANT PARTITION TEMPERED GLASS FOR SHOWER DOOR, TYPICAL
13. RHEEM ECOSENSE 9.5 SEW NATURAL GAS HIGH EFFICIENCY INDOOR TANKLESS GAS WATER HEATER MODEL# XG95ECSEN20-NH (INSTALL PER MFRS INSTRUCTION AND LOCAL CODES)
14. PANTRY CABINET WITH ADJUSTABLE SHELVES.
15. KITCHEN COUNTERTOP ABOVE WITH GRANITE COUNTERTOP
KITCHEN ISLAND WITH GRANITE COUNTERTOP
16. WHIRLPOOL 4.3CF HIGH EFFICIENCY FRONT LOAD WASHER, WHITE MODEL#WFW8620HW
WASHER PAN WITH 2" PVC DRAIN PIPE TO OUTSIDE
17. WHIRLPOOL DUET 7.3CF GAS DRYER, WHITE MODEL#WGD8620HW
7" DIA. GROMMETED DRYER VENT TO USA AND VENT HOOD
18. GLACIER BAY 23"(W)x21.6"D COMPACT LAUNDRY SINK
MODEL#GCT2320A-WH
19. ENCLOSED LINEN SPACE UNDER SINK SHALL BE PROTECTED WITH 1/2" THK "X" GYPSUM BD
20. 24" HIGH +MOBIL, CLEAR FINISHED WOOD, PAINTED WHITE
21. 12" HIGH SHARPSHELF, CLEAR FINISHED WOOD, PAINTED WHITE
22. OPTIONAL PVC-FOAM MOLDING / PILASTER
23. BENCH 18" TO 24" HIGH WHERE USED
24. LOW WALL 42"-HIGH MIN. W/ WOOD CAP AND FILLED IN WITH GRAVEL STORAGE BELOW
25. 24" HIGH COMPUTER DESK
26. SHELF AND POLE, GLOSS PAINTED WHITE
27. 22"x30" ATTIC ACCESS FOR HORIZONTAL EXPOSED AIR DUCT & ATTIC
28. 42" HIGH PORCH GUARD RAIL, PAINTED BLACK
29. CONCRETE SLOPE 1/4"-0" SLOPE + 1/2" FLOORING CAST SEE TO DRAINAGE, TRUE VENTILATION
30. SMART CHARGE (EEG) MODIFICATION
31. ELECTRIC SERVICE MAIN, PROVIDE UTILITY COMPANY FIELD VERIFICATION WITH UTILITY COMPANY
32. GAS CO. SERVICE RISER, FIELD VERIFICATION with UTILITY COMPANY
33. 5/8" TYPE "X" GYP. BD. AT GARAGE SIDE OF WALLS, STAIR AND CEILING COMMON TO DWELLING, PLUS CONTINUOUS TO UNDER SIDE OF ROOF SHEATHING WHEN APPLICABLE
34. PHOTO AND RECYCLE BINS PER MGMT REQUIREMENT

ZBT GROUP

ADU A.6

CONCEPT PLANT SCHEDULE

PARKWAY TREE		4	
Cercis canadensis 'Forest Pansy' / Forest Pansy Eastern Redbud			24" Box, M
Tabebuia impetiginosa / Pink Trumpet Tree			24" Box, M
x Chitalpa tashkentensis / Chitalpa			24" Box, L
SHADE TREE		2	
Geijera parviflora / Australian Willow			24" Box, L
Tristania laurina / Water Gum			24" Box, M
Ulmus parvifolia 'True Green' / True Green Lacebark Elm			24" Box, M
ACCENT TREE		7	
Bauhinia x blakeana / Purple Orchid Tree			24" Box, M
Lagerstroemia indica x fauriei 'Tuskegee' / Tuskegee Crape Myrtle			24" Box, M
Magnolia grandiflora 'St. Mary' / St. Mary Southern Magnolia			24" Box, M
TALL BACKGROUND SHRUBS		26	
Alyogyne huegelii 'Santa Cruz' / Santa Cruz Blue Hibiscus			5-gal, L
Callistemon citrinus 'Jeffers' / Purple Lemon Bottlebrush			5-gal, L
Ribes viburnifolium 'Eve Case' / Eve Case Coffeeberry			5-gal, L
Xylosma congestum 'Compacta' / Compact Xylosma			5-gal, L
MEDIUM SCREEN SHRUB		10	
Grevillea x 'Noellii' / Noel Grevillea			5-gal, L
Nandina domestica 'Monum' TM / Plum Passion Heavenly Bamboo			5-gal, L
Rhaphiolepis umbellata 'Thulthaph1' TM / Southern Moon Yeddo Hawthorn			5-gal, L
Westringia x 'Wynabbie Gem' / Wynabbie Gem Coast Rosemary			5-gal, L
LOW SHRUBS		50	
Callistemon viminalis 'Little John' / Little John Weeping Bottlebrush			5-gal, L
Carissa macrocarpa 'Boxwood Beauty' / Boxwood Beauty Natal Plum			5-gal, L
Correa x 'Ivory Bells' / Ivory Bells Australian Fuchsia			5-gal, L
Myrtus communis 'Compacta' / Dwarf Common Myrtle			5-gal, L
ACCENT SHRUBS		99	
Bulbine frutescens 'Tiny Tangerine' / Tiny Tangerine Stalked Bulbine			5-gal, L
Convolvulus cneorum / Bush Morning Glory			5-gal, L
Limonium perezii / Statice			5-gal, L
Phormium x 'Platts Black' / Platts Black New Zealand Flax			5-gal, L
BIOSWALE SHRUBS		21	
Anisacanthus quadrifidus var. wrightii / Flame Anisacanthus			1-gal, L
Carex divulsa / European Grey Sedge			1-gal, L
Festuca x 'Siskiyou Blue' / Siskiyou Blue Fescue			1-gal, L
Muhlenbergia rigens / Deer Grass			5-gal, L
VINE		6	
Ficus repens / Creeping Fig			5-gal, M
Parthenocissus tricuspidata / Boston Ivy			5-gal, M
GROUNDCOVER		897 sf	
Lantana x 'New Gold' / New Gold Lantana			1-gal, L
Lepechinia hastata 'Kurapia' TM / Kurapia			Plugs, L
Lonicera japonica 'Halliana' / Halls Honeysuckle Flowering Vine			Flats, L
Senecio serpens / Blue Chalksticks			1-gal, L
Senecio serpens / Blue Chalksticks			Flats, L
GRAVEL MULCH		157 sf	
-			
LAWN		955 sf	
Festuca arundinacea 'Marathon II' / Marathon II Fescue			Sod, M



PRELIMINARY WATER EFFICIENT LANDSCAPE WORKSHEET

GARDEN GROVE, CA

Reference Evapotranspiration (ETo) 47.20

Hydrozone #/Planting Description[A]	Plant Factor (PF)	Irrigation Method[B]	Irrigation Efficiency (IE)[C]	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF x Area	Estimated Total Water Use (ETWU)[D]	Valves
REGULAR LANDSCAPE AREAS								
CSL	0.80	ROTOR	0.78	1.03	934.00	957.95	28033.41	
WSL	0.60	ROTOR	0.78	0.77	0.00	0.00	0.00	
LW	0.30	DRIP	0.81	0.37	2775.00	1027.78	30076.89	
MW	0.40	DRIP	0.81	0.49	0.00	0.00	0.00	
MWTR	0.40	BUBBLERS	0.80	0.50	250.00	125.00	3658.00	
GRAVEL	0.00	NONE	1.00	0.00	205.00	0.00	0.00	
				TOTALS	3959.00	2110.73		
						ETWU TOTAL	61768.30	
						Maximum Allowed Water Allowance (MAWA)	63729.00	

ETAF CALCULATIONS

REGULAR LANDSCAPE AREAS	
TOTAL ETAF x AREA	2110.73
TOTAL AREA	3959.00
AVERAGE ETAF	0.53

[A] Hydrozone # / Planting Description
MW = Moderate Water use Plants
LW = Low Water use Plants
CSL = Cool Season Lawn
WSL = Warm Season Lawn
LWTR = Low Water use Trees
MWTR = Moderate Water use Trees

[B] Irrigation Method
R = Rotor
B = Bubbler
D = Drip
N = None

[C] Irrigation Efficiency
0.75 for spray head
0.80 for bubbler
0.81 for drip
0.78 Hunter MP Rotator

[D] ETWU (Annual Gallons Required)
ETo x 0.62 x ETAF x Area

Where 0.62 is a conversion factor that converts acre – inches per acre per year to gallons per square foot per year.

[E] MAWA (Annual Gallons Allowed)
(ETo)(0.62)[(ETAF x LA)

Where 0.62 is a conversion factor that converts acre–inches per acre per year to gallons per square foot per year, LA is the total landscape area in square feet. ETAF is 0.55 for residential areas and 0.45 for non-residential areas.

NOTES:

1. Quantities shown on plant list are to be verified by Contractor.
2. Any trees planted within five feet of curbs or paving shall be installed with a root barrier per detail
3. Tree box sizes will fulfill required landscape requirements per municipal code for final landscape plans.

IRRIGATION NOTES:

- Automatic irrigation system to be installed that is water efficient, appropriate for the landscape hydrozones and provides 100% coverage
- Landscape planting will meet MAWA water use requirements by using a low water efficient irrigation system and weather based smart controller.
- Landscape planting to be irrigated the following ways:
  - Trees: stream bubblers
  - All shrub/groundcover planting areas: drip irrigation
  - Lawn areas: rotators
  - Planting area in parkway: drip irrigation
- Irrigation plans shall provide separate systems for tree stream bubblers.
- Weather based smart controller such as Hunter X-Core, or Hunter PCC will be used.

LANDSCAPE TABULATIONS:

Total site: 16,336 sq ft. (0.38 acres)
Total landscape area: 3,671 sq. ft. (22.5% of site)

On site Tree Tabulations:

1 Tree per 8 parking spaces
Total parking spaces 1, 1 tree required
(1 provided)
1 Tree per 20' of setback, 1 tree required
(1 tree provided)
1 Tree per 600' sq ft of landscape area
6 trees required
(7 trees provided)
Number of trees required: 8 trees (13 trees provided)

Right of Way Tree Tabulations:
Street frontage, 1 tree per 30 lineal feet
119' of lineal street frontage
4 trees required
(trees provided)

North

10 0 10 20 30
Scale: 1" = 10'

REVISIONS BY

ROYAL OAK DESIGN
Sylvia E. Lyons, Landscape Architect #1549
10252 Golden Yarrow Lane
Alta Loma, CA 91701
Telephone: (909)244-9687
Email: royaloakdesign@verizon.net

PRELIMINARY LANDSCAPE PLAN

PROJECT: 6 TOWNHOMES & 1 ADU

ADDRESS 12721 LORNA ST. GARDEN GROVE, CA

DEVELOPER

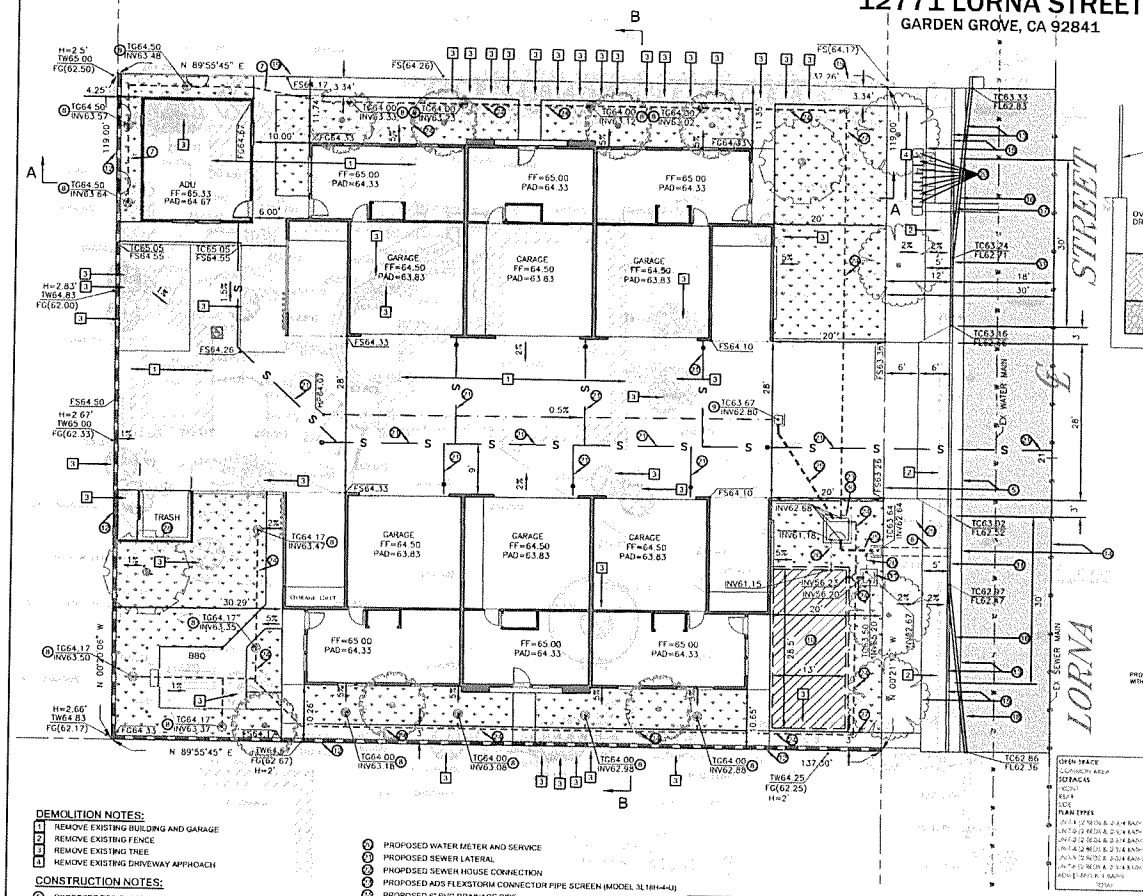
REGISTERED LANDSCAPE ARCHITECT SYLVIA E. LYONS NO. 1549 9/28/2022 STATE OF CALIFORNIA

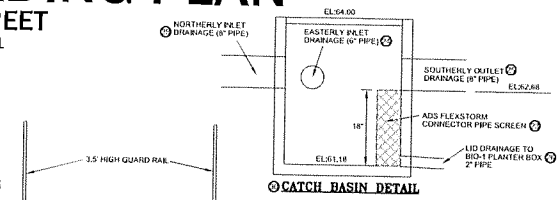
DRAWN: S.L.
DATE: 9/28/2022
SCALE: 1" = 10'
JOB NO: 5432
SHEET: L-1

PRELIMINARY GRADING PLAN

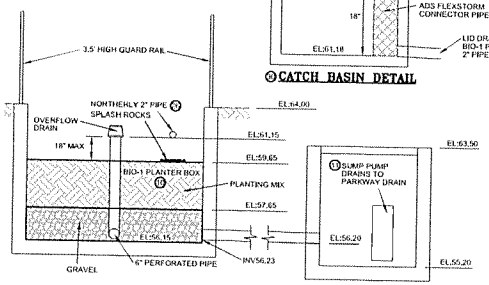
12771 LORNA STREET

GARDEN GROVE, CA 92841

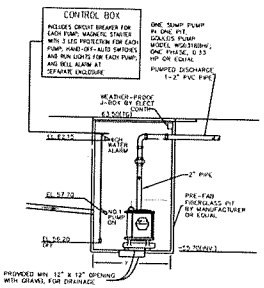




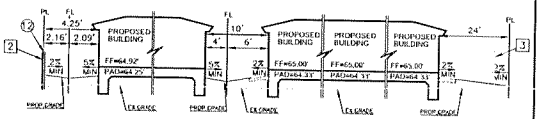
CATCH BASIN DETAIL



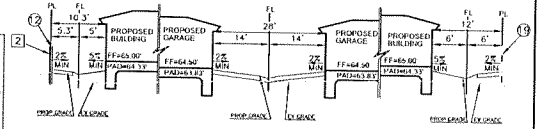
BIO-1 PLANTER BOX DETAIL



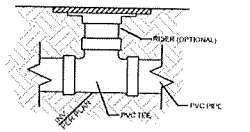
SUMP PUMP DETAIL
NTS



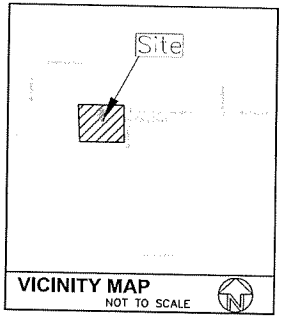
SECTION THRU A-A
NTS



SECTION THRU B-B
NTS



AREA DRAIN (TYP.)
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

LEGEND:

(527.63)	EXISTING ELEVATION
520.00	PROPOSED ELEVATION
(530)	EXISTING COUNTOUR
	DRAINAGE PATTERN
	PROPOSED STRUCTURE
	PROPOSED 6' BLOCK WALL
SW	SIDE WALK
	LIGHT
	CENTER LINE
	PROPERTY LINE
	CONSTRUCTION NOTES
	LANDSCAPE AREA
	SANDBAG
	DOWNSPOUT AND SPLASH BLOCK

T.C.	TOP OF CURB
F.L.	FLOW LINE
F.G.	FINISH GRADE
F.S.	FINISH SURFACE
F.F.	FLOOR FINISH
H.P.	HIGH POINT
P.P.	POWER POLE
D/W	DRIVEWAY
W.M.	WATER METER
INV.	INVERT ELEVATION
T.G.	TOP OF GRATE

DEMOLITION NOTES:

1. REMOVE EXISTING BUILDING AND GARAGE
2. REMOVE EXISTING FENCE
3. REMOVE EXISTING TREE
4. REMOVE EXISTING DRIVEWAY APPROACH

CONSTRUCTION NOTES:

5. PROPOSED DRIVEWAY APPROACH PER CITY STD B-122
6. PROPOSED 18" WIDE PARKWAY DRAIN PER CITY STD PLAN B-209
7. PROPOSED 4" PVC DRAINAGE PIPE
8. PROPOSED AREA DRAIN
9. PROPOSED 12"X12" CONCRETE CATCH BASIN.
10. PROPOSED BIO-1 PLANTER BOX (370 SF LID BMP BIOTREATMENT)
11. PROPOSED ONE(1) - 0.33HP SUMP PUMP (FOR OVERFLOW OF PLANTER BOX)
12. PROPOSED RETAINING WALL
13. CURB AND GUTTER PER A-1925
14. AC PAVEMENT PER A-1925
15. SIDEWALK PER A-1925
16. PROPOSED TEMPORARY BERM (ONLY IF A-1925 IS NOT COMPLETED)
17. RELOCATE EXISTING WATER METER PER A-1925
18. RELOCATE EXISTING SIGN PER A-1925
19. PROTECT-IN-PLACE EXISTING RETAINING WALL
20. PROPOSED WATER METER AND SERVICE
21. PROPOSED SEWER LATERAL
22. PROPOSED SEWER HOUSE CONNECTION
23. PROPOSED ADS FLEXSTORM CONNECTOR PIPE SCREEN (MODEL 3L18IH-44)
24. PROPOSED 6" PVC DRAINAGE PIPE
25. PROPOSED 8" PVC DRAINAGE PIPE
26. PROPOSED 2" PVC DRAINAGE PIPE
27. PROPOSED PVC CLEANOUT
28. PROPOSED TRASH PER CITY STD B-502
29. ABANDON AND CAP EXISTING SEWER LATERAL
30. PROPOSED 48"X48" CONCRETE CATCH BASIN.
31. PAINT CURB RED

LEGAL DESCRIPTION:

PARCEL 3 OF PARCEL NO. IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 34, PAGE 39, OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN: 133-463-14

BASIS OF BEARING:

CENTERLINE OF LORNA STREET N 00°21'12" W AS PER TRACT NO. 807 M.B. 32-5

BENCHMARK:

COUNTY BENCHMARK NO. 1G-135-69

FOUND 3 3\1/4" OCS ALUMINUM BENCHMARK DISK STAMPED "1G-135-69", SET IN THE TOP OF A 6 IN. BY 6 IN. CONCRETE POST. MONUMENT IS LOCATED IN THE NORTHEASTERLY CORNER OF THE INTERSECTION OF MAGNOLIA STREET AND LAMPSON AVENUE, 66 FT. EASTERLY OF THE CENTERLINE OF MAGNOLIA AND 35 FT. NORTHERLY OF THE CENTERLINE OF LAMPSON. MONUMENT

ELEVATION: 73.615' (NAVD88)
YEAR LEVELED: 2005

UTILITIES:

WATER	CITY OF GARDEN GROVE
SEWER	CITY OF GARDEN GROVE
ELECTRIC	SOUTHERN CALIFORNIA EDISON
GAS	SOUTHERN CALIFORNIA GAS
TRASH	REPUBLIC SERVICES

AREA OF LOT	16,336 S.F. 0.375 ACRE	SF
EXISTING % IMPERVIOUS	36%	5,876
EXISTING % PERVIOUS	64%	10,460
PROPOSED % IMPERVIOUS	70%	11,383
PROPOSED % PERVIOUS	30%	4,953

N

0 10 20
(IN FEET)
1 inch = 10 ft.

Underground Service Alert
Call: TOLL FREE
811
TWO WORKING DAYS BEFORE YOU DIG

REVISIONS

DATE	BY	DESCRIPTION	APP'D

CALLAND ENGINEERING, INC.
dba QUARTECH CONSULTANTS
576 E. LAMBERT ROAD, BREA, CA 92821
TEL: (714) 671-1050 FAX: (714) 671-1090

OWNER:

DAN VY NGOC NGUYEN
18261 CARNABY LANE,
HUNTINGTON BEACH, CA 92648
TEL: 714-612-2009
EMAIL: LUUBICH009@GMAIL.COM

DRAWN: PR
CHECKED:
DATE: 9/28/2022
JOB NO.: 21-019-022
SCALE: 1"=10'
FILE NAME:

CITY OF GARDEN GROVE

PRELIMINARY GRADING PLAN

12771 LORNA STREET
GARDEN GROVE, CA

C-1
G-XXXX
SHEET 1 OF 1 SHT.

Cal Land Engineering, Inc.
dba Quartech Consultants
Geotechnical, Environmental, and Civil Engineering

April 5, 2022

City of Garden Grove
Building and Safety
11222 Acacia Parkway
Garden Grove, CA 92840

Subject: **Statement of No Significant Impacts per CEQA**
12771 Lorna Street, Garden Grove

To Whom It May Concern,

This letter serves to describe the stormwater impact of the proposed 6-unit apartment and 1 ADU at 12771 Lorna Street.

The project will demolish the existing building, garage, and hardscape. A new 6-unit apartment with common driveway will be constructed. A detached ADU will also be constructed. The post developed site will be 70% impervious, which is 44% more than the existing condition.

The project will treat stormwater runoff by Bioretention that is designed and constructed per specifications in Appendix XIV.5 of the Orange County Technical Guidance Document (TGD). Stormwater runoff will also be designed to be filtered of trash per the Statewide Trash Provision with the use of state-certified Full-Capture System Trash Treatment Control Device. Treated stromwater will be discharged into catch basins, and then drain to the street via a curb drain.

The site's runoff currently drains from east to west, to the neighboring property. The proposed condition will eliminate the cross-lot drainage.

Stormwater runoff will be collected via various area drains, catch basin, & concrete gutter and then drain into the Full-Capture System Trash Treatment Control Device then to the Bioretention. Drainage from the Bioretention will then be pumped into Lorna Street curb & gutter via a proposed curb drain. Peak flows will bypass the bioretention and will drain straight to the proposed curb drain but will still be filtered by Full-Capture System Trash Treatment Control Device. The site will not be interfering with any offsite runoffs. Therefore, no significant negative impact is anticipated from the proposed development.

Respectfully submitted,

Cal Land Engineering, Inc. (CLE)
dba Quartech Consultants (QCI)

Jack C. Lee, RCE 40870

LINSCOTT LAW & GREENSPAN
engineers

Engineers & Planners
Traffic
Transportation
Parking

Linscott, Law & Greenspan, Engineers
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949.825.6173 F
www.llgengineers.com

Pasadena
Irvine
San Diego
Woodland Hills

March 2, 2022

Mr. Binh Tran
ZBT Group
401 Marion Boulevard
Fullerton, CA 92805

LLG Reference: 2.21.4471.1

Subject: **Traffic Impact Assessment for the Proposed Lorna Street Townhomes Project**
Garden Grove, California

Dear Mr. Tran:

Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit the findings of this Traffic Impact Assessment for the proposed Lorna Street Townhomes Project to be located at 12771 Lorna Street in the City of Garden Grove, California. This analysis evaluates the potential traffic circulation and VMT impacts associated with the proposed Project per the *City of Garden Grove Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and level of Service Assessment (May 2020)*.

PROJECT LOCATION AND DESCRIPTION

The Project applicant is proposing to construct seven (7) three-story townhome dwelling units on the west side of Lorna Street between Stanford Avenue and Acacia Avenue. ***Figure 1***, attached, presents a Vicinity Map that illustrates the general location of the Project site and surrounding street system while ***Figure 2*** presents an existing site aerial. As shown in *Figure 2*, the Project site is currently occupied with one (1) single-family dwelling unit to be razed.

Access for the proposed Project will be provided via one (1) full-movement gated driveway along Lorna Street. ***Figure 3*** presents the proposed site plan for the Project, prepared by ZBT Group. In addition, pedestrian and bicycle access will be provided via a pedestrian connection to the existing local street and proposed sidewalk along the Lorna Street Project frontage.

PROJECT TRAFFIC CHARACTERISTICS

Trip Generation Forecast Comparison

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are found in the Tenth Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2017].

Table 1, attached, summarizes the trip generation rates used in forecasting the vehicular trips generated by the existing site and proposed Project and also presents the proposed Project's net forecast peak hour and daily traffic volumes. As shown in upper portion of *Table 1*, the trip generation potential of the existing site was estimated using ITE Land Use 210: *Single Family Detached Housing* trip rates and the proposed Lorna Street Townhomes Project was estimated using ITE Land Use 220: *Multi Family Housing (Low Rise)* trip rates. Review of the middle portion of Table 1 indicates the existing site is forecast to generate 9 daily trips, with 1 trip (0 inbound, 1 outbound) produced in the AM peak hour and 1 trip (1 inbound, 0 outbound) produced in the PM peak hour while the proposed Project is forecast to generate 51 daily trips, with 3 trip (1 inbound, 2 outbound) produced in the AM peak hour and 4 trip (3 inbound, 1 outbound) produced in the PM peak hour on a "typical" weekday. Lastly, the bottom of *Table 1* indicates that the proposed Project is forecast to generate 42 net daily trips, with 2 net trips (1 inbound, 1 outbound) produced in the AM peak hour and 3 net trips (2 inbound, 1 outbound) produced in the PM peak hour on a "typical" weekday.

As a result, based on the proposed Project AM and PM peak hour trip generation (i.e. < 50 peak hour trips), a TIA which includes LOS analysis is not required based the *City of Garden Grove TIA Guidelines*.

SB 743 VMT ASSESSMENT

On December 28, 2018, the California Natural Resources Agency adopted revised CEQA Guidelines. Among the changes to the guidelines was the removal of vehicle delay and LOS from consideration for transportation impacts under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled. Lead agencies are allowed to continue using their current impact criteria, or to opt into the revised transportation guidelines. However, the new guidelines must be used starting July 1, 2020, as required in CEQA section

15064.3. The City of Garden Grove has adopted thresholds as contained in the *City of Garden Grove Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and level of Service Assessment (May 2020).*

In late 2019, State courts stated that under section 21099, subdivision (b)(2), existing law is that "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment" under CEQA, except for roadway capacity projects.

As a result of SB 743, the new metric in the CEQA guidelines for transportation impacts is VMT per capita. The legislative intent of SB 743 is to balance the needs of congestion management with statewide goals for infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions.

Under the City of Garden Grove VMT analysis methodology, screening is used to determine if a project will be required to conduct a detailed VMT analysis. There are three (3) types of screening that Garden Grove applies to effectively screen projects from project-level assessment. As such, the following guidance summarizes the potential project screening, developed for the City of Garden Grove.

Type 1: Transit Priority Area (TPA) Screening

As noted previously, the CEQA Guidelines were amended to include section 15064.3, "Determining the Significance of Transportation Impacts". Subsection (b)(1) states in part:

> *"Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact."*

Pursuant to the statute, development projects may be screened out of VMT analysis based on proximity to certain transit facilities due to the presumption of less than significant impacts. The *Technical Advisory* reiterates this screening criteria, but also highlights certain project-specific or location-specific characteristics which may indicate the project will still generate "significant levels of VMT", even when located within one-half mile of a major transit stop or a stop along a high-quality transit corridor. These characteristics relate to the project's floor area ratio (FAR), parking supply, and number of dwelling units, as well as consistency with the applicable Sustainable Communities Strategy (SCS). If the project has any characteristics which indicate that the presumption of less than significant impacts as stated in the CEQA

Guidelines may not be appropriate, the *OPR Technical Advisory* recommends that the project should not be screened out of further VMT analysis.

The City of Garden Grove criteria is consistent with the *OPR Technical Advisory* and provides the following criteria, which was utilized to determine whether this Project can be screened out based on the TPA criteria.

Project located within a TPA may be presumed to have a less than significant impact absent substantial evidence to the contrary. This presumption may NOT be appropriate if the project:

1. Has a Floor Area Ratio (FAR) of less than 0.75;
2. Includes more parking for use by residents, customers, or employees of the project than required by the City;
3. Is inconsistent with the Sustainable Communities Strategy (as determined by the City of Garden Grove, with input from the Metropolitan Planning Organization); or
4. Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

Based on the above, the proposed Project will <u>not</u> screen-out under this criteria since it is not within the TPA defined by ***Appendix A-1*** *of the City of Garden Grove Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and level of Service Assessment (May 2020).*

<u>Type 2: Low VMT Area Screening</u>

An additional screening methodology is provided for residential and office land use projects. Lead agencies may prepare maps based on a regional travel demand model or travel survey data to illustrate areas that are currently below the selected VMT threshold. OPR reasons that if a project has similar characteristics to the existing area (i.e., density, mix of uses, transit service, etc.), it will tend to exhibit similar VMT. Therefore, if a project is fully located within an area identified as having a below-threshold VMT, it may be presumed to also have less than significant VMT impacts and be screened out from requiring a detailed VMT analysis.

Appendix B-2 presents the City of Garden Grove Low VMT Screening Map, which illustrates the Daily VMT per Service Population Compared to the County Average (2012). As shown in *Appendix B-2,* the Project site is located within a "blue shaded area" of the map, which indicates a VMT that is < -15% below the County Average

and therefore would screen out based on the City of Garden Grove criteria. In addition, the Project is consistent with the existing land use within the TAZ.

Based on the above, the proposed Project <u>will</u> screen-out under this criteria because the project site is located in an area of the City with a VMT that is < -15% below the County Average and consistent with the existing land use within the TAZ.

<u>Type 3: Project Type Screening</u>

OPR provides additional recommendations on when the presumption of less than significant impacts may be appropriate in addition to the formally recommended screening criteria described above. For the City of Garden Grove, a detailed list of uses is provided in the TIA Guidelines that can be screened from project-level assessment as they are presumed to have a less than significant impact due to their local serving nature. In addition to the local serving retail, the following uses can also be presumed to have a less than significant impact;

- Local-serving K-12 public Schools
- Local parks
- Day care centers
- Local-serving retail uses less than 50,000 square feet, including:
    - Gas stations
    - Banks
    - Restaurants
    - Shopping Center
- Student housing projects on or adjacent to college campuses
- Community institutions (public libraries, fire stations, local government)
- Affordable, supportive, or transitional housing
- Assisted living facilities
- Senior housing (as defined by HUD)
- Local serving community colleges that are consistent with assumptions noted in the RTP/SCS
- Project generating less than 110 daily vehicle trips
    - This generally corresponds to the following "typical" development potentials:
        - 11 single family housing units
        - 16 multi-family, condominiums, or townhouse housing units
        - 10,000 sq. ft. of office
        - 15,000 sq. ft. of light industrial
        - 63,000 sq. ft. of warehousing

- 79,000 sq. ft. of high cube transload and short-term storage warehouse

Based on the ITE *Trip Generation 10th Edition* (2017) net trip generation potential of the proposed seven (7) unit *Multi Family Housing (Low Rise) [ITE Land Use: 220]* development, which is 42 net daily vehicle trips, the proposed Project can be considered not to lead to a significant impact consistent with the *City of Garden Grove Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and level of Service Assessment (May 2020).*

Based on the above, the proposed Lorna Street Townhomes Project <u>will</u> screen-out and be presumed to cause less than significant impacts since it is forecast to generate only 42 net daily vehicle trips under the Type 3: Project Type Screening applied to the "Project generating less than 110 daily vehicle trips" criteria.

SITE ACCESS AND ON-SITE CIRCULATION EVALUATION

As shown in *Figure 3*, access for the proposed Project will be efficiently provided via the one (1) gated full-movement driveway along Lorna Street, which is located adequate distance from Stanford Avenue and Acacia Avenue to provide safe and efficient access.

The on-site circulation layout of the proposed Project as illustrated in *Figure 3* on an overall basis is adequate. The driveway width has been confirmed and is generally adequate for small service/delivery (FedEx, UPS, Amazon) trucks, trash trucks, and emergency vehicles.

CONCLUSION

Based on the results of the aforementioned net Project trip generation forecast for the proposed Lorna Street Townhomes, which is 42 net daily trips, with 2 net trips (1 inbound, 1 outbound) produced in the AM peak hour and 3 net trips (2 inbound, 1 outbound) produced in the PM peak hour on a "typical" weekday, we conclude that a TIA which includes LOS analysis is not required based on the *City of Garden Grove TIA Guidelines*. In addition, given that the proposed seven (7) unit townhome Project is located within a "Low VMT Generating TAZ", per the City's screening map, and forecast to generate 42 net daily vehicle trips, which is significantly less than 110 daily vehicle trips, this Project is screened out of a VMT analysis and could be presumed a less than significant impact on VMT, per the *OPR Technical Advisory*

LINSCOTT LAW & GREENSPAN engineers

and *City of Garden Grove Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and level of Service Assessment (May 2020).*

* * * * * * * * * *

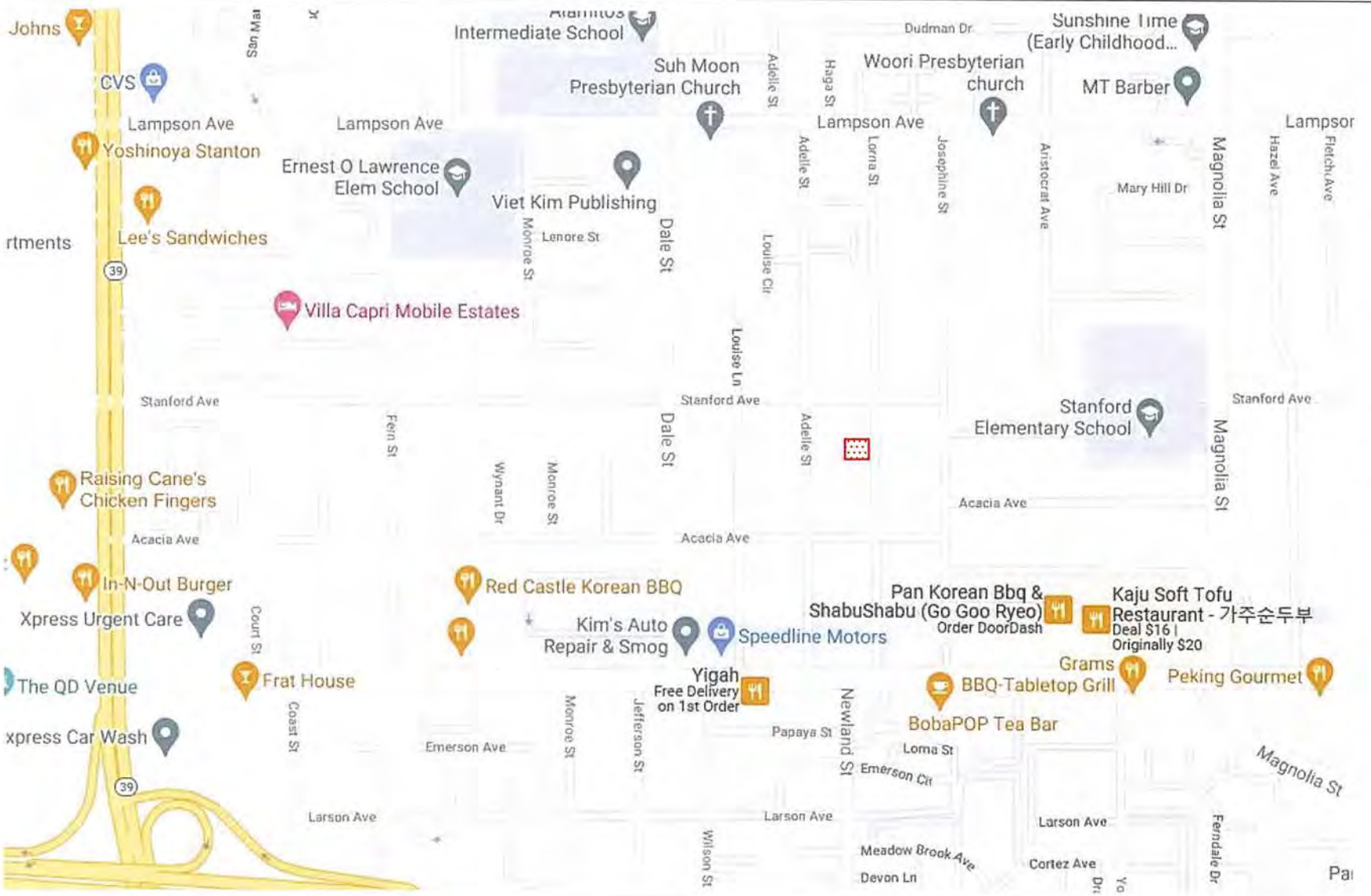
We appreciate the opportunity to provide this Traffic Circulation Impact and VMT Assessment. Should you need further assistance, or have any questions regarding this analysis, please call us at (949) 825-6175.

Very truly yours,
Linscott, Law & Greenspan, Engineers

Keil D. Maberry, P.E.
Principal

Attachment

REGISTERED PROFESSIONAL ENGINEER
KEIL D. MABERRY P.E.
No. 1802
Exp. 6/30/23
TRAFFIC
STATE OF CALIFORNIA



LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

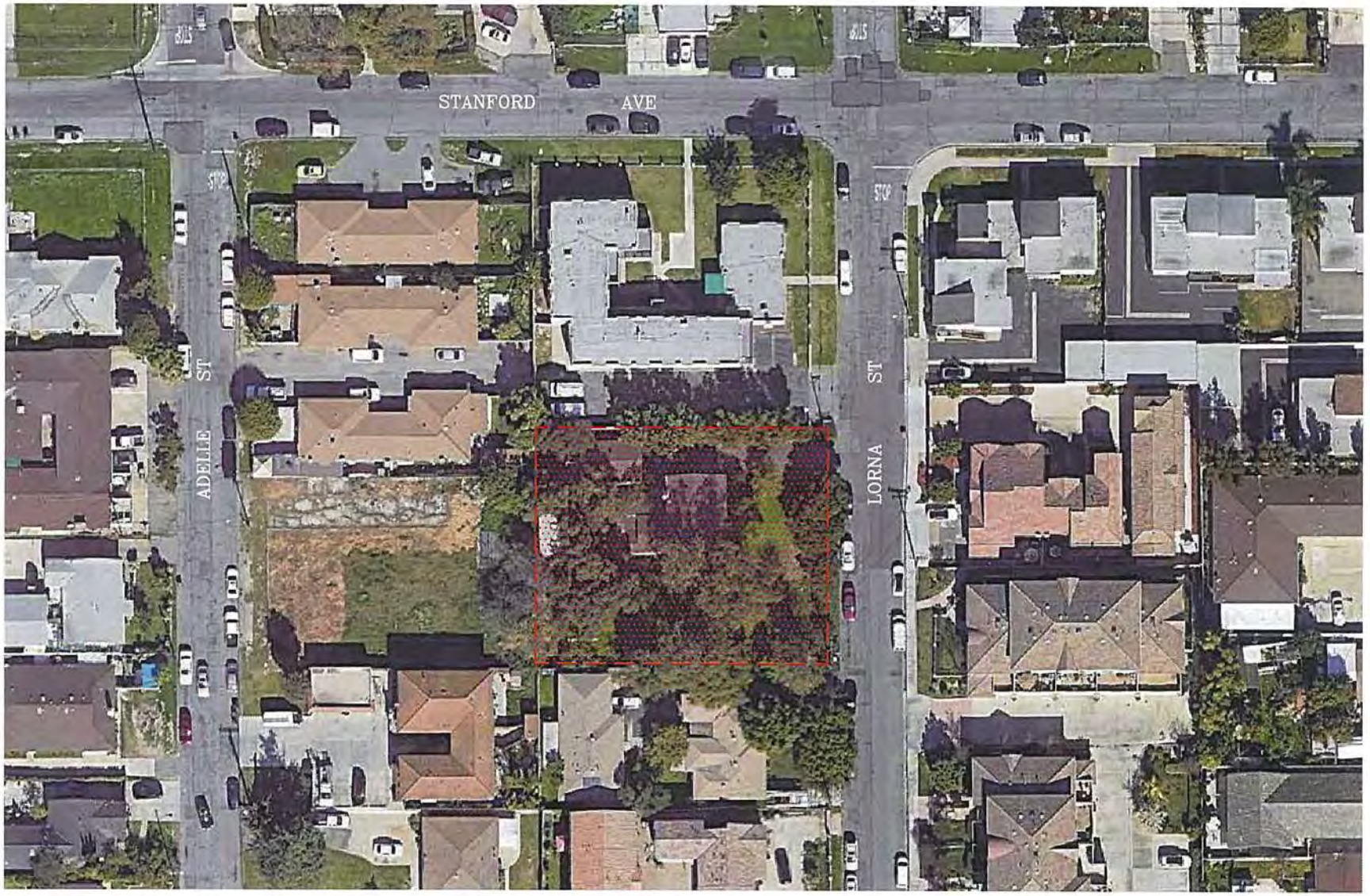
KEY

= PROJECT SITE

FIGURE 1

VICINITY MAP

LORNA STREET APARTMENTS, GARDEN GROVE



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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: GOOGLE

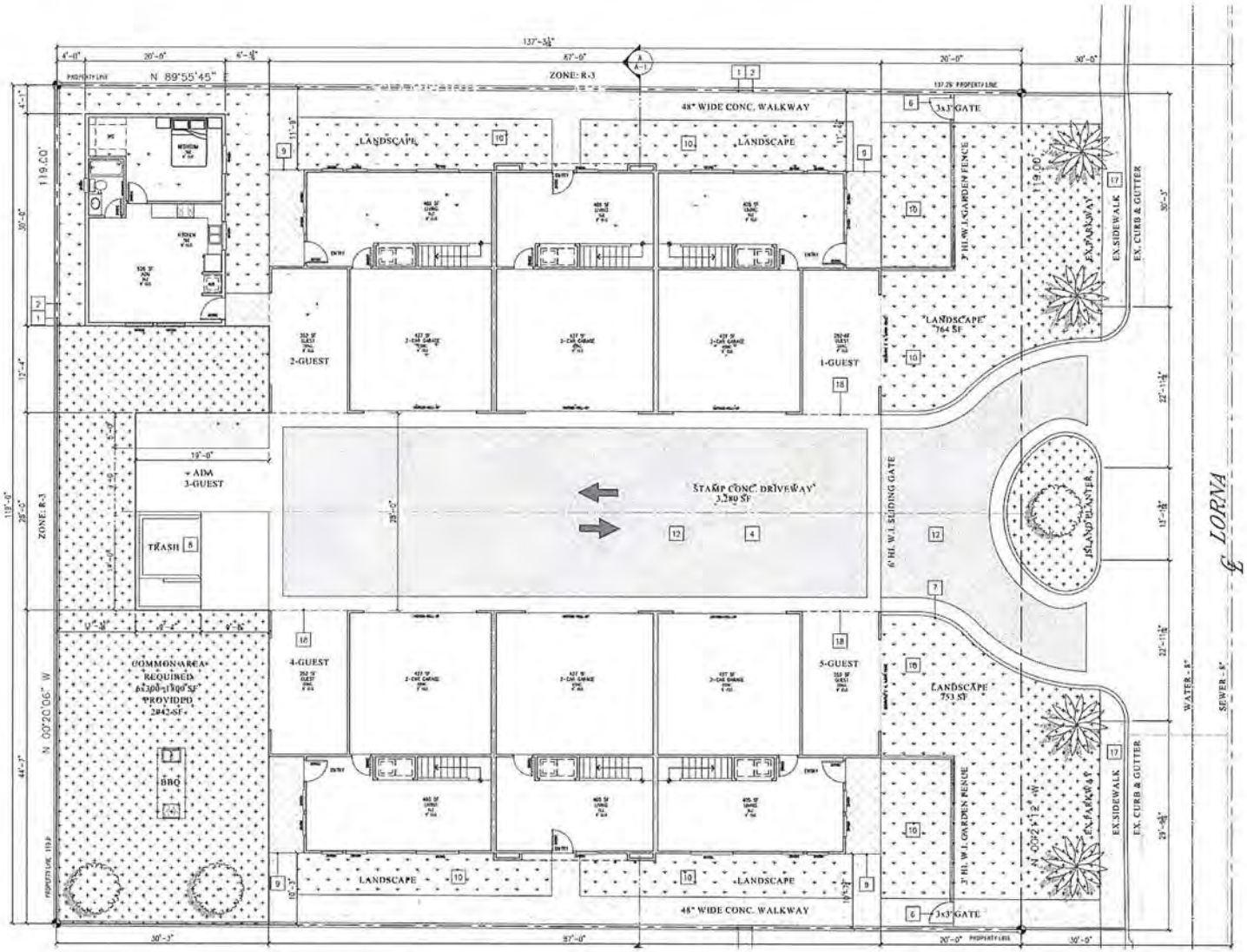
KEY

= PROJECT SITE

FIGURE 2

EXISTING SITE AERIAL

LORNA STREET APARTMENTS, GARDEN GROVE



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SOURCE: ZBT GROUP

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

FIGURE 3

PROPOSED SITE PLAN

LORNA STREET APARTMENTS, GARDEN GROVE

LINSCOTT LAW & GREENSPAN engineers

TABLE 1

PROJECT TRAFFIC GENERATION RATES AND FORECAST[1]

LORNA STREET TOWNHOMES, GARDEN GROVE

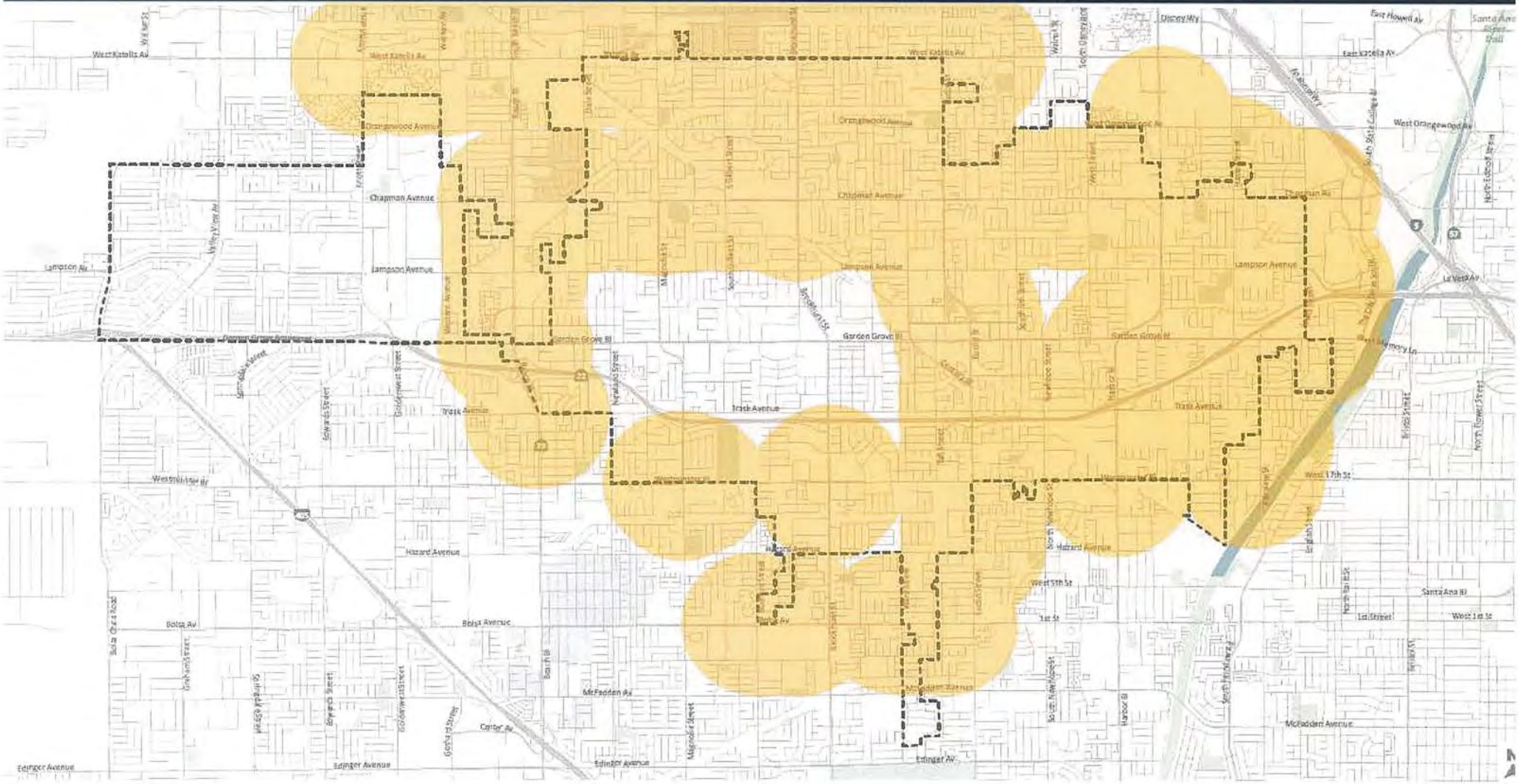
ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Rates:							
▪ 210: Single Family Detached Housing (TE/DU)	9.44	25%	75%	0.74	63%	37%	0.99
▪ 220: Multifamily Housing (Low-Rise) (TE/DU)	7.32	23%	77%	0.46	63%	37%	0.56
Existing Site Generation Forecast:							
▪ Single Family Detached Home (1 DU)	9	0	1	1	1	0	1
Proposed Project Generation Forecast:							
▪ Townhomes (7 DU)	51	1	2	3	3	1	4
Total Net Project Trip Generation Forecast	**42**	**1**	**1**	**2**	**2**	**1**	**3**

Note:

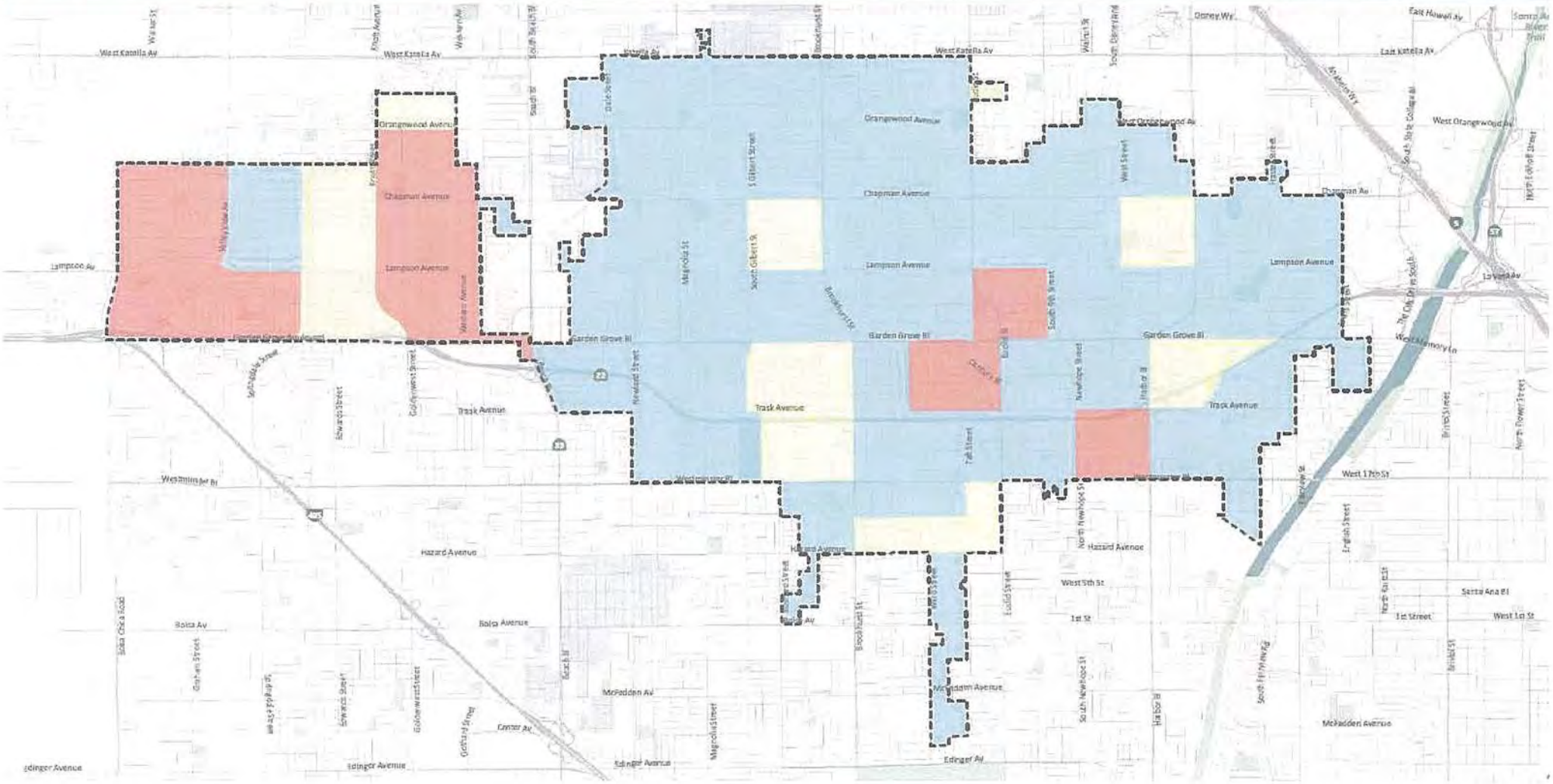
- TE/DU = Trip end per dwelling unit

[1] Source: *Trip Generation, 10th Edition*, Institute of Transportation Engineers, (ITE) [Washington, D.C. (2017)].

Garden Grove Transit Priority Areas (TPAs)



Garden Grove Low VMT Areas
15% Below Countywide Comparison



City Boundary

<-15% below County Average

0 to -15% below County Average

Higher than County Average

Appendix B

OD Method: Daily VMT per Service Population Compared to County Average (201

Lorna Street Residential Development
Focused Noise Analysis

Prepared by:

Synectecology
10232 Overhill Drive
Santa Ana, CA 92705

Prepared for:

Binh Tran
ZBT Group
401 Marion Blvd
Fullerton, CA 92805

February 17, 2022

Lorna Street Residential Development Focused Noise Analysis

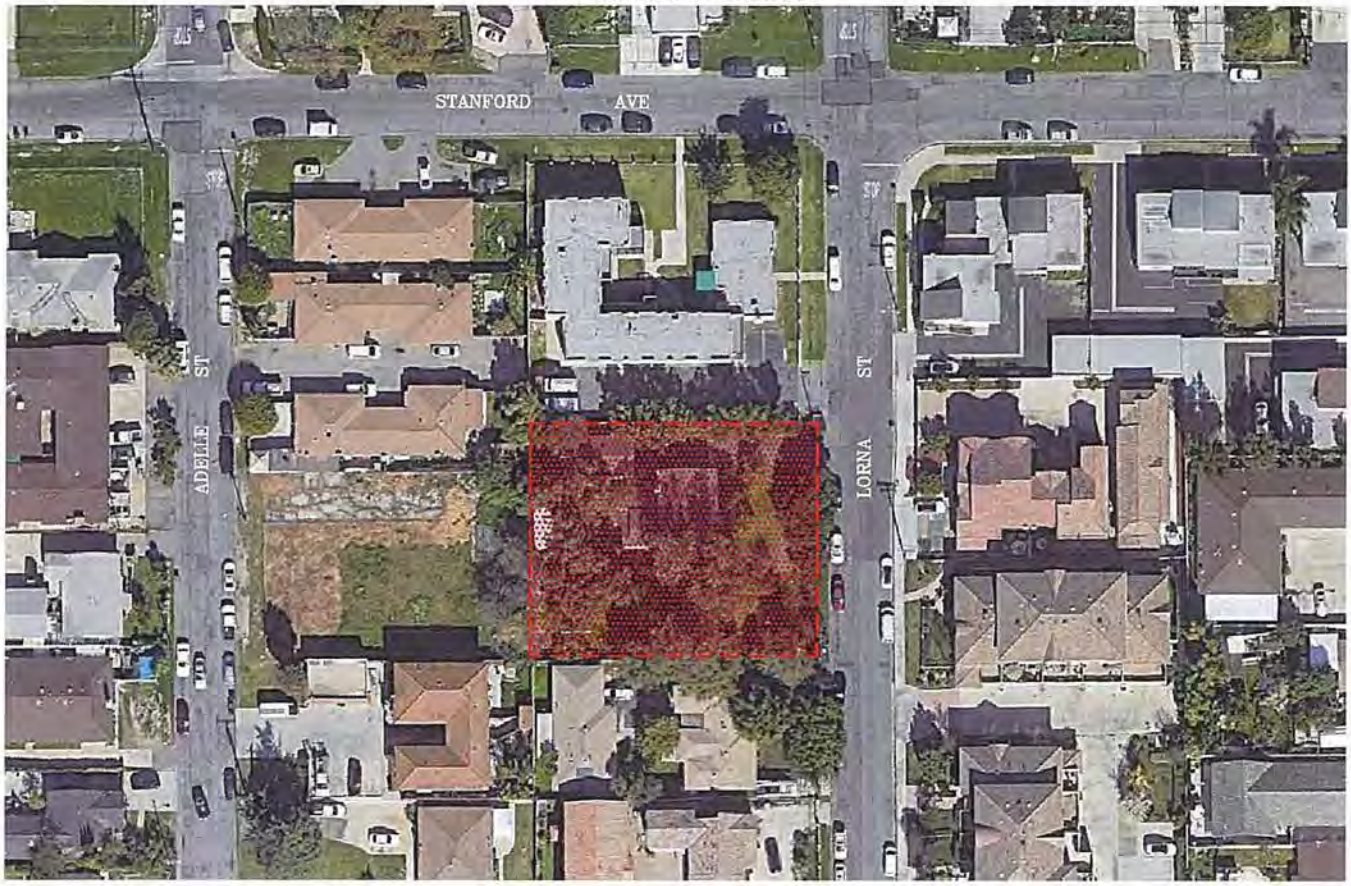
Table of Contents

1.0 Methodology

This noise study was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) to determine if significant impacts are likely to occur in conjunction with the type and scale of development associated with the proposed Lorna Street residential development project proposed by the ZBT Group. The project includes the removal of an existing residential structure and subsequent development of six townhomes and one accessory dwelling unit (ADU) on approximately 0.375 acre of land.

The project is to be located at 12771 Lorna Street in the City of Garden Grove along the west side of Lorna Street, south of Stanford Avenue. The Garden Grove Freeway (SR-22) lies about 2,300 feet to the south. The existing site is shown in Figure 1. Figure 2 includes the conceptual site plan.

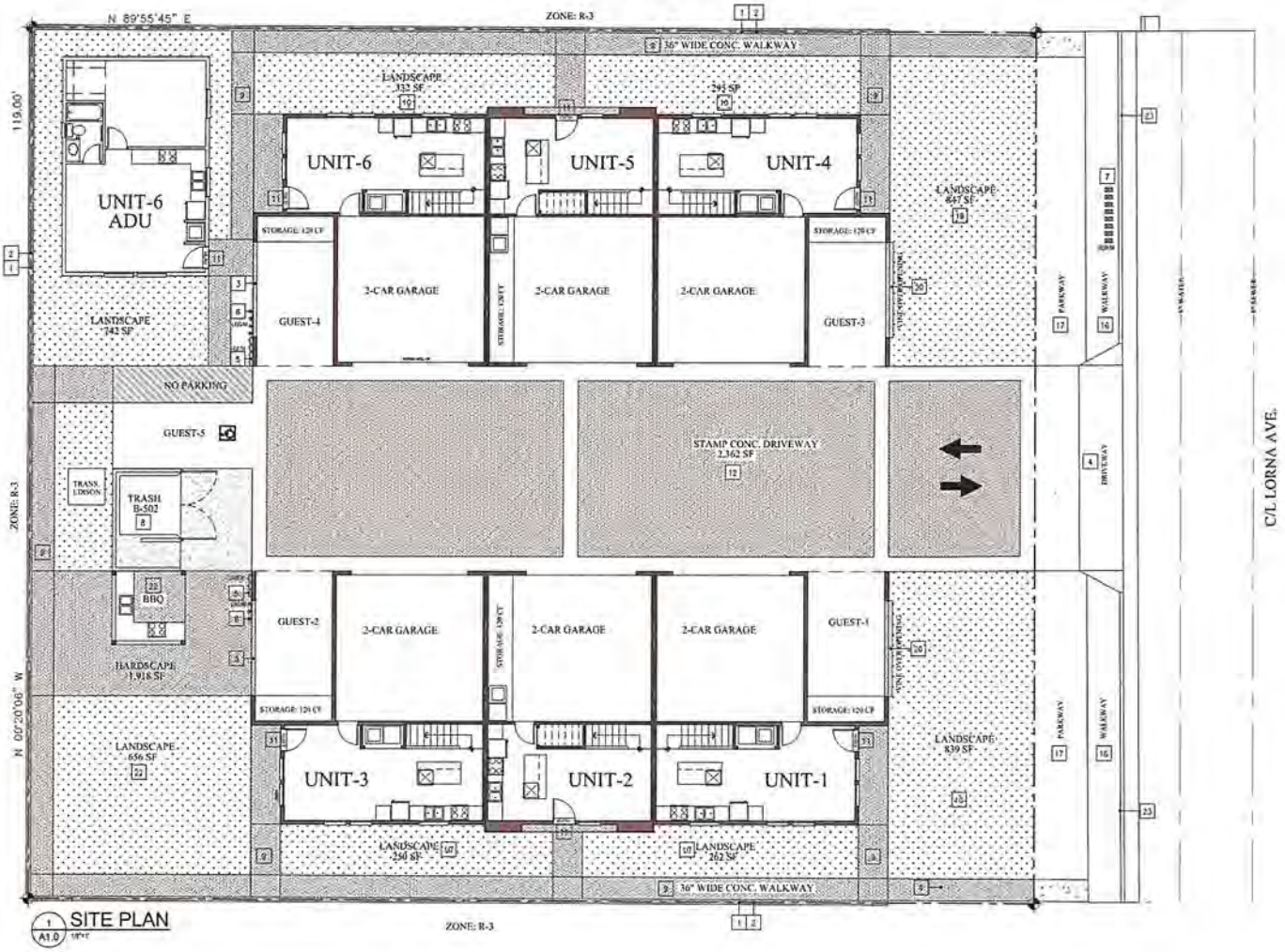
Figure 1
SITE LOCATION



The following analysis provides a discussion on the fundamentals of sound, examines Federal, State, and City noise guidelines and policies, reviews noise levels at the site and existing receptor locations, and evaluates potential noise impacts associated with the Proposed Project. The evaluation of noise impacts associated with a Proposed Project includes:

- Reviewing existing ambient noise levels in the project area,
- Determining the noise impacts associated with site development, and
- Determining the long-term noise impacts from project-related traffic.

Figure 2
CONCEPTUAL SITE PLAN



The generation of noise associated with the implementation of the project would occur in the short-term with demolition and construction activities, and over the long-term from the on-site operation of transportation-related noise sources associated with the proposed development. This noise assessment addresses noise impacts by discussing the current noise environment, analyzing impacts associated with proposed land use including mobile-source noise, and evaluating construction equipment noise.

2.0 Existing Conditions

2.1 Noise Definitions

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in Hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the loudness of sound is the decibel (dB). Typical human hearing can detect changes in sound levels of approximately 3 dBA under normal conditions. Changes of 1 to 3 dBA are detectable under quiet, controlled conditions, and changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is discernable to most people in an exterior environment while a change of 10 dBA is perceived as a doubling (or halving) of the noise.

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all and are "felt" more as a vibration. Similarly, while people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency dependent rating scale is usually used to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Noise is defined as unwanted sound, and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, the federal government, the State of California, and many local governments have established criteria to protect public health and safety and to prevent disruption of certain human activities.

2.2 Noise Measurement Scales

Several rating scales (or noise "metrics") exist to analyze adverse effects of noise, including traffic-generated noise, on a community. These scales include the equivalent noise level (Leq), the community noise equivalent level (CNEL), and the day-night noise level (Ldn). Leq is a measurement of the sound energy level averaged over a specified time period (usually 1 hour). Leq represents the amount of variable sound energy received by a receptor over a time interval in a single numerical value. For example, a 1-hour Leq noise level measurement represents the average amount of acoustic energy that occurred in that hour.

Unlike the Leq metric, the CNEL noise metric is based on 24 hours of measurement. CNEL also differs from Leq in that it applies a time-weighted factor designed to emphasize noise events that occur during the evening and nighttime hours (when quiet time and sleep disturbance is of particular concern). Noise occurring during the daytime period (7:00 a.m. to 7:00 p.m.) receives no penalty. Noise produced during the evening time period (7:00 p.m. to 10:00 p.m.) is penalized by 5 dBA, while nighttime noise (10:00 p.m. to 7:00 a.m.) is penalized by 10 dBA.

The Ldn noise metric is similar to the CNEL metric except that the period from 7:00 p.m. to 10:00 p.m. receives no penalty. Both the CNEL and Ldn metrics yield approximately the same 24-hour value (within about 0.5 dBA) with the CNEL being the more restrictive (i.e., its calculation results in the higher value of the two).

2.3 Vibration Fundamentals

Vibration is a trembling, quivering, or oscillating motion of the earth. Like noise, vibration is transmitted in waves, but in this case through the earth or solid objects. Unlike noise, vibration is typically of a frequency that is felt rather than heard.

Vibration can be either natural as in the form of earthquakes, volcanic eruptions, sea waves, landslides, etc., or man-made as from explosions, the action of heavy machinery or heavy vehicles such as trucks or trains. Both natural and man-made vibration may be continuous such as from operating machinery, or transient as from an explosion.

As with noise, vibration can be described by both its amplitude and frequency. Amplitude may be characterized in three ways including displacement, velocity, and acceleration. Particle displacement is a measure of the distance that a vibrated particle travels from its original position and for the purposes of soil displacement is typically measured in inches or millimeters. Particle velocity is the rate of speed at which soil particles move in inches per second or millimeters per second. Particle acceleration is the rate of change in velocity with respect to time and is measured in inches per second per second or millimeters per second per second. Typically, particle velocity (measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to describe vibration. Table 1 presents the human reaction and effects on buildings exposed to various levels of *continuous* vibration.

Vibrations also vary in frequency and this affects perception. Typical construction vibrations fall in the 10 to 30 Hz range and usually occur around 15 Hz. Traffic vibrations exhibit a similar range of frequencies. However, due to their suspension systems, city buses often generate frequencies around 3 Hz at high vehicle speeds. It is more uncommon, but possible, to measure traffic frequencies above 30 Hz.

The way in which vibration is transmitted through the earth is called propagation. Propagation of earth borne

vibrations is complicated and difficult to predict because of the endless variations in the soil through which waves travel. There are three main types of vibration propagation; surface, compression, and shear waves. Surface waves, or Rayleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. P-waves, or compression waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. S-waves, or shear waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation."

Table 1
HUMAN REACTION TO TYPICAL VIBRATION LEVELS

Vibration Level Peak Particle Velocity (inches/second)	*Human Reaction*	*Effect on Buildings*
0.006 - 0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people.	Virtually no risk of "architectural" damage to normal buildings
0.20	Vibrations annoying to people in buildings.	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4 – 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking by bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Caltrans 2002.

As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

2.4 Regulatory Environment

To limit population exposure to physically and/or psychologically damaging, as well as intrusive noise levels, the federal government, the State of California, various County governments, and most municipalities in the State have established standards and ordinances to control noise.

Federal Government

Occupational Health and Safety

The federal government regulates occupational noise exposure common in the workplace through the Occupational Health and Safety Administration (OSHA) under the USEPA. Noise exposure of this type is dependent on work conditions and is addressed through a facility's Health and Safety Plan. The construction of the project will be subject to these OSHA limitations and all workers would receive appropriate training, hearing protection, and breaks, accordingly, ensuring that they are not exposed to harmful noise levels. Adherence to these OSHA requisites would ensure that these impacts remain less than significant and noise in the workplace will not be addressed further in this study.

Housing and Urban Development

The US Department of Housing and Urban Development (HUD) has set a goal of 45 dBA Ldn as a desirable maximum interior standard for residential units developed under HUD funding. (This level is also generally accepted within the State of California.) While HUD does not specify acceptable exterior noise levels, standard construction of residential dwellings constructed under Title 24 standards typically provides 20 dBA, or more, of attenuation with the windows closed. Based on this premise, the exterior Ldn should not exceed 65 dBA.

State of California Standards

The California Office of Noise Control has set acceptable noise limits for sensitive uses. Sensitive-type land uses, such as homes, are "normally acceptable" in exterior noise environments up to 65 dBA CNEL and "conditionally acceptable" in areas up to 70 dBA CNEL. A "conditionally acceptable" designation implies that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use type is made and needed noise insulation features are incorporated in the design. By comparison, a "normally acceptable" designation indicates that standard construction can occur with no special noise reduction requirements.

City of Garden Grove

The project lies in the City of Garden Grove and is subject to the rules and regulations established therein. The City Noise Element included in the General Plan has adopted the State of California Office of Planning and Research (OPR) Noise Element Guidelines for recommended interior and exterior level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The OPR Guidelines describe the compatibility of various land uses with a range of environmental noise levels in terms of dBA CNEL. A noise environment of 50 dBA CNEL to 60 dBA CNEL is considered to be "normally acceptable" for residential uses. The State indicates that locating residential units, parks, and institutions (such as churches, schools, libraries, and hospitals) in areas where exterior ambient noise levels exceed 65 dBA CNEL is undesirable. The OPR recommendations also note that, under certain conditions, more restrictive standards than the maximum levels cited may be appropriate. As an example, the standards for quiet suburban and rural communities may be reduced by 5 to 10 dB to reflect their lower existing outdoor noise levels in comparison with urban environments.

In addition, Title 25, Section 1092 of the California Code of Regulations, sets forth requirements for the insulation of multiple-family residential dwelling units from excessive and potentially harmful noise. Whenever multiple-family residential dwelling units are proposed in areas with excessive noise exposure, the developer must incorporate construction features into the building's design that reduce interior noise levels to 45 dBA CNEL. Table 2 illustrates the State guidelines established by the State Department of Health Services for acceptable noise levels for each county and city. These standards and criteria are incorporated into the land use planning process to reduce future noise and land use incompatibilities. This table is the primary tool that allows the City to ensure integrated planning for compatibility between land uses and outdoor noise.

Table 2
LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS

Land Use Category	*Community Noise Exposure (CNEL)*			
	Normally Acceptable	*Conditionally Acceptable*	*Normally Unacceptable*	*Clearly Unacceptable*
Residential-Low Density, Single-Family, Duplex, Mobile Homes	50 – 60	55 - 70	70 - 75	75 - 85
Residential – Multiple Family	50 – 65	60 - 70	70 - 75	70 - 85
Transient Lodging – Motel, Hotels	50 – 65	60 - 70	70 - 80	80 - 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 - 70	70 - 80	80 - 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 - 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 - 85

Playgrounds, Neighborhood Parks	50 – 70	NA	67.5 – 77.5	72.5 – 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 70	NA	70 - 80	80 - 85
Office Buildings, Business Commercial and Professional	50 – 70	67.5 – 77.5	75 - 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 - 80	75 - 85	NA

CNEL = community noise equivalent level; NA = not applicable

NORMALLY ACCEPTABLE: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

NORMALLY UNACCEPTABLE: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise-insulation features must be included in the design.

CLEARLY UNACCEPTABLE: New construction or development should generally not be undertaken.

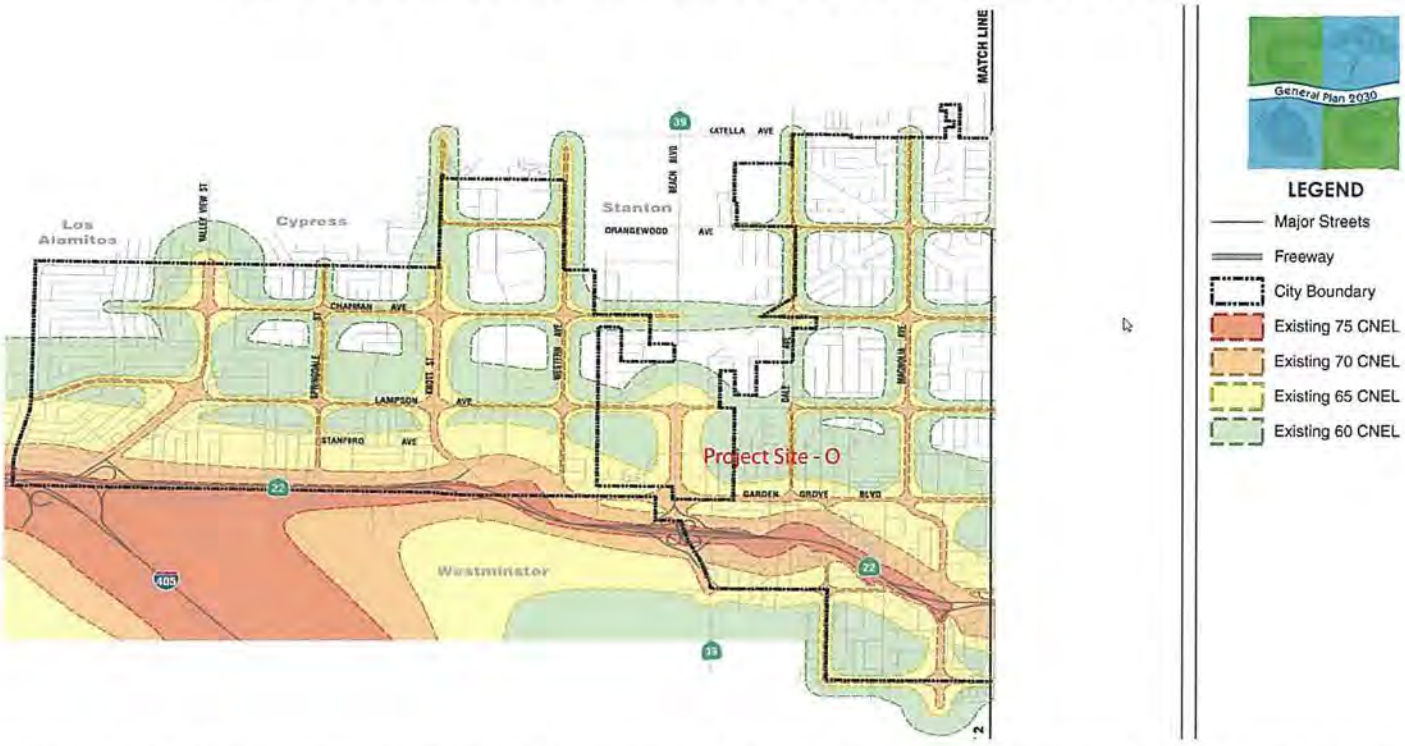
Source: City of Garden Grove General Plan Noise Element.

The existing noise contours included in the Noise Element are shown in Figure 3. Note that at the time that the Noise Element of the General Plan was adopted (May 2008), the project would be located in an area that lies below 60 dBA CNEL.

Figure 3
CITY OF GARDEN GROVE NOISE ELEMENT EXISTING NOISE CONTOURS

Figure 4, also included in the City Noise Element, shows the projected noise contours for the year 2030. In this case noise in the project area is anticipated to rise slightly and the project site is located between the 60 and 65 dBA noise contours.

Figure 4
CITY OF GARDEN GROVE NOISE ELEMENT FUTURE NOISE CONTOURS



The goals of the City Noise Element are administered through the City Noise Ordinance within its Municipal Code that establishes citywide interior and exterior noise level standards. The City has adopted a number of policies that are directed at controlling or mitigating environmental noise effects. The City's Noise Ordinance (Municipal Code Section 8.47, Noise Control,) establishes daytime and nighttime noise standards as shown in Table 3.

Table 3
CITY OF GARDEN GROVE NOISE ORDINANCE STANDARDS

Land Use Designation		*Ambient Base Noise Level (dBA)*	*Time of Day*
Sensitive Uses	Residential Uses	55	7:00 AM – 10:00 PM
		50	10:00 PM – 7:00 AM
Conditionally Sensitive Uses	Institutional Use	65	Any Time
	Office-Professional Use	65	Any Time
	Hotels and Motels	65	Any Time
Non-Sensitive Uses	Commercial Uses	70	Any Time
	Commercial/Industrial Uses within 150 feet of Residential Uses	65	7:00 AM – 10:00 PM
		50	10:00 PM – 7:00 AM
			Any Time

City of Garden Grove Municipal Code, Section 8.47, Noise Control

The ordinance is designed to control unnecessary, excessive, and annoying sounds generated from a stationary source impacting an adjacent property. It differentiates between environmental and nuisance noise. Environmental noise is measured under a time average period while nuisance noise cannot exceed the established Noise Ordinance levels at any time, subject to the duration limitations noted below. At the boundary line between a residential property and a commercial and manufacturing property, the noise level of the quieter zone is required to be used.

Section 8.47.050 of the City Municipal Code defines the noise disturbance criteria. The section notes:

A. NOISE DISTURBANCE CRITERIA. It shall be unlawful for any person to willfully make, continue, or cause to be made or continued, any loud, unnecessary, or unusual noise that disturbs the peace or quiet of any neighborhood, or that causes discomfort or annoyance to any person of normal sensitiveness.

B. The criteria that shall be utilized in determining whether a violation of the provisions of this section exists shall include, but not be limited to, the following:

1. The level of the noise.
2. The frequency of occurrence of the noise.
3. Whether the nature of the noise is usual or unusual.
4. The level and intensity of the background noise, if any.
5. The proximity of the noise to residential sleeping facilities.
6. The nature and zoning of the area within which the noise emanates.
7. The density of the inhabitation of the area within which the noise is received.
8. The time of day or night the noise occurs.
9. The duration of the noise.

C. DURATION OF NOISE. The following criteria shall be used whenever the noise level exceeds:

1. The noise standard for a cumulative period of more than 30 minutes in any hour;
2. The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour;
3. The noise standard plus 10 dB(A) for a cumulative period of more than five minutes in any hour;
4. The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour; or
5. The noise standard plus 20 dB(A) for any period of time.

D. In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level. (2802 § 1, 2011; 2660 § 2, 2005)

Finally, the City recognizes construction is necessary, but can present a nuisance value to sensitive receptors if performed in their proximity and sets limitations accordingly in Section 8.47.050. The ordinance notes that it shall be unlawful for any person within a residential area, or within a radius of 500 feet there from, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects, or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device between the hour of 10:00 p.m. of one day and 7:00 a.m. of the next day in such a manner that a person of normal sensitiveness, as determined utilizing the criteria established in Section 8.47.050(B), is caused discomfort or annoyance unless such operations are of an emergency nature.

While the City's general interpretation is that construction noise during the day is exempt from those levels included in Table 3, the ordinance does not exempt construction noise within 500 feet of a residential area, nor does it set a quantitative limitation on construction noise at proximate receptor locations.

2.5 Existing Noise Environment Field Measurements

The project is to be located in the City of Garden Grove and includes the removal of an existing home and subsequent development of six townhomes and one ADU unit on approximately 0.375 acre of land. The project is to be sited along the west side of Lorna Street south of Stanford Avenue. The SR-22 (Garden Grove) Freeway lies about 2,300 feet to the south. The project includes a residential land use and is to be considered as sensitive in nature. Other sensitive land uses, including single and multi-family residential units, are located proximate to the project on all sides.

A field survey was conducted on Thursday, October 28, 2021 to determine ambient noise levels at the site and proximate area. The study included one noise reading taken at the project site. A weekday was chosen so as to be representative of the general traffic patterns and its noise in the area. During the study, noise monitoring was conducted using a Quest Technologies Model 2900 Type 2 Integrating/logging Sound Level Meter. The unit meets the American National Standards Institute Standard S1.4-1983 for Type 2, International Electrotechnical Commission Standard 651-1979 for Type 2, and International Electro-technical Commission Standard 651-1979 for Type 2 sound level meters. The unit was field-calibrated using a Quest Technologies QC-10 calibrator at 10:33 a.m. immediately prior to the readings. The calibration unit meets the requirements of the American National Standards Institute Standard S1.4-1984 and the International Electrotechnical Commission Standard 942: 1988 for Class 1 equipment. The calibration of the meter was rechecked at 11:02 a.m. and no meter "drift" was noted. The results of the field study are summarized below. The obtained noise level measurements are included in Table 4. The monitoring location is included in Figure 5.

Table 4
NOISE LEVEL MEASUREMENTS[1]

Monitoring Location	*Leq (dBA)*	*L_{02} (dBA)*	*L_{08} (dBA)*	*L_{25} (dBA)*	*L_{50} (dBA)*	*Lmin (dBA)*	*Lmax (dBA)*
NR-1	50.1	58.1	52.6	49.2	47.9	43.0	63.9

[1] The Leq represents the equivalent sound level and is the numeric value of a constant level that over the given period of time transmits the same amount of acoustic energy as the actual time-varying sound level. The L_{02}, L_{08}, L_{25}, and L_{50} are the levels that are exceeded 2, 8, 25, and 50 percent of the time, respectively. Alternatively, these values represent the noise level that would be exceeded for 1, 5, 15, and 30 minutes during a 1-hour period if the readings were extrapolated out to an hour's duration. The Lmin and Lmax represent the minimum and maximum root-mean-square noise levels obtained over a period of 1 second during the measurement.

NR-1

In this case, a single reading was obtained at the project site. The reading is indicative of the general area when traffic volumes would be representative the daytime "off-hour" (i.e., non-rush hour) traffic. Additional readings would yield similar data, and because site noise was elevated due to local construction, the obtained reading already represents a "worst-case" condition for off-hour traffic. Rush-hour traffic is actually quieter *on a per vehicle basis* than off-hour traffic because vehicles are traveling at lower speeds and vehicles in the far lanes are partially shielded by the presence of vehicles in the proximate lanes.

This reading was taken on the unpaved area in front of the existing dwelling along the roadway. The reading would also be indicative of the noise expected at the proximate residents. Specifically the meter was placed next to the south-side of the driveway at a distance of 17 feet from the centerline of Lorna Street. In this location, Lorna has a width of about 32 feet. The 15-minute reading was taken from 10:42 a.m. The primary source of noise was from the operation of a horizontal drill being used by a construction crew to bore under Acacia Avenue to the south. The boring machine was a Ditch Witch JT20. The machine was located at a distance of 385 feet from the monitored location with the engine oriented toward the project site. The JT20 is reported to produce a noise level of 87 dBA at the "operator's station" which would appear to be about 10 feet from the engine and exhaust, the noisiest part of the machine.

Figure 5
NOISE LEVEL MONITORING LOCATION

Attenuation = 20 x log(385 feet/10 feet) = 31.7 dB

87 dBA – 31.7 dBA = 55.3 dBA

Therefore, assuming the operator at 10 feet and based on distance of 385 feet, this noise would be attenuated by about 32 dBA to about 55 dBA. This is still louder than noted in the field, but longer distances actually result in additional attenuation beyond the predicted losses used in the calculations. (The same concept would apply for site construction.) This is because the calculations are only based on "spreading losses" and do not included "atmospheric attenuation" as the noise gives up a portion of its energy to the air. Additionally, the calculations assume a clear line of site from the source of the noise to receptor location, and this was partially obscured by vehicles parked along the curb and vegetation.

Second to the operation of the boring machine, light plane overflights were the most notable noise source. Local traffic also added to the noise profile and five automobiles proceeded southbound while two automobiles went northbound along Lorna Street during the noise reading. Traffic along Stanford Avenue was also observed and while no counts were obtained along this route, the vehicle count appeared to be higher than that noted along Lorna Street. Background traffic noise, primarily along Garden Grove and Magnolia Boulevards, was also audible in the distance.

2.6 Sensitive Receptors

Some land uses are considered more sensitive to noise than others due to the types of population groups or activities involved. Sensitive receptors include residential areas and other sensitive land uses including any private or public school, hospital, residential care facility for the elderly, and religious institutions.

The project is residential and is sensitive to the ambient noise in the area. Residential uses are also located to all sides of the project site. The most proximate of these units is to the south at a distance of about 15 feet from the property line. The residential units to the north and west are located about 30 feet from the property line while those to the east, across Lorna Street, are at a distance of about 65 feet.

3.0 Thresholds of Significance

The City of Garden Grove General Plan Noise Element does not explicitly set indoor noise limitations for sensitive receptors. The Element does cite the State of California Office of Planning and Research adopted standards and these note that interior community noise equivalent levels (CNEL) attributable to external sources shall not exceed an annual CNEL of 45 dB in any habitable room. Also, the standards specify that residential structures located within CNEL contours of 60 dB adjacent to an existing or adopted freeway, expressway, parkway, major street, thoroughfare, railroad, or rapid transit line shall require an acoustical analysis showing that the building has been designed to limit intruding noise to an annual CNEL of 45 dB.

With respect to projected increases, noise impacts can be broken down into three categories. The first is "audible" impacts, which refers to increases in noise level that are perceptible to humans. Audible increases in noise levels generally refer to a change of 3 dBA or more since this level has been found to be barely perceptible in exterior environments. The second category, "potentially audible," refers to a change in noise level between 1 and 3 dBA. This range of noise levels was found to be noticeable to sensitive people in laboratory environments. The last category includes changes in noise level of less than 1 dBA that are typically "inaudible" to the human ear except under quiet conditions in controlled environments. Only "audible" changes in noise levels at sensitive receptor locations are considered potentially significant.

For stationary sources, the applicable noise standards include criteria established by local as well as any State regulations applicable to the proposed project. Mobile-source noise (i.e., vehicle noise) is preempted from local regulation but is still subject to CEQA review using threshold values for the level of increase for a significant noise impact.

3.1 State CEQA Guidelines

In order to assist in determining whether a project will have a significant effect on the environment, the CEQA Guidelines identify criteria that may be deemed to constitute a substantial or potentially substantial adverse change in physical conditions. According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project will normally have a significant adverse environmental impact on noise if the following apply:

- Would the project result in the 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?
- Would the project be consistent with standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (i.e., See CEQA Initial Study Section XI, Land Use Planning, b) Cause a significant environmental impact due to a conflict of any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.)
- Would the project result in the generation of excessive ground borne vibration or ground borne noise levels?
- 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?

4.0 Environmental Impacts and Mitigation Measures

The project involves the demolition of an existing home and the construction and subsequent use of six townhomes and one ADU. Existing on-site noise levels are based on data included in the City of Garden Grove General Plan Noise Element supported by data obtained during the field study. Noise associated with site construction is based on construction noise values provided by the USEPA for use in noise assessments.

Noise associated with site occupancy is primarily from mobile sources and most notably traffic traveling along Lorna Street. This is because this street has a relatively low existing traffic volume, and the project would route all of its traffic along this road. Once this traffic merges onto the adjacent streets, its addition to the system of roadways would be too small to measure. Project-generated ADT volumes are as provided in the Traffic Impact Assessment for the Proposed Lorna Street Townhomes Project (*Traffic Assessment*) prepared by Linscott Law & Greenspan (October 20, 2021). Based on the *Traffic Assessment* the Proposed Project would generate 52 Average Daily Trips (ADT) while removing nine existing ADT for a net increase of 42 ADT. The calculated noise associated with this traffic is then are compared to the thresholds of significance noted in Section 3.0, above. For ease of the reader, the included analysis follows the outline of the CEQA Checklist.

4.1 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

Temporary Noise, Less than Significant Impact with Mitigation

Noise levels associated with construction activities would typically be higher than the ambient noise levels in the project area, but would subside once construction of the project is completed. Two types of noise impacts could occur during the construction phase. First, the transport of workers and equipment to the construction site would incrementally increase noise levels along site access roadways. Even though there could be a relatively high single event noise exposure potential with passing trucks (a maximum noise level of 86 dBA at 50 feet), the increase in noise would be less than 1 dBA when averaged over a 24-hour period, and would therefore have a less than significant impact on noise receptors along the truck routes.

The second type of impact is related to noise generated by on-site construction operations and local residents would be subject to elevated noise levels due to the operation of this equipment. Construction activities are carried out in discrete steps, each of which has its own mix of equipment, and consequently its own noise characteristics. These various sequential phases would change the character of the noise levels surrounding the construction site as work progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow noise ranges to be categorized by work phase. Table 5 lists typical construction equipment noise levels recommended for noise impact assessment at a distance of 50 feet.

Table 5
NOISE LEVELS GENERATED BY TYPICAL CONSTRUCTION EQUIPMENT

Type of Equipment	*Range of Sound Levels Measured (dBA at 50 feet)*	*Suggested Sound Levels for Analysis (dBA at 50 feet)*
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81 to 96	93
Rock Drills	83 to 99	96
Jack Hammers	75 to 85	82
Pneumatic Tools	78 to 88	85
Pumps	68 to 80	77
Dozers	85 to 90	88
Tractor	77 to 82	80
Front-End Loaders	86 to 90	88
Hydraulic Backhoe	81 to 90	86
Hydraulic Excavators	81 to 90	86
Graders	79 to 89	86
Air Compressors	76 to 86	86
Trucks	81 to 87	86

Source: Noise Control for Buildings and Manufacturing Plants, BBN 1987

Noise ranges have been found to be similar during all phases of construction, although the actual construction of the structures is typically reduced from the grading efforts. The grading and site preparation phase tends to create the highest noise levels because the noisiest construction equipment is found in the earthmoving equipment category. This category includes excavating machinery (backfillers, bulldozers, draglines, front loaders, etc.) and earthmoving and compacting equipment (compactors, scrapers, graders, etc.). Typical operating cycles may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Noise levels at 50 feet from earthmoving equipment range from 73 to 96 dBA while Leq noise levels range up to about 88 dBA and 89 dBA for residential and commercial development, respectively. The later construction of structure is somewhat reduced from this value and the physical presence of the structure may break up line-of-sight noise propagation.

Table 6 shows both the maximum and average noise levels for construction equipment. Maximum noise levels represent the noise levels from construction equipment occurring nearest to the off-site noise-sensitive residential structure. In actuality, only ground clearing, site preparation, and paving activities would occur along the site perimeter used here as the minimum distance for the off-site structures. Foundation and building activities, as well as the bulk of the paving activities would not occur along the site perimeter, but at further distances and their off-site noise at the proximate receptor locations is therefore overestimated. Average noise levels represent the noise exposure to sensitive uses based on the approximate distance to the center of the project site. Noise levels from general project-related construction activities would range from 81 to 98 dBA L_{eq} for the maximum noise levels and 72 to 84 dBA L_{eq} for the average noise levels as shown at the distances included in Table 6.

However, during the vast majority of the construction period, exterior noise would be 5 to 10 dBA lower due to lower power settings and sound attenuation provided by longer distances and partial blocking from the presence of other equipment, supplies, the physical presence of the structures under construction, and off-site structures and objects (e.g., cars parked along Lorna Street) that block the receptor's view of the construction activities. Interior noise levels at the proximate residents would be reduced by an additional 20+ dBA with windows closed. Ambient noise levels in the project vicinity would increase during the construction phase, but would drop considerably after construction of the proposed uses is completed.

Table 6
CONSTRUCTION NOISE LEVELS AT NOISE-SENSITIVE USES

	Noise Levels (L_{eq} dBA)							
	Residence to the North		*Residence to the South*		*Residence to the East*		*Residence to the West*	
Construction Phase	*Max (30 ft)*	*Avg. (90 ft)*	*Max (15 ft)*	*Avg (75 ft)*	*Max (65 ft)*	*Avg (140 ft)*	*Max (30 ft)*	*Avg (90 ft)*
Ground Clearing/Demolition	87	78	93	79	81	74	87	77
Excavation (Site Preparation)	92	83	98	84	86	79	92	82
Foundation Construction	85	76	91	77	79	72	85	75
Building Construction	85	76	91	77	79	72	85	75
Paving	92	83	98	84	86	79	92	82

L_{eq} dBA: Average noise energy level; Max: maximum; avg: average; ft: feet

Note: Noise levels from construction activities do not take into account attenuation provided by intervening structures.

Source: Derived from USEPA 1971

All construction would be subject to the requirements set forth in the City of Garden Grove Municipal Code. The City recognizes construction is necessary, but can present a nuisance value to sensitive receptors if performed in their proximity and sets limitations accordingly in Section 8.47.050. The ordinance notes that it shall be unlawful for any person within a residential area, or within a radius of 500 feet there from, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects, or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device between the hour of 10:00 p.m. of one day and 7:00 a.m. of the next day in such a manner that a person of normal sensitiveness, as determined utilizing the criteria established in Section 8.47.050(B), is caused discomfort or annoyance unless such operations are of an emergency nature. Again, it should be noted that Section 8.47.050(B) does not set a *quantitative* limitation on construction noise.

Because of the proximity to the adjacent residents, the impact of construction noise is considered to be potentially significant and mitigation is warranted to ensure that the impact is reduced to a less than significant level.

Mitigation

Prior to issuance of building permits, the Director of the Garden Grove Community and Economic Development Department, or designee, shall verify that grading and construction plans include the following requirements:

- Construction activities shall occur only between the hours of 7:00 a.m. and 10:00 p.m. Monday through Saturday and shall not occur on Sundays or City holidays.
- A temporary 8-ft-high perimeter wall shall be placed along the north, south, and western perimeter of the project site such that the line of sight from construction equipment and off-site, ground-level sensitive receptor locations would be blocked. The construction barrier shall be composed of a material that has a minimum Sound Transmission Class (STC) rating of 27.
- Construction equipment, fixed or mobile, shall be equipped with engine shrouds and properly operating noise mufflers consistent with manufacturers' standards.
- Construction staging areas shall be located as far from off-site sensitive uses as feasible.
- The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site whenever feasible.

- The construction contractor shall use on-site electrical sources to power equipment rather than diesel generators where feasible.
- A sign legible at a distance of 50 feet shall also be posted at the construction site. The sign shall indicate the dates and duration of construction activities, as well as provide a telephone number for the "noise disturbance coordinator."
- A "noise disturbance coordinator" shall be established. The disturbance coordinator shall be responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and shall be required to implement reasonable measures to reduce noise levels.

The inclusion of these measures would ensure that construction noise impacts remain less than significant.

Permanent Noise, Less than Significant Impact

The project would place a common area toward the southwest corner. The most proximate off-site resident is to the south at a distance of about 35 feet from the central portion of this common area (at the bar-b-que). Residential noise from the use of this area would be expected to be minimal and typical of the multi- and single-family units located in the immediate area. Additionally, the project includes a dedicated area for refuse disposal. This area is located about 70 feet from the most proximate off-site resident and would receive a screening wall. Neither of these onsite activities would be projected to result in significant impacts.

The primary addition from the project to the ambient noise would be due to the addition of vehicles to the local roadways. Because the increase in noise is in proportion to the addition of vehicles to the existing volumes, the greatest impacts are expected where the project adds the greatest number of trips to roadways that include the lowest existing volumes. This would along Lorna Street at the project entrance. In this case, an impact would be considered significant if it raises the ambient noise level by 3 dB, a level considered to be barely discernable to the human ear.

No 24-hour vehicle counts were obtained along this street. Furthermore, the City of Garden Grove Circulation Element does not detail the traffic volumes on the lesser traveled residential streets. Still, existing ADT traffic volumes can be reasonably inferred using the following methodology:

- The nighttime traffic volume (i.e., 10:00 p.m. – 6:00 a.m.) includes 15 percent of the ADT
- On average, "rush hour" includes 6 hours of the day (i.e., 6:00 – 9:00 a.m. and 4:00 – 7:00 p.m.)
- On average, every hour of "rush hour" is equivalent to 2 hours of "off-hour" (i.e., not nighttime or rush hour) traffic.

The count along Lorna Street obtained during noise measurement NR-1 (an "off-hour") included seven vehicles over a 15-minute period. This would then equate to 28 vehicles over an hour's duration. So each hour of "off-hour" traffic would include 28 vehicles.

10 hr x 28 veh/hr = 280 veh

6 hr x 28 veh/hr x 2 = 336 veh

(280 veh + 336 veh) / 0.85 = 725 ADT

Thus, Lorna Street would be projected to have an existing ADT of about 725 vehicles.

The Proposed Project would generate 52 ADT while removing nine existing ADT for a net increase of 42 ADT. When considering the addition of this traffic, the increase in noise is calculated using the equation:

Resultant Noise Increase = 10 x log((Existing Volume + Projected Volume) / Existing Volume)

So for Lorna Street:

Resultant Noise Increase = 10 x log((725 + 42) / 725) = 0.2 dBA

As such, the increase in the noise generated along Lorna Street is projected at just 0.2 dBA. This increase is too small to be audible and is less than significant.

4.1A Project consistency with standards established in the local general plan or noise ordinance, or applicable standards of other agencies (See CEQA Initial Study XI, Land Use Planning, b) Cause a significant environmental impact due to a conflict of any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.)

Less than Significant Impact

The City Noise Element included in the General Plan has adopted the State of California Office of Planning and Research (OPR) Noise Element Guidelines for recommended interior and exterior level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise (Table 2). The OPR Guidelines describe the compatibility of various land uses with a range of environmental noise levels in terms of dBA CNEL. A noise environment of 50 dBA CNEL to 60 dBA CNEL is considered to be "normally acceptable" for residential uses and no mitigation would be necessary for approval. The State indicates that locating residential units, parks, and institutions (such as churches, schools, libraries, and hospitals) in areas where exterior ambient noise levels exceed 65 dBA CNEL is undesirable. Sensitive land uses located between the 60 and 65 dBA CNEL contours would need to provide measures to ensure that interior levels do not exceed 45 dBA CNEL. This is attained by utilizing Title 24 Standards for the construction and operation of the structures which has been shown to provide in excess of 20 dBA of attenuation from exterior levels. The use of Title 24 Standards is requisite and as such, not considered as mitigation under CEQA.

Contours presented in the General Plan Noise Element indicate that the project is outside of the 60 dBA CNEL noise contour and will remain outside of the 65 dBA CNEL contour in the foreseeable future. Additionally, on-site noise measurements obtained during the field study confirm that noise at the project site would not exceed 60 dBA CNEL.

The CNEL is typically about 5 dB louder than "off-hour" Leq noise levels. The field study noted an onsite noise level of 50.1 dBA Leq, *in the presence of ongoing construction noise at a distance of 385 feet*. Even with the addition of 5 dBA, these levels would not exceed 60 dBA CNEL and Title 24 construction standards would ensure that future interior noise levels remain at acceptable levels. The project would be consistent with the goals of the General Plan and does not present a significant impact.

4.2 Generation of excessive ground borne vibration or ground borne noise levels

Less than Significant with Mitigation

The Proposed Project would involve the demolition of an existing residential structure and the construction and occupancy of six townhomes and one ADU unit. The California Department of Transportation (Caltrans) notes that ground borne vibration is typically associated with blasting operations, the use of pile drivers, and large-scale demolition activities, none of which are anticipated for the construction or operation of the project.

There are no applicable City standards for vibration-induced annoyance or structural damage from vibration. The Caltrans vibration damage potential guideline thresholds are shown in Table 6.

Table 6
VIBRATION DAMAGE THRESHOLD CRITERIA

	Maximum ppv (in/sec)	
Structure and Condition	*Transient Sources*	*Continuous/Frequent Intermittent Sources*
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

ppv: peak particle velocity; in/sec: inch(es) per second

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: Caltrans 2013

The Caltrans vibration annoyance potential guideline thresholds are shown in Table 7. Based on the table, the "strongly perceptible" vibration level of 0.9 ppv in/sec is considered a threshold for a potentially significant vibration impact for human annoyance.

Table 7
VIBRATION ANNOYANCE CRITERIA

Average Human Response	*ppv (in/sec)*
Severe	2.0
Strongly perceptible	0.9
Distinctly perceptible	0.24
Barely perceptible	0.035

ppv: peak particle velocity; in/sec: inch(es) per second

Source: Caltrans 2013

The project area is dominated by multi-family residential complexes with relatively new structures. In these cases, the value of 0.5 ppv would be the appropriate threshold for the analysis. With the inclusion of the home to the immediate south, none of the neighboring land uses would exceed the 0.5 ppv threshold for any phase of construction. Additionally, none of the homes, including that to the south, would exceed the 0.9 ppv threshold for annoyance.

On the other hand, the residential unit to the immediate south looks to be an older structure and in this case a threshold value of 0.3 ppv would be more appropriate. The analysis indicates that with the structure located 15 feet from the property line, the use of a vibratory roller at the proximate perimeter location could produce a vibration level of 0.45 ppv. The 0.3 ppv threshold value lies at a distance of 20 feet from the piece of equipment.

Here the issue is specific to the use of a vibratory roller and the home to the south and none of the other equipment would exceed this 0.3 ppv threshold at this or any of the other residential units in the project area. The results of the analysis are included in Table 8. Note that there is the potential for a vibratory compactor to create a significant impact at the residential structure to the immediate south of the project site. The included mitigation will ensure that this impact does not occur mitigating it to less than significant.

Table 8
PROJECTED VIBRATION LEVELS AT PROXIMATE RESIDENTS[1]

Equipment	*North (30 Ft)*	*South (15 Ft)*	*East (65 Ft)*	*West (30 Ft)*	*20 Ft*
Vibratory roller	0.16	0.45	0.05	0.16	0.29
Large bulldozer	0.07	0.19	0.02	0.07	0.12
Small bulldozer	0.00	0.01	0.00	0.00	0.00
Jackhammer	0.03	0.08	0.01	0.03	0.05
Loaded trucks	0.06	0.16	0.02	0.06	0.11
Threshold	0.5	0.3	0.5	0.5	0.30
Exceeds Threshold?	No	Yes	No	No	No

[1] Values are in peak particle velocity (inches/second)

Mitigation

- No vibratory compactors shall be used within 20 feet of any existing off-site residential structure.

The inclusion of this measure would ensure that any construction vibration impacts remain less than significant.

4.3 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?

Less than Significant Impact

The Fullerton Municipal Airport is located in the Fullerton approximately 5.7 nautical miles to the north of the project site. The airport's runway is aligned in roughly an east/west orientation and the project site is not in the prevailing flight path. The second nearest airport is John Wayne Airport in Santa Ana approximately 8.3 nautical miles to the southeast and again, the project is not in the prevailing flight path.

In both cases, the project site is well beyond the airport's 65-dBA CNEL noise contour and the resultant aircraft noise levels are well below any regulatory standards. No significant impacts would result from the implementation of the proposed project.

5.0 References

Bolt, Beranek, and Newman, Noise Control for Buildings and Manufacturing Plants, 1987

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Linscott Law & Greenspan, Traffic Impact Assessment for the Proposed Lorna Street Townhomes Project, October 20, 2021

U.S. Department of Housing and Urban Development, *A Guide to HUD Environmental Criteria and Standards Contained in 24 CFR Part 51*, August 1984

USEPA, *Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances*, December 31.1971

Appendix A
Construction Noise Calculations

Appendix B
Construction Vibration Calculations

Lorna Street Residential Development
Focused Air Quality and Greenhouse Gas Analysis

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February 18, 2022

Lorna Street Residential Development
Focused Air Quality and Greenhouse Gas Analysis

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Lorna Street Residential Development
Focused Air Quality and Greenhouse Gas Analysis

1.0 Methodology

This air quality evaluation was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) to determine if significant air quality or greenhouse gas impacts are likely to occur in conjunction with the type and scale of development associated with the proposed Lorna Street residential development project proposed by the ZBT Group.

Implementation of the Proposed Project includes the demolition of existing on-site structures and paving and the construction and the subsequent occupancy of six townhomes and one accessory dwelling unit (ADU) on approximately 0.375 acre of land. The project is to be located at 12771 Lorna Street in the City of Garden Grove along the west side of Lorna Street, south of Stanford Avenue. The Garden Grove Freeway (SR-22) lies about 2,300 feet to the south. The existing site is shown in Figure 1.

Figure 1
SITE LOCATION

The impact analysis contained in this report was prepared in accordance with the methodologies provided by the South Coast Air Quality Management District (SCAQMD) as included in *CEQA Air Quality Handbook* (April 1993) (*Handbook*) as well as updates included on the SCAQMD Internet web site. The analysis makes use of the California Emissions Estimator Model (CalEEMod Version 2020.4.0) distributed by the SCAQMD, and screening tables included in the SCAQMD's *Final Localized Significance Threshold Methodology* (June 2003) and *Sample Construction Scenarios for Projects Less than Five Acres in Size*, (February 2005).

The CalEEMod model uses EMFAC2017 emissions factors for vehicle traffic and the OFFROAD2011 emissions factors for construction equipment. For the purposes of this analysis, construction is estimated to begin on January 3, 2022 and follows the CalEEMod default construction schedule.

The subsequent occupation of the site in 2022 is also based on the CalEEMod model using traffic-projections provided therein and also used by Linscott Law & Greenspan (October 20, 2021).

2.0 Existing Conditions

2.1 Climate/Meteorology

The project area lies in the South Coast Air Basin (SCAB or Basin). The SCAB includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The Basin is located in a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean in the southwest quadrant with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild climatological pattern is infrequently interrupted by periods of extremely hot weather, winter storms, or Santa Ana winds.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit. With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station located nearest to the site in Los Alamitos reports a yearly average of 61°F. The average low is reported at 42°F in January while the average high is 80°F in September. All areas in the Basin have recorded temperatures above 100°F in recent years and temperatures as high as 108°F have been recorded at the Los Alamitos station. January is typically the coldest month in this area of the Basin, with minimum temperatures in the 30s.

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast with slightly heavier shower activity in the east and over the mountains. Rainfall averages around 13.7 inches per year in the project area as measured in Santa Ana.

Although the Basin has a semi-arid climate, the air near the surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by off-shore winds, the ocean effect is dominant. Periods of heavy fog, especially along the coastline, are frequent; and low stratus clouds, often referred to as "high fog" are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the east portions of the Basin.

Wind patterns across the south coastal region are characterized by westerly and southwesterly on-shore winds during the day and easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season. Annually, typical winds in the project area average about 5 to 8 miles per hour during the day and 2 to 5 miles per hour during the night. The overall average wind speed is reported at 5.2 mph in Los Alamitos.

Between the periods of dominant air flow, periods of air stagnation may occur, both in the morning and evening hours. Whether such a period of stagnation occurs is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high pressure systems over the Basin, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally have a duration of a few days before predominant meteorological conditions are reestablished.

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These inversions are the marine/subsidence inversion and the radiation inversion. The height of the base of the inversion at any given time is known as the "mixing height." This mixing height can change under conditions when the top of the inversion does not change. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer, and the generally good air quality in the winter in the project area.

2.2 Ambient Air Quality

The following characterization of the baseline atmospheric environment includes an evaluation of the ambient air quality and applicable rules, regulations, and standards for the area. Because the project has the ability to release gaseous emissions of criteria pollutants and dust into the ambient air, it falls under the ambient air quality standards promulgated on the local, State, and federal levels.

2.2.1 Affected Environment

Topographical features that affect the transport and diffusion of pollutants in the project area include the mountain ranges to the northeast that prevent the transport of pollutants. Air quality in the SCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

The quality of the ambient air is affected by pollutants emitted into the air from stationary and mobile sources. Stationary sources can be divided into two major subcategories: point sources and area sources. Point sources consist of one or more emission sources at a facility with an identified location and are usually associated with manufacturing and industrial processing plants. Area sources are widely distributed and produce many small emissions.

Mobile sources refer to emissions from motor vehicles (including tailpipe and evaporative emissions) and are classified as either on-road or off-road. On-road sources are a combination of emissions from automobiles, trucks, and indirect sources. Indirect sources are sources that, by themselves, may not emit air contaminants; however, they indirectly cause the generation of air pollutants by attracting vehicle trips or consuming energy.

Examples of indirect sources include a commercial center that generates vehicle trips and consumes energy resources through the use of natural gas for space and water heating. Indirect sources also include actions proposed by local governments, such as public and private development projects. In addition, indirect sources include those emissions created by the distance vehicles travel. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment.

2.2.2 Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by State and federal law. These regulated air pollutants are known as "criteria air pollutants" and are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NOx), sulfur dioxide (SO_2), and most fine particulate matter (PM_{10} and $PM_{2.5}$) including lead (Pb) and fugitive dust are primary air pollutants. Of these CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NOx are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reaction in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.
Presented below is a description of each of these primary and secondary criteria air pollutants and their known health effects. Other pollutants, such as carbon dioxide (CO_2), a natural by-product of animal respiration that is also produced in the combustion process, have been linked to such phenomena as global warming. These emissions are now regulated and there are thresholds for their release. However, these pollutants do not jeopardize the attainment status of the SCAB.

Carbon monoxide (CO) is a colorless, odorless, toxic gas produced by incomplete combustion of carbon substances (e.g., gasoline or diesel fuel). The primary adverse health effect associated with CO is the interference of normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.

Reactive organic gases (ROGs) are compounds comprised primarily of atoms of hydrogen and carbon. Internal combustion, associated with motor vehicle usage, is the major source of hydrocarbons. Other sources of ROG include the evaporative emissions associated with the use of paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROG but rather by reactions of ROG to form secondary pollutants. Note that for the purposes of this analysis ROG and **volatile organic compounds** (VOC), such as the emissions released from paint, are synonymous.

Nitrogen oxides (NOx) serve as integral participants in the process of photochemical smog production. The two major forms of NOx are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. NO_2 is a reddish-brown irritating gas formed by the combination of NO and oxygen (O). NOx acts as an acute respiratory irritant and increases susceptibility to respiratory pathogens.

Nitrogen dioxide (NO_2) is a by-product of fuel combustion. The principal form of NO_2 produced by combustion is nitric oxide (NO). NO reacts to form NO_2, creating the mixture of NO and NO_2 commonly called NOx. NO_2 acts as an acute irritant and, in equal concentrations, is more injurious than NO. At atmospheric concentrations, however, NO_2 is only potentially irritating. There is some indication of a relationship between NO_2 and chronic

pulmonary fibrosis. Some increase in bronchitis in children (2-3 years old) has been observed at concentrations below 0.3 ppm. NO_2 absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility. NO_2 also contributes to the formation of PM_{10} (particulates having an aerodynamic diameter of 10 microns or 0.0004 inch or less in diameter).

Sulfur dioxide (SO_2) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. Fuel combustion is the primary source of SO_2. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. At lower concentrations, when combined with particulates, SO_2 may injure lung tissue.

Particulate matter (PM) consists of finely divided solids or liquids, such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulate are now recognized. Course particles (PM_{10}) include that portion of the particulate matter with an aerodynamic diameter of 10 microns (i.e., 10 one-millionths of a meter or 0.0004 inch) or less. Fine particles ($PM_{2.5}$) have an aerodynamic diameter of 2.5 microns (i.e., 2.5 one-millionths of a meter or 0.0001 inch) or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Wind action on the arid landscape also contributes substantially to the local particulate loading. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in those people who are naturally sensitive or susceptible to breathing problems.

Fugitive dust poses primarily two public health and safety concerns. The first concern is that of respiratory problems attributable to the suspended particulates in the air. The second concern is that of motor vehicle accidents caused by reduced visibility during severe wind conditions. Fugitive dust may also cause significant property damage during strong windstorms by acting as an abrasive material agent. Fugitive dust can also result in a nuisance factor due to the soiling of proximate structures and vehicles.

Ozone (O_3) is one of a number of substances called photochemical oxidants that are formed when reactive organic compounds (ROC) and NOx (both by-products of the internal combustion engine) react with sunlight. O_3 is present in relatively high concentrations in the SCAB and the damaging effects of photochemical smog are generally related to the concentrations of O_3. O_3 may pose a health threat to those who already suffer from respiratory diseases as well as healthy people. O_3 has been tied to crop damage (typically in the form of stunted growth and pre-mature death) and acts as a corrosive (resulting in property damage such as the embitterment of rubber products).

2.2.3 Toxic Air Contaminants

The public's exposure to toxic air contaminants (TAC) is an environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The H&SC defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP), pursuant to Section 112(b) of the CAA (42 U.S.C. 7412[b]) is a TAC.

Under State law, the California Environmental Protection Agency (CalEPA), acting through the CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant which may cause or contribute to an increase in mortality or serious illness or which may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bills 1807 (Tanner Air Toxics Act) and 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology (T-BACT) to minimize emissions.

Air toxics from stationary sources are regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the AQMD or APCD. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. To date, the CARB has designated nearly 200 compounds as TACs. Additionally, the CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to a relatively few compounds, the most important being particulate matter from diesel-fueled engines (diesel PM).

In 2000, the SCAQMD conducted a study on ambient concentrations of TACs and estimated the potential health risks from air toxics. The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,400 in a million. The largest contributor to this risk was diesel exhaust, accounting for 71 percent of the air toxics risk.

2.2.4 Other Effects of Air Pollution

Just as humans are affected by air pollution, so too are plants and animals. Animals must breathe the same air and are subject to the same types of negative health effects. Certain plants and trees may absorb air pollutants that can stunt their development or cause premature death, as well as interfere with their ability to convert CO_2 to oxygen. There are also numerous impacts to our economy including lost workdays due to illness, a desire on the part of business to locate in areas with a healthy environment, and increased expenses from medical costs. Pollutants may also lower visibility and cause damage to property. Certain air pollutants are responsible for discoloring painted surfaces, eating away at stones used in buildings, dissolving the mortar that holds bricks together, and cracking tires and other items made from rubber.

2.2.5 Greenhouse Gas Emissions

Federal Regulations

Office of the President

In 2021 President Biden rejoined the United States into the Paris climate accord. The Paris climate accord, known as the "Paris Agreement" by the United Nations, is an international agreement reached in 2015 aimed at reducing carbon emissions, slowing rising global temperatures and helping countries deal with the effects of climate change.

Under the terms of the agreement, signatories committed to "holding the increase in the global average temperature to well below 2° C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5° C above pre-industrial levels."

The deal requires countries to set their own targets for reducing emissions by 2020. The Obama administration committed the U.S. to reducing carbon emissions by 26 to 28 percent by 2025. The agreement also established a $100 billion fund to help vulnerable countries deal with the effects of climate change.

The final text of the agreement was adopted at the Conference of Parties to the U.N. Framework Convention on Climate Change, known as COP_{21}, in December 2015. The U.S., which took the lead in negotiating the deal, signed into agreement in April 2016, along with China, the European Union and 171 other nations. China and the U.S. account for nearly 40 percent of global carbon emissions.

The agreement took effect in November of that year, after nations accounting for 55 percent of global emissions ratified the treaty. As of May 2017, 147 parties have ratified the agreement, out of 195 who signed onto the accord.

By way of background, in June 2013, the Executive Office of the President released *The President's Climate Action Plan* to reduce the causes and impacts of global climate change. The President's comprehensive plan includes numerous steps and measures to reduce climate change. For example, to cut carbon pollution in America, the plan:

- Directs EPA to work closely with states, industry and other stakeholder to establish carbon pollution standards for both new and existing power plants;
- Makes up to $8 billion in loan guarantee authority available for a wide array of advanced fossil energy and efficiency projects to support investments in innovative technologies;
- Directs DOI to permit enough renewables project—like wind and solar – on public lands by 2020 to power more than 6 million homes; designates the first-ever hydropower project for priority permitting; and sets a new goal to install 100 megawatts of renewables on federally assisted housing by 2020; while maintaining the commitment to deploy renewables on military installations;
- Expands the President's Better Building Challenge, focusing on helping commercial, industrial, and multi-family buildings cut waste and become at least 20 percent more energy efficient by 2020;
- Sets a goal to reduce carbon pollution by at least 3 billion metric tons cumulatively by 2030 – more than half of the annual carbon pollution from the U.S. energy sector – through efficiency standards set over the course of the Administration for appliances and federal buildings;
- Commits to partnering with industry and stakeholders to develop fuel economy standards for heavy-duty vehicles to save families money at the pump and further reduce reliance on foreign oil and fuel consumption post-2018; and

- Leverages new opportunities to reduce pollution of highly-potent greenhouse gases known as hydrofluorocarbons; directs agencies to develop a comprehensive methane strategy; and commits to protect our forests and critical landscapes.

To prepare the United States for the impacts of climate change, the plan:

- Directs agencies to support local climate-resilient investment by removing barriers or counterproductive policies and modernizing programs; and establishes a short-term task force of state, local, and tribal officials to advise on key actions the Federal government can take to help strengthen communities on the ground;

- Pilots innovative strategies in the Hurricane Sandy-affected region to strengthen communities against future extreme weather and other climate impacts; and building on a new, consistent flood risk reduction standard established for the Sandy-affected region, agencies will update flood-risk reduction standards for all federally funded projects;

- Launches an effort to create sustainable and resilient hospitals in the face of climate change through a public-private partnership with the healthcare industry;

- Maintains agricultural productivity by delivering tailored, science-based knowledge to farmers, ranchers, and landowners; and helps communities prepare for drought and wildfire by launching a National Drought Resilience Partnership and by expanding and prioritizing forest- and rangeland- restoration efforts to make areas less vulnerable to catastrophic fire; and

- Provides climate preparedness tools and information needed by state, local, and private-sector leaders through a centralized "toolkit" and a new Climate Data Initiative.

Finally, to lead international efforts to address global climate change, the plan:

- Commits to expand major new and existing international initiatives, including bilateral initiatives with China, India, and other major emitting countries;

- Leads global sector public financing towards cleaner energy by calling for the end of U.S. government support for public financing of new coal-fired powers plants overseas, except for the most efficient coal technology available in the world's poorest countries, or facilities deploying carbon capture and sequestration technologies; and

- Strengthens global resilience to climate change by expanding government and local community planning and response capacities.

The Obama administration committed the U.S. to the agreement without seeking ratification in the Senate, thereby allowing President Trump to withdraw support unilaterally. On the first day of the presidency of Donald Trump, the White House website announced that Obama's Climate Action Plan would be eliminated, stating it is 'harmful and unnecessary'. In March 2017, Trump signed an executive order to officially nullify Obama's Clean Power Plan in an effort, it said, of reviving the coal industry. Under President Trump, the U.S. joined Nicaragua and Syria as the only countries not participating in the agreement.

In January 2021, on the Inauguration Day of U.S. President Joe Biden, Trump's executive order was revoked by the executive order "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis," thereby re-instating the Obama Climate Action Plan.

USEPA

As part of President Obama's Climate Action Plan to cut carbon pollution and lead in clean energy, EPA released its 2013 Strategic Sustainability Performance Plan that outlines actions planned over the next year to cut energy use and waste in agency operations. President Obama signed Executive Order 13514 on Federal Leadership in Environmental, Energy, and Economic Performance in October 2009 setting aggressive targets for reducing waste and pollution in Federal operations by 2020. EPA's 2013 Sustainability Plan builds on four years of progress under the Executive Order and provides an overview of how the agency is saving taxpayer dollars, reducing carbon emissions, and saving energy.

The 2013 Sustainability Plan was to help guide EPA's actions to meet the new goal by directing the federal government to consume 20 percent of its electricity from renewable sources by 2020 – more than double the prior level. Meeting this renewable energy goal reduces pollution in our communities, promotes American energy independence, and supports homegrown energy produced by American workers. Under President Trump, this goal was not attained, however, it is assumed that under President Biden, a new goal will be established.

The 2013 Sustainability Plan outlines actions planned for the upcoming year to continue progress in meeting the President's goals, including:

- Pursuing reconstruction of key EPA research infrastructure;
- Consolidating the Research Toxicology Laboratory in Durham, NC into the Main laboratory at Research Triangle Park, NC; and
- Continuing work on EPA's award winning water conservation program.

Additionally, on June 2, 2014, the U.S. Environmental Protection Agency, under President Obama's Climate Action Plan, proposed a commonsense plan to cut carbon pollution from power plants. The EPA's Clean Power Plan was to cut carbon pollution from the power sector by 30 percent from 2005 levels. The proposal also cut pollution that leads to soot and smog by over 25 percent in 2030. Additionally, the plan was anticipated to lead to climate and health benefits worth an estimated $55 to $93 billion in 2030, including 2,700 to 6,000 premature deaths and 140,000 to 150,000 asthma attacks in children. Again, with President Trump's removal and subsequent reinstatement of the Obama Climate Action Plan, it is assumed that under President Biden, new goals will be established in the coming years.

State Regulations

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emission of greenhouse gas would be progressively reduced, as follows:

- By 2010, reduce greenhouse gas emissions to 2000 levels;

- By 2020, reduce greenhouse gas emissions to 1990 levels; and
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.), which requires CARB to design and implement emission limits, regulations, and other measures, such that feasible and cost-effective statewide greenhouse gas emissions are reduced to 1990 levels by 2020 (representing an approximate 25 percent reduction in emissions).

In June 2007, CARB directed staff to pursue 37 early actions for reducing greenhouse gas emissions under AB 32. The broad spectrum of strategies to be developed – including a Low Carbon Fuel Standard, regulations for refrigerants with high global warming potentials, guidance and protocols for local governments to facilitate greenhouse gas reductions, and green ports – reflects that the serious threat of climate change requires action as soon as possible.

In addition to approving the greenhouse gas reduction strategies, CARB directed staff to further evaluate early action recommendations made at the June 2007 meeting, and to report back to CARB within 6 months. The general sentiment of CARB suggested a desire to try to pursue greater greenhouse gas emissions reductions in California in the near-term. Since the June 2007 CARB hearing, CARB staff has evaluated all 48 recommendations submitted by several stakeholder and several internally-generated staff ideas and published the *Expanded List of Early Action Measures To Reduce Greenhouse Gas Emissions In California*, recommended for board consideration in October 2007. Based on its additional analysis, CARB staff is recommending the expansion of the early action list to a total of 44 measures. Nine of the strategies meet the AB 32 definition of discrete early action measures. Discrete early action measures are measures that will be in place and enforceable by January 1, 2010. The discrete early action items include: (1) a Low Carbon Fuel standards for ethanol, biodiesel, hydrogen, electricity, compressed natural gas, liquefied petroleum gas, and biogas; (2) restrictions on High Global Warming Potential Refrigerants; (3) Landfill Methane Capture; (4) Smartway Truck Efficiency; (5) Port Electrification; (6) Reduction of perfluorocarbons from the semiconductor industry; (7) Reduction of propellants in consumer products; (8) Tire inflation; and (9) Sulfur Hexafluoride (SF_6) reductions from non-electricity sector.

The 2020 target reductions are currently estimated to be 174 million metric tons of carbon dioxide (CO_2) equivalent ($MMTCO_2e$). In total, the recommended early actions have the potential to reduce greenhouse gas emissions by at least 42 $MMTCO_2e$ emissions by 2020, representing about 25 percent of the estimated reductions needed by 2020. The CARB Board adopted Resolution 07-55 in December 2007, approving 427 $MMTCO_2e$ as the statewide greenhouse gas emissions limit for 2020, which is equivalent to the 1990 emissions level. The measures are in the sectors of fuels, transportation, forestry, agriculture, education, energy efficiency, commercial, solid waste, cement, oil and gas, electricity, and fire suppression. On July 28, 2021 the CARB released their "greenhouse gas inventory" and reported that inventory data for 2019, showed further reductions below the AB 32 emissions reduction target. That target, a return to 1990 GHG levels, was achieved by the state four years ahead of schedule in 2016.

The numbers in the new inventory demonstrate that emissions continue to fall, from 425 million metric tons in 2018 to 418 million metric tons in 2019.

The most recent update to the AB 32 is the *Final 2017 Scoping Plan* that was approved by the CARB on December 14, 2017. This Plan builds upon the 2008 and 2013 Scoping Plans with new strategies and recommendations. The Plan identifies how the State can reach our 2030 climate target to reduce greenhouse gas (GHG) emissions by 40 percent from 1990 levels, and substantially advance toward our 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels. By selecting and pursuing a sustainable and clean economy path for 2030, the State will continue to successfully execute existing programs, demonstrate the coupling of economic growth and environmental progress, and enhance new opportunities for engagement within the State to address and prepare for climate change.

This current Plan builds on and integrates efforts already underway to reduce the State's GHG, criteria pollutant, and toxic air contaminant emissions. Programs such as the Low Carbon Fuel Standard and Renewables Portfolio Standard are delivering cleaner fuels and energy, the Advanced Clean Cars Program has put more than a quarter million clean vehicles on the road, and the Sustainable Freight Action Plan will result in efficient and cleaner systems to move goods throughout the State. Enhancing and implementing these ongoing efforts, paired with a more stringent Cap-and-Trade Program, puts California on the path to achieving the 2030 target per SB 32 and to deliver climate, air quality, and other benefits.

2.3 Ambient Air Quality Standards (AAQS)

The Clean Air Act Amendment of 1971 established national Ambient Air Quality Standards (AAQS) with states retaining the option to adopt more stringent standards or to include other pollution species. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both the State of California and the federal government have established health based Ambient Air Quality Standards for six air pollutants. As shown in Table 1, these pollutants include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter (PM_{10}, $PM_{2.5}$), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to primary and secondary Ambient Air Quality Standards, the State of California has established a set of episode criteria for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. These criteria refer to episode levels representing periods of short-term exposure to air pollutants, which actually threaten public health.

2.4 Air Quality Management Planning

2.4.1 Local Planning Requirements

The SCAQMD and the Southern California Association of Governments (SCAG) are the agencies responsible for preparing the Air Quality Management Plan (AQMP) for the SCAB. Since 1979, a number of AQMPs have been prepared. The AQMP was designed to comply with State and federal requirements, reduce the high level of

Table 1
AMBIENT AIR QUALITY STANDARDS FOR CRITERIA POLLUTANTS

Pollutant	Averaging Time	California Standard	Federal Primary Standard	Major Pollutant Sources
Ozone (O_3)	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Average	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	*	
Sulfur Dioxide (SO_2)	Annual Average	*	0.03 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	*	
	24 hours	0.04 ppm	0.14 ppm	
Suspended Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 $\mu g/m^3$	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	24 hours	50 $\mu g/m^3$	150 $\mu g/m^3$	
Suspended Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 $\mu g/m^3$	15 $\mu g/m^3$	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	24 hours	*	35 $\mu g/m^3$	
Lead (Pb)	Monthly	1.5 $\mu g/m^3$	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	*	1.5 $\mu g/m^3$	
Sulfates (SO_4)	24 hours	25 $\mu g/m^3$	*	Industrial processes.

Notes:
ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter
* Standard is not applicable for this pollutant/duration by this entity.

Source: California Air Resources Board

pollutant emissions in the SCAB, and ensure clean air for the region through various control measures. To accomplish its task, the AQMP relies on a multilevel partnership of governmental agencies at the federal, State, regional, and local level. These agencies (i.e., the USEPA, CARB, local governments, SCAG, and SCAQMD) are the cornerstones that implement the AQMP programs.

In December 2016, the SCAQMD prepared the Final Draft of the *2016 Air Quality Management Plan*. The SCAQMD reports that the 2016 AQMP includes integrated strategies and measures to meet the following NAAQS 8-hour ozone standard of 75 parts per billion (ppb) by 2032, the annual $PM_{2.5}$ standard of 12 $\mu g/m^3$ by 2021-2025, the 8-hour ozone standard of 80 ppb by 2024 (updated from the 2007 and 2012 AQMPs), the 1-hour ozone standard (120 ppb) by 2023 (updated from the 2012 AQMP), and the 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$ by 2019 (updated from the 2012 AQMP). The 2016 AQMP also takes an initial look at proposed new federal 8-hour ozone standard (in the 65-70 ppb range), as well as incorporate energy, transportation, goods movement, infrastructure and other planning efforts that affect future air quality. The SCAQMD presented a Public Hearing presentation for the 2016 AQMP on February 3, 2017 approved 2016 AQMP on March 3, 2017 that demonstrates attainment of the 1-hr and 8-hr ozone NAAQS as well as the latest 24-hr and annual $PM_{2.5}$ standards.

USEPA designates areas throughout the country as attainment or nonattainment with the National Ambient Air Quality Standards (NAAQS) and establishes classifications for the nonattainment areas that dictate statutory attainment dates and requirements pursuant to the Clean Air Act. On February 3, 2017, the USEPA made a finding of failure to submit a State Implementation Plan (SIP) for the 2008 Ozone NAAQS including nonattainment New Source Review (NSR) certification for the South Coast Air Basin and Coachella Valley. The action would not change the existing SCAQMD NSR program or requirements for affected facilities. A Nonattainment NSR Compliance Demonstration was completed and will be considered for certification by the SCAQMD Governing Board.

On December 13, 2017 the SCAQMD convened a working group to address the Implementation of the 2016 AQMP – Stationary Source Incentive Guidelines. The working group discussed strategies and commitments. The SCAQMD also estimated that 12 to 14 billion dollars in funding will be required for the implementation of the Plan and has set up a working group to this end.

Subsequently, the SCAQMD has updated the attainment demonstration of the federal 1979 1-hour ozone standard that was presented in the 2016 AQMP. The emissions inventory in the updated attainment demonstration is based on the final emissions inventory in the 2016 AQMP in order to be consistent with the attainment demonstrations of the 8-hour ozone and $PM_{2.5}$ standards. The updated attainment demonstration also includes revised air quality modeling and an updated attainment strategy for meeting the 1-hour ozone standard.

The updated attainment strategy relies only on SCAQMD's proposed control measures in the 2016 AQMP, based on the expectation that progress in emission reductions targeted toward attainment of the 1997 8-hour ozone standard by 2023 will ensure attainment of the 1-hour ozone standard by 2022. As such, emission reductions from CARB's State Implementation Plan strategies, including 182(e)5 measures ("black box" measures) are no longer needed to attain the 1-hour standard. The updated attainment strategy successfully demonstrates attainment of the 1-hour ozone standard by 2022.

The Coachella Valley is currently classified as Severe nonattainment for the 1997 8-hour ozone standard and was required to demonstrate attainment by June 15, 2019. Despite air quality improvements in recent years, higher ozone levels were experienced throughout California including in Coachella Valley in 2017 and 2018, resulting in levels greater than the 1997 8-hour ozone standard. Ozone levels in the Coachella Valley are primarily impacted by pollutants directly transported from the SCAB. Because of the recent high ozone levels, the Coachella Valley will not be able to meet the 1997 8-hour ozone standard by June 2019.

Given that additional time is needed to bring the Coachella Valley into attainment of the 1997 8-hour standard, staff recommended submitting a formal request to the USEPA to reclassify the Coachella Valley from Severe to Extreme for the 1997 8-hour ozone standard based on the monitoring data indicating attainment is not practicable by the current attainment date. The SCAQMD conducted two public consultation meetings for the purpose of soliciting information, comments, and suggestions from the public, affected businesses, and stakeholders regarding this voluntary reclassification request. On June 7, 2019, the SCAQMD Governing Board approved the request for reclassification of the Coachella Valley and the formal request was submitted to the USEPA through CARB.

The 2016 AQMP was adopted by the USEPA, on the October 31, 2019 and currently serves as the planning document for air quality in the Basin. Meanwhile, the SCAQMD is currently working on the 2022 AQMP expected to be released late in 2022.

2.4.2 Air Quality Attainment Status

Areas that meet the ambient air quality standards are classified as "attainment" areas while areas that do not meet these standards are classified as "non-attainment" areas. The severities of the classifications for ozone non-attainment include and range in magnitude from: marginal, moderate, serious, severe, and extreme. The attainment status for the SCAB is included in Table 2.

Table 2
ATTAINMENT STATUS FOR THE SOUTH COAST AIR BASIN

Pollutant	State Status	Federal Status
Ozone (1-hour)	Extreme Non-attainment	Extreme Non-attainment (under the prior standard)
Ozone (8-hour)	Extreme Non-Attainment	Severe-17 (may petition for Extreme)
PM_{10}	Serious Non-attainment	Serious Non-attainment
$PM_{2.5}$	Non-attainment	Non-attainment
CO	Attainment	Attainment/Maintenance
NO_2	Attainment	Attainment/Maintenance

Source: California Air Resources Board

The Basin is also designated as attainment of the California Ambient Air Quality Standards (CAAQS) for SO_2, lead, and sulfates. Areas that are designated as Severe-17 for the ozone standard must meet attainment of the 8-hour standard by 2021 (2024 if reclassified to Extreme). Areas considered as serious non-attainment of the PM_{10} standards must have reached attainment by the end of 2006, or as expeditiously as possible. To date, the Basin still does not meet this standard. The $PM_{2.5}$ attainment date was to be met in the year 2015.

2.4.3 State Planning Requirements

Executive Order S-3-05

Under Executive Order S-3-05, as signed by Governor Arnold Schwarzenegger on June 1, 2005, the following greenhouse gas (GHG) emission reduction targets were established for California: (1) by 2010, reduce GHG emissions to 2000 levels; (2) by 2020, reduce GHG emissions to 1990 levels; and (3) by 2050, reduce GHG

emissions to 80 percent below 1990 levels. In response, in March 2006, the California Environmental Protection Agency (CalEPA) published a Climate Action Team (CAT) report detailing how State agencies could implement a series of policies to meet the 2010 and 2020 goals. As indicated therein, among the policy actions that are cited are "smart land use and intelligent transportation." The CAT states that smart land use is an umbrella term for strategies that integrate transportation and land-use decisions. Such strategies generally encourage jobs/housing proximity, promote transit-oriented development, and encourage high-density residential/commercial development along transit corridors. These strategies develop more efficient land-use patterns within each jurisdiction or region to match population increases, workforce, and socioeconomic needs for the full spectrum of the population. Intelligent transportation systems (ITS) is the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and movement of people, goods, and service.

California Health and Safety Code

Section 41700 of the H&SC requires that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, response, health, or safety of any such person or the public, or which causes, or have a natural tendency to cause, injury or damage to business or property." Section 39606(b) of the H&SC authorizes the California Air Resources Board (CARB) to adopt standards for ambient air quality "in consideration of public health and safety, and welfare, including but not limited to health, illness, irritation to the senses, aesthetic value, interference with visibility, and the effects of air pollution on the economy." The objective of ambient air quality standards (AAQS) is to provide a basis for preventing or abating adverse health or welfare effects of air pollution (17 CCR 70101).

Section 39607(e) requires that the CARB establish and periodically review area designation criteria. The CARB makes area designations for the following nine pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns (PM_{10}), sulfates (SO_4), lead (Pb), hydrogen sulfide (H_2S), and visibility-reducing particles. Assembly Bill 2595, known as the California Clean Air Act (CCAA), divided non-attainment areas into categories with progressively more stringent requirements (Sections 40918-40920.5, H&SC). As specified, it is the responsibility of each air pollution control district (APCD) and air quality management district (AQMD) within the State to attain and maintain California Ambient Air Quality Standards (CAAQS). The CCAA requires that an attainment plan be developed by all non-attainment districts for O_3, CO, sulfur oxides (SOx), and nitrogen oxides (NOx) that are either receptors or contributors of transported air pollutants. The CAAQS are listed in Table 1. Areas meeting CAAQS are classified as attainment; areas not meeting CAAQS are classified as non-attainment.

Assembly Bill 32 (California Global Warming Solutions Act of 2006), codified in Section 38500 *et seq.* of the H&SC, established a comprehensive program to reduce GHG by 2020 and identifies several major requirements that CARB is required to implement, including: (1) adoption and implementation of a list of discrete and early action GHG reduction measures; (2) approval of a Statewide1990 emission level that becomes the Statewide 2020 emissions limits; (3) adoption of mandatory GHG reporting rules for significant GHG sources; and (4) adoption of regulations to achieve the maximum technologically feasible and cost-effective reductions. As defined in Section 38505 of the H&SC, greenhouse gases include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

2.4.4 Federal Clean Air Act Requirements

The Federal Clean Air Act of 1970 (42 U.S.C. Section 7401 *et seq.*) (CAA) requires any new major stationary sources of air pollution and any major modifications to major stationary sources to obtain an air pollution permit before commencing construction. New Source Review (NSR) requirements (42 U.S.C. 7411) differ depending on the attainment status of the area where the major facility is to be located. Prevention of Significant Deterioration (PSD) requirements (42 U.S.C. 7470-7491) apply in areas that are in attainment of the National Ambient Air Quality Standards (NAAQS). Non-attainment area NSR requirements apply to areas that have not been able to demonstrate compliance with the NAAQS.

Section 108 of the CAA directs the USEPA to list pollutants that may reasonably be anticipated to endanger public health and welfare and to issue air quality criteria for those pollutants. The USEPA has set NAAQS for the following pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), and sulfur dioxide (SO_2). The NAAQS for those primary pollutants are listed in Table 1. Section 176(c) prohibits federal agencies from taking actions in NAAQS non-attainment or maintenance areas that do not conform to the State Implementation Plan (SIP) for the attainment and maintenance of NAAQS pursuant to Section 110(a).

2.5 Baseline Air Quality

Existing levels of ambient air quality and historical trends and projections in the project area are best documented by measurements made by the SCAQMD. The project is located in the central portion of Source Receptor Area (SRA) 17 (Central Orange County). The SCAQMD maintains an air quality monitoring station for this area that monitors all criteria pollutants. The results are included in Table 3. The station shows that ozone levels continue to exceed the California and national hourly standards, and while local levels appeared to be decreasing over the past several years, 2020 saw an increase in the number of violations over historic levels.

Although NO_2 measurements indicate that no standards were exceeded, NO_2 is a precursor to O_3 formation, which continually does exceed the standards. Hydrocarbons and NO_2 are emitted by both mobile and stationary sources, with the greater portion emanating from mobile sources in the Basin. Pollutants emitted from upwind cities react during their transport downwind to produce the oxidant concentrations measured at the Central Orange County monitoring station. Therefore, all upwind areas within the SCAB contribute to the O_3 production. These concentrations increase during the summer, with concentrations increasing from the late morning through the afternoon.

With regard to particulate matter, no trend is readily apparent. The State standard for PM_{10} was exceeded 59 of the 1,698 (3.47 percent) in the last 5 years that it was monitored. The federal standard has not been violated in more than the last 5 years. However, the federal standard for $PM_{2.5}$ was exceeded 14 of the 1,708 times (0.82 percent) in the last 5 years. Suspended particulate matter (both total suspended particulates [TSP] and PM_{10} and $PM_{2.5}$) is a mixture of natural and manmade materials that include soil particles, biological materials, sulfates, nitrates, organic compounds, and lead. Smaller particles (PM_{10}, $PM_{2.5}$) are created by the combustion of fossil fuels, but are also given off from tire wear and brake dust as well as wild fires.

Table 3
AIR QUALITY MONITORING SUMMARY FOR THE
CENTRAL ORANGE COUNTY MONITORING STATION
(Number Of Days Standards Were Exceeded And Maximum Levels During Such Violations[1])

State and Federal Pollutant/Standard	*2016*	*2017*	*2018*	*2019*	*2020*
Ozone (O_3)					
State 1-hour > 0.09 ppm	2	0	0	1	6
State 8-hour >0.07 ppm	4	4	1	1	15
Federal 1-hour > 0.124 ppm	0	0	0	1	2
Federal 8-hour > 0.070 ppm	4	4	1	1	15
Max. 1-hour conc. (ppm)	0.103	0.090	0.112	0.096	0.142
Max. 8-hour conc. (ppm)	0.074	0.076	0.071	0.082	0.097
Carbon Monoxide (CO)					
State 8-hour ≥ 9.1 ppm	0	0	0	0	0
Max. 8-hour conc. (ppm)	2.1	2.1	1.9	1.3	1.7
Nitrogen Dioxide (NO_2)					
State 1-hour > 180 (ppb)	0	0	0	0	0
Max. 1-hour conc. (ppb)	64.3	81.2	66.0	59.4	70.9
Inhalable Particulates (PM_{10})[2]					
State 24-hour > 50 $\mu g/m^3$	3/353	17/332	13/320	13/364	13/329
Federal 24-hour > 150 ($\mu g/m^3$)	0/353	0/332	0/320	0/364	0/329
Max. 24-hour conc. ($\mu g/m^3$)	74	128	129	127	120
Inhalable Particulates ($PM_{2.5}$)[2]					
Federal 24-Hour > 35 $\mu g/m^3$	1/349	6/305[3]	3/353	3/346	1/355
Max. 24-Hour Conc. ($\mu g/m^3$)	44.45	53.90[3]	54.10	36.10	41.40

Notes:
[1] With the exception of inhalable particulates (PM_{10} and $PM_{2.5}$), all values are based on 365 days per year.
[2]Violations per number of samples.
[3] Incomplete data.

2.6 Standard Conditions and Uniform Codes

All projects constructed in the SCAB are subject to standard conditions and uniform codes. Compliance with these provisions is mandatory. Those conditions and codes specific to air quality are included below.

- Adherence to SCAQMD Rule 403, which sets requirements for dust control associated with grading and construction activities.
- Adherence to SCAQMD Rules 431.1 and 431.2, which require the use of low sulfur fuel for stationary construction equipment.
- Adherence to SCAQMD Rule 1108, which sets limitations on ROG content in asphalt.
- Adherence to SCAQMD Rule 1113, which sets limitations on ROG content in architectural coatings.

- Adherence to SCAQMD Rule 1143, which sets limitations on ROG content in consumer paint thinners and multipurpose solvents.

Furthermore, the project shall comply with Title 24 energy-efficient design requirements as well as the provision of window glazing, wall insulation, and efficient ventilation methods in accordance with the requirements of the Uniform Building Code (UBC).

During construction, the project would be subject to SCAQMD Rule 403 (Fugitive Dust). SCAQMD Rule 403 does not require a permit for construction activities but sets forth general and specific requirements for all construction sites (as well as other fugitive dust sources) in the Basin. The general requirement prohibits a person from causing or allowing emissions of fugitive dust from construction (or other fugitive dust source) such that the presence of such dust remains visible in the atmosphere beyond the property line of the emissions source. SCAQMD Rule 403 also prohibits a construction site from causing an incremental PM_{10} concentration impact at the property line of more than 50 $\mu g/m^3$ as determined through PM_{10} high-volume sampling. The concentration standard and associated PM_{10} sampling do not apply if specific measures identified in the rule are implemented and appropriately documented.

In accordance with Rule 403, the SCAQMD requires that contractors implement Best Available Control Technology (BACT) for construction activities. Rule 403 identifies two sets of specific measures, one for projects less than 50 acres and another set of conditions for projects that exceed 50 acres. The requirements applicable to the project are included in Table 4.

Table 4
SCAQMD REQUIRED BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measures	Guidance
Backfilling	Stabilize backfill material when not actively handling; and Stabilize backfill material during handling; and Stabilize soil at completion of activity	Mix backfill soil with water prior to moving; and Dedicate water truck or high capacity hose to backfilling equipment; and Empty loader bucket slowly so that no dust plumes are generated; and Minimize drop height from loader bucket.
Clearing and Grubbing	Maintain stability of soil through prewatering of site prior to clearing and grubbing; and Stabilize soil during clearing and grubbing activities; and Stabilize soil immediately after clearing and grubbing activities.	Maintain live perennial vegetation where possible; and Apply water in sufficient quantity to prevent generation of dust plumes.
Clearing Forms	Use water spray to clear forms; or Use sweeping and water spray to clear forms; or Use vacuum system to clear forms.	Use of high pressure air to clear forms may cause exceedance of Rule requirements.

Crushing	Stabilize surface soils prior to operation of support equipment; and Stabilize material after crushing.	Follow permit conditions for crushing equipment; and Pre-water material prior to loading into crusher; and Monitor crusher emissions opacity; and Apply water to crushed material to prevent dust plumes.
Cut and Fill	Pre-water soils prior to cut and fill activities; and Stabilize soil during and after cut and fill activities.	For large sites, pre-water with sprinklers or water trucks and allow time for penetration; and Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts.
Demolition Mechanical/Manual	Stabilize wind erodible surfaces to reduce dust; and Stabilize surface soil where support equipment and vehicles will operate; and Stabilize loose soil and demolition debris; and Comply with Rule 1403.	Apply water in sufficient quantities to prevent the generation of visible dust plumes.
Disturbed Soil	Stabilize disturbed soil throughout the construction site; and Stabilize disturbed soil between structures	Limit vehicular traffic and disturbances on soils where possible; and If interior block walls are planned, install as early as possible; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Earth-Moving Activities	Pre-apply water to depth of proposed cuts; and Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and Stabilize soils once earth-moving activities are complete.	Grade each project phase separately, timed to coincide with construction phase; and Upwind fencing can prevent material movement on site; and Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes.
Importing/Exporting of Bulk Materials	Stabilize material while loading to reduce fugitive dust emissions; and Maintain at least six inches of freeboard on haul vehicles; and Stabilize material while transporting to reduce fugitive dust emissions; and Stabilize material while unloading to reduce fugitive dust emissions; and Comply with CVC Section 23114.	Use tarps or other suitable enclosures on haul trucks; and Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage; and Comply with track-out prevention/mitigation requirements; and Provide water while loading and unloading to reduce visible dust plumes.
Landscaping	Stabilize soils, materials, slopes	Apply water to materials to stabilize; and Maintain materials in a crusted condition; and Maintain effective cover over materials; and Stabilize sloping surfaces using soil binders until vegetation or ground cover can

		effectively stabilize the slopes; and Hydroseed prior to rain season.
Road Shoulder Maintenance	Apply water to unpaved shoulders prior to clearing; and Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs; and Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs.
Screening	Pre-water material prior to screening; and Limit fugitive dust emissions to opacity and plume length standards; and Stabilize material immediately after screening.	Dedicate water truck or high capacity hose to screening operation; and Drop material through the screen slowly and minimize drop height; and Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point.
Staging Areas	Stabilize staging areas during use; and Stabilize staging area soils at project completion.	Limit size of staging area; and Limit vehicle speeds to 15 miles per hour; and Limit number and size of staging area entrances/exits.
Stockpiles/Bulk Material Handling	Stabilize stockpiled materials, and stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	Add or remove material from the downwind portion of the storage pile; and Maintain storage piles to avoid steep sides or faces.
Traffic Areas for Construction Activities	Stabilize all off-road traffic and parking areas; and Stabilize all haul routes; and Direct construction traffic over established haul routes.	Apply gravel/paving to all haul routes as soon as possible to all future roadway areas; and Barriers can be used to ensure vehicles are only used on established parking areas/haul routes.
Trenching	Stabilize surface soils where trencher or excavator and support equipment will operate; and Stabilize soils at the completion of trenching activities.	Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching; and Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment.

Truck Loading	Pre-water material prior to loading; and Ensure that freeboard exceeds six inches (CVC 23114)	Empty loader bucket such that no visible dust plumes are created; and Ensure that the loader bucket is close to the truck to minimize drop height while loading.
Turf Overseeding	Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and Cover haul vehicles prior to exiting the site.	Haul waste material immediately off-site.
Unpaved Roads/Parking Lots	Stabilize soils to meet the applicable performance standards; and Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements.
Vacant Land	In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

2.7 Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardio-respiratory diseases.

Residential areas are considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Schools are also considered as sensitive since children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution since exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

3.0 Threshold of Significance Criteria

Presented below are the threshold of significance criteria identified by the SCAQMD relative to this topical issue. In accordance therewith, the proposed project would normally be deemed to produce a significant land use impact if the project or if project-related activities were to:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- 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 standards.
- Expose sensitive receptors to substantial air pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

As indicated in Section 15064(i)(1) of the State CEQA Guidelines, "cumulatively considerable" is defined to mean "that the incremental effects of an individual 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."

In order to determine whether or not the proposed project would cause a significant effect on the environment, the impact of the project must be determined by examining the types and levels of emissions generated, and its impacts on factors that affect air quality. To accomplish this determination of significance, the SCAQMD has established air pollution thresholds against which a proposed project can be evaluated and assist lead agencies in determining whether or not the proposed project is significant. If the thresholds are exceeded by a proposed project, then it should be considered potentially significant.

While the final determination of whether or not a project is significant is within the purview of the lead agency, the SCAQMD recommends that the following air pollution thresholds be used in determining whether the potential emissions from the construction or operational phase of a proposed project are potentially significant.

3.1 Construction Phase - Thresholds of Significance

The following significance thresholds for air quality have been established by the SCAQMD on a daily basis for construction emissions:

- 75 pounds per day for ROG
- 100 pounds per day for NOx
- 550 pounds per day for CO
- 150 pounds per day of SOx
- 150 pounds per day for PM_{10}
- 55 pounds per day for $PM_{2.5}$

During construction, if any of the identified daily air pollutant thresholds are exceeded by the proposed project, then the project's air quality impacts may be considered potentially significant.

3.2 Operational Phase - Thresholds of Significance

Criteria Pollutants

Specific criteria air pollutants have been identified by the SCAQMD as pollutants of special regional concern. Based upon this categorization, the following significance thresholds have been established by the SCAQMD for project operations:

- 55 pounds per day of ROG
- 55 pounds per day of NOx
- 550 pounds per day of CO
- 150 pounds per day of SOx
- 150 pounds per day of PM_{10}
- 55 pounds per day for $PM_{2.5}$

Projects within the SCAB with daily operational-related emissions that exceed any of the above emission thresholds may be considered potentially significant. The SCAQMD indicates in Chapter 6 of their *Handbook* that they consider a project to be mitigated to a level of insignificance if its primary effects are mitigated below the thresholds provided above.

Greenhouse Gasses

On September 28, 2010, the SCAQMD presented their proposed significance thresholds for greenhouse gases. At that time they determined a Tier 3 screening significance threshold level of 10,000 MTons CO_2e/year for industrial projects to be adopted where the SCAQMD is the lead agency. Staff also proposed to extend the industrial GHG significance threshold for use by all lead agencies.

Similarly, with regard to numerical residential/commercial GHG significance thresholds, SCAQMD staff presented two options that lead agencies could choose from. Option #1 presents separate numerical thresholds for residential projects (3,500 MTons CO_2e/year), commercial projects (1,400 MTons CO_2e/year), and mixed use projects (3,000 MTons CO_2e/year). Option #2 presents a single numerical threshold for all nonindustrial projects of 3,000 MTons CO_2e/year. If a lead agency chooses one option, it must consistently use that same option for all projects where it is lead agency. The SCAQMD proposal is to recommend the use of Option #2, but allow lead agencies to choose Option #1 if they prefer that approach.

3.3 Local Emission Standards

In addition to the mass daily threshold values presented above, projects that have the ability to exceed or add measurably to an existing excess of the ambient concentrations presented in Table 1 may be considered significant. The following localized significance thresholds have been established by the SCAQMD for individual projects:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm
- California State 1-hour NO_2 standard of 0.18 ppm
- SCAQMD 24-hour construction PM_{10} and $PM_{2.5}$ standards of 10.4 $\mu g/m^3$
- SCAQMD 24-hour operational PM_{10} and $PM_{2.5}$ standards of 2.5 $\mu g/m^3$

If ambient levels already exceed a State or federal standard, then project emissions are considered potentially significant if they increase ambient concentrations by a measurable amount. In the case of CO, the SCAQMD defines a measurable amount as 1.0 ppm or more for the 1-hour CO concentration or 0.45 ppm or more for the 8-hour CO concentrations. However, since the Basin has come into attainment of all CO standards, elevated CO concentrations are no longer a concern. The SCAQMD indicates that they consider a project to be mitigated to a level of insignificance if its secondary effects are mitigated below these thresholds.

4.0 Environmental Impacts and Mitigation Measures

The Lorna Street project site currently includes an existing residential unit as shown in Figure 1. This would be removed during demolition. The subsequent use includes the construction and operation of six townhomes and one ADU. The conceptual site plan is included in Figure 2.

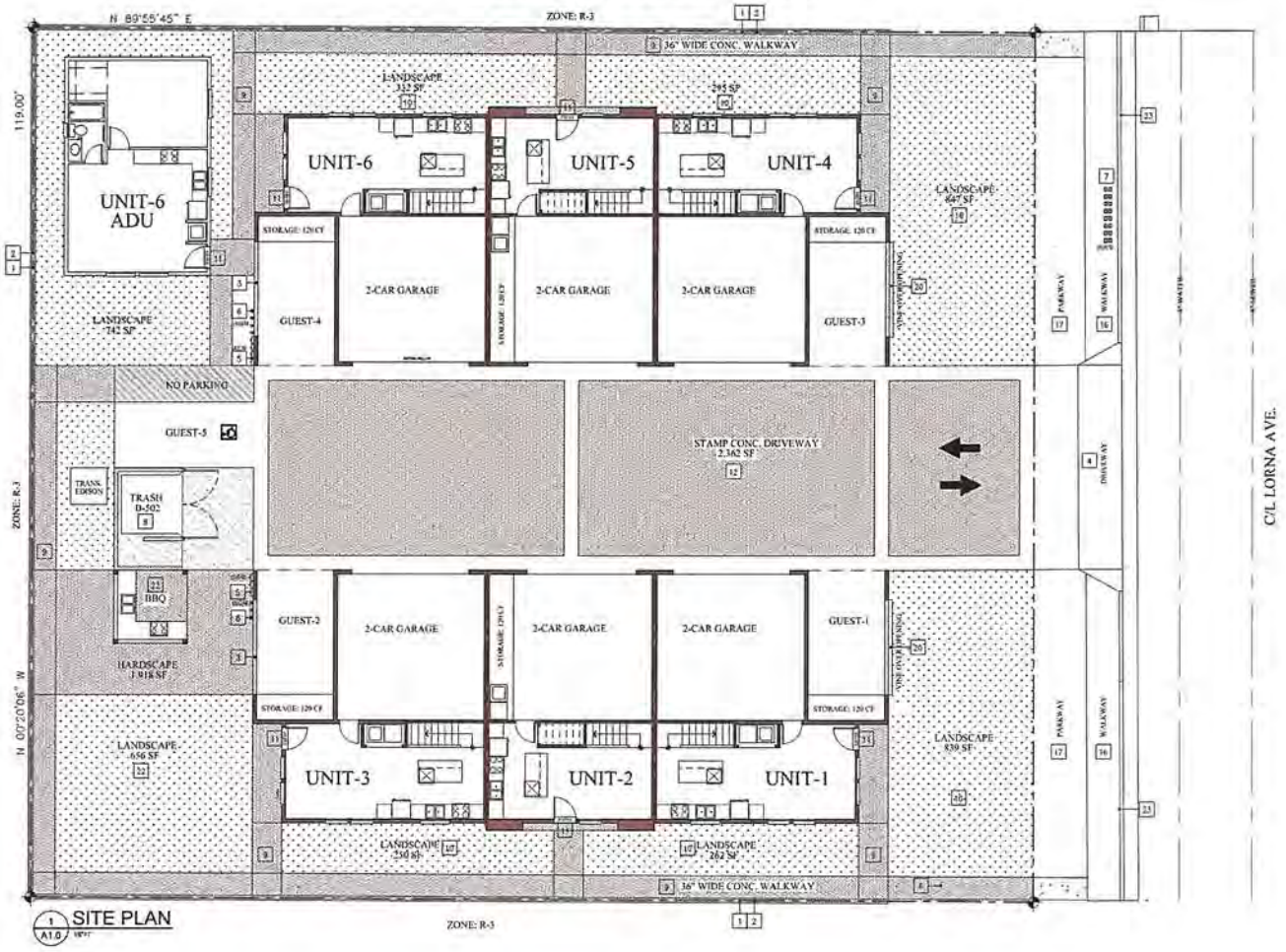
Projected air emissions are calculated using the California Emissions Estimator Model (CalEEMod Version 2020.4.0) distributed by the SCAQMD. The CalEEMod model uses EMFAC2017 emissions factors for vehicle traffic and the OFFROAD2011 emissions factors for construction equipment. Operational vehicle emissions projected by the model were scaled to represent the latest ITE values as provided by STS using the methodology presented in Section 1.0.

For the purposes of this analysis, construction is estimated to begin on January 3, 2022 following the CalEEMod default construction schedule. Based on the CalEEMod default construction schedule of 123 actual construction days (does not include weekends), this would complete construction on June 22, 2022 allowing for occupancy in that year. Daily construction emissions are based on the higher of the summer or winter emissions, regardless of when they actually would occur.

The subsequent occupation of the site in 2022 is also based on the CalEEMod model. Again, the project would remove an existing residential unit, as well as its existing emissions, and this is considered in the analysis.

For ease of the reader, the analysis follows the format included in the California CEQA Guidelines, Appendix G: Environmental Checklist Form for Section III. AIR QUALITY and Section VII. GREENHOUSE GAS EMISSIONS addressing each issue included in those sections, respectively.

Figure 2
CONCEPTUAL SITE PLAN



4.1 Project Potential to Conflict With or Obstruct Implementation of the Applicable Air Quality Plan?

Less than Significant Impact. CEQA requires that projects be consistent with the AQMP. A consistency determination plays an essential role in local agency project review by linking local planning and unique individual projects to the AQMP in the following ways: (1) it fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are fully addressed; and (2) it provides the local agency with ongoing information assuring local decision-makers that they are making real contributions to clean air goals contained in the AQMP.

Only new or amended general plan elements, specific plans, and regionally significant projects need to undergo a consistency review. This is because the AQMP strategy is based on projections from local general plans. Projects that are consistent with the local general plan are, therefore, considered consistent with the air quality management plan.

The City of Garden Grove Land Use and Zoning Maps show the project site to carry an R3 designation and include medium density residential uses. The medium density residential (MDR) designation is intended to create, maintain and enhance residential areas characterized by mostly traditional multi-family apartments, condominiums, townhomes, and single-family small-lot subdivisions. Densities for medium density residential range from 18.1 to 32 dwelling units per acre. The project represents infill development and is consistent with both the zoning and land use designations. Neither the construction (Table 5) nor the operation (Table 6) of the project is projected to exceed the daily threshold values suggested by the SCAQMD. Additionally, the project would not result in significant localized air quality impacts. As such, the project is consistent with the goals of the AQMP and, in that respect, does not present a significant air quality impact.

4.2 Project Potential to 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?

4.2.1 Construction Impacts

Less than Significant Impact. The potential air quality impacts associated with and attributable to the construction and operation of the project are addressed separately below.

Equipment, Vehicles, and Dust

Air quality impacts may occur during site preparation and construction activities required to implement the proposed land use. Major sources of emissions during construction include exhaust emissions, fugitive dust generated as a result of soil disturbance during site preparation and grading activities, and the emission of ROGs during the painting of the structures.

As noted, the project involves the construction of six townhomes and one ADU, also modeled as a townhome. Based on the proposed land use, by default the CalEEMod model allocates the construction over 123 working days and this schedule was retained for the analysis. For the purposes of this analysis, construction is assumed to begin on January 3, 2022 and end on June 22, 2022 allowing for full occupancy in 2022.

This is considered as conservative as this date has already passed and construction now would not begin until mid to late 2022, running into 2023. Because future emissions go down each year as older equipment and vehicles are replaced by newer more efficient models, the CalEEMod model would project slightly less emissions for any construction that would overlap into the year 2023. Therefore, keeping all of the construction with full occupancy in the year 2022 presents a reasonable worst-case for these emissions.

The project site includes an existing residential unit totaling about 2,800 square feet, including out buildings, to be removed at project implementation. Additionally, the existing asphalt is estimated at about 1,500 square feet.

With respect to the demolition of the existing structures, the CalEEMod model estimates that each square foot of floor area generates 0.046 ton of waste material.

2,800 square feet x 0.046 ton/square foot = 129 tons

Typical paving would have a depth of 6 inches. Based on an area of 1,500 square feet and a depth of 0.5 foot:

1,500 square feet x 0.5 foot / 27 cubic feet/cubic yard = 28 cubic yards to be removed

Asphaltic concrete has a weight of about 3,780 pounds per cubic yard.

28 cubic yards x 3,780 pounds per cubic yard = 105,840 pounds / 2,000 pounds/ton =53 tons

The total amount of material to be removed is then calculated below:

129 tons + 53 tons = 182 tons

The CalEEMod model default puts site demolition at 10 days. The CalEEMod model assumes that this movement of materials would generate 18 truck trips over the 10 day period, or about two trips per day.

With respect to the subsequent installation of the paving material, the CalEEMod model calculates the equipment and worker trip emissions, but does not calculate the off-gas emissions from the application of the asphalt. However, in this case, he Applicant proposes the use of concrete, which does not generate VOC emissions as asphalt does and these emissions, while miniscule, would not occur.

Based on the CalEEMod default values, the proposed structures would have a "foot print" of about 7,000 square feet. The actual square footage would be a bit less than this value, but the CalEEMod value was retained as a reasonable worst-case scenario. The remainder of the site is either landscaped or paved with concrete.

SCAQMD's Rule 403 governs fugitive dust emissions from construction projects. This rule sets forth a list of control measures that must be undertaken for all construction projects to ensure that no dust emissions from the project are visible beyond the property boundaries. Adherence to Rule 403 is mandatory and as such, does not denote mitigation under CEQA. The following analysis assumes the use of the minimal measures specified in Rule 403 that overlap between the rule and the CalEEMod model. These include: (1) soil stabilizers shall be applied to unpaved roads; (2) ground cover shall be quickly applied in all disturbed areas; and (3) the active construction site shall be watered twice daily. The model assigns a control efficiency of 55 percent for twice daily watering and a similar efficiency was assumed for other controlled dust-producing, heavy equipment activities. In actuality, Rule 403 specifies several measures that the CalEEMod model does not consider (Table 4), so the modeled PM_{10} and $PM_{2.5}$ emissions associated with fugitive dust are considered conservative.

Table 5 includes the daily emissions projected for site construction. Note that all emissions are within their respective threshold values and the impact is less than significant. Furthermore, all values are so low such that even if phases were to overlap, the impact would remain less than significant.

4.2.2 Operational Impacts

Less than Significant Impact. The major source of long-term air quality impacts is that associated with the emissions produced from project-generated vehicle trips. Stationary sources add only minimally to these values.

As previously noted, this analysis assumes the removal of an existing residential unit and its associated emissions. These were calculated using the CalEEMod model and the results are included in Table 6.

Table 5
COMPARISON OF PROJECTED CONSTRUCTION EMISSIONS AND DAILY CRITERIA VALUES
(pounds/day)[1]

Source	ROG	NOx	CO	SO_2	PM_{10} Dust	PM_{10} Exhaust	PM_{10} Total	$PM_{2.5}$ Dust	$PM_{2.5}$ Exhaust	$PM_{2.5}$ Total
Demolition										
Off Road Diesel	0.71	6.41	7.47	0.01	0.08	0.34	0.42	0.01	0.32	0.33
On Road Diesel	0.01	0.29	0.08	0.00	0.03	0.00	0.03	0.01	0.00	0.01
Worker Trips	0.03	0.02	0.33	0.00	0.11	0.00	0.11	0.03	0.00	0.03
Total	0.75	6.72	7.88	0.01	0.22	0.34	0.56	0.05	0.32	0.37
Site Preparation										
Off Road Diesel	0.58	6.93	3.96	0.01	0.11	0.26	0.36	0.01	0.24	0.25
Worker Trips	0.02	0.01	0.16	0.00	0.06	0.00	0.06	0.01	0.00	0.02
Total	0.60	6.94	4.12	0.01	0.17	0.26	0.42	0.02	0.24	0.27
Grading										
Off Road Diesel	1.08	12.00	5.94	0.01	1.08	0.52	1.59	0.52	0.48	0.48
Worker Trips	0.03	0.02	0.26	0.00	0.09	0.00	0.09	0.02	0.00	0.02
Total	1.11	12.02	6.20	0.01	1.17	0.52	1.68	0.54	0.48	0.50
Building Construction										
Off Road Diesel	0.69	7.03	7.15	0.01	0.00	0.37	0.37	0.00	0.34	0.34
Vendor Trips	0.00	0.05	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Worker Trips	0.02	0.01	0.16	0.00	0.06	0.00	0.06	0.01	0.00	0.02
Total	0.71	7.09	7.33	0.01	0.07	0.37	0.44	0.01	0.34	0.36
Asphalt Paving										
Off Road Diesel	0.64	5.92	7.03	0.01	0.00	0.30	0.30	0.00	0.28	0.28
Worker Trips	0.06	0.04	0.59	0.00	0.20	0.00	0.20	0.05	0.00	0.05
Total	0.70	5.96	7.62	0.01	0.20	0.30	0.50	0.05	0.28	0.33
Coating										
Off-Gas	8.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off Road Diesel	0.20	1.41	1.81	0.00	0.00	0.08	0.08	0.00	0.08	0.08
Worker Trips	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Total	8.96	1.41	1.84	0.00	0.01	0.08	0.09	0.00	0.08	0.08
Daily Threshold										
Any Phase Total	75	100	550	150	→	→	150	→	→	55
Exceeds Threshold?	No	No	No	No			No			No
Notes:										

[1] The CalEEMod model projects summer and winter emissions and the higher of the two values is included in the table.

Table 6
COMPARISON OF PROJECTED PEAK (WEEKDAY) OPERATIONAL EMISSIONS FOR THE EXISTING RESIDENCE AND PROPOSED PROJECT
(pounds/day)[1]

Source	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
Existing Peak Daily Emissions						
Mobile Sources	0.03	0.03	0.29	0.00	0.07	0.02
Natural Gas	0.00	0.01	0.00	0.00	0.00	0.00
Structural Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.04	0.00	0.00	0.00	0.00	0.00
Landscape Maintenance	0.00	0.00	0.08	0.00	0.00	0.00
Total Existing Emission	(0.07)	(0.04)	(0.37)	(0.00)	(0.07)	(0.02)
Proposed Project Peak Daily Emissions						
Mobile Sources	0.17	0.20	1.72	0.00	0.41	0.11
Natural Gas	0.00	0.03	0.01	0.00	0.00	0.00
Structural Maintenance	0.01	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.14	0.00	0.00	0.00	0.00	0.00
Landscape Maintenance	0.02	0.01	0.58	0.00	0.00	0.00
Hearths (Common Area BBQ)	1.83	0.15	3.56	0.00	0.53	0.53
Total Daily Emissions	2.17	0.39	5.87	0.00	0.94	0.64
Total Existing Emission	(0.07)	(0.04)	(0.37)	(0.00)	(0.07)	(0.02)
Total Daily Increase in Emissions	2.10	0.35	5.50	0.00	0.87	0.62
Threshold	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:
[1] The CalEEMod model projects summer and winter emissions. These can differ for mobile sources and the higher of the two values were included in the table.

The CalEEMod model reports the day with the highest emissions production. The estimation of Saturday and Sunday values are used in the calculation of the annual greenhouse gas emissions. Again, in the case of peak day emissions, both summer and winter scenarios were modeled and the higher of the two values is included in Table 6. Note all emissions are within their criteria values and the impact is less than significant. Table 6 also demonstrates that even if no land uses were removed, the project would not result in significant impacts with respect to the daily threshold levels suggested by the SCAQMD.

4.3 Project Potential to Expose Sensitive Receptors to Substantial Pollutant Concentrations

4.3.1 Short-Term Localized Impacts

Less than Significant Impact. In addition to the mass daily threshold standards discussed above, project construction has the potential to raise localized ambient pollutant concentrations. This could present a significant impact if these concentrations were to exceed the ambient air quality standards included in Table 1 at receptor locations.
The SCAQMD has developed screening tables for the construction and operation of projects up to five acres in size. These tables are included in the SCAQMD's *Final Localized Significance Threshold Methodology* (June 2003) and are periodically updated on the SCAQMD Internet web site. The most current update was in 2008 and these data are used in the analysis. It should be noted that the emissions values included in the screening tables are based on the emissions produced from on-site sources and do not include off-site mobile source emissions (i.e., trucks and worker vehicles) that are spread over a much larger area.

Rather than using the actual size of the site, the CalEEMod emissions model bases the area of disturbance on equipment use. Dozers, graders, and crawler tractors are estimated to disturb an area of 0.5 acre while scrapers are estimated to disturb 1.0 acre over an 8-hour work day.

The CalEEMod model estimates that site preparation would use a grader (covering 0.5 acre) while grading would use a grader and a rubber tired dozer (covering 1 acre). However, the site is only 0.375 acre in its entirety.

The SCAQMD screening tables include sites of 1, 2, and 5 acres with receptors at 25, 50, 100, 200, and 500 meters away. The provided methodology notes that site sizes and receptor distances that lie between those values included in the screening manual may be determined by linear regression. In this case, the site covers an area of 0.375 acre and the threshold values were reduced accordingly. The project is bordered by residents on all four sides. Based on these locations, the 25 meter minimal distance is to be used in the analysis even if receptors are located closer than this distance.

Allowable emissions are based on the source receptor area in which they are produced. In this case, the project is located in SRA 17 (Central Orange County). The screening level values for the four emissions types (i.e., NOx, CO, PM_{10}, and $PM_{2.5}$) for the 1, 2, and 5-acre sites with receptors at 25 meters were placed in a linear regression calculator and the slope and Y-intercept for the line that predicts the allowable emissions levels for each emission type was generated. The allowable emissions for the 0.375-acre site were then calculated for each pollutant type. These are 69.3652 pound per day for NOx, 384.3653 pounds per day for CO, 2.4664 pounds per day for PM_{10}, and 2.3750 pounds per day for $PM_{2.5}$. At 12.00, 5.94, 1.59, and 0.48 pounds per day, respectively (Table 5), all values are well below the screening levels and any impact is less than significant. The linear regression calculations are included in Appendix G.

4.3.2 Long-Term Localized Impacts, Off-site Criteria Pollutants

Less than Significant Impact. Long-term effects of the Proposed Project could also be significant if they exceed the CAAQS. As noted for construction, these criteria only apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. CO and NO_2 would be significant if the project were to raise existing levels above those values included in the CAAQS. Again, because the Basin is a non-attainment area for particulate matter, the operational thresholds for both PM_{10} and $PM_{2.5}$ are set at a measurable increase of 2.5 $\mu g/m^3$.

Unlike construction equipment that generates exhaust and dust in a set area, the primary source of emissions from project operations is due to the addition of vehicles on the roadway system. These emissions are then spread over a vast area and do not result in localized concentrations in proximity to the project site. As such, localized modeling for the project operations is not prepared for residential, limited commercial, or light industrial development that does not include a truck terminal.

Because CO is the criteria pollutant that is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, long-term adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. In the past, areas of vehicle congestion had the potential to create "pockets" of CO called "hot spots." However, the SCAB has now been designated as an Attainment area of both the State and federal CO standards, and no hot spots have been reported in project area in more than the last 5 years. CO is no longer a localized pollutant of concern near roadways and as such this analysis is no longer necessary.

4.4 Project Potential to Create Objectionable Odors

Less than Significant Impact. Project construction would involve the use of heavy equipment creating exhaust pollutants from on-site earth movement and from equipment bringing asphalt and other building materials to the site. With regards to nuisance odors, any air quality impacts will be confined to the immediate vicinity of the equipment itself. By the time such emissions reach any sensitive receptor sites away from the project site, they will be diluted to well below any level of air quality concern. An occasional "whiff" of diesel exhaust from passing equipment and trucks accessing the site from public roadways may result. Such brief exhaust odors are an adverse but less-than-significant, air quality impact. Additionally, some odor would be produced from the application of paints and coatings. Any exposure to these common odors would be of short-term duration and, while potentially adverse, are less than significant.

Operational odors could be produced from on-site food preparation with use of the bar-b-que. These odors are common in the environment and would not constitute a significant impact.

4.5 Project Potential to Generate Greenhouse Gas Emissions, Either Directly or Indirectly, that may have a Significant Impact on the Environment

Less than Significant Impact. To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, the SCAQMD has convened a GHG CEQA Significance Threshold Working Group. On December 5, 2008, SCAQMD recommended actions for determination of greenhouse gas significance. The recommendations were tiered to determine what projects would be subject to analysis and mitigation.

- Tier 1 consists of determining if the project would qualify for exemption under CEQA.

- Tier 2 consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. The concept embodied in this tier is equivalent to the existing concept of consistency in CEQA Guidelines §§15064(h)(3), 15125(d), or 15152(a). The GHG reduction plan must, at a minimum, comply with AB 32 GHG reduction goals; include emissions estimates agreed upon by either CARB or the AQMD, have been analyzed under CEQA, and have a certified Final CEQA document. Further, the GHG reduction plan must include a GHG emissions

inventory tracking mechanism; process to monitor progress in achieving GHG emission reduction targets, and a commitment to remedy the excess emissions if GHG reduction goals are not met (enforcement). If the proposed project is consistent with the qualifying local GHG reduction plan, it is not significant for GHG emissions. If the project is not consistent with a local GHG reduction plan, there is no approved plan, or the GHG reduction plan does not include all of the components described above, the project would move to Tier 3.

- Tier 3 establishes a screening significance threshold level of 10,000 MTons per year for industrial facilities. This is based on a 90 percent emission capture rate. If a project exceeds the GHG screening significance threshold level and GHG emissions cannot be mitigated to less than the screening level, the project would move to Tier 4.

- Tier 4 consists of a "decision tree" that would allow lead agencies one of three compliance options based on performance standards. Tier 4 was not recommended for approval by the SCAQMD.

- Tier 5 would allow a Project Proponent to implement off-site mitigation to reduce applicant emissions to less than screening levels.

As noted, the tiered approach above was intended for industrial facilities. With respect to residential development, to achieve the same policy objective of capturing 90 percent of the GHG emissions from new development projects in the residential/commercial sectors and implement a "fair share" approach to reducing emission increases from each sector, staff discussed with the working group a proposal combining performance standards and screening thresholds. The performance standards primarily focus on energy efficiency measures beyond Title 24 and a screening level of 3,000 Mtons CO_2e/year based on the relative GHG emissions contribution between residential/commercial sectors and stationary source (industrial) sectors. With respect to construction, the SCAQMD recommends that the construction emissions be totaled and amortized over a period of 30 years, then added to the emissions generated by the project's operation.

On September 28, 2010, the SCAQMD presented their proposed significance thresholds for greenhouse gases. At that time they determined a Tier 3 screening significance threshold level of 10,000 MTons CO_2e/year for industrial projects to be adopted where the SCAQMD is the lead agency. Staff also proposed to extend the industrial GHG significance threshold for use by all lead agencies.

For the purposes of this analysis, the impact would be considered as significant if the project were to generate greenhouse gases in excess of the recommendation by the SCAQMD for Option #2 land uses (i.e., 3,000 MTons CO_2e/year).

Construction

The CalEEMod model default estimates that construction would take 123 working days to complete. For the purposes of this analysis, construction is estimated to begin on January 3, 2022 and follow the CalEEMod default construction schedule with completion on June 22, 2022 allowing for full occupancy in 2022. While the actual date for the start of construction would not begin until mid to late 2022, any construction performed in 2022 would predict similar emissions regardless of the actual date. Furthermore, any overlap of construction into 2023

would result in reduced emission levels as older equipment and vehicles are replaced by the CalEEMod model on a yearly basis. Finally, keeping construction in 2022 allows for operations in 2022, and this would project slightly higher operational emissions, again, as older vehicles are replaced on a calendar year. As such, keeping construction and operations in 2022 represents a reasonable worst-case scenario.

Construction activities would consume fuel and result in the generation of greenhouse gases. Construction CO_2e emissions are projected using the CalEEMod computer model and included in Table 7.

Table 7
CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS
(Mtons/year)

Year	CO_2	CH_4	N_2O	Total CO_2e[1]
2022	64.51	0.02	0.00	65.07
Total per Year[2]	2.15	0.00	0.00	2.17

Notes:
[1] Because different gases have different conversion factors, totals may not equal.
[2] Averaged over a period of 30 years.

Site Operations

In the case of site operations, the majority of greenhouse gas emissions, and specifically CO_2, is due to vehicle travel and energy consumption. Again, the existing land use would also produce emissions that would be removed with project implementation and this reduction is included in the analysis.

Table 8 shows the increase in the annual greenhouse gas emissions for the Proposed Project including the amortized construction emissions presented in Table 7 as averaged over 30 years. Note that the overall increase is estimated at 65.45 MTons CO_2e/year and is well below the 3,000 MTons CO_2e/year threshold suggested by the SCAQMD and any impact is less than significant.

Table 8
YEARLY OPERATIONAL GREENHOUSE GAS EMISSIONS
FOR THE EXISTING LAND USE AND PROPOSED PROJECT
(Mtons/year)

Source	CO_2	CH_4	N_2O	Total CO_2e[1]
Existing Home				
Mobile Sources	10.69	0.00	0.00	10.84
Electricity	1.39	0.00	0.00	1.39
Natural Gas	1.28	0.00	0.00	1.28
Landscape Maintenance	0.02	0.00	0.00	0.02
Water Use	0.25	0.00	0.00	0.32
Waste Disposal	0.25	0.01	0.00	0.62
Total Existing Yearly Emissions	13.88	0.01	0.00	14.47
Proposed Project				
Mobile Sources[2]	58.49	0.00	0.00	59.32

Electricity	6.00	0.00	0.00	6.00
Natural Gas	6.17	0.00	0.00	6.20
Landscape Maintenance	0.12	0.00	0.00	0.12
Hearths (Common Area BBQ)	2.17	0.00	0.00	2.24
Water Use	1.76	0.01	0.00	2.25
Waste Disposal	0.65	0.04	0.00	1.62
Amortized Construction	2.15	0.00	0.00	2.17
Proposed Project Yearly Emissions	77.51	0.05	0.00	79.92
Existing Yearly Emissions	(13.88)	(0.01)	(0.00)	(14.47)
Total Increase in Emissions	63.63	0.04	0.00	65.45
Threshold	---	---	---	3,000
Exceeds Threshold?				No

Notes:
[1] Because different gases have different conversion factors, totals may not equal.

4.6. Project potential to conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Less than Significant with Mitigation. An impact can also be potentially significant if the project does not comply with the applicable plans necessary for the reduction of greenhouse gases.

The SCAQMD notes that it may be likely that projects can achieve the 2035 efficiency threshold because the SB375 target GHG reductions are expected to be met primarily through cleaner vehicles as a result of fleet turnover and reducing VMT. Consequently, fleet turnover plus a small increment of GHG reductions from land use projects could potentially achieve the 2035 efficiency threshold.

Still, the SCAQMD also notes that small commercial and residential projects should implement some measure or measures to contribute to reducing GHG emissions. Therefore, Tier 3 includes a requirement that all residential/commercial projects with GHG emissions less than the screening level must include efficiency components that reduce GHG emissions beyond the requirements of Title 24 (Part 6, California Code of Regulations), California's energy efficiency standards for residential and nonresidential buildings. No percentage is specified at this time.

Mitigation

- Where applicable, the Applicant shall specify Energy Star rated appliances and lighting.

With the implementation of these measures, the project would be consistent with the policies implemented by the SCAQMD and the impact is less than significant.

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Thomas J. Glover, *Pocket Ref,* April 1994

Appendix A Linear Regression Calculations

NOx

Stats.Blue

Simple Linear Regression Calculator

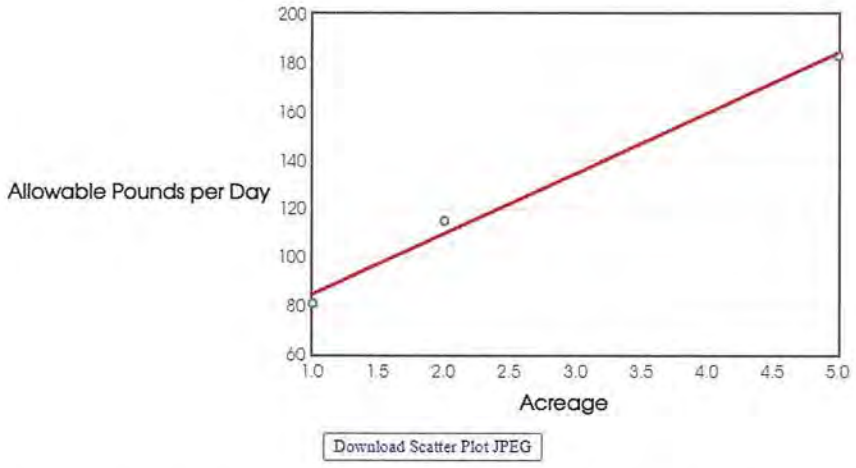
Variable Names (optional): Acreage | Allowable NOx Lb per Day

Explanatory (x)	Response (y)
1	81
2	115
5	183

Data goes here (enter numbers in columns):

Include Regression Line: ☑
Include Regression Inference: ☐

Display output to 4 decimal places | Calculate



Download Scatter Plot JPEG

Regression Line: ALLOWABLE POUNDS PER DAY $= 24.8462 \cdot$ ACREAGE $+ 60.0769$
Correlation: $r = 0.9959$
R-squared: $r^2 = 0.9918$

NOx = 24.8462 x 0.375 + 60.0769 = 69.3952 Pounds per Day

CO

stats.Blue

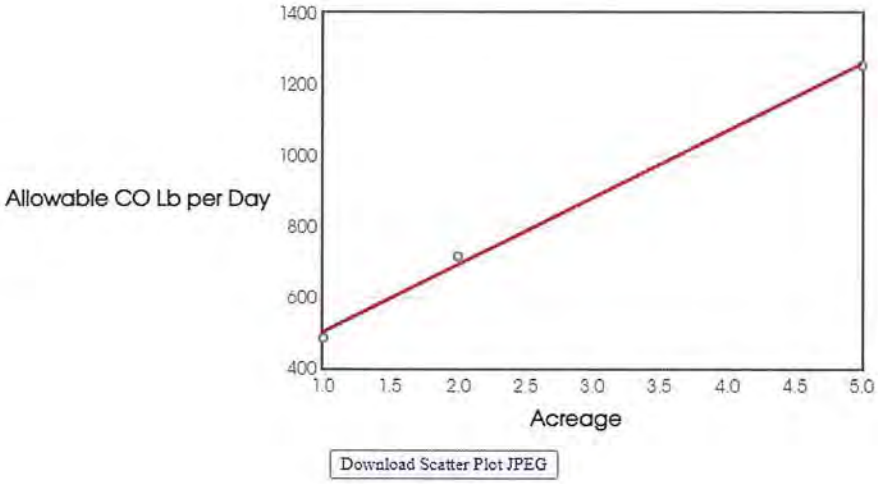
Simple Linear Regression Calculator

Variable Names (optional): Acreage | Allowable CO Lb per Day

	Explanatory (x)	Response (y)
Data goes here (enter numbers in columns):	1 2 5	485 715 1253

Include Regression Line: ☑
Include Regression Inference: ☐

Display output to 4 decimal places Calculate



Download Scatter Plot JPEG

Regression Line: ALLOWABLE CO LB PER DAY = 189.0769 · ACREAGE + 313.4615
Correlation: $r = 0.9986$
R-squared: $r^2 = 0.9971$

CO = 189.0769 x 0.375 + 313.4615 = 384.3653 Pounds per Day

PM_{10}

Stats.Blue

Simple Linear Regression Calculator

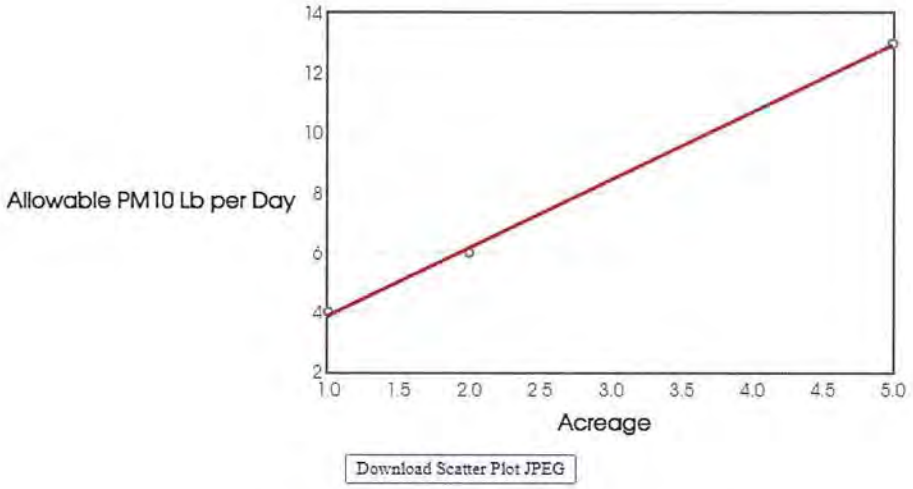
Variable Names (optional): Acreage | Allowable PM10 Lb per Day

Explanatory (x)	Response (y)
1	4
2	6
5	13

Data goes here (enter numbers in columns):

Include Regression Line: ☑
Include Regression Inference: ☐

Display output to 4 decimal places | Calculate



Download Scatter Plot JPEG

Regression Line: ALLOWABLE PM10 LB PER DAY $= 2.2692 \cdot$ ACREAGE $+ 1.6154$
Correlation: $r = 0.9996$
R-squared: $r^2 = 0.9991$

PM_{10} = 2.2692 x 0.375 + 1.6154 = 2.4664 Pounds per Day

$PM_{2.5}$

Stats.Blue

Simple Linear Regression Calculator

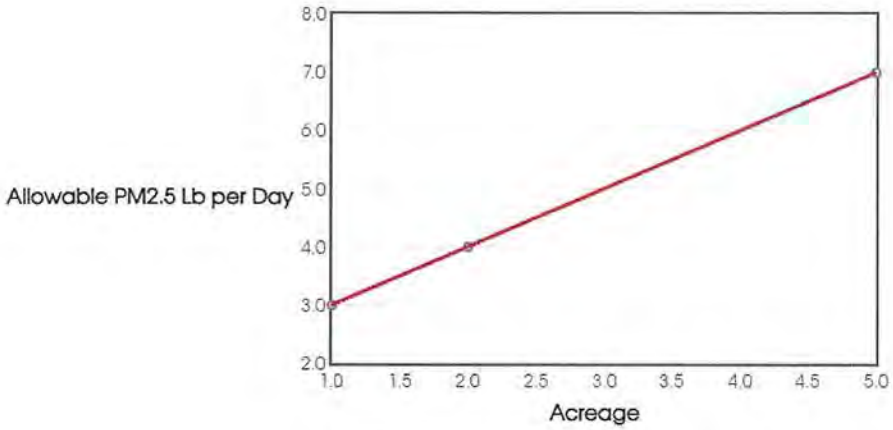
Variable Names (optional): Acreage | Allowable PM2.5 Lb per Day

Data goes here (enter numbers in columns):

Explanatory (x)	Response (y)
1	3
2	4
5	7

Include Regression Line: ☑
Include Regression Inference: ☐

Display output to 4 decimal places | Calculate



Download Scatter Plot JPEG

Regression Line: ALLOWABLE PM2.5 LB PER DAY $= 1 \cdot$ ACREAGE $+ 2$
Correlation: $r = 1$
R-squared: $r^2 = 1$

$PM_{2.5}$ = 1.0000 x 0.375 + 2 = 2.375 Pounds per Day

Appendix B CalEEMod Model Results for the Existing Home's Winter Emissions

Appendix C CalEEMod Model Results for the Existing Home's Summer Emissions

Appendix D CalEEMod Model Results for the Existing Home's Annual Emissions

Appendix E CalEEMod Model Results for the Proposed Project's Winter Emissions

Appendix F CalEEMod Model Results for the Proposed Project's Summer Emissions

RESOLUTION NO. 6052-22

RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF GARDEN GROVE APPROVING SITE PLAN NO. SP-117-2022 FOR PROPERTY LOCATED ON THE SOUTH SIDE OF STANFORD AVENUE, WEST OF LORNA STREET, AT 12771 LORNA STREET, ASSESSOR'S PARCEL NO. 133-463-14.

BE IT RESOLVED that the Planning Commission of the City of Garden Grove, in a regular session assembled on November 17, 2022, hereby approves Site Plan No. SP-117-2022 for a property located on the south side of Stanford Avenue, west of Lorna Street, at 12771 Lorna Street, Assessor's Parcel No. 133-463-14, subject to the conditions of approval attached hereto as Exhibit "A".

BE IT FURTHER RESOLVED in the matter of Site Plan No. SP-117-2022, the Planning Commission of the City of Garden Grove does hereby report as follows:

1. The subject case was initiated by Binh Tran for ZBT Group.

2. The applicant is requesting Site Plan approval to construct six (6) three-story, multi-family residential units with two-car garages on a 16,329 square-foot lot currently improved with a two-story, single-family dwelling, a detached second unit, and a detached garage. In conjunction with the Site Plan approval, the applicant also requested approval of a minor land deviation to exceed the required number of bathrooms and allow an additional half-bath on Units 1, 3, 4, and 6. Subsequent to the applicant's submittal of a complete application, the Land Use Code was amended to eliminate the limit on the number of bathrooms based on number of bedrooms and the need for minor modification approval.

3. The City of Garden Grove Planning Commission hereby determines that the proposed project is categorically exempt from review under the California Environmental Quality Act ("CEQA") pursuant to Section 15332 (In-Fill Development Projects) of the State CEQA Guidelines (14 Cal. Code Regs., Section 15303). As set forth in the Class 32 exemption, the proposed project is: (1) consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations; (2) the proposed development occurs within City limits on a project site of no more than five acres substantially surrounded by urban uses; (3) the project site has no value as habitat for endangered, rare or threatened species; (4) approval of the project would not result in any significant effects relating to traffic, noise, air quality or water quality; and (5) the site can be adequately served by all required utilities and public services. The project is therefore exempt from CEQA review.

4. The property has a General Plan Land Use designation of Medium Density Residential (MDR) and is zoned R-3 (Multiple-Family Residential). The site is

currently improved with a two-story, 2,188 square foot single-family dwelling, a detached second unit, and a detached 600 square foot garage.

5. Existing land use, zoning, and General Plan designation of property in the vicinity of the subject property have been reviewed.

6. Report submitted by the City staff was reviewed.

7. Pursuant to a legal notice, a public hearing was held on November 17, 2022, and all interested persons were given an opportunity to be heard.

8. The Planning Commission gave due and careful consideration to the matter during its meeting on November 17, 2022; and

BE IT FURTHER RESOLVED, FOUND AND DETERMINED that the facts and reasons supporting the conclusion of the Planning Commission, as required under Municipal Code Section 9.04.030 are as follows:

FACTS:

The project site is approximately 16,329 square feet (0.37 acres) and is located on the south side of Stanford Avenue, west of Lorna Street, and is currently improved with a two-story, 2,188 square-foot single-family dwelling, a detached second unit, and a detached 600 square-foot garage. The existing improvements were constructed in 1935, prior to Garden Grove's incorporation. The subject site has a General Plan Land Use designation of Medium Density Residential (MDR), and is zoned R-3 (Multiple-Family Residential). The property abuts R-3 zoned properties to the north, south, and west, and to the east across Lorna Street, that are improved with single-family and multiple-family developments.

The property owner purchased the property in November 2019 and currently occupies the unit. The applicant is requesting Site Plan approval to demolish the existing improvements to construct six (6), three-story, multi-family residential units with individual two-car garages and a detached ADU. Each unit is proposed to consist of a kitchen, a dining area, a living room, two (2) bedrooms, two (2) full bathrooms, a study area, a private deck with a storage room, and a two-car garage. Units 1, 3, 4, and 6 will also be improved with an additional half-bath. The site is proposed to be improved with four (4) covered guest parking spaces, one (1) handicap open parking stall, a trash enclosure, and a BBQ area in a common recreation area. Additionally, the applicant is proposing a detached Accessory Dwelling Unit (ADU) on the northwest corner of the site that consists of one (1) bathroom, a kitchen, and an open living/sleeping area.

As shown on the project plans, the applicant is proposing a detached 446 square-foot ADU. The ADU is being shown for reference only, as it does not require discretionary

approval. Pursuant to State legislation, the ADU will be processed ministerially during the plan check phase of the project.

The project site has a General Plan land use designation of Medium Density Residential (MDR). The City's General Plan 2030 establishes that the MDR land use designation is intended for the development of mainly multi-family residential neighborhoods that: 1) provide a variety of housing types, 2) provide access to schools, parks, and other community services, 3) provide a high-quality architectural design that preserves privacy, 4) provide common spaces, recreation areas and services convenient to residents, 5) provide an excellent environment for family life, and 6) preserve residential property values. The MDR land use designation is intended to create, maintain, and enhance residential areas characterized by mostly traditional multi-family apartments, condominiums, townhomes, and single-family small-lot subdivisions. Densities for the MDR land use designation are intended to range from 21.1 to 32.0 dwelling units per acre, and are implemented by the R-3 zone. The Land Use Element provides that where density is expressed in ranges, the top of the range is the maximum density permitted, however, densities below the bottom of the range are permitted. The project is proposed to be developed at a density of 16 dwelling units per acre, which is permitted by the General Plan Land Use Element and R-3 zone.

Note: The project application was filed prior to the adoption of objective development standards under Amendment No. A-035-2022, which became effective on November 10, 2022. Thus, the project was designed in accordance with the requirements of the R-3 zone prior to the Code Amendment, with the exception of the additional half-baths in Units 1, 3, 4 and 6, which previously required approval of a minor deviation, but which now are permitted without the need for a minor modification approval. In compliance with Cal Gov. Code § 65941.1, the applicant has provided the City's Housing Development Pre-Application prior to November 10, 2022, which allows applicants for housing developments to vest zoning regulations for 180 days.

FINDINGS AND REASONS:

SITE PLAN (HOUSING DEVELOPMENTS)

1. The proposed development project is consistent, in compliance, and in conformity with the applicable, objective standards, provisions, conditions or requirements of the General Plan, Title 9, or other applicable ordinances or policies of the City.

   The subject site has a General Plan land use designation of Medium Density Residential (MDR), and is zoned R-3 (Multiple-Family Residential).

   The proposed project was designed to comply with all applicable development standards for the R-3 zone in existence at the time a complete application was

submitted, with the exception of additional half-baths for some of the units. Although approval of a minor deviation would have previously been required for these half-baths, the City Council eliminated the prior Code provisions limiting the number of bathrooms per bedroom through the adoption of Ordinance No. 2939, which took effect on November 10, 2022.

The City's General Plan 2030 establishes that the MDR land use designation is intended for the development of mainly multi-family residential neighborhoods that: 1.) provide a variety of housing types, 2.) provide access to schools, parks, and other community services, 3.) provide a high-quality architectural design that preserves privacy, 4.) provide common spaces, recreation areas and services convenient to residents, 5.) provide an excellent environment for family life, and 6.) preserve residential property values. The MDR land use designation is intended to create, maintain, and enhance residential areas characterized by mostly traditional multi-family apartments, condominiums, townhomes, and single-family small-lot subdivisions. Densities for the MDR land use designation are intended to range from 21.1 to 32.0 dwelling units per acre, and are implemented by the R-3 zone. Where density is expressed in ranges in the Land Use Element, the top of the range is the maximum density permitted, however, densities below the bottom of the range are permitted. The proposed project will have a density of 16 dwelling units per acre, which is permitted by the General Plan and R-3 zoning.

In addition, the proposed Project is consistent with the goals and policies of the General Plan, including:

a. *Goal LU-4: The City seeks to develop uses that are compatible with one another.*

   The project is located in a dense neighborhood that is improved with multi-family and single-family housing developments. The properties in the direct vicinity of the project site are also zoned R-3 and have a MDR land use designation. The properties directly to the north and west are developed with two-story multi-family apartment buildings. Three-story multi-family buildings are also located in the vicinity. Thus, the proposed housing project is consistent with the development pattern of the surrounding residential uses.

b. *LU-IMP-2B: New development shall be similar in scale to the adjoining residential neighborhood to preserve its character.*

   The proposed design is compatible with the physical scale of the immediate neighborhood, which is improved with multi-family and single-family housing developments ranging from one to three stories in height. Thus, the project is similar both in land use intensity and physical scale of the adjoining residential neighborhood.

c. *LU-IMP-3D: Front multi-family housing on local streets with appropriate setbacks to be consistent with neighborhood development patterns.*

The project was reviewed by City staff and was determined to meet the required front, side, and rear setbacks, as set forth by the R-3 development standards. The proposed buildings will maintain a 20'-0" setback from the front property line along Lorna Street, and 30'-4" from the rear property line. The proposed building located on the south side of the site is setback 10'-8" from the southerly property line, and the building located to the north of the site is setback 11'-4" from the northerly property line, which exceeds the building separation and setback standards of the R-3 zone. Furthermore, the design proposes a third story that is 41.4% of the building footprint, which is sensitive to adjacent residential uses. Thus, the setbacks are consistent with the neighborhood development patterns.

d. *Policy LU-2.4: Assure that the type and intensity of land use shall be consistent with that of the immediate neighborhood.*

The immediate area is a residential neighborhood that consists of both single-family and multiple-family dwellings. The proposed six (6) unit apartment building was reviewed and determined to be within the allowed density and in compliance with the R-3 development standards, as set forth by the Municipal Code. Thus, the development is consistent with the type and intensity of land use of the immediate neighborhood.

2. The provisions of the California Environmental Quality Act have been complied with.

The proposed development is exempt from the California Environmental Quality Act ("CEQA"), pursuant to Section 15332 (In-Fill Development Projects) of the CEQA Guidelines (14 Cal. Code Regs., Section 15303). As set forth in the Class 32 exemption, the proposed project is: (1) consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations; (2) the proposed development occurs within City limits on a project site of no more than five acres substantially surrounded by urban uses; (3) the project site has no value as habitat for endangered, rare or threatened species; (4) approval of the project would not result in any significant effects relating to traffic, noise, air quality or water quality; and (5) the site can be adequately served by all required utilities and public services. Therefore, the provisions of the California Environmental Quality Act have been complied with.

3. The proposed development project does not have specific, adverse impacts, as defined in subdivision (j)(1)(A) of Government Code Section 65589.5, on public health and safety without any feasible method to satisfactorily mitigate

or avoid the specific adverse impact, other than the disapproval of the proposed project.

The proposed six (6) unit multi-family development will not have specific, adverse impacts on the public health and safety. The proposed project is within the maximum allowable density, is compatible with surrounding uses, is similar in scale to the adjoining residential neighborhood, and is consistent with the land use type and intensity in the immediate neighborhood. Furthermore, the Project will contribute to meeting the City's Regional Housing Needs Allocation (RHNA), as well as the Housing Element policies.

NO NET LOSS (GOVERNMENT CODE SECTION 65863) FINDINGS

1. If approval of the proposed Project will result in development of the Site at a lower residential density, the reduction in residential density is consistent with the adopted general plan, including the housing element.

   The project site is approximately 16,329 square feet and is located at 12771 Lorna Street (APN #133-463-14). The subject site has a General Plan Land Use designation of Medium Density Residential (MDR), and is zoned R-3 (Multiple-Family Residential). The project site is identified in the City's Housing Element sites inventory as having a realistic capacity to accommodate a total of eight (8) "above moderate income" units. The project proposes a total of six (6) "above moderate income" units, resulting in a density of 16 dwelling units per acre. Densities for the MDR land use designation are intended to range from 21.1 to 32.0 dwelling units per acre, and are implemented by the R-3 zone. Where density is expressed in ranges in the Land Use Element, the top of the range is the maximum density permitted, however, densities below the bottom of the range are permitted. At the time the applicant submitted a complete application, the Municipal Code allowed up to six (6) units for properties with lot sizes ranging from 16,200 to 17,999 square feet within the R-3 zone. Therefore, the applicant proposed a project at the then maximum permitted density for the R-3 zone. Property owners are allowed to develop their property at less than the maximum permitted density. Therefore, even though the proposed project results in two (2) fewer units than identified in the Housing Element site inventory, the six (6) units proposed is consistent with the density limits of the General Plan. The proposed project is also consistent with several goals and policies of the General Plan Land Use Element, as noted in the findings above.

2. The remaining sites identified in the housing element are adequate to meet the requirements of Government Code Section 65583.2 and to accommodate the City's share of the regional housing need pursuant to Government Code Section 65584; or, if not, the City has, or will within 180 days, identify and make available additional adequate sites to accommodate the City's share of the regional housing need by income level.

The City's 6th Cycle RHNA requires the City to plan for 19,168 housing units for all income levels. A component of preparing the City's Housing Element is the identification of vacant and underutilized sites suitable for residential development, and an evaluation of the housing development potential of these sites in fulfilling the City's RHNA. The project site is identified in the City's Housing Element sites inventory as having a realistic capacity to accommodate a total of eight (8) "above moderate income" units. The project proposes a total of six (6) "above moderate income" units. Although the proposed project includes two (2) fewer units than shown in the Housing Element sites inventory, the remaining Housing Element inventory sites have sufficient capacity to accommodate the City's remaining unmet RHNA by income level if the project is approved as proposed.

At the time the Housing Element was prepared and adopted, the City's *unmet* RHNA was calculated to be 18,208 units, broken down as follows: 6,567 low and very low-income units, 3,087 moderate-income units, and 8,554 above moderate-income units. The sites identified in the adopted Housing Element were determined adequate to accommodate a total of 18,291 units, including 401 more units than the City's unmet RHNA in the low and very low-income categories and 240 more units than the City's unmet RHNA for the moderate-income category. Sites deemed adequate to accommodate the lower and moderate-income categories are also adequate to accommodate above-moderate income units. Overall, the sites inventory in the adopted Housing Element reflected a total capacity surplus of 83 units.

Excluding ADUs, single-family dwellings, and SB 9 units, Staff has identified recently permitted or approved new housing units not accounted for in the Housing Element site capacity analysis. Some of these units were developed on sites not included in the Housing Element sites inventory. After accounting for these permitted and entitled units, and the six (6) units in the proposed project, the City's total remaining unmet RHNA would be 18,127 units[1], broken down as follows: 6,562 low and very low-income units, 3,087 moderate-income units, and 8,478 above-moderate income units. The remaining capacity of the sites identified in the Housing Element would be 18,207 units, resulting in a total capacity surplus of 80 units. The remaining sites are also adequate to accommodate a surplus of low and very low-income units (406) and moderate-income units (240), and such sites are also adequate to accommodate the City's remaining unmet above moderate-income RHNA. Due to this surplus, the overall residential capacity on sites identified in the Housing Element will still be sufficient to accommodate the City's total remaining unmet RHNA if the proposed project is approved.

INCORPORATION OF FACTS AND FINDINGS SET FORTH IN STAFF REPORT

In addition to the foregoing, the Planning Commission incorporates herein by this reference, the facts and findings set forth in the staff report.

BE IT FURTHER RESOLVED that the Planning Commission does conclude:

1. The Site Plan possesses characteristics that would justify the request in accordance with Municipal Code Section No. 9.32.030.3 (Site Plan).

2. In order to fulfill the purpose and intent of the Municipal Code and thereby promote the health, safety, and general welfare, the attached Conditions of Approval (Exhibit "A") shall apply to Site Plan No. SP-117-2022.

EXHIBIT "A"

Site Plan No. SP-117-2022

12771 Lorna Street

CONDITIONS OF APPROVAL

General Conditions

1. The applicant and each owner of the property shall execute, and the applicant shall record a "Notice of Agreement with Conditions of Approval and Discretionary Permit of Approval," as prepared by the City Attorney's Office, on the property. Proof of such recordation is required prior to issuance of building permits.

2. All Conditions of Approval set forth herein shall be binding on and enforceable against each of the following, and whenever used herein, the term "applicant" shall mean and refer to each of the following: the project applicant, Binh Tran for ZBT Group, the developer of the project, Dan Vy Ngoc Nguyen, the current owner of the property, and the future owner(s) and tenants(s) of the property, and each of their respective successors and assigns. All conditions of approval are required to be adhered to for the life of the project, regardless of property ownership. Except for minor modifications authorized to be approved by the Community and Economic Development Director pursuant to Condition No. 4, any changes of the Conditions of Approval require approval by the appropriate City hearing body.

3. Site Plan No. SP-117-2022 only authorizes approval to construct six (6) three-story multi-family residential units with two-car garages and related site improvements on an approximately 16,329 square foot lot located on the south side of Stanford Avenue, west of Lorna Street, at 12771 Lorna Street (APN: 133-463-14), as depicted on the plans submitted by the applicant and made part of the record of the November 17, 2022, Planning Commission proceedings. Approval of this Site Plan shall not be construed to mean any waiver of applicable and appropriate zoning and other regulations; and wherein not otherwise specified, all requirements of the City of Garden Grove Municipal Code shall apply.

4. The approved site plan and floor plan are an integral part of the decision approving this Site Plan. There shall be no additional changes in the design of the site plan and floor plan without the approval of the City. Minor modifications to the Site Plan and/or these Conditions of Approval, which do not materially change the scope or intensity of the project and which will not result in impacts that have not previously been addressed, may be approved by the Community and Economic Development Director, in his or her discretion. Proposed modifications to the project and/or these Conditions of Approval determined by the Community and Economic Development Director

not to be minor in nature shall be subject to approval of new and/or amended land use entitlements by the applicable City hearing body.

5. All conditions of approval shall be implemented at the applicant's expense, except where specified in the individual condition.

Public Works Engineering Division

Project Design

6. A geotechnical study prepared by a registered geotechnical engineer is required. The report shall analyze the liquefaction potential of the site and make recommendations. The report shall analyze sub-surface issues related to the past uses of the site, including sub-surface tanks and basement and septic facilities. Any soil or groundwater contamination shall be remediated prior to the issuance of a building permit per the requirements of the Orange County Health Department and the mitigation requirements of governing regulatory requirements. The report shall make recommendations for foundations and pavement structural section design of interior streets and parking spaces. The report shall also test and analyze soil conditions for LID (Low Impact Development) principles and the implementation of water quality for storm water run-off, including potential infiltration alternatives, soil compaction, saturation, permeability and groundwater levels.

7. Prior to the issuance of any grading or building permits, the applicant shall submit to the City for review and approval a final design Water Quality Management Plan that:

   a. Addresses required mitigation Site Design Best Management Practices (BMPs) based upon the latest Santa Ana Regional Water Quality Control Board (SARWQCB) approved Drainage Area Management Plan (DAMP) as identified in the geotechnical report recommendations and findings, including, but not limited to, infiltration minimizing impervious areas, maximizing permeability, minimizing directly connected impervious areas, creating reduced or "zero discharge" areas, and conserving natural areas as required by the latest adopted County of Orange Technical Guidance Document (TGD).

   b. BMP's shall be sized per the requirements of the latest Technical Guidance Documents.

   c. Incorporates the applicable Routine Source Control BMPs as defined in the DAMP.

   d. Incorporates structural and Treatment Control BMPs as defined in the DAMP.

e. Generally describes the long-term operation and maintenance requirements for the Treatment Control BMPs.

f. Identifies the entity that will be responsible for long-term operation and maintenance of the Treatment Control BMPs.

g. Describes the mechanism for funding the long-term operation and maintenance of the Treatment Control BMPs.

h. Provides a hydrological analysis with scaled map as well as hydrologic and hydraulic calculations to size storm drains per the Orange County RDMD standards.

8. Parkway culverts shall be designed per City of Garden Grove Standard Plan B-209. Storm drain lateral pipe connections to City maintained storm drains within City right-of-way shall be RCP with a minimum diameter of 18-inches.

9. Grading and Street improvement plans prepared by a registered Civil Engineer are required. As required under Section 107 of the California Building Code (CBC), the grading plan shall be based on a current survey of the site, including a boundary survey, topography on adjacent properties up to 30'-0" outside the boundary, and designed to preclude cross-lot drainage. Minimum grades shall be 0.50% for concrete flow lines and 1.25% for asphalt. The grading plan shall also include water and sewer improvements. The grading plan shall include a coordinated utility plan showing all existing utility facilities, easements and proposed utility facilities. All on-site improvements shall be tied by horizontal dimensional control to the property boundary as established by survey. A minimum uninterrupted 20'-0" wide throat access to the site is required from the street for the multi-residential projects and shall meet the requirements of the California Fire Code throughout the site. Vehicle maneuvering, as demonstrated by Auto Turn along private streets and access ways, shall be demonstrated on the grading plan. Street improvement plans shall conform to all format and design requirements of the City Standard Drawings & Specifications. The applicant has been notified by City of Garden Grove Public Works depart to anticipate for a full Street Reconstruction Project first. The property owner or developer is responsible to adjust their Final Grading Plan reflecting the as-built condition of the off-site improvement completed by the City. The developer is responsible for adjusting their Final Grading Plan design as needed to tie in as-built conditions of Street Reconstruction Project. If there's a conflict in construction schedule and activity during construction phase, the City contractor for the street reconstruction shall be prioritized. The contractor shall adjust his schedule accordingly.

10. All vehicular access drives to the site shall be provided in locations approved by the City Traffic Engineer (Policies and Procedures – TE-17).

11. The applicant shall coordinate with Planning Services Division and Orange County Fire Authority to identify proper emergency vehicle access to the site and shall provide the Engineering Division a copy of the approval letters upon first submittal of the grading and street improvement plans.

12. Any new drive approaches to the site shall be constructed in accordance with Garden Grove Standard B-120 (Option #2) as they conform to land use and roadway designation.

13. Prior to issuance of a grading permit, the applicant shall design overhead street lighting within the frontage of the development in conformance with City specifications and the approval of the City's Lighting Administrator. Location of lighting poles shall be shown on all the improvement plans and grading plan.

14. The grading plan shall depict an accessibility route for the ADA pathway in conformance with the requirements of the Department of Justice standards, latest edition and Section 1110A of the California Building Code.

15. All trash container areas shall meet the following requirements per City of Garden Grove Standard B-502 and State mandated commercial organic recycling Law, including AB 1826, SB 1383, and any other applicable State recycling laws related to refuse, recyclables, and/or organics:

    a. Paved with an impervious surface, designed not to allow run-on mixing of drainage from adjoining areas, designed to divert drainage from adjoining roofs and pavements to be directed around the area for trash roll out, and screened or walled to prevent off-site transport of trash by water or wind.

    b. Provide solid roof or awning to prevent direct precipitation into the enclosure.

    c. Connection of trash area drains to the municipal storm drain system is prohibited. Drainage from the enclosure may be directed to a conforming grease or contaminant interceptor.

    d. Potential conflicts with fire code access requirements and garbage pickup routing for access activities shall be considered in implementation of design and source control. See CASQA Storm Water Handbook Section 3.2.9 and BMP Fact Sheet SD-32 for additional information.

    e. The trash enclosure and containers shall be located to allow pick-up and maneuvering, including turn-arounds, in the area of enclosures, and concrete aprons for roll-out areas.

f. Pursuant to state mandated commercial organic recycling Law-AB 1826 and SB 1383, the applicant is required to coordinate storage and removal of the organics waste with local recycling/trash company.

g. Pursuant to applicable state mandated laws, the applicant is required to contact and coordinate with the operations manager of the local recycling/trash company (Republic Services, 800-700-8610) to ensure the trash enclosure includes the appropriate size and number of containers for the disposal of items such as, but may not limited to, municipal solid waste (MSW), recyclables, and organic green waste.

h. Based on the amount of waste disposed, per week, the applicant shall coordinate with the local recycling/trash company to ensure the adequate frequency of trash pick-up is serviced to the site for municipal solid waste (MSW), recyclables, organic and green waste, and any other type of waste.

i. The applicant shall ensure large bulk items, intended for coordinated and scheduled pick-up by the local recycling/trash company, are not placed in areas that encroach into drive aisles, parking spaces, pedestrian pathways, or areas in the front of the property including areas public right-of-way (e.g., street, sidewalk), during and after construction. Any large bulk items shall be out of public vantage points.

j. The requirements for the trash enclosure and design criteria are bound and coordinated with the Water Quality Management Plan (WQMP), when required, as depicted on the project grading plan, which shall be incorporated into the WQMP by narrative description, exhibits and an Operation and Maintenance Plan (O&M).

16. Any new or required block walls and/or retaining walls shall be shown on the grading plans, both in plan-view and cross sections. Cross sections shall show vertical and horizontal relations of improvements (existing and proposed) on both sides of property lines. Required wall heights shall be measured vertically from the highest adjacent finished grade. Block walls shall be designed in accordance to City of Garden Grove Standard B-504, B-505, B-506 and B-508 or designed by a professional registered engineer. In addition, the following shall apply:

a. Any block walls shall be decorative and utilize stucco finish, slump stone or split-face block, and shall include trailing vines, hedges planted along the base of the exterior face, or other landscaping treatments that deter graffiti.

b. Openings for drainage through walls shall be shown in section details and approved by the City Engineer. Cross-lot drainage is not allowed.

17. The applicant shall remove any existing substandard driveway approaches, curbs, sidewalks, ADA ramps, pavement sections, tree well and landscaping, and construct Lorna Street frontage improvements as identified below. All landscape, irrigation, sidewalk, and lighting improvements installed within the public rights-of-way shall require the approval of the City Engineer, Street Division, and the Planning Services Division, and shall be maintained by the applicant for the life of the project. The applicant has been notified by City of Garden Grove Public Works department to anticipate for a full Street Reconstruction Project first. The applicant is responsible to adjust its Final Grading Plan reflecting the as-built condition of the off-site improvements completed by the City. The applicant is responsible for adjusting its Final Grading Plan design as needed to tie in as-built conditions of Street Reconstruction Project. If there's a conflict in construction schedule and activity during construction phase, the City contractor for the street reconstruction shall be prioritized. The contractor shall adjust its schedule accordingly.

    a. A separate street improvement plan shall be prepared and submitted to the Engineering Division for the proposed improvements within the public right-of-way on Lorna Street, which shall include any proposed landscaping and irrigation plans. All work shall be per City standards and specifications.

    b. Existing substandard driveways on Lorna Street shall be removed and replaced with new curb, gutter, landscape, and sidewalk per City standards and specifications.

    c. The new driveway approach to the site on Lorna Street shall be constructed in accordance with Garden Grove Standard B-120 (Option #2).

    d. Construct curb and gutter when replacing any existing driveway approaches along the property frontage on Lorna Street in accordance with City Standard Plan B-114.

    e. The applicant shall remove and replace the pavement of the street from the edge of the easterly gutter to the westerly gutter along the property frontage per City Standard Plan B-104 and the direction of the City Engineer.

    f. The applicant shall locate all existing public utilities across the property frontage and within the property boundary of the project prior to commencement of grading operation and mobilization.

    g. The applicant shall coordinate with the Planning Services Division and Public Works Street Division before placing any type of tree within public right-of-way and proposed landscape area.

h. Street signs shall be installed as required and approved by the City Traffic Engineer.

18. Any proposed new landscaping in public right-of-way shall be approved by the Planning Services Division and maintained by the owner for the life of the project.

19. Driveway widths shall be in accordance with City's Traffic Engineering Policy TE-8 (Driveway Opening Policy).

20. Sight Distance Standards shall be in accordance with City's Traffic Engineering Policy TE-13. All structures and walls shall be designed to ensure proper vision clearance for cars entering or leaving the driveway and parking areas. No structure, wall or fence shall cause an exceedance of the applicable site distance standards set forth in City Traffic Engineering Policy TE 13.

21. The Site Plan shall comply with the completed Development Review and Comment Sheet prepared pursuant to City's Traffic Engineering Policy TE-17 and provided to the applicant.

22. Private Property Tow Away Sign Design shall be in accordance with City's Traffic Engineering Policy TE-19.

23. No Parking Fire Lane Sign Design shall be in accordance with City's Traffic Engineering Policy TE-20.

24. Traffic Impact Mitigation Fees shall be in accordance with Garden Grove City Council Resolution 9401-16.

25. Parking lot layout shall be in accordance with City Standard B-311 & B-312.

26. Off-street parking requirements for residential uses shall be in accordance with the City of Garden Grove's Traffic Engineering Policy TE-17.

27. A minimum five-foot-by-five-foot-wide maneuvering area shall be provided at the end of a dead-end parking aisle and shall consists of a ten-foot-by-nineteen-foot-wide turn-around space.

Permit Issuance

28. The applicant shall be subject to Traffic Mitigation Fees, In-Lieu Park Fees Drainage Facilities Fees, Water Assessment Fees, and other applicable mitigation fees identified in Chapter 9.44 of the Garden Grove Municipal Code, along with all other applicable fees duly adopted by the City. The amount of said fees shall be calculated based on the City's current fee schedule at the time of permit issuance.

29. A separate street permit is required for work performed within the public right-of-way.

30. Grading fees shall be calculated based on the current fee schedule at the time of permit issuance.

31. The applicant shall identify a temporary parking site(s) for construction crew and construction trailers office staff prior to issuance of a grading permit. No construction parking is allowed on local streets. Construction vehicles should be parked off traveled roadways in a designated parking area. Parking areas, whether on-site or off-site, shall be included and covered by the erosion control plans.

32. Prior to issuance of a grading permit, the applicant shall submit and obtain approval of a work-site traffic control plan for all the proposed improvements within public right-of-way, and shall be subject to the review and approval of the City Traffic Engineer.

33. In accordance to City of Garden Grove Municipal Code (Chapter 9.48.030), the applicant is required to underground all existing and proposed on-site and off-site utility facilities fronting the project which the developer is developing or redeveloping. All existing improvements and utilities shall be shown as part of the grading submittal package in the topography section.

Project Construction/Operation

34. The applicant shall coordinate with City's Public Works Department (Engineering, Water Services and Streets Division) and setup appointments for pre-construction inspections for all the on-site and off-site improvements prior to commencement of grading operation and mobilization.

35. In accordance with the Orange County Storm Water Program Manual, the applicant and/or its contractors shall provide dumpsters on-site during construction unless an Encroachment Permit is obtained for placement in street.

36. The applicant and his contractor shall be responsible for protecting all existing horizontal and vertical survey controls, monuments, ties (centerline and corner) and benchmarks located within the limits of the project. If any of the above require removal; relocation or resetting, the Contractor shall, prior to any construction work, and under the supervision of a California licensed Land Surveyor, establish sufficient temporary ties and benchmarks to enable the points to be re-set after completion of construction. Any ties, monuments and bench marks disturbed during construction shall be re-set per Orange County Surveyor Standards after construction. Applicant and his contractor shall also re-set the tie monuments where curb or curb ramps are removed and replaced or new ramps are installed. The Applicant and his contractor shall be liable

for, at his expense, any resurvey required due to his negligence in protecting existing ties, monuments, benchmarks or any such horizontal and vertical controls. Temporary Benchmarks shall not be used for Vertical control. Benchmarks shall be to the National Geodetic Vertical Datum (NGVD).

37. Heavy construction truck traffic and hauling trips, and any required lane closures shall occur outside peak travel periods. Peak travel periods are considered to be from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.

38. Prior to grading or building permit closeout and/or the issuance of a certificate of use or a certificate of occupancy, the applicant shall:

    a. Demonstrate that all structural best management practices (BMPs) described in the Project WQMP have been constructed and installed in conformance with approved plans and specifications.

    b. Demonstrate that the applicant is prepared to implement and maintain all non-structural BMPs described in the Project WQMP.

    c. Demonstrate that an adequate number of copies of the approved Project WQMP are available on-site.

    d. Submit for review and approval by the City an Operations and Maintenance (O&M) Plan for all structural BMPs.

Public Works Water Services Division

39. New water service installations 2" and smaller, shall be installed by the City of Garden Grove at owner's/developer's expense, unless otherwise approved. Installation shall be scheduled upon payment of applicable fees, unless otherwise noted. Fire services and larger water services 3" and larger, shall be installed by developer/owner's contractor per City Standards.

40. Water meters shall be located within the City right-of-way. Fire services and large water services 3" and larger, shall be installed by contractor with Class A or C-34 license, per City water standards and inspected by approved Public Works inspection.

41. A Reduced Pressure Principle Device (RPPD) backflow prevention device shall be installed for meter protection if a large meter is proposed for the complex. The landscape system shall also have RPPD device. Installation shall be per City Standards and shall be tested by a certified backflow device tester immediately after installation. Cross connection inspector shall be notified for inspection after the installation is completed. Owner shall have RPPD device tested once a year thereafter by a certified backflow device tester and the test results to be submitted to Public Works, Water Services Division. Property owner must open a water account upon installation of RPPD device.

42. It shall be the responsibility of owner/developer to abandon any existing private water well(s) per Orange County Health Department requirements. Abandonment(s) shall be inspected by Orange County Health Department inspector after permits have been obtained.

43. A composite utility site plan shall be part of the water plan approval.

44. New utilities shall have a minimum 5-foot horizontal and a minimum 1-foot vertical clearance from water main and appurtenances.

45. Any new or existing water valve located within new concrete driveway or sidewalk construction shall be reconstructed per City Standard B-753.

46. Any existing meter and service shall be abandoned at the water main per City Standard.

47. If individual water meters are proposed for each unit and fire sprinkler system is required, the meters and services for the development shall be installed per City Standard B-719, which specifies a residential fire sprinkler connection (RFSC) on the backside of the meter.

48. If separate fire service or private fire hydrant lateral is proposed, the service(s) shall have above-ground backflow device with a double-check valve assembly. Device shall be tested immediately after installation and once a year thereafter by a certified backflow device tester and the results to be submitted to Public Works, Water Services Division. Device shall be on private property and is the responsibility of the property owner. The above-ground assembly shall be screened from public view as required by the Planning Division.

49. Water meters and boxes shall be installed by City forces upon payment of applicable fees and after new water system (including water services) pass all bacteriological and pressure tests.

50. Location and number of fire hydrants shall be as required by Water Services Division and the Orange County Fire Authority (OCFA).

51. Owner shall install new private sewer main with clean out at right-of-way line and laterals on-site. The sewer main connection in public right-of-way shall be 6" min. dia., extra strength VCP with wedgelock joints and inspected by GGSD. All on site sewer and appurtenances to be installed per the California Plumbing Code and inspected by the Building Service Division.

52. Contractor shall abandon any existing unused sewer lateral(s) at street right-of-way on the property owner's side. The sewer pipe shall be capped with an expansion sewer plug and encased in concrete. Only one sewer connection per lot is allowed.

53. All perpendicular crossings of the sewer, including laterals, shall maintain a vertical separation of min. 12" below the water main, outer diameter to outer diameter. All exceptions to the above require a variance from the State Water Resources Control Board.

54. If water main is exposed during installation of sewer lateral, a 20-foot section of the water main shall be replaced with 20ft PVC C-900 DR-14 class 305 water pipe, size in kind and centered at the crossing.

Orange County Fire Authority

55. The applicant shall comply with all applicable Orange County Fire Authority (OCFA) requirements, including but not limited to the Fire Master Plan.

Building and Safety Division

56. All work shall comply with the latest edition of the California (CA) Building Standards Code (CBC) at time of permit application.

57. An EV (electric vehicle) charger shall be provided in each private garage.

58. A separate solar system shall be provided for each unit.

59. A soils report per the latest edition of CBC Chapter 18 is required and shall be submitted at time of building permit application.

60. An automatic fire sprinkler system shall be provided for each unit.

61. Public/guest parking shall comply with all requirements of the latest edition of CBC Chapter 11B, Division 5.

62. Fire/sound separations shall be provided between the units per the latest edition of CBC Chapter 7.

Planning Services Division

63. The applicant shall submit detailed plans showing the proposed location of utilities and mechanical equipment to the Community and Economic Development Department, Planning Services Division for review and approval prior to submitting plans into the Building and Safety Division Plan Check process. The project shall also be subject to the following:

    a. All on-site and off-site utilities (off-site refers to the areas within public right-of-way to the center line of the streets adjacent to the subject property) within the perimeter of the site and to the centerline of the adjacent streets shall be installed or relocated underground. All on-site

and off-site utilities pertaining to the improvements proposed under this Site Plan shall be installed or relocated underground.

b. All above-ground utility equipment (e.g. electrical, gas, telephone, cable TV) shall not be located in the street setback, within the common areas, or any parking areas, and shall be screened by densely planted and maintained landscaped hedges or a fence or wall. Ground-mounted equipment shall not exceed the maximum allowable height for a wall, fence, or hedge.

c. Clinging vines shall be installed within the landscape planters along the perimeter block walls to deter graffiti.

d. Roof-mounted mechanical equipment shall be screened by parapet walls, rooftop architectural features such as a tower equal to the height of the equipment, or low walls surrounding the equipment and shall be painted to match the color of the building materials.

e. No exterior piping, plumbing, or mechanical ductwork shall be permitted on any exterior façade and/or be visible from any public right-of-way or adjoining property. Roof rain gutters are permitted. The rain gutters shall follow the natural architecture lines of the building.

64. All landscaping shall be consistent with the landscape requirements of Title 9 of the Municipal Code. The developer shall submit a complete landscape plan governing the entire development. The landscape irrigation plans shall include type, size, location and quantity of all plant material. The landscape plan shall include irrigation plans and staking and planting specifications. All landscape irrigation shall comply with the City's Landscape Ordinance and associated Water Efficiency Guidelines. The landscape plan is also subject to the following:

a. A complete, permanent, automatic remote control irrigation system shall be provided for all landscaping areas shown on the plan. The sprinklers shall be of drip or micro-spray system sprinkler heads for water conservation.

b. Forty percent of the trees on a site shall consist of minimum size 24-inch box, and the remaining 60 percent shall be of minimum size 15 gallons. These trees shall be incorporated into the landscaped frontages of all streets. Where clinging vines are considered for covering walls, Boston Ivy shall be used.

c. The applicant or the property owner shall be responsible for installing and maintaining the landscaping.

d. No trees shall be planted closer than five feet (5'-0") from any public right-of-way. Trees planted within ten feet (10'-0") of any public right-of-way shall be planted in a root barrier shield. All landscaping along street frontages adjacent to driveways shall be of the low-height variety to ensure safe sight clearance. All trees planted on the subject property, whether for screening the project from the neighboring lots or for aesthetic or selling/marketing purposes, shall have an irrigation system installed in order maintain the trees.

e. All trees shall be double-staked in accordance with City standards.

f. The landscaping treatment along the Lorna Street frontage, including the area designated as public right-of-way, and the front setback areas of each lot, shall incorporate a mixture of groundcover, flowerbeds, shrubs, and trees.

g. Fifty percent (50%) of all required shrubs shall be a minimum size of five (5) gallons at time of planting.

h. Live groundcover shall be planted and maintained where shrubbery is not sufficient to cover exposed soil. Mulch may be used in place of groundcover where groundcover will not grow or where groundcover will cause harm to other plants, but not more than 30% of the groundcover area shall have the mulch substitute.

i. Groundcover plants shall be planted at a density and spacing necessary for them to become well established and provide surface coverage within 18 months of planting.

j. The landscape plan shall incorporate and maintain for the life of the project those means and methods to address water run-off also identified as Low Impact Development provisions, which address water run-off. This is to also to be inclusive of any application of Water Quality Management Plans (WQMP), Drainage Area Management Plans (DAMP) and any other water conservation measures applicable to this type of development.

k. At the time of irrigation installation, the irrigation system shall comply with all applicable provisions of the City's Water Conservation Ordinance, the City's Municipal Code landscape provisions, and all applicable state regulations.

l. All above-ground utilities (e.g. water backflow devices, electrical transformers, irrigation equipment) shall be shown on the landscaping plan in order to ensure landscape screening will be provided.

65. Hours and days of construction and grading shall be as set forth in the City of Garden Grove Municipal Code Chapter 8.47 as adopted, except that:

    a. Monday through Friday – not before 7:00 a.m. and not after 5:00 p.m.

    b. Saturday – not before 8:00 a.m. and not after 5:00 p.m. All construction activity on Saturday shall be limited to interior construction only.

    c. Sunday and Federal Holidays – no construction shall occur.

66. Construction activities shall adhere to SCAQMD Rule 403 (Fugitive Dust) that includes dust minimization measures, the use of electricity from power poles rather than diesel or gasoline powered generators, and the use methanol, natural gas, propane or butane vehicles instead of gasoline or diesel powered equipment, where feasible. Also, use of solar, low emission water heaters, and low sodium parking lot lights, shall be required to ensure compliance with Title 24.

67. All lighting structures shall be placed so as to confine direct rays to the subject property. All exterior lights shall be reviewed and approved by the Planning Services Division. Lighting adjacent to residential properties shall be restricted to low decorative type wall-mounted lights, or a ground lighting system. Lighting shall be provided throughout all private drive aisles and entrances to the development per City standards for street lighting. Lighting in the common areas shall be directed, positioned, or shielded in such manner so as not to unreasonably illuminate the window area of nearby residences.

68. All units shall maintain the ability to park two (2) cars within the garages at all times. Unless otherwise required to be permitted by State Law, garages shall not be converted to any other use. There shall be no business activities, day care, or garage sales conducted within or from the garages. Parking spaces in the garages shall be made available to the occupants of the unit at all times. The applicant/property owner shall ensure that this condition is complied with at all times by tenants of the units and shall include notice of this requirement in all lease agreements.

69. The main drive aisle serves the entire project for vehicular circulation. The applicant shall utilize effective signage, and/or other acceptable means (i.e., a painted/marked red fire lane), to communicate to residents and guests that there shall be no parking in front of garages or anywhere within the drive aisle, except for within the designated guest parking spaces. Additionally, the applicant shall ensure and enforce lease or other restrictions providing that there will be no long term parking of vehicles in the guest parking spaces and that guest parking spaces shall not be enclosed or reserved for any particular units.

70. The applicant/property owner shall abate all graffiti vandalism within the premises. The property owner shall implement best management practices to prevent and abate graffiti vandalism within the premises throughout the life of the project, including, but not limited to, timely removal of all graffiti, the use of graffiti resistant coatings and surfaces, the installation of vegetation screening of frequent graffiti sites, and the installation of signage, lighting, and/or security cameras, as necessary. Graffiti shall be removed/eliminated by the property owner as soon as reasonably possible after it is discovered, but not later than 72 hours after discovery.

71. The trash enclosure shall have unifying colors and exterior finishes that match, the development. The proposed roof design of the trash enclosure shall be architecturally compatible with the design of the existing development. The proposed roof and materials shall also comply with the building code requirements.

72. Each unit shall have a separate area for storage having a minimum of three hundred (300) cubic feet of private and secure space. This storage may be located within the enclosed garages, provided that it does not interfere with automobile parking.

73. The covered guest parking spaces shall remain unenclosed and be available to guests at all times.

74. Decorative stamped concrete or pavers shall be provided for the entire depth of the drive aisle.

75. Storage of boats, recreational vehicles, or commercial vehicles on the property shall be prohibited. The applicant/property owner shall ensure that this condition is complied with at all times by tenants of the units and shall include notice of this requirement in all lease agreements.

76. All new block walls, and/or retaining wall(s), including existing block walls to remain, shall be shown on the grading plans. Block walls shall be developed to City Standards or designed by a Registered Engineer and shall be measured from on-site finished grade. The applicant shall provide the following:

    a. Decorative masonry walls are required along the north, south, and west property lines and shall be constructed to a minimum height of 6'-0", as measured from highest point of finished grade. The block walls shall be decorative and utilize stucco finish, slump stone or split-face block, and shall include trailing vines, hedges planted along the base of the exterior face, or other landscaping treatments that deter graffiti.

    b. The applicant shall work with the existing property owners along the project perimeter in designing, constructing, and maintaining the required perimeter block walls. This requirement is to avoid having

double walls and to minimize any impact that it might cause to the existing landscaping on the neighbor's side as much as possible. The perimeter block wall shall be constructed and situated entirely within the subject property. In the event that the applicant cannot obtain approval from the property owners, the applicant shall construct the new wall with a decorative cap to be placed between the new and existing walls. In the event the location of a new wall adjacent to an existing wall or fence has the potential to affect the landscape planter, then the applicant shall work with City Staff to address this situation. The Community and Economic Development Director shall be authorized to approve minor alterations the size and/or location of the landscape planter to accommodate the placement of such wall.

77. No security fencing/gate shall be permitted to be installed within the entry of the project, unless a vehicular turn around area meeting Public Works Engineering Division requirements can be accommodated.

78. All recreation areas, landscaping along the interior project street and entryway, landscaped areas in all common areas, and any landscaping within the public right-of-way shall be maintained for the life of the project.

79. The common recreation area, as identified on the approved site plan, shall be equipped with outdoor furniture and BBQ equipment, subject to review by the Planning Services Division, and Building and Safety Division.

80. There shall be no parking allowed along the drive aisle, except within the designated parking areas. All curbs not designated as parking areas shall be painted red. The applicant shall post "No Parking" signs along the drive aisle.

81. Each residence shall be utilized as one (1) dwelling unit. No portion of any residence shall be utilized or rented as a separate dwelling unit.

82. All decks shall remain open and shall not be enclosed at any time. There shall be no storage allowed in the decks at any time, except within the storage closets.

83. The maintenance of the drive aisles, storm drains, sewer system, and open space areas is the responsibility of the applicant and property owner, including the common recreation area, and the common landscape areas.

84. Each unit shall be provided with an air conditioning condensing unit and/or system so that there are no wall-mounted, or window mounted units. If units are located on the roof, an architectural design of the roof areas shall be done to effectively screen such units from adjacent properties and the public right-of-way.

85. Mailboxes shall be provided and installed by the applicant. The local postmaster shall approve the design and location.

86. Each unit shall be provided with washer and dryer hook-ups.

87. During construction, if paleontological or archaeological resources are found, all attempts will be made to preserve in place or leave in an undisturbed state in compliance with applicable law. In the event that fossil specimens or cultural resources are encountered on the site during construction and cannot be preserved in place, the applicant shall contact and retain, at applicant's expense, a qualified paleontologist or archaeologist, as applicable, acceptable to the City to evaluate and determine appropriate treatment for the specimen or resource, and work in the vicinity of the discovery shall halt until appropriate assessment and treatment of the specimen or resource is determined by the paleontologist or archeologist (work can continue elsewhere on the project site). Any mitigation, monitoring, collection, and specimen/resource treatment measures recommended by the paleontologist/archaeologist shall be implemented by the applicant at its own cost.

88. The applicant shall comply with the Migratory Bird Treaty Act (MBTA), and Sections 3503, 3503.5 and 3515 of the California Fish and Game regulations, which require the protection of active nests of all bird species, prior to the removal of any on-site landscaping, including the removal of existing trees.

89. A copy of the resolution approving Site Plan No. SP-117-2022, including these Conditions of Approval, shall be kept on the premises at all times.

90. The applicant shall submit a signed letter acknowledging receipt of the decision approving Site Plan No. SP-117-2022 and his/her agreement with all conditions of the approval.

91. The applicant shall, as a condition of Project approval, at its sole expense, defend, indemnify and hold harmless the City, its officers, employees, agents and consultants from any claim, action, or proceeding against the City, its officers, agents, employees and/or consultants, which action seeks to set aside, void, annul or otherwise challenge any approval by the City Council, Planning Commission, or other City decision-making body, or City staff action concerning Site Plan No. SP-117-2022. The applicant shall pay the City's defense costs, including attorney fees and all other litigation related expenses, and shall reimburse the City for court costs, which the City may be required to pay as a result of such defense. The applicant shall further pay any adverse financial award, which may issue against the City including but not limited to any award of attorney fees to a party challenging such project approval. The City shall retain the right to select its counsel of choice in any action referred to herein.

92. Unless a time extension is granted pursuant to Section 9.32.030.D.9 of Title 9 of the Municipal Code, the use authorized by this approval of Site Plan No. SP-117-2022 shall become null and void if the subject use or construction necessary and incidental thereto is not commenced within one (1) year of the expiration of the appeal period and thereafter diligently advanced until completion of the project. In the event construction of the project is commenced, but not diligently advanced until completion, the rights granted pursuant to SP-117-2022 shall expire if the building permits for the project expire.

COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT PLANNING STAFF REPORT

AGENDA ITEM NO.: C.2.	**SITE LOCATION:** South side of Garden Grove Boulevard, between Newland Street and Yockey Street, at 8722 Garden Grove Boulevard
HEARING DATE: November 17, 2022	**GENERAL PLAN:** Residential/Commercial Mixed Use 2 (RC2)
CASE NOS.: Site Plan No. SP-119-2022 Tentative Tract Map No. TT-19129	**ZONE:** GGMU-2 (Garden Grove Boulevard Mixed Use 2)
APPLICANT: NRI Portfolios, LLC	**APN:** 097-222-03
PROPERTY OWNER: Same as applicant	**CEQA DETERMINATION:** Exempt- Section 15332 "In-Fill Development Projects"

REQUEST:

The applicant is requesting Site Plan approval to construct a three-story, townhome residential project consisting of twenty (20) units, which includes one (1) affordable housing unit for "very low-income" households on a 36,945 square-foot (0.85 acres) site currently improved with a vacant auto dealership. Pursuant to the State Density Bonus law, the applicant is requesting one (1) concession and one (1) waiver from the GGMU-2 (Garden Grove Mixed Use 2) zone development standards: (1) a concession to allow the building to be constructed within the 45-degree encroachment plane required for mixed use zoned properties abutting residentially-zoned lots along the side yard setback; and (2) a waiver to deviate from the requirement of a boulevard garden plaza for properties in the GGMU zones for properties abutting the Garden Grove Boulevard right-of-way. In accordance with the State Subdivision Map Act, the applicant is also requesting approval of a Tentative Tract Map to subdivide the existing property into two (2) lots for the purpose of selling each townhome unit as a condominium.

BACKGROUND:

The project site is approximately 36,945 square feet (0.85 acres) and is located on the south side of Garden Grove Boulevard, between Newland Street and Yockey Street, and is currently improved with a vacant auto dealership constructed in 1956, which operated under Conditional Use Permit No. CUP-124-91. The subject site has a General Plan Land Use designation of Residential/Commercial Mixed Use 2 and is zoned GGMU-2 (Garden Grove Boulevard Mixed Use 2). The property abuts a GGMU-2 zoned property to the east improved with a commercial center, R-3 (Multiple-Family Residential) zoned properties to the south, across an alley, improved with multi-family units, a Planned Unit Development No. PUD-131-99 zoned property to the west improved with a small lot single-family subdivision development, and GGMU-2 zoned properties to the north across Garden Grove Boulevard improved with commercial buildings.

The car dealership ceased operation in 2018 when the property was sold to the current owner, NRI Portfolios, LLC. The applicant is requesting Site Plan approval to demolish the existing car dealership to construct a three-story, townhome residential project consisting of twenty (20) for-sale condominium units, which includes one (1) affordable housing unit for "very low-income" households. With the exception of four (4) units, which are only improved with two-car garages, each unit is proposed to consist of a three-car garage, a kitchen, a dining area, a living room, four (4) bedrooms, three (3) bathrooms, a laundry room, a foyer, a front porch, and a second story balcony. The project will provide 16 three-car garages where two (2) parking spaces will be tandem, four (4) two-car garages, and six (6) open guest parking spaces. The site will also be improved with two (2) active recreation areas and a trash enclosure. In conjunction with the request for Site Plan approval, the applicant is requesting Tentative Tract Map approval to subdivide the subject property to facilitate the development of the project with condominium units.

The project site has a General Plan land use designation of Residential/Commercial Mixed Use 2 (RC2). The RC2 land use designation is intended to allow for mixed use residential and commercial development with higher residential densities up to 24 dwelling units per acre. The RC2 land use designation is implemented by the GGMU-2 zone, which allows the development of residential projects without a commercial component. In addition, the proposed Project is consistent with the goals and policies of the General Plan, including:

1. Goal LU-3: Higher-density residential development along major thoroughfares and in areas well served by public transit, retail and service businesses, public services, and public gathering places.

2. Policy LU-3.2: Support development of multi-family housing that provides a diversity of densities, types, and prices that meet the needs of all household income levels.

3. Policy LU-3.3: Encourage developers to build housing projects at or maximum allowable densities.

4. Goal LU-4: The City seeks to develop uses that are compatible with one another.

5. LU-IMP-2B: New development shall be similar in scale to the adjoining residential neighborhood to preserve its character.

6. LU-IMP-3D: Front multifamily housing on local streets with appropriate setbacks to be consistent with neighborhood development patterns.

7. Policy LU-2.4: Assure that the type and intensity of land use shall be consistent with that of the immediate neighborhood.

8. Policy 2.3 of the Housing Element: Provide density bonuses and other financial and regulatory incentives to facilitate the development of affordable housing.

The applicant is requesting State Density Bonus allowances for parking, one (1) concession, and one (1) waiver to deviate from the GGMU-2 zone development standards: (1) a concession to allow the building to be constructed within the 45-degree encroachment plane required for mixed use zoned properties abutting residentially--zoned lots along the side yard setback; and (2) a waiver to deviate from Section 9.18.090.020.F of the Municipal Code, which requires a boulevard garden plaza for properties in the GGMU zones for properties abutting the Garden Grove Boulevard right-of-way. An Affordable Housing Regulatory Agreement consistent with the State Density Bonus Law and the Garden Grove Municipal Code will be recorded to ensure affordability of the very low-income unit.

Note: The project application was filed prior to the adoption of objective development standards under Amendment No. A-035-2022, which became effective on November 10, 2022. Thus, the project was designed pursuant to the requirements of the GGMU-2 zone prior to the Code Amendment.

PROJECT STATISTICS:

	Provided	Code Requirement	Meets Code	Requires a Concession or Waiver
Lot Size	36,945 S.F. (0.8 acres)	15,000 S.F.	Yes	
Density	20 units	20 units maximum (24 units per acre)	Yes	
Total Parking	62	50	State Density Bonus Law	State Density Bonus Law[1]
Garages	56			
Open	6			
Recreation Area Total[2]	6,394 S.F.	6,000 S.F. (20 units x 300 S.F. = 6,000 S.F.)	Yes	
Common Area - Active	2,554 S.F.			
Private	3,840 S.F.			
Active Recreation Area Dimensions[2]	35'-0" x 36'-6"	35'-0" minimum	Yes	
Boulevard Garden Plaza	None	600 S.F.	State Density Bonus Law	Yes
Building Setbacks				
North (Front)	17'-5"	15'-0"	Yes	
South (Rear)	12'-3"	10'-0" plus encroachment plane	Yes	
East (Side)	10'-6"	10'-0"	Yes	
West (Side)	11'-6"	10'-0" plus encroachment plane	State Density Bonus Law	Yes[3]
Building Height	36'-10"	50'-0" or 4-stories	Yes	
Building Height Stepbacks[4]				
Garden Grove Boulevard	36'-10" overall height	50'-0" height within 45'-0" feet	Yes	

1. The State Density Bonus law requires 2.5 parking spaces for each four (4) bedroom unit.

2. Stand-alone multi-family developments in mixed use zones are required to comply with the open space standards of the R-3 (Multiple-Family Residential) zone.

3. No buildings or structures are allowed to be located within an encroachment plane sloping upward and inward to the site at a 45-degree angle, commencing 15 feet above the existing grade at the property line for mixed use zoned properties abutting residentially-zoned lots along the side yard setback.

4. The Code requires building heights within 45'-0" of the Garden Grove Boulevard property line not to exceed 50'-0".

DISCUSSION:

State Density Bonus Law:

The State Density Bonus Law (Section 65915 *et seq.* of the California Government Code) entitles applicants to a density bonus, concessions, waivers, and reduced parking to encourage the construction of affordable housing units. During the initial design development stages of the proposed project, the City adopted an increased density for the GGMU-2 zone from 21 to 24 dwelling units per acre. At twenty (20) units, the project is within the recently adopted density for the GGMU-2 zone. Therefore, the project no longer requires a density bonus under the State Density Bonus Law. However, the applicant has developed its proposal based on the State Density Bonus law allowances for reduced parking, and concessions and waivers. In exchange for providing one (1) "very low-income" unit, the applicant has requested one (1) concession and one (1) waiver to deviate from the development standards of the GGMU-2 zone, and to apply reduced parking ratios established by the State Density Bonus law.

The Project has been designed to comply with the parking requirements of the State Density Bonus Law, which requires 2.5 parking spaces for units consisting of four (4) or more bedrooms. The project provides twenty (20) four-bedroom units, which requires a total of 50 parking spaces. Under the State Density Bonus Law, tandem parking may also be provided to satisfy the required on-site parking. The project will provide four (4) two-car garages, 16 three-car garages with two tandem spaces, and six (6) visitor parking spaces. Therefore, 56 spaces will be provided in garages, and six (6) spaces will be open, for a total of 62 spaces, which exceeds the required parking under the Density Bonus Law by 12 spaces.

Parking Spaces Required per Unit

Units 1 – 20	**Required parking spaces**	**Provided**
Four (4) bedrooms	2.5 spaces x20	Garage: 56 Visitor: 6
Total	50 spaces	62

Concession and Waivers

The applicant has requested one (1) concession and one (1) waiver pursuant to the State Density Bonus Law to facilitate the development of the Project.
The State Density Bonus Law provides that an applicant is entitled to one (1) "concession or incentive" if it offers to restrict 5% of the housing units for very low-income households. A "concession or incentive" includes a reduction in site development standards or a modification of zoning code requirements or architectural design requirements. The State Density Bonus Law provides that a city must grant a

requested concession or incentive unless it makes a written finding, based upon substantial evidence, that the concession or incentive (1) does not result in identifiable and actual cost reductions to provide for affordable housing costs or for the targeted units; (2) would have a specific, adverse impact upon public health and safety or on any real property that is listed in the California Register of Historical Resources and for which there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact without rendering the development unaffordable to low-income and moderate-income households; or (3) would be contrary to state or federal law.

The following concession is requested for the Project:

Concession: The applicant requests a concession to deviate from Section 9.18.100.020.D.2 of the Municipal Code to allow the building to be constructed within the 45-degree encroachment plane required for mixed use zoned properties abutting residentially-zoned lots along the side yard setback. No buildings or structures are allowed to be located within an encroachment plane sloping upward and inward to the site at a 45-degree angle, commencing 15 feet above the existing grade at the property line. The subject property abuts a PUD zoned property to the west, which is improved with a small lot single-family subdivision development. A 6'-9" portion of the third stories of Buildings A and B encroaches into the 45-degree encroachment plane along the westerly property line, which is shared with the small lot single-family subdivision development. Justification for the concession, as provided by the Applicant, is that the encroachment plane would reduce the buildable area and would inhibit the projects ability from reaching the maximum density allowed in the zone.

The State Density Bonus Law provides that, in addition to a density bonus and concessions or incentives, an applicant may also request a waiver or reduction of development standards that will have the effect of physically precluding the construction of the proposed development, with the required density bonus and concessions or incentives. Similar to a concession or incentive, a city must waive or reduce a development standard that would physically preclude construction of the proposed development unless the waiver or reduction (1) would have a specific, adverse impact upon health or safety, and for which there is no feasible method to satisfactorily mitigate or avoid the specific adverse impact; (2) would have an adverse impact on any real property that is listed in the California Register of Historical Resources; or (3) would be contrary to state or federal law.

The following waiver is requested for the Project:

Waiver: The applicant requests a waiver to deviate from Section 9.18.090.020.F of the Municipal Code, which requires a boulevard garden plaza for properties in the GGMU zones for properties abutting the Garden Grove Boulevard right-of-way to liven the streetscape, and to promote a multi-purpose space that can be used for pedestrian activity, public gatherings, art, and passive recreation. Justification for the waiver, as provided by the Applicant, is that the boulevard garden plaza would reduce the buildable area and would inhibit the projects ability from reaching the maximum density allowed in the zone.

A copy of the density bonus application for the project is attached as Exhibit B, and includes the applicant's justification for granting the concession and waiver to facilitate the development of the project.

SITE PLAN:

Site Design and Circulation

The proposed design consists of four (4) three-story townhome buildings, each containing five (5) units. Buildings A and D are located toward the front of the site and are setback 17'-5" from the front property line that runs along Garden Grove Boulevard. Buildings B and C are located at the rear of the site and are setback approximately 12'-3" from the rear property line, which abuts an alley. A shared 28'-0" wide drive aisle leading from a drive approach that is centrally located along the northerly property line off of Garden Grove Boulevard, is proposed as the primary vehicular access point to the site. The project proposes an automatic vehicular gate at the rear of the site off the 20'-0" wide alley, which serves as a secondary vehicular exit. Buildings A and B are located on the west side of the drive aisle, while Buildings C and D are located on the east side of the drive aisle. Setback 11'-6" from the westerly property line is Building A, which is located on the northwest corner of the site (Units 1 thru 5), and Building B, which is located on the southwest corner of the site (Units 6 thru 10). Setback 10'-6" from the easterly property line is Building C, which is located on the southeast corner of the site (Units 11 thru 15), and Building D, which is located on the southwest corner of the site (Units 16 thru 20). All four (4) proposed structures satisfy the building separation requirements for residential developments in mixed use zones, which is at least 10'-0" from rear and interior side property lines.

With the exception of Units 5, 6, 15 and 16, which are only improved with two-car garages, each unit will consist of an enclosed three-car garage facing the shared drive aisle. The garages have capacity for three (3) vehicles due to two spaces being tandem. A total of six (6) guest parking spaces are provided on-site: three (3) spaces in between Buildings A and B to the west of the drive aisle, two (2) spaces in between Buildings C and D to the east of the drive aisle, and one (1) space at the rear of the site directly south of Building C, also east of the drive aisle. Two (2) separate 1,277 square-foot active recreation areas improved with table tennis and benches are provided in between the buildings: one (1) on the west side of the drive aisle between Buildings A and B, and the second on the east side of the drive aisle between Buildings C and D. A trash enclosure is also proposed along the easterly side of the drive aisle, directly south of Building D. The new drive approach, drive aisle, trash enclosure, and parking layout have been designed in accordance with City standards to provide adequate access for trash trucks and emergency vehicles.

Each unit can be accessed from its attached garage, or from the public right-of-way via internal pedestrian walkways leading to each units' front entry off of the east and west side yards. The units in Buildings A and B (Units 1 thru 10) provide front entries that face the westerly property line, and the units in Buildings C and D (Units 11 thru 20) provide front entries that face the easterly property line. The internal walkways also lead to the active recreation areas and visitor parking spaces.

Unit Design

The proposed project will consist of twenty (20), three-story townhome units. Each unit will consist of approximately 1,801 square feet of living area, 192 square feet of private open space, and 644 square feet of garage space, which includes 300 cubic feet of storage space capacity. Each unit will be improved with an attached garage, a foyer, and a 100 square-foot porch on the ground floor, a living room, a kitchen, a dining area, one (1) bedroom, one (1) bathroom, and a 92 square-foot balcony on the second floor, and three (3) bedrooms, two (2) bathrooms, and a laundry room on the third floor.

Units

Units 1 – 20 Four (4) bedrooms Three (3) bathrooms	**Living Area**	**Private Recreation Areas**	**Garage**
First Floor	154 S.F.	100 S.F. (porch)	644 S.F.
Second Floor	786 S.F.	92 S.F. (balcony)	NA
Third Floor	861 S.F.	NA	NA
Total	**1,801 S.F.**	**192 S.F.**	**644 S.F.**

Open Space and Recreational Area

Stand-alone residential developments in the mixed use zones are required to comply with the R-3 (Multiple-Family Residential) zone standards for private and common open space. Pursuant to the standards in effect at the time the applicant designed the project and submitted its application, the proposed development is required to provide a minimum of 6,000 square feet of recreation area (300 square feet per unit) and a common active recreation area that has minimum dimensions of 35'-0" by 35'-0". The project will provide the required recreation area in the form of both private and active recreation areas. In addition, each private recreation area is required to be at least 100 square feet with a minimum dimension of 9'-0" when located on the first level, and at least 90 square feet with a minimum dimension of 9'-0" " when located on an upper level. Each unit consists of a 9'-7" x 10'-6" porch on the ground level leading to the front entry of each unit, and a 9'-2" x 10'-0" balcony on the second level with access from the dining area. The combined area of the private recreation areas is approximately 3,840 square feet. Therefore, the project exceeds the minimum requirements for private recreation area per the following breakdown:

Private Recreation Areas

Units 1 – 20	**Private Recreation Areas**	**Total**
Ground Level Porch	100 S.F. x20	2,000 S.F.
Second Level Balcony	92 S.F. x20	1,840 S.F.
	Total	**3,840 S.F.**

In addition to the private recreation areas, the project proposes to provide two (2) active recreation areas. Each recreation area is approximately 1,277 square feet and has clear dimensions of 35'-0" x 36'-6". The combined area for the common recreation

areas is 2,554 square feet, which exceeds the minimum threshold established for active recreation areas under the requirements in effect at the time the applicant submitted its application. The recreation areas will be improved with amenities that include table tennis equipment and benches. The updated amenity requirements included in Amendment No. A-035-2022 do not apply to this project.

With the 3,840 square-foot private recreation space and 2,554 square feet of active recreational area, the proposed development will provide a combined area of 6,394 square feet of recreation space. Thus, the project exceeds the minimum requirement of the Municipal Code for a twenty (20) unit multi-family development by 394 square feet.

Garden Grove Boulevard Pedestrian Oriented Setback

Municipal Code Section 9.18.090.020.B requires that GGMU-2 zoned properties provide a pedestrian activity area within the first 5'-0" of the minimum required 15'-0" front yard setback. Said area shall be paved, landscaped, and be improved with elements that enhance the pedestrian experience. Such design elements should include benches, lighting, and enhanced paving.

Additionally, Municipal Code Section 9.18.090.020.C establishes requirements for trees and planting within the public right-of-way and the front setback along Garden Grove Boulevard. Canopy trees within public right-of-way are required at no more than 30'-0" apart on center. Within the front 10-0" of the front setback area, columnar trees are required at regular intervals no more than 40'-0" on center that have a maturity height of at least 45'-0". Additionally, canopy trees are required within the front setback at a ratio of at least one (1) tree for every 50'-0" of lot frontage, either spaced equally or clustered. For all trees within the public right-of-way or front setback, a minimum of sixteen (16) square feet of planting of shrubs and/or groundcover are required at the base of each required tree, unless tree grates are provided.

The proposed project has been designed with enhanced concrete stamped paving along the front 5'-0" of the front setback area. Additionally, conditions of approval will require that the pedestrian activity area be improved with benches and lighting. The project also proposes four (4) canopy trees within the public right-of-way within 30'-0" intervals, three (3) columnar trees less than 40'-0" from each other within the front 10'-0" setback area, and an additional four (4) canopy trees within the front setback area, exceeding the minimum required for a property with a 132'-0" wide lot frontage. The trees within the public right-of-way will have grates, while all other trees within the front setback area will have the required base planting. Therefore, the project complies with the pedestrian oriented front setback requirements, as required for GGMU-2 zoned properties that front Garden Grove Boulevard.

Site Landscaping

Aside from the pedestrian oriented front setback landscaping and tree requirements, Section 9.18.100.020.C.5 of the Municipal Code requires 60% of the surface area of the required side and rear setbacks to be landscaped in all mixed use zones. The project proposes landscaping along the side and rear setbacks, except on areas designated for

walkways, parking spaces, the drive aisle, and private recreation areas, using a variety of plant materials. In addition, the applicant is required to provide a landscape and irrigation plan that complies with the requirements of the Municipal Code. All of the landscaped areas will be fitted with automatic irrigation systems that comply with the City's Water Efficiency Guidelines.

Building Architecture

The four (4) multi-family townhome buildings will be three (3) stories in height and will incorporate a contemporary architectural style in a white and grey color scheme. The building design includes stucco exteriors, trimmed vinyl windows, and a combination of gable and hip design roofs finished with asphalt shingles. The porch and balcony areas will be accentuated with wooden columns, steel railing, and black wall light fixtures. The side elevations of the buildings have varied roof lines to break down the overall massing and provide further architectural articulation of the facades, as required by Municipal Code Section 9.18.100.040 (Enhanced Building Design Standards).

Tentative Tract Map

In accordance with the State Subdivision Map Act, the applicant is requesting approval of Tentative Tract Map No. TT-19129-2022 to subdivide the subject property into two (2) lots for the purpose of selling each townhome unit as a condominium. Lot 1 will be comprised of Units 1 thru 20, and Lot 2 will include all common areas, including the drive aisle, guest parking, trash enclosure, and active recreation areas. The proposed Tentative Tract Map is in conformance with the City's General Plan, the City's Subdivision Ordinance, the GGMU-2 zone requirements, and the State's Subdivision Map Act.

California Environmental Quality Act

Staff has initially determined that the proposed development is exempt from the California Environmental Quality Act ("CEQA"), pursuant to Section 15332 (In-Fill Development Projects) of the CEQA Guidelines (14 Cal. Code Regs., Section 15303). As set forth in the Class 32 exemption, the proposed project is: (1) consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations; (2) the proposed development occurs within City limits on a project site of no more than five acres substantially surrounded by urban uses; (3) the project site has no value as habitat for endangered, rare or threatened species; (4) approval of the project would not result in any significant effects relating to traffic, noise, air quality or water quality; and (5) the site can be adequately served by all required utilities and public services.

No Net Loss

Government Code Section 65863 requires jurisdictions to maintain adequate sites to accommodate their remaining unmet Regional Housing Needs Allocation (RHNA) by each income category at all times throughout the Housing Element planning period. A jurisdiction may not take any action to reduce a parcel's residential density unless it

makes findings that the reduction is consistent with the General Plan, including the Housing Element, and that the remaining sites identified in its Housing Element sites inventory can accommodate its remaining unmet RHNA by each income category or it identifies additional sites so that there is no net loss of residential unit capacity.

In addition, if a jurisdiction approves a development on a parcel identified in its Housing Element sites inventory with fewer units than shown in the Housing Element, the jurisdiction must either make findings that the Housing Element's remaining sites have sufficient capacity to accommodate the remaining unmet RHNA by each income level, or identify and make available additional adequate sites to accommodate the remaining unmet RHNA for each income category. However, a jurisdiction may not disapprove a housing development project on the basis that approval of the development would trigger the identification or zoning of additional adequate sites to accommodate the remaining RHNA.

The City's 6th Cycle RHNA requires the City to plan for 19,168 housing units for all income levels. A component of preparing the City's Housing Element is the identification of vacant and underutilized sites suitable for residential development, and an evaluation of the housing development potential of these sites in fulfilling the City's RHNA. The project site is identified in the City's Housing Element sites inventory as having a realistic capacity to accommodate a total of nineteen (19) "moderate income" units. The project proposes a total of twenty (20) units consisting of nineteen (19) "above moderate income" and one (1) "very low-income" unit. Because the proposed project provides units in differing income categories than shown in the Housing Element sites inventory, the City must determine whether the remaining Housing Element inventory sites have sufficient capacity to accommodate the City's remaining unmet RHNA by income level if the project is approved as proposed. Staff has evaluated the housing projects that have been permitted or approved during the current planning period, or which are otherwise not accounted for in the Housing Element site analysis, and has determined that the remaining sites identified in the sites inventory have sufficient capacity to accommodate the City's remaining unmet RHNA need for each income level.

At the time the Housing Element was prepared and adopted, the City's *unmet* RHNA was calculated to be 18,208 units, broken down as follows: 6,567 low and very low-income units, 3,087 moderate-income units, and 8,554 above moderate-income units. The sites identified in the adopted Housing Element were determined adequate to accommodate a total of 18,291 units, including 401 more units than the City's unmet RHNA in the low and very low-income categories and 240 more units than the City's unmet RHNA for the moderate-income category. Sites deemed adequate to accommodate the lower and moderate-income categories are also adequate to accommodate above-moderate income units. Overall, the sites inventory in the adopted Housing Element reflected a total capacity surplus of 83 units. Due to this surplus, the proposed project will not create a reduction to the City's total required RHNA allocation.

Excluding ADUs, single-family dwellings, and SB 9 units, Staff has identified recently permitted or approved new housing units not accounted for in the Housing Element site capacity analysis. Some of these units were developed on sites not included in the Housing Element sites inventory. After accounting for these permitted and entitled

units, and the twenty (20) units in the proposed project, the City's total remaining unmet RHNA would be 18,113 units[1], broken down as follows: 6,561 low and very low-income units, 3,087 moderate-income units, and 8,465 above-moderate income units. The remaining capacity of the sites identified in the Housing Element would be 18,196 units, resulting in a total capacity surplus of 83 units. The remaining sites are also adequate to accommodate a surplus of low and very low-income units (407) and moderate-income units (221), and such sites are also adequate to accommodate the City's remaining unmet above moderate-income RHNA. Due to this surplus, the overall residential capacity on sites identified in the Housing Element will still be sufficient to accommodate the City's total remaining unmet RHNA if the proposed project is approved. The required No Net Loss findings can be made and are included in Resolution No. 6053-22.

1. Value does not reflect non-approved housing projects that are currently agendized.

SB 330 Compliance:

In 2019, the Legislature adopted and the Governor approved Senate Bill 330 (SB 330) enacting the Housing Crisis Act of 2019 (Government Code § 66300). Among its provisions, SB 330 imposed new requirements when a proposed new housing development would require the demolition of existing residential units. Pursuant to Government Code § 66300(d)(1), the City may not approve a housing development project that will require the demolition of residential dwelling units unless the project will create at least as many residential dwelling units as will be demolished. This proposed project will be constructed on a site that is currently improved with a car dealership. Therefore, no existing residential units will be replaced.

RECOMMENDATION:

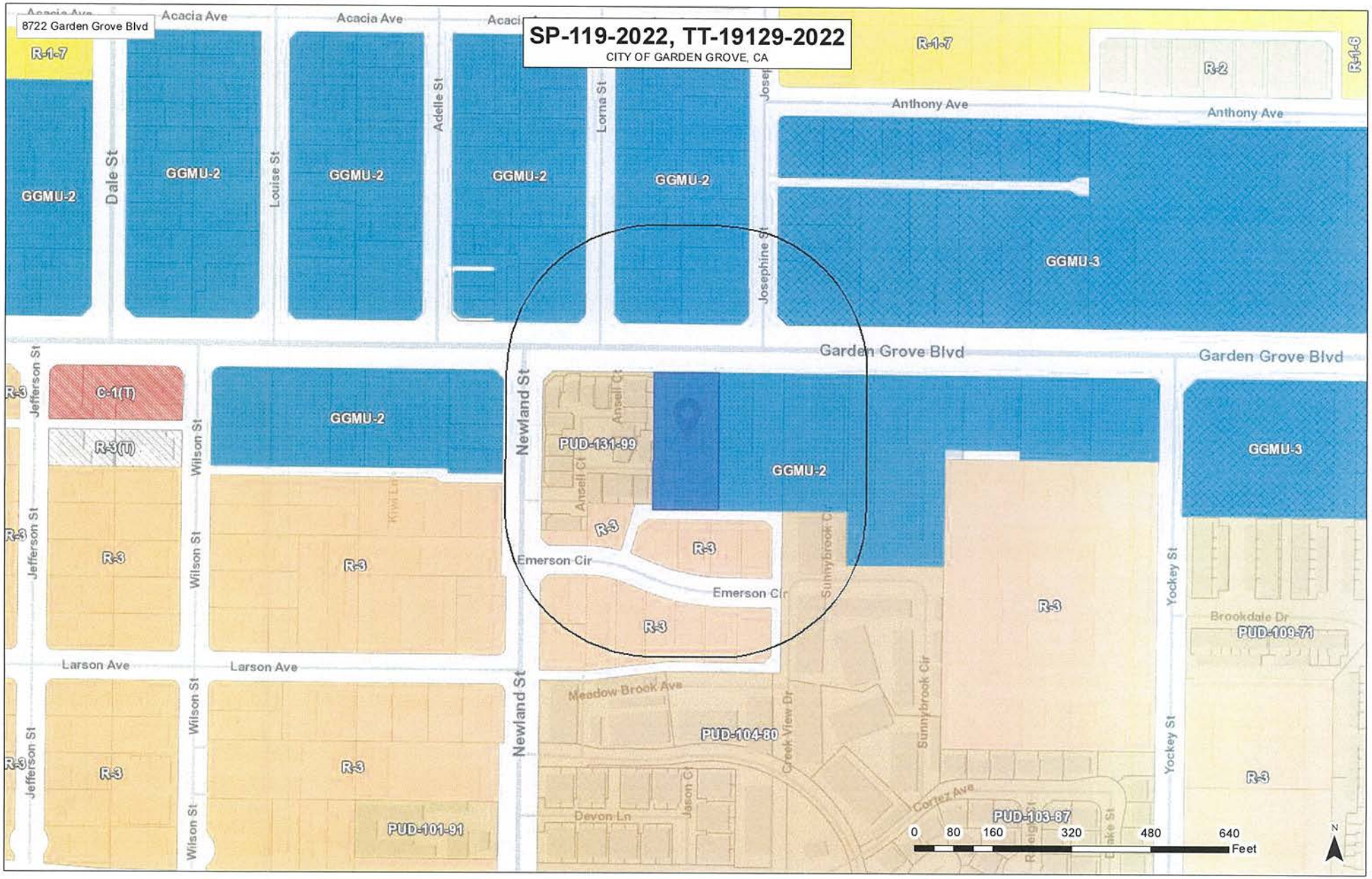
Staff recommends that the Planning Commission take the following action:

1. Adopt Resolution No. 6053-22 approving Site Plan No. SP-119-2022 and Tentative Tract No. TT-19129, subject to the recommended Conditions of Approval.

Lee Marino
Planning Services Manager

By: Mary Martinez
Associate Planner

Attachments: Exhibit "A" – Technical Studies
Exhibit "B" – Density Bonus Application


8722 Garden Grove Blvd
SP-119-2022, TT-19129-2022
CITY OF GARDEN GROVE, CA
Acacia Ave
Anthony Ave
Garden Grove Blvd
Larson Ave
Dale St
Louise St
Adelle St
Lorna St
Josephine St
Jefferson St
Wilson St
Newland St
Ansell Ct
Emerson Cir
Meadow Brook Ave
Brookdale Dr
Yockey St
Sunnybrook Cir
Creek View Dr
Devon Ln
Jason Ct
Cortez Ave
R-1-7
R-2
R-1-6
GGMU-2
GGMU-3
C-1(T)
R-3(T)
R-3
PUD-131-99
PUD-104-80
PUD-101-91
PUD-103-87
PUD-109-71
0 80 160 320 480 640
Feet
N

SP-119-2022
TT-19129-2022

LE' JARDIN TOWNHOMES

8722 GARDEN GROVE BLVD GARDEN GROVE CA

OWNER

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ZONING AND PLANNING DATA

GENERAL NOTES:

1. A CITY APPROVED FORMAT OF A DENSITY BONUS REGULATORY AGREEMENT AND RECORDED COVENANT SHALL BE SIGNED AND RECORDED
2. CONDITIONS, COVENANTS AND RESTRICTIONS AND A CONDOMINIUM PLAN SHALL ACCOMPANY THE PROJECT AND SHALL BE APPROVED BY THE CITY AND RECORDED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

CODES, LAWS AND STANDARDS

THIS PROJECT COMPLIES WITH THE FOLLOWING:

1. GARDEN GROVE, MUNICIPAL CODE
2. THE CALIFORNIA HOUSING LAWS INCLUDING THE FOLLOWING SECTIONS:
   - 19192 – 19195
   - 15268, 21061, 21080, 21159
   - 65580 – 65589, 65913 – 65918, 66413, 66419
   - SB 743, SB 167
3. BUILDING CODES
   - 2019 CALIFORNIA BUILDING CODE (CBC)
   - 2019 CALIFORNIA MECHANICAL CODE (CMC)
   - 2019 CALIFORNIA PLUMBING CODE (CPC)
   - 2019 CALIFORNIA ELECTRICAL CODE (CEC)
   - 2016 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS
   - 2019 CALIFORNIA GREEN BUILDING STANDARDS (CGBSC)

DENSITY

A.	ADDRESS	8722 GARDEN GROVE BLVD GARDEN GROVE CA
B.	LOT ZONE	CCMU-2
C.	LOT AREA	36,945.38 SF (.85 ACRE)
D.	RESIDENTIAL ZONE DENSITY WITH NO BONUSES:	31 UNITS PER ACRE
E.	BASE DENSITY	18 UNITS
F.	AFFORDABLE HOUSING SET ASIDE 1. 5% OF 18 UNITS (FOR VERY LOW INCOME)	1 UNITS
F.	DENSITY BONUS 75% X 18	2
G.	TOTAL NUMBER OF UNITS PROVIDED	20

DEVELOPMENT STANDARDS (SECTION 9.18.090.020)

SETBACKS

A.	FRONT SETBACK	17.42' (15' MINIMUM)
B.	SIDE SETBACK	10.50' @ WEST (10' MIN.) 11.50' @ EAST (10' MIN.)
C.	REAR SETBACK	11.00' (10' MIN. ABUTTING RESIDENTIAL ZONE)
D.	BUILDING HEIGHT (PER 9.18.090.020E)	37.33' (50' MAXIMUM)

SEE SHEETS A3.2 AND A3.3 FOR ENCROACHMENT PLANE AT REAR PROPERTY LINE

BUILDING SEPARATION (PER TABLE 9.18.-10 SECTION 9.18.110.030)

A.	BUILDING SEPARATION PROVIDED	41.16' (10' MINIMUM)

OPEN SPACE (PER 9.12.040.050 K)

A1. OPEN SPACE DEVELOPMENT STANDARDS FOR MULTIFAMILY RESIDENTIAL:

A2. OPEN SPACE REQUIRED: 300 SF PER DWELLING UNIT

20 DWELLING UNITS X 300 SF = 6,000 SF OPEN SPACE REQUIRED

A3. OPEN SPACE PROVIDED CALCULATIONS:

A3.1 ACTIVE RECREATION AREAS FOR TABLE ITEMS

ACTIVE RECREATION AREAS PROVIDED: 2,811 SF

A3.2 PASSIVE RECREATION AREAS PROVIDED: WALKWAYS, LANDSCAPE = 7,035 SF
MAX CONTRIBUTION TO REQUIRED SPACE @ 50% OF 6,000 SF: 3,000 SF

A3.3 PRIVATE OPEN SPACE IN EACH DWELLING UNIT

LOCATED AT 1ST FLR EVERY 10'-6" X 9'-7" = 100.8 SF X 20 UNITS = 2,012 SF

LOCATED AT 2ND FLR BALCONY 9'-2" X 10'-0" = 91.5 SF X 20 UNITS = 1,832 SF

TOTAL AREA OF OPEN SPACE PROVIDED: 4,655 SF

AFFORDABLE HOUSING

DENSITY BONUS INCENTIVES

A REQUESTED INCENTIVES:

1. EXEMPTION FROM SECTION 9.18.100.020.D.2, REQUIREMENTS FOR THE 45° ENCROACHMENT PLANE, BUILDINGS A AND B ENCROACHES 6'-8" INTO THE 45° PLANE, SEE DIAGRAMS ON SHEETS A3.1 AND A3.2 FOR

WAIVER

A REQUESTED WAIVER:

1. WAIVER FROM GARDEN GROVE BLVD. PLAZA REQUIREMENT

PARKING

A. AFFORDABLE HOUSING (PER AFFORDABLE HOUSING CODE SECTION 65915(p)

4 BEDROOM UNIT REQUIRES 2.5/UNIT X 20 UNITS = 50 PARKING SPACES REQUIRED

PARKING PROVIDED IN PRIVATE GARAGES: 56 SPACES
3 STANDARD, 1 ADA
2 COMPACT
PARKING PROVIDED AT OUTDOOR:

BUILDING AND SAFETY NOTES:

1. SOIL REPORT COMPLYING WITH CBC CHAPTER 18 IS REQUIRED AT TIME OF FIRST PLAN SUBMITTAL FOR PLAN CHECK
2. ALL NON-STRUCTURAL PORTIONS OF THE BUILDING(S) SHALL COMPLY WITH THE 2019 CA RESIDENTIAL CODE (CRC)
3. FUTURE ELECTRIC (EV) CHARGING SHALL BE PROVIDED PER CGBSC SECTION 4.106.4.1 AND 4.106.4.1.1 AND CHAPTER FOR VISITOR PARKING.
4. CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING SHALL COMPLY WITH CGBSC SECTION 4.408 AND CITY CONSTRUCTION WASTE MANAGEMENT FORMS SHALL BE COMPLETED AND IMPRINTED ON PLAN
5. OUTDOOR WATER USAGE IN LANDSCAPE SHALL COMPLY WITH CGBSC AND THE MANDATORY MODEL WATER EFFICIENCY LANDSCAPE ORDINANCE (MWELO) CONTAIN WITHIN CHAPTER 2.7, DIVISION 2, TITLE 23, CALIFORNIA CODE OF REGULATIONS. A WORKSHEET SHOWING COMPLIANCE SHALL BE INCLUDED IN LANDSCAPING PLANS FOR REVIEW

DRAWING INDEX

NINTH STREET VIEW FROM NORTH-EAST

NINTH STREET VIEW FROM NORTH-WEST

NINTH STREET VIEW OF DRIVEWAY ENTRANCE

VIEW FROM EAST AT RECREATIONAL AREA

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DATE	REVISIONS

SHEET CONTENTS

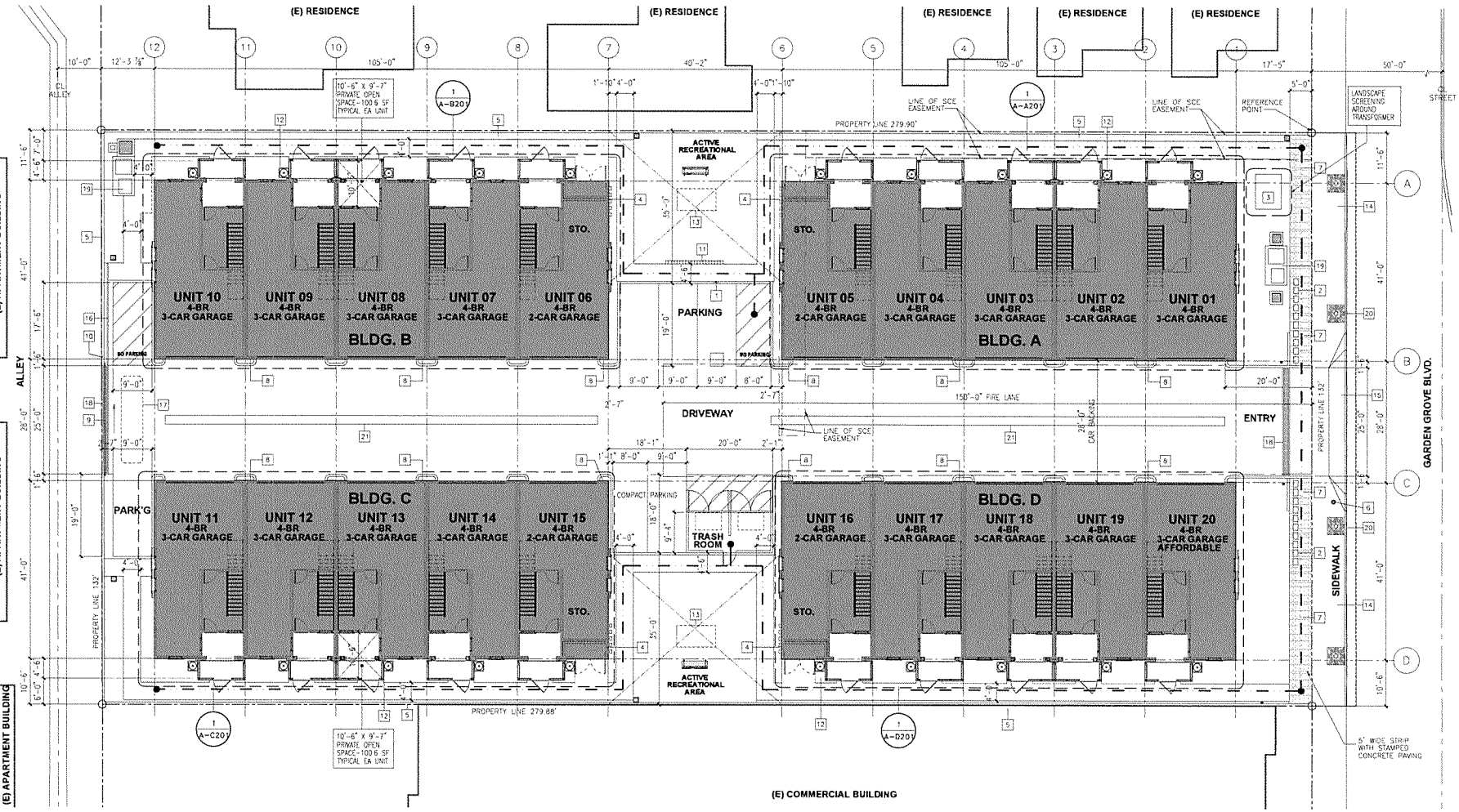
PERPECTIVE VIEWS

SCALE	NONE
CADD FILE	
DRAWN	TV
DATE	8/15/2022

SHEET NO

A-001

SHEET OF



SITE/OVERALL FIRST FLOOR PLAN (1 / A-101)
SCALE : 3/32" = 1'-0"

N

SITE PLAN NOTES:

A.	LOT AREA	36,945.38 SF (.85 ACRE)
B.	AREA OF PARKING AREAS/DRIVEWAYS	9,507 SF
C.	AREA OF LANDSCAPE AT PARKING AREAS	435 SF
D.	RATIO OF LANDSCAPE TO PARKING AREA	4.5%
E.	BUILDING AREAS (A, B, C AND D)	17,220 SF
	BUILDING COVERAGE	46.6%
	BUILDING HEIGHT	37.33'
F.	NUMBER OF OPEN PARKING SPACES ON SITE	3 STANDARD 1 ACCESSIBLE (ADA) 4 COMPACT
G.	AREA OF LANDSCAPE EXCLUDING SETBACKS	2,403 SF

RESIDENTIAL PROJECT NOTES:

A.	NUMBER OF UNITS		20
B.	BUILDING COVERAGE AREA RATIO TO SITE AREA		17,220 SF 46.6%
C.	NO. OF PARKING SPACES (ALL STANDARD STALLS) IN COMPLIANCE WITH AFFORDABLE HOUSING CODE SECTION 65915(p) AT 2.5 SPACES PER EACH 4 BEDROOM UNITS:		
	1) IN ENCLOSED GARAGES	50 REQUIRED	56 PROVIDED
	2) OUTDOOR PARKING	3 STANDARD, 1 ADA AND 2 COMPACT	
D.	AREA OF COMMON RECREATION AREAS AVERAGE COMMON AREA PER UNIT		8,842.00 SF 442.00 SF
E.	SEE SITE PLAN FOR LOCATION AND DIMENSIONS OF RECREATIONAL AREAS		
F.	DENSITY AS SQUARE FEET PER UNIT		1,847.25 SF PER UNIT
G.	DENSITY AS NUMBER OF UNITS PER ACRE		23 UNITS PER ACRE

H. TOWNHOME UNITS DATA

TYPICAL UNIT – 4 BEDROOMS, 3 TOILETS AND 2-3 CAR GARAGE WITH THE FOLLOWING AREA BREAKDOWN:

LEVEL	DWELLING (LIVABLE)	PORCH/BALCONY	GARAGE
FIRST	754 SF	101 SF	644 SF
SECOND	786 SF	92 SF	
THIRD	861 SF		
TOTAL	1,801 SF	193 SF	644 SF

I.	BUILDING HEIGHT	37.33'
J.	AREA OF LANDSCAPE WITHIN PARKING AREAS	435 SF
	RATIO OF LANDSCAPE TO PARKING AREAS	5%

PLAN LEGEND

- LANDSCAPED AREAS
- PEDESTRIAN WALKWAYS/PAVED AREAS
- ADA PATH OF TRAVEL
- EXISTING SIDEWALK AND DRIVEWAY TO BE REMOVED AND CONSTRUCT NEW SIDEWALK AND DRIVEWAY
- SCE EASEMENT AREA

TYPICAL PLAN KEY NOTES

1	ACCESSIBLE PARKING SIGN
2	WATER METERS
3	ELECTRICAL TRANSFORMER CONCEALED FROM VIEW WITH LANDSCAPING AROUND
4	GAS METERS
5	6' HIGH DECORATIVE MASONRY FENCE
6	NEW FIRE HYDRANT
7	STAMPED CONCRETE PAVING
8	"NO PARKING SIGN"
9	AUTOMATIC OPEN STEEL ROLLING GATE
10	SLIDING GATE RECESSED KNOX BOX
11	MAIL BOXES
12	CONDENSING UNIT ON 6" HIGH CONCRETE PAD
13	LINE OF TABLE TENNIS
14	REMOVE EXISTING DRIVEWAY AND CONSTRUCT SIDEWALK PER B-105
15	REMOVE EXISTING SIDEWALK AND CONSTRUCT DRIVEWAY PER B-122
16	SLIDING GATE WIRE MESH POCKET PEDESTRIAN PROTECTION
17	AUTOMATIC ROLLING GATE FLOOR SENSOR
18	TRENCH DRAIN
19	BIO-TREATMENT SYSTEM (SEE CIVIL DWGS)
20	TREE WELL
21	CONCRETE GUTTER

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DATE	REVISIONS

SHEET CONTENTS

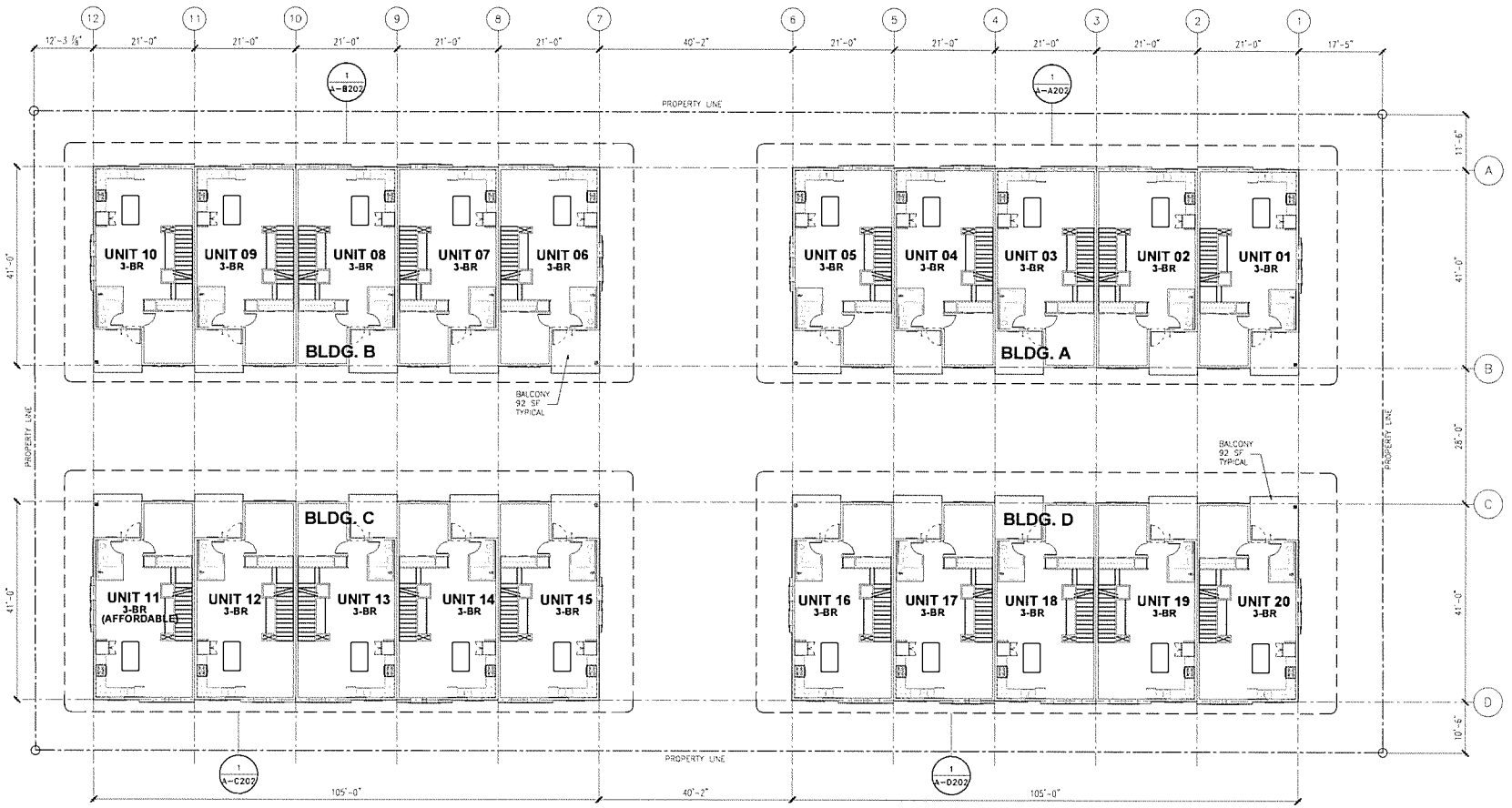
OVERALL SITE/FIRST FLOOR PLAN

SCALE:	3/32" = 1'-0"
CADD FILE:	
DRAWN:	D. ALFARO/ML
DATE:	08/12/2021

SHEET NO.

A-101

SHEET OF



OVERALL SECOND FLOOR PLAN (1/A-102)
SCALE : 3/32" = 1'-0"

N

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DATE	REVISIONS

SHEET CONTENTS

OVERALL
SECOND FLOOR PLAN

SCALE: 3/32" = 1'-0"
CADD FILE:
DRAWN: D. ALFONSO/HL
DATE: 8/15/2022

SHEET NO:

A-102

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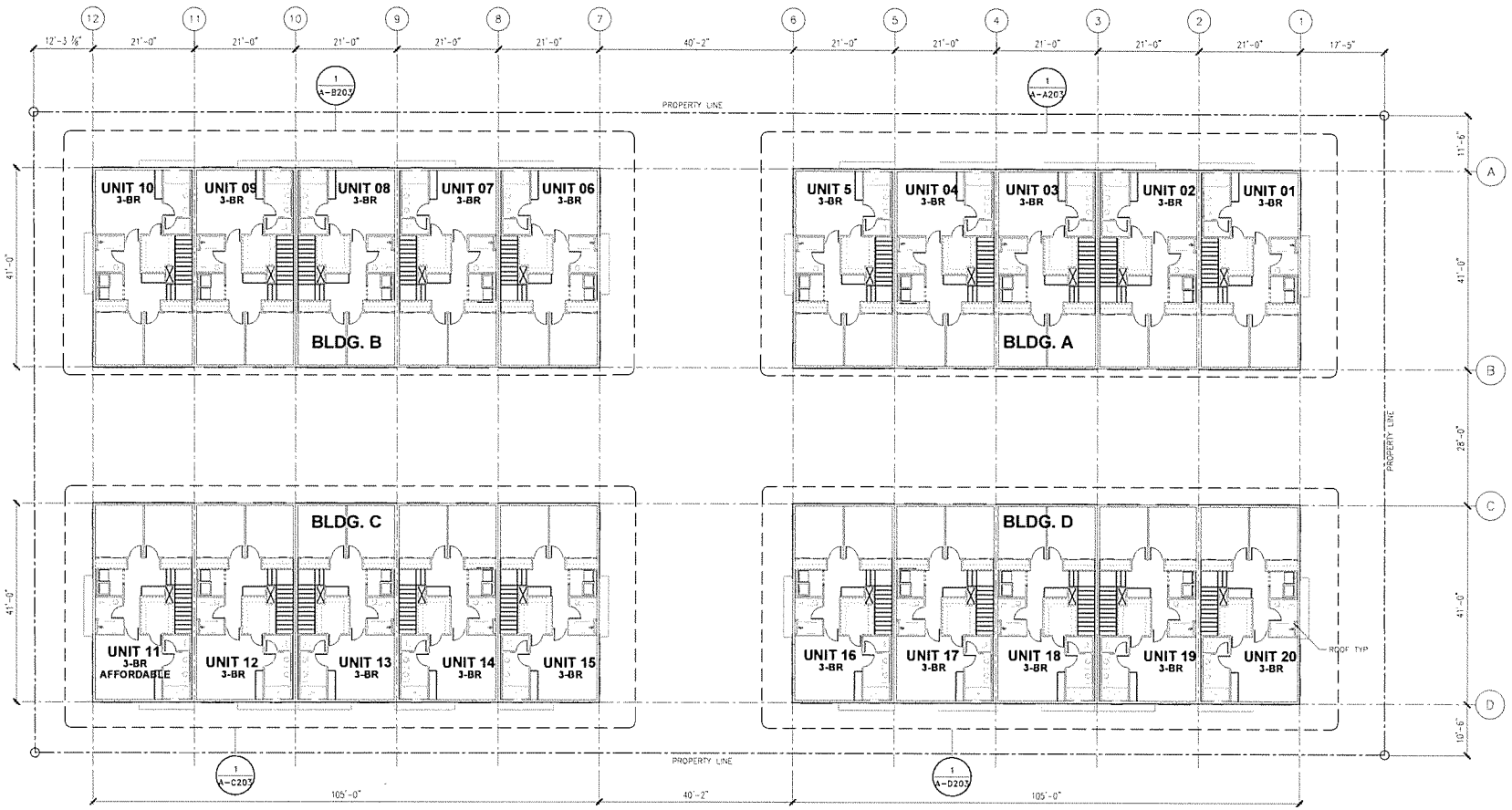

OVERALL THIRD FLOOR PLAN (1 / A-103)
SCALE : 3/32" = 1'-0"

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DATE	REVISIONS

SHEET CONTENTS

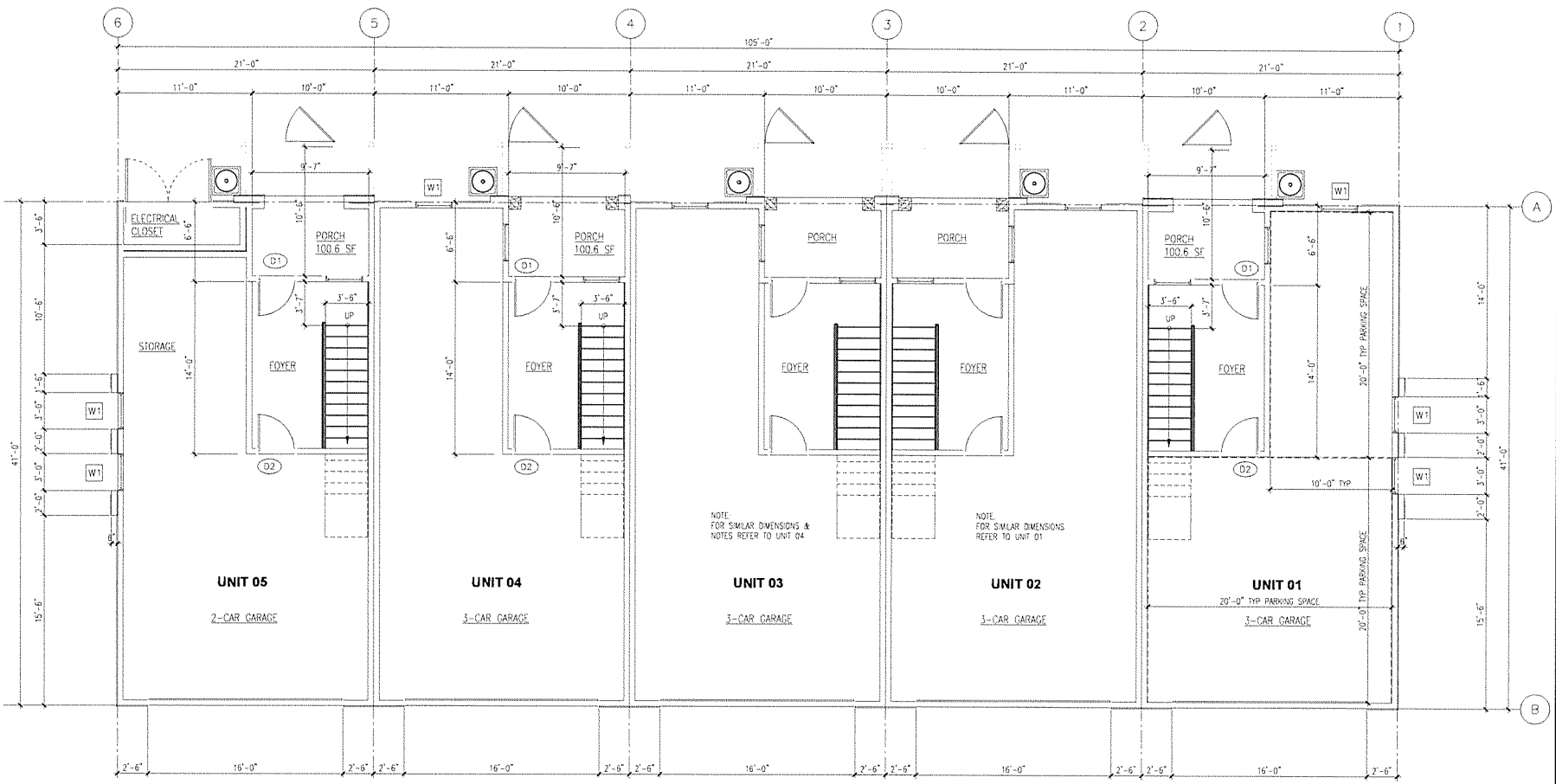
OVERALL
THIRD FLOOR PLAN

SCALE	3/32" = 1'-0"
CADD FILE	
DRAWN	G. ALFONSO/ML
DATE	8/15/2022

SHEET NO.

A-103

SHEET OF



BLDG. A FIRST FLOOR PLAN (1 / A-A201)
SCALE : 1/4" = 1'-0"

FLOOR AREA: 3,990 SQUARE FEET (COVERED SPACE)

N

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DATE	REVISIONS

SHEET CONTENTS

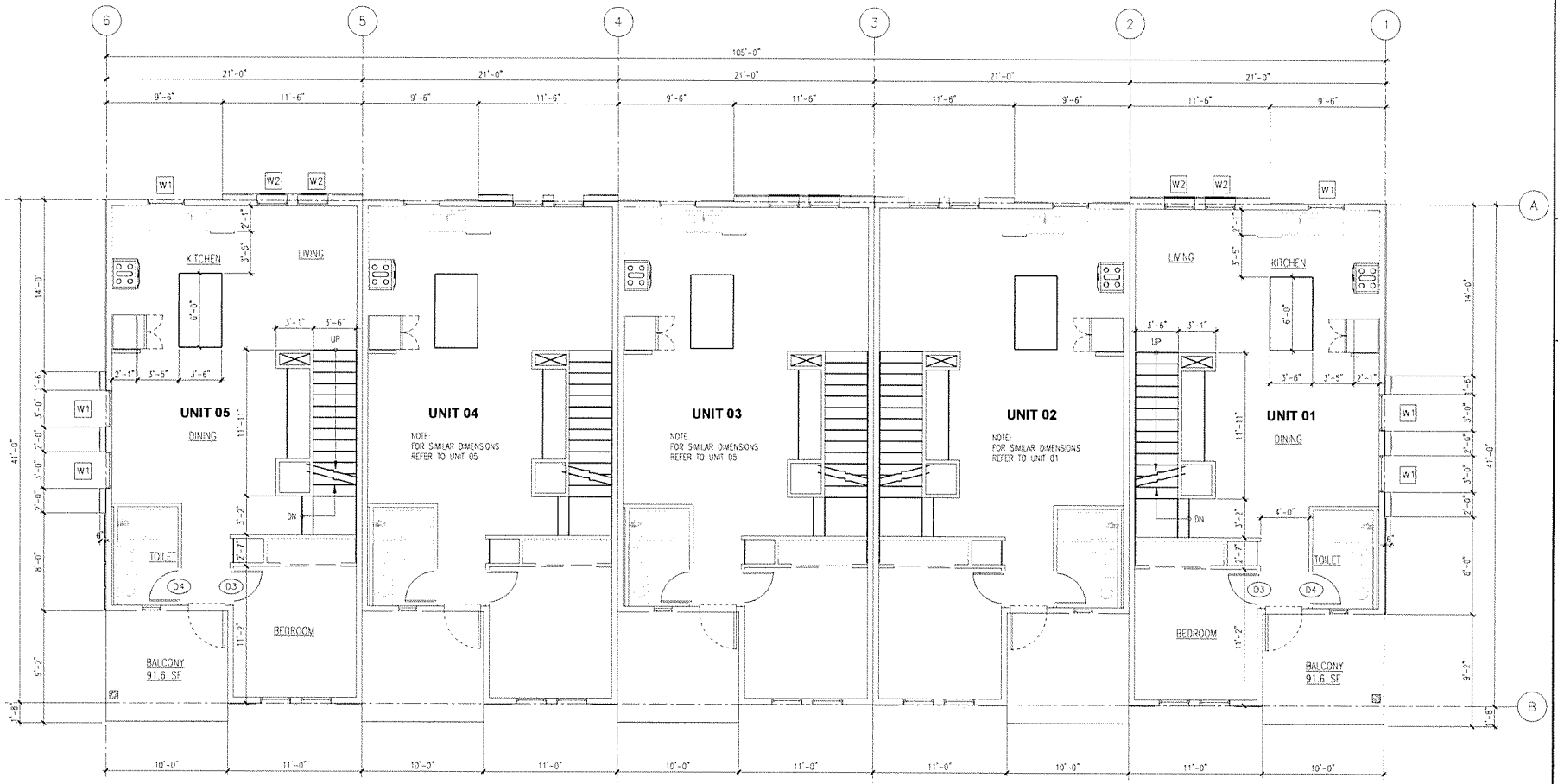
BUILDING A
FIRST FLOOR PLAN

SCALE:	1/4" = 1'-0"
CASD FILE:	
DRAWN:	R. ALFONSO
DATE:	8/15/2022

SHEET NO

A-A201

SHEET OF



BLDG. A SECOND FLOOR PLAN (1 / A-A202)

SCALE : 1/4" = 1'-0"

FLOOR AREA: 3,930 SQUARE FEET (COVERED SPACE)

N

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DATE	REVISIONS

SHEET CONTENTS

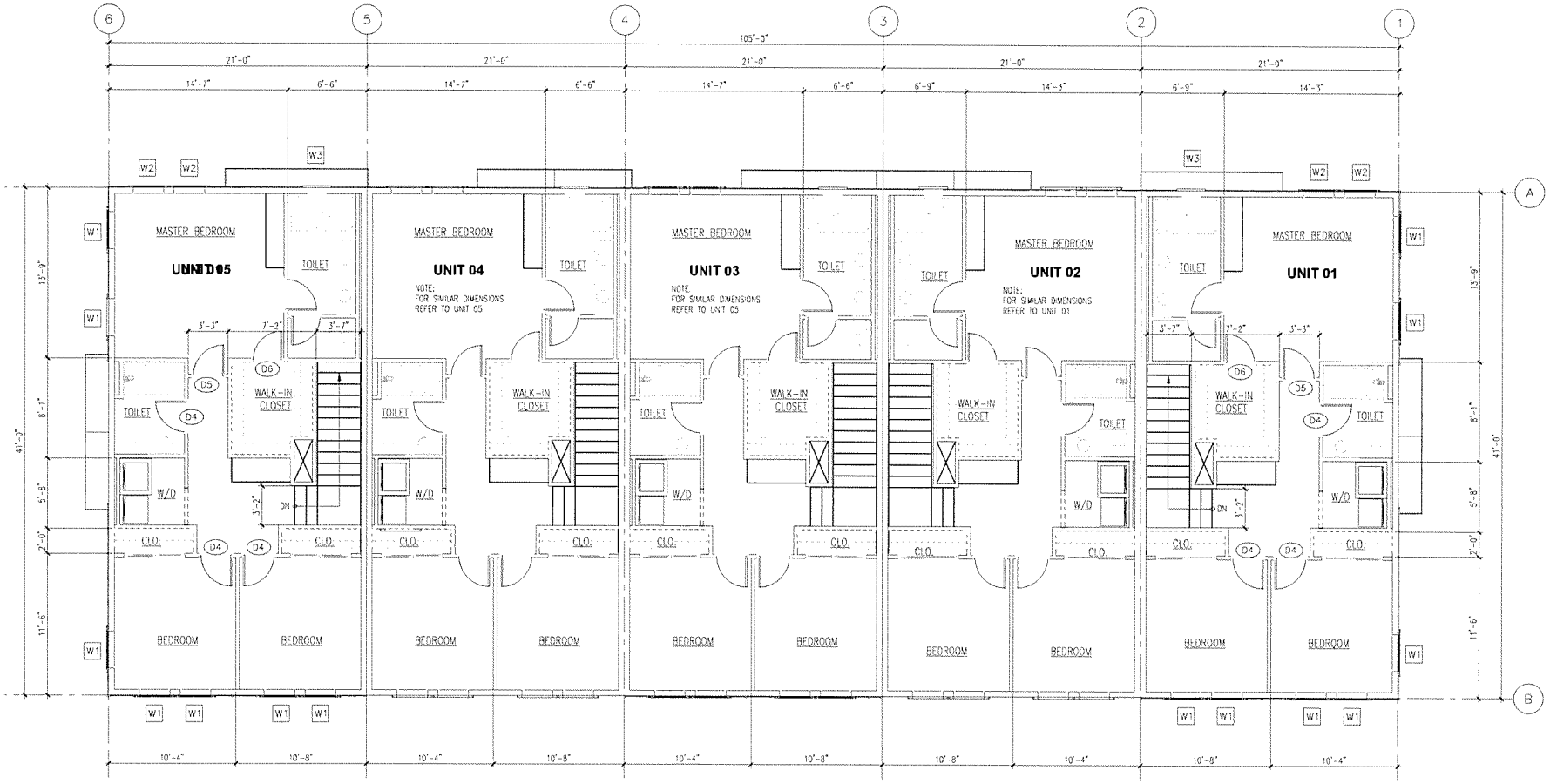
BUILDING A
SECOND FLOOR PLAN

SCALE:	1/4" = 1'-0"
CAD FILE:	
DRAWN:	D. ALFONSO
DATE:	8/15/2022

SHEET NO.

A-A202

SHEET OF



BLDG. A THIRD FLOOR PLAN
SCALE : 1/4" = 1'-0"

1
A-A203

FLOOR AREA: 4,305 SQUARE FEET

N

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DATE	REVISIONS

SHEET CONTENTS

BUILDING A
THIRD FLOOR PLAN

SCALE	1/4" = 1'-0"
CADD FILE	
DRAWN	D. ALFONSO
DATE	8/15/2022

SHEET NO:

A-A203

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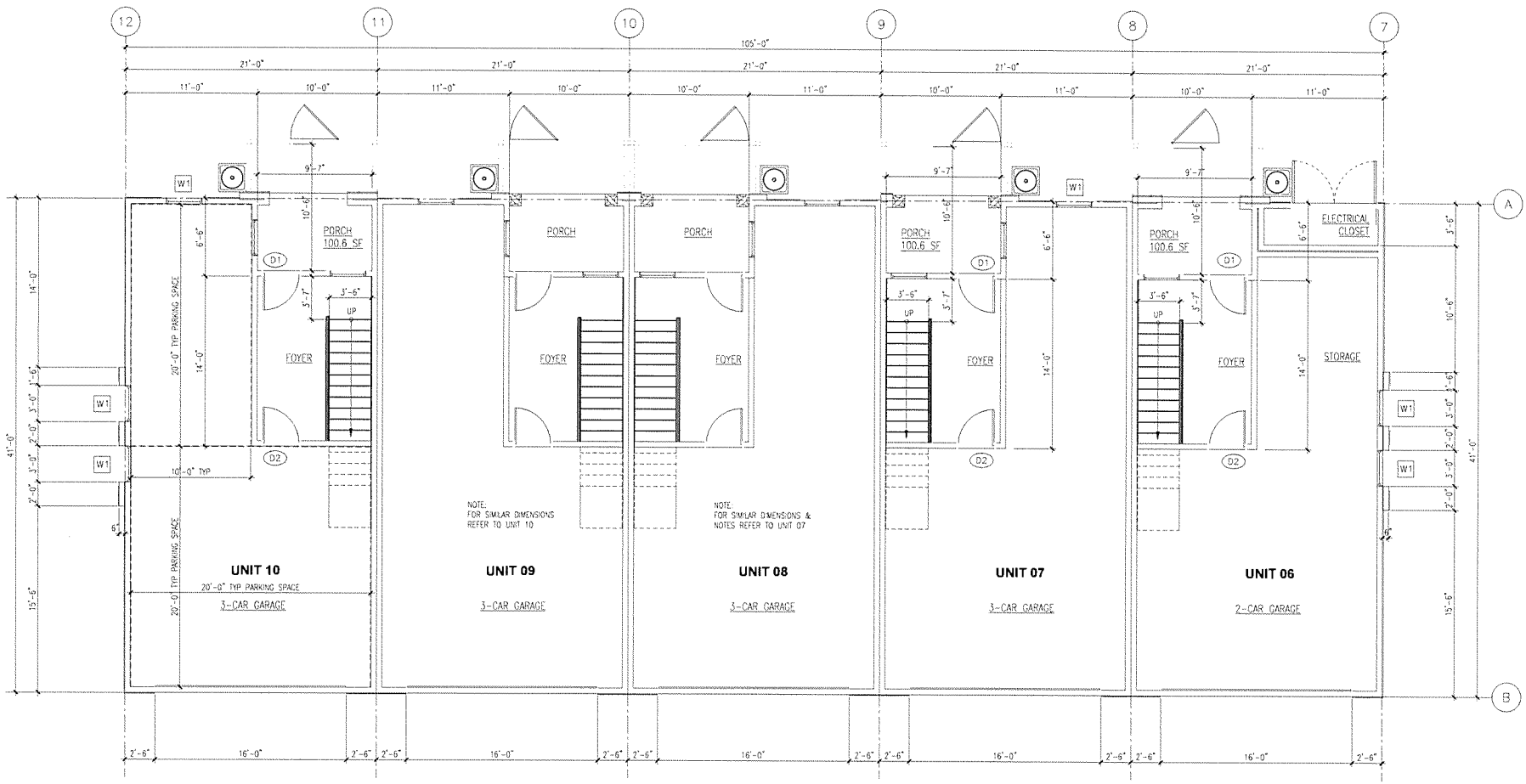

BLDG. B FIRST FLOOR PLAN (1 / A-B201)
SCALE : 1/4" = 1'-0"

FLOOR AREA: 3,990 SQUARE FEET (COVERED SPACE)

N

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DATE	REVISIONS

SHEET CONTENTS

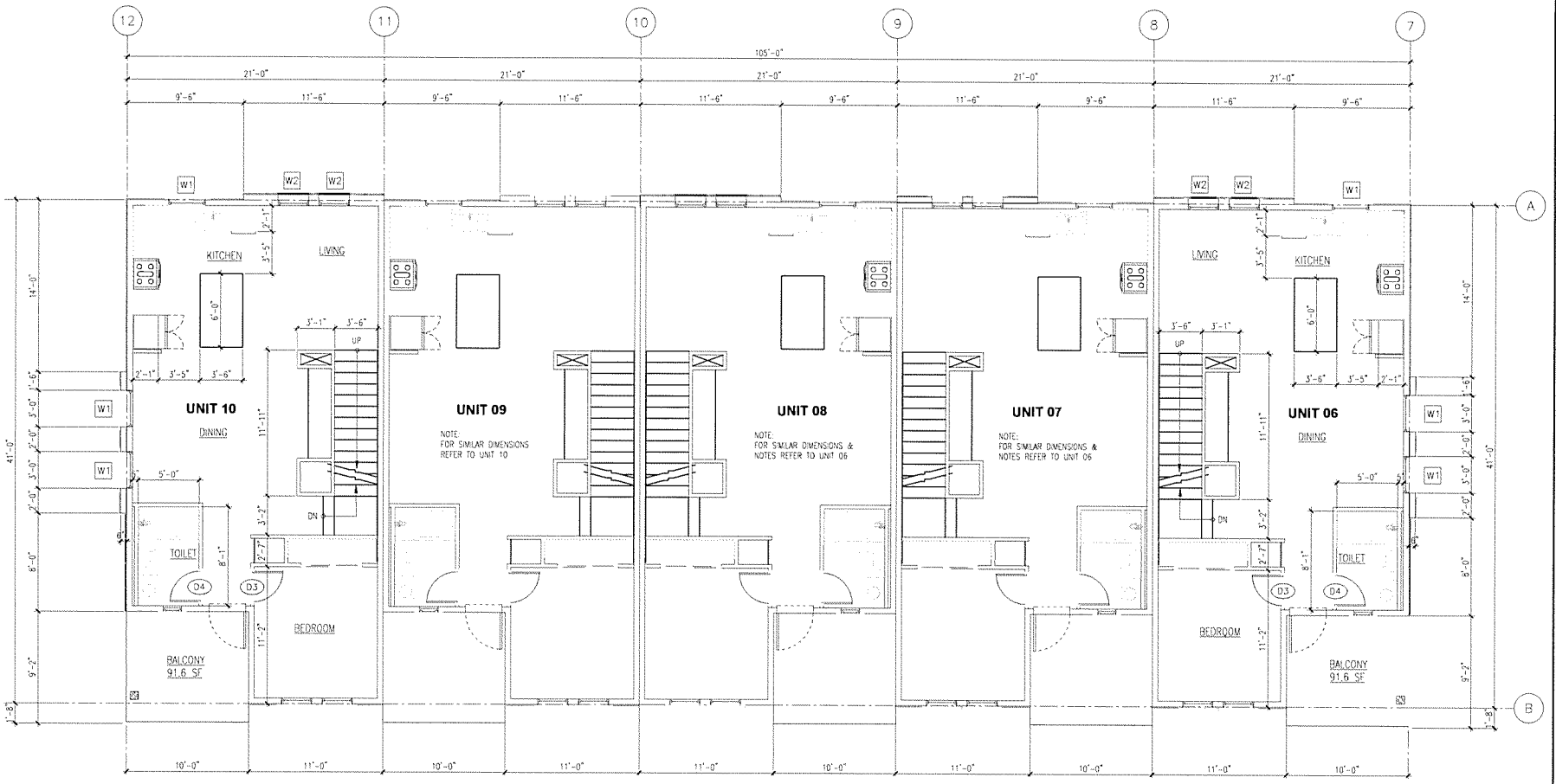
TYPICAL BLDG B AND D FIRST FLOOR PLAN

SCALE:	1/4" = 1'-0"
CADD FILE:	
DRAWN:	D. ALFONSO
DATE:	8/15/2022

SHEET NO.

A-B201

SHEET OF



BLDG. B SECOND FLOOR PLAN (1 / A-B202)
SCALE : 1/4" = 1'-0"

FLOOR AREA: 3,930 SQUARE FEET (COVERED SPACE)

N

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DATE	REVISIONS

SHEET CONTENTS

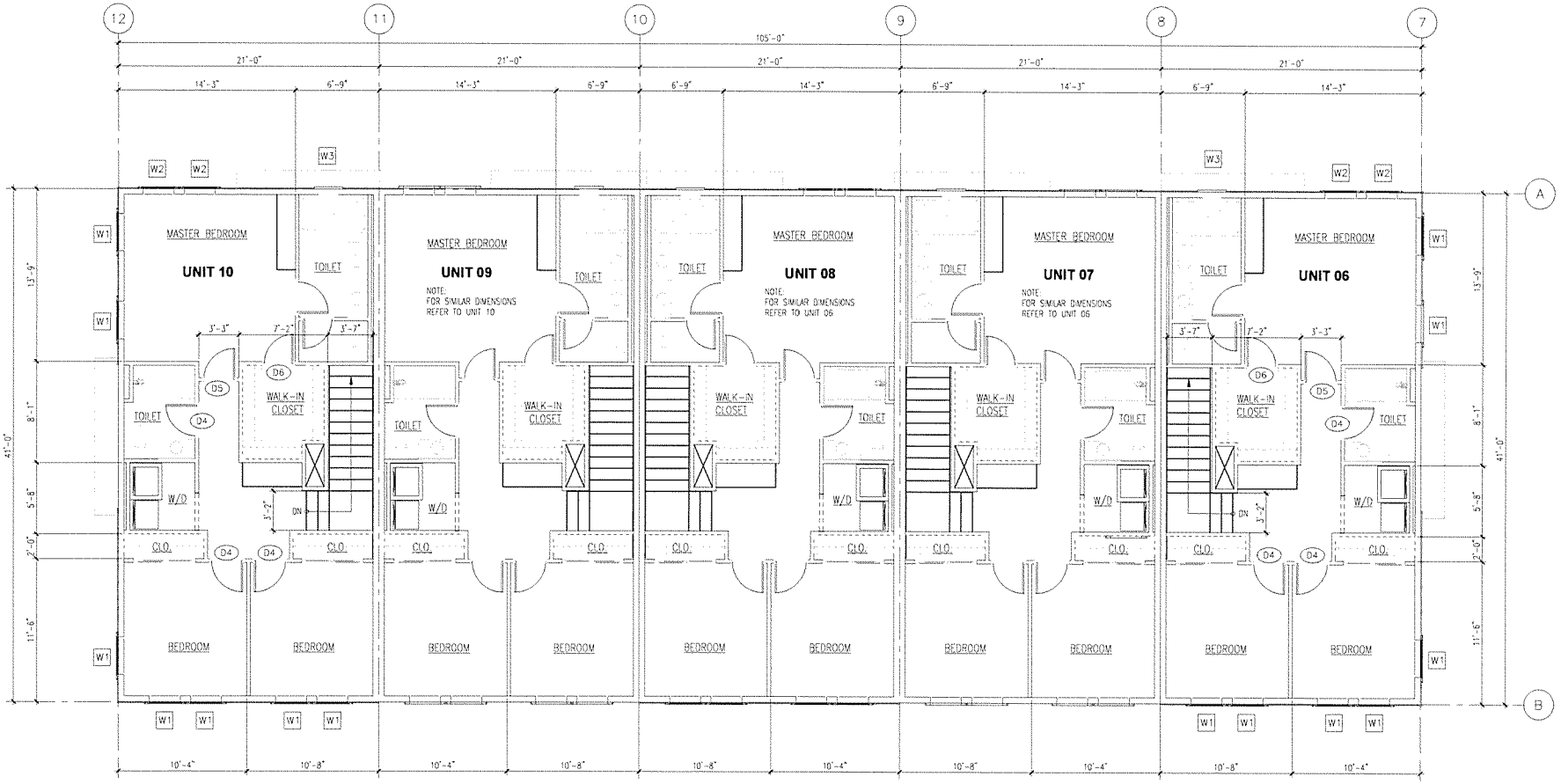
TYPICAL BLDG B AND D SECOND FLOOR PLAN

SCALE	1/4" = 1'-0"
CASO FILE	
DRAWN	D. ALFONSO
DATE	8/15/2022

SHEET NO:

A-B202

SHEET OF



BLDG. B THIRD FLOOR PLAN
SCALE : 1/4" = 1'-0"

1
A-B203

FLOOR AREA: 4,305 SQUARE FEET

N

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SHEET CONTENTS

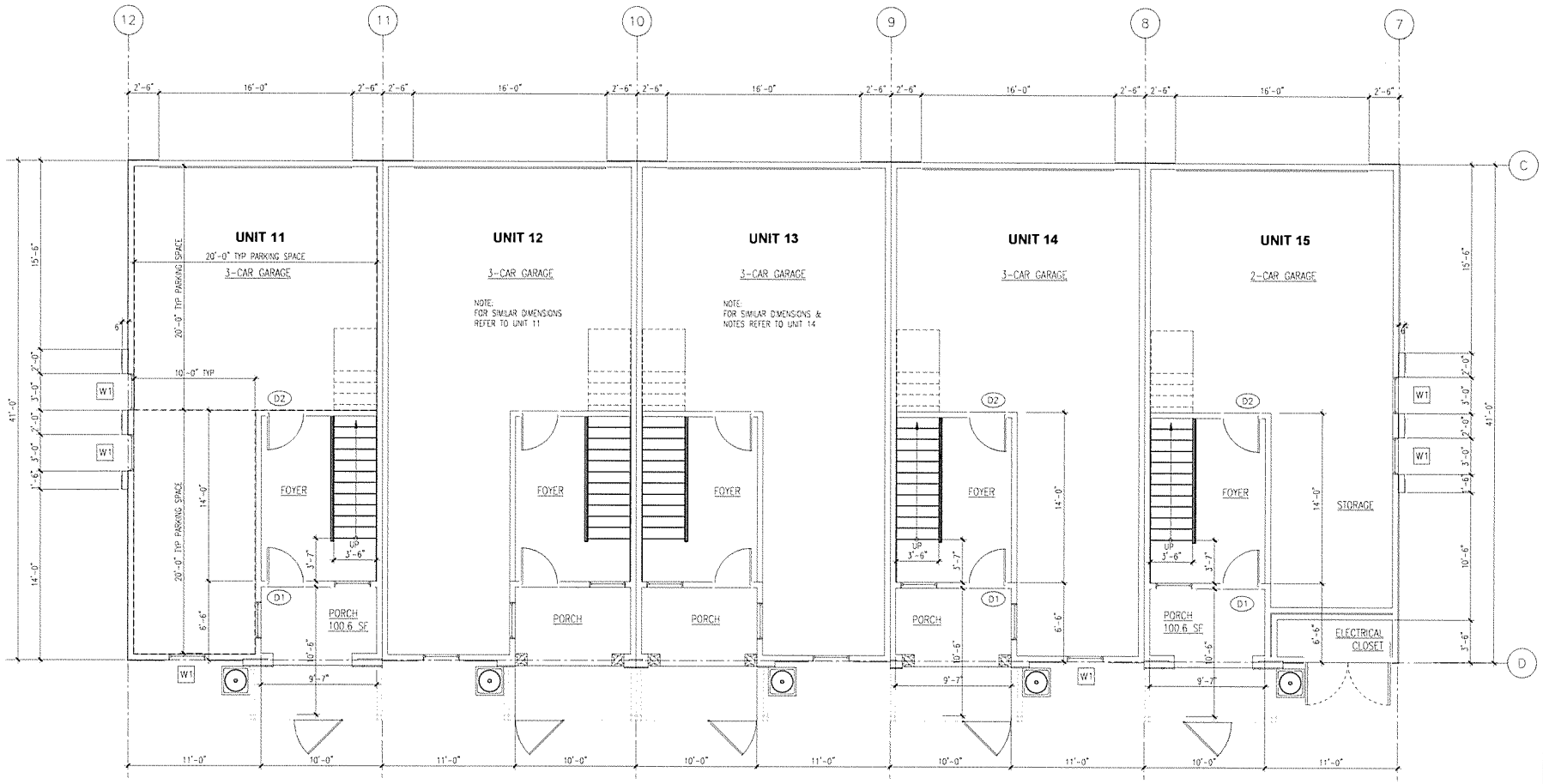
TYPICAL BLDG B AND D THIRD FLOOR PLAN

SCALE:	1/4" = 1'-0"
CADD FILE:	
DRAWN:	D. ALFONSO
DATE:	6/15/2022

SHEET NO:

A-B203

SHEET OF



BLDG. C FIRST FLOOR PLAN (1 / A-C201)
SCALE : 1/4" = 1'-0"

FLOOR AREA: 3,990 SQUARE FEET (COVERED SPACE)

N

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DATE	REVISIONS

SHEET CONTENTS

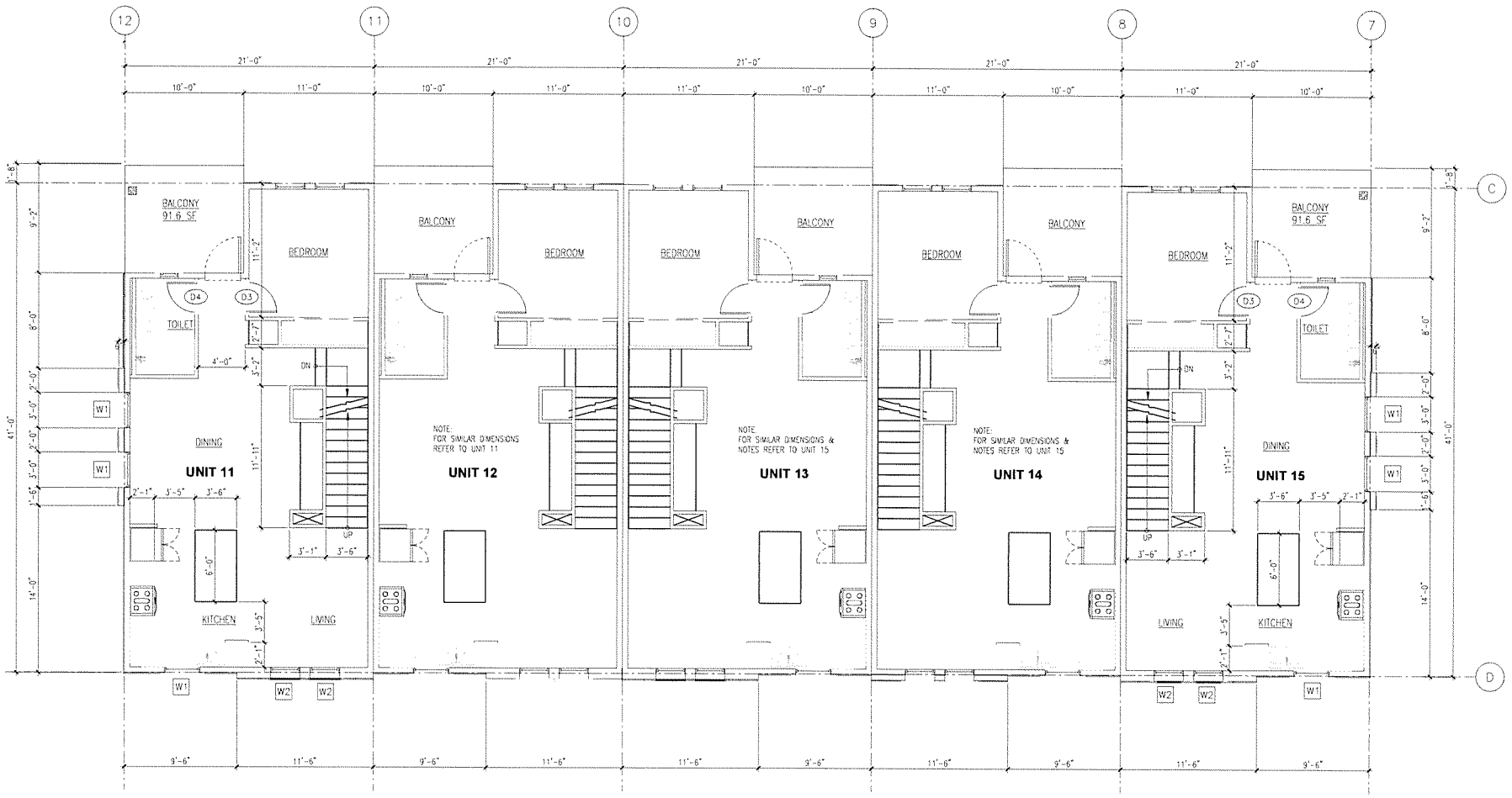
BUILDING C
FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"
CADD FILE:
DRAWN: D. ALFONSO
DATE: 8/15/2022

SHEET NO:

A-C201

SHEET OF



BLDG. C SECOND FLOOR PLAN (1 / A-C202)

SCALE : 1/4" = 1'-0"

FLOOR AREA: 3,930 SQUARE FEET (COVERED SPACE)

N

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LE' JARDIN TOWNHOMES

8722 GARDEN GROVE BOULEVARD GARDEN GROVE CA

OWNER:
NRI PORTFOLIOS LLC.
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DATE	REVISIONS

SHEET CONTENTS

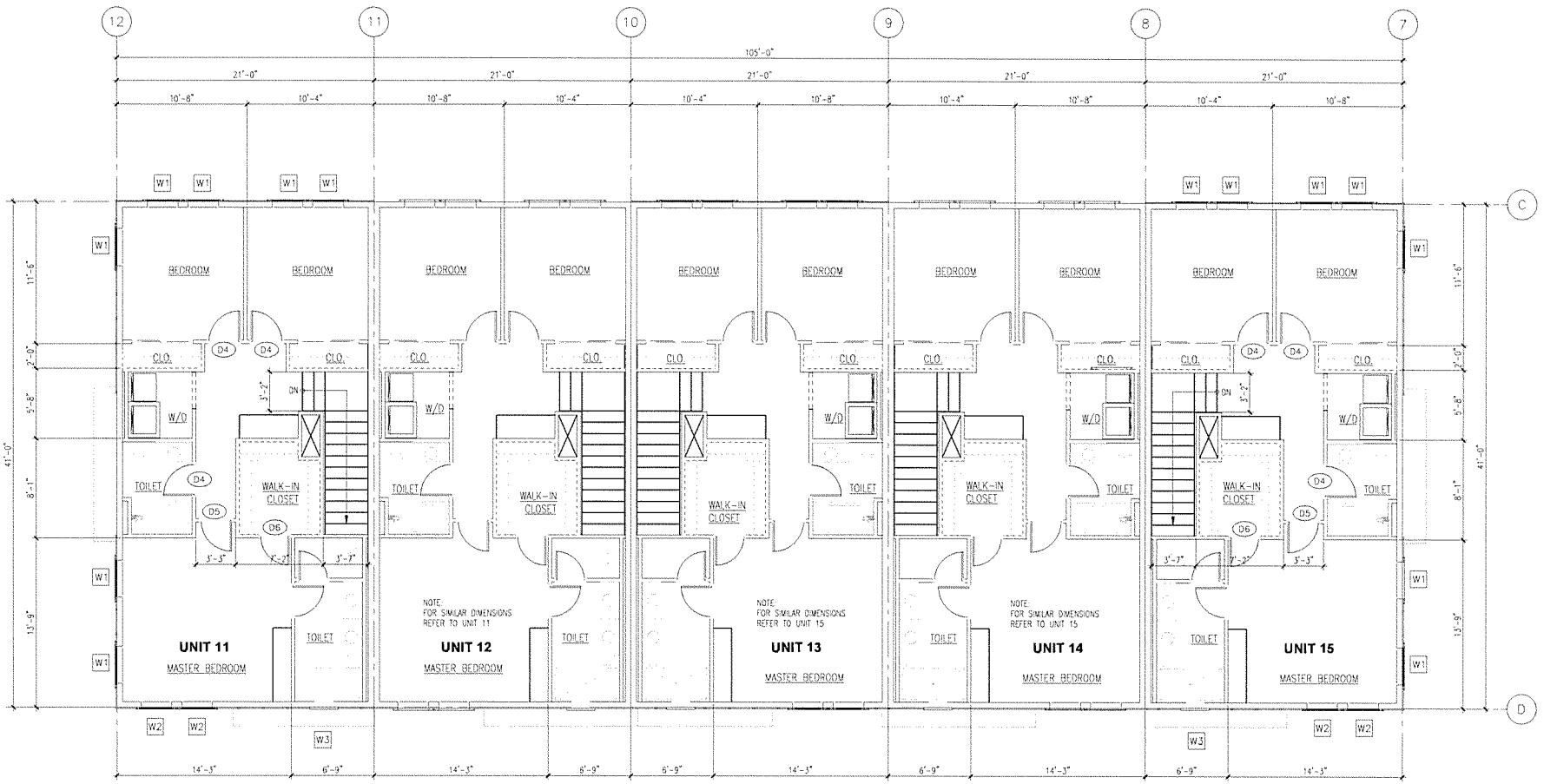
BUILDING C
SECOND FLOOR PLAN

SCALE	1/4" = 1'-0"
CADD FILE	
DRAWN	R. ALFONSO
DATE	6/15/2022

SHEET NO

A-C202

SHEET OF



BLDG. C THIRD FLOOR PLAN

SCALE : 1/4" = 1'-0"

1 / A-C203

FLOOR AREA: 4,305 SQUARE FEET

N

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DATE	REVISIONS

SHEET CONTENTS

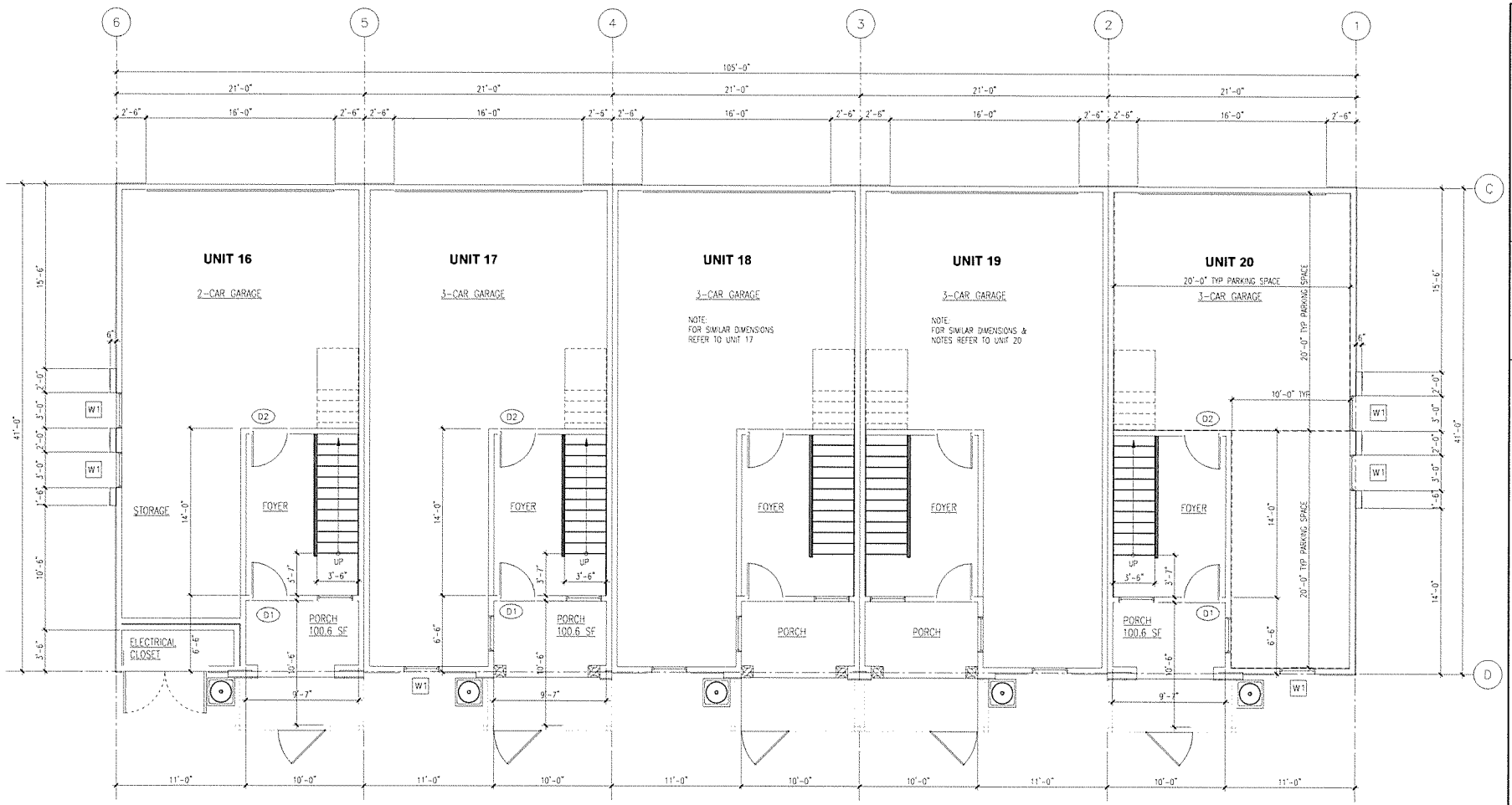
BUILDING C
THIRD FLOOR PLAN

SCALE:	1/4" = 1'-0"
CADD FILE:	
DRAWN:	D. ALFONSO
DATE:	8/15/2022

SHEET NO

A-C203

SHEET OF



BLDG. D FIRST FLOOR PLAN (1 / A-D201)
SCALE : 1/4" = 1'-0"

FLOOR AREA: 3,990 SQUARE FEET (COVERED SPACE)

N

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DATE	REVISIONS

SHEET CONTENTS

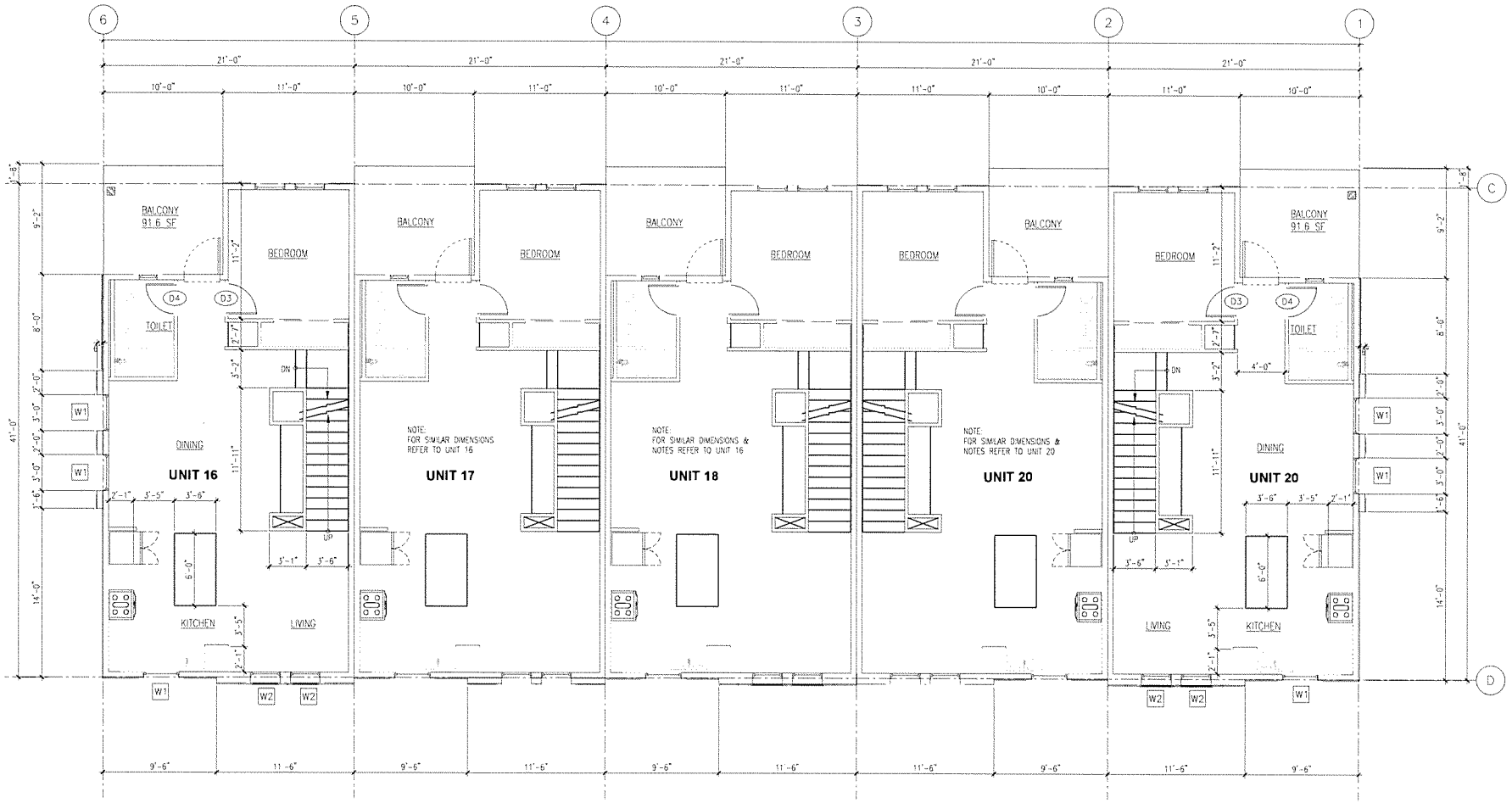
BUILDING D
FIRST FLOOR PLAN

SCALE	1/4" = 1'-0"
CADD FILE	
DRAWN	D. ALFONSO
DATE	8/15/2022

SHEET NO:

A-D201

SHEET OF



BLDG. D SECOND FLOOR PLAN (1 / A-D202)

SCALE : 1/4" = 1'-0"

FLOOR AREA: 3,930 SQUARE FEET (COVERED SPACE)

N

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DATE	REVISIONS

SHEET CONTENTS

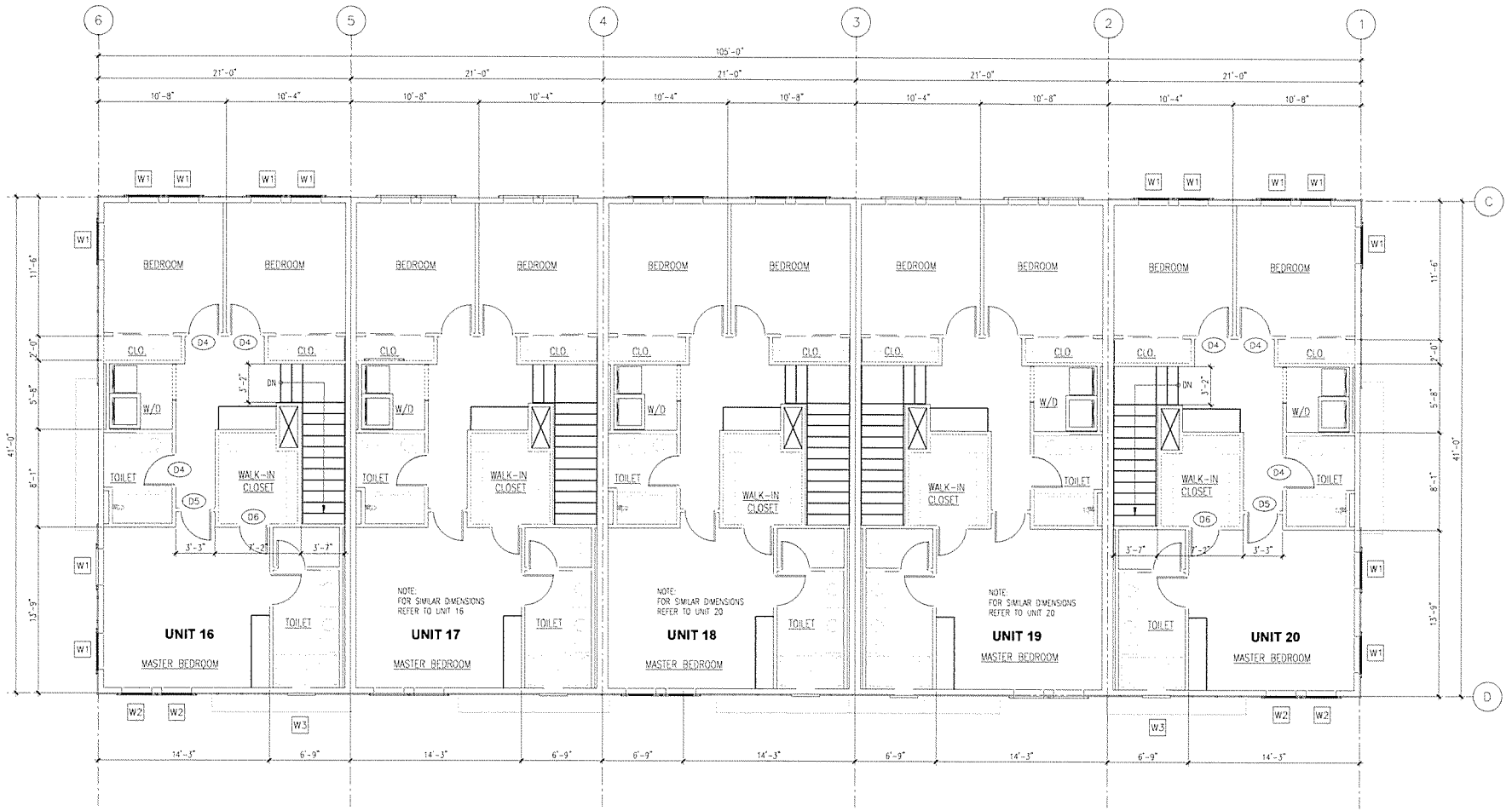
BUILDING D
SECOND FLOOR PLAN

SCALE	1/4" = 1'-0"
CAD FILE	
DRAWN	D. ALFONSO
DATE	8/15/2022

SHEET NO.

A-D202

SHEET OF



BLDG. D THIRD FLOOR PLAN (1 / A-D203)

SCALE : 1/4" = 1'-0"

FLOOR AREA: 4,305 SQUARE FEET

N

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DATE	REVISIONS

SHEET CONTENTS

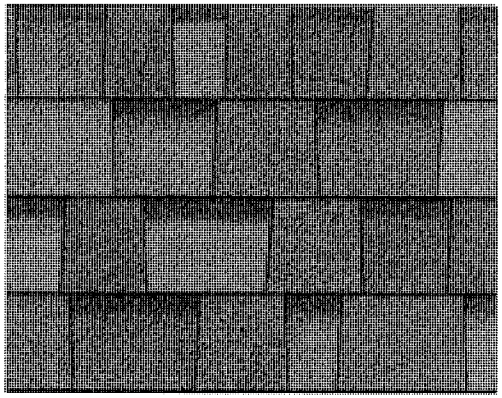
BUILDING D
THIRD FLOOR PLAN

SCALE:	1/4" = 1'-0"
CADD FILE:	
DRAWN:	D. ALFONSO
DATE:	8/15/2022

SHEET NO:

A-D203

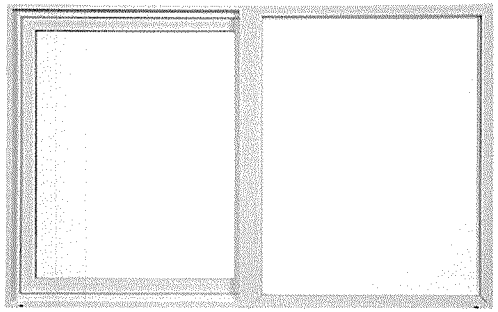
SHEET OF



ROOF: ASPHALT SHINGLES
PRODUCT: OWENS CORNING
COLOR: MYSTIC GRAY

STUCCO 1 - SW 7005
PURE WHITE

STUCCO 6 - SW 9163
TIN LIZZIE



VINYL WINDOW: MILGARD
SERIES: STYLE LINE
COLOR: WHITE

TRIM 2 - SW 7024
FUNCTIONAL GRAY

TRIM 3 - SW 7068
GRIZZLE GRAY

TRIM 5 - SW 7005
PURE WHITE

METAL - SW 7069
IRON ORE

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TOWNHOMES

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BOULEVARD
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DATE	REVISIONS

SHEET CONTENTS:

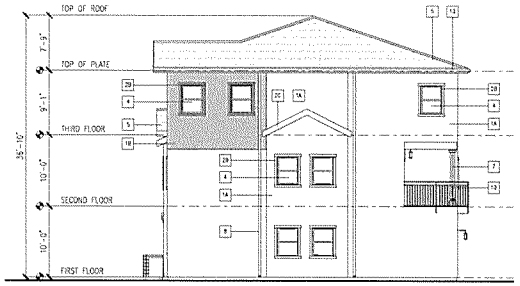
SCHEDULE OF MATERIALS

SCALE: NONE
CADD FILE:
DRAWN:
DATE: 8/15/2022

SHEET NO.

A3-0

SHEET OF

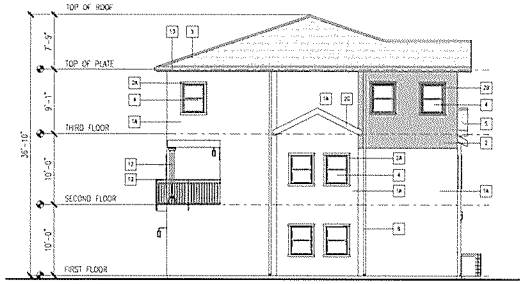


BLDG. A SOUTH SIDE ELEVATION
1/8" = 1'-0"
1 / A3-1

BLDG. A WEST SIDE ELEVATION
SCALE: 1/8" = 1'-0"
2 / A3-1

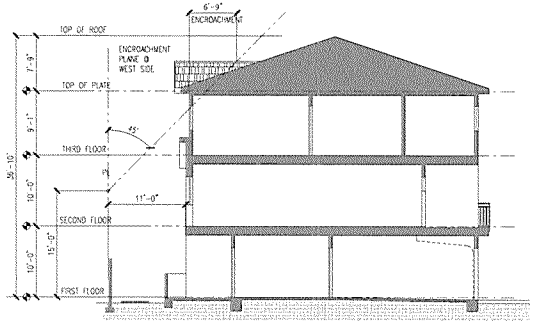
EXTERIOR FINISH/COLOR SCHEDULE

1A	STUCCO 1 - SW 7005 PURE WHITE
1B	STUCCO 6 - SW 9163 YIN LIZZIE
2A	TRIM 2 - SW7024 FUNCTIONAL GRAY
2B	TRIM 3 - SW 7068 GRIZZLE GRAY
2C	TRIM 5 - SW 7005 PURE WHITE
3	METAL - SW 7069 IRON ORE
4	VINYL WINDOW MFR: MILGARD SERIES: STILE LINE COLOR: WHITE
5	ROOFING MFR: OWENS CORNING TYPE: ASPHALT COLOR: MASTIC GRAY
6	FENCE - SW 9163 YIN LIZZIE
7	WOOD COLUMN - SW7005 PURE WHITE
8	DOWNSPOUT - SW 7005 PURE WHITE
9	HOLLOW METAL DOOR - SW 7069 IRON ORE
10	STEEL RAILINGS - SW 7069 IRON ORE
11	WALL LIGHT FIXTURE - BLACK
12	GARAGE DOOR - SW 7069 IRON ORE
13	METAL GUTTER - SW 7005 PURE WHITE

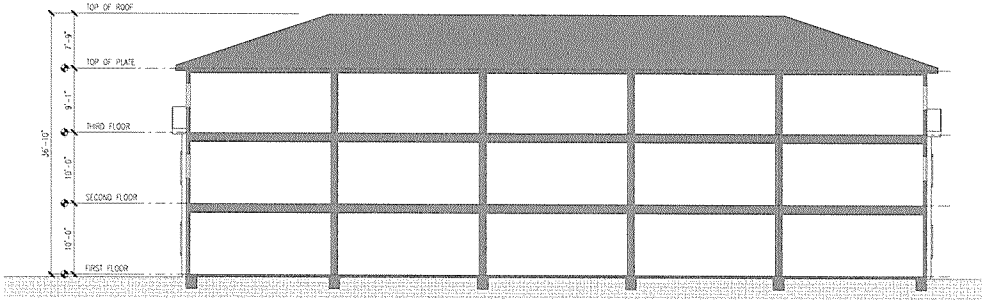


BLDG. A NORTH SIDE ELEVATION
1/8" = 1'-0"
3 / A3-1

BLDG. A EAST SIDE ELEVATION
SCALE: 1/8" = 1'-0"
4 / A3-1



CROSS SECTION
1/8" = 1'-0"
5 / A3-1



LONGITUDINAL SECTION
SCALE: 1/8" = 1'-0"
6 / A3-1

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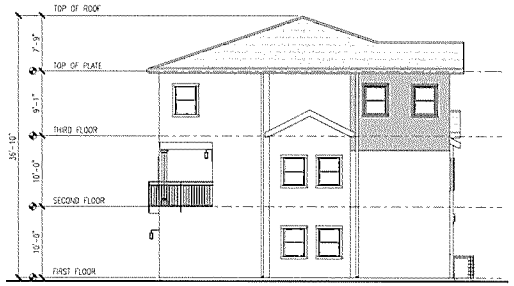
DATE	REVISIONS

SHEET CONTENTS
BUILDING A
ELEVATIONS AND SECTIONS

SCALE:	1/8" = 1'-0"
CADD FILE:	
DRAWN:	JCA/HL
DATE:	8/15/2022

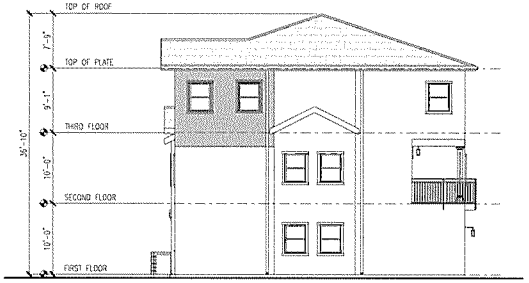
SHEET NO:
A3-1

SHEET OF



BLDG. B NORTH SIDE ELEVATION (1 / A3-2)
1/8" = 1'-0"

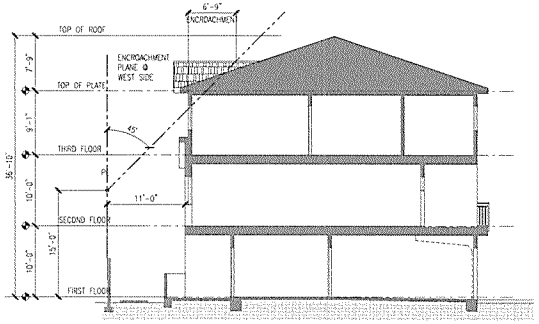
BLDG. B WEST SIDE ELEVATION (2 / A3-2)
SCALE: 1/8" = 1'-0"



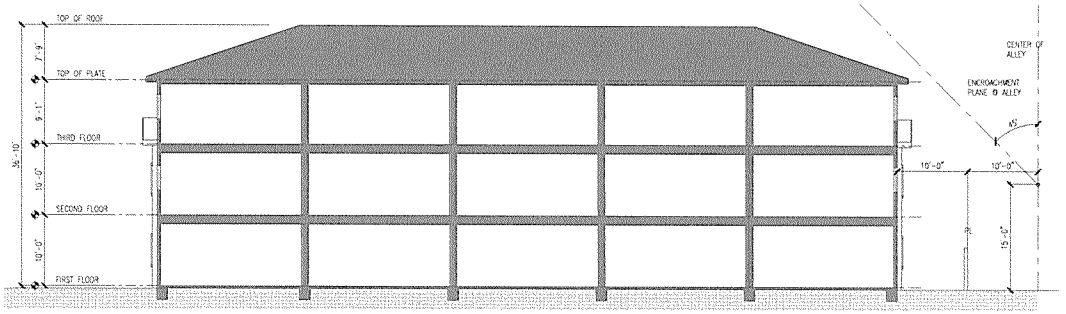
BLDG. B SOUTH SIDE ELEVATION (3 / A3-2)
1/8" = 1'-0"

BLDG. B EAST SIDE ELEVATION (4 / A3-2)
SCALE: 1/8" = 1'-0"

NOTE:
FOR TYPICAL EXTERIOR WALL FINISHES AND COLORS REFER TO EXTERIOR ELEVATIONS ON SHEET A3.1



CROSS SECTION (5 / A3-2)
1/8" = 1'-0"



LONGITUDINAL SECTION (6 / A3-2)
SCALE: 1/8" = 1'-0"

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LE' JARDIN TOWNHOMES

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DATE	REVISIONS

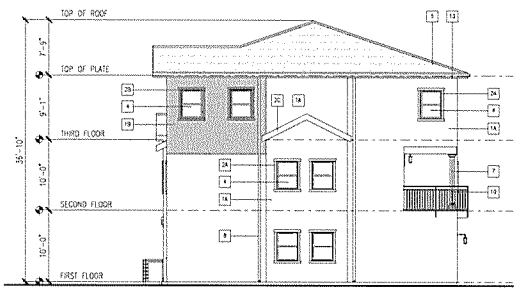
SHEET CONTENTS

BUILDING B
ELEVATIONS AND SECTIONS

SCALE:	1/8" = 1'-0"
CADD FILE:	
DRAWN:	JCP A/N
DATE:	8/15/2022

SHEET NO:
A3-2

SHEET OF

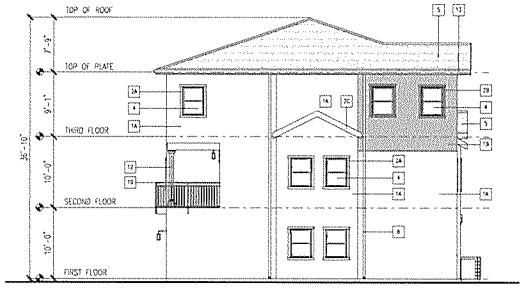


BLDG. C NORTH SIDE ELEVATION (1 / A3-3)
1/8" = 1'-0"

BLDG. C EAST SIDE ELEVATION (2 / A3-3)
SCALE: 1/8" = 1'-0"

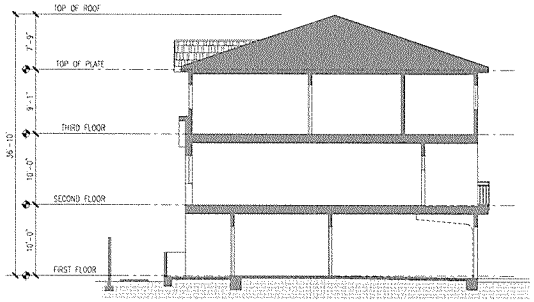
EXTERIOR FINISH - COLOR

1A	STUCCO 1 - SW 7005 PURE WHITE
1B	STUCCO 6 - SW 9163 YIN LIZZIE
2A	TRIM 2 - SW7024 FUNCTIONAL GRAY
2B	TRIM 3 - SW 7068 GRIZZLE GRAY
2C	TRIM 5 - SW 7005 PURE WHITE
3	METAL - SW 7069 IRON ORE
4	VINYL WINDOW MFR: MILGARD SERIES: STILE LINE COLOR: WHITE
5	ROOFING MFR: OWENS CORNING TYPE: ASPHALT COLOR: MASTIC GRAY
6	FENCE - SW 9163 YIN LIZZIE
7	WOOD COLUMN - SW7005 PURE WHITE
8	DOWNSPOUT - SW 7005 PURE WHITE
9	HOLLOW METAL DOOR - SW 7069 IRON ORE
10	STEEL RAILINGS - SW 7069 IRON ORE
11	WALL LIGHT FIXTURE - BLACK
12	GARAGE DOOR - SW 7069 IRON ORE
13	METAL GUTTER - SW 7005 PURE WHITE

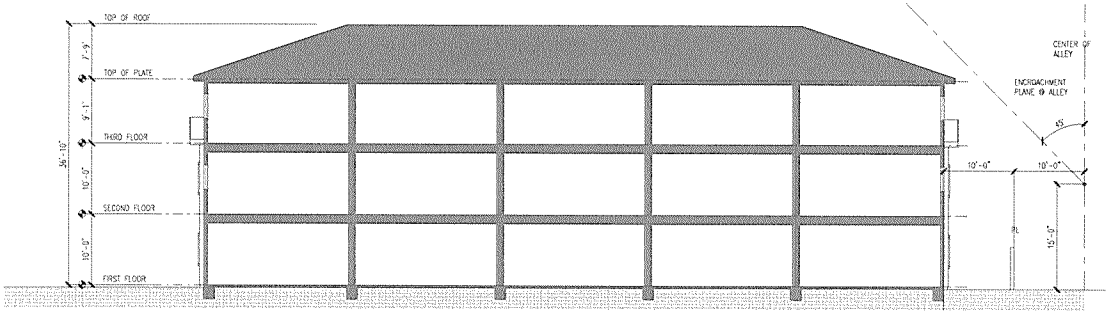


BLDG. C SOUTH SIDE ELEVATION (3 / A3-3)
1/8" = 1'-0"

BLDG. C WEST SIDE ELEVATION (4 / A3-3)
SCALE: 1/8" = 1'-0"



CROSS SECTION (5 / A3-3)
1/8" = 1'-0"



LONGITUDINAL SECTION (6 / A3-3)
SCALE: 1/8" = 1'-0"

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DATE	REVISIONS

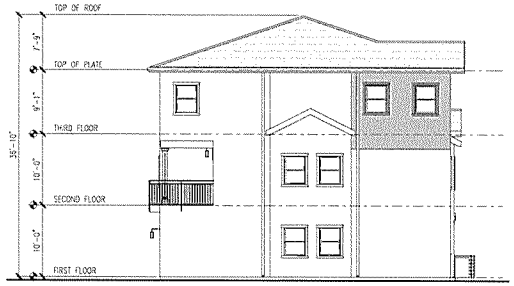
SHEET CONTENTS

BUILDING C
ELEVATIONS AND SECTIONS

SCALE:	1/8" = 1'-0"
CADD FILE:	
DRAWN	JCF/A/HL
DATE:	6/15/2022

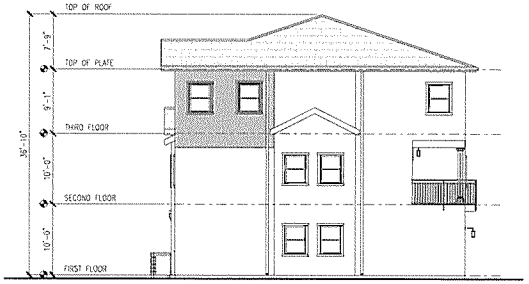
SHEET NO:
A3-3

SHEET OF



BLDG. D SOUTH SIDE ELEVATION (1 / A3-4)
1/8" = 1'-0"

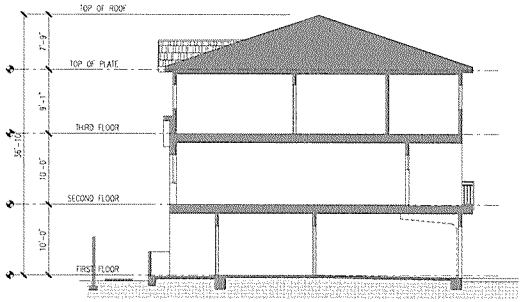
BLDG. D EAST SIDE ELEVATION (2 / A3-4)
SCALE: 1/8" = 1'-0"



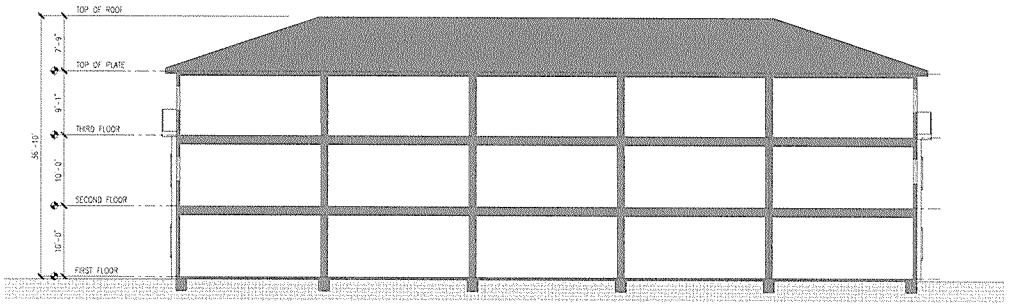
BLDG. D NORTH SIDE ELEVATION (3 / A3-4)
1/8" = 1'-0"

BLDG. D WEST SIDE ELEVATION (4 / A3-4)
SCALE: 1/8" = 1'-0"

NOTE:
FOR TYPICAL EXTERIOR WALL FINISHES AND COLORS REFER TO EXTERIOR ELEVATIONS ON SHEET A3.1



CROSS SECTION (5 / A3-4)
1/8" = 1'-0"



LONGITUDINAL SECTION (6 / A3-4)
SCALE: 1/8" = 1'-0"

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LE' JARDIN TOWNHOMES

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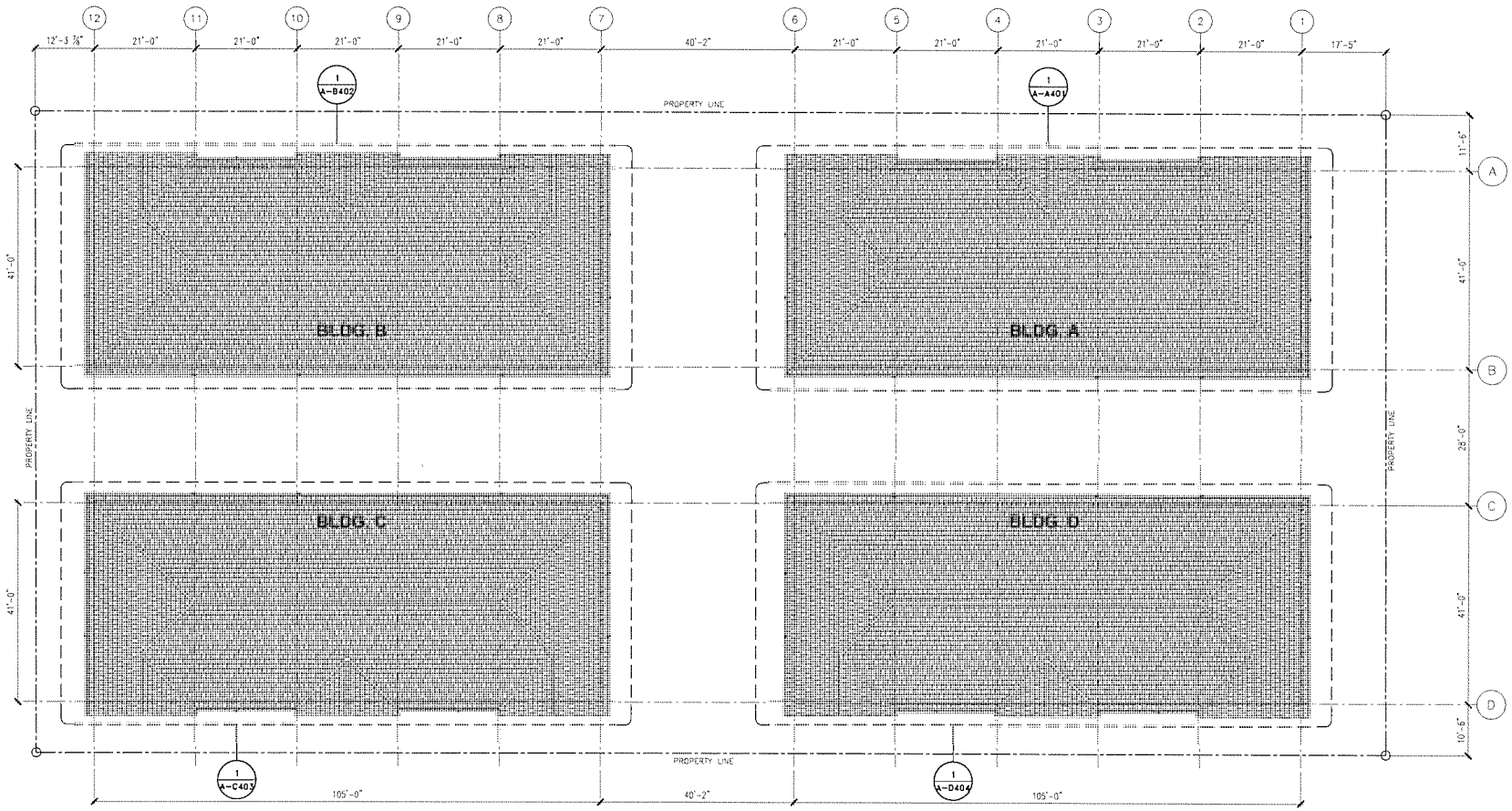
DATE	REVISIONS

SHEET CONTENTS
BUILDING D
ELEVATIONS AND SECTIONS

SCALE:	1/8" = 1'-0"
CADD FILE:	
DRAWN:	JCP/A/HL
DATE:	6/15/2022

SHEET NO:
A3-4

SHEET OF



OVERALL ROOF PLAN
SCALE : 3/32" = 1'-0"

1
A-400

N

ARCHITECT:

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LE' JARDIN
TOWNHOMES

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DATE	REVISIONS

SHEET CONTENTS

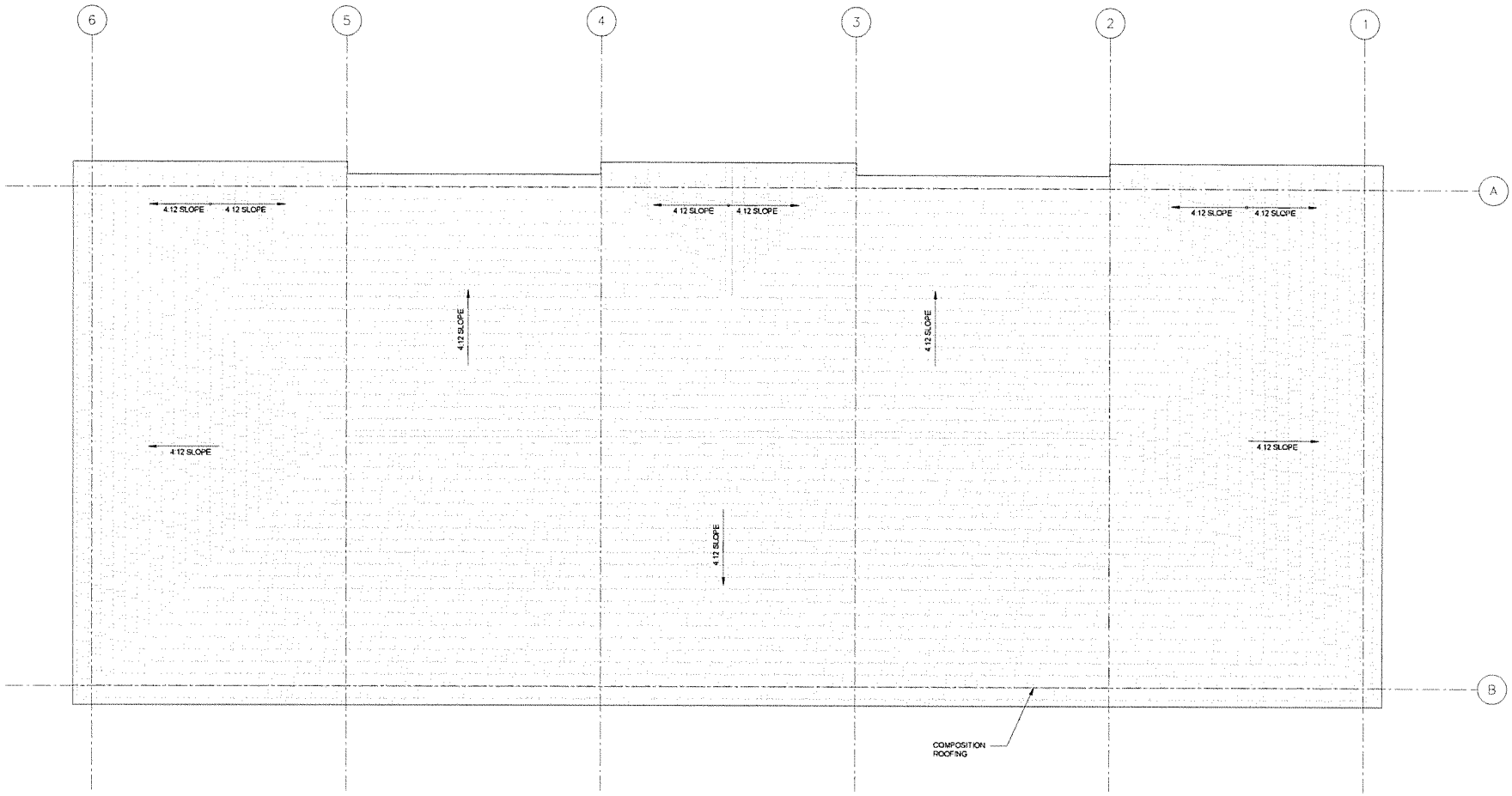
OVERALL ROOF PLAN

SCALE	3/32" = 1'-0"
CADD FILE	
DRAWN	D. ALFONSO/HL
DATE	6/15/2022

SHEET NO

A-400

SHEET OF



BLDG. A ROOF PLAN
SCALE : 1/4" = 1'-0"

1
A-A204

N

ARCHITECT:

EML

E. M. LOPEZ Architect

815 W CESAR E CHAVEZ AVE
SUITE 203
LOS ANGELES CA 90012

TEL NO (213) 621-2358
FAX NO (213) 621-2843

LE' JARDIN
TOWNHOMES

8722
GARDEN GROVE
BOULEVARD
GARDEN GROVE CA

OWNER:
NRI PORTFOLIOS LLC.
12962 MAIN STREET
GARDEN GROVE, CA
92840

CONTACT:
MIKE BARNETT
PHONE: (949) 228-8644
9MIKEMAX@GMAIL.COM

DATE	REVISIONS

SHEET CONTENTS

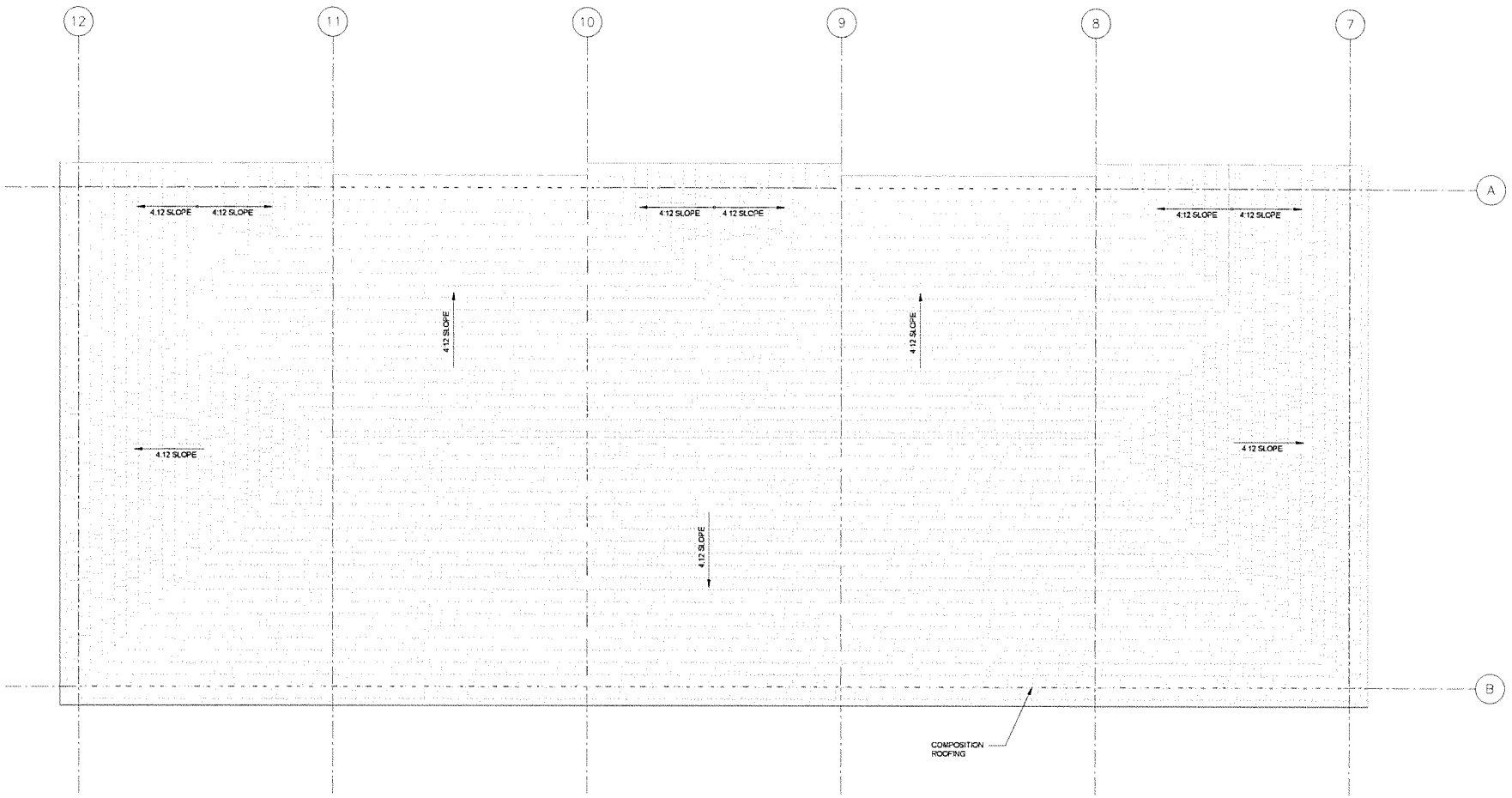
BUILDING A ROOF PLAN

SCALE	1/4" = 1'-0"
CADD FILE	
DRAWN	D. ALFONSO
DATE	8/15/2022

SHEET NO

A-A401

SHEET OF



BLDG. B ROOF PLAN (1 / A-B204)
SCALE : 1/4" = 1'-0"

N

ARCHITECT
EML
E. M. LOPEZ Architect
815 W CESAR E CHAVEZ AVE
SUITE 203
LOS ANGELES CA 90012
TEL NO (213) 621-2358
FAX NO. (213) 621-2843

LE' JARDIN TOWNHOMES

8722 GARDEN GROVE BOULEVARD GARDEN GROVE CA

OWNER:
NRI PORTFOLIOS LLC.
12962 MAIN STREET
GARDEN GROVE, CA 92840

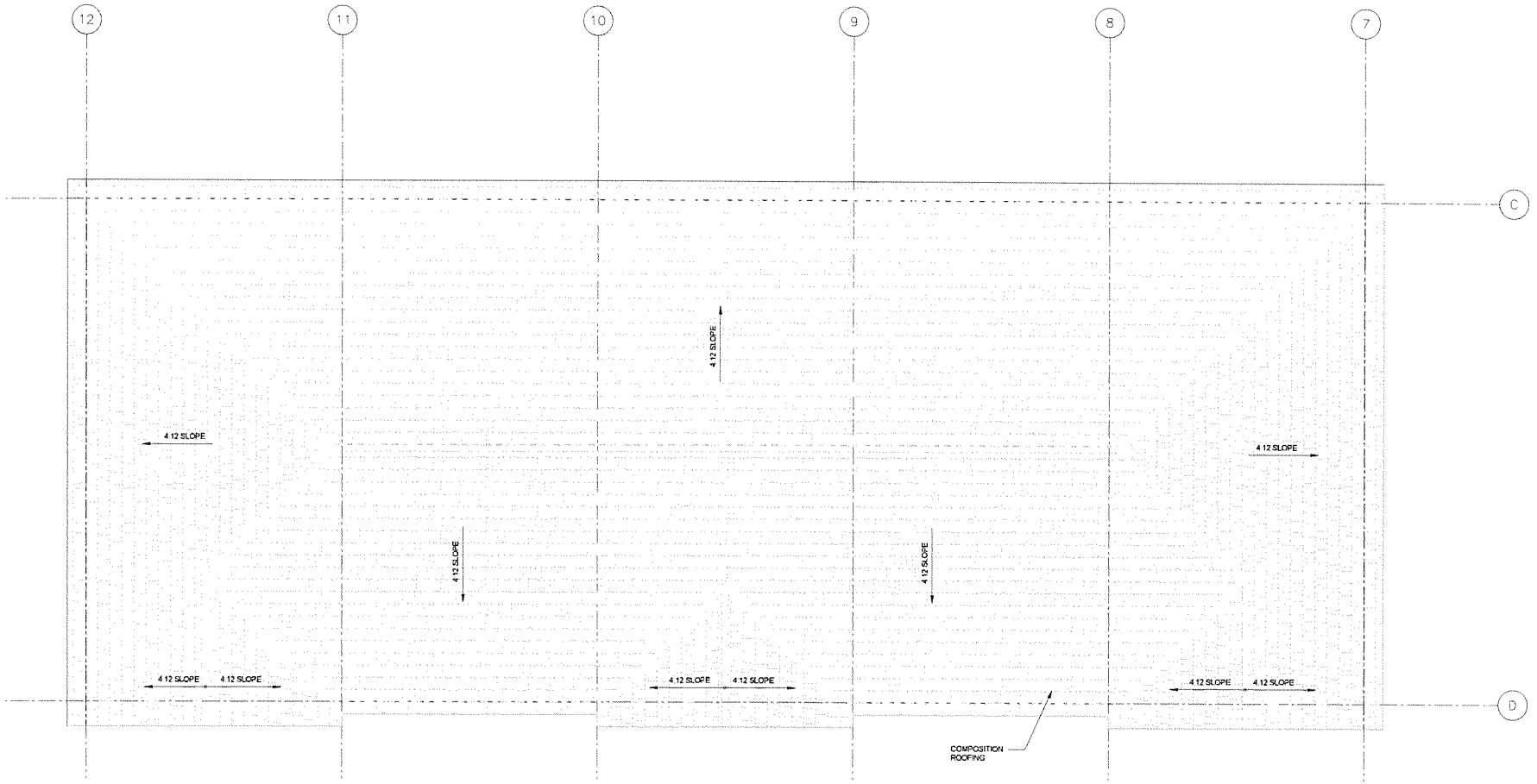
CONTACT:
MIKE BARNETT
PHONE: (949) 228-8644
9MIKEMAX@GMAIL.COM

DATE	REVISIONS

SHEET CONTENTS
BUILDING B ROOF PLAN

SCALE	1/4" = 1'-0"
CADD FILE	
DRAWN	D. ALFONSO
DATE	9/15/2022

SHEET NO.
A-B402
SHEET OF



BLDG. C ROOF PLAN
SCALE : 1/4" = 1'-0"

1
A-C204

N

ARCHITECT:
EML
E. M. LOPEZ Architect
815 W CESAR E CHAVEZ AVE
SUITE 203
LOS ANGELES CA 90012
TEL NO (213) 621-2358
FAX NO (213) 621-2843

LE' JARDIN TOWNHOMES

8722 GARDEN GROVE BOULEVARD GARDEN GROVE CA

OWNER:
NRI PORTFOLIOS LLC.
12962 MAIN STREET
GARDEN GROVE, CA 92840

CONTACT:
MIKE BARNETT
PHONE: (949) 228-8644
9MIKEMAX@GMAIL.COM

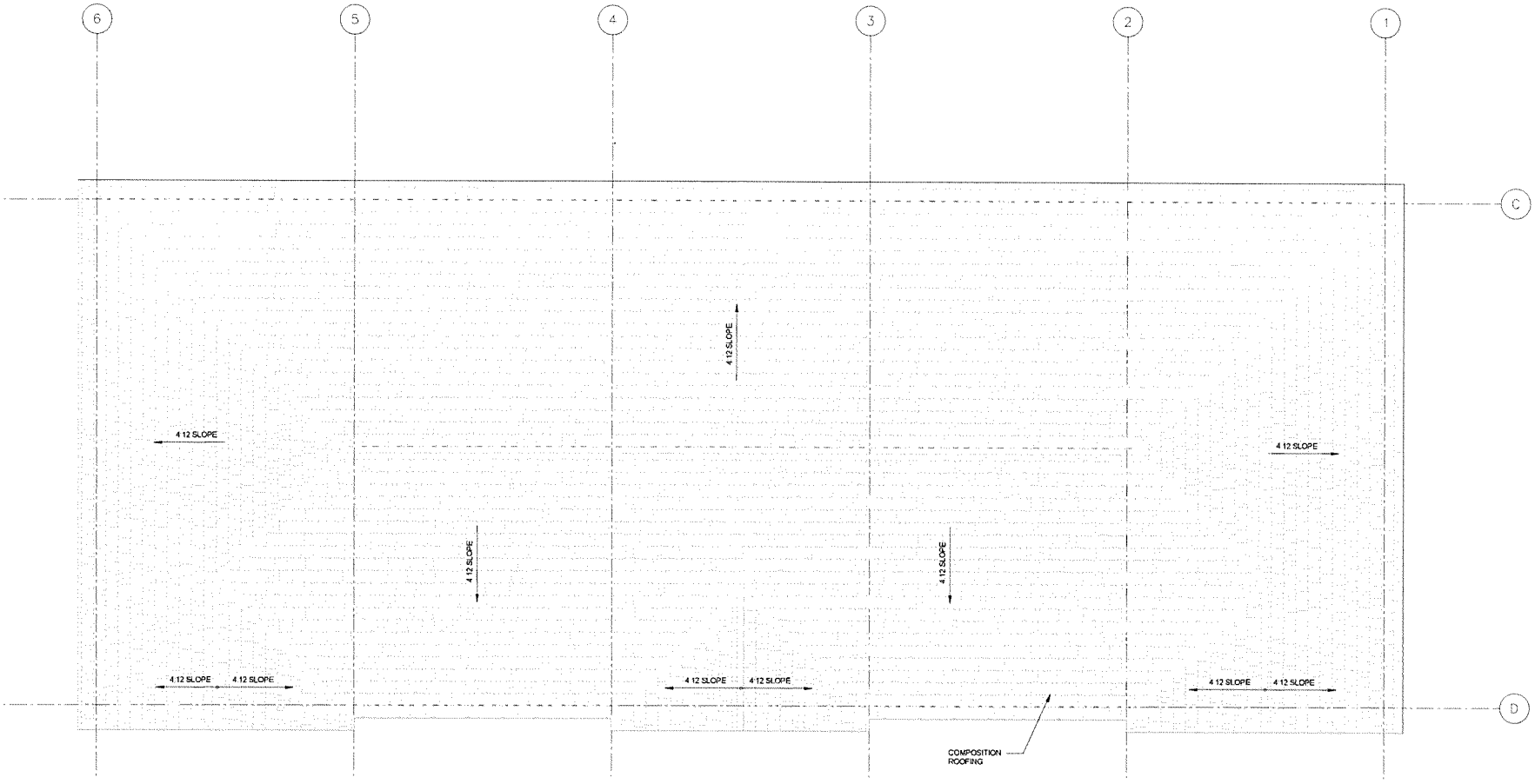
DATE	REVISIONS

SHEET CONTENTS
BUILDING C ROOF PLAN

SCALE: 1/4" = 1'-0"
CADD FILE:
DRAWN: G. ALFONSO
DATE: 8/15/2022

SHEET NO
A-C403

SHEET OF



BLDG. D ROOF PLAN (1 / A-0204)
SCALE : 1/4" = 1'-0"

N

ARCHITECT
EML
E. M. LOPEZ Architect
815 W. CESAR E. CHAVEZ AVE
SUITE 293
LOS ANGELES CA. 90012
TEL NO. (213) 621-2358
FAX NO. (213) 621-2843

LE' JARDIN TOWNHOMES

8722 GARDEN GROVE BOULEVARD GARDEN GROVE CA

OWNER:
NRI PORTFOLIOS LLC.
12962 MAIN STREET
GARDEN GROVE, CA 92840

CONTACT:
MIKE BARNETT
PHONE: (949) 228-8644
MIKEMAX@GMAIL.COM

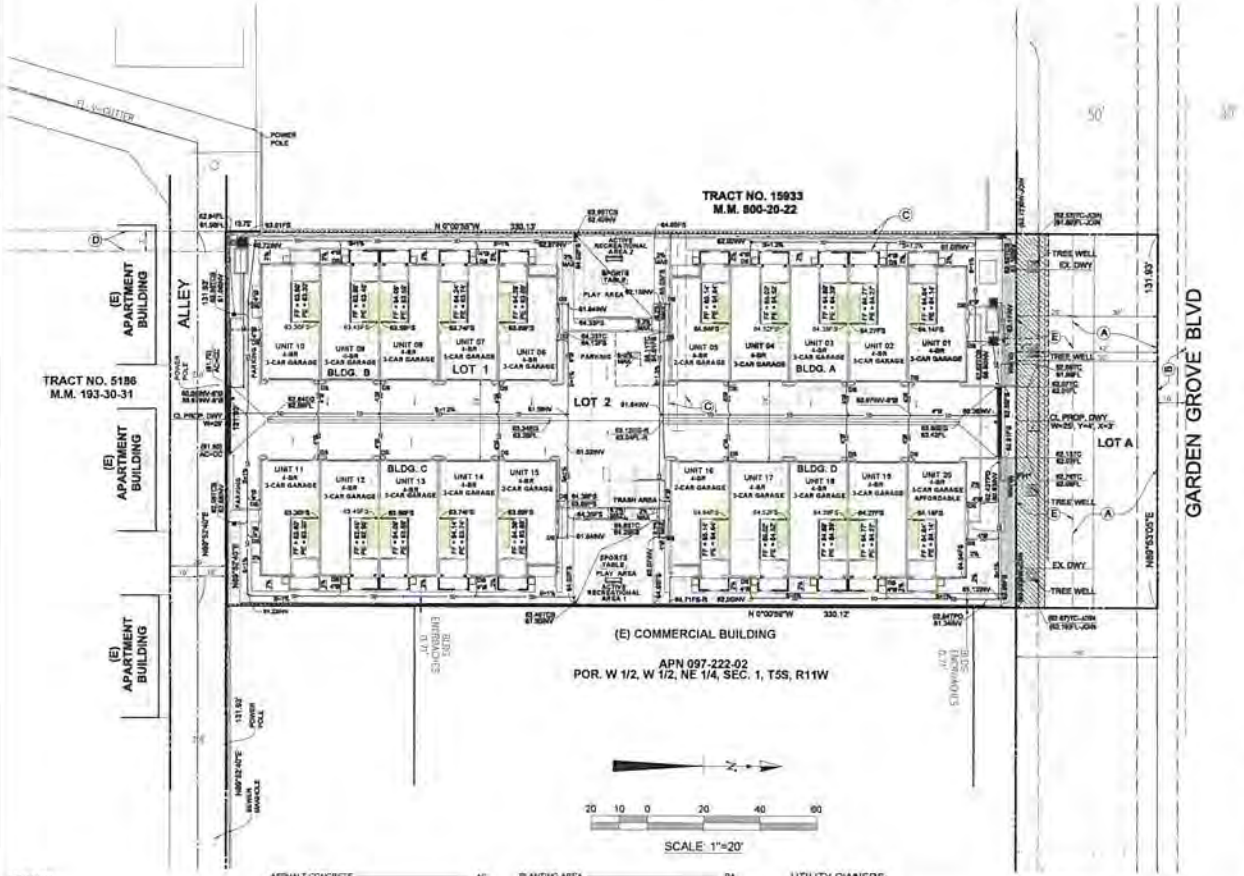
DATE	REVISIONS

SHEET CONTENTS
BUILDING D ROOF PLAN

SCALE 1/4" = 1'-0"
CADD FILE:
DRAWN D. ALFONSO
DATE 8/15/2022

SHEET NO.
A-D404
SHEET OF

LE' JARDIN TOWNHOMES
TENTATIVE TRACT MAP NO. 19129
FOR 20 UNITS RESIDENTIAL CONDOMINIUM PURPOSES
IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA
DATE: 8/17/2022



VICINITY MAP
NOT TO SCALE

OWNERS/SUBIDIVIDERS:

NRI PORTFOLIOS, LLA
12962 MAIN STREET
GARDEN GROVE, CA 92840
TEL (949) 228-8644

PROJECT ADDRESS:

8722 GARDEN GROVE BLVD
GARDEN GROVE, CA 92844

APN: 097-222-03

ZONING:

PRESENT - GGMU-2 (MIXED-USE ZONE 2)
PROPOSED - GGMU-2 (MIXED-USE ZONE 2)

LAND USE:

PRESENT - RC2 (RESIDENTIAL COMMERCIAL MIXED-USE 2)
PROPOSED - RC2 (RESIDENTIAL COMMERCIAL MIXED-USE 2)

DENSITY: 20 DWELLING UNITS PER NET ACRE

LEGAL DESCRIPTION:

THE NORTHERLY 330.25 FEET OF THE WEST 2 ACRES OF THE EAST 8 ACRES OF THE NW | OF THE NW | OF THE NE |
OF SECTION 1, TOWNSHIP 5 SOUTH, RANGE 11 WEST, S.B.B. & M., IN THE CITY OF GARDE GROVE, COUNTY OF
ORANGE, STATE OF CALIFORNIA

BASIS OF BEARINGS:

THE BEARINGS SHOWN HEREON ARE BASED ON THE BEARING BETWEEN O.C.S. HORIZONTAL CONTROL STATION
GPS NO. 375781 AND STATION GPS NO. 3530, BEING N89°31'24"W 2649.54', PER RECORDS ON FILE IN THE OFFICE OF
THE ORANGE COUNTY SURVEYOR.

BENCHMARK:

FOUND 3 3/4" OCS ALUMINUM BENCHMARK DISK STAMPED "1G-147-70", SET IN THE TOP OF A 6 IN. BY 6 IN. CONCRETE POST. MONUMENT IS LOCATED IN THE NORTHWESTERLY CORNER OF THE INTERSECTION OF GARDEN GROVE BOULEVARD AND MAGNOLIA STREET, 142 FT. NORTHERLY OF THE NORTH CURB ALONG GARDEN GROVE BOULEVARD AND 53 FT. WESTERLY OF THE CENTERLINE OF MAGNOLIA STREET. MONUMENT IS SET LEVEL WITH THE SIDEWALK.

ELEVATION = 68.526 FT. (2005)

EASEMENT NOTES:

(A) 30' WIDE EASEMENT FOR ROADS, RAILROADS AND DITCHES RECORDED AUGUST 7, 1877 IN BOOK 55, PAGE 387 OF DEEDS.

(B) THE USE OF 10-FOOT STRIP OF GROUND ADJACENT AND PARALLEL WITH GARDEN GROVE BOULEVARD FOR THE EXCLUSIVE PURPOSE OF CONSTRUCTION, USING, MAINTAINING, REPAIRING OR REMOVING AN UNDERGROUND (BELOW PLOW DEPTH) CEMENT OR METAL PIPE LINE OR PIPE LINES TO SUPPLY WATER TO THIS AND/OR ADJACENT PARCELS OF LAND FOR IRRIGATION AND/OR DOMESTIC PURPOSES AS RESERVED IN THE DEED FROM H.E. YOCKEY ET UX., TO HAROLD H. MITCHELL ET UX., DATED NOVEMBER 1, 1940 AND RECORDED IN BOOK 1089, PAGE 224, OF OFFICIAL RECORDS. THE EXACT LOCATION AND EXTENT OF SAID EASEMENT IS NOT DISCLOSED OF RECORD.

(C) 9' WIDE EASEMENT FOR POLES LINES, CONDUITS AND INCIDENTAL PURPOSES GRANTED TO SOUTHERN CALIFORNIA EDISON COMPANY RECORDED NOVEMBER 2, 1955 IN BOOK 3268, PAGE 587, OF OFFICIAL RECORDS.

(D) 7' WIDE EASEMENT FOR UNDERGROUND ELECTRICAL SUPPLY SYSTEMS AND COMMUNICATION SYSTEMS AND INCIDENTAL PURPOSES RECORDED IN BOOK 13054, PAGE 1737 OF OFFICIAL RECORDS.

(E) 20' WIDE EASEMENT FOR PUBLIC STREET AND HIGHWAY AND INCIDENTAL PURPOSES GRANTED TO THE CITY OF GARDEN GROVE RECORDED APRIL 23, 1980 IN BOOK 13585, PAGE 697, OF OFFICIAL RECORDS.

PROPOSED LOTS:

LOT 1	UNITS 1 THRU 20
LOT 2	COMMON AREAS LOTS
LOT A	STREET DEDICATION

LOT AREAS

LOT 1	18,476 SQUARE FEET OR 0.65 ACRE
LOT 2	18,521 SQUARE FEET OR 0.85 ACRE
LOT A	6,587 SQUARE FEET OR 0.15 ACRE
TOTAL	43,554 SQUARE FEET OR 1 ACRE

OWNER'S STATEMENT:

NRI PORTFOLIOS, LLA, HEREBY CONSENTS TO SUBMIT THIS TENTATIVE MAP FOR DEVELOPMENT OF 20-UNITS CONDOMINIUM COMPLEX IN THE CITY OF GARDEN GROVE.

CHIEF OPERATING OFFICER
NRI PORTFOLIOS, LLA

PREPARED BY:

P.A. ARCA ENGINEERING, INC.

PERFECTO A. ARCA RCE #62618 — DATE

STAMP

LEGEND:

APPARENT PROPERTY LINE		ASPHALT CONCRETE	AC
CENTER LINE	CL/℄ OR	BRICK	BRK
CHAIN LINK FENCE	CLF OR	BACK OF SIDEWALK	BW
WOODEN FENCE	WDF OR	BOTTOM OF DRIVEWAY "X"	BX
WROUGHT IRON FENCE	WIF OR	CATCH BASIN	CB
EXISTING WATER LINE		CEMENT CONCRETE	CONC
EXISTING SEWER LINE		STORM DRAIN MANHOLE	DMH
EXISTING GAS LINE		DRIVEWAY	DWY
EXISTING DRAIN LINE		EDGE OF GUTTER	GK
EXISTING OIL LINE		ELECTRICAL MANHOLE	EMH
EXISTING COMMUNICATION LINE		ELECTRICAL PANEL	EP
EXISTING ELECTRICAL LINE		ELECTRIC PULLBOX	EPB
EXISTING TELEPHONE LINE		FIRE HYDRANT	FH
NEW STORM DRAIN LINE	SD	FLOWLINE	FL
EXISTING GRADE ELEVATION	+ 56.00	GAS VALVE	GV
		GUY WIRE	GW
		LIGHT STANDARD	LS
		MONITORING WELL	MW
		NATURAL GROUND	NG

PLANTING AREA	PA
POWER POLE	PP
SEWER MANHOLE	SMH
STREET SIGN	SS
TOP OF CURB	TC
TELEPHONE MANHOLE	TMH
TRAFFIC SIGNAL POST	TS
TRAFFIC SIGNAL PULLBOX	TSPB
TOP OF TOP STEP	TTS
TOP OF WALL	TW
TOP OF DRIVEWAY "X"	TX
WATER METER	WM
WATER VALVE	WV
WINDOW	WD

UTILITY OWNERS:

UTILITY	CONTACT PERSON	PHONE NO.
CITY OF GARDEN GROVE SANITARY DIVISION	BRENT HAYES	(714)741-5678
CITY OF GARDEN GROVE WATER DIVISION	CARINA DAN	(714)741-5348
CITY OF GARDEN GROVE TRAFFIC DIVISION	DAI VU	(714)741-5188
SOUTHERN CALIFORNIA EDISON CO.	GAIN GARDNER	(562)903-5167
GAS CO.	DON J. AMADOR	(714)634-3039
O.C.T.A.	MARK SELLINGER	(714)530-6060
TIME WARNER COMMUNICATION	CURTIS VASQUEZ	(714)719-7980
O.C. SANITATION DISTRICT	QUYNH NGUYEN	
AT & T	ROBERT FLEISHER	(714)996-5802
FRONTIER/VERIZON	MIKE MADRID	(714)575-6720

PRELIMINARY GRADING PLAN

8722 GARDEN GROVE BOULEVARD

GARDEN GROVE, CA 92844

STANDARD GRADING GENERAL NOTES

48 HOUR ADVANCE NOTICE IS REQUIRED PRIOR TO THE START OF ANY WORK (714) 741-5887

1. All work shall conform to the City of Garden Grove latest Ordinance No.2835 Standard Plans and Specifications, the 2019 Standard Specifications of the State of California Department of Transportation, the City of Garden Grove Ordinance No. 2350 the 2019 California Building Code, California Green Buildings Standard Code, and the Standard Specifications for Public Works Construction (Greenbook) 2020 Edition.

2. The Contractor shall obtain all necessary permits and notify the City of Garden Grove Water Department and all other utility companies a minimum of 48 hours prior to the start of construction. It shall be the responsibility of the Contractor to coordinate all phases of construction with the various utility companies involved.

3. Submittal Document requirements shall at a minimum, conform to all requirements of Sections 107 and 110 of the California Building Code, including the following:
   a. Grading Plan with site Plan showing to scale the size and location of new construction and existing structures on the site and adjacent to the site a minimum of thirty feet (30') from the property boundary;
   b. Horizontal and vertical distances and elevations in relation to the property lot lines and nearest City benchmarks for topographic control. (Temporary bench marks shall not be used for topographic control);
   c. Existing street grades and proposed design grades for all project frontages and adjacent access improvements;
   d. All site/grading plans shall be based upon an accurate boundary line survey with monument and horizontal/vertical control disposition shown on the plans.(section 107.2.5 California Building Code);
   e. Demolition work for improvements to be removed and/or protected in place;
   f. Any phasing of improvements as allowed by the City.

4. The Contractor shall obtain a separate permit for all work within the street right-of-way. Temporary A.C. paving shall be placed where sidewalk removals extend longer than (24) twenty four hours as directed by the City Inspector.

5. Dust shall be controlled by watering and if full conformance with the requirements of the South Coast Air Quality Management District guidelines.

6. Sanitary facilities shall be maintained on site. Facilities shall be located such that no silt shall be contained and at no time enter a public or private storm drain.

7. Prior to the pouring of any foundation materials, the pad elevation and the property corners must be verified in writing to the Building Section by the Registered Civil Engineer or the Licensed Land Surveyor in conformance with section 1612 of the California Building Code.

8. No fill shall be placed until the Building Official and the Soils Engineer approve preparation of ground.

9. Fills shall be compacted throughout to 90% density as determined by A.S.T.M. D1557, A.S.T.M. D1556 (sand cone), and/or A.S.T.M. D2922, (Nuclear). Sand cone method must represent no more than 20% of testing. Drive tube testing is not permitted.

10. Fill slopes shall be no steeper than 2 horizontal to 1 vertical and shall have not less than 90% compaction out to the finish surface.

11. It shall be the responsibility of the Contractor to locate the utilities of every nature whether shown hereon or not and to protect them from damage. The Contractor shall bear total cost of repair or replacement of said utilities damaged by operations.

12. In accordance with specifications and codes referenced in paragraph 1; construction documents and a schedule for demolition shall be submitted where required by the City Engineering Division and or Building Services Division. Where such information is required, no work shall be done until such construction documents or schedule, or both, are approved.

13. The Contractor shall make provisions to have all existing on-site sewer, water, gas, electric, irrigation or telephone lines removed, abandoned, or relocated if they are interfering with the proposed construction.

14. The Contractor shall remove, cap, and abandon all existing on-site water wells, cesspools, or septic tanks encountered during grading in accordance with the latest edition of the Uniform Plumbing Code, the Department of Health and the City Municipal Code.

15. Any broken or damaged improvements on adjacent private property or public right_of_way shall be replaced or repaired in kind as directed by the City Engineer.

16. Temporary traffic control and pedestrian access and protection during construction shall conform to the Department of Public Works and Development's latest "Public Convenience and Traffic Control Specification" sheet, and the "Watch Manual" as published by the APWA, Chapter 33 of the California Building Code and the requirements of the City Engineer.

17. All traffic control devices shall be installed, relocated, or removed to the satisfaction of the City Traffic Engineer.

18. The Contractor shall notify the City Engineer prior to the removal, partial removal or trimming of trees overhanging or lying partially or fully within existing right-of-way.

19. The Soils Report prepared by _____, dated _____, and all recommendations contained therein, shall be made a part of these plans. Soils reports and testing shall be done by a Civil or Geotechnical Engineer registered in the State of California.

20. Prior to the importation of any soil material to this site, an investigation shall be made and a report filed with the Building Official. Use of the soil will not be permitted if it is determined by the test results that the expansion index is in excess of twenty (20). An "E" value test shall also be performed on import soil and results submitted to the Grading Engineer. Import soil shall be clean and free of any debris. Failure to conform to these requirements shall be cause for removal and replacement of said soil.

21. Statement of Quantities – Including all remedial grading as recommended in the Soils Report:

   a. Cut SEE TABLE Cubic Yards (GROSS)

   b. Fill SEE TABLE Cubic Yards (GROSS)

22. All earthwork and other quantities are estimated for bonding and plan check fee purposes only – not for bidding purposes. The Contractor shall be responsible for determining the accuracy of the estimate.

23. Water meter and service to be installed by City forces upon payment of applicable fees.

24. Prior to placement of paving (at structural section), Developer shall compact sub-grade to 95% min. relative compaction. Aggregate base shall be Class II 3/4" compacted to 90% relative compaction. The Developer's Geotechnical Engineer shall submit compaction tests to the City per ASTM D1557 (Method C for aggregate base). Asphalt concrete shall be class C2 dense medium asphalt concrete mix per Table 203-6.4.3(A) (The "Greenbook" 2020 edition conforming to Sepa 70-10.)

25. The Contractor shall install and maintain a six (6) foot high chain link fence to secure the project perimeter. The fence shall be removed upon construction of permanent perimeter fencing and/or completion of the project.

VICINITY MAP

NTS

ABBREVIATIONS :

ASPHALTIC CONCRETE	AC
BOTTOM OF BOTTOM STEP	BBS
BOTTOM OF "X"	BX
CEMENT CONCRETE	CC
CLEAN OUT	CO
DOWN SPOUT	DS
DRIVEWAY	DWY
EXISTING	(EXIST
EXISTING UTILITY (D,E,G,S OR W) LINE	(W)
FINISH SURFACE	FS
FINISH FLOOR	FF
FIRE HYDRANT	FH
FLOW LINE	FL
GAS METER	GM
GAS VALVE	GV
GRADE CHANGE	GC
HOUSE CONNECTION	HC
INVERT ELEVATION	INV
NATURAL GRADE	NG
PLANTING AREA	PA
PAD ELEVATION	PE
POINT OF CONNECTION	POC
POWER POLE	PP
PROPERTY LINE	PL
SLOPE	S
STREET LIGHT	SL
STREET SIGN	SS
TOP OF CURB	TC
TOP OF CATCH BASIN	TCB
TOP OF FLOOR DRAIN	TFD
TOP OF WALL	TW
TOP OF JUNCTION STRUCTURE	TJS
TOP OF TOP STEP	TTS
TOP OF TOP "X"	TX
TRASH AREA	TA
WATER METER	WM
WATER VALVE	WV

LEGEND :

PROPERTY LINE ——— W ——— DW ———

CENTER LINE ——— C ——— DC ———

GRADE CHANGE ——— G ——— DG ——— 145.0

FINISH (DESIGN) GRADE CONTOUR ———

PRESENT GRADE CONTOUR ———

FLOW LINE ——— FL ——— DW ———

NEW STORM DRAIN LINE ——— SD ———

RIDGE LINE ——— R ———

EXISTING ELECTRICAL CONDUIT ———

EXISTING GAS LINE ———

EXISTING SANITARY SEWER LINE ———

EXISTING WATER LINE ———

EXISTING GRADE ELEVATION ——— (145.00)

FINISH (DESIGN) GRADE ELEVATION ——— 145.00

DIAMETER ——— Ø

CLEANOUT ———

PERIMETER WALL ———

INDEX TO DRAWINGS

LEGAL DESCRIPTION

THE NORTH 330.25 FT OF THE WEST 2 ACRES OF THE EAST 2 ACRES OF THE NW 1/4, NW 1/4, NE1/4, SEC 1, T5S, R11W, S B B&M. IN THE CITY OF GARDEN GROVE , COUNTY OF ORANGE, STATE OF CALIFORNIA

BENCH MARK

FOUND 3 1/2" OCS ALUMINUM BENCHMARK DISK STAMPED "10-147-70", SET IN THE TOP OF A 6 IN. CONCRETE POST. MONUMENT IS LOCATED IN THE NORTHWESTERLY CORNER OF THE INTERSECTION OF GARDEN GROVE BOULEVARD AND MAGNOLIA STREET, 142 FT. NORTHERLY OF THE NORTH CURB ALONG GARDEN GROVE BOULEVARD AND 53 FT. WESTERLY OF THE CENTERLINE OF MAGNOLIA STREET. MONUMENT IS SET LEVEL WITH THE SIDEWALK

ELEVATION = 88.528 (2005)

UTILITY OWNER

UTILITY	CONTACT PERSON	PHONE NO.
AT&T (MAP REQUEST)	YVETTE MARTINEZ-GARAFANO	714-668-5692
AT&T (CONSTRUCTION & ENGINEERING)	ROBERT FLEISNER	714-237-6165
CITY OF GARDEN GROVE SANITARY DIVISION	BRENT HAYES	714-741-5976
CITY OF GARDEN GROVE WATER DIVISION	CARINA DAY	714-741-5346
CITY OF GARDEN GROVE TRAFFIC DIV. (FIBER OPTIC CONSULT)	DAI VU	714-741-5169
SOUTHERN CALIFORNIA EDISON (UTILITY NOTICES)	DAE GARDNER	562-903-5187
SOUTHERN CALIFORNIA EDISON	JAY PARISH	310-892-1323
SOUTHERN CALIFORNIA GAS COMPANY	SALE SAENZ	213-231-7273
SC. CALIFORNIA GAS CO. (TRANSMISSION DEPARTMENT)	ROSALYN SQUIRES	818-701-4546
O.C.S.D. (MAP REQUEST)	DUYTH NGUYEN	N/A
REGIONAL PIPELINE MANAGER	GREG KERN	714-834-5005
SPECTRUM / CHARTER COMMUNICATIONS	ANTONIO ORTIZ	714-591-4852
XO COMMUNICATIONS	LEE ARNOLD	949-417-7700
FRONTIER / VERIZON	PHIL OLIVAS	626-331-0155
RED FLEX SYSTEM, INC	JOE CHASE	805-2006-5348
CRIMSON PIPELINE LAND DEPARTMENT	JENNIFER LONDVILLE	562-285-4195
CHEVRON PIPE LINE COMPANY	PASCUAL ALVAREZ / DAVE AERLER	310-668-4814
CROWN CASTLE	AHMAD R. SMITH	949-936-0045

26. Concrete form elevations for curb and drainage gutters are to be verified for plan grade by a licensed surveyor prior to concrete pour. Any deviations from these approved plans shall require approval by the City Engineer or corrected prior to placement of concrete by submittal of a request for revision to the approved plan.

27. Upon completion of all work, the Registered Civil Engineer of record shall certify in writing that the project is in compliance with the lines, grades, and elevations on the approved grading plan. If the building is in a Flood Zone Hazard Area, the Civil Engineer shall supply additional certificates verifying that the lowest finish floor elevation(s) comply with the FEMA Flood Hazard elevations as required under 1612A of the California Building Code. Certification forms shall be obtained from the City and wet-signed by the Engineer of Record.

28. All concrete for curbs, gutters, and sidewalks shall be 2500 psi at 28 days. Catch basins and truck wells shall be 3000 psi at 28 days.

29. Provide the following signing and striping. Each parking space reserved for persons with physical disabilities shall be identified by a reflectorized sign permanently posted immediately adjacent to and visible from each stall or space, consisting of a profile view of a wheelchair with occupant in white on a dark blue background. The sign shall not be smaller than 70 square inches in area and when in the path of travel, shall be posted at a minimum height of 80 inches from the bottom of the sign to the parking space finished grade. Signs may also be centered on the wall at the interior end of the parking space at a minimum height of 36 inches from the parking space finished grade, ground or sidewalk. Parking stall layout shall conform to Title 24 2019 California Building Code, Chapters 11A and 11B, and the Department of Justice Standards, latest edition.

30. An additional sign shall also be posted, in a conspicuous place, at each entrance to off-street parking facilities, or immediately adjacent to and visible from each stall or space. The sign shall be not less than 17 inches x 22 inches in size with lettering not less than 1 inch in height, which clearly and conspicuously states the following:

31. "Unauthorized vehicles parked in designated handicapped spaces not displaying distinguishing placards or license plates issued for physically disabled persons may be towed away at owner's expense. Towed vehicle may be reclaimed by telephoning (714) 741-5704

***Verify number with Police Department prior to fabrication of signs.**

32. In addition to the above-required signs, the surface of each parking space shall have a surface identification of either of the following:

   a. Outline the stall in blue and provide a profile view of a wheelchair with occupant in white (or other contrasting color).

   b. Provide a 36 inches x 36 inches profile view of a wheelchair with occupant or white on a blue background. Symbol shall be located such that it is visible to a traffic enforcement officer when the vehicle is parked.

   c. All compact parking stalls shall be individually striped and marked on the parking space surface. All parking stalls shall be havon striped. All curbs not associated with a parking stall shall be painted red.

33. All curb ramps shall have a grooved border 12 inches wide, at the level surface or landing of the sidewalk along the top of the rise and each side approximately spaced 3/4 inches on center of the grooves. All curb ramps constructed between the face of the curb and the street right of way shall have a grooved border at the level surface or landing of the sidewalk. Ramps shall be shown on these approved plans and in conformance with Title 24, 2019 California Building Code, Chapter 11A and 11B, and the Department of Justice Standards, latest edition.

34. For exterior walkways and paths of travel, objects projecting from walls (for example, telephones) with their leading edges between 27 inches and 80 inches above the finished floor shall protrude no more than 4 inches into walks, halls, corridors, passageways or aisles. Objects mounted with their leading edges at or below 27 inches above the finished floor may not protrude any amount.

35. Freestanding objects mounted on posts or pylons may overhang 12 inches maximum from 27 inches to 80 inches above the ground or finished floor. Protruding objects shall not reduce the clear width of an accessible route or maneuvering space. Any obstruction overhanging a pedestrian way shall be a minimum of 80 inches above the walking surface as measured to the bottom of the obstruction.

36. Walks, halls, corridors, passageways, aisles or other circulation spaces shall have 80 inches minimum clear headroom. Abrupt changes in level, except between a walk or sidewalk and an adjacent street or driveway, exceeding 4 inches in a vertical dimension, such as at planters or fountains located in or adjacent to walks, sidewalks, or other pedestrian ways shall be identified by curbs projecting at least 4 inches in height above the walk or sidewalk surface to warn the blind of a potential drop-off.

37. When a guardrail or handrail is provided, no curb is required when a guide rail is provided centered 3 inches plus or minus one inch above the surface of the walk or sidewalk. All work shall conform to the requirements of Title 24, 2019 California Building Code, Chapter 11A and 11B and the Department of Justice Standards, latest edition.

38. All handicap parking stalls shall conform to the detail(s) shown on the plans, and Title 24, 2019 California Building Code Chapter 11A and 11B, and the Department of Justice Standards, latest edition.

39. Drainage shall be checked by flooding of paved areas and concrete gutters. Any ponding areas holding water shall be removed and replaced. Any pavement areas holding water shall be removed and replaced or grouted to a uniform depth of ¼" and capped to the satisfaction of the City Engineer.

40. Landscape treatment and ground conditioning as per the approved landscape plan, including lighting standards, shall be shown on the grading plan. Location of trees shall also be shown.

41. The developer shall sweep all streets in the area of the construction site on a daily basis as required by the City Engineer. Washing down of any street shall not be permitted unless specifically approved by the City Engineer after all debris and silt have been removed. Failure to comply with this section shall be cause for immediate suspension of all work on the development as well as suspension of all permits approved to date.

42. All work shall be in conformance with the latest NPDES permit and City of Garden Grove Local Implementation Plan (LIP) and adopted Low Impact Development (LID) requirements. Copies of approved Erosion Control Plans and Storm Water Pollution Prevention Plan (SWPPP) where required, shall be at the construction site **at all times** and made available upon request for review and implementation.

43. It is the responsibility of the contractor to ensure that all imported and exported soil is free of the Red Imported Fire Ant (RIFA).

44. All on-site catch basins shall be stenciled notifying the public that no dumping is permitted and that all flows drain to the ocean. The contractor shall obtain the latest stencil from the City Streets Division-714.741.5179.

EARTHWORK QUANTITIES

DESCRIPTION	CUT	FILL
EARTHWORK	201 CY	813 CY
OVEREXCAVATION	2,453 CY	2,453 CY
SHRINKAGE		491 CY
IMPORT	612 CY	
TOTAL	3,948 CY	3,948 CY

NOTE: INCLUDES SHRINKAGE FACTOR OF 20%

811 Know what's below. Call before you dig.

P.A. ARCA

DESIGNED BY N/A | DRAWN BY N/A | CHECKED BY PAA

APPROVED BY

PEDRO A. ARCA, PE

DATE _____ R.C.E. NO. 28918

REFERENCE PLANS ARE APPROVED PLAN FOR PUBLIC IMPROVEMENTS

REFERENCE PLANS FOR THESE IMPROVEMENTS

DATE	BY	DESCRIPTION REVISIONS	APP'D

APN: 097-222-03 DATE

CITY OF GARDEN GROVE

TITLE SHEET

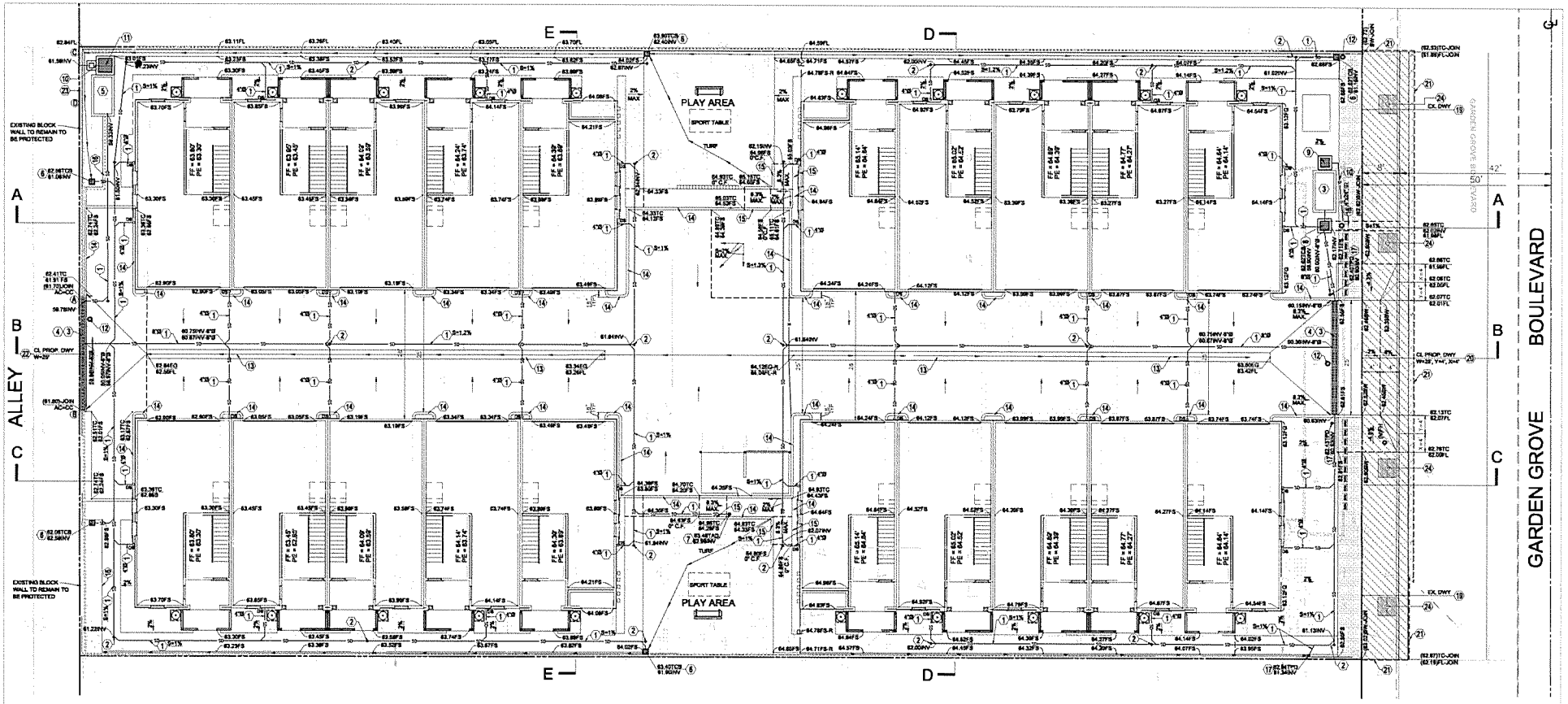
PRELIMINARY GRADING PLAN

8722 GARDEN GROVE BOULEVARD

GARDEN GROVE, CA

DRAWING NUMBER

SHEET 1 OF 9



LEGEND OF PAVEMENT ALONG RIGHT OF WAY :

REMOVE EXISTING CONCRETE

CONSTRUCT CEMENT CONCRETE DRIVEWAY, CURB AND GUTTER AND SIDEWALK WHERE OCCURS PER CITY STANDARD B-120, B106 AND B-113, TYPE C-8

REMOVE EXISTING ASPHALT FULL DEPTH AND CONSTRUCT NEW ASPHALT TO MATCH THE EXISTING

LEGEND ON SITE:

LANDSCAPE/PLANTING AREA

PAVERS

TURF

811 Know what's below. Call before you dig.

CONSTRUCTION NOTES:

1. CONSTRUCT 6" Ø PVC STORM DRAIN LINE UNLESS NOTED OTHERWISE.
2. CONSTRUCT CLEANOUT PER DETAIL (6/SHT3)
3. CONSTRUCT TRENCH DRAIN PER DETAIL (1/SHT4)
4. PROVIDE AND INSTALL FLOGARD PLUS TRENCH DRAIN FILTER FG-TDOF8 PER DETAIL (2/SHT8)
5. CONSTRUCT (BIO-7) PROPRIETARY BIOTREATMENT SYSTEM MWS-L-4-8-V PER DETAIL (1/SHT6)
6. CONSTRUCT CATCH BASIN PER DETAIL (7/SHT3)
7. CONSTRUCT AREA DRAIN PER DETAIL (1/SHT3)
8. CONSTRUCT CATCH BASIN PER DETAIL (5/SHT3)
9. CONSTRUCT SUMP PIT AND PUMP PER DETAIL (3/SHT4)
10. CONSTRUCT 1 ½" Ø PVC SCHEDULE 80 DISCHARGE PIPE.
11. CONSTRUCT SUMP PIT AND PUMP PER DETAIL (2/SHT4)
12. CONSTRUCT STENCIL PER DETAIL (8/SHT3)
13. CONSTRUCT RIBBON GUTTER PER DETAIL (4/SHT3)
14. CONSTRUCT CURB PER DETAIL (2/SHT3)
15. CONSTRUCT VARIABLE CURB PER DETAIL (12/SHT3)
16. CONSTRUCT TURNDOWN SLAB PER DETAIL (13/SHT3)
17. CONSTRUCT PLANTER DRAIN PER DETAIL (3/SHT3)
18. CONSTRUCT PARKWAY DRAIN PER DETAIL (11/SHT3)
19. REMOVE EXISTING DRIVEWAY AND CONSTRUCT NEW SIDEWALK AND CONCRETE CURB AND GUTTER PER GARDEN GROVE STANDARD PLAN B-106 & B113 TYPE C-8.
20. REMOVE EXISTING SIDEWALK AND CURB AND GUTTER AND CONSTRUCT NEW DRIVEWAY PER CITY OF GARDEN GROVE STANDARD PLAN B-120.
21. SAWCUT & JOIN.
22. REMOVE EXISTING 6' BLOCK WALL FROM (A) TO (B) AND CONSTRUCT NEW 25' ACCESS TO ALLEY.
23. CONSTRUCT BLOCK WALL FROM (C) TO (D) TO MATCH THE EXISITING.
24. CONSTRUCT NEW TREE WELL PER CITY STANDARD PLAN B-127.

SCALE: 1"=10'

APN: 097-222-03 DATE

CITY OF GARDEN GROVE

PRELIMINARY GRADING AND DRAINAGE PLAN
PRELIMINARY GRADING PLAN
8722 GARDEN GROVE BOULEVARD
GARDEN GROVE, CA

DRAWING NUMBER

SHEET 2 OF 8

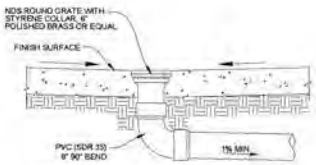
P.A. ARCA ENGINEERING, INC.

DESIGNED BY	DRAWN BY	CHECKED BY
NRA	NRA	PAA

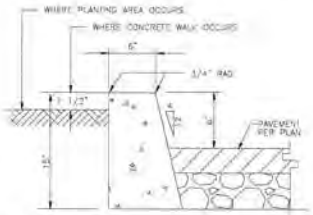
APPROVED BY:
PERFECTO A. ARCA, PE
DATE RCE. NO 28918

REFERENCE PLANS FOR THESE IMPROVEMENTS

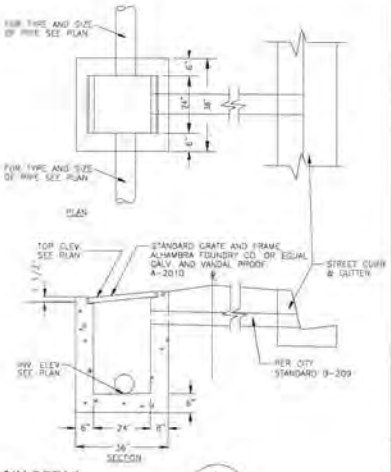
DATE	BY	DESCRIPTION REVISIONS	APP'D



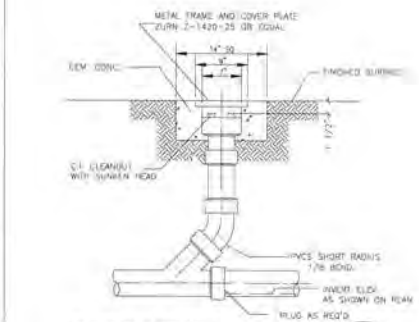
AREA DRAIN DETAIL
NOT TO SCALE
1 SHT 3



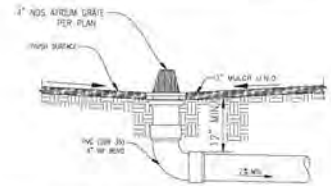
CONCRETE CURB DETAIL
NOT TO SCALE
2 SHT3



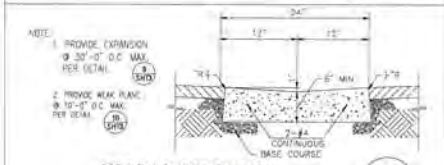
CATCH BASIN DETAIL
NOT TO SCALE
5 SHT3



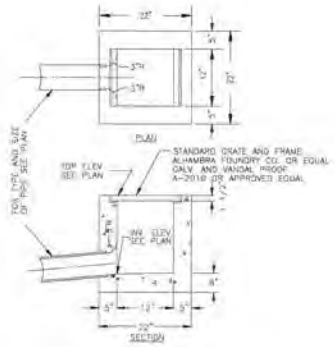
CLEANOUT DETAIL
NOT TO SCALE
6 SHT3



PLANTER DRAIN DETAIL
NOT TO SCALE
3 SHT3

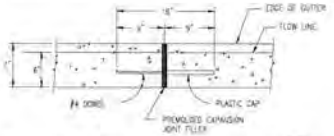


RIBBON GUTTER DETAIL
NOT TO SCALE
4 SHT3

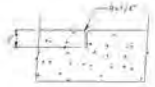


CATCH BASIN DETAIL
NOT TO SCALE
7 SHT 3

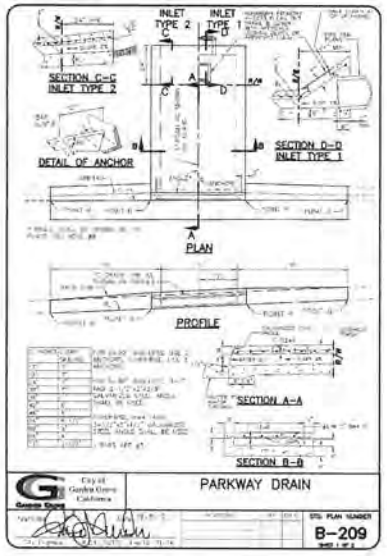
STENCIL DETAIL
NOT TO SCALE
8 SHT3



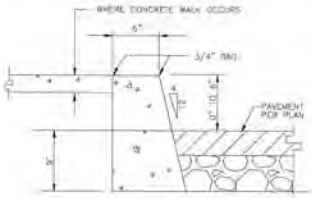
EXPANSION JOINT
NOT TO SCALE
9 SHT3



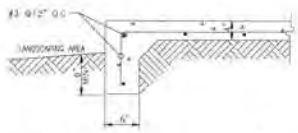
WEAK PLANE JOINT
NOT TO SCALE
10 SHT3



PARKWAY DRAIN DETAIL
NOT TO SCALE
11 SHT3



VARIABLE CURB DETAIL
NOT TO SCALE
12 SHT3



TURNDOWN SLAB DETAIL
NOT TO SCALE
13 SHT3

811
Know what's below.
Call before you dig.

P.A. ARCA

DESIGNED BY	DRAWN BY	CHECKED BY
NRA	NRA	PAA

APPROVED BY:
PREPARED IN ARCA, PE
DATE | R.C.E. NO. 70918

REFERENCE PLANS FOR THESE IMPROVEMENTS

DATE	BY	DESCRIPTION REVISIONS	APP'D

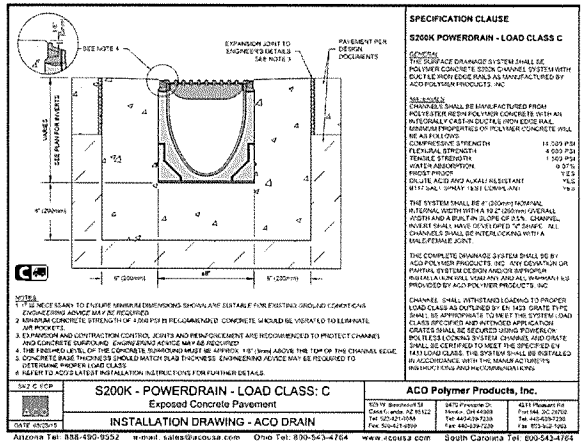
APN: 097-222-03 DATE

CITY OF GARDEN GROVE

DETAILS
PRELIMINARY GRADING PLAN
8722 GARDEN GROVE BOULEVARD
GARDEN GROVE, CA

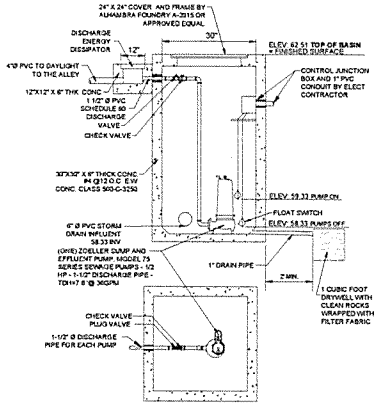
DRAWING NUMBER

SHEET 3 OF 8



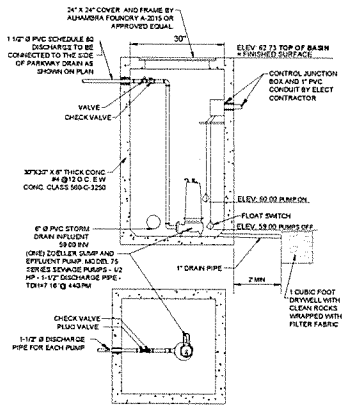
TRENCH DRAIN DETAIL
NOT TO SCALE

1
SHT4



SUMP PIT & PUMP DETAIL
NOT TO SCALE

2
SHT 4



SUMP PIT & PUMP DETAIL
NOT TO SCALE

3
SHT 4

811
Know what's below.
Call before you dig.

P.A. ARCA ENGINEERING, INC.

DESIGNED BY	DRAWN BY	CHECKED BY
NRA	NRA	PAA

APPROVED BY:
PERFECTO A. ARCA, PE
DATE RCE NO. 28918

REFERENCE PLANS FOR THESE IMPROVEMENTS

DATE	BY	DESCRIPTION REVISIONS	APP'D

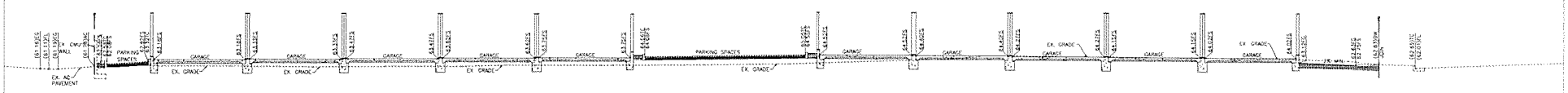
APN: 097-222-03 DATE

CITY OF GARDEN GROVE

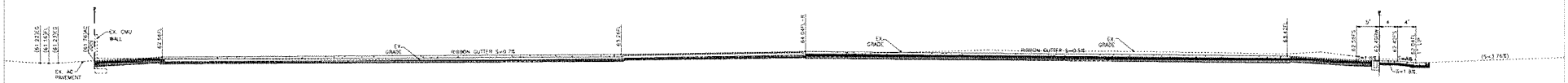
DETAILS
PRELIMINARY GRADING PLAN
8722 GARDEN GROVE BOULEVARD
GARDEN GROVE, CA

DRAWING NUMBER

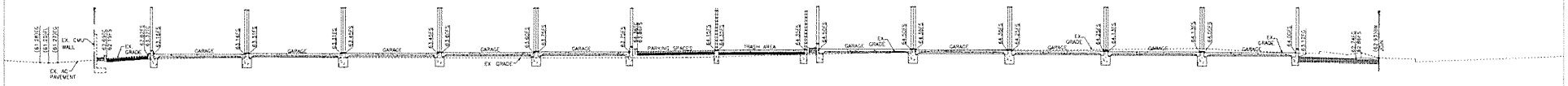
SHEET 4 OF 8



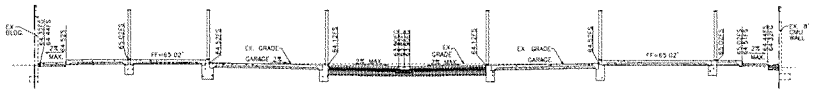
SECTION A-A



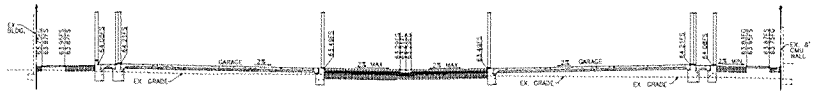
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

811 Know what's below. Call before you dig.

P.A. ARCA ENGINEERING, INC.

DESIGNED BY	DRAWN BY	CHECKED BY
NRA	NRA	PAA

APPROVED BY:

PERFECTO A. ARCA, PE
DATE RCE NO. 20918

REFERENCE PLANS FOR THESE IMPROVEMENTS

DATE	BY	DESCRIPTION REVISIONS	APP'D

APN: 097-222-03 DATE

CITY OF GARDEN GROVE

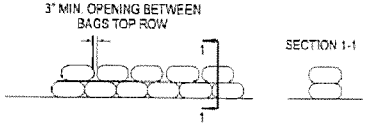
SECTIONS
PRELIMINARY GRADING PLAN
8722 GARDEN GROVE BOULEVARD
GARDEN GROVE, CA

DRAWING NUMBER

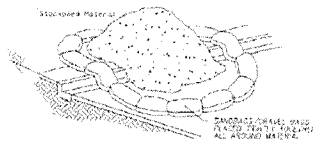
SHEET 5 OF 8

EROSION CONTORL, SEDIMENT CONTROL AND WATER QAULITY NOTES:

1. IN CASE OF EMERGENCY, CALL _____ AT _____
2. A STAND-BY CREW FOR EMERGENCY WORK SHALL BE AVAILABLE AT ALL TIMES. NECESSARY MATERIALS SHALL BE AVAILABLE ON-SITE AND STOCKPILED AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF EMERGENCY DEVICES WHEN RAIN IS IMMINENT.
3. THE CIVIL ENGINEER OR OTHER RESPONSIBLE INDIVIDUAL SHALL SUBMIT PLANS FOR REVIEW BY THE CITY ENGINEER DETAILING THE PLACING OF EROSION CONTROL FACILITIES TO PROTECT AREAS SUBJECT TO STORM DAMAGE. ALL DEVICES MUST BE IN PLACE AND WORKING AT ALL TIMES. FAILURE TO PROVIDE THESE DEVICES WILL BE CAUSED TO REVOKE PERMITS OR APPROVALS BY THE CITY ENGINEER AND/OR BUILDING OFFICIAL.
4. DEVICES SHALL NOT BE MOVED OR MODIFIED WITHOUT THE APPROVAL OF THE CITY INSPECTOR.
5. EXCEPT AS OTHERWISE APPROVED BY THE CITY INSPECTOR, REMOVABLE PROTECTIVE DEVICES SHOWN SHALL BE IN PLACE THAT THE END OF EACH WORKING DAY OR ON WEEKENDS WHEN THE 5 DAY RAIN PROBABILITY FORECAST EXCEEDS 40%
6. THE PLACEMENT OF ADDITIONAL DEVICES TO REDUCE EROSION DAMAGE WITHIN THE SITE IS LEFT TO THE DISCRETION OF THE FIELD ENGINEER
7. DESILTING BASINS MAY NOT BE REMOVED OR MADE INOPERABLE WITHOUT PRIOR APPROVAL OF THE CITY INSPECTOR
8. EROSION CONTROL DEVICES SHALL BE MODIFIED AS NEEDED AS THE PROJECT PROGRESSES, AND PLANS OF THESE CHANGES SUBMITTED FOR APPROVAL AS REQUIRED
9. INSURE THAT ALL EXISTING DRAINAGE COURSES AND CULVERTS ARE MAINTAINED IN WORKING CONDITION AND FREE OF SILT AND DEBRIS.
10. SEDIMENT FROM AREAS DISTURBED BY CONSTRUCTION SHALL BE RETAINED ON SITE USING STRUCTURAL CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE
11. ALL LOOSE SOIL AND DEBRIS WHICH MAY CREATE A POTENTIAL HAZARD TO OFFSITE PROPERTY SHALL BE REMOVED FROM THE SITE AS DIRECTED BY THE INSPECTOR
12. AFTER A RAINSTORM, ALL SILT AND DEBRIS SHALL BE REMOVED FROM CHECK BERMS AND DESILTING BASINS AND BASINS PUMPED DRY.
13. STOCKPILES OF SOIL SHALL BE PROPERLY CONTAINED TO MINIMIZE SEDIMENT TRANSPORT FROM THE SITE TO THE STREETS, DRAINAGE FACILITIES AND ADJACENT PROPERTIES VIA RUNOFF, VEHICLE TRACKING, OR WIND
14. APPROPRIATE BMP FOR CONSTRUCTION-RELATED MATERIALS, WASTES, SPILLS OR RESIDUES SHALL BE IMPLEMENTED TO MINIMIZE TRANSPORT FROM SITE TO STREETS, DRAINAGE FACILITIES, OR ADJOINING PROPERTY BE WIND OR RUNOFF
15. RUNOFF FROM EQUIPMENT AND VEHICLE WASHING SHALL BE CONTAINED AT CONSTRUCTION SITES UNLESS TREATED TO REMOVE SEDIMENT AND OTHER POLLUTANTS
16. ALL CONSTRUCTION CONTRACTOR AND SUBCONTRACTOR PERSONNEL ARE TO BE MADE AWARE OF THE REQUIRED BEST MANAGEMENT PRACTICES AND GOOD HOUSEKEEPING MEASURES FOR THE PROJECT SITE AND ANY ASSOCIATED CONSTRUCTION STAGING AREAS.
17. AT THE END OF EACH DAY OF CONSTRUCTION ACTIVITY ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND PROPERLY DISPOSED IN TRASH OR RECYCLE BINS.
18. FILL SLOPES AT THE SITE PERIMETER MUST DRAIN AWAY FROM THE TOP OF SLOPE AT THE CONCLUSION OF EACH WORKING DAY
19. A GUARD SHALL BE POSTED ON THE SITE WHENEVER THE DEPTH OF WATER IN ANY DEVICE EXCEEDS TWO (2) FEET
20. CONSTRUCTION SITES SHALL BE MAINTAINED IN SUCH A CONDITION THAT AN ANTICIPATED STORM DOES NOT CARRY WASTES OR POLLUTANTS OFF THE SITE. DISCHARGES OF THIS MATERIAL OTHER THAN STORMWATER ARE ALLOWED ONLY WHEN NECESSARY FOR PERFORMANCE AND COMPLETION OF CONSTRUCTION PRACTICES AND WHERE THEY DO NOT CAUSE OR CONTRIBUTE TO A VOLATION OF ANY WATER QUALITY STANDARD; CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION OR NUISANCE, OR CONTAIN A HAZARDOUS SUBSTANCE IN A QUANTITY REPORTABLE UNDER FEDERAL REGULATIONS 40 CFR PARTS 117 AND 302. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SOLID OR LIQUID CHEMICAL SPILLS, WASTES FROM PAINTS, STAINS, SEALANTS, GLUES, LIME, PESTICIDES, HERBICIDES, WOOD PRESERVATIVES AND SOLVENTS, ASBESTOS FIBERS, PAINT FLAKES OR STUCCO FRAGMENTS; FUELS, OILS, LUBRICANTS, AND HYDRAULIC, RADIATOR OR BATTERY FLUIDS; CONCRETE, DETERGENT OR FLOATABLE WASTES; WASTES FROM ANY ENGINE/EQUIPMENT STEAM CLEANING OR CHEMICAL DEGREASING; AND SUPERCHLORINATED POTABLE WATER LINE FLUSHING
21. DURING CONSTRUCTION, DISPOSAL OF SUCH MATERIALS SHOULD OCCUR IN A SPECIFIED AND CONTROLLED TEMPORARY AREA ON-SITE PHYSICALLY SEPARATED FROM POTENTIAL STORMWATER RUNOFF, WITH ULTIMATE DISPOSAL IN ACCORDANCE WITH LOCAL STATE AND FEDERAL REQUIREMENTS
22. DEWATERING OF CONTAMINATED GROUNDWATER, OR DISCHARGING CONTAMINATED SOILS VIA SURFACE EROSION IS PROHIBITED. DEWATERING OF NON-CONTAMINATED GROUNDWATER REQUIRES A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FROM THE RESPECTIVE STATE REGIONAL WATER QUALITY CONTROL BOARD
23. TAKE NECESSARY PRECAUTION TO INSURE THAT ADJACENT PROPERTY NOT SUFFER DAMAGE DUE TO DEBRIS, MUD, OR INUNDATION CAUSED BY GRADING ACTIVITIES WITHIN PERMITTED AREA
24. PLACE EROSION PROTECTION AROUND ALL OUTLETS OF DOWN DRAINS THAT ARE NOT FULLY CONNECTED TO THE ULTIMATE DRAINAGE DEVICES
25. PLACE EROSION PROTECTION AROUND ALL ULTIMATE INLETS WHILE THE POSSIBILITY OF SILTATION EXISTS PRIOR TO ULTIMATE SLOPE PLANTING BECOMING EFFECTIVE.
26. RESTORE ALL VEGETATION AND PLANTING ON THE EXISTING SLOPE TO ORIGINAL CONDITION



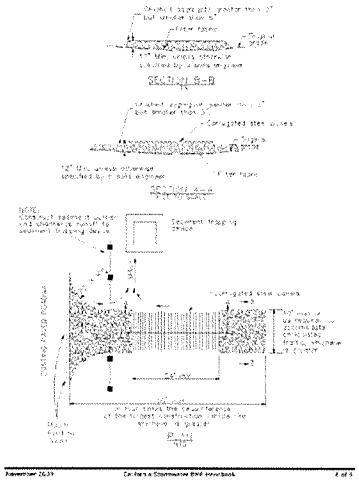
TYPICAL GRAVEL BAG DETAIL — NOT TO SCALE — 1 SHT-4



Notes
1. Dirt and other construction debris material picked to the street or an other impervious surfaces must be contained with sandbags or other measures to prevent transport to the storm drain system.
2. Any construction material stored or stockpiled on-site shall be protected from being transported by the force of wind or water.

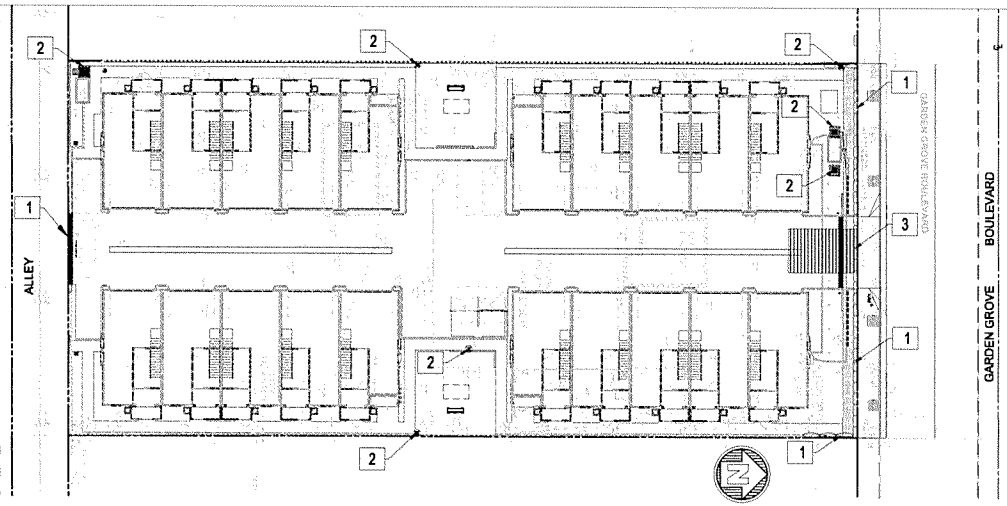
MATERIAL STORAGE DETAIL — NOT TO SCALE — 2 SHT-4

Stabilized Construction Entrance/Exit TC-1



November 2639 — California Stormwater BMP Handbook, Construction, www.cabmp.org — 4 of 5

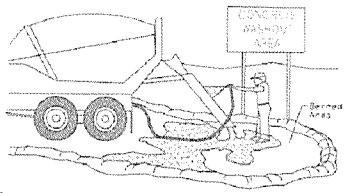
STABILIZED CONSTRUCTION ENTRANCE/EXIT — NOT TO SCALE — 3 SHT-4



EROSION CONTROL CONSTRUCTION NOTES

1. PROVIDE AND INSTALL GRAVEL BAGS ALONG PROPERTY LINES AND WHERE REQUIRED PER DETAIL 1 SHT-4
2. CONSTRUCT CHECK DAM AT PROPOSED CATCH BASINS AS SHOWN PER DETAIL 1 SHT-4
3. PROVIDE AND INSTALL STABILIZED CONSTRCUTION ENTRANCE/EXIT PER DETAIL 3 SHT-4

20 10 0 20 40 60
SCALE: 1" = 20'



Notes:
1. Excess and waste concrete shall not be washed into the street or into a drainage system. For washout of concrete and mortar products, a designated containment facility of sufficient capacity to retain liquid and solid waste shall be provided on site.
2. Slurry from concrete and asphalt saw cutting shall be vacuumed or contained, dried, picked up and disposed of properly.

CONCRETE WASTE MANAGMENT — NOT TO SCALE — 4 SHT-4

Know what's below. Call before you dig.

P.A. ARCA ENGINEERING, INC.

DESIGNED BY	DRAWN BY	CHECKED BY
NRA	NRA	PAA

APPROVED BY:
PERFECTO A. ARCA, PE
DATE _____ RCE NO. 29918

REFERENCE PLANS FOR THESE IMPROVEMENTS

DATE	BY	DESCRIPTION REVISIONS	APP'D

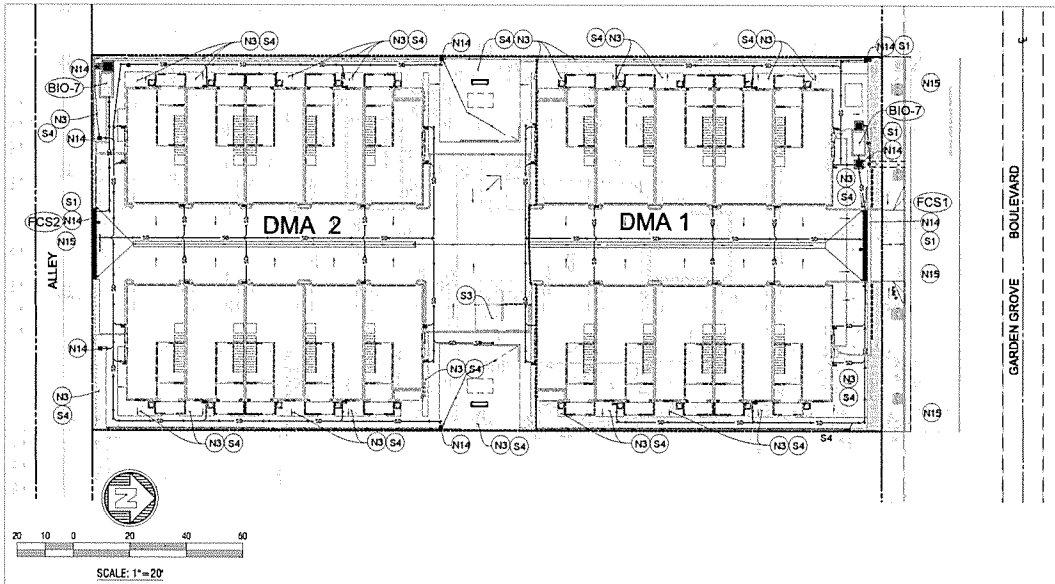
APN: 097-222-03 DATE

CITY OF GARDEN GROVE

EROSION CONTROL PLAN
PRELIMINARY GRADING PLAN
8722 GARDEN GROVE BOULEVARD
GARDEN GROVE, CA

DRAWING NUMBER

SHEET 6 OF 8



20 10 0 20 40 60

SCALE: 1"=20'

KEY :

- IMPERMEABLE AREA
- PERMEABLE AREA
- PERMEABLE AREA
- PERMEABLE AREA
- DMA BOUNDARY
- DRAINAGE FLOW PATH
- PIPE FLOW PIPE — SD — SD

DETERMINATION OF DCV

DMA 1:
TOTAL AREA = 16,251 SF = 0.37 Ac
IMPERVIOUS AREA CREATED = 14,012 SF = 0.32 Ac
IMPERVIOUS FRACTION = 0.86
PERVIOUS AREA = 2,239 SF = .05 Ac

DMA 2:
TOTAL AREA = 20,696 SF = 0.475 Ac
IMPERVIOUS AREA CREATED = 17,602 SF = 0.40 Ac
IMPERVIOUS FRACTION = 0.85
PERVIOUS AREA = 3,094 SF = 0.07 Ac
TOTAL IMPERVIOUS AREA CREATED = 31,614 SF = 0.73 Ac
TOTAL EXISTING IMPERVIOUS AREA = 36,296 SF = 0.83 Ac
IMPERVIOUS AREA CREATED IS > 50%
THEREFORE SIZING APPLIES TO ENTIRE IMPERVIOUS AREA
THE PROJECT PROPOSES FLOW-BASED BIOTREATMENT BMPS
EQUATION:
Q_{DESIGN} (CFS) = C(UNITLESS) X I_{DESIGN} (IN/HR) X A (AC)

WHERE:
C = 0.75 X $IMP_{FRACTION}$ + 0.15
I_{DESIGN} = 0.26 IN/HR
A = AREA

DMA 1:
C = 0.75 X 0.86 + 0.15 = 0.83
Q = 0.83 X 0.26 (IN/HR) X 0.37 (Ac) = 0.080 CFS
MWS-L-4-8 HAS A TREATMENT FLOW RATE OF 0.112 CFS

DMA 2:
C = 0.75 X 0.85 + 0.15 = 0.79
Q = 0.79 X 0.26 (IN/HR) X 0.475 (Ac) = 0.098 CFS
MWS-L-4-8 HAS A TREATMENT FLOW RATE OF 0.112 CFS

NON-STRUCTURAL SOURCE CONTROL BMPS

- N1 EDUCATION OF PROPERTY OWNER, TENANTS, AND OCCUPANTS ON STORMWATER BMPS (NOT SHOWN)
- N3 LANDSCAPE MANAGEMENT BMPS
- N4 BMP MAINTENANCE - NOT SHOWN, APPLIES TO ALL BMPS.
- N5 TITLE 22 CCR COMPLIANCE- NOT APPLIES TO WHOLE SITE
- N11 COMMON AREA LITTER CONTROL - NOT SHOWN APPLY TO WHOLE SITE.
- N12 EMPLOYEE TRAINING - NOT SHOWN APPLIES TO WHOLE SITE.
- N14 COMMON AREA CATCH BASIN INSPECTION
- N15 STREET SWEEPING OF DRIVEWAY, PARKING SPACES AND WALKWAYS.

NON-STRUCTURAL SOURCE CONTROL BMPS

- S1 STORM DRAIN STENCILLING AND SIGNAGE
- S3 TRASH AND WASTE STORAGE
- S4 EFFICIENT IRRIGATION

BIOTREATMENT CONTORL BMPS

- BIO-7 PROPRIETARY BIOTREATMENT

FULL CAPTURE SYSTEM BMP

- FCS# FLOGARD CATCH BASIN INSERT FILTER

DEVELOPMENT CATEGORY

NEW DEVELOPMENT PROJECT THE CREATE 10,000 SQUARE FEET OR MORE OF IMPERVIOUS SURFACE.

LAND USE

RC2 (RESIDENTIAL COMMERCIAL MIXED USE)

ZONING

GGMU-2 GAROEN GROVE MIXED USE ZONE

INFILTRATION FEASIBILITY

INFILTRATION IS NOT FEASIBLE DUE TO SHALLOW GROUNDWATER.

DEVELOPMENT CATEGORY

NEW DEVELOPMENT PROJECT THE CREATE 10,000 SQUARE FEET OR MORE OF IMPERVIOUS SURFACE.

811 Know what's below. Call before you dig.

P.A. ARCA ENGINEERING, INC.

DESIGNED BY: NRA	DRAWN BY: NRA	CHECKED BY: PAA

APPROVED BY:
PERFECTO A. ARCA, PE
DATE | RCE NO 28910

REFERENCE PLANS FOR THESE IMPROVEMENTS

DATE	BY	DESCRIPTION REVISIONS	APP'D

APN: 097-222-03 DATE

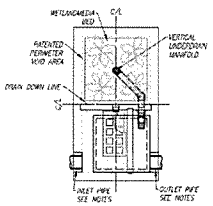
CITY OF GARDEN GROVE
PRELIMINARY WQMP PLAN
PRELIMINARY GRADING PLAN
8722 GARDEN GROVE BOULEVARD
GARDEN GROVE, CA

DRAWING NUMBER

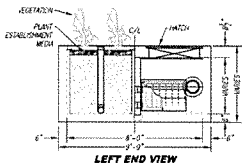
SHEET 7 OF 8

SITE SPECIFIC DATA			
PROJECT NUMBER			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.115	
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			OFFLINE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE			
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION			
SURFACE LOAD	PEDESTRIAN		
FRAME & COVER	36" X 36"	OPEN PLANTER	N/A
NOTES:			

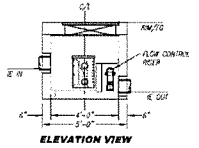
* PRELIMINARY NOT FOR CONSTRUCTION



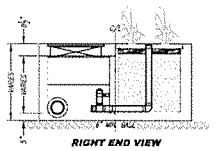
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. PIPES CANNOT PROTRUDE BEYOND FLUSH. INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATER TIGHT PER MANUFACTURERS STANDARD CONNECTION DETAIL.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO EXTEND ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING BIO CLEAN FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITH OUT PROPER ACTIVATION BY A BIO CLEAN REPRESENTATIVE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT BIO CLEAN.

TREATMENT FLOW (CFS)	0.115
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	2.0
WETLAND MEDIA LOADING RATE (GPM/SF)	1.0

PROPRIETARY AND CONFIDENTIAL

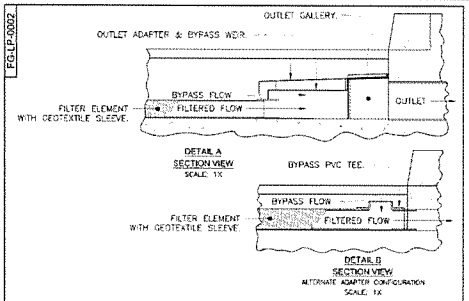
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF CONTECH. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF CONTECH IS PROHIBITED. RECEIPT OR POSSESSION OF THIS DRAWING DOES NOT CONVEY ANY RIGHTS TO REPRODUCE OR USE IT FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS SPECIFICALLY PREPARED.

Bio Clean — A Contech Company

MWS-L-4-8-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

STORMWATER BIOFILTRATION SYSTEM
NOT TO SCALE
1 SHT8

FG-LP-0002



SPECIFIER CHART						
MODEL	FILTER TYPE	TRENCH WIDTH** (CLEAR OPENING)	MINIMUM TRENCH DEPTH (FROM BOTTOM OF GRATE)	SOLIDS STORAGE CAPACITY CUBIC FEET **	FILTERED FLOW CUBIC FEET / SECOND **	TOTAL BYPASS CAPACITY CUBIC FEET /SECOND
FG-TDOF3	PIPE*	3.0	6.5	0.1	0.5	0.1
FG-TDOF4	PIPE*	4.0	6.5	0.2	0.5	0.1
FG-TDOF6	PIPE	6.0	6.5	0.4	0.5	0.2
FG-TDOF8	PIPE	8.0	6.5	0.7	0.5	0.3
FG-TDOF10	PIPE	10.0	6.5	0.9	0.5	0.5
FG-TDOF12	PIPE	12.0	6.5	0.9	1.0	0.6
FG-TDOF18	PIPE	18.0	6.5	1.3	1.5	1.1
FG-TDOF24	PIPE	24.0	6.5	1.8	2.0	1.5
FG-TDOA6	PANEL	6.0	4.5	0.4	0.2	0.2
FG-TDOA8	PANEL	8.0	4.5	0.7	0.2	0.3
FG-TDOA10	PANEL	10.0	4.5	0.8	0.3	0.5
FG-TDOA12	PANEL	12.0	4.5	1.0	0.4	0.6
FG-TDOA18	PANEL	18.0	4.5	1.4	0.8	1.1
FG-TDOA24	PANEL	24.0	4.5	1.8	1.1	1.5

* ALTERNATE ADAPTER CONFIGURATION, SEE DETAIL B
**CAPACITY PER 5-FT SEGMENT USED

FloGard®
Catch Basin Insert Filter
Trench Drain Style

Oldcastle® Stormwater Solutions

FG-LP-0002 | H | 04/27/18 | JPR 3/31/07 | SHEET 2 OF 3

FLOGARD TRENCH DRAIN FILTER INSERT
NOT TO SCALE
2 SHT8

811 Know what's below. Call before you dig.

P.A. ARCA ENGINEERING, INC.

DESIGNED BY	DRAWN BY	CHECKED BY
NRA	NRA	PAA

APPROVED BY:
PERFECTO A. ARCA, PE
DATE RCE NO. 28918

REFERENCE PLANS FOR THESE IMPROVEMENTS

DATE	BY	DESCRIPTION REVISIONS	APP'D

APN: 097-222-03 DATE

CITY OF GARDEN GROVE

WQMP DETAILS
PRELIMINARY GRADING PLAN
8722 GARDEN GROVE BOULEVARD
GARDEN GROVE, CA

DRAWING NUMBER

SHEET 8 OF 8

GARDEN GROVE
MULTI-FAMILY COMMUNITY
LANDSCAPE PLANS

8722 GARDEN GROVE BLVD.
GARDEN GROVE, CA 92844

LANDSCAPE ARCHITECT'S DESIGN CERTIFICATION

I, CHERYL FIELDS, HEREBY DECLARE THAT I AM THE LANDSCAPE ARCHITECT OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE, AS DEFINED IN THE BUSINESS AND PROFESSIONALS CODE, OVER THE DESIGN OF THIS PROJECT AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS IN THE CITY OF GARDEN GROVE IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME AS THE LANDSCAPE ARCHITECT OF WORK OF MY RESPONSIBILITIES FOR PROJECT DESIGN.

SIGNED: _____ DATE: AUGUST 19, 2022

LICENSE NO.: 5326 MY LICENSE EXPIRES ON: 01-31-23
FIRM: CHERYL FIELDS LANDSCAPE ARCHITECT
ADDRESS: 1100 N. HUNTINGTON DR. #A
ARCADIA, CA 91007
TELEPHONE: 626.566.1763

HOLD HARMLESS AND INDEMNIFICATION CLAUSE

CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER, THE CITY/COUNTY OF LOCAL JURISDICTION, AND THE LANDSCAPE ARCHITECT HARMLESS FROM ANY AND ALL LIABILITY REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, THE CITY/COUNTY OF LOCAL JURISDICTION, OR THE LANDSCAPE ARCHITECT.

COPYRIGHT

THE ABOVE DRAWINGS AND SPECIFICATIONS, IDEAS, DESIGNS, ARRANGEMENTS REPRESENTED THEREBY ARE, AND SHALL REMAIN THE PROPERTY OF CHERYL FIELDS LANDSCAPE ARCHITECT, (CFLA), AND NO PART THEREOF SHALL BE COPIED, DISCLOSED TO OTHERS OR USED IN CONNECTION WITH ANY WORK OR PROJECT OTHER THAN THE SPECIFIC FOR WHICH THEY HAVE BEEN PREPARED AND DEVELOPED WITHOUT THE WRITTEN CONSENT OF CFLA. VISUAL CONTACT WITH THE DRAWINGS OR SPECIFICATIONS SHALL CONSTITUTE CONCLUSIVE EVIDENCE OF ACCEPTANCE OF THIS RESTRICTION. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. CONTRACTORS SHALL BE RESPONSIBLE TO VERIFY FIELD CONDITIONS AND REPORT ANY AND ALL DEVIATIONS TO CFLA. SHOP DRAWINGS AS REQUIRED, ARE TO BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION OF PERTINENT COMPONENTS OF THIS PROJECT. ALTERATIONS OF ANY KIND TO THESE DOCUMENTS ARE SPECIFICALLY PROHIBITED WITHOUT THE WRITTEN CONSENT OF CFLA. CFLA IS NOT RESPONSIBLE FOR THE WORK OF CONSULTANTS AND ENGINEERS THAT TAKE PART IN THIS PROJECT.

VICINITY MAP
NTS

PLANS PREPARED FOR:

MICHAEL BARRETT
AVIAN CAPITAL LLC
2963 MAIN STREET
GARDEN GROVE, CA
92840
T: 949.228.8844

PLANS PREPARED BY:

CHERYL FIELDS LANDSCAPE ARCHITECT
1100 N. HUNTINGTON DR. #A
ARCADIA, CA 91007
T: 626.566.1763

PLAN NOTES:

PROJECT TYPE: MULTI-FAMILY COMMUNITY

TOTAL SITE: 36,600 SQ. FT.
TOTAL LANDSCAPE AREA: 8,216 SF INCLUDING AMENITIES/ 14%

AT PROJECT FINAL PROVIDE LANDSCAPE INSTALLATION CERTIFICATE OF COMPLETION (WITH APPLICABLE SECTIONS COMPLETED AND SIGNED).

WATER EFFICIENT LANDSCAPE:

THE IRRIGATION PLANS INCLUDED IN THIS PACKAGE COMPLY WITH THE MODEL WATER EFFICIENT ORDINANCE AND EMPLOY THE CITY'S RECOMMENDED WATER CONSERVATION MEASURES.

WATER SUPPLY: POTABLE

STREET TREE REQUIREMENTS:

FRONTAGE WIDTH: 152 LF
ROW TREES REQ.: (1) PER 30' O.C. 5 PROPOSED
COLUMNAR TREES REQ. W/ 10' OF PL: (1) PER 40' O.C., 4 PROPOSED
SETBACK CANOPY TREES REQ.: (1) PER 50' OF FRONTAGE, 3 REQ'D., 5 PROPOSED

SHEET INDEX

PLANS PREPARED BY:
CHERYL FIELDS & KAY KITE
LANDSCAPE ARCHITECTURE
556 N. ALDA AVE. APT. A
ALDA, CA 91702

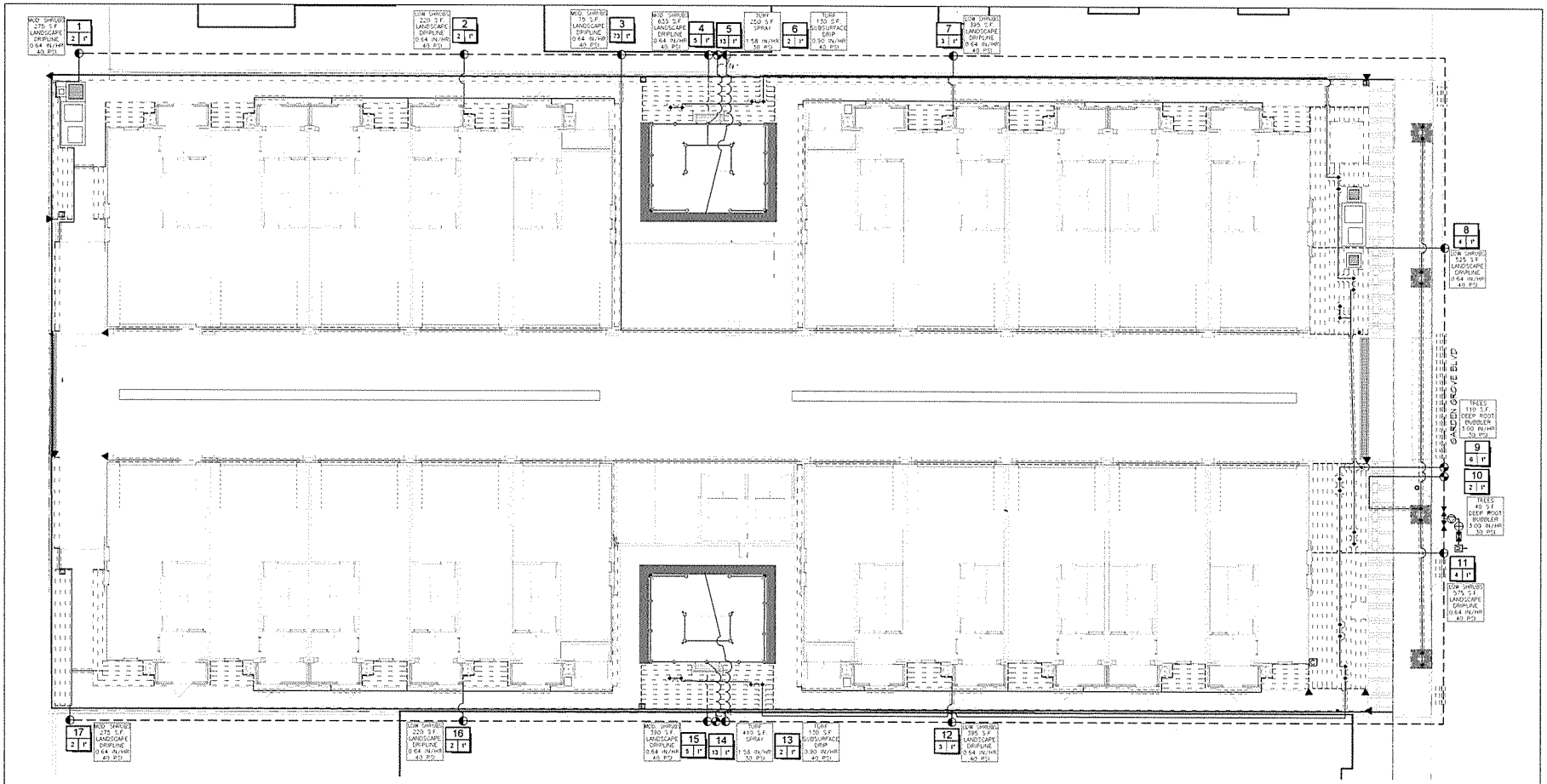
811 Know what's below. Call before you dig.

PLANS PREPARED FOR:
GARDEN GROVE TOWNHOMES
8722 GARDEN GROVE BLVD
GARDEN GROVE, CA 92844
APN NO. 09422206

SHEET TITLE: TITLE SHEET

REVISIONS	
1ST SUBMITTAL	05-23-2022
2ND SUBMITTAL	07-6-2022
3RD SUBMITTAL	07-9-2022
SUBMITTAL	08-9-2022
CHECKED:	CF
DATE:	08-9-2022
SCALE:	PER PLAN @ 24X36

L1.0



EQUIPMENT LEGEND

SYMBOL	MANUFACTURER/MODEL #	SIZE	DETAIL	NOTES
M	HOA IRRIGATION WATER METER – LOCATE ON PROJECT PROPERTY	3/4"	N/A	-
C	RAINBIRD ESP2SLIMME² WITH LT MANAGER AND WR2 WIRELESS RAIN SENSOR IRRIGATION CONTROLLER LOCATED IN A STRONG BOX SB-1852SW WALL MOUNT VANDAL RESISTANT ENCLOSURE	22 STA	'A', L-2.1	(1,2,3)
RP	FEBCO 825YA REDUCED PRESSURE BACKFLOW PREVENTER LOCATED IN A STRONG BOX SBBC-3053 VANDAL RESISTANT ENCLOSURE, BFP TO BE PAINTED GREEN	3/4"	'B', L-2.1	-
⊕	GRISWOLD 2260 NORMALLY OPEN PRESSURE REDUCING MASTER VALVE	1-1/2"	'C', L-2.1	-
FS	RAINBIRD FS1000 FLOW SENSOR	1"	'D', L-2.1	-
⋈	NIBCO T-585 BRONZE BALL VALVE	1-1/2"	'E', L-2.1	-
◉	RAINBIRD PESB SERIES ELECTRIC CONTROL VALVE WITH PRS-D DIAL	1"	'F', L-2.1	-
◐	RAINBIRD XCZ-100-PRB-COM DRIP CONTROL ZONE ASSEMBLY USE LOW FLOW VALVE FOR FLOWS UNDER 5 GPM	1"	'G', L-2.1	-
▼	DRIPLINE MANUAL FLUSH VALVE	LINE SIZE	'H', L-2.1	-
— — —	SCH. 40 PVC IRRIGATION MAINLINE – 24" MIN. COVER	1-1/2"	'I', L-2.1	-
————	SCH. 40PVC NON-PRESSURE LATERAL LINE – 12" MIN. COVER	3/4"	'I', L-2.1	-
- - - -	RAINBIRD XFD-06-18 LANDSCAPE DRIPLINE	N/A	'A-2', L-2.2	-
========	SCH 40 PVC IRRIGATION PIPE / WIRE SLEEVE – 24" MIN. COVER	SEE CHART	'J', L-2.1	-
NOT SHOWN	UF RATED CONTROL WIRE, 12 GA COMMON, 14 GA PILOT	12/14 GA	'K', L-2.1	-
	HUNTER ECO-MAT SUBSURFACE DRIP SYSTEM	N/A	'A & B', L-2.2 '3', L-2.3	-

(1) LANDSCAPE CONTRACTOR TO COORDINATE ELECTRICAL POWER W/ ELECTRICAL CONTRACTOR
(2) MOUNT RAIN SENSOR ON SIDE OF BUILDING EAVE, CLEAR OF ANY OBSTRUCTIONS
(3) CONTRACTOR TO COORDINATE FINAL LOCATION OF CONTROLLER IN THE FIELD WITH THE OWNER
* = UNLESS OTHERWISE NOTED

SPRINKLER LEGEND

SYMBOL	MANUFACTURER/MODEL #	NOZZLE	RAD	PSI	FLOW (GPM) Q	T	H	1/2"	3/4"	1"	PRECIP RATE	DETAIL	NOTES
TURF SPRAY													
◬ ◬	RAINBIRD 1804-SAM-PRS-NE-VAN8	Q/H	8'	30	0.29			0.58			1.58	'L', L-2.1	
◬ ◬	RAINBIRD 1804-SAM-PRS-NE-VAN10	H/TQ	10'	30				0.88		1.34	1.58	'L', L-2.1	
◬	RAINBIRD 1804-SAM-PRS-NE-VAN12	Q	12'	30	0.59						1.58	'L', L-2.1	
TREE BUBBLERS													
◆	RAINBIRD RWS-B-C-1402	F		30							0.50	6	'F', L-2.2

SCH 40 PVC SLEEVING CHART

1 1/4" SLEEVE	1-4 WIRES	1/2" PIPE
1 1/2" SLEEVE	5-10 WIRES	3/4" PIPE
2" SLEEVE	11-20 WIRES	1" PIPE
2 1/2" SLEEVE	21-30 WIRES	1 1/4" PIPE
3" SLEEVE	31-40 WIRES	1 1/2" PIPE
4" SLEEVE	41-60 WIRES	2" PIPE
6" SLEEVE	61-99 WIRES	2 1/2"-3" PIPE
8" SLEEVE	100+ WIRES	4" PIPE
10" SLEEVE	N/A	6" PIPE

DRIPLINE FORMULAS PER DESIGN GUIDES

TOTAL LENGTH OF DRIPLINE = AREA × 12 / O.C. LINE SPACING

TOTAL NUMBER OF EMITTERS = LENGTH OF DRIPLINE × 12 / EMITTER SPACING

TOTAL GPM = NUMBER OF EMITTERS × GPH / 60

STATION # / CONTROLLER | FLOW (GPM) | MAX PSI

HYDROZONE AREA | IRRIGATION TYPE | PRECIP RATE | PRESSURE

IRRIGATION PLANS ARE DIAGRAMMATIC IN NATURE. IRRIGATION MAINLINE AND ALL VALVES TO BE LOCATED IN PLANTER AREAS WHERE POSSIBLE. NO IRRIGATION EQUIPMENT IS TO BE INSTALLED IN STREETS, DRIVE AISLES OR BUILDINGS.

PLANS PREPARED BY
CHERYL FIELDS & KAY KITE
LANDSCAPE ARCHITECTURE
936 ALISAL A #177
ALISAL, CA 93722

811 Know what's below. Call before you dig.

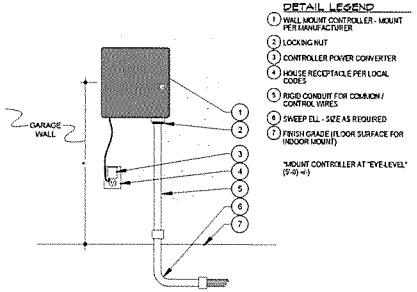
SCALE 1"=10'

SHEET TITLE
IRRIGATION PLAN

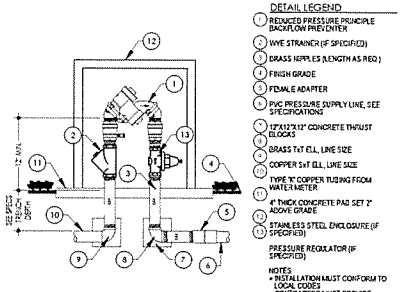
PLANS PREPARED FOR
GARDEN GROVE TOWNHOMES
8722 GARDEN GROVE BLVD
GARDEN GROVE, CA 92844

REVISIONS	
1ST SUBMITTAL	05-22-2020
2ND SUBMITTAL	04-6-2020
3RD SUBMITTAL	01-4-2021
SUBMITTAL	08-4-2022
CHECKED	CF
DATE	08-4-2022
SCALE	PER PLAN # 24436

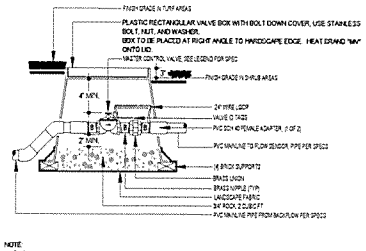
L-2.0



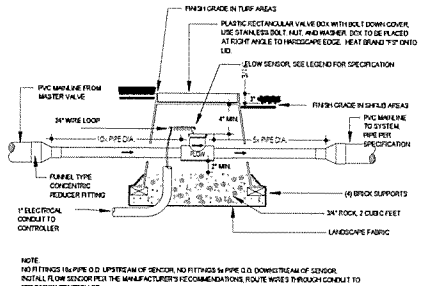
A CONTROLLER
NTS



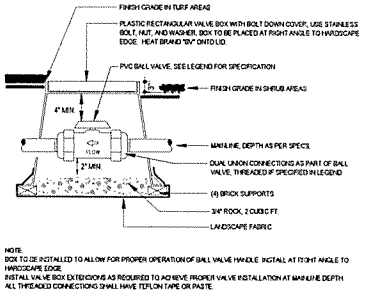
B BACKFLOW DEVICE
NTS



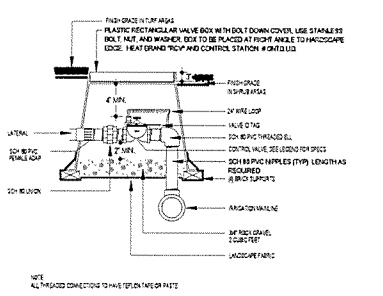
C MASTER VALVE
NTS



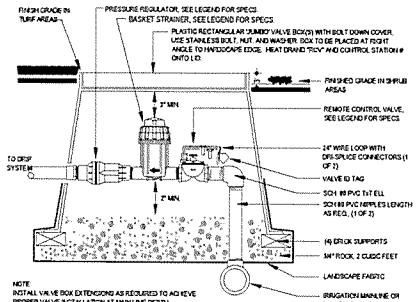
D FLOW SENSOR
NTS



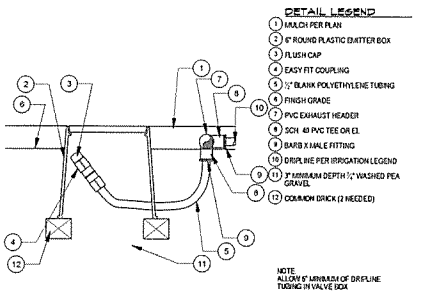
E BALL VALVE, TRU-UNION
NTS



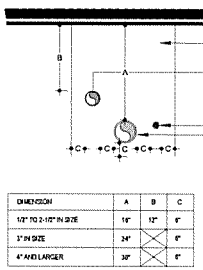
F REMOTE CONTROL VALVE
NTS



G DRIP VALVE ASSEMBLY
NTS

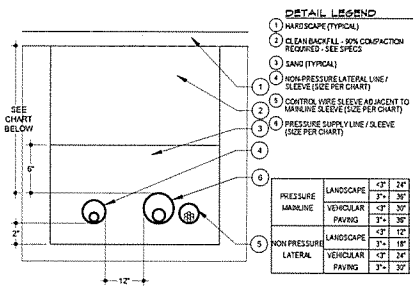


H DRIPLINE FLUSH VALVE
NTS.



DIMENSION	A	B	C
1/2" TO 2-1/2" IN SIZE	18"	12"	6"
3" IN SIZE	24"		6"
4" AND LARGER	30"		6"

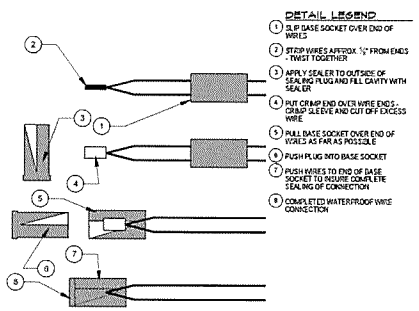
I PIPE INSTALLATION, POTABLE
NTS



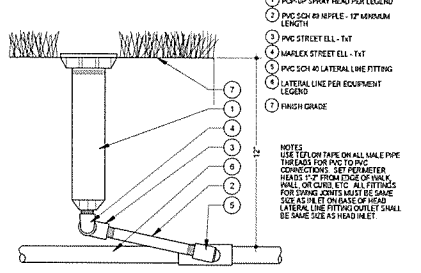
PRESSURE MAINLINE	LANDSCAPE	<3"	24"
		3"+	30"
	VEHICULAR PAVING	<3"	30"
		3"+	36"
NON PRESSURE LATERAL	LANDSCAPE	<3"	12"
		3"+	18"
	VEHICULAR PAVING	<3"	24"
		3"+	30"

NOTES:
SIZE ALL SLEEVES PER SLEEVING CHART ON PLANS. EXTEND SLEEVES 12" BEYOND EDGE OF HARDSCAPE ON BOTH ENDS. REQUIRED WATER SLEEVES TO BE A MINIMUM 42"-43" DEEP (OR PER WATER DISTRICT STANDARDS) WHERE APPLICABLE.

J SLEEVING
NTS



K WIRE CONNECTIONS
NTS.



L TURF SPRAY HEAD
NTS.

PLANS PREPARED BY:
CHERYL FIELDS + KAY KITE
LANDSCAPE ARCHITECTURE
926 N. ALISAL AVE., APT. A
ALISAL, CA 93702

811
Know what's below.
Call before you dig.

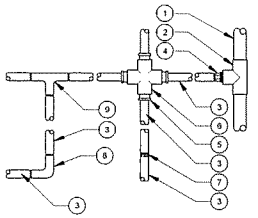
SCALE 1"=1'-0"

PLANS PREPARED FOR:
GARDEN GROVE TOWNHOMES
8722 GARDEN GROVE BLVD
GARDEN GROVE, CA 92844
APN: 079-252-10

SHEET TITLE
DETAILS & NOTES

REVISIONS	
1ST SUBMITTAL	05-22-2020
2ND SUBMITTAL	09-16-2020
3RD SUBMITTAL	01-14-2021
SUBMITTAL	08-14-2022
CHECKED	CF
DATE	08-14-2022
SCALE	PER PLAN @ 24X36

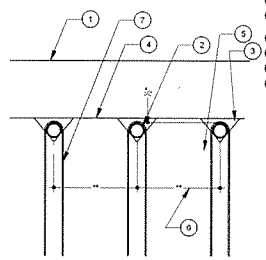
L-2.1



DETAIL LEGEND
1. PVC PIPE (PER LEGEND)
2. SCH 40 PVC TEE
3. DRIPLINE TUBING PER LEGEND
4. SCH 40 PVC MALE ADAPTER
5. COMPRESSION ADAPTER FITTING
6. SCH 40 PVC CROSS
7. COMPRESSION COUPLING
8. COMPRESSION ELBOW FITTING
9. COMPRESSION TEE FITTING

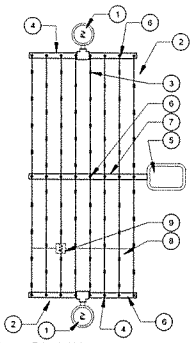
NOTES
ALL PERIMETER LATERALS ARE TO BE 2" TO 4" FROM THE EDGE OF PLANTER AREA. CONTRACTOR TO SIZE PVC SUPPLY MANIFOLD TO COMPENSATE FOR FLUSH VALVE FLOWS. THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE SHALL NOT EXCEED THE MAXIMUM RUN LENGTH

A DRIPLINE FITTINGS
NTS



DETAIL LEGEND
1. TOP OF MULCH
2. DRIPLINE PER LEGEND
3. DRIPLINE BURIAL TRECH BACKFILL OVER DRIPLINE
4. FINISHED GRADE
5. SUB GRADE OF NATIVE SOIL
6. (*) LATERAL DRIPLINE SPACE@INCHES
7. TIE DOWN STAKE AT 3' O.C

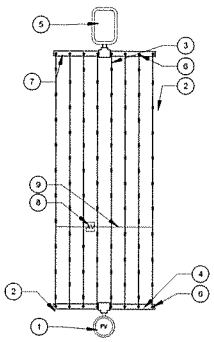
B DRIPLINE BURIAL
NTS



DETAIL LEGEND
1. FLUSH VALVE (PER LEGEND) PLUMBED TO TUBING
2. AREA PERIMETER
3. LANDSCAPE DRIP TUBING (PER LEGEND)
4. PVC FLUSH MANIFOLD
5. REMOTE CONTROL VALVE WITH FILTER AND PRESSURE REGULATOR (SEE DETAIL)
6. MANIFOLD-TO-ELBOW CONNECTION
7. PVC SUPPLY MANIFOLD
8. AIR/VACUUM RELIEF VALVE (PER LEGEND) PLUMBED TO BLANK TUBING AT EACH HIGH POINT
9. AIR RELIEF BLANK TUBING LATERAL ON MOUNDS OR BERMS

NOTES
ALL PERIMETER LATERALS ARE TO BE 2" TO 4" FROM THE EDGE OF PLANTER AREA

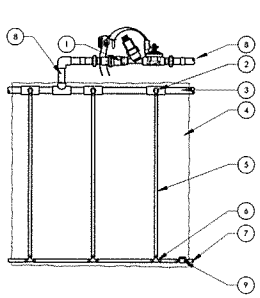
C DRIPLINE CENTER CONNECTION
NTS



DETAIL LEGEND
1. FLUSH VALVE (PER LEGEND) PLUMBED TO TUBING
2. AREA PERIMETER
3. LANDSCAPE DRIP TUBING (PER LEGEND)
4. PVC FLUSH MANIFOLD
5. REMOTE CONTROL VALVE WITH FILTER AND PRESSURE REGULATOR (SEE DETAIL)
6. MANIFOLD-TO-ELBOW CONNECTION
7. PVC SUPPLY MANIFOLD
8. AIR/VACUUM RELIEF VALVE (PER LEGEND) PLUMBED TO BLANK TUBING AT EACH HIGH POINT
9. AIR RELIEF BLANK TUBING LATERAL ON MOUNDS OR BERMS

NOTES
ALL PERIMETER LATERALS ARE TO BE 2" TO 4" FROM THE EDGE OF PLANTER AREA

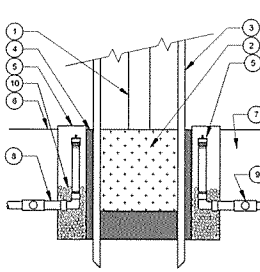
D DRIPLINE END CONNECTION
NTS



DETAIL LEGEND
1. DRIP CONTROL ZONE KIT PER PLAN
2. PIOTUBING CONNECTION
3. ¾" PVC SUPPLY HEADER
4. ECO-MAT SUBSURFACE IRRIGATION MAT
5. DRIP LINE TUBING WRAPPED IN POLYPROPYLENE FLEECE
6. PLD-TEE 17mm (BARB x BARB x BARB) FITTING
7. 17mm PLD BLANK TUBING DISCHARGE HEADER
8. LATERAL LINE PER PLAN
9. PLD-EV BALL VALVE

NOTES
ALL PERIMETER LATERALS ARE TO BE 2" TO 4" FROM THE EDGE OF PLANTER AREA

E ECO-MAT INSTALLATION
NTS



DETAIL LEGEND
1. TREE TRUNK
2. TREE ROOTBALL
3. TREE STAKES PER PLANTING PLAN
4. PLANT BACKFILL PER PLANTING PLAN
5. BUBBLER ASSEMBLY PER IRRIGATION LEGEND
6. FINISH GRADE
7. UNDISTURBED NATIVE SOIL
8. ¾" SCH 40 PVC LATERAL LINE
9. SCH 40 PVC TEE AROUND PLANTING PIT
10. PEA GRAVEL IN BASE OF ASSEMBLY

* INSTALL ASSEMBLY WITH CAP FLUSH TO GRADE

F TREE BUBBLERS
NTS

1. GENERAL – ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND THESE PLANS. THE CONTRACTOR SHALL APPLY FOR ALL PERMITS AND PAY FOR SAME.
2. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS SHOWN ON THE PLANS AT THE SITE PRIOR TO COMMENCEMENT OF ANY WORK UNDER THIS CONTRACT.
3. THE CONTRACTOR SHALL CARRY ALL WORKERS COMPENSATION, PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE, AS REQUIRED BY THE CITY / OWNER.
4. SCOPE OF WORK – UNLESS OTHERWISE SPECIFIED, THE CONSTRUCTION OF IRRIGATION SYSTEMS SHALL INCLUDE THE FURNISHING, INSTALLATION AND TESTING OF ALL MAINLINE, POINT OF CONNECTION, LATERAL LINES, RISERS, AND FITTINGS, AND THE FURNISHING AND INSTALLATION OF SPRINKLER HEADS, CONTROLLERS, ELECTRIC CONTROL VALVES, EXCAVATION AND BACKFILL; AND ALL OTHER WORK IN ACCORDANCE WITH THESE PLANS, DETAILS, AND NOTES. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, EQUIPMENT PROPERTY, TRANSPORTATION, AND PERFORM ALL OPERATIONS REQUIRED FOR A COMPLETE AND OPERABLE IRRIGATION SYSTEM AS INDICATED ON, OR REASONABLY IMPLIED, BY THE DRAWINGS, DETAILS, AND NOTES. INCLUDED AS A PART OF THE IRRIGATION WORK, BUT NOT LIMITED BY IT, ARE THE FOLLOWING:
5. INSTALL COMPLETE OPERABLE INDEPENDENT IRRIGATION SYSTEMS PER THE PLANS, DETAILS, NOTES, AND LEGENDS.
6. ALL IRRIGATION WORK SHALL BE GUARANTEED BY THE CONTRACTOR AS TO MATERIAL AND WORKMANSHIP, INCLUDING SETTLING OF BACKFILLED TRENCHES BELOW GRADE, FOR A PERIOD OF ONE (1) YEAR FOLLOWING THE DATE OF FINAL ACCEPTANCE OF THE WORK.
7. THE LANDSCAPE ARCHITECT SHALL DECIDE ALL QUESTIONS RELATING TO THE INTERPRETATION OF THE DRAWINGS AND THE ACCEPTABLE FULFILLMENT OF THE CONTRACT.
8. PIPING AND VALVES SHOWN ON THE PLANS ARE DIAGRAMMATIC. CONTRACTOR SHALL ROUTE PIPING TO AVOID CONFLICT WITH STATIONARY ELEMENTS AND IN SUCH A MANNER AS TO CONFORM WITH THE VARIOUS DETAILS AND DESIGN INTENT OF THESE PLANS.
9. THE CONTRACTOR SHALL AT ALL TIMES PROTECT HIS WORK FROM DAMAGE AND THEFT AND REPLACE ALL DAMAGED OR STOLEN PARTS AT HIS EXPENSE UNTIL THE WORK IS ACCEPTED IN WRITING BY THE OWNER / CITY.
10. EXTREME CARE SHALL BE EXERCISED IN EXCAVATING AND WORKING NEAR EXISTING UTILITIES. CONTRACTOR SHALL VERIFY THE LOCATION AND CONDITION OF ALL UTILITIES AND BE RESPONSIBLE FOR ANY DAMAGE.
11. THE CONTRACTOR SHALL KEEP THE PREMISES CLEAN AND FREE OF EXCESS EQUIPMENT, MATERIALS, AND RUBBISH INCIDENTAL TO HIS WORK.
12. IRRIGATION DESIGN IS BASED ON 60 PSI AVAILABLE WATER PRESSURE AT 13 GPM. CONTRACTOR SHALL VERIFY PRESSURE PRIOR TO CONSTRUCTION, SHOULD A DISCREPANCY EXIST, NOTIFY THE LANDSCAPE ARCHITECT PRIOR TO START OF WORK.
13. CONTRACTOR SHALL MAKE POINT(S) OF CONNECTION AS NOTED ON THE PLANS.
14. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTING 120 VOLT SERVICE TO THE CONTROLLER; ELECTRICAL POWER WILL BE PROVIDED BY OWNER AT THE CONTROLLER LOCATION SHOWN ON THE PLANS.
15. ALL WIRES SHALL BE SOLID COPPER, PLASTIC INSULATED, U.F. DIRECT BURIAL WIRE. ALL COMMON WIRE SHALL BE AWG #12 WHITE. ALL CONTROL WIRE SHALL BE AWG #14 RED OR BLACK. CONTROLLERS SHALL HAVE SEPARATE COLOR CODED COMMON WIRES WHEN TWO OR MORE CONTROLLERS ARE ON PROJECT.
16. ALL CONTROL WIRES AND IRRIGATION PIPE LINES THAT RUN UNDER PAVING SHALL BE ENCASED IN SCH 40 PVC PIPE SLEEVES. SLEEVES SHALL BE SIZED ACCORDING TO THE CHART ON THE PLANS
17. FINAL LOCATION OF CONTROL VALVES SHALL BE APPROVED IN THE FIELD BY THE LANDSCAPE ARCHITECT OR THE OWNER'S AUTHORIZED REPRESENTATIVE.
18. CONTRACTOR SHALL HEAT BRAND VALVE NUMBERS ON OUTSIDE OF ALL VALVE BOX LIDS.
19. ALL BRASS OR GALVANIZED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE OR LED-LUBE JOINT COMPOUND (OF APPROVED EQUAL). ALL PVC THREADED CONNECTIONS SHALL BE COATED WITH TEFLON TAPE.
20. ALL PVC SOLVENT-WELD CONNECTIONS SHALL BE MADE WITH SOLVENT-WELD MATERIALS AS RECOMMENDED BY THE PIPE MANUFACTURER. SOLVENT-WELD PRIMER SHALL BE APPLIED AT ALL CONNECTIONS.
21. LOW HEAD DRAINAGE WILL NOT BE ALLOWED. CONTRACTOR TO DETERMINE IN THE FIELD WHICH HEADS DRAIN AFTER THE VALVE IS SHUT OFF. CONTRACTOR SHALL PROVIDE AND INSTALL ADDITIONAL IN LINE CHECK VALVES AS NEEDED AT NO ADDITIONAL COST TO THE OWNER.
22. ALL PRESSURE SUPPLY LINES AND CONTROL WIRES TO HAVE 18"-24" MINIMUM COVER (PER DETAIL). LATERAL LINES TO HAVE 12" MINIMUM COVER.
23. THE RADIUS OF EACH HEAD IS TO BE ADJUSTED TO THAT HEAD-TO-HEAD COVERAGE IS MAINTAINED, BUT OVERSPRAY ON BUILDINGS, WALKS, AND WALLS, ETC. IS MINIMIZED.
24. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR IS TO TURN OVER TO THE OWNER THE FOLLOWING:
25. A REPRODUCIBLE SET OF "AS-BUILT" DRAWINGS AND CONTROLLER CHART.
    25.1. 2 KEYS FOR EACH CONTROLLER AND CONTROLLER ENCLOSURE (AS APPLICABLE).
    25.2. 2 QUICK COUPLER KEYS AND MATCHING HOSE SWIVELS.
    25.3. 4 OF EACH SPRINKLER HEAD SPECIFIED
26. AS-BUILT DRAWINGS – THE CONTRACTOR SHALL PROVIDE AND KEEP UP TO DATE A COMPLETE "AS-BUILT" RECORD SET OF PRINTS WHICH SHALL BE CORRECTED DAILY AND SHOW EVERY CHANGE FROM THE ORIGINAL DRAWINGS. PRIOR TO FINAL INSPECTION, THE CONTRACTOR SHALL TRANSCRIBE ALL INFORMATION FROM THE "AS-BUILT" SET TO A REPRODUCIBLE MYLAR, PROCURED FROM THE OWNER. ALL WORK SHALL BE NEAT AND LEGIBLE, LOCATING THE FOLLOWING ITEMS FROM PERMANENT POINTS OF REFERENCE: SHUT-OFF VALVES, MAINLINE AND CONTROL WIRE ROUTING, POC, BACKFLOW DEVICE, CONTROL VALVES, CONTROLLER, QUICK COUPLERS, AND OTHER PERTINENT UNDERGROUND ITEMS.
27. CONTROLLER CHART – UPON APPROVAL OF THE FINAL "AS-BUILT" DRAWINGS, PROVIDE ONE CHART FOR EACH CONTROLLER INSTALLED AS FOLLOWS:
28. THE CHART IS TO BE A REDUCED COPY OF THE APPROVED "AS-BUILT" SYSTEM (A BLACK-LINE PRINT REDUCED TO THE MAXIMUM SIZE THE CONTROLLER DOOR WILL ALLOW, COLORED WITH A DIFFERENT COLOR FOR EACH VALVE STATION).
29. WHEN COMPLETED AND APPROVED, THE CHART SHALL BE HERMETICALLY SEALED BETWEEN TWO (2) PIECES OF 20 MIL CLEAR PLASTIC AND MOUNTED ON THE INSIDE OF THE CONTROLLER DOOR USING VELCRO TAPE OR EQUAL.
30. FINAL LOCATION OF STREET TREE IRRIGATION TO BE DETERMINED BY ROAD INSPECTOR

21st Street Apartments

Yearly ETO

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ETO
2.34	2.61	3.82	4.62	5.21	5.73	6.21	6	4.77	3.64	2.63	2.07	49.65
0.39	0.42	0.62	0.78	0.84	0.92	1.00	0.97	0.77	0.59	0.42	0.33	

IRRIGATION CONTROLLER SCHEDULE FOR FIRST SIX MONTHS AFTER PLANTING

CONTROLLER

Station	Valve Size	Flow (gpm)	Area (s.f.)	Sprinkler Type	Inst Effcy	Plant Type	Plant Factor	Precip Rate (inches/Hr.)	Water Days	Run Time Min.	Cycles Per Day	July App Water	Yearly App Water
1	1"	2	433	Drip	0.81	Mod Shrubs	0.5	0.64	4	12	2	192	1,511
2	1"	2	375	Drip	0.81	Low Shrubs	0.3	0.64	4	15	1	120	963
3	1"	0.73	110	Drip	0.81	Mod Shrubs	0.5	0.64	4	12	2	70	563
4	1"	5	565	Drip	0.81	Mod Shrubs	0.5	0.64	4	12	2	450	3,653
5	1"	13	250	Spray	0.75	Turf	0.7	1.58	5	10	1	650	5,218
6	1"	2	115	SubDrip	0.81	Turf	0.7	0.9	5	17	1	170	1,355
7	1"	3	370	Drip	0.81	Low Shrubs	0.3	0.64	4	15	1	180	1,445
8	1"	4	340	Drip	0.81	Low Shrubs	0.3	0.64	4	15	1	240	1,927
9	1"	6	80	Bubbler	0.81	Trees	0.3	3	4	3	1	72	578
10	1"	2	40	Bubbler	0.81	Trees	0.3	3	4	3	1	24	193
11	1"	4	390	Drip	0.81	Low Shrubs	0.3	0.64	4	15	1	240	1,927
12	1"	3	395	Drip	0.81	Low Shrubs	0.3	0.64	4	15	1	180	1,445
13	1"	2	115	SubDrip	0.81	Turf	0.7	0.9	5	17	1	170	1,355
14	1"	13	250	Spray	0.75	Turf	0.7	1.58	5	10	1	650	5,218
15	1"	5	520	Drip	0.81	Mod Shrubs	0.5	0.64	4	12	2	468	3,753
16	1"	2	300	Drip	0.81	Low Shrubs	0.3	0.64	4	15	1	108	963
17	1"	2	405	Drip	0.81	Mod Shrubs	0.5	0.64	4	12	2	192	1,541
											Total	4,233	33,969

21st Street Apartments

Yearly ETO

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	ETO
2.34	2.61	3.82	4.62	5.21	5.73	6.21	6	4.77	3.64	2.63	2.07	49.65
0.39	0.42	0.62	0.78	0.84	0.92	1.00	0.97	0.77	0.59	0.42	0.33	

IRRIGATION CONTROLLER SCHEDULE AFTER SIX MONTH ESTABLISHMENT PERIOD

CONTROLLER

Station	Valve Size	Flow (gpm)	Area (s.f.)	Sprinkler Type	Inst Effcy	Plant Type	Plant Factor	Precip Rate (inches/Hr.)	Water Days	Run Time Min.	Cycles Per Day	July App Water	Yearly App Water
1	1"	2	433	Drip	0.81	Mod Shrubs	0.5	0.64	3	12	2	144	1,156
2	1"	2	375	Drip	0.81	Low Shrubs	0.3	0.64	3	15	1	90	722
3	1"	0.73	110	Drip	0.81	Mod Shrubs	0.5	0.64	3	12	2	53	422
4	1"	5	565	Drip	0.81	Mod Shrubs	0.5	0.64	3	12	2	338	2,800
5	1"	13	250	Spray	0.75	Turf	0.7	1.58	5	8	1	325	4,174
6	1"	2	115	SubDrip	0.81	Turf	0.7	0.9	5	14	1	140	1,124
7	1"	3	370	Drip	0.81	Low Shrubs	0.3	0.64	3	15	1	135	1,084
8	1"	4	340	Drip	0.81	Low Shrubs	0.3	0.64	3	15	1	180	1,445
9	1"	6	80	Bubbler	0.81	Trees	0.3	3	3	3	1	54	433
10	1"	2	40	Bubbler	0.81	Trees	0.3	3	3	3	1	18	144
11	1"	4	390	Drip	0.81	Low Shrubs	0.3	0.64	3	15	1	180	1,445
12	1"	3	395	Drip	0.81	Low Shrubs	0.3	0.64	3	15	1	135	1,084
13	1"	2	115	SubDrip	0.81	Turf	0.7	0.9	5	14	1	140	1,124
14	1"	13	250	Spray	0.75	Turf	0.7	1.58	5	8	1	520	4,174
15	1"	5	520	Drip	0.81	Mod Shrubs	0.5	0.64	3	12	2	360	2,800
16	1"	2	300	Drip	0.81	Low Shrubs	0.3	0.64	3	15	1	90	722
17	1"	2	405	Drip	0.81	Mod Shrubs	0.5	0.64	3	12	2	144	1,156
											Total	3,203	25,190

California Water Efficient Landscape Worksheet

Reference Evapotranspiration (ET_o)		47.2	Project Type		Residential		0.55
Hydrozone # / Planting Description	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU)
Regular Landscape Areas							
LowShrubs	0.3	Drip	0.81	0.37	2,330	863	25,254
Moderate Shrubs	0.5	Drip	0.81	0.62	1,545	954	27,909
Trees	0.3	Drip	0.81	0.37	150	56	1,626
Turf	0.7	Drip	0.81	0.86	260	225	6,575
Turf	0.7	overhead	0.75	0.93	820	765	22,397
				Totals	5,105	2862	61,364
						ETWU Total	61,364
					Maximum Allowed Water Allowance (MAWA)		82,166

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	2,862
Total Area	5,105
Average ETAF	0.56

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

PLANS PREPARED BY:
CHERYL FIELDS & KAY KITE
LANDSCAPE ARCHITECTURE
936 N. ACACIA AVE. APT A
FULLERTON, CA 91832

811 Know what's below. Call before you dig.

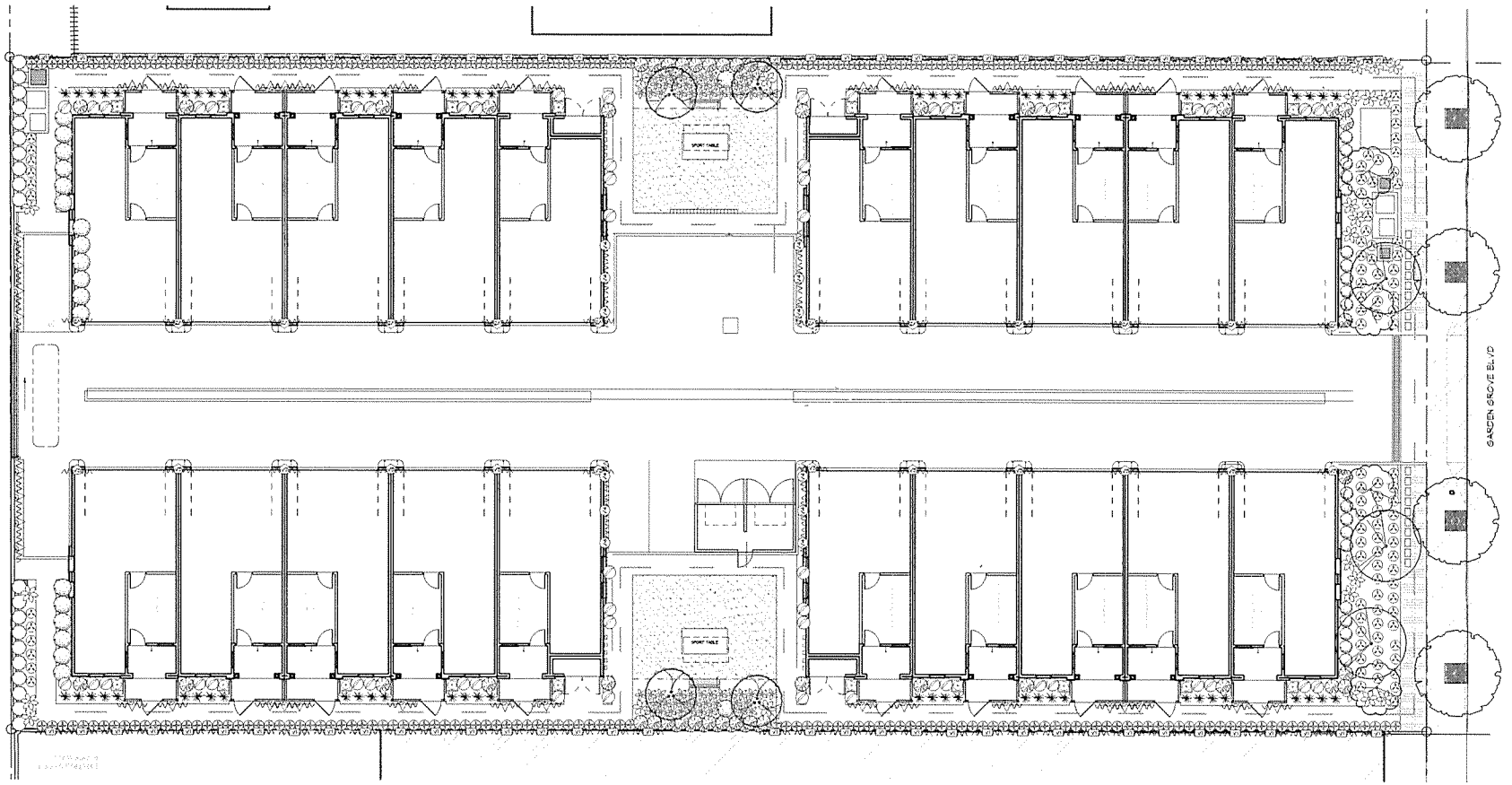
SCALE 1"=10'

SHEET TITLE: DETAILS & NOTES

PLANS PREPARED FOR:
GARDEN GROVE TOWNHOMES
8722 GARDEN GROVE BLVD
GARDEN GROVE, CA 92844
APN: 097-252-25

REVISIONS	
1ST SUBMITTAL	05-22-2020
2ND SUBMITTAL	09-16-2020
3RD SUBMITTAL	01-14-2021
SUBMITTAL	08-14-2022
CHECKED	CF
DATE	08-14-2022
SCALE	PER PLAN @ 24X36

L-2.2



PLANT SCHEDULE

TREES

KEY	BOTANICAL NAME	COMMON NAME	SIZE	SPACG	QTY	REMARKS	H2OUSE	MATURE SIZE
	ACACIA BAILEYANA 'PURPUREA'	PURPLE-LEAF ACACIA	24" BOX	AS SHOWN	4	MULTI-STEM	L	25'H X 25'W
	CUPANIOPSIS ANACARDIOIDES	CARROT WOOD	24" BOX	AS SHOWN	4		M	30'H X 25'W
	CUPRESSUS SEMPERVIRENS 'MONSHEL'	TINY TOWER ITALIAN CYPRESS	15 GAL	AS SHOWN	57	MATCHED SPECIMENS	L	25'H X 3'W
	LOPHOSTEMON CONFERTUS (TRISTANIA)	BRISBANE BOX	36" BOX	AS SHOWN	3	COLUMNAR	M	40'H X 20'W
	RHUS LANCEA	AFRICAN SUMAC	36" BOX	AS SHOWN	4		L	25'H X 25'W

SHRUBS/PERENNIALS

	ACACIA COGNATA 'COUSIN ITT'	LITTLE RIVER WATTLE	5 GAL	AS SHOWN	23	SHADE TOLERANT	L	3'H X 5'W
	ANIGOZANTHOS 'ORANGE CROSS'	ORANGE KANGAROO PAW	1 GAL	AS SHOWN	94		L	2'H X 2'W
	DIETES BICOLOR 'LEMON DROPS'	FORTNIGHT LILY	5 GAL	AS SHOWN	62		L	3'H X 3'W
	NANDINA DOMESTICA 'GULF STREAM'	GULF STREAM HEAVENLY BAMBOO	15 GAL	AS SHOWN	34	SHADE TOLERANT	L	5'H X 3'W
	NASSELLA TENUISSIMA	MEXICAN FEATHER GRASS	5 GAL	AS SHOWN	66		L	2'H X 3'W
	OLEA EUROPAEA 'LITTLE OLLIE'	LITTLE OLLIE DWARF OLIVE	5 GAL	AS SHOWN	40	PRUNE TO MAINTAIN SHAPE	L	5'H X 5'W
	PRUNUS CAROLINIANA	CAROLINA CHERRY	15 GAL	AS SHOWN	20	HEDGE	M	15'H X 5'W
	SANSEVIERIA TRIFASCIATA	SNAKE PLANT	5 GAL	AS SHOWN	258	SHADE	M	3'H X 3'W

VINES

	CALLIANDRA HAEMATOCEPHALA	PINK POWDER PUFF	5 GAL	AS SHOWN	71	ESPALIER	M	8'H X 8'W
	FICUS PUMILA	CREEPING FIG	1 GAL	AS SHOWN	40		M	10'H X 10'W
	ROSA X 'BLAZE OF GLORY'	BLAZE OF GLORY CLIMBING ROSE	15 GAL	AS SHOWN	24		M	9'H X 5'W
	TRACHELOSPERMUM JASMINOIDES	STAR JASMINE	5 GAL	AS SHOWN	12	SHADE TOLERANT	M	4'H X 5'W

GROUNDCOVERS

					SQ. FT.		
GAZANIA COPPER KING	COPPER KING GAZANIA	1 GAL	15" O.C.	464	L	8'H X 12'W
TURF				1070	M	

NOTES:
- HUCOLS IV: REGION 3 - SOUTH COASTAL, CIMIS ETo ZONE 6
- TILL ALL PLANTING BEDS & AMEND PER SOIL MANAGEMENT REPORT
- EXISTING TREES TO REMAIN AS NOTED.
- ALL PLANTING BEDS TO RECEIVE 3" PREMIUM DARK BROWN ORGANIC BARK MULCH, AVAIL. THRU STONEYARD 626.748.5283

MATERIALS & FINISHES SCHEDULE

DESCRIPTION

CONCRETE WALKWAY/PATIO PAVING: POURED-IN-PLACE CONCRETE, COLOR TO BE DAVIS COLORS #8084 LIGHT GREY. TOPCAST #5 FINISH, TROWEL SCORE JOINTS PER PLAN

PARK BENCH: TO BE DUMOR MODEL #505-60PL. METAL MEMBERS TO BE BLACK, WOOD GRAIN RECY. PLASTIC SLATS TO BE ANTIQUE MAHOGANY. AVAIL. THRU COAST RECREATION 714-619-0100

TREE GRATE: TO BE TITLE 24 - 4' SQ.; MATERIAL: GREY IRON, RAW FINISH. INSTALL PER MANUFACTURER'S SPECIFICATIONS, AVAIL. THRU URBAN ACCESSORIES P 877-487-0488

SPORT TABLE BY OTHERS

PLANS PREPARED BY:
CHERYL FIELDS & KAY KITE
LANDSCAPE ARCHITECTURE
936 A BEACH AVENUE
ALISA CA 92702

811 Know what's below Call before you dig

SCALE: 1"=10'

SHEET TITLE: PLANTING PLAN

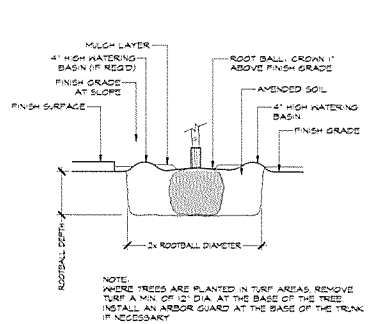
PLANS PREPARED FOR:
GARDEN GROVE TOWNHOMES
8722 GARDEN GROVE BLVD
GARDEN GROVE, CA 92844
APN NO. 047-222-04

REVISIONS	
1ST SUBMITTAL	09-22-2020
2ND SUBMITTAL	04-6-2020
3RD SUBMITTAL	07-14-2021
SUBMITTAL	08-14-2022
CHECKED	CF
DATE	08-14-2022
SCALE	PER PLAN @ 24X36

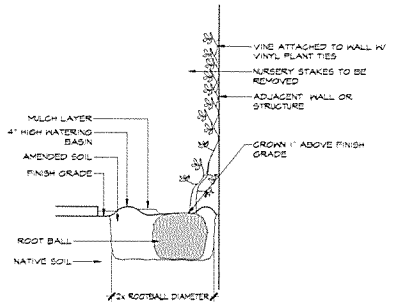
L-3.0

PLANTING NOTES

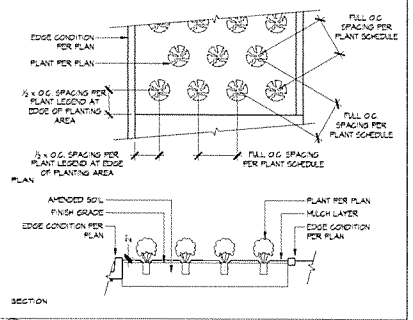
1. THE PLANTING PLAN IS DIAGRAMMATIC TO THE EXTENT THAT ALL PLANT LOCATIONS ARE SUBJECT TO ADJUSTMENTS IN THE FIELD BY THE LANDSCAPE ARCHITECT, AND SUBSTITUTION OF PLANTS MAY BE MADE BY THE LANDSCAPE ARCHITECT OR BY THE CONTRACTOR (SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT), DEPENDING ON AVAILABILITY, PHYSICAL CONDITION OR HEALTH OF THE PLANTS, OR FOR HORTICULTURAL, MICRO-CLIMATIC AND/OR AESTHETIC REASONS.
2. CONTRACTOR SHALL PROVIDE A RUNNING TALLY OF ALL PLANT SUBSTITUTIONS AND PROVIDE TO THE LANDSCAPE ARCHITECT AND OWNER UNIT COST ADJUSTMENTS AS NECESSARY
3. IF ANY DISCREPANCIES OCCUR BETWEEN QUANTITIES OF PLANTS SHOWN IN THE PLANT LEGEND(S) AND QUANTITIES OF PLANTS SHOWN ON THE PLAN DRAWINGS, THE DRAWINGS TAKE PRECEDENCE OVER THE PLANT LEGEND(S). CONTRACTOR IS RESPONSIBLE FOR QUANTITY TAKE-OFFS BASED ON THE PLAN DRAWINGS
4. APPLY A CONTACT HERBICIDE IF NECESSARY TO CONTROL WEED GROWTH PRIOR TO PLANTING OPERATIONS. SUBMIT PRODUCT RECOMMENDATION(S) TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO PROCUREMENT AND APPLICATION OF THE PRODUCT.
5. SEND SAMPLES OF EXISTING SOILS TO WALLACE LABS (US.WLABS.COM), OR SIMILAR EQUALLY-QUALIFIED SOIL TESTING LABORATORY, FOR SOIL ANALYSES AND RECOMMENDATIONS REGARDING SOIL AMENDMENTS. SUBMIT SOIL REPORT TO LANDSCAPE ARCHITECT PRIOR TO PROCUREMENT OF AMENDMENTS AND TILLING OPERATIONS.
6. NURSERY STOCK SHALL MEET CURRENT STANDARDS OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1) REGARDING CONTAINER SIZE, PHYSICAL CONDITION OF PLANTS AND OTHER CRITERIA THAT PERTAIN TO THE QUALITY OF NURSERY STOCK. ENSURE THAT PURCHASED PLANT MATERIAL HAD BEEN PROPERLY GROWN AND SHIFTED, AND THAT IT IS PROPERLY HANDLED DURING THE DELIVERY PROCESS.
7. FULLY SCARIFY THE BOTTOM AND SIDES OF PLANTING PITS AND HOLES PRIOR TO INSTALLATION OF PLANTS TO REMOVE ALL EVIDENCE OF GLAZING BY EXCAVATION EQUIPMENT. DEEPLY FRACTURE COMPACTED OR CLAYEY SUBSOILS, HARDPAN AND ANY OTHER SOIL CONDITION WITHIN PLANTING PITS THAT WOULD IMPEDE GROWTH OF PLANT ROOTS.
8. ENSURE THAT SPRINKLER HEADS ARE LOCATED AT LEAST 12" FROM INSTALLED PLANTS.
9. PRIOR TO PLANTING OPERATIONS, PROPERLY REMOVE ALL REMNANT CONCRETE FOUNDATIONS, PADS, WALLS, COLUMNS AND ANY OTHER MATERIALS THAT MAY BE DELETERIOUS TO THE HEALTH GROWTH OF PLANTS AND THEIR ROOT SYSTEMS
10. PROVIDE SOIL AMENDMENTS AS RECOMMENDED BY THE TESTING LABORATORY
11. EXTEND LATERAL EXCAVATION OF PLANTING PITS WELL BEYOND THE DIMENSIONS OF THE PLANT CONTAINER, THE EXTENT DEPENDING ON SOIL TEXTURE. COARSE-TEXTURED SOILS REQUIRE LESS EXCAVATION, FINE-TEXTURED SOILS REQUIRE GREATER EXCAVATION, ESPECIALLY IN THE UPPER 12" TO 24" OF GRADE
12. ENSURE THAT THE BOTTOM OF TREE PITS IS EITHER UN-EXCAVATED OR SUFFICIENTLY COMPACTED AND STABLE TO PREVENT SUBSEQUENT SETTLEMENT OF THE TREE
13. ENSURE THAT ALL PLANT PITS ARE FREE-DRAINING.
14. INSTALL ALL PLANTS AT PROPER ELEVATION WITH RESPECT TO FINISH GRADE. ENSURE THAT THE ROOT CROWN OF TREES IS PLANTED SLIGHTLY ABOVE GRADE AND THAT GIRDLING ROOTS ARE NOT PRESENT.
15. BACKFILL PLANTS WITH NATIVE OR AMENDED SOIL AS NECESSARY TO PROMOTE LONG-TERM GROWTH AND HEALTH OF THE PLANT. REMOVE AIR POCKETS AND PROPERLY COMPACT BACKFILL.
16. MAINTAIN ALL PLANTINGS ON A DAILY OR WEEKLY BASIS AS NECESSARY FOR A PERIOD OF 60 DAYS AFTER PLANTING. KEEP ALL PLANTED AREAS CLEAN AND WEED-FREE.
17. WARRANTY ALL PLANT MATERIAL FOR A PERIOD OF 12 MONTHS AFTER PLANTING REPLACE DEAD OR UNDER-PERFORMING PLANTS IMMEDIATELY UPON DISCOVERY OR NOTICE FROM THE OWNER OR LANDSCAPE ARCHITECT.
18. ENSURE THAT ALL TREES REMAIN PERFECTLY UPRIGHT UNTIL THEIR ROOT SYSTEM IS SUFFICIENTLY ESTABLISHED TO NO LONGER REQUIRE SUPPORT. ENSURE THAT ALL SHRUBS AND PERENNIALS REMAIN PERFECTLY UPRIGHT UNTIL THEIR ROOT SYSTEM IS SUFFICIENTLY ESTABLISHED TO NO LONGER REQUIRE ADJUSTMENT.
19. CONTRACTOR SHALL LEAVE SITE IN A CLEAN CONDITION, REMOVING ALL UNUSED MATERIAL, TRASH, AND TOOLS.



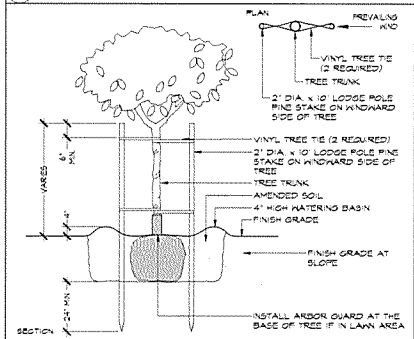
A TREE & SHRUB PLANTING NTS



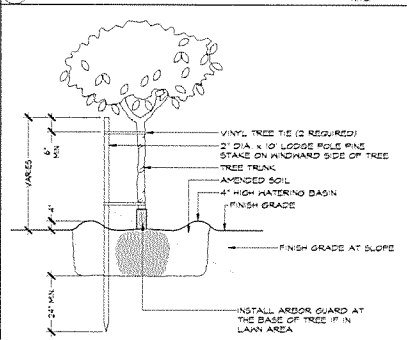
B VINE PLANTING NTS



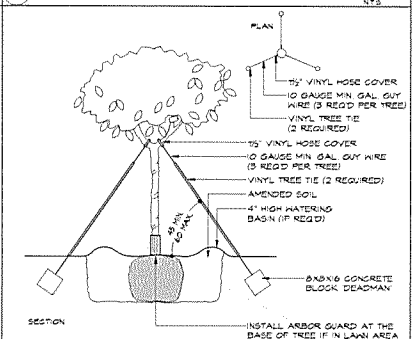
C GROUNDCOVER PLANTING (TRIANGULATED) NTS



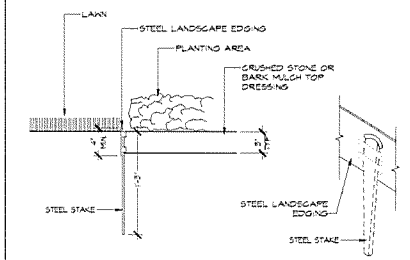
D TREE - DOUBLE STAKING NTS



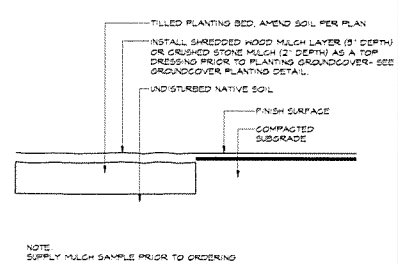
E TREE - SINGLE STAKING NTS



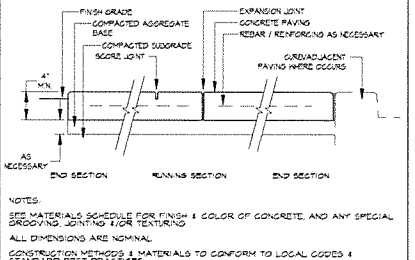
F TREE - GUYING NTS



G STEEL LAWN EDGING NTS



H MULCH LAYER NTS



I CONCRETE WALKWAY/PATIO PAVING NTS

PLANS PREPARED BY:
CHERYL FIELDS & KAY KITE
LANDSCAPE ARCHITECTURE
3156 LOMA RIDGE PLACE
ACOSTA, CA 93702

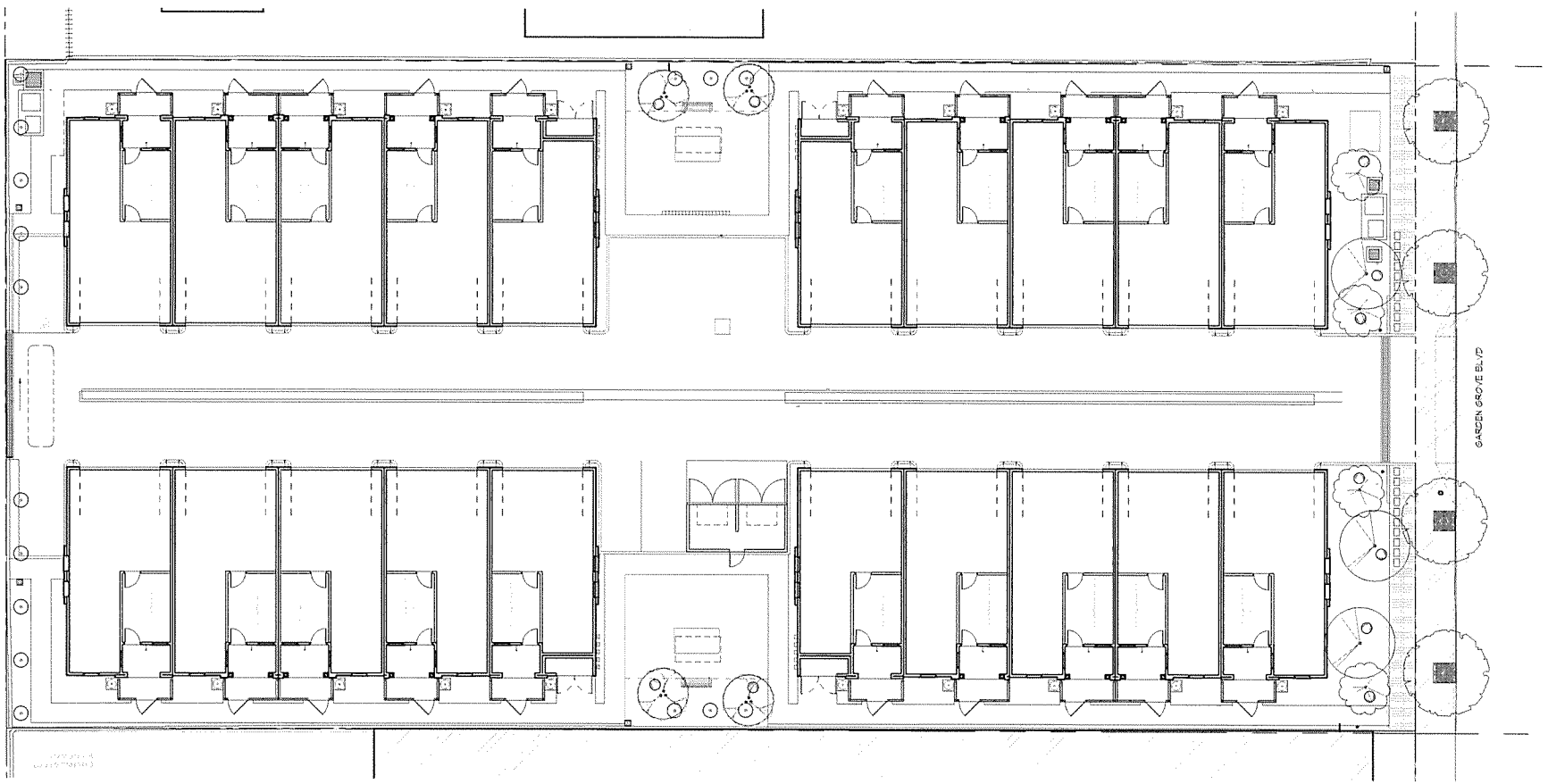
811 Know what's below Call before you dig

PLANS PREPARED FOR:
GARDEN GROVE TOWNHOMES
8722 GARDEN GROVE BLVD
GARDEN GROVE, CA 92844
APN NO. 047-222-03

SHEET TITLE: DETAILS & NOTES

REVISIONS	
1ST SUBMITTAL	09-22-2020
2ND SUBMITTAL	09-6-2020
3RD SUBMITTAL	01-4-2021
SUBMITTAL	08-4-2022
CHECKED	CF
DATE	08-4-2022
SCALE	PER PLAN @ 24X36

L-3.1



LIGHT FIXTURE SCHEDULE

KEYMSTR	MODEL	ORDER NO	MTL	GLASS	QTY
◯ SPJ LIGHTING	STARBRIGHT	RVDG-5W-FLOOD-12S-2700K LED	BRASS	MG	11
◯ SPJ LIGHTING	MR UNIVERSE	RVDG-2W-SPOT-13S-2700K LED	BRASS	MG	16
600 W (MIN.) TRANSFORMER W/ 110V GFI OUTLET					

NOTES:

- CONTRACTOR TO SIZE TRANSFORMERS TO EXCEED MIN. REQUIRED WATT/VOLTAGE DRAW FOR POSSIBLE FUTURE ADDITIONS
- ALL EXTERIOR LIGHTING SHALL BE CONTROLLED BY TIME CLOCK AND PHOTOCELL
- ALL EXTERIOR LIGHT FIXTURES SHALL BE PER LOCATION APPROVED
- FOR ALL BUILDING MOUNTED LIGHT FIXTURES REFER TO ELECTRICAL ENGINEER'S LIGHTING SITE PLAN E-1.0
- ENSURE FIXTURES INCLUDE SHIELDS TO PREVENT LIGHT LEAKAGE OFF PROPERTY

- ELECTRICAL PLANS FOR THE BUILDING INTERIOR ARE UNDER SEPARATE PERMIT AND PLAN REVIEW

PLANS PREPARED BY
GARCIA FIELDS & KAY-KITE
LANDSCAPE ARCHITECTS
526 N ALISA AVE, APT A
ALISA CA 91702

811 Know what's below. Call before you dig.

SCALE: 1"=10'

SHEET TITLE: SITE LIGHTING PLAN

PLANS PREPARED FOR
GARDEN GROVE TOWNHOMES
8722 GARDEN GROVE BLVD
GARDEN GROVE, CA 92844
APN NO. 047-232-25

REVISIONS	
1ST SUBMITTAL	08-22-2020
2ND SUBMITTAL	04-8-2020
3RD SUBMITTAL	07-14-2021
SUBMITTAL	08-14-2022
CHECKED	GF
DATE	08-14-2022
SCALE	PER PLAN @ 24X36

L-4.0

ARCHITECT

EML

E. M. LOPEZ Architect

815 W CESAR E CHAVEZ AVE
SUITE 203
LOS ANGELES CA 90012

TEL NO: (213) 621-2359
FAX NO: (213) 621-2643

LE' JARDIN TOWNHOMES

8722 GARDEN GROVE BOULEVARD GARDEN GROVE CA

OWNER:
NRI PORTFOLIOS LLC.
12962 MAIN STREET
GARDEN GROVE, CA 92840

CONTACT:
MIKE BARNETT
PHONE: (949) 228-8644
9MIKEMAX@GMAIL.COM

DATE	REVISIONS

SHEET CONTENTS

SCALE:
CADD FILE:
DRAWN:
DATE:

SHEET NO:

SHEET OF

P.A. ARCA
ENGINEERING, INC.

500 East Carson Plaza Drive, Suite 201, Carson, CA 90746
Office: (310) 768-3828 • Fax: (310) 768-3977
www.paarcaengineering.com
Civil Engineers / Land Surveyors

August 9, 2021

Attn: City of Garden Grove
11222 Acacia Parkway
Garden Grove, CA 92840

RE: Statement of No Significant Impacts per CEQA

To whom it may concern,

This letter serves to describe the stormwater impact of the proposed 20 units townhomes at 8722 Garden Grove Boulevard.

The project will demolish the existing building and hardscapes. A new 4 building structure with 5 units each and parking lots will be constructed. The proposed work will result in a 9% decrease in impervious footprint of the project site.

The proposed drainage pattern will be similar to present condition. However, prior to discharge to Garden Grove Boulevard and to the Alley, the stormwater runoff will pass to the catch basins with filter insert to pretreat the 85th percentile 24-hour volume before conveying to the infiltration trench. The project infiltration system is designed and will be constructed per the specifications in Appendix XIV.3 of the Orange County Technical Guidance Document (TGD). In the event the infiltration trench is filled with stormwater, the excess peak runoff will overflow to the street gutter along Garden Grove Boulevard at the north side and will sheet flow to the Alley at the south side.

The redevelopment of the site will reduce the impervious area. Infiltration system is proposed to be utilized to retain stormwater on site and to minimize pollutants flow to the streets. No significant negative impact is anticipated as a result of the redevelopment of the onsite areas.

Sincerely,

Perfecto A. Arca, PE
(310) 768-3828

2141 W. Orangewood Avenue, Orange, CA 92868
T: 714.573.0377 | F: 714.573.9534 | www.koaconj.com
MONTEREY PARK ORANGE ONTARIO SAN DIEGO

TECHNICAL MEMORANDUM

Date: February 8, 2022

To: Michael Barnett

From: Jimmy Lin, P.E., Management Executive – KOA Corporation

Subject: Traffic Analysis Technical Memorandum for Residential Development Project located at 8722 Garden Grove, CA

KOA Corporation (KOA) submits this technical memorandum to document the analysis of potential traffic impacts resulting from the change of use from commercial to mid-rise multifamily residential due to the proposed project.

1.0 PROJECT DESCRIPTIONS

The proposed project includes the construction of four new three-story buildings with 20 residential townhouse dwelling units on a 36,600 square-foot lot. The Project location resides on the south side of Garden Grove Boulevard, approximately 200 feet east of Newland Street.

The existing use consists of a used-car dealership with two access driveways on Garden Grove Boulevard and one access point at the southwest corner of the property, accessible via an alley off Emerson Circle. The project site is located between the Brandywine Cottages residential community to the west, a commercial shopping center, Newland Plaza, to the east, and multi-family residential to the south.

The proposed Project Vicinity map is illustrated in Figure 1.1. The Project Site Plan is illustrated in Figure 1.2.

KOA Corporation has been retained to conduct a traffic analysis and prepare a technical memorandum addressing the following:

- Access to public streets
- Existing Pedestrian Infrastructure
- Vehicular Traffic in a residential zone

Figure 1.1 – Project Vicinity Map

Figure 1.2 – Project Site Plan

2.0 ANALYSIS METHODOLOGY

The following text in sections 2.1 and 2.2 describes the study methodology contained in this report.

2.1 SITE ACCESSIBILITY

Accessibility was reviewed by considering the access point to enter and exit the site, characteristics, and connectivity of roadways surrounding the site, and pedestrian infrastructure including sidewalks and crosswalks. Further details on the analysis can be found in Section 3.0

2.2 PROJECT TRIP GENERATION

Project trip generation is typically based on land use trip rates defined by the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition. AM and PM weekday peak period rates were used to estimate trip generation of the existing and proposed uses. Further details on the analysis can be found in Section 4.0.

3.0 SITE ACCESS TO PUBLIC STREETS ANALYSIS

The key roadways within the study area are described below. The discussion presented here is limited to specific roadways that traverse the Project site.

Garden Grove Boulevard is an east/west roadway that is approximately 84 feet wide with six travel lanes, three in each direction, within the project vicinity. Street parking is prohibited on both sides of the street. The street has a posted speed limit of 40 miles per hour (mph). The signalized intersection of Garden Grove Boulevard and Newland Street provides pedestrian crossing on the south and east legs. Sidewalks are provided along both sides of Garden Grove Boulevard.

Garden Grove Boulevard currently has two driveways that provide right-in and right-out access to the Project site.

Newland Street is a north/south roadway that is approximately 64 feet wide with two travel lanes, one in each direction with a center left-turn lane and available on-street parking on both sides of the street. The street has a posted speed limit of 40 mph. The nearest crosswalk is at the intersection with Garden Grove Boulevard, west of the Project site. Existing sidewalk is present on both sides of the street.

4.0 PROJECT TRIP GENERATION ANALYSIS

Trip generation estimates were calculated using the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition. For the existing use rates, the land use was classified as ITE land use, Automobile Sales (Used) (ITE Code 841). For the proposed use rates, the land use was classified as ITE land use, Multifamily Housing Mid-Rise (ITE Code 221). Trip generation estimates are shown in Table 4.1.

Based on the estimates shown in Table 4.1, the proposed project would be consistent with the City's LOS standards established in the City's General Plan. The existing automobile sales land use generates an estimated 119 daily weekday trips with 9 AM peak hour trips and 16 PM peak hour trips, while the proposed land use would generate an estimated 109 daily weekday trips with 7 AM peak hour trips and 9 PM peak hour trips. This results in an estimated net trip decrease of 10 daily weekday trips with a decrease of 2 AM peak hour trips and 7 PM peak hour trips.

The AM peak period is typically between 7:00 AM and 9:00 AM and PM peak period is typically between 4:00 PM and 6:00 PM. Thus, most of the daily traffic generated by the proposed Project will likely occur during off-peak periods in the areas surrounding the project, when traffic volumes are typically less than the AM and PM peak periods.

Level of Service (LOS) analysis is conducted to determine the current and/or future circulation system performance, at an intersection level, and is considered for the General Plan consistency. For CEQA, Vehicle Miles Traveled (VMT) analysis is used where the analysis is focused on a larger study area and/or regional analysis, not at the intersection level.

Table 4.1 Weekday Peak Hour Trip Generation

Land Use	ITE Code	Intensity		Weekday						
				Average Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Trip Generation Rates[1]										
Multifamily Housing Mid-rise	221	1	D.U.	5.44	0.26	0.74	0.36	0.63	0.39	0.44
Automobile Sales (Used)	841	1.000	T.S.F.	27.06	0.76	0.24	2.13	0.47	0.53	3.75
Proposed Use										
Multifamily Housing Mid-rise	221	20	D.U.	109	2	5	7	6	3	9
		Sub-total		**109**	**2**	**5**	**7**	**6**	**3**	**9**
Existing Use										
Automobile Sales (Used)	841	4.381	T.S.F.	119	7	2	9	8	8	16
		Sub-total		**119**	**7**	**2**	**9**	**8**	**8**	**16**
		Net Estimated Trips		**-10**	**-5**	**3**	**-2**	**-2**	**-5**	**-7**

Notes:

1. Trip Generation, 10th Edition

D.U. = Dwelling Unit

T.S.F. = Thousand Square Feet

5.0 VEHICLE MILES TRAVELED (VMT) SCREENING

Per the City of Garden Grove Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment, May 2020, there are three types of screening criteria that may be applied to effectively screen projects from Vehicle Miles Traveled (VMT) assessment; Transit Priority Area (TPA), Low VMT Area, and Project Type screening. The three screening types were applied to the proposed project to determine if the project screens out of requiring VMT analysis.

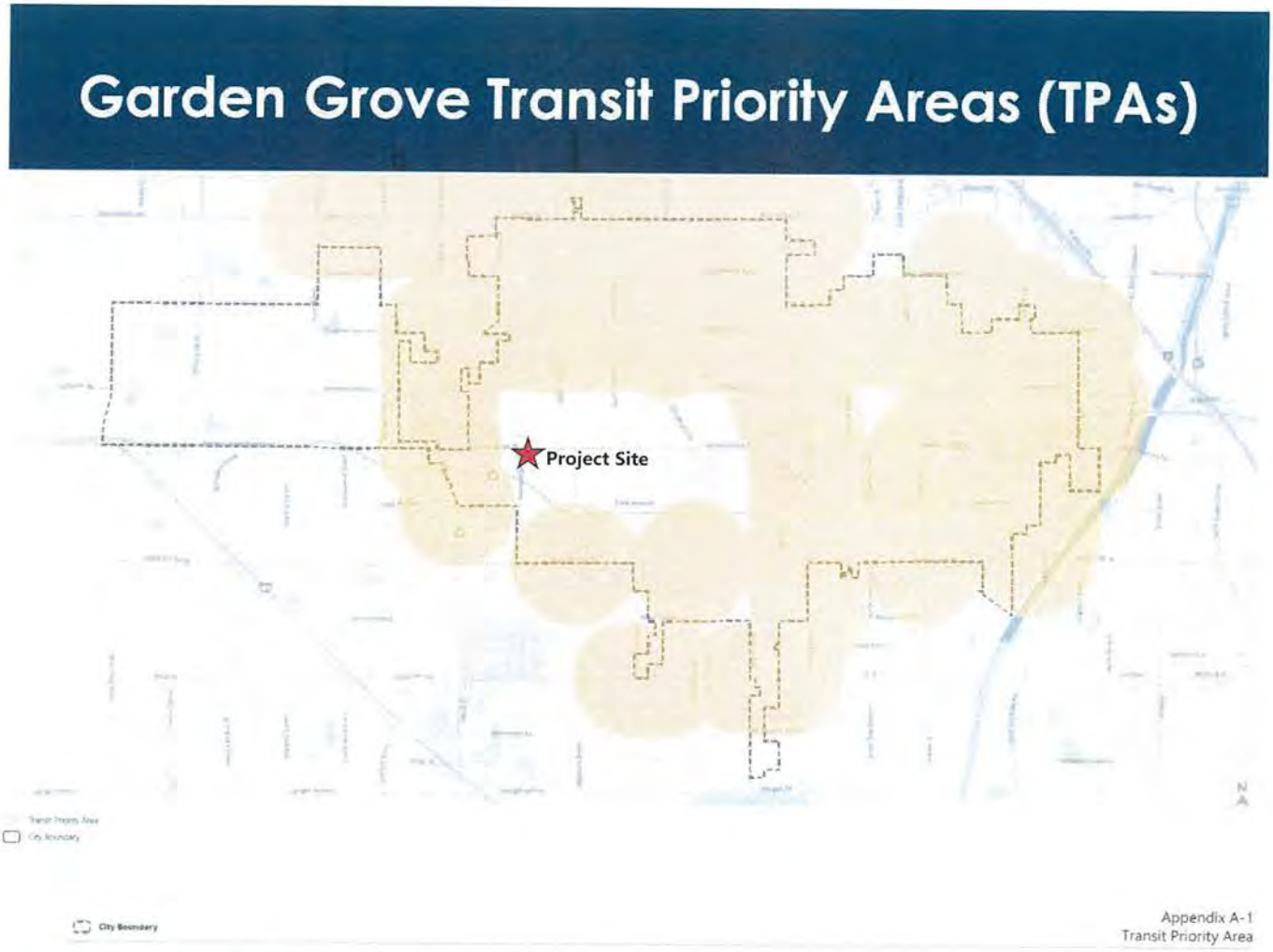
Transit Priority Area (TPA) Screening

A Transit Priority Area (TPA) is defined as a half mile area around an existing major transit stop or an existing stop along a high-quality transit corridor (Public Resources Code § 21099(a)(7), City of Garden Grove TIA Guidelines, May 2020). Projects that are located within a TPA may be presumed to have a less than significant impact. The proposed project is located outside of a TPA and therefore does not satisfy the TPA screening criteria. Figure 5.1 illustrates the Transit Priority Areas and the project location.

Low VMT Area Screening

Within low VMT areas, local-serving retail uses (less than 50,000 square feet), local-serving K-12 schools, local parks, various types of residential and other projects may be presumed to have a less than significant impact, as discussed in the City of Garden Grove Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment. Additionally, other employment-related and mixed-use land use projects may qualify for the use of screening if the project can reasonably be expected to generate VMT per resident, per worker, or per service population that is similar to the existing land uses in the low VMT area (City of Garden Grove TIA Guidelines, May 2020). The proposed project is located within a Low VMT Area where VMT is more than -15% below County average. Therefore, the proposed project satisfies the Low VMT Area Screening criteria and screens out of requiring VMT analysis. Figure 5.2 illustrates the Low VMT Areas and the project location.

Figure 5.1 – Transit Priority Areas



Project Type Screening

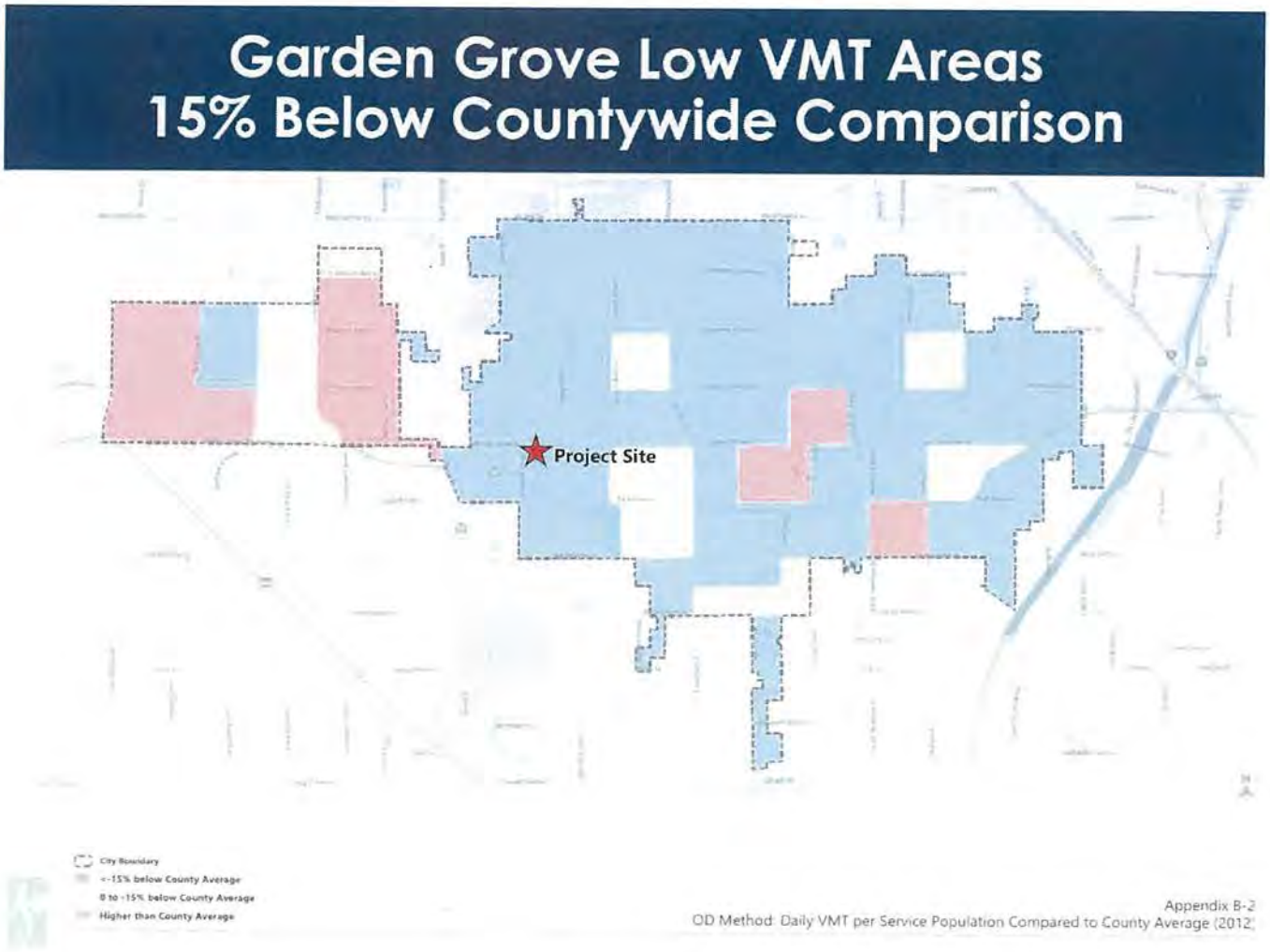
There are some project types that have been identified as having the presumption of a less than significant impact, which include local serving projects in nature, which include the following:

- Local-serving K-12 schools
- Local parks
- Day care centers
- Local-serving retail uses less than 50,000 square feet, including:
    - Gas stations
    - Banks
    - Restaurants
    - Shopping Center
- Local-serving hotels (e.g. non-destination hotels)

- Student housing projects on or adjacent to a college campus
- Local-serving assembly uses (places of worship, community organizations)
- Community institutions (public libraries, fire stations, local government)
- Affordable, supportive, or transitional housing
- Assisted living facilities
- Senior housing (as defined by HUD)
- Local serving community colleges that are consistent with the assumptions noted in the RTP/SCS
- Projects generating less than 110 daily vehicle trips

The proposed project would generate a net of -10 daily vehicle trips. Therefore, the proposed project satisfies the Project Type Screening criteria and is screened out of requiring VMT analysis.

Figure 5.2 – Low VMT Areas



6.0 ANALYSIS SUMMARY AND CONCLUSIONS

The following summarizes the traffic analysis results and recommendations:

- High vehicle capacity along Garden Grove Boulevard and the presence of existing pedestrian infrastructure allow for adequate access between public streets and Project site.
- The existing commercial land use (automobile sales (used)) generates an estimated 119 daily weekday trips with 9 AM peak period trips and 16 PM peak period trips, while the proposed land use would generate an estimated 109 daily weekday trips with 7 AM peak period trips and 9 PM peak period trips. The resulting net trips resulting from the proposed project would be a decrease of 10 daily weekday trips with a decrease of 2 AM peak period trips and a decrease of 8 PM peak period trips.
- Based on the City of Garden Grove Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment, May 2020, there are three types of screening criteria that may be applied to effectively screen projects from VMT assessment. The proposed project satisfies the Low VMT Area Screening and the Project Type Screening criteria. Therefore, the proposed project screens out of requiring VMT analysis.
- The Project's net reduction of peak hour trips would be consistent with the City's LOS standards in the City's General Plan.
- Adequate pedestrian infrastructure and the increase of expected vehicle trips resulting from the proposed land use noted in section 4.0 should not substantially increase traffic hazards to pedestrians.

KOA concludes that the proposed Project is not anticipated to significantly impact traffic or pedestrians at the nearby intersections and surrounding roadway network.

Sincerely,

Jimmy Lin, P.E.
Executive Management

Yorke
ENGINEERING, LLC
www.YorkeEngr.com

November 9, 2021

Mr. Michael R. Barnett
9Max Capital, LLC
12962 Garden Grove Boulevard
Garden Grove, CA 92840
Cell: (949) 228-8644
E-mail: 9MaxMike@ProtonMail.com

Subject: Air Quality and Greenhouse Gas Study for a Multi-Residential Townhome Development in Garden Grove, CA

Dear Mr. Barnett:

Yorke Engineering, LLC (Yorke) is pleased to provide this Air Quality (AQ), and Greenhouse Gas (GHG) Report. This AQ/GHG Letter Report includes California Emissions Estimator Model® (CalEEMod) emissions estimates, criteria pollutant analysis, localized significance level (LST) analysis, and GHG analysis for the proposed multi-residential building development in the City of Garden Grove (City), California. These evaluations will support the Applicant's submittal of a CEQA Categorical Exemption (CATX).

PROJECT DESCRIPTION

9Max Capital is proposing to develop a townhome community to be located at 8722 Garden Grove Boulevard in the City of Garden Grove, CA (the City), which is within the South Coast Air Quality Management District (SCAQMD). The lot size is 36,945 square feet (0.85 acre), and the community will have 20 dwelling units, each with a garage. Building footprints will total 17,220 square feet, with unit defined areas totaling 52,760 square feet (habitable, porches/balconies, garages). Driveways and outside parking will occupy 9,507 square feet. Aggregated landscaping, open, and other outdoor unpaved areas comprise 10,218 square feet.

ASSUMPTIONS

The following basic assumptions were used in developing the emission estimates for the proposed Project using the CalEEMod:

- Some project design features including size of the buildings and parking areas were defined by the Applicant.
- CalEEMod default construction equipment, including hours used per data were applied to construction phases of the project.
- During site preparation and grading the project site will be watered three times daily.
- Low VOC paint will be used.
- The Project is expected to require up to approximately six months of planned work activities (i.e., from mobilization to substantial completion) comprising six construction phases (demolition, site preparation, grading, building construction, paving, and architectural coating).

- Approximately 500 square feet of old buildings will be removed during the demolition phase.

LIST OF TABLES

The project analyses and results are summarized in the following tables:

- Table 1: Land Use Data for CalEEMod Input – Le Jardin Townhomes
- Table 2: SCAQMD CEQA Thresholds of Significance
- Table 3: Daily Construction Emissions Summary and Significance Evaluation
- Table 4: Daily Operational Emissions Summary and Significance Evaluation
- Table 5: Construction Localized Significance Threshold Evaluation
- Table 6: Operational Localized Significance Threshold Evaluation
- Table 7: Greenhouse Gas Emissions Summary and Significance Evaluation

AIR QUALITY AND GREENHOUSE GAS IMPACTS ANALYSES

In order to evaluate the potential for Air Quality and Greenhouse Gas impacts of a proposed project, quantitative significance criteria established by the local air quality agency, such as the SCAQMD, may be relied upon to make significance determinations based on mass emissions of criteria pollutants and GHGs, as presented in this report. This project falls under a CEQA Article 19, Section 15332, Categorical Exemption for In-Fill Development Projects (Class 32 CATX). As shown below, approval of the project would not result in any significant effects relating to air quality or greenhouse gases.

Project Emissions Estimation

The construction and operation analyses were performed using CalEEMod version 2016.3.2, the official statewide land use computer model designed to provide a uniform platform for estimating potential criteria pollutant and GHG emissions associated with both construction and operations of land use projects under CEQA. The model quantifies direct emissions from construction and operations (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The mobile source emission factors used in the model –published by the California Air Resources Board (CARB) – include the Pavley standards and Low Carbon Fuel standards. The model also identifies project design features, regulatory measures, and control measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from the selected measures. CalEEMod was developed by the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the SCAQMD, the Bay Area Air Quality Management District (BAAQMD), the San Joaquin Valley Air Pollution Control District (SJVAPCD), and other California air districts. Default land use data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) were provided by the various California air districts to account for local requirements and conditions. As the official assessment methodology for land use projects in California, CalEEMod is relied upon herein for construction and operational emissions quantification, which forms the basis for the impact analyses.

Based on information received from the Applicant, land use data used for CalEEMod input are presented in Table 1. The SCAQMD quantitative significance thresholds shown in Table 2 were used to evaluate project emissions impacts (SCAQMD 2019).

Table 1: Land Use Data for CalEEMod Input - Le Jardin Townhomes

Project Element	Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage (footprint)	Square Feet (est.)
Buildings	Residential	Condo/Townhouse	20.00	Dwelling Unit	0.40	17,220
Parking Lot	Parking	Parking Lot	9.51	1000 sq. ft.	0.22	9,507
Landscaping	Parking	Other Non-Asphalt Surfaces	10.22	1,000 sq. ft.	0.23	10,218
Project Site					**0.85**	**36,945**

Source: Applicant 2021, CalEEMod version 2016.3.2

Notes:

Electric utility: Southern California Edison

Climate Zone 8 - Orange County

Table 2: SCAQMD CEQA Thresholds of Significance		
Pollutant	**Project Construction**	**Project Operation**
ROG (VOC)	75 lbs/day	55 lbs/day
NO_X	100 lbs/day	55 lbs/day
CO	550 lbs/day	550 lbs/day
SO_X	150 lbs/day	150 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
24-hour $PM_{2.5}$ Increment	10.4 µg/m³	2.5 µg/m³
24-hour PM_{10} Increment	10.4 µg/m³	2.5 µg/m³
Annual PM_{10} Increment	1.0 µg/m³ annual average	
1-hour NO_2 Increment	0.18 ppm (state)	
Annual NO_2 Increment	0.03 ppm (state) & 0.0534 ppm (federal)	
1-hour SO_2 Increment	0.25 ppm (state) & 0.075 ppm (federal – 99th percentile)	
24-hour SO_2 Increment	0.04 ppm (state)	
24-hour Sulfate Increment	25 ug/m³ (state)	
1-hour CO Increment	20 ppm (state) & 35 ppm (federal)	
8-hour CO Increment	9.0 ppm (state/federal)	
Toxic Air Contaminants (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥10 in 1 million	
	Cancer Burden >0.5 excess cancer cases (in areas ≥1 in 1 million)	
	Chronic & Acute Hazard Index ≥1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to Rule 402	
Greenhouse Gases	10,000 MT/yr CO_2e for industrial facilities	
	3,000 MT/yr CO_2e for land use projects (draft proposal)	

Source: SCAQMD 2019, 2008b

Criteria Pollutants from Project Construction

A project's construction phase produces many types of emissions, generally PM_{10} (including $PM_{2.5}$) in fugitive dust and diesel engine exhaust are the pollutants of greatest concern. Construction activities will include construction of three levels. Construction-related emissions can cause substantial increases in localized concentrations of PM_{10}, as well as affecting PM_{10} compliance with ambient air quality standards on a regional basis. The use of diesel-powered construction equipment emits ozone precursors oxides of nitrogen (NO_X) and reactive organic gases (ROG), and diesel particulate matter (DPM). Use of architectural coatings and other materials associated with finishing buildings may also emit ROG and Toxic Air Contaminants (TACs). CEQA significance thresholds address the impacts of construction activity emissions on local and regional air quality. Thresholds are also provided for other potential impacts related to project construction, such as odors and TACs.

The SCAQMD's approach to CEQA analyses of fugitive dust impacts is to require implementation of effective and comprehensive dust control measures rather than to require detailed quantification of emissions. PM_{10} emitted during construction can vary greatly depending on the level of activity,

the specific operations taking place, the equipment being operated, local soils, weather conditions, and other factors, making quantification difficult. Despite this variability in emissions, experience has shown that there are several feasible control measures that can be reasonably implemented to significantly reduce fugitive dust emissions from construction. For larger projects, pursuant to Rule 403, the SCAQMD has determined that compliance with an approved fugitive dust control plan comprising Best Management Practices (BMPs), primarily through frequent water application, constitutes sufficient preventive measures to reduce PM_{10} impacts to a level considered less than significant, as presented in this report.

Criteria Pollutants from Project Operation

The term "project operations" refers to the full range of activities that can or may generate criteria pollutant, GHG, and TAC emissions when the project is functioning in its intended use. For projects, such as office parks, shopping centers, apartment buildings, residential subdivisions, and other indirect sources, motor vehicles traveling to and from the project represents the primary source of air pollutant emissions. For industrial projects and some commercial projects, equipment operation and manufacturing processes, i.e., permitted stationary sources, can be of greatest concern from an emissions standpoint. CEQA significance thresholds address the impacts of operational emission sources on local and regional air quality. Thresholds are also provided for other potential impacts related to project operations, such as odors.

Results of Criteria Emissions Analyses

Table 3 shows estimated criteria emissions from project construction and evaluates these against SCAQMD significance thresholds.

Table 4 shows estimated criteria emissions from project operation and evaluates these against SCAQMD significance thresholds.

As shown in Tables 3 and 4, mass emissions of criteria pollutants from construction and operation are below applicable SCAQMD significance thresholds.

PROJECTED IMPACT: Less Than Significant (LTS)

Table 3: Daily Construction Emissions Summary and Significance Evaluation

Criteria Pollutants	Estimated (lbs/day)	Threshold (lbs/day)	Significance
ROG (VOC)	11.6	75	LTS
NO_X	8.5	100	LTS
CO	8.2	550	LTS
SO_X	0.02	150	LTS
Total PM_{10}	0.8	150	LTS
Total $PM_{2.5}$	0.6	55	LTS

Sources: SCAQMD 2019, CalEEMod version 2016.3.2

Notes:

lbs/day are winter or summer maxima for planned land use

Total PM_{10} / $PM_{2.5}$ comprises fugitive dust plus engine exhaust

LTS - Less Than Significant

Table 4: Daily Operational Emissions Summary and Significance Evaluation			
Criteria Pollutants	**Estimated (lbs/day)**	**Threshold (lbs/day)**	**Significance**
ROG (VOC)	0.6	55	LTS
NO_X	0.7	55	LTS
CO	3.9	550	LTS
SO_X	0.01	150	LTS
Total PM_{10}	0.9	150	LTS
Total $PM_{2.5}$	0.2	55	LTS

Sources: SCAQMD 2019, CalEEMod version 2016.3.2

Notes:

lbs/day are winter or summer maxima for planned land use

Total PM_{10} / $PM_{2.5}$ comprises fugitive dust plus engine exhaust

LTS - Less Than Significant

Localized Significance Threshold Analysis

The SCAQMD's Localized Significance Threshold (LST) methodology (2008a) was used to analyze the neighborhood scale impacts of NO_X, CO, PM_{10}, and $PM_{2.5}$ associated with project-specific mass emissions. Introduced in 2003, the LST methodology was revised in 2008 to include the $PM_{2.5}$ significance threshold methodology and update the LST mass rate lookup tables for the new 1-hour NO_2 standard.

For determining localized air quality impacts from small projects in a defined geographic source-receptor area (SRA), the LST methodology provides mass emission rate lookup tables for 1-acre, 2-acre, and 5-acre parcels by SRA. The tabulated LSTs represent the maximum mass emissions from a project that will not cause or contribute to an exceedance of state or national ambient air quality standards (CAAQS or NAAQS) for the above pollutants and were developed based on ambient concentrations of these pollutants for each SRA in the South Coast Air Basin. (SCAQMD 2008a)

For most land use projects, the highest daily emission rates occur during the site preparation and grading phases of construction; these maximum daily emissions are used in the LST analysis. Since land use operational emissions – mainly from associated traffic – are dispersed over a wide area, localized impacts from project operation are substantially lower than during project construction. However, an Operational LST analysis was also performed.

The proposed Project site is 0.85 acres in source-receptor area Zone 17 – Central Orange County. The 1-acre screening lookup tables were used to evaluate NO_X, CO, PM_{10}, and $PM_{2.5}$ impacts on nearby receptors. The nearest receptor is approximately 25 meters away from the site. Therefore, the impact evaluation was performed using the closest distance within SCAQMD LST tables of 25 meters for construction. (SCAQMD 2008a)

Results of Localized Significance Threshold Analysis

The LST results provided in Tables 5 and 6 show that on-site emissions from construction and operations would meet the LST passing criteria at the nearest receptors (25 meters). Thus, impacts would be less than significant.

PROJECTED IMPACT: Less Than Significant (LTS)

Table 5: Construction Localized Significance Threshold Evaluation				
Criteria Pollutants	**Estimated (lbs/day)**	**Threshold (lbs/day)**	**Percent of Threshold**	**Result**
NO_X	8.5	81	11%	Pass
CO	8.2	485	2%	Pass
Total PM_{10}	0.81	4	20%	Pass
Total $PM_{2.5}$	0.58	3	19%	Pass

Sources: SCAQMD 2008a, CalEEMod version 2016.3.2

Notes:

Source-receptor area Zone 17 - Central Orange County

1-acre area, 25 meters to receptor

Table 6: Operations Localized Significance Threshold Evaluation				
Criteria Pollutants	**Estimated (lbs/day)**	**Threshold (lbs/day)**	**Percent of Threshold**	**Result**
NO_X	0.7	81	0.8%	Pass
CO	3.9	485	0.8%	Pass
Total PM_{10}	0.86	1	86%	Pass
Total $PM_{2.5}$	0.25	1	25%	Pass

Sources: SCAQMD 2008a, CalEEMod version 2016.3.2

Notes:

Source-receptor area Zone 17 - Central Orange County

1-acre area, 25 meters to receptor

Operational PM_{10} / $PM_{2.5}$ includes 1 mile around project site for mobile source fugitive dust plus engine exhaust

Greenhouse Gas Emissions from Construction and Operation

Greenhouse gases – primarily carbon dioxide (CO_2), methane (CH_4), and nitrous (N_2O) oxide, collectively reported as carbon dioxide equivalents (CO_2e) – are directly emitted from stationary source combustion of natural gas in equipment such as water heaters, boilers, process heaters, and furnaces. GHGs are also emitted from mobile sources such as on-road vehicles and off-road construction equipment burning fuels such as gasoline, diesel, biodiesel, propane, or natural gas (compressed or liquefied). Indirect GHG emissions result from electric power generated elsewhere (i.e., power plants) used to operate process equipment, lighting, and utilities at a facility. Also, included in GHG quantification is electric power used to pump the water supply (e.g., aqueducts, wells, pipelines) and disposal and decomposition of municipal waste in landfills. (CARB 2017)

California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2019 standards improved upon the 2016 standards for new construction of, and additions and alterations to, residential, commercial, and industrial buildings. The 2019 standards went into effect on January 1, 2020 (CEC 2019).

Since the Title 24 standards require energy conservation features in new construction (e.g., high-efficiency lighting, high-efficiency heating, ventilating, and air-conditioning (HVAC) systems,

thermal insulation, double-glazed windows, water conserving plumbing fixtures, etc.), they indirectly regulate and reduce GHG emissions.

Using CalEEMod, direct onsite and offsite GHG emissions were estimated for construction and operation, and indirect offsite GHG emissions were estimated to account for electric power used by the proposed Project, water conveyance, and solid waste disposal.

Results of Greenhouse Gas Emissions Analyses

The SCAQMD officially adopted an industrial facility mass emissions threshold of 10,000 metric tons (MT) CO_2e per year (SCAQMD 2019) and has proposed a residential/commercial mass emissions threshold of 3,000 metric tons (MT) CO_2e per year. (SCAQMD 2008b)

Table 7 shows estimated GHG emissions and evaluates emissions against SCAQMD significance thresholds. Operational measures incorporate typical code-required energy and water conservation features. Off-site traffic impacts are included in these emissions estimates, along with construction emissions amortized over 30 years.

Table 8 shows estimated GHG emissions from construction only. However, for CEQA significance evaluation purposes per SCAQMD guidance, construction emissions are amortized over 30 years and added to annual operational emissions, as shown in Table 7.

PROJECTED IMPACT: Less Than Significant (LTS)

Table 7: Greenhouse Gas Emissions Summary and Significance Evaluation

Greenhouse Gases	Estimated (MT/yr)	Threshold (MT/yr)	Significance
CO_2	203	—	—
CH_4	0.1	—	—
N_2O	0.0	—	—
CO_2e	207	3,000	LTS

Sources: SCAQMD 2008b, CalEEMod version 2016.3.2

Notes:

Comprises annual operational emissions plus construction emissions amortized over 30 years

LTS - Less Than Significant

Table 8: Construction Only Greenhouse Gas Emissions Summary

Greenhouse Gases	Estimated (MT/yr)	Threshold (MT/yr)	Significance
CO_2	80	—	—
CH_4	0.02	—	—
N_2O	0.00	—	—
CO_2e	80	3,000	LTS

Sources: CalEEMod version 2016.3.2

CLOSING

Thank you very much for the opportunity to be of assistance to 9MAX Capital. Should you have any questions, please contact me at (949) 426-6765 (mobile).

Sincerely,

McGregor Stadtmiller, BSChemE | San Juan Capistrano Office
Engineer
Yorke Engineering, LLC
MStadtmiller@YorkeEngr.com

cc: Bradford Boyes, Yorke Engineering, LLC

Enclosures/Attachments:

1. CalEEMod Outputs

AIR QUALITY AND GHG REFERENCES

California Air Resources Board (CARB). 2017. California's 2017 Climate Change Scoping Plan. Website (https://ww3.arb.ca.gov/cc/scopingplan/scopingplan.htm) accessed June 2, 2021.

California Department of Resources Recycling and Recovery (CalRecycle). 2016. Solid Waste Cleanup Program Weights and Volumes for Project Estimates. Website (https://www.calrecycle.ca.gov/swfacilities/cdi/Tools/Calculations) accessed June 2, 2021.

California Emissions Estimation Model® (CalEEMod). 2016. Version 2016.3.2. Website (http://www.caleemod.com/) accessed June 2, 2021.

California Energy Commission (CEC). 2019. Building Energy Efficiency Program. Website (https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards) accessed June 2, 2021.

South Coast Air Quality Management District (SCAQMD). 2019. Air Quality Significance Thresholds. Website (http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2) accessed June 2, 2021.

South Coast Air Quality Management District (SCAQMD). 2008a. Localized Significance Threshold Methodology. Website (http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf?sfvrsn=2) accessed June 2, 2021.

South Coast Air Quality Management District (SCAQMD). 2008b. Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans. Website (http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2) accessed June 2, 2021.

ATTACHMENT 1 – CALEEMOD OUTPUTS

Le Jardin Townhomes

Orange County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	10.22	1000sqft	0.23	10,220.00	0
Parking Lot	9.51	1000sqft	0.22	9,510.00	0
Condo/Townhouse	20.00	Dwelling Unit	0.40	17,220.00	57

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Size of Condo/Townhouse area updated to reflect Architect drawings.

Construction Phase - Phase timing updated to reflect plan.

Demolition -

Grading - Total acres graded updated to reflect full parcel size.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Woodstoves -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	5.00	10.00
tblGrading	AcresOfGrading	0.50	0.85
tblLandUse	LandUseSquareFeet	20,000.00	17,220.00
tblLandUse	LotAcreage	1.25	0.40

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					
2021	11.5633	8.5374	8.2086	0.0166	0.9573	0.4502	1.2726	0.4434	0.4142	0.8327	0.0000	1,653.6437	1,653.6437	0.3728	0.0000	1,660.1371
Maximum	**11.5633**	**8.5374**	**8.2086**	**0.0166**	**0.9573**	**0.4502**	**1.2726**	**0.4434**	**0.4142**	**0.8327**	**0.0000**	**1,653.6437**	**1,653.6437**	**0.3728**	**0.0000**	**1,660.1371**

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					
2021	11.5633	8.5374	8.2086	0.0166	0.4075	0.4502	0.8134	0.1910	0.4142	0.5803	0.0000	1,653.6437	1,653.6437	0.3728	0.0000	1,660.1371
Maximum	**11.5633**	**8.5374**	**8.2086**	**0.0166**	**0.4075**	**0.4502**	**0.8134**	**0.1910**	**0.4142**	**0.5803**	**0.0000**	**1,653.6437**	**1,653.6437**	**0.3728**	**0.0000**	**1,660.1371**

	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**	**57.44**	**0.00**	**36.08**	**56.92**	**0.00**	**30.31**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	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					
Area	5.6696	0.4340	11.8234	0.0260		1.5369	1.5369		1.5369	1.5369	187.3384	362.9754	550.3137	0.5616	0.0127	568.1416
Energy	0.0104	0.0891	0.0379	5.7000e-004		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003		113.7510	113.7510	2.1800e-003	2.0900e-003	114.4270
Mobile	0.1567	0.5724	2.1064	8.5100e-003	0.8424	5.9400e-003	0.8483	0.2253	5.5100e-003	0.2308		865.3044	865.3044	0.0347		866.1728
Total	**5.8368**	**1.0955**	**13.9678**	**0.0351**	**0.8424**	**1.5501**	**2.3924**	**0.2253**	**1.5496**	**1.7749**	**187.3384**	**1,342.0308**	**1,529.3692**	**0.5985**	**0.0148**	**1,548.7414**

Mitigated Operational

	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					
Area	0.4289	0.0190	1.6524	9.0000e-005		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003	0.0000	2.9754	2.9754	2.8700e-003	0.0000	3.0471
Energy	0.0104	0.0891	0.0379	5.7000e-004		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003		113.7510	113.7510	2.1800e-003	2.0900e-003	114.4270
Mobile	0.1567	0.5724	2.1064	8.5100e-003	0.8424	5.9400e-003	0.8483	0.2253	5.5100e-003	0.2308		865.3044	865.3044	0.0347		866.1728
Total	**0.5960**	**0.6805**	**3.7967**	**9.1700e-003**	**0.8424**	**0.0223**	**0.8646**	**0.2253**	**0.0219**	**0.2471**	**0.0000**	**982.0308**	**982.0308**	**0.0398**	**2.0900e-003**	**983.6469**

	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	89.79	37.88	72.82	73.88	0.00	98.56	63.86	0.00	98.59	86.08	100.00	26.83	35.79	93.35	85.89	36.49

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	5/21/2021	6/3/2021	5	10	
2	Site Preparation	Site Preparation	6/4/2021	6/4/2021	5	1	
3	Grading	Grading	6/5/2021	6/8/2021	5	2	
4	Building Construction	Building Construction	6/9/2021	10/26/2021	5	100	
5	Paving	Paving	10/27/2021	11/2/2021	5	5	
6	Architectural Coating	Architectural Coating	11/3/2021	11/16/2021	5	10	

Acres of Grading (Site Preparation Phase): 0.85

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.45

Residential Indoor: 34,871; Residential Outdoor: 11,624; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,184 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	4	10.00	0.00	49.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	23.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 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					
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**		**0.4073**	**0.4073**		**0.3886**	**0.3886**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.2 Demolition - 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	0.0362	1.2604	0.3592	3.6400e-003	0.0853	3.9800e-003	0.0893	0.0234	3.8100e-003	0.0272		406.6267	406.6267	0.0438		407.7208
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	0.0409	0.0240	0.2803	1.0000e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		99.5832	99.5832	2.1300e-003		99.6365
Total	**0.0770**	**1.2844**	**0.6395**	**4.6400e-003**	**0.1971**	**4.7000e-003**	**0.2018**	**0.0530**	**4.4800e-003**	**0.0575**		**506.2099**	**506.2099**	**0.0459**		**507.3573**

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	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**		**0.4073**	**0.4073**		**0.3886**	**0.3886**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.2 Demolition - 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	0.0362	1.2604	0.3592	3.6400e-003	0.0853	3.9800e-003	0.0893	0.0234	3.8100e-003	0.0272		406.6267	406.6267	0.0438		407.7208
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	0.0409	0.0240	0.2803	1.0000e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		99.5832	99.5832	2.1300e-003		99.6365
Total	**0.0770**	**1.2844**	**0.6395**	**4.6400e-003**	**0.1971**	**4.7000e-003**	**0.2018**	**0.0530**	**4.4800e-003**	**0.0575**		**506.2099**	**506.2099**	**0.0459**		**507.3573**

3.3 Site Preparation - 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					
Fugitive Dust					0.9014	0.0000	0.9014	0.0973	0.0000	0.0973			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755		942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**0.9014**	**0.2995**	**1.2009**	**0.0973**	**0.2755**	**0.3728**		**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.3 Site Preparation - 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	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
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	0.0204	0.0120	0.1401	5.0000e-004	0.0559	3.6000e-004	0.0563	0.0148	3.3000e-004	0.0152		49.7916	49.7916	1.0700e-003		49.8183
Total	**0.0204**	**0.0120**	**0.1401**	**5.0000e-004**	**0.0559**	**3.6000e-004**	**0.0563**	**0.0148**	**3.3000e-004**	**0.0152**		**49.7916**	**49.7916**	**1.0700e-003**		**49.8183**

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					0.3516	0.0000	0.3516	0.0380	0.0000	0.0380			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755	0.0000	942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**0.3516**	**0.2995**	**0.6510**	**0.0380**	**0.2755**	**0.3135**	**0.0000**	**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.3 Site Preparation - 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	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
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	0.0204	0.0120	0.1401	5.0000e-004	0.0559	3.6000e-004	0.0563	0.0148	3.3000e-004	0.0152		49.7916	49.7916	1.0700e-003		49.8183
Total	**0.0204**	**0.0120**	**0.1401**	**5.0000e-004**	**0.0559**	**3.6000e-004**	**0.0563**	**0.0148**	**3.3000e-004**	**0.0152**		**49.7916**	**49.7916**	**1.0700e-003**		**49.8183**

3.4 Grading - 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					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.7528**	**0.4073**	**1.1601**	**0.4138**	**0.3886**	**0.8024**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.4 Grading - 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	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
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	0.0409	0.0240	0.2803	1.0000e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		99.5832	99.5832	2.1300e-003		99.6365
Total	**0.0409**	**0.0240**	**0.2803**	**1.0000e-003**	**0.1118**	**7.2000e-004**	**0.1125**	**0.0296**	**6.7000e-004**	**0.0303**		**99.5832**	**99.5832**	**2.1300e-003**		**99.6365**

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					0.2936	0.0000	0.2936	0.1614	0.0000	0.1614			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.2936**	**0.4073**	**0.7009**	**0.1614**	**0.3886**	**0.5500**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.4 Grading - 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	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
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	0.0409	0.0240	0.2803	1.0000e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		99.5832	99.5832	2.1300e-003		99.6365
Total	**0.0409**	**0.0240**	**0.2803**	**1.0000e-003**	**0.1118**	**7.2000e-004**	**0.1125**	**0.0296**	**6.7000e-004**	**0.0303**		**99.5832**	**99.5832**	**2.1300e-003**		**99.6365**

3.5 Building Construction - 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					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**		**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

3.5 Building Construction - 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	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
Vendor	0.0140	0.4680	0.1396	1.2000e-003	0.0320	1.0100e-003	0.0330	9.1900e-003	9.7000e-004	0.0102		131.0945	131.0945	0.0111		131.3708
Worker	0.0940	0.0552	0.6446	2.3000e-003	0.2571	1.6600e-003	0.2588	0.0682	1.5300e-003	0.0697		229.0414	229.0414	4.9000e-003		229.1640
Total	**0.1080**	**0.5232**	**0.7842**	**3.5000e-003**	**0.2890**	**2.6700e-003**	**0.2917**	**0.0774**	**2.5000e-003**	**0.0799**		**360.1359**	**360.1359**	**0.0160**		**360.5349**

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	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**	**0.0000**	**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

3.5 Building Construction - 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	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
Vendor	0.0140	0.4680	0.1396	1.2000e-003	0.0320	1.0100e-003	0.0330	9.1900e-003	9.7000e-004	0.0102		131.0945	131.0945	0.0111		131.3708
Worker	0.0940	0.0552	0.6446	2.3000e-003	0.2571	1.6600e-003	0.2588	0.0682	1.5300e-003	0.0697		229.0414	229.0414	4.9000e-003		229.1640
Total	**0.1080**	**0.5232**	**0.7842**	**3.5000e-003**	**0.2890**	**2.6700e-003**	**0.2917**	**0.0774**	**2.5000e-003**	**0.0799**		**360.1359**	**360.1359**	**0.0160**		**360.5349**

3.6 Paving - 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					
Off-Road	0.7214	6.7178	7.0899	0.0113		0.3534	0.3534		0.3286	0.3286		1,035.3425	1,035.3425	0.3016		1,042.8818
Paving	0.1153					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8367**	**6.7178**	**7.0899**	**0.0113**		**0.3534**	**0.3534**		**0.3286**	**0.3286**		**1,035.3425**	**1,035.3425**	**0.3016**		**1,042.8818**

3.6 Paving - 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	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
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	0.0736	0.0432	0.5045	1.8000e-003	0.2012	1.3000e-003	0.2025	0.0534	1.2000e-003	0.0546		179.2498	179.2498	3.8400e-003		179.3458
Total	**0.0736**	**0.0432**	**0.5045**	**1.8000e-003**	**0.2012**	**1.3000e-003**	**0.2025**	**0.0534**	**1.2000e-003**	**0.0546**		**179.2498**	**179.2498**	**3.8400e-003**		**179.3458**

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	0.7214	6.7178	7.0899	0.0113		0.3534	0.3534		0.3286	0.3286	0.0000	1,035.3425	1,035.3425	0.3016		1,042.8818
Paving	0.1153					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8367**	**6.7178**	**7.0899**	**0.0113**		**0.3534**	**0.3534**		**0.3286**	**0.3286**	**0.0000**	**1,035.3425**	**1,035.3425**	**0.3016**		**1,042.8818**

3.6 Paving - 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	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
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	0.0736	0.0432	0.5045	1.8000e-003	0.2012	1.3000e-003	0.2025	0.0534	1.2000e-003	0.0546		179.2498	179.2498	3.8400e-003		179.3458
Total	**0.0736**	**0.0432**	**0.5045**	**1.8000e-003**	**0.2012**	**1.3000e-003**	**0.2025**	**0.0534**	**1.2000e-003**	**0.0546**		**179.2498**	**179.2498**	**3.8400e-003**		**179.3458**

3.7 Architectural Coating - 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	11.3240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**11.5429**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 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	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
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	0.0204	0.0120	0.1401	5.0000e-004	0.0559	3.6000e-004	0.0563	0.0148	3.3000e-004	0.0152		49.7916	49.7916	1.0700e-003		49.8183
Total	**0.0204**	**0.0120**	**0.1401**	**5.0000e-004**	**0.0559**	**3.6000e-004**	**0.0563**	**0.0148**	**3.3000e-004**	**0.0152**		**49.7916**	**49.7916**	**1.0700e-003**		**49.8183**

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	11.3240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**11.5429**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 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	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
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	0.0204	0.0120	0.1401	5.0000e-004	0.0559	3.6000e-004	0.0563	0.0148	3.3000e-004	0.0152		49.7916	49.7916	1.0700e-003		49.8183
Total	**0.0204**	**0.0120**	**0.1401**	**5.0000e-004**	**0.0559**	**3.6000e-004**	**0.0563**	**0.0148**	**3.3000e-004**	**0.0152**		**49.7916**	**49.7916**	**1.0700e-003**		**49.8183**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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					
Mitigated	0.1567	0.5724	2.1064	8.5100e-003	0.8424	5.9400e-003	0.8483	0.2253	5.5100e-003	0.2308		865.3044	865.3044	0.0347		866.1728
Unmitigated	0.1567	0.5724	2.1064	8.5100e-003	0.8424	5.9400e-003	0.8483	0.2253	5.5100e-003	0.2308		865.3044	865.3044	0.0347		866.1728

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	116.20	113.40	96.80	386,236	386,236
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	116.20	113.40	96.80	386,236	386,236

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904
Other Non-Asphalt Surfaces	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904
Parking Lot	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	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					
NaturalGas Mitigated	0.0104	0.0891	0.0379	5.7000e-004		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003		113.7510	113.7510	2.1800e-003	2.0900e-003	114.4270
NaturalGas Unmitigated	0.0104	0.0891	0.0379	5.7000e-004		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003		113.7510	113.7510	2.1800e-003	2.0900e-003	114.4270

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	966.884	0.0104	0.0891	0.0379	5.7000e-004		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003		113.7510	113.7510	2.1800e-003	2.0900e-003	114.4270
Other Non-Asphalt Surfaces	0	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
Parking Lot	0	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
Total		**0.0104**	**0.0891**	**0.0379**	**5.7000e-004**		**7.2000e-003**	**7.2000e-003**		**7.2000e-003**	**7.2000e-003**		**113.7510**	**113.7510**	**2.1800e-003**	**2.0900e-003**	**114.4270**

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	0.966884	0.0104	0.0891	0.0379	5.7000e-004		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003		113.7510	113.7510	2.1800e-003	2.0900e-003	114.4270
Other Non-Asphalt Surfaces	0	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
Parking Lot	0	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
Total		**0.0104**	**0.0891**	**0.0379**	**5.7000e-004**		**7.2000e-003**	**7.2000e-003**		**7.2000e-003**	**7.2000e-003**		**113.7510**	**113.7510**	**2.1800e-003**	**2.0900e-003**	**114.4270**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	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					
Mitigated	0.4289	0.0190	1.6524	9.0000e-005		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003	0.0000	2.9754	2.9754	2.8700e-003	0.0000	3.0471
Unmitigated	5.6696	0.4340	11.8234	0.0260		1.5369	1.5369		1.5369	1.5369	187.3384	362.9754	550.3137	0.5616	0.0127	568.1416

6.2 Area by SubCategory

Unmitigated

SubCategory	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
	lb/day										lb/day					
Architectural Coating	0.0310					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3479					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	5.2407	0.4150	10.1710	0.0260		1.5278	1.5278		1.5278	1.5278	187.3384	360.0000	547.3384	0.5587	0.0127	565.0945
Landscaping	0.0499	0.0190	1.6524	9.0000e-005		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003		2.9754	2.9754	2.8700e-003		3.0471
Total	**5.6696**	**0.4340**	**11.8235**	**0.0260**		**1.5369**	**1.5369**		**1.5369**	**1.5369**	**187.3384**	**362.9754**	**550.3137**	**0.5616**	**0.0127**	**568.1416**

6.2 Area by SubCategory

Mitigated

SubCategory	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
	lb/day										lb/day					
Architectural Coating	0.0310					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3479					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	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
Landscaping	0.0499	0.0190	1.6524	9.0000e-005		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003		2.9754	2.9754	2.8700e-003		3.0471
Total	**0.4289**	**0.0190**	**1.6524**	**9.0000e-005**		**9.1400e-003**	**9.1400e-003**		**9.1400e-003**	**9.1400e-003**	**0.0000**	**2.9754**	**2.9754**	**2.8700e-003**	**0.0000**	**3.0471**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Le Jardin Townhomes

Orange County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	10.22	1000sqft	0.23	10,220.00	0
Parking Lot	9.51	1000sqft	0.22	9,510.00	0
Condo/Townhouse	20.00	Dwelling Unit	0.40	17,220.00	57

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Size of Condo/Townhouse area updated to reflect Architect drawings.

Construction Phase - Phase timing updated to reflect plan.

Demolition -

Grading - Total acres graded updated to reflect full parcel size.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Woodstoves -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	5.00	10.00
tblGrading	AcresOfGrading	0.50	0.85
tblLandUse	LandUseSquareFeet	20,000.00	17,220.00
tblLandUse	LotAcreage	1.25	0.40

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					
2021	11.5610	8.5205	8.2151	0.0167	0.9573	0.4502	1.2726	0.4434	0.4142	0.8327	0.0000	1,665.5359	1,665.5359	0.3725	0.0000	1,672.0084
Maximum	**11.5610**	**8.5205**	**8.2151**	**0.0167**	**0.9573**	**0.4502**	**1.2726**	**0.4434**	**0.4142**	**0.8327**	**0.0000**	**1,665.5359**	**1,665.5359**	**0.3725**	**0.0000**	**1,672.0084**

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					
2021	11.5610	8.5205	8.2151	0.0167	0.4075	0.4502	0.8134	0.1910	0.4142	0.5803	0.0000	1,665.5359	1,665.5359	0.3725	0.0000	1,672.0084
Maximum	**11.5610**	**8.5205**	**8.2151**	**0.0167**	**0.4075**	**0.4502**	**0.8134**	**0.1910**	**0.4142**	**0.5803**	**0.0000**	**1,665.5359**	**1,665.5359**	**0.3725**	**0.0000**	**1,672.0084**

	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**	**57.44**	**0.00**	**36.08**	**56.92**	**0.00**	**30.31**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	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					
Area	5.6696	0.4340	11.8234	0.0260		1.5369	1.5369		1.5369	1.5369	187.3384	362.9754	550.3137	0.5616	0.0127	568.1416
Energy	0.0104	0.0891	0.0379	5.7000e-004		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003		113.7510	113.7510	2.1800e-003	2.0900e-003	114.4270
Mobile	0.1597	0.5559	2.2120	8.9000e-003	0.8424	5.9200e-003	0.8483	0.2253	5.4900e-003	0.2308		904.9419	904.9419	0.0349		905.8142
Total	**5.8397**	**1.0790**	**14.0734**	**0.0355**	**0.8424**	**1.5500**	**2.3924**	**0.2253**	**1.5496**	**1.7749**	**187.3384**	**1,381.6683**	**1,569.0066**	**0.5986**	**0.0148**	**1,588.3828**

Mitigated Operational

	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					
Area	0.4289	0.0190	1.6524	9.0000e-005		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003	0.0000	2.9754	2.9754	2.8700e-003	0.0000	3.0471
Energy	0.0104	0.0891	0.0379	5.7000e-004		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003		113.7510	113.7510	2.1800e-003	2.0900e-003	114.4270
Mobile	0.1597	0.5559	2.2120	8.9000e-003	0.8424	5.9200e-003	0.8483	0.2253	5.4900e-003	0.2308		904.9419	904.9419	0.0349		905.8142
Total	**0.5990**	**0.6641**	**3.9024**	**9.5600e-003**	**0.8424**	**0.0223**	**0.8646**	**0.2253**	**0.0218**	**0.2471**	**0.0000**	**1,021.6683**	**1,021.6683**	**0.0399**	**2.0900e-003**	**1,023.2883**

	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	89.74	38.46	72.27	73.07	0.00	98.56	63.86	0.00	98.59	86.08	100.00	26.06	34.88	93.33	85.89	35.58

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	5/21/2021	6/3/2021	5	10	
2	Site Preparation	Site Preparation	6/4/2021	6/4/2021	5	1	
3	Grading	Grading	6/5/2021	6/8/2021	5	2	
4	Building Construction	Building Construction	6/9/2021	10/26/2021	5	100	
5	Paving	Paving	10/27/2021	11/2/2021	5	5	
6	Architectural Coating	Architectural Coating	11/3/2021	11/16/2021	5	10	

Acres of Grading (Site Preparation Phase): 0.85

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.45

Residential Indoor: 34,871; Residential Outdoor: 11,624; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,184 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	4	10.00	0.00	49.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	23.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 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					
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**		**0.4073**	**0.4073**		**0.3886**	**0.3886**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.2 Demolition - 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	0.0353	1.2457	0.3422	3.7000e-003	0.0853	3.9100e-003	0.0892	0.0234	3.7400e-003	0.0271		412.8827	412.8827	0.0428		413.9529
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	0.0361	0.0218	0.3037	1.0600e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		105.2194	105.2194	2.2500e-003		105.2758
Total	**0.0714**	**1.2675**	**0.6459**	**4.7600e-003**	**0.1971**	**4.6300e-003**	**0.2017**	**0.0530**	**4.4100e-003**	**0.0574**		**518.1022**	**518.1022**	**0.0451**		**519.2287**

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	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**		**0.4073**	**0.4073**		**0.3886**	**0.3886**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.2 Demolition - 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	0.0353	1.2457	0.3422	3.7000e-003	0.0853	3.9100e-003	0.0892	0.0234	3.7400e-003	0.0271		412.8827	412.8827	0.0428		413.9529
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	0.0361	0.0218	0.3037	1.0600e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		105.2194	105.2194	2.2500e-003		105.2758
Total	**0.0714**	**1.2675**	**0.6459**	**4.7600e-003**	**0.1971**	**4.6300e-003**	**0.2017**	**0.0530**	**4.4100e-003**	**0.0574**		**518.1022**	**518.1022**	**0.0451**		**519.2287**

3.3 Site Preparation - 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					
Fugitive Dust					0.9014	0.0000	0.9014	0.0973	0.0000	0.0973			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755		942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**0.9014**	**0.2995**	**1.2009**	**0.0973**	**0.2755**	**0.3728**		**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.3 Site Preparation - 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	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
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	0.0181	0.0109	0.1519	5.3000e-004	0.0559	3.6000e-004	0.0563	0.0148	3.3000e-004	0.0152		52.6097	52.6097	1.1300e-003		52.6379
Total	**0.0181**	**0.0109**	**0.1519**	**5.3000e-004**	**0.0559**	**3.6000e-004**	**0.0563**	**0.0148**	**3.3000e-004**	**0.0152**		**52.6097**	**52.6097**	**1.1300e-003**		**52.6379**

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					0.3516	0.0000	0.3516	0.0380	0.0000	0.0380			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755	0.0000	942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**0.3516**	**0.2995**	**0.6510**	**0.0380**	**0.2755**	**0.3135**	**0.0000**	**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.3 Site Preparation - 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	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
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	0.0181	0.0109	0.1519	5.3000e-004	0.0559	3.6000e-004	0.0563	0.0148	3.3000e-004	0.0152		52.6097	52.6097	1.1300e-003		52.6379
Total	**0.0181**	**0.0109**	**0.1519**	**5.3000e-004**	**0.0559**	**3.6000e-004**	**0.0563**	**0.0148**	**3.3000e-004**	**0.0152**		**52.6097**	**52.6097**	**1.1300e-003**		**52.6379**

3.4 Grading - 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					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.7528**	**0.4073**	**1.1601**	**0.4138**	**0.3886**	**0.8024**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.4 Grading - 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	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
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	0.0361	0.0218	0.3037	1.0600e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		105.2194	105.2194	2.2500e-003		105.2758
Total	**0.0361**	**0.0218**	**0.3037**	**1.0600e-003**	**0.1118**	**7.2000e-004**	**0.1125**	**0.0296**	**6.7000e-004**	**0.0303**		**105.2194**	**105.2194**	**2.2500e-003**		**105.2758**

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					0.2936	0.0000	0.2936	0.1614	0.0000	0.1614			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.2936**	**0.4073**	**0.7009**	**0.1614**	**0.3886**	**0.5500**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.4 Grading - 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	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
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	0.0361	0.0218	0.3037	1.0600e-003	0.1118	7.2000e-004	0.1125	0.0296	6.7000e-004	0.0303		105.2194	105.2194	2.2500e-003		105.2758
Total	**0.0361**	**0.0218**	**0.3037**	**1.0600e-003**	**0.1118**	**7.2000e-004**	**0.1125**	**0.0296**	**6.7000e-004**	**0.0303**		**105.2194**	**105.2194**	**2.2500e-003**		**105.2758**

3.5 Building Construction - 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					
Off-Road	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**		**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

3.5 Building Construction - 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	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
Vendor	0.0133	0.4691	0.1272	1.2300e-003	0.0320	9.7000e-004	0.0329	9.1900e-003	9.3000e-004	0.0101		134.3963	134.3963	0.0105		134.6597
Worker	0.0830	0.0502	0.6986	2.4300e-003	0.2571	1.6600e-003	0.2588	0.0682	1.5300e-003	0.0697		242.0047	242.0047	5.1800e-003		242.1342
Total	**0.0964**	**0.5193**	**0.8258**	**3.6600e-003**	**0.2890**	**2.6300e-003**	**0.2917**	**0.0774**	**2.4600e-003**	**0.0798**		**376.4009**	**376.4009**	**0.0157**		**376.7939**

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	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**	**0.0000**	**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

3.5 Building Construction - 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	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
Vendor	0.0133	0.4691	0.1272	1.2300e-003	0.0320	9.7000e-004	0.0329	9.1900e-003	9.3000e-004	0.0101		134.3963	134.3963	0.0105		134.6597
Worker	0.0830	0.0502	0.6986	2.4300e-003	0.2571	1.6600e-003	0.2588	0.0682	1.5300e-003	0.0697		242.0047	242.0047	5.1800e-003		242.1342
Total	**0.0964**	**0.5193**	**0.8258**	**3.6600e-003**	**0.2890**	**2.6300e-003**	**0.2917**	**0.0774**	**2.4600e-003**	**0.0798**		**376.4009**	**376.4009**	**0.0157**		**376.7939**

3.6 Paving - 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					
Off-Road	0.7214	6.7178	7.0899	0.0113		0.3534	0.3534		0.3286	0.3286		1,035.3425	1,035.3425	0.3016		1,042.8818
Paving	0.1153					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8367**	**6.7178**	**7.0899**	**0.0113**		**0.3534**	**0.3534**		**0.3286**	**0.3286**		**1,035.3425**	**1,035.3425**	**0.3016**		**1,042.8818**

3.6 Paving - 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	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
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	0.0650	0.0393	0.5467	1.9000e-003	0.2012	1.3000e-003	0.2025	0.0534	1.2000e-003	0.0546		189.3950	189.3950	4.0600e-003		189.4963
Total	**0.0650**	**0.0393**	**0.5467**	**1.9000e-003**	**0.2012**	**1.3000e-003**	**0.2025**	**0.0534**	**1.2000e-003**	**0.0546**		**189.3950**	**189.3950**	**4.0600e-003**		**189.4963**

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	0.7214	6.7178	7.0899	0.0113		0.3534	0.3534		0.3286	0.3286	0.0000	1,035.3425	1,035.3425	0.3016		1,042.8818
Paving	0.1153					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8367**	**6.7178**	**7.0899**	**0.0113**		**0.3534**	**0.3534**		**0.3286**	**0.3286**	**0.0000**	**1,035.3425**	**1,035.3425**	**0.3016**		**1,042.8818**

3.6 Paving - 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	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
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	0.0650	0.0393	0.5467	1.9000e-003	0.2012	1.3000e-003	0.2025	0.0534	1.2000e-003	0.0546		189.3950	189.3950	4.0600e-003		189.4963
Total	**0.0650**	**0.0393**	**0.5467**	**1.9000e-003**	**0.2012**	**1.3000e-003**	**0.2025**	**0.0534**	**1.2000e-003**	**0.0546**		**189.3950**	**189.3950**	**4.0600e-003**		**189.4963**

3.7 Architectural Coating - 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	11.3240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**11.5429**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 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	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
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	0.0181	0.0109	0.1519	5.3000e-004	0.0559	3.6000e-004	0.0563	0.0148	3.3000e-004	0.0152		52.6097	52.6097	1.1300e-003		52.6379
Total	**0.0181**	**0.0109**	**0.1519**	**5.3000e-004**	**0.0559**	**3.6000e-004**	**0.0563**	**0.0148**	**3.3000e-004**	**0.0152**		**52.6097**	**52.6097**	**1.1300e-003**		**52.6379**

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	11.3240					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**11.5429**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 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	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
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	0.0181	0.0109	0.1519	5.3000e-004	0.0559	3.6000e-004	0.0563	0.0148	3.3000e-004	0.0152		52.6097	52.6097	1.1300e-003		52.6379
Total	**0.0181**	**0.0109**	**0.1519**	**5.3000e-004**	**0.0559**	**3.6000e-004**	**0.0563**	**0.0148**	**3.3000e-004**	**0.0152**		**52.6097**	**52.6097**	**1.1300e-003**		**52.6379**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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					
Mitigated	0.1597	0.5559	2.2120	8.9000e-003	0.8424	5.9200e-003	0.8483	0.2253	5.4900e-003	0.2308		904.9419	904.9419	0.0349		905.8142
Unmitigated	0.1597	0.5559	2.2120	8.9000e-003	0.8424	5.9200e-003	0.8483	0.2253	5.4900e-003	0.2308		904.9419	904.9419	0.0349		905.8142

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	116.20	113.40	96.80	386,236	386,236
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	116.20	113.40	96.80	386,236	386,236

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904
Other Non-Asphalt Surfaces	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904
Parking Lot	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	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					
NaturalGas Mitigated	0.0104	0.0891	0.0379	5.7000e-004		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003		113.7510	113.7510	2.1800e-003	2.0900e-003	114.4270
NaturalGas Unmitigated	0.0104	0.0891	0.0379	5.7000e-004		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003		113.7510	113.7510	2.1800e-003	2.0900e-003	114.4270

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	966.884	0.0104	0.0891	0.0379	5.7000e-004		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003		113.7510	113.7510	2.1800e-003	2.0900e-003	114.4270
Other Non-Asphalt Surfaces	0	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
Parking Lot	0	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
Total		**0.0104**	**0.0891**	**0.0379**	**5.7000e-004**		**7.2000e-003**	**7.2000e-003**		**7.2000e-003**	**7.2000e-003**		**113.7510**	**113.7510**	**2.1800e-003**	**2.0900e-003**	**114.4270**

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	0.966884	0.0104	0.0891	0.0379	5.7000e-004		7.2000e-003	7.2000e-003		7.2000e-003	7.2000e-003		113.7510	113.7510	2.1800e-003	2.0900e-003	114.4270
Other Non-Asphalt Surfaces	0	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
Parking Lot	0	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
Total		**0.0104**	**0.0891**	**0.0379**	**5.7000e-004**		**7.2000e-003**	**7.2000e-003**		**7.2000e-003**	**7.2000e-003**		**113.7510**	**113.7510**	**2.1800e-003**	**2.0900e-003**	**114.4270**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	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					
Mitigated	0.4289	0.0190	1.6524	9.0000e-005		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003	0.0000	2.9754	2.9754	2.8700e-003	0.0000	3.0471
Unmitigated	5.6696	0.4340	11.8234	0.0260		1.5369	1.5369		1.5369	1.5369	187.3384	362.9754	550.3137	0.5616	0.0127	568.1416

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	0.0310					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3479					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	5.2407	0.4150	10.1710	0.0260		1.5278	1.5278		1.5278	1.5278	187.3384	360.0000	547.3384	0.5587	0.0127	565.0945
Landscaping	0.0499	0.0190	1.6524	9.0000e-005		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003		2.9754	2.9754	2.8700e-003		3.0471
Total	**5.6696**	**0.4340**	**11.8235**	**0.0260**		**1.5369**	**1.5369**		**1.5369**	**1.5369**	**187.3384**	**362.9754**	**550.3137**	**0.5616**	**0.0127**	**568.1416**

6.2 Area by SubCategory

Mitigated

	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
SubCategory	lb/day										lb/day					
Architectural Coating	0.0310					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3479					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	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
Landscaping	0.0499	0.0190	1.6524	9.0000e-005		9.1400e-003	9.1400e-003		9.1400e-003	9.1400e-003		2.9754	2.9754	2.8700e-003		3.0471
Total	**0.4289**	**0.0190**	**1.6524**	**9.0000e-005**		**9.1400e-003**	**9.1400e-003**		**9.1400e-003**	**9.1400e-003**	**0.0000**	**2.9754**	**2.9754**	**2.8700e-003**	**0.0000**	**3.0471**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Le Jardin Townhomes

Orange County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	10.22	1000sqft	0.23	10,220.00	0
Parking Lot	9.51	1000sqft	0.22	9,510.00	0
Condo/Townhouse	20.00	Dwelling Unit	0.40	17,220.00	57

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	30
Climate Zone	8			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Size of Condo/Townhouse area updated to reflect Architect drawings.

Construction Phase - Phase timing updated to reflect plan.

Demolition -

Grading - Total acres graded updated to reflect full parcel size.

Construction Off-road Equipment Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Woodstoves -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	5.00	10.00
tblGrading	AcresOfGrading	0.50	0.85
tblLandUse	LandUseSquareFeet	20,000.00	17,220.00
tblLandUse	LotAcreage	1.25	0.40

2.0 Emissions Summary

2.1 Overall Construction

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	tons/yr										MT/yr					
2021	0.1092	0.5045	0.4827	9.0000e-004	0.0173	0.0265	0.0438	4.7700e-003	0.0245	0.0293	0.0000	79.9960	79.9960	0.0192	0.0000	80.4758
Maximum	**0.1092**	**0.5045**	**0.4827**	**9.0000e-004**	**0.0173**	**0.0265**	**0.0438**	**4.7700e-003**	**0.0245**	**0.0293**	**0.0000**	**79.9960**	**79.9960**	**0.0192**	**0.0000**	**80.4758**

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	tons/yr										MT/yr					
2021	0.1092	0.5045	0.4827	9.0000e-004	0.0165	0.0265	0.0430	4.4900e-003	0.0245	0.0290	0.0000	79.9959	79.9959	0.0192	0.0000	80.4758
Maximum	**0.1092**	**0.5045**	**0.4827**	**9.0000e-004**	**0.0165**	**0.0265**	**0.0430**	**4.4900e-003**	**0.0245**	**0.0290**	**0.0000**	**79.9959**	**79.9959**	**0.0192**	**0.0000**	**80.4758**

	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**	**4.28**	**0.00**	**1.67**	**5.87**	**0.00**	**0.96**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-21-2021	8-20-2021	0.3060	0.3060
2	8-21-2021	9-30-2021	0.1373	0.1373
		Highest	0.3060	0.3060

2.2 Overall Operational

Unmitigated Operational

	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	tons/yr										MT/yr					
Area	0.1409	7.5700e-003	0.3337	3.4000e-004		0.0202	0.0202		0.0202	0.0202	2.1244	4.4197	6.5441	6.6600e-003	1.4000e-004	6.7536
Energy	1.9000e-003	0.0163	6.9200e-003	1.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	51.5548	51.5548	1.7100e-003	6.2000e-004	51.7838
Mobile	0.0270	0.1030	0.3784	1.5200e-003	0.1465	1.0500e-003	0.1476	0.0392	9.7000e-004	0.0402	0.0000	140.6484	140.6484	5.5700e-003	0.0000	140.7875
Waste						0.0000	0.0000		0.0000	0.0000	1.8675	0.0000	1.8675	0.1104	0.0000	4.6267
Water						0.0000	0.0000		0.0000	0.0000	0.4134	8.3142	8.7276	0.0428	1.0700e-003	10.1177
Total	**0.1698**	**0.1268**	**0.7190**	**1.9600e-003**	**0.1465**	**0.0226**	**0.1691**	**0.0392**	**0.0225**	**0.0618**	**4.4053**	**204.9371**	**209.3425**	**0.1671**	**1.8300e-003**	**214.0693**

2.2 Overall Operational

Mitigated Operational

	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	tons/yr										MT/yr					
Area	0.0754	2.3800e-003	0.2066	1.0000e-005		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	0.3374	0.3374	3.3000e-004	0.0000	0.3455
Energy	1.9000e-003	0.0163	6.9200e-003	1.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	50.8108	50.8108	1.6800e-003	6.2000e-004	51.0372
Mobile	0.0270	0.1030	0.3784	1.5200e-003	0.1465	1.0500e-003	0.1476	0.0392	9.7000e-004	0.0402	0.0000	140.6484	140.6484	5.5700e-003	0.0000	140.7875
Waste						0.0000	0.0000		0.0000	0.0000	1.2139	0.0000	1.2139	0.0717	0.0000	3.0074
Water						0.0000	0.0000		0.0000	0.0000	0.3307	7.2330	7.5637	0.0343	8.6000e-004	8.6778
Total	**0.1043**	**0.1216**	**0.5918**	**1.6300e-003**	**0.1465**	**3.5000e-003**	**0.1500**	**0.0392**	**3.4200e-003**	**0.0427**	**1.5446**	**199.0296**	**200.5742**	**0.1136**	**1.4800e-003**	**203.8554**

	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	**38.59**	**4.09**	**17.68**	**16.84**	**0.00**	**84.51**	**11.30**	**0.00**	**84.81**	**30.93**	**64.94**	**2.88**	**4.19**	**32.03**	**19.13**	**4.77**

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	5/21/2021	6/3/2021	5	10	
2	Site Preparation	Site Preparation	6/4/2021	6/4/2021	5	1	
3	Grading	Grading	6/5/2021	6/8/2021	5	2	
4	Building Construction	Building Construction	6/9/2021	10/26/2021	5	100	
5	Paving	Paving	10/27/2021	11/2/2021	5	5	
6	Architectural Coating	Architectural Coating	11/3/2021	11/16/2021	5	10	

Acres of Grading (Site Preparation Phase): 0.85

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.45

Residential Indoor: 34,871; Residential Outdoor: 11,624; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,184 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

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	4	10.00	0.00	49.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	23.00	5.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.6 Paving - 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	tons/yr										MT/yr					
Hauling	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	0.0000	0.0000
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	0.0000	0.0000
Worker	1.6000e-004	1.1000e-004	1.2900e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4127	0.4127	1.0000e-005	0.0000	0.4130
Total	**1.6000e-004**	**1.1000e-004**	**1.2900e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4127**	**0.4127**	**1.0000e-005**	**0.0000**	**0.4130**

3.7 Architectural Coating - 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	tons/yr										MT/yr					
Archit. Coating	0.0566					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	**0.0577**	**7.6300e-003**	**9.0900e-003**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**9.0000e-005**	**0.0000**	**1.2788**

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 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	tons/yr										MT/yr					
Off-Road	3.9800e-003	0.0363	0.0379	6.0000e-005		2.0400e-003	2.0400e-003		1.9400e-003	1.9400e-003	0.0000	5.2047	5.2047	9.7000e-004	0.0000	5.2289
Total	**3.9800e-003**	**0.0363**	**0.0379**	**6.0000e-005**		**2.0400e-003**	**2.0400e-003**		**1.9400e-003**	**1.9400e-003**	**0.0000**	**5.2047**	**5.2047**	**9.7000e-004**	**0.0000**	**5.2289**

3.2 Demolition - 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	tons/yr										MT/yr					
Hauling	1.8000e-004	6.4200e-003	1.7500e-003	2.0000e-005	4.2000e-004	2.0000e-005	4.4000e-004	1.2000e-004	2.0000e-005	1.3000e-004	0.0000	1.8609	1.8609	2.0000e-004	0.0000	1.8658
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	0.0000	0.0000
Worker	1.8000e-004	1.2000e-004	1.4400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4586	0.4586	1.0000e-005	0.0000	0.4588
Total	**3.6000e-004**	**6.5400e-003**	**3.1900e-003**	**3.0000e-005**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**2.7000e-004**	**2.0000e-005**	**2.8000e-004**	**0.0000**	**2.3195**	**2.3195**	**2.1000e-004**	**0.0000**	**2.3246**

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	tons/yr										MT/yr					
Off-Road	3.9800e-003	0.0363	0.0379	6.0000e-005		2.0400e-003	2.0400e-003		1.9400e-003	1.9400e-003	0.0000	5.2047	5.2047	9.7000e-004	0.0000	5.2289
Total	**3.9800e-003**	**0.0363**	**0.0379**	**6.0000e-005**		**2.0400e-003**	**2.0400e-003**		**1.9400e-003**	**1.9400e-003**	**0.0000**	**5.2047**	**5.2047**	**9.7000e-004**	**0.0000**	**5.2289**

3.2 Demolition - 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	tons/yr										MT/yr					
Hauling	1.8000e-004	6.4200e-003	1.7500e-003	2.0000e-005	4.2000e-004	2.0000e-005	4.4000e-004	1.2000e-004	2.0000e-005	1.3000e-004	0.0000	1.8609	1.8609	2.0000e-004	0.0000	1.8658
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	0.0000	0.0000
Worker	1.8000e-004	1.2000e-004	1.4400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4586	0.4586	1.0000e-005	0.0000	0.4588
Total	**3.6000e-004**	**6.5400e-003**	**3.1900e-003**	**3.0000e-005**	**9.7000e-004**	**2.0000e-005**	**9.9000e-004**	**2.7000e-004**	**2.0000e-005**	**2.8000e-004**	**0.0000**	**2.3195**	**2.3195**	**2.1000e-004**	**0.0000**	**2.3246**

3.3 Site Preparation - 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	tons/yr										MT/yr					
Fugitive Dust					4.5000e-004	0.0000	4.5000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	3.9100e-003	2.0100e-003	0.0000		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.4276	0.4276	1.4000e-004	0.0000	0.4310
Total	**3.2000e-004**	**3.9100e-003**	**2.0100e-003**	**0.0000**	**4.5000e-004**	**1.5000e-004**	**6.0000e-004**	**5.0000e-005**	**1.4000e-004**	**1.9000e-004**	**0.0000**	**0.4276**	**0.4276**	**1.4000e-004**	**0.0000**	**0.4310**

3.3 Site Preparation - 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	tons/yr										MT/yr					
Hauling	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	0.0000	0.0000
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	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0229	0.0229	0.0000	0.0000	0.0229
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0229**	**0.0229**	**0.0000**	**0.0000**	**0.0229**

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	tons/yr										MT/yr					
Fugitive Dust					1.8000e-004	0.0000	1.8000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	3.9100e-003	2.0100e-003	0.0000		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.4276	0.4276	1.4000e-004	0.0000	0.4310
Total	**3.2000e-004**	**3.9100e-003**	**2.0100e-003**	**0.0000**	**1.8000e-004**	**1.5000e-004**	**3.3000e-004**	**2.0000e-005**	**1.4000e-004**	**1.6000e-004**	**0.0000**	**0.4276**	**0.4276**	**1.4000e-004**	**0.0000**	**0.4310**

3.3 Site Preparation - 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	tons/yr										MT/yr					
Hauling	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	0.0000	0.0000
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	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0229	0.0229	0.0000	0.0000	0.0229
Total	**1.0000e-005**	**1.0000e-005**	**7.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0229**	**0.0229**	**0.0000**	**0.0000**	**0.0229**

3.4 Grading - 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	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-004	7.2500e-003	7.5700e-003	1.0000e-005		4.1000e-004	4.1000e-004		3.9000e-004	3.9000e-004	0.0000	1.0409	1.0409	1.9000e-004	0.0000	1.0458
Total	**8.0000e-004**	**7.2500e-003**	**7.5700e-003**	**1.0000e-005**	**7.5000e-004**	**4.1000e-004**	**1.1600e-003**	**4.1000e-004**	**3.9000e-004**	**8.0000e-004**	**0.0000**	**1.0409**	**1.0409**	**1.9000e-004**	**0.0000**	**1.0458**

3.4 Grading - 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	tons/yr										MT/yr					
Hauling	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	0.0000	0.0000
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	0.0000	0.0000
Worker	4.0000e-005	2.0000e-005	2.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0917	0.0917	0.0000	0.0000	0.0918
Total	**4.0000e-005**	**2.0000e-005**	**2.9000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0917**	**0.0917**	**0.0000**	**0.0000**	**0.0918**

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	tons/yr										MT/yr					
Fugitive Dust					2.9000e-004	0.0000	2.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-004	7.2500e-003	7.5700e-003	1.0000e-005		4.1000e-004	4.1000e-004		3.9000e-004	3.9000e-004	0.0000	1.0409	1.0409	1.9000e-004	0.0000	1.0458
Total	**8.0000e-004**	**7.2500e-003**	**7.5700e-003**	**1.0000e-005**	**2.9000e-004**	**4.1000e-004**	**7.0000e-004**	**1.6000e-004**	**3.9000e-004**	**5.5000e-004**	**0.0000**	**1.0409**	**1.0409**	**1.9000e-004**	**0.0000**	**1.0458**

3.4 Grading - 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	tons/yr										MT/yr					
Hauling	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	0.0000	0.0000
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	0.0000	0.0000
Worker	4.0000e-005	2.0000e-005	2.9000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0917	0.0917	0.0000	0.0000	0.0918
Total	**4.0000e-005**	**2.0000e-005**	**2.9000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0917**	**0.0917**	**0.0000**	**0.0000**	**0.0918**

3.5 Building Construction - 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	tons/yr										MT/yr					
Off-Road	0.0388	0.3993	0.3632	5.7000e-004		0.0224	0.0224		0.0206	0.0206	0.0000	50.0410	50.0410	0.0162	0.0000	50.4456
Total	**0.0388**	**0.3993**	**0.3632**	**5.7000e-004**		**0.0224**	**0.0224**		**0.0206**	**0.0206**	**0.0000**	**50.0410**	**50.0410**	**0.0162**	**0.0000**	**50.4456**

3.5 Building Construction - 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	tons/yr										MT/yr					
Hauling	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	0.0000	0.0000
Vendor	6.8000e-004	0.0238	6.6800e-003	6.0000e-005	1.5700e-003	5.0000e-005	1.6200e-003	4.5000e-004	5.0000e-005	5.0000e-004	0.0000	6.0332	6.0332	4.9000e-004	0.0000	6.0454
Worker	4.2100e-003	2.8300e-003	0.0330	1.2000e-004	0.0126	8.0000e-005	0.0127	3.3500e-003	8.0000e-005	3.4300e-003	0.0000	10.5477	10.5477	2.3000e-004	0.0000	10.5533
Total	**4.8900e-003**	**0.0267**	**0.0397**	**1.8000e-004**	**0.0142**	**1.3000e-004**	**0.0143**	**3.8000e-003**	**1.3000e-004**	**3.9300e-003**	**0.0000**	**16.5809**	**16.5809**	**7.2000e-004**	**0.0000**	**16.5988**

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	tons/yr										MT/yr					
Off-Road	0.0388	0.3993	0.3632	5.7000e-004		0.0224	0.0224		0.0206	0.0206	0.0000	50.0410	50.0410	0.0162	0.0000	50.4456
Total	**0.0388**	**0.3993**	**0.3632**	**5.7000e-004**		**0.0224**	**0.0224**		**0.0206**	**0.0206**	**0.0000**	**50.0410**	**50.0410**	**0.0162**	**0.0000**	**50.4456**

3.5 Building Construction - 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	tons/yr										MT/yr					
Hauling	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	0.0000	0.0000
Vendor	6.8000e-004	0.0238	6.6800e-003	6.0000e-005	1.5700e-003	5.0000e-005	1.6200e-003	4.5000e-004	5.0000e-005	5.0000e-004	0.0000	6.0332	6.0332	4.9000e-004	0.0000	6.0454
Worker	4.2100e-003	2.8300e-003	0.0330	1.2000e-004	0.0126	8.0000e-005	0.0127	3.3500e-003	8.0000e-005	3.4300e-003	0.0000	10.5477	10.5477	2.3000e-004	0.0000	10.5533
Total	**4.8900e-003**	**0.0267**	**0.0397**	**1.8000e-004**	**0.0142**	**1.3000e-004**	**0.0143**	**3.8000e-003**	**1.3000e-004**	**3.9300e-003**	**0.0000**	**16.5809**	**16.5809**	**7.2000e-004**	**0.0000**	**16.5988**

3.6 Paving - 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	tons/yr										MT/yr					
Off-Road	1.8000e-003	0.0168	0.0177	3.0000e-005		8.8000e-004	8.8000e-004		8.2000e-004	8.2000e-004	0.0000	2.3481	2.3481	6.8000e-004	0.0000	2.3652
Paving	2.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0900e-003**	**0.0168**	**0.0177**	**3.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.3481**	**2.3481**	**6.8000e-004**	**0.0000**	**2.3652**

3.6 Paving - 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	tons/yr										MT/yr					
Hauling	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	0.0000	0.0000
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	0.0000	0.0000
Worker	1.6000e-004	1.1000e-004	1.2900e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4127	0.4127	1.0000e-005	0.0000	0.4130
Total	**1.6000e-004**	**1.1000e-004**	**1.2900e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4127**	**0.4127**	**1.0000e-005**	**0.0000**	**0.4130**

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	tons/yr										MT/yr					
Off-Road	1.8000e-003	0.0168	0.0177	3.0000e-005		8.8000e-004	8.8000e-004		8.2000e-004	8.2000e-004	0.0000	2.3481	2.3481	6.8000e-004	0.0000	2.3652
Paving	2.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0900e-003**	**0.0168**	**0.0177**	**3.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.3481**	**2.3481**	**6.8000e-004**	**0.0000**	**2.3652**

3.7 Architectural Coating - 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	tons/yr										MT/yr					
Hauling	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	0.0000	0.0000
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	0.0000	0.0000
Worker	9.0000e-005	6.0000e-005	7.2000e-004	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2293	0.2293	0.0000	0.0000	0.2294
Total	**9.0000e-005**	**6.0000e-005**	**7.2000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2293**	**0.2293**	**0.0000**	**0.0000**	**0.2294**

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	tons/yr										MT/yr					
Archit. Coating	0.0566					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	7.6300e-003	9.0900e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.2766	1.2766	9.0000e-005	0.0000	1.2788
Total	**0.0577**	**7.6300e-003**	**9.0900e-003**	**1.0000e-005**		**4.7000e-004**	**4.7000e-004**		**4.7000e-004**	**4.7000e-004**	**0.0000**	**1.2766**	**1.2766**	**9.0000e-005**	**0.0000**	**1.2788**

3.7 Architectural Coating - 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	tons/yr										MT/yr					
Hauling	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	0.0000	0.0000
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	0.0000	0.0000
Worker	9.0000e-005	6.0000e-005	7.2000e-004	0.0000	2.7000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	7.0000e-005	0.0000	0.2293	0.2293	0.0000	0.0000	0.2294
Total	**9.0000e-005**	**6.0000e-005**	**7.2000e-004**	**0.0000**	**2.7000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2293**	**0.2293**	**0.0000**	**0.0000**	**0.2294**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	tons/yr										MT/yr					
Mitigated	0.0270	0.1030	0.3784	1.5200e-003	0.1465	1.0500e-003	0.1476	0.0392	9.7000e-004	0.0402	0.0000	140.6484	140.6484	5.5700e-003	0.0000	140.7875
Unmitigated	0.0270	0.1030	0.3784	1.5200e-003	0.1465	1.0500e-003	0.1476	0.0392	9.7000e-004	0.0402	0.0000	140.6484	140.6484	5.5700e-003	0.0000	140.7875

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	116.20	113.40	96.80	386,236	386,236
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	116.20	113.40	96.80	386,236	386,236

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904
Other Non-Asphalt Surfaces	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904
Parking Lot	0.563406	0.043070	0.209298	0.109958	0.015015	0.005784	0.026182	0.017546	0.001775	0.001524	0.004941	0.000598	0.000904

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	31.9781	31.9781	1.3200e-003	2.7000e-004	32.0925
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	32.7221	32.7221	1.3500e-003	2.8000e-004	32.8391
NaturalGas Mitigated	1.9000e-003	0.0163	6.9200e-003	1.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	18.8328	18.8328	3.6000e-004	3.5000e-004	18.9447
NaturalGas Unmitigated	1.9000e-003	0.0163	6.9200e-003	1.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	18.8328	18.8328	3.6000e-004	3.5000e-004	18.9447

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	352913	1.9000e-003	0.0163	6.9200e-003	1.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	18.8328	18.8328	3.6000e-004	3.5000e-004	18.9447
Other Non-Asphalt Surfaces	0	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
Parking Lot	0	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
Total		**1.9000e-003**	**0.0163**	**6.9200e-003**	**1.0000e-004**		**1.3100e-003**	**1.3100e-003**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**18.8328**	**18.8328**	**3.6000e-004**	**3.5000e-004**	**18.9447**

Mitigated

	NaturalGas Use	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
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	352913	1.9000e-003	0.0163	6.9200e-003	1.0000e-004		1.3100e-003	1.3100e-003		1.3100e-003	1.3100e-003	0.0000	18.8328	18.8328	3.6000e-004	3.5000e-004	18.9447
Other Non-Asphalt Surfaces	0	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
Parking Lot	0	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
Total		**1.9000e-003**	**0.0163**	**6.9200e-003**	**1.0000e-004**		**1.3100e-003**	**1.3100e-003**		**1.3100e-003**	**1.3100e-003**	**0.0000**	**18.8328**	**18.8328**	**3.6000e-004**	**3.5000e-004**	**18.9447**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	99370.4	31.6615	1.3100e-003	2.7000e-004	31.7748
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	3328.5	1.0605	4.0000e-005	1.0000e-005	1.0643
Total		**32.7221**	**1.3500e-003**	**2.8000e-004**	**32.8391**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	97368.2	31.0236	1.2800e-003	2.6000e-004	31.1346
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	2995.65	0.9545	4.0000e-005	1.0000e-005	0.9579
Total		**31.9781**	**1.3200e-003**	**2.7000e-004**	**32.0925**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

	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	tons/yr										MT/yr					
Mitigated	0.0754	2.3800e-003	0.2066	1.0000e-005		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	0.3374	0.3374	3.3000e-004	0.0000	0.3455
Unmitigated	0.1409	7.5700e-003	0.3337	3.4000e-004		0.0202	0.0202		0.0202	0.0202	2.1244	4.4197	6.5441	6.6600e-003	1.4000e-004	6.7536

6.2 Area by SubCategory

Unmitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.6600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0635					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0655	5.1900e-003	0.1271	3.2000e-004		0.0191	0.0191		0.0191	0.0191	2.1244	4.0823	6.2067	6.3400e-003	1.4000e-004	6.4081
Landscaping	6.2400e-003	2.3800e-003	0.2066	1.0000e-005		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	0.3374	0.3374	3.3000e-004	0.0000	0.3455
Total	**0.1409**	**7.5700e-003**	**0.3337**	**3.3000e-004**		**0.0202**	**0.0202**		**0.0202**	**0.0202**	**2.1244**	**4.4197**	**6.5441**	**6.6700e-003**	**1.4000e-004**	**6.7536**

6.2 Area by SubCategory

Mitigated

	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
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.6600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0635					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	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
Landscaping	6.2400e-003	2.3800e-003	0.2066	1.0000e-005		1.1400e-003	1.1400e-003		1.1400e-003	1.1400e-003	0.0000	0.3374	0.3374	3.3000e-004	0.0000	0.3455
Total	**0.0754**	**2.3800e-003**	**0.2066**	**1.0000e-005**		**1.1400e-003**	**1.1400e-003**		**1.1400e-003**	**1.1400e-003**	**0.0000**	**0.3374**	**0.3374**	**3.3000e-004**	**0.0000**	**0.3455**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.5637	0.0343	8.6000e-004	8.6778
Unmitigated	8.7276	0.0428	1.0700e-003	10.1177

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.30308 / 0.821507	8.7276	0.0428	1.0700e-003	10.1177
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**8.7276**	**0.0428**	**1.0700e-003**	**10.1177**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	1.04246 / 0.821507	7.5637	0.0343	8.6000e-004	8.6778
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**7.5637**	**0.0343**	**8.6000e-004**	**8.6778**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.2139	0.0717	0.0000	3.0074
Unmitigated	1.8675	0.1104	0.0000	4.6267

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	9.2	1.8675	0.1104	0.0000	4.6267
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**1.8675**	**0.1104**	**0.0000**	**4.6267**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	5.98	1.2139	0.0717	0.0000	3.0074
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**1.2139**	**0.0717**	**0.0000**	**3.0074**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

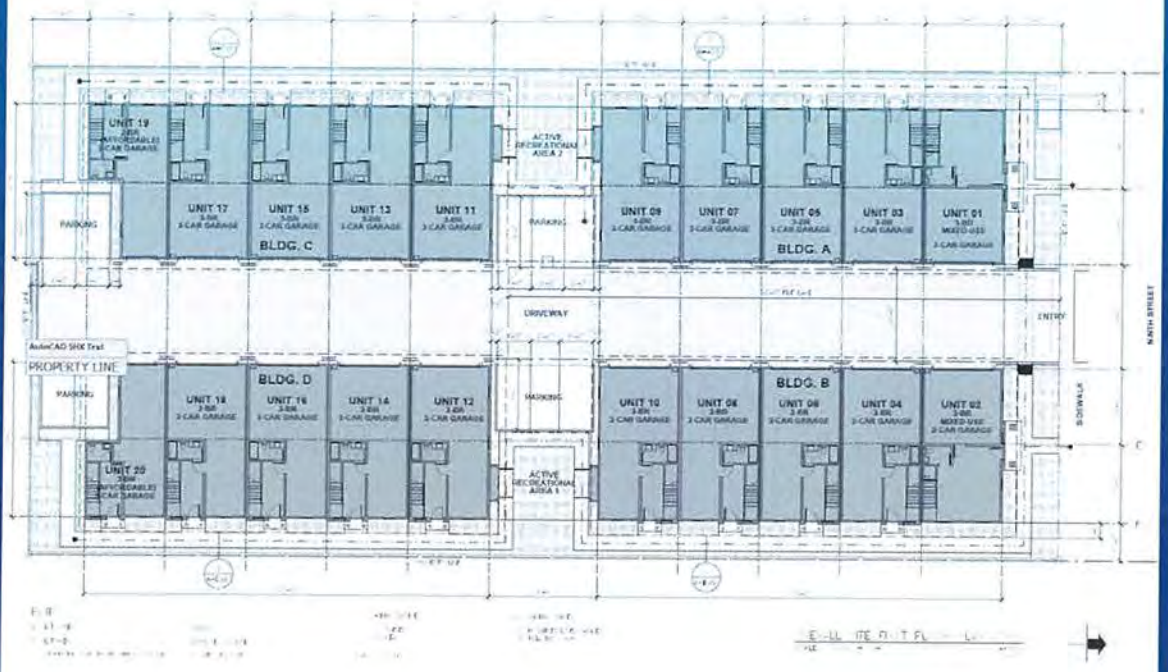
Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation



ENVIRONMENTAL NOISE STUDY FOR GARDEN GROVE TOWNHOMES PROJECT

JUNE 4, 2021

PREPARED FOR:
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EXECUTIVE SUMMARY

Acoustics Group, Inc., (AGI) was retained to conduct an environmental noise study of the Garden Grove Townhomes Project located at 8722 Garden Grove Boulevard in Garden Grove, CA. This report presents an assessment of the potential construction and operational noise impacts associated with the Project.

The project site is exposed to over 70 dBA CNEL and is considered by the City of Garden Grove Land-Use Guidelines to be in the Normally Unacceptable range and is ***potentially-significant-unless-mitigation-incorporated***. The project requires an acoustical study to demonstrate that the residences and project area have been designed to limit intruding noise to a maximum interior noise level of 45 dBA CNEL and exterior noise level of 65 dBA CNEL.[1]

The project site is located over 3.5 miles southeast from Joint Forces Training Base Los Alamitos (SLI) and is situated significantly outside of the 60 dB noise contour. Aircraft noise has a ***less-than-significant*** contribution to the future noise environment at the project site.

Construction for the project would only occur during daytime hours. Exterior peak hour construction noise levels (Leq) from the proposed Project's center of the construction would be expected to be as high as 64.3, 64.8, 75.2, 78.3, and 69.1 dBA at receivers R1 through R5, respectively. Typical construction noise would exceed the City of Garden Grove's Daytime Noise Standard of 60 dBA. The Lmax from the proposed project's center of construction would be expected to be as high as 64.5, 65.0, 75.4, 78.5, and 69.4 dBA at receivers R1 through R5, respectively. Typical construction would comply with the Daytime Lmax standard of 80 dBA. The project construction noise would be ***potentially-significant-unless-mitigation-incorporated***. Additionally, construction noise would be a temporary source of annoyance for the nearest residents.

The maximum construction-related vibration level would be well below the 0.20 PPV in/sec criteria for vibration induced architectural damage at the nearby structures. Vibration would be considered ***less-than-significant***. However, construction vibration experienced at residential receptors would exceed the 78 VdB threshold for human annoyance during the daytime at R3 and R4 and would be strongly perceptible during the periods of greatest construction activity.

Project generated traffic would have a ***less-than-significant*** increase in noise levels on local roadways.

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[1] *Garden Gove Townhomes Development Exterior-to-Interior Noise Study was prepared by Acoustics Group, Inc, dated April 20, 2020.*

The future peak hour noise level from community activities (people talking on balconies and at outdoor recreational areas, cars exiting and entering the project site) would be as high as 4.7, 8.9, 12.5, 5.7, and 31.0 dBA at receptors R1 through R5, respectively. The operational noise from community activity would comply with the City of Garden Grove Daytime and Nighttime Noise Standard of 60 and 55 dBA at residential property lines, respectively. Additionally, operational noise from community activities would not increase the ambient noise levels by more than 3 dB. Operational community noise would have a ***less-than-significant*** impact on the adjacent noise sensitive receptors.

Future peak hour Leq from the exterior mechanical HVAC condensers would be as high as 28.9, 24.3, 28.7, 26.0, 45.8 dBA at receptors R1 through R5, respectively. The operational noise from exterior mechanical units would comply with the City of Garden Grove Daytime and Nighttime Noise Standard of 60 and 55 dBA at residential property lines, respectively. Additionally, operational exterior mechanical HVAC condensers would not increase the ambient noise levels by more than 3 dB. Exterior mechanical condensers noise would have a ***less-than-significant*** impact on the adjacent noise sensitive receptors.

Noise control measures have been recommended to reduce potential project-related noise impacts.

This report has been organized into multiple sections for ease of reference. Section 1 introduces the Project and provides a general discussion on the Project Components. Section 2 discusses Noise and Vibration Fundamentals, and Section 3 presents the Noise and Vibration Standards. Section 4 discusses the Existing Noise Environment, Section 5 discusses the Analysis Methodology and Section 6 discusses the Future Noise and Vibration Environment and Impacts. Section 7 presents the Noise Control Measures and Section 8 presents the Conclusion.

1. INTRODUCTION

1.1 Purpose of the Report

This report analyzes potential noise impacts associated with the Garden Grove Townhomes Project and, as appropriate, identifies measures which can be taken to avoid adverse impacts related to noise. The analysis follows the California Environmental Quality Act (CEQA) Guidelines. Impacts would be potentially significant if the Project results in or causes:

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 ground-borne vibration or ground-borne 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?

1.2 Project Description

The Project proposes to construct a residential development at 8722 Garden Grove Boulevard in Garden Grove, CA. The project consists of constructing 20-Residential Units. Refer to Figure 1 for the general location of the Project Site and Vicinity Map. Land use immediately surrounding the site are comprised of primarily residential and commercial. To the north, there are single-family residences (R1). To the east (R2), south (R3 and R5) and west (R4), there are multi-family residential developments. Refer to the Appendix for the Project Drawings.

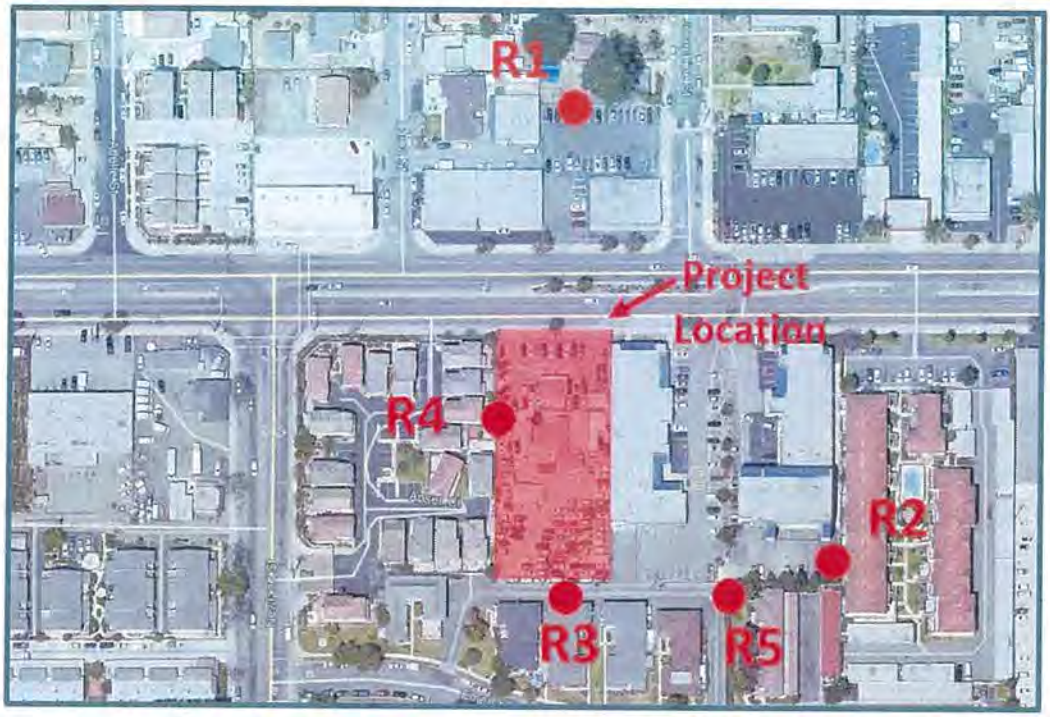

Figure 1. Location of the Project Site and Vicinity Map

2. NOISE AND VIBRATION FUNDAMENTALS & TERMINOLOGY

2.1 Noise

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver contribute to the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. A logarithmic scale is used to describe sound pressure level (SPL) in terms of dBA units. The threshold of hearing for the human ear is approximately 0 dBA, which corresponds to 20 micro Pascals (mPa).

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions.

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol Leq, with a specified duration. The Community Noise Equivalent Level (CNEL) is a 24-hour average, where noise levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dBA weighting, and sound levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dBA weighting. This is similar to the Day Night sound level (LDN), which is a 24-hour average with an added 10 dBA weighting on the same nighttime hours, but no added weighting on the evening hours. For transportation noise, the CNEL and LDN are considered to be equal. Sound levels expressed in CNEL are always based on dBA. These metrics are used to express noise levels for both measurement and municipal regulations, as well as for land use guidelines and enforcement of noise ordinances.

Technical acoustical terms commonly used in this section are defined in Table 1. The fundamental model of acoustics consists of a sound (i.e., noise) source, a receptor, and the propagation path between the two. The loudness of the noise source and the obstructions or atmospheric factors, which affect the propagation path to the receptor, determine the sound level and the characteristics of the noise perceived by the receptor.

The dB scale alone does not adequately characterize how humans perceive noise. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on human sensitivity to those frequencies. The common measure is the A-weighted sound level, which approximates the response of the average young ear to most ordinary sounds. Peoples' judgments regarding the relative loudness or annoyance of a sound tend to correlate well with the A-scale sound levels of those sounds. Table 2 provides typical noise levels in the environment.

Table 1. Definitions of Acoustical Terms

Term	Definition
Sound	A vibratory disturbance created by a vibrating object, which when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism such as the human ear or a microphone.
Sound Level	In decibels, that quantity measured with a sound level meter as defined herein, by use of the "A" frequency weighting and "fast" time averaging unless some other time averaging is specified.
Noise	Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
Noise Level	The same as sound level. The terms may be used interchangeably.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals, where 1 pascal is the pressure from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is more commonly expressed in decibels (see below). Sound pressure level is the quantity that is measured directly by a sound level meter.
Decibel (dB)	A unit measure of sound (noise) level. Just as feet is used to measure distances, decibels are used to measure sound (noise) levels. The decibel is defined as 10 times the common logarithm of the ratio of two amounts of sound power. The human ear can hear sounds from less than 10 dB to over 100 dB (sounds which are 100,000 times greater than the faintest sounds. A unit describing the amplitude of sound equal to 20 times the logarithm to base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micropascals.
Frequency, Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is 20 Hz - 20,000 Hz.
A-Weighted Sound Level (dBA)	As in decibel A-weighting (dB[A]). Represents the frequency characteristics of the average human ear for various sound intensities. An A-weight sound filters out lower frequencies, and provides a good indicator of the annoyance potential of a noise.
Average Sound Level	A sound level typical of the sound levels at a certain place during a given period of time, averaged by the general rule of combination for sound levels, said general rule being set forth in American National Standard Specifications for Sound Level Meters 1.4-1971. Average sound level is also called equivalent continuous level. (Leq.)
Equivalent Noise Level (L_{eq})	The average A-weighted noise level during the measurement period. The hourly L_{eq} used for this report is denoted as dBA L_{eq}.
Community Noise Equivalent Level (CNEL)	An average sound level during a 24-hour day, obtained after addition of five (5) decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m., and after addition of ten (10) decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m. CNEL recognizes that noise annoyance is related to duration, how often the noise is present, how long it persists, and when it occurs.
Day/Night Noise Level (L_{dn})	The average A-weighted noise level during a 24-hour day, which is obtained by adding 10 dB to sound levels measured at night between 10:00 p.m. and 7:00 a.m.
L_{01}, L_{10}, L_{50}, L_{90}	A-weighted noise levels that are exceeded 01, 10, 50, and 90 percent of the time during the measurement period. The L_{01} is indicative of the typical highest noise levels reached, L_{10} is typically considered the intrusive noise level, the L_{50} represents the median noise level, and the L_{90} represents, and is considered, the background, or ambient noise level.
Maximum Sound Level (Lmax)	The maximum A-weighted noise level measured during the measurement period.
Minimum Sound Level (Lmin)	The minimum A-weighted noise level measured during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive Noise	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, and tonal or informational content as well as the prevailing ambient noise level.
Sound Level Meter	An instrument of the measurement of sound, including a microphone, an amplifier, an attenuator, networks at least for standardized frequency weighting A, and an indicating instrument having at least the standardizes dynamic characteristic "fast". As specified in American National Standard Specification for Sound Level Meters S1.4-1971 or its successor.

Table 2. Typical Noise Levels in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	120 dBA	
Jet fly-over at 300 meters		Rock concert
	110 dBA	
Pile driver at 30 meters	100 dBA	
		Night club with live music
	90 dBA	
Large truck passes by at 15 meters		
	80 dBA	Noisy restaurant
		Garbage disposal at 1 meter
Gas lawn mower at 30 meters	70 dBA	Vacuum cleaner at 3 meters
Commercial/Urban area daytime		Normal speech at 1 meter
Suburban expressway at 90 meters	60 dBA	
Suburban daytime		Active office environment
	50 dBA	
Urban area nighttime		Quiet office environment
	40 dBA	
Suburban nighttime		
Quiet rural areas	30 dBA	Library
		Quiet bedroom at night
Wilderness area	20 dBA	
	10 dBA	Quiet recording studio
Threshold of human hearing	0 dBA	Threshold of human hearing

Source: Caltrans, 2013.

2.2 Vibration

Groundborne vibration is an oscillatory motion of the soil with respect to the equilibrium position and can be quantified in terms of velocity or acceleration. It can be a serious concern for nearby neighbors of activities that cause buildings to shake and rumbling sounds to be heard, but it is unusual for vibration from sources such as buses and trucks on smooth roads to be perceptible, even in locations close to major roads. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are heavy construction equipment and activities (such as blasting and pile driving), steel-wheeled trains, and heavy trucks on rough roads.

Table 3 summarizes common sources of groundborne vibration velocity levels (measured in decibel units [VdB]) and average human response to vibration that may be anticipated when a person is at rest in quiet surroundings (tolerance to vibration increases considerably during physical activity). The duration of the vibration event has an effect on human response, as does its frequency of occurrence: increases in both result in decreased tolerance. Typical background vibration levels in residential areas are usually 50 VdB or lower, well below the threshold (65 VdB) of perception for most humans.

Groundborne noise is a secondary phenomenon of groundborne vibration. When a building or structure vibrates, noise radiates into the interior of the building, producing rattling of windows, doors, stacked dishes, etc. Low-frequency vibration could produce graundborne noise perceived as a low rumble. Groundborne noise is quantified by the A-weighted sound level inside the building. The sound level accompanying vibration is generally 25 to 40 dBA lower than the vibration velocity level in VdB. Groundborne vibration levels of 65 VdB can result in groundborne noise levels up to 40 dBA, which can disturb sleep. Groundborne vibration levels of 85 VdB can result in groundborne noise levels up to 60 dBA, which can be annoying to daytime noise sensitive land uses such as schools (Federal Transit Administration, 2006).

Table 3. Typical Levels of Ground-borne Vibration

Human or Structural Response	Vibration Velocity Level (VdB)	Typical Sources (50 feet from source)
Threshold for minor cosmetic damage to fragile buildings	100	Blasting, pile driving, vibratory compaction equipment
Difficulty with tasks such as reading a video or computer screen	90	Heavy tracked vehicles (Bulldozers, cranes, drill rigs)
Threshold for residential annoyance for infrequent events (e.g., commuter rail)	80	Freight rail, typical Commuter rail, upper range
	70	Rapid transit, upper range
Threshold for residential annoyance for frequent events (e.g., rapid transit)	60	Commuter rail, typical Bus or truck over bump or on rough roads
Approximate threshold for human perception of vibration Limit for vibration sensitive equipment	50	Bus or truck over bump or on rough roads Rapid transit, typical
		Typical bus or truck on public road
		Typical background vibration

Source: USDOT Federal Transit Administration, 2006.

3. REGULATORY FRAMEWORK

3.1 State Regulations

3.1.1 California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973 (Act), find that excessive noise is a serious hazard to the public health and welfare, and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. The Act also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the State to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

3.1.2 California Environmental Quality Act

Under the California Environmental Quality Act (CEQA), lead agencies are directed to assess conformance to local or other agency noise standards; measure and identify the potentially significant exposure of people to (or generation of) excessive ground-borne vibration or noise levels; and measure and identify potentially significant permanent or temporary increases in ambient noise levels. Implementation of CEQA ensures that during the decision-making stage of development, decision-makers and the public will be informed of any potentially excessive noise levels and available mitigation measures to reduce them to acceptable levels.

The 2020 CEQA Guidelines establishes that a significant noise impact will occur if the proposed project achieves any of the following:

1. 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?
    a. Therefore, a significant impact would be identified if traffic generated by the project or project improvements/operations would substantially increase noise levels at sensitive receivers in the vicinity. A substantial increase would occur if: a) the noise level increase is 5 dBA CNEL or greater where the future noise level is compatible in terms of noise and

land use compatibility, or b) the noise level increase is 3 dBA CNEL or greater where the future noise level exceeds the compatibility threshold.

2. Generation of excessive groundborne vibration or groundborne noise levels?
3. 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?

3.1.3 California Noise Insulation Standards (California Code of Regulations Title 24)

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for hotels, motels, dormitories, and multi-family residential buildings (California Building Standards Commission [CBSC] 2016a). Title 24 requires that residential structures be designed to prevent the intrusion of exterior noise so that the interior noise, with windows closed, attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room. The regulations also specify that acoustical studies must be prepared whenever a multi-family residential building or structure may be exposed to exterior noise levels of 60 dBA CNEL or greater. Such acoustical analysis must demonstrate that the residences have been designed to limit intruding noise to a maximum interior noise level of 45 dBA CNEL.

3.1.4 California Building Code 2016

California Building Code 2016 Section 1207 establishes that walls, partitions and floor/ceiling assemblies separating dwelling units and sleeping units from each other or from public or service areas shall have a sound transmission class of not less than 50, or not less than 45 if field tested, for air-borne noise when tested in accordance with ASTM E90.

Floor/ceiling assemblies between dwelling units and sleeping units or between a dwelling unit or sleeping unit and a public or service area within the structure shall have an impact insulation class rating of not less than 50, or not less than 45 if field tested, when tested in accordance with ASTM E492.

3.2 Local Regulations

3.2.1 City of Garden Grove Municipal Code

The Section 8.47 of the City of Garden Grove Municipal Code establishes ambient baseline noise level standards. For sensitive land uses, such as residential, the set daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10 :00 p.m. to 7:00 a.m.) ambient noise levels are 55 dBA and 50 dBA, respectively. Noise levels cannot exceed either the

ambient base noise level or the actual measured ambient noise level by 5 dBA, as measured at the property line of the noise generation property. Therefore, the exterior daytime and nighttime noise standard for residential land uses is 60 and 55 dBA, respectively. In addition, the City sets cumulative percentile noise descriptors to ensure that the duration of the noise source is considered. Table 4 presents the residential noise standards.

Table 4. Residential Exterior Noise Standards, dBA

Time Period		Ambient Base Noise Levels, dBA	Exterior Noise Standard, dBA
Daytime (7:00 a.m. – 10:00 p.m.)	L50 (30 Minutes)	55	60
	L25 (15 Minutes)	60	65
	L4 (5 Minutes)	65	70
	L2 (1 Minute)	70	75
	Lmax (Anytime)	75	80
Nighttime (10:00 p.m. – 7:00 a.m.)	L50 (30 Minutes)	50	55
	L25 (15 Minutes)	55	60
	L4 (5 Minutes)	60	65
	L2 (1 Minute)	65	70
	Lmax (Anytime)	70	75

However, the Leq noise level metric best describes the relatively constant intensity of the Project operational activities. In addition, the Leq noise level metric accounts for noise fluctuations over time by averaging the louder and quieter events and giving more weight to the louder events. In addition, due to the mathematical relationship between the median (L50) and the mean (Leq), the Leq will always be larger than or equal to the L50. The more variable the noise becomes, the larger the Leq becomes in comparison to the L50. Therefore, this noise study conservatively relies on the Leq to describe the Project operational noise levels.

Additionally, all construction activity is prohibited at or within 500 feet of a residential area between the hours of 10:00 p.m. and 7:00 a.m.

3.2.2 City of Garden Grove General Plan Noise Element

The Noise Element of the City of Garden Grove General Plan establishes the Land Use - Noise Compatibility Guidelines, which identify the limits for acceptable noise levels for different land use categories, are illustrated in Figure 2. Proposed residential and other noise-sensitive projects impacted by a 55 dBA CNEL or greater would require additional acoustical analysis to achieve acceptable exterior and interior noise levels.

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50 - 60	55 - 70	70-75	75-85
Residential - Multiple Family	50 - 65	60 - 70	70 - 75	70 – 85
Transient Lodging - Motel, Hotels	50 - 65	60 - 70	70 - 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 – 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 – 85
Playgrounds, Neighborhood Parks	50 - 70	NA	67.5 - 75	72.5 – 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 70	NA	70 - 80	80 – 85
Office Buildings, Business Commercial and Professional	50 - 70	67.5 - 77.5	75 - 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	75 - 85	NA
NA: Not Applicable				
Source: Office of Planning and Research, California, *General Plan Guidelines*, October 2003.				
Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.				
Conditionally Acceptable – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.				
Normally Unacceptable – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.				
Clearly Unacceptable – New construction or development should generally not be undertaken.				

Source: City of Garden Grove's General Plan.

Figure 2. City of Garden Grove Land Use Compatibility Guidelines

3.2.3 Vibration Standards

The City Municipal Code and General Plan do not include vibration standards. In lieu of such standards, this analysis will use the standards presented in the Federal Transit Administration (FTA) Guideline Manual Transit Noise and Vibration Impact Assessment (May 2006). Based on the FTA Guidelines, an impact would occur if construction activities generate vibration that is strong enough to physically damage buildings. The threshold for vibration-induced architectural damage is 0.2 peak particle velocity (PPV) in inches per second (in/sec) for typical wood-framed buildings. The threshold for human annoyance at residential receptors during the daytime is 78 VdB.

4. EXISTING NOISE ENVIRONMENT

Ambient noise levels were measured to characterize the existing sound environments near the Project Site. AGI conducted a site visit on April 15 to 16, 2020 to conduct one 24-hour ambient noise measurement (NM1) at the project site. Five short-term 20-minute measurements were also conducted on May 11, 2021 at the nearest noise sensitive receptors: the single-family residential community to the north (ST1/R1), the multi -family

residential communities to the east (ST2/R2), multi-family residential community to the south (ST3/R3), multi-family residential community to the west (ST4/R4), and the multi-family residential community to the south (ST5/R5). Figure 3 shows the locations of the noise measurements.

Noise measurement (LT1/NM1) was conducted at the north property line the project site. The hourly measured Leq ranged from 58.4 to 70.1 dBA and the CNEL was 70.8 The predominant noise source contributing to the ambient measurement data was from vehicular traffic.

The measured ambient background Leq at receptors ST1/R1 through ST5/R5 was 56.1, 52.2, 50.5, 53.9, and 51.1 dBA, respectively. An adjusted CNEL was estimated based on the delta between the Leq of the measurement period and the 24-hr CNEL and the difference applied to each time-synchronized short-term noise measurement. Table 5 summarizes the noise measurement data from the survey. Refer to the Appendix for the measurement data sheets.

Figure 3. Noise Measurement Locations

Table 5. Summary of Ambient Noise Measurements

Receiver Location		Date and Time	Lmin, dBA	Lmax, dBA	Leq, dBA	CNEL, dB	Contributing Noise Sources
LT1/ NM1	Project Site	4/16/20 10 AM – 4/16/20 10 AM	36.4	93.3	58.4 – 70.1	70.8	Vehicular traffic
ST1/R1	Nearest Residential Area to the North	5/11/21 11:46 AM – 12:08 PM	45.7	65.2	56.1	58 [1]	Vehicular Traffic
ST2/R2	Nearest Residential Area to the East	5/11/21 11:13 AM – 11:34 PM	43.8	67.4	52.2	54 [1]	Wildlife, Vehicular Traffic, Aircraft
ST3/R3	Nearest Residential Area to the South	5/11/21 10:49 AM – 11:10 PM	41.8	61.6	50.5	52 [1]	Aircraft, Wildlife
ST4/R4	Nearest Residential Area to the West	5/11/21 9:52 AM – 10:14 PM	40.8	72.9	53.9	55 [1]	Wildlife, Vehicular Traffic
ST5/R5	Residential Area to the Southeast	5/11/21 10:15 AM – 10:36 PM	44.9	61.8	51.1	53 [1]	Vehicular Traffic

Note: [1]Estimated CNEL based on the delta between the Leq of the measurement period and the 24-hr CNEL and the difference applied to each time-synchronized short-term noise measurement.

5. NOISE ANALYSIS METHODOLOGY

5.1 Construction Noise

To evaluate noise from construction activities, the methodology outlined by the FHWA Roadway Construction Noise Model (RCNM) was used. The RCNM methodology considers the type and number of construction equipment used, individual equipment noise emissions, and time-usage factors for each phase of construction. Sound levels produced are acoustically summed to compute the construction noise levels. Distances from construction locations to sensitive receptors were measured on a map of the area and input to the RCNM.

Noise levels generated by construction equipment vary greatly depending on factors such as weather, the type, model, and condition of equipment, the amount of time that the equipment operates, and the activity performed. The dominant source of noise from most construction equipment is the engine, although in a few cases, noise generated by the process dominates. Table 6 shows the maximum noise levels for a variety of construction equipment at a reference distance of 50 feet. These reference sound levels are representative of the noise levels that would occur during the noisiest construction activities.

Overall average site construction noise levels vary with the numbers and types of equipment operating onsite at once and the proximity of the equipment to noise-sensitive receptors. Calculated hourly average noise levels, therefore, are estimates based on a typical complement of construction equipment that would be expected to be on-site to complete the various proposed Project components.

Table 6. Typical Construction Equipment Noise Emissions

Noisiest Construction Equipment by Phase	Lmax @ 50 feet from Source, dBA	Acoustical Usage Factor, %
Excavator	81	40
Front End Loader	79	40
Haul Truck	77	40
Cement Truck	81	20
Forklift	75	20

Source:
[1]Environmental Protection Agency (EPA)'s Noise from Construction Equipment and Operations, Building Equipment and Home Appliances Study prepared by Bolt, Beranek and Newman.
[2]FHWA Roadway Construction Noise Model (RCNM), January 2006.

5.2 Operations Noise

To evaluate noise from operation activities, the CadnaA Noise Prediction Model was used to estimate the worst-case operations associated with the project. CadnaA uses industry-accepted propagation algorithms and user defined sound power based on ISO 9613-2 standards. ISO 9613-2 is an internationally recognized standard that establishes a method for calculating the attenuation of noise from outdoor propagation, in order to predict the levels of noise at a distance from a variety of sources. The calculations account for classical sound wave divergence, plus attenuation factors resulting from air absorption, basic ground effects, and barrier/structure shielding. Air absorption was considered to be under "standard day" conditions of 59° F and 70% relative humidity. The site plans and topography were inputted into CadnaA to establish the x, y, and z site geometrics for the analysis. The noise generated by future operations was calculated by inputting acoustical sources.

Specific operating parameters were provided by 9Max Capital. AGI in-house acoustical database of people talking (people talking on balconies and at outdoor recreational areas) was modeled as area sources with constant level of activity calibrated to 2 occupants on each patio and 8 occupants at each recreational area. A projected traffic volume of 109 vehicles entering/exiting the Project was modeled in CadnaA per peak hour. The noise from the future mechanical equipment (exterior condensers) was modeled as point sources with a constant level of activity. At the time of this study, mechanical units have not yet been chosen and a typical HVAC condenser with a sound power of 77 dBA was assumed. Refer to the Appendix for the CadnaA Input Output Tables.

5.3 Construction Vibration

Vibration impacts generated by construction and operations from the proposed Project have been evaluated using the Federal Transit Administration (FTA)'s Transit Noise and Vibration Impact Assessment Manual. The FTA's recommended procedures for estimating vibration impact from construction activities is as follows:

Vibration Damage Assessment

- Select the equipment and associated vibration source levels at a reference distance of 25 feet from Table 7.
- Make the propagation adjustment according to the following formula (this formula is based on point sources with normal propagation conditions):

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

where: PPV_{equip} is the peak particle velocity in in/sec of the equipment adjusted for distance
PPV_{ref} is the reference vibration level in in/sec at 25 feet from Table 6
D is the distance from the equipment to the receiver in feet.

Table 7. Vibration Velocities for Construction Equipment at 25-ft

Equipment	PPV at 25 ft, in/sec	Approximate Lv at 25 ft
Vibratory Roller	0.210	94
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Note: [1]RMS velocity in decibels (VdB) re 1 micro-inch/second.
[2]A crest factor of 4 (representing a PPV-rms difference of 12 VdB) was used to calculate the approximate rms vibration velocity levels from the PPV values.
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.

Vibration Annoyance Assessment

Annoyance or interference with vibration-sensitive activities was determined by estimating the vibration level, L_v in VdB, at any distance D in feet, from the following equation and applying the vibration impact criteria of 78 VdB for residential daytime.

$$L_v(D) = L_v(25\text{ ft}) - 30 \times \log(D/25)$$

Vibration from construction equipment spreads through the ground and diminish in amplitude with distance from the source. Refer to Table 8 for the vibration levels in peak particle velocity (PPV) in inches per second and root mean squared (RMS) velocity level in VdB at reference distances of 25, 50, 100, and 200 feet from the source.

Table 8. Vibration Velocities for Construction Equipment

Equipment	PPV Velocity, in/sec				RMS Velocity Level, VdB[1]			
	25 ft	50 ft	100 ft	200 ft	25 ft	50 ft	100 ft	200 ft
Vibratory Roller	0.210	0.074	0.026	0.009	94	85	76	67
Large Bulldozer	0.089	0.031	0.011	0.004	87	78	69	60
Caisson Drilling	0.089	0.031	0.011	0.004	87	78	69	60
Loaded Trucks	0.076	0.027	0.010	0.003	86	77	68	58
Jackhammer	0.035	0.012	0.004	0.002	79	70	61	52
Small Bulldozer	0.003	0.001	0.000	0.000	58	48	39	30

Note: [1]RMS velocity in decibels (VdB) re 1 micro-inch/second.
[2]A crest factor of 4 (representing a PPV-rms difference of 12 VdB) was used to calculate the approximate rms vibration velocity levels from the PPV values.
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.

5.4 Traffic Noise

The Federal Highway Administration's (FHWA) traffic noise model TNM to evaluate future traffic noise at the project site. The highest traffic noise level from a roadway is typically generated when traffic is heavy but still flowing freely. This situation is referred to as Level-of-Service (LOS) C by Transportation Engineers. Roadway traffic design capacity volumes and LOS ratios were obtained from Federal Highway Capacity Manual.

6. FUTURE NOISE ENVIRONMENT

6.1 Exterior Traffic Noise

The project space is affected by vehicular traffic from Garden Grove Boulevard and Newland Street. Garden Grove Boulevard is currently a 6-lane two-way arterial street with a posted speed limit of 40 miles per hour. Newland Street is currently a 2-lane two-way collector with a posted speed limit of 40 miles per hour. For the future peak hour traffic analysis, the truck mix distribution percentages for the analysis were assumed to be 2%

for medium 2-axle trucks and 2% for heavy 3+-axle trucks. Table 9 lists the traffic data used in the future peak hour traffic noise analysis.

Table 9. Traffic Data Inputs for Future Peak Hour Traffic Analysis

Traffic Lane	# of Lanes	Total Traffic Volumes /Hour	Travel Speed mph	Volumes by Vehicle Type					
				Cars/ Hour	% Cars	Medium Trucks/ Hour	% MT	Heavy Trucks / Hour	% HT
EB Garden Grove Blvd	3	2,400	40	2,304	96.0	48	2.0	48	2.0
WB Garden Grove Blvd	3	2,400	40	2,304	96.0	48	2.0	48	2.0
NB Newland Street	1	600	40	576	96.0	12	2.0	12	2.0
SB Newland Street	1	600	40	576	96.0	12	2.0	12	2.0

Source: Federal Highway Capacity Manual

The TNM noise analysis indicates that the future peak hour traffic noise at the project site would be as high as 72.1 dBA at the north building elevation of Buildings A and B. The 24-hour CNEL will be as high as 73.1 dB at the same location, with a worst case 1.0 dB calibration factor between future peak hour Leq and 24-hour CNEL. At Outdoor Recreational Areas 1 and 2, the future CNEL will be 59.1 and 58.2 dBA. Refer to the Appendix for the TNM Input and Output files from the traffic noise analysis and for the calibration data.

The project site is exposed to over 70 dBA CNEL and is considered by the City of Garden Grove Land-Use Guidelines in the Normally Unacceptable range and is ***potentially-significant-unless-mitigation-incorporated***. The project will require an acoustical study to demonstrate that the residences and project area have been designed to limit intruding noise to a maximum interior noise level of 45 dBA CNEL an exterior noise level of 65 dBA CNEL. [2]

6.2 Aircraft Noise

The nearest airport to the project is Joint Forces Training Base Los Alamitos (SLI). The project site is situated over 3.5 miles southeast from SLI and is significantly outside of the 60 dB noise contour. During the ambient noise survey, aircraft noise was not observed significantly contributing to the ambient noise environment. Aircraft noise has a ***less-than-significant*** contribution to the future noise environment at the project site. Refer to the Appendix for the SLI noise contour map.

[2] *Garden Gove Townhomes Development Exterior-to-Interior Noise Study was prepared by Acoustics Group, Inc, dated April 20, 2020.*

6.3 Construction Noise

Although typically short-term, construction can be a substantial source of noise. Construction activities related to implementation of the proposed Project would not take place all at once; however, future development accommodated by the proposed Project would have the potential to temporarily generate construction noise resulting in short-term elevated noise levels to nearby noise sensitive land uses.

Exterior peak hour construction noise levels (Leq) from the proposed Project's center of the construction can be expected to be as high as 64.3, 64.8, 75.2, 78.3, and 69.1 dBA at receivers R1 through R5, respectively. The Lmax from the proposed project's center of construction can be expected to be as high as 64.5, 65.0, 75.4, 78.5, and 69.4 dBA at receivers R1 through R5, respectively. Table 10 summarizes the Construction Noise Levels from construction occurring at the Center of the Project Site.

Table 10. Summary of Construction Noise

Receptor	Construction at Center of Site (Typical)	
	Peak Hourly Leq, dBA	Peak Hourly Lmax, dBA
R1	64.3	64.5
R2	64.8	65.0
R3	75.2	75.4
R4	78.3	78.5
R5	69.1	69.4

Construction for the project would only occur during daytime hours. Typical construction noise would exceed the City of Garden Grove's Daytime Noise Standard of 60 dBA. However, typical construction would comply with the Daytime Lmax standard of 80 dBA. The project construction noise would be ***potentially-significant-unless-mitigation-incorporated***. Additionally, construction noise would be a temporary source of annoyance for the nearest residents.

6.4 Construction Vibration

No pile driving and rock blasting activities are anticipated during project construction. Because vibration dissipates quickly with distance, and because construction would mostly require the use of small earthmoving equipment that do not generate considerable amounts of vibration, the maximum construction-related vibration level would be well below the 0.20 PPV in/sec criteria for vibration induced architectural damage at the nearby structures. Vibration would be considered less-than-significant. However, construction vibration experienced at residential receptors would exceed the 78 VdB

threshold for human annoyance during the daytime at R3 and R4 and would be strongly perceptible. Table 11 shows the vibration levels in peak particle velocity (PPV) in inches per second and root mean squared (RMS) velocity level in VdB from typical construction equipment at the nearest noise sensitive receptors.

Table 11. Vibration Velocities for Construction Equipment

Equipment	PPV Velocity, in/sec					RMS Velocity Level, VdB[1]				
	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5
Hoe Ram	0.002	0.024	0.089	0.124	0.031	56	76	87	90	78
Large Bulldozer	0.002	0.024	0.089	0.124	0.031	56	76	87	90	78
Loaded Trucks	0.002	0.020	0.076	0.106	0.027	54	74	86	88	77
Jackhammer	0.001	0.009	0.035	0.049	0.012	48	67	79	82	70
Small Bulldozer	0.000	0.001	0.003	0.004	0.001	26	46	58	60	48

Note: [1]RMS velocity in decibels (VdB) re 1 micro-inch/second.
[2]A crest factor of 4 (representing a PPV-rms difference of 12 VdB) was used to calculate the approximate rms vibration velocity levels from the PPV values.
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, 2006.

6.5 Operations Noise

Future residential operations noise at the Garden Grove Townhomes could cause an increase in ambient noise levels due to typical residential noise from people, community activities, mechanical and HVAC equipment.

6.5.1 Project Generated Traffic

Due to the limited quantity of expected project related traffic, the City of Garden Grove has not required a Traffic Study for the Project. The max capacity of 109 cars would not result in a noticeable increase in noise levels (a doubling of traffic would be required for a minimally audible 3 dBA increase in noise to occur). Project generated traffic would have a ***less-than-significant*** increase in noise levels on local roadways.

6.5.2 Operational Community Noise

The future peak hour noise level from community activities (people talking on balconies and at outdoor recreational areas, cars exiting and entering the project site) would be as high as 4.7, 8.9, 12.5, 5.7, and 31.0 dBA at receptors R1 through R5, respectively. The operational noise from community activity would comply with the City of Garden Grove Daytime and Nighttime Noise Standard of 60 and 55 dBA at residential property lines, respectively. Additionally, operational noise from community activities would not increase the ambient noise levels by more than 3 dB. Operational community noise would have a ***less-than-significant*** impact on the adjacent noise sensitive receptors.

6.5.3 Exterior Mechanical Condenser Noise

Future peak hour Leq from the exterior mechanical condensers would be as high as 28.9, 24.3, 28.7, 26.0, 45.8 dBA at receptors R1 through R5, respectively. The operational noise from exterior mechanical units would comply with the City of Garden Grove Daytime and Nighttime Noise Standard of 60 and 55 dBA at residential property lines, respectively. Additionally, operational noise from exterior mechanical condensers would not increase the ambient noise levels by more than 3 dB. Exterior mechanical condenser noise would have a ***less-than-significant impact*** on the adjacent noise sensitive receptors.

Refer to Tables 12 and 13 for the assessment of operational noise levels with the City of Garden Grove Noise Standards and the CEQA incremental increase of 3 dB, respectively.

6.6 Operational Vibration

The operation of the proposed project would not include any long-term vibration sources. Thus, ***less-than-significant*** vibration effects or impacts from operations sources would occur and no mitigation measures are required.

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Table 12. Assessment of Operational Noise Levels with Noise Standard

Noise Source	Receptor		Predicted Noise Level, dBA	Noise Standard, dBA (Daytime/ Nighttime)	Noise Level above Noise Standard, dB	Impact Assessment
Community Activity	R1	Nearest Residential Area to the North	12.7	60/55	0/0	Compliance
	R2	Nearest Residential Area to the East	27.6	60/55	0/0	Compliance
	R3	Nearest Residential Area to the South	27.6	60/55	0/0	Compliance
	R4	Nearest Residential Area to the West	25.3	60/55	0/0	Compliance
	R5	Residential Area to the Southeast	25.9	60/55	0/0	Compliance
Condensers	R1	Nearest Residential Area to the North	23.4	60/55	0/0	Compliance
	R2	Nearest Residential Area to the East	35.3	60/55	0/0	Compliance
	R3	Nearest Residential Area to the South	46.8	60/55	0/0	Compliance
	R4	Nearest Residential Area to the West	40.7	60/55	0/0	Compliance
	R5	Residential Area to the Southeast	32.4	60/55	0/0	Compliance

Table 13. Assessment of Operational Noise Levels with Ambient Noise Level

Noise Source	Receptor		Predicted Noise Level, dBA	Adjusted Ambient Noise Level (CNEL), dBA	Noise Level above Ambient (CNEL), dB	Impact Assessment
Community Activity	R1	Nearest Residential Area to the North	12.7	58 [1]	0/0	Compliance
	R2	Nearest Residential Area to the East	27.6	54 [1]	0/0	Compliance
	R3	Nearest Residential Area to the South	27.6	52 [1]	0/0	Compliance
	R4	Nearest Residential Area to the West	25.3	55 [1]	0/0	Compliance
	R5	Residential Area to the Southeast	25.9	53 [1]	0/0	Compliance
Condensers	R1	Nearest Residential Area to the North	23.4	58 [1]	0/0	Compliance
	R2	Nearest Residential Area to the East	35.3	54 [1]	0/0	Compliance
	R3	Nearest Residential Area to the South	46.8	52 [1]	0/0	Compliance
	R4	Nearest Residential Area to the West	40.7	55 [1]	0/0	Compliance
	R5	Residential Area to the Southeast	32.4	53 [1]	0/0	Compliance

Note: [1] Estimated CNEL based on the delta between the Leq of the measurement period and the 24-hr CNEL and the difference applied to each time-synchronized short-term noise measurement.

7 NOISE CONTROL MEASURES

Implementation of the following noise control measures would reduce potential project-related noise impacts.

A. Construction activities shall be restricted on any Sunday, or on any other day after 10:00 p.m. or before 7:00 a.m. and shall comply with the requirements set forth in the City of Garden Grove Municipal Code Section 8.47.060d.

B. During construction, the contractor should ensure all construction equipment is equipped with appropriate noise attenuating devices (e.g., improved mufflers, equipment redesign, intake silencers, ducts, engine enclosures, acoustically attenuating shields or shrouds) and equipment shall be maintained so that vehicles and their loads are secured from rattling and banging.

C. Impact tools (e.g., jack hammers, pavement breakers, rock drills) used for project construction shall be hydraulically or electrically powered (where feasible) to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. Where feasible, quieter procedures shall be used, such as drills rather than impact equipment Construction contractors shall be required to use "quiet" gasoline-powered compressors or electrically powered compressors, where feasible.

D. During construction, the contractor should implement administrative measures to minimize-short-term noise levels caused by construction activities such as the following:

   a. Locate construction equipment as far as feasible from noise-sensitive uses.
   b. Inactive construction equipment for prolonged periods (i.e., more than two minutes) shall not be left idling.
   c. Implement noise-reducing enclosures around noise-generating equipment that has the potential to disturb nearby off-site land uses or where otherwise necessary to comply with City Code noise limits for receiving zones.
   d. Schedule truck loading, unloading, and haul operations so as to minimize impact near noise sensitive locations and surrounding communities.
   e. Schedule noise intensive construction equipment operations of the excavator to less noise sensitive time periods, such as 10:00 a.m. to 2:00 p.m.
   f. Limit the use of enunciators or public address systems, except for emergency notifications. Any public address or music system must not be audible at any adjacent sensitive receptor.

g. The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.

E. Prior to the issuance of a building permit, a qualified noise consultant or acoustical engineer must conduct a detailed noise analysis to determine any special noise insulation features necessary to ensure that interior noise levels in the proposed residential units would not exceed 45 dBA CNEL in any habitable room with all doors and windows closed as per State of California Interior Noise Requirements. The noise analysis should stipulate required Sound Transmission Class (STC) ratings for window, door, and exterior wall assemblies to be employed in the project in order to achieve the required level of sound insulation. The acoustical design recommendations shall be incorporated into project plans and implemented during project construction.

F. Prior to the issuance of a building permit, a qualified noise consultant or acoustical engineer must conduct a detailed noise analysis to determine any noise control measures to ensure that exterior noise levels at the proposed exterior recreational areas would not exceed 65 dBA CNEL as per City of Garden Grove Exterior Noise Requirements. The acoustical design recommendations shall be incorporated into project plans and implemented during project construction.

G. Party walls and floor/ceiling assemblies separating non-common residential units shall meet or exceed the California Building Code Requirements of STC 50 for designated assemblies (CCR Title 24 Part 2). The acoustical design recommendations shall be incorporated into project plans and implemented during project construction.

8 CONCLUSION

AGI has conducted an environmental noise study for the Garden Grove Townhomes located in Garden Grove, CA. AGI has assessed the potential construction and operational noise impacts associated with the Project.

The project site is exposed to over 70 dBA CNEL and is considered by the City of Garden Grove Land-Use Guidelines in the Normally Unacceptable range and is ***potentially-significant-unless-mitigation-incorporated***. The project requires an acoustical study to demonstrate that the residences and project area have been designed to limit intruding noise to a maximum interior noise level of 45 dBA CNEL an exterior noise level of 65 dBA CNEL. [3]

The project site is located over 3.5 miles southeast from Joint Forces Training Base Los Alamitos (SLI) and is situated significantly outside of the 60 dB noise contour. Aircraft noise has a ***less-than-significant*** contribution to the future noise environment at the project site.

Construction for the project would only occur during daytime hours. Exterior peak hour construction noise levels (Leq) from the proposed Project's center of the construction be expected to be as high as 64.3, 64.8, 75.2, 78.3, and 69.1 dBA at receivers R1 through R5, respectively. Typical construction noise would exceed the City of Garden Grove's Daytime Noise Standard of 60 dBA. The Lmax from the proposed project's center of construction can be expected to be as high as 64.5, 65.0, 75.4, 78.5, and 69.4 dBA at receivers R1 through R5, respectively. Typical construction would comply with the Daytime Lmax standard of 80 dBA. The project construction noise would be ***potentially-significant-unless-mitigation-incorporated***. Additionally, construction noise would be a temporary source of annoyance for the nearest residents.

The maximum construction-related vibration level would be well below the 0.20 PPV in/sec criteria for vibration induced architectural damage at the nearby structures. Vibration would be considered ***less-than-significant***. However, construction vibration experienced at residential receptors would exceed the 78 VdB threshold for human annoyance during the daytime at R3 and R4 and would be strongly perceptible.

Project generated traffic would have a ***less-than-significant*** increase in noise levels on local roadways.

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[3] *Garden Gove Townhomes Development Exterior-to-Interior Noise Study was prepared by Acoustics Group, Inc, dated April 20, 2020.*

The future peak hour noise level from community activities (people talking on balconies and at outdoor recreational areas, cars exiting and entering the project site) would be as high as 4.7, 8.9, 12.5, 5.7, and 31.0 dBA at receptors R1 through R5, respectively. The operational noise from community activity would comply with the City of Garden Grove Daytime and Nighttime Noise Standard of 60 and 55 dBA at residential property lines, respectively. Additionally, operational noise from community activities would not increase the ambient noise levels by more than 3 dB. Operational community noise would have a ***less-than-significant*** impact on the adjacent noise sensitive receptors.

Future peak hour Leq from the exterior mechanical condensers would be as high as 28.9, 24.3, 28.7, 26.0, 45.8 dBA at receptors R1 through R5, respectively. The operational noise from exterior mechanical units would comply with the City of Garden Grove Daytime and Nighttime Noise Standard of 60 and 55 dBA at residential property lines, respectively. Additionally, operational noise from exterior mechanical condensers would not increase the ambient noise levels by more than 3 dB. Exterior mechanical condensers noise would have a ***less-than-significant*** impact on the adjacent noise sensitive receptors.

Noise control measures have been recommended to reduce potential project-related noise impacts.

9 REFERENCES

1. Project Drawings, prepared by E.M. Lopez Architect, dated February 25, 2020.
2. California Department of Transportation (Caltrans), Technical Noise Supplement to the Traffic Noise Analysis Protocol. Sept 2013.
3. 2020 California Environmental Quality Act (CEQA) Guidelines, effective January 1, 2019.
4. California Building Standards Commissions (CBSC). 2016a. California Building Code, California Code of Regulations, Title 24, Part 2. July, 2016.
5. California Building Code, California Code of Regulations, Title 24, Part 11. July, 2016.
6. City of Garden Grove General Plan Noise Element, dated May 2008.
7. City of Garden Grove Municipal Code, dated December, 2020.
8. Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment, May 2006.
9. U.S. Department of Transportation, Federal Highway Administration's (FHWA) Roadway Construction Noise Model, 2006.
10. U.S. Department of Transportation, Federal Highway Administration's (FHWA) Traffic Noise Model (TNM) Version 2.5, 2004.
11. Airport Environs Land Use Plan for Joint Forces Training Base Los Alamitos, Airport Land Use Commission, August 17, 2017.
12. Traffic Analysis Technical Memorandum for Residential Development Project located at 8722 Garden Grove, CA. prepared by KOA Corporation, dated April 21, 2020.

10 APPENDIX

FIELD DATA SHEETS & MEASUREMENT DATA

NOISE STANDARDS

MODELING INPUT & OUTPUT

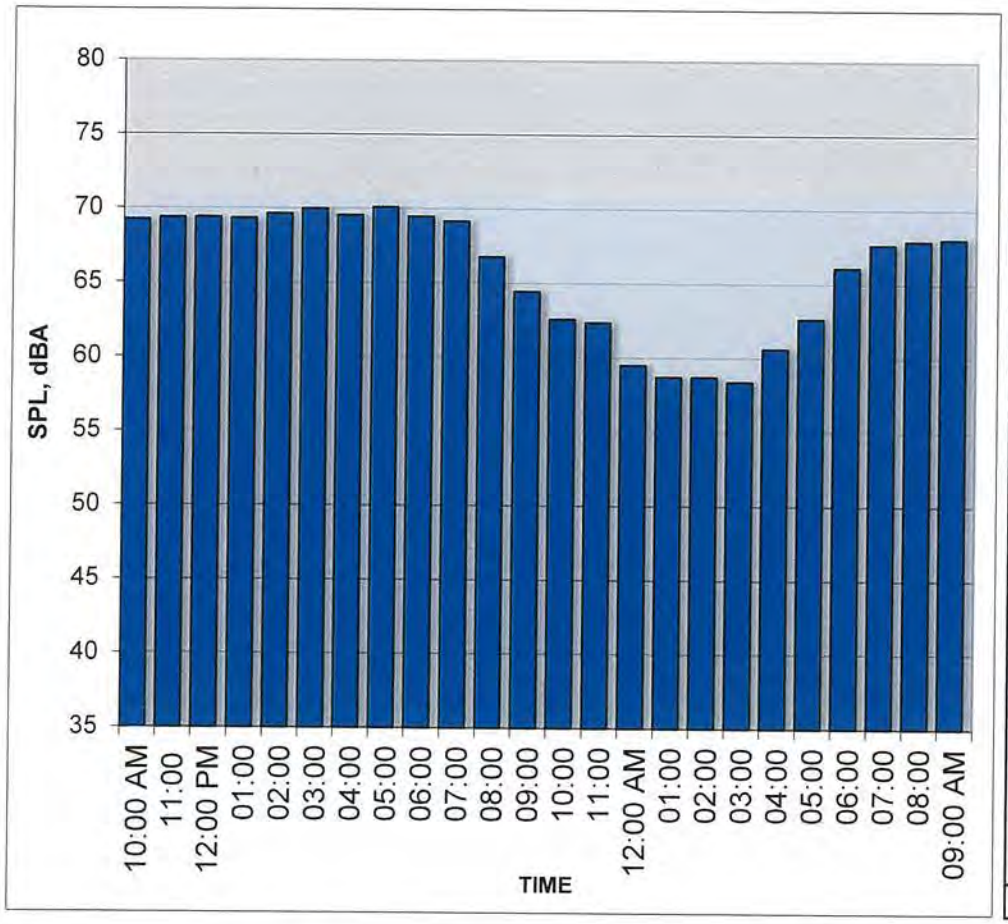
ARCHITECTURAL DRAWINGS

FIELD DATA SHEETS
&
MEASUREMENT DATA

MEASUREMENT DATA - HOURLY NOISE LEVELS

Project: 9Max Capital, LLC - Garden Grove Townhomes
Address: 8722 West Garden Grove Boulevard, Garden Grove, CA
Location:
Noise Sources: Vehicular Traffic

Date: 4/16/2020 - 4/17/2020
Position: NM1



TIME	HNL, dB(A)
10:00 - 11:00 AM	69.2
11:00 - 12:00 PM	69.4
12:00 - 01:00 PM	69.4
01:00 - 02:00 PM	69.3
02:00 - 03:00 PM	69.6
03:00 - 04:00 PM	70.0
04:00 - 05:00 PM	69.5
05:00 - 06:00 PM	70.1
06:00 - 07:00 PM	69.5
07:00 - 08:00 PM	69.1
08:00 - 09:00 PM	66.8
09:00 - 10:00 PM	64.4
10:00 - 11:00 PM	62.6
11:00 - 12:00 AM	62.4
12:00 - 01:00 AM	59.5
01:00 - 02:00 AM	58.7
02:00 - 03:00 AM	58.7
03:00 - 04:00 AM	58.4
04:00 - 05:00 AM	60.6
05:00 - 06:00 AM	62.6
06:00 - 07:00 AM	66.1
07:00 - 08:00 AM	67.6
08:00 - 09:00 AM	67.9
09:00 - 10:00 AM	68.0
CNEL:	70.8

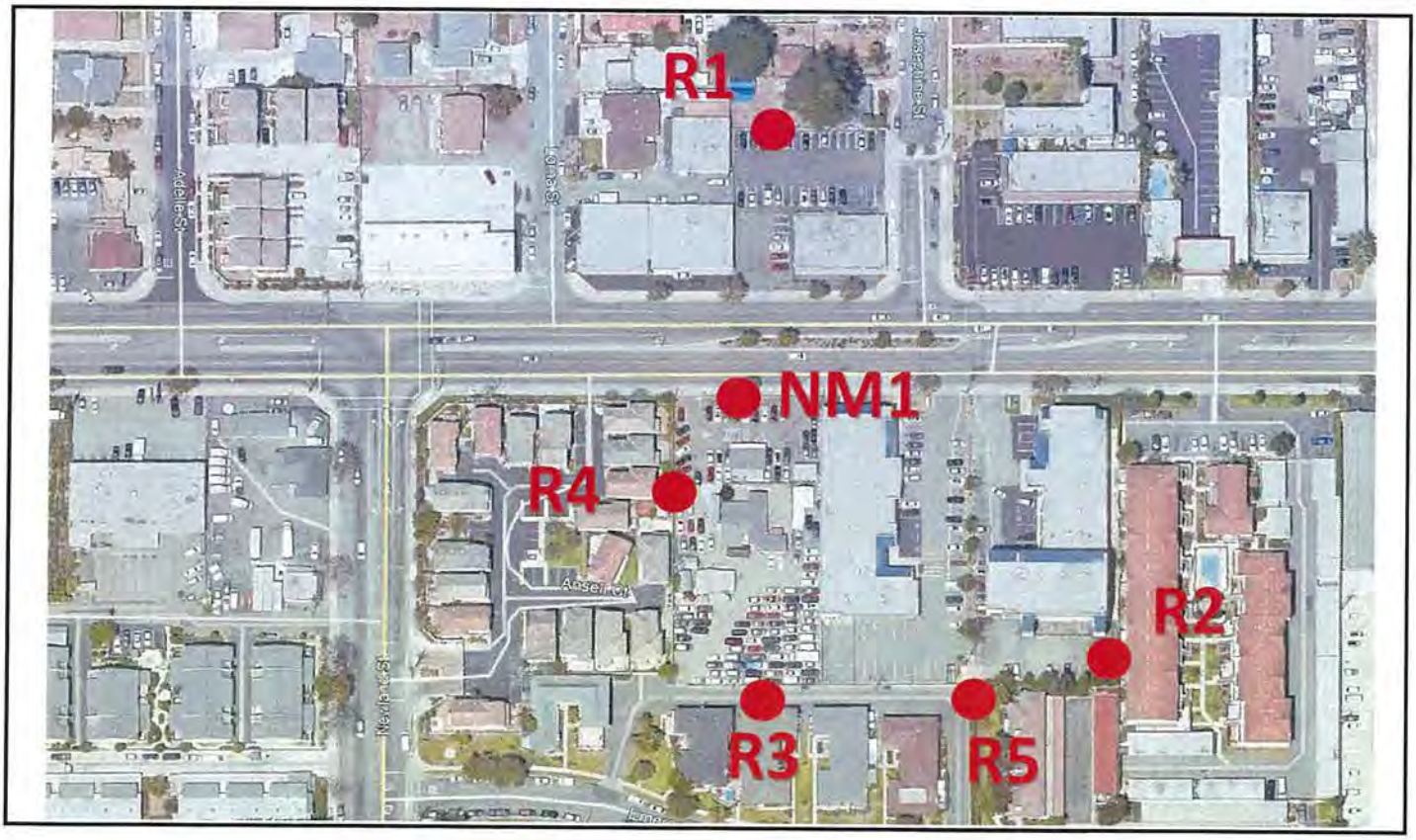
Notes:

Source: Acoustics Group, Inc.

NOISE MONITORING FIELD DATA SHEET

Project:	**9Max Capital** - Graden Grove Townhomes	**Date:**	5/11/2021
Loc:	**R1** - 12941 Josephine St, Garden Grove, CA 92844		
	R2 - 8800 Garden Grove Blvd, Garden Grove, CA 92844		
	R3 - 8551 Emerson Cir, Garden Grove, CA 92844		
	R4 - 13010 Ansell Ct, Garden Grove, CA 92844		
	R5 - 13135 Sunnybrook Cir, Garden Grove, CA 92844		
SLM:	Brüel And Kjær BK2250	**SN:**	3011688
Mic:	Brüel And Kjær 4189	**SN:**	3099865
P/A:	Brüel And Kjær ZC0032	**SN:**	25864

Start	Stop	L2	L8	L25	L50	L90	L99	Lmax	Lmin	Leq	Notes
11:46:46 AM	12:08:01 PM	62.3	60.0	56.9	54.2	50.3	46.9	65.2	45.7	56.1	R1 - Vehicular Traffic from Graden Grove Blvd
11:13:48 AM	11:34:06 AM	59.1	55.0	52.2	50.2	46.9	45.0	67.4	43.8	52.2	R2 - Vehicular Traffic from Graden Grove Blvd, Birds Chirping, Aircrafts, Trash Dumpster Bang
10:49:32 AM	11:10:18 AM	55.6	53.7	51.6	49.2	44.7	42.6	61.6	41.8	50.5	R3 - Aircrafts, Birds Chirping, Vacuum On
9:52:35 AM	10:14:19 AM	60.3	53.3	49.9	48.4	43.8	41.1	72.9	40.8	53.9	R4 - Vehicular Traffic from Graden Grove Blvd, Birds Chirping, Residential Hammering in Backyard
10:15:57 AM	10:36:51 AM	57.0	54.3	51.4	49.3	47.0	44.9	61.8	44.9	51.1	R5 - Birds Chirping, Aircrafts, Car Idling near by



NOISE STANDARDS

CHAPTER 7

NOISE ELEMENT

CHAPTER 7

NOISE ELEMENT

7.1 INTRODUCTION

The Noise Element of the General Plan examines noise sources in the City to identify and appraise the potential for noise conflicts and problems, and to identify ways to reduce existing and potential noise impacts. Existing and future noise environments and the compatibility of land uses are considered in the Element, as well as sensitive receptors and generators of stationary noise. The Element identifies projected noise levels, and contains policies and programs to achieve and maintain noise levels compatible with various types of land uses, as well as prevent high noise levels in sensitive areas. It is important to note that the Element addresses noise that affects the community at large, rather than noise associated with site-specific conditions. The regulatory framework, background information, and existing and future conditions can be found in the General Plan EIR.

7.2 AUTHORITY FOR ELEMENT

Government Code Section 65302(f) requires that a General Plan include:

> *"... a noise element which shall identify and appraise noise problems in the community. The Noise Element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Services and shall analyze and quantify...current and projected noise levels for all of the following sources: (1) highways and freeways; (2) primary arterials and major local streets; (3) passenger and freight on-line railroad operations and ground rapid transit systems; (4) commercial, general aviation, heliport, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation; (5) local industrial plants, including but not limited to, railroad classification yards; (6) other ground stationary noise sources identified by local agencies as contributing to the community noise environment."*

7.3 NOISE DEFINITIONS

Noise often is defined as annoying or unwanted sound. Health studies have shown that excessive noise can cause adverse psychological or physiological effects on human beings.

Defining noise problems and establishing a regulatory scheme to deal with noise that is both fair and effective requires an understanding of some of the basic characteristics of sound and how it affects people and their activities. While sound levels can be easily measured, the variability in subjective and physical responses to sound complicates the analysis of its impact on people. Sound is created when an object vibrates and radiates part of its energy as acoustic pressure waves through a medium such as air, water, or a solid. The ear, the hearing mechanism of humans and most animals, receives these sound pressure waves and converts them to neurological impulses which are transmitted to the brain for interpretation. The interpretation by the auditory system and the brain depends on the characteristics of the sound and on the characteristics of the person hearing it.

STANDARD UNIT OF MEASUREMENT

Sound is described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by differentiating among frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound ten dBA higher than another is perceived to be twice as loud, and 20 dBA higher is perceived to be four times as loud, and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Various methods have been developed for evaluating community noise to account for, among other things:

- The variation of noise levels over time;
- The influence of periodic individual loud events; and
- The community response to changes in the community noise environment.

NOISE SCALES AND DEFINITIONS

Sound pressure level is a measure of the sound pressure of a given noise source relative to a standard reference value. The reference pressure is typical of the quietest sound that a young person with good hearing is able to detect. Sound pressure levels are measured in decibels (dB). Decibels are logarithmic quantities, relating the sound pressure level of a noise source to the reference pressure level.

An important characteristic of sound is frequency. This is the rate of repetition of sound pressure oscillations (waves) as they reach our ears; frequency is expressed in hertz (Hz). When analyzing the total noise of any source, the frequency components are sometimes analyzed to determine the relative amounts of low-frequency, middle-frequency, and high-frequency noise. This breakdown is important for two reasons:

- Our ear is better equipped to hear mid- and high-range frequencies than lower frequencies. Thus, we find mid- and high-frequency noise to be more annoying. High-frequency noise is also more capable of producing hearing loss.

- Engineering solutions to a noise problem are different for different frequency ranges. Low-frequency noise is generally harder to control.

The normal frequency range of hearing for most people extends from a low frequency of about 20 Hz to a high frequency of about 10,000 to 15,000 Hz. People respond to sound most readily when the predominant frequency is in the range of normal conversation, typically around 1,000 to 2,000 Hz. Several filters have been developed that match the sensitivity of our ear and thus help us to judge the relative loudness of various sounds made up of many different frequencies. The so-called "A" filter is the best measure for most environmental noise sources. Sound pressure levels measured through this filter are referred to as A-weighted levels, and are measured in A-weighted decibels or (dBA).

The A-weighted filter significantly de-emphasizes those parts of the total noise that occur at lower frequencies (those below about 500 Hz) and also those at very high frequencies (above 10,000 Hz) the frequencies that we do not hear as well. The filter has very little effect, or is nearly "flat," in the middle range of frequencies (between 500 and 10,000 Hz), where our ears are most sensitive. Because this filter generally matches our ears' sensitivity, sounds having a higher A-weighted sound level are usually judged to be louder than those with lower A-weighted sound levels, a relationship that otherwise might not be true.

Community Noise Equivalent Level (CNEL)

Cumulative noise metrics were developed to assess community response to noise. They are useful because they attempt to take into account the loudness and duration of the noise, the total number of noise events, and the time of day these events occur in one single-number rating scale. They are designed to account for the known health effects of noise on people. The community noise equivalent level (CNEL) is a 24-hour, time-weighted energy-average noise level based on dBA that measures the overall noise during an entire day. Noise that occurs during certain sensitive time periods is penalized for occurring at these times (by adding decibels to its Leq measurement). On the CNEL scale, noise between 7:00 a.m. and 10:00 p.m. is penalized by approximately five dB, to account for the greater potential for noise to interfere during these hours, as well as the typically lower ambient (background) noise levels during these hours. Noise during the night (from 10:00 p.m. to 7:00 a.m.) is penalized by 10 dB to attempt to account for our higher sensitivity to noise in the nighttime and the expected further decrease in ambient noise levels that typically occur in the night.

Equivalent Noise Level (L_{EQ})

The equivalent sound level, abbreviated Leq, is a measure of the exposure resulting from the accumulation of A-weighted sound levels over a particular time period (e.g., 1 hour, 8 hour, a school day, nighttime, or a full 24-hour day). However, because the length of the period can be different depending on the time frame of interest, the applicable period should always be identified or clearly understood when discussing the metric. Such durations are often identified through a subscript, for example, "Leq (24)".

Conceptually, Leq may be thought of as a constant sound level over the period of interest that contains as much sound energy as the actual time-varying sound level with its normal peaks and valleys. It is important to realize, however, that the two signals (the constant one and the time-varying one) would sound very different from each other if compared in real life. Variations in the "average" sound level suggested by Leq is not an arithmetic value, but a logarithmic ("energy-averaged") sound level. Thus, loud events clearly dominate any noise environment described by the metric.

DAY NIGHT AVERAGE (LDN)

Another commonly used noise metric is the day/night average noise level (Ldn). The Ldn is a measure of the 24-hour average noise level at a given location. It was adopted by the EPA for developing criteria to evaluate community noise exposure. Ldn is based on a measure of the average noise level over a given time period. The Ldn is calculated by averaging the Leq for each hour of the day at a given location after penalizing the sleeping hours (from 10:00 p.m. to 7:00 a.m.) by 10 dBA to take into account the increased sensitivity of people to noises that occur at night. The sound level exceeded over a specified time frame can be expressed as Ln (i.e., L90, L50, L10, etc.). L50 equals the level exceeded 50 percent of the time; L10, 10 percent of the time; etc.

OTHER NOISE MATRICES

As previously mentioned, people tend to respond to changes in sound pressure in a logarithmic manner. In general, a 1 dBA change in the sound pressure levels of a given sound is detectable only under laboratory conditions. A 3 dBA change in sound pressure level is considered a detectable difference in most situations. A 5 dBA change is readily noticeable and a 10 dBA change is considered a doubling (or halving) of the subjective loudness. It should be noted that a 3 dBA increase or decrease in the average traffic noise level is realized by a doubling or halving of the traffic volume; or by about a 7 mile per hour (mph) increase or decrease in speed.

For each doubling of distance from a point noise source, the sound level will decrease by 6 dBA. In other words, if a person is 100 feet from a machine, and moves to 200 feet from that source, sound levels will drop approximately 6 dBA. For each doubling of distance from a line source, like a roadway, noise levels are reduced by 3 to 5 decibels, depending on the ground cover between the source and the receiver.

Noise barriers can provide approximately a 5 dBA CNEL noise reduction (additional reduction may be provided with a barrier of appropriate height, material, location and length). A row of buildings provides up to 5 dBA CNEL noise reduction with a 1.5 dBA CNEL reduction for each additional row up to a maximum reduction of approximately 10 dBA. The exact degree of noise attenuation depends on the nature and orientation of the structure and intervening barriers.

7.4 KEY THEMES AND VISION FOR GENERAL PLAN

It is the general objective of the City to regulate and control unnecessary, excessive, and annoying sounds emanating from uses and activities within the City, and to prohibit such sounds that are detrimental to the public health, welfare, and safety of its residents. With the objective, the City is focused on maintaining or improving the quality of life for both existing and future residents. The Land Use Element proposes a variety of mixed use development types along major arterials in the City. The Noise Element will ensure that the residential and non-residential uses within the mixed use development meet established noise standards.

AMBIENT NOISE

Ambient noise is described as the all-encompassing background noise associated with a given environment, usually being a composite of sounds from many sources near and far.

Garden Grove's noise environment is dominated by vehicular traffic noise along State Route 22 (SR-22) as well as major and primary arterials. The major arterials that serve the City are Valley View Street, Brookhurst Street, Harbor Boulevard, Bolsa Avenue, Westminster Avenue, Fairview

Road, and Knott Avenue. The primary arterials that serve the City are Magnolia Street, Euclid Street, Haster Street, Chapman Avenue, Garden Grove Boulevard, and Westminster Boulevard,. In addition, Katella Avenue, Harbor Boulevard, Bolsa Avenue, and Valley View Streets are designated as Smart Streets.

NOISE SENSITIVE RECEPTORS

Human response to noise varies widely depending on the type of noise, time of day, and sensitivity of the receptor. The effects of noise on humans can range from temporary or permanent hearing loss to mild stress and annoyance due to such things as speech interference and sleep deprivation. Prolonged stress, regardless of the cause, is known to contribute to a variety of health disorders. The sensitive receptors located within the City are listed in Appendix D, Air Quality Data, of the General Plan EIR.[1]

NOISE AND LAND USE COMPATIBLITY MATRIX

The State of California Office of Planning and Research (OPR) Noise Element Guidelines include recommended interior and exterior level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The OPR Guidelines describe the compatibility of various land uses with a range of environmental noise levels in terms of dBA CNEL (Community Noise Equivalent Level).

A noise environment of 50 dBA CNEL to 60 dBA CNEL is considered to be "normally acceptable" for residential uses. The State indicates that locating residential units, parks, and institutions (such as churches, schools, libraries, and hospitals) in areas where exterior ambient noise levels exceed 65 dBA CNEL is undesirable. The OPR recommendations also note that, under certain conditions, more restrictive standards than the maximum levels cited may be appropriate. As an example, the standards for quiet suburban and rural communities may be reduced by 5 to 10 dB to reflect their lower existing outdoor noise levels in comparison with urban environments.

In addition, *Title 25, Section 1092 of the California Code of Regulations,* sets forth requirements for the insulation of multiple-family residential dwelling units from excessive and potentially harmful noise. Whenever multiple-family residential dwelling units are proposed in areas with excessive noise exposure, the developer must incorporate construction features into the building's design that reduce interior noise levels to 45 dBA CNEL.

Table 7-1, Noise and Land Use Compatibility Matrix, illustrates the State guidelines established by the State Department of Health Services for acceptable noise levels for each county and city. These standards and criteria are incorporated into the land use planning process to reduce future noise and land use incompatibilities. This table is the primary tool that allows the City to ensure integrated planning for compatibility between land uses and outdoor noise.

CITY OF GARDEN GROVE NOISE STANDARDS

The City of Garden Grove maintains a comprehensive Noise Ordinance within its Municipal Code that establishes citywide interior and exterior noise level standards. The City has adopted a number of policies that are directed at controlling or mitigating environmental noise effects. The City's Noise Ordinance (Municipal Code Section 8.47, Noise Control,) establishes daytime and nighttime noise standards; refer to *Table 7-2, Garden Grove Noise Ordinance Standards*. The ordinance is designed to control unnecessary, excessive and annoying sounds generated

[1] Similar uses are sensitive to both air quality and noise impacts. Therefore, the sensitive receptor list for both issue areas is the same.

from a stationary source impacting an adjacent property. It differentiates between environmental and nuisance noise. Environmental noise is measured under a time average period while nuisance noise cannot exceed the established Noise Ordinance levels at any time. At the boundary line between a residential property and a commercial and manufacturing property, the noise level of the quieter zone is required to be used.

Table 7-1
Noise and Land Use Compatibility Matrix

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50 - 60	55 - 70	70-75	75-85
Residential - Multiple Family	50 - 65	60 - 70	70 - 75	70 – 85
Transient Lodging - Motel, Hotels	50 - 65	60 - 70	70 - 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 - 70	60 - 70	70 - 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 – 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 – 85
Playgrounds, Neighborhood Parks	50 - 70	NA	67.5 - 75	72.5 – 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 - 70	NA	70 - 80	80 – 85
Office Buildings, Business Commercial and Professional	50 - 70	67.5 - 77.5	75 - 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 - 75	70 - 80	75 - 85	NA

NA: Not Applicable

Source: Office of Planning and Research, California, *General Plan Guidelines*, October 2003.

Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.
Normally Unacceptable – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable – New construction or development should generally not be undertaken.

Table 7-2
Garden Grove Noise Ordinance Standards

Land Use Designation		Ambient Base Noise Level	Time Of Day
Sensitive Uses	Residential Use	55 dBA	7:00 AM – 10:00 PM
		50 dBA	10:00 PM – 7:00 AM
Conditionally Sensitive Uses	Institutional Use	65 dBA	Any Time
	Office-Professional Use	65 dBA	Any Time
	Hotels and Motels	65 dBA	Any Time
Non-Sensitive Uses	Commercial Uses	70 dBA	Any Time
	Commercial/Industrial Uses within 150 feet of Residential Uses	65 dBA	7:00 AM – 10:00 PM
		50 dBA	10:00 PM – 7:00 AM
	Industrial Uses	70 dBA	Any Time

Source: City of Garden Grove, *Municipal Code, Section 8.47, Noise Control*, 2005.

Municipal Code Section 8.47.060, Special Noise Sources, also includes the following provisions for construction and maintenance activities:

> *(d) Construction of Buildings and Projects. It shall be unlawful for any person within a residential area, or within a radius of 500 feet there from, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects, or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device between the hour of 10:00 p.m. of one day and 7:00 a.m. of the next day in such a manner that a person of normal sensitiveness, as determined utilizing the criteria established in Section 8.47.050(a), is caused discomfort or annoyance unless such operations are of an emergency nature.*

MINIMIZE COMMUNITY EXPOSURE TO NOISE

The primary goal with regard to community noise is to minimize the exposure of new residential development, schools, hospitals and similar noise-sensitive uses to excessive or unhealthy noise levels to the greatest extent possible. Toward this end, this Element establishes the noise/land use compatibility guidelines set forth in *Table 7-1* for outdoor noise. The compatibility guidelines recognize and respond to the many different noise environments in Garden Grove.

The City supports new residential development within already urbanized areas where ambient noise levels may be higher than those experienced in neighborhoods located on the urban periphery. This is in an effort to promote "smart growth," mixed use development, making more efficient use of land and resources.

Interior noise levels for new residential development, regardless of location within the City will be required to comply with standards set forth in Title 24 of the State Health and Safety Code. New construction may need to incorporate special insulation, windows, and sealants in order to ensure that interior noise levels meet Title 24 standards.

The City will utilize the noise/land use compatibility guidelines outlined in *Table 7-1* and *Table 7-2* in making land use decisions. These compatibility guidelines show a range of noise standards for various land use categories. Depending on the ambient environment of a particular community, these basic guidelines may be tailored to reflect existing noise and land use characteristics. The matrix defines noise in terms of Community Noise Equivalent Level (CNEL) and expressed in dB that measure sound intensity. Noise levels occurring during nighttime hours are weighted more heavily than during the daytime.

7.5 GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS

This Element is organized into goals, policies, and implementation programs. A description of each is provided in Chapter 1, Introduction. It is important to note that the implementation programs are specific actions to carry out all of the preceding goals and policies.

Goal N-1	**Noise considerations must be incorporated into land use planning decisions.**
Policy N-1.1	Require all new residential construction in areas with an exterior noise level greater than 55 dBA to include sound attenuation measures.
Policy N-1.2	Incorporate a noise assessment study into the environmental review process, when needed for a specific project for the purposes of identifying potential noise impacts and noise abatement procedures.

Policy N-1.3	Require noise reduction techniques in site planning, architectural design, and construction, where noise reduction is necessary consistent with the standards in Tables 7-1 and 7-2, Title 24 of the California Code of Regulations, and Section 8.47 of the Municipal Code.
Policy N-1.4	Ensure acceptable noise levels are maintained near schools, hospitals, convalescent homes, churches, and other noise sensitive areas.
Policy N-1.5	Require the design of mixed use structures to incorporate techniques to prevent the transfer of noise and vibration from the commercial to residential use.
Policy N-1.6	Encourage commercial uses in mixed use developments that are not noise intensive.
Policy N-1.7	Avoid locating noise-sensitive land use in existing and noise-impacted areas.
N-IMP-1A	Maintain a technical resource for builders, developers, and operators of construction equipment that discusses a variety of sound attenuation measures (e.g., temporary noise attenuation fences, preferential location of equipment, use of current technology and types of noise suppression equipment), the amount of noise reduction each produces, and how to combine them to meet City requirements.
N-IMP-1B	Require that new commercial, industrial, any redevelopment project, or any proposed development near existing residential land use demonstrate compliance with the City's Noise Ordinance prior to approval of the project.
N-IMP-1C	Implement noise mitigation by placing conditions of approval on development projects, and require a clear description of mitigation on subdivision maps, site plans, and building plans for inspection purposes.
N-IMP-1D	Require construction activity to comply with the limits established in the City's Noise Ordinance.
N-IMP-1E	Require buffers or appropriate mitigation of potential noise sources on noise sensitive areas.
N-IMP-1F	Require that vehicle access to commercial properties that are located adjacent to residential parcels or other noise sensitive uses be located at the maximum practical distance from these uses.
N-IMP-1G	Encourage truck deliveries to commercial or industrial properties abutting residential or noise sensitive uses after 7:00 AM and before 10:00 PM.
N-IMP-1H	Orient residential units away from major noise sources, particularly in mixed use projects.
N-IMP-1I	Encourage the location of balconies and operable windows of residential units in mixed use projects away from arterials and other major noise sources.

N-IMP-1J	Review the noise performance standards in the Zoning Code to determine if additional or modified standards are necessary to address mixed use development, particularly along major arterial roadways, or address and mitigate noise-generating land uses.
N-IMP-1K	Enforce the Noise Ordinance to ensure that stationary noise and noise emanating from construction activities, private development, and/or special events are minimized.
N-IMP-1L	Continue to enforce noise abatement and control measures.

Goal N-2	**Maximized efficiency in noise abatement efforts through clear and effective policies and ordinances.**

Policy N-2.1	Incorporate noise considerations into land use planning decisions by establishing acceptable limits of noise for various land uses throughout the community.
Policy N-2.2	Fully integrate noise considerations into land use planning decisions to prevent new noise/land use conflicts.
Policy N-2.3	Incorporate noise reduction features for items such as but not limited to parking and loading areas, ingress/egress point, and refuse collection areas, during site planning to mitigate anticipated noise impacts on affected noise sensitive land uses.
Policy N-2.4	Permit only those new development or redevelopment projects that have incorporated appropriate mitigation measures, so that standards contained in the Noise Element or adopted ordinance are met.
Policy N-2.5	Ensure the effective enforcement of City, State, and Federal noise levels by all appropriate City Divisions.
N-IMP-2A	Require a noise impact evaluation for projects, if determined necessary through the environmental review process. Should noise abatement be necessary, the City shall require the implementation of mitigation measures based on a technical study prepared by a qualified acoustical professional.
N-IMP-2B	Consider establishing a periodic noise monitoring program to identify progress in achieving noise abatement and to perform necessary updating of the Noise Element and community noise standards.
N-IMP-2C	Amend, and combine if deemed appropriate, ordinances and policies relating to noise control. The amended ordinance(s) shall more clearly address mitigation of noise conflicts between adjacent uses, construction noise, noise associated with maintenance equipment (e.g., leaf blowers, street sweepers, etc), hours of operation of construction or maintenance equipment, noise standards, abatement, enforcement, procedures, and other like issues.

N-IMP-2D	Use code enforcement to enforce the appropriate noise standards in the City's noise ordinance(s).
N-IMP-2E	Use the Police unit to enforce the appropriate noise standards in the State's motor vehicle code.
N-IMP-2F	Require that new equipment purchased by the City of Garden Grove comply with noise performance standards.
N-IMP-2G	Disseminate information to the public regarding City noise regulations and programs, the health effects of high noise levels, means of mitigating such levels, as well as abatement and enforcement procedures.
N-IMP-2H	Coordinate with California Occupational Safety and Health Administration (Cal-OSHA) to provide information on occupational noise requirements within the City.
N-IMP-2I	Examine the potential to establish a Violators Fee for persons requiring a second call/visit for violating the noise ordinance(s).

Goal N-3	**Minimized noise impacts from freeways, ensuring that City and State interior and exterior noise standards are not exceeded.**

Policy N-3.1	Encourage Caltrans to meet the State standard of 65 dBA CNEL for exterior noise levels for the Garden Grove Freeway (SR-22) and the San Diego Freeway (I-405).
Policy N-3.2	Encourage Caltrans to keep the interior residential noise levels below the State standard of 45 dBA CNEL, where appropriate and feasible.
N-IMP-3A	Continue to work with Caltrans to ensure that similar soundwalls or other appropriate mitigations to those installed along the Garden Grove Freeway (SR-22) be provided where the San Diego Freeway (I-405) abuts residential areas or areas with sensitive receptors within the City.
N-IMP-3B	Encourage Caltrans to develop a range of sound attenuation alternatives to mitigate noise impacts from the San Diego Freeway (I-405).

Goal N-4	**Minimize noise impacts for residential uses and noise sensitive receptors along the City's arterial streets, ensuring that City and State interior and exterior noise levels are not exceeded.**

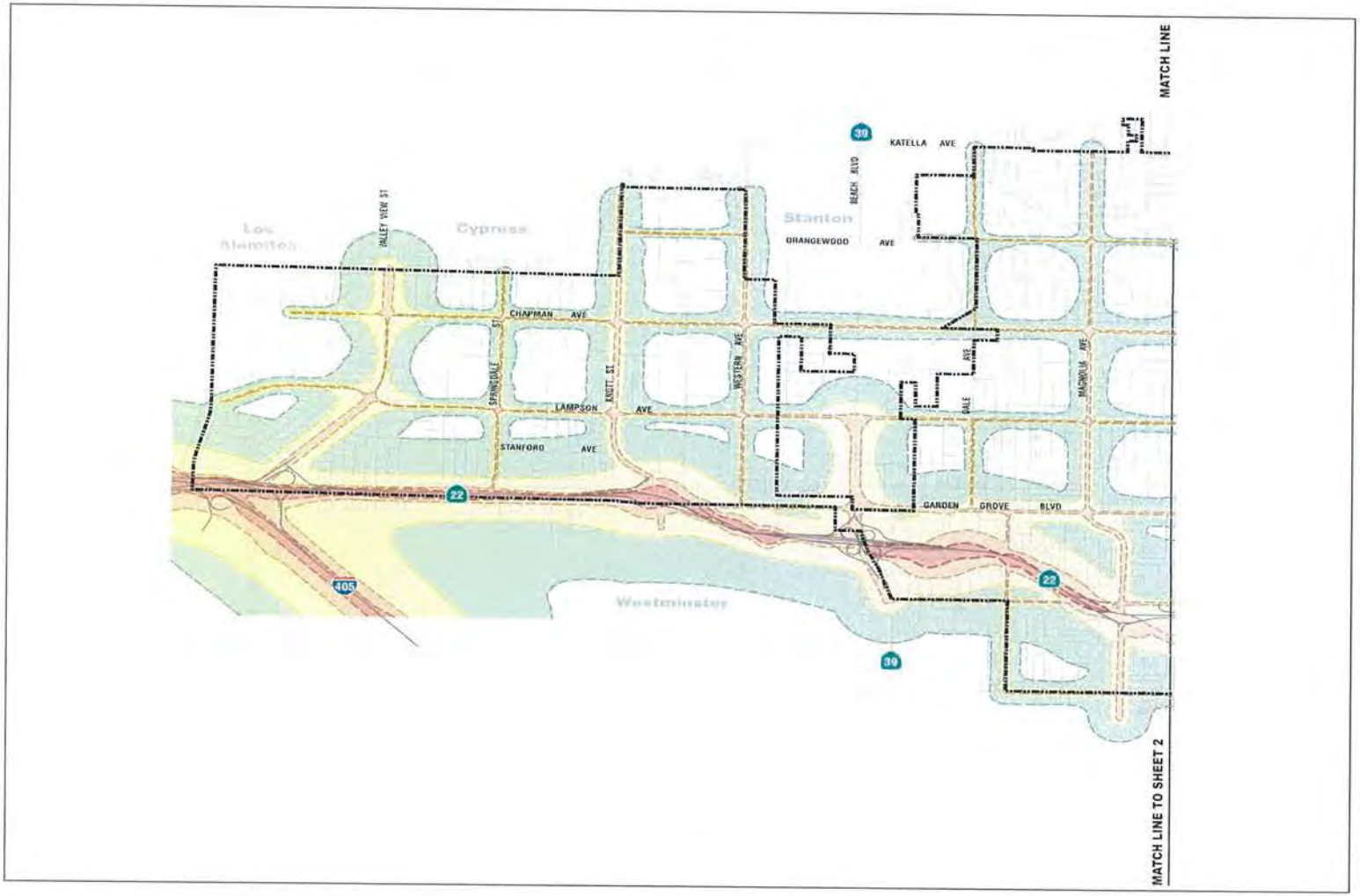
Policy N-4.1	Examine the feasibility of implementing sound attenuation measures along the City's arterial streets. Prioritize the areas in need of sound attenuation based on degree of sensitivity, excess of maximum allowable standards, length of time the noise impact has existed, and the number or residential uses or sensitive receptors impacted.
Policy N-4.2	Minimize potential transportation noise through proper design of street circulation, coordination of routing, and other traffic control measures (e.g., shifting travel lanes away from impacted units, adding bike ways, etc.)

Policy N-4.3	Discourage through traffic on residential local streets to reduce noise.
N-IMP-4A	Install sound attenuation measures, including but not limited to, retrofitting existing residential units or sensitive receptors with double-glazed windows and sound insulation; construction of sound walls and landscaping, use of low walls and landscaped berms, enclose courtyards, rubberized asphalt, or relocation of driveways.
N-IMP-4B	Develop a streamlined process to expedite approval of noise reducing techniques identified in the noise ordinance(s).
N-IMP-4C	Ensure the inclusion of noise mitigation measures in the design of new roadway projects in the City of Garden Grove.
N-IMP-4D	Provide for continued evaluation of truck movements and routes in the City to provide effective separation from residential or other noise sensitive land uses.
N-IMP-4E	Conduct periodic noise monitoring and abatement to identify sound levels on residential local streets that may be affected by increased traffic volumes and speed limits.

Goal N-5	**Minimize noise impacts on residential areas from rail and/or transit operations.**
Policy N-5.1	Continue to encourage the Southern Pacific Transportation Company to schedule trains during the daylight hours, when possible.
Policy N-5.2	Require noise attenuation measures for residential construction in areas affected by the 65 dBA CNEL railroad noise contour. Sound attenuation measures shall reduce interior noise to a maximum of 45 dBA CNEL. These measures shall be applicable to all residential construction in a railroad noise impact area, both for new structures and for renovations, remodels, and building additions.
Policy N-5.3	Work with the Orange County Transit Authority (OCTA) in the development of the OCTA right-of-way or other rail/transit lines to ensure that noise attenuation measures are addressed in the selection of the rail or vehicle technology for use along the right-of-way or rail/transit line, and in the siting, design, and construction of stations.
N-IMP-5A	Require the Orange County Transit Authority (OCTA) to comprehensively analyze and mitigate the noise impacts associated with transit development of the OCTA right-of-way or other rail/transit lines.

Goal N-6	**Maintain or work to reduce noise levels associated with the Joint Forces Training Base (JFTB) Los Alamitos.**
Policy N-6.1	Coordinate with the Airport Land Use Commission to monitor any expansion plans and/or increased activities at the Joint Forces Training Base (JFTB) Los Alamitos.

N-IMP-6A Support development at the Joint Forces Training Base (JFTB) Los Alamitos that adheres to the Airport Environs Land Use Plan (AELUP) and the City of Garden Grove and State noise requirements or ordinances.



General Plan 2030

LEGEND

- Major Streets
- Freeway
- City Boundary
- Existing 75 CNEL
- Existing 70 CNEL
- Existing 65 CNEL
- Existing 60 CNEL

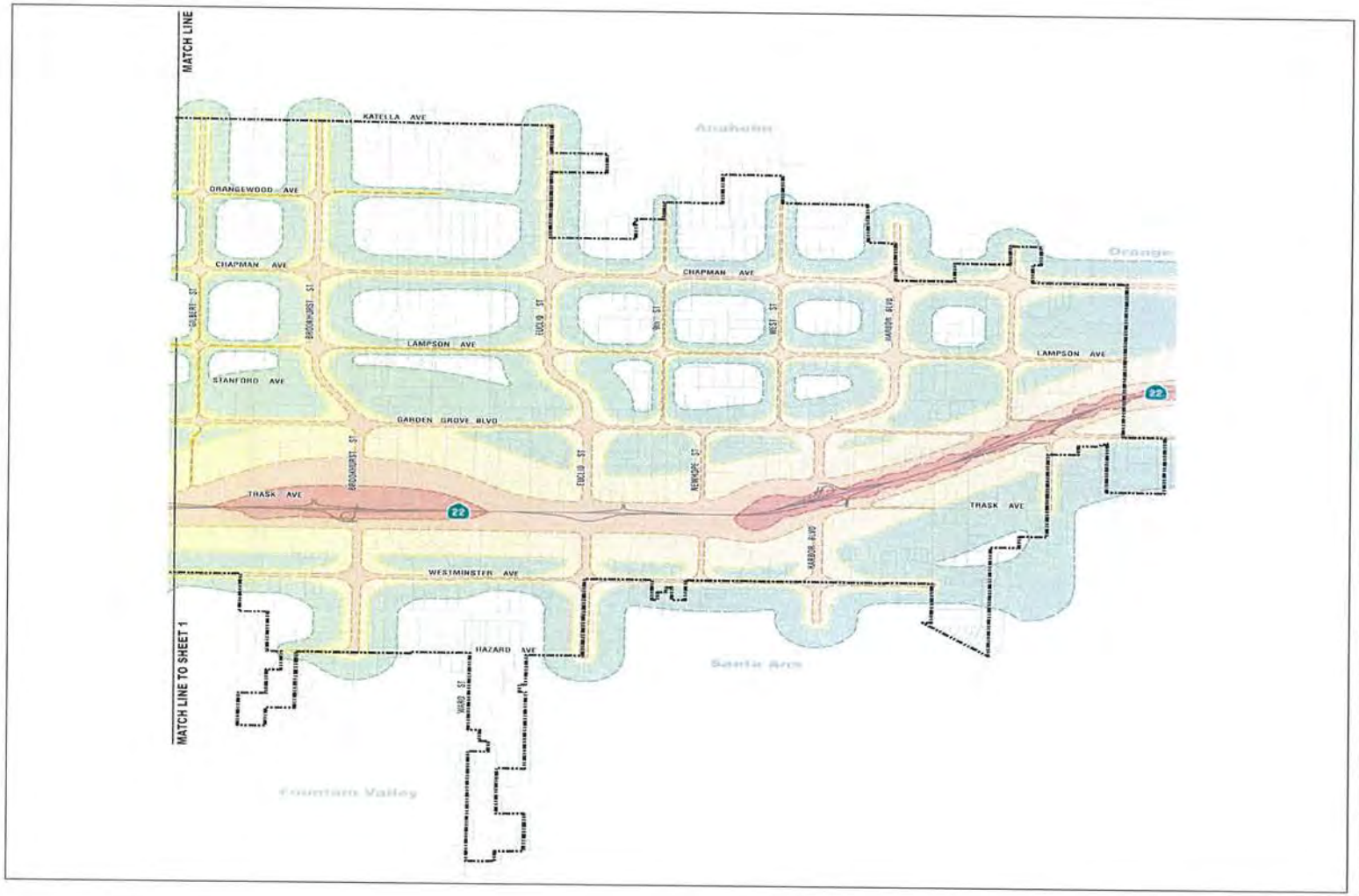
0 2250

SOURCE: RBF Consulting, May 2008

RBF CONSULTING

EXISTING NOISE CONTOURS • WEST

EXHIBIT N-1A



LEGEND

- Major Streets
- Freeway
- City Boundary
- Existing 75 CNEL
- Existing 70 CNEL
- Existing 65 CNEL
- Existing 60 CNEL

SOURCE: RBF Consulting

RBF CONSULTING

EXISTING NOISE CONTOURS • EAST

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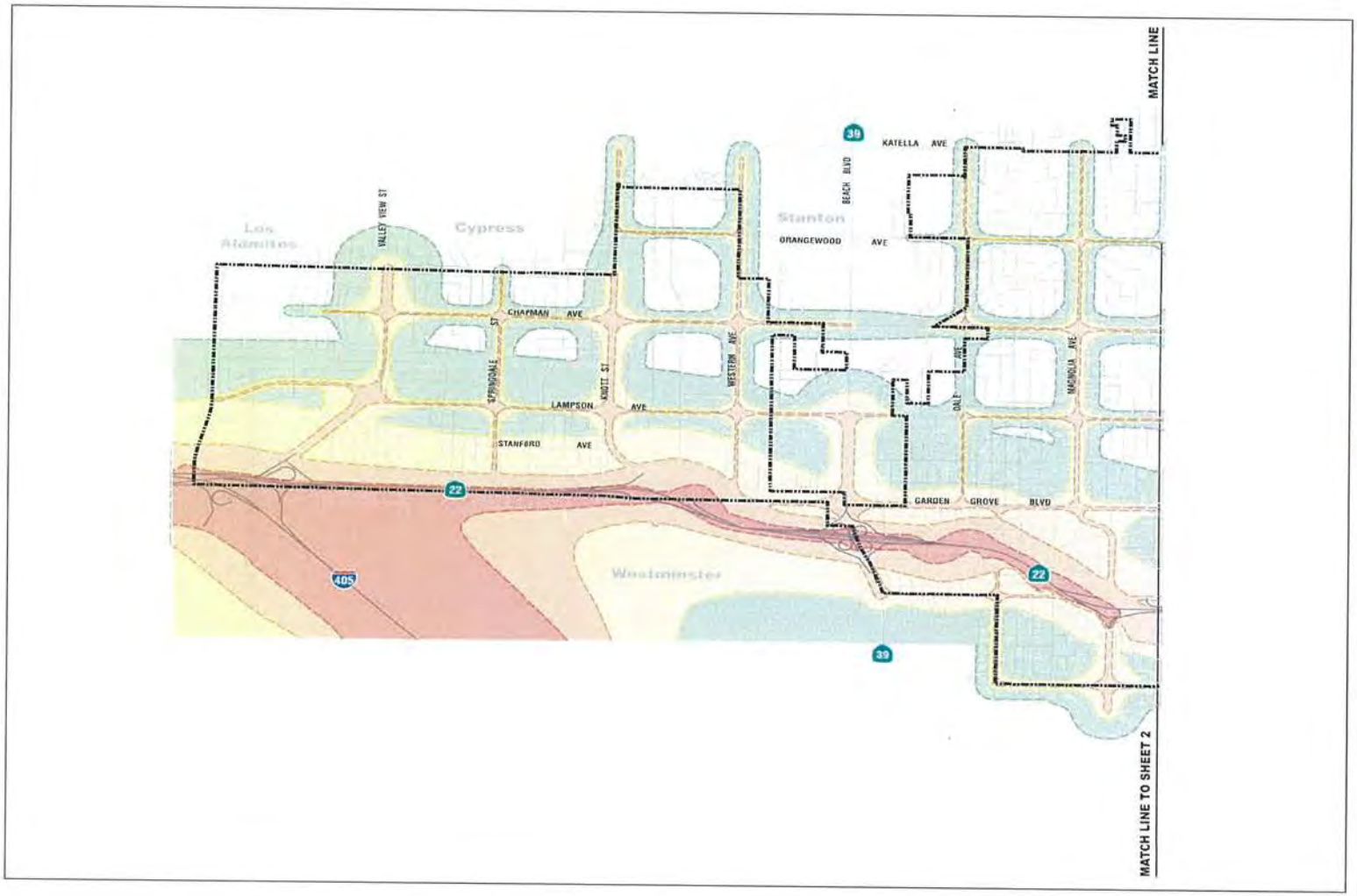


General Plan 2030

LEGEND

- Major Streets
- Freeway
- City Boundary
- Existing 75 CNEL
- Existing 70 CNEL
- Existing 65 CNEL
- Existing 60 CNEL

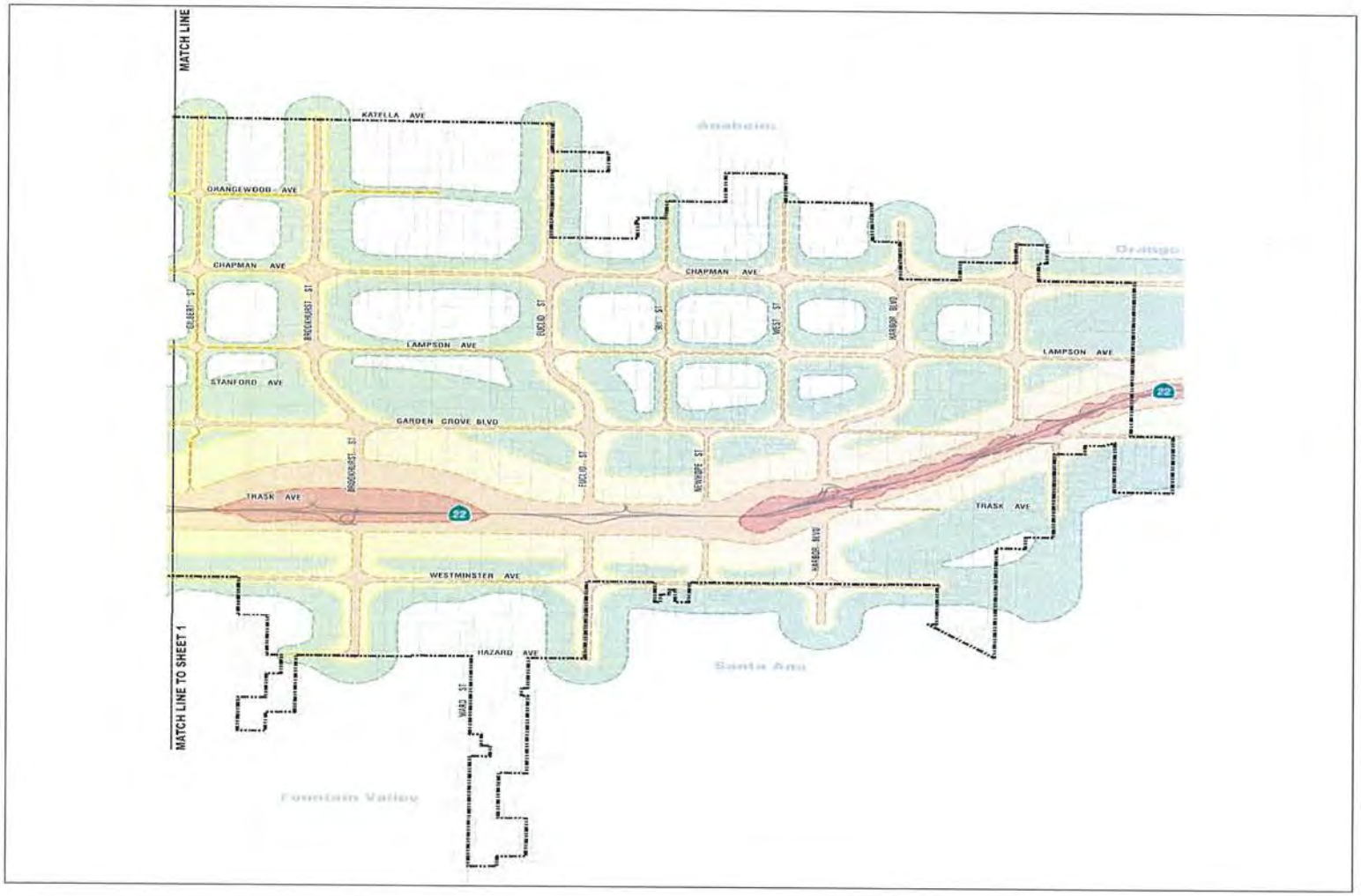
0 2250

SOURCE: RBF Consulting, May 2008.

RBF CONSULTING

FUTURE NOISE CONTOURS • WEST

EXHIBIT N-2A



RBF CONSULTING

FUTURE NOISE CONTOURS • EAST

EXHIBIT N-2B

Chapter 8.47 NOISE CONTROL

Note

* **Prior ordinance history**: Ord. Nos. 1949, 1950, and 2258.

8.47.020 Definitions

The following words, phrases, and terms as used in this chapter shall have the meaning as indicated below:

"Actual measured ambient noise level" shall mean that noise level existing in the general area of the noise problem, excluding the noise generated by the noise source being evaluated.

"Ambient base noise level" shall mean the maximum loudness level normally found to be acceptable for given land uses and that serves as the basis for determining loudness noise violations pursuant to the provisions of Section 8.48.040 of this chapter.

"Ambient noise level" shall mean the all-encompassing background noise associated with a given environment, being usually a composite of sounds from many sources near and far.

"Commercial use" shall mean any enterprise whose principal endeavor is the sale of goods and/or services.

"Decibel (dB)" shall mean a unit that denotes the ratio between two quantities that are proportional to power: the number of decibels corresponding to the ratio of two amounts of power is 10 times the logarithm to the base 10 of this ratio. The commonly used unit for measuring sound pressure levels.

"Emergency" means operations made necessary to restore property to a safe condition following a public calamity, or work required to protect persons or property from an imminent exposure to danger or work by private or public utilities when restoring utility service.

"Industrial use" means any facility or operations involved in the manufacturing, repairing, testing, processing, warehousing, wholesaling, researching, and treatment of products.

"Institutional use" means an establishment maintained and operated by a society, church, corporation, individual, foundation, or public agency for the purpose of providing religious, charitable, social, educational, fraternal, or similar services.

"Noise" means any sound that exceeds the appropriate actual or presumed ambient noise level, that annoys or tends to disturb humans, or that causes or tends to cause an adverse psychological or physiological effect on humans of normal sensitiveness.

"Office-professional use" means any enterprise engaged in providing business or professional services.

"Residential use" means any structure utilized principally for human habitation, excluding hotels, motels, and recreational vehicle parks.

"Sound amplifying equipment" means any device for the amplification of the human voice, music, or any other sound and does not include standard automobile radios when used and heard only by the occupants of the vehicle in which the automobile radio is installed or devices on authorized emergency vehicles or horns or other warning devices on any vehicle used only for traffic safety purposes.

"Sound level in decibels (dB)" means the sound measured utilizing the A-weighting scale and the slow needle response by a sound level meter.

"Sound level meter" means an instrument meeting American National Standard Institutes Standard S1.4-1971 for Type 1 or Type 2 sound level meters or an equivalent standard. (2802 § 1, 2011; 2660 § 2, 2005)

8.47.030 Noise Level Measurement

All noise level measurements made pursuant to the provisions of this chapter shall be performed using a sound level meter as defined in Section 8.47.020, using a fast needle response, utilizing the dB(A) scale. (2802 § 1, 2011; 2660 § 2, 2005)

8.47.040 Ambient Base Noise Levels

The ambient base noise levels contained in the following chart shall be utilized as the basis for determining noise levels in excess of those allowed by this chapter unless the actual measured ambient noise level occurring at the same time as the noise under review is being investigated exceeds the ambient base noise level contained in the chart. When the actual measured ambient noise level exceeds the ambient base noise level, the actual measured ambient noise level shall be utilized as the basis for determining whether or not the subject noise exceeds the level allowed by this section. In situations where two adjoining properties exist within two different use designations, the most restrictive ambient base noise level will apply. This section permits any noise level that does not exceed either the ambient base noise level or the actual measured ambient noise level by 5 dB(A), as measured at the property line of the noise generation property.

USE CATEGORIES	USE DESIGNATIONS	AMBIENT BASE NOISE LEVELS	TIME OF DAY
Sensitive	Residential Use	55 dB(A) 50 dB(A)	7:00 a.m.—10:00 p.m. 10:00 p.m.—7:00 a.m.
Conditionally Sensitive	Institutional Use Office-Professional Use Hotels & Motels	65 dB(A) 65 dB(A) 65 dB(A)	Any Time Any Time Any Time

Non-Sensitive	Commercial Uses	70 dB(A)	Any Time
	Commercial/ Industrial Uses within 150 feet of Residential	65 dB(A)	7:00 a.m.—10:00 p.m.
		50 dB(A)	10:00 p.m.—7:00 a.m.
	Industrial Use	70 dB(A)	Any Time

(2802 § 1, 2011; 2660 § 2, 2005)

8.47.050 General Noise Regulation

A. NOISE DISTURBANCE CRITERIA. It shall be unlawful for any person to willfully make, continue, or cause to be made or continued, any loud, unnecessary, or unusual noise that disturbs the peace or quiet of any neighborhood, or that causes discomfort or annoyance to any person of normal sensitiveness.

B. The criteria that shall be utilized in determining whether a violation of the provisions of this section exists shall include, but not be limited to, the following:

1. The level of the noise.
2. The frequency of occurrence of the noise.
3. Whether the nature of the noise is usual or unusual.
4. The level and intensity of the background noise, if any.
5. The proximity of the noise to residential sleeping facilities.
6. The nature and zoning of the area within which the noise emanates.
7. The density of the inhabitation of the area within which the noise is received.
8. The time of day or night the noise occurs.
9. The duration of the noise.

C. DURATION OF NOISE. The following criteria shall be used whenever the noise level exceeds:

1. The noise standard for a cumulative period of more than 30 minutes in any hour;
2. The noise standard plus five dB(A) for a cumulative period of more than 15 minutes in any hour;
3. The noise standard plus 10 dB(A) for a cumulative period of more than five minutes in any hour;
4. The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour; or
5. The noise standard plus 20 dB(A) for any period of time.

D. In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level. (2802 § 1, 2011; 2660 § 2, 2005)

8.47.060 Special Noise Sources

A. RADIOS, TELEVISION SETS, AND SIMILAR DEVICES.

1. USE RESTRICTED. It shall be unlawful for any person within any residential area of the City to use or operate any radio receiving set, musical instrument, stereo equipment, television set, or other machine or device for the producing or reproducing of sound between the hours of 10:00 p.m. of one day and 7:00 a.m. of the following day in such a manner as to disturb the peace, quiet, and comfort of any person of normal sensitiveness residing in the area, as determined utilizing the criteria established in Section 8.47.050(A).

2. PRIMA FACIE VIOLATION. Any noise level exceeding the ambient base level at the property line of any property (or, if a condominium or apartment house, within any adjoining apartment) by more than five decibels shall be deemed to be prima facie evidence of a violation of the provisions of this section.

B. MUSICAL INSTRUMENTS—USE RESTRICTED. It shall be unlawful for any person to use any drum or other instrument or device of any kind for the purpose of attracting attention by the creation of noise within the City. This section shall not apply to any person who is a participant in a duly licensed parade or who has been otherwise duly authorized to engage in such conduct.

C. MACHINERY, EQUIPMENT, FANS, AND AIR CONDITIONING. It shall be unlawful for any person to operate any machinery, equipment, pump, fan, air conditioning apparatus, or similar mechanical device in any manner so as to create any noise that would cause the noise level at the property line of any property to exceed either the ambient base noise level or the actual measured ambient noise level by more than five decibels.

D. CONSTRUCTION OF BUILDINGS AND PROJECTS. It shall be unlawful for any person within a residential area, or within a radius of 500 feet therefrom, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects, or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction type device between the hours of 10:00 p.m. of one day and 7:00 a.m. of the next day in such a manner that a person of normal sensitiveness, as determined utilizing the criteria established in Section 8.47.050(B), is caused discomfort or annoyance unless such operations are of an emergency nature.

E. VEHICLE REPAIRS. It shall be unlawful for any person within any residential area of the City to repair, rebuild, or test any motor vehicle in such a manner that a person of normal sensitiveness residing in the area is caused discomfort or annoyance, as determined utilizing the criteria established in Section 8.47.050, unless such operations are of an emergency nature.

F. MOTOR DRIVEN VEHICLES. It shall be unlawful for any person to operate any motor driven vehicle within the City in such a manner that a person of normal sensitiveness residing in the area is caused discomfort or annoyance, as determined utilizing the criteria established in Section

8.47.050(B), unless such operations are of an emergency nature; provided, however, any such vehicle that is operated upon any public highway, street, or right-of-way shall be excluded from the provisions of this section.

G. AMPLIFIED SOUND.

1. PURPOSE. While recognizing the constitutional rights of freedom of speech and assembly, the City nevertheless feels obligated to reasonably regulate the use of sound amplifying equipment in order to protect the rights of the citizens of the City to privacy and freedom from excessively loud and unnecessary noise.

2. REGISTRATION. It shall be unlawful for any person, other than personnel of law enforcement or governmental agencies, to install, use, or operate within the City a loudspeaker or sound amplifying equipment mounted upon any vehicle for the purposes of warnings, giving instructions, directions, talks, addresses, lectures, or transmitting music to any persons or assemblages of persons without first filing a registration statement at least seven days prior to the date on which the sound amplifying equipment is intended to be used and obtaining approval from the Zoning Administrator.

3. APPROVAL. The Zoning Administrator shall return to the applicant an approved copy of the registration statement unless he or she finds that:

a. The conditions of the motor vehicle movement are such that use of the equipment would constitute a detriment to traffic safety; or

b. The conditions of pedestrian movement are such that use of the equipment would constitute a detriment to traffic safety.

4. DISAPPROVAL. In the event the registration statement is disapproved, the Zoning Administrator shall endorse upon the statement the reason for disapproval and return it to the applicant.

5. APPEALS. Any decision by the Zoning Administrator may be appealed to the City Council within seven days of action of the Zoning Administrator by filing a notice of appeal with the City Clerk.

H. WASTE HAULERS/COMMERCIAL SWEEPERS AND LEAF BLOWERS. It shall be unlawful for any person within any commercial, industrial, or office complex area of the City to operate any refuse compacting, processing or collection vehicle, parking lot sweeper or leaf blower within 150 feet of residential property between the hours of 10:00 p.m. of one day and 7:00 a.m. of the following day.

I. LOADING/UNLOADING. It shall be unlawful for any person in any commercial or industrial area of the City that abuts or is located adjacent to any residential property between the hours of 10:00 p.m. of one day and 7:00 a.m. of the following day to load or unload any vehicle, or operate any dollies, carts, forklifts, or other wheeled equipment that causes any noise that disturbs the peace or quiet of the residential neighborhood. (2802 § 1, 2011; 2660 § 2, 2005)

8.47.070 Exemptions

A. EMERGENCY ACTIVITIES. The provisions of this chapter shall not preclude the operation, maintenance, and repair of equipment, apparatus, or facilities of essential public services, including those of governmental agencies and public utilities providing those activities are of an emergency nature or are necessary to maintain the health, safety, and welfare of the citizenry.

B. COMMUNITY ACTIVITIES. Community events, as described in Section 8.08.060 of the Municipal Code, outdoor gatherings, school bands, dances, shows, and athletic events are hereby exempted from the provisions of this chapter provided such activities are conducted pursuant to a duly authorized license or permit.

C. STATE AND FEDERAL PREEMPTIONS. Motor vehicle and aircraft operations and any other activity whose regulation has been preempted by state or federal law is hereby exempted from the provisions of this chapter. (2802 § 1, 2011; 2660 § 2, 2005)

8.47.080 Abatement

The City Manager or his or her designee and his or her duly authorized representatives are hereby directed to enforce the provisions of this chapter by requiring that the alleged offender correct violations and achieve compliance with the provisions of this chapter within a reasonable period of time.

A. The City Manager or his or her designee shall have the power and duty to enforce the following noise control provisions of this Code: Section 8.47.050, Section 8.47.060(A)(2), (C), (H), and (I).

B. The Police Department shall have the power and duty to enforce the following noise control provisions of this Code: Section 8.47.060 (A)(1), (B), (E), (F), (G)(1) and (2).

C. The Building Official shall have the power and duty to enforce the following noise control provisions of this Code: Section 8.47.060(D). (2802 § 1, 2011; 2660 § 2, 2005)

MODELING INPUT & OUTPUT

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat 6/7/2021
Case Descr 9Max Capital - Typical Case

---- Receptor #1 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
R1	Residential	60	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	350	0
Front End Loader	No	40		79.1	350	0
Dump Truck	No	40		76.5	350	0
Concrete Pump Truck	No	20		81.4	350	0
Forklift	No	20		75	350	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	63.8	59.8	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Front End Loader	62.2	58.2	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Dump Truck	59.5	55.6	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Concrete Pump Truck	64.5	57.5	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Forklift	58.1	48.1	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Total	64.5	64.2	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
R2	Residential	60	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	330	0
Front End Loader	No	40		79.1	330	0
Dump Truck	No	40		76.5	330	0
Concrete Pump Truck	No	20		81.4	330	0
Forklift	No	20		75	330	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	64.3	60.3	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Front End Loader	62.7	58.7	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Dump Truck	60.1	56.1	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Concrete Pump Truck	65	58	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Forklift	58.6	48.6	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Total	65	64.7	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Descriptior	Land Use	Baselines (dBA) Daytime	Evening	Night
R3	Residential	60	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	100	0
Front End Loader	No	40		79.1	100	0
Dump Truck	No	40		76.5	100	0
Concrete Pump Truck	No	20		81.4	100	0
Forklift	No	20		75	100	0

Results

Calculated (dBA)	Noise Limits (dBA)	Noise Limit Exceedance (dBA)

			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	74.7	70.7	85	65	N/A	N/A	N/A	N/A	None		5.7	N/A	N/A	N/A	N/A
Front End Loader	73.1	69.1	85	65	N/A	N/A	N/A	N/A	None		4.1	N/A	N/A	N/A	N/A
Dump Truck	70.4	66.5	85	65	N/A	N/A	N/A	N/A	None		1.4	N/A	N/A	N/A	N/A
Concrete Pump Truck	75.4	68.4	85	65	N/A	N/A	N/A	N/A	None		3.4	N/A	N/A	N/A	N/A
Forklift	69	62	85	65	N/A	N/A	N/A	N/A	None	None		N/A	N/A	N/A	N/A
Total	75.4	75.2	85	65	N/A	N/A	N/A	N/A	None		10.2	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R4	Residential	60	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	70	0
Front End Loader	No	40		79.1	70	0
Dump Truck	No	40		76.5	70	0
Concrete Pump Truck	No	20		81.4	70	0
Forklift	No	20		75	70	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	77.8	73.8	85	65	N/A	N/A	N/A	N/A	None		8.8	N/A	N/A	N/A	N/A
Front End Loader	76.2	72.2	85	65	N/A	N/A	N/A	N/A	None		7.2	N/A	N/A	N/A	N/A
Dump Truck	73.5	69.5	85	65	N/A	N/A	N/A	N/A	None		4.5	N/A	N/A	N/A	N/A
Concrete Pump Truck	78.5	71.5	85	65	N/A	N/A	N/A	N/A	None		6.5	N/A	N/A	N/A	N/A
Forklift	72.1	62.1	85	65	N/A	N/A	N/A	N/A	None	None		N/A	N/A	N/A	N/A
Total	78.5	78.2	85	65	N/A	N/A	N/A	N/A	None		13.2	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #5 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
R5	Residential	60	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	200	0
Front End Loader	No	40		79.1	200	0
Dump Truck	No	40		76.5	200	0
Concrete Pump Truck	No	20		81.4	200	0
Forklift	No	20		75	200	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	68.7	64.7	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Front End Loader	67.1	63.1	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Dump Truck	64.4	60.4	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Concrete Pump Truck	69.4	62.4	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Forklift	63	53	85	65	N/A	N/A	N/A	N/A	None	None	N/A	N/A	N/A	N/A
Total	69.4	69	85	65	N/A	N/A	N/A	N/A	None		4	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Construction Vibration Analysis

Equipment		PPV Velocity, in/sec									RMS Velocity Level, VdB[1]									
		Relative Distances				Vibration Receptor Distance, ft					Relative Distances				Vibration Receptor Distance, ft					
		25 ft	50 ft	100 ft	200 ft	R1	R2	R3	R4	R5	25 ft	50 ft	100 ft	200 ft	R1	R2	R3	R4	R5
						275	60	25	20	50					275	60	25	20	50
Hydromill (slurry wall)	In soil	0.008	0.003	0.001	0.000	0.000	0.002	0.008	0.011	0.003	66	57	48	39	35	55	66	69	57
	In rock	0.017	0.006	0.002	0.001	0.000	0.005	0.017	0.024	0.006	73	64	55	45	41	61	73	75	64
Hoe Ram		0.089	0.031	0.011	0.004	0.002	0.024	0.089	0.124	0.031	87	78	69	60	56	76	87	90	78
Large Bulldozer		0.089	0.031	0.011	0.004	0.002	0.024	0.089	0.124	0.031	87	78	69	60	56	76	87	90	78
Caisson Drilling		0.089	0.031	0.011	0.004	0.002	0.024	0.089	0.124	0.031	87	78	69	60	56	76	87	90	78
Loaded Trucks		0.076	0.027	0.010	0.003	0.002	0.020	0.076	0.106	0.027	86	77	68	58	54	74	86	88	77
Jackhammer		0.035	0.012	0.004	0.002	0.001	0.009	0.035	0.049	0.012	79	70	61	52	48	67	79	82	70
Small Bulldozer		0.003	0.001	0.000	0.000	0.000	0.001	0.003	0.004	0.001	58	48	39	30	26	46	58	60	48

Note: 1 - RMS velocity in decibles (VdB) re 1 micro-inch/second

CadnaA Input Output
Project: 9Max Capital Garden Grove Townhomes

Receiver:

Name	M.	ID	Level Lr Day (dBA)	Night (dBA)	Limit. Value Day (dBA)	Night (dBA)	Land Use Type	Auto	Noise Type	Height (m)		Coordinates X (m)	Y (m)	Z (m)	
R1			0	0	0	0	x		Total	1.5	r	279.48	333.63	1.5	
R2			0	0	0	0	x		Total	1.5	r	376.45	181.17	1.5	
R3			0	0	0	0	x		Total	1.5	r	343.48	170.83	1.5	
R4			0	0	0	0	x		Total	1.5	r	273.46	164.21	1.5	
R5			0	0	0	0	x		Total	1.5	r	254.75	214.45	1.5	

Point Source

Name	M.	ID	Result. PWL Day (dBA)	Evening (dBA)	Night (dBA)	Lw / Li Type	Value	norm. dB(A)	Correction Day dB(A)	Evening dB(A)	Night dB(A)	Sound Reduction R	Area (m^2)	Attenuatio Operating Time Day (min)	Special (min)	Night (min)	KO (dB)	Freq. (Hz)	Direct.	Height (m)		Coordinates X (m)	Y (m)	Z (m)	
C1			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	258	250.49	1	
C2			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	258	244.21	1	
C3			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	258	237.48	1	
C4			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	258	230.69	1	
C5			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	258	223.83	1	
C6			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	293.3	250.97	1	
C7			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	296.3	244.04	1	
C8			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	296.3	237.4	1	
C9			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	293.3	230.76	1	
C10			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	293.3	224.12	1	
C11			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	258	176.35	1	
C12			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	258	183.13	1	
C13			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	258	189.74	1	
C14			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	258	196.43	1	
C15			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	258	203.12	1	
C16			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	293.3	203.16	1	
C17			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	293.3	196.3	1	
C18			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	293.3	189.38	1	
C19			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	293.3	182.82	1	
C20			76.7	76.7	76.7	Lw	C77		0	0	0						0	(none)		1	r	293.3	176.09	1	
P1			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	249	4.57	
P1			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	247.5	4.57	
P2			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	249	4.57	
P7			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	247.5	4.57	
P3			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	242	4.57	
P3			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	240.4	4.57	
P4			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	242	4.57	
P4			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	240.4	4.57	
P5			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	235	4.57	
P5			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	233.5	4.57	
P6			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	235	4.57	
P6			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	233.5	4.57	
P7			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	229	4.57	
P7			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	227	4.57	
P8			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	229	4.57	
P8			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	227	4.57	
P9			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	227	4.57	
P9			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	220	4.57	
P10			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	222	4.57	
P10			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	220	4.57	
P11			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	206.5	4.57	
P11			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	205	4.57	
P12			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	206.5	4.57	
P12			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	205	4.57	
P13			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	200	4.57	
P13			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	198.7	4.57	
P14			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	200	4.57	
P14			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	198.7	4.57	
P15			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	193	4.57	
P15			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	192	4.57	
P16			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	193	4.57	
P16			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	192	4.57	
P17			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	187	4.57	
P17			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	185	4.57	
P18			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	187	4.57	
P18			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	185	4.57	
P19			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	180	4.57	
P19			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	258	178	4.57	
P20			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	180	4.57	
P20			49.9	49.9	49.9	Lw	P		0	0	0						0	(none)		4.57	r	293.3	178	4.57	

Area Source

Name	M.	ID	Result. PWL	Result. PWL"	Lw / Li	Correction	Sound Reduction	Attenuatio Operating Time	KO	Freq.	Direct.	Moving Pt. Src

	Day (dBA)	Evening (dBA)	Night (dBA)	Day (dBA)	Evening (dBA)	Night (dBA)	Type	Value	norm. dB(A)	Day dB(A)	Evening dB(A)	Night dB(A)	R	Area (m^2)	Day (min)	Special (min)	Night (min)	(dB)	(Hz)	Number Day	Evening	Night
Recreational Area	0	0	0	0	0	0	PWL-Pt				0	0	0					0	(none)	8	0	0
Recreational Area	0	0	0	0	0	0	PWL-Pt				0	0	0					0	(none)	8	0	0

Road

Name	M.	ID	Lme Day (dBA)	Evening (dBA)	Night (dBA)	Count Data DTV	Str.class.	exact Count Data M Day	Evening	Night	p (%) Day	Evening	Night	Speed Limit Auto (km/h)	Truck (km/h)	SCS Dist.	Surface Dstro (dB)	Type	Gradient (%)	Mult. Reflection Drefl (dB)	Hbuild (m)	Dist. (m)
Driveway Exit/Enter			0	0	0			0	0	0	0	0	0	15		0	0	0	1	0	0	

Name	ID	Type	Oktave Spectrum (dB) Weight.	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	Source
Carrier Condenser	C77	Lw			87.5	82.5	76.1	73.6	71.3	67.1	64.1	60	76.7	89.2	Carrier 77
1 Person	P	Lw		47.2	48.3	50.9	47.5	47.5	45.3	42.1	34	28	49.9	56.1	

Barrier

Name	M.	ID	Absorption left	right	Z-Ext. (m)	Cantilever horz. (m)	vert. (m)	Height Begin (m)	End (m)
Side Building								3.5	r
Building A								6.1	r
Building B								6.1	r
Building C								6.1	r
Building D								6.1	r
Perimeter Barrier								1.5	r

Result Table - Operations

Receiver Name	ID	Land Use	Limiting Value Day dB(A)	Night dB(A)	rel. Axis Station m	Distance m	Height m	Lr w/o Noise Control Day dB(A)	Night dB(A)	dL req. Day dB(A)	Night dB(A)	Lr w/ Noise Control Day dB(A)	Night dB(A)	Exceeding Day dB(A)	Night dB(A)	passive NC dB(A)
R1			0	0	200	54.94	1.5	12.7	12.7	12.7	12.7	0	0	-	-	-
R2			0	0	105	85.49	-59	27.6	27.6	27.6	27.6	0	0	-	-	-
R3			0	0	79	67.95	1.5	27.6	27.6	27.6	27.6	0	0	-	-	-
R4			0	0	79	11.1	1.5	25.3	25.3	25.3	25.3	0	0	-	-	-
R5			0	0	40	20.52	1.5	25.9	25.9	25.9	25.9	0	0	-	-	-

Result Table - Condensers

Receiver Name	ID	Land Use	Limiting Value Day dB(A)	Night dB(A)	rel. Axis Station m	Distance m	Height m	Lr w/o Noise Control Day dB(A)	Night dB(A)	dL req. Day dB(A)	Night dB(A)	Lr w/ Noise Control Day dB(A)	Night dB(A)	Exceeding Day dB(A)	Night dB(A)	passive NC dB(A)
R1			0	0	200	54.94	1.5	23.4	23.4	23.4	23.4	0	0	-	-	-
R2			0	0	105	85.49	-59	35.3	35.3	35.3	35.3	0	0	-	-	-
R3			0	0	79	67.95	1.5	46.8	46.8	46.8	46.8	0	0	-	-	-
R4			0	0	79	11.1	1.5	40.7	40.7	40.7	40.7	0	0	-	-	-
R5			0	0	40	20.52	1.5	32.4	32.4	32.4	32.4	0	0	-	-	-

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MONTEREY PARK ORANGE ONTARIO SAN DIEGO

TECHNICAL MEMORANDUM

Date: April 21, 2020

To: Michael Barnett

From: Frank Barrera, Senior Planner – KOA Corporation

Subject: Traffic Analysis Technical Memorandum for Residential Development Project located at 8722 Garden Grove, CA

KOA Corporation (KOA) is pleased to submit this technical memorandum to document the analysis of potential traffic impacts resulting from the change of use from commercial to mid-rise multifamily residential due to the proposed project.

1.0 PROJECT DESCRIPTIONS

The proposed project includes the construction of four new three-story buildings with 20 residential townhouse dwelling units on a 36,600 square-foot lot. The Project location resides on the south side of Garden Grove Boulevard, approximately 200 feet east of Newland Street.

The existing use consists of a used-car dealership with two access driveways on Garden Grove Boulevard and one access point at the southwest corner of the property, accessible via an alley off Emerson Circle. The project site is located between the Brandywine Cottages residential community to the west, a commercial shopping center, Newland Plaza, to the east, and multi-family residential to the south.

The proposed Project Vicinity map is illustrated in Figure 1.1. The Project Site Plan is illustrated in Figure 1.2.

KOA Corporation has been retained to conduct a traffic analysis and prepare a technical memorandum addressing the following:

- Access to public streets
- Existing Pedestrian Infrastructure
- Vehicular Traffic in a residential zone

Figure 1.1 – Project Vicinity Map

Figure 1.2 – Project Site Plan

2.0 ANALYSIS METHODOLOGY

The following text in sections 2.1 and 2.2 describes the study methodology contained in this report.

2.1 SITE ACCESSIBILITY

Accessibility was reviewed by considering access point to enter and exit the site, characteristics, and connectivity of roadways surrounding the site, and pedestrian infrastructure including sidewalks and crosswalks. Further details on the analysis can be found in Section 3.0

2.2 PROJECT TRIP GENERATION

Project trip generation is typically based on land use trip rates defined by the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition. AM and PM weekday peak period rates were used to estimate trip generation of the existing and proposed uses. Further details on the analysis can be found in Section 4.0.

3.0 SITE ACCESS TO PUBLIC STREETS ANALYSIS

The key roadways within the study area are described below. The discussion presented here is limited to specific roadways that traverse the Project site.

Garden Grove Boulevard is an east/west roadway that is approximately 84 feet wide with six travel lanes, three in each direction, within the project vicinity. Street parking is prohibited on both sides of the street. The street has a posted speed limit of 40 miles per hour (mph). The signalized intersection of Garden Grove Boulevard and Newland Street provides pedestrian crossing on the south and east legs. Sidewalks are provided along both sides of Garden Grove Boulevard.

Garden Grove Boulevard currently has two driveways that provide right-in and right-out access to the Project site.

Newland Street is a north/south roadway that is approximately 64 feet wide with two travel lanes, one in each direction with a center left-turn lane and available on-street parking on both sides of the street. The street has a posted speed limit of 40 mph. The nearest crosswalk is at the intersection with Garden Grove Boulevard, west of the Project site. Existing sidewalk is present on both sides of the street.

4.0 PROJECT TRIP GENERATION ANALYSIS

Trip generation estimates were calculated using the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition. For the existing use rates, the land use was classified as ITE land use, Automobile Sales (Used) (ITE Code 841). For the proposed use rates, the land use was classified as ITE land use, Multifamily Housing Mid-Rise (ITE Code 221). Trip generation estimates are shown in Table 4.1.

Based on the estimates shown in Table 4.1, the proposed project is not anticipated to have a significant impact on traffic within the surrounding area during the AM peak period and PM peak period. The existing automobile sales land use generates an estimated 119 daily weekday trips with 9 AM peak period trip and 16 PM peak period trips, while the proposed land use would generate an estimated 109 daily weekday trips with 7 AM peak period trips and 9 PM peak period trips. This results in an estimated net trip decrease of 10 daily weekday trips with a decrease of 2 AM peak period trips and 8 PM peak period trips.

AM peak period is typically between 7 AM and 9 AM and PM peak period is typically between 4 PM and 6 PM. Thus, most of the daily traffic generated by the proposed Project will likely occur during off-peak periods in the areas surrounding the project, when traffic volumes are typically less than the AM and PM peak periods.

Table 4.1 Weekday Peak Hour Trip Generation

Land Use	ITE Code	Intensity		Weekday						
				Average Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Trip Generation Rates[1]										
Multifamily Housing Mid-rise	221	1	D.U.	5.44	0.26	0.74	0.36	0.63	0.39	0.44
Automobile Sales (Used)	841	1.000	T.S.F.	27.06	0.76	0.24	2.13	0.47	0.53	3.75
Proposed Use										
Multifamily Housing Mid-rise	221	20	D.U.	109	2	5	7	6	3	9
		Sub-total		**109**	**2**	**5**	**7**	**6**	**3**	**9**
Existing Use										
Automobile Sales (Used)	841	4.381	T.S.F.	119	7	2	9	8	9	16
		Sub-total		**119**	**7**	**2**	**9**	**8**	**9**	**16**
		Net Estimated Trips		**-10**	**-5**	**3**	**-2**	**-2**	**-5**	**-8**

Notes:

1. Trip Generation, 10th Edition

D.U. = Dwelling Unit

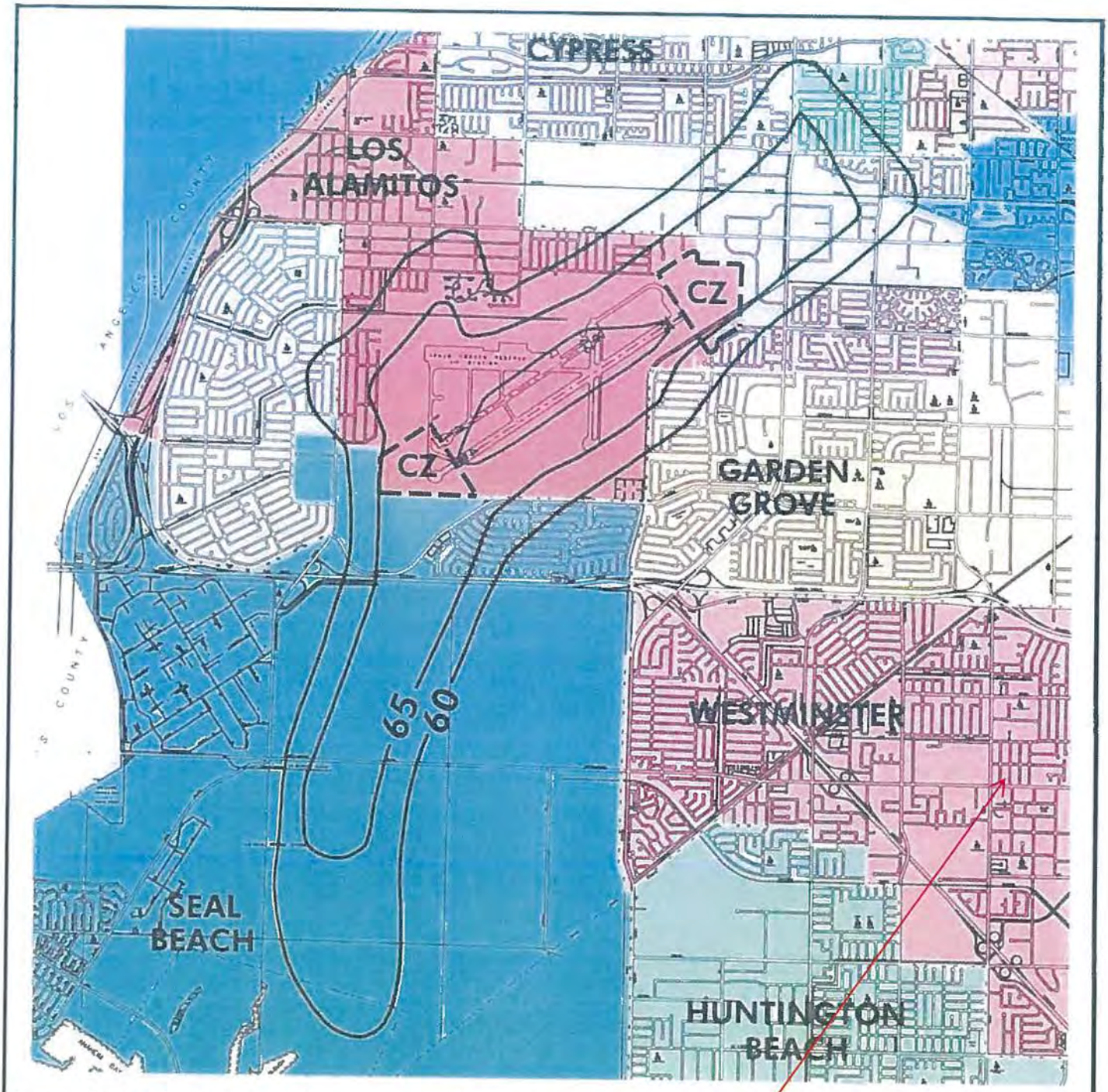
T.S.F. = Thousand Square Feet

5.0 ANALYSIS SUMMARY AND CONCLUSIONS

The following summarizes the traffic analysis results and recommendations:

- High vehicle capacity along Garden Grove Boulevard and the presence of existing pedestrian infrastructure allow for adequate access between public streets and Project site.
- The existing commercial land use (automobile sales (used)) generates an estimated 119 daily weekday trips with 9 AM peak period trip and 16 PM peak period trips, while the proposed land use would generate an estimated 109 daily weekday trips with 7 AM peak period trips and 9 PM peak period trips. The resulting net trips resulting from the proposed project would be a decrease of 10 daily weekday trips with a decrease of 2 AM peak period trips and a decrease of 8 PM peak period trips.
- No significant impacts are expected during the AM and PM weekday peak periods as a result of the proposed Project when considering the existing use of the site and the surrounding land uses in the area and the decrease net project trips generated from the proposed project.
- Adequate pedestrian infrastructure and the increase of expected vehicle trips resulting from the proposed land use noted in section 4.0 should not substantially increase traffic hazards to pedestrians.

KOA concludes that the proposed Project is not anticipated to significantly impact traffic or pedestrians at the nearby intersections and surrounding roadway network.



Note: County Unincorporated areas are shown in white.

Impact Zones
Joint Forces Training Base Los Alamitos

Exhibit D3

Source: Final AICUZ Study for JFTB, Los Alamitos, June 1, 1994

LEGEND

~60/65~ CNEL CONTOUR
— — — CLEAR ZONE (CZ)
—·—·— CITY BOUNDARIES

Scale in Feet

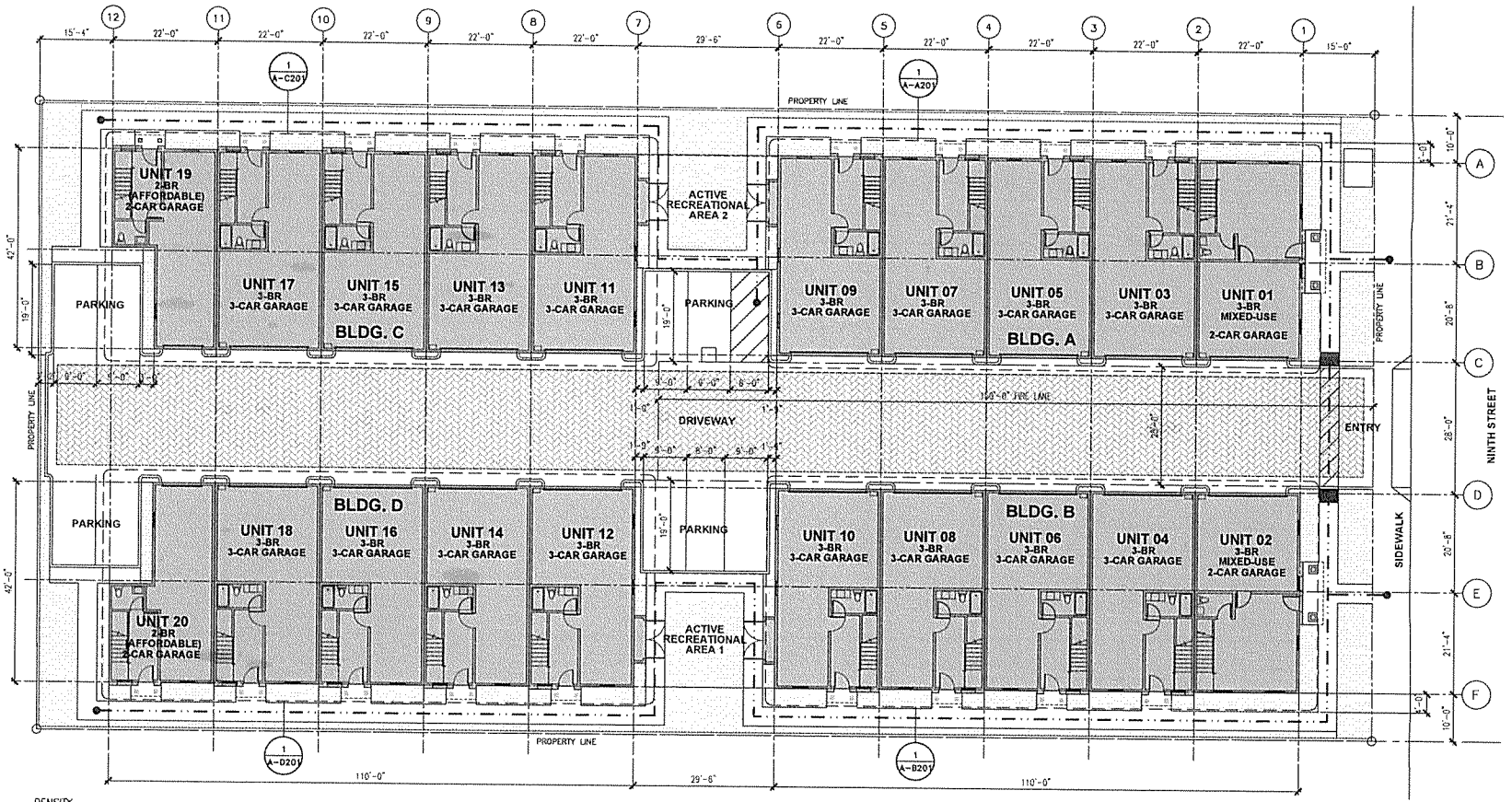
CERTIFICATION

Adopted by the Airport Land Use Commission for Orange County

Kari A. Rigoni, Executive Officer — Date 8/17/17

ALUC-2007/losolipzone-07.dgn

ARCHITECTURAL DRAWINGS



DENSITY

A.	LOT ZONE	GGMU-2
B.	LOT AREA	39,600 SF (.85 ACRE)
C.	RESIDENTIAL ZONE DENSITY WITH NO BONUSES	21 UNITS PER ACRE
D.	BASE DENSITY	17.85 (18) UNITS
E.	AFFORDABLE HOUSING SET ASIDE 1. 15% OF 13 UNITS	2.67 (2) UNITS
F.	TOTAL NUMBER OF UNITS PROVIDED	20

DENSITY BONUS INCENTIVES

A.	NUMBER OF INCENTIVES	3
B.	REQUESTED INCENTIVES	
	B.1 FRONT SETBACK	15.0 FEET (20' PER MUN. CODE)
	B.2 PARKING REQUIREMENT	65 PARKING SPACES (68 PER MUN. CODE)
	B.3 FRONT AND SIDE YARDS CANOPY COLUMN PROJECTIONS	

PARKING (PER TABLE 9.18-11)

A.	18 – 3 BR UNITS X 3.5	63 PARKING SPACES
B.	2 – 2 BR UNITS X 2.75	5 PARKING SPACES
C.	TOTAL REQUIRED	68 PARKING SPACES
D.	PARKING PROVIDED	65 PARKING SPACES
	D.1 COVERED	56 (IN UNIT ENCLOSED GARAGE)
	D.2 OPEN	9 (INCLUDING 1 ADA)

OPEN SPACE

A. OPEN SPACE PER 9.10.110.030 F DEVELOPMENT STANDARDS FOR MULTIFAMILY RESIDENTIAL WITHIN MIXED USE ZONE:

A1. OPEN SPACE, RECREATION AND LEISURE AREA REQUIREMENTS FOR RESIDENTIAL COMPONENTS INTEGRATED IN MIXED USE.

A2. OPEN SPACE REQUIRED: 300 SF PER DWELLING UNIT

20 DWELLING UNITS X 300 SF = 6,000 SF

A3. OPEN SPACE PROVIDED:

A3.1. PRIVATE OPEN SPACE EACH DWELLING UNIT
FRONT/ENTRY YARD 4' X 22' = 88 SF X 20 = 1,760 SF
SECOND FLOOR BALCONY 6' X 10.5' = 63 SF X 20 = 1,260 SF

TOTAL PRIVATE OPEN SPACE 3,020 SF

A3.2. ACTIVE RECREATION AREAS
AREA 1 = 29.5' X 24.5' = 723 SF
AREA 2 = 29.5' X 24.5' = 723 SF

TOTAL ACTIVE RECREATION AREAS 1,446 SF

A3.3. PASSIVE RECREATION AREAS
LANDSCAPE AREAS AND PATHWAYS 5,444 SF

TOTAL OPEN SPACE PROVIDED 9,070 SF

OVERALL SITE/FIRST FLOOR PLAN (1 / A-101)
SCALE : 3/32" = 1'-0"

N

PLAN LEGEND

- OUTDOOR RECREATION AREAS/LANDSCAPE
- PEDESTRIAN WALKWAYS/PAVED AREAS
- DRIVEWAY/PERMEABLE PAVERS
- ADA PATH OF TRAVEL

ARCHITECT:
EML
E. M. LOPEZ Architect
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LOS ANGELES, CA 90012
TEL NO. (213) 621-2350
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GARDEN GROVE TOWNHOMES

8722
GARDEN GROVE BOULEVARD
GARDEN GROVE CA

OWNER:
9MAX CAPITAL LLC.
12962 MAIN STREET
GARDEN GROVE, CA 92840

CONTACT:
MIKE BARNETT
PHONE: (949) 228-8644
9MIKEMAX@GMAIL.COM

DATE	REVISIONS

SHEET CONTENTS
OVERALL SITE/FIRST FLOOR PLAN

SCALE: 3/32" = 1'-0"
CADD FILE:
DRAWN: D. ALFONSO/ML
DATE: 02/25/2020

SHEET NO:
A-101

SHEET OF

GARDEN GROVE

CITY OF GARDEN GROVE
PLANNING SERVICES DIVISION
11222 ACACIA PARKWAY
GARDEN GROVE, CA 92840
TEL: (714) 741-5312 FAX: (714) 741-5578
ggcity.org

Density Bonus Application
(Government Code §65915 *et seq.*)

Housing development project applicants intending to request a density bonus, incentives or concessions, modifications or waivers, and/or reduced parking pursuant to the Section 65915 et seq. of the California Government (Density Bonuses and Other Incentives) must complete the following application. For additional information regarding density bonuses and affordability agreements, please refer to Section 9.12.030.070 of the Garden Grove Municipal Code, and to the Garden Grove Density Bonus Agreement Guidelines.

Date Filed: 8/25/21

DENSITY BONUS TYPE	
Please check one of the following (as proposed at the time of application submittal):	
☐	100% of all units in the development, including Total Units and density bonus units, but exclusive of a manager's unit or units, are for low income households, as defined by Section 50079.5 of the Health and Safety Code, except that up to 20 percent of the units in the development, including Total Units and density bonus units, may be for moderate income households, as defined in Section 50053 of the Health and Safety Code.
☒	At least 5% of the Total Units for very low income households, as defined in Section 50105 of the California Health and Safety Code.
☐	At least 10% of the Total Units for lower income households, as defined in Section 50079.5 of the California Health and Safety Code.
☐	At least 10% of the Total Units for moderate income households, as defined in Section 50093 of the California Health and Safety Code (common interest development offered to the public for purchase unless on-site option for Impact Fees, see 15.72.100.B.4).
☐	A senior citizen housing development, as defined in Sections 51.3 and 51.12 of the California Civil Code.
☐	At least 10% of the Total Units for transitional foster youth, as defined in California Education Code section 66025.9 (very low income households as defined in Section 50105 of the California Health and Safety Code).
☐	At least 10% of the Total Units for disabled veterans, as defined in California Government Code Section 18541 (very low income households as defined in Section 50105 of the California Health and Safety Code).
☐	At least 10% of the Total Units for homeless persons, as defined in the federal McKinney-Vento Homeless Assistance Act (42 U.S.C. Sec. 11301 et seq.) (very low income households, as defined in Section 50105 of the California Health and Safety Code).
☐	At least 20% of the Total Units for lower income students in a student housing development (that satisfies the requirements of California Government Code Section 65915(b)(1)(F)).
☐	Land donation (at least one acre in size, or of sufficient size to permit development of at least 40 units and otherwise satisfies the requirements of California Government Code Section 65915(g).)
☐	Child care facility (that satisfies the requirements of California Government Code Subsection 65915(h)).
☐	Condominium Conversion (that satisfies the requirements of California Government Code 65915.5)).

PRIMARY CONTACT INFORMATION	
Name:	GRI Portfolios, LLC. Mike Barnett
Contact Type: ☐ Architect ☐ Engineer ☒ Property Owner ☐ Representative ☐ Other	
Mailing Address:	12962 Main Street
City, State, Zip Code:	Garden Grove, Ca 92840
Phone No.:	(949) 228-8644
E-mail:	gmax.mikec@protonmail.com

PROPERTY OWNER CONTACT INFORMATION (If different than Primary Contact)	
Name:	
Mailing Address:	
City, State, Zip Code:	
Phone No.:	
E-mail:	

PROJECT INFORMATION:	
Project Address:	8722 Garden Grove Blvd. Garden Grove, CA
APN(s):	097-222-03
Zoning & General Plan Land Use:	GGMU2
Maximum Allowable Residential Density (before density bonus):	18
Total Base Number of Housing Units (before density bonus):	18
Market Rate Base Housing Units (before density bonus):	18
Affordable Base Housing Units (before density bonus):	1
Size of Market Rate Units (# of Studios, 1 bedroom, 2 bedroom, etc.):	1,801 sqft 4-Bedrooms
Size of Affordable Units (# of Studios, 1 bedroom, 2 bedroom, etc.):	1,801 sqft 4-Bedrooms
Proposed number of Very Low Income units :	1
Proposed number of Low Income units :	
Proposed number Moderate Income units :	
Percentage of Total Base Housing Units that are Affordable:	5%
Maximum Density Bonus Percentage (See chart on page 4):	20%
Number of Required Parking Spaces:	54
Number of Parking Spaces Provided:	56
Residential Tenure: Does the project propose rental or ownership units?	NO

DENSITY BONUS REQUEST		
Density Bonus Percentage (calculate using "Density Bonus Chart"):		20%
Total Number of Density Bonus Units:		2
Total Units in Development After Density Bonus is Applied:		20
If requesting a Density Bonus for the following project types, please check the appropriate box and provide the following information:		
☐	Land Donation	Address (or APN) of land to be dedicated:
		Attach proof of site control.
		Attach evidence of meeting conditions for a land transfer density bonus as specified in the State Housing Density Bonuses and Incentives Law
☐	Child-Care Facility	Address and APN of child-care facility:
		Square footage of facility:
		Attach evidence of meeting conditions for a child care facility density bonus or Incentive as specified in the State Housing Density Bonuses and Incentives Law.
☐	Condominium Conversion	Attach evidence of meeting conditions for a condominium conversion Density Bonus as specified in the State Housing Density Bonuses and Incentives Law.

INCENTIVES/CONCESSIONS REQUEST

An applicant for a density bonus may also propose specific incentives/concessions pursuant to Subsection (d) of Government Code Section 65915. The number of incentives/concessions an applicant may receive is based on the number of affordable units and level of affordability provided. Use the Incentives/Concessions Calculator below to determine the number of incentives or concessions you are eligible for.

INCENTIVES/CONCESSIONS CALCULATOR

Affordability Level	Restricted Affordable Units Provided In Project	% of Base Project	Threshold for one (1) Incentive/ Concession (# of units)		Threshold for two (2) Incentives/ Concessions (# of units)		Threshold for three (3) Incentives/ Concessions (# of units)		Threshold for four (4) Incentives/ Concessions* (# of units)	
Very Low Income	1	5%	5%	1	10%		15%		100% affordable with ≥80% low income, ≤20% moderate	
Low Income			10%		17%		24%			
Moderate Income			10%		20%		30%			

** If a 100% affordable project is located within ½ mile of a major transit stop, the project is eligible for a height increase of up to three (3) additional stories, or thirty-three feet (33'-0"); however, if the project also seeks a waiver from any maximum controls on density, the project cannot receive a waiver of any other development standards (but can still receive four incentives). If this allowance is sought, please describe/identify the major transit stop that is within ½ mile of the qualifying 100% affordable project:*

DESCRIPTION OF INCENTIVES/CONCESSIONS REQUESTED

List all requested incentives/concessions. If a reduction in site development standards or a modification of zoning code requirements is sought, include references to specific Municipal Code Sections in question, and reference the requested incentives/concessions on the submitted plans.

Incentive for 9.18.100.020.D.2.
For the buildings 45 degree angle plain setback requirement
Allowance for the building height to encroach into the
45 degree angle plain.

Provide evidence substantiating the applicant's eligibility for each incentive/concession requested, including information that clearly demonstrates that the requested incentive/concession will result in identifiable and actual cost reductions to provide for affordable housing costs. The Applicant may attach additional documentation as required.

Angle plain reduces buildable area of the site
and inhibits the projects ability to achieve
the maximum density allowed by the project
sites zoning ordinance.

MODIFICATION/WAIVER REQUEST

Pursuant to Subsection (e) of Government Code Section 65915, an applicant may also propose the waiver or reduction of development standards that have the effect of physically precluding the construction of a housing development incorporating the density bonus and any incentives or concessions granted to the applicant.

DESCRIPTION OF MODIFICATIONS/WAIVERS REQUESTED

List all development standards for which you are seeking a waiver or reduction pursuant to Subsection (e) of Government Code Section 65915. Include references to specific Municipal Code Sections in question, and reference development standards to be modified or waived on the submitted plans.

Waiver for 9.18.090.020.F.

For the required setback of the buildings to be increased from 15' to 25' for the requirement of a plaza to be built at the front of the project site.

Provide evidence substantiating the applicant's eligibility for each waiver or reduction of a development standard being requested, including documentation demonstrating that the waiver or reduction is physically necessary to construct the housing development with the additional density allowed pursuant to the density bonus and incorporating any incentives or concessions required to be granted. Where more than one modification or waiver is sought, the applicant should clearly demonstrate why the modifications/waivers are cumulatively necessary to prevent a development standard from physically precluding the construction of the development.

Garden Grove Blvd plaza reduces the buildable area of the site and inhibits the projects ability to achieve the maximum density allowed by the project sites zoning ordinance.

PARKING RATIOS	
Are you requesting application of the onsite vehicular parking ratios set forth in Subsection (p)(1) of Government Code Section 65915?	
☒ Yes	☐ No

SPECIAL PARKING REQUIREMENTS	
If you are requesting application of a reduced onsite parking ratio pursuant to Subsections (p)(2), (p)(3), or (p)(4) of Government Code Section 65915, select the onsite parking standard requested per the appropriate development type:	
☐	Rental/for sale projects with at least 11% very low income or 20% lower income units, within ½ mile of accessible major transit stop** – 0.5 spaces per unit
☐	Rental projects 100% affordable to lower income, within ½ mile of accessible major transit stop** – 0 spaces per unit
☐	Rental senior projects 100% affordable to lower income, either with paratransit service or within ½ half mile of accessible bus route** (operating ≥8 times per day) – 0 spaces per unit
☐	Rental special needs projects 100% affordable to lower income households, either with paratransit service or within ½ half mile of accessible bus route** (operating ≥8 times per day) – 0 spaces per unit
☐	Rental supportive housing developments 100% affordable to lower income households – 0 spaces
*** If applicable, please describe/identify the major transit stop or accessible bus route that is within ½ mile of the project.*	

ASSOCIATED HOUSING DEVELOPMENT FORMS & APPLICATIONS	
Dependent upon the nature of the request, and the design of the project, the following forms may also be required:	
☐ Replacement Unit Determination	☐ SB 330 Housing Development Pre-Application
☐ SB 35 Housing Streamlining Eligibility Checklist	☐ Preliminary Development Review Application

CERTIFICATION:

I certify and declare under penalty of perjury under the laws of the State of California that the answers furnished above, and in any attached exhibits, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. I further understand that additional information may be required by the City of Garden Grove to complete my review. Furthermore, developments requesting a density bonus shall enter into a density bonus housing agreement with the City. A density bonus housing agreement shall be made a condition of the discretionary planning permits for all housing developments, and shall be recorded as a restriction on any parcels on which the target units or density bonus units will be constructed. The density bonus housing agreement shall be recorded prior to final or parcel map approval, or, where the housing development does not include a map, prior to issuance of a building permit for any structure in the housing development. The density bonus housing agreement shall run with the land and bind on all future owners and successors in interest.

Applicant Signature — Date: 8/25/21

Property Owner Signature — Date: 8/25/21

RESOLUTION NO. 6053-22

RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF GARDEN GROVE APPROVING SITE PLAN NO. SP-119-2022 AND TENTATIVE TRACT MAP NO. TT-19129-2022 FOR PROPERTY LOCATED ON THE SOUTH SIDE OF GARDEN GROVE BOULEVARD, BETWEEN NEWLAND STREET AND YOCKEY STREET, AT 8722 GARDEN, ASSESSOR'S PARCEL NO. 097-222-03.

BE IT RESOLVED that the Planning Commission of the City of Garden Grove, in a regular session assembled on November 17, 2022, hereby approves Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129 for a property located on the south side of Garden Grove Boulevard, between Newland Street and Yockey Street, at 8722 Garden Grove Boulevard, Assessor's Parcel No. 097-222-03, subject to the conditions of approval attached hereto as Exhibit "A".

BE IT FURTHER RESOLVED in the matter of Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129, the Planning Commission of the City of Garden Grove does hereby report as follows:

1. The subject case was initiated by NRI Portfolios, LLC.

2. The applicant is requesting Site Plan approval to construct a three-story, townhome residential project consisting of twenty (20) units, which includes one (1) affordable housing unit for "very low-income" households on a 36,945 square foot (0.85 acres) site currently improved with an auto dealership. Pursuant to the State Density Bonus law, the applicant is requesting one (1) concession and one (1) waiver from the GGMU-2 (Garden Grove Mixed Use 2) zone development standards: (1) a concession to allow the building to be constructed within the 45-degree encroachment plane required for mixed use zoned properties abutting residentially-zoned lots along the side yard setback; and (2) a waiver to deviate from the requirement of a boulevard garden plaza for properties in the GGMU zones for properties abutting the Garden Grove Boulevard right-of-way. In accordance with the State Subdivision Map Act, the applicant is also requesting approval of a Tentative Tract Map to subdivide the existing property into two (2) lots for the purpose of selling each townhome unit as a condominium.

3. The City of Garden Grove Planning Commission hereby determines that the proposed project is categorically exempt from review under the California Environmental Quality Act ("CEQA") pursuant to Section 15332 (In-Fill Development Projects) of the State CEQA Guidelines (14 Cal. Code Regs., Section 15303). As set forth in the Class 32 exemption, the proposed project is: (1) consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations; (2) the proposed development occurs within City limits on a project site of no more than five acres substantially surrounded by urban uses; (3) the project site has no value as habitat for endangered, rare or threatened

species; (4) approval of the project would not result in any significant effects relating to traffic, noise, air quality or water quality; and (5) the site can be adequately served by all required utilities and public services. The project is therefore exempt from CEQA review.

4. The property has a General Plan Land Use designation of Residential/Commercial Mixed Use 2. The site is currently developed with an auto dealership.

5. Existing land use, zoning, and General Plan designation of property in the vicinity of the subject property have been reviewed.

6. Report submitted by the City staff was reviewed.

7. Pursuant to a legal notice, a public hearing was held on November 17, 2022, and all interested persons were given an opportunity to be heard.

8. The Planning Commission gave due and careful consideration to the matter during its meeting on November 17, 2022.

BE IT FURTHER RESOLVED, FOUND AND DETERMINED that the facts and reasons supporting the conclusion of the Planning Commission, as required under Municipal Code Section 9.04.030 are as follows:

FACTS:

The project site is approximately 36,945 square feet (0.85 acres) and is located on the south side of Garden Grove Boulevard, between Newland Street and Yockey Street, and is currently improved with a vacant auto dealership constructed in 1956, which operated under Conditional Use Permit No. CUP-124-91. The subject site has a General Plan Land Use designation of Residential/Commercial Mixed Use 2 and is zoned GGMU-2 (Garden Grove Boulevard Mixed Use 2). The property abuts a GGMU-2 zoned property to the east improved with a commercial center, R-3 (Multiple-Family Residential) zoned properties to the south, across an alley, improved with multi-family units, a Planned Unit Development No. PUD-131-99 zoned property to the west improved with a small lot single-family subdivision development, and GGMU-2 zoned properties to the north across Garden Grove Boulevard improved with commercial buildings.

The car dealership ceased operation in 2018 when the property was sold to the current owner, NRI Portfolios, LLC. The applicant is requesting Site Plan approval to demolish the existing car dealership to construct a three-story, townhome residential project consisting of twenty (20) for-sale condominium units, which includes one (1) affordable housing unit for "very low-income" households. With the exception of four (4) units, which are only improved with two-car garages, each unit is proposed to consist of a three-car garage, a kitchen, a dining area, a living room, four (4)

bedrooms, three (3) bathrooms, a laundry room, a foyer, a front porch, and a second story balcony. The project will provide 16 three-car garages where two (2) parking spaces will be tandem, four (4) two-car garages, and six (6) open guest parking spaces. The site will also be improved with two (2) active recreation areas and a trash enclosure. In conjunction with the request for Site Plan approval, the applicant is requesting Tentative Tract Map approval to subdivide the subject property to facilitate the development of the project with condominium units.

The project site has a General Plan land use designation of Residential/Commercial Mixed Use 2 (RC2). The RC2 land use designation is intended to allow for mixed use residential and commercial development with higher residential densities up to 24 dwelling units per acre. The RC2 land use designation is implemented by the GGMU-2 zone, which allows the development of residential projects without a commercial component.

The applicant is requesting State Density Bonus allowances for parking, one (1) concession, and one (1) waiver to deviate from the GGMU-2 zone development standards: (1) a concession to allow the building to be constructed within the 45-degree encroachment plane required for mixed use zoned properties abutting residentially-zoned lots along the side yard setback; and (2) a waiver to deviate from Section 9.18.090.020.F of the Municipal Code, which requires a boulevard garden plaza for properties in the GGMU zones for properties abutting the Garden Grove Boulevard right-of-way. An Affordable Housing Regulatory Agreement consistent with the State Density Bonus Law and the Garden Grove Municipal Code will be recorded to ensure affordability of the very low-income unit.

Note: The project application was filed prior to the adoption of objective development standards under Amendment No. A-035-2022, which became effective on November 10, 2022. Thus, the project was designed pursuant to the requirements of the GGMU-2 zone prior to the Code Amendment. In compliance with Cal Gov. Code § 65941.1, the applicant has provided the City's Housing Development Pre-Application prior to November 10, 2022, which allows applicants for housing developments to vest zoning regulations for 180 days.

FINDINGS AND REASONS:

SITE PLAN (HOUSING DEVELOPMENTS)

1. The proposed development project is consistent, in compliance, and in conformity with the applicable, objective standards, provisions, conditions or requirements of the General Plan, Title 9, or other applicable ordinances or policies of the City.

   The applicant is requesting Site Plan approval to demolish the existing car dealership to construct a three-story, townhome residential project consisting of twenty (20) for-sale units, which includes one (1) affordable housing unit

for "very low-income" households. In conjunction with the request for Site Plan approval, the applicant is requesting Tentative Tract Map approval to subdivide the subject property into (2) lots for the purpose of selling each unit as a condominium.

The subject site has a General Plan land use designation of Residential/Commercial Mixed Use 2 (RC2), and is zoned GGMU-2 (Garden Grove Boulevard Mixed Use 2). The RC2 land use designation is intended to allow for mixed use residential and commercial developments with higher residential densities up to 24 dwelling units per acre. The RC2 land use designation is implemented by the GGMU-2 zone, which allows residential developments without a commercial component.

The project has been designed to comply with the development standards of the Municipal Code for the GGMU-2 zone and the State Density Bonus allowances and is within the density permitted under the General Plan. In addition, the proposed project is consistent with the goals and policies of the General Plan, including:

a. *Goal LU-3: Higher-density residential development along major thoroughfares and in areas well served by public transit, retail and service businesses, public services, and public gathering places.*

   The project site has a General Plan land use designation of RC2, which is intended to allow higher residential densities up to 24 dwelling units per acre. The site fronts Garden Grove Boulevard, which is a major thoroughfare served by public transit, retail and service businesses, and public services.

b. *Policy LU-3.2: Support development of multi-family housing that provides a diversity of densities, types, and prices that meet the needs of all household income levels.*

   The proposed project is a multi-family, twenty (20) unit for-sale townhome development designed at 24 dwelling units per acre. The proposed project has been designed under the State Density Bonus allowances for parking, one (1) concession, and one (1) waiver. Therefore, the project includes one (1) for-sale affordable unit for "very low-income" households. Furthermore, the project will contribute to meeting the City's Regional Housing Needs Allocation (RHNA), as well as the Housing Element policies.

c. *Policy LU-3.3: Encourage developers to build housing projects at or maximum allowable densities.*

Under RC2 General Plan land use designation, the subject project is allowed a maximum density of 24 dwelling units per acre, which yields twenty (20) units. The project proposed is a twenty (20) unit townhome residential development that maximizes the allowable density. Furthermore, the Project will contribute to meeting the City's Regional Housing Needs Allocation (RHNA), as well as the Housing Element policies.

d. *Goal LU-4: The City seeks to develop uses that are compatible with one another.*

The project is located in a dense neighborhood that is improved with multi-family and commercial developments. The properties in the direct vicinity of the project site are zoned GGMU-2 or R-3 (Multiple-Family Residential), and have a RC2 or Medium Density Residential (MDR) land use designations, respectively. The properties directly to the south and west are developed with two-story multi-family residential buildings. Thus, the proposed housing project is consistent with the development pattern of the surrounding residential uses.

e. *LU-IMP-2B: New development shall be similar in scale to the adjoining residential neighborhood to preserve its character.*

The proposed density, which is twenty (20) townhome units for a 36,945 square foot (0.8 acres) lot, maximizes the allowable density for the GGMU-2 zoned site. The proposed project was reviewed by the City staff and deemed to be within the allowed density, as set forth by the Code. The proposed design is compatible with the physical scale of the immediate neighborhood, which is improved with multi-family developments ranging from one to two stories. Thus, the project is similar both in land use intensity and physical scale of the adjoining residential neighborhood.

f. *LU-IMP-3D: Front multi-family housing on local streets with appropriate setbacks to be consistent with neighborhood development patterns.*

The project was reviewed by City staff and was determined to meet the required front, side, and rear setbacks, as set forth by the GGMU-2 zone development standards. The proposed buildings will maintain a 17-5" setback from the front property line along Garden Grove Boulevard, and 12'-3" from the rear property line. The proposed buildings located on the east side of the site are setback 10'-6" from the easterly property line, and the buildings located to the west of the site are setback 11'-6" from the westerly property line, which exceeds the setback standards of the GGMU-2 zone. Thus, the setbacks are consistent to the neighborhood development patterns.

g. *Policy LU-2.4: Assure that the type and intensity of land use shall be consistent with that of the immediate neighborhood.*

The immediate area consists of both multiple-family dwellings and commercial developments. The proposed twenty (20) unit townhome project was reviewed and determined to be within the allowed density and in compliance with the GGMU-2 zone development standards as set forth by the Municipal Code. Thus, the development is consistent with the type and intensity of land use of the immediate neighborhood.

h. *Policy 2.3 of the Housing Element: Provide density bonuses and other financial and regulatory incentives to facilitate the development of affordable housing.*

The proposed project includes one (1) for-sale affordable unit for "very low-income" households. To facilitate the development, the applicant is requesting State Density Bonus allowances for parking, one (1) concession, and one (1) waiver to deviate from the GGMU-2 zone development standards: (1) a concession to allow the building to be constructed within the 45-degree encroachment plane required for mixed use zoned properties abutting residentially-zoned lots along the side yard setback; and (2) a waiver to deviate from Section 9.18.090.020.F of the Municipal Code, which requires a boulevard garden plaza for properties in the GGMU zones for properties abutting the Garden Grove Boulevard right-of-way. The granting of the concession and waiver is needed to facilitate the construction of the proposed development and to support the creation of more affordable housing units in the City. Furthermore, the Project will contribute to meeting the City's Regional Housing Needs Allocation (RHNA).

2. The provisions of the California Environmental Quality Act have been complied with.

The proposed development is exempt from the California Environmental Quality Act ("CEQA"), pursuant to Section 15332 (In-Fill Development Projects) of the CEQA Guidelines (14 Cal. Code Regs., Section 15303). As set forth in the Class 32 exemption, the proposed project is: (1) consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations; (2) the proposed development occurs within City limits on a project site of no more than five acres substantially surrounded by urban uses; (3) the project site has no value as habitat for endangered, rare or threatened species; (4) approval of the project would not result in any significant effects relating to traffic, noise, air quality or water quality; and (5) the site can be adequately served by all required utilities and public services. Therefore, the provisions of the California Environmental Quality Act have been complied with.

3. The proposed development project does not have specific, adverse impacts, as defined in subdivision (j)(1)(A) of Government Code Section 65589.5, on public health and safety without any feasible method to satisfactorily mitigate or avoid the specific adverse impact, other than the disapproval of the proposed project.

   The proposed twenty (20) unit townhome development will not have specific, adverse impacts on the public health and safety. The proposed project is within the maximum allowable density, is compatible with surrounding uses, is similar in scale to the adjoining neighborhood, and is consistent with the land use type and intensity in the immediate neighborhood. Furthermore, the Project will contribute to meeting the City's Regional Housing Needs Allocation (RHNA), as well as the Housing Element policies.

TENTATIVE TRACT MAP

1. The proposed map is consistent with the General Plan.

   The proposed map is consistent with the provisions of the General Plan. The applicant is requesting Tentative Tract Map No. TT-19129 approval to subdivide the subject property to facilitate the development of a three-story, townhome residential project consisting of twenty (20) for-sale condominium units, which includes one (1) affordable housing unit for "very low-income" households. The site has a land use designation of Residential/Commercial Mixed Use 2 (RC2), which is intended to allow for mixed use residential and commercial developments with higher residential densities at 24 dwelling units per acre. The RC2 land use designation is implemented by the GGMU-2 (Garden Grove Boulevard Mixed Use 2) zone, which allows residential developments without a commercial component. The proposed project will consist of twenty (20) units, which is the maximum number of units allowed by the RC2 land use designation and the GGMU-2 zone, and is therefore consistent with the General Plan. Moreover, construction of the residential project will increase the number of available housing in the area, and further the goals of the Housing Element of the General Plan to meeting the City's Regional Housing Needs Allocation (RHNA).

   In addition, the proposed map is consistent with the goals and policies of the General Plan, including:

   a. *Goal LU-3: Higher-density residential development along major thoroughfares and in areas well served by public transit, retail and service businesses, public services, and public gathering places.*

      The project site has a General Plan land use designation of RC2, which is intended to allow higher residential densities at 24 dwelling units per acre. The site fronts Garden Grove Boulevard, which is a major

thoroughfare served by public transit, retail and service businesses, and public services.

b. *Policy LU-3.2: Support development of multi-family housing that provides a diversity of densities, types, and prices that meet the needs of all household income levels.*

The proposed project is a multi-family, twenty (20) unit for-sale townhome development designed at 24 dwelling units per acre. The proposed project has been designed under the State Density Bonus allowances for parking, one (1) concession, and one (1) waiver. Therefore, the project includes one (1) for-sale affordable unit for "very low-income" households. Furthermore, the project will contribute to meeting the City's Regional Housing Needs Allocation (RHNA), as well as the Housing Element policies.

c. *Policy LU-3.3: Encourage developers to build housing projects at or maximum allowable densities.*

Under RC2 General Plan land use designation, the subject project is allowed a maximum density of 24 dwelling units per acre, which yields twenty (20) units. The project proposed is a twenty (20) unit townhome residential development that maximizes the allowable density. Furthermore, the Project will contribute to meeting the City's Regional Housing Needs Allocation (RHNA), as well as the Housing Element policies.

d. *Goal LU-4: The City seeks to develop uses that are compatible with one another.*

The project is located in a dense neighborhood that is improved with multi-family and commercial developments. The properties in the direct vicinity of the project site are zoned GGMU-2 or R-3 (Multiple-Family Residential), and have a RC2 or Medium Density Residential (MDR) land use designations, respectively. The properties directly to the south and west are developed with two-story multi-family residential buildings. Thus, the proposed housing project is consistent with the development pattern of the surrounding residential uses.

e. *LU-IMP-2B: New development shall be similar in scale to the adjoining residential neighborhood to preserve its character*.

The proposed density, which is twenty (20) townhome units for a 36,945 square foot (0.8 acres) lot, maximizes the allowable density for the GGMU-2 zoned site. The proposed project was reviewed by the City staff and deemed to be within the allowed density, as set forth by the Code.

The proposed design is compatible with the physical scale of the immediate neighborhood, which is improved with multi-family developments ranging from one to two stories. Thus, the project is similar both in land use intensity and physical scale of the adjoining residential neighborhood.

f. *LU-IMP-3D: Front multi-family housing on local streets with appropriate setbacks to be consistent with neighborhood development patterns.*

The project was reviewed by City staff and was determined to meet the required front, side, and rear setbacks, as set forth by the GGMU-2 zone development standards. The proposed buildings will maintain a 17-5" setback from the front property line along Garden Grove Boulevard, and 12'-3" from the rear property line. The proposed buildings located on the east side of the site are setback 10'-6" from the easterly property line, and the buildings located to the west of the site are setback 11'-6" from the westerly property line, which exceeds the setback standards of the GGMU-2 zone. Thus, the setbacks are consistent to the neighborhood development patterns.

g. *Policy LU-2.4: Assure that the type and intensity of land use shall be consistent with that of the immediate neighborhood.*

The immediate area consists of both multiple-family dwellings and commercial developments. The proposed twenty (20) unit townhome project was reviewed and determined to be within the allowed density and in compliance with the GGMU-2 zone development standards as set forth by the Municipal Code. Thus, the development is consistent with the type and intensity of land use of the immediate neighborhood.

h. *Policy 2.3 of the Housing Element: Provide density bonuses and other financial and regulatory incentives to facilitate the development of affordable housing.*

The proposed project includes one (1) for-sale affordable unit for "very low-income" households. To facilitate the development, the applicant is requesting State Density Bonus allowances for parking, one (1) concession, and one (1) waiver to deviate from the GGMU-2 zone development standards: (1) a concession to allow the building to be constructed within the 45-degree encroachment plane required for mixed use zoned properties abutting residentially-zoned lots along the side yard setback; and (2) a waiver to deviate from Section 9.18.090.020.F of the Municipal Code, which requires a boulevard garden plaza for properties in the GGMU zones for properties abutting the Garden Grove Boulevard right-of-way. The granting of the concession and waiver is needed to facilitate the construction of the

proposed development and to support the creation of more affordable housing units in the City. Furthermore, the Project will contribute to meeting the City's Regional Housing Needs Allocation (RHNA).

2. The design and improvement of the proposed subdivision are consistent with the General Plan.

The proposed map is consistent with the provisions of the General Plan. The applicant is requesting Tentative Tract Map No. TT-19129 approval to subdivide the subject property to facilitate the development of a three-story, townhome residential project consisting of twenty (20) for-sale condominium units, which includes one (1) affordable housing unit for "very low-income" households. The subject site has a General Plan Land Use Designation of RC2 which is intended to allow for mixed use residential and commercial developments with higher residential densities at 24 dwelling units per acre. The RC2 land use designation is implemented by the GGMU-2 zone which allows residential developments without a commercial component. In accordance with the State Subdivision Map Act, the applicant is requesting approval of Tentative Tract Map No. TT-19129 to subdivide the existing property into two (2) lots for the purpose of selling each townhome unit as a condominium. Lot 1 will be comprised of Units 1 thru 20, and Lot 2 will include all common areas, including the drive aisle, guest parking, trash enclosure, and active recreation areas. The proposed Tentative Tract Map is in conformance with the City's General Plan, the City's Subdivision Ordinance, the GGMU-2 zone requirements, and the State's Subdivision Map Act.

3. The site is physically suitable for the type of development and complies with the spirit and intent of the Municipal Code.

The site is physically suitable for the type of development proposed by the developer and complies with the spirit and intent of the Municipal Code. The proposed project will consist of a stand-alone residential development, which is an allowed use by the Municipal Code for GGMU-2 zoned properties. The project has also been designed to comply with the development standards in the Municipal Code and the State Density Bonus allowances for parking, one (1) concession, and one (1) waiver to deviate from the GGMU-2 development standards: (1) a concession to allow the building to be constructed within the 45-degree encroachment plane required for mixed use zoned properties abutting residentially-zoned lots along the side yard setback; and (2) a waiver to deviate from Section 9.18.090.020.F of the Municipal Code, which requires a boulevard garden plaza for properties in the GGMU zones for properties abutting the Garden Grove Boulevard right-of-way. As designed, the site is able to accommodate twenty (20) units, and the required parking, landscaping, private and common recreation areas, setbacks, and building height. Therefore, the property is sufficient in size to accommodate the

proposed development, and complies with all applicable provisions of the City of Garden Grove Municipal Code and the State Density Bonus Laws.

4. The design of the subdivision and the proposed improvements are not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat, and the requirements of the California Environmental Quality Act have been satisfied.

Pursuant to the California Environmental Quality Act ("CEQA"), the City of Garden Grove Planning Commission has determined that the proposed project is categorically exempt from the CEQA pursuant to Section 15332 (In-Fill Development Projects) of the CEQA Guidelines (14 Cal. Code Regs., Section 15332). The proposed project is characterized as in-fill development meeting conditions described in Section 15332.

5. The site is physically suitable for the proposed density of the development.

The site is physically suitable for the density proposed by the developer. The General Plan land use designation of RC2 is intended to allow for mixed use residential and commercial developments with higher residential densities at 24 dwelling units per acre. The RC2 land use designation is implemented by the GGMU-2 zone which allows residential developments without a commercial component. The proposed project will consist of twenty (20) units, which is the maximum number of units allowed by the General Plan land use designation and the GGMU-2 zone. The project has also been designed to comply with State Density Bonus allowances for parking, one (1) concession, and one (1) waiver to deviate from the GGMU-2 development standards: (1) a concession to allow the building to be constructed within the 45-degree encroachment plane required for mixed use zoned properties abutting residentially-zoned lots along the side yard setback; and (2) a waiver to deviate from Section 9.18.090.020.F of the Municipal Code, which requires a boulevard garden plaza for properties in the GGMU zones for properties abutting the Garden Grove Boulevard right-of-way. As designed, the site is able to accommodate twenty (20) units, and the required parking, landscaping, private and common recreation areas, setbacks, and building height. Therefore, the property is sufficient in size to accommodate the proposed development, and complies with all applicable provisions of the City of Garden Grove Municipal Code and the State Density Bonus Laws.

6. The design of the subdivision and the proposed improvements are not likely to cause serious public health problems.

The design of the subdivision and the proposed improvements are not likely to cause serious public health problems since conditions of approval will be in place to safeguard the public health. The proposed subdivision has been designed to comply with the development standards of the GGMU-2 zone and

the State Density Bonus Laws. City Departments, including the Traffic Division, Water Division, Engineering Division and the Planning Division, and the Orange County Fire Authority (OCFA) have reviewed the proposed development and have applied conditions of approval to minimize potential negative impacts that the project may have on the community. The conditions of approval for on and off-site improvements will safeguard the public health.

7. The design of the project and the proposed improvements will not conflict with easements of record or easements established by court judgment acquired by the public at large for access through or use of property within the subdivision; or, if such easements exist, alternate easements for access or for use will be provided and these will be substantially equivalent to the ones previously acquired by the public.

   The design of the subdivision and the proposed improvements will not conflict with easements of record or easements established by court judgment acquired by the public at large for access through or use of property within the proposed subdivision. The project has been designed to avoid development over existing easements.

8. The design and improvement of the proposed subdivision are suitable for the uses proposed and the subdivision can be developed in compliance with the applicable zoning regulations.

   The proposed subdivision has been specifically designed to accommodate the proposed twenty (20) unit residential townhome project on the property, which has been designed to comply with the GGMU-2 zone developments standards and State Density Bonus allowances for parking, concessions, and waivers: one (1) concession, and one (1) waiver to deviate from the GGMU-2 development standards: (1) a concession to allow the building to be constructed within the 45-degree encroachment plane required for mixed use zoned properties abutting residentially-zoned lots along the side yard setback; and (2) a waiver to deviate from Section 9.18.090.020.F of the Municipal Code, which requires a boulevard garden plaza for properties in the GGMU zones for properties abutting the Garden Grove Boulevard right-of-way. As designed, the subdivision is able to accommodate twenty (20) units, and the required parking, landscaping, private and common recreation areas, setbacks, and building height. Therefore, the design and improvement of the proposed subdivision is suitable for the proposed use and the subdivision can be developed in compliance with the applicable provisions of the City of Garden Grove Municipal Code and the State Density Bonus Laws.

9. The design of the subdivision provides, to the extent feasible, for future passive or natural heating and cooling opportunities in the subdivision.

To the extent feasible, the project has been designed in accordance with Government Code Section 66473.1, such as to allow for passive or natural heating opportunities in the subdivision design, to encourage the orientation of structures to take advantage of shade and prevailing breezes, to allow solar access for passive heating and opportunities for placement of shade trees and other vegetation for cooling.

10. The design, density, and configuration of the subdivision strike a balance between the affect of the subdivision on the housing needs of the region and public service needs. The character of the subdivision is compatible with the design of existing structures, and the lot sizes of the subdivision are substantially compatible with the lot sizes within the general area.

    The applicant is requesting approval of Tentative Tract Map No. TT-19129 to subdivide the existing property into two (2) lots for the purpose of selling each townhome unit as a condominium. Lot 1 will be comprised of Units 1 thru 20, and Lot 2 will include all common areas, including the drive aisle, guest parking, and active recreation areas. Approval of the map will allow construction of a three-story, townhome residential project consisting of twenty (20) units, which includes one (1) affordable housing unit for "very low-income" households on a site currently improved with an auto dealership that has been out of business since 2018. The project has been reviewed in relation to the housing needs and goals of the City and is compatible with existing residential developments in the vicinity. The property is located in an area with existing multi-family and commercial uses. Per the maximum density allowed by the Residential/Commercial Mixed Use 2 land use designation, the proposal includes twenty (20) new multi-family residential townhomes that will increase the number of available housing in the area, and further the goals of the Housing Element of the General Plan. The project complies with the density requirements of the General Plan, as well as the GGMU-2 zone development standards and allowances allowed by State Density Bonus laws.

11. The subject property is not located within a state responsibility area or a very high fire hazard severity zone, the proposed subdivision is served by local fire suppression services, and the proposed subdivision meets applicable design, location, and ingress-egress requirements.

12. The discharge of waste from the proposed subdivision into the existing sewer system will not result in violation of existing requirements prescribed by the California Regional Water Quality Control Board. The conditions of approval for on and off-site improvements will ensure permitted capacity of the public sewer system is not exceeded.

NO NET LOSS (GOVERNMENT CODE SECTION 65863) FINDINGS

1. If approval of the proposed Project will result in development of the Site at a lower residential density, the reduction in residential density is consistent with the adopted general plan, including the housing element.

   The project site is approximately 36,945 square feet (0.85 acres) and is located at 8722 Garden Grove Boulevard (APN #097-222-03). The subject site has a General Plan Land Use designation of Residential/Commercial Mixed Use 2 and is zoned GGMU-2 (Garden Grove Boulevard Mixed Use 2). The project site is identified in the City's Housing Element sites inventory as having a realistic capacity to accommodate a total of twenty (20) "moderate income" units. The project proposes a total of twenty (20) units consisting of nineteen (19) "above moderate income" units and one (1) "very low income" unit. The maximum allowable residential density for the site under the General Plan Land Use Element and Municipal Code is 24 units per acre, or twenty (20) units. The applicant is proposing to develop the site at the maximum permitted density. The City cannot require the applicant to seek a larger density bonus. Therefore, even though the proposed project results in units with differing income categories than identified in the Housing Element site inventory, the twenty (20) units proposed is consistent with the density limits of the General Plan. The proposed project is also consistent with several goals and policies of the General Plan Land Use Element, as noted in the findings above.

2. The remaining sites identified in the housing element are adequate to meet the requirements of Government Code Section 65583.2 and to accommodate the City's share of the regional housing need pursuant to Government Code Section 65584; or, if not, the City has, or will within 180 days, identify and make available additional adequate sites to accommodate the City's share of the regional housing need by income level.

   The City's 6th Cycle RHNA requires the City to plan for 19,168 housing units for all income levels. A component of preparing the City's Housing Element is the identification of vacant and underutilized sites suitable for residential development, and an evaluation of the housing development potential of these sites in fulfilling the City's RHNA. The project site is identified in the City's Housing Element sites inventory as having a realistic capacity to accommodate a total of nineteen (19) "moderate income" units. The project proposes a total of twenty (20) units consisting of nineteen (19) "above moderate income" units and one (1) "very low income" unit. Although the proposed project provides units in differing income categories than shown in the Housing Element sites inventory, the remaining Housing Element inventory sites have sufficient capacity to accommodate the City's remaining unmet RHNA by income level if the project is approved as proposed.

At the time the Housing Element was prepared and adopted, the City's *unmet* RHNA was calculated to be 18,208 units, broken down as follows: 6,567 low and very low-income units, 3,087 moderate-income units, and 8,554 above moderate-income units. The sites identified in the adopted Housing Element were determined adequate to accommodate a total of 18,291 units, including 401 more units than the City's unmet RHNA in the low and very low-income categories and 240 more units than the City's unmet RHNA for the moderate-income category. Sites deemed adequate to accommodate the lower and moderate-income categories are also adequate to accommodate above-moderate income units. Overall, the sites inventory in the adopted Housing Element reflected a total capacity surplus of 83 units.

Excluding ADUs, single-family dwellings, and SB 9 units, Staff has identified recently permitted or approved new housing units not accounted for in the Housing Element site capacity analysis. Some of these units were developed on sites not included in the Housing Element sites inventory. After accounting for these permitted and entitled units, and the twenty (20) units in the proposed project, the City's total remaining unmet RHNA would be 18,113 units[1], broken down as follows: 6,561 low and very low-income units, 3,087 moderate-income units, and 8,465 above-moderate income units. The remaining capacity of the sites identified in the Housing Element would be 18,196 units, resulting in a total capacity surplus of 83 units. The remaining sites are also adequate to accommodate a surplus of low and very low-income units (407) and moderate-income units (221), and such sites are also adequate to accommodate the City's remaining unmet above moderate-income RHNA. Due to this surplus, the overall residential capacity on sites identified in the Housing Element will still be sufficient to accommodate the City's total remaining unmet RHNA if the proposed project is approved.

INCORPORATION OF FACTS AND FINDINGS SET FORTH IN STAFF REPORT

In addition to the foregoing, the Planning Commission incorporates herein by this reference, the facts and findings set forth in the staff report.

BE IT FURTHER RESOLVED that the Planning Commission does conclude:

1. The Site Plan and Tentative Tract Map possess characteristics that would justify the request in accordance with Municipal Code Section No. 9.32.030.3 (Site Plan) and Section 9.40.060 (Tentative Maps).

2. In order to fulfill the purpose and intent of the Municipal Code and thereby promote the health, safety, and general welfare, the attached Conditions of Approval (Exhibit "A") shall apply to Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129.

EXHIBIT "A"

Site Plan No. SP-119-2022

Tentative Tract Map No. 19129

8722 Garden Grove Boulevard

CONDITIONS OF APPROVAL

General Conditions

1. The applicant and each owner of the property shall execute, and the applicant shall record a "Notice of Agreement with Conditions of Approval and Discretionary Permit of Approval," as prepared by the City Attorney's Office, on the property. Proof of such recordation is required prior to issuance of building permits.

2. All Conditions of Approval set forth herein shall be binding on and enforceable against each of the following, and whenever used herein, the term "applicant" shall mean and refer to each of the following: the project applicant, owner and developer of the project, NRI Portfolios, LLC, and the future owner(s) and tenants(s) of the property, and each of their respective successors and assigns. All conditions of approval are required to be adhered to for the life of the project, regardless of property ownership. Except for minor modifications authorized to be approved by the Community and Economic Development Director pursuant to Condition No. 4, any changes of the Conditions of Approval require approval by the appropriate City hearing body.

3. Site Plan No. SP-119-2022 only authorizes approval to a three-story, townhome residential project consisting of twenty (20) units, which includes one (1) affordable housing unit for "very low-income" households on a 36,945 square-foot (0.85 acres) lot located on the south side of Garden Grove Boulevard, between Newland Street and Yockey Street, at 8722 Garden Grove Boulevard (APN: 097-222-03), as depicted on the plans submitted by the applicant and made part of the record of the November 17, 2022, Planning Commission proceedings. Approval of this Site Plan shall not be construed to mean any waiver of applicable and appropriate zoning and other regulations; and wherein not otherwise specified, all requirements of the City of Garden Grove Municipal Code shall apply.

4. The approved site plan and floor plan are an integral part of the decision approving this Site Plan. There shall be no additional changes in the design of the site plan and floor plan without the approval of the City. Minor modifications to the Site Plan and/or these Conditions of Approval, which do not materially change the scope or intensity of the project and which will not result in impacts that have not previously been addressed, may be approved by the Community and Economic Development Director, in his or her

discretion. Proposed modifications to the project and/or these Conditions of Approval determined by the Community and Economic Development Director not to be minor in nature shall be subject to approval of new and/or amended land use entitlements by the applicable City hearing body.

5. All conditions of approval shall be implemented at the applicant's expense, except where specified in the individual condition.

Public Works Engineering Division

Project Design

6. A geotechnical study prepared by a registered geotechnical engineer is required. The report shall analyze the liquefaction potential of the site and make recommendations. The report shall analyze sub-surface issues related to the past uses of the site, including sub-surface tanks and basement and septic facilities. Any soil or groundwater contamination shall be remediated prior to the issuance of a building permit per the requirements of the Orange County Health Department and the mitigation requirements of governing regulatory requirements. The report shall make recommendations for foundations and pavement structural section design of interior streets and parking spaces. The report shall also test and analyze soil conditions for LID (Low Impact Development) principles and the implementation of water quality for storm water run-off, including potential infiltration alternatives, soil compaction, saturation, permeability and groundwater levels.

7. Prior to the issuance of any grading or building permits, the applicant shall submit to the City for review and approval a final design Water Quality Management Plan that:

   a. Addresses required mitigation Site Design Best Management Practices (BMPs) based upon the latest Santa Ana Regional Water Quality Control Board (SARWQCB) approved Drainage Area Management Plan (DAMP) as identified in the geotechnical report recommendations and findings, including, but not limited to, infiltration minimizing impervious areas, maximizing permeability, minimizing directly connected impervious areas, creating reduced or "zero discharge" areas, and conserving natural areas as required by the latest adopted County of Orange Technical Guidance Document (TGD).

   b. BMP's shall be sized per the requirements of the latest Technical Guidance Documents.

   c. Incorporates the applicable Routine Source Control BMPs as defined in the DAMP.

d. Incorporates structural and Treatment Control BMPs as defined in the DAMP.

e. Generally describes the long-term operation and maintenance requirements for the Treatment Control BMPs.

f. Identifies the entity that will be responsible for long-term operation and maintenance of the Treatment Control BMPs.

g. Describes the mechanism for funding the long-term operation and maintenance of the Treatment Control BMPs.

h. Provides a hydrological analysis with scaled map as well as hydrologic and hydraulic calculations to size storm drains per the Orange County RDMD standards.

8. Parkway culverts shall be designed per City of Garden Grove Standard Plan B-209. Storm drain lateral pipe connections to City maintained storm drains within City right-of-way shall be RCP with a minimum diameter of 18-inches.

9. Grading plans prepared by a registered Civil Engineer are required. As required under Section 107 of the California Building Code (CBC), the grading plan shall be based on a current survey of the site, including a boundary survey, topography on adjacent properties up to 30'-0" outside the boundary, and designed to preclude cross lot drainage. Minimum grades shall be 0.50% for concrete flow lines and 1.25% for asphalt. The grading plan shall also include water and sewer improvements. The grading plan shall include a coordinated utility plan showing all existing utility facilities, easements and proposed utility facilities. All on-site improvements shall be tied by horizontal dimensional control to the property boundary as established by survey. A minimum uninterrupted 20-foot wide throat access to the site is required from the street for the multi residential projects and shall meet the requirements of the California Fire Code throughout the site. Vehicle maneuvering, as demonstrated by Auto Turn along private streets and access ways, shall be demonstrated on the grading plan. Street improvement plans shall conform to all format and design requirements of the City Standard Drawings & Specifications.

10. All vehicular access drives to the site shall be provided in locations approved by the City Traffic Engineer (Policies and Procedures – TE-17).

11. The applicant shall coordinate with Planning Services Division and Orange County Fire Authority to identify proper emergency vehicle access to the site and shall provide the Engineering Division a copy of the approval letters upon first submittal of the grading and street improvement plans.

12. The applicant shall complete the following for the tract map:

a. Prior to recordation of a final parcel or tract map, the surveyor/engineer preparing the map shall tie the boundary of the map into the Horizontal Control System established by the County Surveyor in a manner described in Sections 7-9-330 and 7-9-337 of the Orange County Subdivision Code and Orange County Subdivision Manual, Subarticle 18. The surveyor/engineer shall submit record information to the City on Auto Cad DWG format.

b. Prior to recordation of a final parcel or tract map, the surveyor/engineer preparing the map shall submit to the County Surveyor a digital graphics file of said map in a manner described in Sections 7-9-330 and 7-9-337 of the Orange County Subdivision Code and Orange County Subdivision Manual, Subarticle 18. The surveyor/engineer shall submit record information to the City on Auto Cad DWG format.

c. Prior to issuance of a grading permit, the applicant shall submit to the Planning Services Division an updated title report along with copies of the recorded instruments listed in the title report, reference maps used to prepare legal description and the plat for review and approval of the parcel map.

d. All subdivision mapping shall be concurrently reviewed by the City Engineering Division and the County of Orange Survey Department. The applicant shall forward all plan check comments received from the County of Orange Survey Department to the City of Garden Grove's Engineering Division upon receipt from the county.

13. Prior to the issuance of the street improvement encroachment permit and grading permit, provide subdivision completion bonds for all work constructed under the street improvements and grading permit for review and approval by the City Engineer, City Attorney, and City Finance Department (Risk Management). Alternate forms of security may be considered, solely at the discretion of the City Engineer and with the concurrence of the City Attorney and City Finance Department (Risk Management).

14. Any new drive approaches to the site shall be constructed in accordance with Garden Grove Standard B-120 (Option #2) as they conform to land use and roadway designation.

15. The grading plan shall depict an accessibility route for the ADA pathway in conformance with the requirements of the Department of Justice standards, latest edition and section 1110A of the California Building Code (CBC).

16. All trash container areas shall meet the following requirements per City of Garden Grove Standard B-502 and State mandated commercial organic recycling Law, including AB 1826, SB 1383, and any other applicable State recycling laws related to refuse, recyclables, and/or organics:

a. Paved with an impervious surface, designed not to allow run-on mixing of drainage from adjoining areas, designed to divert drainage from adjoining roofs and pavements to be directed around the area for trash roll out, and screened or walled to prevent off-site transport of trash by water or wind.

b. Provide solid roof or awning to prevent direct precipitation into the enclosure.

c. Connection of trash area drains to the municipal storm drain system is prohibited. Drainage from the enclosure may be directed to a conforming grease or contaminant interceptor.

d. Potential conflicts with fire code access requirements and garbage pickup routing for access activities shall be considered in implementation of design and source control. See CASQA Storm Water Handbook Section 3.2.9 and BMP Fact Sheet SD-32 for additional information.

e. The trash enclosure and containers shall be located to allow pick-up and maneuvering, including turn-arounds, in the area of enclosures, and concrete aprons for roll-out areas.

f. Pursuant to state mandated commercial organic recycling Law-AB 1826 and SB 1383, the applicant is required to coordinate storage and removal of the organics waste with local recycling/trash company.

g. Pursuant to applicable state mandated laws, the applicant is required to contact and coordinate with the operations manager of the local recycling/trash company (Republic Services, 800-700-8610) to ensure the trash enclosure includes the appropriate size and number of containers for the disposal of items such as, but may not limited to, municipal solid waste (MSW), recyclables, and organic green waste.

h. Based on the amount of waste disposed, per week, the applicant shall coordinate with the local recycling/trash company to ensure the adequate frequency of trash pick-up is serviced to the site for municipal solid waste (MSW), recyclables, organic and green waste, and any other type of waste.

i. The applicant shall ensure large bulk items, intended for coordinated and scheduled pick-up by the local recycling/trash company, are not placed in areas that encroach into drive aisles, parking spaces, pedestrian pathways, or areas in the front of the property including areas public right-of-way (e.g., street, sidewalk), during and after construction. Any large bulk items shall be out of public vantage points.

j. The requirements for the trash enclosure and design criteria are bound and coordinated with the Water Quality Management Plan (WQMP), when

required, as depicted on the project grading plan, which shall be incorporated into the WQMP by narrative description, exhibits and an Operation and Maintenance Plan (O&M).

17. Any new or required block walls and/or retaining walls shall be shown on the grading plans, both in plan-view and cross sections. Cross sections shall show vertical and horizontal relations of improvements (existing and proposed) on both sides of property lines. Required wall heights shall be measured vertically from the highest adjacent finished grade. Block walls shall be designed in accordance to City of Garden Grove Standard B-504, B-505, B-506 and B-508 or designed by a professional registered engineer. In addition, the following shall apply:

    a. Any block walls shall be decorative and utilize stucco finish, slump stone or split-face block, and shall include trailing vines, hedges planted along the base of the exterior face, or other landscaping treatments that deter graffiti.

    b. Openings for drainage through walls shall be shown in section details and approved by the City Engineer. Cross-lot drainage is not allowed.

18. The applicant shall remove any existing substandard driveway approaches, curbs, sidewalks, ADA ramps, pavement sections, tree well and landscaping, and construct Garden Grove Boulevard frontage improvements as identified below. All landscape, irrigation, sidewalk, and lighting improvements installed within the public rights-of-way shall be maintained by the applicant and shall require the approval of the City Engineer, Street Division, and Planning Division, and shall be maintained by the applicant for the life of the project.

    a. Existing substandard driveways on Garden Grove Boulevard shall be removed and replaced with new curb, gutter, landscape, and sidewalk per City standards and specifications.

    b. The new driveway approach to the site on Garden Grove Boulevard shall be constructed in accordance with Garden Grove Standard B-120 (Option #3).

    c. The applicant shall remove the existing damaged sidewalk panels fronting the project on Garden Grove Boulevard and replace it with new sidewalk panels in accordance with City of Garden Grove Standard B-106. The owner/contractor shall verify the removal and replacement sections of the sidewalk concrete panels with Public Works inspector prior to start of construction.

    d. The new tree wells fronting the project on Garden Grove Boulevard shall be constructed in accordance with Garden Grove Standard B-123 and B-127.

e. The applicant shall plant total of four Columbia Sycamore tree (36-inch box). The applicant shall coordinate with City's Public Works Department prior to order and placement of trees on Garden Grove Boulevard.

f. Construct curb and gutter when replacing any existing driveway approach along the property frontage on Garden Grove Boulevard in accordance with City Standard Plan B-113.

g. The applicant shall locate all existing public utilities across the property frontage and within the property boundary of the project prior to commencement of grading operation and mobilization.

h. The applicant shall coordinate with the Planning Services Division and Public Works Street Division before placing any type of tree within public right-of-way and proposed landscape area.

i. Street signs shall be installed as required and approved by the City Traffic Engineer.

19. Any proposed new landscaping in public right-of-way shall be approved by the Planning Services Division and maintained by the owner for the life of the project.

20. Driveway widths shall be in accordance with City's Traffic Engineering Policy TE-8 (Driveway Opening Policy).

21. Sight Distance Standards shall be in accordance with City's Traffic Engineering Policy TE-13. All structures and walls shall be designed to ensure proper vision clearance for cars entering or leaving the driveway and parking areas. No structure, wall or fence shall cause an exceedance of the applicable site distance standards set forth in City Traffic Engineering Policy TE 13.

22. The Site Plan shall comply with the completed Development Review and Comment Sheet prepared pursuant to City's Traffic Engineering Policy TE-17 and provided to the applicant.

23. Private Property Tow Away Sign Design shall be in accordance with City's Traffic Engineering Policy TE-19.

24. No Parking Fire Lane Sign Design shall be in accordance with City's Traffic Engineering Policy TE-20.

25. Parking lot layout shall be in accordance with City Standard B-311 and B-312.

26. Off-street parking requirements for residential uses shall be in accordance with the City of Garden Grove's Traffic Engineering Policy TE-17.

27. A minimum five-foot-by-five-foot-wide maneuvering area shall be provided at the end of a dead-end parking aisle and shall consists of a ten-foot-by-nineteen-foot-wide turn-around space.

Permit Issuance

28. The applicant shall be subject to Traffic Mitigation Fees (Garden Grove City Council Resolution 9401-16), In-Lieu Park Fees Drainage Facilities Fees, Water Assessment Fees, and other applicable mitigation fees identified in Chapter 9.44 of the Garden Grove Municipal Code, along with all other applicable fees duly adopted by the City. The amount of said fees shall be calculated based on the City's current fee schedule at the time of permit issuance.

29. A separate street permit is required for work performed within the public right-of-way.

30. Grading fees shall be calculated based on the current fee schedule at the time of permit issuance.

31. The applicant shall identify a temporary parking site(s) for construction crew and construction trailers office staff prior to issuance of a grading permit. No construction parking is allowed on local streets. Construction vehicles should be parked off traveled roadways in a designated parking area. Parking areas, whether on-site or off-site, shall be included and covered by the erosion control plans.

32. Prior to issuance of a grading permit, the applicant shall submit and obtain approval of a work-site traffic control plan for all the proposed improvements within public right-of-way, and shall be subject to the review and approval of the City Traffic Engineer.

33. In accordance to City of Garden Grove Municipal Code (Chapter 9.48.030), the applicant is required to underground all existing and proposed on-site and off-site utility facilities fronting the project which the developer is developing or redeveloping. All existing improvements and utilities shall be shown as part of the grading submittal package in the topography section.

Project Construction/Operation

34. The applicant shall coordinate with City's Public Works Department (Engineering, Water Services and Streets Division) and setup appointments for pre-construction inspections for all the on-site and off-site improvements prior to commencement of grading operation and mobilization.

35. In accordance with the Orange County Storm Water Program manual, the applicant and/or its contractors shall provide dumpsters on-site during

construction unless an Encroachment Permit is obtained for placement in street.

36. The applicant and his contractor shall be responsible for protecting all existing horizontal and vertical survey controls, monuments, ties (centerline and corner) and benchmarks located within the limits of the project. If any of the above require removal; relocation or resetting, the Contractor shall, prior to any construction work, and under the supervision of a California licensed Land Surveyor, establish sufficient temporary ties and benchmarks to enable the points to be re-set after completion of construction. Any ties, monuments and bench marks disturbed during construction shall be re-set per Orange County Surveyor Standards after construction. Applicant and his contractor shall also re-set the tie monuments where curb or curb ramps are removed and replaced or new ramps are installed. The Applicant and his contractor shall be liable for, at his expense, any resurvey required due to his negligence in protecting existing ties, monuments, benchmarks or any such horizontal and vertical controls. Temporary Benchmarks shall not be used for Vertical control. Benchmarks shall be to the National Geodetic Vertical Datum (NGVD).

37. Heavy construction truck traffic and hauling trips, and any required lane closures shall occur outside peak travel periods. Peak travel periods are considered to be from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.

38. Prior to grading or building permit closeout and/or the issuance of a certificate of use or a certificate of occupancy, the applicant shall:

    a. Demonstrate that all structural best management practices (BMPs) described in the Project WQMP have been constructed and installed in conformance with approved plans and specifications.

    b. Demonstrate that the applicant is prepared to implement and maintain all non-structural BMPs described in the Project WQMP.

    c. Demonstrate that an adequate number of copies of the approved Project WQMP are available on-site.

    d. Submit for review and approval by the City an Operations and Maintenance (O&M) Plan for all structural BMPs.

Public Works Water Services Division

39. New water service installations 2" and smaller, shall be installed by the City of Garden Grove at owner's/developer's expense. Installation shall be scheduled upon payment of applicable fees, unless otherwise noted. Fire services and larger water services 3" and larger, shall be installed by developer/owner's contractor per City Standards.

40. Water meters shall be located within the City right-of-way. Fire services and large water services 3" and larger, shall be installed by contractor with Class A or C-34 license, per City water standards and inspected by approved Public Works inspection.

41. A Reduced Pressure Principle Device (RPPD) backflow prevention device shall be installed the landscape system. Installation shall be per City Standards and shall be tested by a certified backflow device tester immediately after installation. Cross connection inspector shall be notified for inspection after the installation is completed. Owner shall have RPPD device tested once a year thereafter by a certified backflow device tester and the test results to be submitted to Public Works, Water Services Division. Property owner must open a water account upon installation of RPPD device.

42. It shall be the responsibility of owner/developer to abandon any existing private water well(s) per Orange County Health Department requirements. Abandonment(s) shall be inspected by Orange County Health Department inspector after permits have been obtained.

43. A composite utility site plan shall be part of the water plan approval.

44. New utilities shall have a minimum 5-foot horizontal and a minimum 1-foot vertical clearance from water main and appurtenances.

45. Any new or existing water valve located within new concrete driveway or sidewalk construction shall be reconstructed per City Standard B-753.

46. If fire sprinkler system is required, and a separate fire service is not proposed, the meter and service for the new lot shall be installed per City Standard B-719, which specifies a residential fire sprinkler connection (RFSC) on the backside of the meter.

47. If required, fire service and any private fire hydrant laterals shall have above-ground backflow device with a double check-valve assembly. Device shall be tested immediately after installation and once a year thereafter by a certified backflow device tester and the results to be submitted to Public Works, Water Services Division. Device shall be on private property and is the responsibility of the property owner. The above-ground assembly shall be screened from public view as required by the Planning Division.

48. Water meters and boxes shall be installed by City forces upon payment of applicable fees and after new water system (including water services) pass all bacteriological and pressure tests.

49. Location and number of fire hydrants shall be as required by Water Services Division and the Orange County Fire Authority.

50. Owner shall install new sewer lateral with clean out at right-of-way line. Lateral in public right-of-way shall be 6" min. dia., extra strength VCP with wedgelock joints. Lateral shall connect to the 18" sewer main in Garden Grove Blvd through a new manhole.

51. Contractor shall abandon any existing sewer lateral(s) at street right-of-way on the property owner's side. The sewer pipe shall be capped with an expansion sewer plug and encased in concrete. Only one sewer connection per lot is allowed.

52. All perpendicular crossings of the sewer, including laterals, shall maintain a vertical separation of min. 12" below the water main, outer diameter to outer diameter. All exceptions to the above require a variance from the State Water Resources Control Board.

53. If water main is exposed during installation of sewer lateral, a 20-foot section of the water main shall be replaced with 20ft PVC C-900 DR-14 Class 305 water pipe, size in kind and centered at the crossing.

Orange County Fire Authority

54. The applicant shall comply with all applicable Orange County Fire Authority (OCFA) requirements, including but not limited to the Fire Master Plan.

Building and Safety Division

55. All work shall comply with the latest edition of the California (CA) Building Standards Code (CBC) at time of permit application.

56. A soils report per the latest edition of CBC Chapter 18 is required and shall be submitted at time of building permit application.

57. A fire sprinkler system shall be provided per the latest edition of CBC Chapter 9.

58. Fire and sound rated constructions shall be provided between the units and shall comply with the latest edition of CBC Chapter 7.

59. Common use areas shall comply with the latest edition of CBC Chapter 11A.

60. A minimum 10% of the total units shall comply with the latest edition of CBC Section 1102A.3.

61. Complete mechanical, plumbing and electrical plans shall be required.

62. HVAC systems shall be designed to comply with the latest edition of California Green Building Standards Code Section 4.507.

63. Each dwelling unit shall be equipped with a future ready EV charger.

64. Each dwelling shall be provided with a minimum 250 square foot solar ready zone.

65. All rooms and spaces on the primary level shall be on an accessible route.

66. A path of travel to the trash enclosure shall be provided.

Planning Services Division

67. The applicant shall submit detailed plans showing the proposed location of utilities and mechanical equipment to the Community and Economic Development Department, Planning Services Division for review and approval prior to submitting plans into the Building and Safety Division Plan Check process. The project shall also be subject to the following:

68. The applicant shall submit detailed plans showing the proposed location of utilities and mechanical equipment to the Community and Economic Development Department, Planning Services Division for review and approval prior to submitting plans into the Building and Safety Division Plan Check process. The project shall also be subject to the following:

    a. All on-site and off-site utilities (off-site refers to the areas within public right-of-way to the center line of the streets adjacent to the subject property) within the perimeter of the site and to the centerline of the adjacent streets shall be installed or relocated underground. All on-site and off-site utilities pertaining to the improvements proposed under this Site Plan shall be installed or relocated underground.

    b. All above-ground utility equipment (e.g. electrical, gas, telephone, cable TV) shall not be located in the street setback, within the common areas, or any parking areas, and shall be screened by densely planted and maintained landscaped hedges or a fence or wall. Ground-mounted equipment shall not exceed the maximum allowable height for a wall, fence, or hedge.

    c. Clinging vines shall be installed within the landscape planters along the perimeter block walls to deter graffiti.

    d. Roof-mounted mechanical equipment shall be screened by parapet walls, rooftop architectural features such as a tower equal to the height of the equipment, or low walls surrounding the equipment and shall be painted to match the color of the building materials.

e. No exterior piping, plumbing, or mechanical ductwork shall be permitted on any exterior façade and/or be visible from any public right-of-way or adjoining property. Roof rain gutters are permitted. The rain gutters shall follow the natural architecture lines of the building.

69. All landscaping shall be consistent with the landscape requirements of Title 9 of the Municipal Code. The developer shall submit a complete landscape plan governing the entire development. The landscape irrigation plans shall include type, size, location and quantity of all plant material. The landscape plan shall include irrigation plans and staking and planting specifications. All landscape irrigation shall comply with the City's Landscape Ordinance and associated Water Efficiency Guidelines. The landscape plan is also subject to the following:

a. A complete, permanent, automatic remote control irrigation system shall be provided for all landscaping areas shown on the plan. The sprinklers shall be of drip or micro-spray system sprinkler heads for water conservation.

b. Forty percent of the trees on a site shall consist of minimum size 24-inch box, and the remaining 60 percent shall be of minimum size 15 gallons. These trees shall be incorporated into the landscaped frontages of all streets. Where clinging vines are considered for covering walls, Boston Ivy shall be used.

c. The applicant or the property owner shall be responsible for installing and maintaining the landscaping.

d. No trees shall be planted closer than five feet (5'-0") from any public right-of-way. Trees planted within ten feet (10'-0") of any public right-of-way shall be planted in a root barrier shield. All landscaping along street frontages adjacent to driveways shall be of the low-height variety to ensure safe sight clearance. All trees planted on the subject property, whether for screening the project from the neighboring lots or for aesthetic or selling/marketing purposes, shall have an irrigation system installed in order maintain the trees.

e. All trees shall be double-staked in accordance with City standards.

f. Landscaping along Garden Grove Boulevard shall comply with the landscape requirements of the Garden Grove Mixed Use Zones. Off-site landscaping shall include planters with canopy trees spaced 30'-0" apart on center with an under planting of shrubs and flowering ground cover. Plant materials within the public rights-of-ways shall be determined by the City's Public Work's Department. On-site landscaping shall include both columnar and canopy trees. Columnar trees (minimum height at maturity of 45"-0") shall be planted within 10'-0 of the public

right-of-way and shall be placed at regular intervals and no more than 40'-0" on center. On-site canopy trees shall be planted at a ratio of at least one tree for every 50'-0" of the Garden Grove Boulevard street frontage. The on-site front yard landscape area shall also include shrubs and flowering ground covers. All on- and off-site canopy trees shall be a minimum size of 24-inch box. Columnar trees shall be a minimum of 25'-0" tall. Should palm trees be proposed, the brown trunk height of the palm trees shall be 25'-0".

g. All landscape areas, including the areas located within the public rights-of-ways along Garden Grove Boulevard that abuts the subject property, are the responsibility of the applicant/property owner(s).

h. Fifty percent (50%) of all required shrubs shall be a minimum size of five (5) gallons at time of planting.

i. Live groundcover shall be planted and maintained where shrubbery is not sufficient to cover exposed soil. Mulch may be used in place of groundcover where groundcover will not grow or where groundcover will cause harm to other plants, but not more than 30% of the groundcover area shall have the mulch substitute.

j. Groundcover plants shall be planted at a density and spacing necessary for them to become well established and provide surface coverage within 18 months of planting.

k. The landscape plan shall incorporate and maintain for the life of the project those means and methods to address water run-off also identified as Low Impact Development provisions, which address water run-off. This is to also to be inclusive of any application of Water Quality Management Plans (WQMP), Drainage Area Management Plans (DAMP) and any other water conservation measures applicable to this type of development.

l. At the time of irrigation installation, the irrigation system shall comply with all applicable provisions of the City's Water Conservation Ordinance, the City's Municipal Code landscape provisions, and all applicable state regulations.

m. All above-ground utilities (e.g. water backflow devices, electrical transformers, irrigation equipment) shall be shown on the landscaping plan in order to ensure landscape screening will be provided.

70. Hours and days of construction and grading shall be as set forth in the City of Garden Grove Municipal Code Chapter 8.47 as adopted, except that:

a. Monday through Friday – not before 7:00 a.m. and not after 5:00 p.m.

b. Saturday – not before 8:00 a.m. and not after 5:00 p.m. All construction activity on Saturday shall be limited to interior construction only.

c. Sunday and Federal Holidays – no construction shall occur.

71. Construction activities shall adhere to SCAQMD Rule 403 (Fugitive Dust) that includes dust minimization measures, the use of electricity from power poles rather than diesel or gasoline powered generators, and the use methanol, natural gas, propane or butane vehicles instead of gasoline or diesel powered equipment, where feasible. Also, use of solar, low emission water heaters, and low sodium parking lot lights, shall be required to ensure compliance with Title 24.

72. The applicant shall prepare Covenants, Conditions, and Restrictions (CC&R's) for review and approval by the City Attorney's office and Community and Economic Development Department prior to final map approval. The approved CC&R's shall be recorded at the same time that the subdivision map is recorded and two copies (a hard copy and an electronic copy) of the recorded CC&R's shall be provided to the Planning Division. The CC&R's shall include the following stipulations and/or provisions:

a. Units 1-4, 7-14, and 17-20 shall maintain the ability to park three (3) vehicles at all times, or two (2) vehicles for Units 5, 6, 15 and 16. Garages shall not be converted to any other use.

b. There shall be no business activities, day care, or garage sales conducted within or from the garages.

c. Parking spaces in the garages shall be made available to the occupants of the unit at all times.

d. Residents shall not park or store vehicles anywhere on the site except within the designated parking spaces in the garages for their dwelling unit. However, the six (6) unassigned open, guest parking spaces, located throughout the development, may be utilized by residents or guests for temporary parking. Any issues arising from the use, application, or restriction of such open parking spaces shall be at the resolve of the Homeowner's Association.

e. All graffiti vandalism shall be abated within the premises. Best management practices shall be implemented to prevent and abate graffiti vandalism within the premises throughout the life of the project, including, but not limited to, timely removal of all graffiti, the use of graffiti resistant coatings and surfaces, the installation of vegetation

screening of frequent graffiti sites, and the installation of signage, lighting, and/or security cameras, an necessary. Graffiti shall be removed/eliminated as soon as reasonably possible after it is discovered, but not later than 72 hours after discovery.

f. Each residence shall be utilized as one (1) dwelling unit. No portion of any residence shall be utilized or rented as a separate dwelling unit.

g. The CC&R's shall include provisions providing the owners or tenants a means of contacting persons responsible for site maintenance, repairs, trash pick-up, and other related matters for a development of this type. This shall also include scheduling of maintenance of such items as the recreation area, landscape area maintenance, etc. This also includes ensuring tree overhangs do not block or hinder any vehicles such as street sweepers, trash trucks, fire trucks, etc., from maneuvering around the cul-de-sac.

h. Storage of boats, recreational vehicles, or commercial vehicles on the property is prohibited.

i. The CC&R's shall include stipulations that maintenance of the private drive aisles, storm drain, sewer system, open space areas within the interior of the development, and the common landscaped areas, are the responsibility of the Homeowner's Association.

j. Each unit shall have a minimum of 300 cubic feet of storage space, which may be provided in the garage parking areas, and typical closet space within the unit shall not count toward this requirement.

k. The Standards of Development and Conditions of Approval for Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129, shall be incorporated into the CC&Rs, and provisions corresponding to any applicable Conditions of Approval shall be included in the CC&Rs.

l. The following provisions shall be included within the CC&R's (in substantially the same form as below or as otherwise approved by the City Attorney):

    i. Compliance with Stormwater Quality Regulations: The Homeowner's Association shall implement, and fund implementation of, the Operation and Maintenance ("O&M") Plan for the Property, which was approved by the City as part of the Water Quality Management Plan ("WQMP") required for development of the Property, and shall operate and maintain the Best Management Practices ("BMPs") described in the O&M Plan for the Property, which includes:

1. Description of all post-construction BMPs (non-structural and structural),

2. Description of the Property owner's(s') responsibilities and required training of persons performing BMP implementation, operation and maintenance,

3. Implementation frequency and operating schedule,

4. Inspection/maintenance frequency and schedule,

5. Specific maintenance activities,

6. Required permits from resource agencies, if any,

7. Forms to be used in documenting implementation, operation and maintenance activities,

8. Recordkeeping requirements.

A copy of the approved O&M Plan is described in the current WQMP for the Project, as it may be amended from time to time according to its terms, which is on file with the City of Garden Grove Community and Economic Development Department, and is incorporated herein by this reference. The Committee shall maintain a copy of the current WQMP at a location on the Property.

The Property shall be, and the Homeowner's Association shall ensure, that the Property is used and maintained in full compliance with the provisions of the O&M Plan and Chapter 6.40 (Stormwater Quality) of the Garden Grove Municipal Code, as it may be amended. The City shall have the right to inspect the Property for the purpose of verifying compliance with this provision. The City of Garden Grove shall be an intended third-party beneficiary to this provision. The City shall have the right and authority, but not the obligation, to enforce this provision by any legal or equitable means, or by any method available to the Property owners as provided elsewhere in the Declaration, against the Declarant, Homeowner's Association, Owners, their successors and assigns, or other persons in possession of the Property. This provision shall not be amended or terminated without the written approval of the City of Garden Grove Community and Economic Development Department.

ii. Enforcement: The City is hereby made a party to this Declaration solely for purposes of enforcing its provisions and the Standards of Development and Conditions of Approval of Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129. The

City, its agents, departments and employees shall have the unrestricted right and authority, but not the obligation, to enforce the provisions of this Declaration and the Standards of Development and Conditions of Approval of Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129. In the enforcement of this Declaration, the City shall not be limited to the procedures or processes described in this Declaration and may use any remedy provided under law or equity, including the City's Municipal Code. The City, its agents, departments and employees may further refuse to issue any building, electrical or plumbing permit that may be in violation of these Declarations or Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129 approvals. However, the City shall not be liable for failing or refusing to enforce the provisions of these Declarations or the Standards of Development and Conditions of Approval of Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129. The alternative dispute resolution provisions set forth in Section / Article [SECTION] of this Declaration shall not apply to or legally bind the City.

iii. Assessments: The City may levy special assessments against the properties in connection with its actions to enforce the conditions of this Declaration or Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129 approvals, or to abate the violation thereof. The City shall have the same power as the Association to levy special assessments pursuant to the provisions of [SECTION] of this Declaration in the event that it incurs expenses in the enforcement of the conditions of these Declarations or Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129 approvals. Notice of intention to make such assessment shall be mailed by the City to the Owner of each affected [LOT/UNIT] affording the Owner thirty (30) days' notice to satisfy or reimburse the City's expenditure. In the event of the failure of any Owner of any affected [LOT/UNIT] to reimburse the City within thirty (30) days, notice of such assessment shall be mailed by the City to said Owner, and said assessment shall thereafter be due as a separate debt to the City within thirty (30) days following the mailing of such notice. Any such delinquent assessment may be and may become a lien upon the interest of the defaulting Owner in the Lot upon the execution by the City and the recording in the Orange County Recorder's office of a notice of delinquent assessment under the same conditions that the Association could record the same pursuant to the provisions of [SECTION]. The City may foreclose on such notice of delinquent assessment in the same manner and with the same power as the Association could foreclose on such notice pursuant to the provisions of [SECTION]. It is the intent of Declarant,

which intent shall be binding upon all of Declarant's successors in interest in the Properties, that the City shall be deemed an interest holder pursuant to the provisions of these Declarations in order to enforce the rights which have been given to the City generally in these Declarations and specifically pursuant to this Section.

iv. Attorney Fees: The City shall be entitled to recover its attorney's fees incurred in connection with its actions to enforce the conditions of these Declarations or Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129 approvals, or to abate the violation thereof.

v. Public Safety Access: The Police and Orange County Fire Authority personnel may enter upon any part of the common area for the purpose of enforcing State and Local laws.

vi. Modification/Termination: This Declaration shall not be terminated or substantially amended without the prior written approval of the City of Garden Grove Community and Economic Development Department.

73. All lighting structures shall be placed so as to confine direct rays to the subject property. All exterior lights shall be reviewed and approved by the Planning Services Division. Lighting adjacent to residential properties shall be restricted to low decorative type wall-mounted lights, or a ground lighting system. Lighting shall be provided throughout all private drive aisles and entrances to the development per City standards for street lighting. Lighting in the common areas shall be directed, positioned, or shielded in such manner so as not to unreasonably illuminate the window area of nearby residences.

74. Per the approved site plan, Units 1-4, 7-14, and 17-20 shall maintain the ability to park three (3) vehicles at all times, or two (2) vehicles for Units 5, 6, 15 and 16. Unless otherwise required to be permitted by state law, garages shall not be converted to any other use. There shall be no business activities, day care, or garage sales conducted within or from the garages. Parking spaces in the garages shall be made available to the occupants of the unit at all times. The applicant/property owner shall ensure that this condition is complied with at all times by tenants of the units and shall include notice of this requirement in all lease agreements.

75. The main drive aisle serves the entire project for vehicular circulation. The applicant shall utilize effective signage, and/or other acceptable means (i.e., a painted/marked red fire lane), to communicate to residents and guests that there shall be no parking in front of garages or anywhere within the drive aisle, except for within the designated guest parking spaces. Additionally, applicant shall ensure and enforce lease or other restrictions providing that there will be

no long term parking of vehicles in the guest parking spaces and that guest parking spaces shall not be reserved for any particular units.

76. The applicant/property owner shall abate all graffiti vandalism within the premises. The property owner shall implement best management practices to prevent and abate graffiti vandalism within the premises throughout the life of the project, including, but not limited to, timely removal of all graffiti, the use of graffiti resistant coatings and surfaces, the installation of vegetation screening of frequent graffiti sites, and the installation of signage, lighting, and/or security cameras, as necessary. Graffiti shall be removed/eliminated by the property owner as soon as reasonably possible after it is discovered, but not later than 72 hours after discovery.

77. The trash enclosure shall have unifying colors and exterior finishes that match, the development. The proposed roof design of the trash enclosure shall be architecturally compatible with the design of the existing development. The proposed roof and materials shall also comply with the building code requirements.

78. Each unit shall have a separate area for storage having a minimum of three hundred (300) cubic feet of private and secure space. This storage may be located within the enclosed garages, provided that it does not interfere with automobile parking.

79. Decorative stamped concrete or pavers shall be provided within the front 20-feet for the driveway along Garden Grove Boulevard. The final design and configuration shall be shown on the final site plan, grading plan, and landscape plans.

80. Storage of boats, recreational vehicles, or commercial vehicles on the property shall be prohibited. The applicant/property owner shall ensure that this condition is complied with at all times by tenants of the units and shall include notice of this requirement in all lease agreements.

81. All new block walls, and/or retaining wall(s), including existing block walls to remain, if any, shall be shown on the grading plans. Block walls shall be developed to City Standards or designed by a Registered Engineer and shall be measured from on-site finished grade. The applicant shall provide the following:

    a. Decorative masonry walls are required along the south, east, and west property lines and shall be constructed to a minimum height of 6'-0", as measured from highest point of finished grade. The block walls shall be decorative and utilize stucco finish, slump stone or split-face block, and shall include trailing vines, hedges planted along the base of the exterior face, or other landscaping treatments that deter graffiti.

b. The applicant shall work with the existing property owners along the project perimeter in designing, constructing, and maintaining the required perimeter block walls. This requirement is to avoid having double walls and to minimize any impact that it might cause to the existing landscaping on the neighbor's side as much as possible. The perimeter block wall shall be constructed and situated entirely within the subject property. In the event that the applicant cannot obtain approval from the property owners, the applicant shall construct the new wall with a decorative cap to be placed between the new and existing walls. In the event the location of a new wall adjacent to an existing wall or fence has the potential to affect the landscape planter, then the applicant shall work with City Staff to address this situation. The Community and Economic Development Director shall be authorized to approve minor alterations the size and/or location of the landscape planter to accommodate the placement of such wall.

82. All recreation areas, landscaping along the interior project street and entryway, landscaped areas in all common areas, and any landscaping within the public right-of-way shall be maintained for the life of the project and such maintenance provisions shall be included in the CC&R's.

83. Both common recreation areas, as identified on the approved site plan, shall be equipped with outdoor furniture and table tennis equipment, subject to review by the Planning Services Division, and Building and Safety Division.

84. During construction, if paleontological or archaeological resources are found, all attempts will be made to preserve in place or leave in an undisturbed state in compliance with applicable law. In the event that fossil specimens or cultural resources are encountered on the site during construction and cannot be preserved in place, the applicant shall contact and retain, at applicant's expense, a qualified paleontologist or archaeologist, as applicable, acceptable to the City to evaluate and determine appropriate treatment for the specimen or resource, and work in the vicinity of the discovery shall halt until appropriate assessment and treatment of the specimen or resource is determined by the paleontologist or archeologist (work can continue elsewhere on the project site). Any mitigation, monitoring, collection, and specimen/resource treatment measures recommended by the paleontologist/archaeologist shall be implemented by the applicant at its own cost.

85. The applicant shall comply with the Migratory Bird Treaty Act (MBTA), and Sections 3503, 3503.5 and 3515 of the California Fish and Game regulations, which require the protection of active nests of all bird species, prior to the removal of any on-site landscaping, including the removal of existing trees.

86. The proposed development will consist of the construction of twenty (20) townhome units, and one (1) unit shall be reserved for very low-income households.

87. The vehicular gate at the alley shall be of automatic type.

88. There shall be no parking allowed along any drive-aisle, except within the designated parking areas. All curbs not designated as parking areas shall be painted red. The applicant shall post "No Parking" signs along the drive aisle.

89. Each residence shall be utilized as one (1) dwelling unit. No portion of any residence shall be utilized or rented as a separate dwelling unit.

90. All balconies shall remain open and shall not be enclosed at any time. There shall be no storage allowed in the balconies at any time.

91. The maintenance of the drive aisles, storm drains, sewer system, and open space areas is the responsibility of the applicant and property owner, including the common recreation areas, and the common landscape areas.

92. Each unit shall be provided with an air conditioning condensing unit and/or system so that there are no wall-mounted, or window mounted units. If units are located on the roof, an architectural design of the roof areas shall be done to effectively screen such units from adjacent properties and the public right-of-way.

93. Mailboxes shall be provided and installed by the applicant. The local postmaster shall approve the design and location.

94. Each unit shall be provided with washer and dryer hook-ups.

95. At applicant's request, applicant has been granted State Density Bonus allowances for parking, one (1) concession, and one (1) waiver in exchange for the applicant's agreement to reserve one (1) dwelling unit in the project for occupancy by very low-income households for a period of 45 years commencing with the issuance of the certificate of occupancy for the project. The applicant shall at all times during the term of the affordability period comply with the requirement to sell the target unit to very low-income households at an affordable price as required by the Garden Grove Municipal Code and State Law. Pursuant to State law, the Garden Grove Municipal Code, and the City's Density Bonus Agreement Guidelines, the record owner or owners of the subject property shall enter into an affordable housing regulatory agreement with the City pursuant to Garden Grove Municipal Code Section 9.60.050, which satisfies the criteria set forth in subdivision (c) of Government Code Section 65915. The regulatory agreement shall be prepared by the City at the applicant/owner's expense, and the applicant and/or owner shall pay applicable fees pursuant to GGMC Section 9.60.050.G and reimburse the City for the actual fees and costs charged for the services of attorneys and/or other professional third-party consultants engaged by the City for the purposes set forth in GGMC Section 9.60.050.F. Prior to preparation of the regulatory agreement, applicant and/or property owner shall execute a reimbursement

agreement with the City, in a form approved by the City Attorney, and provide a deposit to the City in an amount sufficient to cover the estimated professional fees and costs to be incurred by the City, as determined by the Department Director, in his or her reasonable discretion. The regulatory agreement shall be approved by the City and recorded prior to final map approval. The regulatory agreement shall remain a senior, non-subordinate covenant and as an encumbrance running with the land for the full term thereof. In no event shall the regulatory agreement be made junior or subordinate to any deed of trust or other documents providing financing for the construction or operation of the project, or any other lien or encumbrance whatsoever for the entire term of the required covenants.

96. Final Tentative Tract Map No. TT-19129 shall be approved by the City and recorded by the applicant prior to issuance of building permits for the proposed development.

97. A copy of the resolution approving Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129, including these Conditions of Approval, shall be kept on the premises at all times.

98. The applicant shall submit a signed letter acknowledging receipt of the decision approving Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129 and his/her agreement with all conditions of the approval.

99. The applicant shall, as a condition of Project approval, at its sole expense, defend, indemnify and hold harmless the City, its officers, employees, agents and consultants from any claim, action, or proceeding against the City, its officers, agents, employees and/or consultants, which action seeks to set aside, void, annul or otherwise challenge any approval by the City Council, Planning Commission, or other City decision-making body, or City staff action concerning Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129. The applicant shall pay the City's defense costs, including attorney fees and all other litigation related expenses, and shall reimburse the City for court costs, which the City may be required to pay as a result of such defense. The applicant shall further pay any adverse financial award, which may issue against the City including but not limited to any award of attorney fees to a party challenging such project approval. The City shall retain the right to select its counsel of choice in any action referred to herein.

100. In accordance with Garden Grove Municipal Code Sections 9.32.160 and 9.40.070.A, respectively, the rights granted pursuant to Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129 shall be valid for a period of two years from the effective date of this approval. Unless a time extension is granted pursuant to Section 9.32.030.D.9 of the Municipal Code, the rights conferred by Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129 shall become null and void if the subject development and construction necessary and incidental thereto is not commenced within two (2) years of the

expiration of the appeal period and thereafter diligently advanced until completion of the project. In the event construction of the project is commenced but not diligently advanced until completion, the rights granted pursuant to Site Plan No. SP-119-2022 and Tentative Tract Map No. TT-19129 shall expire if the building permits for the project expire.