9562 CHAPMAN AVENUE APARTMENTS PROJECT

DRAFT CLASS 32 EXEMPTION CHECKLIST

Site Plan No. SP-156-2025

Lead Agency:

City of Garden Grove
Community Development Department
11222 Acacia Parkway
Garden Grove, CA 92840

Project Contact:

Priit Kaskla, AICP, Associate Planner
priitk@ggcity.org
714-741-5303

CEQA Consultant:

RE Consulting
renee@renvconsulting.com

May 2025

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Acronym List

ADT	Average Daily Trips
AQMP	Air Quality Management Plan
AB	Assembly Bill
APN	Assessor Parcel Number
BMPs	Best Management Practices
CAA	Clean Air Act
CalEEMod	California Emissions Estimator Model

CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
CMU	Concrete Masonry Unit
CO	Carbon Monoxide
CY	Cubic Yards
DAMP	Drainage Area Management Plan
dBA	A-weighted decibel
FAR	Floor Area Ratio
FTA	Federal Transit Administration
GGMC	Garden Grove Municipal Code
GHG	Greenhouse Gas
HQTA	High-Quality Transit Area
ITE	Institute of Transportation Engineers
lbs	pounds
LCFS	Low Carbon Fuel Standard
LID	Low Impact Development
LOS	Level of Service
LST	Local Significance Thresholds
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendant
MTCO2e	metric tons carbon dioxide equivalent
NPDES	National Pollutant Discharge Elimination System
NAHC	Native American Heritage Commission
NOx	Nitrous Oxides
OCTA	Orange County Transportation Authority
OPR	Governor's Office of Planning and Research
PM	Particulate Matter
PPM	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCH	State Clearinghouse
SF	Square Foot
SOx	Oxides of Sulfur
SR	State Route
SRA	Source Receptor Area
SWPPP	Storm Water Pollution Prevention Plan
TAC	Toxic Air Contaminant
TAZ	Traffic Analysis Zone
TPA	Transit Priority Area
VdB	velocity in decibels
VMT	Vehicle Miles Traveled

UCACE	United States Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
WDRs	Waste Discharge Requirements
WQMP	Water Quality Management Plan

1.0 INTRODUCTION

The applicant (P & P Bros Corp., a California Corporation) for the proposed Project is requesting approval from the City of Garden Grove (the City) to redevelop 9562 Chapman Avenue (the Project site) with a four-story multi-family residential building with 36 one, two, and three-bedroom apartments (the Project). The Project would also provide onsite parking and open space areas. The City is the Lead Agency for the proposed Project.

1.1 PURPOSE OF THE EXEMPTION CHECKLIST

This Exemption checklist has been prepared in accordance with the following:

- California Environmental Quality Act (CEQA) of 1970 (Public Resources Code Sections 21000 et seq.)
- California Code of Regulations, Title 14, Division 6, Chapter 3 (CEQA Guidelines, Sections 15000 et seq.).

Article 19 of the California Environmental Quality Act (CEQA) Guidelines includes, as required by Public Resources Code Section 21084, a list of classes of projects which have been determined not to have a significant effect on the environment.

Pursuant to CEQA Guidelines Section 15332, the Project qualifies for a Class 32 Exemption because it is: (a) consistent with the General Plan designation and policies and zoning regulations; (b) is located within the City limits, surrounded by urban uses and is less than 5 acres in size; (c) has no value for endangered, rare or threatened species; (d) would not result in any significant effects related to traffic, noise, air quality or water quality; and (e) can be adequately served by all required utilities and public services. Additionally, to qualify for the exemption the project must not result in any exceptions identified in CEQA Guidelines Section 15300.2.

Existing Regulations that Reduce Potential Impacts
Throughout the analysis in this Class 32 Exemption Checklist, reference is made to requirements that are applied to all development on the basis of federal, state, or local law, which effectively reduce the potential for environmental impacts to occur. Where applicable, these existing regulations are listed to show their effect in reducing potential environmental impacts.

1.2 DOCUMENT ORGANIZATION

This Class 32 Exemption Checklist includes the flowing sections:

Section 1.0 Introduction
It provides information about CEQA, its requirements for environmental review, and explains the Exemption Checklist that evaluates the potential impacts of the proposed Project to the physical environment.

Section 2.0 Project Setting
It provides information about the Project's location, a description of existing site uses, and identifies the existing General Plan and zoning designations.

Section 3.0 Project Description
It includes a description of the Project's physical features, along with construction and operational activities. Describes anticipated approvals and permits needed for implementation of the proposed Project.

Section 4.0 Class 32 Infill Exemption Requirements
It provides the CEQA Guidelines detailing the types of projects exempt from CEQA review related to urban infill development and exceptions to the exemptions.

Section 5.0 Proposed Project CEQA Exemption Compliance Analysis
Evaluates the Project's potential to result in significant adverse effects to the physical environment as required by CEQA Guidelines Section 15332 and identifies applicable regulations. In addition, Section 5.0 analyzes whether the proposed Project would result in any of the exceptions in the criteria of CEQA Guidelines Section 15300.2(b)-(f) (Exceptions) to the Project.

Section 6.0 References
It includes a list of sources that were used in preparation of this CEQA document.

2.0 PROJECT SETTING

2.1 PROJECT LOCATION

The Project site is located at 9562 Chapman Avenue in the City of Garden Grove, as shown in Figure 1, *Regional Location*. The site is located along the south side of Chapman Avenue, just east of the intersection with Gilbert Street. Regional access to the site is provided by State Route 22 (SR-22) and either the Magnolia Street or Brookhurst Street interchanges. Both Magnolia Street and Brookhurst Street provides direct access to Chapman Avenue to the west or east of the Project site. The Project location is shown in Figure 2, *Local Vicinity*.

The Project site is identified as Assessor Parcel Number (APN): 133-091-03; and is located within the Anaheim United States Geological Survey (USGS) 7.5' topographic quadrangle. The site is within Township 04S, Range: 10W, Section 31, and Baseline San Bernardino. The latitude and longitude for the Project site are 33° 47' 17" North, 117° 57' 58" West.

The Project site is located within a Southern California Associations of Governments (SCAG) 2045 High-Quality Transit Area (HQTA), which (as of January 1, 2025 per Assembly Bill 2553, Friedman) are areas within 0.5-mile of a transit stop or a transit corridor with 20-minute or less service frequency during peak commute hours. The site is also within a Transit Priority Area (TPA) as identified by Exhibit 4.14-6, *Transit Priority Areas*, of the Focused General Plan Update and Zoning Amendments Draft EIR.

2.2 EXISTING PROJECT SITE

The 0.97 gross-acre (42,066 square foot) Project site was previously developed with a 2,496 square foot restaurant building and patio that was constructed in 1968. The restaurant was closed and vacated in 2023 and red tagged by the City Building and Safety Division on June 1, 2023. As the building was seriously damaged and unsafe for occupancy, the City issued a demolition permit and in June 2024 the building was demolished and the site cleared of vegetation and debris. The site is currently vacant with areas of soil, weeds, and an asphalt area that was the previous restaurant parking lot, with a driveway connection to Chapman Avenue. The site is bound by existing walls along the east, west, and south sides of the site. Currently, a chain linked fence is installed along the northern site boundary along Chapman Avenue. The site frontage is bound by chained linked fencing and a sidewalk along Chapman Avenue (Figure 3, *Aerial View*).

2.3 EXISTING GENERAL PLAN LAND USE AND ZONING OF THE PROJECT SITE

The Project site has a General Plan land use designation of Residential / Commercial Mixed Use 2 (RC2) that allows a maximum of 24 dwelling units per acre, and a zoning designation of Neighborhood Mixed Use (NMU) that also allows a maximum of 24 dwelling units per acre. Surrounding development consists of residential, commercial, and automotive uses. Zoning of the Project site and surrounding areas are shown in Figure 4.

2.4 SURROUNDING LAND USES

The Project site is located within a fully developed area. The surrounding land uses and zoning are described in Table 1.

Table 1: Surrounding Existing Land Uses and Designations

Direction	Existing Land Use	General Plan Land Use Designation	Zoning Designations
North	Surface parking lot for Garden Grove Women's Club	Residential/Commercial Mixed Use 2 (RC2)	NMU (Neighborhood Mixed Use Zone)
East	Commercial/Automotive	Residential/Commercial Mixed Use 2 (RC2)	NMU (Neighborhood Mixed Use Zone)
South	Multi-Family Residential	Residential/Commercial Mixed Use 2 (RC2)	NMU (Neighborhood Mixed Use Zone)
West	Commercial Retail and Multi-Family Residential	Residential/Commercial Mixed Use 2 (RC2)	NMU (Neighborhood Mixed Use Zone)

Figure 1: Regional Location

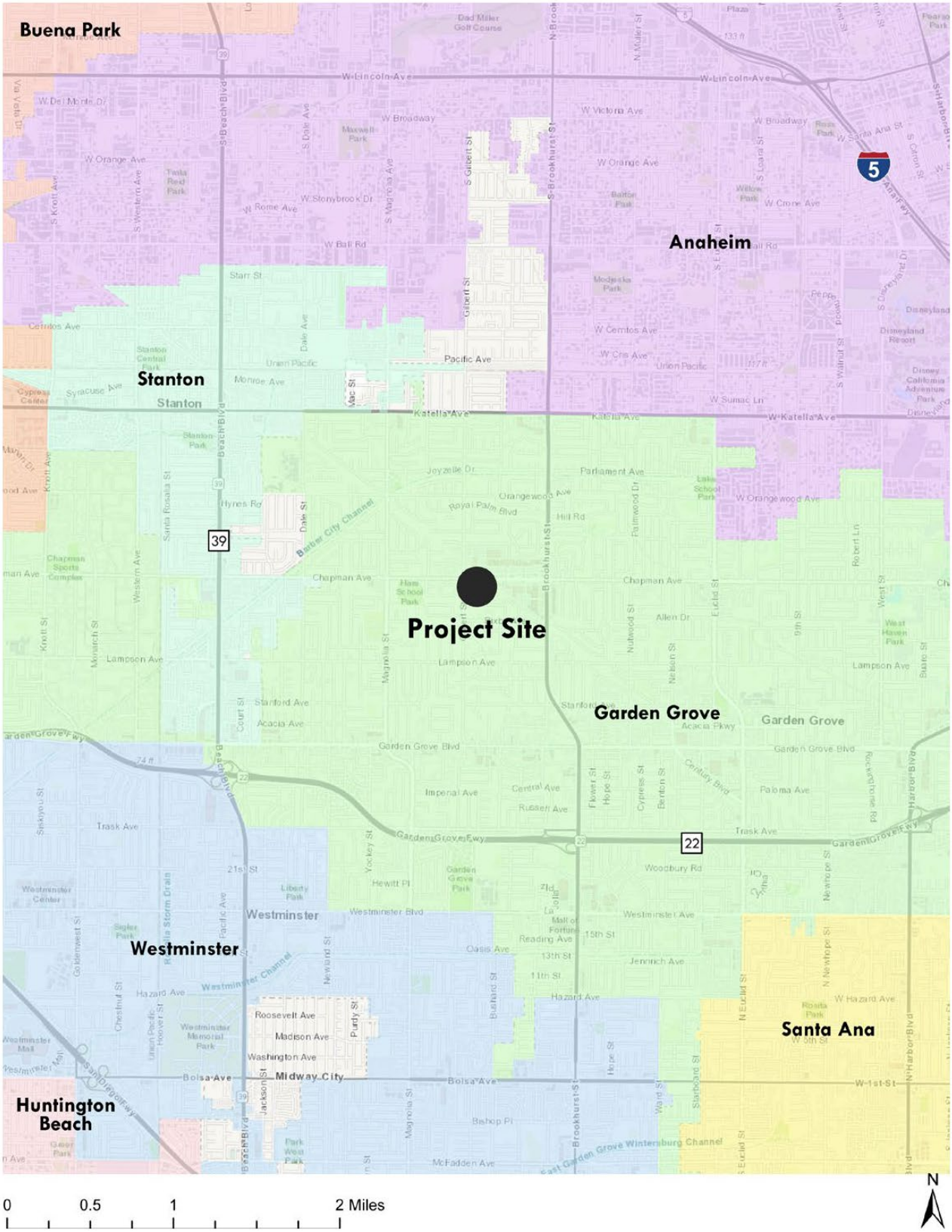


Figure 2: Local Vicinity

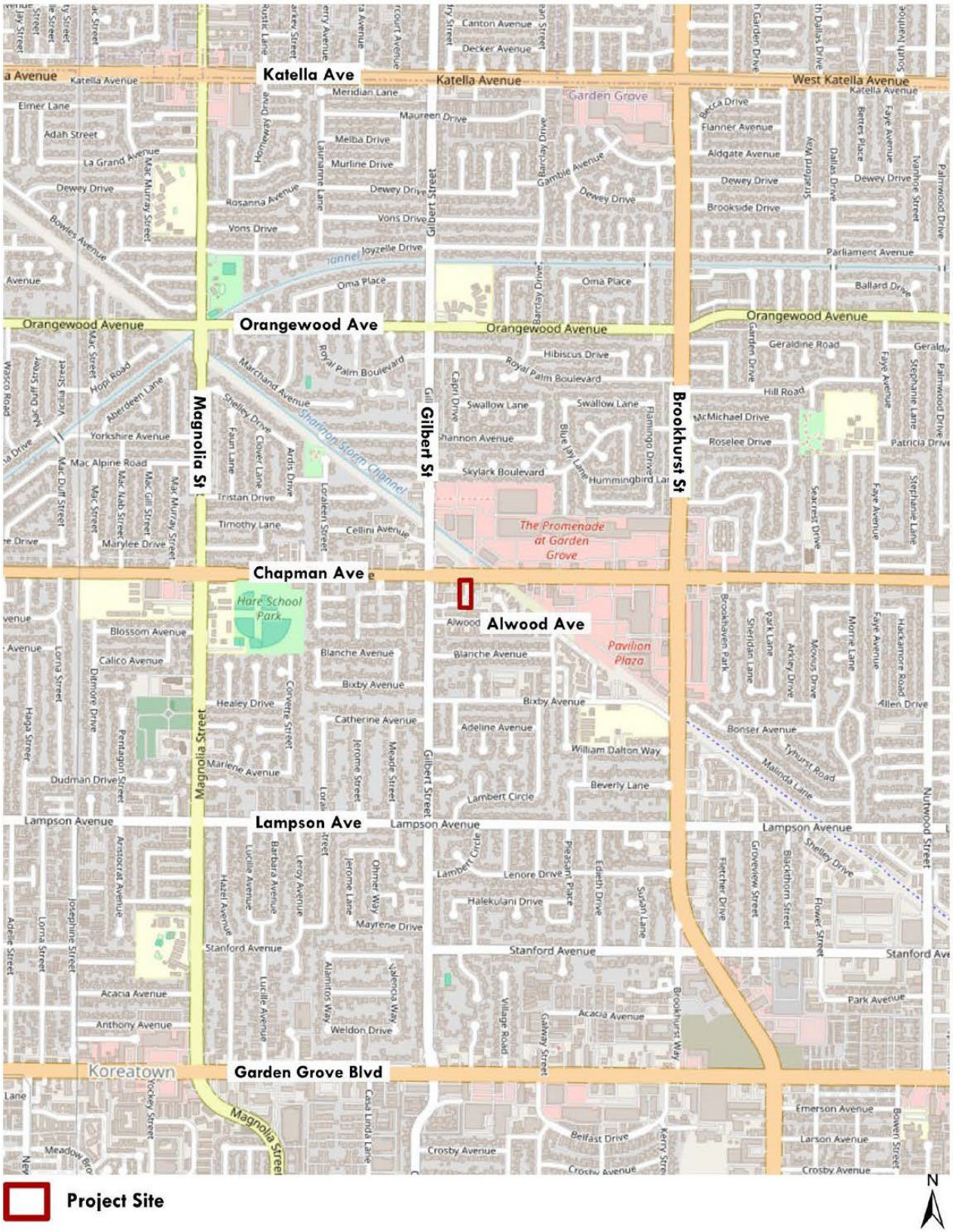
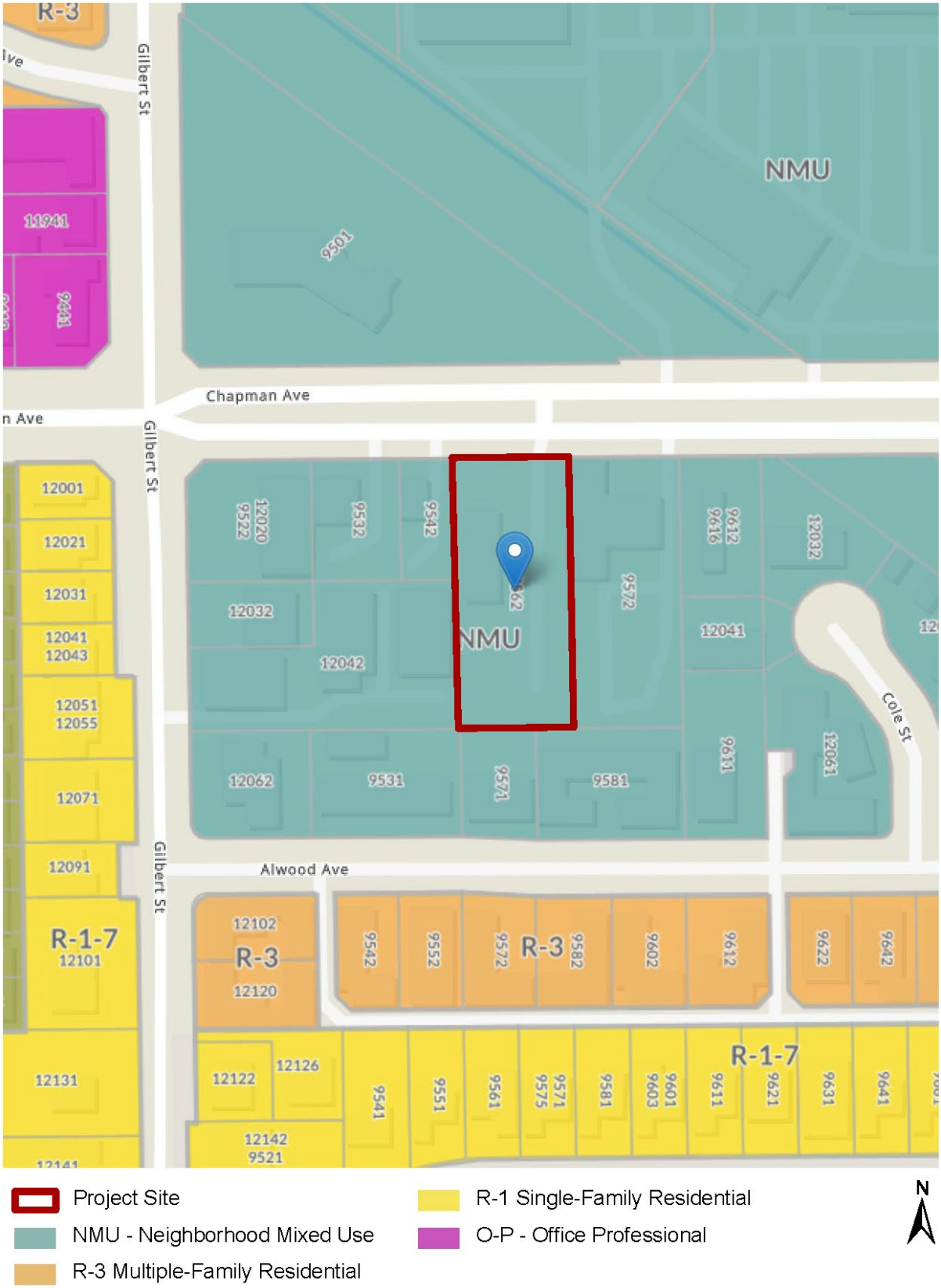


Figure 3: Aerial View

Figure 4: Project Site and Surrounding Zoning Designations



3.0 PROJECT DESCRIPTION

3.1 PROJECT OVERVIEW

The proposed Project would remove the existing pavement and remaining improvements and infrastructure from the previous restaurant and redevelop the site with 36 new for rent residential units within one building that would have one level of parking and three levels of one, two, and three-bedroom residences. The Project also includes a community room, onsite landscaped areas, and a private deck. The parking area would be accessed from a driveway along Chapman Avenue.

Four of the proposed Project's units would be Very Low Income affordable units. The base density allowed for the 0.92 gross acre site is 24 dwelling units per acre or 24 dwelling units (0.92 gross acres x 24 dwelling units per acre equals 23.18 dwelling units rounded to 24 dwelling units). By providing four Very Low Income housing (i.e., four Very-Low Income Affordable Units), which would be 16 percent of the allowable base units, the proposed Project would receive a 50 percent density bonus. With approval of the State Density Bonus Law entitlement request, the proposed Project would result in a density of 37.28 units per gross acre. The Project additionally requires approval of a Site Plan.

3.2 PROJECT FEATURES

Building Structure
The proposed Project would develop the site with a four-story multi-family residential building that would have one level of parking under three levels of one, two, and three-bedroom residences, and a rooftop deck as shown in Figure 5, *Conceptual Site Plan*. The building would have a total gross floor area of 63,047 square feet and a net floor area, as defined in the GGMC, of 42,549 square feet. The building would have a footprint of 15,496 square feet and a height of 45 feet to the roof, with rooftop structures up to 55 feet in height.

The building would be a cement and stucco structure with veneer, metal panel walls and canopies, wood awnings, and large windows. The proposed building would have a minimum front setback of six feet, minimum side setback of 10-feet, and minimum rear setback of 43 feet in compliance with Garden Grove Municipal Code (GGMC) Section 9.12.040.020 and a density bonus waiver for the front setback.

Residential Units
The proposed residences would consist of one, two, and three-bedroom units, which are detailed in Table 2 below. Each unit would each have a minimum 95 square foot balcony.

Table 2: Proposed Residential Units

Floor Plan	Bedrooms	Bathrooms	Net Area	# of Units
Unit A1	1	1	656	16
Unit A2	1+ Den	1	935	5
Unit B	2	2	935	9
Unit C	3	2	1,136	6
Total				**36**

The Project also includes a 2,217 square foot community room and a 2,843 square foot open podium on the second level of the building that would have open space amenities for residents, such as barbeques, fitness

equipment, and pet waste stations. The on-grade open space would consist of 4,000 square feet of passive/active open space that would include a basketball court, community garden, and seating areas.

Of the proposed residential units, four would be Very-Low Income Affordable Units, as defined in Section 50053 of the California Health and Safety Code. Pursuant to Govt Code Section 65915, the Project includes a density bonus (an allowance for additional units) as follows: in exchange for providing 16 percent Very Low Income Affordable Units the Project is entitled to a 50 percent density bonus. Additionally, the Project is entitled to incentives and waivers pursuant to Govt Code Section 65915.

Access, Circulation, and Parking
The proposed Project would be accessed through a 30-foot-wide driveway along Chapman Avenue, as shown in Figure 5 *Conceptual Site Plan*. An existing left-hand turn pocket on Chapman Avenue would provide left-turn access to the site for vehicles traveling west along Chapman Ave. The driveway would lead directly to a parking garage on the ground level (first floor) of the building that would include 48 vehicle parking spaces and bike racks/storage for residents. Additionally, two guest surface parking spaces are provided at the rear of the Project.

Lighting
Outdoor lighting included as part of the Project would be typical of residential uses and would consist of primarily wall-mounted lighting, entrance lighting, landscaping and sign lighting, and parking garage lighting. All the Project's outdoor lighting would be directed downward and shielded to minimize off-site spill in compliance with City's lighting regulations (GGMC Section 9.12.040.210).

Landscaping
The proposed Project would include landscaping around the proposed building and along the Chapman Avenue frontage. The landscaping would include 15-gallon and 24-inch box trees, various shrubs, and ground cover per GGMC Section 9.12.040.090. Landscaping would be drought tolerant, in compliance with the City's landscaping regulations.

Walls and Gates
The Project includes the removal of the existing walls along the east, west, and south sides of the site and would replace them with a concrete masonry unit (CMU) wall that would be 3-feet in height for the first 15-feet of wall from Chapman Avenue and then 8-feet in height around the remainder of the site.

Infrastructure Improvements
The proposed Project would provide sidewalk frontage improvements and would install new utilities on the Project site that would connect to existing offsite infrastructure that was serving the previous restaurant use.

Street: The proposed Project would remove the existing driveway and sidewalk and install a new sidewalk and site driveway along Chapman Avenue.

Water and Sewer: The proposed Project would install 6-inch water lines and sewer lines on the site that would connect to the existing 12-inch water line and 8-inch sewer line in Chapman Avenue.

Drainage: The proposed Project would install an onsite drainage and detention system to capture and treat stormwater. Stormwater on the Project site would be conveyed to landscape areas and onsite storm drains that

would drain to a proposed detention basin that would collect, treat, and slowly discharge stormwater. Excess storm runoff would flow to a proposed pump system and then discharged to the gutter along Chapman Avenue.

3.3 PROJECT CONSTRUCTION

Construction activities for the Project would occur in one phase. Per the California Emissions Estimator Model (CalEEMod) default construction timeline estimator, construction would last approximately six months. Construction would occur in the following stages that would not overlap: (1) site preparation; (2) grading and excavation; (3) building construction; (4) paving; and (5) application of architectural coatings. Construction of the Project would require removal and compaction of the upper seven to eight feet of existing soil, which includes 1,065 cubic yards (cy) of cut and 561 cy of export. Table 3 details the total working days and construction equipment used for each phase of construction for analytical modeling purposes. Project construction would not involve the use of vibratory rollers, which is consistent with CalEEMod default assumptions. Also, construction activities would be limited to the hours allowed by the GGMC Section 8.47.060(D) that limits construction activities to the hours between 7:00 a.m. to 10:00 p.m.

Table 3: Construction Schedule and Equipment

Construction Phase	Working Days	Equipment
Site Preparation	1	Grader, Tractor
Grading	11	Grader, Excavator, Plate Compactor, Rubber Tired Dozer, Tractor
Building Construction	100	Crane, Forklifts, Tractor, Loader
Paving	5	Cement and Mortar Mixers, Paver, Roller, Tractor
Architectural Coating	10	Air Compressor

3.4 GENERAL PLAN LAND USE AND ZONING

The Project site has City of Garden Grove General Plan land use designation of Residential / Commercial Mixed Use 2 (RC2). The General Plan states that the Residential / Commercial Mixed Use 2 designation provides for a mix of residential and commercial uses mostly around older underutilized, multi-tenant commercial developments. The zoning and General Plan allow projects with building heights of two to four stories (50-foot height limit) and residential densities up to 24 units per acre. Additionally, GGMC Section 9.18.100(F) allows uninhabited rooftop structures and penthouses up to 15 feet above the height limit.

The Project site has a zoning designation of Neighborhood Mixed Use (NMU), which allows for retail and service commercial businesses and moderate-density residential uses. GGMC Section 9.18.010.020 states that residential and commercial uses may be provided together as an integrated mixed use development, or standalone commercial uses are permitted. New residential development in the NMU zone is required to include a commercial component, except for properties in the NMU zone that do not have access to a principal, major, primary, or secondary arterial street (GGMC Section 9.18.010.020(C)), and except for projects with a density bonus waiver.

3.5 DISCRETIONARY APPROVALS AND PERMITS

The following discretionary approval and permits are anticipated from the City of Garden Grove to be necessary for implementation of the proposed Project:

- Approval of a Site Plan

- Approval of a Density Bonus, including concessions and waivers as follows:
    - A concession for relief from the requirement of GGMC Section 9.18.090.070 and GGMC Table 9.18-5 to provide a commercial development component with a residential project located on a principal, major, primary, or secondary arterial street.
    - A concession for relief from GGMC Section 9.18.110.030D to allow for the first habitable floor to be located in excess of four feet above existing grade.
    - A waiver of GGMC Section 9.18.090.070 to allow for a reduction of the required 15 feet front setback to six feet.
    - A waiver of GGMC Section 9.18.110.030A to allow for a reduction of the minimum unit size requirement to approximately 656 square feet in lieu of 750 square feet for the one-bedroom units.
    - A waiver for relief from GGMC Section 9.18.100.020C5 to allow for a reduction of the minimum 60 percent of area required to be landscaped in the setbacks.
- Approvals and permits necessary to execute the proposed Project, including but not limited to, grading permit, building permit, etc.

Figure 5: Proposed Project Rendering

Figure 6: Ground Level Building Plan

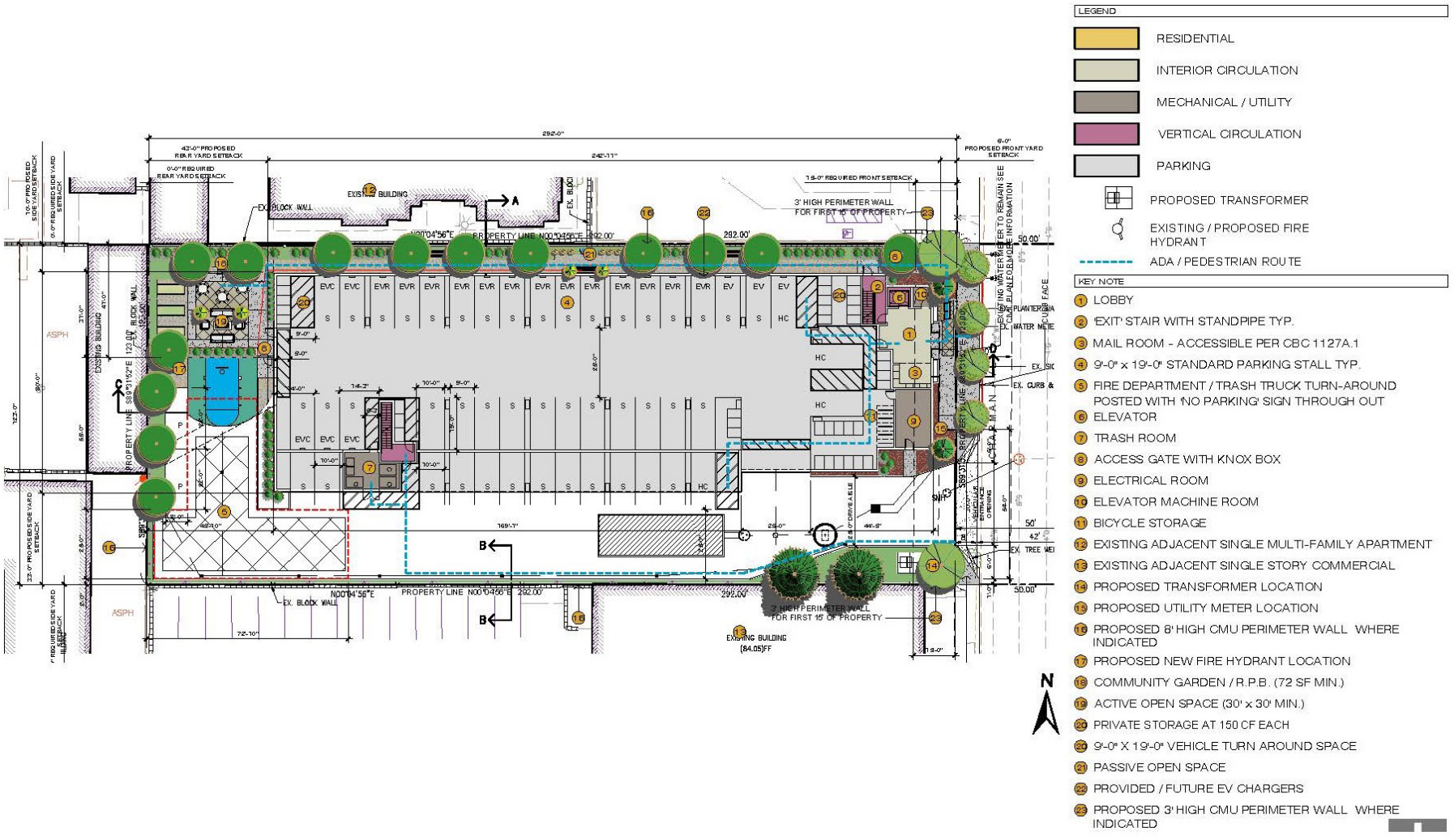


Figure 7: Second Level Building Plan

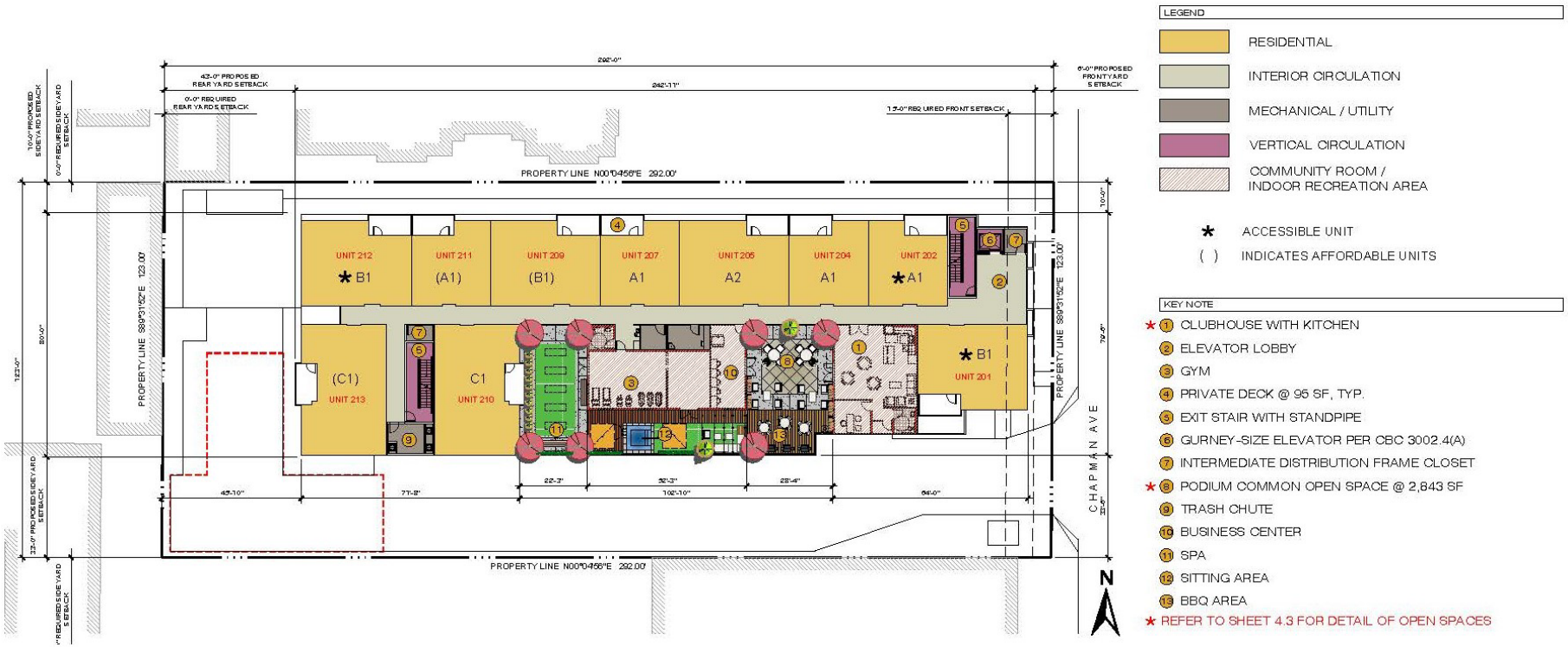


Figure 8: Third and Fourth Level Building Plan

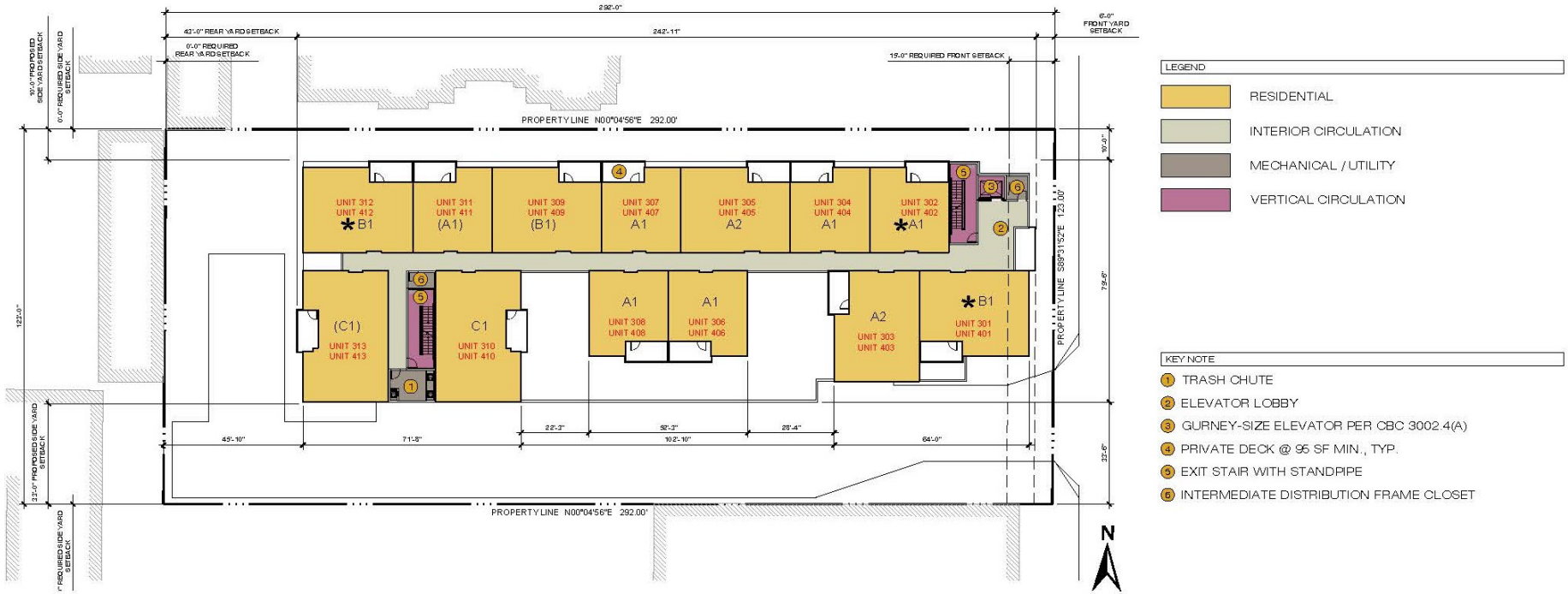
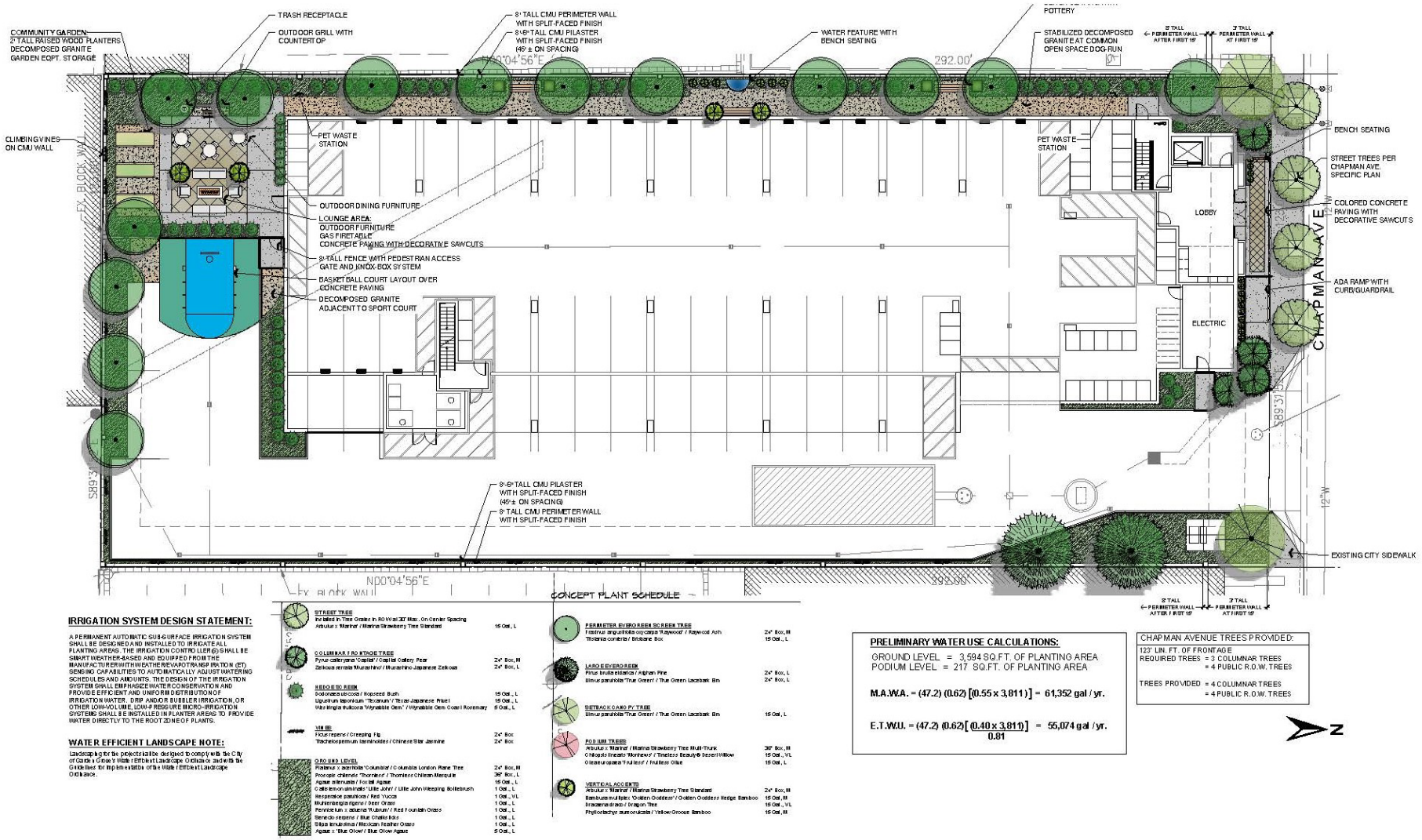


Figure 9: Building Elevations South and West

Figure 10: Building Elevations North and East

Figure 11: Conceptual Ground Level Landscape Plan



IRRIGATION SYSTEM DESIGN STATEMENT:

A PERMANENT AUTOMATIC SUB-SURFACE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED TO IRRIGATE ALL PLANTING AREAS. THE IRRIGATION CONTROLLER(S) SHALL BE SMART WEATHER-BASED AND EQUIPPED FROM THE MANUFACTURER WITH WEATHER/EVAPOTRANSPIRATION (ET) SENSING CAPABILITIES TO AUTOMATICALLY ADJUST WATERING SCHEDULES AND AMOUNTS. THE DESIGN OF THE IRRIGATION SYSTEM SHALL EMPHASIZE WATER CONSERVATION AND PROVIDE EFFICIENT AND UNIFORM DISTRIBUTION OF IRRIGATION WATER. DRIP AND/OR BUBBLER IRRIGATION, OR OTHER LOW-VOLUME, LOW-PRESSURE MICRO-IRRIGATION SYSTEMS SHALL BE INSTALLED IN PLANTER AREAS TO PROVIDE WATER DIRECTLY TO THE ROOT ZONE OF PLANTS.

WATER EFFICIENT LANDSCAPE NOTE:

Landscaping for the project shall be designed to comply with the City of Garden Grove's Water Efficient Landscape Ordinance and with the Guidelines for implementation of the Water Efficient Landscape Ordinance.

CONCEPT PLANT SCHEDULE

STREET TREE
Installed in Tree Grates in ROW at 30' Max. On Center Spacing
Arbutus x 'Marina' / Marina Strawberry Tree Standard — 15 Gal., L

COLUMNAR FOLIAGE TREE
Pyrus calleryana 'Capital' / Capital Calley Pear — 24" Box, M
Zelkova serrata 'Musashino' / Musashino Japanese Zelkova — 24" Box, L

HEDGE/SCREEN
Dodonaea viscosa / Hopseed Bush — 15 Gal., L
Ligustrum lucidum 'Tricolor' / Tricolor Japanese Privet — 15 Gal., L
Westringia fruticosa 'Wynyabbie Gem' / Wynyabbie Gem Coast Rosemary — 5 Gal., L

VINE
Ficus repens / Creeping Fig — 24" Box
Trachelospermum tamiroides / Chinese Star Jasmine — 24" Box

GROUND LEVEL
Platanus x acerifolia 'Columbia' / Columbia London Plane Tree — 24" Box, M
Prosopis chilensis 'Thornless' / Thornless Chilean Mesquite — 36" Box, L
Agave attenuata / Foxtail Agave — 15 Gal., L
Callistemon viminalis 'Little John' / Little John Weeping Bottlebrush — 1 Gal., L
Hesperaloe parviflora / Red Yucca — 1 Gal., VL
Muhlenbergia rigens / Deer Grass — 1 Gal., L
Pennisetum x advena 'Rubrum' / Red Fountain Grass — 1 Gal., L
Senecio serpens / Blue Chalksticks — 1 Gal., L
Stipa tenuissima / Mexican Feather Grass — 1 Gal., L
Agave x 'Blue Glow' / Blue Glow Agave — 5 Gal., L

PERIMETER EVERGREEN SCREEN TREE
Firmiana angustifolia cv-cerpa 'Raywood' / Raywood Ash — 24" Box, M
Tristania conferta / Brisbane Box — 15 Gal., L

LARGE EVERGREEN
Pinus brutia eldarica / Afghan Pine — 24" Box, L
Ulmus parvifolia 'True Green' / 'True Green Lacebark Elm — 24" Box, L

SETBACK CANOPY TREE
Ulmus parvifolia 'True Green' / 'True Green Lacebark Elm — 15 Gal., L

PODIUM TREES
Arbutus x 'Marina' / Marina Strawberry Tree Multi-Trunk — 36" Box, M
Chilopsis linearis 'Monhews' / 'Timeless Beauty® Desert Willow — 15 Gal., VL
Olea europaea 'Fruitless' / 'Fruitless Olive — 15 Gal., L

VERTICAL ACCENTS
Arbutus x 'Marina' / Marina Strawberry Tree Standard — 24" Box, M
Bambusa multiplex 'Golden Goddess' / 'Golden Goddess Hedge' Bamboo — 15 Gal., M
Dracaena draco / Dragon Tree — 15 Gal., VL
Phyllostachys aureosulcata / Yellow Grooved Bamboo — 15 Gal., M

PRELIMINARY WATER USE CALCULATIONS:

GROUND LEVEL = 3,594 SQ.FT. OF PLANTING AREA
PODIUM LEVEL = 217 SQ.FT. OF PLANTING AREA

$$M.A.W.A. = (47.2)\,(0.62)\,[(0.55 \times 3{,}811)] = 61{,}352 \text{ gal / yr.}$$

$$E.T.W.U. = (47.2)\,(0.62)\left[\frac{(0.40 \times 3{,}811)}{0.81}\right] = 55{,}074 \text{ gal / yr.}$$

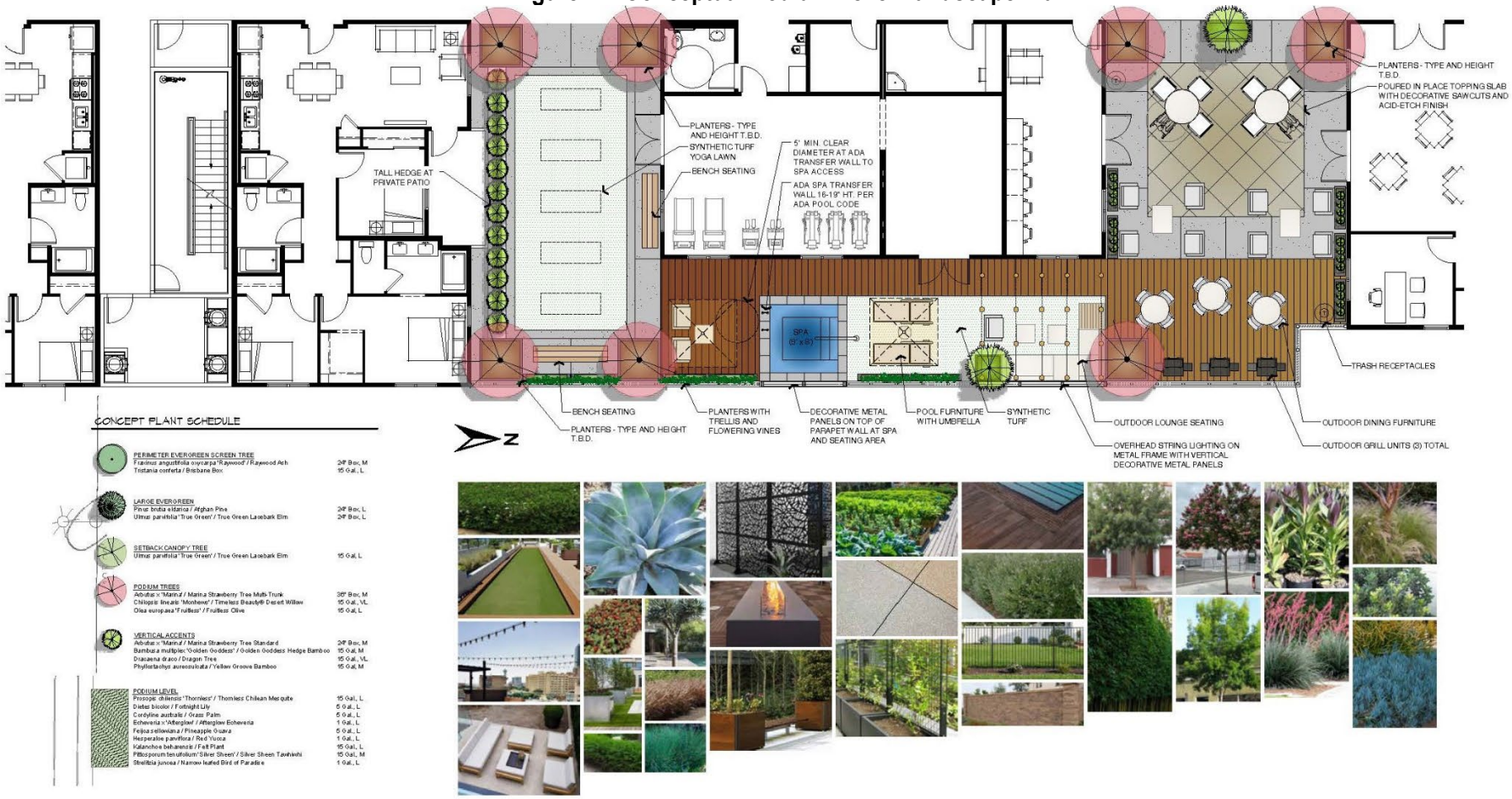
CHAPMAN AVENUE TREES PROVIDED:

123' LIN. FT. OF FRONTAGE
REQUIRED TREES = 3 COLUMNAR TREES
= 4 PUBLIC R.O.W. TREES

TREES PROVIDED = 4 COLUMNAR TREES
= 4 PUBLIC R.O.W. TREES

N

Figure 12: Conceptual Podium Level Landscape Plan



4.0 CLASS 32 INFILL EXEMPTION REQUIREMENTS

Article 19 of the California Environmental Quality Act (CEQA Guidelines Sections 15300 to 15333), includes a list of classes of projects that have been determined to not have a significant effect on the environment and as a result, are exempt from review under CEQA.

Class 32 Infill Exemption
One class of projects exempt from CEQA review includes projects that are characterized as urban infill development. CEQA Guidelines Section 15332 defines the Class 32 Infill Exemption as a project that meets the following five requirements:

a) The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

b) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.

c) The project site has no value as habitat for endangered, rare, or threatened species.

d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

e) The site can be adequately served by all required utilities and public services.

Exceptions
In addition to meeting the requirements listed above, the CEQA Guidelines Section 15300.2 provides specific instances where exceptions apply to a project that would otherwise meet the requirements for an exemption. These exceptions are:

a) Location: Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located – a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply in all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

b) Cumulative Impact: All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.

c) Significant Effects: A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

d) Scenic Highways: A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.

e) Hazardous Waste Sites: A categorical exemption shall not be used for a project located on a site which is included on any list complied pursuant to Section 65962.5 of the Government Code.

f) Historical Resources: A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.

5.0 PROPOSED PROJECT CEQA EXEMPTION

The analysis below provides substantial evidence that the Project properly qualifies for an exemption under CEQA Guidelines Section 15332 (i.e., Class 32) and, as a result, would not have a significant effect on the environment. Additionally, the analysis shows there are no exceptions to qualifying for the categorical exemption, as identified in CEQA Guidelines Section 15300.2(b)-(f).

a. Criterion Section 15332(a): General Plan and Zoning Consistency: *The Project is consistent with the applicable General Plan designation and all applicable General Plan policies as well as with applicable zoning designation and regulations.*

The Project site has a City of Garden Grove General Plan land use designation of Residential / Commercial Mixed Use 2 (RC2) and a zoning designation of Neighborhood Mixed Use (NMU), which both allow residential development up to 24 dwelling units per acre.[1] Based on the 0.97 gross acre site, the base permitted density is 23.18 dwelling units, rounded to 24 dwelling units. State Density Bonus Law (Government Code Section 65915(f)(2)) states that a housing development is eligible for up to a 50 percent density bonus if 15 percent of the base units allowed under the zoning are reserved for Very Low-Income households.

As a result of including 16 percent of the base (4 dwelling units) as Very-Low Income units, the Project would be entitled to a density bonus of 50 percent. The Project includes 36 residential units, four of which are restricted for Very-Low Income households. Thus, the resulting Project density would be within the allowable density with application of the density bonus.

Density bonus housing developments are also eligible for development incentives/concessions (per Government Code Section 65915(d)), waivers (per Government Code Section 65915(e)), and reduced parking standards. As a result of providing 16 percent Very Low-Income dwelling units, the Project would have four incentives, plus waivers of development standards (per Government Code Section 65915(e)) that would physically preclude the Project as proposed.

Table 4 shows the Project's consistency with the Neighborhood Mixed Use (NMU) zoning development standards per GGMC 9.18.090.070 and 9.18.110. As shown, with application of the allowable density bonus and development concessions and waivers, the proposed Project would meet all of the applicable land use and zoning development standards. Therefore, the Project would be consistent with the applicable regulations and meet the criteria of CEQA Guidelines Section 15332(a).

Table 4: Consistency with Applicable Zoning Development Standards

Development Feature	General Plan or Zoning Requirement	Proposed Project Consistency
Development Standards for the Neighborhood Mixed Use Zone per GGMC 9.18.090.070		
Commercial Component	Provide a commercial development component to a residential project located on a principal, major, primary, or secondary arterial street.	**Consistent.** The Project is located on an arterial street but would not provide a commercial development component of a minimum 0.2 FAR, which would be allowable with a density bonus

[1] See Garden Grove Land Use Element, Table 2-2.

Development Feature	General Plan or Zoning Requirement	Proposed Project Consistency
		incentive per Government Code Section 65915(d).
Minimum Lot Size	15,000 square feet	**Consistent.** The Project site is approximately 42,066 square feet and meets the required minimum lot size. Thus, the Project is consistent with this requirement.
Minimum Lot Width	75 feet	**Consistent.** The width of the Project site is approximately 126 feet and meets the required lot width. Thus, the Project is consistent with this requirement.
Density	Up to 24.0 dwelling units per acre	**Consistent.** With application of a density bonus of 50 percent for providing at least 15 percent of the units reserved for Very-Low Income households, with rounding, the Project density of 36 units per gross acre would be within the allowable density. Thus, the Project is consistent with this requirement.
Front Setback	15 foot minimum	**Consistent.** The proposed building would have a front setback of 6 feet, which would be allowable with a density bonus waiver per Government Code Section 65915(e).
Rear Setback	10 foot minimum when abutting residential zoning	**Consistent.** The proposed building would have a rear setback of 43 feet, which exceeds the 10-foot minimum adjacent to residential uses. Thus, the Project is consistent with this requirement.
Maximum Building Height	50 feet or 4 stories	**Consistent.** The maximum building height of 4-stories and 45-feet is less than the 50-foot maximum. Please note that allowable rooftop appurtenances would be up to ten feet above the proposed building height, even though the GGMC allows rooftop appurtenances up to 15 feet above the height limit. Thus, the Project is consistent with this requirement.
Maximum Building Footprint	40,000 square feet	**Consistent.** The Project would have a footprint of 15,496 square feet that would be less than the 40,000 square foot maximum. Thus, the Project is consistent with this requirement.
Pedestrian-Oriented Plaza	Each project in the NMU zone shall provide a pedestrian plaza, except for projects that	**Consistent.** The Project is 100% residential and would not be required to have a plaza. However, the Project would have a 2,843 square foot open

Development Feature	General Plan or Zoning Requirement	Proposed Project Consistency
	are 100% residential, in which case the plaza shall not be required.	podium on the second level of the building that would have open space amenities for residents, such as barbeques, fitness equipment, and pet waste stations. Also, the Project would provide 4,000 square feet of on-grade passive/active open space.
Development Standards for Specific Uses in Mixed Use Zones per GGMC 9.18.110		
Minimum Dwelling Unit Area	Minimum unit size of: 750 square feet for one-bedroom units 900 square feet for two-bedroom units 1,050 square feet for three-bedroom units	**Consistent.** The Project proposes 656 square foot one bedroom units, which would be allowable with a density bonus waiver per Government Code Section 65915(e). The proposed two-bedroom units would be a minimum of 935 square feet and be consistent with this requirement. The proposed three-bedroom units would be a minimum of 1,136 square feet and be consistent with this requirement.
Residential Building Setbacks.	10 feet from the rear property line and interior side property line	**Consistent.** The proposed building would have a rear setback of 43 feet, which exceeds the 10-foot minimum adjacent to residential uses. The proposed building would also have a minimum side setback of 10 feet. Thus, the Project is consistent with this requirement.
Elevation of First Habitable Floor	First habitable floor of a residential only building to be located no more than four feet above the existing grade	**Consistent.** The proposed building would have the first habitable floor at the second level to allow ground level parking under the residential structure, which would be allowable with a density bonus concession per Government Code Section 65915(d).
Minimum Floor-to-Floor Height.	The minimum floor-to-floor height of residential spaces shall be nine feet six inches.	**Consistent.** The minimum floor-to-floor height of the proposed residential units is 10 feet 6 inches.
Open Space and Recreation	Minimum 300 square feet per dwelling unit, including minimum area of 60 square feet of private open space per unit	**Consistent.** The Project would provide a total of approximately 12,564 square feet of open space, inclusive of approximately 3,504 of private open space, exceeding the 10,800 square foot total open space and 2,160 square foot private open space requirement.
Landscape Setbacks	Minimum setback area to be landscaped 60%	**Consistent.** The Project proposes 32.1% of the setback to be landscaped, which would be allowable with a density bonus waiver per Government Code Section 65915(e).

As described in Section 3.4, *General Plan Land Use and Zoning* of this document, the Land Use Element of the General Plan designates the Project site as Residential / Commercial Mixed Use 2 (RC2). The Land Use Element states that this designation will add residential to encourage revitalization around older underutilized, multi-tenant commercial developments. The Land Use Element identifies development in the RC2 area to be two to four stories with a 50-foot height limit.

The Project would revitalize the Project site that is currently vacant and was previously developed with an older commercial use. The Project would provide one- and two-bedroom residential units in proximity to schools and other community services with high-quality architectural design. The Project includes common open space and recreational amenities that would be in close proximity to retail commercial and services. The Project would encourage revitalization as the Project would increase in residential property valuation in the Project vicinity.

The Project is also consistent with applicable General Plan Land Use Element and Housing Element goals and policies as detailed below.

Goal LU-1, Well-Planned Growth with a Mix of Uses: The City of Garden Grove is a well-planned community with sufficient land use and intensities to meets the needs of anticipated growth and achieve the community's vision.

Policy LU-1.1: Identify appropriate locations for residential and non-residential development to accommodate growth through the year 2030 on the Land use Diagram (Exhibit LU-3).

Consistent: The Project would include residential development consistent with the Residential / Commercial Mixed Use 2 (RC2) designation and with a density bonus pursuant to State Density Bonus Law.

Policy LU-1.2: Encourage modern residences in areas designated as Mixed Use. Mixed-use housing should minimize impacts on designated single-family neighborhoods.

Consistent: The proposed multi-family building would develop modern residences in an area with mixed-uses that includes commercial retail, restaurant, office, and automotive. The Project site is not adjacent to single-family residential and is not within a single-family neighborhood. The Project demonstrates a commitment to minimizing impacts on designated single-family neighborhoods. Concentrating higher-density housing avoids encroaching on single-family neighborhoods, preserving their character while still meeting the City's housing demands.

Policy LU-1.3: Support the production of housing citywide that is affordable to lower-and moderate-income households consistent with the policies and targets set forth in the Housing Element.

Consistent: The Project, in addition to market rate units, also includes four Very Low Income units, supporting the production of housing that is affordable to those households. The 2021-2029 Regional Housing Needs Assessment (as detailed in the Housing Element) identifies that the City is obligated to accommodate 4,166 Very Low Income units and 8,999 Above Moderate Income units. The Project would assist the City in achieving its RHNA targets, as outlined in the Housing Element.

Policy LU-1.11: Promote future patterns of urban development and land use that reduce infrastructure construction costs and make better use of existing and planned public facilities.

Consistent: The residential development on Chapman Avenue on a previously developed site constitutes infill development that would reduce infrastructure construction costs. Utility infrastructure already exists in the area, including stormwater, water, electricity, gas, cable, sewer, etc. As such, the Project would assist in reducing infrastructure construction costs and make use of existing and planned public facilities.

Goal LU-2 Stable, well-maintained residential neighborhoods in Garden Grove

Policy LU-2.1: Protect residential areas from the effects of potentially incompatible uses. Where new commercial or industrial development is allowed adjacent to residentially zoned districts, maintain standards for circulation, noise, setbacks, buffer areas, landscaping, and architecture which ensure compatibility between the uses.

Consistent: The Project constitutes residential development. It would not constitute industrial or commercial development, and there would be no threat to the protection of residential areas from potentially incompatible uses. The Project includes walls, setbacks, and landscaping, as well as architectural detailing to ensure compatibility with surrounding uses.

Policy LU-2.2: Strive to provide a diverse mix of housing types, along with uniformly high standards of residential property maintenance to preserve residents' real estate values and their high quality of life.

Consistent: The Project would provide high-quality new multi-family development with a diverse mix of unit types for a variety of households with varying sizes. Further, the Project would provide open space, new landscaping, and amenities that would preserve and enhance real estate values and a high quality of life.

Goal LU-3, Multi-Family Developments: 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.

Policy LU-3.1: Preserve existing and encourage new multi-family residential development in the Focus Areas, allowing mixed use in older or underutilized commercial centers. Such housing provides convenient access to jobs and activities and supplies a resident clientele to support commercial sales and services in mixed-use areas.

No Conflict: The Project would add residential units to an underutilized area along Chapman Avenue near Brookhurst Street. This housing is conveniently located near a variety of retail commercial uses that would support residential needs.

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.

Consistent: This development provides a mix of unit types (1-bedroom units, 2-bedroom units, and 3-bedroom units) that allow for a diversity in household types all within one building. In addition, four dwelling units are designated Very Low Income units, which allow for a diversity of incomes within one building.

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

Consistent: This Project provides 36 units and meets the maximum allowable density, using a density bonus to go above that density and provide affordable housing at the same time.

Goal LU-4, Land Use Compatibility: Uses compatible with one another.

Policy LU-4.1: Locate higher-density residential uses within proximity of commercial uses to encourage pedestrian traffic, and to provide a consumer base for commercial uses.

Consistent: The proposed Project would provide a higher-density residential use along Chapman Avenue that is within walking distance to a variety of nearby stores, restaurants, and job sites. The residents of the site would provide a permanent commercial base for nearby businesses.

Policy LU-4.2: Ensure that infill development is well planned and allows for increased density in Focus Areas along established transportation corridors.

Consistent: The proposed Project is a well planned infill development that increases residential density near a major established transportation corridor; OCTA Route 54 provides frequent service along Chapman Avenue and Bus Route 35 provides frequent services along Brookhurst Street.

Policy LU-4.3: Allow for mixed-use development at varying intensities in Focus Areas as a means of revitalizing underutilized parcels.

Consistent: This development is consistent with providing mixed-use development at various intensities in Focus Areas. The Project would revitalize the underutilized Project site with new residential uses. The Project provides an increase in density that would revitalize the parcel. New residents would be able to walk to and shop at nearby businesses.

Policy LU-4.4: Avoid intrusion of non-residential uses incompatible with established residential neighborhoods.

Consistent: The Project would develop new residences and does not involve new non-residential uses and is consistent with this policy in that it does not result in intrusion of non-residential uses incompatible with established residential neighborhoods.

Goal H-2, Affordable Housing: Housing supply to accommodate housing needs at all affordability levels.

Policy H-2.1: Expanding Affordable Housing. Preserve and expand the City's supply of affordable rental and ownership housing for lower-income households.

Consistent: The proposed Project would increase the supply of affordable housing for lower income households, as it includes four dwelling units for Very Low Income households.

Goal H-3, Adequate Housing Sites: A range of available housing types, densities, and affordability levels to meet diverse community needs.

Policy H-3.6: Housing Near Transit. Encourage transit-oriented development consisting of higher residential densities, public gathering places, streetscape amenities, and commercial and entertainment uses within walking distance of planned rail stations and high-frequency bus stops.

Consistent: The Project would provide new higher density residential along a major thoroughfare with high frequency bus service. OCTA provides Route 54 service along Chapman Avenue and Bus Route 35 services along Brookhurst Street. The adjacency of commercial businesses also encourages walkability.

Policy H-3.7: Infill Housing. Encourage infill housing development that is compatible in character with established residential neighborhoods.

Consistent: The proposed Project consists of infill housing that is compatible in character with the established residential neighborhoods. There are existing multi-family dwelling units immediately to the southwest and south side of the Project site, as well as other multi-family residential uses in the surrounding neighborhood. The Project is compatible with and does not conflict with the multi-family residential uses in the area.

b. Criterion Section 15332(b): Project Location, Size, and Context: *The proposed development occurs within City limits on a Project site of no more than five acres substantially surrounded by urban uses.*

The Project is within the City limits of the City of Garden Grove, on an approximately 0.97 gross acre site. As shown in Figure 3 and detailed in Section 2.4, the site is surrounded by urban uses. Chapman Avenue is to the north, and commercial retail, office, and multi-family residential uses are to the east, west, and south. As the Project site is less than five acres and surrounded by urban uses, it meets the criteria of CEQA Guidelines Section 15332(b).

c. Criterion Section 15332(c): Endangered, Rare, or Threatened Species: *The Project site was determined to have no value as habitat for endangered, rare, or threatened species.*

The 0.97-acre Project site was previously completely developed as a restaurant with a large asphalt parking lot. It is now completely vacant with areas of soil, weeds, and pavement and does not include any trees or landscaping. The previous improvements on the site have been demolished and cleared from the site, and previous landscaping has been removed. The site is bound by existing walls along the south, east, and west sides of the site, and a sidewalk and Chapman Avenue to the north. The entire Project site has been disturbed by previous development and all previous vegetation has been removed; currently, only areas of soil, weeds, and pavement exist. The site does not contain any sensitive habitat, endangered, rare, or threatened species, or habitat that could support sensitive species. The Project site is located within an urban area and surrounded by developed uses that do not contain natural areas. There are no California Department of Fish and Wildlife (CDFW), United States Army Corps of Engineers (USACE), or Regional Water Quality Control Board (RWQCB) jurisdictional waters within the Project site boundaries or adjacent to the site; and that the site does not contain any wetlands or vernal pools. Thus, no aquatic, riparian, or wetland related resources would be impacted by the proposed Project. In addition, all development in the City is required to comply with established laws and regulations regarding the protection of migratory or sensitive wildlife (e.g., federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code Sections 3503.5, 3511, and 3515) that would be implemented through the City's standard conditions of approval and development permitting process.

The proposed Project site has no value as habitat for endangered, rare, or threatened species and meets the criteria of CEQA Guidelines Section 15332(c).

d. Criterion Section 15332(d): Significant Effects: *Approval of the Project would not result in any significant effects relating to traffic, noise, air quality, or water quality.*

TRAFFIC

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

Construction

Construction activities associated with the Project would generate vehicular trips from construction workers traveling to and from the Project site and delivery and hauling of construction supplies to, and debris and recyclable solid waste from, the Project site. The CalEEMod modeling completed for the Project (Appendix D) found that the building construction phase would generate the most vehicular trips, with a total of 52 worker and 8 vendor trips per day. As detailed in Table 2, *Construction Schedule*, CalEEMod defaults estimate that building construction would occur over 100 working days. Should all of the workers and vendors arrive and leave the site during the AM and PM peak hours, it would result in 30 trips per peak hour over those 100 work days of maximum construction activity.

The construction related trips would be temporary and generally travel from SR-22 and either the Magnolia Street or Brookhurst Street interchanges. Both Magnolia Street and Brookhurst Street provide direct access to Chapman Avenue to the west or east of the Project site. Direct access from the freeway and arterial streets to the site would provide for efficient construction trips on existing roadway facilities, that would not result in a conflict with a program, plan, ordinance, or policy addressing the circulation system. Impacts would be less than significant.

Operation

Roadway Facilities. The Project proposes to redevelop the site with 36 multi-family residences. A Project trip generation was prepared using trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition (2021) for Multi Family Housing Low Rise (ITE Land Use Code 220). As shown in Table T-1, the proposed 36 residential units are forecast to generate 243 daily vehicle trips, 14 a.m. and 18 p.m. peak hour vehicle trips.

Table T-1: Project Trip Generation

				AM Peak Hour			PM Peak Hour		
Land Use		**Units**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Project Trip Rate									
Multifamily Housing (Low-Rise)[1]		DU	6.74	0.10	0.30	0.40	0.32	0.19	0.51
Proposed Project Trip Generation									
Multifamily Housing (Low-Rise) [1]	36	DU	243	3	11	14	11	7	18
Total Trip Generation			**243**	**3**	**11**	**14**	**11**	**7**	**18**

[1] Trip Generation & Vehicle Mix Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).
Source: LOS Screening Analysis, Appendix A.

Direct access from the freeway and arterial streets to the site would provide for efficient operational trips on existing roadway facilities, that would not result in a conflict with a program, plan, ordinance, or policy addressing the circulation system. Impacts would be less than significant.

Pedestrian Facilities. Sidewalks currently exist on both sides of Chapman Avenue along the Project frontage and nearby areas, such as along Gilbert Street to the west and along Brookhurst Street to the east. The proposed Project would provide for pedestrian circulation by constructing new onsite sidewalks and pathways that would provide pedestrian access to the onsite open space areas and connect to the existing offsite sidewalks along Chapman Avenue. The Project would provide onsite pedestrian circulation to facilitate use of

the existing offsite sidewalks; and therefore, impacts related to pedestrian facilities or a conflict with a program, plan, ordinance, or policy related to pedestrian facilities would not occur.

Bicycle Facilities. There are no existing bicycle lanes located along Chapman Avenue. However, there are existing bicycle lanes along Gilbert Street to the west (north of Chapman Avenue) and along Brookhurst Street to the east. The Project does not involve changes to the existing bicycle lanes and includes installation of bicycle racks for community use to encourage bicycle transportation. As a result, the Project would not result in impacts related to bicycle circulation.

Transit Service. Transit service within the City is provided by the Orange County Transportation Authority (OCTA). Bus Route 54 provides service along Chapman Avenue and Bus Route 35 provides services along Brookhurst Street. The existing bus services would provide efficient transportation to and from the site for residents and visitors and has the potential to reduce vehicle miles traveled. In addition, because the Project is located along existing bus routes and within an existing mixed-use corridor it would not result in the need to expand the existing transit service area. Overall, impacts related to transit services would not occur from implementation of the proposed Project.

(b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

CEQA Guidelines Section 15064.3 - Determining the Significance of Transportation Impacts, provides lead agencies with the discretion to choose the most appropriate methodology and thresholds for evaluating VMT. The City of Garden Grove Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment provides screening thresholds to identify projects that would be presumed to have a less than significant impact on VMT, which include being within a Transit Priority Area, being within a low traffic analysis zone (TAZ), or being a local-serving project.

A VMT Screening Analysis was prepared and is included as Appendix B, and the Project's consistency with these screening thresholds is explained below.

Transit Priority Area. The City's VMT screening thresholds identify that projects in a Transit Priority Area, which are locations within 0.5 mile of an existing major transit stop (an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 20 minutes or less during the morning and afternoon peak commute periods) or an existing stop along a high-quality transit corridor would have a less than significant impact on VMT.[2] However, the City guidelines state that the project may not meet the screening threshold if the following project or location specific criteria are met:

- Has a Floor Area Ratio (FAR) of less than 0.75;
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
- Replaces affordable residential units with a smaller number of moderate or high-income residential units.

[2] As of January 1, 2025 the state law changed to a headway of every 20 minutes per Assembly Bill 2553, Friedman.

As shown in Figure T-1, *Transit Priority Area*, the Project site is located in a Transit Priority Area and in a SCAG high-quality transit corridor (Figure T-2). The proposed building would have a net total floor area of 42,549 square feet on the approximately 35,916 square feet Project site (net), which would result in a FAR of 1.18, which would exceed 0.75. With the lower parking ratios of State Density Bonus Law applied here, the proposed Project does not include excess parking.

The Project is consistent with the SCAG Connect SoCal 2024 Regional Transportation Plan/Sustainable Communities Strategy that provides for infill and redevelopment of higher density residential uses within mixed-use areas that are served by transit. Connect SoCal 2024 Policy 32 promotes the growth of origins and destinations, with a focus on future housing and population growth, in areas with existing and planned urban infrastructure that includes transit and utilities. The Project is consistent with this policy as it provides new housing and population in an urban area with infrastructure, transit, and utilities. Connect SoCal 2024 Policy 36 encourages housing development in transit-supportive and walkable areas (such as the Project area) to create more interconnected and resilient communities. Connect SoCal 2024 Policy 42 promotes 15-minute communities as places with a mix of complementary land uses and accessible mobility options where residents can either access their most basic, day-to-day needs within a 15-minute walk, bike ride or roll from their home or as places that result in fewer and shorter trips because of the proximity of complementary land uses, which is consistent with the complementary residential and commercial uses in the Project vicinity.

In addition, the Project provides affordable residential units on a site that was not previously used for affordable housing. Therefore, the Project meets the Transit Priority Area screening criteria, and impacts would be less than significant.

Low VMT Traffic Analysis Zone. The City's VMT screening thresholds identify that projects in a low VMT TAZ would be presumed to have a less than significant impact on VMT. Per the City of Garden Grove Traffic Impact Analysis Guidelines for VMT and Level of Service Assessment, projects located in Zone 1 areas can be presumed not to have a significant VMT impact and can be screened from VMT analysis; and Zone 2 identifies VMT areas that are more efficient than the county average, but not as efficient as Zone 1 areas and that projects in these areas may or may not have a VMT impact and that impact level verification is required.

As shown in Figure T-3, *Low VMT Generating Traffic Analysis Zones*, the Project site is located in Zone 2 that has been identified as having a VMT that is lower than County average, but Projects in the area need to verify the significance of potential impacts. As described under Screening Criteria 1, the Project is located within a TPA (with meeting criteria) which verifies that the Project would not result in a significant VMT impact. Therefore, the Project meets Screening Criteria 2, and impacts would be less than significant.

Local Serving Projects. The City's VMT screening thresholds state that "local-serving retail development tends to shorten trips and reduce VMT." The screening thresholds specify that retail development includes stores smaller than 50,000 square feet, such as gas stations, banks, restaurants, and shopping centers. In addition, projects which would generate fewer than 110 average daily vehicle trips would not cause a substantial increase in the total citywide or regional VMT. As shown in Table T-1, the Project would generate 243 daily trips, which is more than 110 daily vehicle trips. Therefore, Screening Criteria 3 is not met.

Overall, because the Project is located both within a Transit Priority Area and within a lower VMT TAZ, it meets the City's VMT screening criteria, and the Project would result in a less than significant impact related to VMT.

Figure T-1: Transit Priority Area

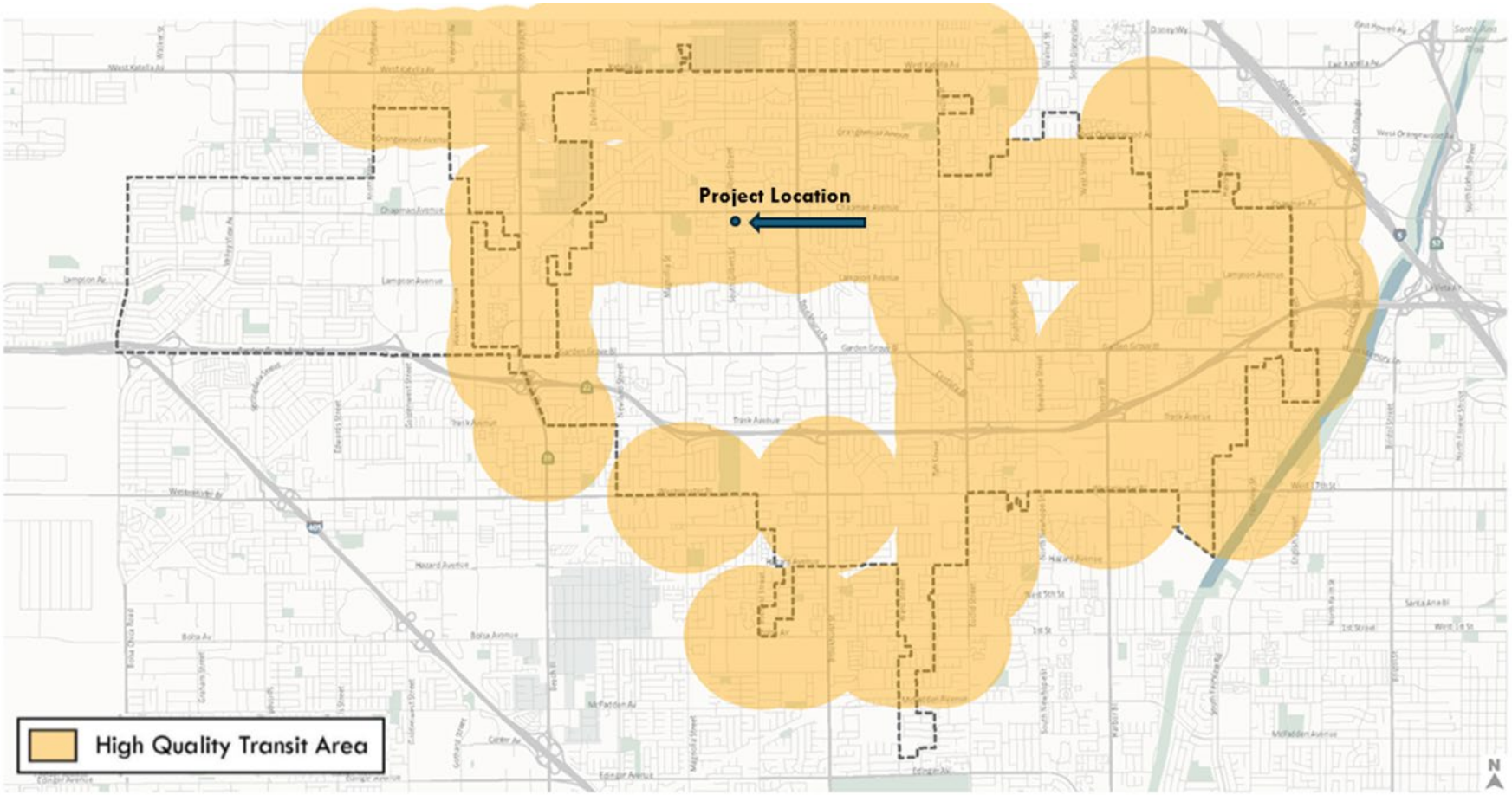


Figure T-2: SCAG 2045 High Quality Transit Areas

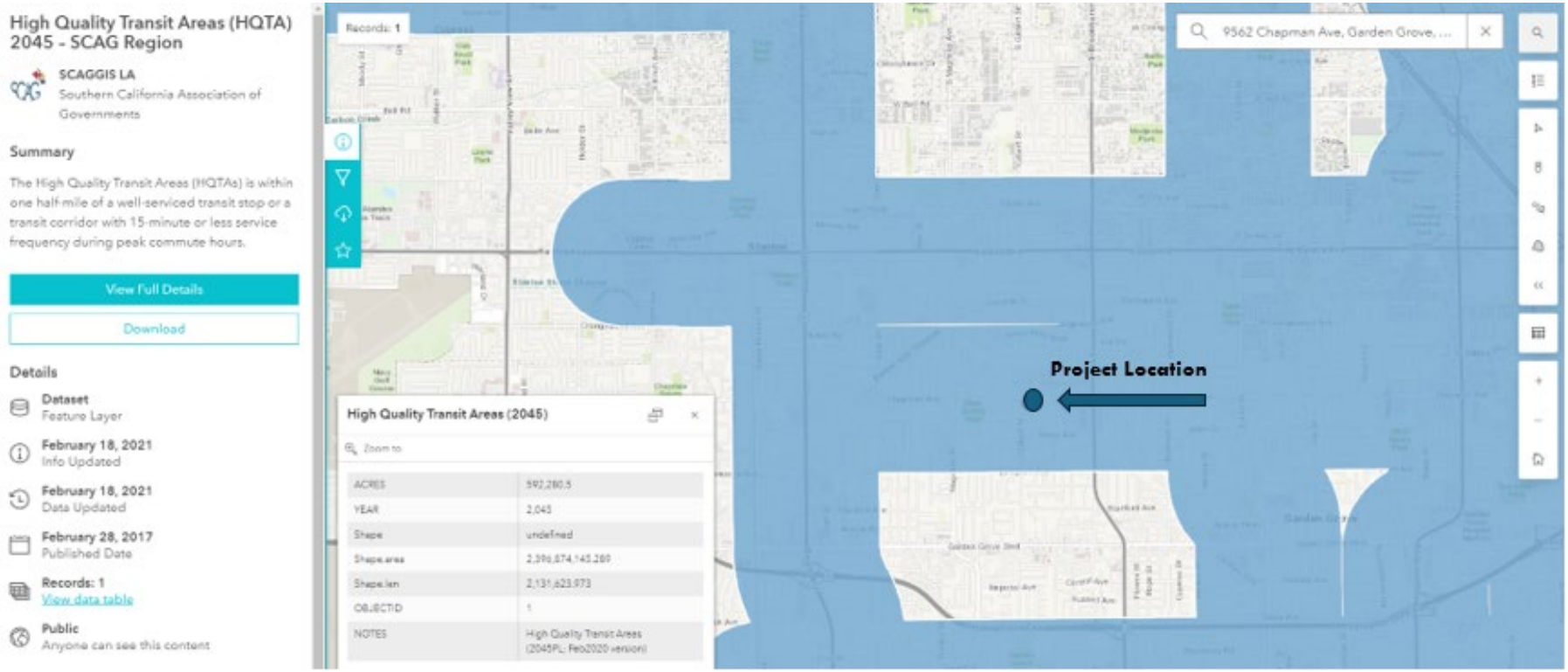
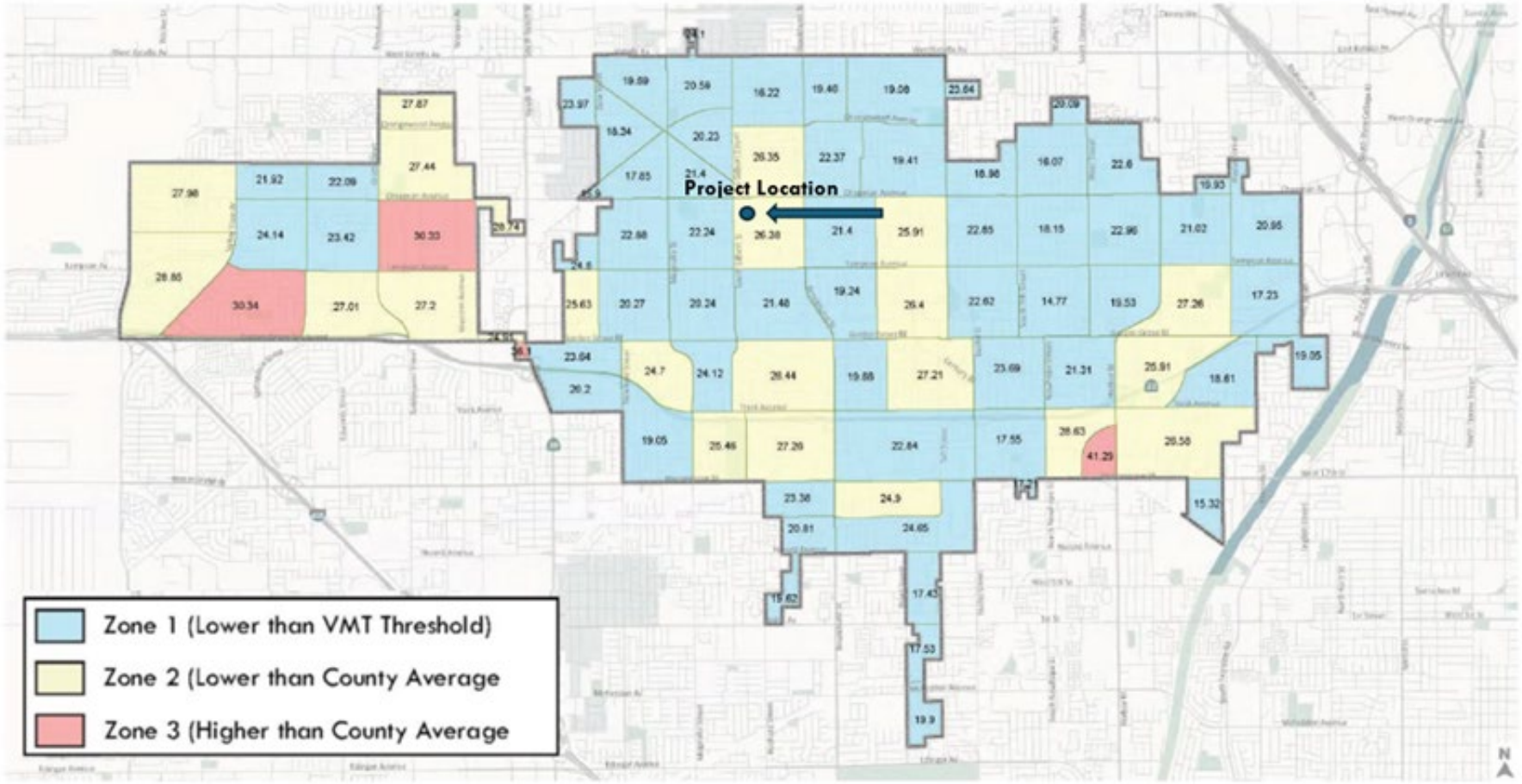


Figure T-3: Low VMT Generating Traffic Analysis Zone



Orange County Average VMT/SP: 29.01

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

The Project includes development of residences, open space, recreation, and circulation and parking. The Project includes only residential uses and does not include any incompatible uses, such as farm equipment.

The proposed Project site would be accessed from Chapman Avenue through a 30-foot-wide driveway. Onsite vehicular circulation would be provided by a drive isle that would be a minimum of 25 feet in width. Pedestrian circulation would be provided by an onsite sidewalk that would link the proposed recreation and open space areas and the existing offsite sidewalk along Chapman Avenue.

The Project would also not increase any hazards related to a design feature. The City's construction permitting process includes review of project plans to ensure that no potentially hazardous transportation design features would be introduced by the Project. For example, the onsite circulation plan would be reviewed to ensure fire engine accessibility and turn around area is provided to the fire code standards. As a result, impacts related to vehicular circulation design features would not occur.

(d) Result in inadequate emergency access?

Construction

The proposed construction activities, including equipment and supply staging and storage, would occur within the Project site, and would not restrict emergency vehicle access to the Project site or adjacent areas. The installation of new driveways and connections to existing infrastructure systems that would be implemented during construction of the proposed Project would not require closure of Chapman Avenue. Any temporary lane closures needed for utility connections or driveway construction would be implemented consistent with the recommendations of the California Joint Utility Traffic Control Manual (Caltrans 2014), as incorporated into a Traffic Management Plan for the Project that the City requires prior to the issuance of construction permits. The Traffic Management Plan would include designated haul routes, temporary traffic control devices, travel time restrictions, and other elements determined through the construction review and permitting process by the City's Public Works Division that would ensure that substantial traffic queuing along Chapman Avenue would not occur, and that all construction equipment would be staged on site. Thus, implementation of the Project through the City's permitting process would ensure existing regulations are adhered to and that potential construction related emergency access impacts would not occur.

Operation

Operation of the Project would not result in inadequate emergency access. The Project driveway and internal access would be required through the City's permitting procedures to meet the City's design standards and provides adequate turning space for passenger cars, fire trucks, and delivery trucks. The Project is also required to provide fire suppression facilities to meet OCFA and City requirements. Measures that the Project provides per the Orange County Fire Authority Master Plan for Residential Development include a red curb fire lane; fire lane entrance sign; fire lane no parking sign; installation of building address with six inch minimum lettering; pedestrian gate with knox box device; fire rated interior exist stairway with roof access; exterior level courtyard open to the sky; installation of wet standpipe; installation of sprinklers; and ground ladder access to level three units and above. The City would review the development plans as part of the permitting procedures to ensure adequate emergency access pursuant to the requirements in Section 503 of the California Fire Code (Title 24, California Code of Regulations, Part 9), included in GGMC Chapter 18.04 and as amended in Chapter 18.16. As a result, impacts related to inadequate emergency access would not occur.

The proposed Project would not result in any significant effects relating to traffic; therefore, the proposed Project meets the traffic related criteria of CEQA Guidelines Section 15332(d).

NOISE

A Noise Impact Analysis (Appendix C) was prepared for the proposed Project to assess the Project's potential noise and vibration related impacts. The following analysis incorporates information from the study.

Noise Terminology

- **Leq:** The equivalent sound level, which is used to describe noise over a specified period of time, typically 1-hour, in terms of a single numerical value. The Leq of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The Leq may also be referred to as the average sound level.
- **Lmax:** The instantaneous maximum noise level experienced during a given period of time.
- **Lmin:** The instantaneous minimum noise level experienced during a given period of time.
- **CNEL:** The Community Noise Equivalent Level, which, similar to the Ldn, is the average A-weighted noise level during a 24-hour day that is obtained after an addition of 5 dBA to measured noise levels between the hours of 7:00 pm to 10:00 pm and after an addition of 10 dBA to noise levels between the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the evening and nighttime, respectively.
- **Ambient Noise:** The "ambient noise level" is the background noise level associated with a given environment at a specified time and is usually a composite of sound from many sources from many directions.

Noise Regulations

State Law

An interior CNEL of 45 dB is mandated by the State of California Noise Insulation Standards (CCR, Title 24, Part 6, Section T25-28) for residential dwellings and hotel and motel rooms. Conventional construction practices, with closed windows and fresh air supply systems or air conditioning, normally suffice.

City of Garden Grove General Plan Noise Element

The City's General Plan Noise Element includes a compatibility matrix (Table 7-1) to determine if new land uses are compatible with the existing noise environment. The table identifies noise environments that are less than 60 dBA CNEL to be normally compatible with low density and single-family residential uses; and noise environments that are less than 65 dBA CNEL to be normally compatible with multiple family development, such as the proposed Project. Specific Noise Element Goals and Policies are listed and analyzed later in this section.

Garden Grove Municipal Code

GGMC Section 8.47.040 outlines the City's exterior noise limits as it relates to stationary noise sources. The residential limits are listed below:

- Residential Uses: 55 dBA between 7:00 a.m. and 10:00 p.m.
  50 dBA between 10:00 p.m. and 7:00 a.m.

GGMC Section 8.47.050(C) requires that the following criteria be used whenever the ambient noise level exceeds the City's standards:

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.

GGMC Section 8.47.060(D) Construction of Buildings and Projects, states that it is 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 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 GGMC Section 8.47.050(B), is caused discomfort or annoyance unless such operations are of an emergency nature.

Federal Transit Administration

The FTA *Transit Noise and Vibration Impact Assessment Manual* (2018) provides construction noise criteria to determine if the project would create a substantial temporary noise increase to the nearby sensitive receptors. The Manual provides different criteria options and states that project construction noise criteria should account for the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. Based on the FTA criteria for a detailed construction assessment, the residential threshold of 80 dBA Leq during the daytime and 70 dBA Leq during the nighttime is applied.

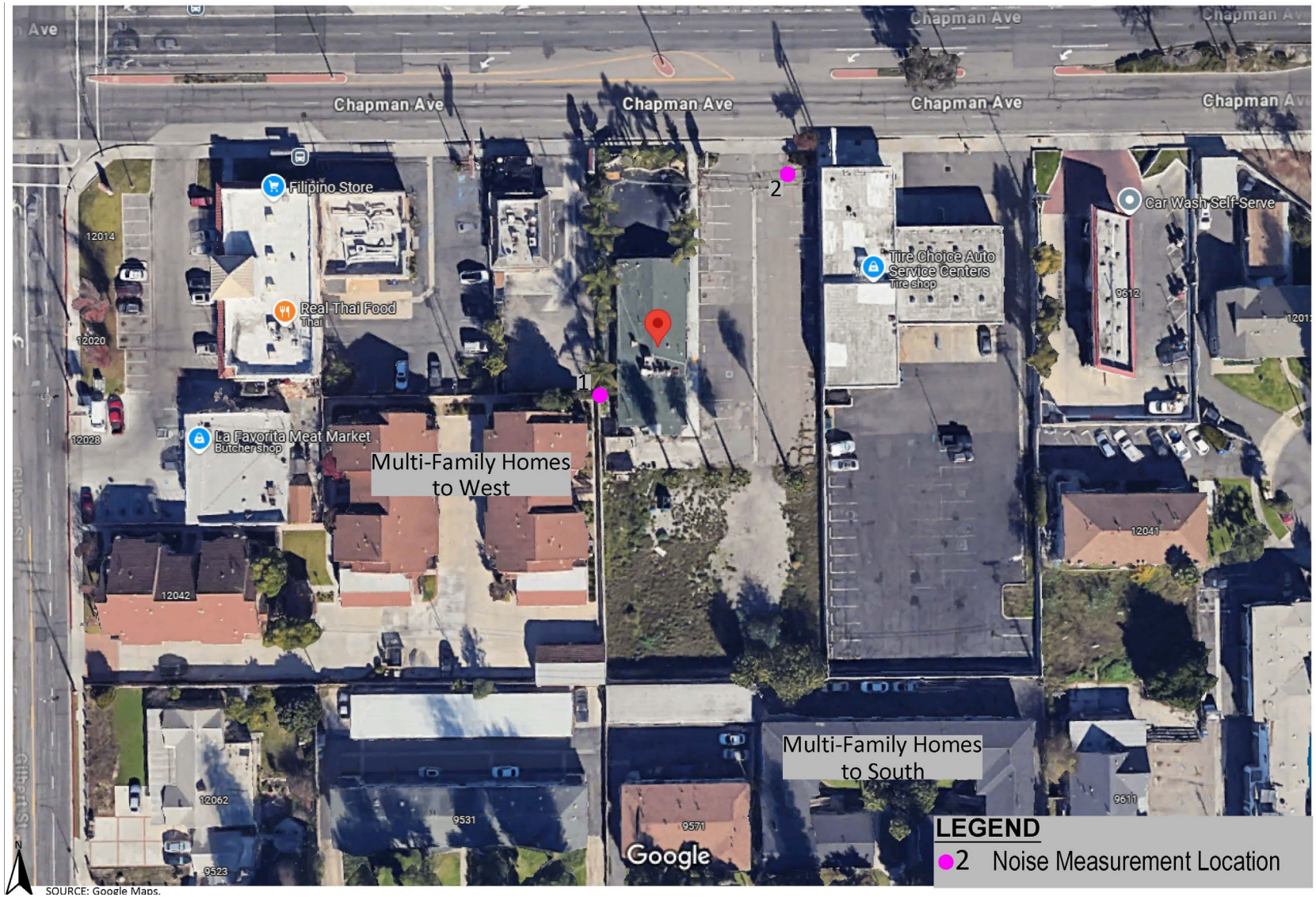
The FTA *Transit Noise and Vibration Impact Assessment* also provides thresholds for increases in ambient noise from vehicular traffic based on increases to ambient noise. An impact would occur if existing noise levels at noise-sensitive land uses (e.g. residential, etc.) are less than 60 dBA Ldn and the project creates an increase of 3 dBA or greater project-related noise level increase; or if existing noise levels range from 60 to 65 dBA Ldn and the project creates 2 dBA or greater noise level increase. Noise level increase of 1 dBA or less would not result in an impact.

The FTA *Transit Noise and Vibration Impact Assessment* guidelines are also used as a screening tool for assessing the potential for adverse vibration effects. The FTA Manual details that a vibration level of up to 0.20 in/sec in PPV is considered safe for non-engineered timber and masonry buildings and would not result in any construction vibration damage. Engineered concrete and masonry buildings are considered safe up to a vibration level of 0.30 in/sec PPV, and reinforced buildings are considered safe up to a vibration level of 0.50 in/sec PPV. To be conservative, the 0.20 in/sec PPV threshold has been used to evaluate potential vibration impacts at the nearest structures to the site. The FTA Manual also provides criteria for human annoyance from vibration. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time, which the FTA considers to be approximately 75 VdB (velocity decibels).

Sensitive Receivers

Noise sensitive receivers are defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land, including: residences, schools, hospitals, churches, libraries, and recreation areas. The closest noise sensitive receptors to the Project site are the existing residences that are as close as 8 feet west of the Project site boundary, as shown in Figure N-1.

Figure N-1: Noise Measurement Locations



SOURCE: Google Maps.

Existing Ambient Noise Levels

To document existing ambient noise levels at existing sensitive receptors in the Project area, three 15-minute daytime noise measurements were taken on August 28, 2024 and one long-term 24-hour noise measurement was taken from August 28, 2024, to August 29, 2024. Figure N-1 shows the noise measurement locations and Table N-1 identifies that existing noise levels are 61.0 dBA CNEL and 75.5 dBA CNEL. The dominant noise source is vehicle traffic associated with Chapman Avenue.

Table N-1: Existing Ambient Noise Measurement Summary (dBA)

Site No.	Site Description	Average (dBA L_{eq})	Maximum (dBA L_{max})	(dBA $L_{eq\ 1\text{-}hour}$/Time)		Average (dBA CNEL)
				Minimum	Maximum	
1	On the fence on the west side of the Project site, near the property line between the commercial property (north) and multi-family residential property (south).	56.8	83.8	46.9 1:52 a.m.	59.6 2:26 p.m.	61.0
2	On the fence on the north side of the Project site, approximately 10 feet west of the east property line and 65 feet south of Chapman Avenue centerline.	72.1	99.6	61.5 6:17 p.m.	75.5 7:55 a.m.	75.5

Source: Noise Impact Analysis, Appendix C.

(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?

Construction

Noise generated by construction equipment would include a combination of trucks, power tools, concrete mixers, and portable generators that when combined can reach high noise levels. Construction is expected to occur in the following stages that would not overlap; site preparation, grading, building construction, architectural coating, paving. Noise levels generated by the heavy construction equipment that would be used by the Project would range from approximately 77 dBA to 83 dBA when measured at 50 feet, as shown on Table N-2.

Table N-2: Construction Reference Noise Levels

Equipment	Number of Equipment	Acoustical Use Factor[1] (percent)	Spec 721.560 Lmax at 50 feet[2] (dBA, slow[3])	Actual Measured Lmax at 50 feet[4] (dBA, slow[3])
Site Preparation				
Grader	1	40	85	83
Tractor	1	40	84	N/A
Grading				
Grader	1	40	85	83
Excavator	1	40	85	81
Plate Compactor	1	20	80	83
Rubber Tired Dozer	1	40	85	82
Tractor	1	40	84	N/A

Equipment	Number of Equipment	Acoustical Use Factor[1] (percent)	Spec 721.560 Lmax at 50 feet[2] (dBA, slow[3])	Actual Measured Lmax at 50 feet[4] (dBA, slow[3])
Building Construction				
Crane	1	16	85	81
Forklifts (Gradall)	2	40	85	83
Tractor	1	40	84	N/A
Front End Loader	1	40	80	79
Paving				
Cement and Mortar Mixers	4	40	85	79
Paver	1	50	85	77
Roller	1	20	85	80
Tractor	1	40	84	N/A
Architectural Coating				
Air Compressor	1	40	80	78

Source: Noise Impact Analysis, Appendix C.
Notes:
[1] Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.
[2] Spec 721.560 is the equipment noise level utilized by the RCNM program.
[3] The "slow" response averages sound levels over 1-second increments. A "fast" response averages sound levels over 0.125-second increments.
[4] Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.

The GGMC Section 8.47.060(d) allows construction noise to exceed the City noise standards provided that construction activities occur between the hours of 7:00 a.m. and 10:00 p.m., within 500 feet of a residential area. The proposed Project's construction activities would occur pursuant to these regulations, as conditioned through the permitting process. The GGMC does not include construction related noise level standards; therefore, the FTA construction noise criteria thresholds are used.

The construction noise from the proposed Project would occur over a 6-month period (per CalEEMod default estimates) and would be temporary in nature as the operation of each piece of construction equipment would not be constant throughout the construction day, and equipment would be turned off when not in use. During operation of construction equipment, power levels vary between one or two minutes of full power operation followed by three or four minutes at lower power settings which results in a range of noise levels.

For each phase of construction, all construction equipment was analyzed based on being placed in the middle of the Project site, per the FTA Manual for a General Assessment, and is based on the rationale that mobile equipment would likely move around the entire Project site in a typical workday. As such, the middle of the Project site would provide the acoustical average noise level created over a typical workday. However, to provide a conservative analysis, all equipment for each phase of construction was analyzed as if operating simultaneously, instead of just the two nosiest pieces of equipment as recommended by the FTA Manual.

As shown on Table N-3, construction noise at the closest residences would range from 56 to 76 dBA Leq, which would not exceed the 80 dBA Leq threshold during the daytime for residential uses and almost the same as the existing noise levels measured at the Project site (Table N-1). Thus, impacts would be less than significant. The analyzed phases of construction would occur sequentially; however, it should be noted that due to the logarithmic properties of addition of two distinct noise sources, the most that the noise may be increased if two construction phases occurred concurrently (which is not proposed or anticipated) would be an additional 3 dB above the higher construction phase noise (Appendix C). As such, the worst-case noise level if two construction

phases were to occur simultaneously, which is not reasonably foreseeable as it is not proposed or part of typical construction operations, would be 79 dBA Leq at the residence to the west, which would not exceed the FTA construction noise standard of 80 dBA. Therefore, with implementation of the Project as proposed, construction noise impacts would be less than significant.

Table N-3: Project Construction Noise Levels at Nearest Sensitive Receivers

	Construction Noise Level (dBA Leq) at:	
Construction Phase	**Homes to West**	**Homes to South**
Site Preparation	74	65
Grading	76	68
Building Construction	75	67
Paving	74	66
Painting	64	56
Construction Noise Threshold	**80**	**80**
Exceed Threshold?	**No**	**No**

Source: *Noise Impact Analysis*, Appendix C
[1] Includes installation of the proposed 8-foot-high wall along site boundary by residences.

Operation Noise Impacts

Traffic Noise. As shown in Table T-1, the proposed 36 residential units are forecast to generate 243 daily vehicle trips, including 14 a.m. and 18 p.m. peak hour vehicle trips. According to the City's Focused General Plan Update and Zoning Amendments Draft EIR, Chapman Avenue, west of Euclid Street had 19,140 daily trips in the year 2020, which included operation of the previous restaurant on the site. Not including the reduction in vehicles from the removal of the previous restaurant, the proposed Project would contribute up to 1.2 percent of the daily trips on Chapman Avenue. In order for project-generated vehicular traffic to increase the noise level on any of the nearby roadways by 3 dB (the human threshold of perception), the daily trips would have to double. As such, the proposed Project's roadway noise impacts would be less than significant.

Onsite Noise. The Noise Impact Study modeled the onsite noise that would be generated by operation of the Project, including noise from vehicle parking and loading areas, and air conditioning units. A majority of vehicular parking would be located in a parking garage on the ground level of the residential structure. An additional two vehicle parking spaces would be located at the rear of the proposed building. Parking lots generate noise from vehicle engines, car doors being slammed, people talking, and various similar activities that average approximately 52.1 dBA at 5 feet. However, the proposed parking is mostly located within the parking garage and the site would be generally bound by a proposed 8-foot-high CMU wall that would shield noise. As shown on Table N-4, from these locations, the parking lot noise at the closest residence would be 29 dBA, which would not exceed the City's daytime residential noise standard of 55 dBA or nighttime residential noise standard of 50 dBA. Therefore, the proposed parking areas would not result in noise impacts to existing offsite sensitive receptors.

The typical residential air conditioning systems (such as the 2.5-ton Carrier Model No: CA15NA03-0-A and a 3 ton Carrier Model No: CA15NA036-0-A) produces a noise level of 73 dBA at one meter. The proposed air conditioning equipment would be located near the center of the roof on top of a vibration isolation pad. Noise modeling was conducted to determine the noise from air conditioning units at the closest residences. As shown

in Table N-4, the air conditioning noise levels at the residences adjacent to the west of the site could reach 34 dBA, which would not exceed the City's daytime residential noise standard of 55 dBA or nighttime residential noise standard of 50 dBA. Therefore, the proposed air conditioning units would not result in noise impacts to existing offsite sensitive receptors.

The proposed Project's worst-case operational noise from the simultaneous operation of all noise sources on the Project site would create a noise level of 38 dBA at the closest residences to the south of the Project site and a noise level of 37 dBA at the residences to the west side of the Project site. The worst-case operational noise level of 38 dBA would be within both the City's daytime residential noise standard of 55 dBA or nighttime residential noise standard of 50 dBA. Therefore, the onsite operational noise impacts would be less than significant.

Table N-4: Project Operational Noise Levels At Nearest Sensitive Noise Receptors

	Operational Noise Levels (dBA Leq) at:	
Noise Source	**Homes to West**	**Homes to South**
Air Conditioning Compressor Units	34	30
Parking Lot	29	19
City Noise Standard (Day/Night)	55/50	55/50
Exceed Standard (Day/Night)?	**No/No**	**No/No**

Source: *Noise Impact Analysis*, Appendix C

In addition, the Noise Element includes the following goal and policies, which are related to the Project. As detailed below, the Project is consistent with the Noise Element goal and policies:

Goal N-1: Noise considerations must be incorporated into land use planning decisions.

Consistent: Noise considerations have been incorporated into the Project as the Project would be consistent with adjacent residential uses and would not result in an impact on nearby uses, as detailed previously.

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 (refer to Table 2 and Table 3, Garden Grove Noise Ordinance Standards, respectively), Title 24 of the California Code of Regulations, and Section 8.47 of the Municipal Code.

Consistent: As detailed previously in Tables N-3 and N-4 the Project would be consistent with the City's noise standards. Title 24 and municipal code requirements would be ensured through the City's development permitting process.

Policy N-1.4: Ensure acceptable noise levels are maintained near schools, hospitals, convalescent homes, churches, and other noise sensitive areas.

Consistent: As detailed previously in Tables N-3 and N-4 the Project would be consistent with the City's noise standards and would result in acceptable noise levels near noise sensitive uses.

Policy N-IMP-1B: Require that new commercial, industrial, any redevelopment projects, or any proposed development near existing residential land use demonstrate compliance with the City's Noise Ordinance prior to approval of the project.

Consistent: As detailed previously in Tables N-3 and N-4 the Project would be consistent with the City's Noise Ordinance.

Policy N-IMP-1D: Require construction activity to comply with the limits established in the City's Noise Ordinance.

Consistent: As detailed previously, the construction limits established in the City's Noise Ordinance would be ensured through the City's development permitting process.

Policy N-IMP-1E: Require buffers or appropriate mitigation of potential noise sources on noise sensitive areas.

Consistent: As detailed previously in Tables N-3 and N-4 the Project would be consistent with the City's noise standards and would not result in noise impacts on noise sensitive areas. Therefore, noise buffers and mitigation are not required.

Policy 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.

Consistent: As detailed previously in Tables N-3 and N-4 the Project would be consistent with the City's noise standards. In addition, Title 24 and municipal code requirements would be ensured through the City's development permitting process.

(b) Generation of excessive groundborne vibration or groundborne noise levels?

Construction Vibration. Construction activities for development of the Project would include excavation and grading, which have the potential to generate low levels of groundborne vibration. People residing in close proximity to the construction could be exposed to the generation of excessive groundborne vibration or groundborne noise levels related to construction activities. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels.

The City does not have adopted thresholds related to vibration. However, the FTA *Transit Noise and Vibration Impact Assessment* provides numeric thresholds for vibration impacts for building damage and human annoyance. The threshold for vibrations related to building damage is 0.20 PPV for non-engineered timber and masonry buildings and the threshold for human annoyance is 75 Vdb.

As shown in Table N-5, loaded trucks generate 0.076 in/sec PPV, jackhammers generate 0.035 PPV, and operation of a small bulldozer generates 0.003 PPV at a distance of 25 feet. Groundborne vibration associated with this equipment drops off as the equipment moves away. It should be noted that these vibration levels are reference levels and may vary slightly depending upon soil type and specific usage of each piece of equipment.

Table N-5: Construction Equipment Vibration Source Levels

Equipment	PPV at 25 ft, in/sec	Approximate Vdb at 25 ft
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: Noise Impact Analysis, Appendix C.

The primary source of vibration during construction of the proposed Project would be from the operation of a small rubber tired bulldozer. From Table N-5 above a small bulldozer would create a vibration level of 0.003 inch per second PPV (or 58 Vdb) at 25 feet. Based on typical propagation rates identified by the FTA, the vibration level at the nearest off-site residences (8 feet to the west of the Project site boundary) would be 0.01 inch per second PPV (or 68 Vdb), which is below the 0.20 inch per second PPV threshold for damage to non-engineered timber and masonry buildings and below the human annoyance threshold of 75 VdB. In addition, the heavy construction equipment would be used for a limited time during the construction period, as detailed in Table 3. As shown in the Noise Impact Analysis (Appendix C), and as described in the Project Description, no vibratory rollers would be used for construction of the Project. Therefore, construction-related vibration impacts would be less than significant.

Operation

Operation of the proposed residences would include heavy trucks for residents moving in and out of the units and garbage trucks for solid waste disposal. Truck vibration levels are dependent on vehicle characteristics, load, speed, and pavement conditions. However, as shown on Table N-7, vibration levels from loaded trucks generate 0.076 inch per second PPV. Truck movements on site would be travelling at very low speed, so it is expected that truck vibration at nearby sensitive receptors would be less than 0.076 inch per second PPV, which is less than the structure damage threshold of 0.5 inch per second PPV threshold and the human annoyance threshold of 0.24 inch per second PPV. Therefore, operational vibration impacts would be less than significant.

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

The Project site is not located within an airport land use plan or within 2 miles of an airport. The closest air facility is the Los Alamitos Joint Forces Training Base, located approximately 4.15 miles west of the Project site. The closest public airport to the project site is John Wayne Airport, which is located over 9 miles to the southeast of the Project site. In addition, the Fullerton Municipal Airport is located approximately 5.7 miles to the north of the site. Therefore, the Project would not result in excessive noise levels related to airports, and no impacts would occur. Overall, the proposed Project would not result in any significant effects relating to noise or vibration; therefore, the proposed Project meets the noise related criteria of CEQA Guidelines Section 15332(d).

AIR QUALITY

This section is based on the Air Quality Assessment prepared for the proposed Project that is provided in Appendix D. The Project's construction and operational emissions were calculated using the California Emissions Estimator Model (CalEEMod) Version 2022.1.1.20 pursuant to the South Coast Air Quality Management District (SCAQMD) methodology criteria.

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

The Project site is located in the South Coast Air Basin, which is under the jurisdictional boundaries of the SCAQMD. The SCAQMD and Southern California Association of Governments (SCAG) are responsible for preparing the Air Quality Management Plan (AQMP), which addresses federal and state Clean Air Act (CAA) requirements. The AQMP details goals, policies, and programs for improving air quality in the Basin. In

preparation of the AQMP, SCAQMD and SCAG use land use designations contained in General Plan documents to forecast, inventory, and allocate regional emissions from land use and development-related sources.

As described in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's CEQA Air Quality Handbook (1993), for purposes of analyzing consistency with the AQMP, if a project would have a development density and vehicle trip generation that is greater than what was anticipated in the General Plan, then the proposed project would conflict with the AQMP. On the other hand, if a project's density is consistent with the General Plan, its emissions would be consistent with the assumptions in the AQMP, and the project would not conflict with the AQMP. In addition, the SCAQMD considers projects consistent with the AQMP if the project would not result in an increase in the frequency or severity of existing air quality violations or cause a new violation.

The 2022 AQMP states (p. 3-22) that growth projections were based on demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by SCAG for the 2020 RTP/SCS. The 2020 RTP/SCS projects the City population growth from 176,000 residents in 2016 to 185,800 residents in 2045, which is an increase of 9,800 residents; and a household growth from 46,300 households in 2016 to 49,200 households in 2045, which is an increase of 2,900 households.

The Project site has a General Plan land use designation of Residential / Commercial Mixed Use 2 (RC2) and a zoning designation of Neighborhood Mixed Use (NMU), which both allow a maximum of 24 dwelling units per acre. However, the proposed Project includes four units restricted for Very-Low Income households that provide a 50 percent density bonus and would result in a density of 37.28 dwelling units per acre. Thus, the proposed Project would be within the allowable density with application of the density bonus.

In addition, the 125 residents at full capacity of the Project would be an increase of 0.07 percent of the City's population of 171,024 (CA Dept of Finance 2024) and 1.3 percent of the 2020 RTP/SCS projected population increase in the City. The proposed 36 residences would be an increase of 0.07 percent of the 49,972 housing units within the City (CA Dept of Finance 2024) and 1.2 percent of the 2020 RTP/SCS projected household increase. Therefore, the Project would not conflict with the AQMP.

Additionally, as detailed previously and shown on Figure T-2, the Project site is located within a SCAG 2045 HQTA, which are areas within 0.5-mile of a transit stop or a transit corridor with 20-minute or less service frequency during peak commute hours. Also, the Project site is within a TPA, as designated by the City as shown in Figure T-1. The provision of higher density housing within HQTAs and TPAs is consistent with the AQMP objective of providing infill/high density housing near transit to support alternative modes of transportation that reduce vehicular emissions. Further, as described in the analysis below, emissions generated by construction and operation of the proposed Project would not exceed thresholds. Thus, the Project would not result in an increase in the frequency or severity of existing air quality violations or cause a new violation, and no impacts would occur.

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

Construction Regional Emissions

Construction activities associated with the proposed Project would generate pollutant emissions from the following construction activities: site preparation, grading, building construction, paving, and architectural coating. The volume of emissions generated on a daily basis would vary, depending on the intensity and types

of construction activities occurring. Construction activities would generate emissions from onsite construction equipment, haul of soils, export and import of construction materials, and construction worker vehicle trips to and from the Project site during the estimated 6 months of construction (as estimated per the CalEEMod default construction timeline).

It is mandatory for all construction projects to comply with several SCAQMD Rules, including Rule 403 for controlling fugitive dust, PM_{10}, and $PM_{2.5}$ emissions from construction activities. Rule 403 requirements include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the proposed Project site, covering all trucks hauling soil with a fabric cover and maintaining a freeboard height of 12-inches, and maintaining effective cover over exposed areas. Compliance with Rule 403 was accounted for in the construction emissions modeling and is ensured through the City's development permitting process. In addition, implementation of SCAQMD Rule 1113 that governs the VOC content in architectural coating, paint, thinners, and solvents, would be required and is also ensured through the City's development permitting process.

As shown in Table AQ-1, CalEEMod modeling results show that construction emissions generated by the proposed Project would not exceed SCAQMD regional thresholds. Therefore, construction activities would result in a less than significant impact.

Table AQ-1: Regional Construction Emissions Summary

Construction Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
2025						
Site Prep	0.7	5.6	6.4	<0.1	0.7	0.4
Grading	1.8	15.8	15.6	<0.1	2.9	1.7
Building Construction	0.8	7.6	10.5	<0.1	0.7	0.4
Paving	1.0	5.3	7.1	<0.1	0.5	0.3
Architectural Coating	40.3	1.2	1.8	<0.1	0.1	<0.1
Maximum Daily Emissions 2025	40.3	15.8	15.6	<0.1	2.9	1.7
2026						
Architectural Coating	40.3	1.2	1.7	<0.1	0.1	<0.1
Maximum Daily Emissions 2026	40.3	1.2	1.7	<0.1	0.1	<0.1
Maximum Daily Emission 2025-2026	**40.3**	**15.8**	**15.6**	**<0.1**	**2.9**	**1.7**
SCAQMD Significance Thresholds	75	100	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Air Quality and Greenhouse Gas Impact Analysis, Appendix D

Operation Regional Emissions

Implementation of the Project would result in long-term regional emissions of criteria air pollutants and ozone precursors associated with area sources, such as natural gas and electricity consumption, landscaping, application of architectural coatings, and consumer products. However, operational vehicular emissions would generate a majority of the emissions generated from the Project.

Operational emissions associated with the proposed Project were modeled using CalEEMod and are presented in Table AQ-2. As shown, the proposed Project would result in long-term regional emissions of the criteria pollutants that would be below the SCAQMD's applicable thresholds. Therefore, the Project's operational emissions would not exceed the NAAQS and CAAQS, would not result in a cumulatively considerable net increase of any criteria pollutant impacts, and would be less than significant.

Table AQ-2: Summary of Regional Operational Emissions

Operational Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NO_x	CO	SO_2	PM10	PM2.5
Mobile	0.7	0.5	5.5	<0.1	1.3	0.3
Area	1.6	<0.1	2.0	<0.1	<0.1	<0.1
Energy	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Total Emissions	**2.4**	**0.6**	**7.6**	**<0.1**	**1.3**	**0.3**
SCAQMD Significance Thresholds	55	55	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Air Quality and Greenhouse Gas Impact Analysis, Appendix D

(c) Expose sensitive receptors to substantial pollutant concentrations?

Local Emissions. The SCAQMD recommends the evaluation of localized NO_x, CO, PM_{10}, and $PM_{2.5}$ construction-related impacts to sensitive receptors in the immediate vicinity of the Project site. Such an evaluation is referred to as a localized significance threshold (LST) analysis. The impacts were analyzed pursuant to the SCAQMD's Final Localized Significance Threshold Methodology. According to the LST Methodology, off-site mobile emissions from the Project should not be included in the emissions compared to the LSTs. SCAQMD has developed LSTs that represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standards, and thus would not cause or contribute to localized air quality impacts. LSTs are developed based on the ambient concentrations of NOx, CO, PM_{10}, and $PM_{2.5}$ pollutants for each of the 38 source receptor areas (SRAs) in the SCAB. The Project site is located in SRA 17, Central Orange County.

Sensitive receptors include uses such as residences, schools, playgrounds, childcare centers, and athletic facilities. The nearest sensitive receptors to the Project site are the residences located approximately 2.5 meters (8 feet) west of the Project site boundary.

Construction LST. The localized thresholds from the mass rate look-up tables in SCAQMD's Final Localized Significance Threshold Methodology document, were developed for use on projects that are less than or equal to 5-acres in size or have a disturbance of less than or equal to 5 acres daily and were used to evaluate LSTs. The maximum number of acres disturbed on the peak day of construction was calculated from the CalEEMod model construction equipment list, which identifies that crawler tractors, graders, and rubber-tired dozers disturb 0.5-acre in an 8-hour day and scrapers disturb 1.0-acre in an 8-hour day. It was determined that the Project's construction activities could disturb the entire 0.97-acre site in one day.

As shown in Table AQ-3, with implementation of SCAQMD Rules 403 and 1113, the maximum daily construction emissions from the proposed Project would not exceed the applicable SCAQMD LST thresholds. Therefore, impacts would be less than significant.

Table AQ-3: Localized Construction Emissions

Construction Activity	Maximum Daily Regional Emissions (pounds/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
2025				
Site Preparation	5.6	6.1	0.6	0.4
Grading	15.8	14.9	2.8	1.6
Building Construction	7.3	18.0	0.6	0.6
Maximum Daily Emissions 2025	15.8	18.0	2.8	1.6
2026				
Paving	5.2	6.3	0.2	0.2
Architectural Coating	1.1	1.5	<0.1	<0.1
Maximum Daily Emissions	5.2	6.3	0.2	0.2
Maximum Daily Emission 2025-2026	**15.8**	**18.0**	**2.8**	**1.6**
SCAQMD Significance Thresholds	81	485	4	3
Threshold Exceeded?	**No**	**No**	**No**	**No**

Source: Air Quality and Greenhouse Gas Impact Analysis, Appendix D

Operational LST. According to the SCAQMD LST methodology, LSTs apply to project stationary mobile sources (SCAQMD, 2008a). Projects that involve mobile sources that spend long periods queuing and idling at a site, such as transfer facilities or warehousing and distribution buildings, have the potential to exceed the operational localized significance thresholds.

The proposed Project would operate 36 residential units, which do not involve vehicles idling or queueing for long periods. Therefore, due to the lack of significant stationary source emissions, impacts related to operational localized significance thresholds would be less than significant.

Overall, the proposed Project would not result in any significant effects relating to air quality emissions; therefore, the proposed Project meets the air quality related criteria of CEQA Guidelines Section 15332(d).

Construction Health Risks. A Construction Health Risk Assessment (HRA) (Appendix E) was also prepared for the Project to determine if toxic air contaminants (TACs) from diesel particulate matter (DPM) from construction equipment and vehicles would have the potential to impact surrounding sensitive receptors. The predominant sources of DPM emissions resulting from construction is from heavy-duty diesel trucks that travel to, from, and within the Project site each day, as well as the off-road construction equipment. The significance thresholds recommended by the SCAQMD include:

- Cancer Risk: ten persons per million population as the maximum acceptable incremental cancer risk due to exposure to TACs
- Non-Cancer Hazard Index (HI): 1.0

The Construction HRA identified DPM emissions from construction activities and vehicle and truck trips and completed dispersion modeling to determine both cancer and non-cancer health risks. As shown on Table AQ-4, the estimated maximum cancer risk for construction is 2.47 in one million for sensitive/residential receptors. The estimated maximum cancer risk for worker receptors during construction would be 0.17 in one million.

Table AQ-4: Summary of Proposed Project Construction Health Risk

Receptor	Cancer Risk (per million)		Exceeds Significance Threshold?
	Maximum Lifetime Proposed Project Risk	Significance Threshold	
Maximum Impacted Sensitive Receptor – Infant to Adult (30 years)	2.47	10	No
Maximum Impacted Sensitive Receptor – Adult	0.09	10	No
Maximum Impacted Worker Receptor	0.17	10	No
Receptor	**Chronic Non-Cancer Hazard Index**		**Exceeds Significance Threshold?**
	Maximum Lifetime Proposed Project Risk	**Significance Threshold**	
Maximum Impacted Sensitive Receptor – Infant to Adult (30 years)	<0.01	1	No
Maximum Impacted Sensitive Receptor – Adult	<0.01	1	No
Maximum Impacted Worker Receptor	0.02	1	No

Source: Construction HRA, Appendix E.

Thus, the maximum cancer risk from construction of the proposed Project would not exceed the SCAQMD cancer health risk significance threshold of 10 in one million. In addition, the Project's maximum estimated non-cancer health risk is 0.02, for the maximum impacted worker receptor, which is below the significance threshold of 1.0. Thus, the Project impact related to both cancer and non-cancer health risks would be less than significant.

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

The proposed Project would not emit other emissions, such as those generating objectionable odors, that would affect a substantial number of people. The threshold for odor is identified by SCAQMD Rule 402, Nuisance, which states:

> *A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals*.

The type of facilities that are considered to result in other emissions, such as objectionable odors, include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities.

The proposed Project would implement residential development that does not involve the types of uses that would emit objectionable odors affecting a substantial number of people. In addition, odors generated by the Project are required to be in compliance with SCAQMD Rule 402, which would prevent nuisance odors.

During construction, emissions from construction equipment, architectural coatings, and paving activities may generate odors. However, these odors would be temporary, intermittent in nature, and would not affect a substantial number of people. The noxious odors would be confined to the immediate vicinity of the construction equipment. Also, the short-term construction-related odors would cease upon the drying or hardening of the odor-producing materials. Therefore, impacts associated with other emissions, such as odors, would not adversely affect a substantial number of people.

WATER QUALITY

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

The Project site is located within the Anaheim Bay-Huntington Harbor Watershed, which includes 80-square miles and all or part of 11 cities. The City of Garden Grove is underlain by the Elsinore Groundwater Basin, which covers 270 square miles in Orange County. The City is within the jurisdiction of the Santa Ana Regional Water Quality Control Board (RWQCB), which sets water quality standards for all ground and surface waters within its region. Water quality standards are defined under the Clean Water Act (CWA) to include both the beneficial uses of specific water bodies and the levels of water quality that must be met and maintained to protect those uses (water quality objectives). Water quality standards for all ground and surface waters overseen by the RWQCB are documented in its Basin Plan, and the regulatory program of the RWQCB is designed to minimize and control discharges to surface and groundwater, largely through permitting, such that water quality standards are effectively attained.

Construction. Implementation of the proposed Project includes site preparation, grading, excavation, construction of the new building, infrastructure improvements, and installation of new landscaping. Grading, stockpiling of materials, excavation, construction of new structures, and landscaping activities would expose and loosen sediment and building materials, which would have the potential to mix with stormwater and urban runoff and degrade surface and receiving water quality.

Additionally, construction generally requires the use of heavy equipment and construction-related materials and chemicals, such as concrete, cement, asphalt, fuels, oils, antifreeze, transmission fluid, grease, solvents, and paints. In the absence of proper controls, these potentially harmful materials could be accidentally spilled or improperly disposed of during construction activities and could wash into and pollute surface waters or groundwater, resulting in a significant impact to water quality. However, Section 6.40.050 of the GGMC states that all new development and significant redevelopment within the City shall be undertaken in accordance with the County Drainage Area Management Plan (DAMP), including any conditions and requirements established related to the reduction or elimination of pollutants in storm water runoff from the Project site, which are verified prior to the issuance of a grading permit and/or building permit by the City.

The DAMP requires construction sites to implement BMPs that address control of construction related pollutants discharges, including erosion/sediment control, onsite hazardous materials, and waste management (DAMP Section 8.0). Additionally, the Statewide NPDES Permit for General Construction Activity requires implementation of a SWPPP, by a Qualified SWPPP Developer. The SWPPP is required to be consistent with the County DAMP; address site-specific conditions related to construction; identify the sources of sediment and other pollutants that may affect the quality of storm water discharges during construction; and implement erosion control and sediment control BMPs to reduce or eliminate sediment, pollutants adhering to sediment,

and other non-sediment pollutants in water discharges during construction. Typical erosion control methods that are designed to minimize potential pollutants entering stormwater during construction include:

- Perimeter gravel bags or silt fences to prevent offsite transport of sediment;
- Storm drain inlet protection (filter fabric gravel bags and straw wattles), with gravel bag check dams within paved roadways;
- Regular sprinkling of exposed soils to control dust during construction and soil binders for forecasted wind storms;
- Specifications for construction waste handling and disposal;
- Contained equipment wash-out and vehicle maintenance areas;
- Erosion control measures including soil binders, hydro mulch, geotextiles, and hydro seeding of disturbed areas ahead of forecasted storms;
- Construction of stabilized construction entry/exits to prevent trucks from tracking sediment on City roadways;
- Construction timing to minimize soil exposure to storm events; and
- Training of subcontractors on general site housekeeping.

Adherence to a City approved SWPPP and its prescribed BMPs, which would be verified prior to the issuance of a demolition and/or grading permit would ensure that potential water quality degradation associated with construction activities would be minimized, and impacts would be less than significant.

Operations. The proposed Project includes operation of new residential uses on the Project site. Potential pollutants associated with the proposed uses include various chemicals from cleaners, nutrients from fertilizer, pesticides and sediment from landscaping, trash and debris, and oil and grease from vehicles. If these pollutants discharge into surface waters, it could result in degradation of water quality.

However, operation of the proposed Project would be required to comply with the requirements of the County DAMP and would be required to implement a Water Quality Management Plan (WQMP) that includes Low Impact Development (LID) features and BMPs to limit the potential for pollutants to enter surface water, such as storm water runoff. The Preliminary WQMP has been completed and is included as Appendix F. The purpose of a WQMP is to reduce discharge of pollutants by reducing or eliminating sources of pollutants, capture pollutants, and manage site runoff volumes and flow rates through application of appropriate LID features and BMPs. The WQMP is required to include implementation of non-structural, structural, source control and treatment control BMPs that have been designed to protect water quality.

The Project would install drainage features to convey runoff to a detention basin that would be installed on the site, which has been designed to capture, infiltrate, filter, and treat flows from the 85th percentile storm as required by the DAMP. The additional types of BMPs that would be implemented as part of the Project WQMP are listed in Table WQ-1.

Table WQ-1: Types of BMPs Incorporated into the Project WQMP

Type of BMP	Description of BMPs
LID Site Design	Optimize the site layout: The site has been designed so that runoff from impervious surfaces would flow to either landscaped areas or the underground detention basin for filtration, treatment, and regulated discharge.
	Use pervious surfaces: Landscaping is incorporated into the Project design to increase the amount of pervious area and onsite retention of stormflows.
Source Control	Storm Drain Stenciling: All inlets/catch basins would be stenciled with the words "Only Rain Down the Storm Drain," or equivalent message.
	Design and construct trash and waste storage areas to reduce pollution introduction.
	Need for future indoor & structural pest control: The building would be designed to avoid openings that would encourage entry of pests.
	Landscape/outdoor pesticide use: Landscape plans would accomplish all of the following: • Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to storm water pollution. • Consider using pest-resistant plants, especially adjacent to hardscape. • To ensure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.
	Roofing, gutters, and trim: The architectural design would avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.
	Sidewalks and parking lots: Sidewalks and parking lots shall be swept regularly to prevent the accumulation of litter and debris. Debris from pressure washing would be collected to prevent entry into the storm drain system. Wash water containing any cleaning agent or degreaser would be collected and discharged to the sanitary sewer and not discharged to a storm drain.
Treatment Control	Filtration Systems: The underground detention basin system proposed for the Project would detain, filter, and treat runoff prior to discharge.

As described previously, a WQMP is required to be approved prior to the issuance of a building or grading permit. The Project's WQMP would be reviewed and approved by the City to ensure it complies with the DAMP regulations. In addition, the City's permitting process would ensure that all LID features in the WQMP would be implemented with the Project. Overall, implementation of the WQMP pursuant to the existing regulations would ensure that operation of the proposed Project would not violate any water quality standards, waste discharge requirements, or otherwise degrade water quality; and impacts would be less than significant.

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

In the existing condition, storm flows drain across the site to Chapman Avenue. The Project site does not currently provide for groundwater recharge and was historically fully developed and not previously used for groundwater recharge. The Project would redevelop the site, and as detailed in the WQMP (Appendix F), the impervious areas onsite would be 90 percent and 10 percent of the area would be pervious landscaped open spaces. However, as detailed in the Preliminary WQMP (Appendix F) the runoff volume would be reduced from 2.20 cubic feet per second (CFS) to 1.84 cfs. Unlike the existing conditions, storm water would be conveyed to a detention basin that would collect, treat, and slowly discharge storm water. The detention basin has been designed to treat and infiltrate flows, as detailed in the WQMP. Therefore, the Project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

In addition, groundwater within the Project region is managed by the Orange County Water District (OCWD). To ensure the Basin is not overdrawn, OCWD monitors water levels and recharges the Basin with local and imported water. Continued management of the groundwater basin by OCWD ensures that substantial depletion of groundwater supplies would not occur. Likewise, the Project would not impede with the OCWD management of the groundwater basin. Thus, impacts related to the groundwater recharge and sustainable groundwater management of the basin would not occur.

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

- **i) result in substantial erosion or siltation on- or off-site;**
- **ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;**
- **iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or**
- **iv) impede or redirect flood flows?**

No streams, creeks, or rivers exist on or adjacent to the Project site. Construction of the proposed Project would require excavation and grading activities that would expose and loosen building materials and sediment, which has the potential to mix with storm water runoff and result in erosion or siltation offsite. However, the Project site does not include any slopes, which reduces the erosion potential. Also, the NPDES Construction General Permit and Orange County DAMP require preparation and implementation of a SWPPP by a Qualified SWPPP Developer for the proposed construction activities. The SWPPP is required to address site-specific conditions related to potential sources of sedimentation and erosion and would list the required BMPs that are necessary to reduce or eliminate the potential of erosion or alteration of a drainage pattern during construction activities.

In addition, a Qualified SWPPP Practitioner (QSP) is required to ensure compliance with the SWPPP through regular monitoring and visual inspections during construction activities. The SWPPP would be amended and BMPs revised, as determined necessary through field inspections, in order to protect against substantial soil erosion, the loss of topsoil, or alteration of the drainage pattern. Compliance with the Construction General Permit and a SWPPP prepared by a QSD and implemented by a QSP would prevent construction-related impacts related to potential alteration of a drainage pattern or erosion from development activities. With implementation of the NPDES Permit for General Construction Activity, including a SWPPP with BMPs, that would be verified by the City during the permitting approval process, impacts related to alteration of an existing drainage pattern during construction that could result in substantial erosion, siltation, and increases in storm water runoff that could be polluted, or cause flooding or redirection/impediment of flood flows would be less than significant.

During operation of the Project, the WQMP (Appendix F) would be implemented. As detailed previously, both the pre-Project and post-Project site condition is 90 percent impervious. The impervious areas would not be subject to erosion and the pervious areas would be landscaped with groundcovers that would inhibit erosion. Also, the proposed Project would maintain the existing drainage pattern. In the existing condition, storm flows drain to Chapman Avenue. With implementation of the Project, storm water runoff would be conveyed to landscape areas and to a detention basin that would filter and treat flows that are slowly discharged to the gutter along Chapman Avenue. As shown in Table WQ-2, the Project runoff conditions for a 100-year storm would decrease by 0.36 cfs from predevelopment conditions with the proposed drainage system, and the

Project would not result in exceedance of the capacity of the existing stormwater drainage system. As such, the Project would not increase or impede flood flows. In addition, the proposed landscaping and drainage system would reduce the potential of onsite soils being eroded, siltation, flooding, and discharge of pollutants compared to the existing condition.

Table WQ-2: Storm Water Flow Comparison

	Existing Condition	Proposed Condition
Peak Flow	2.20 cfs	1.84 cfs

Source: Preliminary WQMP, Appendix F

Additionally, as part of the permitting approval process, the proposed drainage and water quality design and engineering plans would be reviewed by the City to ensure that the site-specific design limits the potential for erosion, siltation, pollution, flooding, or impeding/redirecting of flows. Thus, significant impacts would not occur.

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

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 06059C0137J, the Project site is not located within a flood zone. A 100-year flood hazard area is an area in which a flood event has a one percent probability of occurring in any given year. The FEMA FIRM for the Project site and vicinity shows that the site is within a 0.2 percent annual chance of flood hazard and is identified as "Zone X." Therefore, the site is not within a 100-year flood zone. In addition, the Project site does not contain any bodies of water and is not located in the vicinity of any bodies of water that could result in flooding on the Project site. The Project site is located over 7.5 miles from the Pacific Ocean and due to its location, is not at risk of inundation from tsunami. Likewise, the Project site is not located near any water retention facilities or water bodies that could result in seiche. For this reason, the Project site is not at risk of inundation from seiche waves. Therefore, the proposed Project would not risk the release of pollutants from inundation from seiche, tsunami, or from being within a flood zone.

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

The use of BMPs during construction implemented as part of a SWPPP as required by the NPDES Construction General Permit, would serve to ensure that Project impacts related to construction activities resulting in a degradation of water quality would be less than significant. Thus, construction of the Project would not conflict or obstruct implementation of a water quality control plan.

Also, new development projects are required to implement a WQMP that would comply with the Orange County DAMP. The WQMP and applicable BMPs are verified as part of the City's permitting approval process, and construction plans would be required to demonstrate compliance with these regulations. Therefore, operation of the Project would not conflict with or obstruct a water quality control plan. In addition, as detailed previously, groundwater within the Project region is managed by OCWD. To ensure the Basin is not overdrawn, OCWD monitors water levels and recharges the Basin with local and imported water. Continued management of the groundwater basin by OCWD ensures that substantial depletion of groundwater supplies would not occur. The Project is an infill and redevelopment project that is located within a developed area and would not impede the OCWD management of the groundwater basin. The proposed detention basin would filter and treat flows that would be slowly discharged, which would not conflict with sustainable groundwater management. Thus, impacts related to a water quality control plan or sustainable groundwater management plan would not occur.

Overall, the proposed Project would not result in any significant effects relating to water quality; therefore, the proposed Project meets the water quality related criteria of CEQA Guidelines Section 15332(d).

e. Criterion Section 15332(e): Utilities: The site is located in an urbanized and developed area and is currently developed and adequately served by all required utilities and public services. The utilities necessary to construct and operate the proposed Project (water, wastewater, electric, natural gas, landfill capacity) and public services (fire, police, and schools) would be adequately provided by existing utility and service systems as detailed below.

Water Utility: The proposed Project would connect to existing utility service lines surrounding the Project site. The proposed Project would install onsite 6-inch water lines that would connect to the existing 12-inch water line in Chapman Avenue. The impacts related to installation of the new water lines are included in the analysis herein, such as within the construction traffic, construction air quality, and construction noise analysis.

The City's 2020 Urban Water Management Plan (UWMP) projects that between 2020 and 2045, the population of the City will increase by 4.8 percent and the City's water supply portfolio will increase as needed to meet water needs. The 2020 UWMP shows that the City's water demand in 2020 was 21,979 acre-feet yearly (AFY) and is projected to increase to 22,792 AFY by 2045. This is an increase of 813 AFY and assumes continued provision of water to existing developed land uses, such as the existing building on the Project site.

The Project would develop the site with 36 residential units, which would house approximately 125 residents, based on the 2024 California Department of Finance data that the City has an average of 3.47 persons per household. The 125 new onsite residents would result in a water demand of approximately 17,750 gallons per day (19.9 AFY) using the 2020 UWMP baseline water use rate of 142 Gallons Per Capita per Day (GPCD), which is a conservative assumption as the 2020 UWMP details that the City used 93 GPCD in 2020. This represents 2.4 percent of the City's anticipated increase in water demand between 2020 and 2030 (although currently undeveloped, the City's 2020 UWMP anticipates water demand from the previous restaurant use of the site, as the previous restaurant was building was just demolished in July 2024). In addition, the Project would implement a number of water conservation measures as required by Cal/Green and Title 24 requirements, such as use of water efficient plumbing fixtures, appliances, and irrigation systems, and routing runoff to landscape areas. Therefore, the City has sufficient water supplies available to serve the Project. The water demand needed for the Project would be accommodated by the existing 12-inch water line in the Chapman Avenue right-of-way, which would not require expansion to serve the Project.

Sewer Utility: The proposed Project would install 6-inch sewer lines on the site that would connect to the existing 8-inch sewer line in Chapman Avenue, which has adequate capacity to serve the new residences on the site. The impacts related to installation of the new sewer lines are included in the analysis herein, such as within the construction traffic, construction air quality, and construction noise analysis.

The proposed residences would generate new wastewater, which would be conveyed through existing sewer facilities to OCSD's wastewater treatment plant No. 1 in Fountain Valley that has a capacity of 320 million gallons per day (MGD). In 2023-24, the estimated average daily flow received at the wastewater treatment plant No. 1 was 124 MGD. Thus, the plant has an additional capacity of 196 MGD (OCSD 2024).

As detailed previously, the Project is anticipated to generate a water demand of 17,750 gallons per day, some of which would be used for landscaping and other uses and would not enter the sewer system. However, assuming the maximum water from the Project becomes wastewater, the 17,750 gallons per day would be

accommodated by the OCSD's excess capacity. Therefore, the Project would be adequately served by the existing wastewater system.

Electric and Natural Gas: The proposed Project would install onsite electrical and natural gas lines that would connect to existing infrastructure within Chapman Avenue. The impacts related to installation of the new electric and natural gas lines are included in the analysis herein, such as within the construction traffic, construction air quality, and construction noise analysis. The existing electric and gas utilities would be able adequately serve the Project. All service confirmations would be confirmed by the City prior to issuance of occupancy permits.

Landfills: In 2019 (the most recent data available), most of the solid waste from the City, which was disposed of in landfills, went to either the Olinda Alpha Sanitary Landfill or the Frank Bowerman Sanitary Landfill (Calrecycle 2024).

The Olinda Alpha Sanitary Landfill is permitted to accept 8,000 tons per day of solid waste and is permitted to operate through 2036. In September 2024 the maximum tonnage accepted was 7,240 tons, which is 760 tons less than the allowable tonnage. The Frank Bowerman Sanitary Landfill is permitted to accept 11,500 tons per day of solid waste and is permitted to operate through 2053. In September 2024, the landfill had a maximum tonnage of 10,295; thus, having an average daily additional capacity of 1,205 tons per day (Calrecycle SWIS 2024).

The CalEEMod modeling for the Project (included in Appendix D), identifies that the Project would generate 25.1 tons of solid waste per year, which would be 0.48 tons per week. However, based on the current recycling requirements, which require diversion of 75 percent of solid waste away from landfills, the Project would result in 0.12 tons (240 pounds) of solid waste per week being disposed of in landfills. As described above, the Olinda Alpha Sanitary Landfill has an average daily additional capacity of 760 tons per day and the Frank Bowerman Sanitary Landfill has an average daily additional capacity of 1,205 tons per day (Calrecycle 2024), which is sufficient permitted capacity to accommodate the additional solid waste disposal needs that would result from the Project. In addition, trash collection services would be arranged prior to the issuance of building permits.

Fire Services: There are seven City owned fire stations within the City that are staffed by the Orange County Fire Authority (OCFA). The OCFA response times for engines to arrive on scene after an emergency has been called are between 5 to 7 minutes. The closest Fire Station is 0.3 mile from the Project site, and there are four City fire stations within three miles of the site. The City's fire stations are listed below with the distance from the Project site:

- Fire Station 80, located at 14162 Forsyth Lane, which is 2.9 miles from the Project site.
- Fire Station 81, located at 11261 Acacia Parkway, which is 2.5 miles from the Project site.
- Fire Station 82, located at 11805 Gilbert Street, which is 0.3 mile from the Project site.
- Fire Station 83, located at 12132 Trask Avenue, which is 4.3 miles from the Project site
- Fire Station 84, located at 12191 Valley View Street, which is 3.8 miles from the Project site
- Fire Station 85, located at 12751 Western Avenue, which is 2.8 miles from the Project site
- Fire Station 86, located at 12232 West Street, which is 2.8 miles from the Project site.

The proposed Project would develop the site with 36 residences on the site. The building would include new fire prevention infrastructure pursuant to current code requirements. The City has adopted the California Fire Code (Title 24, Part 9 of the California Code of Regulations) in GGMC Section 18.16.020, which regulates new structures related to safety provisions, emergency planning, fire-resistant construction, fire protection systems,

and appropriate emergency access throughout the site. The Project's adherence to the existing fire code requirements would be verified as part of the City's regular permitting process.

As the site is within an area that is currently served by Fire Station 82 that is 0.3 mile from the site and there are three other City fire stations within three miles of the site, OCFA would be able to continue to provide fire services to the Project site and surrounding area from the existing fire stations. Additionally, the Project would be constructed pursuant to existing California Fire Code regulations that would be verified during the City's permitting process. Also, the proposed Project would result in a limited number of residents on the site. The 125 residents at full capacity would be a maximum increase of 0.07% of the City's population of 171,024 (CA Dept of Finance 2024). The new construction and limited increase in population within three miles of four fire stations would be adequately served by the existing fire services, and no expansion of fire services facilities would be required.

Police Services: The Garden Grove Police Department provides police services to the Project area. The Police Department headquarters is located at City Hall, which is approximately 2.5 miles from the Project site. The City has 183 sworn officers and 71 non-sworn Police Department employees (GG 24-25), which equates to 0.93 sworn officer per 1,000 residents.

Construction. Crime and safety issues during Project construction may include theft of building materials and construction equipment, malicious mischief, graffiti, and vandalism, which can result in the need for police services. However, the site would have security fencing during construction activities, and onsite materials would be either locked or kept in secure locations and would be limited based on the materials needed during each phase of construction, which would reduce these concerns during the approximately 6-month construction period, and the existing City police services are anticipated to continue to adequately serve the area.

Operation. Redevelopment of the Project site would result in approximately 125 persons onsite, which would be a maximum increase of 0.07% of the City's population. Based on the City's existing ratio of 0.93 sworn officer per 1,000 residents, the 125 residents at full capacity would result in the need for 12 percent of a new officer. During operation, the Project is anticipated to generate a typical range of police service calls, such as vehicle break-ins, residential thefts and disturbances, and vandalism. Security concerns would be addressed by providing low-intensity security lighting. Also, pursuant to the City's existing permitting process, the Police Department would review the Project's site plans to ensure that design measures are incorporated appropriately to provide a safe environment, and no new police facilities are required.

Due to the redevelopment nature of the Project site that is within an area that is already served, the increase would not be significant when compared to the current demand levels. Law enforcement personnel are anticipated to be able to respond in a timely manner to emergency calls from the Project site and the Project would be adequately served by police services.

School Services: The Project site is in the Garden Grove Unified School District that provides K-12 public school services. The following schools identified by the School District website school locator would serve the site:

- Brookhurst Elementary School, at 9821 William Dalton Way, Garden Grove
- Ralston Intermediate School, at 10851 Lampson Avenue, Garden Grove
- Rancho Alamitos High School, at 11351 Dale Street, Garden Grove

Development of the Project would generate a new student population on the Project site, who would generally (unless homeschooled or attending a private school) attend one of the three schools listed above. This would generate additional students to be served at local public schools. However, the need for additional school facilities is addressed through compliance with school impact fee assessment SB 50 (Chapter 407 of Statutes of 1998). SB 50 sets forth a state school facilities construction program, in which school districts (including the Garden Grove Unified School District) collect fees at the time of issuance of building permits for development projects. The existing development impact fee for the Garden Grove Unified School District is $4.79 per square foot for all new residential development. In addition, pursuant to Government Code Section 65995 payment of the school impact fees provides full and complete mitigation of school impacts. As a result, impacts related to school facilities from the increase in students related to the Project would be less than significant with the Government Code required fee payments, and the Project would be adequately served by school services.

Utilities Conclusion

Given the Project size and its location within an area that is currently served by utilities and the information provided above, the Project would be adequately served by all required utilities and public services. Therefore, the proposed Project meets the criteria of CEQA Guidelines Section 15332(e).

5.1 EXCEPTIONS FOR EXEMPTIONS

In addition to investigating the applicability of CEQA Guidelines Section 15332 (Class 32), this CEQA document also assesses whether any of the exceptions to qualifying for the Class 32 categorical exemption for an Infill Project are present. The following analysis compares the criteria of CEQA Guidelines Section 15300.2 (Exceptions) to the Project.

a. Criterion 15300.2(a): Location: Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located – a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

The Project does not qualify for an exemption under Classes 3, 4, 5, 6 or 11, which are related to other types of projects such as small facilities, minor alterations of land or land use limitations, information collection, and regulatory agency actions.

The Project is located within an urban area, and as detailed previously, is not located within a sensitive environment. In addition, the Project would not result in any impacts on an environmental resource of hazardous or critical concern, as described throughout this Exemption Checklist document. Therefore, the exception under criterion 15300.2(a) is not applicable.

b. Criterion 15300.2(b): Cumulative Impact: *All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.*

The effects of the proposed Project would generally be beneficial, as the proposed Project would create needed housing in the City on an underutilized parcel of land. The proposed Project would redevelop a site that is disturbed, has been previously developed, and is already served by utilities, public services, and transportation

infrastructure. Any construction effects would be temporary, confined to the Project vicinity, and reduced to a less than significant level by implementing existing applicable regulatory requirements, such as Air Quality Management District Rules and Regional Water Quality Control Board (RWCB) regulations that are implemented and verified through the City's development permitting process.

As explained previously, the Project would generate a limited number of vehicular traffic trips that do not exceed the City's screening threshold. The site is located within a Transit Priority Area and a SCAQMD High Quality Transit Area, and low VMT area; and thus, potential impacts related to transportation would be less than cumulatively considerable. Similarly, the previous noise analysis details the limited construction and operational noise and vibration that would be generated by the Project, which would either be limited in time and duration and/or below existing ambient noise levels (detailed in Table N-1); and therefore, would result in a less than significant cumulative impact.

As evaluated previously in Tables AQ-1 through AQ-3, the proposed Project would not exceed the SCAQMD's applicable thresholds. Therefore, the Project's operational emissions would not exceed the NAAQS and CAAQS, would not result in a cumulatively considerable net increase of any criteria pollutant impacts. Also, as detailed in Table AQ-4, construction related health risks were far below the threshold for both cancer and non-cancer health risks and would have a limited ability to be cumulatively considerable. Further, there are no cumulative projects within 1,000-foot radius of the Project that would substantially generate TACs during the Project's six-month construction period. Thus, the Project would have a less than significant cumulative impact.

The Project would develop the site consistent with the City's land use plan, and would implement the City's General Plan Update, which assumes that "Densities above the maximum-stated densities may be permitted pursuant to the State Density Bonus law" (General Plan Land Use Element Page 2-25). Thus, the potential cumulative impacts of the Project have been previously evaluated in the City's Focused General Plan Update and Zoning Amendments Draft Environmental Impact Report (SCH# 2021060714), which analyzed the cumulative impact of thousands of new dwelling units across the City. As detailed herein, the proposed Project would not result in any potentially significant impacts that have the potential to cumulatively combine. No potential cumulative impacts would result from the Project. Therefore, the exception under CEQA Guidelines Section 15300.2(b) does not apply to the Project.

c. Criterion 15300.2(c): Significant Effects: A *categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.*

There are no known unusual circumstances that are applicable to the Project, and which may result in a significant effect on the environment. The proposed Project consists of redevelopment of the site that was previously developed with a restaurant for multi-family residential uses within a developed area that contains other multi-family residential uses and that is served by utilities and multiple forms of transportation. There is nothing unusual about the Project site or the proposed Project. The Project site would be consistent with the City's General Plan land use and the Zoning Code requirements with implementation of density bonus wavers. Implementation of the proposed Project in a manner consistent with existing City planning and zoning would not introduce a new activity to the area that could result in a significant effect on the environment. Therefore, the exception under CEQA Guidelines Section 15300.2(c) does not apply to the Project. Additionally, the Project does not have any significant impacts.

d. Criterion 15300.2(d): Scenic Highways: *A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.*

The California Department of Transportation's (Caltrans) Landscape Architecture Program administers the Scenic Highway Program contained in the Streets and Highways Code, Sections 260–263. State Highways are classified as either Officially Listed or Eligible. There are no officially designated state scenic highways in the City or in vicinity of the Project (Caltrans 2024). The closest State-designated scenic highway is a portion of State Route 91 (SR-91), which is located approximately 13.5 miles northeast of the Project site. Therefore, the proposed Project does not have the potential to damage resources within a State-designated scenic highway. Therefore, the exception under CEQA Guidelines Section 15300.2(d) does not apply to the Project.

e. Criterion 15300.2(e): Hazardous Waste Sites: *A categorical exemption shall not be used for a project located on a site which is included on any list complied pursuant to Section 65962.5 of the Government Code.*

A Phase I Environmental Site Assessment (Appendix G) was prepared for the Project site that included a search of government databases that did not identify the Project site on any list of hazardous material sites. In addition, a survey of the site was completed, which did not identify any hazardous materials or evidence of previous release of hazardous materials on the site.

The Project site is a vacant undeveloped site that does not contain any identified hazardous waste. A review of the California Department of Toxic Substances Control EnviroStor database identifies that the Project site and adjacent areas do not contain hazardous waste sites and are not on any list complied pursuant to Section 65962.5 of the Government Code. In addition, the Phase I Environmental Site Assessment conducted a search to identify if there are any hazardous material uses in the Project vicinity that could adversely affect the Project site, which did not identify an impact to the site. Therefore, the proposed Project would not be located on a list of hazardous waste site, and the exception under CEQA Guidelines Section 15300.2(e) does not apply to the Project.

f. Criterion 15300.2(f): Historical Resources: *A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resources.*

CEQA defines a historical resource as something that meets one or more of the following criteria: (1) listed in, or determined eligible for listing in, the California Register of Historical Resources; (2) listed in a local register of historical resources as defined in Public Resources Code (PRC) Section 5020.1(k); (3) identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (4) determined to be a historical resource by a project's Lead Agency (PRC Section 21084.1 and CEQA Guidelines Section 15064.5[a]).

The California Register defines a "historical resource" as a resource that meets one or more of the following criteria: (1) associated with events that have made a significant contribution to the broad patterns or local or regional history of the cultural heritage of California or the United States; (2) associated with the lives of persons important to local, California, or national history; (3) embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values; or (4) has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

The Phase I Environmental Site Assessment (Appendix G) evaluated the historic records searches for the Project site, which showed that the site was vacant or agricultural until 1952 when it was developed for use as a chicken ranch and egg farm. In 1968 the chicken ranch use ended, and a hamburger restaurant named Burger Chef was constructed with 40 parking spaces, which was then used as a Nutters Produce in 1971 and then Knollwood Burgers in 1975. Since the 1970s other restaurants used the site including Sultan Palace Restaurant and in 2018 Raoushi Lebanese Restaurant and Hookah Lounge that closed in 2023. Record searches identify that there have been various uses of the site over the years; however, none are identified as being associated with events that have made a significant contribution to history. Likewise, the site is not strongly associated with the development of the region or with the founding of Garden Grove. Therefore, the site is not strongly associated with events that have made a significant contribution to the broad patterns of national or state history or with significant persons from the past.

In July 2024 the building was demolished and the site was cleared of vegetation and debris. The site is currently vacant and undeveloped and does not contain any historic resources. As a result, the Project site is not eligible for listing in the National Register of Historic Places or California Register of Historic Resources at any level, or for local designation. As such, the site does not meet the CEQA criteria for a historic resource and the Project would not result in impacts to historic resources. The exception under CEQA Guidelines Section 15300.2(e) does not apply to the Project.

Additionally, the Project site is located adjacent to modern commercial and residential buildings that have not been identified as historic and are not strongly associated with events that have made a significant contribution to the broad patterns of national or state history or with significant persons from the past. The adjacent areas do not contain historic resources or yield information important to history of prehistory. As a result, the Project would not result in impacts to historic resources; and this exception under CEQA Guidelines Section 15300.2(e) does not apply to the Project.

Conclusion

On the basis of the evidence provided above, the Project is eligible for a Class 32 Categorical Exemption in accordance with Section 15332, Infill Development Projects, of the CEQA Guidelines. Because the proposed Project meets the criteria for categorically exempt infill development projects listed in CEQA Guidelines Section 15332 and it would not have a significant effect on the environment, this analysis finds that a Notice of Exemption may be prepared for the Project.

6.0 REFERENCES

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VMT Screening Analysis, 2024. Prepared by EPD Solutions. Appendix B.

Appendix A: LOS Screening Analysis

E | P | D SOLUTIONS, INC

WHERE EXPERIENCE AND PASSION MEET

To:	City of Garden Grove
From:	Maryam Javanmardi, Chad Karns, EPD Solutions Inc
Date:	10/21/2024
Site:	9562 Chapman Street, Garden Grove-EPD#24-074
Subject:	Level of Service (LOS) Screening Analysis

This technical memorandum provides an evaluation of the proposed residential project (the Project) located at 9562 Chapman Avenue in the southwestern portion of the City of Garden Grove. The site is located along the south side of Chapman Avenue, just east of the intersection with Gilbert Street. Regional access to the site is provided by State Route 22 (SR-22) and the Magnolia Street and Brookhurst Street interchanges. Both Magnolia Street and Brookhurst Street provide direct access to Chapman Avenue to the west and east of the Project site.

The purpose of this analysis is to determine if a Traffic Impact Analysis (TIA) would be required for the Project.

The 0.97-acre Project site, previously developed, included a 2,496-square-foot restaurant and patio built in 1968. It was vacated and marked unsafe by the City's Building and Safety Division in 2023. Following a demolition permit in July 2024, the building and debris were removed, leaving the site vacant with areas of soil, weeds, and the former asphalt parking lot.

The Project proposes to remove existing pavement, infrastructure, and remnants from the former restaurant site to construct a new building with 36 rental residential units. The building will include one parking level and three residential levels with one-bedroom, two-bedroom, and three-bedroom units. Additional elements include a community room, landscape areas, and a private deck, with parking access from Chapman Avenue. The proposed density of 37.28 units per gross acre aligns with allowable limits, incorporating density bonuses of four very low-income affordable units.

The Project site plan is shown in Figure 1. This memo evaluates the Project using the City of Garden Grove Traffic Impact Analysis (TIA) Guidelines for Vehicles Miles Traveled and Level of Service Assessment (May 2020).

Project Trip Generation

The Project trip generation was prepared using trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition (2021). The proposed use was analyzed using Multifamily Housing (Low-Rise) (ITE Land Use Code 220). Table 1 presents the trip generation estimate for the Project. As shown in Table 1, the Project is anticipated to generate 243 daily vehicle trips, 14 AM and 18 PM peak hour vehicle trips.

Level of Service Screening

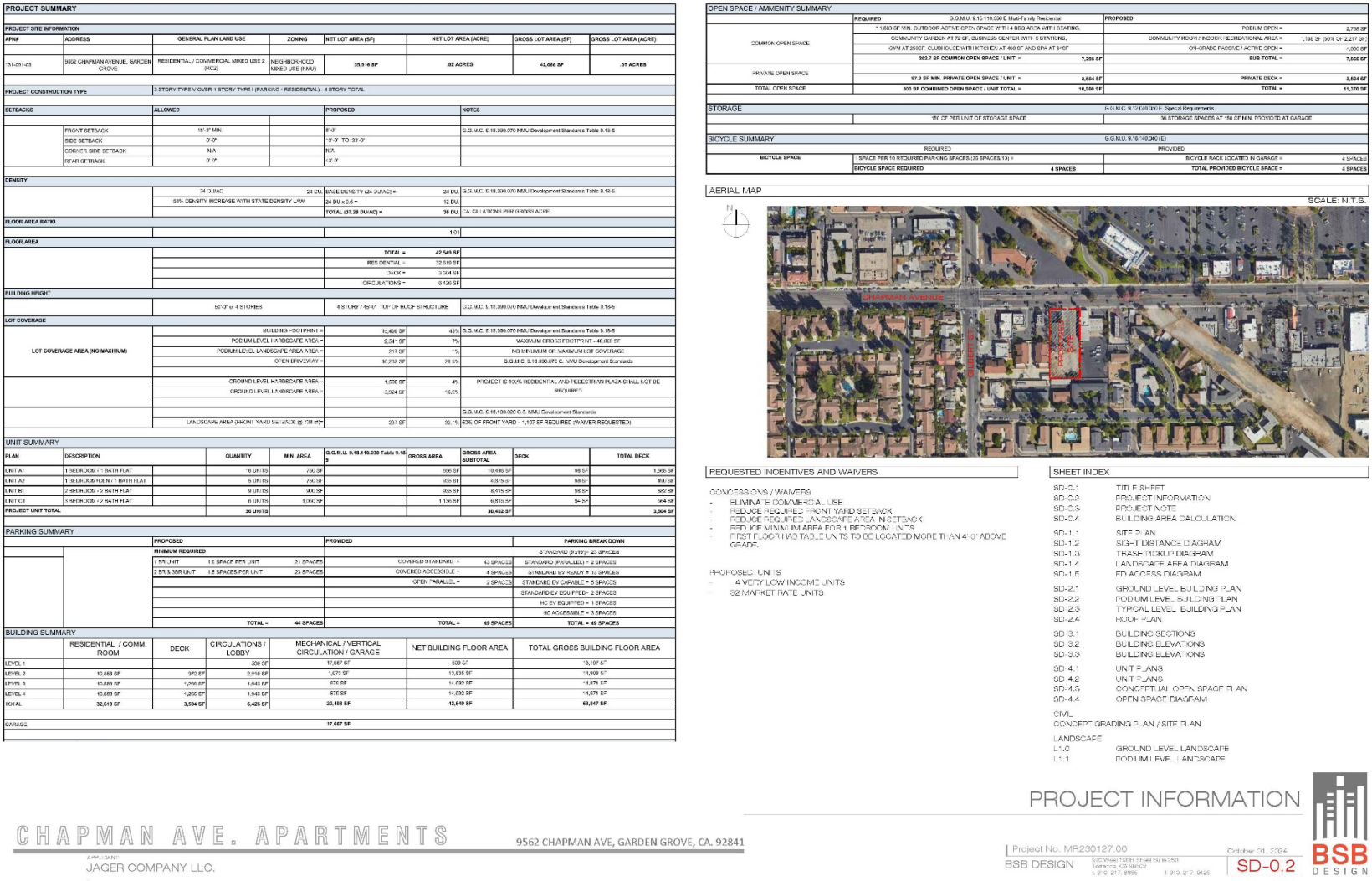
As detailed in the 'Introduction' Section (page 8) of the City's TIA Guidelines for Vehicles Miles Traveled and Level of Service Assessment, a TIA that includes a Level of Service (LOS) analysis is not required for projects

that generate less than 50 vehicle trips during either the AM or PM peak hour. As shown in Table 1, the project is anticipated to generate 14 AM peak hour trips and 18 PM peak hour trips. Therefore, the proposed project would not generate 50 or more vehicle trips during the peak hour. A TIA that includes an LOS analysis is not required.

TIA Screening Results

The Project was evaluated using the City's TIA Guidelines for Level of Service Assessment to determine if the project would require a TIA LOS analysis (for non-CEQA purposes). The Project generates 243 daily vehicle trips, 14 AM and 18 PM peak hour vehicle trips, which is less than the 50 peak hour trip screening threshold. Therefore, the Project would not result in a 50 peak hour increase in trips from the site and does not require preparation of a TIA LOS analysis.

Figure 1: Project Site Plan



PROJECT SUMMARY

PROJECT SITE INFORMATION

APN#	ADDRESS	GENERAL PLAN LAND USE	ZONING	NET LOT AREA (SF)	NET LOT AREA (ACRE)	GROSS LOT AREA (SF)	GROSS LOT AREA (ACRE)
131-091-03	9562 CHAPMAN AVENUE, GARDEN GROVE	RESIDENTIAL / COMMERCIAL MIXED USE 2 (RC2)	NEIGHBORHOOD MIXED USE (NMU)	35,916 SF	.82 ACRES	42,066 SF	.97 ACRES

PROJECT CONSTRUCTION TYPE: 3 STORY TYPE V OVER 1 STORY TYPE I (PARKING + RESIDENTIAL) - 4 STORY TOTAL

SETBACKS	ALLOWED	PROPOSED	NOTES
FRONT SETBACK	15'-3" MIN.	8'-9"	G.G.M.C. § 18.390.070 NMU Development Standards Table 9.18-5
SIDE SETBACK	0'-0"	0'-0" TO 33'-6"	
CORNER SIDE SETBACK	N/A	N/A	
REAR SETBACK	0'-0"	43'-0"	

DENSITY

24 DU/AC	24 DU	BASE DENSITY (24 DU/AC) =	24 DU	G.G.M.C. § 18.390.070 NMU Development Standards Table 9.18-5
50% DENSITY INCREASE WITH STATE DENSITY LAW		24 DU x 0.5 =	12 DU	
		TOTAL (37.39 DU/AC) =	36 DU	CALCULATIONS PER GROSS ACRE

FLOOR AREA RATIO: 1.01

FLOOR AREA

TOTAL =	42,549 SF	
RESIDENTIAL =	32,619 SF	
DECK =	3,504 SF	
CIRCULATION =	6,426 SF	

BUILDING HEIGHT

55'-3" or 4 STORIES	4 STORY / 48'-6" TOP OF ROOF STRUCTURE	G.G.M.C. § 18.390.070 NMU Development Standards Table 9.18-5	

LOT COVERAGE

LOT COVERAGE AREA (NO MAXIMUM)	BUILDING FOOTPRINT =	19,496 SF	43%	G.G.M.C. § 18.390.070 NMU Development Standards Table 9.18-5
	PODIUM LEVEL HARDSCAPE AREA =	2,541 SF	7%	MAXIMUM GROSS FOOTPRINT - 80,000 SF
	PODIUM LEVEL LANDSCAPE AREA AREA =	211 SF	1%	NO MINIMUM OR MAXIMUM LOT COVERAGE
	OPEN DRIVEWAY =	10,232 SF	28.5%	G.G.M.C. § 18.390.070 C. NMU Development Standards
	GROUND LEVEL HARDSCAPE AREA =	1,555 SF	4%	PROJECT IS 100% RESIDENTIAL AND PEDESTRIAN PLAZA SHALL NOT BE REQUIRED
	GROUND LEVEL LANDSCAPE AREA =	3,924 SF	10.5%	
	LANDSCAPE AREA (FRONT YARD SETBACK @ 738 SF)	257 SF	35.1%	G.G.M.C. § 18.100.030 C.5. NMU Development Standards 50% OF FRONT YARD – 1,107 SF REQUIRED (WAIVER REQUESTED)

UNIT SUMMARY

PLAN	DESCRIPTION	QUANTITY	MIN. AREA	G.G.M.U. 9.18.110.030 Table 9.18-5	GROSS AREA	GROSS AREA SUBTOTAL	DECK	TOTAL DECK
UNIT A1	1 BEDROOM / 1 BATH FLAT	6 UNITS	700 SF		696 SF	10,436 SF	98 SF	1,366 SF
UNIT A2	1 BEDROOM+DEN / 1 BATH FLAT	6 UNITS	750 SF		933 SF	4,375 SF	98 SF	490 SF
UNIT B1	2 BEDROOM / 2 BATH FLAT	9 UNITS	900 SF		953 SF	8,415 SF	98 SF	882 SF
UNIT C1	3 BEDROOM / 2 BATH FLAT	6 UNITS	1,000 SF		1,196 SF	6,886 SF	94 SF	564 SF
PROJECT UNIT TOTAL		30 UNITS				30,402 SF		3,304 SF

PARKING SUMMARY

	PROPOSED			PROVIDED		PARKING BREAK DOWN
	MINIMUM REQUIRED					STANDARD (RAMP) - 23 SPACES
	1 BR UNIT	1.5 SPACE PER UNIT	21 SPACES	COVERED STANDARD =	43 SPACES	STANDARD (PARALLEL) = 2 SPACES
	2 & 3 BR UNIT	1.5 SPACES PER UNIT	23 SPACES	COVERED ACCESSIBLE =	4 SPACES	STANDARD EV READY = 12 SPACES
				OPEN *PARALLEL =	2 SPACES	STANDARD EV CAPABLE = 5 SPACES
						STANDARD EV EQUIPPED= 2 SPACES
						HC EV EQUIPPED = 1 SPACES
						HC ACCESSIBLE = 3 SPACES
	TOTAL =	44 SPACES		TOTAL =	49 SPACES	TOTAL = 49 SPACES

BUILDING SUMMARY

	RESIDENTIAL / COMM. ROOM	DECK	CIRCULATIONS / LOBBY	MECHANICAL / VERTICAL CIRCULATION / GARAGE	NET BUILDING FLOOR AREA	TOTAL GROSS BUILDING FLOOR AREA
LEVEL 1			536 SF	17,667 SF	533 SF	18,197 SF
LEVEL 2	10,883 SF	972 SF	3,010 SF	1,073 SF	13,935 SF	14,909 SF
LEVEL 3	10,883 SF	1,266 SF	1,043 SF	876 SF	11,892 SF	13,871 SF
LEVEL 4	10,883 SF	1,266 SF	1,043 SF	876 SF	11,892 SF	13,871 SF
TOTAL	32,619 SF	3,504 SF	6,426 SF	20,466 SF	42,549 SF	63,847 SF
GARAGE				17,667 SF		

OPEN SPACE / AMMENITY SUMMARY

	REQUIRED	G.G.M.U. 9.18.110.030 E Multi-Family Residential	PROPOSED	
COMMON OPEN SPACE	* 1,650 SF MIN. OUTDOOR ACTIVE OPEN SPACE WITH 4 BBQ AREA WITH SEATING,		PODIUM OPEN =	2,738 SF
	COMMUNITY GARDEN AT 72 SF, BUSINESS CENTER WITH 5 STATIONS,		COMMUNITY ROOM / INDOOR RECREATIONAL AREA =	1,199 SF (50% OF 2,217 SF)
	GYM AT 2592F, CLUBHOUSE WITH KITCHEN AT 469 SF AND SPA AT 6'-0"		ON-GRADE PASSIVE / ACTIVE OPEN =	4,000 SF
	392.7 SF COMMON OPEN SPACE / UNIT =	7,266 SF	SUB-TOTAL =	7,666 SF
PRIVATE OPEN SPACE	97.3 SF MIN. PRIVATE OPEN SPACE / UNIT =	3,584 SF	PRIVATE DECK =	3,504 SF
TOTAL OPEN SPACE	300 SF COMBINED OPEN SPACE / UNIT TOTAL =	10,850 SF	TOTAL =	11,370 SF

STORAGE — G.G.M.U. 9.12.040.300 E. Special Requirements

REQUIRED	PROVIDED
150 CF PER UNIT OF STORAGE SPACE	36 STORAGE SPACES AT 150 CF MIN. PROVIDED AT GARAGE

BICYCLE SUMMARY — G.G.M.U. 9.18.140.040 (E)

	REQUIRED		PROVIDED	
BICYCLE SPACE	1 SPACE PER 10 REQUIRED PARKING SPACES (35 SPACES/10) =		BICYCLE RACK LOCATED IN GARAGE =	4 SPACES
	BICYCLE SPACE REQUIRED	4 SPACES	TOTAL PROVIDED BICYCLE SPACE =	4 SPACES

AERIAL MAP — SCALE: N.T.S.

REQUESTED INCENTIVES AND WAIVERS

CONCESSIONS / WAIVERS
- ELIMINATE COMMERCIAL USE
- REDUCE REQUIRED FRONT YARD SETBACK
- REDUCE REQUIRED LANDSCAPE AREA IN SETBACK
- REDUCE MINIMUM AREA FOR 1 BEDROOM UNITS
- FIRST FLOOR HABITABLE UNITS TO BE LOCATED MORE THAN 4'-0" ABOVE GRADE

PROPOSED UNITS
- 4 VERY LOW INCOME UNITS
- 32 MARKET RATE UNITS

SHEET INDEX

CHAPMAN AVE. APARTMENTS

9562 CHAPMAN AVE, GARDEN GROVE, CA. 92841

APPLICANT
JAGER COMPANY LLC.

PROJECT INFORMATION

Project No. MR230127.00 | October 31, 2024

BSB DESIGN 525 West 190th Street Suite 250 Torrance, CA 90502 T. 310. 217. 9966 F. 310. 217. 9425

SD-0.2

BSB DESIGN

Table 1: Project Trip Generation

				AM Peak Hour			PM Peak Hour		
Land Use		**Units**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Project Trip Rate									
Multifamily Housing (Low-Rise)[1]		DU	6.74	0.10	0.30	0.40	0.32	0.19	0.51
Proposed Project Trip Generation									
Multifamily Housing (Low-Rise) [1]	36	DU	243	3	11	14	11	7	18
Total Trip Generation			243	3	11	14	11	7	18

DU = Dwelling Unit

[1] Trip rates from the Institute of Transportation Engineers, *Trip Generation,11th Edition, 2021* . Land Use Code 220- Multifamily Housing (Low-Rise).

Appendix B: Vehicle Miles Traveled Screening Analysis

E | P | D SOLUTIONS, INC

WHERE EXPERIENCE AND PASSION MEET

To:	City of Garden Grove
From:	Maryam Javanmardi, Chad Karns, EPD Solutions Inc
Date:	4/3/2024
Site:	9562 Chapman Street, Garden Grove-EPD#24-074
Subject:	Vehicle Miles Traveled (VMT) Screening Analysis

This technical memorandum provides an evaluation of the proposed residential project (the Project) located at 9562 Chapman Avenue in the southwestern portion of the City of Garden Grove. The site is located along the south side of Chapman Avenue, just east of the intersection with Gilbert Street. Regional access to the site is provided by State Route 22 (SR-22) and the Magnolia Street and Brookhurst Street interchanges. Both Magnolia Street and Brookhurst Street provide direct access to Chapman Avenue to the west and east of the Project site.

The purpose of this analysis is to determine if a Vehicles Miles Traveled Analysis (VMT) would be required for the Project.

The 0.97-acre Project site, previously developed, included a 2,496-square-foot restaurant and patio built in 1968. It was vacated and marked unsafe by the City's Building and Safety Division in 2023. Following a demolition permit in July 2024, the building and debris were removed, leaving the site vacant with areas of soil, weeds, and the former asphalt parking lot.

The Project proposes to remove existing pavement, infrastructure, and remnants from the former restaurant site to construct a new building with 36 rental residential units. The building will include one parking level and three residential levels with one-bedroom, two-bedroom, and three-bedroom units. Additional elements include a community room, landscape areas, and a private deck, with parking access from Chapman Avenue. The proposed density of 37.28 units per gross acre aligns with allowable limits, incorporating density bonuses of four very low-income affordable units.

The Project site plan is shown in Figure 1. This memo evaluates the Project using the City of Garden Grove Traffic Impact Analysis (TIA) Guidelines for Vehicles Miles Traveled and Level of Service Assessment (May 2020).

Project Trip Generation

The Project trip generation was prepared using trip rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 11th Edition (2021). The proposed use was analyzed using Multifamily Housing (Low-Rise) (ITE Land Use Code 220). Table 1 presents the trip generation estimate for the Project. As shown in Table 1, the Project is anticipated to generate 243 daily vehicle trips, 14 AM and 18 PM peak hour vehicle trips.

Vehicle Miles Traveled Screening

Senate Bill (SB) 743 was signed by Governor Brown in 2013 and required the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide an alternative to LOS for evaluating Transportation impacts, aiming to promote the reduction of greenhouse gas emissions, the development of

multimodal transportation networks and a diversity of land uses. In response, Section 15064.3 - Determining the Significance of Transportation Impacts, was added to the CEQA Guidelines which states that VMT is the most appropriate measure of transportation impacts and shall apply statewide beginning on July 1, 2020.

The City's TIA Guidelines 'CEQA Assessment - VMT Analysis' Section provides VMT screening thresholds to identify projects that would be considered to have a less-than significant impact on VMT and therefore could be screened from further analysis. If a project meets one of the following criteria, then the VMT impact of the project would be considered less-than significant and no further analysis of VMT would be required:

1. Transit Priority Area (TPA) Screening.
2. Low VMT Area Screening.
3. Project Type Screening.

The applicability of each criterion to the project is discussed below.

Screening Criteria 1 - Transit Priority Area Screening: According to the City's Guidelines, projects located in a TPA may be presumed to have a less than significant impact. A TPA is defined as a half mile area around an existing major transit stop or an existing stop along a high-quality transit corridor. The City guidelines also state that a project may not meet the screening threshold if the following project or location specific criteria are not met:

- Has a Floor Area Ration (FAR) of less than 0.75;
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
- Replaces affordable residential units with a smaller number of moderate or high-income residential units.

Exhibit 4.14-6, of the Transit Priority Areas of the Focused General Plan Update and Zoning Amendments Draft EIR (included as Figure 2), identifies that the Project site is located in a TPA. The site is also located within a SCAG high-quality transit corridor (Figure 3). The proposed building would have a net total floor area of 42,549 SF on the approximately 42,066 SF Project site, which would result in a FAR of 1.01 that would exceed 0.75. The proposed Project does not include excess parking beyond what is required and is consistent with the SCAG Connect SoCal 2024 Regional Transportation Plan/Sustainable Communities Strategy that provides for infill and redevelopment of higher-density residential uses within mixed-use areas that are served by transit. Connect SoCal 2024 Policy 32 promotes the growth of origins and destinations, with a focus on future housing and population growth, in areas with existing and planned urban infrastructure that includes transit and utilities. The Project is consistent with this policy as it provides new housing and population in an urban area with infrastructure, transit, and utilities. Connect SoCal 2024 Policy 36 encourages housing development in transit-supportive and walkable areas (such as the Project area) to create more interconnected and resilient communities. Connect SoCal 2024 Policy 42 promotes 15-minute communities as places with a mix of complementary land uses and accessible mobility options where residents can either access their most basic, day-to-day needs within a 15-minute walk, bike ride, or roll from their

home or as places that result in fewer and shorter trips because of the proximity of complementary land uses, which is consistent with the complementary residential and commercial uses in the Project vicinity.[1]

In addition, the Project provides affordable residential units on a site that was not previously used for affordable housing. Therefore, the Project meets the Transit Priority Area screening criteria, and impacts would be less than significant.

Screening Criteria 2 - Low VMT Area Screening: The City of Garden Grove Traffic Impact Analysis Guidelines for VMT and Level of Service Assessment use the Orange County Traffic Analysis Model (OCTAM) travel demand forecasting to determine if the Project is located in a low VMT generating area. Per these guidelines, projects located in Zone 1 areas can be presumed not to have a significant VMT impact and can be screened from VMT analysis; and Zone 2 identifies VMT areas that are more efficient than the county average, but not as efficient as Zone 1areas and that projects in these areas may or may not have a VMT impact and that impact level verification is required.

As per Exhibit 4.14-5 of the Focused General Plan Update and Zoning Amendments Draft EIR (included as Figure 4) the Project site is located in Zone 2 that has been identified as having a VMT that is lower than County average, but Projects in the area need to verify the significance of potential impacts. As described under Screening Criteria 1, the Project is located within a TPA (with meeting criteria); which verifies that the Project would not result in a significant VMT impact. Therefore, the Project meets Screening Criteria 2.

Screening Criteria 3 – Project Type Screening: According to the City's Guidelines, projects which propose local serving retail (retail projects less than 50,000 square feet) or other local serving uses would have a less than significant impact on VMT. The types of projects considered local serving include K-12 schools, day care centers, local parks, student housing projects and community institutions such as libraries, fire stations, etc. In addition, projects which would generate fewer than 110 average daily vehicle trips would not cause a substantial increase in the total citywide or regional VMT. As shown in Table 1, the Project generates 243 daily trips, which is more than 110 daily vehicle trips. Therefore, Screening Criteria 3 is not met.

Summary

The Project was evaluated using the City's TIA Guidelines thresholds to determine if a VMT analysis is required. The Project site is located within a TPA and meets Screening Criteria 1. Also, because the site is located within TAZ Zone 2 and within a TPA, Screening Criteria 2 would also be met. Therefore, the Project meets the City's VMT screening criteria and is presumed to have a less-than-significant VMT impact.

[1] Southern California Association of Governments (SCAG) Connect SoCal 2024 Regional Transportation Plan/Sustainable Communities Strategy.

Figure 1: Project Details

PROJECT SUMMARY

PROJECT SITE INFORMATION

APN#	ADDRESS	GENERAL PLAN LAND USE	ZONING	NET LOT AREA (SF)	NET LOT AREA (ACRE)	GROSS LOT AREA (SF)	GROSS LOT AREA (ACRE)
131-091-03	9562 CHAPMAN AVENUE, GARDEN GROVE	RESIDENTIAL / COMMERCIAL MIXED USE 2 (MU2)	NEIGHBORHOOD MIXED USE (NMU)	35,916 SF	.82 ACRES	42,066 SF	.97 ACRES

PROJECT CONSTRUCTION TYPE	3 STORY TYPE V OVER 1 STORY TYPE I (PARKING - RESIDENTIAL) - 4 STORY TOTAL

SETBACKS	ALLOWED	PROPOSED	NOTES
FRONT SETBACK	15'-3" MIN.	8'-9"	G.G.M.C. § 18.390.070 NMU Development Standards Table 9.18-5
SIDE SETBACK	0'-0"	0'-0" TO 33'-0"	
CORNER SIDE SETBACK	N/A	N/A	
REAR SETBACK	0'-0"	43'-0"	

DENSITY				
	24 DU/AC	24 DU	BASE DENSITY (24 DU/AC) =	24 DU G.G.M.C. § 18.390.070 NMU Development Standards Table 9.18-5
	50% DENSITY INCREASE WITH STATE DENSITY LAW		24 DU x 0.5 =	12 DU
			TOTAL (37.29 DUAC) =	36 DU CALCULATIONS PER GROSS ACRE

FLOOR AREA RATIO		
		1.01

FLOOR AREA		
	TOTAL =	42,549 SF
	RESIDENTIAL =	32,619 SF
	UNICK =	3,504 SF
	CIRCULATION =	6,426 SF

BUILDING HEIGHT			
	65'-0" or 4 STORIES	4 STORY / 49'-4" TOP OF ROOF STRUCTURE	G.G.M.C. § 18.390.070 NMU Development Standards Table 9.18-5

LOT COVERAGE				
LOT COVERAGE AREA (NO MAXIMUM)	BUILDING FOOTPRINT =	15,496 SF	43%	G.G.M.C. § 18.390.070 NMU Development Standards Table 9.18-5
	PODIUM LEVEL HARDSCAPE AREA =	2,541 SF	7%	MAXIMUM GROSS FOOTPRINT - 40,000 SF
	PODIUM LEVEL LANDSCAPE AREA AREA =	217 SF	1%	NO MINIMUM OR MAXIMUM LOT COVERAGE
	OPEN DRIVEWAY =	10,732 SF	29.5%	G.G.M.C. § 18.390.070 C. NMU Development Standards
	GROUND LEVEL HARDSCAPE AREA =	1,206 SF	4%	PROJECT IS 100% RESIDENTIAL AND PEDESTRIAN PLAZA SHALL NOT BE REQUIRED
	GROUND LEVEL LANDSCAPE AREA =	5,924 SF	16.5%	
				G.G.M.C. § 18.130.020 C.3. NMU Development Standards
	LANDSCAPE AREA (FRONT YARD SETBACK @ 70% SF)	237 SF	69.1%	60% OF FRONT YARD = 1,107 SF REQUIRED (WAIVER REQUESTED)

UNIT SUMMARY

PLAN	DESCRIPTION	QUANTITY	MIN. AREA	G.G.M.U. § 18.110.030 Table 9.18-5	GROSS AREA	GROSS AREA SUBTOTAL	DECK	TOTAL DECK
UNIT A1	1 BEDROOM / 1 BATH FLAT	6 UNITS	700 SF		696 SF	16,496 SF	98 SF	1,566 SF
UNIT A2	1 BEDROOM+DEN / 1 BATH FLAT	5 UNITS	750 SF		933 SF	4,875 SF	88 SF	490 SF
UNIT B1	2 BEDROOM / 2 BATH FLAT	9 UNITS	900 SF		983 SF	8,415 SF	98 SF	882 SF
UNIT C1	3 BEDROOM / 2 BATH FLAT	6 UNITS	1,000 SF		1,136 SF	6,855 SF	94 SF	564 SF
PROJECT UNIT TOTAL		36 UNITS				36,402 SF		3,504 SF

PARKING SUMMARY

PROPOSED				PROVIDED		PARKING BREAK DOWN
MINIMUM REQUIRED						STANDARD (9'x19')= 23 SPACES
1 BR UNIT	1.0 SPACE PER UNIT	31 SPACES	COMPACT STANDARD =	43 SPACES	STANDARD (PARALLEL) = 2 SPACES	
2 BR & 3BR UNIT	1.5 SPACES PER UNIT	23 SPACES	COVERED ACCESSIBLE =	4 SPACES	STANDARD VAN HEAVY = 17 SPACES	
			OPEN TANDEM =	2 SPACES	STANDARD EV CAPABLE = 8 SPACES	
					STANDARD EV EQUIPPED= 2 SPACES	
					HC EV EQUIPPED = 1 SPACES	
					HC ACCESSIBLE = 3 SPACES	
	TOTAL =	44 SPACES	TOTAL =	49 SPACES	TOTAL = 49 SPACES	

BUILDING SUMMARY

	RESIDENTIAL / COMM. ROOM	DECK	CIRCULATIONS / LOBBY	MECHANICAL / VERTICAL CIRCULATION / GARAGE	NET BUILDING FLOOR AREA	TOTAL GROSS BUILDING FLOOR AREA
LEVEL 1			506 SF	17,667 SF	539 SF	18,197 SF
LEVEL 2	10,883 SF	972 SF	2,010 SF	1,073 SF	13,835 SF	13,909 SF
LEVEL 3	10,883 SF	1,266 SF	1,043 SF	676 SF	11,892 SF	14,871 SF
LEVEL 4	10,883 SF	1,266 SF	1,043 SF	676 SF	11,892 SF	14,871 SF
TOTAL	32,619 SF	3,504 SF	6,426 SF	20,458 SF	42,549 SF	63,047 SF
GARAGE				17,667 SF		

OPEN SPACE / AMMENITY SUMMARY

	REQUIRED G.G.M.U. § 18.110.090 E Multi-Family Residential		PROPOSED	
COMMON OPEN SPACE	1,800 SF MIN. OUTDOOR ACTIVE OPEN SPACE WITH 4 BBQ AREA WITH SEATING,		PODIUM OPEN =	2,736 SF
	COMMUNITY GARDEN AT 72 SF, BUSINESS CENTER WITH 5 STATIONS,		COMMUNITY ROOM / INDOOR RECREATIONAL AREA =	3,199 SF (50% OF 2,217 SF)
	GYM AT 2590 SF, CLUBHOUSE WITH KITCHEN AT 469 SF AND SPA AT 615 SF		ON-GRADE PASSIVE / ACTIVE OPEN =	1,200 SF
	202.7 SF COMMON OPEN SPACE / UNIT =	7,290 SF	SUB-TOTAL =	7,066 SF
PRIVATE OPEN SPACE				
	97.3 SF MIN. PRIVATE OPEN SPACE / UNIT =	3,504 SF	PRIVATE DECK =	3,504 SF
TOTAL OPEN SPACE	300 SF COMBINED OPEN SPACE / UNIT TOTAL =	10,800 SF	TOTAL =	11,376 SF

STORAGE		
	G.G.M.U. § 18.110.090 E. Special Requirements	
	150 CF PER UNIT OF STORAGE SPACE	36 STORAGE SPACES AT 150 CF MIN. PROVIDED AT GARAGE

BICYCLE SUMMARY		G.G.M.U. § 18.140.040 (D)		
	REQUIRED		PROVIDED	
BICYCLE SPACE	1 SPACE PER 10 REQUIRED PARKING SPACES (35 SPACES/10) =		BICYCLE RACK LOCATED IN GARAGE =	4 SPACES
	BICYCLE SPACE REQUIRED	4 SPACES	TOTAL PROVIDED BICYCLE SPACE =	4 SPACES

AERIAL MAP

SCALE: N.T.S.

REQUESTED INCENTIVES AND WAIVERS

CONCESSIONS / WAIVERS
- ELIMINATE COMMERCIAL USE
- REDUCE REQUIRED FRONT YARD SETBACK
- REDUCE REQUIRED LANDSCAPE AREA IN SETBACK
- REDUCE MINIMUM AREA FOR 1 BEDROOM UNITS
- FIRST FLOOR UNITS TO BE LOCATED MORE THAN 4'-0" ABOVE GRADE

PROPOSED UNITS
- 4 VERY LOW INCOME UNITS
- 32 MARKET RATE UNITS

SHEET INDEX

CHAPMAN AVE. APARTMENTS

9562 CHAPMAN AVE, GARDEN GROVE, CA. 92841

APPLICANT
JAGER COMPANY LLC.

PROJECT INFORMATION

Project No. MR230127.00 | October 01, 2024

BSB DESIGN 370 West 190th Street Ste 240 Torrance, CA 90502 t. 310 217 8995 f. 310 217 9425

SD-0.2

BSB DESIGN

Table 1: Project Trip Generation

				AM Peak Hour			PM Peak Hour		
Land Use		**Units**	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Project Trip Rate									
Multifamily Housing (Low-Rise)[1]		DU	6.74	0.10	0.30	0.40	0.32	0.19	0.51
Proposed Project Trip Generation									
Multifamily Housing (Low-Rise) [1]	36	DU	243	3	11	14	11	7	18
Total Trip Generation			243	3	11	14	11	7	18

DU = Dwelling Unit

[1] Trip rates from the Institute of Transportation Engineers, *Trip Generation,11th Edition, 2021* . Land Use Code 220- Multifamily Housing (Low-Rise).

Figure 2: Transit Priority Area Screening

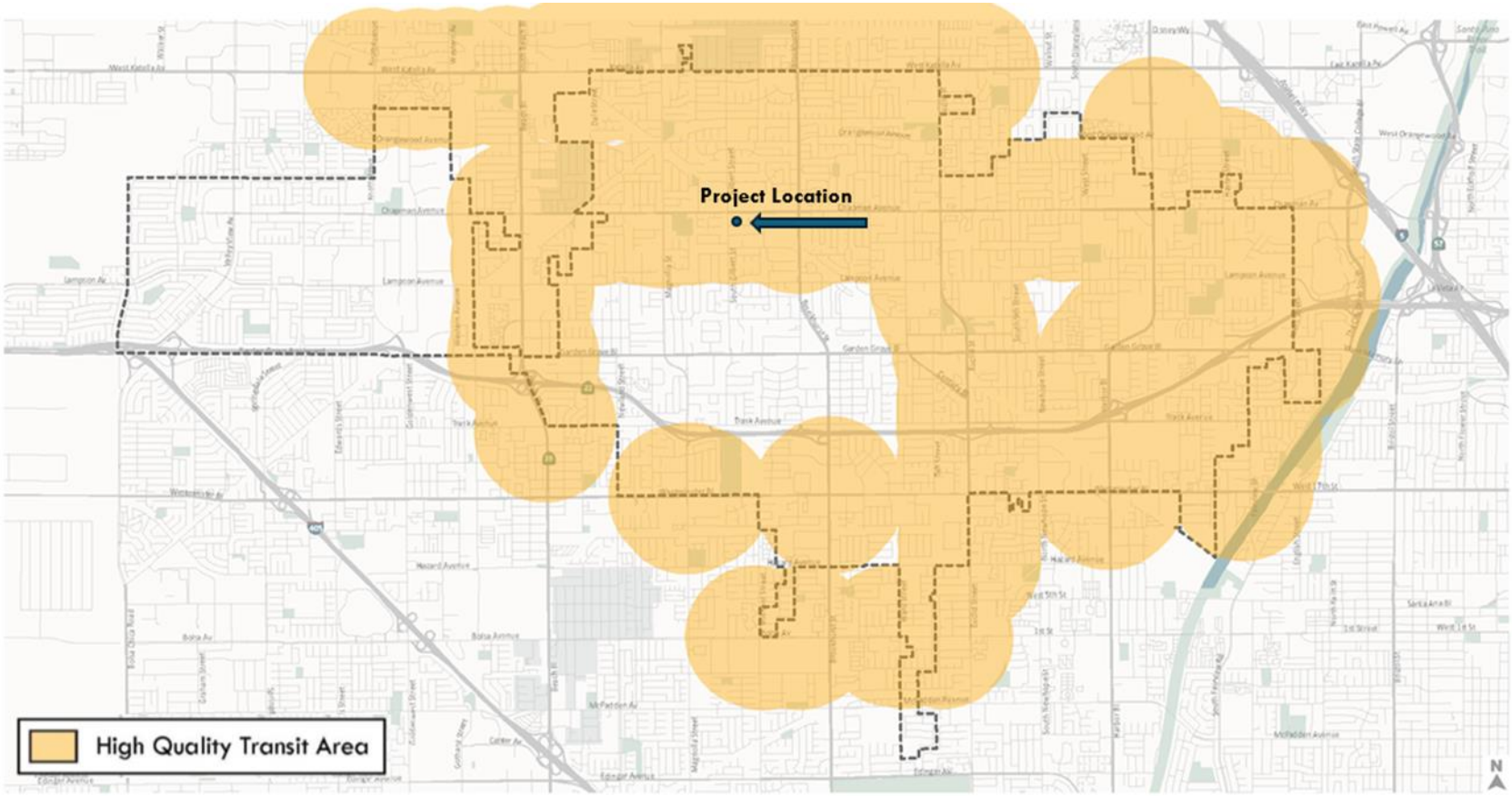


Exhibit 4.14-6 Transit Priority Areas
Focused General Plan Update and Zoning Amendments
Garden Grove, California

MIG

Figure 3: SCAG High Quality Transit Areas (HQTA)

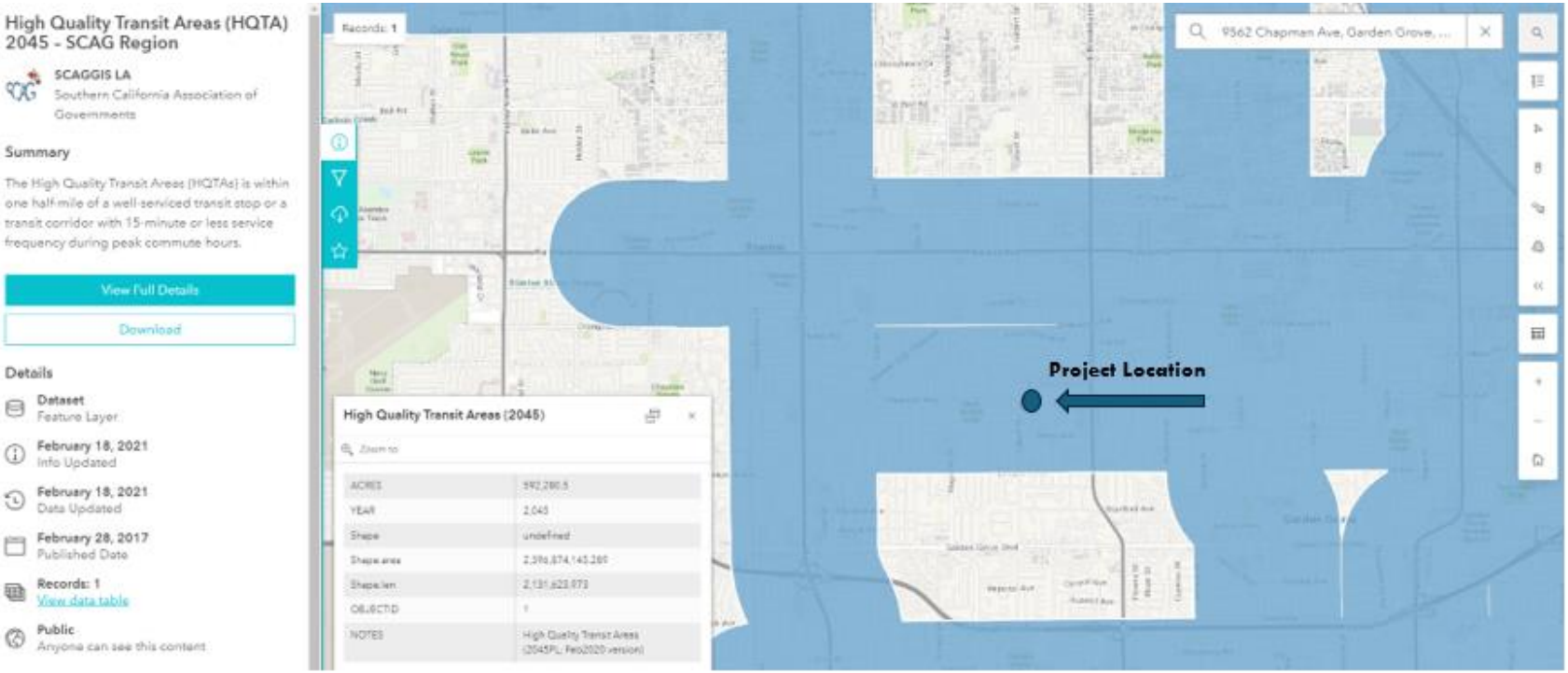
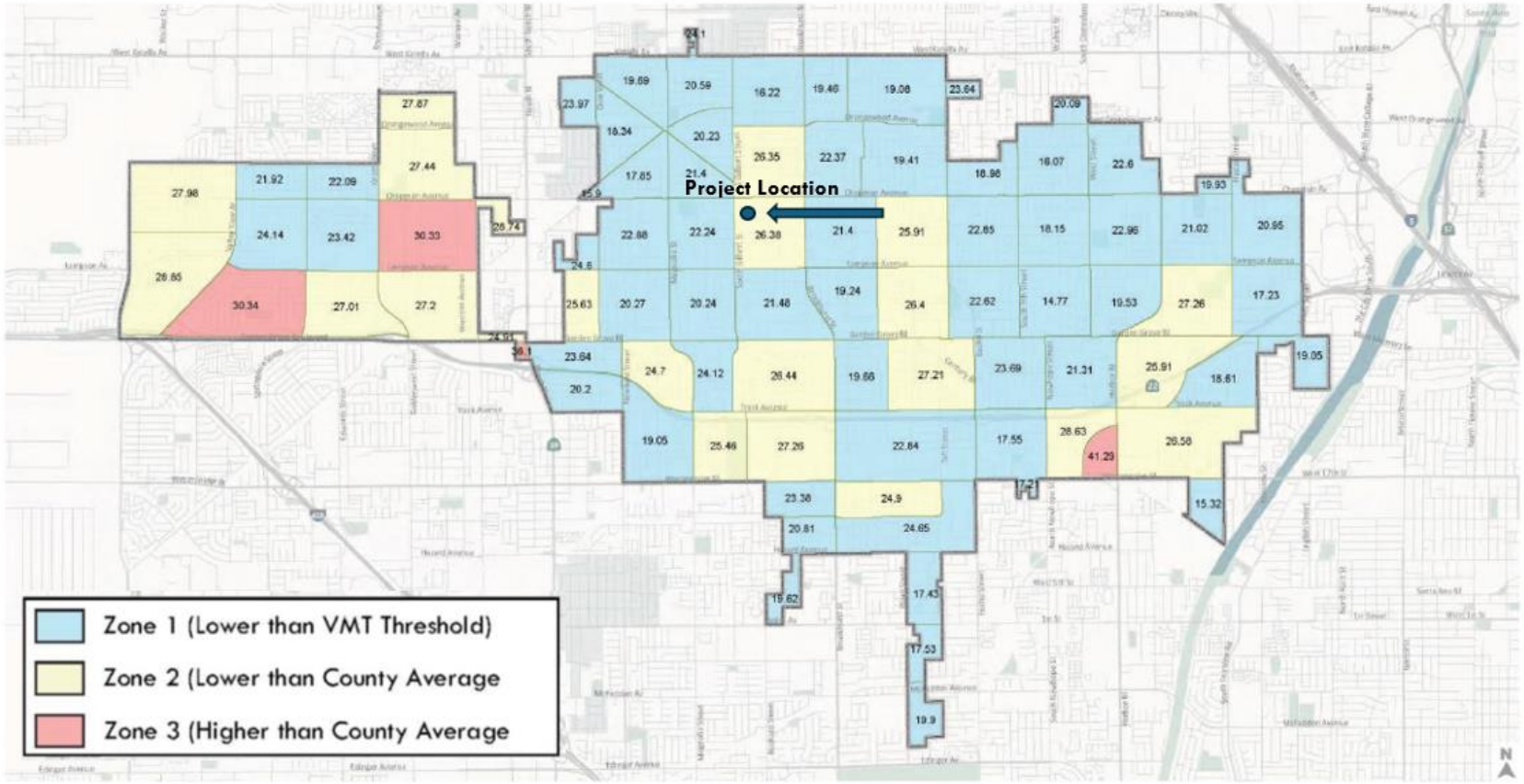


Figure 4: Low VMT Area Screening



Orange County Average VMT/SP: 29.01

Exhibit 4.14-5 Housing Allocation by TAZ

Focused General Plan Update and Zoning Amendments
Garden Grove, California

MIG

Appendix C: Noise Impact Analysis

NOISE IMPACT ANALYSIS

9562 CHAPMAN AVENUE APARTMENTS PROJECT

CITY OF GARDEN GROVE

Lead Agency:

City of Garden Grove
11222 Acacia Parkway
Garden Grove, CA 92840

Prepared by:

Vista Environmental
1021 Didrickson Way
Laguna Beach, CA 92651
949 510 5355
Greg Tonkovich, INCE

Project No. 24063

May 6, 2025

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ACRONYMS AND ABBREVIATIONS

ANSI	American National Standards Institute
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
City	City of Garden Grove
cmu	concrete masonry unit
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	A-weighted decibels
DOT	Department of Transportation
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
EPA	Environmental Protection Agency
Hz	Hertz
Ldn	Day-night average noise level
Leq	Equivalent sound level
Lmax	Maximum noise level
OSHA	Occupational Safety and Health Administration
PPV	Peak particle velocity
RMS	Root mean square
SEL	Single Event Level or Sound Exposure Level
STC	Sound Transmission Class
VdB	Vibration velocity level in decibels

1.0 INTRODUCTION

1.1 Purpose of Analysis and Study Objectives

This Noise Impact Analysis has been prepared to determine the potential noise impacts associated with the proposed 9562 Chapman Avenue Apartments project (proposed project). The following is provided in this report:

- A description of the study area and the proposed project;
- Information regarding the fundamentals of noise;
- Information regarding the fundamentals of vibration;
- A description of the local noise guidelines and standards;
- An evaluation of the current noise environment;
- An analysis of the potential short-term construction-related noise and vibration impacts from the proposed project; and
- An analysis of long-term operations-related noise and vibration impacts from the proposed project.

1.2 Site Location and Study Area

The project site is located at 9562 Chapman Avenue in the southwestern portion of the City of Garden Grove (City). The approximately 0.97-acre project site is currently vacant and is bounded by Chapman Avenue to the north, commercial uses to the east, multi-family residential uses to the south, and commercial uses on the north portion and multi-family residential uses on the south portion of the west side of the project site. The project study area is shown in Figure 1.

Sensitive Receptors in Project Vicinity

The nearest sensitive receptors to the project site are multi-family homes located as near as 8 feet west of the project site, there are also multi-family homes as near as 20 feet south of the project site. The nearest school is Padre Pio Academy that is located as near as 850 feet south of the project site on Bixby Avenue.

1.3 Proposed Project Description

The proposed project would develop the site with 36 new for rent residential units within one building that would have the ground level of parking and three levels of one, two, and three-bedroom residences. The second floor will include a clubhouse (community room) with kitchen, a gym, business center, and outdoor open space area that will have a spa, BBQ area and sitting areas. In addition, each apartment unit will have a minimum 95 square foot private deck area. All of the air conditioning condensing units will be located near the center of the roof on top of a vibration isolation pad. There will be a passive landscaped area with a sidewalk around the perimeter of the building and an active open space area with a basketball court, BBQ area with seats and a community garden area in the southwest corner of the project site. The proposed site plan is shown in Figure 2.

The proposed project includes the removal of the existing walls along the east, west, and south sides of the site and to be replaced with a concrete masonry unit (CMU) wall that would be 3-feet in height for the first 15 feet of wall from Chapman Avenue, which would be adjacent to the existing abutting restaurant and auto service uses and then 8-feet in height around the remainder of the site that would be adjacent to the restaurant, auto service, and multi-family residential uses that are abutting the east and west sides of the Project site.

1.4 Executive Summary

Standard Noise Regulatory Conditions

The proposed project will be required to comply with the following regulatory conditions from the City and State of California (State).

City of Garden Grove Noise Regulations

The following lists the noise and vibration regulations from the *Garden Grove, California Municipal Code,* December, 2022.

- Section 8.47.040 – Operational Noise Levels; and
- Section 8.47.060(D) – Construction Noise Limits.

State of California Noise Regulations

The following lists the State of California noise regulations that are applicable, but not limited to the proposed project.

- California Vehicle Code Section 27200-27207 – On Road Vehicle Noise Limits
- California Vehicle Code Section 38365-38350 – Off-Road Vehicle Noise Limits

Summary of Analysis Results

The following is a summary of the proposed project's impacts with regard to the State CEQA Guidelines noise checklist questions.

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

Less than significant impact.

Generation of excessive groundborne vibration or groundborne noise levels?

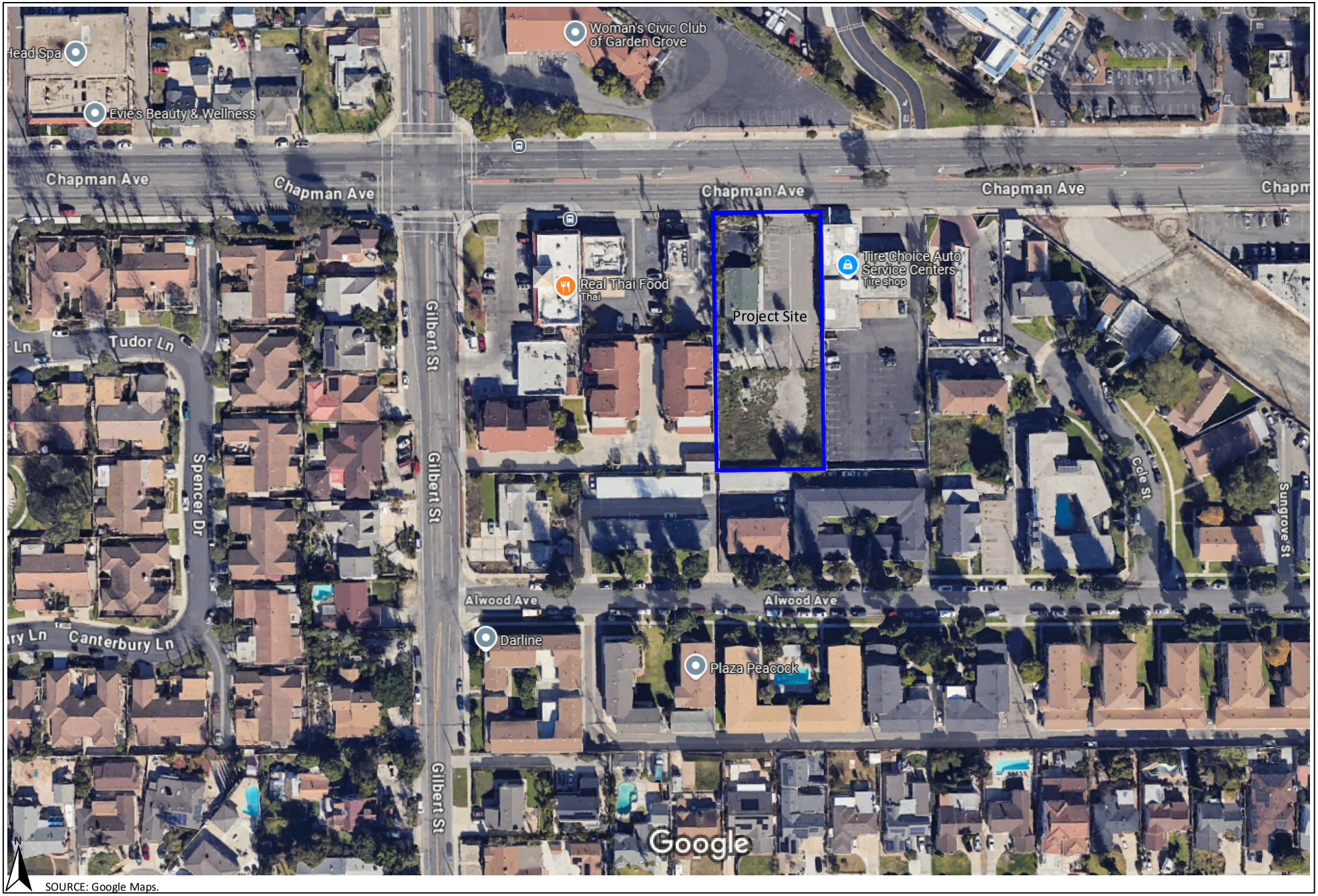
Less than significant impact.

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.

Mitigation Measures for the Proposed Project

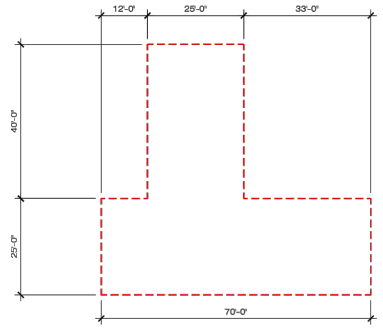
This analysis found that through adherence to the noise and vibration regulations detailed in Section 1.4 above, the Project as proposed to be designed and constructed would result in less than significant levels. No mitigation measures are required for the proposed project with respect to noise and vibration impacts.



SOURCE: Google Maps.

VISTA ENVIRONMENTAL

Figure 1
Project Location Map



LEGEND

- PROPOSED TRANSFORMER
- EXISTING / PROPOSED FIRE HYDRANT
- 150' HOSE PULL

KEY NOTE

1. 3 STORY TYPE V APARTMENT OVER PARKING
2. 'EXIT' STAIR WITH STANDPIPE TYP.
3. PEDESTRIAN GATE WITH KNOX BOX
4. PROPOSED TRANSFORMER LOCATION
5. ACTIVE OPEN SPACE / BBQ AREA
6. PAVED PEDESTRIAN WALK WAY PER SECTION 9.18.100.030 A. 1. (5'-0" WIDE MIN.)
7. PODIUM OPEN SPACE / BBQ AREA
8. COMMUNITY GARDEN (72 SF TOTAL)
9. FIRE DEPARTMENT / TRASH TRUCK TURN-AROUND POSTED WITH 'NO PARKING' SIGN THROUGH OUT
10. EXISTING ADJACENT MULTI-FAMILY APARTMENT
11. EXISTING ADJACENT SINGLE STORY COMMERCIAL
12. PROPOSED NEW FIRE HYDRANT LOCATION
13. PROPOSED TRANSFORMER LOCATION
14. PROPOSED UTILITY METER LOCATION
15. PROPOSED 3' & 8' HIGH CMU PERIMETER WALL SHEET SD 1.3 AND 2.1
16. ON-GRADE PARALLEL PARKING SPACES
17. STAMPED / COLORED CONCRETE PAVER IN THE FRONT SETBACK AREA PER SECTION 9.18.100.020.C.6.

SOURCE: BSB Design

VISTA ENVIRONMENTAL

Figure 2
Proposed Site Plan

2.0 NOISE FUNDAMENTALS

Noise is defined as unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit which expresses the ratio of the sound pressure level being measured to a standard reference level. A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear.

2.1 Noise Descriptors

Noise Equivalent sound levels are not measured directly, but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. The worst-hour traffic Leq is the noise metric used by California Department of Transportation (Caltrans) for all traffic noise impact analyses.

The Day-Night Average Level (Ldn) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of ten decibels to sound levels at night between 10 p.m. and 7 a.m. While the Community Noise Equivalent Level (CNEL) is similar to the Ldn, except that it has another addition of 4.77 decibels to sound levels during the evening hours between 7 p.m. and 10 p.m. These additions are made to the sound levels at these time periods because during the evening and nighttime hours, when compared to daytime hours, there is a decrease in the ambient noise levels, which creates an increased sensitivity to sounds. For this reason the sound appears louder in the evening and nighttime hours and is weighted accordingly. The City of Garden Grove relies on the CNEL noise standard to assess transportation-related impacts on noise sensitive land uses.

2.2 Tone Noise

A pure tone noise is a noise produced at a single frequency and laboratory tests have shown that humans are more perceptible to changes in noise levels of a pure tone. For a noise source to contain a “pure tone,” there must be a significantly higher A-weighted sound energy in a given frequency band than in the neighboring bands, thereby causing the noise source to “stand out” against other noise sources. A pure tone occurs if the sound pressure level in the one-third octave band with the tone exceeds the average of the sound pressure levels of the two contiguous one-third octave bands by:

- 5 dB for center frequencies of 500 hertz (Hz) and above
- 8 dB for center frequencies between 160 and 400 Hz
- 15 dB for center frequencies of 125 Hz or less

2.3 Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in level of noise as the distance from the source increases. The manner in which the noise level reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects and refraction, and shielding by natural and manmade features.

Sound from point sources, such as air conditioning condensers, radiate uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD) between source and receiver. Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

2.4 Ground Absorption

The sound drop-off rate is highly dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA/DD is typically observed over soft ground with landscaping, as compared with a 6.0 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3.0 dBA/DD drop-off rate for hard-site conditions. Caltrans research has shown that the use of soft-site conditions is more appropriate for the application of the Federal Highway Administration (FHWA) traffic noise prediction model used in this analysis.

3.0 GROUND-BORNE VIBRATION FUNDAMENTALS

Ground-borne vibrations consist of rapidly fluctuating motions within the ground that have an average motion of zero. The effects of ground-borne vibrations typically only cause a nuisance to people, but at extreme vibration levels damage to buildings may occur. Although ground-borne vibration can be felt outdoors, it is typically only an annoyance to people indoors where the associated effects of the shaking of a building can be notable. Ground-borne noise is an effect of ground-borne vibration and only exists indoors, since it is produced from noise radiated from the motion of the walls and floors of a room and may also consist of the rattling of windows or dishes on shelves.

3.1 Vibration Descriptors

There are several different methods that are used to quantify vibration amplitude such as the maximum instantaneous peak in the vibrations velocity, which is known as the peak particle velocity (PPV) or the root mean square (rms) amplitude of the vibration velocity. Due to the typically small amplitudes of vibrations, vibration velocity is often expressed in decibels and is denoted as (L_v) and is based on the rms velocity amplitude. A commonly used abbreviation is "VdB", which in this text, is when L_v is based on the reference quantity of 1 micro inch per second.

3.2 Vibration Perception

Typically, developed areas are continuously affected by vibration velocities of 50 VdB or lower. These continuous vibrations are not noticeable to humans whose threshold of perception is around 65 VdB. Off-site sources that may produce perceptible vibrations are usually caused by construction equipment, steel-wheeled trains, and traffic on rough roads, while smooth roads rarely produce perceptible ground-borne noise or vibration.

3.3 Vibration Propagation

The propagation of ground-borne vibration is not as simple to model as airborne noise. This is due to the fact that noise in the air travels through a relatively uniform medium, while ground-borne vibrations travel through the earth which may contain significant geological differences. 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."

As vibration waves propagate from a source, the vibration energy decreases in a logarithmic nature and the vibration levels typically decrease by 6 VdB per doubling of the distance from the vibration source. As stated above, this drop-off rate can vary greatly depending on the soil but has been shown to be effective enough for screening purposes, in order to identify potential vibration impacts that may need to be studied through actual field tests.

4.0 REGULATORY SETTING

The project site is located in the City of Garden Grove. Noise regulations are addressed by various federal, state, and local government agencies. The agencies responsible for regulating noise are discussed below.

4.1 Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting state and local abatement efforts
- Promoting noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration (FAA) regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA), which regulates transit noise, while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that "noise sensitive" uses are either prohibited from being sited adjacent to a highway or, alternately that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

The *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual), prepared by the FTA, September 2018, is a guidance document for analyzing potential noise impacts. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the human effects and reaction to noise and a summary of the FTA findings are provided below in Table A.

Table A – FTA Project Effects on Cumulative Noise Exposure

Existing Noise Exposure (dBA Leq or Ldn)	Allowable Noise Impact Exposure dBA Leq or Ldn		
	Project Only	Combined	Noise Exposure Increase
45	51	52	+7
50	53	55	+5
55	55	58	+3
60	57	62	+2
65	60	66	+1
70	64	71	+1
75	65	75	0

Source: Federal Transit Administration, 2018.

The FTA also provides guidance on construction noise and recommends developing construction noise criteria on a project-specific basis that utilizes local noise ordinances if possible. However, most local noise ordinances, including the City of Garden Grove Municipal Code, only limit the time of day when construction activities may occur and for the times when construction activities are allowed, no construction noise level limits are provided. The FTA construction noise criteria has been utilized in this analysis to determine whether the proposed project would cause any significant short-term construction impacts. The FTA standards are based on extensive studies by the FTA and other governmental agencies on the effects of noise. A summary of the FTA findings for a detailed construction noise assessment is provided below in Table B.

Table B – FTA Detailed Analysis Construction Noise Criteria

Land Use	Day (dBA $Leq_{(8\text{-hour})}$)	Night (dBA $Leq_{(8\text{-hour})}$)
Residential	80	70
Commercial	85	85
Industrial	90	90

Source: Federal Transit Administration, 2018.

4.2 State Regulations

Noise Standards

California Department of Health Services Office of Noise Control

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the "Land Use Compatibility for Community Noise Environments Matrix," which allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

California Noise Insulation Standards

Title 24, Chapter 1, Article 4 of the California Administrative Code (California Noise Insulation Standards) requires noise insulation in new hotels, motels, apartment houses, and dwellings (other than single-family detached housing) that provides an annual average noise level of no more than 45 dBA CNEL. When such structures are located within a 60-dBA CNEL (or greater) noise contour, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL annual threshold. In addition, Title 21, Chapter 6, Article 1 of the California Administrative Code requires that all habitable rooms, hospitals, convalescent homes, and places of worship shall have an interior CNEL of 45 dB or less due to aircraft noise.

Government Code Section 65302

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable.

California Vehicle Code Section 27200-27207 – On-Road Vehicle Noise

California Vehicle Code Section 27200-27207 provides noise limits for vehicles operated in California. For vehicles over 10,000 pounds noise is limited to 88 dB for vehicles manufactured before 1973, 86 dB for vehicles manufactured before 1975, 83 dB for vehicles manufactured before 1988, and 80 dB for vehicles manufactured after 1987. All measurements are based at 50 feet from the vehicle.

California Vehicle Section 38365-38380 – Off-Road Vehicle Noise

California Vehicle Code Section 38365-38380 provides noise limits for off-highway motor vehicles operated in California. 92 dBA for vehicles manufactured before 1973, 88 dBA for vehicles manufactured before 1975, 86 dBA for vehicles manufactured before 1986, and 82 dBA for vehicles manufactured after December 31, 1985. All measurements are based at 50 feet from the vehicle.

Vibration Standards

Title 14 of the California Administrative Code Section 15000 requires that all state and local agencies implement the California Environmental Quality Act (CEQA) Guidelines, which requires the analysis of exposure of persons to excessive groundborne vibration. However, no statute has been adopted by the state that quantifies the level at which excessive groundborne vibration occurs.

The City's Municipal Code does not include specific criteria for assessing vibration impacts associated with structural damage. Therefore, for the purpose of determining the significance of vibration impacts experienced at sensitive uses surrounding the project site, the guidelines within the FTA Manual (2018) have been used to determine vibration impacts.

The FTA Manual details that a vibration level of up to 0.20 in/sec in PPV is considered safe for non-engineered timber and masonry buildings and would not result in any construction vibration damage. Engineered concrete and masonry buildings are considered safe up to a vibration level of 0.30 in/sec PPV, and reinforced buildings are considered safe up to a vibration level of 0.50 in/sec PPV. To be conservative, the 0.20 in/sec PPV threshold has been used to evaluate potential vibration impacts at the nearest structures to the site.

The FTA Manual also provides criteria for human annoyance from vibration. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time, which the FTA considers to be approximately 75 VdB (velocity decibels).

4.3 Local Regulations

The City of Garden Grove General Plan and Municipal Code establishes the following applicable policies related to noise and vibration.

City of Garden Grove General Plan

The City of Garden Grove has developed its own land use compatibility standards based on recommended parameters from the California Governor's Office of Planning and Research that rate compatibility. Using the State's land use compatibility guidelines, the City has established the City's Land Use Compatibility standards that are presented in Table C.

Table C – City of Garden Grove Noise and Land Use Compatibility Matrix

Land Use Category	Community Noise Exposure (Ldn 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	67.5 – 77.5	75 – 85	NA
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

Notes:
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 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
Source: City of Garden Grove General Plan Table 7-1.

The City's Noise Ordinance establishes the following daytime and nighttime noise standards that are defined in Table 7-2 of the General Plan and reprinted below in Table D.

Table D – City of 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 General Plan Table 7-2.

Applicable goals and policies from the Noise Element of the General Plan are as follows:

Goal N-1: Noise considerations must be incorporated into land use planning decisions.

N-1 Policies

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.

Goal N-2: Maximized efficiency in noise abatement efforts through clear and effective policies and ordinances.

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.

City of Garden Grove Municipal Code

The City of Garden Grove Municipal Code establishes the following applicable standards related to noise.

8.47.040 Ambient Base Noise Levels

The ambient base noise levels contained in the following chart (see Table D above) 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 noise level by 5 dB(A), as measured at the property line of the noise generation property.

8.47.060 Special Noise Sources

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.

5.0 EXISTING NOISE CONDITIONS

To determine the existing noise levels, noise measurements have been taken in the vicinity of the project site. The field survey noted that noise within the proposed project area is generally characterized by vehicle traffic on Chapman Avenue that is adjacent to the north side of the project site. The following describes the measurement procedures, measurement locations, noise measurement results, and the modeling of the existing noise environment.

5.1 Noise Measurement Equipment

The noise measurements were taken using one Extech Model 407780 Type 2 integrating sound level meter and one Larson Davis Model LXT1 Type 1 sound level meter. All sound level meters were programed in "slow" mode. The Extech meters recorded the sound pressure level at 3-second intervals and the Larson Davis meters recorded the sound pressure level at 1-second intervals. All sound level meters recorded noise levels for approximately 24 hours in "A" weighted form. In addition, the L_{eq} averaged over the entire measuring time and L_{max} were recorded with all sound level meters. The sound level meters and microphones were mounted on fences approximately six feet above the ground and were equipped with windscreens during all measurements. The Extech sound level meters were calibrated before and after the monitoring using an Extech calibrator, Model 407766 and the Larson Davis meters were calibrated before and after the monitoring using a Larson Davis Cal200 calibrator. All noise level measurement equipment meets American National Standards Institute specifications for sound level meters (S1.4-1983 identified in Chapter 19.68.020.AA).

Noise Measurement Locations

The noise monitoring locations were selected in order to obtain noise levels in the vicinity of the project site. Descriptions of the noise monitoring sites are provided below in Table E and are shown in Figure 4. Appendix A includes a photo index of the study area and noise level measurement locations.

Noise Measurement Timing and Climate

The noise measurements were recorded between 11:36 a.m. on Wednesday, August 28, 2024 and 11:49 a.m. on Thursday, August 29, 2024. At the start of the noise measurements, the sky was clear (no clouds), the temperature was 77 degrees Fahrenheit, the humidity was 57 percent, barometric pressure was 29.88 inches of mercury, and the wind was blowing around two miles per hour. Overnight, the temperature dropped to 63 degrees Fahrenheit and the humidity peaked at 86 percent. At the conclusion of the noise measurements, the sky was clear, the temperature was 76 degrees Fahrenheit, the humidity was 55 percent, barometric pressure was 29.89 inches of mercury, and the wind was blowing around two miles per hour.

5.2 Noise Measurement Results

The results of the noise level measurements are presented in Table E. The measured sound pressure levels in dBA have been used to calculate the minimum and maximum L_{eq} averaged over 1-hour intervals. Table E also shows the L_{eq}, L_{max}, and CNEL, based on the entire measurement time. The CNEL was calculated through use of Equation 2-23 from *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (TeNS), prepared by Caltrans, September 2013. The noise monitoring data printouts are included in Appendix B. Figure 5 shows a graph of the 24-hour noise measurements.

Table E – Existing (Ambient) Noise Measurement Results

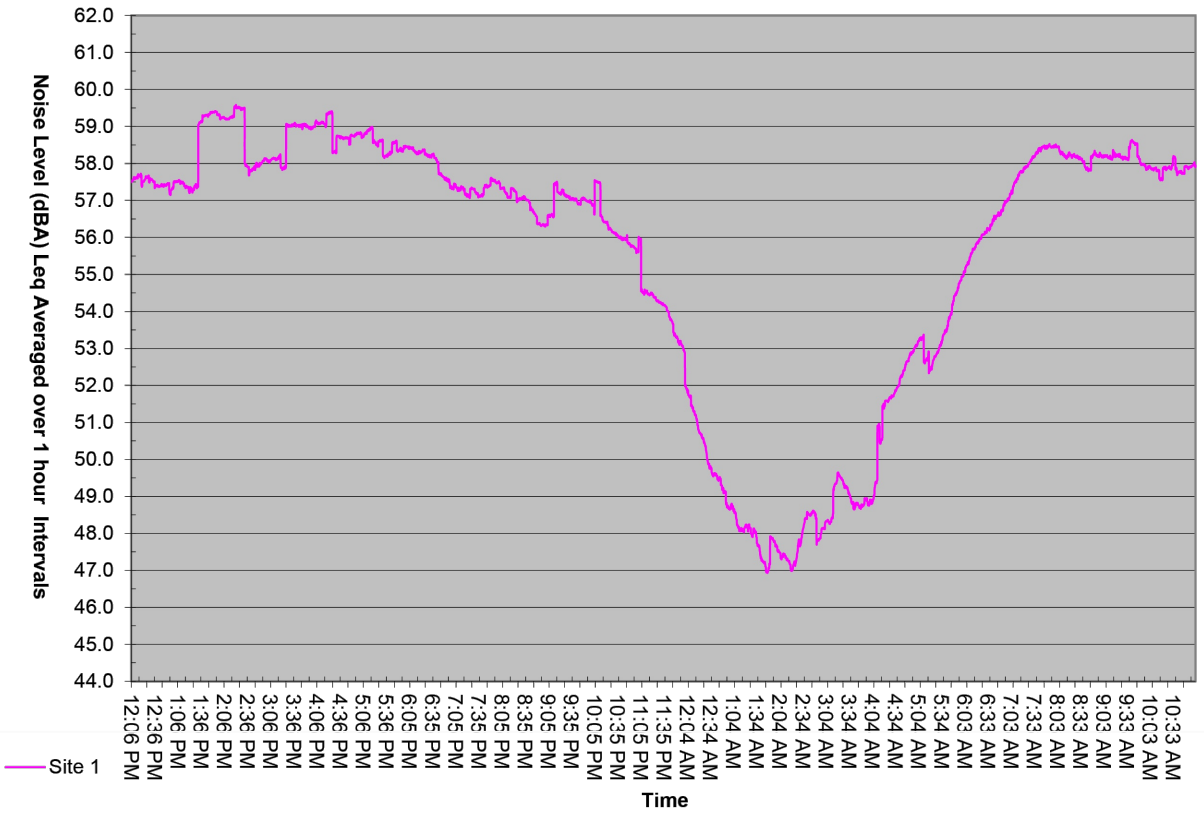
Site No.	Site Description	Average (dBA L_{eq})	Maximum (dBA L_{max})	(dBA $L_{eq\ 1\text{-}hour}$/Time) Minimum	(dBA $L_{eq\ 1\text{-}hour}$/Time) Maximum	Average (dBA CNEL)
1	Located on the fence on the west side of the project site, near the shared property line between the commercial property (north) and multi-family residential property (south) on the west side.	56.8	83.8	46.9 1:52 a.m.	59.6 2:26 p.m.	61.0
2	Located on the fence on the north side of the project site, approximately 10 feet west of the east property line and 65 feet south of Chapman Avenue centerline.	72.1	99.6	61.5 6:17 p.m.	75.5 7:55 a.m.	75.5

Source: Noise measurements were taken with one Extech Model 407780 Type 2 sound level meter and one Larson Davis Model LXT1 Type 1 sound level meter from Wednesday, August 28, 2024 to Thursday, August 29, 2024.

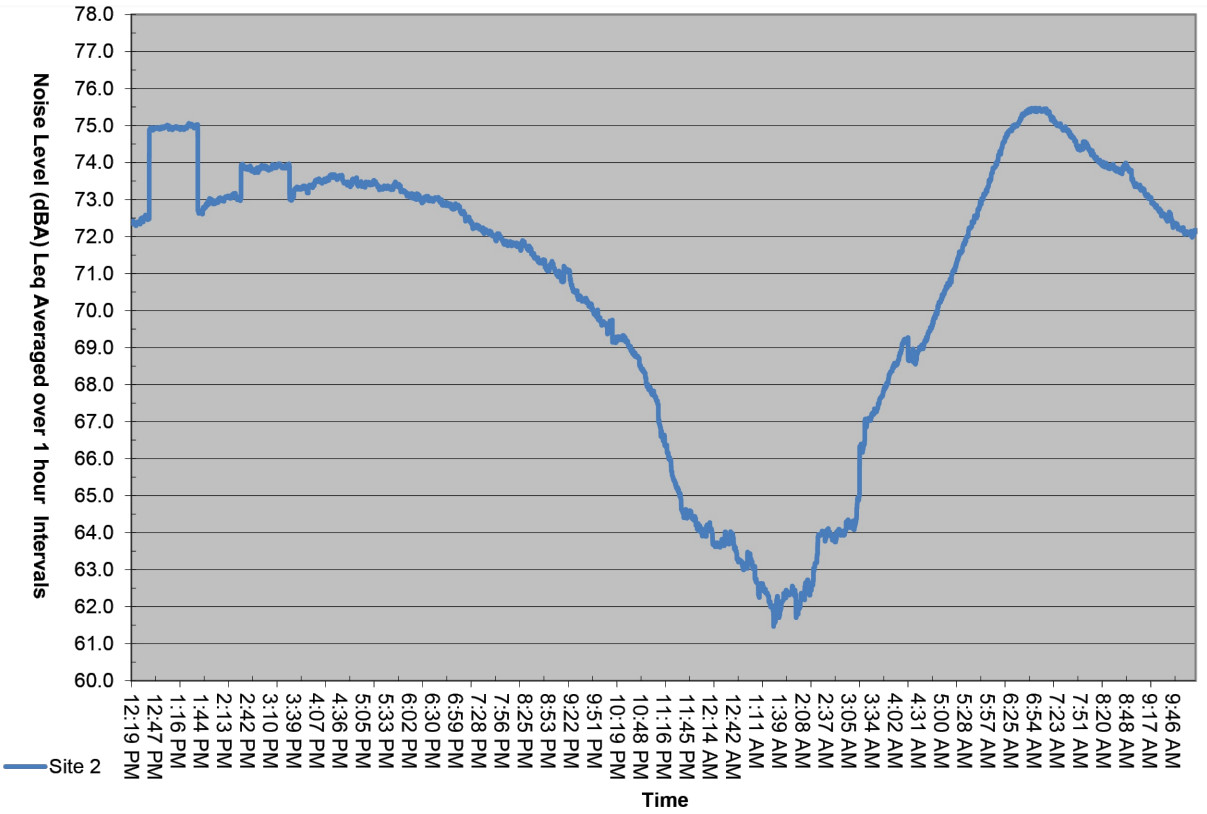
SOURCE: Google Maps.

VISTA ENVIRONMENTAL

Figure 3
Field Noise Monitoring Locations



SOURCE: Larson Davis Model LXT Type 1 Sound Level Meter



SOURCE: Extech Model 407780 Type 2 Sound Level Meter

VISTA ENVIRONMENTAL

Figure 4
Field Noise Measurements Graphs

6.0 MODELING PARAMETERS AND ASSUMPTIONS

6.1 Construction Noise

The noise impacts from construction of the proposed project have been analyzed through use of the FHWA's Roadway Construction Noise Model (RCNM). The FHWA compiled noise measurement data regarding the noise generating characteristics of several different types of construction equipment used during the Central Artery/Tunnel project in Boston. Table F below provides a list of the construction equipment anticipated to be used for each phase of construction that was obtained from the *Air Quality and Greenhouse Gas Impact Analysis for 9562 Chapman Avenue Apartments Project* (Air Quality Analysis), prepared by EPD Solutions, Inc., October 29, 2024.

Table F – Construction Equipment Noise Emissions and Usage Factors

Equipment Description	Number of Equipment	Acoustical Use Factor[1] (percent)	Spec 721.560 Lmax at 50 feet[2] (dBA, slow[3])	Actual Measured Lmax at 50 feet[4] (dBA, slow[3])
Site Preparation				
Grader	1	40	85	83
Tractor	1	40	84	N/A
Grading				
Grader	1	40	85	83
Excavator	1	40	85	81
Plate Compactor	1	20	80	83
Rubber Tired Dozer	1	40	85	82
Tractor	1	40	84	N/A
Building Construction				
Crane	1	16	85	81
Forklift (Gradall)	2	40	85	83
Tractor	1	40	84	N/A
Front End Loader	1	40	80	79
Paving				
Cement and Mortar Mixers	4	40	85	79
Paver	1	50	85	77
Rollers	1	20	85	80
Tractor	1	40	84	N/A
Architectural Coating				
Air Compressor	1	40	80	78

Notes:
[1] Acoustical use factor is the percentage of time each piece of equipment is operational during a typical workday.
[2] Spec 721.560 is the equipment noise level utilized by the RCNM program.
[3] The "slow" response averages sound levels over 1-second increments. A "fast" response averages sound levels over 0.125-second increments.
[4] Actual Measured is the average noise level measured of each piece of equipment during the Central Artery/Tunnel project in Boston, Massachusetts primarily during the 1990s.
Source: Federal Highway Administration, 2006.

Table F shows the associated measured noise emissions for each piece of equipment from the RCNM model and measured percentage of typical equipment use per day. Construction noise impacts to the nearby sensitive receptors have been calculated according to the equipment noise levels and usage

factors listed in Table F and through use of the RCNM. For each phase of construction, all construction equipment was analyzed based on being placed in the middle of the project site, per the FTA Manual for a General Assessment, and is based on the rationale that mobile equipment would likely move around the entire project site in a typical workday. As such, the middle of project site would provide the acoustical average noise level created over a typical workday. However, in order to provide a conservative analysis, all equipment for each phase of construction were analyzed as operating simultaneously, instead of just the two nosiest pieces of equipment as detailed in the FTA Manual.

Caltrans research that has found sound walls provide 5 dB of noise shielding when the wall reaches the height of line of sight between source and receiver (approximately 5 feet high) and then an additional 0.9 dBA of noise shielding for each foot above the line of sight[1], which would result in the 8-foot-high wall providing 7.7 dBA on noise reduction. In order to provide a conservative analysis a 7 dB of shielding was added to the RCNM model for the homes to the west and south prior to the start of grading activities. The RCNM model printouts are provided in Appendix C.

6.2 Vibration

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings in the vicinity of the construction site respond to these vibrations with varying results ranging from no perceptible effects at the low levels to damage at the highest levels. Table G gives approximate vibration levels for particular construction activities. The data in Table G provides a reasonable estimate for a wide range of soil conditions.

Table G – Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity (inches/second)	Approximate Vibration Level (L_v) at 25 feet (VdB)
Loaded trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Source: Federal Transit Administration, 2018.

The construction-related vibration impacts have been calculated through the vibration levels generated by the anticipated equipment used for project construction and through typical vibration propagation rates. The equipment assumptions were based on the equipment lists provided above in Table F.

1 Obtained from: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf

7.0 IMPACT ANALYSIS

7.1 CEQA Thresholds of Significance

Consistent with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- 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;
- Generation of excessive groundborne vibration or groundborne noise levels; or
- 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.

7.2 Generation of Noise Levels in Excess of Standards

The proposed project would not generate 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. The following section calculates the potential noise emissions associated with the temporary construction activities and long-term operations of the proposed project and compares the noise levels to the City standards.

Construction-Related Noise

The construction activities for the proposed project are anticipated to include site preparation and grading of the 0.97-acre project site, building construction of a four-story apartment building complex, paving of the onsite driveways, parking areas, sidewalks and hardscapes, and application of architectural coatings. Noise impacts from construction activities associated with the proposed project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities. The nearest sensitive receptors to the project site are multi-family homes located as near as 8 feet west of the project site, there are also multi-family homes as near as 20 feet south of the project site.

Section 8.47.060(D) of the City's Municipal Code allows construction noise to exceed the City noise standards provided that construction activities occur between 7:00 a.m. and 10:00 p.m. All construction activities associated with the proposed project would occur during the allowable hours for construction activities as detailed in Section 8.47.060(D) of the Municipal Code. Because the City's ordinance does not include construction noise standards, the FTA construction noise criteria thresholds detailed above in Section 4.1 have been utilized. For these purposes a significant construction noise impact would occur if construction noise exceeds 80 dBA Leq during the Day (defined as 7 a.m. to 10 p.m.) at any of the nearby sensitive receptors.

Construction noise impacts to the nearby sensitive receptors have been calculated through use of the RCNM and the parameters and assumptions detailed in Section 6.1 of this report including Table F – Construction Equipment Noise Emissions and Usage Factors. Table H that shows the anticipated construction equipment per phase. The results are shown below in Table H and the RCNM printouts are provided in Appendix C.

Table H – Construction Noise Levels at the Nearby Sensitive Receptors

Construction Phase	Construction Noise Level (dBA Leq) at[1]:	
	Homes to West[2]	Homes to South[3]
Site Preparation	74	65
Grading	76	68
Building Construction	75	67
Paving	74	66
Painting	64	56
FTA Construction Noise Threshold[4]	**80**	**80**
Exceed Threshold?	**No**	**No**

Notes:
[1] Calculated Construction Noise Levels includes installation of the 8-foot-high wall adjacent to the nearby homes.
[2] The homes to the west are located as near as 70 feet from the center of the project site.
[3] The homes to the south are located as near as 180 feet from the center of the project site.
[4w] Obtained from Table B, above.
Source: RCNM, Federal Highway Administration, 2006 (see Section 6.1 above for detailed description of modeling assumptions)

Table H shows that the greatest noise impacts would occur during the grading phase, with noise levels as high as 76 dBA Leq at the homes to the west and 68 dBA Leq at the homes to the south. The analyzed phases of construction would occur sequentially, however it should be noted that due to the logarithmic properties of addition of two distinct noise sources, the most that the noise may be increased if two construction phases occurred concurrently (which is not proposed or anticipated) would be an additional 3 dB above the higher construction phase noise. As such, the worst-case noise level that may occur with two construction phases occurring simultaneously, which is not reasonably foreseeable as it is not proposed or part of typical construction operations, would be 79 dBA Leq at the homes to the west. Table H also shows that none of the construction phases (or from two phases occurring simultaneously) would exceed the FTA construction noise standard of 80 dBA for residential uses. Therefore, with implementation of the Project as proposed and adherence to allowable construction times provided in 8.47.060(D) of the Municipal Code, the construction activities for the proposed project would not create a substantial temporary increase in ambient noise levels that are in excess of applicable noise standards. Impacts would be less than significant.

Operational-Related Noise

The proposed project would consist of development of a four-story apartment building with 36 new residential units on the top three floors and the ground level will be utilized as a parking area. Potential noise impacts associated with the operations of the proposed project would be from project-generated vehicular traffic on the nearby roadways and from onsite noise sources to the nearby sensitive receptors. The noise impacts created from project generated vehicular traffic on the nearby roadways and from onsite noise sources to the nearby homes have been analyzed separately below.

Roadway Vehicular Noise Impact to Nearby Sensitive Receptors

Vehicle noise is a combination of the noise produced by the engine, exhaust and tires. The level of traffic noise depends on three primary factors (1) the volume of traffic, (2) the speed of traffic, and (3) the number of trucks in the flow of traffic. The proposed project does not propose any uses that would require a substantial number of truck trips and the proposed project would not alter the speed limit on any existing roadway so the proposed project's potential offsite noise impacts have been focused on the noise

impacts associated with the change of volume of traffic that would occur with development of the proposed project.

Neither the General Plan nor the Municipal Code defines what constitutes a "substantial permanent increase to ambient noise levels". As such, this impact analysis has utilized guidance from the Federal Transit Administration for a moderate impact that has been detailed above in Table A that shows that the project contribution to the noise environment can range between 0 and 7 dB, which is dependent on the existing roadway noise levels.

According to the *9562 Chapman Street, Garden Grove Level of Service (LOS) Screening Analysis*, prepared by EPD Solutions, Inc., October 21, 2024, the long-term operation of the proposed project would generate 243 daily vehicle trips. According to the *City of Garden Grove Focused General Plan Update and Zoning Amendments Draft Environmental Impact Report,* August 18, 2021, Chapman Avenue, west of Euclid Street had 19,140 daily trips in the year 2020. The proposed project would contribute up to 1.2 percent of the daily trips on Chapman Avenue. In order for project-generated vehicular traffic to increase the noise level on any of the nearby roadways by 3 dB[2], the ADT would have to double, or by 1.5 dB, the ADT would have to increase by 50 percent. As such, the proposed project's roadway noise impacts would be negligible and would not result in a quantitative increase in roadway noise levels. Therefore, operational roadway noise impacts to the nearby sensitive receptors would be less than significant.

Onsite Noise Impacts

The operation of the proposed project may create an increase in onsite noise levels from noise created from the proposed second floor common outdoor open space area that will have a spa, BBQ area and sitting areas, from the ground floor active open space area with a basketball court, BBQ area with seats, and a community garden area in the southwest corner of the project site. However, human generated noise sources that include common outdoor areas and basketball court would not be significant. Governor Newsom signed AB 1307 into law in September 2023, which provided that "the effects of noise generated by project occupants and their guests on human beings is not a significant effect on the environment for residential projects for purposes of CEQA."

Other onsite noise sources include rooftop air conditioner condenser units and the ground floor parking lot area. Section 8.47.040 of the City's Municipal Code limits noise created on the project site to the nearby sensitive receptors to 55 dBA between 7:00 a.m. and 10:00 p.m. and 50 dBA between 10:00 p.m. and 7:00 a.m.

In order to determine the noise impacts from the proposed ground floor and second floor common outdoor areas with a spa, a reference noise measurement was taken at Magnolia Street Park in South Pasadena that includes outdoor tables with amenities as well as a community garden. It should be noted that the spa pump equipment will be located inside the proposed structure, so it will not be audible outside, so the spa noise will be limited to the noise from the people using it, which is assumed to be similar to people talking in a park. For the basketball court a reference noise measurement was taken approximately three feet from a basketball court with kids playing basketball during recess at Eastshore Elementary School in the City of Irvine. However, as detailed previously, AB 1307 provides that "the effects of noise generated by project occupants and their guests on human beings is not a significant effect on

[2] In a normal noise environment, it is generally accepted that the average healthy ear can barely perceive a noise level change of 3 dBA. A 3 dB increase is typically referred to as the threshold of perception (Caltrans, 2013)

the environment for residential projects for purposes of CEQA." This includes noise from onsite open space and recreation areas, such as the proposed common areas and basketball court.

For the parking lot area, a reference noise measurement was taken at the edge of the parking area for a multi-family residential complex in the City of Rancho Cucamonga and the noise measurement printouts are provided in Appendix D. The air conditioning equipment will be located near the center of the roof on top of a vibration isolation pad. The project applicant has stated that no specific air conditioning systems have been identified for the project, but would likely be units similar to the 2.5-ton Carrier Model No: CA15NA03-0-A. According to the Carrier Product Data sheet (see Appendix D), the 2.5-ton model produces a noise level of 73 dBA. Although the use of the above air conditioning model is the best information available at this time, it should be noted that due to changes in Title 24 requirements that occur every three years, another air conditioner unit may be required to be used at the time of construction of the project.

In order to account for the noise reduction provided by the proposed 8-foot high cmu walls on the west, east and south property lines, the wall attenuation equations from the *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (TeNS), prepared by Caltrans, September 2013, were utilized and the noise calculation spreadsheet along with the reference noise measurements are provided in Appendix D. Table I shows the anticipated noise level from each source at the homes on the east, south and north sides of the project site and compares the calculated noise levels to the City noise standards.

Table I – Project Onsite Operational Noise Levels at Nearby Homes

	Operational Noise Levels (dBA Leq) at:	
Noise Source	**Homes to West**	**Homes to South**
Second Floor Common Outdoor Area[1]	12	12
Ground Level Common Outdoor Area[1]	18	34
Air Conditioning Compressor Units[2]	34	30
Parking Lot[3]	29	19
Basketball Court[4]	31	34
Combined Noise Level	37	38
City Noise Standard[5] (Day/Night)	55/50	55/50
Exceed Standard (Day/Night)?	No/No	No/No

Notes:
[1] Common outdoor area is based on a reference noise measurement of 45.7 dBA at 10 feet.
[2] Air conditioning based on a 2.5 ton compressor unit (Carrier Model CA15NA036-0-A) that produces a noise level of 73 dBA at 1 meter.
[3] Parking lot is based on a reference noise measurement of 52.1 dBA at 5 feet.
[4] Basketball court is based on a reference noise measurement of 66.6 dBA at 3 feet from the basket.
[5] From Section 8.47.040 of the City's Municipal Code.

Table I shows that the proposed project's worst-case operational noise from the simultaneous operation of all noise sources on the project site would create a noise level of 37 dBA at the multi-family homes on the west side of the project site and a noise level of 38 dBA at the multi-family homes on the south side of the project site. The worst-case operational noise level of 38 dBA would be less than both the City's residential noise standards of 55 dBA between 7 a.m. and 10 p.m. and 50 dBA between 10 p.m. and 7 a.m. In addition, it is below the existing ambient noise levels of 60 dBA and would not increase ambient noise or be heard above existing ambient noise. Therefore, the onsite operational noise impacts would be less than significant.

Level of Significance

Less than significant impact.

7.3 Generation of Excessive Groundborne Vibration

The proposed project would not expose persons to or generation of excessive groundborne vibration or groundborne noise levels. The following section analyzes the potential vibration impacts associated with the construction and operations of the proposed project.

Construction-Related Vibration Impacts

The construction activities for the proposed project are anticipated to include site preparation and grading of the 0.97-acre project site, building construction of a four-story apartment building complex, paving of the onsite driveways, parking areas, sidewalks and hardscapes, and application of architectural coatings. Vibration impacts from construction activities associated with the proposed project would typically be created from the operation of heavy off-road equipment. The nearest sensitive receptors are the multi-family homes located as near as 8 feet west of the project site.

FTA guidance that is detailed above in Section 4.2, defines the threshold for building damage to non-engineered timber and masonry buildings to 0.20 in/sec PPV and the threshold for distinctly perceptible human annoyance of 75 VdB.

The primary source of vibration during construction would be from the operation of a small bulldozer[3], since the project site is too small to utilize a large bulldozer. From Table G above, a small bulldozer would create a vibration level of 0.003 inch per second PPV (or 58 VdB) at 25 feet. Based on typical propagation rates, the vibration level at the nearest offsite homes (8 feet to the west of the site boundary) would be 0.01 inch per second PPV (or 68 VdB). The vibration level at the nearest offsite homes would be below both the 0.20 inch per second PPV threshold for damage to structures and the human annoyance threshold of 75 VdB. Therefore, construction-related vibration impacts would be less than significant.

Operations-Related Vibration Impacts

The proposed project would consist of the development of a four-story apartment building with 36 new residential units. The ongoing operation of the proposed project would not include the operation of any known vibration sources other than typical onsite vehicle operations for a residential development. Therefore, a less than significant vibration impact is anticipated from operation of the proposed project.

Level of Significance

Less than significant impact.

7.4 Aircraft Noise

The proposed project would not expose people residing or working in the project area to excessive noise levels from aircraft. The nearest airport is Joint Forces Training Base Los Alamitos, located approximately 4.2 miles west of the project site. The project site is located outside of the 60 dBA CNEL noise contours of this airport. Impacts would be less than significant.

3 A small dozer is defined as under 105 horsepower and include CAT Models D1, D2, and D3 dozers (obtained from: https://www.cat.com/en_US/products/new/equipment/dozers/small-dozers.html

Level of Significance

Less than significant impact.

8.0 REFERENCES

California Department of Transportation (Caltrans), *Technical Noise Supplement to the Traffic Noise Analytics Protocol*, September 2013.

California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, April 2020.

City of Garden Grove, *City of Garden Grove Focused General Plan Update and Zoning Amendments Draft Environmental Impact Report*, August 18, 2021.

City of Garden Grove, *Garden Grove General Plan 2030*, May 2008.

City of Garden Grove, *Garden Grove Municipal Code,* 2022.

EPD Solutions, Inc., *9562 Chapman Avenue, Garden Grove Level of Service (LOS) Screening Analysis*, October 21, 2024.

EPD Solutions, Inc., *Air Quality and Greenhouse Gas Impact Analysis for 9562 Chapman Avenue Apartments Project*, October 29, 2024.

Federal Transit Administration, *Transit Noise and Vibration Impact Assessment,* May 2006.

U.S. Department of Transportation, *FHWA Roadway Construction Noise Model User's Guide,* January, 2006.

U.S. Department of Transportation, *Highway Traffic Noise: Analysis and Abatement Guidance,* December, 2011.

APPENDIX A

Field Noise Measurements Photo Index

Noise Measurement Site 1 - looking north

Noise Measurement Site 1 - looking northeast

Noise Measurement Site 1 - looking east

Noise Measurement Site 1 - looking southeast

Noise Measurement Site 1 - looking south

Noise Measurement Site 1 - looking southwest

Noise Measurement Site 1 - looking west

Noise Measurement Site 1 - looking northwest

Noise Measurement Site 2 - looking north

Noise Measurement Site 2 - looking northeast

Noise Measurement Site 2 - looking east

Noise Measurement Site 2 - looking southeast

Noise Measurement Site 2 - looking south

Noise Measurement Site 2 - looking southwest

Noise Measurement Site 2 - looking west

Noise Measurement Site 2 - looking northwest

APPENDIX B

Field Noise Measurements Printouts

Site 1 - On West Side of Project Site

August 28, 2024 11:36:58 AM Leq Daytime = 56.6
Sampling Time = 1 sec Freq Weighting=A Leq Nighttime = 57.2
Record Num = 86400 CNEL(24hr)= 61.0
Leq = 56.8 Ldn(24hr)= 60.5
Min = 36.3 Min Leq hr at 1:52 AM 46.9
Max = 83.8 Max Leq hr at 2:26 PM 59.6

Site 1 - On West Side of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
54.1	11:36:58		54.1	54.1
62.8	11:36:59		62.8	62.8
64.3	11:37:00		64.3	64.3
70.5	11:37:01		70.5	70.5
81.0	11:37:02		81.0	81.0
65.2	11:37:03		65.2	65.2
52.8	11:37:04		52.8	52.8
53.6	11:37:05		53.6	53.6
57.1	11:37:06		57.1	57.1
54.5	11:37:07		54.5	54.5
51.6	11:37:08		51.6	51.6
57.2	11:37:09		57.2	57.2
52.7	11:37:10		52.7	52.7
59.0	11:37:11		59.0	59.0
55.9	11:37:12		55.9	55.9
58.6	11:37:13		58.6	58.6
63.8	11:37:14		63.8	63.8
74.9	11:37:15		74.9	74.9
67.9	11:37:16		67.9	67.9
66.4	11:37:17		66.4	66.4
70.3	11:37:18		70.3	70.3
65.4	11:37:19		65.4	65.4
64.5	11:37:20		64.5	64.5
67.4	11:37:21		67.4	67.4
64.4	11:37:22		64.4	64.4
62.4	11:37:23		62.4	62.4
56.6	11:37:24		56.6	56.6
59.2	11:37:25		59.2	59.2
72.2	11:37:26		72.2	72.2
65.0	11:37:27		65.0	65.0
61.0	11:37:28		61.0	61.0
63.4	11:37:29		63.4	63.4
51.3	11:37:30		51.3	51.3
65.0	11:37:31		65.0	65.0
55.1	11:37:32		55.1	55.1
51.5	11:37:33		51.5	51.5
47.9	11:37:34		47.9	47.9
56.1	11:37:35		56.1	56.1
58.3	11:37:36		58.3	58.3
50.3	11:37:37		50.3	50.3
60.1	11:37:38		60.1	60.1
77.6	11:37:39		77.6	77.6
60.2	11:37:40		60.2	60.2
67.4	11:37:41		67.4	67.4
59.6	11:37:42		59.6	59.6
64.0	11:37:43		64.0	64.0
56.2	11:37:44		56.2	56.2
58.3	11:37:45		58.3	58.3
59.7	11:37:46		59.7	59.7
82.1	11:37:47		82.1	82.1
56.7	11:37:48		56.7	56.7
53.8	11:37:49		53.8	53.8
59.6	11:37:50		59.6	59.6
54.6	11:37:51		54.6	54.6
49.5	11:37:52		49.5	49.5
77.4	11:37:53		77.4	77.4
57.0	11:37:54		57.0	57.0
52.4	11:37:55		52.4	52.4
63.3	11:37:56		63.3	63.3
63.9	11:37:57		63.9	63.9
53.6	11:37:58		53.6	53.6
67.8	11:37:59		67.8	67.8
55.0	11:38:00		55.0	55.0
49.5	11:38:01		49.5	49.5
63.7	11:38:02		63.7	63.7
58.6	11:38:03		58.6	58.6
56.3	11:38:04		56.3	56.3
58.2	11:38:05		58.2	58.2
65.8	11:38:06		65.8	65.8
69.2	11:38:07		69.2	69.2
65.1	11:38:08		65.1	65.1
57.9	11:38:09		57.9	57.9
53.0	11:38:10		53.0	53.0
57.9	11:38:11		57.9	57.9
63.2	11:38:12		63.2	63.2
60.9	11:38:13		60.9	60.9
60.4	11:38:14		60.4	60.4
57.6	11:38:15		57.6	57.6
52.4	11:38:16		52.4	52.4
52.6	11:38:17		52.6	52.6
51.8	11:38:18		51.8	51.8
52.0	11:38:19		52.0	52.0
54.8	11:38:20		54.8	54.8
48.4	11:38:21		48.4	48.4
47.4	11:38:22		47.4	47.4
47.6	11:38:23		47.6	47.6
48.5	11:38:24		48.5	48.5
51.5	11:38:25		51.5	51.5
50.4	11:38:26		50.4	50.4
53.0	11:38:27		53.0	53.0
52.9	11:38:28		52.9	52.9
47.8	11:38:29		47.8	47.8
48.5	11:38:30		48.5	48.5
48.8	11:38:31		48.8	48.8
49.7	11:38:32		49.7	49.7
49.9	11:38:33		49.9	49.9
51.8	11:38:34		51.8	51.8
53.8	11:38:35		53.8	53.8
50.2	11:38:36		50.2	50.2
50.5	11:38:37		50.5	50.5
49.8	11:38:38		49.8	49.8
51.2	11:38:39		51.2	51.2
53.1	11:38:40		53.1	53.1
55.1	11:38:41		55.1	55.1
56.2	11:38:42		56.2	56.2
59.4	11:38:43		59.4	59.4
60.5	11:38:44		60.5	60.5
61.1	11:38:45		61.1	61.1
61.4	11:38:46		61.4	61.4
61.6	11:38:47		61.6	61.6
61.8	11:38:48		61.8	61.8
63.1	11:38:49		63.1	63.1
61.2	11:38:50		61.2	61.2
59.8	11:38:51		59.8	59.8
59.8	11:38:52		59.8	59.8
59.9	11:38:53		59.9	59.9
60.5	11:38:54		60.5	60.5
64.6	11:38:55		64.6	64.6
64.2	11:38:56		64.2	64.2
66.9	11:38:57		66.9	66.9
64.7	11:38:58		64.7	64.7
65.4	11:38:59		65.4	65.4
65.3	11:39:00		65.3	65.3
59.7	11:39:01		59.7	59.7
56.3	11:39:02		56.3	56.3
54.5	11:39:03		54.5	54.5
57.1	11:39:04		57.1	57.1
57.5	11:39:05		57.5	57.5
54.0	11:39:06		54.0	54.0
53.9	11:39:07		53.9	53.9
53.5	11:39:08		53.5	53.5
53.8	11:39:09		53.8	53.8
56.1	11:39:10		56.1	56.1
53.1	11:39:11		53.1	53.1
53.8	11:39:12		53.8	53.8
53.4	11:39:13		53.4	53.4
55.1	11:39:14		55.1	55.1
58.1	11:39:15		58.1	58.1
59.2	11:39:16		59.2	59.2
60.8	11:39:17		60.8	60.8
60.3	11:39:18		60.3	60.3
61.0	11:39:19		61.0	61.0
63.9	11:39:20		63.9	63.9
63.3	11:39:21		63.3	63.3
58.8	11:39:22		58.8	58.8
56.6	11:39:23		56.6	56.6
57.9	11:39:24		57.9	57.9
57.9	11:39:25		57.9	57.9
56.9	11:39:26		56.9	56.9
61.0	11:39:27		61.0	61.0
59.8	11:39:28		59.8	59.8
55.9	11:39:29		55.9	55.9
55.0	11:39:30		55.0	55.0
52.8	11:39:31		52.8	52.8
51.5	11:39:32		51.5	51.5
50.9	11:39:33		50.9	50.9
52.6	11:39:34		52.6	52.6
51.9	11:39:35		51.9	51.9
49.2	11:39:36		49.2	49.2
49.2	11:39:37		49.2	49.2
49.1	11:39:38		49.1	49.1
48.7	11:39:39		48.7	48.7
48.6	11:39:40		48.6	48.6
48.2	11:39:41		48.2	48.2
48.4	11:39:42		48.4	48.4
49.5	11:39:43		49.5	49.5
51.8	11:39:44		51.8	51.8
52.0	11:39:45		52.0	52.0
55.7	11:39:46		55.7	55.7
59.7	11:39:47		59.7	59.7

Site 2 - Near Northeast Corner of Project Site

August 28, 2024 11:49:00 AM Leq Daytime = 73.4
Sampling Time = 1 sec Freq Weighting=A Leq Nighttime = 67.9
Record Num = 29000 CNEL(24hr)= 76.2
Leq = 72.1 Ldn(24hr)= 75.7
Min = 38.6 Min Leq hr at 6:17 PM 61.5
Max = 99.6 Max Leq hr at 7:55 AM 75.5

Site 2 - Near Northeast Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
66.9	11:49:00		66.9	66.9
67.6	11:49:03		67.6	67.6
73.7	11:49:06		73.7	73.7
67.9	11:49:09		67.9	67.9
69.9	11:49:12		69.9	69.9
63.2	11:49:15		63.2	63.2
71.3	11:49:18		71.3	71.3
66.3	11:49:21		66.3	66.3
67.9	11:49:24		67.9	67.9
66.4	11:49:27		66.4	66.4
62.6	11:49:30		62.6	62.6
60.3	11:49:33		60.3	60.3
58.6	11:49:36		58.6	58.6
74.4	11:49:39		74.4	74.4
69.0	11:49:42		69.0	69.0
70.6	11:49:45		70.6	70.6
78.7	11:49:48		78.7	78.7
73.1	11:49:51		73.1	73.1
70.7	11:49:54		70.7	70.7
68.0	11:49:57		68.0	68.0
70.5	11:50:00		70.5	70.5
75.6	11:50:03		75.6	75.6
68.2	11:50:06		68.2	68.2
60.8	11:50:09		60.8	60.8
69.2	11:50:12		69.2	69.2
62.1	11:50:15		62.1	62.1
72.1	11:50:18		72.1	72.1
76.6	11:50:21		76.6	76.6
72.5	11:50:24		72.5	72.5
73.8	11:50:27		73.8	73.8
74.2	11:50:30		74.2	74.2
62.8	11:50:33		62.8	62.8
67.8	11:50:36		67.8	67.8
67.2	11:50:39		67.2	67.2
63.2	11:50:42		63.2	63.2
68.7	11:50:45		68.7	68.7
62.9	11:50:48		62.9	62.9
59.8	11:50:51		59.8	59.8
61.8	11:50:54		61.8	61.8
70.2	11:50:57		70.2	70.2
68.3	11:51:00		68.3	68.3
66.2	11:51:03		66.2	66.2
72.8	11:51:06		72.8	72.8
69.7	11:51:09		69.7	69.7
64.8	11:51:12		64.8	64.8
65.8	11:51:15		65.8	65.8
79.2	11:51:18		79.2	79.2
72.5	11:51:21		72.5	72.5
66.4	11:51:24		66.4	66.4
61.6	11:51:27		61.6	61.6
74.4	11:51:30		74.4	74.4
69.6	11:51:33		69.6	69.6
71.7	11:51:36		71.7	71.7
66.0	11:51:39		66.0	66.0
77.0	11:51:42		77.0	77.0
76.0	11:51:45		76.0	76.0
75.0	11:51:48		75.0	75.0
77.2	11:51:51		77.2	77.2
77.7	11:51:54		77.7	77.7
73.8	11:51:57		73.8	73.8
67.2	11:52:00		67.2	67.2
72.5	11:52:03		72.5	72.5
67.3	11:52:06		67.3	67.3
56.8	11:52:09		56.8	56.8
54.5	11:52:12		54.5	54.5
63.2	11:52:15		63.2	63.2
73.6	11:52:18		73.6	73.6
69.8	11:52:21		69.8	69.8
71.2	11:52:24		71.2	71.2
70.0	11:52:27		70.0	70.0
61.0	11:52:30		61.0	61.0
62.7	11:52:33		62.7	62.7
76.6	11:52:36		76.6	76.6
74.9	11:52:39		74.9	74.9
70.6	11:52:42		70.6	70.6
70.6	11:52:45		70.6	70.6
75.5	11:52:48		75.5	75.5
71.8	11:52:51		71.8	71.8
62.3	11:52:54		62.3	62.3
63.4	11:52:57		63.4	63.4
67.6	11:53:00		67.6	67.6
57.2	11:53:03		57.2	57.2
58.3	11:53:06		58.3	58.3
72.4	11:53:09		72.4	72.4
70.8	11:53:12		70.8	70.8
69.8	11:53:15		69.8	69.8
78.1	11:53:18		78.1	78.1
76.4	11:53:21		76.4	76.4
80.3	11:53:24		80.3	80.3
77.0	11:53:27		77.0	77.0
75.3	11:53:30		75.3	75.3
78.7	11:53:33		78.7	78.7
74.9	11:53:36		74.9	74.9
71.7	11:53:39		71.7	71.7
76.9	11:53:42		76.9	76.9
72.9	11:53:45		72.9	72.9
72.2	11:53:48		72.2	72.2
66.4	11:53:51		66.4	66.4
74.4	11:53:54		74.4	74.4
70.7	11:53:57		70.7	70.7
64.2	11:54:00		64.2	64.2
64.4	11:54:03		64.4	64.4
63.8	11:54:06		63.8	63.8
66.9	11:54:09		66.9	66.9
69.6	11:54:12		69.6	69.6
72.5	11:54:15		72.5	72.5
67.6	11:54:18		67.6	67.6
56.2	11:54:21		56.2	56.2
53.1	11:54:24		53.1	53.1
63.8	11:54:27		63.8	63.8
77.8	11:54:30		77.8	77.8
68.2	11:54:33		68.2	68.2
61.6	11:54:36		61.6	61.6
77.0	11:54:39		77.0	77.0
67.8	11:54:42		67.8	67.8
58.2	11:54:45		58.2	58.2
54.4	11:54:48		54.4	54.4
57.2	11:54:51		57.2	57.2
58.1	11:54:54		58.1	58.1
59.0	11:54:57		59.0	59.0
62.8	11:55:00		62.8	62.8
63.3	11:55:03		63.3	63.3
66.9	11:55:06		66.9	66.9
77.6	11:55:09		77.6	77.6
65.8	11:55:12		65.8	65.8
64.4	11:55:15		64.4	64.4
68.8	11:55:18		68.8	68.8
69.2	11:55:21		69.2	69.2
76.4	11:55:24		76.4	76.4
77.4	11:55:27		77.4	77.4
69.1	11:55:30		69.1	69.1
78.0	11:55:33		78.0	78.0
75.7	11:55:36		75.7	75.7
78.9	11:55:39		78.9	78.9
75.6	11:55:42		75.6	75.6
70.7	11:55:45		70.7	70.7
72.8	11:55:48		72.8	72.8
67.4	11:55:51		67.4	67.4
70.5	11:55:54		70.5	70.5
63.8	11:55:57		63.8	63.8
60.7	11:56:00		60.7	60.7
71.9	11:56:03		71.9	71.9
67.2	11:56:06		67.2	67.2
62.2	11:56:09		62.2	62.2
61.2	11:56:12		61.2	61.2
63.2	11:56:15		63.2	63.2
71.3	11:56:18		71.3	71.3
64.4	11:56:21		64.4	64.4
62.3	11:56:24		62.3	62.3
78.3	11:56:27		78.3	78.3
66.9	11:56:30		66.9	66.9
59.7	11:56:33		59.7	59.7
75.9	11:56:36		75.9	75.9
72.6	11:56:39		72.6	72.6
61.4	11:56:42		61.4	61.4
59.3	11:56:45		59.3	59.3
59.4	11:56:48		59.4	59.4
64.8	11:56:51		64.8	64.8
63.7	11:56:54		63.7	63.7
61.7	11:56:57		61.7	61.7
58.8	11:57:00		58.8	58.8
61.2	11:57:03		61.2	61.2
71.2	11:57:06		71.2	71.2
83.4	11:57:09		83.4	83.4
78.1	11:57:12		78.1	78.1
77.3	11:57:15		77.3	77.3
77.6	11:57:18		77.6	77.6
75.3	11:57:21		75.3	75.3
76.1	11:57:24		76.1	76.1
73.4	11:57:27		73.4	73.4

Site 1 - On West Side of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
54.3	11:39:48		54.3	54.3
55.2	11:39:49		55.2	55.2
55.4	11:39:50		55.4	55.4
56.3	11:39:51		56.3	56.3
63.7	11:39:52		63.7	63.7
58.6	11:39:53		58.6	58.6
57.7	11:39:54		57.7	57.7
53.4	11:39:55		53.4	53.4
51.5	11:39:56		51.5	51.5
50.4	11:39:57		50.4	50.4
50.4	11:39:58		50.4	50.4
50.4	11:39:59		50.4	50.4
50.4	11:40:00		50.4	50.4
50.3	11:40:01		50.3	50.3
50.8	11:40:02		50.8	50.8
51.7	11:40:03		51.7	51.7
51.5	11:40:04		51.5	51.5
50.0	11:40:05		50.0	50.0
49.5	11:40:06		49.5	49.5
50.0	11:40:07		50.0	50.0
50.4	11:40:08		50.4	50.4
54.2	11:40:09		54.2	54.2
55.2	11:40:10		55.2	55.2
52.1	11:40:11		52.1	52.1
51.3	11:40:12		51.3	51.3
50.3	11:40:13		50.3	50.3
50.2	11:40:14		50.2	50.2
51.1	11:40:15		51.1	51.1
50.4	11:40:16		50.4	50.4
51.3	11:40:17		51.3	51.3
52.0	11:40:18		52.0	52.0
54.9	11:40:19		54.9	54.9
56.8	11:40:20		56.8	56.8
59.0	11:40:21		59.0	59.0
61.8	11:40:22		61.8	61.8
60.0	11:40:23		60.0	60.0
59.7	11:40:24		59.7	59.7
60.4	11:40:25		60.4	60.4
64.3	11:40:26		64.3	64.3
60.3	11:40:27		60.3	60.3
61.1	11:40:28		61.1	61.1
58.7	11:40:29		58.7	58.7
56.5	11:40:30		56.5	56.5
56.1	11:40:31		56.1	56.1
55.4	11:40:32		55.4	55.4
54.1	11:40:33		54.1	54.1
52.4	11:40:34		52.4	52.4
51.7	11:40:35		51.7	51.7
52.7	11:40:36		52.7	52.7
56.1	11:40:37		56.1	56.1
54.2	11:40:38		54.2	54.2
56.9	11:40:39		56.9	56.9
59.9	11:40:40		59.9	59.9
58.1	11:40:41		58.1	58.1
56.9	11:40:42		56.9	56.9
55.7	11:40:43		55.7	55.7
56.6	11:40:44		56.6	56.6
54.9	11:40:45		54.9	54.9
55.4	11:40:46		55.4	55.4
56.1	11:40:47		56.1	56.1
60.9	11:40:48		60.9	60.9
56.8	11:40:49		56.8	56.8
55.9	11:40:50		55.9	55.9
55.3	11:40:51		55.3	55.3
53.9	11:40:52		53.9	53.9
57.1	11:40:53		57.1	57.1
55.9	11:40:54		55.9	55.9
56.0	11:40:55		56.0	56.0
55.3	11:40:56		55.3	55.3
55.0	11:40:57		55.0	55.0
52.5	11:40:58		52.5	52.5
52.4	11:40:59		52.4	52.4
53.5	11:41:00		53.5	53.5
53.0	11:41:01		53.0	53.0
52.4	11:41:02		52.4	52.4
53.7	11:41:03		53.7	53.7
52.3	11:41:04		52.3	52.3
52.7	11:41:05		52.7	52.7
53.9	11:41:06		53.9	53.9
55.4	11:41:07		55.4	55.4
52.4	11:41:08		52.4	52.4
52.4	11:41:09		52.4	52.4
53.5	11:41:10		53.5	53.5
52.9	11:41:11		52.9	52.9
53.5	11:41:12		53.5	53.5
54.0	11:41:13		54.0	54.0
53.0	11:41:14		53.0	53.0
52.4	11:41:15		52.4	52.4
52.4	11:41:16		52.4	52.4
52.3	11:41:17		52.3	52.3
50.3	11:41:18		50.3	50.3
51.2	11:41:19		51.2	51.2
48.7	11:41:20		48.7	48.7
47.8	11:41:21		47.8	47.8
49.4	11:41:22		49.4	49.4
50.1	11:41:23		50.1	50.1
50.5	11:41:24		50.5	50.5
51.5	11:41:25		51.5	51.5
53.2	11:41:26		53.2	53.2
53.0	11:41:27		53.0	53.0
55.2	11:41:28		55.2	55.2
53.6	11:41:29		53.6	53.6
52.2	11:41:30		52.2	52.2
51.7	11:41:31		51.7	51.7
50.7	11:41:32		50.7	50.7
51.2	11:41:33		51.2	51.2
51.6	11:41:34		51.6	51.6
50.1	11:41:35		50.1	50.1
51.5	11:41:36		51.5	51.5
52.1	11:41:37		52.1	52.1
52.9	11:41:38		52.9	52.9
54.2	11:41:39		54.2	54.2
52.9	11:41:40		52.9	52.9
51.5	11:41:41		51.5	51.5
51.9	11:41:42		51.9	51.9
53.3	11:41:43		53.3	53.3
54.7	11:41:44		54.7	54.7
57.0	11:41:45		57.0	57.0
62.2	11:41:46		62.2	62.2
60.0	11:41:47		60.0	60.0
57.9	11:41:48		57.9	57.9
54.9	11:41:49		54.9	54.9
53.4	11:41:50		53.4	53.4
56.2	11:41:51		56.2	56.2
57.3	11:41:52		57.3	57.3
59.0	11:41:53		59.0	59.0
56.5	11:41:54		56.5	56.5
59.2	11:41:55		59.2	59.2
54.6	11:41:56		54.6	54.6
54.3	11:41:57		54.3	54.3
53.6	11:41:58		53.6	53.6
56.6	11:41:59		56.6	56.6
51.5	11:42:00		51.5	51.5
51.7	11:42:01		51.7	51.7
50.1	11:42:02		50.1	50.1
49.0	11:42:03		49.0	49.0
49.9	11:42:04		49.9	49.9
50.1	11:42:05		50.1	50.1
55.1	11:42:06		55.1	55.1
55.0	11:42:07		55.0	55.0
54.7	11:42:08		54.7	54.7
55.4	11:42:09		55.4	55.4
58.7	11:42:10		58.7	58.7
53.8	11:42:11		53.8	53.8
53.7	11:42:12		53.7	53.7
50.4	11:42:13		50.4	50.4
49.3	11:42:14		49.3	49.3
49.5	11:42:15		49.5	49.5
50.7	11:42:16		50.7	50.7
55.9	11:42:17		55.9	55.9
51.3	11:42:18		51.3	51.3
51.6	11:42:19		51.6	51.6
48.9	11:42:20		48.9	48.9
48.9	11:42:21		48.9	48.9
49.2	11:42:22		49.2	49.2
49.6	11:42:23		49.6	49.6
54.4	11:42:24		54.4	54.4
57.0	11:42:25		57.0	57.0
61.3	11:42:26		61.3	61.3
56.3	11:42:27		56.3	56.3
57.6	11:42:28		57.6	57.6
55.1	11:42:29		55.1	55.1
54.7	11:42:30		54.7	54.7
55.5	11:42:31		55.5	55.5
55.9	11:42:32		55.9	55.9
56.6	11:42:33		56.6	56.6
57.2	11:42:34		57.2	57.2
57.8	11:42:35		57.8	57.8
54.5	11:42:36		54.5	54.5
53.2	11:42:37		53.2	53.2
50.5	11:42:38		50.5	50.5
47.9	11:42:39		47.9	47.9
47.1	11:42:40		47.1	47.1
46.4	11:42:41		46.4	46.4
46.0	11:42:42		46.0	46.0
46.5	11:42:43		46.5	46.5
48.1	11:42:44		48.1	48.1
50.7	11:42:45		50.7	50.7
50.8	11:42:46		50.8	50.8
53.5	11:42:47		53.5	53.5
54.7	11:42:48		54.7	54.7
53.9	11:42:49		53.9	53.9

Site 2 - Near Northeast Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
69.7	11:57:30		69.7	69.7
66.2	11:57:33		66.2	66.2
56.6	11:57:36		56.6	56.6
50.0	11:57:39		50.0	50.0
51.5	11:57:42		51.5	51.5
65.6	11:57:45		65.6	65.6
68.1	11:57:48		68.1	68.1
59.8	11:57:51		59.8	59.8
73.9	11:57:54		73.9	73.9
71.9	11:57:57		71.9	71.9
69.1	11:58:00		69.1	69.1
64.2	11:58:03		64.2	64.2
63.4	11:58:06		63.4	63.4
75.6	11:58:09		75.6	75.6
77.5	11:58:12		77.5	77.5
73.4	11:58:15		73.4	73.4
67.3	11:58:18		67.3	67.3
67.7	11:58:21		67.7	67.7
72.6	11:58:24		72.6	72.6
68.7	11:58:27		68.7	68.7
73.1	11:58:30		73.1	73.1
64.7	11:58:33		64.7	64.7
54.4	11:58:36		54.4	54.4
52.1	11:58:39		52.1	52.1
59.8	11:58:42		59.8	59.8
60.1	11:58:45		60.1	60.1
73.3	11:58:48		73.3	73.3
72.6	11:58:51		72.6	72.6
76.4	11:58:54		76.4	76.4
74.0	11:58:57		74.0	74.0
76.6	11:59:00		76.6	76.6
76.1	11:59:03		76.1	76.1
72.8	11:59:06		72.8	72.8
68.3	11:59:09		68.3	68.3
64.4	11:59:12		64.4	64.4
64.5	11:59:15		64.5	64.5
62.1	11:59:18		62.1	62.1
70.5	11:59:21		70.5	70.5
73.6	11:59:24		73.6	73.6
78.0	11:59:27		78.0	78.0
74.0	11:59:30		74.0	74.0
72.5	11:59:33		72.5	72.5
68.5	11:59:36		68.5	68.5
66.7	11:59:39		66.7	66.7
71.6	11:59:42		71.6	71.6
68.2	11:59:45		68.2	68.2
70.9	11:59:48		70.9	70.9
69.0	11:59:51		69.0	69.0
74.1	11:59:54		74.1	74.1
73.9	11:59:57		73.9	73.9
66.6	12:00:00		66.6	66.6
68.4	12:00:03		68.4	68.4
70.5	12:00:06		70.5	70.5
63.2	12:00:09		63.2	63.2
65.2	12:00:12		65.2	65.2
67.4	12:00:15		67.4	67.4
69.3	12:00:18		69.3	69.3
75.4	12:00:21		75.4	75.4
76.1	12:00:24		76.1	76.1
80.8	12:00:27		80.8	80.8
78.6	12:00:30		78.6	78.6
77.6	12:00:33		77.6	77.6
77.3	12:00:36		77.3	77.3
79.4	12:00:39		79.4	79.4
76.5	12:00:42		76.5	76.5
80.4	12:00:45		80.4	80.4
71.5	12:00:48		71.5	71.5
65.5	12:00:51		65.5	65.5
64.4	12:00:54		64.4	64.4
60.3	12:00:57		60.3	60.3
63.9	12:01:00		63.9	63.9
56.9	12:01:03		56.9	56.9
50.7	12:01:06		50.7	50.7
50.1	12:01:09		50.1	50.1
50.3	12:01:12		50.3	50.3
51.0	12:01:15		51.0	51.0
60.0	12:01:18		60.0	60.0
64.4	12:01:21		64.4	64.4
65.5	12:01:24		65.5	65.5
74.2	12:01:27		74.2	74.2
74.7	12:01:30		74.7	74.7
68.2	12:01:33		68.2	68.2
71.8	12:01:36		71.8	71.8
72.8	12:01:39		72.8	72.8
62.1	12:01:42		62.1	62.1
78.9	12:01:45		78.9	78.9
73.5	12:01:48		73.5	73.5
58.5	12:01:51		58.5	58.5
61.0	12:01:54		61.0	61.0
67.7	12:01:57		67.7	67.7
73.3	12:02:00		73.3	73.3
67.9	12:02:03		67.9	67.9
68.0	12:02:06		68.0	68.0
73.3	12:02:09		73.3	73.3
91.6	12:02:12		91.6	91.6
78.1	12:02:15		78.1	78.1
76.4	12:02:18		76.4	76.4
74.1	12:02:21		74.1	74.1
78.2	12:02:24		78.2	78.2
77.9	12:02:27		77.9	77.9
79.2	12:02:30		79.2	79.2
79.5	12:02:33		79.5	79.5
74.0	12:02:36		74.0	74.0
78.8	12:02:39		78.8	78.8
78.5	12:02:42		78.5	78.5
78.9	12:02:45		78.9	78.9
71.7	12:02:48		71.7	71.7
63.2	12:02:51		63.2	63.2
65.5	12:02:54		65.5	65.5
66.2	12:02:57		66.2	66.2
63.2	12:03:00		63.2	63.2
73.8	12:03:03		73.8	73.8
74.1	12:03:06		74.1	74.1
61.1	12:03:09		61.1	61.1
55.1	12:03:12		55.1	55.1
52.5	12:03:15		52.5	52.5
52.0	12:03:18		52.0	52.0
63.4	12:03:21		63.4	63.4
72.3	12:03:24		72.3	72.3
68.9	12:03:27		68.9	68.9
70.4	12:03:30		70.4	70.4
74.5	12:03:33		74.5	74.5
71.9	12:03:36		71.9	71.9
75.0	12:03:39		75.0	75.0
72.1	12:03:42		72.1	72.1
70.5	12:03:45		70.5	70.5
69.4	12:03:48		69.4	69.4
69.3	12:03:51		69.3	69.3
74.3	12:03:54		74.3	74.3
74.4	12:03:57		74.4	74.4
77.1	12:04:00		77.1	77.1
65.9	12:04:03		65.9	65.9
65.9	12:04:06		65.9	65.9
61.0	12:04:09		61.0	61.0
62.5	12:04:12		62.5	62.5
66.4	12:04:15		66.4	66.4
63.9	12:04:18		63.9	63.9
61.0	12:04:21		61.0	61.0
65.9	12:04:24		65.9	65.9
64.3	12:04:27		64.3	64.3
66.6	12:04:30		66.6	66.6
68.5	12:04:33		68.5	68.5
74.4	12:04:36		74.4	74.4
74.1	12:04:39		74.1	74.1
76.1	12:04:42		76.1	76.1
66.7	12:04:45		66.7	66.7
66.0	12:04:48		66.0	66.0
76.5	12:04:51		76.5	76.5
75.9	12:04:54		75.9	75.9
63.8	12:04:57		63.8	63.8
60.7	12:05:00		60.7	60.7
75.1	12:05:03		75.1	75.1
65.4	12:05:06		65.4	65.4
52.2	12:05:09		52.2	52.2
50.1	12:05:12		50.1	50.1
51.1	12:05:15		51.1	51.1
49.5	12:05:18		49.5	49.5
48.6	12:05:21		48.6	48.6
49.0	12:05:24		49.0	49.0
54.5	12:05:27		54.5	54.5
64.6	12:05:30		64.6	64.6
71.3	12:05:33		71.3	71.3
78.3	12:05:36		78.3	78.3
77.8	12:05:39		77.8	77.8
74.5	12:05:42		74.5	74.5
75.6	12:05:45		75.6	75.6
74.1	12:05:48		74.1	74.1
70.8	12:05:51		70.8	70.8
74.7	12:05:54		74.7	74.7
69.1	12:05:57		69.1	69.1
66.0	12:06:00		66.0	66.0
65.8	12:06:03		65.8	65.8
76.6	12:06:06		76.6	76.6
75.3	12:06:09		75.3	75.3
70.9	12:06:12		70.9	70.9
63.3	12:06:15		63.3	63.3
60.3	12:06:18		60.3	60.3
66.5	12:06:21		66.5	66.5
73.8	12:06:24		73.8	73.8
60.4	12:06:27		60.4	60.4
54.0	12:06:30		54.0	54.0
57.3	12:06:33		57.3	57.3

Site 1 - On West Side of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
56.6	11:42:50		56.6	56.6
55.8	11:42:51		55.8	55.8
51.5	11:42:52		51.5	51.5
50.6	11:42:53		50.6	50.6
48.9	11:42:54		48.9	48.9
51.7	11:42:55		51.7	51.7
53.1	11:42:56		53.1	53.1
47.9	11:42:57		47.9	47.9
48.8	11:42:58		48.8	48.8
50.3	11:42:59		50.3	50.3
51.1	11:43:00		51.1	51.1
55.0	11:43:01		55.0	55.0
53.6	11:43:02		53.6	53.6
50.8	11:43:03		50.8	50.8
50.2	11:43:04		50.2	50.2
49.1	11:43:05		49.1	49.1
47.5	11:43:06		47.5	47.5
48.3	11:43:07		48.3	48.3
50.8	11:43:08		50.8	50.8
52.2	11:43:09		52.2	52.2
54.0	11:43:10		54.0	54.0
54.6	11:43:11		54.6	54.6
57.9	11:43:12		57.9	57.9
54.5	11:43:13		54.5	54.5
53.1	11:43:14		53.1	53.1
53.3	11:43:15		53.3	53.3
53.2	11:43:16		53.2	53.2
54.2	11:43:17		54.2	54.2
54.9	11:43:18		54.9	54.9
54.4	11:43:19		54.4	54.4
53.5	11:43:20		53.5	53.5
52.9	11:43:21		52.9	52.9
51.4	11:43:22		51.4	51.4
53.5	11:43:23		53.5	53.5
55.4	11:43:24		55.4	55.4
62.2	11:43:25		62.2	62.2
60.9	11:43:26		60.9	60.9
57.4	11:43:27		57.4	57.4
54.2	11:43:28		54.2	54.2
51.2	11:43:29		51.2	51.2
50.6	11:43:30		50.6	50.6
50.9	11:43:31		50.9	50.9
51.2	11:43:32		51.2	51.2
53.0	11:43:33		53.0	53.0
53.6	11:43:34		53.6	53.6
54.5	11:43:35		54.5	54.5
54.1	11:43:36		54.1	54.1
59.4	11:43:37		59.4	59.4
54.8	11:43:38		54.8	54.8
55.3	11:43:39		55.3	55.3
53.2	11:43:40		53.2	53.2
54.4	11:43:41		54.4	54.4
55.1	11:43:42		55.1	55.1
52.2	11:43:43		52.2	52.2
50.9	11:43:44		50.9	50.9
52.8	11:43:45		52.8	52.8
54.7	11:43:46		54.7	54.7
55.7	11:43:47		55.7	55.7
60.4	11:43:48		60.4	60.4
59.0	11:43:49		59.0	59.0
58.8	11:43:50		58.8	58.8
60.3	11:43:51		60.3	60.3
58.1	11:43:52		58.1	58.1
59.7	11:43:53		59.7	59.7
59.4	11:43:54		59.4	59.4
60.2	11:43:55		60.2	60.2
59.1	11:43:56		59.1	59.1
60.7	11:43:57		60.7	60.7
60.3	11:43:58		60.3	60.3
61.3	11:43:59		61.3	61.3
59.7	11:44:00		59.7	59.7
61.2	11:44:01		61.2	61.2
57.6	11:44:02		57.6	57.6
59.2	11:44:03		59.2	59.2
54.5	11:44:04		54.5	54.5
53.4	11:44:05		53.4	53.4
52.7	11:44:06		52.7	52.7
55.1	11:44:07		55.1	55.1
54.3	11:44:08		54.3	54.3
54.8	11:44:09		54.8	54.8
56.5	11:44:10		56.5	56.5
53.7	11:44:11		53.7	53.7
52.9	11:44:12		52.9	52.9
52.3	11:44:13		52.3	52.3
51.9	11:44:14		51.9	51.9
52.0	11:44:15		52.0	52.0
50.7	11:44:16		50.7	50.7
47.6	11:44:17		47.6	47.6
47.1	11:44:18		47.1	47.1
46.6	11:44:19		46.6	46.6
48.0	11:44:20		48.0	48.0
50.5	11:44:21		50.5	50.5
52.0	11:44:22		52.0	52.0
58.6	11:44:23		58.6	58.6
55.0	11:44:24		55.0	55.0
57.2	11:44:25		57.2	57.2
54.0	11:44:26		54.0	54.0
52.5	11:44:27		52.5	52.5
52.0	11:44:28		52.0	52.0
53.2	11:44:29		53.2	53.2
56.0	11:44:30		56.0	56.0
58.9	11:44:31		58.9	58.9
57.3	11:44:32		57.3	57.3
55.0	11:44:33		55.0	55.0
52.2	11:44:34		52.2	52.2
51.8	11:44:35		51.8	51.8
52.0	11:44:36		52.0	52.0
53.9	11:44:37		53.9	53.9
55.1	11:44:38		55.1	55.1
51.8	11:44:39		51.8	51.8
52.5	11:44:40		52.5	52.5
58.0	11:44:41		58.0	58.0
59.2	11:44:42		59.2	59.2
55.9	11:44:43		55.9	55.9
57.1	11:44:44		57.1	57.1
54.9	11:44:45		54.9	54.9
57.9	11:44:46		57.9	57.9
55.1	11:44:47		55.1	55.1
54.9	11:44:48		54.9	54.9
53.8	11:44:49		53.8	53.8
54.0	11:44:50		54.0	54.0
54.6	11:44:51		54.6	54.6
54.7	11:44:52		54.7	54.7
60.4	11:44:53		60.4	60.4
57.8	11:44:54		57.8	57.8
58.2	11:44:55		58.2	58.2
59.4	11:44:56		59.4	59.4
57.0	11:44:57		57.0	57.0
57.3	11:44:58		57.3	57.3
57.3	11:44:59		57.3	57.3
56.3	11:45:00		56.3	56.3
53.2	11:45:01		53.2	53.2
53.3	11:45:02		53.3	53.3
51.0	11:45:03		51.0	51.0
49.1	11:45:04		49.1	49.1
48.8	11:45:05		48.8	48.8
49.3	11:45:06		49.3	49.3
50.3	11:45:07		50.3	50.3
51.5	11:45:08		51.5	51.5
52.4	11:45:09		52.4	52.4
51.5	11:45:10		51.5	51.5
51.8	11:45:11		51.8	51.8
51.7	11:45:12		51.7	51.7
49.3	11:45:13		49.3	49.3
53.4	11:45:14		53.4	53.4
54.4	11:45:15		54.4	54.4
53.0	11:45:16		53.0	53.0
53.4	11:45:17		53.4	53.4
55.0	11:45:18		55.0	55.0
54.1	11:45:19		54.1	54.1
54.3	11:45:20		54.3	54.3
54.2	11:45:21		54.2	54.2
55.2	11:45:22		55.2	55.2
56.9	11:45:23		56.9	56.9
59.0	11:45:24		59.0	59.0
63.7	11:45:25		63.7	63.7
60.9	11:45:26		60.9	60.9
61.2	11:45:27		61.2	61.2
60.7	11:45:28		60.7	60.7
62.6	11:45:29		62.6	62.6
63.2	11:45:30		63.2	63.2
60.8	11:45:31		60.8	60.8
61.2	11:45:32		61.2	61.2
61.6	11:45:33		61.6	61.6
64.4	11:45:34		64.4	64.4
64.0	11:45:35		64.0	64.0
62.2	11:45:36		62.2	62.2
60.1	11:45:37		60.1	60.1
59.9	11:45:38		59.9	59.9
62.6	11:45:39		62.6	62.6
60.6	11:45:40		60.6	60.6
59.2	11:45:41		59.2	59.2
58.4	11:45:42		58.4	58.4
58.4	11:45:43		58.4	58.4
58.0	11:45:44		58.0	58.0
58.6	11:45:45		58.6	58.6
60.0	11:45:46		60.0	60.0
60.7	11:45:47		60.7	60.7
62.5	11:45:48		62.5	62.5
64.0	11:45:49		64.0	64.0
63.3	11:45:50		63.3	63.3
57.9	11:45:51		57.9	57.9
58.9	11:45:52		58.9	58.9
57.6	11:45:53		57.6	57.6
58.7	11:45:54		58.7	58.7
57.8	11:45:55		57.8	57.8
59.4	11:45:56		59.4	59.4
56.9	11:45:57		56.9	56.9
57.6	11:45:58		57.6	57.6

Site 2 - Near Northeast Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
62.3	12:06:36		62.3	62.3
61.9	12:06:39		61.9	61.9
66.2	12:06:42		66.2	66.2
65.5	12:06:45		65.5	65.5
75.3	12:06:48		75.3	75.3
75.5	12:06:51		75.5	75.5
72.1	12:06:54		72.1	72.1
66.2	12:06:57		66.2	66.2
77.9	12:07:00		77.9	77.9
73.3	12:07:03		73.3	73.3
63.0	12:07:06		63.0	63.0
52.7	12:07:09		52.7	52.7
52.4	12:07:12		52.4	52.4
64.1	12:07:15		64.1	64.1
71.8	12:07:18		71.8	71.8
71.0	12:07:21		71.0	71.0
72.3	12:07:24		72.3	72.3
74.9	12:07:27		74.9	74.9
71.7	12:07:30		71.7	71.7
71.9	12:07:33		71.9	71.9
71.3	12:07:36		71.3	71.3
73.2	12:07:39		73.2	73.2
71.6	12:07:42		71.6	71.6
74.9	12:07:45		74.9	74.9
64.9	12:07:48		64.9	64.9
80.5	12:07:51		80.5	80.5
72.8	12:07:54		72.8	72.8
75.8	12:07:57		75.8	75.8
70.3	12:08:00		70.3	70.3
78.2	12:08:03		78.2	78.2
75.8	12:08:06		75.8	75.8
72.2	12:08:09		72.2	72.2
73.9	12:08:12		73.9	73.9
78.7	12:08:15		78.7	78.7
77.7	12:08:18		77.7	77.7
72.5	12:08:21		72.5	72.5
63.0	12:08:24		63.0	63.0
61.8	12:08:27		61.8	61.8
62.2	12:08:30		62.2	62.2
76.2	12:08:33		76.2	76.2
69.9	12:08:36		69.9	69.9
61.3	12:08:39		61.3	61.3
58.6	12:08:42		58.6	58.6
62.1	12:08:45		62.1	62.1
61.9	12:08:48		61.9	61.9
60.4	12:08:51		60.4	60.4
74.9	12:08:54		74.9	74.9
74.3	12:08:57		74.3	74.3
70.0	12:09:00		70.0	70.0
67.6	12:09:03		67.6	67.6
65.6	12:09:06		65.6	65.6
64.7	12:09:09		64.7	64.7
71.6	12:09:12		71.6	71.6
68.2	12:09:15		68.2	68.2
58.3	12:09:18		58.3	58.3
60.5	12:09:21		60.5	60.5
75.8	12:09:24		75.8	75.8
64.9	12:09:27		64.9	64.9
63.2	12:09:30		63.2	63.2
67.3	12:09:33		67.3	67.3
58.6	12:09:36		58.6	58.6
56.7	12:09:39		56.7	56.7
65.6	12:09:42		65.6	65.6
65.2	12:09:45		65.2	65.2
61.4	12:09:48		61.4	61.4
71.4	12:09:51		71.4	71.4
71.0	12:09:54		71.0	71.0
75.8	12:09:57		75.8	75.8
80.4	12:10:00		80.4	80.4
79.3	12:10:03		79.3	79.3
77.6	12:10:06		77.6	77.6
75.2	12:10:09		75.2	75.2
75.2	12:10:12		75.2	75.2
77.6	12:10:15		77.6	77.6
73.0	12:10:18		73.0	73.0
71.9	12:10:21		71.9	71.9
70.0	12:10:24		70.0	70.0
63.5	12:10:27		63.5	63.5
71.1	12:10:30		71.1	71.1
66.6	12:10:33		66.6	66.6
69.6	12:10:36		69.6	69.6
66.2	12:10:39		66.2	66.2
65.0	12:10:42		65.0	65.0
73.8	12:10:45		73.8	73.8
68.8	12:10:48		68.8	68.8
63.6	12:10:51		63.6	63.6
74.5	12:10:54		74.5	74.5
70.7	12:10:57		70.7	70.7
66.0	12:11:00		66.0	66.0
74.0	12:11:03		74.0	74.0
76.1	12:11:06		76.1	76.1
71.9	12:11:09		71.9	71.9
68.8	12:11:12		68.8	68.8
61.4	12:11:15		61.4	61.4
54.4	12:11:18		54.4	54.4
53.1	12:11:21		53.1	53.1
65.6	12:11:24		65.6	65.6
69.0	12:11:27		69.0	69.0
60.7	12:11:30		60.7	60.7
66.0	12:11:33		66.0	66.0
80.5	12:11:36		80.5	80.5
77.0	12:11:39		77.0	77.0
70.5	12:11:42		70.5	70.5
75.9	12:11:45		75.9	75.9
79.8	12:11:48		79.8	79.8
82.2	12:11:51		82.2	82.2
80.2	12:11:54		80.2	80.2
77.9	12:11:57		77.9	77.9
68.9	12:12:00		68.9	68.9
69.9	12:12:03		69.9	69.9
72.8	12:12:06		72.8	72.8
76.1	12:12:09		76.1	76.1
68.4	12:12:12		68.4	68.4
61.4	12:12:15		61.4	61.4
67.3	12:12:18		67.3	67.3
74.3	12:12:21		74.3	74.3
68.3	12:12:24		68.3	68.3
70.1	12:12:27		70.1	70.1
73.6	12:12:30		73.6	73.6
72.7	12:12:33		72.7	72.7
77.7	12:12:36		77.7	77.7
68.0	12:12:39		68.0	68.0
64.2	12:12:42		64.2	64.2
68.4	12:12:45		68.4	68.4
74.0	12:12:48		74.0	74.0
76.8	12:12:51		76.8	76.8
68.5	12:12:54		68.5	68.5
64.1	12:12:57		64.1	64.1
63.4	12:13:00		63.4	63.4
75.2	12:13:03		75.2	75.2
70.1	12:13:06		70.1	70.1
64.7	12:13:09		64.7	64.7
62.0	12:13:12		62.0	62.0
57.5	12:13:15		57.5	57.5
57.3	12:13:18		57.3	57.3
53.8	12:13:21		53.8	53.8
73.3	12:13:24		73.3	73.3
74.7	12:13:27		74.7	74.7
76.6	12:13:30		76.6	76.6
75.0	12:13:33		75.0	75.0
78.3	12:13:36		78.3	78.3
73.2	12:13:39		73.2	73.2
72.5	12:13:42		72.5	72.5
72.8	12:13:45		72.8	72.8
74.9	12:13:48		74.9	74.9
70.2	12:13:51		70.2	70.2
73.5	12:13:54		73.5	73.5
66.3	12:13:57		66.3	66.3
78.1	12:14:00		78.1	78.1
74.7	12:14:03		74.7	74.7
66.4	12:14:06		66.4	66.4
63.9	12:14:09		63.9	63.9
61.0	12:14:12		61.0	61.0
70.3	12:14:15		70.3	70.3
74.6	12:14:18		74.6	74.6
75.2	12:14:21		75.2	75.2
75.8	12:14:24		75.8	75.8
71.2	12:14:27		71.2	71.2
69.8	12:14:30		69.8	69.8
67.1	12:14:33		67.1	67.1
75.9	12:14:36		75.9	75.9
67.4	12:14:39		67.4	67.4
66.5	12:14:42		66.5	66.5
70.0	12:14:45		70.0	70.0
67.8	12:14:48		67.8	67.8
65.0	12:14:51		65.0	65.0
56.7	12:14:54		56.7	56.7
52.1	12:14:57		52.1	52.1
60.7	12:15:00		60.7	60.7
65.5	12:15:03		65.5	65.5
64.5	12:15:06		64.5	64.5
64.2	12:15:09		64.2	64.2
64.0	12:15:12		64.0	64.0
61.8	12:15:15		61.8	61.8
62.2	12:15:18		62.2	62.2
58.9	12:15:21		58.9	58.9
60.9	12:15:24		60.9	60.9
64.2	12:15:27		64.2	64.2
78.7	12:15:30		78.7	78.7
77.2	12:15:33		77.2	77.2
75.9	12:15:36		75.9	75.9
78.2	12:15:39		78.2	78.2
72.3	12:15:42		72.3	72.3
81.3	12:15:45		81.3	81.3
71.8	12:15:48		71.8	71.8
75.9	12:15:51		75.9	75.9
68.1	12:15:54		68.1	68.1
63.2	12:15:57		63.2	63.2
77.5	12:16:00		77.5	77.5

Site 1 - On West Side of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
56.5	11:45:59		56.5	56.5
56.1	11:46:00		56.1	56.1
51.1	11:46:01		51.1	51.1
59.3	11:46:02		59.3	59.3
56.3	11:46:03		56.3	56.3
54.1	11:46:04		54.1	54.1
52.7	11:46:05		52.7	52.7
51.7	11:46:06		51.7	51.7
48.7	11:46:07		48.7	48.7
48.0	11:46:08		48.0	48.0
47.5	11:46:09		47.5	47.5
47.7	11:46:10		47.7	47.7
48.0	11:46:11		48.0	48.0
49.4	11:46:12		49.4	49.4
50.5	11:46:13		50.5	50.5
51.6	11:46:14		51.6	51.6
51.7	11:46:15		51.7	51.7
55.7	11:46:16		55.7	55.7
54.3	11:46:17		54.3	54.3
53.6	11:46:18		53.6	53.6
51.2	11:46:19		51.2	51.2
50.2	11:46:20		50.2	50.2
55.0	11:46:21		55.0	55.0
52.4	11:46:22		52.4	52.4
51.1	11:46:23		51.1	51.1
50.5	11:46:24		50.5	50.5
49.7	11:46:25		49.7	49.7
48.3	11:46:26		48.3	48.3
45.8	11:46:27		45.8	45.8
45.8	11:46:28		45.8	45.8
45.4	11:46:29		45.4	45.4
45.4	11:46:30		45.4	45.4
45.1	11:46:31		45.1	45.1
46.6	11:46:32		46.6	46.6
49.8	11:46:33		49.8	49.8
52.0	11:46:34		52.0	52.0
56.3	11:46:35		56.3	56.3
60.0	11:46:36		60.0	60.0
56.8	11:46:37		56.8	56.8
55.4	11:46:38		55.4	55.4
53.6	11:46:39		53.6	53.6
50.4	11:46:40		50.4	50.4
48.9	11:46:41		48.9	48.9
49.1	11:46:42		49.1	49.1
49.7	11:46:43		49.7	49.7
51.9	11:46:44		51.9	51.9
56.2	11:46:45		56.2	56.2
54.4	11:46:46		54.4	54.4
53.8	11:46:47		53.8	53.8
52.1	11:46:48		52.1	52.1
50.5	11:46:49		50.5	50.5
48.6	11:46:50		48.6	48.6
48.5	11:46:51		48.5	48.5
46.0	11:46:52		46.0	46.0
45.7	11:46:53		45.7	45.7
44.4	11:46:54		44.4	44.4
44.2	11:46:55		44.2	44.2
43.8	11:46:56		43.8	43.8
44.0	11:46:57		44.0	44.0
44.3	11:46:58		44.3	44.3
45.1	11:46:59		45.1	45.1
46.5	11:47:00		46.5	46.5
46.3	11:47:01		46.3	46.3
45.6	11:47:02		45.6	45.6
45.6	11:47:03		45.6	45.6
46.4	11:47:04		46.4	46.4
47.1	11:47:05		47.1	47.1
47.6	11:47:06		47.6	47.6
47.6	11:47:07		47.6	47.6
48.9	11:47:08		48.9	48.9
49.0	11:47:09		49.0	49.0
49.3	11:47:10		49.3	49.3
51.7	11:47:11		51.7	51.7
52.0	11:47:12		52.0	52.0
52.5	11:47:13		52.5	52.5
53.8	11:47:14		53.8	53.8
59.6	11:47:15		59.6	59.6
57.5	11:47:16		57.5	57.5
56.0	11:47:17		56.0	56.0
55.2	11:47:18		55.2	55.2
54.8	11:47:19		54.8	54.8
52.8	11:47:20		52.8	52.8
53.3	11:47:21		53.3	53.3
50.4	11:47:22		50.4	50.4
51.1	11:47:23		51.1	51.1
50.7	11:47:24		50.7	50.7
52.0	11:47:25		52.0	52.0
54.8	11:47:26		54.8	54.8
56.7	11:47:27		56.7	56.7
55.8	11:47:28		55.8	55.8
59.8	11:47:29		59.8	59.8
58.5	11:47:30		58.5	58.5
57.6	11:47:31		57.6	57.6
60.5	11:47:32		60.5	60.5
61.5	11:47:33		61.5	66.4
59.7	11:47:34		59.7	59.7
59.3	11:47:35		59.3	59.3
58.5	11:47:36		58.5	58.5
57.6	11:47:37		57.6	57.6
57.9	11:47:38		57.9	57.9
59.7	11:47:39		59.7	59.7
61.3	11:47:40		61.3	61.3
61.9	11:47:41		61.9	61.9
59.5	11:47:42		59.5	59.5
58.5	11:47:43		58.5	58.5
59.8	11:47:44		59.8	59.8
61.5	11:47:45		61.5	61.5
59.7	11:47:46		59.7	59.7
61.0	11:47:47		61.0	61.0
58.0	11:47:48		58.0	58.0
56.7	11:47:49		56.7	56.7
55.7	11:47:50		55.7	55.7
54.3	11:47:51		54.3	54.3
57.6	11:47:52		57.6	57.6
57.0	11:47:53		57.0	57.0
56.7	11:47:54		56.7	56.7
57.6	11:47:55		57.6	57.6
57.2	11:47:56		57.2	57.2
57.4	11:47:57		57.4	57.4
56.3	11:47:58		56.3	56.3
56.5	11:47:59		56.5	56.5
53.9	11:48:00		53.9	53.9
54.7	11:48:01		54.7	54.7
52.0	11:48:02		52.0	52.0
51.0	11:48:03		51.0	51.0
50.5	11:48:04		50.5	50.5
51.2	11:48:05		51.2	51.2
50.8	11:48:06		50.8	50.8
50.3	11:48:07		50.3	50.3
52.2	11:48:08		52.2	52.2
53.5	11:48:09		53.5	53.5
56.9	11:48:10		56.9	56.9
51.9	11:48:11		51.9	51.9
52.5	11:48:12		52.5	52.5
50.9	11:48:13		50.9	50.9
50.8	11:48:14		50.8	50.8
49.6	11:48:15		49.6	49.6
46.8	11:48:16		46.8	46.8
47.1	11:48:17		47.1	47.1
47.2	11:48:18		47.2	47.2
47.3	11:48:19		47.3	47.3
47.4	11:48:20		47.4	47.4
48.4	11:48:21		48.4	48.4
49.9	11:48:22		49.9	49.9
50.4	11:48:23		50.4	50.4
54.5	11:48:24		54.5	54.5
52.5	11:48:25		52.5	52.5
51.9	11:48:26		51.9	51.9
51.9	11:48:27		51.9	51.9
50.9	11:48:28		50.9	50.9
50.4	11:48:29		50.4	50.4
51.7	11:48:30		51.7	51.7
52.8	11:48:31		52.8	52.8
53.3	11:48:32		53.3	53.3
59.9	11:48:33		59.9	59.9
55.5	11:48:34		55.5	55.5
55.9	11:48:35		55.9	55.9
53.9	11:48:36		53.9	53.9
49.8	11:48:37		49.8	49.8
50.0	11:48:38		50.0	50.0
51.3	11:48:39		51.3	51.3
51.1	11:48:40		51.1	51.1
55.1	11:48:41		55.1	55.1
57.7	11:48:42		57.7	57.7
57.0	11:48:43		57.0	63.5
57.5	11:48:44		57.5	57.5
52.8	11:48:45		52.8	52.8
51.7	11:48:46		51.7	51.7
49.6	11:48:47		49.6	49.6
47.2	11:48:48		47.2	47.2
46.8	11:48:49		46.8	46.8
46.1	11:48:50		46.1	46.1
45.5	11:48:51		45.5	45.5
45.5	11:48:52		45.5	45.5
45.8	11:48:53		45.8	45.8
45.8	11:48:54		45.8	45.8
46.0	11:48:55		46.0	46.0
46.0	11:48:56		46.0	46.0
46.1	11:48:57		46.1	46.1
49.5	11:48:58		49.5	49.5
50.9	11:48:59		50.9	50.9
51.8	11:49:00		51.8	51.8
53.5	11:49:01		53.5	53.5
54.2	11:49:02		54.2	54.2
54.4	11:49:03		54.4	54.4
50.8	11:49:04		50.8	50.8
51.8	11:49:05		51.8	51.8
52.0	11:49:06		52.0	52.0
59.8	11:49:07		59.8	59.8
56.1	11:49:08		56.1	56.1
54.5	11:49:09		54.5	54.5
55.2	11:49:10		55.2	55.2
56.4	11:49:11		56.4	56.4
55.1	11:49:12		55.1	55.1
57.5	11:49:13		57.5	57.5
58.9	11:49:14		58.9	58.9
60.5	11:49:15		60.5	60.5
62.8	11:49:16		62.8	62.8
63.8	11:49:17		63.8	63.8
63.6	11:49:18		63.6	63.6
62.0	11:49:19		62.0	62.0
61.3	11:49:20		61.3	61.3
61.3	11:49:21		61.3	61.3
61.3	11:49:22		61.3	61.3
61.6	11:49:23		61.6	61.6
60.1	11:49:24		60.1	60.1

Site 2 - Near Northeast Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
73.5	12:16:03		73.5	73.5
69.9	12:16:06		69.9	69.9
70.4	12:16:09		70.4	70.4
73.0	12:16:12		73.0	73.0
77.2	12:16:15		77.2	77.2
69.8	12:16:18		69.8	69.8
72.6	12:16:21		72.6	72.6
69.8	12:16:24		69.8	69.8
53.1	12:16:27		53.1	53.1
58.0	12:16:30		58.0	58.0
60.6	12:16:33		60.6	60.6
71.1	12:16:36		71.1	71.1
72.8	12:16:39		72.8	72.8
72.1	12:16:42		72.1	72.1
74.6	12:16:45		74.6	74.6
71.4	12:16:48		71.4	71.4
68.2	12:16:51		68.2	68.2
65.6	12:16:54		65.6	65.6
67.0	12:16:57		67.0	67.0
71.5	12:17:00		71.5	71.5
65.5	12:17:03		65.5	65.5
78.5	12:17:06		78.5	78.5
79.5	12:17:09		79.5	79.5
79.5	12:17:12		79.5	79.5
78.9	12:17:15		78.9	78.9
77.9	12:17:18		77.9	77.9
76.6	12:17:21		76.6	76.6
77.0	12:17:24		77.0	77.0
77.2	12:17:27		77.2	77.2
74.2	12:17:30		74.2	74.2
76.9	12:17:33		76.9	76.9
72.2	12:17:36		72.2	72.2
71.2	12:17:39		71.2	71.2
94.4	12:17:42		94.4	94.4
60.7	12:17:45		60.7	60.7
63.0	12:17:48		63.0	63.0
57.7	12:17:51		57.7	57.7
54.2	12:17:54		54.2	54.2
56.6	12:17:57		56.6	56.6
76.2	12:18:00		76.2	76.2
71.3	12:18:03		71.3	71.3
73.9	12:18:06		73.9	73.9
85.3	12:18:09		85.3	85.3
91.1	12:18:12		91.1	91.1
60.8	12:18:15		60.8	60.8
61.8	12:18:18		61.8	61.8
72.4	12:18:21		72.4	72.4
68.4	12:18:24		68.4	68.4
62.4	12:18:27		62.4	62.4
59.9	12:18:30		59.9	59.9
88.8	12:18:33		88.8	88.8
85.6	12:18:36		85.6	85.6
85.8	12:18:39		85.8	85.8
91.0	12:18:42		91.0	91.0
63.8	12:18:45		63.8	63.8
94.4	12:18:48		94.4	94.4
68.4	12:18:51		68.4	68.4
63.5	12:18:54		63.5	63.5
94.0	12:18:57		94.0	94.0
58.8	12:19:00	73.0	58.8	58.8
67.3	12:19:03	73.0	67.3	67.3
72.0	12:19:06	73.0	72.0	72.0
80.7	12:19:09	73.0	80.7	80.7
78.5	12:19:12	73.0	78.5	78.5
91.0	12:19:15	73.0	91.0	91.0
80.5	12:19:18	73.0	80.5	80.5
77.8	12:19:21	73.0	77.8	77.8
76.5	12:19:24	73.0	76.5	76.5
74.5	12:19:27	73.0	74.5	74.5
75.7	12:19:30	73.0	75.7	75.7
76.5	12:19:33	73.0	76.5	76.5
72.7	12:19:36	73.0	72.7	72.7
72.5	12:19:39	73.0	72.5	72.5
72.7	12:19:42	73.0	72.7	72.7
67.2	12:19:45	73.0	67.2	67.2
61.1	12:19:48	73.0	61.1	61.1
53.5	12:19:51	73.0	53.5	53.5
58.3	12:19:54	73.0	58.3	58.3
62.1	12:19:57	73.0	62.1	62.1
70.9	12:20:00	73.0	70.9	70.9
65.3	12:20:03	73.0	65.3	65.3
60.2	12:20:06	73.0	60.2	60.2
63.2	12:20:09	73.0	63.2	63.2
71.6	12:20:12	73.0	71.6	71.6
73.1	12:20:15	73.0	73.1	73.1
63.6	12:20:18	73.0	63.6	63.6
57.4	12:20:21	73.0	57.4	57.4
61.0	12:20:24	73.0	61.0	61.0
66.5	12:20:27	73.0	66.5	66.5
64.2	12:20:30	73.0	64.2	64.2
73.1	12:20:33	73.0	73.1	73.1
69.7	12:20:36	73.0	69.7	69.7
73.2	12:20:39	73.0	73.2	73.2
86.2	12:20:42	73.0	86.2	86.2
66.4	12:20:45	73.0	66.4	66.4
65.5	12:20:48	73.0	65.5	65.5
65.6	12:20:51	73.0	65.6	65.6
67.3	12:20:54	73.0	67.3	67.3
72.5	12:20:57	73.0	72.5	72.5
79.9	12:21:00	73.0	79.9	79.9
77.2	12:21:03	73.0	77.2	77.2
75.7	12:21:06	73.0	75.7	75.7
77.1	12:21:09	73.0	77.1	77.1
75.2	12:21:12	73.0	75.2	75.2
76.8	12:21:15	73.0	76.8	76.8
76.8	12:21:18	73.0	76.8	76.8
71.6	12:21:21	73.0	71.6	71.6
88.2	12:21:24	73.0	88.2	88.2
73.9	12:21:27	73.0	73.9	73.9
74.5	12:21:30	73.0	74.5	74.5
71.0	12:21:33	73.0	71.0	71.0
70.8	12:21:36	73.0	70.8	70.8
94.5	12:21:39	73.0	94.5	94.5
98.0	12:21:42	73.0	98.0	98.0
77.5	12:21:45	73.0	77.5	77.5
70.1	12:21:48	73.0	70.1	70.1
77.1	12:21:51	73.0	77.1	77.1
69.8	12:21:54	73.0	69.8	69.8
84.8	12:21:57	73.0	84.8	84.8
67.7	12:22:00	73.0	67.7	67.7
67.7	12:22:03	73.0	67.7	67.7
66.6	12:22:06	73.0	66.6	66.6
69.9	12:22:09	73.0	69.9	69.9
66.8	12:22:12	73.0	66.8	66.8
64.5	12:22:15	73.0	64.5	64.5
70.9	12:22:18	73.1	70.9	70.9
67.0	12:22:21	73.1	67.0	67.0
76.9	12:22:24	73.1	76.9	76.9
86.1	12:22:27	73.1	86.1	86.1
59.6	12:22:30	73.1	59.6	59.6
57.6	12:22:33	73.1	57.6	57.6
59.5	12:22:36	73.1	59.5	59.5
91.1	12:22:39	73.1	91.1	91.1
62.3	12:22:42	73.1	62.3	62.3
62.8	12:22:45	73.1	62.8	62.8
69.8	12:22:48	73.1	69.8	69.8
70.7	12:22:51	73.1	70.7	70.7
86.1	12:22:54	73.1	86.1	86.1
94.1	12:22:57	73.1	94.1	94.1
76.4	12:23:00	73.1	76.4	76.4
76.8	12:23:03	73.1	76.8	76.8
74.3	12:23:06	73.1	74.3	74.3
75.1	12:23:09	73.1	75.1	75.1
75.3	12:23:12	73.1	75.3	75.3
76.6	12:23:15	73.1	76.6	76.6
75.3	12:23:18	73.1	75.3	75.3
74.8	12:23:21	73.1	74.8	74.8
75.7	12:23:24	73.1	75.7	75.7
72.2	12:23:27	73.1	72.2	72.2
72.4	12:23:30	73.0	72.4	72.4
74.7	12:23:33	73.0	74.7	74.7
74.1	12:23:36	73.0	74.1	74.1
70.2	12:23:39	73.0	70.2	70.2
65.6	12:23:42	73.0	65.6	65.6
78.6	12:23:45	73.0	78.6	78.6
75.5	12:23:48	73.0	75.5	75.5
69.6	12:23:51	73.0	69.6	69.6
74.5	12:23:54	73.0	74.5	74.5
66.5	12:23:57	73.0	66.5	66.5
62.4	12:24:00	73.0	62.4	62.4
61.3	12:24:03	73.0	61.3	61.3
68.1	12:24:06	73.1	68.1	68.1
66.9	12:24:09	73.1	66.9	66.9
60.8	12:24:12	73.1	60.8	60.8
63.5	12:24:15	73.1	63.5	63.5
71.6	12:24:18	73.1	71.6	71.6
74.8	12:24:21	73.1	74.8	74.8
73.8	12:24:24	73.1	73.8	73.8
68.6	12:24:27	73.1	68.6	68.6
56.6	12:24:30	73.1	56.6	56.6
58.1	12:24:33	73.1	58.1	58.1
58.3	12:24:36	73.1	58.3	58.3
52.1	12:24:39	73.1	52.1	52.1
51.8	12:24:42	73.1	51.8	51.8
61.2	12:24:45	73.1	61.2	61.2
78.6	12:24:48	73.1	78.6	78.6
74.8	12:24:51	73.1	74.8	74.8
74.6	12:24:54	73.1	74.6	74.6
74.9	12:24:57	73.1	74.9	74.9
65.9	12:25:00	73.1	65.9	65.9
76.8	12:25:03	73.1	76.8	76.8
71.8	12:25:06	73.1	71.8	71.8
73.3	12:25:09	73.1	73.3	73.3
68.3	12:25:12	73.1	68.3	68.3
68.7	12:25:15	73.1	68.7	68.7
66.5	12:25:18	73.1	66.5	66.5
67.5	12:25:21	73.1	67.5	67.5
71.7	12:25:24	73.1	71.7	71.7
70.0	12:25:27	73.1	70.0	70.0
60.1	12:25:30	73.0	60.1	60.1
69.8	12:25:33	73.0	69.8	69.8
66.4	12:25:36	73.0	66.4	66.4
61.9	12:25:39	73.0	61.9	61.9
64.0	12:25:42	73.0	64.0	64.0
70.6	12:25:45	73.0	70.6	70.6
73.7	12:25:48	73.0	73.7	73.7
65.9	12:25:51	73.0	65.9	65.9
76.8	12:25:54	73.0	76.8	76.8
73.9	12:25:57	73.0	73.9	73.9
66.7	12:26:00	73.0	66.7	66.7
65.5	12:26:03	73.0	65.5	65.5
70.5	12:26:06	73.1	70.5	70.5
75.1	12:26:09	73.1	75.1	75.1
73.5	12:26:12	73.1	73.5	73.5
70.2	12:26:15	73.1	70.2	70.2
62.8	12:26:18	73.1	62.8	62.8

Site 1 - On West Side of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
51.1	11:49:25		51.1	51.1
52.1	11:49:26		52.1	52.1
59.7	11:49:27		59.7	59.7
59.5	11:49:28		59.5	59.5
58.4	11:49:29		58.4	58.4
60.7	11:49:30		60.7	60.7
58.1	11:49:31		58.1	58.1
56.5	11:49:32		56.5	56.5
58.1	11:49:33		58.1	58.1
55.2	11:49:34		55.2	55.2
52.7	11:49:35		52.7	52.7
52.2	11:49:36		52.2	52.2
52.5	11:49:37		52.5	52.5
53.2	11:49:38		53.2	53.2
52.2	11:49:39		52.2	52.2
54.8	11:49:40		54.8	54.8
55.1	11:49:41		55.1	55.1
52.9	11:49:42		52.9	52.9
55.1	11:49:43		55.1	55.1
54.2	11:49:44		54.2	54.2
47.5	11:49:45		47.5	47.5
46.4	11:49:46		46.4	46.4
45.3	11:49:47		45.3	45.3
44.5	11:49:48		44.5	44.5
44.9	11:49:49		44.9	44.9
44.5	11:49:50		44.5	44.5
44.8	11:49:51		44.8	44.8
45.0	11:49:52		45.0	45.0
46.6	11:49:53		46.6	46.6
48.3	11:49:54		48.3	48.3
53.4	11:49:55		53.4	53.4
55.8	11:49:56		55.8	55.8
56.7	11:49:57		56.7	56.7
56.6	11:49:58		56.6	56.6
55.5	11:49:59		55.5	55.5
56.9	11:50:00		56.9	56.9
51.6	11:50:01		51.6	51.6
58.5	11:50:02		58.5	58.5
58.3	11:50:03		58.3	58.3
56.1	11:50:04		56.1	56.1
51.1	11:50:05		51.1	51.1
52.3	11:50:06		52.3	52.3
52.8	11:50:07		52.8	52.8
53.7	11:50:08		53.7	53.7
55.0	11:50:09		55.0	55.0
55.4	11:50:10		55.4	55.4
53.1	11:50:11		53.1	53.1
52.8	11:50:12		52.8	52.8
53.1	11:50:13		53.1	53.1
52.2	11:50:14		52.2	52.2
54.6	11:50:15		54.6	54.6
55.3	11:50:16		55.3	55.3
55.8	11:50:17		55.8	55.8
58.8	11:50:18		58.8	58.8
62.4	11:50:19		62.4	62.4
65.0	11:50:20		65.0	65.0
63.0	11:50:21		63.0	63.0
63.6	11:50:22		63.6	63.6
64.0	11:50:23		64.0	64.0
64.8	11:50:24		64.8	64.8
63.4	11:50:25		63.4	63.4
59.1	11:50:26		59.1	59.1
57.8	11:50:27		57.8	57.8
56.0	11:50:28		56.0	56.0
59.6	11:50:29		59.6	59.6
56.9	11:50:30		56.9	56.9
54.5	11:50:31		54.5	54.5
53.5	11:50:32		53.5	53.5
52.4	11:50:33		52.4	52.4
53.2	11:50:34		53.2	53.2
58.3	11:50:35		58.3	58.3
57.7	11:50:36		57.7	57.7
58.8	11:50:37		58.8	58.8
54.6	11:50:38		54.6	54.6
54.3	11:50:39		54.3	54.3
54.8	11:50:40		54.8	54.8
53.4	11:50:41		53.4	53.4
52.0	11:50:42		52.0	52.0
50.7	11:50:43		50.7	50.7
49.0	11:50:44		49.0	49.0
47.0	11:50:45		47.0	47.0
49.1	11:50:46		49.1	49.1
48.3	11:50:47		48.3	48.3
51.7	11:50:48		51.7	51.7
55.9	11:50:49		55.9	55.9
58.0	11:50:50		58.0	58.0
58.3	11:50:51		58.3	58.3
58.0	11:50:52		58.0	58.0
57.1	11:50:53		57.1	57.1
57.0	11:50:54		57.0	57.0
62.0	11:50:55		62.0	62.0
59.0	11:50:56		59.0	59.0
58.2	11:50:57		58.2	58.2
58.8	11:50:58		58.8	58.8
61.3	11:50:59		61.3	61.3
60.1	11:51:00		60.1	60.1
59.1	11:51:01		59.1	59.1
58.9	11:51:02		58.9	58.9
60.6	11:51:03		60.6	60.6
62.0	11:51:04		62.0	62.0
62.3	11:51:05		62.3	62.3
60.7	11:51:06		60.7	60.7
60.8	11:51:07		60.8	60.8
61.3	11:51:08		61.3	61.3
60.0	11:51:09		60.0	60.0
58.0	11:51:10		58.0	58.0
58.9	11:51:11		58.9	58.9
56.9	11:51:12		56.9	56.9
54.0	11:51:13		54.0	54.0
53.2	11:51:14		53.2	53.2
52.5	11:51:15		52.5	52.5
52.0	11:51:16		52.0	52.0
52.7	11:51:17		52.7	52.7
54.1	11:51:18		54.1	54.1
53.3	11:51:19		53.3	53.3
53.9	11:51:20		53.9	53.9
54.6	11:51:21		54.6	54.6
49.5	11:51:22		49.5	49.5
49.9	11:51:23		49.9	49.9
49.9	11:51:24		49.9	49.9
50.9	11:51:25		50.9	50.9
54.2	11:51:26		54.2	54.2
53.2	11:51:27		53.2	53.2
55.5	11:51:28		55.5	55.5
57.1	11:51:29		57.1	57.1
56.0	11:51:30		56.0	56.0
56.1	11:51:31		56.1	56.1
57.0	11:51:32		57.0	57.0
61.0	11:51:33		61.0	61.0
58.8	11:51:34		58.8	58.8
60.0	11:51:35		60.0	60.0
57.7	11:51:36		57.7	57.7
55.5	11:51:37		55.5	55.5
54.6	11:51:38		54.6	54.6
54.3	11:51:39		54.3	54.3
59.6	11:51:40		59.6	59.6
56.0	11:51:41		56.0	56.0
55.5	11:51:42		55.5	55.5
54.9	11:51:43		54.9	54.9
52.9	11:51:44		52.9	52.9
52.9	11:51:45		52.9	52.9
56.5	11:51:46		56.5	56.5
57.1	11:51:47		57.1	57.1
52.9	11:51:48		52.9	52.9
52.3	11:51:49		52.3	52.3
51.6	11:51:50		51.6	51.6
50.8	11:51:51		50.8	50.8
54.8	11:51:52		54.8	54.8
54.6	11:51:53		54.6	54.6
52.3	11:51:54		52.3	52.3
52.1	11:51:55		52.1	52.1
51.4	11:51:56		51.4	51.4
50.9	11:51:57		50.9	50.9
50.8	11:51:58		50.8	50.8
52.1	11:51:59		52.1	52.1
53.1	11:52:00		53.1	53.1
57.6	11:52:01		57.6	57.6
59.2	11:52:02		59.2	59.2
62.2	11:52:03		62.2	62.2
62.3	11:52:04		62.3	62.3
61.3	11:52:05		61.3	61.3
60.1	11:52:06		60.1	60.1
60.6	11:52:07		60.6	60.6
58.3	11:52:08		58.3	58.3
53.0	11:52:09		53.0	53.0
52.2	11:52:10		52.2	52.2
51.1	11:52:11		51.1	51.1
50.2	11:52:12		50.2	50.2
51.7	11:52:13		51.7	51.7
54.5	11:52:14		54.5	54.5
55.1	11:52:15		55.1	55.1
54.5	11:52:16		54.5	54.5
53.9	11:52:17		53.9	53.9
53.1	11:52:18		53.1	53.1

Site 2 - Near Northeast Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
60.2	12:26:21	73.1	60.2	60.2
52.8	12:26:24	73.1	52.8	52.8
50.3	12:26:27	73.1	50.3	50.3
49.8	12:26:30	73.1	49.8	49.8
53.1	12:26:33	73.1	53.1	53.1
54.9	12:26:36	73.1	54.9	54.9
54.7	12:26:39	73.1	54.7	54.7
73.9	12:26:42	73.1	73.9	73.9
75.7	12:26:45	73.1	75.7	75.7
75.4	12:26:48	73.1	75.4	75.4
69.8	12:26:51	73.1	69.8	69.8
75.2	12:26:54	73.1	75.2	75.2
71.2	12:26:57	73.1	71.2	71.2
65.0	12:27:00	73.1	65.0	65.0
66.1	12:27:03	73.1	66.1	66.1
62.5	12:27:06	73.1	62.5	62.5
57.7	12:27:09	73.1	57.7	57.7
72.8	12:27:12	73.0	72.8	72.8
74.8	12:27:15	73.0	74.8	74.8
73.2	12:27:18	73.0	73.2	73.2
67.8	12:27:21	73.0	67.8	67.8
71.7	12:27:24	73.0	71.7	71.7
68.4	12:27:27	73.0	68.4	68.4
63.8	12:27:30	73.0	63.8	63.8
68.1	12:27:33	73.0	68.1	68.1
79.3	12:27:36	73.0	79.3	79.3
71.5	12:27:39	73.0	71.5	71.5
62.2	12:27:42	73.0	62.2	62.2
63.2	12:27:45	73.0	63.2	63.2
64.1	12:27:48	73.1	64.1	64.1
70.4	12:27:51	73.1	70.4	70.4
71.3	12:27:54	73.1	71.3	71.3
68.4	12:27:57	73.1	68.4	68.4
63.5	12:28:00	73.1	63.5	63.5
54.4	12:28:03	73.1	54.4	54.4
51.4	12:28:06	73.1	51.4	51.4
50.7	12:28:09	73.1	50.7	50.7
64.9	12:28:12	73.1	64.9	64.9
68.6	12:28:15	73.1	68.6	68.6
68.0	12:28:18	73.1	68.0	68.0
76.1	12:28:21	73.0	76.1	76.1
75.2	12:28:24	73.0	75.2	75.2
74.1	12:28:27	73.0	74.1	74.1
77.8	12:28:30	73.0	77.8	77.8
74.8	12:28:33	73.0	74.8	74.8
75.6	12:28:36	73.0	75.6	75.6
74.5	12:28:39	73.0	74.5	74.5
72.3	12:28:42	73.0	72.3	72.3
72.2	12:28:45	73.0	72.2	72.2
70.9	12:28:48	73.0	70.9	70.9
64.5	12:28:51	73.0	64.5	64.5
63.8	12:28:54	73.1	63.8	63.8
71.2	12:28:57	73.1	71.2	71.2
65.0	12:29:00	73.1	65.0	65.0
69.4	12:29:03	73.1	69.4	69.4
73.0	12:29:06	73.1	73.0	73.0
76.4	12:29:09	73.1	76.4	76.4
69.8	12:29:12	73.1	69.8	69.8
69.5	12:29:15	73.1	69.5	69.5
69.3	12:29:18	73.1	69.3	69.3
67.7	12:29:21	73.1	67.7	67.7
60.3	12:29:24	73.1	60.3	60.3
67.3	12:29:27	73.1	67.3	67.3
75.1	12:29:30	73.1	75.1	75.1
70.6	12:29:33	73.1	70.6	70.6
69.1	12:29:36	73.1	69.1	69.1
69.2	12:29:39	73.1	69.2	69.2
70.5	12:29:42	73.1	70.5	70.5
74.4	12:29:45	73.1	74.4	74.4
64.7	12:29:48	73.1	64.7	64.7
62.7	12:29:51	73.1	62.7	62.7
57.5	12:29:54	73.1	57.5	57.5
76.4	12:29:57	73.1	76.4	76.4
77.4	12:30:00	73.1	77.4	77.4
79.1	12:30:03	73.1	79.1	79.1
75.1	12:30:06	73.1	75.1	75.1
71.2	12:30:09	73.1	71.2	71.2
66.5	12:30:12	73.1	66.5	66.5
61.6	12:30:15	73.1	61.6	61.6
65.3	12:30:18	73.1	65.3	65.3
73.9	12:30:21	73.1	73.9	73.9
67.7	12:30:24	73.1	67.7	67.7
77.9	12:30:27	73.0	77.9	77.9
71.0	12:30:30	73.0	71.0	71.0
72.5	12:30:33	73.0	72.5	72.5
64.6	12:30:36	73.0	64.6	64.6
72.6	12:30:39	73.0	72.6	72.6
74.5	12:30:42	73.0	74.5	74.5
64.7	12:30:45	73.0	64.7	64.7
55.0	12:30:48	73.0	55.0	55.0
51.3	12:30:51	73.0	51.3	51.3
60.2	12:30:54	73.0	60.2	60.2
72.8	12:30:57	73.0	72.8	72.8
68.1	12:31:00	73.0	68.1	68.1
58.1	12:31:03	73.0	58.1	58.1
52.9	12:31:06	73.0	52.9	52.9
49.4	12:31:09	73.0	49.4	49.4
52.2	12:31:12	73.0	52.2	52.2
61.1	12:31:15	73.0	61.1	61.1
69.1	12:31:18	73.0	69.1	69.1
63.2	12:31:21	73.0	63.2	63.2
72.7	12:31:24	73.0	72.7	72.7
68.9	12:31:27	73.0	68.9	68.9
75.0	12:31:30	73.0	75.0	75.0
76.4	12:31:33	73.0	76.4	76.4
80.0	12:31:36	73.0	80.0	80.0
75.9	12:31:39	73.0	75.9	75.9
77.6	12:31:42	73.0	77.6	77.6
71.3	12:31:45	73.0	71.3	71.3
75.7	12:31:48	73.0	75.7	75.7
67.3	12:31:51	73.0	67.3	67.3
60.5	12:31:54	73.0	60.5	60.5
72.5	12:31:57	73.0	72.5	72.5
73.6	12:32:00	73.0	73.6	73.6
71.4	12:32:03	73.0	71.4	71.4
64.9	12:32:06	73.0	64.9	64.9
55.4	12:32:09	73.0	55.4	55.4
55.0	12:32:12	73.0	55.0	55.0
63.5	12:32:15	72.7	63.5	63.5
61.6	12:32:18	72.7	61.6	61.6
64.4	12:32:21	72.7	64.4	64.4
63.6	12:32:24	72.7	63.6	63.6
65.1	12:32:27	72.7	65.1	65.1
66.4	12:32:30	72.7	66.4	66.4
62.2	12:32:33	72.7	62.2	62.2
67.5	12:32:36	72.7	67.5	67.5
74.5	12:32:39	72.7	74.5	74.5
71.2	12:32:42	72.6	71.2	71.2
74.2	12:32:45	72.6	74.2	74.2
78.3	12:32:48	72.6	78.3	78.3
80.5	12:32:51	72.6	80.5	80.5
74.6	12:32:54	72.6	74.6	74.6
77.0	12:32:57	72.6	77.0	77.0
76.4	12:33:00	72.6	76.4	76.4
73.3	12:33:03	72.6	73.3	73.3
73.6	12:33:06	72.6	73.6	73.6
74.5	12:33:09	72.6	74.5	74.5
76.0	12:33:12	72.6	76.0	76.0
73.4	12:33:15	72.6	73.4	73.4
71.5	12:33:18	72.6	71.5	71.5
69.6	12:33:21	72.6	69.6	69.6
62.0	12:33:24	72.6	62.0	62.0
61.0	12:33:27	72.6	61.0	61.0
76.8	12:33:30	72.6	76.8	76.8
77.7	12:33:33	72.6	77.7	77.7
71.2	12:33:36	72.6	71.2	71.2
74.7	12:33:39	72.6	74.7	74.7
62.2	12:33:42	72.6	62.2	62.2
52.7	12:33:45	72.6	52.7	52.7
61.5	12:33:48	72.6	61.5	61.5
73.6	12:33:51	72.6	73.6	73.6
62.7	12:33:54	72.6	62.7	62.7
68.5	12:33:57	72.7	68.5	68.5
73.5	12:34:00	72.7	73.5	73.5
74.4	12:34:03	72.6	74.4	74.4
71.1	12:34:06	72.7	71.1	71.1
72.9	12:34:09	72.7	72.9	72.9
75.5	12:34:12	72.7	75.5	75.5
68.2	12:34:15	72.7	68.2	68.2
59.0	12:34:18	72.7	59.0	59.0
56.3	12:34:21	72.7	56.3	56.3
55.6	12:34:24	72.7	55.6	55.6
51.9	12:34:27	72.7	51.9	51.9
56.6	12:34:30	72.7	56.6	56.6
56.4	12:34:33	72.7	56.4	56.4
59.0	12:34:36	72.7	59.0	59.0
62.2	12:34:39	72.7	62.2	62.2
74.6	12:34:42	72.7	74.6	74.6
71.2	12:34:45	72.6	71.2	71.2
71.4	12:34:48	72.6	71.4	71.4
62.1	12:34:51	72.6	62.1	62.1
64.3	12:34:54	72.6	64.3	64.3
61.4	12:34:57	72.6	61.4	61.4
58.8	12:35:00	72.6	58.8	58.8

Site 1 - On West Side of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
54.9	11:52:19		54.9	54.9
58.4	11:52:20		58.4	58.4
59.7	11:52:21		59.7	59.7
60.2	11:52:22		60.2	60.2
59.6	11:52:23		59.6	59.6
60.0	11:52:24		60.0	60.0
57.9	11:52:25		57.9	57.9
59.6	11:52:26		59.6	59.6
61.7	11:52:27		61.7	61.7
58.7	11:52:28		58.7	58.7
59.0	11:52:29		59.0	59.0
60.2	11:52:30		60.2	60.2
61.5	11:52:31		61.5	61.5
63.1	11:52:32		63.1	63.1
61.9	11:52:33		61.9	61.9
63.3	11:52:34		63.3	63.3
61.6	11:52:35		61.6	61.6
63.9	11:52:36		63.9	63.9
61.8	11:52:37		61.8	61.8
62.2	11:52:38		62.2	62.2
60.8	11:52:39		60.8	60.8
61.7	11:52:40		61.7	61.7
62.2	11:52:41		62.2	62.2
61.2	11:52:42		61.2	61.2
60.6	11:52:43		60.6	60.6
64.3	11:52:44		64.3	64.3
62.2	11:52:45		62.2	62.2
61.3	11:52:46		61.3	61.3
61.7	11:52:47		61.7	61.7
59.8	11:52:48		59.8	59.8
59.9	11:52:49		59.9	59.9
61.1	11:52:50		61.1	61.1
59.5	11:52:51		59.5	59.5
62.2	11:52:52		62.2	62.2
57.3	11:52:53		57.3	57.3
55.8	11:52:54		55.8	55.8
53.9	11:52:55		53.9	53.9
51.7	11:52:56		51.7	51.7
51.9	11:52:57		51.9	51.9
53.4	11:52:58		53.4	53.4
51.0	11:52:59		51.0	51.0
48.5	11:53:00		48.5	48.5
49.1	11:53:01		49.1	49.1
47.3	11:53:02		47.3	47.3
45.9	11:53:03		45.9	45.9
45.4	11:53:04		45.4	45.4
45.8	11:53:05		45.8	45.8
46.2	11:53:06		46.2	46.2
46.7	11:53:07		46.7	46.7
48.0	11:53:08		48.0	48.0
48.4	11:53:09		48.4	48.4
48.1	11:53:10		48.1	48.1
50.7	11:53:11		50.7	50.7
51.6	11:53:12		51.6	51.6
47.5	11:53:13		47.5	47.5
46.7	11:53:14		46.7	46.7
45.9	11:53:15		45.9	45.9
45.9	11:53:16		45.9	45.9
46.6	11:53:17		46.6	46.6
45.9	11:53:18		45.9	45.9
46.1	11:53:19		46.1	46.1
46.4	11:53:20		46.4	46.4
46.2	11:53:21		46.2	46.2
45.8	11:53:22		45.8	45.8
46.0	11:53:23		46.0	46.0
46.1	11:53:24		46.1	46.1
46.0	11:53:25		46.0	46.0
45.6	11:53:26		45.6	45.6
46.4	11:53:27		46.4	46.4
47.5	11:53:28		47.5	47.5
49.4	11:53:29		49.4	49.4
51.3	11:53:30		51.3	51.3
54.5	11:53:31		54.5	54.5
56.5	11:53:32		56.5	56.5
56.8	11:53:33		56.8	56.8
61.7	11:53:34		61.7	61.7
59.2	11:53:35		59.2	59.2
58.3	11:53:36		58.3	58.3
59.4	11:53:37		59.4	59.4
59.0	11:53:38		59.0	59.0
59.8	11:53:39		59.8	59.8
62.1	11:53:40		62.1	62.1
62.0	11:53:41		62.0	62.0
62.2	11:53:42		62.2	62.2
59.1	11:53:43		59.1	59.1
59.9	11:53:44		59.9	59.9
56.9	11:53:45		56.9	56.9
55.3	11:53:46		55.3	55.3
53.1	11:53:47		53.1	53.1
53.2	11:53:48		53.2	53.2
54.0	11:53:49		54.0	54.0
52.7	11:53:50		52.7	52.7
56.2	11:53:51		56.2	56.2
60.2	11:53:52		60.2	60.2
65.6	11:53:53		65.6	65.6
57.6	11:53:54		57.6	57.6
54.3	11:53:55		54.3	54.3
52.1	11:53:56		52.1	52.1
50.8	11:53:57		50.8	50.8
50.0	11:53:58		50.0	50.0
50.7	11:53:59		50.7	50.7
50.3	11:54:00		50.3	50.3
50.1	11:54:01		50.1	50.1
51.9	11:54:02		51.9	51.9
51.7	11:54:03		51.7	51.7
53.3	11:54:04		53.3	53.3
54.5	11:54:05		54.5	54.5
57.7	11:54:06		57.7	57.7
54.9	11:54:07		54.9	54.9
55.8	11:54:08		55.8	55.8
59.3	11:54:09		59.3	59.3
59.5	11:54:10		59.5	59.5
59.8	11:54:11		59.8	59.8
59.4	11:54:12		59.4	59.4
59.9	11:54:13		59.9	59.9
60.7	11:54:14		60.7	60.7
65.1	11:54:15		65.1	65.1
67.7	11:54:16		67.7	67.7
73.0	11:54:17		73.0	73.0
76.9	11:54:18		76.9	76.9
74.4	11:54:19		74.4	74.4
70.7	11:54:20		70.7	70.7
68.9	11:54:21		68.9	68.9
63.3	11:54:22		63.3	63.3
58.9	11:54:23		58.9	58.9
59.3	11:54:24		59.3	59.3
59.2	11:54:25		59.2	59.2
57.4	11:54:26		57.4	57.4
58.0	11:54:27		58.0	58.0
59.4	11:54:28		59.4	59.4
56.8	11:54:29		56.8	56.8
60.3	11:54:30		60.3	60.3
57.4	11:54:31		57.4	57.4
59.3	11:54:32		59.3	59.3
59.3	11:54:33		59.3	59.3
61.3	11:54:34		61.3	61.3
63.2	11:54:35		63.2	63.2
61.0	11:54:36		61.0	61.0
63.6	11:54:37		63.6	63.6
62.2	11:54:38		62.2	62.2
61.5	11:54:39		61.5	61.5
62.8	11:54:40		62.8	62.8
61.2	11:54:41		61.2	61.2
60.5	11:54:42		60.5	60.5
60.6	11:54:43		60.6	60.6
60.7	11:54:44		60.7	60.7
61.8	11:54:45		61.8	61.8
63.3	11:54:46		63.3	63.3
60.7	11:54:47		60.7	60.7
60.7	11:54:48		60.7	60.7
63.0	11:54:49		63.0	63.0
58.2	11:54:50		58.2	58.2
60.4	11:54:51		60.4	60.4
60.9	11:54:52		60.9	60.9
59.8	11:54:53		59.8	59.8
55.3	11:54:54		55.3	55.3
53.3	11:54:55		53.3	53.3
51.4	11:54:56		51.4	51.4
50.4	11:54:57		50.4	50.4
49.9	11:54:58		49.9	49.9
50.1	11:54:59		50.1	50.1
51.2	11:55:00		51.2	51.2

Site 2 - Near Northeast Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
72.5	12:35:03	72.6	72.5	72.5
78.6	12:35:06	72.6	78.6	78.6
80.7	12:35:09	72.6	80.7	80.7
73.4	12:35:12	72.6	73.4	73.4
62.4	12:35:15	72.6	62.4	62.4
72.3	12:35:18	72.6	72.3	72.3
65.5	12:35:21	72.6	65.5	65.5
55.9	12:35:24	72.6	55.9	55.9
66.3	12:35:27	72.6	66.3	66.3
74.1	12:35:30	72.7	74.1	74.1
74.3	12:35:33	72.7	74.3	74.3
64.0	12:35:36	72.7	64.0	64.0
54.0	12:35:39	72.7	54.0	54.0
61.6	12:35:42	72.7	61.6	61.6
65.3	12:35:45	72.7	65.3	65.3
78.2	12:35:48	72.7	78.2	78.2
70.7	12:35:51	72.7	70.7	70.7
73.3	12:35:54	72.7	73.3	73.3
65.7	12:35:57	72.7	65.7	65.7
61.2	12:36:00	72.7	61.2	61.2
61.3	12:36:03	72.7	61.3	61.3
58.4	12:36:06	72.7	58.4	58.4
61.9	12:36:09	72.7	61.9	61.9
67.5	12:36:12	72.7	67.5	67.5
69.4	12:36:15	72.7	69.4	69.4
69.3	12:36:18	72.7	69.3	69.3
74.9	12:36:21	72.7	74.9	74.9
76.5	12:36:24	72.7	76.5	76.5
79.0	12:36:27	72.7	79.0	79.0
75.4	12:36:30	72.7	75.4	75.4
69.6	12:36:33	72.7	69.6	69.6
75.9	12:36:36	72.7	75.9	75.9
72.7	12:36:39	72.7	72.7	72.7
65.4	12:36:42	72.7	65.4	65.4
61.9	12:36:45	72.7	61.9	61.9
64.4	12:36:48	72.7	64.4	64.4
67.5	12:36:51	72.7	67.5	67.5
73.6	12:36:54	72.7	73.6	73.6
65.9	12:36:57	72.7	65.9	65.9
64.1	12:37:00	72.7	64.1	64.1
60.3	12:37:03	72.7	60.3	60.3
58.5	12:37:06	72.7	58.5	58.5
74.8	12:37:09	72.7	74.8	74.8
70.9	12:37:12	72.7	70.9	70.9
60.7	12:37:15	72.7	60.7	60.7
54.8	12:37:18	72.7	54.8	54.8
59.2	12:37:21	72.7	59.2	59.2
75.4	12:37:24	72.7	75.4	75.4
68.8	12:37:27	72.7	68.8	68.8
58.4	12:37:30	72.7	58.4	58.4
58.3	12:37:33	72.7	58.3	58.3
71.5	12:37:36	72.7	71.5	71.5
68.0	12:37:39	72.7	68.0	68.0
59.0	12:37:42	72.7	59.0	59.0
70.4	12:37:45	72.7	70.4	70.4
69.3	12:37:48	72.7	69.3	69.3
62.5	12:37:51	72.7	62.5	62.5
65.4	12:37:54	72.7	65.4	65.4
69.2	12:37:57	72.7	69.2	69.2
71.4	12:38:00	72.7	71.4	71.4
84.6	12:38:03	72.7	84.6	84.6
71.3	12:38:06	72.7	71.3	71.3
65.8	12:38:09	72.7	65.8	65.8
79.4	12:38:12	72.7	79.4	79.4
77.7	12:38:15	72.7	77.7	77.7
77.1	12:38:18	72.7	77.1	77.1
75.6	12:38:21	72.7	75.6	75.6
69.8	12:38:24	72.7	69.8	69.8
69.3	12:38:27	72.7	69.3	69.3
68.8	12:38:30	72.7	68.8	68.8
64.8	12:38:33	72.7	64.8	64.8
62.2	12:38:36	72.7	62.2	62.2
68.2	12:38:39	72.7	68.2	68.2
71.2	12:38:42	72.7	71.2	71.2
74.1	12:38:45	72.7	74.1	74.1
68.8	12:38:48	72.7	68.8	68.8
68.2	12:38:51	72.7	68.2	68.2
66.0	12:38:54	72.7	66.0	66.0
61.1	12:38:57	72.7	61.1	61.1
63.7	12:39:00	72.7	63.7	63.7
74.2	12:39:03	72.7	74.2	74.2
75.1	12:39:06	72.7	75.1	75.1
74.6	12:39:09	72.7	74.6	74.6
72.6	12:39:12	72.7	72.6	72.6
61.2	12:39:15	72.7	61.2	61.2
54.4	12:39:18	72.7	54.4	54.4
58.7	12:39:21	72.7	58.7	58.7
61.4	12:39:24	72.7	61.4	61.4
62.9	12:39:27	72.7	62.9	62.9
64.2	12:39:30	72.7	64.2	64.2
72.5	12:39:33	72.7	72.5	72.5
75.5	12:39:36	72.7	75.5	75.5
74.3	12:39:39	72.7	74.3	74.3
73.2	12:39:42	72.7	73.2	73.2
76.7	12:39:45	72.7	76.7	76.7
77.5	12:39:48	72.7	77.5	77.5
76.4	12:39:51	72.7	76.4	76.4
67.9	12:39:54	72.7	67.9	67.9
73.2	12:39:57	72.7	73.2	73.2
67.7	12:40:00	72.7	67.7	67.7
56.4	12:40:03	72.7	56.4	56.4
66.3	12:40:06	72.7	66.3	66.3
68.8	12:40:09	72.7	68.8	68.8
61.4	12:40:12	72.6	61.4	61.4
54.4	12:40:15	72.6	54.4	54.4
57.0	12:40:18	72.6	57.0	57.0
67.8	12:40:21	72.6	67.8	67.8
73.1	12:40:24	72.6	73.1	73.1
71.6	12:40:27	72.6	71.6	71.6
66.8	12:40:30	72.6	66.8	66.8
66.6	12:40:33	72.6	66.6	66.6
63.9	12:40:36	72.6	63.9	63.9
63.5	12:40:39	72.6	63.5	63.5
62.2	12:40:42	72.6	62.2	62.2
60.1	12:40:45	72.6	60.1	60.1
59.0	12:40:48	72.6	59.0	59.0
62.7	12:40:51	72.6	62.7	62.7
62.4	12:40:54	72.6	62.4	62.4
61.6	12:40:57	72.6	61.6	61.6
64.4	12:41:00	72.6	64.4	64.4
64.4	12:41:03	72.6	64.4	64.4
62.1	12:41:06	72.6	62.1	62.1
61.1	12:41:09	72.6	61.1	61.1
59.5	12:41:12	72.6	59.5	59.5
66.3	12:41:15	72.7	66.3	66.3
67.6	12:41:18	72.7	67.6	67.6
67.0	12:41:21	72.7	67.0	67.0
76.0	12:41:24	72.7	76.0	76.0
73.3	12:41:27	72.7	73.3	73.3
62.8	12:41:30	72.7	62.8	62.8
73.6	12:41:33	72.7	73.6	73.6
74.1	12:41:36	72.7	74.1	74.1
70.8	12:41:39	72.7	70.8	70.8
62.2	12:41:42	72.7	62.2	62.2
71.8	12:41:45	72.7	71.8	71.8
72.1	12:41:48	72.7	72.1	72.1
60.4	12:41:51	72.6	60.4	60.4
58.4	12:41:54	72.6	58.4	58.4
63.2	12:41:57	72.6	63.2	63.2
57.5	12:42:00	72.6	57.5	57.5
57.9	12:42:03	72.6	57.9	57.9
67.6	12:42:06	72.6	67.6	67.6
70.4	12:42:09	72.6	70.4	70.4
72.7	12:42:12	72.6	72.7	72.7
67.3	12:42:15	72.6	67.3	67.3
70.4	12:42:18	72.6	70.4	70.4
59.2	12:42:21	72.6	59.2	59.2
55.8	12:42:24	72.6	55.8	55.8
63.3	12:42:27	72.6	63.3	63.3
73.6	12:42:30	72.6	73.6	73.6
70.1	12:42:33	72.6	70.1	70.1
66.7	12:42:36	72.6	66.7	66.7
61.8	12:42:39	72.6	61.8	61.8
61.7	12:42:42	72.6	61.7	61.7
68.9	12:42:45	72.6	68.9	68.9
69.7	12:42:48	72.6	69.7	69.7
62.3	12:42:51	72.6	62.3	62.3
56.9	12:42:54	72.6	56.9	56.9
66.6	12:42:57	72.6	66.6	66.6
68.4	12:43:00	72.6	68.4	68.4
67.4	12:43:03	72.6	67.4	67.4
68.6	12:43:06	72.6	68.6	68.6

Site 1 - On West Side of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
50.9	11:55:01		50.9	50.9
51.5	11:55:02		51.5	51.5
53.0	11:55:03		53.0	53.0
53.6	11:55:04		53.6	53.6
52.9	11:55:05		52.9	52.9
53.2	11:55:06		53.2	53.2
53.3	11:55:07		53.3	53.3
56.0	11:55:08		56.0	56.0
56.7	11:55:09		56.7	56.7
55.4	11:55:10		55.4	55.4
60.2	11:55:11		60.2	60.2
55.6	11:55:12		55.6	55.6
54.4	11:55:13		54.4	54.4
51.8	11:55:14		51.8	51.8
50.5	11:55:15		50.5	50.5
50.3	11:55:16		50.3	50.3
51.3	11:55:17		51.3	51.3
49.7	11:55:18		49.7	49.7
49.5	11:55:19		49.5	49.5
50.8	11:55:20		50.8	50.8
51.2	11:55:21		51.2	51.2
51.1	11:55:22		51.1	51.1
50.7	11:55:23		50.7	50.7
50.5	11:55:24		50.5	50.5
50.0	11:55:25		50.0	50.0
50.5	11:55:26		50.5	50.5
51.0	11:55:27		51.0	51.0
50.9	11:55:28		50.9	50.9
54.9	11:55:29		54.9	54.9
55.3	11:55:30		55.3	55.3
53.9	11:55:31		53.9	53.9
54.0	11:55:32		54.0	54.0
53.8	11:55:33		53.8	53.8
56.3	11:55:34		56.3	56.3
55.9	11:55:35		55.9	55.9
55.0	11:55:36		55.0	55.0
56.5	11:55:37		56.5	56.5
55.6	11:55:38		55.6	55.6
58.3	11:55:39		58.3	58.3
55.3	11:55:40		55.3	55.3
57.1	11:55:41		57.1	57.1
55.8	11:55:42		55.8	55.8
55.1	11:55:43		55.1	55.1
55.9	11:55:44		55.9	55.9
57.1	11:55:45		57.1	57.1
57.5	11:55:46		57.5	57.5
55.0	11:55:47		55.0	55.0
54.7	11:55:48		54.7	54.7
54.9	11:55:49		54.9	54.9
55.2	11:55:50		55.2	55.2
57.5	11:55:51		57.5	57.5
55.7	11:55:52		55.7	55.7
56.8	11:55:53		56.8	56.8
56.0	11:55:54		56.0	56.0
57.1	11:55:55		57.1	57.1
57.4	11:55:56		57.4	57.4
55.3	11:55:57		55.3	55.3
56.1	11:55:58		56.1	56.1
56.8	11:55:59		56.8	56.8
59.2	11:56:00		59.2	59.2
57.4	11:56:01		57.4	57.4
57.2	11:56:02		57.2	57.2
59.8	11:56:03		59.8	59.8
59.6	11:56:04		59.6	59.6
59.5	11:56:05		59.5	59.5
62.9	11:56:06		62.9	62.9
59.7	11:56:07		59.7	59.7
56.7	11:56:08		56.7	56.7
53.2	11:56:09		53.2	53.2
52.2	11:56:10		52.2	52.2
51.6	11:56:11		51.6	51.6
51.8	11:56:12		51.8	51.8
52.1	11:56:13		52.1	52.1
52.7	11:56:14		52.7	52.7
52.8	11:56:15		52.8	52.8
52.6	11:56:16		52.6	52.6
53.7	11:56:17		53.7	53.7
54.0	11:56:18		54.0	54.0
51.5	11:56:19		51.5	51.5
52.2	11:56:20		52.2	52.2
51.9	11:56:21		51.9	51.9
52.5	11:56:22		52.5	52.5
52.8	11:56:23		52.8	52.8
52.4	11:56:24		52.4	52.4
54.3	11:56:25		54.3	54.3
53.5	11:56:26		53.5	53.5
52.2	11:56:27		52.2	52.2
50.9	11:56:28		50.9	50.9
50.8	11:56:29		50.8	50.8
50.2	11:56:30		50.2	50.2
50.7	11:56:31		50.7	50.7
52.0	11:56:32		52.0	52.0
52.0	11:56:33		52.0	52.0
52.3	11:56:34		52.3	52.3
52.4	11:56:35		52.4	52.4
52.6	11:56:36		52.6	52.6
52.6	11:56:37		52.6	52.6
53.6	11:56:38		53.6	53.6
54.2	11:56:39		54.2	54.2
55.4	11:56:40		55.4	55.4
59.2	11:56:41		59.2	59.2
56.4	11:56:42		56.4	56.4
57.6	11:56:43		57.6	57.6
59.5	11:56:44		59.5	59.5
57.2	11:56:45		57.2	57.2
56.9	11:56:46		56.9	56.9
60.4	11:56:47		60.4	60.4
60.4	11:56:48		60.4	60.4
59.0	11:56:49		59.0	59.0
57.9	11:56:50		57.9	57.9
56.6	11:56:51		56.6	56.6
55.6	11:56:52		55.6	55.6
53.9	11:56:53		53.9	53.9
50.8	11:56:54		50.8	50.8
52.1	11:56:55		52.1	52.1
53.3	11:56:56		53.3	53.3
54.6	11:56:57		54.6	54.6
59.6	11:56:58		59.6	59.6
56.6	11:56:59		56.6	56.6
58.8	11:57:00		58.8	58.8
56.6	11:57:01		56.6	56.6
55.5	11:57:02		55.5	55.5
53.9	11:57:03		53.9	53.9
51.2	11:57:04		51.2	51.2
50.9	11:57:05		50.9	50.9
52.3	11:57:06		52.3	52.3
52.9	11:57:07		52.9	52.9
52.4	11:57:08		52.4	52.4
57.7	11:57:09		57.7	57.7
56.2	11:57:10		56.2	56.2
55.7	11:57:11		55.7	55.7
54.9	11:57:12		54.9	54.9
52.5	11:57:13		52.5	52.5
50.2	11:57:14		50.2	50.2
49.3	11:57:15		49.3	49.3
49.0	11:57:16		49.0	49.0
49.1	11:57:17		49.1	49.1
49.1	11:57:18		49.1	49.1
49.2	11:57:19		49.2	49.2
49.0	11:57:20		49.0	49.0
48.8	11:57:21		48.8	48.8
48.8	11:57:22		48.8	48.8
48.6	11:57:23		48.6	48.6
49.0	11:57:24		49.0	49.0
49.0	11:57:25		49.0	49.0
49.0	11:57:26		49.0	49.0
49.1	11:57:27		49.1	49.1
48.9	11:57:28		48.9	48.9
49.0	11:57:29		49.0	49.0
48.8	11:57:30		48.8	48.8
48.9	11:57:31		48.9	48.9
48.9	11:57:32		48.9	48.9
49.0	11:57:33		49.0	49.0
49.2	11:57:34		49.2	49.2
50.1	11:57:35		50.1	50.1
50.3	11:57:36		50.3	50.3
52.2	11:57:37		52.2	52.2
54.7	11:57:38		54.7	54.7
56.6	11:57:39		56.6	56.6
59.4	11:57:40		59.4	59.4
62.4	11:57:41		62.4	62.4
61.7	11:57:42		61.7	61.7

Site 2 - Near Northeast Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
76.2	12:43:09	72.6	76.2	76.2
76.3	12:43:12	72.6	76.3	76.3
75.2	12:43:15	72.6	75.2	75.2
76.5	12:43:18	72.6	76.5	76.5
72.4	12:43:21	72.6	72.4	72.4
69.5	12:43:24	72.6	69.5	69.5
71.3	12:43:27	72.6	71.3	71.3
69.0	12:43:30	72.6	69.0	69.0
71.2	12:43:33	72.6	71.2	71.2
65.8	12:43:36	72.6	65.8	65.8
58.8	12:43:39	72.6	58.8	58.8
57.3	12:43:42	72.6	57.3	57.3
62.0	12:43:45	72.6	62.0	62.0
66.8	12:43:48	72.6	66.8	66.8
73.2	12:43:51	72.6	73.2	73.2
69.4	12:43:54	72.6	69.4	69.4
66.2	12:43:57	72.6	66.2	66.2
56.2	12:44:00	72.6	56.2	56.2
61.6	12:44:03	72.6	61.6	61.6
58.3	12:44:06	72.6	58.3	58.3
53.9	12:44:09	72.6	53.9	53.9
62.4	12:44:12	72.6	62.4	62.4
75.2	12:44:15	72.6	75.2	75.2
70.5	12:44:18	72.6	70.5	70.5
63.0	12:44:21	72.6	63.0	63.0
73.4	12:44:24	72.6	73.4	73.4
68.5	12:44:27	72.6	68.5	68.5
68.6	12:44:30	72.6	68.6	68.6
68.6	12:44:33	72.6	68.6	68.6
64.7	12:44:36	72.6	64.7	64.7
71.8	12:44:39	72.6	71.8	71.8
72.5	12:44:42	72.6	72.5	72.5
72.9	12:44:45	72.6	72.9	72.9
66.3	12:44:48	72.6	66.3	66.3
65.6	12:44:51	72.6	65.6	65.6
65.0	12:44:54	72.6	65.0	65.0
60.6	12:44:57	72.6	60.6	60.6
65.8	12:45:00	72.6	65.8	65.8
78.6	12:45:03	72.6	78.6	78.6
75.4	12:45:06	72.6	75.4	75.4
78.2	12:45:09	72.6	78.2	78.2
80.0	12:45:12	72.6	80.0	80.0
79.0	12:45:15	72.6	79.0	79.0
76.8	12:45:18	72.6	76.8	76.8
76.1	12:45:21	72.6	76.1	76.1
72.2	12:45:24	72.6	72.2	72.2
72.8	12:45:27	72.6	72.8	72.8
71.0	12:45:30	72.6	71.0	71.0
63.6	12:45:33	72.6	63.6	63.6
72.1	12:45:36	72.6	72.1	72.1
69.1	12:45:39	72.6	69.1	69.1
62.0	12:45:42	72.6	62.0	62.0
57.7	12:45:45	72.6	57.7	57.7
52.4	12:45:48	72.6	52.4	52.4
61.5	12:45:51	72.6	61.5	61.5
64.6	12:45:54	72.6	64.6	64.6
74.3	12:45:57	72.6	74.3	74.3
75.6	12:46:00	72.6	75.6	75.6
69.3	12:46:03	72.5	69.3	69.3
58.4	12:46:06	72.5	58.4	58.4
52.3	12:46:09	72.5	52.3	52.3
50.5	12:46:12	72.5	50.5	50.5
50.5	12:46:15	72.5	50.5	50.5
51.0	12:46:18	72.5	51.0	51.0
53.2	12:46:21	72.5	53.2	53.2
55.7	12:46:24	72.5	55.7	55.7
59.1	12:46:27	72.5	59.1	59.1
66.4	12:46:30	72.5	66.4	66.4
72.0	12:46:33	72.5	72.0	72.0
69.6	12:46:36	72.5	69.6	69.6
59.0	12:46:39	72.5	59.0	59.0
53.7	12:46:42	72.5	53.7	53.7
54.0	12:46:45	72.5	54.0	54.0
58.0	12:46:48	72.5	58.0	58.0
70.8	12:46:51	72.5	70.8	70.8
68.9	12:46:54	72.5	68.9	68.9
68.5	12:46:57	72.5	68.5	68.5
67.1	12:47:00	72.5	67.1	67.1
70.1	12:47:03	72.5	70.1	70.1
64.2	12:47:06	72.5	64.2	64.2
67.5	12:47:09	72.5	67.5	67.5
76.4	12:47:12	72.5	76.4	76.4
79.5	12:47:15	72.5	79.5	79.5
76.6	12:47:18	72.5	76.6	76.6
74.9	12:47:21	72.5	74.9	74.9
76.0	12:47:24	72.5	76.0	76.0
74.8	12:47:27	72.5	74.8	74.8
72.3	12:47:30	72.5	72.3	72.3
67.9	12:47:33	72.5	67.9	67.9
65.6	12:47:36	72.5	65.6	65.6
66.8	12:47:39	72.5	66.8	66.8
64.1	12:47:42	72.5	64.1	64.1
68.6	12:47:45	72.5	68.6	68.6
71.0	12:47:48	72.5	71.0	71.0
68.6	12:47:51	72.5	68.6	68.6
71.0	12:47:54	72.5	71.0	71.0
61.9	12:47:57	72.5	61.9	61.9
54.6	12:48:00	72.5	54.6	54.6
60.0	12:48:03	72.5	60.0	60.0
70.6	12:48:06	72.5	70.6	70.6
71.2	12:48:09	72.5	71.2	71.2
74.2	12:48:12	72.5	74.2	74.2
64.2	12:48:15	72.5	64.2	64.2
67.6	12:48:18	72.5	67.6	67.6
68.9	12:48:21	72.5	68.9	68.9
66.8	12:48:24	72.5	66.8	66.8
67.9	12:48:27	72.5	67.9	67.9
67.3	12:48:30	72.5	67.3	67.3
68.5	12:48:33	72.5	68.5	68.5
74.1	12:48:36	72.5	74.1	74.1
78.5	12:48:39	72.5	78.5	78.5
76.5	12:48:42	72.5	76.5	76.5
68.8	12:48:45	72.5	68.8	68.8
63.3	12:48:48	72.5	63.3	63.3
63.8	12:48:51	72.5	63.8	63.8
61.5	12:48:54	72.5	61.5	61.5
63.0	12:48:57	72.5	63.0	63.0
74.4	12:49:00	72.5	74.4	74.4
79.5	12:49:03	72.5	79.5	79.5
75.2	12:49:06	72.5	75.2	75.2
72.6	12:49:09	72.5	72.6	72.6
78.9	12:49:12	72.5	78.9	78.9
75.9	12:49:15	72.5	75.9	75.9
75.0	12:49:18	72.2	75.0	75.0
75.1	12:49:21	72.2	75.1	75.1
70.8	12:49:24	72.2	70.8	70.8
68.5	12:49:27	72.2	68.5	68.5
66.2	12:49:30	72.2	66.2	66.2
67.6	12:49:33	72.2	67.6	67.6
72.1	12:49:36	72.2	72.1	72.1
69.4	12:49:39	72.2	69.4	69.4
72.9	12:49:42	72.2	72.9	72.9
65.9	12:49:45	72.2	65.9	65.9
68.2	12:49:48	72.2	68.2	68.2
66.6	12:49:51	72.2	66.6	66.6
60.1	12:49:54	72.2	60.1	60.1
53.3	12:49:57	72.3	53.3	53.3
60.1	12:50:00	72.3	60.1	60.1
64.8	12:50:03	72.3	64.8	64.8
69.9	12:50:06	72.3	69.9	69.9
62.4	12:50:09	72.3	62.4	62.4
60.7	12:50:12	72.3	60.7	60.7
58.8	12:50:15	72.3	58.8	58.8
57.2	12:50:18	72.3	57.2	57.2
55.2	12:50:21	72.3	55.2	55.2
54.7	12:50:24	72.3	54.7	54.7
56.7	12:50:27	72.3	56.7	56.7
64.7	12:50:30	72.3	64.7	64.7
73.3	12:50:33	72.3	73.3	73.3
73.9	12:50:36	72.3	73.9	73.9
77.0	12:50:39	72.3	77.0	77.0
74.5	12:50:42	72.3	74.5	74.5
73.1	12:50:45	72.3	73.1	73.1
73.5	12:50:48	72.3	73.5	73.5
76.8	12:50:51	72.3	76.8	76.8
75.9	12:50:54	72.3	75.9	75.9
69.0	12:50:57	72.3	69.0	69.0
72.5	12:51:00	72.3	72.5	72.5
68.1	12:51:03	72.3	68.1	68.1
69.1	12:51:06	72.3	69.1	69.1
70.9	12:51:09	72.3	70.9	70.9
65.1	12:51:12	72.3	65.1	65.1

Site 1 - On West Side of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
61.9	11:57:43		61.9	61.9
60.9	11:57:44		60.9	60.9
62.5	11:57:45		62.5	62.5
59.8	11:57:46		59.8	59.8
59.3	11:57:47		59.3	59.3
58.1	11:57:48		58.1	58.1
56.5	11:57:49		56.5	56.5
57.6	11:57:50		57.6	57.6
59.7	11:57:51		59.7	59.7
56.2	11:57:52		56.2	56.2
56.9	11:57:53		56.9	56.9
54.5	11:57:54		54.5	54.5
56.9	11:57:55		56.9	56.9
54.2	11:57:56		54.2	54.2
54.0	11:57:57		54.0	54.0
56.0	11:57:58		56.0	56.0
57.9	11:57:59		57.9	57.9
60.2	11:58:00		60.2	60.2
58.3	11:58:01		58.3	58.3
55.4	11:58:02		55.4	55.4
54.1	11:58:03		54.1	54.1
54.5	11:58:04		54.5	54.5
54.2	11:58:05		54.2	54.2
53.7	11:58:06		53.7	53.7
53.6	11:58:07		53.6	53.6
54.2	11:58:08		54.2	54.2
53.4	11:58:09		53.4	53.4
54.1	11:58:10		54.1	54.1
53.1	11:58:11		53.1	53.1
53.9	11:58:12		53.9	53.9
58.5	11:58:13		58.5	58.5
55.4	11:58:14		55.4	55.4
56.0	11:58:15		56.0	56.0
60.4	11:58:16		60.4	60.4
56.7	11:58:17		56.7	56.7
56.4	11:58:18		56.4	56.4
52.7	11:58:19		52.7	52.7
49.1	11:58:20		49.1	49.1
48.2	11:58:21		48.2	48.2
48.3	11:58:22		48.3	48.3
47.9	11:58:23		47.9	47.9
47.6	11:58:24		47.6	47.6
48.1	11:58:25		48.1	48.1
48.6	11:58:26		48.6	48.6
50.4	11:58:27		50.4	50.4
52.4	11:58:28		52.4	52.4
59.1	11:58:29		59.1	59.1
56.9	11:58:30		56.9	56.9
55.3	11:58:31		55.3	55.3
54.1	11:58:32		54.1	54.1
49.5	11:58:33		49.5	49.5
48.4	11:58:34		48.4	48.4
47.5	11:58:35		47.5	47.5
46.5	11:58:36		46.5	46.5
46.1	11:58:37		46.1	46.1
46.3	11:58:38		46.3	46.3
46.5	11:58:39		46.5	46.5
46.9	11:58:40		46.9	46.9
46.8	11:58:41		46.8	46.8
47.8	11:58:42		47.8	47.8
48.4	11:58:43		48.4	48.4
48.9	11:58:44		48.9	48.9
49.6	11:58:45		49.6	49.6
49.2	11:58:46		49.2	49.2
49.1	11:58:47		49.1	49.1
50.7	11:58:48		50.7	50.7
52.0	11:58:49		52.0	52.0
52.2	11:58:50		52.2	52.2
53.4	11:58:51		53.4	53.4
56.8	11:58:52		56.8	56.8
58.5	11:58:53		58.5	58.5
57.8	11:58:54		57.8	57.8
56.4	11:58:55		56.4	56.4
56.4	11:58:56		56.4	56.4
59.6	11:58:57		59.6	59.6
55.9	11:58:58		55.9	55.9
56.9	11:58:59		56.9	56.9
55.1	11:59:00		55.1	55.1
56.0	11:59:01		56.0	56.0
53.8	11:59:02		53.8	53.8
52.8	11:59:03		52.8	52.8
52.6	11:59:04		52.6	52.6
54.2	11:59:05		54.2	54.2
56.3	11:59:06		56.3	56.3
60.3	11:59:07		60.3	60.3
56.0	11:59:08		56.0	56.0
57.3	11:59:09		57.3	57.3
51.8	11:59:10		51.8	51.8
50.8	11:59:11		50.8	50.8
48.8	11:59:12		48.8	48.8
46.7	11:59:13		46.7	46.7
46.0	11:59:14		46.0	46.0
44.8	11:59:15		44.8	44.8
44.4	11:59:16		44.4	44.4
44.4	11:59:17		44.4	44.4
45.2	11:59:18		45.2	45.2
45.0	11:59:19		45.0	45.0
46.0	11:59:20		46.0	46.0
47.3	11:59:21		47.3	47.3
48.4	11:59:22		48.4	48.4
53.7	11:59:23		53.7	53.7
54.0	11:59:24		54.0	54.0
53.8	11:59:25		53.8	53.8
53.7	11:59:26		53.7	53.7
56.2	11:59:27		56.2	56.2
54.7	11:59:28		54.7	54.7
56.2	11:59:29		56.2	56.2
54.7	11:59:30		54.7	54.7
54.0	11:59:31		54.0	54.0
58.8	11:59:32		58.8	58.8
55.3	11:59:33		55.3	55.3
58.5	11:59:34		58.5	58.5
57.9	11:59:35		57.9	57.9
59.2	11:59:36		59.2	59.2
62.0	11:59:37		62.0	62.0
62.7	11:59:38		62.7	62.7
59.0	11:59:39		59.0	59.0
56.0	11:59:40		56.0	56.0
55.1	11:59:41		55.1	55.1
56.0	11:59:42		56.0	56.0
53.5	11:59:43		53.5	53.5
54.0	11:59:44		54.0	54.0
55.7	11:59:45		55.7	55.7
55.1	11:59:46		55.1	55.1
54.5	11:59:47		54.5	54.5
53.7	11:59:48		53.7	53.7
53.7	11:59:49		53.7	53.7
57.7	11:59:50		57.7	57.7
56.3	11:59:51		56.3	56.3
53.2	11:59:52		53.2	53.2
53.3	11:59:53		53.3	53.3
49.9	11:59:54		49.9	49.9
51.9	11:59:55		51.9	51.9
54.7	11:59:56		54.7	54.7
60.2	11:59:57		60.2	60.2
60.5	11:59:58		60.5	60.5
55.0	11:59:59		55.0	55.0
55.3	12:00:00		55.3	55.3
54.6	12:00:01		54.6	54.6
62.2	12:00:02		62.2	62.2
55.5	12:00:03		55.5	55.5
55.1	12:00:04		55.1	55.1
53.6	12:00:05		53.6	53.6
55.2	12:00:06		55.2	55.2
56.2	12:00:07		56.2	56.2
61.8	12:00:08		61.8	61.8
61.9	12:00:09		61.9	61.9
60.1	12:00:10		60.1	60.1
60.1	12:00:11		60.1	60.1
60.4	12:00:12		60.4	60.4
58.7	12:00:13		58.7	58.7
59.7	12:00:14		59.7	59.7
57.9	12:00:15		57.9	57.9
56.2	12:00:16		56.2	56.2
57.1	12:00:17		57.1	57.1
59.1	12:00:18		59.1	59.1
59.3	12:00:19		59.3	59.3
64.9	12:00:20		64.9	64.9
63.1	12:00:21		63.1	63.1
61.3	12:00:22		61.3	61.3
61.6	12:00:23		61.6	61.6
62.2	12:00:24		62.2	62.2

Site 2 - Near Northeast Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
76.2	12:51:15	72.3	76.2	76.2
79.0	12:51:18	72.3	79.0	79.0
72.4	12:51:21	72.3	72.4	72.4
68.9	12:51:24	72.3	68.9	68.9
69.2	12:51:27	72.3	69.2	69.2
71.0	12:51:30	72.3	71.0	71.0
65.4	12:51:33	72.3	65.4	65.4
62.9	12:51:36	72.3	62.9	62.9
65.1	12:51:39	72.3	65.1	65.1
67.4	12:51:42	72.3	67.4	67.4
66.4	12:51:45	72.3	66.4	66.4
68.0	12:51:48	72.3	68.0	68.0
68.7	12:51:51	72.3	68.7	68.7
74.6	12:51:54	72.3	74.6	74.6
78.3	12:51:57	72.2	78.3	78.3
75.2	12:52:00	72.3	75.2	75.2
77.9	12:52:03	72.3	77.9	77.9
77.6	12:52:06	72.2	77.6	77.6
76.4	12:52:09	72.2	76.4	76.4
77.0	12:52:12	72.2	77.0	77.0
76.8	12:52:15	72.2	76.8	76.8
74.4	12:52:18	72.2	74.4	74.4
82.6	12:52:21	72.2	82.6	82.6
77.4	12:52:24	72.2	77.4	77.4
68.7	12:52:27	72.2	68.7	68.7
69.4	12:52:30	72.2	69.4	69.4
61.0	12:52:33	72.2	61.0	61.0
58.8	12:52:36	72.3	58.8	58.8
57.5	12:52:39	72.3	57.5	57.5
75.9	12:52:42	72.3	75.9	75.9
76.8	12:52:45	72.3	76.8	76.8
66.2	12:52:48	72.3	66.2	66.2
73.4	12:52:51	72.3	73.4	73.4
69.2	12:52:54	72.3	69.2	69.2
76.2	12:52:57	72.3	76.2	76.2
72.8	12:53:00	72.3	72.8	72.8
68.6	12:53:03	72.3	68.6	68.6
63.2	12:53:06	72.3	63.2	63.2
64.3	12:53:09	72.3	64.3	64.3
58.0	12:53:12	72.3	58.0	58.0
53.5	12:53:15	72.2	53.5	53.5
59.0	12:53:18	72.2	59.0	59.0
57.3	12:53:21	72.2	57.3	57.3
60.0	12:53:24	72.2	60.0	60.0
63.1	12:53:27	72.2	63.1	63.1
65.1	12:53:30	72.2	65.1	65.1
68.7	12:53:33	72.2	68.7	68.7
77.1	12:53:36	72.2	77.1	77.1
74.3	12:53:39	72.2	74.3	74.3
76.7	12:53:42	72.2	76.7	76.7
74.6	12:53:45	72.2	74.6	74.6
76.0	12:53:48	72.2	76.0	76.0
71.0	12:53:51	72.2	71.0	71.0
70.0	12:53:54	72.2	70.0	70.0
75.8	12:53:57	72.2	75.8	75.8
73.8	12:54:00	72.2	73.8	73.8
76.9	12:54:03	72.2	76.9	76.9
78.0	12:54:06	72.2	78.0	78.0
69.2	12:54:09	72.2	69.2	69.2
65.7	12:54:12	72.2	65.7	65.7
61.9	12:54:15	72.2	61.9	61.9
65.2	12:54:18	72.2	65.2	65.2
73.2	12:54:21	72.2	73.2	73.2
76.0	12:54:24	72.2	76.0	76.0
67.7	12:54:27	72.2	67.7	67.7
72.0	12:54:30	72.2	72.0	72.0
73.5	12:54:33	72.2	73.5	73.5
67.4	12:54:36	72.2	67.4	67.4
68.3	12:54:39	72.2	68.3	68.3
58.3	12:54:42	72.2	58.3	58.3
55.8	12:54:45	72.2	55.8	55.8
57.3	12:54:48	72.2	57.3	57.3
67.0	12:54:51	72.2	67.0	67.0
73.5	12:54:54	72.2	73.5	73.5
65.8	12:54:57	72.2	65.8	65.8
72.2	12:55:00	72.2	72.2	72.2
69.0	12:55:03	72.2	69.0	69.0
58.3	12:55:06	72.2	58.3	58.3
54.0	12:55:09	72.2	54.0	54.0
54.0	12:55:12	72.2	54.0	54.0
62.1	12:55:15	72.2	62.1	62.1
76.9	12:55:18	72.2	76.9	76.9
66.0	12:55:21	72.2	66.0	66.0
57.0	12:55:24	72.2	57.0	57.0
60.0	12:55:27	72.2	60.0	60.0
63.4	12:55:30	72.2	63.4	63.4
61.1	12:55:33	72.2	61.1	61.1
66.3	12:55:36	72.2	66.3	66.3
73.2	12:55:39	72.2	73.2	73.2
74.7	12:55:42	72.2	74.7	74.7
77.7	12:55:45	72.2	77.7	77.7
78.6	12:55:48	72.2	78.6	78.6
74.6	12:55:51	72.2	74.6	74.6
73.8	12:55:54	72.2	73.8	73.8
69.6	12:55:57	72.2	69.6	69.6
76.3	12:56:00	72.2	76.3	76.3
75.7	12:56:03	72.2	75.7	75.7
75.7	12:56:06	72.2	75.7	75.7
78.4	12:56:09	72.2	78.4	78.4
76.7	12:56:12	72.2	76.7	76.7
69.6	12:56:15	72.2	69.6	69.6
67.0	12:56:18	72.2	67.0	67.0
71.7	12:56:21	72.2	71.7	71.7
75.7	12:56:24	72.2	75.7	75.7
66.5	12:56:27	72.2	66.5	66.5
66.3	12:56:30	72.2	66.3	66.3
63.4	12:56:33	72.2	63.4	63.4
60.2	12:56:36	72.2	60.2	60.2
51.6	12:56:39	72.2	51.6	51.6
51.7	12:56:42	72.2	51.7	51.7
62.2	12:56:45	72.2	62.2	62.2
70.3	12:56:48	72.2	70.3	70.3
61.4	12:56:51	72.2	61.4	61.4
61.3	12:56:54	72.2	61.3	61.3
59.7	12:56:57	72.2	59.7	59.7
56.4	12:57:00	72.2	56.4	56.4
58.1	12:57:03	72.2	58.1	58.1
54.4	12:57:06	72.2	54.4	54.4
52.4	12:57:09	72.2	52.4	52.4
50.9	12:57:12	72.2	50.9	50.9
59.8	12:57:15	72.2	59.8	59.8
63.0	12:57:18	72.2	63.0	63.0
76.6	12:57:21	72.2	76.6	76.6
80.4	12:57:24	72.2	80.4	80.4
70.8	12:57:27	72.2	70.8	70.8
79.1	12:57:30	72.2	79.1	79.1
77.7	12:57:33	72.2	77.7	77.7
76.0	12:57:36	72.2	76.0	76.0
75.3	12:57:39	72.2	75.3	75.3
67.6	12:57:42	72.2	67.6	67.6
77.9	12:57:45	72.2	77.9	77.9
74.2	12:57:48	72.2	74.2	74.2
76.2	12:57:51	72.2	76.2	76.2
65.7	12:57:54	72.2	65.7	65.7
66.6	12:57:57	72.2	66.6	66.6
73.9	12:58:00	72.2	73.9	73.9
72.2	12:58:03	72.2	72.2	72.2
74.0	12:58:06	72.2	74.0	74.0
68.8	12:58:09	72.2	68.8	68.8
66.1	12:58:12	72.2	66.1	66.1
63.8	12:58:15	72.2	63.8	63.8
61.1	12:58:18	72.2	61.1	61.1
65.0	12:58:21	72.2	65.0	65.0
64.4	12:58:24	72.2	64.4	64.4
65.7	12:58:27	72.2	65.7	65.7
65.3	12:58:30	72.2	65.3	65.3
64.3	12:58:33	72.2	64.3	64.3
64.8	12:58:36	72.2	64.8	64.8
66.2	12:58:39	72.2	66.2	66.2
65.0	12:58:42	72.2	65.0	65.0
63.8	12:58:45	72.2	63.8	63.8
64.5	12:58:48	72.2	64.5	64.5
80.0	12:58:51	72.2	80.0	80.0
78.8	12:58:54	72.2	78.8	78.8
80.2	12:58:57	72.2	80.2	80.2
77.0	12:59:00	72.2	77.0	77.0
74.4	12:59:03	72.2	74.4	74.4
71.1	12:59:06	72.2	71.1	71.1
75.3	12:59:09	72.2	75.3	75.3
68.9	12:59:12	72.2	68.9	68.9
62.3	12:59:15	72.2	62.3	62.3
59.8	12:59:18	72.2	59.8	59.8

Site 1 - On West Side of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
61.8	12:00:25		61.8	61.8
61.6	12:00:26		61.6	61.6
59.3	12:00:27		59.3	59.3
58.8	12:00:28		58.8	58.8
55.5	12:00:29		55.5	55.5
54.7	12:00:30		54.7	54.7
56.6	12:00:31		56.6	56.6
54.8	12:00:32		54.8	54.8
53.6	12:00:33		53.6	53.6
50.9	12:00:34		50.9	50.9
50.3	12:00:35		50.3	50.3
51.2	12:00:36		51.2	51.2
51.5	12:00:37		51.5	51.5
52.9	12:00:38		52.9	52.9
56.5	12:00:39		56.5	56.5
56.1	12:00:40		56.1	56.1
56.4	12:00:41		56.4	56.4
55.6	12:00:42		55.6	55.6
55.3	12:00:43		55.3	55.3
53.9	12:00:44		53.9	53.9
54.3	12:00:45		54.3	54.3
55.8	12:00:46		55.8	55.8
56.8	12:00:47		56.8	56.8
56.7	12:00:48		56.7	56.7
52.9	12:00:49		52.9	52.9
51.1	12:00:50		51.1	51.1
52.1	12:00:51		52.1	52.1
54.3	12:00:52		54.3	54.3
54.3	12:00:53		54.3	54.3
56.5	12:00:54		56.5	56.5
53.1	12:00:55		53.1	53.1
51.7	12:00:56		51.7	51.7
52.6	12:00:57		52.6	52.6
53.8	12:00:58		53.8	53.8
54.2	12:00:59		54.2	54.2
56.0	12:01:00		56.0	56.0
60.6	12:01:01		60.6	60.6
63.7	12:01:02		63.7	63.7
59.4	12:01:03		59.4	59.4
57.4	12:01:04		57.4	57.4
56.3	12:01:05		56.3	56.3
58.7	12:01:06		58.7	58.7
56.2	12:01:07		56.2	56.2
56.3	12:01:08		56.3	56.3
57.1	12:01:09		57.1	57.1
60.7	12:01:10		60.7	60.7
53.4	12:01:11		53.4	53.4
52.7	12:01:12		52.7	52.7
52.8	12:01:13		52.8	52.8
54.1	12:01:14		54.1	54.1
54.6	12:01:15		54.6	54.6
57.7	12:01:16		57.7	57.7
57.7	12:01:17		57.7	57.7
56.1	12:01:18		56.1	56.1
57.8	12:01:19		57.8	57.8
56.0	12:01:20		56.0	56.0
55.7	12:01:21		55.7	55.7
55.2	12:01:22		55.2	55.2
54.2	12:01:23		54.2	54.2
51.9	12:01:24		51.9	51.9
53.5	12:01:25		53.5	53.5
55.4	12:01:26		55.4	55.4
53.6	12:01:27		53.6	53.6
52.5	12:01:28		52.5	52.5
53.9	12:01:29		53.9	53.9
57.9	12:01:30		57.9	57.9
55.5	12:01:31		55.5	55.5
54.1	12:01:32		54.1	54.1
52.3	12:01:33		52.3	52.3
51.9	12:01:34		51.9	51.9
53.5	12:01:35		53.5	53.5
52.3	12:01:36		52.3	52.3
55.2	12:01:37		55.2	55.2
53.4	12:01:38		53.4	53.4
53.1	12:01:39		53.1	53.1
52.1	12:01:40		52.1	52.1
50.6	12:01:41		50.6	50.6
49.3	12:01:42		49.3	49.3
48.8	12:01:43		48.8	48.8
48.1	12:01:44		48.1	48.1
46.9	12:01:45		46.9	46.9
48.5	12:01:46		48.5	48.5
49.2	12:01:47		49.2	49.2
51.7	12:01:48		51.7	51.7
49.2	12:01:49		49.2	49.2
48.8	12:01:50		48.8	48.8
48.8	12:01:51		48.8	48.8
48.1	12:01:52		48.1	48.1
47.9	12:01:53		47.9	47.9
49.0	12:01:54		49.0	49.0
49.0	12:01:55		49.0	49.0
51.4	12:01:56		51.4	51.4
54.5	12:01:57		54.5	54.5
56.6	12:01:58		56.6	56.6
62.6	12:01:59		62.6	62.6
58.4	12:02:00		58.4	58.4
57.4	12:02:01		57.4	57.4
56.9	12:02:02		56.9	56.9
58.0	12:02:03		58.0	58.0
62.6	12:02:04		62.6	62.6
62.2	12:02:05		62.2	62.2
63.6	12:02:06		63.6	63.6
62.0	12:02:07		62.0	62.0
62.2	12:02:08		62.2	62.2
61.9	12:02:09		61.9	61.9
61.5	12:02:10		61.5	61.5
61.6	12:02:11		61.6	61.6
63.5	12:02:12		63.5	63.5
61.5	12:02:13		61.5	61.5
60.6	12:02:14		60.6	60.6
58.7	12:02:15		58.7	58.7
61.3	12:02:16		61.3	61.3
58.9	12:02:17		58.9	58.9
59.0	12:02:18		59.0	59.0
58.2	12:02:19		58.2	58.2
57.4	12:02:20		57.4	57.4
56.9	12:02:21		56.9	56.9
62.7	12:02:22		62.7	62.7
56.6	12:02:23		56.6	56.6
56.9	12:02:24		56.9	56.9
55.7	12:02:25		55.7	55.7
51.9	12:02:26		51.9	51.9
56.2	12:02:27		56.2	56.2
52.9	12:02:28		52.9	52.9
51.7	12:02:29		51.7	51.7
51.8	12:02:30		51.8	51.8
51.1	12:02:31		51.1	51.1
52.2	12:02:32		52.2	52.2
52.3	12:02:33		52.3	52.3
52.3	12:02:34		52.3	52.3
56.7	12:02:35		56.7	56.7
52.8	12:02:36		52.8	52.8
50.9	12:02:37		50.9	50.9
50.4	12:02:38		50.4	50.4
49.3	12:02:39		49.3	49.3
49.3	12:02:40		49.3	49.3
53.0	12:02:41		53.0	53.0
51.4	12:02:42		51.4	51.4
52.0	12:02:43		52.0	52.0
52.7	12:02:44		52.7	52.7
53.6	12:02:45		53.6	53.6
53.8	12:02:46		53.8	53.8
53.6	12:02:47		53.6	53.6
53.3	12:02:48		53.3	53.3
57.2	12:02:49		57.2	57.2
54.5	12:02:50		54.5	54.5
56.4	12:02:51		56.4	56.4
53.4	12:02:52		53.4	53.4
53.2	12:02:53		53.2	53.2
52.1	12:02:54		52.1	52.1
50.6	12:02:55		50.6	50.6
50.4	12:02:56		50.4	50.4
50.2	12:02:57		50.2	50.2
50.8	12:02:58		50.8	50.8
56.5	12:02:59		56.5	56.5
56.0	12:03:00		56.0	56.0
59.4	12:03:01		59.4	59.4
56.6	12:03:02		56.6	56.6
55.5	12:03:03		55.5	55.5
57.2	12:03:04		57.2	57.2
53.4	12:03:05		53.4	53.4
51.6	12:03:06		51.6	51.6

Site 2 - Near Northeast Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
54.6	12:59:21	72.2	54.6	54.6
53.3	12:59:24	72.2	53.3	53.3
62.4	12:59:27	72.2	62.4	62.4
71.3	12:59:30	72.2	71.3	71.3
63.3	12:59:33	72.2	63.3	63.3
67.4	12:59:36	72.2	67.4	67.4
72.4	12:59:39	72.3	72.4	72.4
77.0	12:59:42	72.3	77.0	77.0
69.9	12:59:45	72.3	69.9	69.9
59.5	12:59:48	72.3	59.5	59.5
60.2	12:59:51	72.3	60.2	60.2
62.6	12:59:54	72.3	62.6	62.6
57.6	12:59:57	72.3	57.6	57.6
64.3	13:00:00	72.2	64.3	64.3
75.4	13:00:03	72.2	75.4	75.4
67.6	13:00:06	72.2	67.6	67.6
66.6	13:00:09	72.2	66.6	66.6
63.9	13:00:12	72.2	63.9	63.9
60.0	13:00:15	72.2	60.0	60.0
65.5	13:00:18	72.2	65.5	65.5
67.3	13:00:21	72.2	67.3	67.3
66.1	13:00:24	72.2	66.1	66.1
76.0	13:00:27	72.2	76.0	76.0
72.0	13:00:30	72.2	72.0	72.0
64.7	13:00:33	72.2	64.7	64.7
68.5	13:00:36	72.2	68.5	68.5
72.9	13:00:39	72.2	72.9	72.9
62.1	13:00:42	72.2	62.1	62.1
73.8	13:00:45	72.2	73.8	73.8
75.8	13:00:48	72.2	75.8	75.8
74.6	13:00:51	72.2	74.6	74.6
73.6	13:00:54	72.2	73.6	73.6
74.2	13:00:57	72.2	74.2	74.2
75.2	13:01:00	72.2	75.2	75.2
77.9	13:01:03	72.2	77.9	77.9
70.2	13:01:06	72.2	70.2	70.2
75.6	13:01:09	72.2	75.6	75.6
69.4	13:01:12	72.2	69.4	69.4
71.6	13:01:15	72.2	71.6	71.6
78.7	13:01:18	72.2	78.7	78.7
78.2	13:01:21	72.2	78.2	78.2
71.0	13:01:24	72.2	71.0	71.0
66.5	13:01:27	72.3	66.5	66.5
67.8	13:01:30	72.3	67.8	67.8
74.8	13:01:33	72.3	74.8	74.8
64.6	13:01:36	72.3	64.6	64.6
59.2	13:01:39	72.2	59.2	59.2
63.4	13:01:42	72.2	63.4	63.4
61.4	13:01:45	72.2	61.4	61.4
54.9	13:01:48	72.2	54.9	54.9
50.4	13:01:51	72.2	50.4	50.4
49.4	13:01:54	72.2	49.4	49.4
50.9	13:01:57	72.2	50.9	50.9
60.3	13:02:00	72.2	60.3	60.3
67.9	13:02:03	72.2	67.9	67.9
75.3	13:02:06	72.2	75.3	75.3
71.4	13:02:09	72.2	71.4	71.4
65.8	13:02:12	72.2	65.8	65.8
59.3	13:02:15	72.2	59.3	59.3
60.0	13:02:18	72.2	60.0	60.0
59.9	13:02:21	72.2	59.9	59.9
60.3	13:02:24	72.2	60.3	60.3
61.7	13:02:27	72.2	61.7	61.7
60.9	13:02:30	72.2	60.9	60.9
72.5	13:02:33	72.2	72.5	72.5
73.1	13:02:36	72.2	73.1	73.1
72.8	13:02:39	72.2	72.8	72.8
75.7	13:02:42	72.3	75.7	75.7
75.7	13:02:45	72.3	75.7	75.7
74.2	13:02:48	72.3	74.2	74.2
65.3	13:02:51	72.2	65.3	65.3
68.2	13:02:54	72.2	68.2	68.2
70.9	13:02:57	72.2	70.9	70.9
62.5	13:03:00	72.2	62.5	62.5
64.8	13:03:03	72.2	64.8	64.8
67.7	13:03:06	72.2	67.7	67.7
72.7	13:03:09	72.2	72.7	72.7
70.4	13:03:12	72.2	70.4	70.4
71.8	13:03:15	72.2	71.8	71.8
68.0	13:03:18	72.2	68.0	68.0
65.3	13:03:21	72.2	65.3	65.3
65.9	13:03:24	72.2	65.9	65.9
70.5	13:03:27	72.2	70.5	70.5
66.9	13:03:30	72.2	66.9	66.9
73.5	13:03:33	72.2	73.5	73.5
69.6	13:03:36	72.2	69.6	69.6
71.0	13:03:39	72.2	71.0	71.0
61.7	13:03:42	72.2	61.7	61.7
67.4	13:03:45	72.2	67.4	67.4
78.8	13:03:48	72.2	78.8	78.8
76.4	13:03:51	72.2	76.4	76.4
76.5	13:03:54	72.2	76.5	76.5
75.6	13:03:57	72.2	75.6	75.6
73.8	13:04:00	72.2	73.8	73.8
76.1	13:04:03	72.2	76.1	76.1
72.8	13:04:06	72.2	72.8	72.8
71.8	13:04:09	72.2	71.8	71.8
63.2	13:04:12	72.1	63.2	63.2
66.6	13:04:15	72.1	66.6	66.6
64.2	13:04:18	72.1	64.2	64.2
63.3	13:04:21	72.1	63.3	63.3
65.1	13:04:24	72.2	65.1	65.1
65.6	13:04:27	72.2	65.6	65.6
65.5	13:04:30	72.2	65.5	65.5
67.7	13:04:33	72.2	67.7	67.7
65.6	13:04:36	72.2	65.6	65.6
63.6	13:04:39	72.2	63.6	63.6
63.5	13:04:42	72.2	63.5	63.5
65.9	13:04:45	72.2	65.9	65.9
67.8	13:04:48	72.2	67.8	67.8
72.9	13:04:51	72.2	72.9	72.9
75.6	13:04:54	72.2	75.6	75.6
68.3	13:04:57	72.2	68.3	68.3
55.5	13:05:00	72.2	55.5	55.5
56.1	13:05:03	72.2	56.1	56.1
63.1	13:05:06	72.2	63.1	63.1
65.5	13:05:09	72.2	65.5	65.5
60.9	13:05:12	72.2	60.9	60.9
63.6	13:05:15	72.2	63.6	63.6
62.0	13:05:18	72.2	62.0	62.0
62.7	13:05:21	72.2	62.7	62.7
67.7	13:05:24	72.2	67.7	67.7
79.8	13:05:27	72.2	79.8	79.8
73.0	13:05:30	72.2	73.0	73.0
79.2	13:05:33	72.2	79.2	79.2
77.3	13:05:36	72.2	77.3	77.3
72.9	13:05:39	72.2	72.9	72.9
74.7	13:05:42	72.2	74.7	74.7
73.7	13:05:45	72.2	73.7	73.7
79.8	13:05:48	72.2	79.8	79.8
72.7	13:05:51	72.2	72.7	72.7
70.9	13:05:54	72.2	70.9	70.9
65.0	13:05:57	72.2	65.0	65.0
76.0	13:06:00	72.2	76.0	76.0
68.6	13:06:03	72.2	68.6	68.6
59.4	13:06:06	72.2	59.4	59.4
73.8	13:06:09	72.2	73.8	73.8
72.8	13:06:12	72.2	72.8	72.8
70.9	13:06:15	72.2	70.9	70.9
73.9	13:06:18	72.2	73.9	73.9
65.3	13:06:21	72.2	65.3	65.3
58.5	13:06:24	72.2	58.5	58.5
59.2	13:06:27	72.2	59.2	59.2
65.3	13:06:30	72.2	65.3	65.3
58.9	13:06:33	72.2	58.9	58.9
60.4	13:06:36	72.2	60.4	60.4
65.9	13:06:39	72.2	65.9	65.9
69.9	13:06:42	72.2	69.9	69.9
73.4	13:06:45	72.2	73.4	73.4
67.9	13:06:48	72.2	67.9	67.9
63.2	13:06:51	72.2	63.2	63.2
64.0	13:06:54	72.2	64.0	64.0
71.6	13:06:57	72.2	71.6	71.6
73.4	13:07:00	72.2	73.4	73.4
72.1	13:07:03	72.2	72.1	72.1
74.2	13:07:06	72.2	74.2	74.2
72.1	13:07:09	72.2	72.1	72.1
74.6	13:07:12	72.2	74.6	74.6
74.0	13:07:15	72.2	74.0	74.0
71.1	13:07:18	72.2	71.1	71.1
68.1	13:07:21	72.2	68.1	68.1
81.1	13:07:24	72.2	81.1	81.1

Site 1 - On West Side of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
51.5	12:03:07		51.5	51.5
52.0	12:03:08		52.0	52.0
53.8	12:03:09		53.8	53.8
58.7	12:03:10		58.7	58.7
60.8	12:03:11		60.8	60.8
60.0	12:03:12		60.0	60.0
57.6	12:03:13		57.6	57.6
58.7	12:03:14		58.7	58.7
54.3	12:03:15		54.3	54.3
53.7	12:03:16		53.7	53.7
51.8	12:03:17		51.8	51.8
51.9	12:03:18		51.9	51.9
51.6	12:03:19		51.6	51.6
52.5	12:03:20		52.5	52.5
54.0	12:03:21		54.0	54.0
53.5	12:03:22		53.5	53.5
52.0	12:03:23		52.0	52.0
50.9	12:03:24		50.9	50.9
48.0	12:03:25		48.0	48.0
48.0	12:03:26		48.0	48.0
47.6	12:03:27		47.6	47.6
47.2	12:03:28		47.2	47.2
48.3	12:03:29		48.3	48.3
49.6	12:03:30		49.6	49.6
50.8	12:03:31		50.8	50.8
56.4	12:03:32		56.4	56.4
52.7	12:03:33		52.7	52.7
52.6	12:03:34		52.6	52.6
51.6	12:03:35		51.6	51.6
49.4	12:03:36		49.4	49.4
51.9	12:03:37		51.9	51.9
52.3	12:03:38		52.3	52.3
53.0	12:03:39		53.0	53.0
55.2	12:03:40		55.2	55.2
60.2	12:03:41		60.2	60.2
66.0	12:03:42		66.0	66.0
68.4	12:03:43		68.4	68.4
69.3	12:03:44		69.3	69.3
68.9	12:03:45		68.9	68.9
66.7	12:03:46		66.7	66.7
61.0	12:03:47		61.0	61.0
58.5	12:03:48		58.5	58.5
57.6	12:03:49		57.6	57.6
58.9	12:03:50		58.9	58.9
62.0	12:03:51		62.0	62.0
62.9	12:03:52		62.9	62.9
63.9	12:03:53		63.9	63.9
65.2	12:03:54		65.2	65.2
69.0	12:03:55		69.0	69.0
70.2	12:03:56		70.2	70.2
66.4	12:03:57		66.4	66.4
67.1	12:03:58		67.1	67.1
66.4	12:03:59		66.4	66.4
65.0	12:04:00		65.0	65.0
64.1	12:04:01		64.1	64.1
63.8	12:04:02		63.8	63.8
62.7	12:04:03		62.7	62.7
59.6	12:04:04		59.6	59.6
59.2	12:04:05		59.2	59.2
55.7	12:04:06		55.7	55.7
54.3	12:04:07		54.3	54.3
54.5	12:04:08		54.5	54.5
55.3	12:04:09		55.3	55.3
55.9	12:04:10		55.9	55.9
62.0	12:04:11		62.0	62.0
58.1	12:04:12		58.1	58.1
58.3	12:04:13		58.3	58.3
56.8	12:04:14		56.8	56.8
57.2	12:04:15		57.2	57.2
60.6	12:04:16		60.6	60.6
55.8	12:04:17		55.8	55.8
54.6	12:04:18		54.6	54.6
50.8	12:04:19		50.8	50.8
49.3	12:04:20		49.3	49.3
46.9	12:04:21		46.9	46.9
46.3	12:04:22		46.3	46.3
47.2	12:04:23		47.2	47.2
49.5	12:04:24		49.5	49.5
52.5	12:04:25		52.5	52.5
53.0	12:04:26		53.0	53.0
56.0	12:04:27		56.0	56.0
55.0	12:04:28		55.0	55.0
54.8	12:04:29		54.8	54.8
53.5	12:04:30		53.5	53.5
53.3	12:04:31		53.3	53.3
54.0	12:04:32		54.0	54.0
54.7	12:04:33		54.7	54.7
56.8	12:04:34		56.8	56.8
56.4	12:04:35		56.4	56.4
55.8	12:04:36		55.8	55.8
55.4	12:04:37		55.4	55.4
57.2	12:04:38		57.2	57.2
55.1	12:04:39		55.1	55.1
57.7	12:04:40		57.7	57.7
56.4	12:04:41		56.4	56.4
59.1	12:04:42		59.1	59.1
56.8	12:04:43		56.8	56.8
54.9	12:04:44		54.9	54.9
52.5	12:04:45		52.5	52.5
50.3	12:04:46		50.3	50.3
49.6	12:04:47		49.6	49.6
49.3	12:04:48		49.3	49.3
49.6	12:04:49		49.6	49.6
50.5	12:04:50		50.5	50.5
52.2	12:04:51		52.2	52.2
53.0	12:04:52		53.0	53.0
57.4	12:04:53		57.4	57.4
55.2	12:04:54		55.2	55.2
56.3	12:04:55		56.3	56.3
55.8	12:04:56		55.8	55.8
60.4	12:04:57		60.4	60.4
56.9	12:04:58		56.9	56.9
56.5	12:04:59		56.5	56.5
54.2	12:05:00		54.2	54.2
52.2	12:05:01		52.2	52.2
51.7	12:05:02		51.7	51.7
51.5	12:05:03		51.5	51.5
50.5	12:05:04		50.5	50.5
51.2	12:05:05		51.2	51.2
51.5	12:05:06		51.5	51.5
52.3	12:05:07		52.3	52.3
52.7	12:05:08		52.7	52.7
56.0	12:05:09		56.0	56.0
57.0	12:05:10		57.0	57.0
57.1	12:05:11		57.1	57.1
56.4	12:05:12		56.4	56.4
53.2	12:05:13		53.2	53.2
51.8	12:05:14		51.8	51.8
50.3	12:05:15		50.3	50.3
49.6	12:05:16		49.6	49.6
49.3	12:05:17		49.3	49.3
48.9	12:05:18		48.9	48.9
48.8	12:05:19		48.8	48.8
49.1	12:05:20		49.1	49.1
49.0	12:05:21		49.0	49.0
49.3	12:05:22		49.3	49.3
48.4	12:05:23		48.4	48.4
49.4	12:05:24		49.4	49.4
49.8	12:05:25		49.8	49.8
50.8	12:05:26		50.8	50.8
52.7	12:05:27		52.7	52.7
55.4	12:05:28		55.4	55.4
59.3	12:05:29		59.3	59.3
57.0	12:05:30		57.0	57.0
56.9	12:05:31		56.9	56.9
53.4	12:05:32		53.4	53.4
53.5	12:05:33		53.5	53.5
58.5	12:05:34		58.5	58.5
57.1	12:05:35		57.1	57.1
60.6	12:05:36		60.6	60.6
61.0	12:05:37		61.0	61.0
57.6	12:05:38		57.6	57.6
59.4	12:05:39		59.4	59.4
59.6	12:05:40		59.6	59.6
61.2	12:05:41		61.2	61.2
59.6	12:05:42		59.6	59.6
63.1	12:05:43		63.1	63.1
60.6	12:05:44		60.6	60.6
64.5	12:05:45		64.5	64.5
67.2	12:05:46		67.2	67.2
59.5	12:05:47		59.5	59.5
60.9	12:05:48		60.9	60.9

Site 2 - Near Northeast Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
71.5	13:07:27	72.2	71.5	71.5
77.3	13:07:30	72.2	77.3	77.3
70.2	13:07:33	72.2	70.2	70.2
73.1	13:07:36	72.2	73.1	73.1
75.4	13:07:39	72.2	75.4	75.4
78.5	13:07:42	72.2	78.5	78.5
77.1	13:07:45	72.2	77.1	77.1
69.5	13:07:48	72.2	69.5	69.5
74.8	13:07:51	72.2	74.8	74.8
72.8	13:07:54	72.2	72.8	72.8
78.1	13:07:57	72.2	78.1	78.1
70.6	13:08:00	72.2	70.6	70.6
67.8	13:08:03	72.2	67.8	67.8
69.4	13:08:06	72.2	69.4	69.4
75.2	13:08:09	72.2	75.2	75.2
73.8	13:08:12	72.2	73.8	73.8
66.4	13:08:15	72.2	66.4	66.4
58.7	13:08:18	72.2	58.7	58.7
65.8	13:08:21	72.2	65.8	65.8
73.2	13:08:24	72.1	73.2	73.2
67.5	13:08:27	72.1	67.5	67.5
75.2	13:08:30	72.1	75.2	75.2
69.3	13:08:33	72.1	69.3	69.3
59.7	13:08:36	72.1	59.7	59.7
71.8	13:08:39	72.1	71.8	71.8
71.7	13:08:42	72.1	71.7	71.7
64.6	13:08:45	72.2	64.6	64.6
64.2	13:08:48	72.1	64.2	64.2
69.8	13:08:51	72.2	69.8	69.8
63.9	13:08:54	72.2	63.9	63.9
62.2	13:08:57	72.2	62.2	62.2
62.0	13:09:00	72.2	62.0	62.0
60.0	13:09:03	72.2	60.0	60.0
66.4	13:09:06	72.2	66.4	66.4
61.4	13:09:09	72.2	61.4	61.4
59.7	13:09:12	72.2	59.7	59.7
74.9	13:09:15	72.2	74.9	74.9
79.2	13:09:18	72.2	79.2	79.2
74.2	13:09:21	72.2	74.2	74.2
77.1	13:09:24	72.2	77.1	77.1
76.0	13:09:27	72.2	76.0	76.0
65.1	13:09:30	72.1	65.1	65.1
64.9	13:09:33	72.1	64.9	64.9
75.6	13:09:36	72.1	75.6	75.6
71.4	13:09:39	72.1	71.4	71.4
72.6	13:09:42	72.1	72.6	72.6
68.8	13:09:45	72.1	68.8	68.8
67.5	13:09:48	72.1	67.5	67.5
65.9	13:09:51	72.1	65.9	65.9
75.2	13:09:54	72.1	75.2	75.2
68.9	13:09:57	72.3	68.9	68.9
57.9	13:10:00	72.3	57.9	57.9
54.8	13:10:03	72.3	54.8	54.8
56.6	13:10:06	72.3	56.6	56.6
68.6	13:10:09	72.3	68.6	68.6
67.7	13:10:12	72.3	67.7	67.7
65.4	13:10:15	72.3	65.4	65.4
75.8	13:10:18	72.3	75.8	75.8
74.5	13:10:21	72.3	74.5	74.5
63.2	13:10:24	72.3	63.2	63.2
66.9	13:10:27	72.3	66.9	66.9
69.3	13:10:30	72.3	69.3	69.3
65.8	13:10:33	72.3	65.8	65.8
67.7	13:10:36	72.3	67.7	67.7
70.3	13:10:39	72.3	70.3	70.3
67.6	13:10:42	72.3	67.6	67.6
67.6	13:10:45	72.3	67.6	67.6
67.8	13:10:48	72.3	67.8	67.8
68.8	13:10:51	72.3	68.8	68.8
68.4	13:10:54	72.3	68.4	68.4
66.3	13:10:57	72.3	66.3	66.3
69.6	13:11:00	72.3	69.6	69.6
78.5	13:11:03	72.3	78.5	78.5
77.1	13:11:06	72.3	77.1	77.1
77.1	13:11:09	72.3	77.1	77.1
76.8	13:11:12	72.3	76.8	76.8
77.9	13:11:15	72.3	77.9	77.9
77.1	13:11:18	72.3	77.1	77.1
75.0	13:11:21	72.3	75.0	75.0
79.2	13:11:24	72.3	79.2	79.2
65.8	13:11:27	72.3	65.8	65.8
59.3	13:11:30	72.3	59.3	59.3
56.7	13:11:33	72.3	56.7	56.7
63.2	13:11:36	72.3	63.2	63.2
56.3	13:11:39	72.3	56.3	56.3
56.3	13:11:42	72.3	56.3	56.3
58.6	13:11:45	72.3	58.6	58.6
54.4	13:11:48	72.3	54.4	54.4
60.6	13:11:51	72.3	60.6	60.6
67.6	13:11:54	72.3	67.6	67.6
76.2	13:11:57	72.3	76.2	76.2
68.4	13:12:00	72.3	68.4	68.4
60.5	13:12:03	72.3	60.5	60.5
55.7	13:12:06	72.3	55.7	55.7
57.7	13:12:09	72.3	57.7	57.7
64.3	13:12:12	72.3	64.3	64.3
75.4	13:12:15	72.3	75.4	75.4
73.0	13:12:18	72.3	73.0	73.0
65.4	13:12:21	72.3	65.4	65.4
53.5	13:12:24	72.3	53.5	53.5
58.8	13:12:27	72.3	58.8	58.8
64.7	13:12:30	72.3	64.7	64.7
60.5	13:12:33	72.3	60.5	60.5
67.0	13:12:36	72.3	67.0	67.0
77.0	13:12:39	72.3	77.0	77.0
79.8	13:12:42	72.3	79.8	79.8
75.1	13:12:45	72.3	75.1	75.1
78.0	13:12:48	72.3	78.0	78.0
70.8	13:12:51	72.3	70.8	70.8
74.2	13:12:54	72.3	74.2	74.2
76.4	13:12:57	72.3	76.4	76.4
76.5	13:13:00	72.3	76.5	76.5
75.0	13:13:03	72.3	75.0	75.0
65.0	13:13:06	72.3	65.0	65.0
65.2	13:13:09	72.3	65.2	65.2
65.8	13:13:12	72.3	65.8	65.8
67.1	13:13:15	72.3	67.1	67.1
77.8	13:13:18	72.4	77.8	77.8
75.4	13:13:21	72.4	75.4	75.4
69.0	13:13:24	72.4	69.0	69.0
72.2	13:13:27	72.4	72.2	72.2
82.3	13:13:30	72.4	82.3	82.3
72.0	13:13:33	72.4	72.0	72.0
65.0	13:13:36	72.4	65.0	65.0
70.8	13:13:39	72.4	70.8	70.8
75.0	13:13:42	72.4	75.0	75.0
75.0	13:13:45	72.4	75.0	75.0
64.2	13:13:48	72.4	64.2	64.2
55.5	13:13:51	72.4	55.5	55.5
58.1	13:13:54	72.4	58.1	58.1
59.6	13:13:57	72.4	59.6	59.6
56.0	13:14:00	72.4	56.0	56.0
61.7	13:14:03	72.4	61.7	61.7
76.4	13:14:06	72.4	76.4	76.4
73.5	13:14:09	72.4	73.5	73.5
71.1	13:14:12	72.5	71.1	71.1
58.4	13:14:15	72.5	58.4	58.4
60.0	13:14:18	72.5	60.0	60.0
64.2	13:14:21	72.4	64.2	64.2
63.6	13:14:24	72.4	63.6	63.6
66.2	13:14:27	72.4	66.2	66.2
59.7	13:14:30	72.4	59.7	59.7
55.9	13:14:33	72.4	55.9	55.9
55.2	13:14:36	72.5	55.2	55.2
52.1	13:14:39	72.5	52.1	52.1
52.9	13:14:42	72.5	52.9	52.9
64.2	13:14:45	72.5	64.2	64.2
66.5	13:14:48	72.5	66.5	66.5
55.0	13:14:51	72.5	55.0	55.0
61.6	13:14:54	72.5	61.6	61.6
73.9	13:14:57	72.4	73.9	73.9
66.6	13:15:00	72.4	66.6	66.6
73.6	13:15:03	72.4	73.6	73.6
62.7	13:15:06	72.4	62.7	62.7
61.3	13:15:09	72.4	61.3	61.3
66.0	13:15:12	72.4	66.0	66.0
65.2	13:15:15	72.4	65.2	65.2
68.7	13:15:18	72.4	68.7	68.7
79.6	13:15:21	72.4	79.6	79.6
79.1	13:15:24	72.4	79.1	79.1
76.5	13:15:27	72.4	76.5	76.5
75.8	13:15:30	72.4	75.8	75.8

Site 1 - On West Side of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
59.0	12:05:49		59.0	59.0
58.5	12:05:50		58.5	58.5
56.8	12:05:51		56.8	56.8
57.4	12:05:52		57.4	57.4
58.5	12:05:53		58.5	58.5
58.2	12:05:54		58.2	58.2
57.0	12:05:55		57.0	57.0
57.0	12:05:56		57.0	57.0
57.0	12:05:57		57.0	57.0
62.5	12:05:58		62.5	62.5
58.6	12:05:59		58.6	58.6
58.3	12:06:00		58.3	58.3
58.1	12:06:01		58.1	58.1
54.0	12:06:02		54.0	54.0
51.0	12:06:03		51.0	51.0
52.3	12:06:04		52.3	52.3
55.7	12:06:05		55.7	55.7
57.1	12:06:06		57.1	57.1
60.7	12:06:07		60.7	60.7
61.5	12:06:08		61.5	61.5
58.2	12:06:09		58.2	58.2
57.6	12:06:10		57.6	57.6
57.9	12:06:11		57.9	57.9
55.7	12:06:12		55.7	55.7
54.7	12:06:13		54.7	54.7
56.6	12:06:14		56.6	56.6
53.8	12:06:15		53.8	53.8
51.2	12:06:16		51.2	51.2
50.8	12:06:17		50.8	50.8
52.1	12:06:18		52.1	52.1
51.3	12:06:19		51.3	51.3
50.8	12:06:20		50.8	50.8
56.6	12:06:21		56.6	56.6
53.5	12:06:22		53.5	53.5
52.8	12:06:23		52.8	52.8
53.6	12:06:24		53.6	53.6
57.2	12:06:25		57.2	57.2
54.7	12:06:26		54.7	54.7
57.3	12:06:27		57.3	57.3
56.6	12:06:28		56.6	56.6
55.5	12:06:29		55.5	55.5
57.4	12:06:30		57.4	57.4
56.8	12:06:31		56.8	56.8
54.8	12:06:32		54.8	54.8
56.9	12:06:33		56.9	56.9
54.2	12:06:34		54.2	54.2
51.2	12:06:35		51.2	51.2
51.8	12:06:36		51.8	51.8
52.1	12:06:37		52.1	52.1
51.7	12:06:38		51.7	51.7
53.4	12:06:39		53.4	53.4
55.9	12:06:40		55.9	55.9
56.8	12:06:41		56.8	56.8
61.4	12:06:42		61.4	61.4
56.6	12:06:43		56.6	56.6
56.5	12:06:44		56.5	56.5
53.6	12:06:45		53.6	53.6
52.2	12:06:46		52.2	52.2
53.5	12:06:47		53.5	53.5
53.9	12:06:48		53.9	53.9
53.5	12:06:49		53.5	53.5
53.6	12:06:50		53.6	53.6
53.6	12:06:51		53.6	53.6
55.1	12:06:52		55.1	55.1
53.5	12:06:53		53.5	53.5
52.7	12:06:54		52.7	52.7
52.3	12:06:55		52.3	52.3
50.0	12:06:56		50.0	50.0
49.6	12:06:57		49.6	49.6
52.1	12:06:58	58.6	52.1	52.1
53.7	12:06:59	58.6	53.7	53.7
52.2	12:07:00	58.6	52.2	52.2
49.8	12:07:01	58.6	49.8	49.8
48.6	12:07:02	58.5	48.6	48.6
48.6	12:07:03	58.3	48.6	48.6
46.8	12:07:04	58.3	46.8	46.8
46.1	12:07:05	58.3	46.1	46.1
47.3	12:07:06	58.3	47.3	47.3
51.5	12:07:07	58.3	51.5	51.5
53.9	12:07:08	58.3	53.9	53.9
52.3	12:07:09	58.3	52.3	52.3
52.9	12:07:10	58.3	52.9	52.9
53.6	12:07:11	58.3	53.6	53.6
53.1	12:07:12	58.3	53.1	53.1
53.0	12:07:13	58.3	53.0	53.0
53.9	12:07:14	58.3	53.9	53.9
52.8	12:07:15	58.3	52.8	52.8
50.6	12:07:16	58.3	50.6	50.6
50.7	12:07:17	58.3	50.7	50.7
50.3	12:07:18	58.2	50.3	50.3
51.3	12:07:19	58.2	51.3	51.3
50.9	12:07:20	58.2	50.9	50.9
51.6	12:07:21	58.2	51.6	51.6
50.6	12:07:22	58.2	50.6	50.6
49.7	12:07:23	58.2	49.7	49.7
48.7	12:07:24	58.2	48.7	48.7
51.4	12:07:25	58.2	51.4	51.4
55.2	12:07:26	58.2	55.2	55.2
52.9	12:07:27	58.2	52.9	52.9
52.4	12:07:28	58.2	52.4	52.4
52.6	12:07:29	58.2	52.6	52.6
50.3	12:07:30	58.2	50.3	50.3
50.1	12:07:31	58.2	50.1	50.1
50.8	12:07:32	58.2	50.8	50.8
53.5	12:07:33	58.2	53.5	53.5
56.0	12:07:34	58.2	56.0	56.0
57.0	12:07:35	58.2	57.0	57.0
58.9	12:07:36	58.2	58.9	58.9
64.1	12:07:37	58.2	64.1	64.1
60.8	12:07:38	58.2	60.8	60.8
61.1	12:07:39	58.2	61.1	61.1
63.1	12:07:40	58.1	63.1	63.1
62.5	12:07:41	58.1	62.5	62.5
61.5	12:07:42	58.1	61.5	61.5
59.7	12:07:43	58.1	59.7	59.7
61.5	12:07:44	58.1	61.5	61.5
61.2	12:07:45	58.1	61.2	61.2
58.3	12:07:46	58.1	58.3	58.3
57.1	12:07:47	58.1	57.1	57.1
56.0	12:07:48	57.7	56.0	56.0
55.2	12:07:49	57.7	55.2	55.2
55.7	12:07:50	57.7	55.7	55.7
59.1	12:07:51	57.7	59.1	59.1
62.7	12:07:52	57.7	62.7	62.7
59.4	12:07:53	57.7	59.4	59.4
56.9	12:07:54	57.6	56.9	56.9
56.0	12:07:55	57.6	56.0	56.0
55.6	12:07:56	57.6	55.6	55.6
54.9	12:07:57	57.6	54.9	54.9
59.6	12:07:58	57.6	59.6	59.6
54.7	12:07:59	57.6	54.7	54.7
54.7	12:08:00	57.6	54.7	54.7
51.3	12:08:01	57.6	51.3	51.3
50.0	12:08:02	57.6	50.0	50.0
51.5	12:08:03	57.6	51.5	51.5
54.6	12:08:04	57.6	54.6	54.6
56.6	12:08:05	57.6	56.6	56.6
58.9	12:08:06	57.6	58.9	58.9
58.2	12:08:07	57.6	58.2	58.2
56.5	12:08:08	57.6	56.5	56.5
55.5	12:08:09	57.6	55.5	55.5
57.5	12:08:10	57.6	57.5	57.5
53.2	12:08:11	57.6	53.2	53.2
53.0	12:08:12	57.6	53.0	53.0
53.1	12:08:13	57.6	53.1	53.1
53.3	12:08:14	57.6	53.3	53.3
53.7	12:08:15	57.6	53.7	53.7
56.9	12:08:16	57.6	56.9	56.9
55.9	12:08:17	57.6	55.9	55.9
55.1	12:08:18	57.6	55.1	55.1
56.4	12:08:19	57.6	56.4	56.4
61.1	12:08:20	57.6	61.1	61.1
58.2	12:08:21	57.6	58.2	58.2
55.6	12:08:22	57.6	55.6	55.6
56.3	12:08:23	57.6	56.3	56.3
55.4	12:08:24	57.6	55.4	55.4
57.0	12:08:25	57.6	57.0	57.0
60.8	12:08:26	57.6	60.8	60.8
58.6	12:08:27	57.6	58.6	58.6
57.2	12:08:28	57.6	57.2	57.2
53.6	12:08:29	57.6	53.6	53.6
48.7	12:08:30	57.6	48.7	48.7

Site 2 - Near Northeast Corner of Project Site

SPL	Time	Leq (1 hour Avg.)	Ldn	CNEL
70.0	13:15:33	72.4	70.0	70.0
70.7	13:15:36	72.4	70.7	70.7
68.4	13:15:39	72.4	68.4	68.4
68.2	13:15:42	72.4	68.2	68.2
74.0	13:15:45	72.4	74.0	74.0
73.0	13:15:48	72.4	73.0	73.0
66.7	13:15:51	72.4	66.7	66.7
68.6	13:15:54	72.4	68.6	68.6
61.6	13:15:57	72.4	61.6	61.6
56.0	13:16:00	72.4	56.0	56.0
61.8	13:16:03	72.4	61.8	61.8
64.2	13:16:06	72.4	64.2	64.2
72.0	13:16:09	72.4	72.0	72.0
64.5	13:16:12	72.4	64.5	64.5
66.9	13:16:15	72.4	66.9	66.9
58.3	13:16:18	72.4	58.3	58.3
55.5	13:16:21	72.4	55.5	55.5
60.1	13:16:24	72.4	60.1	60.1
71.9	13:16:27	72.4	71.9	71.9
63.6	13:16:30	72.4	63.6	63.6
70.2	13:16:33	72.4	70.2	70.2
74.8	13:16:36	72.4	74.8	74.8
76.0	13:16:39	72.4	76.0	76.0
71.9	13:16:42	72.4	71.9	71.9
75.4	13:16:45	72.4	75.4	75.4
64.6	13:16:48	72.4	64.6	64.6
56.1	13:16:51	72.4	56.1	56.1
69.4	13:16:54	72.4	69.4	69.4
63.8	13:16:57	72.4	63.8	63.8
61.8	13:17:00	72.4	61.8	61.8
70.9	13:17:03	72.4	70.9	70.9
65.3	13:17:06	72.4	65.3	65.3
74.8	13:17:09	72.4	74.8	74.8
72.9	13:17:12	72.4	72.9	72.9
63.0	13:17:15	72.4	63.0	63.0
68.1	13:17:18	72.4	68.1	68.1
79.6	13:17:21	72.4	79.6	79.6
80.9	13:17:24	72.4	80.9	80.9
77.3	13:17:27	72.4	77.3	77.3
71.6	13:17:30	72.4	71.6	71.6
75.7	13:17:33	72.4	75.7	75.7
76.1	13:17:36	72.4	76.1	76.1
71.3	13:17:39	72.4	71.3	71.3
78.2	13:17:42	72.4	78.2	78.2
74.8	13:17:45	72.4	74.8	74.8
75.3	13:17:48	72.4	75.3	75.3
73.1	13:17:51	72.4	73.1	73.1
64.8	13:17:54	72.4	64.8	64.8
66.6	13:17:57	72.4	66.6	66.6
71.1	13:18:00	72.4	71.1	71.1
58.8	13:18:03	72.4	58.8	58.8
53.2	13:18:06	72.4	53.2	53.2
55.8	13:18:09	72.4	55.8	55.8
59.9	13:18:12	72.4	59.9	59.9
52.3	13:18:15	72.4	52.3	52.3
51.7	13:18:18	72.4	51.7	51.7
57.9	13:18:21	72.4	57.9	57.9
70.5	13:18:24	72.4	70.5	70.5
76.2	13:18:27	72.4	76.2	76.2
73.1	13:18:30	72.4	73.1	73.1
72.7	13:18:33	72.4	72.7	72.7
64.1	13:18:36	72.4	64.1	64.1
52.8	13:18:39	72.4	52.8	52.8
57.0	13:18:42	72.4	57.0	57.0
62.9	13:18:45	72.4	62.9	62.9
59.7	13:18:48	72.4	59.7	59.7
62.0	13:18:51	72.4	62.0	62.0
56.7	13:18:54	72.4	56.7	56.7
54.5	13:18:57	72.4	54.5	54.5
60.2	13:19:00	72.4	60.2	60.2
77.4	13:19:03	72.4	77.4	77.4
75.6	13:19:06	72.4	75.6	75.6
75.0	13:19:09	72.4	75.0	75.0
74.9	13:19:12	72.4	74.9	74.9
74.4	13:19:15	72.4	74.4	74.4
75.4	13:19:18	72.4	75.4	75.4
77.8	13:19:21	72.4	77.8	77.8
75.1	13:19:24	72.3	75.1	75.1
79.1	13:19:27	72.4	79.1	79.1
76.9	13:19:30	72.4	76.9	76.9
75.7	13:19:33	72.4	75.7	75.7
73.6	13:19:36	72.4	73.6	73.6
75.4	13:19:39	72.4	75.4	75.4
67.6	13:19:42	72.4	67.6	67.6
63.8	13:19:45	72.4	63.8	63.8
71.5	13:19:48	72.4	71.5	71.5
75.0	13:19:51	72.4	75.0	75.0
74.5	13:19:54	72.4	74.5	74.5
77.1	13:19:57	72.4	77.1	77.1
78.6	13:20:00	72.4	78.6	78.6
75.7	13:20:03	72.4	75.7	75.7
71.3	13:20:06	72.4	71.3	71.3
77.8	13:20:09	72.4	77.8	77.8
68.8	13:20:12	72.4	68.8	68.8
66.8	13:20:15	72.4	66.8	66.8
63.5	13:20:18	72.4	63.5	63.5
60.8	13:20:21	72.4	60.8	60.8
57.0	13:20:24	72.4	57.0	57.0
58.4	13:20:27	72.4	58.4	58.4
74.2	13:20:30	72.4	74.2	74.2
68.5	13:20:33	72.4	68.5	68.5
59.8	13:20:36	72.4	59.8	59.8
72.4	13:20:39	72.4	72.4	72.4
66.6	13:20:42	72.4	66.6	66.6
55.3	13:20:45	72.4	55.3	55.3
52.0	13:20:48	72.4	52.0	52.0
53.8	13:20:51	72.4	53.8	53.8
62.9	13:20:54	72.4	62.9	62.9
78.3	13:20:57	72.4	78.3	78.3
71.4	13:21:00	72.4	71.4	71.4
77.0	13:21:03	72.4	77.0	77.0
77.4	13:21:06	72.4	77.4	77.4
76.1	13:21:09	72.4	76.1	76.1
77.8	13:21:12	72.4	77.8	77.8
73.1	13:21:15	72.4	73.1	73.1
64.5	13:21:18	72.4	64.5	64.5
72.5	13:21:21	72.4	72.5	72.5
68.1	13:21:24	72.4	68.1	68.1
70.0	13:21:27	72.4	70.0	70.0
67.5	13:21:30	72.4	67.5	67.5
66.9	13:21:33	72.4	66.9	66.9
67.6	13:21:36	72.4	67.6	67.6
76.2	13:21:39	72.4	76.2	76.2
67.9	13:21:42	72.4	67.9	67.9
60.3	13:21:45	72.4	60.3	60.3
65.3	13:21:48	72.4	65.3	65.3
65.3	13:21:51	72.4	65.3	65.3
66.5	13:21:54	72.4	66.5	66.5
70.1	13:21:57	72.4	70.1	70.1
63.5	13:22:00	72.4	63.5	63.5
60.1	13:22:03	72.4	60.1	60.1
61.8	13:22:06	72.4	61.8	61.8
61.8	13:22:09	72.4	61.8	61.8
63.3	13:22:12	72.4	63.3	63.3
62.4	13:22:15	72.3	62.4	62.4
63.9	13:22:18	72.3	63.9	63.9
71.2	13:22:21	72.3	71.2	71.2
62.8	13:22:24	72.3	62.8	62.8
64.3	13:22:27	72.3	64.3	64.3
72.9	13:22:30	72.3	72.9	72.9
77.7	13:22:33	72.3	77.7	77.7
78.9	13:22:36	72.3	78.9	78.9
78.4	13:22:39	72.3	78.4	78.4
73.4	13:22:42	72.3	73.4	73.4
68.3	13:22:45	72.3	68.3	68.3
57.6	13:22:48	72.3	57.6	57.6
58.3	13:22:51	72.3	58.3	58.3
62.8	13:22:54	72.3	62.8	62.8
54.1	13:22:57	72.3	54.1	54.1
50.7	13:23:00	72.3	50.7	50.7
58.1	13:23:03	72.3	58.1	58.1
63.6	13:23:06	72.3	63.6	63.6
58.6	13:23:09	72.3	58.6	58.6
62.7	13:23:12	72.4	62.7	62.7
64.7	13:23:15	72.4	64.7	64.7
60.8	13:23:18	72.4	60.8	60.8
76.9	13:23:21	72.4	76.9	76.9
68.9	13:23:24	72.4	68.9	68.9
57.6	13:23:27	72.4	57.6	57.6
67.7	13:23:30	72.4	67.7	67.7
63.5	13:23:33	72.4	63.5	63.5
52.0	13:23:36	72.4	52.0	52.0

APPENDIX C

RCNM Model Construction Noise Calculation Printouts

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/15/2025
Case Description: 9562 Chapman Ave Apartments - Site Preparation

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to West	Residential	56.8	56.8	56.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		70	7
Tractor	No	40	84		70	7

	Calculated (dBA)		Results Noise Limits (dBA)			
			Day		Evening	
Equipment	***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Grader	75.1	71.1	N/A	N/A	N/A	N/A
Tractor	74.1	70.1	N/A	N/A	N/A	N/A
Total	**75**	**74**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to South	Residential	56.8	56.8	56.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		180	7
Tractor	No	40	84		180	7

	Calculated (dBA)		Results Noise Limits (dBA)			
			Day		Evening	
Equipment	***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Grader	66.9	62.9	N/A	N/A	N/A	N/A
Tractor	65.9	61.9	N/A	N/A	N/A	N/A
Total	**67**	**65**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/15/2025
Case Description: 9562 Chapman Ave Apartments - Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Homes to West	Residential	56.8	56.8	56.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		70	7
Excavator	No	40		80.7	70	7
Compactor (ground)	No	20		83.2	70	7
Dozer	No	40		81.7	70	7
Tractor	No	40	84		70	7

	Calculated (dBA)		Results Noise Limits (dBA) Day		Evening	
Equipment	***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Grader	75.1	71.1	N/A	N/A	N/A	N/A
Excavator	70.8	66.8	N/A	N/A	N/A	N/A
Compactor (ground)	73.3	66.3	N/A	N/A	N/A	N/A
Dozer	71.7	67.8	N/A	N/A	N/A	N/A
Tractor	74.1	70.1	N/A	N/A	N/A	N/A
Total	**75**	**76**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/15/2025
Case Description: 9562 Chapman Ave Apartments - Grading

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to South	Residential	56.8	56.8	56.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85		180	7
Excavator	No	40		80.7	180	7
Compactor (ground)	No	20		83.2	180	7
Dozer	No	**40**		81.7	180	7
Tractor	No	40	84		180	7

	Calculated (dBA)		Results Noise Limits (dBA)			
			Day		Evening	
Equipment	***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Grader	66.9	62.9	N/A	N/A	N/A	N/A
Excavator	62.6	58.6	N/A	N/A	N/A	N/A
Compactor (ground)	65.1	58.1	N/A	N/A	N/A	N/A
Dozer	63.5	59.6	N/A	N/A	N/A	N/A
Tractor	65.9	61.9	N/A	N/A	N/A	N/A
Total	**67**	**68**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/15/2025
Case Description: 9562 Chapman Ave Apartments - Building Construction

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to West	Residential	56.8	56.8	56.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	70	7
Gradall	No	40		83.4	70	7
Gradall	No	40		83.4	70	7
Tractor	No	40	84		70	7
Front End Loader	No	40		79.1	70	7

	Calculated (dBA)		Results Noise Limits (dBA)			
			Day		Evening	
Equipment	***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Crane	70.6	62.7	N/A	N/A	N/A	N/A
Gradall	73.5	69.5	N/A	N/A	N/A	N/A
Gradall	73.5	69.5	N/A	N/A	N/A	N/A
Tractor	74.1	70.1	N/A	N/A	N/A	N/A
Front End Loader	69.2	65.2	N/A	N/A	N/A	N/A
Total	**74**	**75**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/15/2025
Case Description: 9562 Chapman Ave Apartments - Building Construction

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to South	Residential	56.8	56.8	56.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	180	7
Gradall	No	40		83.4	180	7
Gradall	No	40		83.4	180	7
Tractor	No	40	84		180	7
Front End Loader	No	40		79.1	180	7

	Calculated (dBA)		Results Noise Limits (dBA)			
			Day		Evening	
Equipment	***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Crane	62.4	54.5	N/A	N/A	N/A	N/A
Gradall	65.3	61.3	N/A	N/A	N/A	N/A
Gradall	65.3	61.3	N/A	N/A	N/A	N/A
Tractor	65.9	61.9	N/A	N/A	N/A	N/A
Front End Loader	61.0	57.0	N/A	N/A	N/A	N/A
Total	**66**	**67**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/15/2025
Case Description: 9562 Chapman Ave Apartments - Paving

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to West	Residential	56.8	56.8	56.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	70	7
Concrete Mixer Truck	No	40		78.8	70	7
Concrete Mixer Truck	No	40		78.8	70	7
Concrete Mixer Truck	No	40		78.8	70	7
Paver	No	50		77.2	70	7
Roller	No	20		80	70	7
Tractor	No	40	84		70	7

		Calculated (dBA)		Results Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck		68.9	64.9	N/A	N/A	N/A	N/A
Concrete Mixer Truck		68.9	64.9	N/A	N/A	N/A	N/A
Concrete Mixer Truck		68.9	64.9	N/A	N/A	N/A	N/A
Concrete Mixer Truck		68.9	64.9	N/A	N/A	N/A	N/A
Paver		67.3	64.3	N/A	N/A	N/A	N/A
Roller		70.1	63.1	N/A	N/A	N/A	N/A
Tractor		74.1	70.1	N/A	N/A	N/A	N/A
	Total	**74**	**74**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/15/2025
Case Description: 9562 Chapman Ave Apartments - Paving

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to South	Residential	56.8	56.8	56.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40		78.8	180	7
Concrete Mixer Truck	No	40		78.8	180	7
Concrete Mixer Truck	No	40		78.8	180	7
Concrete Mixer Truck	No	40		78.8	180	7
Paver	No	50		77.2	180	7
Roller	No	20		80	180	7
Tractor	No	40	84		180	7

	Calculated (dBA)		Results Noise Limits (dBA)			
			Day		Evening	
Equipment	***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck	60.7	56.7	N/A	N/A	N/A	N/A
Concrete Mixer Truck	60.7	56.7	N/A	N/A	N/A	N/A
Concrete Mixer Truck	60.7	56.7	N/A	N/A	N/A	N/A
Concrete Mixer Truck	60.7	56.7	N/A	N/A	N/A	N/A
Paver	59.1	56.1	N/A	N/A	N/A	N/A
Roller	61.9	54.9	N/A	N/A	N/A	N/A
Tractor	65.9	61.9	N/A	N/A	N/A	N/A
Total	**66**	**66**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/15/2025
Case Description: 9562 Chapman Ave Apartments - Painting

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to West	Residential	56.8	56.8	56.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	70	7

		Calculated (dBA)		Results Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Compressor (air)		67.7	63.8	N/A	N/A	N/A	N/A
	Total	**68**	**64**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Homes to South	Residential	56.8	56.8	56.8

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	180	7

		Calculated (dBA)		Results Noise Limits (dBA)			
				Day		Evening	
Equipment		***Lmax**	**Leq**	Lmax	Leq	Lmax	Leq
Compressor (air)		59.5	55.6	N/A	N/A	N/A	N/A
	Total	**60**	**56**	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX D

Operational Reference Noise Measurements and Noise Calculation Printouts

Measurement Report

Report Summary

Meter's File Name	831_Data.001	Computer's File Name	SLM_0002509_831_Data_001.15.ldbin
Meter	831		
Firmware	2.314		
User	GT		Location
Description	Magnolia St Park		
Note	2 people working in Garden, a dog walker, birds and vehicles on Magnolia St		
Start Time	2022-04-06 08:42:32	Duration	0:15:00.0
End Time	2022-04-06 08:57:32	Run Time	0:15:00.0
Pause Time	0:00:00.0		

Results

Overall Metrics

LA_{eq}	45.7 dB		
LAE	75.2 dB	SEA	--- dB
EA	3.7 µPa²h		
LZ_{peak}	99.0 dB	2022-04-06 08:42:33	
LAS_{max}	58.6 dB	2022-04-06 08:42:32	
LAS_{min}	39.4 dB	2022-04-06 08:50:06	
LA_{eq}	45.7 dB		
LC_{eq}	60.0 dB	LC_{eq} - LA_{eq}	14.3 dB
LAI_{eq}	49.8 dB	LAI_{eq} - LA_{eq}	4.2 dB

Exceedances	Count	Duration
LAS > 65.0 dB	0	0:00:00.0
LAS > 85.0 dB	0	0:00:00.0
LZpeak > 135.0 dB	0	0:00:00.0
LZpeak > 137.0 dB	0	0:00:00.0
LZpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	45.7 dB	45.7 dB	0.0 dB

	LDEN	LDay	LEve	LNight
	45.7 dB	45.7 dB	--- dB	--- dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	45.7 dB		60.0 dB		65.6 dB	
$Ls_{(max)}$	58.6 dB	2022-04-06 08:42:32	70.1 dB	2022-04-06 08:42:33	90.6 dB	2022-04-06 08:42:33
$LF_{(max)}$	58.1 dB	2022-04-06 08:45:16	75.0 dB	2022-04-06 08:42:33	95.1 dB	2022-04-06 08:42:33
$LI_{(max)}$	74.0 dB	2022-04-06 08:42:32	78.9 dB	2022-04-06 08:42:33	96.8 dB	2022-04-06 08:42:32
$LS_{(min)}$	39.4 dB	2022-04-06 08:50:06	56.5 dB	2022-04-06 08:48:37	59.9 dB	2022-04-06 08:49:57
$LF_{(min)}$	37.9 dB	2022-04-06 08:50:05	54.6 dB	2022-04-06 08:48:57	58.0 dB	2022-04-06 08:49:53
$LI_{(min)}$	39.2 dB	2022-04-06 08:50:05	57.2 dB	2022-04-06 08:47:06	60.9 dB	2022-04-06 08:49:57
$L_{Peak(max)}$	74.9 dB	2022-04-06 08:50:36	84.9 dB	2022-04-06 08:42:33	99.0 dB	2022-04-06 08:42:33

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	48.8 dB
LAS 10.0	47.7 dB
LAS 33.3	45.8 dB
LAS 50.0	45.0 dB
LAS 66.6	44.3 dB
LAS 90.0	43.0 dB

Summary					
File Name	831_Data.002				
Serial Number	0002509				
Model	Model 831				
Firmware Version	2.301				
User	GT				
Location	At 7080 Mayten Ave - Edge of MFR Parking Lot				
Job Description	Mayten & Foothill				
Note					
Measurement Description					
Start	2015-09-10 15:54:09				
Stop	2015-09-10 16:10:10				
Duration	0:16:00.5				
Run Time	0:16:00.5				
Pause	0:00:00.0				
Pre Calibration	2015-09-10 15:32:49				
Post Calibration	None				
Calibration Deviation	---				
Overall Settings					
RMS Weight	A Weighting				
Peak Weight	A Weighting				
Detector	Slow				
Preamp	PRM831				
Microphone Correction	Off				
Integration Method	Linear				
OBA Range	High				
OBA Bandwidth	1/1 and 1/3				
OBA Freq. Weighting	Z Weighting				
OBA Max Spectrum	Bin Max				
Gain	0.0 dB				
Overload	143.1 dB				
		A	**C**	**Z**	
Under Range Peak		**75.6**	72.6	77.6 dB	
Under Range Limit		**26.1**	26.4	31.8 dB	
Noise Floor		17.0	17.3	22.5 dB	
Results					
LAeq	52.1 dB				
LAE	81.9 dB				
EA	17.242 µPa²h				
LApeak (max)	2015-09-10 16:03:36	98.6 dB			
LASmax	2015-09-10 16:03:36	74.6 dB			
LASmin	2015-09-10 15:54:57	41.3 dB			
SEA	-99.9 dB				
LAS > 65.0 dB (Exceedance Counts / Duration)	6	11.6 s			

LAS > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LApeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**':00-23:00**	**3:00-07:00**	**Lden**
	52.1	52.1	-99.9	52.1
LCeq	65.0 dB			
LAeq	52.1 dB			
LCeq - LAeq	12.9 dB			
LAleq	61.6 dB			
LAeq	52.1 dB			
LAleq - LAeq	9.5 dB			
# Overloads	0			
Overload Duration	0.0 s			
# OBA Overloads	0			
OBA Overload Duration	0.0 s			

Statistics	
LAS5.00	55.0 dB
LAS10.00	53.4 dB
LAS33.30	49.1 dB
LAS50.00	47.1 dB
LAS66.60	45.8 dB
LAS90.00	43.9 dB

Calibration History

Preamp	**Date**	**re. 1V/Pa**	**6.3**
PRM831	2015-09-10 15:32:49	-25.6	73.9
PRM831	2015-08-14 17:54:36	-26.3	36.4
PRM831	2015-08-05 20:29:18	-24.7	64.2
PRM831	2015-07-24 14:47:10	-25.6	60.9
PRM831	2015-05-05 14:56:20	-25.8	61.2
PRM831	2015-04-22 8:42:55	-26.3	58.2
PRM831	2015-04-17 11:29:03	-26.3	21.3
PRM831	2015-04-17 9:59:48	-26.0	30.6
PRM831	2015-04-17 8:00:28	-26.0	9.4
PRM831	2061-08-11 15:40:00	-26.0	44.2
PRM831	2014-10-15 14:30:38	-26.0	72.4

CA15NA
Single–Stage Air Conditioner with Puron® Refrigerant
1–1/2 To 5 Tons

Carrier
turn to the experts

Product Data

INDUSTRY LEADING FEATURES / BENEFITS

Efficiency

- 14.0 SEER / 11.7 – 12.2 EER (based on tested combination)
- Microtube Technology™ refrigeration system

Reliability

- Puron® refrigerant
- Scroll compressor
- Internal pressure relief valve
- Internal thermal overload
- Filter drier

Durability

WeatherArmor™ protection package:

- Solid, durable sheet metal construction
- Dense wire coil guard

Applications

- Long–line – up to 250 feet (76.20 m) total equivalent length, up to 200 feet (60.96 m) condenser above evaporator, or up to 80 ft. (24.38 m) evaporator above condenser (See Longline Guide for more information.)
- Low ambient (down to –20°F/–28.9°C) with accessory kit

NOTE: Ratings contained in this document are subject to change at any time. Always refer to the AHRI directory (www.ahridirectory.org) for the most up–to–date ratings information.

ACCESSORY THERMOSTATS

PART NUMBER	PROGRAM	GAS	ELECTRIC	HEAT PUMP	HEAT	COOL
TC–PAC01	5–2 Day	√	√		1	1
TC–NAC01	NP	√	√		1	1
TCSNAC01	NP	√	√		1	1

THERMOSTAT ACCESSORIES		
PART NUMBER	**DESCRIPTION**	**THERMOSTATS USED WITH**
TSTATXXCNV10‡	Thermostat Conversion Kit (4 to 5 wire) – 10 pack	All Carrier® branded thermostats
TX–LBP01	Large Decorative Backplate	TP–Pxx, TP–Nxx, TC–Pxx
TX–MBP01	Medium Decorative Backplate	TC–Nxx, TB–Pxx

ACCESSORIES

Accessory Kit Number	Description	018	024	030	036	042	048	060
HC32GE234	MOTOR,FAN	X						
HC34GE239	MOTOR,FAN		X	X				
HC38GE219	MOTOR,FAN				X	X		
HC40GE226	MOTOR,FAN						X	X
HH07AT212	BASE,THERM/SUB	X	X	X	X	X	X	X
KAACF1001MED	FILTER KIT	X	X	X	X			
KAACF1101LRG	FILTER KIT					X	X	X
KAACH1201AAA	CRKC HTR KIT					X	X	X
KAACH1401AAA	CRKC HTR KIT	X	X	X	X			
KAACS0201PTC	KIT PTC	X	X	X	X	X	X	X
KAAFT0101AAA	FRZ THERM KIT	X	X	X	X	X	X	X
KAAHI0501PUR	HIGH PRESSURE SW KIT	X	X	X	X	X	X	X
KAALP0401PUR	LOW PRESSURE SW KIT	X	X	X	X	X	X	X
KAALS0201LLS	SOL VALVE KIT	X	X	X	X	X	X	X
KAATD0101TDR	TIME DELAY KIT	X	X	X	X	X	X	X
KAAWS0101AAA	WINTER START KIT	X	X	X	X	X	X	X
KSACY0101AAA	CYCLE PROTRECTOR KIT	X	X	X	X	X	X	X
KSAHS1501AAA	HARD START KIT	X	X	X	X	X	X	X
KSALA0301410	LOW AMBIENT KIT	X	X	X	X	X	X	X
KSALA0601AAA	MOTORMASTER KIT	X	X	X	X	X	X	X
KSASH0601COP	SOUND BLKT KIT				X	X	X	
KSASH1801COP	SOUND BLKT KIT	X	X	X				
KSASH2101COP	SOUND BLKT KIT							X
KSATX0201PUR	TXV KIT	X	X	X				
KSATX0301PUR	TXV KIT				X	X		
KSATX0401PUR	TXV KIT						X	
KSATX0501PUR	TXV KIT							X
KSBTX0201PUR	TXV KIT	X	X	X				
KSBTX0301PUR	TXV KIT				X	X		
KSBTX0401PUR	TXV KIT						X	
TSTATXXSEN01	SENSOR	X	X	X	X	X	X	X

X = Accessory

ELECTRICAL DATA

UNIT SIZE – SERIES	V/PH	OPER VOLTS*		COMPR		FAN	MCA	MAX FUSE† or CKT BRK AMPS
		MAX	MIN	LRA	RLA	FLA		
18–A	208/230/1–60	253	197	47.5	9.0	0.40	11.7	20
24–A				62.9	10.9	0.50	14.1	20
30–A				67.8	12.8	0.75	16.8	25
36–A				79.0	13.6	1.10	18.1	30
42–A				109.0	16.7	1.40	22.3	35
48–A				105.7	15.6	1.40	20.9	35
60–A				127.1	20.8	1.52	27.5	40

* Permissible limits of the voltage range at which the unit will operate satisfactorily

† Time–Delay fuse.

FLA – Full Load Amps

LRA – Locked Rotor Amps

MCA – Minimum Circuit Amps

RLA – Rated Load Amps

NOTE: Control circuit is 24V on all units and requires external power source. Copper wire must be used from service disconnect to unit. All motors/compressors contain internal overload protection.

Complies with 2010 requirements of ASHRAE Standards 90.1

A–WEIGHTED SOUND POWER (dBA)

UNIT SIZE – SERIES	Standard Rating (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dBA without tone adjustment)						
		125	250	500	1000	2000	4000	8000
18–A	75	46.0	55.0	59.5	64.0	60.5	54.5	48.5
24–A	71	50.5	53.5	58.5	60.5	60.0	56.5	52.5
30–A	73	49.5	56.0	62.5	64.0	60.5	57.5	53.5
36–A	75	49.0	57.0	62.5	66.0	61.0	58.5	52.0
42–A	75	52.5	63.0	64.0	63.0	62.0	58.0	52.0
48–A	76	53.0	61.0	64.0	65.5	62.0	59.5	50.5
60–A	75	53.5	57.0	62.5	63.5	61.5	57.5	51.0

NOTE: Tested in compliance with AHRI 270–1995 (not listed with AHRI)

A–WEIGHTED SOUND POWER (dBA) WITH SOUND SHIELD

UNIT SIZE – SERIES	Standard Rating (dBA)	TYPICAL OCTAVE BAND SPECTRUM (dBA without tone adjustment)						
		125	250	500	1000	2000	4000	8000
18–A	75	46.5	55.5	59.5	63.5	60.0	54.0	47.0
24–A	71	47.5	53.5	58.0	59.5	60.0	55.5	49.0
30–A	72	49.0	56.5	61.5	62.5	60.0	57.0	52.0
36–A	73	49.5	57.0	62.0	64.0	60.0	58.0	51.0
42–A	74	53.5	64.0	64.0	62.5	61.0	56.5	50.5
48–A	73	54.5	61.0	63.5	62.5	60.0	56.5	47.5
60–A	73	53.5	59.0	63.0	62.5	59.5	56.0	48.0

NOTE: Tested in compliance with AHRI 270–1995 (not listed with AHRI)

METERING DEVICE

UNIT SIZE – SERIES	INDOOOR	REQUIRED SUBCOOLING °F (°C)
18–A	TXV*	13 (7.22)
24–A		10 (5.56)
30–A		12 (6.67)
36–A		11 (6.11)
42–A		11 (6.11)
48–A		11 (6.11)
60–A		13 (7.22)

* TXV must be ordered separately when indoor coil is not equipped with a TXV. TXV must be hard–shutoff type.

General Information

Serial Number	02509
Model	831
Firmware Version	2.301
Filename	831_Data.001
User	GT
Job Description	Eastshore Elementary School
Location	East Side of Proposed Relocatables
Measurement Description	
Start Time	Wednesday, 2016 June 29 10:09:10
Stop Time	Wednesday, 2016 June 29 10:16:10
Duration	00:07:00.6
Run Time	00:07:00.6
Pause	00:00:00.0
Pre Calibration	Wednesday, 2016 June 29 10:02:23
Post Calibration	None
Calibration Deviation	---

Note

Noise from children playing basketball on court 3' to west and from AC unit at west AC unit on relocatables to north
79 F, 64% hu, 2 mph wind, hazy sky

Overall Data

LAeq		66.6	dB
LASmax	2016 Jun 29 10:10:36	76.1	dB
LApeak (max)	2016 Jun 29 10:14:14	102.5	dB
LASmin	2016 Jun 29 10:16:10	56.8	dB
LCeq		70.2	dB
LAeq		66.6	dB
LCeq - LAeq		3.6	dB
LAIeq		72.5	dB
LAeq		66.6	dB
LAIeq - LAeq		5.9	dB
Ldn		66.6	dB
LDay 07:00-23:00		66.6	dB
LNight 23:00-07:00		---	dB
Lden		66.6	dB
LDay 07:00-19:00		66.6	dB
LEvening 19:00-23:00		---	dB
LNight 23:00-07:00		---	dB
LAE		92.9	dB
# Overloads		0	
Overload Duration		0.0	s
# OBA Overloads		0	
OBA Overload Duration		0.0	s

Statistics

LAS5.00	71.1	dBA
LAS10.00	69.5	dBA
LAS33.30	66.5	dBA
LAS50.00	65.2	dBA
LAS66.60	64.1	dBA
LAS90.00	62.0	dBA
LAS > 65.0 dB (Exceedence Counts / Duration)	29 / 309.4	s
LAS > 85.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 135.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 137.0 dB (Exceedence Counts / Duration)	0 / 0.0	s
LApeak > 140.0 dB (Exceedence Counts / Duration)	0 / 0.0	s

Settings

RMS Weight	A Weighting	
Peak Weight	A Weighting	
Detector	Slow	
Preamp	PRM831	
Integration Method	Linear	
OBA Range	Normal	
OBA Bandwidth	1/1 and 1/3	
OBA Freq. Weighting	Z Weighting	
OBA Max Spectrum	Bin Max	
Gain	+0	dB
Under Range Limit	26.2	dB
Under Range Peak	75.8	dB
Noise Floor	17.0	dB
Overload	143.3	dB

1/1 Spectra

Freq. (Hz):	8.0	16.0	31.5	63.0	125	250	500	1k	2k	4k	8k	16k
LZeq	59.6	57.3	59.9	64.7	64.1	58.0	58.2	63.9	59.9	54.0	47.0	43.7
LZSmax	82.0	75.4	69.5	72.3	72.3	67.5	65.8	74.6	71.8	63.4	63.5	48.9
LZSmin	45.9	52.0	56.2	60.6	56.8	53.5	51.3	52.3	48.4	43.2	41.0	43.0

1/3 Spectra

Freq. (Hz):	6.3	8.0	10.0	12.5	16.0	20.0	25.0	31.5	40.0	50.0	63.0	80.0
LZeq	57.3	53.9	53.9	52.3	53.2	53.4	53.3	55.1	56.5	56.9	61.4	60.4
LZSmax	79.4	74.8	74.9	71.1	70.7	69.2	67.5	64.3	63.3	61.4	67.2	72.0
LZSmin	38.3	35.6	40.9	44.0	45.4	46.8	48.1	50.4	52.2	52.8	57.2	51.1

Freq. (Hz):	100	125	160	200	250	315	400	500	630	800	1k	1.25k
LZeq	60.3	60.2	56.2	53.9	53.3	52.2	52.1	52.7	54.9	57.8	60.1	59.2
LZSmax	66.8	66.9	63.8	62.2	64.2	59.6	60.6	64.0	64.6	73.1	73.6	71.0
LZSmin	52.1	53.2	47.5	46.7	48.6	47.7	44.6	45.0	48.0	46.2	46.1	48.8

Freq. (Hz):	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
LZeq	56.4	55.2	53.1	51.4	48.5	45.9	42.8	43.3	40.1	38.6	38.6	39.7
LZSmax	68.2	69.8	62.8	62.0	58.3	55.8	51.5	63.1	53.6	46.7	44.7	41.8
LZSmin	43.8	42.7	41.7	39.4	38.3	36.8	35.7	35.8	36.8	37.2	37.8	39.5

Calibration History

Preamp	Date	dB re. 1V/Pa
PRM831	29 Jun 2016 10:02:21	-25.8
PRM831	23 May 2016 20:57:21	-24.4
PRM831	21 Apr 2016 20:33:17	-26.4
PRM831	05 Apr 2016 19:44:56	-25.8
PRM831	20 Jan 2016 19:37:37	-25.1
PRM831	04 Jan 2016 15:13:27	-25.0
PRM831	24 Nov 2015 17:51:11	-25.7
PRM831	18 Sep 2015 11:07:45	-24.9
PRM831	10 Sep 2015 15:32:49	-25.6
PRM831	14 Aug 2015 17:54:36	-26.3
PRM831	05 Aug 2015 20:29:18	-24.7

Stationary Noise Calculations at Multi-Family Homes West of Project Site

Stationary Noise Sources	Reference Measurement Distance	Leq	Distances and Calculated Noise Level at Homes to West Horiz. Dist	Vert. Dist	Tot. Dist	Leq
2nd Floor Outdoor Area	10	45.7	120	15	121	24
Southwest Outdoor Area	10	45.7	50	3	50	32
Air Conditioner	3.28	73.0	40	47.5	62	47
Parking Lot Area	5	52.1	15	3	15	42
Basketball Court	3	66.6	40	5	40	44

1 (Line Source: hard=0, soft=.5; Point Source: hard=1, soft=1.5)
(eq. N-2141.2 of TeNS)

Combined Noise Level without Shielding **49** **dBA Leq**

Stationary Noise Sources	Distance from Receptor to Wall	Distance from source to Wall	Height of Wall (feet)	Without Wall Noise Level at Residence	With Wall Noise Level at	Source Height (feet)	Exterior Observer Height (feet)	Source Frequency (hz)	barrier to receiver - b (all)	source to barrier - a	source to receiver - c	path difference y =a+b-c (auto)	line of sight (slope)	fresnel	Barrier Atten
2nd Floor Outdoor /	5	121	8	24	**12**	15	5	800	5.83	121.14	126.33	0.64	1	1.81	-11.92
Southwest Outdoor	5	50	8	32	**18**	3	5	800	5.83	50.34	55.13	1.04	1	2.97	-13.548
Air Conditioner	5	62	8	47	**34**	3	5	800	5.83	62.30	67.13	1.00	1	2.85	-13.405
Parking Lot Area	5	15	8	42	**29**	5	5	800	5.83	15.59	20.30	1.12	1	3.19	-13.79
Basketball Court	5	40	8	44	**31**	5	5	800	5.83	40.42	45.31	0.94	1	2.68	-13.184

Combined Noise Levels with Proposed 8 foot High CMU Wall **37** **dBA Leq**

Stationary Noise Calculations at Multi-Family Homes South of Project Site

Stationary Noise Sources	Reference Measurement Distance	Leq	Distances and Calculated Noise Level at Homes to South Horiz. Dist	Vert. Dist	Tot. Dist	Leq
2nd Floor Outdoor Area	10	45.7	120	15	121	24
Southwest Outdoor Area	10	45.7	5	3	6	50
Air Conditioner	3.28	73.0	90	47.5	102	43
Parking Lot Area	5	52.1	50	3	50	32
Basketball Court	3	66.6	27	5	27	47

1 (Line Source: hard=0, soft=.5; Point Source: hard=1, soft=1.5)
(eq. N-2141.2 of TeNS)

Combined Noise Level without Shielding **51** **dBA Leq**

Stationary Noise Sources	Distance from Receptor to Wall	Distance from source to Wall	Height of Wall (feet)	Without Wall Noise Level at Residence	With Wall Noise Level at	Source Height (feet)	Exterior Observer Height (feet)	Source Frequency (hz)	barrier to receiver - b (all)	source to barrier - a	source to receiver - c	path difference y =a+b-c (auto)	line of sight (slope)	fresnel	Barrier Atten
2nd Floor Outdoor /	5	121	8	24	**12**	15	5	800	5.83	121.14	126.33	0.64	1	1.81	-11.92
Southwest Outdoor	5	6	8	50	**34**	3	5	800	5.83	7.68	11.01	2.50	1	7.11	-16.33
Air Conditioner	5	102	8	43	**30**	3	5	800	5.83	101.89	106.78	0.93	1	2.66	-13.145
Parking Lot Area	5	50	8	32	**19**	5	5	800	5.83	50.18	55.09	0.92	1	2.62	-13.093
Basketball Court	5	27	8	47	**34**	5	5	800	5.83	27.62	32.46	0.99	1	2.83	-13.366

Combined Noise Levels with Proposed 8 foot High CMU Wall **38** **dBA Leq**

Appendix D: Air Quality Impact Analysis

To: City of Garden Grove Planning Department

From: Elaina Chambers, Alex J. Garber, EPD Solutions, Inc.

Date: 4/3/2025

Re: Air Quality Impact Analysis for 9562 Chapman Avenue Apartments Project, EPD Project Number 24-074

This technical memorandum presents an analysis of the air quality impacts for the Chapman Avenue Apartments (proposed Project) located at 9562 Chapman Avenue, within the City of Garden Grove. The Project site encompasses 0.97 total acres and is comprised of a single parcel identified as Assessor Parcel Number (APN) 131-091-03. The site is currently vacant and the Project applicant is proposing to develop the site with a four story multi-family residential building inclusive of 36 dwelling units. The four-story building would have a total gross floor area of 63,047 square feet (SF). The building would have a footprint of 15,496 SF and a maximum height of 45 feet. Development of the site would also include landscaping, utility connections, stormwater facilities, and pavement of parking areas and drive aisles. The proposed Project site is shown in Figure 1, *Project Site Plan*, included at the end of this document.

To support the CEQA document, this report analyzes the proposed Project's construction and net operational impacts to air quality (emission of criteria pollutants) using the California Emissions Estimator Model (CalEEMod Version 2022.1) land use emission model and Emission Factor (EMFAC Version 2021) model. Table 1, *Construction Schedule*, shows the CalEEMod default estimated construction schedule, which is expected to last approximately 6 months.

Table 1: Construction Schedule

Activity	Start Date	End Date	Total Working Days
Site Preparation	7/16/2025	7/17/2025	1
Grading	7/18/2025	8/1/2025	11
Building Construction	8/1/2025	12/18/2025	100
Paving	12/19/2025	12/25/2025	5
Architectural Coating	12/26/2025	1/8/2026	10

Source: CalEEMod Output Sheets (see Attachment A).

The following non-default assumptions and adjustments were used in the CalEEMod emission model for this analysis:

- Land Use: The lot acreage was adjusted to match the site details provided by the client.
- Construction: Assumed that all equipment would be used for 8 hours per workday. As Appendix A of the CalEEMod User Manual only identifies equipment-specific grading rates for Crawler Tractors, Graders, Rubber Tired Dozers, and Scrapers; therefore, Tractors/Loaders/Backhoes equipment that was included in the site preparation and grading phase was replaced with crawler tractors. . An excavator and plate compactor were added to the grading phase to account for the soil excavation and compaction.
- Construction: Removed demolition phase, site is vacant as of July 2024. Extended grading from 2 days to 11 days per soil excavation and compaction.

- Construction: Three total acres graded as default, with a 6-inch depth of grading, to remove 8 feet of soil, the equivalent of 16.5 acres is required during the grading phase.
- Operations: Hearths, wood stoves and wood fireplaces were removed in accordance with SCAQMD Rule 445, which prohibits the installation of wood-burning devices in effort to reduce particulate matter and reduce production of VOCs.[1] Removed gas and propane fireplaces as neither are proposed for the Project.
- Operations: The trip rate was adjusted to match the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition,* auto trip rates for Multi-Family Housing (Low Rise) as generated by the Project's Trip Generation.

SUMMARY OF AIR QUALITY IMPACTS

Air Quality

The proposed Project's maximum daily emissions (regional and local) for construction and operation would not exceed the South Coast Air Quality Management District's (SCAQMD) regional thresholds of significance. In addition, all construction activities would comply with applicable SCAQMD rules and regulations, including Rule 402, Rule 403, Rule 445 and Rule 1113:

- Rule 402, *Public Nuisance*: Prohibits the discharge of air contaminants that cause injury, nuisance, or annoyance to the public or damage to property.
- Rule 403, *Fugitive Dust*: Aims to minimize fugitive particulate matter dust emissions during construction activities.
- Rule 445, *Wood Burning Devices:* Reduce emission production of particulate matter and volatile organic compounds from wood burning devices.
- Rule 1113, *Architectural Coatings*: Allows only low-volatile organic compounds (VOC) paints to be used.

The construction and operation of the proposed Project would not exceed SCAQMD thresholds for any of the six criteria pollutants. Projects that do not exceed the regional thresholds are assumed to not have a significant impact on both a project level and cumulative level. The proposed Project aligns with SCAQMD'S 2022 Air Quality Management Plan (AQMP), reflecting adherence to regional air quality management goals and standards. Furthermore, odors produced by construction and operation of the proposed Project would be minimal and comply with SCAQMD Rule 402. Therefore, the proposed Project would have less-than-significant air quality impacts.

AIR QUALITY

Methodology and Model Inputs

To calculate the operational impacts, the air quality emissions were estimated using CalEEMod. The passenger vehicles were analyzed using the CalEEMod default trip distance information.

[1] SCAQMD (2020). *Rule 445, Wood-Burning Devices. https://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-445.pdf*

Regional Emissions

The SCAQMD has adopted maximum daily emission thresholds (pounds/day) for the criteria pollutants during construction and operation of a project.[2] While incremental regional air quality impacts of an individual project are generally very small and difficult to measure, SCAQMD's regional maximum emission thresholds set standards to reduce the burden of SCAQMD to attain and maintain ambient air quality standards. The regional thresholds apply to the criteria pollutants mentioned in Table 2 and Table 3 along with the CalEEMod Project emissions. These emission thresholds include the Project emissions generated both from onsite sources (such as off-road construction equipment and fugitive dust) and off-site sources (vehicle travel arriving to and leaving from the site). To calculate the operational impacts, the air quality emissions were estimated using CalEEMod. As shown in Table 2 and Table 3, the Project would generate emissions below the SCAQMD thresholds, and therefore result in less-than-significant regional air quality impacts.

Table 2: Regional Construction Emission Estimates

Construction Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
2025						
Site Prep	0.7	5.6	6.4	<0.1	0.7	0.4
Grading	1.8	15.8	15.6	<0.1	2.9	1.7
Building Construction	0.8	7.6	10.5	<0.1	0.7	0.4
Paving	1.0	5.3	7.1	<0.1	0.5	0.3
Architectural Coating	40.3	1.2	1.8	<0.1	0.1	<0.1
Maximum Daily Emissions 2025	40.3	15.8	15.6	<0.1	2.9	1.7
2026						
Architectural Coating	40.3	1.2	1.7	<0.1	0.1	<0.1
Maximum Daily Emissions 2026	40.3	1.2	1.7	<0.1	0.1	<0.1
Maximum Daily Emission 2025-2026	**40.3**	**15.8**	**15.6**	**<0.1**	**2.9**	**1.7**
SCAQMD Significance Thresholds	*75*	100	*550*	150	150	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: ROG = reactive organic gases, NO_x = nitrogen oxides, CO = carbon monoxide, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter, PM2.5 = particulate matter 2.5 microns in diameter
Source: CalEEMod Output Sheets (see Attachment A).

[2] SCAQMD. (March 2023). *South Coast AQMD Air Quality Significance Thresholds*. Referenced at https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf?sfvrsn=25.

Table 3: Regional Operational Emission Estimates

Operational Activity	Maximum Daily Regional Emissions (pounds/day)					
	ROG	**NO_x**	**CO**	**SO_2**	**PM10**	**PM2.5**
Mobile	0.7	0.5	5.5	<0.1	1.3	0.3
Area	1.6	<0.1	2.0	<0.1	<0.1	<0.1
Energy	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Total Project Operational Emissions	**2.4**	**0.6**	**7.6**	**<0.1**	**1.3**	**0.3**
SCAQMD Significance Thresholds	*55*	*55*	*550*	150	150	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: ROG = reactive organic gases, NO_x = nitrogen oxides, CO = carbon monoxide, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter, PM2.5 = particulate matter 2.5 microns in diameter
Source: CalEEMod Output Sheets (see Attachment A).

Local Emissions

Localized significance thresholds (LSTs) were also adopted by the SCAQMD due to project-related construction or operational air emissions having the potential to exceed the State and national air quality standards in the project vicinity, while not exceeding the regional emission significance thresholds adopted by the SCAQMD. These thresholds set the maximum rates of daily construction or operational emissions from a project site that would not exceed a national or State ambient air quality standard.[3] The differences between regional thresholds and LSTs are as follows:

1. Regional thresholds include all sources of project construction and operational emissions generated from onsite and offsite emission sources whereas the LSTs only consider the emissions generated from onsite emission sources.
2. LSTs only apply to carbon monoxide (CO), nitrogen oxides (NO_x), and particulate matter (PM_{10} and $PM_{2.5}$), while regional thresholds include both reactive organic gases (ROG) and sulfur dioxide (SO_2).
3. Regional thresholds apply to emission sources located anywhere within the SCAQMD whereas the LSTs are location dependent and rely on the size of the project and emission location relative to the nearest sensitive receptor.

SCAQMD provides screening tables (Appendix C of the SCAQMD *2008 Final Localized Significance Threshold Methodology*) for projects that disturb less than or equal to 5 acres in a day.[4] These tables were created to easily determine if the daily emissions of NO_x, CO, PM_{10}, and $PM_{2.5}$ from a project could result in a significant impact to the local air quality. The thresholds are determined by:

[3] SCAQMD 2008: Final Localized Significance Threshold Methodology. Referenced at http://www.aqmd.gov/docs/defaultsource/ceqa/handbook/localized-significance-thresholds/final-lst-methodology-document.pdf.

[4] SCAQMD 2008: Final Localized Significance Threshold Methodology Appendix C. Referenced at http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2.

- Source receptor area (SRA), which is the geographic area within the SCAQMD that can act as both a source of emissions and a receptor of emission impacts (the Project is located within SRA 17, Central Orange County);
- Size of grading disturbance (construction)/size of the project (operation); and
- Distance to the nearest sensitive receptor, which is defined as an individual who is most susceptible to negative health effects when exposed to air pollutants and includes children, the elderly, and adults with chronic health issues. Locations for such receptors include residences, schools, elderly care centers, and hospitals.

Table 4, *Construction Equipment Modeled in CalEEMod and Acres Disturbed per Day*, shows the amount of grading that would occur during the demolition, site preparation, and grading phases. As can be seen in Table 4, the phase with the most ground disturbance would be the grading phase, with a maximum of 1.5 acres of total ground disturbance per day occurring though use of graders, dozers, and tractors traversing the site. However, based on SCAQMD's "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds", projects that grade more acreage than the size of the project should utilize the project acreage for the LST screening tables instead of the acres graded. The Project site is 0.97 acres, thus the Project's maximum amount of ground disturbance per day is limited to 0.97 acres according to SCAQMD methodology, which limits construction LST analysis to the Project gross acreage.[5] The smallest acres graded value in the screening tables is 1-acre, so that table was utilized for this analysis.

Distance to the nearest sensitive receptor also determines the emission thresholds. The sensitive receptors closest to the Project site include residential homes about 2.5 meters west of the Project site boundary; therefore, the construction and operational emission thresholds for 25 meter distance from the nearest receptor and 1 acre project site was used, because 25 meters is the lowest distance threshold provided by SCAQMD. Table 5, *Construction Localized Emission Estimates*, show the thresholds and estimated maximum daily construction emissions for the proposed Project. As shown in Table 5, the proposed Project would not exceed the SCAQMD LST thresholds and would therefore have a less-than-significant localized construction air quality impact.

[5] South Coast Air Quality Management District. (2005). *Sample Construction Scenarios for Projects Less than Five Acres in Size*. Accessed: https://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/final-sample-construction-scenario-report.pdf?sfvrsn=9a641d61_2

Table 4: Construction Equipment Modeled in CalEEMod and Acres Disturbed per Day

Activity	Equipment Type	Equipment Quantity	Operating Hours per Day	Acres Disturbed per piece of Equipment per Day	Acres Disturbed per Day
Site Preparation	Graders	1	8	0.5	0.5
	Tractors/Loaders/Backhoes	0	8	0	0
	Crawler Tractors	1	8	0.5	0.5
				Total Acres Disturbed Per Day	1.0
Grading	Graders	1	8	0.5	0.5
	Rubber Tired Dozers	1	8	0.5	0.5
	Tractors/Loaders/Backhoes	0	8	0	0
	Crawler Tractors	1	8	0.5	0.5
				Total Acres Disturbed Per Day	1.5
				Maximum Acres Disturbed Per Day (Project Maximum Size)	**0.97**

Source: CalEEMod Output Sheets (see Attachment A).

Table 5: Construction Localized Emission Estimates

Construction Activity	Maximum Daily Regional Emissions (pounds/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
2025				
Site Preparation	5.6	6.1	0.6	0.4
Grading	15.8	14.9	2.8	1.6
Building Construction	7.3	18.0	0.6	0.6
Maximum Daily Emissions 2025	15.8	18.0	2.8	1.6
2026				
Paving	5.2	6.3	0.2	0.2
Architectural Coating	1.1	1.5	<0.1	<0.1
Maximum Daily Emissions	5.2	6.3	0.2	0.2
Maximum Daily Emission 2025-2026	**15.8**	**18.0**	**2.8**	**1.6**
SCAQMD Significance Thresholds	81	485	4	3
Threshold Exceeded?	**No**	**No**	**No**	**No**

Notes: NO_x = nitrogen oxides, CO = carbon monoxide, PM_{10} = particulate matter 10 microns in diameter, $PM_{2.5}$ = particulate matter 2.5 microns in diameter
Source: CalEEMod Output Sheets (see Attachment A).

According to the SCAQMD LST methodology, LSTs apply to project stationary mobile sources (SCAQMD, 2008a). Projects that involve mobile sources that spend long periods queuing and idling at a site, such as transfer facilities or warehousing and distribution buildings, have the potential to exceed the operational

localized significance thresholds. The proposed Project would operate as 36 residential units, which do not involve vehicles idling or queueing for long periods. Therefore, due to the lack of significant stationary source emissions, impacts related to operational localized significance thresholds would be less than significant.

Air Quality Management Plan Consistency

SCAQMD's CEQA Handbook provides the following two criteria to determine whether a project would be consistent or in conflict with the AQMP:

1. The Project would not generate population and employment growth that would be inconsistent with Southern California Association of Governments (SCAG)'s growth forecasts.
2. The Project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

Consistency Criterion No. 1 refers to the SCAG's growth forecasts, and associated assumptions included in the AQMP. The future air quality levels projected in the AQMP are based on SCAG's growth projections, which are based, in part, on the general plans of cities located within the SCAG region. Therefore, if the level of housing and employment growth related to the proposed Project is consistent with the applicable assumptions used in the development of the AQMP, the Project would not jeopardize attainment of the air quality levels identified in the AQMP.

The Project site has a General Plan land use designation of Residential / Commercial Mixed Use 2 (RC2) and is zoned as Neighborhood Mixed Use (NMU), which both allow residential development at a density of up to 24.0 dwelling units per acre. However, the proposed Project includes four units restricted for Very-Low Income households that provide a 50 percent density bonus and would provide for housing as required by the City's Regional Housing Needs Allocation.[6] It is anticipated that tenant, residential, and employment base for both the construction and operation of the Project would come from the existing population in the region. The California Department of Finance estimated that the City had a vacancy rate of 2.5% in 20241 and City allocated 19,168 new housing units for the 2021-2029 planning period through the Regional Housing Needs Assessment (RHNA). A, and as of 2024, 639 new permits have been issued towards meeting this target.[7] Also, the local labor force remains stable, with approximately 63.8% of City residents aged 16 and over in the civilian workforce and an unemployment rate of 4.2% in February 2025.[8] These factors provide that the construction and operation of the proposed Project would primarily draw from the existing population, meeting local housing needs and utilizing the current workforce. Thus, the proposed Project would not induce population growth or growth in the area. Therefore, implementation of the Project would not exceed the growth assumptions for the Project site. As a result, the proposed Project would be consistent with Criterion 1.

Consistency Criterion No. 2 refers to the California Ambient Air Quality Standards. An impact would occur if the long-term emissions associated with the proposed Project would exceed SCAQMD's regional significance thresholds for operation-phase emissions. As presented in Table 3, operation of the proposed

[6] City of Garden Grove Housing Element. Accessed: https://ggcity.org/housing-element
[7] City of Garden Grove. *Inter-Department Memorandum*. Accessed https://agendasuite.org/iip/gardengrove/file/getfile/15406?utm_source=chatgpt.com
[8] California Employment Development Department Labor Force and Unemployment Rate for Cities February 2025. Accessed: https://labormarketinfo.edd.ca.gov/data/labor-force-and-unemployment-for-cities-and-census-areas.html

Project would result in emissions that do not exceed any SCAQMD thresholds. Therefore, the proposed Project would be consistent with Criterion No. 2.

As the Project would be consistent with both Criterion No. 1 and 2, impacts related to consistency with the AQMP would be less than significant.

Odors

Odors would be produced during the construction of the proposed Project due to the operation of heavy-duty off-road equipment. The primary odor emitted would be diesel particulate matter (DPM) from the vendor trucks and heavy-duty off-road equipment. This odor may be noticeable by nearby residents; however, these odors would be expected and not necessarily objectionable. These odors would also dissipate quickly and would be temporary. Therefore, due to the nature of the odor produced during construction as temporary and non-objectionable to a substantial number of people, the odor impact from construction of the proposed Project would be less than significant.

For operational odor emissions, SCAQMD's *CEQA Air Quality Handbook* describes odor complaints associated with the following land uses:

- Agricultural uses
- Chemical plants
- Composting activities
- Dairies
- Fiberglass molding
- Food processing plants
- Landfills
- Refineries
- Wastewater treatment plants

The Project does not propose any of the above land uses and is required to comply with SCAQMD Rule 402, *Nuisance*, which states:

> *A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.*

Thus, impacts associated with odor produced by operation of the proposed Project would be less than significant.

Conclusion

The proposed Project's maximum daily regional and localized construction and operational emissions would not exceed SCAQMD's regional thresholds of significance, as detailed in Tables 2 through 5. All construction and operational activities would comply with applicable SCAQMD rules and regulations and not exceed any criteria pollutant thresholds. Additionally, the proposed Project is consistent with SCAQMD'S 2022 AQMP, reflecting adherence to regional air quality management goals and standards. Finally, odors produced during construction would be temporary and not significantly objectionable, and during operation, the proposed Project involves residential land uses that typically do not generate significant odor complaints

and would comply with SCAQMD Rule 402. Therefore, the proposed Project would result in less-than-significant air quality impacts without requiring mitigation.

Figure 1: Project Details

PROJECT SUMMARY

PROJECT SITE INFORMATION

APN#	ADDRESS	GENERAL PLAN LAND USE	ZONING	NET LOT AREA (SF)	NET LOT AREA (ACRE)	GROSS LOT AREA (SF)	GROSS LOT AREA (ACRE)
131-091-03	9562 CHAPMAN AVENUE, GARDEN GROVE	RESIDENTIAL / COMMERCIAL MIXED USE 2 (RC2)	NEIGHBORHOOD MIXED USE (NMU)	35,916 SF	.82 ACRES	42,066 SF	.97 ACRES

PROJECT CONSTRUCTION TYPE	3 STORY TYPE V OVER 1 STORY TYPE I (PARKING + RESIDENTIAL) = 4 STORY TOTAL

SETBACKS	ALLOWED	PROPOSED	NOTES
FRONT SETBACK	15'-0" MIN.	8'-0"	G.G.M.C. § 15.300.070 NMU Development Standards Table 9.15-5
SIDE SETBACK	0-4"	0'-0" TO 33'-0"	
CORNER SIDE SETBACK	N/A	N/A	
REAR SETBACK	0'-4"	47'-0"	

DENSITY				
	24 DU/AC	24 DU	BASE DENSITY (24 DU/AC) =	24 DU
	50% DENSITY INCREASE WITH STATE DENSITY LAW		24 DU x 0.5 =	12 DU
			TOTAL (37.26 DU/AC) =	36 DU

FLOOR AREA RATIO			
		1.01	

FLOOR AREA			
	TOTAL =	42,549 SF	
	RESIDENTIAL =	32,619 SF	
	DECK =	3,504 SF	
	CIRCULATION =	6,426 SF	

BUILDING HEIGHT			
	55'-3" or 4 STORIES	4 STORY / 48'-0" TOP OF ROOF STRUCTURE	G.G.M.C. § 15.300.070 NMU Development Standards Table 9.15-5

LOT COVERAGE				
LOT COVERAGE AREA (NO MAXIMUM)	BUILDING FOOTPRINT =	15,466 SF	43%	G.G.M.C. § 15.300.070 NMU Development Standards Table 9.15-5
	PODIUM LEVEL HARDSCAPE AREA =	2,541 SF	7%	MAXIMUM CROSS FOOTPRINT = 40,000 SF
	PODIUM LEVEL LANDSCAPE AREA =	317 SF	1%	NO MINIMUM OR MAXIMUM LOT COVERAGE
	OPEN DRIVEWAY =	10,232 SF	28.5%	G.G.M.C. § 15.300.070 C NMU Development Standards
	GROUND LEVEL HARDSCAPE AREA =	1,000 SF	4%	PROJECT IS 100% RESIDENTIAL AND PEDESTRIAN PLAZA SHALL NOT BE REQUIRED
	GROUND LEVEL LANDSCAPE AREA =	3,924 SF	10.5%	
				G.G.M.C. § 15.130.020 C.5. NMU Development Standards
	LANDSCAPE AREA (FRONT YARD Set back @ 738 sf) =	257 SF	35.1%	65% OF FRONT YARD = 1,107 SF REQUIRED (WAIVER REQUESTED)

UNIT SUMMARY

PLAN	DESCRIPTION	QUANTITY	MIN. AREA	G.G.M.U. § 15.110.030 Table 9.15-5	GROSS AREA	GROSS AREA SUBTOTAL	DECK	TOTAL DECK
UNIT A	1 BEDROOM / 1 BATH FLAT	16 UNITS	700 SF		696 SF	10,936 SF	96 SF	1,366 SF
UNIT A2	1 BEDROOM+DEN / 1 BATH FLAT	5 UNITS	750 SF		955 SF	4,875 SF	88 SF	490 SF
UNIT B	2 BEDROOM / 2 BATH FLAT	9 UNITS	900 SF		935 SF	8,415 SF	88 SF	882 SF
UNIT C1	3 BEDROOM / 2 BATH FLAT	6 UNITS	1,000 SF		1,156 SF	6,936 SF	94 SF	564 SF
PROJECT UNIT TOTAL		36 UNITS				30,492 SF		3,304 SF

PARKING SUMMARY

	PROPOSED		PROVIDED		PARKING BREAK DOWN
	MINIMUM REQUIRED				STANDARD (PARALLEL) = 23 SPACES
	1.5/1 UNIT	1.5 SPACE PER UNIT = 31 SPACES	COVERED STANDARD =	43 SPACES	STANDARD (PARALLEL) = 2 SPACES
	2.5/1 & 3.5/1 UNIT	1.5 SPACES PER UNIT = 23 SPACES	COVERED ACCESSIBLE =	4 SPACES	STANDARD (VERTICAL) = 12 SPACES
			OPEN "PARALLEL" =	2 SPACES	STANDARD EV CAPABLE = 5 SPACES
					STANDARD EV EQUIPPED = 2 SPACES
					HC EV EQUIPPED = 1 SPACES
					HC ACCESSIBLE = 3 SPACES
		TOTAL = 44 SPACES		TOTAL = 49 SPACES	TOTAL = 49 SPACES

BUILDING SUMMARY

	RESIDENTIAL / COMM. ROOM	DECK	CIRCULATIONS / LOBBY	MECHANICAL / VERTICAL CIRCULATION / GARAGE	NET BUILDING FLOOR AREA	TOTAL GROSS BUILDING FLOOR AREA
LEVEL 1			536 SF	17,667 SF	539 SF	18,197 SF
LEVEL 2	10,883 SF	972 SF	2,016 SF	1,073 SF	13,935 SF	14,909 SF
LEVEL 3	10,883 SF	1,266 SF	1,043 SF	675 SF	11,926 SF	13,871 SF
LEVEL 4	10,883 SF	1,266 SF	1,043 SF	675 SF	11,926 SF	13,871 SF
TOTAL	32,619 SF	3,504 SF	6,426 SF	20,458 SF	42,549 SF	63,847 SF
GARAGE				17,667 SF		

OPEN SPACE / AMMENITY SUMMARY

	REQUIRED	G.G.M.U. § 15.110.030 E Multi-Family Residential	PROPOSED	
COMMON OPEN SPACE	* 1,800 SF MIN. OUTDOOR ACTIVE OPEN SPACE WITH 4 BBQ AREA WITH SEATING,		PODIUM OPEN =	2,738 SF
	COMMUNITY GARDEN AT 72 SF, BUSINESS CENTER WITH 3 SEATIONS,		COMMUNITY ROOM / INDOOR RECREATIONAL AREA =	1,199 SF (50% OF 2,217 SF)
	GYM AT 250SF, CLUBHOUSE WITH KITCHEN AT 469 SF AND SPA AT 91SF		GROUND PASSIVE / ACTIVE OPEN =	7,000 SF
	202.7 SF COMMON OPEN SPACE / UNIT =	7,295 SF	SUB-TOTAL =	7,666 SF
PRIVATE OPEN SPACE				
	97.3 SF MIN. PRIVATE OPEN SPACE / UNIT =	3,504 SF	PRIVATE DECK =	3,504 SF
TOTAL OPEN SPACE	300 SF COMBINED OPEN SPACE / UNIT TOTAL =	10,800 SF	TOTAL =	11,170 SF

STORAGE		G.G.M.U. § 15.140.060 E. Special Requirements
	150 CF PER UNIT OF STORAGE SPACE	36 STORAGE SPACES AT 150 CF MIN. PROVIDED AT GARAGE

BICYCLE SUMMARY		G.G.M.U. § 15.140.040 (E)
	REQUIRED	PROVIDED
BICYCLE SPACE	SPACE PER 10 REQUIRED PARKING SPACES (36 SPACES/10) =	BICYCLE RACK LOCATED IN GARAGE = 4 SPACES
	BICYCLE SPACE REQUIRED = 4 SPACES	TOTAL PROVIDED BICYCLE SPACE = 4 SPACES

AERIAL MAP

SCALE: N.T.S.

REQUESTED INCENTIVES AND WAIVERS

CONCESSIONS / WAIVERS:
- ELIMINATE COMMERCIAL USE
- REDUCE REQUIRED FRONT YARD SETBACK
- REDUCE REQUIRED LANDSCAPE AREA IN SETBACK
- REDUCE MINIMUM AREA FOR 1 BEDROOM UNITS
- FIRST FLOOR TO MUST BE UNITS TO BE LOCATED MORE THAN 4'-0" ABOVE GRADE.

PROPOSED UNITS
- 4 VERY LOW INCOME UNITS
- 32 MARKET RATE UNITS

SHEET INDEX

CHAPMAN AVE. APARTMENTS

9562 CHAPMAN AVE, GARDEN GROVE, CA. 92841

APPLICANT
JAGER COMPANY LLC.

PROJECT INFORMATION

Project No. MR230127.00 | October 01, 2024

BSB DESIGN | SD-0.2

BSB DESIGN

ATTACHMENT A: CALEEMOD OUTPUT SHEETS

24-074 Chapman Ave Apartments Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	24-074 Chapman Ave Apartments
Construction Start Date	7/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.80
Precipitation (days)	18.2
Location	9562 Chapman Ave, Garden Grove, CA 92841, USA
County	Orange
City	Garden Grove
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5827
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.28

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	36.0	Dwelling Unit	0.44	63,047	3,811	—	107	—

Other Asphalt Surfaces	0.53	Acre	0.53	0.00	0.00	—	—	—
Enclosed Parking Structure	49.0	Space	0.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Unmit.	2.63	23.4	26.1	0.04	3.62	2.04	5,008
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	40.3	7.57	10.3	0.02	0.68	0.38	2,342
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	0.77	2.65	3.45	0.01	0.28	0.16	745
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.14	0.48	0.63	< 0.005	0.05	0.03	123
Exceeds (Daily Max)	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Average Daily)	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—
2025	2.63	23.4	26.1	0.04	3.62	2.04	5,008
Daily - Winter (Max)	—	—	—	—	—	—	—
2025	40.3	7.57	10.3	0.02	0.68	0.38	2,342
2026	40.3	1.16	1.75	< 0.005	0.10	0.04	244
Average Daily	—	—	—	—	—	—	—
2025	0.77	2.65	3.45	0.01	0.28	0.16	745
2026	0.63	0.02	0.03	< 0.005	< 0.005	< 0.005	3.83
Annual	—	—	—	—	—	—	—
2025	0.14	0.48	0.63	< 0.005	0.05	0.03	123
2026	0.12	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.63

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Unmit.	2.38	0.60	7.56	0.01	1.30	0.34	1,742
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	2.19	0.63	5.19	0.01	1.30	0.34	1,680
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	2.23	0.59	6.13	0.01	1.15	0.30	1,553
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.41	0.11	1.12	< 0.005	0.21	0.06	257
Exceeds (Daily Max)	—	—	—	—	—	—	—

Threshold	55.0	55.0	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Average Daily)	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Annual)	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	3,000
Unmit.	—	—	—	—	—	—	No

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	0.73	0.48	5.47	0.01	1.29	0.33	1,412
Area	1.64	0.02	2.04	< 0.005	< 0.005	< 0.005	5.48
Energy	0.01	0.10	0.04	< 0.005	0.01	0.01	254
Water	—	—	—	—	—	—	20.2
Waste	—	—	—	—	—	—	50.1
Refrig.	—	—	—	—	—	—	0.45
Total	2.38	0.60	7.56	0.01	1.30	0.34	1,742
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	0.73	0.53	5.15	0.01	1.29	0.33	1,355
Area	1.46	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.01	0.10	0.04	< 0.005	0.01	0.01	254
Water	—	—	—	—	—	—	20.2
Waste	—	—	—	—	—	—	50.1
Refrig.	—	—	—	—	—	—	0.45

Total	2.19	0.63	5.19	0.01	1.30	0.34	1,680
Average Daily	—	—	—	—	—	—	—
Mobile	0.64	0.47	4.69	0.01	1.14	0.29	1,224
Area	1.58	0.01	1.40	< 0.005	< 0.005	< 0.005	3.75
Energy	0.01	0.10	0.04	< 0.005	0.01	0.01	254
Water	—	—	—	—	—	—	20.2
Waste	—	—	—	—	—	—	50.1
Refrig.	—	—	—	—	—	—	0.45
Total	2.23	0.59	6.13	0.01	1.15	0.30	1,553
Annual	—	—	—	—	—	—	—
Mobile	0.12	0.09	0.86	< 0.005	0.21	0.05	203
Area	0.29	< 0.005	0.26	< 0.005	< 0.005	< 0.005	0.62
Energy	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	42.1
Water	—	—	—	—	—	—	3.34
Waste	—	—	—	—	—	—	8.29
Refrig.	—	—	—	—	—	—	0.07
Total	0.41	0.11	1.12	< 0.005	0.21	0.06	257

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.66	5.62	6.13	0.01	0.35	0.33	920
Dust From Material Movement	—	—	—	—	0.28	0.03	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	2.52
Dust From Material Movement	—	—	—	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.42
Dust From Material Movement	—	—	—	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.02	0.02	0.28	0.00	0.07	0.02	67.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	1.75	15.8	14.9	0.02	0.79	0.73	2,480
Dust From Material Movement	—	—	—	—	1.98	0.91	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.48	0.45	< 0.005	0.02	0.02	74.7
Dust From Material Movement	—	—	—	—	0.06	0.03	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.08	< 0.005	< 0.005	< 0.005	12.4
Dust From Material Movement	—	—	—	—	0.01	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.04	0.04	0.70	0.00	0.16	0.04	168
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	< 0.005	< 0.005	4.89
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.81
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.75	7.34	9.02	0.02	0.31	0.29	1,883
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.75	7.34	9.02	0.02	0.31	0.29	1,883
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.21	2.01	2.47	< 0.005	0.09	0.08	516
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.37	0.45	< 0.005	0.02	0.01	85.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.09	0.09	1.45	0.00	0.34	0.08	349
Vendor	< 0.005	0.13	0.06	< 0.005	0.03	0.01	128
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.09	0.10	1.25	0.00	0.34	0.08	331
Vendor	< 0.005	0.13	0.06	< 0.005	0.03	0.01	128

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	0.02	0.03	0.36	0.00	0.09	0.02	92.1
Vendor	< 0.005	0.04	0.02	< 0.005	0.01	< 0.005	35.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	0.01	0.07	0.00	0.02	< 0.005	15.3
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	5.81
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.61	5.24	6.25	0.01	0.23	0.21	977
Paving	0.28	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.09	< 0.005	< 0.005	< 0.005	13.4
Paving	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	2.21
Paving	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.06	0.07	0.85	0.00	0.23	0.05	224
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	3.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Architectural Coating (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.17	1.18	1.52	< 0.005	0.04	0.03	179
Architectural Coatings	40.1	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	2.10
Architectural Coatings	0.47	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.35
Architectural Coatings	0.09	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.02	0.02	0.25	0.00	0.07	0.02	66.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.79
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.14	1.51	< 0.005	0.03	0.03	179
Architectural Coatings	40.1	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	2.80
Architectural Coatings	0.63	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.46
Architectural Coatings	0.11	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.02	0.02	0.24	0.00	0.07	0.02	65.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	0.73	0.48	5.47	0.01	1.29	0.33	1,412
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.73	0.48	5.47	0.01	1.29	0.33	1,412
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	0.73	0.53	5.15	0.01	1.29	0.33	1,355
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.73	0.53	5.15	0.01	1.29	0.33	1,355
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	0.12	0.09	0.86	< 0.005	0.21	0.05	203
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.12	0.09	0.86	< 0.005	0.21	0.05	203

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	126

Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	126
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	126
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	126
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	20.8
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	20.8

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	0.01	0.10	0.04	< 0.005	0.01	0.01	129
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.01	0.10	0.04	< 0.005	0.01	0.01	129
Daily, Winter (Max)	—	—	—	—	—	—	—

Apartments Mid Rise	0.01	0.10	0.04	< 0.005	0.01	0.01	129
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.01	0.10	0.04	< 0.005	0.01	0.01	129
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	21.3
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	21.3

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.35	—	—	—	—	—	—
Architectural Coatings	0.11	—	—	—	—	—	—
Landscape Equipment	0.18	0.02	2.04	< 0.005	< 0.005	< 0.005	5.48
Total	1.64	0.02	2.04	< 0.005	< 0.005	< 0.005	5.48
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.35	—	—	—	—	—	—
Architectural Coatings	0.11	—	—	—	—	—	—
Total	1.46	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.25	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—
Landscape Equipment	0.02	< 0.005	0.26	< 0.005	< 0.005	< 0.005	0.62
Total	0.29	< 0.005	0.26	< 0.005	< 0.005	< 0.005	0.62

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	20.2
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	20.2
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	20.2
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	20.2
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	3.34
Other Asphalt Surfaces	—	—	—	—	—	—	0.00

Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	3.34

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	50.1
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	50.1
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	50.1
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	50.1
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	8.29
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	8.29

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.45
Total	—	—	—	—	—	—	0.45
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.45
Total	—	—	—	—	—	—	0.45
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.07
Total	—	—	—	—	—	—	0.07

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	7/16/2025	7/17/2025	5.00	1.00	—
Grading	Grading	7/18/2025	8/1/2025	5.00	11.0	—
Building Construction	Building Construction	8/1/2025	12/18/2025	5.00	100	—
Paving	Paving	12/19/2025	12/25/2025	5.00	5.00	—
Architectural Coating	Architectural Coating	12/26/2025	1/8/2026	5.00	10.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Site Preparation	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Grading	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	8.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	25.9	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	3.85	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	5.18	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	127,670	42,557	0.00	0.00	1,385

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	1.00	0.00	—
Grading	0.00	0.00	16.5	0.00	—
Paving	0.00	0.00	0.00	0.00	0.53

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%
Other Asphalt Surfaces	0.53	100%
Enclosed Parking Structure	0.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	349	0.03	< 0.005
2026	0.00	346	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	243	164	139	79,046	1,813	1,224	1,038	590,488
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	36
Conventional Wood Stoves	0
Catalytic Wood Stoves	0

Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
127670.17499999999	42,557	0.00	0.00	1,385

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	131,970	346	0.0330	0.0040	399,846
Other Asphalt Surfaces	0.00	346	0.0330	0.0040	0.00
Enclosed Parking Structure	0.00	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	1,350,923	60,368
Other Asphalt Surfaces	0.00	0.00

Enclosed Parking Structure	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	26.6	—
Other Asphalt Surfaces	0.00	—
Enclosed Parking Structure	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.94	annual days of extreme heat
Extreme Precipitation	3.65	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	45.0
AQ-PM	74.7

AQ-DPM	43.7
Drinking Water	58.3
Lead Risk Housing	84.2
Pesticides	0.00
Toxic Releases	89.1
Traffic	39.8
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	24.7
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	32.9
Cardio-vascular	44.3
Low Birth Weights	59.2
Socioeconomic Factor Indicators	—
Education	68.2
Housing	71.9
Linguistic	75.8
Poverty	71.1
Unemployment	39.2

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	28.21763121

Employed	26.40831515
Median HI	29.7318106
Education	—
Bachelor's or higher	26.30565892
High school enrollment	100
Preschool enrollment	45.54087001
Transportation	—
Auto Access	19.63300398
Active commuting	17.2334146
Social	—
2-parent households	56.21711793
Voting	19.42769152
Neighborhood	—
Alcohol availability	31.24598999
Park access	14.17939176
Retail density	56.0246375
Supermarket access	76.32490697
Tree canopy	21.40382394
Housing	—
Homeownership	27.07558065
Housing habitability	7.160272039
Low-inc homeowner severe housing cost burden	71.07660721
Low-inc renter severe housing cost burden	37.72616451
Uncrowded housing	12.24175542
Health Outcomes	—
Insured adults	14.83382523
Arthritis	34.9
Asthma ER Admissions	66.8

High Blood Pressure	35.9
Cancer (excluding skin)	47.4
Asthma	49.0
Coronary Heart Disease	31.2
Chronic Obstructive Pulmonary Disease	23.6
Diagnosed Diabetes	26.4
Life Expectancy at Birth	28.9
Cognitively Disabled	62.4
Physically Disabled	60.6
Heart Attack ER Admissions	58.9
Mental Health Not Good	37.4
Chronic Kidney Disease	45.1
Obesity	66.6
Pedestrian Injuries	19.6
Physical Health Not Good	31.5
Stroke	26.0
Health Risk Behaviors	—
Binge Drinking	85.2
Current Smoker	32.9
No Leisure Time for Physical Activity	19.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	35.2
Elderly	57.3
English Speaking	23.7
Foreign-born	88.4
Outdoor Workers	38.5

Climate Change Adaptive Capacity	—
Impervious Surface Cover	28.1
Traffic Density	41.1
Traffic Access	23.0
Other Indices	—
Hardship	71.9
Other Decision Support	—
2016 Voting	45.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	52.0
Healthy Places Index Score for Project Location (b)	22.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

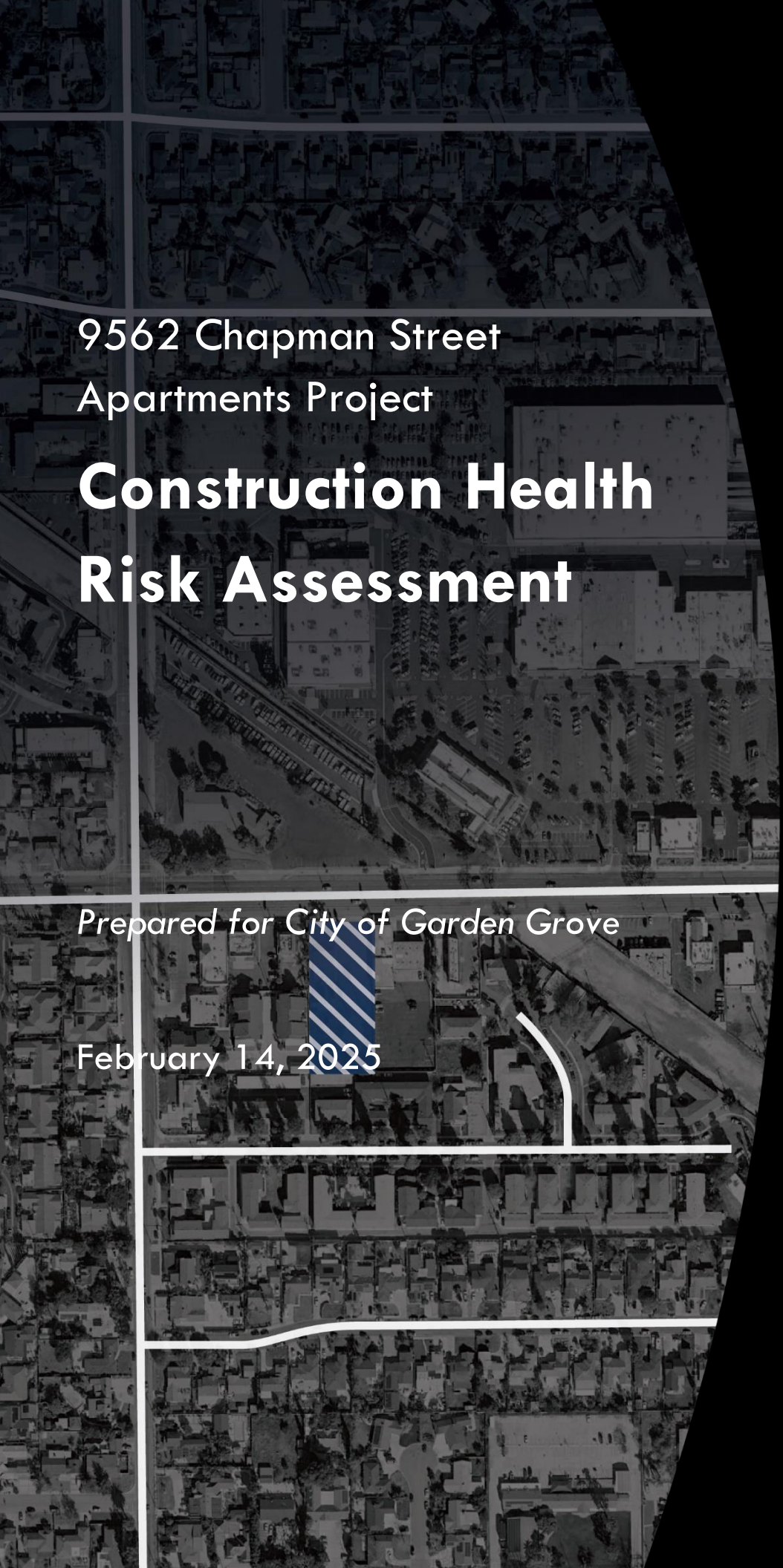
No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification

Land Use	Adjusted to match the site plans provided by client
Construction: Off-Road Equipment	Assumed all equipment would operate 8 hrs a day for a conservative analysis. Replaced Tractor, Loaders, Backhoes with Crawler Tractors for the Site Prep and Grading phases. Excavator and plate compactor added to account for soil excavation and compaction.
Construction: Construction Phases	Removed demolition phase, site is vacant as of July 2024. Extended days of grading to 11 days per 8 feet of soil removal and compaction.
Operations: Hearths	Adjusted wood stoves in accordance with Rule 445. Removed gas and propane fireplaces as neither are proposed for the Project.
Operations: Vehicle Data	Adjusted trip rates to match the 11th Generation ITE Trip Rates for Multifamily Housing Low-Rise as generated by the Project's Trip Generation.
Construction: Dust From Material Movement	3 acres graded total default (with a CalEEMod default of 6 inch depth of grading). To remove and compact up to 8 feet of soil, the equivalent of 16.5 acres is required.

Appendix E: Construction Health Risk Assessment



9562 Chapman Street
Apartments Project

Construction Health Risk Assessment

Prepared for City of Garden Grove

February 14, 2025

Prepared by

Maryam Javanmardi
Assistant Transportation Planner

Alex Garber,
Sr. Technical Planner

Contact:
techservices@EPDsolutions.com

E|P|D
SOLUTIONS, INC

949.794.1180
3333 Michelson Drive, Suite 500
Irvine, CA 92612

EPDSolutions.com

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1 INTRODUCTION

This Construction Health Risk Assessment (HRA) evaluates the potential health impacts from construction of the Chapman Avenue Apartments Project (proposed Project) located at 9562 Chapman Avenue, within the City of Garden Grove. The Project site is within the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

The Project site encompasses 0.97-acre and is comprised of a single parcel identified as Assessor Parcel Number (APN) 133-091-03. The site is currently vacant, and the Project applicant is proposing to develop the site with a four-story multi-family residential building inclusive of 36 dwelling units. Each unit would each have a 95 square foot balcony. The Project also includes a 2,217 square foot (SF) community room and a 2,843 square foot open podium on the second level of the building that would have open space amenities for residents, such as barbeques, fitness equipment, and pet waste stations. The on-grade open space would consist of 4,000 square feet of passive/active open space. The four-story building would have a total floor area of 63,047 SF. The building would have a footprint of 15,496 SF and a maximum height of 45 feet. Development of the site would also include landscaping, utility connections, stormwater facilities, and pavement of parking areas and drive aisles.

The Project site has a General Plan land use designation of Residential / Commercial Mixed Use 2 (RC2) and is zoned as Neighborhood Mixed Use (NMU), which both allow residential development at a density of up to 24.0 dwelling units per acre. The Project location can be found in Figure 1, *Project Location*. The Project Site details can be found in Figure 2, *Project Site Details*.

Figure 1: Project Location

Figure 2: Project Site Details

PROJECT SUMMARY

PROJECT SITE INFORMATION

APN#	ADDRESS	GENERAL PLAN LAND USE	ZONING	NET LOT AREA (SF)	NET LOT AREA (ACRE)	GROSS LOT AREA (SF)	GROSS LOT AREA (ACRE)
131-091-03	9562 CHAPMAN AVENUE, GARDEN GROVE	RESIDENTIAL / COMMERCIAL MIXED USE 2 (RC2)	NEIGHBORHOOD MIXED USE (NMU)	35,916 SF	.82 ACRES	42,066 SF	.97 ACRES

PROJECT CONSTRUCTION TYPE: 3 STORY TYPE V OVER 1 STORY TYPE I (PARKING / RESIDENTIAL) - 4 STORY TOTAL

SETBACKS	ALLOWED		PROPOSED	NOTES
FRONT SETBACK	15'-0" MIN.		6'-6"	G.G.M.C. 9.18.090.070 NMU Development Standards Table 9.18-5
SIDE SETBACK	0'-0"		10'-0" TO 33'-6"	
CORNER SIDE SETBACK	N/A		N/A	
REAR SETBACK	0'-0"		47'-0"	

DENSITY				
	24 DU/AC	24 DU	BASE DENSITY (24 DU/AC) =	24 DU G.G.M.C. 9.18.090.070 NMU Development Standards Table 9.18-5
	50% DENSITY INCREASE WITH STATE DENSITY LAW		24 DU x 0.5 =	12 DU
			TOTAL (37.28 DU/AC) =	36 DU CALCULATIONS PER GROSS ACRE

FLOOR AREA RATIO			
		1.01	

FLOOR AREA		
	TOTAL =	42,549 SF
	RESIDENTIAL =	32,619 SF
	DECK =	3,504 SF
	CIRCULATIONS =	6,426 SF

BUILDING HEIGHT			
	50'-0" or 4 STORIES	4 STORY / 45'-0" TOP OF ROOF STRUCTURE	G.G.M.C. 9.18.090.070 NMU Development Standards Table 9.18-5

LOT COVERAGE				
LOT COVERAGE AREA (NO MAXIMUM)	BUILDING FOOTPRINT =	16,496 SF	43%	G.G.M.C. 9.18.090.070 NMU Development Standards Table 9.18-5
	PODIUM LEVEL HARDSCAPE AREA =	2,541 SF	7%	MAXIMUM GROSS FOOTPRINT - 40,000 SF
	PODIUM LEVEL LANDSCAPE AREA AREA =	217 SF	1%	NO MINIMUM OR MAXIMUM LOT COVERAGE
	OPEN DRIVEWAY =	10,232 SF	28.5%	G.G.M.C. 9.18.090.070 C. NMU Development Standards
	GROUND LEVEL HARDSCAPE AREA =	1,506 SF	4%	PROJECT IS 100% RESIDENTIAL AND PEDESTRIAN PLAZA SHALL NOT BE
	GROUND LEVEL LANDSCAPE AREA =	5,924 SF	16.5%	REQUIRED
				G.G.M.C. 9.18.100.020 C.5. NMU Development Standards
	LANDSCAPE AREA (FRONT YARD SETBACK @ 738 sf)=	237 SF	32.1%	60% OF FRONT YARD = 1,107 SF REQUIRED (WAIVER REQUESTED)

UNIT SUMMARY

PLAN	DESCRIPTION	QUANTITY	MIN. AREA	G.G.M.U. 9.18.110.030 Table 9.18 9	GROSS AREA	GROSS AREA SUBTOTAL	DECK	TOTAL DECK
UNIT A1	1 BEDROOM / 1 BATH FLAT	16 UNITS	750 SF		656 SF	10,496 SF	96 SF	1,568 SF
UNIT A2	1 BEDROOM+DEN / 1 BATH FLAT	5 UNITS	750 SF		935 SF	4,675 SF	98 SF	490 SF
UNIT B1	2 BEDROOM / 2 BATH FLAT	9 UNITS	900 SF		935 SF	8,415 SF	98 SF	882 SF
UNIT C1	3 BEDROOM / 2 BATH FLAT	6 UNITS	1,050 SF		1,136 SF	6,816 SF	94 SF	564 SF
PROJECT UNIT TOTAL		36 UNITS				30,402 SF		3,504 SF

PARKING SUMMARY

	PROPOSED		PROVIDED		PARKING BREAK DOWN
	MINIMUM REQUIRED				STANDARD (9'x19')= 23 SPACES
	1 BR UNIT	1.0 SPACE PER UNIT 21 SPACES	COVERED STANDARD =	43 SPACES	STANDARD (PARALLEL) = 2 SPACES
	2 BR & 3BR UNIT	1.5 SPACES PER UNIT 23 SPACES	COVERED ACCESSIBLE =	4 SPACES	STANDARD EV READY = 13 SPACES
			OPEN PARALLEL =	2 SPACES	STANDARD EV CAPABLE = 5 SPACES
					STANDARD EV EQUIPPED= 2 SPACES
					HC EV EQUIPPED = 1 SPACES
					HC ACCESSIBLE = 3 SPACES
	TOTAL =	44 SPACES	TOTAL =	49 SPACES	TOTAL = 49 SPACES

BUILDING SUMMARY

	RESIDENTIAL / COMM. ROOM	DECK	CIRCULATIONS / LOBBY	MECHANICAL / VERTICAL CIRCULATION / GARAGE	NET BUILDING FLOOR AREA	TOTAL GROSS BUILDING FLOOR AREA
LEVEL 1			539 SF	17,687 SF	539 SF	18,197 SF
LEVEL 2	10,553 SF	972 SF	2,010 SF	1,373 SF	13,935 SF	14,908 SF
LEVEL 3	10,553 SF	1,266 SF	1,943 SF	879 SF	14,092 SF	14,971 SF
LEVEL 4	10,553 SF	1,266 SF	1,943 SF	879 SF	14,092 SF	14,971 SF
TOTAL	32,619 SF	3,504 SF	6,426 SF	20,498 SF	42,549 SF	63,047 SF

GARAGE: 17,687 SF

OPEN SPACE / AMMENITY SUMMARY

	REQUIRED G.G.M.U. 9.18.110.030 B. Multi-Family Residential		PROPOSED	
COMMON OPEN SPACE	* 1,800 SF MIN. OUTDOOR ACTIVE OPEN SPACE WITH 4 BBQ AREA WITH SEATING,		PODIUM OPEN =	2,758 SF
	COMMUNITY GARDEN AT 72 SF, BUSINESS CENTER WITH 5 STATIONS,		COMMUNITY ROOM / INDOOR RECREATIONAL AREA =	1,108 SF (50% OF 2,217 SF)
	GYM AT 2500SF, CLUB HOUSE WITH KITCHEN AT 400 SF AND SPA AT 640SF		ON-GRADE PASSIVE / ACTIVE OPEN =	4,060 SF
	202.7 SF COMMON OPEN SPACE / UNIT =	**7,296 SF**	**SUB-TOTAL =**	**7,866 SF**
PRIVATE OPEN SPACE				
	97.3 SF MIN. PRIVATE OPEN SPACE / UNIT =	**3,504 SF**	**PRIVATE DECK =**	**3,504 SF**
TOTAL OPEN SPACE	**300 SF COMBINED OPEN SPACE / UNIT TOTAL =**	**10,800 SF**	**TOTAL =**	**11,370 SF**

STORAGE	G.G.M.C. 9.12.040.050 E. Spacial Requirements
	150 CF PER UNIT OF STORAGE SPACE — 36 STORAGE SPACES AT 150 CF MIN. PROVIDED AT GARAGE

BICYCLE SUMMARY	G.G.M.U. 9.18.140.040 (E)	
	REQUIRED	PROVIDED
BICYCLE SPACE	1 SPACE PER 10 REQUIRED PARKING SPACES (36 SPACES/10) =	BICYCLE RACK LOCATED IN GARAGE = 4 SPACES
	BICYCLE SPACE REQUIRED 4 SPACES	**TOTAL PROVIDED BICYCLE SPACE = 4 SPACES**

AERIAL MAP

SCALE: N.T.S.

REQUESTED INCENTIVES AND WAIVERS

CONCESSIONS / WAIVERS
- ELIMINATE COMMERCIAL USE
- REDUCE REQUIRED FRONT YARD SETBACK
- REDUCE REQUIRED LANDSCAPE AREA IN SETBACK
- REDUCE MINIMUM AREA FOR 1 BEDROOM UNITS
- FIRST FLOOR HABITABLE UNITS TO BE LOCATED MORE THAN 4'-0" ABOVE GRADE.

PROPOSED UNITS
- 4 VERY LOW INCOME UNITS
- 32 MARKET RATE UNITS

SHEET INDEX

CHAPMAN AVE. APARTMENTS

9562 CHAPMAN AVE, GARDEN GROVE, CA. 92841

APPLICANT
JAGER COMPANY LLC.

PROJECT INFORMATION

Project No. MR230127.00 | October 01, 2024

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 9995 f. 310. 217. 0425

SD-0.2

BSB DESIGN

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1.1 Access and Circulation

The proposed Project would be accessed through a 30-foot-wide driveway along Chapman Avenue. An existing left-hand turn pocket on Chapman Avenue would provide left-turn access to the site for vehicles traveling west along Chapman Ave. The ensuing construction truck routes are described in Section 2.3, *Estimation of Project DPM Emissions*.

1.2 Parking Summary

The driveway would lead directly to a parking garage on the ground level (first floor) of the building that would include 47 vehicle parking spaces and bike racks/storage for residents. Additionally, two guest surface parking spaces are provided at the rear of the Project.

The Project location can be found in Figure 1, *Project Location*. The Project details can be found in Figure 2, *Project Site Details*.

1.3 Purpose of the Report

To support the CEQA document for the proposed Project, this report evaluates the potential health impacts to sensitive receptors from the construction of the Project. This HRA focuses on the emissions of diesel particulate matter (DPM) from the Project's construction on-site and off-site equipment and vehicles, measuring the health risk impact of surrounding land uses. DPM has been identified by the California Air Resources Board (CARB) as a carcinogenic substance responsible for nearly 70% of the airborne cancer risk in California (California Air Resources Board, 2017). The estimated health risk impacts from the Project construction were compared to the health risk significance thresholds recommended by the SCAQMD for use in CEQA assessments.

This HRA employed the following tools to estimate the health impacts of the Project:

- The California Air Pollution Control Officers Association California Emissions Estimator Model (CalEEMod, Version 2022.1) to calculate exhaust emissions from mobile sources such as diesel trucks and construction equipment such as crawler tractors and cranes during the construction of the Project.
- The U.S. Environmental Protection Agency (EPA) AMS/EPA Regulatory Model (AERMOD Version 23132) air dispersion model to estimate DPM impacts to sensitive receptors.
- Cancer Risk Methodology from the California Office of Environmental Health Hazards Assessment (OEHHA) (California Office of Environmental Health Hazards Assessment, 2015) and the SCAQMD (South Coast Air Quality Management District, 2017).

1.4 Summary of the Results

The emissions from Project construction would not result in cancer health risk results that exceed the lifetime cancer risk threshold of 10 in one million at the maximum impacted sensitive receptor during the construction of the Project. The Project's emissions for construction impacts would also not result in a non-cancer risk greater than the 1.0 non-cancer hazard index (HI) threshold. The Project's maximum construction health risk impacts would result in the following:

Maximum Project Construction Health Risk Impacts:

- Sensitive/residential receptor for the 30-year lifetime exposure duration: 2.47 in one million
- Worker receptor: 0.17 in one million
- Sensitive receptor chronic non-cancer HI: 0.01
- Worker receptor chronic non-cancer HI: 0.03

Therefore, the construction of the proposed Project would result in less-than-significant project-level impacts for cancer and non-cancer health risk. Additionally, with no cumulative projects (those under construction or planned to be operational in the foreseeable future) located within 0.25 miles, cumulative impacts would also be less than significant for cancer and non-cancer health risks.

2 HEALTH RISK ASSESSMENT

An HRA is a guide that helps determine whether the risks from current or future exposures to a toxic chemical or substance in the environment could affect the health of a population. In general, the quantification of risk from the development of a project depends on the following factors:

- Identification of the toxic air contaminants (TACs) that may be present in the air;
- Estimation of the amount of TACs released from all emission sources using emission models;
- Estimation of the airborne concentrations of TACs in the geographic area of concern using air dispersion models using information about emissions, source locations, weather, and other factors;
- Estimation of the level of exposure to different concentrations of the TACs at different geographic locations and their consequential health impacts.

Thus, an HRA identifies the TACs that could affect public health, identifies the sources and quantities of the TAC emissions, estimates where the emissions are transported by prevailing meteorological conditions, and assesses the consequential health impacts due to the identified exposures.

The State of California Office of Environmental Health Hazards Assessment (OEHHA) has developed methods for conducting HRAs. As defined under the Air Toxics "Hot Spots" Information and Assessment Act:

> "*A health risk assessment means a detailed, comprehensive analysis prepared pursuant to Section 44361 to evaluate and predict the dispersion of hazardous substances in the environment and the potential for exposure of human populations and to assess and quantify both the individual and population-wide health risks associated with those levels of exposure*" *(California Health and Safety Code)*.

The methodology used to estimate health risks and hazards that could potentially affect nearby sensitive receptors from the emissions of TACs is described below. The methodology included assumptions regarding emission source quantification, configurations and locations, receptor locations, air dispersion modeling, and health risk modeling. As noted above, this HRA focused on DPM emissions that the ARB has identified as the principal airborne carcinogenic substance in California. For purposes of this HRA, DPM was assumed to be comprised of PM_{10} from construction related vehicle and equipment exhaust emissions.

2.1 SCAQMD Significance Thresholds

Project-Level

The City of Garden Grove has not adopted a numerical significance threshold for cancer risk or non-cancer hazards. Therefore, the significance thresholds recommended by the SCAQMD were used for this assessment. The relevant significance thresholds are provided below:

- Cancer Risk: ten (10) persons per million population as the maximum acceptable incremental cancer risk due to exposure to TACs
- Non-Cancer Hazard Index (HI): 1.0

These thresholds are discussed further in Section 2.2, *Health Risk Estimation Methodology*.

Cumulative

The SCAQMD conducted an analysis of the cumulative effects of TACs within the South Coast Air Basin as part of its *Multiple Air Toxics Exposure Study in the South Coast Air Basin* (MATES-V, the draft version of this MATES study series) (South Coast Air Quality Management District, 2021). The MATES-V study expresses cumulative TAC impacts in terms of potential increased cancer risks. The MATES-V Study estimates the cumulative TAC-source cancer risk for the localized area encompassing the Project site ranges from 300 to 400 in one million. DPM-source cancer risks are reflected in the area's ambient cumulative cancer risk along with all other TAC-source risks and account for the predominance (68%) of the total risk shown in MATES-V for the Project site area. The cancer risk upper limit of 400 in a million was assumed to comprise the impact from existing TAC emission sources in the region without the impacts from the Project.

The TAC emissions inventory used in the MATES-V study to estimate health impacts was representative of emissions for the year 2018. In addition to the MATES-V cumulative TAC-source cancer risk noted above, other new or proposed potential TAC-generating projects (related projects) in the Project area not included in the MATES V study could contribute to cumulative TAC impacts. The SCAQMD has published a white paper on addressing cumulative impacts from air pollution (South Coast Air Quality Management District, 2003). The white paper recommends a 1,000-foot distance from a proposed project to identify other development projects that could contribute to cumulative impacts with the proposed Project (South Coast Air Quality Management District , 2019). The 1,000-foot evaluation distance is supported by research-based findings concerning TAC emission dispersion rates from roadways and large sources, showing that emissions diminish substantially between 500 and 1,000 feet from emission sources. While the cumulative analysis incorporates future emissions within 1,000 feet of the source, the project-specific and cumulative significance thresholds of 10 in one million remain the same.

Section 3.2, *Cumulative Analysis,* discusses the cumulative analysis of the Project further.

2.2 Health Risk Estimation Methodology

Cancer Risk

Cancer risks are estimated as the upper-bound incremental probability that an individual would develop cancer due to exposure to potential carcinogens over a specified exposure duration. The estimated risk is expressed as a probability since there is no level below which some level of impact may occur. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF). A risk level of 10 in one million implies a likelihood that up to 10 people in a population of one million equally exposed people could contract cancer if exposed continuously (24 hours per day) to the levels of TACs over a specified duration of time. This risk is an excess cancer risk in addition to any environmental cancer risk borne by a person not exposed to these air toxins.

The exposure dose is the amount of a chemical taken into the body at a given time. In particular, the exposure dose through inhalation ($Dose_{air}$) is a function of the breathing rate, the exposure frequency, and the concentration of exposures. Breathing rates change over time for different age groups and are determined for specific age groups. The $Dose_{air}$ is calculated for each of the following age groups: third trimester to birth, and 0 to 2, 2 to 16, and 16 to 30 years of age. The OEHHA recommends that the 30-year exposure duration be used as the basis for public notification and risk reduction audits and plans (California Office

of Environmental Health Hazards Assessment, 2015). The risks for each age group are summed together to provide a total estimate of lifetime cancer risks for sensitive receptors. To estimate the cancer risk, the $Dose_{air}$ is estimated by applying the following equation to the DPM concentration at each receptor as calculated by the air dispersion model:

$$Dose_{air} = C_{DPM} \times DBR_i \times A \times EF_i \quad \text{(EQ-1)}$$

Where:

$Dose_{air}$ = dose through inhalation (mg/kg/day)

C_{DPM} = period average concentration of DPM as estimated by the air dispersion model ($\mu g/m^3$)

DBR = daily breathing rate for each age group (liters/kg-day)—see Table 1

A = Inhalation absorption factor (unitless = 1)

EF = exposure frequency (days per year)

i – number of age groups

The dose is multiplied by the cancer potency factor, the age sensitivity factors (ASF), the exposure duration (ED), and the fraction of time spent at home (FAH, for sensitive/residential receptors only) divided by averaging time (AT) to arrive at an estimate of cancer risk:

$$\text{Cancer Risk} = Dose_{air,i} \times CPF \times ASF_i \times ED_i \times FAH_i/AT \quad \text{(EQ-2)}$$

Where:

Cancer Risk = Total individual excess inhalation cancer risk, defined as the cancer risk a hypothetical individual faces if exposed to carcinogenic emissions from a particular source for specified exposure durations; this risk is summed over all age groups; cancer risk is expressed in terms of risk per million exposed individuals.

$Dose_{air,i}$ = inhalation dose through inhalation (mg/kg-day)

CPF = inhalation cancer potency factor $(mg/kg\text{-}day)^{-1}$

ASF_i = age sensitivity factors (see Table 1)

ED_i = exposure duration (years)—see Table 1

AT = averaging time of lifetime cancer risk (70 years or 25550 days)

FAH_i = fraction of time spent at home—see Table 1

n = number of age groups

While the OEHHA recommends that the 30-year exposure duration be used as the basis for public notification and risk reduction audits and plans, the Project's construction duration is expected to only span 0.48 year, and no significant DPM emissions are anticipated to occur after the completion of the Project's construction during the operation of the Project. Thus, for the remainder of this report, the lifetime cancer risk will refer to the construction's time span of 0.48 year.

Thus, for the purpose of this HRA, the exposure duration for sensitive/residential receptors' lifetime cancer risk was assumed to only analyze a daily construction duration of eight hours, five days a week, as a reasonable assumption for the site's construction operation hours and was assumed to span the duration of a third trimester pre-birth in 2025 (the Project's starting year of construction) to the year 2026 when the

Project's construction would conclude. Estimates of cancer risk were also provided for informational purposes for adult exposure, also spanning the duration of construction.

Table 1 provides the values for the various cancer risk parameters shown in equations EQ-1 and EQ-2 for the receptor groups examined in this assessment for the construction of the Project. For DPM, the value of the CPF is 1.1 milligrams per kilogram per day.

Table 1: Exposure Assumptions for Cancer Risk–OEHHA/SCAQMD Guidance

Age Group	Exposure Frequency, EF		Exposure Duration (ED) (Years)	Age Sensitivity Factors (ASF)	Fraction Time at Home (FAH)	Daily Breathing Rate[a] (DBR) (l/kg-day)
	Construction		Construction			
	Hours/Day	Days/Year				
Sensitive/Residential Receptor – Pre-birth to Adult (30-year duration)						
3rd Trimester to Birth	8	250	0.25	10	1	361
0 to 2 years	8	250	0.23	10	1	1,090
2 to 16 years	8	250		3	1	745
16 to 30 years	8	250		1	0.73	335
Sensitive Receptor/Residential Child (9-year duration)						
3rd Trimester to Birth	8	250	0.25	10	1	361
0 to 2 years	8	250	0.23	10	1	1,090
2 to 9 years	8	250		3	1	861
Sensitive Receptor/Residential Receptor – Adult (30-year duration)						
17 years and older	8	250	1.62	1	0.73	335
Worker Receptor (25-years duration)						
17 years and older	8	250	1.62	1		230

[a] Daily breathing rates are representative of the 95th percentile for sensitive/residential receptors.
(L/kg-day) = liters per kilogram body weight per day
Source: SCAQMD Rule 1401

Chronic Non-Cancer Hazard

TACs can also cause chronic (long-term) effects on non-cancer illnesses such as reproductive effects, birth defects, or adverse environmental effects. Non-cancer health risks are conveyed in terms of the Hazard Index (HI). A ratio of the predicted concentration of the facility's reported TAC emissions to a concentration is considered acceptable to public health professionals. A significant risk is defined as an HI of 1.0 or greater. An HI of less than 1 indicates that no significant health risks are expected from the facility's TAC emissions. The following equation gives the relationship for the non-cancer hazards for TACs:

$$HI = C_{ann}/REL \quad \text{(EQ-3)}$$

Where:

HI = Hazard Index: an expression of the potential for chronic non-cancer health risks

C_{ann} = Annual average TAC concentration ($\mu g/m^3$)

REL = Reference Exposure Level: the DPM concentration at which no adverse health effects are anticipated

As predicted by the air dispersion model, annual concentrations of DPM are used to estimate chronic non-cancer hazards. The OEHHA has defined a REL for DPM of 5 $\mu g/m^3$.

2.3 Estimation of Project Construction DPM Emissions

Construction DPM Emissions

Construction emissions were calculated using the latest CalEEMod Version 2022.1. DPM construction emissions were based on the CalEEMod construction runs for the proposed construction schedule and equipment inventory, using exhaust PM_{10} construction emissions to represent DPM emissions. Construction-related DPM emissions are expected to primarily occur as a function of heavy-duty equipment that would operate on-site during the construction phase. Additional DPM emissions would occur from the operation of construction vehicles that travel to/from the Project during construction (haul trucks, vendor trucks, and worker vehicles).

These travel link assumptions can be found in Appendices C.

Construction Equipment Emission Inventory Development

The first requirement to conduct the HRA involves identifying and quantifying the sources of construction DPM emissions from the Project, also termed an emissions inventory. Each piece of equipment that emits DPM is identified in terms of its location and physical characteristics (release height, release temperature, etc.) and the chemical nature of the emissions. The predominant sources of DPM emissions resulting from the construction of the Project derive from the heavy-duty diesel trucks that travel to, from, and within the Project site each day, as well as the off-road construction equipment used during the five construction phases: site preparation, grading, building construction, paving, and architectural coating. The Project's DPM exhaust emissions were calculated using the PM_{10} exhaust emissions calculated from CalEEMod. Table 2 shows the Project's construction schedule and Table 3 shows the Project's proposed construction equipment. Table 4 shows the proposed construction vehicle use for worker, vendor, and hauling trips. Table 5 depicts the daily average DPM emissions of the Project's construction. Figure 3 provides the locations of the on-site and off-site construction DPM emission sources.

Table 2: Construction Schedule

Activity	Start Date	End Date	Total Working Days
Site Preparation	7/16/2025	7/17/2025	1
Grading	7/18/2025	8/1/2025	11
Building Construction	8/1/2025	12/18/2025	100
Paving	12/19/2025	12/25/2025	5
Architectural Coating	12/26/2025	1/8/2026	10

Source: CalEEMod Output Sheets (see Attachment A).

Table 3: Proposed Project Construction Equipment Inventory

Activity	Equipment	Number per day	Hours per day	Horse-power	Load Factor
Site Preparation	Graders	1	8	148	0.41
	Crawler Tractors	1	8	84	0.43
Grading	Excavators	1	8	36	0.38
	Graders	1	8	148	0.41
	Rubber Tired Dozers	1	8	367	0.40
	Plate Compactors	1	8	8	0.43
	Crawler Tractors	1	8	87	0.43
Building Construction	Cranes	1	8	367	0.29
	Forklifts	2	8	82	0.20
	Tractors/Loaders/Backhoes	2	8	84	0.37
Paving	Tractors/Loaders/Backhoes	1	8	84	0.37
	Pavers	1	8	81	0.42
	Cement and Mortar Mixers	4	8	10	0.56
	Rollers	1	8	36	0.38
Architectural Coating	Air Compressors	1	8	37	0.48

Source: See CalEEMod Output in Appendix A.

Table 4: Proposed Construction Vehicle Use

Activity	Daily Worker Trips	Daily Vendor Trips	Total Haul Trips
Site Preparation	5	0	0
Grading	13	0	0
Building Construction	26	4	0
Paving	18	0	0
Architectural Coating	5	0	0

Source: See CalEEMod Output in Appendix A.

Table 5: Project On-site and Off-Site Construction Source DPM Daily Emissions

Activity	Working Days	On-Site	Off-Site	Total
		Maximum Daily DPM Emissions[1] (pounds/day)	Maximum Daily DPM Emissions[1] (pounds/day)	Average Daily Construction Emissions (pounds/day)
2025				
Site Preparation	1	0.35	<0.1	
Grading	11	0.79	<0.1	
Building Construction	100	0.31	<0.1	
Paving	5	0.23	<0.1	
Architectural Coating	5	0.04	<0.1	
Average Daily Construction Emissions 2025		0.79	<0.1	**0.79**
2026				
Architectural Coating	5	0.03	<0.1	
Average Daily Construction Emissions 2026		0.03	<0.1	**0.03**
2025-2026 Maximum Daily Construction Emissions (pounds/day)				**0.79**

Source: See Data Attachment in Appendix C.

Atmospheric Dispersion Methodology

Atmospheric dispersion modeling is the mathematical simulation of how air pollutants disperse in the ambient atmosphere. The modeling is performed with computer programs that solve algorithms simulating the movement and dispersion of air pollutants. The air dispersion model uses emissions from various emission sources and meteorological data such as wind speed and direction, air temperature, and atmospheric mixing rates to estimate the air pollutant impacts at various geographic locations (referred to as receptor locations).

Tables 6 and 7 provide the general assumptions applied in the AERMOD model (Version 23132). The AERMOD output sheets can be found in Appendix B for construction, respectively.

Table 6: General Modeling Assumptions

Feature	Assumption
Terrain Processing	Complex terrain; elevations were obtained for the Project site using the EPA AERMAP terrain data pre-processor Version 18081; Data Set: Santa_ana-W.DEM
Land Use	Urban – Based on land use patterns surrounding the Project site.
Meteorological Data	The Fullerton Airport National Weather Service (NWS) Station was used for the years of 2012-2016 as representative of meteorological conditions on the Project site.
Receptor Locations	A uniform network grid was used to include all existing residences and worker locations surrounding the Project site. Additional receptors were located at nearby residences and the nearby schools. Receptors were placed at ground level.
Population	Orange County: ~ 3.2 million

Source: See Data Attachment in Appendix B.

Table 7: Summary of Construction Emissions Source Configuration

Emission Source Type	Geometric Configuration	Relevant Assumptions
Construction Sources	Polygon Area Source	• Size of the construction area source was the size of the building area to be constructed approximately 63,047 SF (Square Feet), or 5,857 m^2). • Construction equipment emission source release height – 5 meters. • Emissions generated from the CalEEMod model. • Construction operation: Assumed 8 hours per day, 5 days a week.
On-Site Construction Vehicle Traffic	Line Area Sources	• Line source height of 3.11 meters (10.2 feet) and plume height of 6.2 meters (20.4 feet) (from EPA Haul Roads Calculator); Construction on-site access: ○ 100% of on-site truck trips utilized Magnolia Street *to/from* the central Project site. • Assumed two lanes, in and out of driveways on-site as number of truck trips. • Vehicle types: see Table 7, *Diesel Heavy-Duty Truck Vehicle Fleet*, and Table 8, *Number of Daily Project Diesel Truck Vehicle Trips*. • Construction operation: Assumed 8 hours per day, 5 days a week.
Off-Site Construction Vehicle Traffic	Line Area Source	• Line source release height of 3.11 meters (10.2 feet) with a plume height of 6.2 meters (20.4 feet) (from EPA Haul Roads Calculator). • Identical off-site travel routes were used for the calculation of construction DPM emissions. • The assumed off-site routes used are as follows: ○ Off-site 1: W on Chapman Drive to/from S Magnolia St to/from SR-91 Junction: 100%. ○ Off-site 2: SR-22 Junction *to/from* SR-22 East Ramp: 50%. ○ Off-site 3: SR-22 Junction *to/from* SR-22 West Ramp: 50%. • Construction operation: Assumed 8 hours per day, 5 days a week.

Source: See Data Attachment in Appendix B.

2.4 Receptors

The SCAQMD defines a sensitive receptor as any residence, including private homes, condominiums, apartments, and living quarters, schools, preschools, daycare centers, and health facilities such as hospitals or retirement and nursing homes. A sensitive receptor includes long-term care hospitals, hospices, prisons, and dormitories, or similar live-in housing. For the purpose of this HRA, sensitive receptors were placed within the air dispersion model at the locations of the closest existing residences and other establishments or residences nearest to the Project site that qualify as sensitive receptors. Receptor points were placed on existing

residences, schools, healthcare facilities along the Project's travel routes, as well as the closest worker receptors to the Project's boundary. In addition, a uniform grid network of receptors was placed over the Project site to complete the receptor network. These receptors were used to evaluate the health risk during the Project's construction, including on-site source emissions and along the off-site Project routes. The closest receptors to the Project site and the Project's on-site and off-site travel links approximate the maximum DPM emissions from the construction of the Project and thus yield the highest cancer risk values. The nearest sensitive receptor to the Project site was identified as residential properties located approximately 2.5 meters (8.5 feet) to the east of the site boundary. The closest worker receptor was the on-site business, situated 2.5 meters (8.5 feet) to the west of the boundary. Figure 3, *Locations of the Project's Construction On-Site and Off-Site DPM Emission Sources*, shows the locations of the Project's on-site and off-site construction-related DPM emission sources, while Figure 4, *Locations of Air Dispersion Model Receptors,* shows the receptor locations incorporated into the HRA.

Figure 3: Locations of the Project's Construction On-Site and Off-Site DPM Emission Sources

Figure 4: Locations of Air Dispersion Model Receptors

3 RESULTS OF THE HEALTH RISK ASSESSMENT

3.1 Project-Level Risk Results

Table 8 presents a summary of the cancer risks resulting from the Project's construction DPM emissions, respectively, along with the SCAQMD health risk significance thresholds. As shown in Table 8, the estimated maximum cancer risk for construction is 2.47 in one million for sensitive/residential receptors. The estimated maximum cancer risk for worker receptors during construction would be 0.17 in one million. In addition, the Project's maximum estimated construction results for non-cancer health risk are 0.02, for the maximum impacted worker receptor, which is below the significance threshold of 1.0.

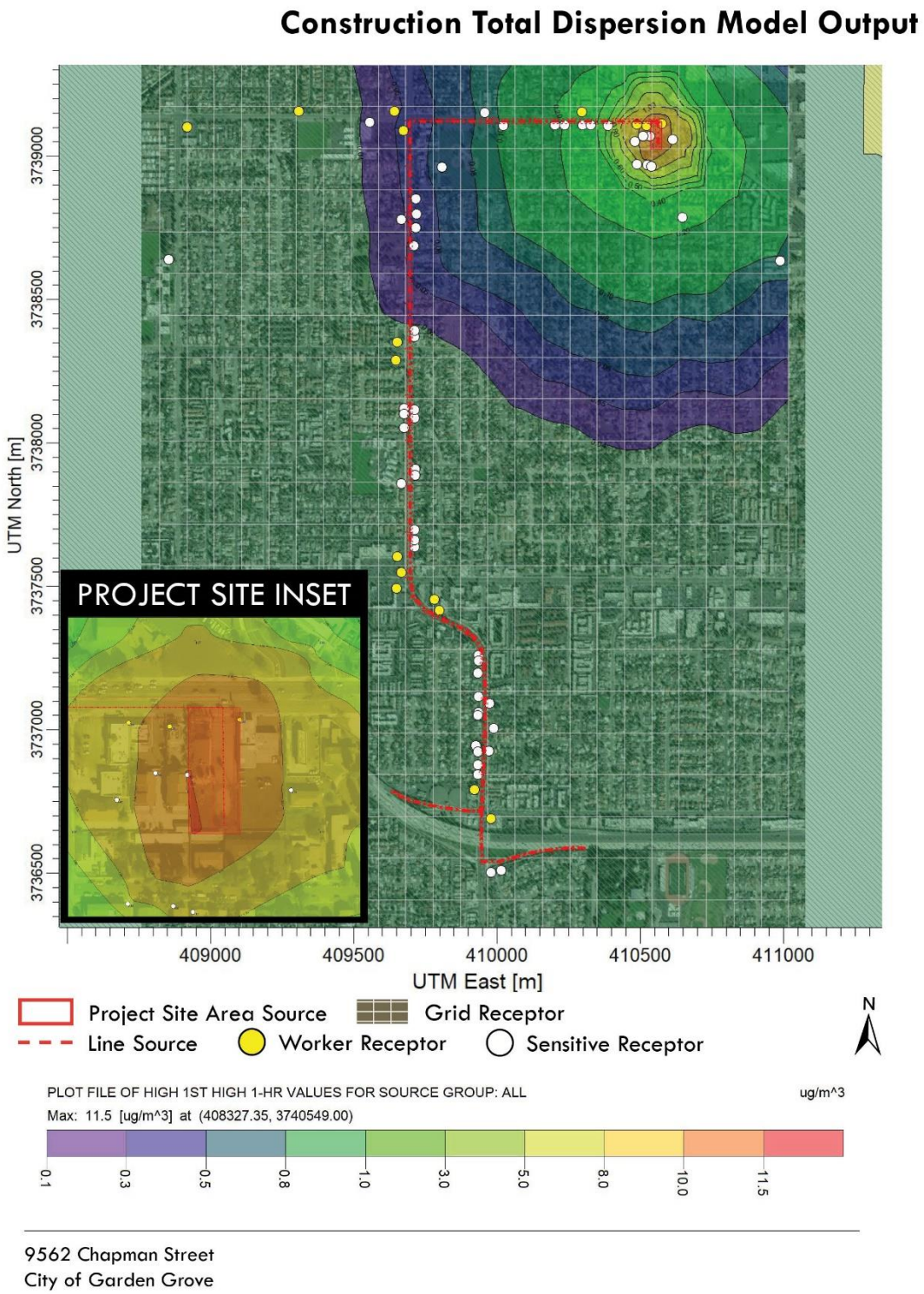
The construction maximum cancer risk would not exceed the SCAQMD cancer health risk significance threshold of 10 in one million. Thus, the Project would have a less-than-significant impact related to both cancer and non-cancer health risks. Figure 5, *Total Construction Model Output,* displays the total emission contour output for the Project's construction model.

Table 8: Summary of Proposed Project Construction Health Risk

Receptor	Cancer Risk (per million)		Exceeds Significance Threshold?
	Maximum Lifetime Proposed Project Risk	Significance Threshold	
Maximum Impacted Sensitive Receptor – Infant to Adult (30 years)	2.47	10	No
Maximum Impacted Sensitive Receptor – Adult	0.09	10	No
Maximum Impacted Worker Receptor	0.17	10	No
Receptor	**Chronic Non-Cancer Hazard Index**		**Exceeds Significance Threshold?**
	Maximum Lifetime Proposed Project Risk	**Significance Threshold**	
Maximum Impacted Sensitive Receptor – Infant to Adult (30 years)	<0.01	1	No
Maximum Impacted Sensitive Receptor – Adult	<0.01	1	No
Maximum Impacted Worker Receptor	0.02	1	No

Source: See Data Attachment in Appendix D.

Figure 5: Total Construction Model Output



3.2 Cumulative Analysis

As discussed in Section 2.1, *SCAQMD Significance Thresholds*, the SCAQMD has recommended a 1,000-foot distance to identify other development projects that could contribute to cumulative impacts with a project. The search radius for this Project was extended to 0.25 mile (1,320 feet) to identify potential cumulative sources.

Within 0.25 mile radius of the Project, there are no ensuing or ongoing developments with an increase in long-term DPM emissions. The Project's maximum cancer risk is less than the 10 in one million project-level threshold. Thus, with no cumulative increase in DPM emissions from surrounding projects, the Project would result in a less-than-significant cumulative impact related to cancer and non-cancer risks.

CONCLUSION

The emissions from Project construction would not result in cancer health risk results that exceed the lifetime cancer risk threshold of 10 in one million at the maximum impacted sensitive receptor. The Project's emissions for construction impacts would also not result in a non-cancer risk greater than the 1.0 non-cancer HI threshold. The Project's maximum construction health risk impacts would result in the following:

Maximum Project Construction Health Risk Impacts:

- Sensitive/residential receptor for the 30-year lifetime exposure duration: 2.47 in one million
- Worker receptor: 0.17 in one million
- Sensitive receptor chronic non-cancer HI: 0.01
- Worker receptor chronic non-cancer HI: 0.02

The Project construction health risk results would not exceed the SCAQMD significance thresholds of 10 in one million for cancer risk and 1.0 for non-cancer HI. Therefore, the construction of the proposed Project would result in a less-than-significant Project-level and cumulative-level impact for cancer and non-cancer health risks.

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APPENDIX A – CALEEMOD OUTPUT FOR PROJECT CONSTRUCTION

24-074 Chapman Ave Apartments Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	24-074 Chapman Ave Apartments
Construction Start Date	7/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.80
Precipitation (days)	18.2
Location	9562 Chapman Ave, Garden Grove, CA 92841, USA
County	Orange
City	Garden Grove
Air District	South Coast AQMD
Air Basin	South Coast
TAZ	5827
EDFZ	7
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.28

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Mid Rise	36.0	Dwelling Unit	0.44	63,047	3,811	—	107	—

Other Asphalt Surfaces	0.53	Acre	0.53	0.00	0.00	—	—	—
Enclosed Parking Structure	49.0	Space	0.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Unmit.	2.63	23.4	26.1	0.04	3.62	2.04	5,008
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	40.3	7.57	10.3	0.02	0.68	0.38	2,342
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	0.77	2.65	3.45	0.01	0.28	0.16	745
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.14	0.48	0.63	< 0.005	0.05	0.03	123
Exceeds (Daily Max)	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Average Daily)	—	—	—	—	—	—	—
Threshold	75.0	100	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—
2025	2.63	23.4	26.1	0.04	3.62	2.04	5,008
Daily - Winter (Max)	—	—	—	—	—	—	—
2025	40.3	7.57	10.3	0.02	0.68	0.38	2,342
2026	40.3	1.16	1.75	< 0.005	0.10	0.04	244
Average Daily	—	—	—	—	—	—	—
2025	0.77	2.65	3.45	0.01	0.28	0.16	745
2026	0.63	0.02	0.03	< 0.005	< 0.005	< 0.005	3.83
Annual	—	—	—	—	—	—	—
2025	0.14	0.48	0.63	< 0.005	0.05	0.03	123
2026	0.12	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.63

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Unmit.	2.38	0.60	7.56	0.01	1.30	0.34	1,742
Daily, Winter (Max)	—	—	—	—	—	—	—
Unmit.	2.19	0.63	5.19	0.01	1.30	0.34	1,680
Average Daily (Max)	—	—	—	—	—	—	—
Unmit.	2.23	0.59	6.13	0.01	1.15	0.30	1,553
Annual (Max)	—	—	—	—	—	—	—
Unmit.	0.41	0.11	1.12	< 0.005	0.21	0.06	257
Exceeds (Daily Max)	—	—	—	—	—	—	—

Threshold	55.0	55.0	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Average Daily)	—	—	—	—	—	—	—
Threshold	55.0	55.0	550	150	150	55.0	—
Unmit.	No	No	No	No	No	No	—
Exceeds (Annual)	—	—	—	—	—	—	—
Threshold	—	—	—	—	—	—	3,000
Unmit.	—	—	—	—	—	—	No

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Mobile	0.73	0.48	5.47	0.01	1.29	0.33	1,412
Area	1.64	0.02	2.04	< 0.005	< 0.005	< 0.005	5.48
Energy	0.01	0.10	0.04	< 0.005	0.01	0.01	254
Water	—	—	—	—	—	—	20.2
Waste	—	—	—	—	—	—	50.1
Refrig.	—	—	—	—	—	—	0.45
Total	2.38	0.60	7.56	0.01	1.30	0.34	1,742
Daily, Winter (Max)	—	—	—	—	—	—	—
Mobile	0.73	0.53	5.15	0.01	1.29	0.33	1,355
Area	1.46	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.01	0.10	0.04	< 0.005	0.01	0.01	254
Water	—	—	—	—	—	—	20.2
Waste	—	—	—	—	—	—	50.1
Refrig.	—	—	—	—	—	—	0.45

Total	2.19	0.63	5.19	0.01	1.30	0.34	1,680
Average Daily	—	—	—	—	—	—	—
Mobile	0.64	0.47	4.69	0.01	1.14	0.29	1,224
Area	1.58	0.01	1.40	< 0.005	< 0.005	< 0.005	3.75
Energy	0.01	0.10	0.04	< 0.005	0.01	0.01	254
Water	—	—	—	—	—	—	20.2
Waste	—	—	—	—	—	—	50.1
Refrig.	—	—	—	—	—	—	0.45
Total	2.23	0.59	6.13	0.01	1.15	0.30	1,553
Annual	—	—	—	—	—	—	—
Mobile	0.12	0.09	0.86	< 0.005	0.21	0.05	203
Area	0.29	< 0.005	0.26	< 0.005	< 0.005	< 0.005	0.62
Energy	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	42.1
Water	—	—	—	—	—	—	3.34
Waste	—	—	—	—	—	—	8.29
Refrig.	—	—	—	—	—	—	0.07
Total	0.41	0.11	1.12	< 0.005	0.21	0.06	257

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.66	5.62	6.13	0.01	0.35	0.33	920
Dust From Material Movement	—	—	—	—	0.28	0.03	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	2.52
Dust From Material Movement	—	—	—	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.42
Dust From Material Movement	—	—	—	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.02	0.02	0.28	0.00	0.07	0.02	67.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	1.75	15.8	14.9	0.02	0.79	0.73	2,480
Dust From Material Movement	—	—	—	—	1.98	0.91	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.48	0.45	< 0.005	0.02	0.02	74.7
Dust From Material Movement	—	—	—	—	0.06	0.03	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.09	0.08	< 0.005	< 0.005	< 0.005	12.4
Dust From Material Movement	—	—	—	—	0.01	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.04	0.04	0.70	0.00	0.16	0.04	168
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	< 0.005	< 0.005	4.89
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.81
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.75	7.34	9.02	0.02	0.31	0.29	1,883
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.75	7.34	9.02	0.02	0.31	0.29	1,883
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.21	2.01	2.47	< 0.005	0.09	0.08	516
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.37	0.45	< 0.005	0.02	0.01	85.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Worker	0.09	0.09	1.45	0.00	0.34	0.08	349
Vendor	< 0.005	0.13	0.06	< 0.005	0.03	0.01	128
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.09	0.10	1.25	0.00	0.34	0.08	331
Vendor	< 0.005	0.13	0.06	< 0.005	0.03	0.01	128

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	0.02	0.03	0.36	0.00	0.09	0.02	92.1
Vendor	< 0.005	0.04	0.02	< 0.005	0.01	< 0.005	35.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	0.01	0.07	0.00	0.02	< 0.005	15.3
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	5.81
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.61	5.24	6.25	0.01	0.23	0.21	977
Paving	0.28	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.09	< 0.005	< 0.005	< 0.005	13.4
Paving	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	2.21
Paving	< 0.005	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.06	0.07	0.85	0.00	0.23	0.05	224
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	3.11
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Architectural Coating (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.17	1.18	1.52	< 0.005	0.04	0.03	179
Architectural Coatings	40.1	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	2.10
Architectural Coatings	0.47	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.35
Architectural Coatings	0.09	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.02	0.02	0.25	0.00	0.07	0.02	66.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.79
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.14	1.51	< 0.005	0.03	0.03	179
Architectural Coatings	40.1	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	2.80
Architectural Coatings	0.63	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.46
Architectural Coatings	0.11	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Worker	0.02	0.02	0.24	0.00	0.07	0.02	65.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.17
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	0.73	0.48	5.47	0.01	1.29	0.33	1,412
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.73	0.48	5.47	0.01	1.29	0.33	1,412
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	0.73	0.53	5.15	0.01	1.29	0.33	1,355
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.73	0.53	5.15	0.01	1.29	0.33	1,355
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	0.12	0.09	0.86	< 0.005	0.21	0.05	203
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.12	0.09	0.86	< 0.005	0.21	0.05	203

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	126

Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	126
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	126
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	126
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	20.8
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	20.8

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	0.01	0.10	0.04	< 0.005	0.01	0.01	129
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.01	0.10	0.04	< 0.005	0.01	0.01	129
Daily, Winter (Max)	—	—	—	—	—	—	—

Apartments Mid Rise	0.01	0.10	0.04	< 0.005	0.01	0.01	129
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.01	0.10	0.04	< 0.005	0.01	0.01	129
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	21.3
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	21.3

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.35	—	—	—	—	—	—
Architectural Coatings	0.11	—	—	—	—	—	—
Landscape Equipment	0.18	0.02	2.04	< 0.005	< 0.005	< 0.005	5.48
Total	1.64	0.02	2.04	< 0.005	< 0.005	< 0.005	5.48
Daily, Winter (Max)	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	1.35	—	—	—	—	—	—
Architectural Coatings	0.11	—	—	—	—	—	—
Total	1.46	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.25	—	—	—	—	—	—
Architectural Coatings	0.02	—	—	—	—	—	—
Landscape Equipment	0.02	< 0.005	0.26	< 0.005	< 0.005	< 0.005	0.62
Total	0.29	< 0.005	0.26	< 0.005	< 0.005	< 0.005	0.62

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	20.2
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	20.2
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	20.2
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	20.2
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	3.34
Other Asphalt Surfaces	—	—	—	—	—	—	0.00

Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	3.34

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	50.1
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	50.1
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	50.1
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	50.1
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	8.29
Other Asphalt Surfaces	—	—	—	—	—	—	0.00
Enclosed Parking Structure	—	—	—	—	—	—	0.00
Total	—	—	—	—	—	—	8.29

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.45
Total	—	—	—	—	—	—	0.45
Daily, Winter (Max)	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.45
Total	—	—	—	—	—	—	0.45
Annual	—	—	—	—	—	—	—
Apartments Mid Rise	—	—	—	—	—	—	0.07
Total	—	—	—	—	—	—	0.07

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10T	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	7/16/2025	7/17/2025	5.00	1.00	—
Grading	Grading	7/18/2025	8/1/2025	5.00	11.0	—
Building Construction	Building Construction	8/1/2025	12/18/2025	5.00	100	—
Paving	Paving	12/19/2025	12/25/2025	5.00	5.00	—
Architectural Coating	Architectural Coating	12/26/2025	1/8/2026	5.00	10.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Site Preparation	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Grading	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Building Construction	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	4.00	8.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Site Preparation	—	—	—	—
Site Preparation	Worker	5.00	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	12.5	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	25.9	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	3.85	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	17.5	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	5.18	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	127,670	42,557	0.00	0.00	1,385

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Ton of Debris)	Material Exported (Ton of Debris)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	1.00	0.00	—
Grading	0.00	0.00	16.5	0.00	—
Paving	0.00	0.00	0.00	0.00	0.53

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Mid Rise	—	0%
Other Asphalt Surfaces	0.53	100%
Enclosed Parking Structure	0.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	349	0.03	< 0.005
2026	0.00	346	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Apartments Mid Rise	243	164	139	79,046	1,813	1,224	1,038	590,488
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Enclosed Parking Structure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Mid Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	36
Conventional Wood Stoves	0
Catalytic Wood Stoves	0

Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
127670.17499999999	42,557	0.00	0.00	1,385

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Apartments Mid Rise	131,970	346	0.0330	0.0040	399,846
Other Asphalt Surfaces	0.00	346	0.0330	0.0040	0.00
Enclosed Parking Structure	0.00	346	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Mid Rise	1,350,923	60,368
Other Asphalt Surfaces	0.00	0.00

Enclosed Parking Structure	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Mid Rise	26.6	—
Other Asphalt Surfaces	0.00	—
Enclosed Parking Structure	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Mid Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Mid Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.94	annual days of extreme heat
Extreme Precipitation	3.65	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	45.0
AQ-PM	74.7

AQ-DPM	43.7
Drinking Water	58.3
Lead Risk Housing	84.2
Pesticides	0.00
Toxic Releases	89.1
Traffic	39.8
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	24.7
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	32.9
Cardio-vascular	44.3
Low Birth Weights	59.2
Socioeconomic Factor Indicators	—
Education	68.2
Housing	71.9
Linguistic	75.8
Poverty	71.1
Unemployment	39.2

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	28.21763121

Employed	26.40831515
Median HI	29.7318106
Education	—
Bachelor's or higher	26.30565892
High school enrollment	100
Preschool enrollment	45.54087001
Transportation	—
Auto Access	19.63300398
Active commuting	17.2334146
Social	—
2-parent households	56.21711793
Voting	19.42769152
Neighborhood	—
Alcohol availability	31.24598999
Park access	14.17939176
Retail density	56.0246375
Supermarket access	76.32490697
Tree canopy	21.40382394
Housing	—
Homeownership	27.07558065
Housing habitability	7.160272039
Low-inc homeowner severe housing cost burden	71.07660721
Low-inc renter severe housing cost burden	37.72616451
Uncrowded housing	12.24175542
Health Outcomes	—
Insured adults	14.83382523
Arthritis	34.9
Asthma ER Admissions	66.8

High Blood Pressure	35.9
Cancer (excluding skin)	47.4
Asthma	49.0
Coronary Heart Disease	31.2
Chronic Obstructive Pulmonary Disease	23.6
Diagnosed Diabetes	26.4
Life Expectancy at Birth	28.9
Cognitively Disabled	62.4
Physically Disabled	60.6
Heart Attack ER Admissions	58.9
Mental Health Not Good	37.4
Chronic Kidney Disease	45.1
Obesity	66.6
Pedestrian Injuries	19.6
Physical Health Not Good	31.5
Stroke	26.0
Health Risk Behaviors	—
Binge Drinking	85.2
Current Smoker	32.9
No Leisure Time for Physical Activity	19.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	35.2
Elderly	57.3
English Speaking	23.7
Foreign-born	88.4
Outdoor Workers	38.5

Climate Change Adaptive Capacity	—
Impervious Surface Cover	28.1
Traffic Density	41.1
Traffic Access	23.0
Other Indices	—
Hardship	71.9
Other Decision Support	—
2016 Voting	45.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	52.0
Healthy Places Index Score for Project Location (b)	22.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification

Land Use	Adjusted to match the site plans provided by client
Construction: Off-Road Equipment	Assumed all equipment would operate 8 hrs a day for a conservative analysis. Replaced Tractor, Loaders, Backhoes with Crawler Tractors for the Site Prep and Grading phases. Excavator and plate compactor added to account for soil excavation and compaction.
Construction: Construction Phases	Removed demolition phase, site is vacant as of July 2024. Extended days of grading to 11 days per 8 feet of soil removal and compaction.
Operations: Hearths	Adjusted wood stoves in accordance with Rule 445. Removed gas and propane fireplaces as neither are proposed for the Project.
Operations: Vehicle Data	Adjusted trip rates to match the 11th Generation ITE Trip Rates for Multifamily Housing Low-Rise as generated by the Project's Trip Generation.
Construction: Dust From Material Movement	3 acres graded total default (with a CalEEMod default of 6 inch depth of grading). To remove and compact up to 8 feet of soil, the equivalent of 16.5 acres is required.

APPENDIX B – AERMOD CONSTRUCTION MODEL OUTPUT

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 12.0.0
** Lakes Environmental Software Inc.
** Date: 1/15/2025
** File: C:\Lakes\AERMOD View\24_074 Chapman Residential\24_074 Chapman
Residential.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\24_074 Chapman Residential\24_074 Chapman Resid
   MODELOPT CONC
   AVERTIME 1 24 PERIOD
   URBANOPT 3200000
   POLLUTID PM_10
   RUNORNOT RUN
   ERRORFIL "24_074 Chapman Residential.err"
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION AREAS        AREAPOLY   410534.817  3739121.384       16.000
** DESCRSRC Project Area Source
** ------------------------------------------------------------------
** Line Source Represented by Area Sources
** LINE AREA Source ID = ONS1
** DESCRSRC On Site Area Route
** PREFIX ONSI
** Length of Side = 16.00
** Ratio = 10
** Vertical Dimension = 2.46
** Emission Rate = 3.7866E-11
** Nodes = 2
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** 410563.108, 3739030.798, 16.19, 2.64
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** End of LINE AREA Source ID = ONS1
** ----------------------------------------------------------------------
** Line Source Represented by Area Sources
** LINE AREA Source ID = ARLN1
** DESCRSRC Offsite 1:  W on Chapman Drive  > S Magnolia St > Intersection
** PREFIX OFFS
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** Ratio = 10
** Vertical Dimension = 2.46
** Emission Rate = 3.7807E-11
** Nodes = 16
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** 409707.415, 3737464.927, 12.04, 2.64
** 409751.334, 3737417.767, 12.35, 2.64
** 409780.175, 3737402.858, 12.77, 2.64
** 409813.131, 3737385.640, 12.92, 2.64
** 409893.166, 3737345.953, 13.02, 2.64
** 409898.253, 3737342.563, 13.04, 2.64
** 409902.450, 3737339.977, 13.05, 2.64
** 409924.112, 3737320.670, 13.17, 2.64
** 409945.935, 3737282.910, 13.30, 2.64
** 409956.087, 3737231.871, 13.51, 2.64
** 409959.691, 3737108.135, 13.49, 2.64
** 409957.289, 3736974.789, 13.58, 2.64
** 409947.986, 3736725.524, 13.00, 2.64
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   LOCATION OFFS0026     AREA     410415.037 3739130.028 16.00
   LOCATION OFFS0027     AREA     410271.135 3739130.206 16.00
   LOCATION OFFS0028     AREA     410127.232 3739130.384 15.26
   LOCATION OFFS0029     AREA     409983.329 3739130.563 15.00
   LOCATION OFFS0030     AREA     409839.427 3739130.741 15.00
   LOCATION OFFS0031     AREA     409687.514 3739122.913 15.00
   LOCATION OFFS0032     AREA     409687.633 3738963.599 15.00
   LOCATION OFFS0033     AREA     409687.751 3738804.284 15.00
   LOCATION OFFS0034     AREA     409687.869 3738644.970 14.00
   LOCATION OFFS0035     AREA     409687.988 3738485.656 13.55
   LOCATION OFFS0036     AREA     409688.106 3738326.341 12.72
   LOCATION OFFS0037     AREA     409688.224 3738167.027 12.00
   LOCATION OFFS0038     AREA     409688.343 3738007.712 12.00
   LOCATION OFFS0039     AREA     409688.461 3737848.398 12.00
   LOCATION OFFS0040     AREA     409688.579 3737689.083 12.00
   LOCATION OFFS0041     AREA     409688.805 3737528.470 12.00
   LOCATION OFFS0042     AREA     409701.560 3737459.474 12.00
   LOCATION OFFS0043     AREA     409747.660 3737410.660 12.35
   LOCATION OFFS0044     AREA     409776.470 3737395.767 12.73
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   LOCATION OFFS0046     AREA     409888.729 3737339.296 13.00
   LOCATION OFFS0047     AREA     409894.057 3737335.752 13.00
   LOCATION OFFS0048     AREA     409897.127 3737334.006 13.00
   LOCATION OFFS0049     AREA     409917.185 3737316.666 13.00
   LOCATION OFFS0050     AREA     409938.088 3737281.349 13.00
   LOCATION OFFS0051     AREA     409948.091 3737231.638 13.00
   LOCATION OFFS0052     AREA     409951.693 3737108.279 13.03
   LOCATION OFFS0053     AREA     409949.294 3736975.087 13.02
   LOCATION OFFS0054     AREA     409944.643 3736850.455 13.00
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** LINE AREA Source ID = ARLN2
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** PREFIX OFFS
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** Ratio = 10
** Vertical Dimension = 2.46
** Emission Rate = 1.5919E-11
** Nodes = 8
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** 409946.650, 3736541.099, 13.12, 2.64
** 410006.340, 3736540.428, 13.97, 2.64
** 410053.958, 3736553.842, 14.00, 2.64
** 410122.367, 3736571.950, 14.00, 2.64
** 410190.776, 3736583.352, 14.34, 2.64
** 410265.221, 3736588.717, 14.93, 2.64
** 410306.802, 3736587.376, 14.96, 2.64
** ------------------------------------------------------------------
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   LOCATION OFFS0247     AREA     409946.597 3736536.349 13.04
   LOCATION OFFS0248     AREA     410007.628 3736535.856 13.83
   LOCATION OFFS0249     AREA     410055.174 3736549.250 14.00
   LOCATION OFFS0250     AREA     410123.148 3736567.265 14.17
   LOCATION OFFS0251     AREA     410191.117 3736578.614 14.52
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** LINE AREA Source ID = ARLN3
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** PREFIX
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** Ratio = 10
** Vertical Dimension = 2.46
** Emission Rate = 1.6599E-11
** Nodes = 8
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** 409903.003, 3736717.516, 13.00, 2.64
** 409825.598, 3736725.795, 12.93, 2.64
** 409760.746, 3736737.416, 12.53, 2.64
** 409689.145, 3736756.535, 12.08, 2.64
** 409651.283, 3736775.278, 12.00, 2.64
** 409629.915, 3736788.024, 12.00, 2.64
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   LOCATION A0000003     AREA     409947.891 3736722.237 13.03
   LOCATION A0000004     AREA     409903.488 3736722.045 13.00
   LOCATION A0000005     AREA     409826.402 3736730.279 13.00
   LOCATION A0000006     AREA     409761.921 3736741.817 12.62
   LOCATION A0000007     AREA     409691.166 3736760.617 12.00
   LOCATION A0000008     AREA     409653.616 3736779.190 12.00
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** Source Parameters **
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   AREAVERT AREAS        410534.817 3739121.384 410575.597 3739121.736
   AREAVERT AREAS        410575.128 3739024.270 410535.797 3739024.361
** LINE AREA Source ID = ONS1
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2.459
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   SRCPARAM OFFS0026     3.7807E-11     2.644   143.903    16.000  -179.929
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   SRCPARAM OFFS0027     3.7807E-11     2.644   143.903    16.000  -179.929
2.459
   SRCPARAM OFFS0028     3.7807E-11     2.644   143.903    16.000  -179.929
2.459
   SRCPARAM OFFS0029     3.7807E-11     2.644   143.903    16.000  -179.929
2.459
   SRCPARAM OFFS0030     3.7807E-11     2.644   143.903    16.000  -179.929
2.459
   SRCPARAM OFFS0031     3.7807E-11     2.644   159.314    16.000    89.957
2.459
   SRCPARAM OFFS0032     3.7807E-11     2.644   159.314    16.000    89.957
2.459
   SRCPARAM OFFS0033     3.7807E-11     2.644   159.314    16.000    89.957
2.459
   SRCPARAM OFFS0034     3.7807E-11     2.644   159.314    16.000    89.957
2.459
   SRCPARAM OFFS0035     3.7807E-11     2.644   159.314    16.000    89.957
2.459
   SRCPARAM OFFS0036     3.7807E-11     2.644   159.314    16.000    89.957
2.459
   SRCPARAM OFFS0037     3.7807E-11     2.644   159.314    16.000    89.957
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   SRCPARAM OFFS0038     3.7807E-11     2.644   159.314    16.000    89.957
2.459
   SRCPARAM OFFS0039     3.7807E-11     2.644   159.314    16.000    89.957
2.459
   SRCPARAM OFFS0040     3.7807E-11     2.644   159.314    16.000    89.957
2.459
   SRCPARAM OFFS0041     3.7807E-11     2.644    65.728    16.000    80.616
2.459
   SRCPARAM OFFS0042     3.7807E-11     2.644    64.443    16.000    47.038
2.459
   SRCPARAM OFFS0043     3.7807E-11     2.644    32.467    16.000    27.337
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   SRCPARAM OFFS0045     3.7807E-11     2.644    89.334    16.000    26.375
2.459
   SRCPARAM OFFS0046     3.7807E-11     2.644     6.113    16.000    33.679
2.459
   SRCPARAM OFFS0047     3.7807E-11     2.644     4.930    16.000    31.633
2.459
   SRCPARAM OFFS0048     3.7807E-11     2.644    29.017    16.000    41.713
2.459
   SRCPARAM OFFS0049     3.7807E-11     2.644    43.612    16.000    59.974
2.459
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2.459
   SRCPARAM OFFS0051     3.7807E-11     2.644   123.788    16.000    88.332
2.459
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** ------------------------------------------------------------------
** LINE AREA Source ID = ARLN2
   SRCPARAM OFFS0245     1.5919E-11     2.644    88.196     9.500    89.564
2.459
   SRCPARAM OFFS0246     1.5919E-11     2.644    88.196     9.500    89.564
2.459
   SRCPARAM OFFS0247     1.5919E-11     2.644    59.694     9.500     0.644
2.459
   SRCPARAM OFFS0248     1.5919E-11     2.644    49.471     9.500   -15.732
2.459
   SRCPARAM OFFS0249     1.5919E-11     2.644    70.765     9.500   -14.826
2.459
   SRCPARAM OFFS0250     1.5919E-11     2.644    69.352     9.500    -9.462
2.459
   SRCPARAM OFFS0251     1.5919E-11     2.644    74.638     9.500    -4.122
```

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2.459
   SRCPARAM OFFS0252     1.5919E-11     2.644    41.603     9.500     1.848
2.459
** ------------------------------------------------------------------
** LINE AREA Source ID = ARLN3
   SRCPARAM A0000002     1.6599E-11     2.644     8.650     9.110    88.898
2.459
   SRCPARAM A0000003     1.6599E-11     2.644    44.905     9.110   179.788
2.459
   SRCPARAM A0000004     1.6599E-11     2.644    77.846     9.110  -173.895
2.459
   SRCPARAM A0000005     1.6599E-11     2.644    65.886     9.110  -169.841
2.459
   SRCPARAM A0000006     1.6599E-11     2.644    74.109     9.110  -165.050
2.459
   SRCPARAM A0000007     1.6599E-11     2.644    42.248     9.110  -153.662
2.459
   SRCPARAM A0000008     1.6599E-11     2.644    24.880     9.110  -149.184
2.459
** ------------------------------------------------------------------
   URBANSRC ALL

** Variable Emissions Type: "By Hour / Day (HRDOW)"
** Variable Emission Scenario: "Scenario 1"
** WeekDays:
   EMISFACT AREAS        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREAS        HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT AREAS        HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT AREAS        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT AREAS        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREAS        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREAS        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREAS        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT AREAS        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREAS        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREAS        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AREAS        HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** WeekDays:
   EMISFACT A0000001     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000001     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT A0000001     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT A0000001     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT A0000001     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000001     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000001     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000001     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
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   EMISFACT A0000001     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000001     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000001     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000001     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** WeekDays:
   EMISFACT OFFS0025     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0025     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0025     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0025     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0026     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0026     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0026     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0026     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0027     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0027     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0027     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0027     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0028     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0028     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0028     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0028     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0029     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0029     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0029     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0029     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0030     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0030     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0030     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0030     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0031     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0031     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0031     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0031     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0032     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0032     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0032     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0032     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0033     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0033     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0033     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0033     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0034     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0034     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0034     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0034     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0035     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0035     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0035     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0035     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0036     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
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EMISFACT OFFS0036     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0036     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
EMISFACT OFFS0036     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0037     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0037     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0037     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
EMISFACT OFFS0037     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0038     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0038     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0038     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
EMISFACT OFFS0038     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0039     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0039     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0039     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
EMISFACT OFFS0039     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0040     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0040     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0040     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
EMISFACT OFFS0040     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0041     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0041     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0041     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
EMISFACT OFFS0041     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0042     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0042     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0042     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
EMISFACT OFFS0042     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0043     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0043     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0043     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
EMISFACT OFFS0043     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0044     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0044     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0044     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
EMISFACT OFFS0044     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0045     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0045     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0045     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
EMISFACT OFFS0045     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0046     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0046     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0046     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
EMISFACT OFFS0046     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0047     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0047     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0047     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
EMISFACT OFFS0047     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0048     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0048     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
EMISFACT OFFS0048     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
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   EMISFACT OFFS0048     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0049     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0049     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0049     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0049     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0050     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0050     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0050     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0050     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0051     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0051     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0051     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0051     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0052     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0052     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0052     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0052     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0053     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0053     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0053     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0053     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0054     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0054     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0054     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0054     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT OFFS0025     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0025     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0025     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0025     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0026     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0026     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0026     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0026     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0027     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0027     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0027     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0027     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0028     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0028     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0028     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0028     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0029     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0029     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0029     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0029     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0030     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0030     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0030     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0030     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
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EMISFACT OFFS0031     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0031     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0031     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0031     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0032     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0032     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0032     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0032     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0033     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0033     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0033     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0033     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0034     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0034     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0034     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0034     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0035     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0035     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0035     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0035     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0036     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0036     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0036     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0036     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0037     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0037     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0037     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0037     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0038     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0038     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0038     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0038     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0039     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0039     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0039     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0039     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0040     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0040     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0040     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0040     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0041     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0041     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0041     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0041     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0042     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0042     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0042     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0042     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0043     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0043     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
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   EMISFACT OFFS0043     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0043     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0044     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0044     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0044     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0044     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0045     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0045     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0045     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0045     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0046     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0046     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0046     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0046     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0047     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0047     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0047     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0047     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0048     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0048     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0048     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0048     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0049     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0049     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0049     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0049     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0050     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0050     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0050     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0050     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0051     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0051     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0051     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0051     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0052     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0052     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0052     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0052     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0053     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0053     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0053     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0053     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0054     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0054     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0054     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0054     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT OFFS0025     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0025     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0025     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
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EMISFACT OFFS0025     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0026     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0026     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0026     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0026     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0027     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0027     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0027     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0027     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0028     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0028     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0028     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0028     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0029     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0029     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0029     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0029     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0030     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0030     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0030     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0030     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0031     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0031     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0031     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0031     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0032     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0032     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0032     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0032     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0033     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0033     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0033     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0033     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0034     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0034     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0034     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0034     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0035     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0035     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0035     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0035     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0036     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0036     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0036     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0036     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0037     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0037     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0037     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0037     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0038     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
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EMISFACT OFFS0038     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0038     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0038     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0039     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0039     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0039     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0039     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0040     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0040     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0040     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0040     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0041     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0041     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0041     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0041     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0042     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0042     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0042     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0042     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0043     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0043     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0043     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0043     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0044     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0044     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0044     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0044     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0045     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0045     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0045     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0045     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0046     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0046     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0046     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0046     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0047     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0047     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0047     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0047     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0048     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0048     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0048     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0048     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0049     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0049     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0049     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0049     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0050     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0050     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT OFFS0050     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
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   EMISFACT OFFS0050     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0051     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0051     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0051     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0051     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0052     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0052     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0052     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0052     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0053     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0053     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0053     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0053     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0054     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0054     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0054     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0054     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** WeekDays:
   EMISFACT OFFS0245     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0245     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0245     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0245     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0246     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0246     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0246     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0246     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0247     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0247     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0247     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0247     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0248     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0248     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0248     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0248     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0249     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0249     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0249     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0249     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0250     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0250     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0250     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0250     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0251     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0251     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0251     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0251     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0252     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0252     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT OFFS0252     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT OFFS0252     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
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** Saturday:
   EMISFACT OFFS0245     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0245     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0245     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0245     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0246     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0246     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0246     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0246     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0247     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0247     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0247     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0247     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0248     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0248     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0248     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0248     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0249     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0249     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0249     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0249     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0250     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0250     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0250     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0250     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0251     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0251     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0251     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0251     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0252     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0252     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0252     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0252     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT OFFS0245     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0245     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0245     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0245     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0246     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0246     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0246     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0246     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0247     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0247     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0247     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0247     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0248     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0248     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0248     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0248     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
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   EMISFACT OFFS0249     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0249     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0249     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0249     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0250     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0250     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0250     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0250     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0251     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0251     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0251     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0251     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0252     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0252     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0252     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT OFFS0252     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** WeekDays:
   EMISFACT A0000002     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000002     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT A0000002     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT A0000002     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000003     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000003     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT A0000003     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT A0000003     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000004     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000004     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT A0000004     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT A0000004     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000005     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000005     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT A0000005     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT A0000005     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000006     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000006     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT A0000006     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT A0000006     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000007     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000007     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT A0000007     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT A0000007     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000008     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000008     HRDOW 0.0 1.0 1.0 1.0 1.0 1.0
   EMISFACT A0000008     HRDOW 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT A0000008     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Saturday:
   EMISFACT A0000002     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000002     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000002     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000002     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
```

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   EMISFACT A0000003     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000003     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000003     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000003     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000004     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000004     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000004     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000004     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000005     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000005     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000005     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000005     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000006     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000006     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000006     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000006     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000007     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000007     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000007     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000007     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000008     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000008     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000008     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000008     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
** Sunday:
   EMISFACT A0000002     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000002     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000002     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000002     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000003     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000003     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000003     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000003     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000004     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000004     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000004     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000004     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000005     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000005     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000005     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000005     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000006     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000006     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000006     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000006     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000007     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000007     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000007     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000007     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000008     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
```

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   EMISFACT A0000008     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000008     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000008     HRDOW 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
RE STARTING
   INCLUDED "24_074 Chapman Residential.rou"
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE "..\..\Met Files\KFUL_V9_ADJU\KFUL_v9.SFC"
   PROFFILE "..\..\Met Files\KFUL_V9_ADJU\KFUL_v9.PFL"
   SURFDATA 3166 2012 Fullerton_Station_Airport
   UAIRDATA 3190 2012
   PROFBASE 29.3 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 24 1ST 6TH
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST "24_074 Chapman Residential.AD\01H1GALL.PLT" 31
   PLOTFILE 24 ALL 1ST "24_074 Chapman Residential.AD\24H1GALL.PLT" 32
   PLOTFILE 24 ALL 6TH "24_074 Chapman Residential.AD\24H6GALL.PLT" 33
   PLOTFILE PERIOD ALL "24_074 Chapman Residential.AD\PE00GALL.PLT" 34
   SUMMFILE "24_074 Chapman Residential.sum"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------
```

```
 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186     830       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
 ME W187     830       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


 *********************************
 *** SETUP Finishes Successfully ***
 *********************************

 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

                                  PAGE   1
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                                            ***     MODEL SETUP OPTIONS SUMMARY
 ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Allows User-Specified Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses URBAN Dispersion Algorithm for the SBL for    47 Source(s),
        for Total of    1 Urban Area(s):
   Urban Population =   3200000.0 ;  Urban Roughness Length =  1.000 m
      * Urban Roughness Length of 1.0 Meter Used.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
```

```
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Assumes No FLAGPOLE Receptor Heights.
      * The User Specified a Pollutant Type of: PM_10

 **Model Calculates  2 Short Term Average(s) of:   1-HR  24-HR
     and Calculates PERIOD Averages

 **This Run Includes:     47 Source(s);       1 Source Group(s); and     645
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:      0 VOLUME source(s)
                 and:     47 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 RLINE/RLINEXT source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with a total of     0 line(s)
                 and:      0 SWPOINT source(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  16216

 **Output Options Selected:
          Model Outputs Tables of PERIOD Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and
Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    29.30 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.7 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out
```

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. (DEG.)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY	AIRCRAFT
A0000001	0	0.37866E-10	410554.1	3739121.6	16.0	2.64	90.86	16.00	89.36	2.46	YES	HRDOW	NO
OFFS0025	0	0.37807E-10	410558.9	3739129.8	16.0	2.64	143.90	16.00	-179.93	2.46	YES	HRDOW	NO
OFFS0026	0	0.37807E-10	410415.0	3739130.0	16.0	2.64	143.90	16.00	-179.93	2.46	YES	HRDOW	NO
OFFS0027	0	0.37807E-10	410271.1	3739130.2	16.0	2.64	143.90	16.00	-179.93	2.46	YES	HRDOW	NO
OFFS0028	0	0.37807E-10	410127.2	3739130.4	15.3	2.64	143.90	16.00	-179.93	2.46	YES	HRDOW	NO
OFFS0029	0	0.37807E-10	409983.3	3739130.6	15.0	2.64	143.90	16.00	-179.93	2.46	YES	HRDOW	NO
OFFS0030	0	0.37807E-10	409839.4	3739130.7	15.0	2.64	143.90	16.00	-179.93	2.46	YES	HRDOW	NO
OFFS0031	0	0.37807E-10	409687.5	3739122.9	15.0	2.64	159.31	16.00	89.96	2.46	YES	HRDOW	NO
OFFS0032	0	0.37807E-10	409687.6	3738963.6	15.0	2.64	159.31	16.00	89.96	2.46	YES	HRDOW	NO
OFFS0033	0	0.37807E-10	409687.8	3738804.3	15.0	2.64	159.31	16.00	89.96	2.46	YES	HRDOW	NO
OFFS0034	0	0.37807E-10	409687.9	3738645.0	14.0	2.64	159.31	16.00	89.96	2.46	YES	HRDOW	NO
OFFS0035	0	0.37807E-10	409688.0	3738485.7	13.6	2.64	159.31	16.00	89.96	2.46	YES	HRDOW	NO

```
 OFFS0036          0   0.37807E-10  409688.1 3738326.3    12.7     2.64    159.31
16.00     89.96     2.46     YES   HRDOW            NO
 OFFS0037          0   0.37807E-10  409688.2 3738167.0    12.0     2.64    159.31
16.00     89.96     2.46     YES   HRDOW            NO
 OFFS0038          0   0.37807E-10  409688.3 3738007.7    12.0     2.64    159.31
16.00     89.96     2.46     YES   HRDOW            NO
 OFFS0039          0   0.37807E-10  409688.5 3737848.4    12.0     2.64    159.31
16.00     89.96     2.46     YES   HRDOW            NO
 OFFS0040          0   0.37807E-10  409688.6 3737689.1    12.0     2.64    159.31
16.00     89.96     2.46     YES   HRDOW            NO
 OFFS0041          0   0.37807E-10  409688.8 3737528.5    12.0     2.64     65.73
16.00     80.62     2.46     YES   HRDOW            NO
 OFFS0042          0   0.37807E-10  409701.6 3737459.5    12.0     2.64     64.44
16.00     47.04     2.46     YES   HRDOW            NO
 OFFS0043          0   0.37807E-10  409747.7 3737410.7    12.4     2.64     32.47
16.00     27.34     2.46     YES   HRDOW            NO
 OFFS0044          0   0.37807E-10  409776.5 3737395.8    12.7     2.64     37.18
16.00     27.58     2.46     YES   HRDOW            NO
 OFFS0045          0   0.37807E-10  409809.6 3737378.5    13.0     2.64     89.33
16.00     26.38     2.46     YES   HRDOW            NO
 OFFS0046          0   0.37807E-10  409888.7 3737339.3    13.0     2.64      6.11
16.00     33.68     2.46     YES   HRDOW            NO
 OFFS0047          0   0.37807E-10  409894.1 3737335.8    13.0     2.64      4.93
16.00     31.63     2.46     YES   HRDOW            NO
 OFFS0048          0   0.37807E-10  409897.1 3737334.0    13.0     2.64     29.02
16.00     41.71     2.46     YES   HRDOW            NO
 OFFS0049          0   0.37807E-10  409917.2 3737316.7    13.0     2.64     43.61
16.00     59.97     2.46     YES   HRDOW            NO
 OFFS0050          0   0.37807E-10  409938.1 3737281.3    13.0     2.64     52.04
16.00     78.75     2.46     YES   HRDOW            NO
 OFFS0051          0   0.37807E-10  409948.1 3737231.6    13.0     2.64    123.79
16.00     88.33     2.46     YES   HRDOW            NO
 OFFS0052          0   0.37807E-10  409951.7 3737108.3    13.0     2.64    133.37
16.00     91.03     2.46     YES   HRDOW            NO
 OFFS0053          0   0.37807E-10  409949.3 3736975.1    13.0     2.64    124.72
16.00     92.14     2.46     YES   HRDOW            NO
 OFFS0054          0   0.37807E-10  409944.6 3736850.5    13.0     2.64    124.72
16.00     92.14     2.46     YES   HRDOW            NO
 OFFS0245          0   0.15919E-10  409940.6 3736717.4    13.0     2.64     88.20
 9.50     89.56     2.46     YES   HRDOW            NO
 OFFS0246          0   0.15919E-10  409941.2 3736629.3    13.0     2.64     88.20
 9.50     89.56     2.46     YES   HRDOW            NO
 OFFS0247          0   0.15919E-10  409946.6 3736536.3    13.0     2.64     59.69
 9.50      0.64     2.46     YES   HRDOW            NO
 OFFS0248          0   0.15919E-10  410007.6 3736535.9    13.8     2.64     49.47
 9.50    -15.73     2.46     YES   HRDOW            NO
 OFFS0249          0   0.15919E-10  410055.2 3736549.2    14.0     2.64     70.77
 9.50    -14.83     2.46     YES   HRDOW            NO
 OFFS0250          0   0.15919E-10  410123.1 3736567.3    14.2     2.64     69.35
 9.50     -9.46     2.46     YES   HRDOW            NO
```

*** AREA SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	COORD (SW CORNER) X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	X-DIM OF AREA (METERS)	Y-DIM OF AREA (METERS)	ORIENT. (DEG.)	INIT. SZ (METERS)	URBAN SOURCE BY	EMISSION RATE SCALAR VARY	AIRCRAFT
A0000003	0	0.16599E-10	409947.9	3736722.2	13.0	2.64	44.91	9.11	179.79	2.46	YES	HRDOW	NO
A0000004	0	0.16599E-10	409903.5	3736722.0	13.0	2.64	77.85	9.11	-173.90	2.46	YES	HRDOW	NO
A0000005	0	0.16599E-10	409826.4	3736730.3	13.0	2.64	65.89	9.11	-169.84	2.46	YES	HRDOW	NO
A0000006	0	0.16599E-10	409761.9	3736741.8	12.6	2.64	74.11	9.11	-165.05	2.46	YES	HRDOW	NO
A0000007	0	0.16599E-10	409691.2	3736760.6	12.0	2.64	42.25	9.11	-153.66	2.46	YES	HRDOW	NO
A0000008	0	0.16599E-10	409653.6	3736779.2	12.0	2.64	24.88	9.11	-149.18	2.46	YES	HRDOW	NO

*** AREAPOLY SOURCE DATA ***

| SOURCE ID | NUMBER PART. CATS. | EMISSION RATE (GRAMS/SEC /METER**2) | LOCATION OF AREA X (METERS) | Y (METERS) | BASE ELEV. (METERS) | RELEASE HEIGHT (METERS) | NUMBER

```
 INIT.   URBAN  EMISSION RATE    AIRCRAFT
   SOURCE       PART.  (GRAMS/SEC       X        Y      ELEV.    HEIGHT  OF VERTS.
  SZ     SOURCE  SCALAR VARY
     ID         CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)
(METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -

 AREAS            0   0.43900E-06  410534.8 3739121.4    16.0     5.00       4
  0.00     YES   HRDOW            NO
↑ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

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 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*


                                          *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                          SOURCE IDs
 -----------                                          ----------


  ALL        AREAS       , A0000001    , OFFS0025    , OFFS0026    , OFFS0027    ,
OFFS0028    , OFFS0029    , OFFS0030    ,

             OFFS0031    , OFFS0032    , OFFS0033    , OFFS0034    , OFFS0035    ,
OFFS0036    , OFFS0037    , OFFS0038    ,

             OFFS0039    , OFFS0040    , OFFS0041    , OFFS0042    , OFFS0043    ,
OFFS0044    , OFFS0045    , OFFS0046    ,

             OFFS0047    , OFFS0048    , OFFS0049    , OFFS0050    , OFFS0051    ,
OFFS0052    , OFFS0053    , OFFS0054    ,

             OFFS0245    , OFFS0246    , OFFS0247    , OFFS0248    , OFFS0249    ,
OFFS0250    , OFFS0251    , OFFS0252    ,

             A0000002    , A0000003    , A0000004    , A0000005    , A0000006    ,
A0000007    , A0000008    ,
↑ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

                                  PAGE   6
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*
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*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
	3200000.	AREAS , A0000001 , OFFS0025 , OFFS0026 , OFFS0027 , OFFS0028 , OFFS0029 , OFFS0030 ,
		OFFS0031 , OFFS0032 , OFFS0033 , OFFS0034 , OFFS0035 , OFFS0036 , OFFS0037 , OFFS0038 ,
		OFFS0039 , OFFS0040 , OFFS0041 , OFFS0042 , OFFS0043 , OFFS0044 , OFFS0045 , OFFS0046 ,
		OFFS0047 , OFFS0048 , OFFS0049 , OFFS0050 , OFFS0051 , OFFS0052 , OFFS0053 , OFFS0054 ,
		OFFS0245 , OFFS0246 , OFFS0247 , OFFS0248 , OFFS0249 , OFFS0250 , OFFS0251 , OFFS0252 ,
		A0000002 , A0000003 , A0000004 , A0000005 , A0000006 , A0000007 , A0000008 ,

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = AREAS ; SOURCE TYPE = AREAPOLY :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.1000E+01	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SATURDAY															

```
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                  PAGE   8
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = A0000001     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
                                                DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
```

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0025 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.1000E+01	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
DAY OF WEEK = SUNDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0026 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

HOUR SCALAR HOUR SCALAR HOUR SCALAR

DAY OF WEEK = WEEKDAY

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01 13 .1000E+01
14 .1000E+01 15 .1000E+01 16 .1000E+01
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00
22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SATURDAY

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00 13 .0000E+00
14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00
22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SUNDAY

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00 13 .0000E+00
14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00
22 .0000E+00 23 .0000E+00 24 .0000E+00

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0027 ; SOURCE TYPE = AREA :

HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR

DAY OF WEEK = WEEKDAY

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01 13 .1000E+01
14 .1000E+01 15 .1000E+01 16 .1000E+01
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00
22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SATURDAY

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .0000E+00

```
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00

                                                DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
```

```
                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0028     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

                                                DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00

                                                DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00

                                                DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
```

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0029   ; SOURCE TYPE = AREA   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 -

                                                DAY OF WEEK = WEEKDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00   6 .0000E+00   7 .0000E+00   8 .1000E+01
    9 .1000E+01   10 .1000E+01   11 .1000E+01   12 .1000E+01   13 .1000E+01   14 .1000E+01   15 .1000E+01   16 .1000E+01
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00   22 .0000E+00   23 .0000E+00   24 .0000E+00

                                                DAY OF WEEK = SATURDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00   6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00   14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00   22 .0000E+00   23 .0000E+00   24 .0000E+00

                                                DAY OF WEEK = SUNDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00   6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00   14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00   22 .0000E+00   23 .0000E+00   24 .0000E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0030   ; SOURCE TYPE = AREA   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 -

- -
DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01 13 .1000E+01
14 .1000E+01 15 .1000E+01 16 .1000E+01
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00
22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00 13 .0000E+00
14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00
22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SUNDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00 13 .0000E+00
14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00
22 .0000E+00 23 .0000E+00 24 .0000E+00

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0031 ; SOURCE TYPE = AREA :
HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR HOUR SCALAR
- -
DAY OF WEEK = WEEKDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01 13 .1000E+01
14 .1000E+01 15 .1000E+01 16 .1000E+01
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00
22 .0000E+00 23 .0000E+00 24 .0000E+00
DAY OF WEEK = SATURDAY
1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00 13 .0000E+00
14 .0000E+00 15 .0000E+00 16 .0000E+00

```
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↟ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                  PAGE  16
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0032     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
                                                DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↟ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25
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*** MODELOPTs: CONC ELEV URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0033 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

DAY OF WEEK = WEEKDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.1000E+01	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

DAY OF WEEK = SATURDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

DAY OF WEEK = SUNDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0034 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

DAY OF WEEK = WEEKDAY

```
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00

                                                DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00

                                                DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↟ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

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 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0035     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -

                                                DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00

                                                DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
```

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0036   ; SOURCE TYPE = AREA   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 -
- -
                                                DAY OF WEEK = WEEKDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .1000E+01
    9 .1000E+01   10 .1000E+01   11 .1000E+01   12 .1000E+01   13 .1000E+01
14 .1000E+01   15 .1000E+01   16 .1000E+01
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                DAY OF WEEK = SATURDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                DAY OF WEEK = SUNDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0037 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

DAY OF WEEK = WEEKDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.1000E+01	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

DAY OF WEEK = SATURDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

DAY OF WEEK = SUNDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0038 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

DAY OF WEEK = WEEKDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01

```
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↟ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                 PAGE  23
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0039     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
```

6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00

 *** MODELOPTs: CONC ELEV URBAN ADJ_U*

                    * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

 SOURCE ID = OFFS0040   ; SOURCE TYPE = AREA   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 -
                                                    DAY OF WEEK = WEEKDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .1000E+01
    9 .1000E+01   10 .1000E+01   11 .1000E+01   12 .1000E+01   13 .1000E+01
14 .1000E+01   15 .1000E+01   16 .1000E+01
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                    DAY OF WEEK = SATURDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                    DAY OF WEEK = SUNDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00

 *** MODELOPTs: CONC ELEV URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0041 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

DAY OF WEEK = WEEKDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.1000E+01	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

DAY OF WEEK = SATURDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

DAY OF WEEK = SUNDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0042 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

DAY OF WEEK = WEEKDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.1000E+01	14	.1000E+01	15	.1000E+01	16	.1000E+01

```
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↑ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

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 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0043     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
                                                DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
```

```
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↑ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

                                  PAGE  28
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0044     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↑ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

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 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *
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 SOURCE ID = OFFS0045     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
                                                DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↟ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

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 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0046     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
                                                DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
```

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00 13 .0000E+00
14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00
22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SUNDAY

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00 13 .0000E+00
14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00
22 .0000E+00 23 .0000E+00 24 .0000E+00

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0047 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

DAY OF WEEK = WEEKDAY

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .1000E+01
9 .1000E+01 10 .1000E+01 11 .1000E+01 12 .1000E+01 13 .1000E+01
14 .1000E+01 15 .1000E+01 16 .1000E+01
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00
22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SATURDAY

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00 13 .0000E+00
14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00
22 .0000E+00 23 .0000E+00 24 .0000E+00

DAY OF WEEK = SUNDAY

1 .0000E+00 2 .0000E+00 3 .0000E+00 4 .0000E+00 5 .0000E+00
6 .0000E+00 7 .0000E+00 8 .0000E+00
9 .0000E+00 10 .0000E+00 11 .0000E+00 12 .0000E+00 13 .0000E+00
14 .0000E+00 15 .0000E+00 16 .0000E+00
17 .0000E+00 18 .0000E+00 19 .0000E+00 20 .0000E+00 21 .0000E+00

22 .0000E+00   23 .0000E+00   24 .0000E+00

 *** MODELOPTs: CONC ELEV URBAN ADJ_U*

                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

 SOURCE ID = OFFS0048   ; SOURCE TYPE = AREA   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 -

                                                DAY OF WEEK = WEEKDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00   6 .0000E+00   7 .0000E+00   8 .1000E+01
    9 .1000E+01   10 .1000E+01   11 .1000E+01   12 .1000E+01   13 .1000E+01   14 .1000E+01   15 .1000E+01   16 .1000E+01
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00   22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                DAY OF WEEK = SATURDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00   6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00   14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00   22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                DAY OF WEEK = SUNDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00   6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00   14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00   22 .0000E+00   23 .0000E+00   24 .0000E+00

 *** MODELOPTs: CONC ELEV URBAN ADJ_U*

                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

 SOURCE ID = OFFS0049   ; SOURCE TYPE = AREA   :

```
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
                                                 DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                 DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                 DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↑ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

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 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0050     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
                                                 DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                 DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
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6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                DAY OF WEEK = SUNDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00

 *** MODELOPTs: CONC ELEV URBAN ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0051   ; SOURCE TYPE = AREA   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 -
- -
                                                DAY OF WEEK = WEEKDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .1000E+01
    9 .1000E+01   10 .1000E+01   11 .1000E+01   12 .1000E+01   13 .1000E+01
14 .1000E+01   15 .1000E+01   16 .1000E+01
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                DAY OF WEEK = SATURDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                DAY OF WEEK = SUNDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00

                    * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

 SOURCE ID = OFFS0052   ; SOURCE TYPE = AREA   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 -

                                                DAY OF WEEK = WEEKDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00   6 .0000E+00   7 .0000E+00   8 .1000E+01
    9 .1000E+01   10 .1000E+01   11 .1000E+01   12 .1000E+01   13 .1000E+01   14 .1000E+01   15 .1000E+01   16 .1000E+01
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00   22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                DAY OF WEEK = SATURDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00   6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00   14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00   22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                DAY OF WEEK = SUNDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00   6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00   14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00   22 .0000E+00   23 .0000E+00   24 .0000E+00

                    * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

 SOURCE ID = OFFS0053   ; SOURCE TYPE = AREA   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR

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 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↑ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

                                    PAGE  38
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                           * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0054     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
```

```
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

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 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0245     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
                                          DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
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* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0246 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

DAY OF WEEK = WEEKDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.1000E+01	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

DAY OF WEEK = SATURDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

DAY OF WEEK = SUNDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0247 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

```
                                              DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↑ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

                                  PAGE  42
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                     * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0248     ; SOURCE TYPE = AREA     :
  HOUR    SCALAR    HOUR    SCALAR    HOUR    SCALAR    HOUR    SCALAR    HOUR    SCALAR
HOUR    SCALAR    HOUR    SCALAR    HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
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22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
```



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 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                  * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0249     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
                                          DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
```

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0250 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

DAY OF WEEK = WEEKDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.1000E+01	14	.1000E+01	15	.1000E+01	16	.1000E+01
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

DAY OF WEEK = SATURDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

DAY OF WEEK = SUNDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = OFFS0251 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

DAY OF WEEK = WEEKDAY

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00

6 .0000E+00   7 .0000E+00   8 .1000E+01
    9 .1000E+01   10 .1000E+01   11 .1000E+01   12 .1000E+01   13 .1000E+01
14 .1000E+01   15 .1000E+01   16 .1000E+01
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                              DAY OF WEEK = SATURDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                              DAY OF WEEK = SUNDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00

 *** MODELOPTs: CONC ELEV URBAN ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = OFFS0252   ; SOURCE TYPE = AREA   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 -
- -
                                              DAY OF WEEK = WEEKDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .1000E+01
    9 .1000E+01   10 .1000E+01   11 .1000E+01   12 .1000E+01   13 .1000E+01
14 .1000E+01   15 .1000E+01   16 .1000E+01
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                              DAY OF WEEK = SATURDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                              DAY OF WEEK = SUNDAY

```
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
```


*** MODELOPTs: CONC ELEV URBAN ADJ_U*

* SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF WEEK (HRDOW) *

SOURCE ID = A0000002 ; SOURCE TYPE = AREA :

HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR

DAY OF WEEK = WEEKDAY

```
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
```

DAY OF WEEK = SATURDAY

```
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
```

DAY OF WEEK = SUNDAY

```
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
```


*** MODELOPTs: CONC ELEV URBAN ADJ_U*

```
                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = A0000003     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                              DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
↑ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

                                  PAGE  49
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = A0000004     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
                                              DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
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14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
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                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = A0000005     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
                                          DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                          DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
```

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    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
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                    * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = A0000006     ; SOURCE TYPE = AREA     :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
                                                DAY OF WEEK = WEEKDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .1000E+01
    9  .1000E+01   10  .1000E+01   11  .1000E+01   12  .1000E+01   13  .1000E+01
14  .1000E+01   15  .1000E+01   16  .1000E+01
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SATURDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
                                                DAY OF WEEK = SUNDAY
    1  .0000E+00    2  .0000E+00    3  .0000E+00    4  .0000E+00    5  .0000E+00
6  .0000E+00    7  .0000E+00    8  .0000E+00
    9  .0000E+00   10  .0000E+00   11  .0000E+00   12  .0000E+00   13  .0000E+00
14  .0000E+00   15  .0000E+00   16  .0000E+00
   17  .0000E+00   18  .0000E+00   19  .0000E+00   20  .0000E+00   21  .0000E+00
22  .0000E+00   23  .0000E+00   24  .0000E+00
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                    * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
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WEEK (HRDOW) *

 SOURCE ID = A0000007   ; SOURCE TYPE = AREA   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 -
- -
                                                DAY OF WEEK = WEEKDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .1000E+01
    9 .1000E+01   10 .1000E+01   11 .1000E+01   12 .1000E+01   13 .1000E+01
14 .1000E+01   15 .1000E+01   16 .1000E+01
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                DAY OF WEEK = SATURDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00
                                                DAY OF WEEK = SUNDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
    9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00

                   * SOURCE EMISSION RATE SCALARS WHICH VARY DIURNALLY AND BY DAY OF
WEEK (HRDOW) *

 SOURCE ID = A0000008   ; SOURCE TYPE = AREA   :
  HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
HOUR   SCALAR   HOUR   SCALAR   HOUR   SCALAR
 -
- -
                                                DAY OF WEEK = WEEKDAY
    1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .1000E+01
    9 .1000E+01   10 .1000E+01   11 .1000E+01   12 .1000E+01   13 .1000E+01
14 .1000E+01   15 .1000E+01   16 .1000E+01
   17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00

22 .0000E+00   23 .0000E+00   24 .0000E+00

DAY OF WEEK = SATURDAY

1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00

DAY OF WEEK = SUNDAY

1 .0000E+00   2 .0000E+00   3 .0000E+00   4 .0000E+00   5 .0000E+00
6 .0000E+00   7 .0000E+00   8 .0000E+00
9 .0000E+00   10 .0000E+00   11 .0000E+00   12 .0000E+00   13 .0000E+00
14 .0000E+00   15 .0000E+00   16 .0000E+00
17 .0000E+00   18 .0000E+00   19 .0000E+00   20 .0000E+00   21 .0000E+00
22 .0000E+00   23 .0000E+00   24 .0000E+00

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: UCART1   ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

408822.4, 408917.8, 409013.3, 409108.8, 409204.3, 409299.7, 409395.2,
409490.7, 409586.1, 409681.6,
409777.1, 409872.5, 409968.0, 410063.5, 410159.0, 410254.4, 410349.9,
410445.4, 410540.8, 410636.3,
410731.8, 410827.2, 410922.7, 411018.2,

*** Y-COORDINATES OF GRID ***
(METERS)

3735970.3, 3736115.9, 3736261.5, 3736407.1, 3736552.7, 3736698.3, 3736843.9,
3736989.5, 3737135.0, 3737280.6,
3737426.2, 3737571.8, 3737717.4, 3737863.0, 3738008.6, 3738154.2, 3738299.8,
3738445.4, 3738590.9, 3738736.5,
3738882.1, 3739027.7, 3739173.3, 3739318.9,

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)									
	408822.38	408917.85	409013.32	409108.79	409204.26	409299.73	409395.20	409490.67	409586.14	
3739318.90	15.00	15.00	14.50	14.90	15.00	15.00	15.00	15.00	15.00	
3739173.31	14.00	14.00	14.00	14.00	14.60	15.00	15.00	15.00	15.00	
3739027.72	13.00	13.00	13.00	13.00	14.00	14.00	14.60	15.00	15.00	
3738882.13	12.40	12.40	12.40	12.40	13.10	13.60	14.00	14.40	15.00	
3738736.54	12.00	12.00	12.00	12.00	12.10	12.90	13.50	13.90	14.10	
3738590.95	12.00	12.00	12.00	12.00	12.00	12.10	12.70	13.00	13.40	
3738445.36	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.80	
3738299.77	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3738154.18	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3738008.59	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3737863.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3737717.41	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3737571.82	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3737426.23	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3737280.64	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3737135.05	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3736989.46	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3736843.87	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	

  3739318.90 | 15.00   15.00   15.20   16.00   16.00
   16.00   16.00   16.00   16.00
  3739173.31 | 15.00   15.00   15.00   15.00   15.20
   15.80   16.00   16.00   16.00
  3739027.72 | 15.00   15.00   15.00   15.00   15.00
   15.10   15.80   16.00   16.00
  3738882.13 | 15.00   15.00   15.00   15.00   15.00
   15.00   15.00   15.50   16.00
  3738736.54 | 14.90   15.00   15.00   15.00   15.00
   15.00   15.00   15.00   16.00
  3738590.95 | 14.00   14.20   14.90   15.00   15.00
   15.00   15.00   15.00   16.00
  3738445.36 | 13.30   13.90   14.00   14.80   15.00
   15.00   15.00   15.00   16.00
  3738299.77 | 12.50   13.10   13.20   14.00   14.50
   15.00   15.00   15.00   16.00
  3738154.18 | 12.00   12.60   13.00   13.10   14.00
   14.00   14.80   15.10   16.00
  3738008.59 | 12.00   12.70   13.00   13.10   14.00

```
   14.00        14.80        15.10        16.00
  3737863.00 |         12.00        12.70        13.00        13.20        14.00
   14.00        14.90        15.10        16.00
  3737717.41 |         12.00        12.70        13.00        13.20        14.00
   14.00        14.90        15.10        16.00
  3737571.82 |         12.00        12.70        13.00        13.20        14.00
   14.00        14.90        15.10        16.00
  3737426.23 |         12.00        12.70        13.00        13.20        14.00
   14.00        14.90        15.20        16.00
  3737280.64 |         12.00        12.80        13.00        13.20        14.00
   14.00        14.90        15.20        16.00
  3737135.05 |         12.00        12.80        13.00        13.20        14.00
   14.00        15.00        15.20        16.00
  3736989.46 |         12.00        12.80        13.00        13.30        14.00
   14.00        15.00        15.20        16.00
  3736843.87 |         12.00        12.80        13.00        13.30        14.00
   14.00        15.00        15.20        16.20
  3736698.28 |         12.00        12.80        13.00        13.30        14.00
   14.00        15.00        15.30        16.60
  3736552.69 |         12.00        12.80        13.00        13.30        14.00
   14.50        15.00        16.00        17.50
  3736407.10 |         12.00        12.90        13.00        13.30        14.00
   14.60        15.00        16.30        18.00
  3736261.51 |         12.00        12.10        13.00        13.30        14.00
   14.00        15.10        16.30        17.60
  3736115.92 |         12.00        12.00        12.10        12.90        13.80
   14.00        15.00        15.50        17.40
  3735970.33 |         12.00        12.00        12.00        12.40        13.60
   14.00        15.00        15.30        16.60
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                PAGE  57
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                                *** NETWORK ID: UCART1   ;  NETWORK TYPE: GRIDCART
***

                                          * ELEVATION HEIGHTS IN METERS *

    Y-COORD  |                                          X-COORD (METERS)
    (METERS) |     410540.84    410636.31    410731.78    410827.25    410922.72
411018.19
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  3739318.90 |         16.00        16.60        17.00        17.10        18.10
   18.70
```

```
  3739173.31 |        16.00        16.70        17.00        17.00        17.40
   18.60
  3739027.72 |        16.00        16.70        17.00        17.00        17.10
   17.80
  3738882.13 |        16.00        16.70        17.00        17.00        17.00
   17.40
  3738736.54 |        16.00        16.70        17.00        17.00        17.00
   17.00
  3738590.95 |        16.00        16.70        17.00        17.00        17.00
   17.00
  3738445.36 |        16.00        16.70        17.00        17.00        17.00
   17.00
  3738299.77 |        16.00        16.80        17.00        17.00        17.00
   17.00
  3738154.18 |        16.00        16.80        17.00        17.00        17.00
   17.00
  3738008.59 |        16.00        16.80        17.00        17.00        17.00
   17.00
  3737863.00 |        16.00        16.80        17.00        17.00        17.00
   17.00
  3737717.41 |        16.00        16.80        17.00        17.00        17.00
   16.20
  3737571.82 |        16.00        16.80        17.00        17.00        17.00
   16.20
  3737426.23 |        16.00        16.90        17.00        17.00        17.00
   16.20
  3737280.64 |        16.00        16.90        17.00        17.00        17.00
   16.20
  3737135.05 |        16.20        16.90        17.00        17.00        17.00
   16.10
  3736989.46 |        16.70        17.00        17.00        17.00        17.00
   16.10
  3736843.87 |        17.50        18.00        17.80        17.00        17.00
   16.10
  3736698.28 |        18.50        19.00        17.80        17.00        16.30
   16.00
  3736552.69 |        19.50        19.00        17.80        17.00        16.30
   15.50
  3736407.10 |        18.80        18.00        17.60        16.90        16.20
   15.10
  3736261.51 |        18.00        17.20        16.80        16.10        16.00
   15.00
  3736115.92 |        17.20        17.00        16.50        15.80        15.20
   15.00
  3735970.33 |        17.00        17.00        16.00        15.50        15.00
   14.10
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***       10:58:25
```

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* HILL HEIGHT SCALES IN METERS *

Y-COORD (METERS)	X-COORD (METERS)									
	408822.38	408917.85	409013.32	409108.79	409204.26	409299.73	409395.20	409490.67	409586.14	
3739318.90	15.00	15.00	14.50	14.90	15.00	15.00	15.00	15.00	15.00	
3739173.31	14.00	14.00	14.00	14.00	14.60	15.00	15.00	15.00	15.00	
3739027.72	13.00	13.00	13.00	13.00	14.00	14.00	14.60	15.00	15.00	
3738882.13	12.40	12.40	12.40	12.40	13.10	13.60	14.00	14.40	15.00	
3738736.54	12.00	12.00	12.00	12.00	12.10	12.90	13.50	13.90	14.10	
3738590.95	12.00	12.00	12.00	12.00	12.00	12.10	12.70	13.00	13.40	
3738445.36	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.80	
3738299.77	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3738154.18	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3738008.59	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3737863.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3737717.41	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3737571.82	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3737426.23	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3737280.64	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3737135.05	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3736989.46	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	
3736843.87	12.00	12.00	12.00	12.00	12.00					

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

* HILL HEIGHT SCALES IN METERS *

Y-COORD (METERS)	X-COORD (METERS)					
	409681.61	409777.08	409872.55	409968.02	410063.49	410158.96
	410254.43	410349.90	410445.37			
3739318.90	15.00	15.00	15.20	16.00	16.00	16.00
	16.00	16.00	16.00			
3739173.31	15.00	15.00	15.00	15.00	15.20	15.80
	16.00	16.00	16.00			
3739027.72	15.00	15.00	15.00	15.00	15.00	15.10
	15.80	16.00	16.00			
3738882.13	15.00	15.00	15.00	15.00	15.00	15.00
	15.00	15.50	16.00			
3738736.54	14.90	15.00	15.00	15.00	15.00	15.00
	15.00	15.00	16.00			
3738590.95	14.00	14.20	14.90	15.00	15.00	15.00
	15.00	15.00	16.00			
3738445.36	13.30	13.90	14.00	14.80	15.00	15.00
	15.00	15.00	16.00			
3738299.77	12.50	13.10	13.20	14.00	14.50	15.00
	15.00	15.00	16.00			
3738154.18	12.00	12.60	13.00	13.10	14.00	14.00
	14.80	15.10	16.00			

```
  3738008.59 |         12.00        12.70        13.00        13.10        14.00
   14.00        14.80        15.10        16.00
  3737863.00 |         12.00        12.70        13.00        13.20        14.00
   14.00        14.90        15.10        16.00
  3737717.41 |         12.00        12.70        13.00        13.20        14.00
   14.00        14.90        15.10        16.00
  3737571.82 |         12.00        12.70        13.00        13.20        14.00
   14.00        14.90        15.10        16.00
  3737426.23 |         12.00        12.70        13.00        13.20        14.00
   14.00        14.90        15.20        16.00
  3737280.64 |         12.00        12.80        13.00        13.20        14.00
   14.00        14.90        15.20        16.00
  3737135.05 |         12.00        12.80        13.00        13.20        14.00
   14.00        15.00        15.20        16.00
  3736989.46 |         12.00        12.80        13.00        13.30        14.00
   14.00        15.00        15.20        16.00
  3736843.87 |         12.00        12.80        13.00        13.30        14.00
   14.00        15.00        15.20        16.20
  3736698.28 |         12.00        12.80        13.00        13.30        14.00
   14.00        15.00        15.30        16.60
  3736552.69 |         12.00        12.80        13.00        13.30        14.00
   14.50        15.00        16.00        17.50
  3736407.10 |         12.00        12.90        13.00        13.30        14.00
   14.60        15.00        16.30        18.00
  3736261.51 |         12.00        12.10        13.00        13.30        14.00
   14.00        15.10        16.30        17.60
  3736115.92 |         12.00        12.00        12.10        12.90        13.80
   14.00        15.00        15.50        17.40
  3735970.33 |         12.00        12.00        12.00        12.40        13.60
   14.00        15.00        15.30        16.60
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                PAGE  60
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                                *** NETWORK ID: UCART1   ;  NETWORK TYPE: GRIDCART
***

                                              * HILL HEIGHT SCALES IN METERS *

    Y-COORD  |                                                 X-COORD (METERS)
    (METERS) |     410540.84    410636.31    410731.78    410827.25    410922.72
411018.19
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

  3739318.90 |         16.00        16.60        17.00        17.10        18.10
```

```
 18.70
3739173.31 |        16.00        16.70        17.00        17.00        17.40
 18.60
3739027.72 |        16.00        16.70        17.00        17.00        17.10
 17.80
3738882.13 |        16.00        16.70        17.00        17.00        17.00
 17.40
3738736.54 |        16.00        16.70        17.00        17.00        17.00
 17.00
3738590.95 |        16.00        16.70        17.00        17.00        17.00
 17.00
3738445.36 |        16.00        16.70        17.00        17.00        17.00
 17.00
3738299.77 |        16.00        16.80        17.00        17.00        17.00
 17.00
3738154.18 |        16.00        16.80        17.00        17.00        17.00
 17.00
3738008.59 |        16.00        16.80        17.00        17.00        17.00
 17.00
3737863.00 |        16.00        16.80        17.00        17.00        17.00
 17.00
3737717.41 |        16.00        16.80        17.00        17.00        17.00
 16.20
3737571.82 |        16.00        16.80        17.00        17.00        17.00
 16.20
3737426.23 |        16.00        16.90        17.00        17.00        17.00
 16.20
3737280.64 |        16.00        16.90        17.00        17.00        17.00
 16.20
3737135.05 |        16.20        16.90        17.00        17.00        17.00
 16.10
3736989.46 |        16.70        17.00        17.00        17.00        17.00
 16.10
3736843.87 |        17.50        18.00        17.80        17.00        17.00
 16.10
3736698.28 |        18.50        19.00        17.80        17.00        16.30
 16.00
3736552.69 |        19.50        19.00        17.80        17.00        16.30
 15.50
3736407.10 |        18.80        18.00        17.60        16.90        16.20
 15.10
3736261.51 |        18.00        17.20        16.80        16.10        16.00
 15.00
3736115.92 |        17.20        17.00        16.50        15.80        15.20
 15.00
3735970.33 |        17.00        17.00        16.00        15.50        15.00
 14.10
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
```

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(410534.9, 3739069.9, 16.0, 16.0, 0.0); (410510.3, 3739071.3, 16.0, 16.0, 0.0);
(410480.4, 3739050.8, 16.0, 16.0, 0.0); (410614.7, 3739058.2, 16.4, 16.4, 0.0);
(410488.8, 3738970.7, 16.0, 16.0, 0.0); (410524.0, 3738968.8, 16.0, 16.0, 0.0);
(410539.1, 3738964.6, 16.0, 16.0, 0.0); (410022.5, 3739106.6, 15.0, 15.0, 0.0);
(409807.9, 3738961.2, 15.0, 15.0, 0.0); (410575.2, 3739112.4, 16.0, 16.0, 0.0);
(410489.5, 3739110.1, 16.0, 16.0, 0.0); (410387.0, 3739105.2, 16.0, 16.0, 0.0);
(410202.2, 3739109.7, 16.0, 16.0, 0.0); (410298.9, 3739108.9, 16.0, 16.0, 0.0);
(410328.1, 3739108.9, 16.0, 16.0, 0.0); (410236.3, 3739107.7, 16.0, 16.0, 0.0);
(409720.3, 3738798.6, 15.0, 15.0, 0.0); (409716.4, 3738851.9, 15.0, 15.0, 0.0);
(409716.0, 3738751.2, 15.0, 15.0, 0.0); (409710.6, 3738687.0, 14.4, 14.4, 0.0);
(409675.6, 3738120.5, 12.0, 12.0, 0.0); (409675.3, 3738102.4, 12.0, 12.0, 0.0);
(409675.6, 3738053.3, 12.0, 12.0, 0.0); (409711.1, 3738086.5, 12.0, 12.0, 0.0);
(409711.1, 3738117.0, 12.0, 12.0, 0.0); (409713.3, 3737638.3, 12.0, 12.0, 0.0);
(409713.0, 3737662.4, 12.0, 12.0, 0.0); (409712.7, 3737698.4, 12.0, 12.0, 0.0);
(409715.7, 3737909.5, 12.0, 12.0, 0.0); (409714.3, 3737887.3, 12.0, 12.0, 0.0);
(409711.2, 3738371.2, 13.0, 13.0, 0.0); (409711.5, 3738391.3, 13.1, 13.1, 0.0);
(409935.6, 3737259.2, 13.0, 13.0, 0.0); (409934.7, 3737240.7, 13.0, 13.0, 0.0);
(409934.4, 3737198.8, 13.0, 13.0, 0.0); (409935.3, 3737114.9, 13.0, 13.0, 0.0);
(409973.3, 3737093.1, 13.3, 13.3, 0.0); (409989.2, 3737004.3, 13.5, 13.5, 0.0);
(409971.9, 3736925.5, 13.3, 13.3, 0.0); (409926.9, 3736946.3, 13.0, 13.0, 0.0);
(409934.1, 3736923.9, 13.0, 13.0, 0.0); (409932.7,

```
3736877.0,      13.0,      13.0,       0.0);
     ( 409933.4, 3736845.3,      13.0,      13.0,       0.0);         ( 409978.5,
3736502.7,      13.5,      13.5,       0.0);
     ( 410014.7, 3736509.6,      13.9,      13.9,       0.0);         ( 409934.8,
3737060.9,      13.0,      13.0,       0.0);
     ( 409932.7, 3737050.2,      13.0,      13.0,       0.0);         ( 410646.4,
3738786.3,      16.8,      16.8,       0.0);
     ( 410989.5, 3738635.1,      17.0,      17.0,       0.0);         ( 409556.9,
3739118.8,      15.0,      15.0,       0.0);
     ( 409652.9, 3737604.5,      12.0,      12.0,       0.0);         ( 409649.9,
3737492.9,      12.0,      12.0,       0.0);
     ( 409979.2, 3736689.4,      13.4,      13.4,       0.0);         ( 409665.8,
3737859.0,      12.0,      12.0,       0.0);
     ( 409781.4, 3737453.9,      12.8,      12.8,       0.0);         ( 409798.1,
3737415.6,      13.0,      13.0,       0.0);
     ( 409922.2, 3736790.3,      13.0,      13.0,       0.0);         ( 410297.3,
3739153.4,      16.0,      16.0,       0.0);
     ( 409674.2, 3739089.8,      15.0,      15.0,       0.0);         ( 409643.3,
3739156.3,      15.0,      15.0,       0.0);
     ( 409667.2, 3738779.9,      15.0,      15.0,       0.0);         ( 410521.2,
3739107.3,      16.0,      16.0,       0.0);
     ( 409957.6, 3739152.5,      15.0,      15.0,       0.0);         ( 409665.8,
3737547.7,      12.0,      12.0,       0.0);
     ( 409652.2, 3738351.5,      12.7,      12.7,       0.0);         ( 409646.2,
3738288.8,      12.1,      12.1,       0.0);
     ( 408918.7, 3739100.7,      13.8,      13.8,       0.0);         ( 409307.4,
3739155.9,      15.0,      15.0,       0.0);
     ( 408854.1, 3738639.9,      12.0,      12.0,       0.0);

 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

                                  PAGE  62
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                                              *** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***
                                                                  (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
```

```
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1

               NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON
WHAT IS INCLUDED IN THE DATA FILE.



                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED
CATEGORIES ***
                                                          (METERS/SEC)

                                                  1.54,   3.09,   5.14,   8.23,
10.80,
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

                                   PAGE  63
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                                     *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL
DATA ***

   Surface file:   ..\..\Met Files\KFUL_V9_ADJU\KFUL_v9.SFC
                Met Version:  16216
   Profile file:   ..\..\Met Files\KFUL_V9_ADJU\KFUL_v9.PFL

   Surface format: FREE

   Profile format: FREE

   Surface station no.:     3166                  Upper air station no.:     3190
                 Name: FULLERTON_STATION_AIRPORT                  Name: UNKNOWN

                 Year:   2012                                     Year:   2012

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN
ALBEDO  REF WS   WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - -
 12 01 01   1 01   -4.8  0.098 -9.000 -9.000 -999.   74.     18.0  0.26   2.61
1.00    0.96  322.   10.1  283.8    2.0
 12 01 01   1 02   -1.9  0.072 -9.000 -9.000 -999.   47.     18.0  0.26   2.61
```

```
1.00    0.52   13.   10.1  283.1    2.0
 12 01 01   1 03   -3.1  0.083 -9.000 -9.000 -999.   57.     16.3  0.26   2.61
1.00    0.75   73.   10.1  282.0    2.0
 12 01 01   1 04   -4.3  0.094 -9.000 -9.000 -999.   69.     17.3  0.26   2.61
1.00    0.91   98.   10.1  281.4    2.0
 12 01 01   1 05 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.26   2.61
1.00    0.00    0.   10.1  280.9    2.0
 12 01 01   1 06   -2.1  0.074 -9.000 -9.000 -999.   48.     17.6  0.26   2.61
1.00    0.55   80.   10.1  280.4    2.0
 12 01 01   1 07   -2.8  0.080 -9.000 -9.000 -999.   54.     16.3  0.26   2.61
1.00    0.69  201.   10.1  280.4    2.0
 12 01 01   1 08   -1.5  0.066 -9.000 -9.000 -999.   41.     17.0  0.26   2.61
0.54    0.52   72.   10.1  280.9    2.0
 12 01 01   1 09   37.4 -9.000 -9.000 -9.000   38. -999. -99999.0  0.26   2.61
0.31    0.00    0.   10.1  285.9    2.0
 12 01 01   1 10  109.1  0.151  0.713  0.008  121.  141.     -2.9  0.26   2.61
0.24    0.79  268.   10.1  289.9    2.0
 12 01 01   1 11  160.5  0.148  1.143  0.005  338.  136.     -1.8  0.26   2.61
0.21    0.70  273.   10.1  294.2    2.0
 12 01 01   1 12  186.9  0.156  1.483  0.005  634.  148.     -1.8  0.26   2.61
0.20    0.74  230.   10.1  297.5    2.0
 12 01 01   1 13  187.4  0.210  1.777  0.005 1088.  231.     -4.5  0.26   2.61
0.20    1.20  227.   10.1  300.4    2.0
 12 01 01   1 14  160.3  0.235  1.833  0.005 1395.  274.     -7.4  0.26   2.61
0.21    1.47  233.   10.1  300.9    2.0
 12 01 01   1 15  109.1  0.197  1.662  0.005 1527.  210.     -6.3  0.26   2.61
0.25    1.20  233.   10.1  302.0    2.0
 12 01 01   1 16   33.3  0.243  1.125  0.005 1548.  288.    -39.2  0.26   2.61
0.33    1.91  229.   10.1  298.1    2.0
 12 01 01   1 17   -9.1  0.141 -9.000 -9.000 -999.  132.     28.3  0.26   2.61
0.60    1.37  212.   10.1  294.2    2.0
 12 01 01   1 18   -4.3  0.094 -9.000 -9.000 -999.   69.     17.5  0.26   2.61
1.00    0.91  190.   10.1  292.0    2.0
 12 01 01   1 19   -2.8  0.079 -9.000 -9.000 -999.   54.     16.3  0.26   2.61
1.00    0.70  302.   10.1  289.2    2.0
 12 01 01   1 20   -4.0  0.091 -9.000 -9.000 -999.   65.     17.0  0.26   2.61
1.00    0.87  338.   10.1  288.1    2.0
 12 01 01   1 21   -6.3  0.113 -9.000 -9.000 -999.   91.     20.5  0.26   2.61
1.00    1.11  304.   10.1  287.0    2.0
 12 01 01   1 22   -3.1  0.082 -9.000 -9.000 -999.   57.     16.3  0.26   2.61
1.00    0.75   76.   10.1  285.4    2.0
 12 01 01   1 23   -2.4  0.076 -9.000 -9.000 -999.   50.     16.7  0.26   2.61
1.00    0.62  306.   10.1  284.9    2.0
 12 01 01   1 24   -3.6  0.087 -9.000 -9.000 -999.   62.     16.6  0.26   2.61
1.00    0.82  318.   10.1  283.8    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 12 01 01 01   10.1 1  322.    0.96   283.8   99.0  -99.00  -99.00
```

 *** MODELOPTs: CONC ELEV URBAN ADJ_U*

                              *** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL   ***
                                 INCLUDING SOURCE(S):   AREAS   , A0000001 , OFFS0025   , OFFS0026   , OFFS0027   ,
                 OFFS0028   , OFFS0029   , OFFS0030   , OFFS0031   , OFFS0032 , OFFS0033   , OFFS0034   , OFFS0035   ,
                 OFFS0036   , OFFS0037   , OFFS0038   , OFFS0039   , OFFS0040 , OFFS0041   , OFFS0042   , OFFS0043   ,
                 OFFS0044   , OFFS0045   , OFFS0046   , OFFS0047   , OFFS0048 , OFFS0049   , OFFS0050   , . . .   ,

                                  *** NETWORK ID: UCART1   ; NETWORK TYPE: GRIDCART ***

                                       ** CONC OF PM_10   IN MICROGRAMS/M**3
                  **

    Y-COORD | X-COORD (METERS)
    (METERS) | 408822.38   408917.85   409013.32   409108.79   409204.26   409299.73   409395.20   409490.67   409586.14
 -

  3739318.90 | 0.00006   0.00006   0.00006   0.00007   0.00008   0.00008   0.00009   0.00010   0.00011
  3739173.31 | 0.00006   0.00007   0.00007   0.00008   0.00009   0.00010   0.00011   0.00012   0.00014
  3739027.72 | 0.00006   0.00007   0.00007   0.00008   0.00009   0.00010   0.00011   0.00013   0.00015
  3738882.13 | 0.00006   0.00006   0.00007   0.00007   0.00008   0.00009   0.00010   0.00011   0.00013
  3738736.54 | 0.00005   0.00006   0.00006   0.00006   0.00007   0.00007   0.00008   0.00009   0.00010
  3738590.95 | 0.00004   0.00005   0.00005   0.00005   0.00005   0.00006   0.00006   0.00006   0.00007
  3738445.36 | 0.00004   0.00004   0.00004   0.00004   0.00004   0.00004   0.00004   0.00005   0.00005
  3738299.77 | 0.00003   0.00003   0.00003   0.00003   0.00003   0.00003   0.00003   0.00003   0.00004
  3738154.18 | 0.00002   0.00002   0.00002   0.00002   0.00002

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): AREAS , A0000001 , OFFS0025 , OFFS0026 , OFFS0027 ,
OFFS0028 , OFFS0029 , OFFS0030 , OFFS0031 , OFFS0032 , OFFS0033 , OFFS0034 , OFFS0035 ,
OFFS0036 , OFFS0037 , OFFS0038 , OFFS0039 , OFFS0040 , OFFS0041 , OFFS0042 , OFFS0043 ,
OFFS0044 , OFFS0045 , OFFS0046 , OFFS0047 , OFFS0048 , OFFS0049 , OFFS0050 , . . . ,

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)								
	409681.61	409777.08	409872.55	409968.02	410063.49	410158.96	410254.43	410349.90	410445.37
3739318.90	0.00013	0.00015	0.00017	0.00021	0.00025	0.00032	0.00042	0.00062	0.00115
3739173.31	0.00017	0.00021	0.00025	0.00032	0.00043	0.00061	0.00095	0.00169	0.00395
3739027.72	0.00018	0.00022	0.00027	0.00035	0.00048	0.00070	0.00114	0.00222	0.00613
3738882.13	0.00016	0.00018	0.00021	0.00026	0.00032	0.00040	0.00051	0.00065	0.00083
3738736.54	0.00011	0.00012	0.00013	0.00015	0.00016	0.00018	0.00020	0.00024	0.00029
3738590.95	0.00008	0.00008	0.00008	0.00009	0.00009	0.00010	0.00011	0.00013	0.00015
3738445.36	0.00006	0.00005	0.00005	0.00006	0.00006	0.00007	0.00008	0.00009	0.00010
3738299.77	0.00004	0.00004	0.00004	0.00004	0.00005	0.00005	0.00006	0.00006	0.00007
3738154.18	0.00003	0.00003	0.00003	0.00003	0.00004	0.00004	0.00004	0.00005	0.00005
3738008.59	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003	0.00004	0.00004	0.00004
3737863.00	0.00003	0.00002	0.00002	0.00003	0.00003	0.00003	0.00003	0.00003	0.00003
3737717.41	0.00002	0.00002	0.00002	0.00002	0.00002	0.00003	0.00003	0.00003	0.00003
3737571.82	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
3737426.23	0.00002	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002
3737280.64	0.00001	0.00002	0.00002	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002
3737135.05	0.00001	0.00001	0.00002	0.00003	0.00002	0.00002	0.00002	0.00002	0.00002
3736989.46	0.00001	0.00001	0.00001	0.00003	0.00002	0.00001	0.00001	0.00001	0.00001
3736843.87	0.00001	0.00001	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001
3736698.28	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): AREAS , A0000001 , OFFS0025 , OFFS0026 , OFFS0027 , OFFS0028 , OFFS0029 , OFFS0030 , OFFS0031 , OFFS0032 , OFFS0033 , OFFS0034 , OFFS0035 , OFFS0036 , OFFS0037 , OFFS0038 , OFFS0039 , OFFS0040 , OFFS0041 , OFFS0042 , OFFS0043 , OFFS0044 , OFFS0045 , OFFS0046 , OFFS0047 , OFFS0048 , OFFS0049 , OFFS0050 , . . . ,

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)					
	410540.84	410636.31	410731.78	410827.25	410922.72	411018.19
3739318.90	0.00283	0.00446	0.00342	0.00189	0.00099	0.00056
3739173.31	0.02285	0.02061	0.00540	0.00194	0.00093	0.00053
3739027.72	0.03457	0.01433	0.00357	0.00150	0.00080	0.00049
3738882.13	0.00119	0.00142	0.00114	0.00079	0.00054	0.00038
3738736.54	0.00036	0.00041	0.00041	0.00037	0.00031	
3736552.69	0.00001	0.00001	0.00001	0.00001	0.00002	0.00001
3736407.10	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
3736261.51	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
3736115.92	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001
3735970.33	0.00001	0.00001	0.00001	0.00001	0.00001	0.00001

0.00025
 3738590.95 | 0.00018   0.00019   0.00020   0.00020   0.00018
0.00017
 3738445.36 | 0.00011   0.00012   0.00012   0.00012   0.00012
0.00011
 3738299.77 | 0.00007   0.00008   0.00008   0.00008   0.00008
0.00008
 3738154.18 | 0.00005   0.00006   0.00006   0.00006   0.00006
0.00006
 3738008.59 | 0.00004   0.00004   0.00005   0.00005   0.00005
0.00005
 3737863.00 | 0.00003   0.00004   0.00004   0.00004   0.00004
0.00004
 3737717.41 | 0.00003   0.00003   0.00003   0.00003   0.00003
0.00003
 3737571.82 | 0.00002   0.00002   0.00003   0.00003   0.00003
0.00003
 3737426.23 | 0.00002   0.00002   0.00002   0.00002   0.00002
0.00002
 3737280.64 | 0.00002   0.00002   0.00002   0.00002   0.00002
0.00002
 3737135.05 | 0.00002   0.00002   0.00002   0.00002   0.00002
0.00002
 3736989.46 | 0.00002   0.00002   0.00002   0.00002   0.00002
0.00002
 3736843.87 | 0.00001   0.00001   0.00001   0.00001   0.00001
0.00001
 3736698.28 | 0.00001   0.00001   0.00001   0.00001   0.00001
0.00001
 3736552.69 | 0.00001   0.00001   0.00001   0.00001   0.00001
0.00001
 3736407.10 | 0.00001   0.00001   0.00001   0.00001   0.00001
0.00001
 3736261.51 | 0.00001   0.00001   0.00001   0.00001   0.00001
0.00001
 3736115.92 | 0.00001   0.00001   0.00001   0.00001   0.00001
0.00001
 3735970.33 | 0.00001   0.00001   0.00001   0.00001   0.00001
0.00001

 *** MODELOPTs: CONC ELEV URBAN ADJ_U*

                             *** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL   ***
                                INCLUDING SOURCE(S):   AREAS   , A0000001

```
, OFFS0025    , OFFS0026    , OFFS0027    ,
                OFFS0028    , OFFS0029    , OFFS0030    , OFFS0031    , OFFS0032
, OFFS0033    , OFFS0034    , OFFS0035    ,
                OFFS0036    , OFFS0037    , OFFS0038    , OFFS0039    , OFFS0040
, OFFS0041    , OFFS0042    , OFFS0043    ,
                OFFS0044    , OFFS0045    , OFFS0046    , OFFS0047    , OFFS0048
, OFFS0049    , OFFS0050    ,  . . .      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                  **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         410534.87    3739069.90        0.07185                       410510.27
3739071.28        0.03669
         410480.38    3739050.79        0.01424                       410614.68
3739058.21        0.04125
         410488.84    3738970.72        0.00359                       410523.96
3738968.83        0.00427
         410539.14    3738964.56        0.00436                       410022.49
3739106.59        0.00042
         409807.88    3738961.18        0.00022                       410575.24
3739112.39        0.14239
         410489.55    3739110.06        0.01785                       410387.01
3739105.21        0.00346
         410202.17    3739109.74        0.00088                       410298.91
3739108.92        0.00159
         410328.14    3739108.92        0.00198                       410236.34
3739107.68        0.00106
         409720.27    3738798.64        0.00014                       409716.40
3738851.88        0.00016
         409716.00    3738751.21        0.00013                       409710.65
3738686.98        0.00011
         409675.64    3738120.52        0.00003                       409675.28
3738102.43        0.00003
         409675.64    3738053.27        0.00003                       409711.10
3738086.53        0.00004
         409711.10    3738117.05        0.00004                       409713.29
3737638.31        0.00003
         409713.00    3737662.42        0.00003                       409712.70
3737698.43        0.00003
         409715.69    3737909.47        0.00003                       409714.26
3737887.32        0.00003
         409711.20    3738371.21        0.00005                       409711.46
3738391.35        0.00006
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         409935.60    3737259.21        0.00002                        409934.69
3737240.68        0.00002
         409934.38    3737198.77        0.00002                        409935.29
3737114.94        0.00002
         409973.26    3737093.07        0.00003                        409989.17
3737004.29        0.00002
         409971.87    3736925.54        0.00002                        409926.88
3736946.33        0.00002
         409934.12    3736923.94        0.00002                        409932.71
3736877.05        0.00002
         409933.36    3736845.32        0.00002                        409978.45
3736502.69        0.00001
         410014.70    3736509.56        0.00001                        409934.76
3737060.89        0.00002
         409932.70    3737050.19        0.00002                        410646.44
3738786.27        0.00058
         410989.51    3738635.08        0.00020                        409556.89
3739118.80        0.00014
         409652.94    3737604.55        0.00002                        409649.88
3737492.91        0.00002
         409979.21    3736689.41        0.00001                        409665.81
3737858.98        0.00002
         409781.42    3737453.90        0.00002                        409798.14
3737415.59        0.00003
         409922.21    3736790.35        0.00002                        410297.34
3739153.38        0.00134
         409674.16    3739089.82        0.00018                        409643.27
3739156.31        0.00016
         409667.22    3738779.89        0.00012                        410521.21
3739107.26        0.05052
         409957.65    3739152.46        0.00033                        409665.75
3737547.68        0.00002
         409652.24    3738351.46        0.00004                        409646.25
3738288.85        0.00004
         408918.70    3739100.72        0.00007                        409307.37
3739155.94        0.00010
         408854.06    3738639.95        0.00005

 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

                                   PAGE  68
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                   INCLUDING SOURCE(S):     AREAS       , A0000001
, OFFS0025    , OFFS0026    , OFFS0027    ,
```

```
                OFFS0028    , OFFS0029    , OFFS0030    , OFFS0031    , OFFS0032
, OFFS0033    , OFFS0034    , OFFS0035    ,
                OFFS0036    , OFFS0037    , OFFS0038    , OFFS0039    , OFFS0040
, OFFS0041    , OFFS0042    , OFFS0043    ,
                OFFS0044    , OFFS0045    , OFFS0046    , OFFS0047    , OFFS0048
, OFFS0049    , OFFS0050    ,  . . .      ,

                                  *** NETWORK ID: UCART1   ;  NETWORK TYPE:
GRIDCART ***

                                       ** CONC OF PM_10    IN MICROGRAMS/M**3
                 **

  Y-COORD  |                                                  X-COORD (METERS)
  (METERS) |       408822.38              408917.85              409013.32
      409108.79              409204.26
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -

 3739318.9 |      0.01955 (13010908)      0.02122 (13010908)      0.02310 (13010908)
     0.02527 (13010908)      0.02774 (13010908)
 3739173.3 |      0.02054 (13012208)      0.02216 (13012208)      0.02401 (13012208)
     0.02615 (13012208)      0.02866 (13012208)
 3739027.7 |      0.02009 (13012208)      0.02171 (13012208)      0.02356 (13012208)
     0.02571 (13012208)      0.02822 (13012208)
 3738882.1 |      0.02077 (13013108)      0.02244 (13013108)      0.02434 (13013108)
     0.02652 (13013108)      0.02905 (13013108)
 3738736.5 |      0.02016 (16121408)      0.02170 (16121408)      0.02342 (16121408)
     0.02532 (13011608)      0.02788 (13011608)
 3738590.9 |      0.01977 (13011608)      0.02133 (12010408)      0.02308 (12010408)
     0.02500 (12010408)      0.02706 (12010408)
 3738445.4 |      0.01915 (12010408)      0.02028 (12010408)      0.02143 (12010408)
     0.02339 (12020208)      0.02664 (12020208)
 3738299.8 |      0.01827 (12020208)      0.02040 (12020208)      0.02264 (12020208)
     0.02496 (12020208)      0.02727 (12020208)
 3738154.2 |      0.01943 (12020208)      0.02101 (12020208)      0.02250 (12020208)
     0.02388 (12020208)      0.02497 (12020208)
 3738008.6 |      0.01896 (12020208)      0.01984 (12020208)      0.02050 (12020208)
     0.02090 (12020208)      0.02087 (12020208)
 3737863.0 |      0.01725 (12020208)      0.01744 (12020208)      0.01733 (12020208)
     0.01800 (13011708)      0.01871 (13011708)
 3737717.4 |      0.01468 (12020208)      0.01531 (13011708)      0.01587 (13011708)
     0.01633 (15122908)      0.01742 (15122908)
 3737571.8 |      0.01373 (13011708)      0.01400 (13011708)      0.01478 (15122908)
     0.01552 (15122908)      0.01609 (15122908)
 3737426.2 |      0.01270 (15122908)      0.01339 (15122908)      0.01392 (15122908)
     0.01426 (15122908)      0.01436 (15122908)
 3737280.6 |      0.01218 (15122908)      0.01257 (15122908)      0.01273 (15122908)
     0.01271 (15122908)      0.01360 (16012508)
 3737135.0 |      0.01139 (15122908)      0.01145 (15122908)      0.01137 (15122908)
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    0.01235 (16012508)      0.01323 (16012508)
 3736989.5 |      0.01039 (15122908)      0.01037 (16012508)      0.01129 (16012508)
    0.01203 (16012508)      0.01263 (16012508)
 3736843.9 |      0.00960 (16012508)      0.01039 (16012508)      0.01101 (16012508)
    0.01153 (16012508)      0.01184 (16012508)
 3736698.3 |      0.00961 (16012508)      0.01015 (16012508)      0.01060 (16012508)
    0.01087 (16012508)      0.01105 (12121708)
 3736552.7 |      0.00941 (16012508)      0.00980 (16012508)      0.01004 (16012508)
    0.01015 (16012508)      0.01070 (12121708)
 3736407.1 |      0.00912 (16012508)      0.00933 (16012508)      0.00943 (16012508)
    0.00981 (12121708)      0.01031 (12121708)
 3736261.5 |      0.00871 (16012508)      0.00881 (16012508)      0.00900 (12121708)
    0.00949 (12121708)      0.00980 (12121708)
 3736115.9 |      0.00826 (16012508)      0.00833 (12121708)      0.00873 (12121708)
    0.00908 (12121708)      0.00926 (12121708)
 3735970.3 |      0.00775 (12121708)      0.00811 (12121708)      0.00844 (12121708)
    0.00863 (12121708)      0.00871 (12121708)
↟ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                 PAGE  69
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     AREAS       , A0000001
, OFFS0025    , OFFS0026    , OFFS0027    ,
                OFFS0028    , OFFS0029    , OFFS0030    , OFFS0031    , OFFS0032
, OFFS0033    , OFFS0034    , OFFS0035    ,
                OFFS0036    , OFFS0037    , OFFS0038    , OFFS0039    , OFFS0040
, OFFS0041    , OFFS0042    , OFFS0043    ,
                OFFS0044    , OFFS0045    , OFFS0046    , OFFS0047    , OFFS0048
, OFFS0049    , OFFS0050    ,  . . .      ,

                                  *** NETWORK ID: UCART1   ;  NETWORK TYPE:
GRIDCART ***

                                       ** CONC OF PM_10    IN MICROGRAMS/M**3
                **

  Y-COORD  |                                                  X-COORD (METERS)
  (METERS) |       409299.73              409395.20              409490.67
      409586.14              409681.61
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

 3739318.9 |      0.03147 (12121008)      0.03581 (12121008)      0.04105 (12121008)
    0.04736 (12121008)      0.05486 (12121008)
```

```
 3739173.3 |      0.03161 (13012208)      0.03508 (13012208)      0.03929 (13012208)
     0.04448 (13012208)      0.05082 (13012208)
 3739027.7 |      0.03119 (13012208)      0.03488 (13013108)      0.03944 (13013108)
     0.04512 (13013108)      0.05246 (13013108)
 3738882.1 |      0.03192 (13013108)      0.03534 (13013108)      0.03941 (16121408)
     0.04468 (16121408)      0.05120 (16121408)
 3738736.5 |      0.03083 (13011608)      0.03421 (12010408)      0.03832 (12010408)
     0.04299 (12010408)      0.04836 (12010408)
 3738590.9 |      0.02924 (12010408)      0.03161 (12020208)      0.03712 (12020208)
     0.04328 (12020208)      0.05009 (12020208)
 3738445.4 |      0.03014 (12020208)      0.03384 (12020208)      0.03749 (12020208)
     0.04090 (12020208)      0.04378 (12020208)
 3738299.8 |      0.02943 (12020208)      0.03132 (12020208)      0.03266 (12020208)
     0.03319 (12020208)      0.03467 (13011708)
 3738154.2 |      0.02570 (12020208)      0.02583 (12020208)      0.02682 (13011708)
     0.02826 (15122908)      0.03084 (15122908)
 3738008.6 |      0.02166 (13011708)      0.02255 (13011708)      0.02419 (15122908)
     0.02569 (15122908)      0.02657 (15122908)
 3737863.0 |      0.01966 (15122908)      0.02092 (15122908)      0.02179 (15122908)
     0.02210 (15122908)      0.02481 (16012508)
 3737717.4 |      0.01826 (15122908)      0.01874 (15122908)      0.01916 (16012508)
     0.02123 (16012508)      0.02297 (16012508)
 3737571.8 |      0.01630 (15122908)      0.01693 (16012508)      0.01855 (16012508)
     0.01981 (16012508)      0.02069 (16012508)
 3737426.2 |      0.01510 (16012508)      0.01642 (16012508)      0.01743 (16012508)
     0.01803 (16012508)      0.01934 (12121708)
 3737280.6 |      0.01467 (16012508)      0.01551 (16012508)      0.01600 (16012508)
     0.01691 (12121708)      0.01790 (12121708)
 3737135.0 |      0.01394 (16012508)      0.01435 (16012508)      0.01501 (12121708)
     0.01592 (12121708)      0.01641 (12121708)
 3736989.5 |      0.01299 (16012508)      0.01343 (12121708)      0.01429 (12121708)
     0.01477 (12121708)      0.01495 (12121708)
 3736843.9 |      0.01214 (12121708)      0.01289 (12121708)      0.01341 (12121708)
     0.01363 (12121708)      0.01351 (12121708)
 3736698.3 |      0.01171 (12121708)      0.01224 (12121708)      0.01250 (12121708)
     0.01247 (12121708)      0.01250 (13120908)
 3736552.7 |      0.01121 (12121708)      0.01150 (12121708)      0.01161 (12121708)
     0.01142 (13120908)      0.01163 (13120908)
 3736407.1 |      0.01059 (12121708)      0.01073 (12121708)      0.01065 (12121708)
     0.01072 (13120908)      0.01080 (13120908)
 3736261.5 |      0.00996 (12121708)      0.00992 (12121708)      0.00993 (13120908)
     0.01006 (13120908)      0.00995 (13120908)
 3736115.9 |      0.00933 (12121708)      0.00921 (13120908)      0.00939 (13120908)
     0.00944 (13120908)      0.00923 (13120908)
 3735970.3 |      0.00864 (12121708)      0.00879 (13120908)      0.00887 (13120908)
     0.00876 (13120908)      0.00881 (14010808)
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25
```

*** MODELOPTs: CONC ELEV URBAN ADJ_U*

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): AREAS , A0000001 , OFFS0025 , OFFS0026 , OFFS0027 , OFFS0028 , OFFS0029 , OFFS0030 , OFFS0031 , OFFS0032 , OFFS0033 , OFFS0034 , OFFS0035 , OFFS0036 , OFFS0037 , OFFS0038 , OFFS0039 , OFFS0040 , OFFS0041 , OFFS0042 , OFFS0043 , OFFS0044 , OFFS0045 , OFFS0046 , OFFS0047 , OFFS0048 , OFFS0049 , OFFS0050 , . . . ,

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS) 409777.08	409872.55	409968.02	410063.49	410158.96
3739318.9	0.06397 (12121008)	0.07483 (12121008)	0.08758 (12121008)	0.10148 (12121008)	0.11751 (15011308)
3739173.3	0.05895 (13012208)	0.07109 (12121008)	0.09056 (12121008)	0.11894 (12121008)	0.16233 (12121008)
3739027.7	0.06150 (13013108)	0.07389 (13013108)	0.09110 (13013108)	0.11639 (13013108)	0.15616 (13013108)
3738882.1	0.05945 (13011608)	0.07083 (12010408)	0.08618 (12010408)	0.10732 (12020208)	0.14958 (12020208)
3738736.5	0.05716 (12020208)	0.07036 (12020208)	0.08529 (12020208)	0.10046 (12020208)	0.11150 (12020208)
3738590.9	0.05649 (12020208)	0.06236 (12020208)	0.06588 (12020208)	0.07059 (15122908)	0.07948 (15122908)
3738445.4	0.04487 (12020208)	0.04685 (13011708)	0.05218 (15122908)	0.05699 (16012508)	0.06606 (16012508)
3738299.8	0.03728 (15122908)	0.04028 (15122908)	0.04382 (16012508)	0.04943 (16012508)	0.05552 (12121708)
3738154.2	0.03215 (15122908)	0.03514 (16012508)	0.03890 (16012508)	0.04283 (12121708)	0.04585 (12121708)
3738008.6	0.02904 (16012508)	0.03174 (16012508)	0.03427 (12121708)	0.03699 (12121708)	0.03734 (12121708)
3737863.0	0.02659 (16012508)	0.02823 (12121708)	0.03061 (12121708)	0.03146 (12121708)	0.03168 (13120908)
3737717.4	0.02378 (12121708)	0.02584 (12121708)	0.02684 (12121708)		

Y-COORD (METERS)	X-COORD (METERS)				
	410254.43	410349.90	410445.37	410540.84	410636.31
3739318.9	0.14546 (15012908)	0.19373 (15012908)	0.25177 (12120608)	0.26255 (12112608)	0.28545 (14120808)
3739173.3	0.23287 (12121008)	0.35365 (12121008)	0.57057 (15012908)	1.06535 (12120608)	0.65996 (14120808)
3739027.7	0.22571 (13013108)	0.36891 (13011608)	0.87373 (12020208)	4.15863 (12121708)	1.17484 (12020808)
3738882.1	0.20562 (12020208)	0.26137 (12020208)	0.37019 (12121708)	0.48235 (14012208)	0.41041 (16121308)
3738736.5	0.12627 (15122908)	0.16050 (12121708)	0.18748 (12121708)	0.21491 (14012208)	0.19965 (16121308)
3738590.9	0.09549 (16012508)	0.11185 (12121708)	0.12279 (14012008)	0.12973 (14012208)	0.11696 (16121308)
3738445.4	0.07577 (12121708)	0.07831 (13120908)	0.08711 (14012008)	0.08972 (14012208)	0.08049 (14011608)
3738299.8	0.05844 (12121708)	0.06155 (14012008)	0.06556 (14012008)	0.06705 (14012208)	0.06083 (14011608)
3738154.2	0.04628 (13120908)	0.05036 (14012008)	0.05233 (14012208)	0.05271 (14012208)	0.04814 (14012108)
3738008.6	0.03848 (14012008)	0.04183 (14012008)	0.04319 (14012208)	0.04295 (14012208)	0.03960 (14012108)
3737863.0	0.03355 (14012008)	0.03531 (14012008)	0.03635 (14012208)	0.03592 (14012208)	0.03346 (14012108)
3737717.4	0.02948 (14012008)	0.03025 (14012008)	0.03119 (14012208)	0.03065 (14012208)	0.02872 (14012108)
3737571.8	0.02600 (14012008)	0.02624 (14012008)	0.02714 (14012208)	0.02657 (14012208)	0.02505 (14012108)
3737426.2	0.02307 (14012008)	0.02322 (14012208)	0.02392 (14012208)	0.02334 (14012208)	0.02213 (14012108)
3737280.6	0.02061 (14012008)	0.02088 (14012208)	0.02131 (14012208)	0.02075 (14012208)	0.01977 (14012108)
3737135.0	0.01853 (14012008)	0.01892 (14012208)	0.01916 (14012208)	0.01862 (14012208)	0.01782 (14012108)
3736989.5	0.01676 (14012008)	0.01719 (14012208)	0.01734 (14012208)	0.01683 (14012208)	0.01619 (14012108)
3736843.9	0.01524 (14012008)	0.01573 (14012208)	0.01580 (14012208)	0.01533 (14012208)	0.01478 (14012108)
3736698.3	0.01402 (14012208)	0.01449 (14012208)	0.01450 (14012208)	0.01404 (14012208)	0.01358 (14012108)
3736552.7	0.01301 (14012208)	0.01338 (14012208)	0.01335 (14012208)	0.01292 (14012208)	0.01255 (14012108)
3736407.1	0.01213 (14012208)	0.01240 (14012208)	0.01235 (14012208)	0.01194 (14012208)	0.01166 (14012108)
3736261.5	0.01138 (14012208)	0.01154 (14012208)	0.01148 (14012208)	0.01108 (14012208)	0.01089 (14012108)

 *** MODELOPTs: CONC ELEV URBAN ADJ_U*

                             *** THE   1ST HIGHEST 1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL   ***
                                INCLUDING SOURCE(S):   AREAS   , A0000001
, OFFS0025   , OFFS0026   , OFFS0027   ,
                OFFS0028   , OFFS0029   , OFFS0030   , OFFS0031   , OFFS0032
, OFFS0033   , OFFS0034   , OFFS0035   ,
                OFFS0036   , OFFS0037   , OFFS0038   , OFFS0039   , OFFS0040
, OFFS0041   , OFFS0042   , OFFS0043   ,
                OFFS0044   , OFFS0045   , OFFS0046   , OFFS0047   , OFFS0048
, OFFS0049   , OFFS0050   , . . .   ,

                                *** NETWORK ID: UCART1   ; NETWORK TYPE:
GRIDCART ***

                                     ** CONC OF PM_10   IN MICROGRAMS/M**3
                 **

  Y-COORD | X-COORD (METERS)
  (METERS) | 410731.78   410827.25   410922.72
      411018.19
 -
- -

 3739318.9 | 0.19225 (14120808)   0.10704 (14013108)   0.08770 (16120208)
    0.07208 (15010508)
 3739173.3 | 0.27645 (15010508)   0.17487 (15010508)   0.12232 (15012808)
    0.09556 (15012808)
 3739027.7 | 0.43553 (13020408)   0.23678 (15011908)   0.15849 (15011908)
    0.11544 (15011908)
 3738882.1 | 0.30976 (12020808)   0.21338 (12020808)   0.14444 (16012108)
    0.11242 (13020408)
 3738736.5 | 0.16571 (13021408)   0.14375 (12020808)   0.12781 (12020808)
    0.10093 (12020808)
 3738590.9 | 0.11624 (16121308)   0.09784 (13021408)   0.08461 (12020808)
    0.08352 (12020808)
 3738445.4 | 0.08347 (16121308)   0.07576 (16121308)   0.06702 (12011808)
    0.05950 (14012808)
 3738299.8 | 0.06188 (16121308)   0.06107 (16121308)   0.05349 (12020608)

```
    0.04995 (14012808)
 3738154.2 |      0.04734 (16121308)      0.04924 (16121308)      0.04617 (16121308)
    0.04165 (12020608)
 3738008.6 |      0.03784 (14010708)      0.04002 (16121308)      0.03948 (16121308)
    0.03602 (16121308)
 3737863.0 |      0.03203 (14011608)      0.03297 (16121308)      0.03366 (16121308)
    0.03213 (16121308)
 3737717.4 |      0.02775 (14011608)      0.02737 (16121308)      0.02877 (16121308)
    0.02839 (16121308)
 3737571.8 |      0.02430 (14011608)      0.02366 (14010708)      0.02467 (16121308)
    0.02501 (16121308)
 3737426.2 |      0.02149 (14011608)      0.02062 (14010708)      0.02132 (16121308)
    0.02207 (16121308)
 3737280.6 |      0.01919 (14011608)      0.01845 (14011608)      0.01861 (14010708)
    0.01943 (16121308)
 3737135.0 |      0.01726 (14011608)      0.01674 (14011608)      0.01672 (14010708)
    0.01721 (16121308)
 3736989.5 |      0.01564 (14011608)      0.01533 (14011608)      0.01499 (14010708)
    0.01523 (16121308)
 3736843.9 |      0.01427 (14011608)      0.01409 (14011608)      0.01360 (14010708)
    0.01383 (14010708)
 3736698.3 |      0.01309 (14011608)      0.01295 (14011608)      0.01242 (14011608)
    0.01270 (14010708)
 3736552.7 |      0.01207 (14012108)      0.01199 (14011608)      0.01160 (14011608)
    0.01165 (14010708)
 3736407.1 |      0.01126 (14012108)      0.01115 (14011608)      0.01078 (14011608)
    0.01072 (14010708)
 3736261.5 |      0.01057 (14012108)      0.01038 (14011608)      0.01014 (14011608)
    0.00997 (14010708)
 3736115.9 |      0.00994 (14012108)      0.00971 (14011608)      0.00957 (14011608)
    0.00922 (14010708)
 3735970.3 |      0.00933 (14012108)      0.00911 (14011608)      0.00901 (14011608)
    0.00868 (14010708)
↟ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***       10:58:25

                                  PAGE  73
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                               *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     AREAS       , A0000001
, OFFS0025    , OFFS0026    , OFFS0027    ,
                OFFS0028    , OFFS0029    , OFFS0030    , OFFS0031    , OFFS0032
, OFFS0033    , OFFS0034    , OFFS0035    ,
                OFFS0036    , OFFS0037    , OFFS0038    , OFFS0039    , OFFS0040
, OFFS0041    , OFFS0042    , OFFS0043    ,
                OFFS0044    , OFFS0045    , OFFS0046    , OFFS0047    , OFFS0048
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, OFFS0049   , OFFS0050   , . . .   ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10   IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
410534.87	3739069.90	4.06667	(12020208)	410510.27	3739071.28	2.58655	(13012208)
410480.38	3739050.79	1.42117	(12020208)	410614.68	3739058.21	1.79093	(13020408)
410488.84	3738970.72	0.85724	(12121708)	410523.96	3738968.83	1.09267	(14012008)
410539.14	3738964.56	1.12203	(14012208)	410022.49	3739106.59	0.10320	(13012208)
409807.88	3738961.18	0.06506	(13013108)	410575.24	3739112.39	3.28166	(14120808)
410489.55	3739110.06	1.63913	(12121008)	410387.01	3739105.21	0.51999	(12121008)
410202.17	3739109.74	0.17870	(13012208)	410298.91	3739108.92	0.28619	(12121008)
410328.14	3739108.92	0.34157	(12121008)	410236.34	3739107.68	0.20537	(12121008)
409720.27	3738798.64	0.05315	(12010408)	409716.40	3738851.88	0.05353	(13011608)
409716.00	3738751.21	0.05092	(12010408)	409710.65	3738686.98	0.05165	(12020208)
409675.64	3738120.52	0.02982	(15122908)	409675.28	3738102.43	0.02933	(15122908)
409675.64	3738053.27	0.02789	(15122908)	409711.10	3738086.53	0.02908	(15122908)
409711.10	3738117.05	0.03008	(15122908)	409713.29	3737638.31	0.02177	(16012508)
409713.00	3737662.42	0.02219	(16012508)	409712.70	3737698.43	0.02281	(16012508)
409715.69	3737909.47	0.02599	(16012508)	409714.26	3737887.32	0.02572	(16012508)
409711.20	3738371.21	0.03812	(12020208)	409711.46	3738391.35	0.03979	(12020208)
409935.60	3737259.21	0.01833	(13120908)	409934.69	3737240.68	0.01806	(13120908)
409934.38	3737198.77	0.01750	(13120908)	409935.29	3737114.94	0.01647	(13120908)
409973.26	3737093.07	0.01599	(13120908)	409989.17	3737004.29	0.01533	(14012008)

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        409971.87   3736925.54        0.01470  (14012008)               409926.88
3736946.33        0.01455  (13120908)
        409934.12   3736923.94        0.01435  (13122408)               409932.71
3736877.05        0.01397  (14010808)
        409933.36   3736845.32        0.01377  (14012008)               409978.45
3736502.69        0.01224  (14012008)
        410014.70   3736509.56        0.01251  (14012008)               409934.76
3737060.89        0.01578  (13120908)
        409932.70   3737050.19        0.01566  (13120908)               410646.44
3738786.27        0.24604  (16121308)
        410989.51   3738635.08        0.09418  (12020808)               409556.89
3739118.80        0.04388  (13012208)
        409652.94   3737604.55        0.02089  (16012508)               409649.88
3737492.91        0.01932  (12121708)
        409979.21   3736689.41        0.01333  (14012008)               409665.81
3737858.98        0.02428  (16012508)
        409781.42   3737453.90        0.02064  (12121708)               409798.14
3737415.59        0.02021  (12121708)
        409922.21   3736790.35        0.01331  (14012008)               410297.34
3739153.38        0.28937  (12121008)
        409674.16   3739089.82        0.05224  (13012208)               409643.27
3739156.31        0.04876  (13012208)
        409667.22   3738779.89        0.04897  (12010408)               410521.21
3739107.26        3.36363  (12121008)
        409957.65   3739152.46        0.08492  (12121008)               409665.75
3737547.68        0.02014  (16012508)
        409652.24   3738351.46        0.03675  (12020208)               409646.25
3738288.85        0.03337  (13011708)
        408918.70   3739100.72        0.02228  (13012208)               409307.37
3739155.94        0.03208  (13012208)
        408854.06   3738639.95        0.02034  (13011608)

 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                  PAGE  74
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                               *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     AREAS       , A0000001
, OFFS0025    , OFFS0026    , OFFS0027    ,
                OFFS0028    , OFFS0029    , OFFS0030    , OFFS0031    , OFFS0032
, OFFS0033    , OFFS0034    , OFFS0035    ,
                OFFS0036    , OFFS0037    , OFFS0038    , OFFS0039    , OFFS0040
, OFFS0041    , OFFS0042    , OFFS0043    ,
                OFFS0044    , OFFS0045    , OFFS0046    , OFFS0047    , OFFS0048
, OFFS0049    , OFFS0050    ,  . . .      ,
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*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)				
	408822.38	408917.85	409013.32	409108.79	409204.26
3739318.9	0.00109c(12010324)	0.00117c(13010924)	0.00126c(13010924)	0.00137c(13010924)	0.00150c(13010924)
3739173.3	0.00124c(14120524)	0.00132c(14120524)	0.00143c(14120524)	0.00154c(14120524)	0.00168c(14120524)
3739027.7	0.00129c(14120524)	0.00139c(14120524)	0.00151c(14120524)	0.00164c(14120524)	0.00179c(14120524)
3738882.1	0.00121c(14120524)	0.00129c(14120524)	0.00139c(14120524)	0.00149c(14120524)	0.00162c(14120524)
3738736.5	0.00101c(14120524)	0.00108c(12120524)	0.00117c(12120524)	0.00127c(12120524)	0.00139c(12120524)
3738590.9	0.00104c(12120524)	0.00111c(12120524)	0.00118c(12120524)	0.00125c(12120524)	0.00133c(12120524)
3738445.4	0.00098c(12120524)	0.00102c(12120524)	0.00105c(12120524)	0.00108c(12120524)	0.00117c(13010424)
3738299.8	0.00084c(12120524)	0.00090c(13010424)	0.00096c(13010424)	0.00105 (12020224)	0.00114 (12020224)
3738154.2	0.00081 (12020224)	0.00088 (12020224)	0.00094 (12020224)	0.00100 (12020224)	0.00104 (12020224)
3738008.6	0.00079 (12020224)	0.00083 (12020224)	0.00086 (12020224)	0.00087 (12020224)	0.00089 (13011724)
3737863.0	0.00072 (12020224)	0.00073 (12020224)	0.00074 (13011724)	0.00078 (13011724)	0.00082 (13011724)
3737717.4	0.00063 (13011724)	0.00066 (13011724)	0.00069 (13011724)	0.00071 (13011724)	0.00073 (15122924)
3737571.8	0.00060 (13011724)	0.00061 (13011724)	0.00062 (13011724)	0.00065 (15122924)	0.00067 (15122924)
3737426.2	0.00054 (13011724)	0.00056 (15122924)	0.00058 (15122924)	0.00059 (15122924)	0.00060 (15122924)
3737280.6	0.00051 (15122924)	0.00052 (15122924)	0.00053 (15122924)	0.00053c(12011124)	0.00062c(12011124)
3737135.0	0.00047 (15122924)	0.00048 (15122924)	0.00049c(12011124)	0.00056c(12011124)	0.00063c(12011124)
3736989.5	0.00043 (15122924)	0.00045c(12011124)	0.00051c(12011124)	0.00057c(12011124)	0.00063c(12011124)
3736843.9	0.00042c(12011124)	0.00047c(12011124)	0.00052c(12011124)	0.00057c(12011124)	0.00062c(12011124)
3736698.3	0.00043c(12011124)	0.00048c(12011124)	0.00053c(12011124)		

                             *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL   ***
                                 INCLUDING SOURCE(S):   AREAS   , A0000001
, OFFS0025   , OFFS0026   , OFFS0027   ,
                OFFS0028   , OFFS0029   , OFFS0030   , OFFS0031   , OFFS0032
, OFFS0033   , OFFS0034   , OFFS0035   ,
                OFFS0036   , OFFS0037   , OFFS0038   , OFFS0039   , OFFS0040
, OFFS0041   , OFFS0042   , OFFS0043   ,
                OFFS0044   , OFFS0045   , OFFS0046   , OFFS0047   , OFFS0048
, OFFS0049   , OFFS0050   , . . .   ,

                                 *** NETWORK ID: UCART1   ; NETWORK TYPE:
GRIDCART ***

                                      ** CONC OF PM_10   IN MICROGRAMS/M**3
                **

  Y-COORD | X-COORD (METERS)
  (METERS) | 409299.73   409395.20   409490.67
      409586.14   409681.61
 -
- -

 3739318.9 | 0.00166c(12121024)   0.00188c(12121024)   0.00216c(12121024)
    0.00249c(12121024)   0.00289c(12121024)
 3739173.3 | 0.00184c(14120524)   0.00204c(14120524)   0.00227c(14120524)
    0.00256c(14120524)   0.00292c(14120524)
 3739027.7 | 0.00198c(14120524)   0.00220c(14120524)   0.00247c(14120524)
    0.00281c(14120524)   0.00328c(14120524)
 3738882.1 | 0.00176c(14120524)   0.00193c(14120524)   0.00213c(14120524)
    0.00237c(14120524)   0.00269c(14120524)

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 3738736.5 |      0.00152c(12120524)      0.00167c(12120524)      0.00183c(12120524)
     0.00201c(12120524)      0.00224c(12120524)
 3738590.9 |      0.00140c(12120524)      0.00147c(12120524)      0.00163c(13010424)
     0.00183 (12020224)      0.00212 (12020224)
 3738445.4 |      0.00127 (12020224)      0.00142 (12020224)      0.00157 (12020224)
     0.00171 (12020224)      0.00184 (12020224)
 3738299.8 |      0.00123 (12020224)      0.00131 (12020224)      0.00136 (12020224)
     0.00142 (13011724)      0.00156 (13011724)
 3738154.2 |      0.00107 (12020224)      0.00111 (13011724)      0.00118 (13011724)
     0.00124 (13011724)      0.00130 (15122924)
 3738008.6 |      0.00095 (13011724)      0.00099 (13011724)      0.00102 (13011724)
     0.00107 (15122924)      0.00120c(12011124)
 3737863.0 |      0.00084 (13011724)      0.00087 (15122924)      0.00091 (15122924)
     0.00101c(12011124)      0.00123c(12011124)
 3737717.4 |      0.00076 (15122924)      0.00078 (15122924)      0.00088c(12011124)
     0.00103c(12011124)      0.00120c(12011124)
 3737571.8 |      0.00068 (15122924)      0.00077c(12011124)      0.00089c(12011124)
     0.00101c(12011124)      0.00113c(12011124)
 3737426.2 |      0.00069c(12011124)      0.00079c(12011124)      0.00088c(12011124)
     0.00096c(12011124)      0.00103c(12011124)
 3737280.6 |      0.00070c(12011124)      0.00078c(12011124)      0.00085c(12011124)
     0.00090c(12011124)      0.00093c(12011124)
 3737135.0 |      0.00070c(12011124)      0.00076c(12011124)      0.00080c(12011124)
     0.00083c(12011124)      0.00085c(12121724)
 3736989.5 |      0.00068c(12011124)      0.00072c(12011124)      0.00075c(12011124)
     0.00076c(12121724)      0.00079c(12121724)
 3736843.9 |      0.00066c(12011124)      0.00068c(12011124)      0.00069c(12011124)
     0.00071c(12121724)      0.00072c(12121724)
 3736698.3 |      0.00062c(12011124)      0.00064c(12011124)      0.00065c(12121724)
     0.00066c(12121724)      0.00066c(12121724)
 3736552.7 |      0.00059c(12011124)      0.00060c(12121724)      0.00061c(12121724)
     0.00061c(12121724)      0.00061c(12121724)
 3736407.1 |      0.00055c(12011124)      0.00056c(12121724)      0.00057c(12121724)
     0.00057c(12121724)      0.00055c(12121724)
 3736261.5 |      0.00052c(12121724)      0.00053c(12121724)      0.00053c(12121724)
     0.00052c(12121724)      0.00052c(13121124)
 3736115.9 |      0.00049c(12121724)      0.00050c(12121724)      0.00049c(12121724)
     0.00048c(12121724)      0.00049c(13121124)
 3735970.3 |      0.00046c(12121724)      0.00046c(12121724)      0.00045c(12121724)
     0.00046c(13121124)      0.00046c(13121124)
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                  PAGE  76
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                               *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
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                                  INCLUDING SOURCE(S):     AREAS       , A0000001
, OFFS0025    , OFFS0026    , OFFS0027    ,
                 OFFS0028    , OFFS0029    , OFFS0030    , OFFS0031    , OFFS0032
, OFFS0033    , OFFS0034    , OFFS0035    ,
                 OFFS0036    , OFFS0037    , OFFS0038    , OFFS0039    , OFFS0040
, OFFS0041    , OFFS0042    , OFFS0043    ,
                 OFFS0044    , OFFS0045    , OFFS0046    , OFFS0047    , OFFS0048
, OFFS0049    , OFFS0050    ,  . . .      ,

                                    *** NETWORK ID: UCART1   ;  NETWORK TYPE:
GRIDCART ***

                                         ** CONC OF PM_10    IN MICROGRAMS/M**3
                  **

  Y-COORD  |                                                  X-COORD (METERS)
  (METERS) |       409777.08               409872.55               409968.02
      410063.49               410158.96
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -

 3739318.9 |      0.00337c(12121024)      0.00394c(12121024)      0.00461c(12121024)
     0.00534c(12121024)      0.00601c(12121024)
 3739173.3 |      0.00339c(14120524)      0.00402c(14120524)      0.00487c(14120524)
     0.00626c(12121024)      0.00855c(12121024)
 3739027.7 |      0.00382c(14120524)      0.00460c(14120524)      0.00572c(14120524)
     0.00741c(14120524)      0.01021c(14120524)
 3738882.1 |      0.00301c(14120524)      0.00345c(14120524)      0.00407c(12120524)
     0.00504c(12120524)      0.00661 (13011724)
 3738736.5 |      0.00252c(13010424)      0.00301 (12020224)      0.00363 (12020224)
     0.00426 (12020224)      0.00516 (13011724)
 3738590.9 |      0.00238 (12020224)      0.00262 (12020224)      0.00291 (13011724)
     0.00325 (13011724)      0.00389c(12011124)
 3738445.4 |      0.00194 (13011724)      0.00212 (13011724)      0.00224 (13011724)
     0.00280c(12011124)      0.00349c(12011124)
 3738299.8 |      0.00162 (13011724)      0.00168 (15122924)      0.00214c(12011124)
     0.00259c(12011124)      0.00290c(12011124)
 3738154.2 |      0.00139c(12011124)      0.00171c(12011124)      0.00202c(12011124)
     0.00225c(12011124)      0.00235c(12121724)
 3738008.6 |      0.00141c(12011124)      0.00164c(12011124)      0.00182c(12011124)
     0.00191c(12011124)      0.00195c(12121724)
 3737863.0 |      0.00137c(12011124)      0.00151c(12011124)      0.00159c(12011124)
     0.00163c(12121724)      0.00163c(13121124)
 3737717.4 |      0.00128c(12011124)      0.00135c(12011124)      0.00139c(12121724)
     0.00140c(12121724)      0.00142c(13121124)
 3737571.8 |      0.00117c(12011124)      0.00120c(12121724)      0.00122c(12121724)
     0.00121c(13121124)      0.00124c(13121124)
 3737426.2 |      0.00107c(12011124)      0.00108c(12121724)      0.00108c(12121724)
     0.00108c(13121124)      0.00108c(13121124)
 3737280.6 |      0.00096c(12121724)      0.00097c(12121724)      0.00096c(13121124)
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 3739318.9 |      0.00683c(12122824)      0.01026 (12020724)      0.01545 (16122324)
     0.02019c(13111524)      0.02044 (12052424)
 3739173.3 |      0.01226c(12121024)      0.01941c(12122824)      0.03635 (15021724)
     0.13096c(13111524)      0.07212 (12042324)
 3739027.7 |      0.01552c(14120524)      0.02749 (13012524)      0.06996 (14121624)
     0.33472c(14120524)      0.13515c(12120424)
 3738882.1 |      0.00957 (13011724)      0.01348 (13011724)      0.02052c(12121724)
     0.02477c(13121124)      0.02900c(14011524)
 3738736.5 |      0.00600c(12011124)      0.00852c(12011124)      0.01027c(13121124)
     0.01041c(14012124)      0.01028c(12011724)
 3738590.9 |      0.00508c(12011124)      0.00582c(12121724)      0.00624c(13121124)
     0.00626c(14012124)      0.00587b(15011624)
 3738445.4 |      0.00393c(12011124)      0.00413c(13121124)      0.00416c(13121124)
     0.00434c(14012124)      0.00400c(14012124)
 3738299.8 |      0.00302c(12121724)      0.00315c(13121124)      0.00312c(14012024)
     0.00327c(14012124)      0.00307c(14012124)
 3738154.2 |      0.00240c(13121124)      0.00245c(13121124)      0.00246c(14012124)
     0.00259c(14012124)      0.00245c(14012124)
 3738008.6 |      0.00200c(13121124)      0.00199c(14012024)      0.00205c(14012124)
     0.00213c(14012124)      0.00203c(14012124)
 3737863.0 |      0.00167c(13121124)      0.00168c(14012024)      0.00174c(14012124)
     0.00179c(14012124)      0.00172c(14012124)
 3737717.4 |      0.00141c(13121124)      0.00144c(14012024)      0.00150c(14012124)
     0.00154c(14012124)      0.00148c(14012124)
 3737571.8 |      0.00124c(14012024)      0.00125c(14012024)      0.00132c(14012124)
     0.00134c(14012124)      0.00130c(14012124)
 3737426.2 |      0.00110c(14012024)      0.00110c(14012124)      0.00117c(14012124)
     0.00119c(14012124)      0.00115c(14012124)
 3737280.6 |      0.00098c(14012024)      0.00100c(14012124)      0.00105c(14012124)
     0.00106c(14012124)      0.00103c(14012124)
 3737135.0 |      0.00088c(14012024)      0.00091c(14012124)      0.00095c(14012124)
     0.00096c(14012124)      0.00093c(14012124)
 3736989.5 |      0.00080c(14012024)      0.00083c(14012124)      0.00086c(14012124)
     0.00087c(14012124)      0.00085c(14012124)
 3736843.9 |      0.00073c(14012024)      0.00077c(14012124)      0.00079c(14012124)
     0.00079c(14012124)      0.00077c(14012124)
 3736698.3 |      0.00067c(14012124)      0.00071c(14012124)      0.00073c(14012124)
     0.00073c(14012124)      0.00071c(14012124)
 3736552.7 |      0.00063c(14012124)      0.00067c(14012124)      0.00068c(14012124)
     0.00068c(14012124)      0.00066c(14012124)
 3736407.1 |      0.00059c(14012124)      0.00062c(14012124)      0.00063c(14012124)
     0.00063c(14012124)      0.00061c(14012124)
 3736261.5 |      0.00056c(14012124)      0.00058c(14012124)      0.00059c(14012124)
     0.00059c(14012124)      0.00057c(14012124)
 3736115.9 |      0.00053c(14012124)      0.00054c(14012124)      0.00056c(14012124)
     0.00055c(14012124)      0.00054c(14012124)
 3735970.3 |      0.00050c(14012124)      0.00051c(14012124)      0.00052c(14012124)
     0.00052c(14012124)      0.00051c(14012124)
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
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 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                 PAGE  78
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     AREAS       , A0000001
, OFFS0025    , OFFS0026    , OFFS0027    ,
                 OFFS0028    , OFFS0029    , OFFS0030    , OFFS0031    , OFFS0032
, OFFS0033    , OFFS0034    , OFFS0035    ,
                 OFFS0036    , OFFS0037    , OFFS0038    , OFFS0039    , OFFS0040
, OFFS0041    , OFFS0042    , OFFS0043    ,
                 OFFS0044    , OFFS0045    , OFFS0046    , OFFS0047    , OFFS0048
, OFFS0049    , OFFS0050    ,  . . .      ,

                                  *** NETWORK ID: UCART1   ;  NETWORK TYPE:
GRIDCART ***

                                       ** CONC OF PM_10    IN MICROGRAMS/M**3
                   **

  Y-COORD  |                                                  X-COORD (METERS)
  (METERS) |      410731.78              410827.25              410922.72
      411018.19
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -

 3739318.9 |      0.01458 (12042324)      0.00917c(14013124)      0.00732c(14013124)
     0.00544c(14013124)
 3739173.3 |      0.02876c(14013124)      0.01420c(14013124)      0.00773c(14013124)
     0.00520c(12110924)
 3739027.7 |      0.03440c(13122324)      0.01568 (16122924)      0.00913 (16122924)
     0.00598 (16122924)
 3738882.1 |      0.02179c(14011524)      0.01511c(13122324)      0.01026c(13122324)
     0.00686c(13122324)
 3738736.5 |      0.01052c(14011524)      0.00906c(14011524)      0.00732b(12020824)
     0.00621c(13122324)
 3738590.9 |      0.00586c(12011724)      0.00577c(14011524)      0.00516c(14011524)
     0.00466b(12020824)
 3738445.4 |      0.00400c(16121324)      0.00388c(12011724)      0.00373c(14011524)
     0.00340c(14011524)
 3738299.8 |      0.00303b(15011624)      0.00295c(16121324)      0.00283c(12011724)
     0.00268c(14011524)
 3738154.2 |      0.00240b(15011624)      0.00237c(16121324)      0.00226c(16121324)
     0.00219c(12011724)
 3738008.6 |      0.00194b(15011624)      0.00193b(15011624)      0.00193c(16121324)
     0.00181c(12011724)
 3737863.0 |      0.00160b(15011624)      0.00164b(15011624)      0.00164c(16121324)
```

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    0.00159c(16121324)
 3737717.4 |      0.00135b(15011624)      0.00141b(15011624)      0.00141c(16121324)
    0.00140c(16121324)
 3737571.8 |      0.00118c(14012124)      0.00121b(15011624)      0.00121b(15011624)
    0.00124c(16121324)
 3737426.2 |      0.00106c(14012124)      0.00106b(15011624)      0.00107b(15011624)
    0.00109c(16121324)
 3737280.6 |      0.00095c(14012124)      0.00093b(15011624)      0.00096b(15011624)
    0.00096c(16121324)
 3737135.0 |      0.00087c(14012124)      0.00082b(15011624)      0.00086b(15011624)
    0.00086c(16121324)
 3736989.5 |      0.00079c(14012124)      0.00073b(15011624)      0.00077b(15011624)
    0.00078b(15011624)
 3736843.9 |      0.00073c(14012124)      0.00066c(14012124)      0.00069b(15011624)
    0.00071b(15011624)
 3736698.3 |      0.00067c(14012124)      0.00062c(14012124)      0.00063b(15011624)
    0.00065b(15011624)
 3736552.7 |      0.00063c(14012124)      0.00058c(14012124)      0.00057b(15011624)
    0.00059b(15011624)
 3736407.1 |      0.00059c(14012124)      0.00055c(14012124)      0.00052b(15011624)
    0.00055b(15011624)
 3736261.5 |      0.00055c(14012124)      0.00051c(14012124)      0.00048b(15011624)
    0.00050b(15011624)
 3736115.9 |      0.00052c(14012124)      0.00048c(14012124)      0.00045c(14012124)
    0.00046b(15011624)
 3735970.3 |      0.00049c(14012124)      0.00045c(14012124)      0.00042c(14012124)
    0.00043b(15011624)
↟ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                 PAGE  79
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                               *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     AREAS       , A0000001
, OFFS0025    , OFFS0026    , OFFS0027    ,
                OFFS0028    , OFFS0029    , OFFS0030    , OFFS0031    , OFFS0032
, OFFS0033    , OFFS0034    , OFFS0035    ,
                OFFS0036    , OFFS0037    , OFFS0038    , OFFS0039    , OFFS0040
, OFFS0041    , OFFS0042    , OFFS0043    ,
                OFFS0044    , OFFS0045    , OFFS0046    , OFFS0047    , OFFS0048
, OFFS0049    , OFFS0050    ,  . . .      ,

                                    *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                 ** CONC OF PM_10    IN MICROGRAMS/M**3
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**

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
410534.87	3739069.90	0.53347c	(14120524)	410510.27	3739071.28	0.32550c	(14120524)
410480.38	3739050.79	0.14624	(14121624)	410614.68	3739058.21	0.22564c	(13112524)
410488.84	3738970.72	0.05369c	(12121724)	410523.96	3738968.83	0.06932	(16122724)
410539.14	3738964.56	0.06637c	(13121124)	410022.49	3739106.59	0.00649c	(14120524)
409807.88	3738961.18	0.00377c	(14120524)	410575.24	3739112.39	0.43246c	(12092624)
410489.55	3739110.06	0.14315c	(14120524)	410387.01	3739105.21	0.03641c	(14120524)
410202.17	3739109.74	0.01184c	(14120524)	410298.91	3739108.92	0.01922c	(14120524)
410328.14	3739108.92	0.02298c	(14120524)	410236.34	3739107.68	0.01387c	(14120524)
409720.27	3738798.64	0.00248c	(12120524)	409716.40	3738851.88	0.00257c	(14120524)
409716.00	3738751.21	0.00234c	(12120524)	409710.65	3738686.98	0.00225c	(13010424)
409675.64	3738120.52	0.00125	(15122924)	409675.28	3738102.43	0.00123	(15122924)
409675.64	3738053.27	0.00117	(15122924)	409711.10	3738086.53	0.00124c	(12011124)
409711.10	3738117.05	0.00127	(15122924)	409713.29	3737638.31	0.00118c	(12011124)
409713.00	3737662.42	0.00119c	(12011124)	409712.70	3737698.43	0.00121c	(12011124)
409715.69	3737909.47	0.00128c	(12011124)	409714.26	3737887.32	0.00128c	(12011124)
409711.20	3738371.21	0.00170	(13011724)	409711.46	3738391.35	0.00173	(13011724)
409935.60	3737259.21	0.00096c	(12121724)	409934.69	3737240.68	0.00094c	(12121724)
409934.38	3737198.77	0.00091c	(12121724)	409935.29	3737114.94	0.00086c	(13121124)
409973.26	3737093.07	0.00087c	(13121124)	409989.17	3737004.29	0.00081c	(13121124)
409971.87	3736925.54	0.00078c	(13121124)	409926.88	3736946.33	0.00078c	(13121124)
409934.12	3736923.94	0.00077c	(13121124)	409932.71	3736877.05	0.00075c	(13121124)
409933.36	3736845.32	0.00074c	(13121124)	409978.45	3736502.69	0.00058c	(14012024)

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        410014.70   3736509.56        0.00060c (14012024)                409934.76
3737060.89        0.00084c (13121124)
        409932.70   3737050.19        0.00083c (13121124)                410646.44
3738786.27        0.01382c (12011724)
        410989.51   3738635.08        0.00528b (12020824)                409556.89
3739118.80        0.00263c (14120524)
        409652.94   3737604.55        0.00110c (12011124)                409649.88
3737492.91        0.00104c (12011124)
        409979.21   3736689.41        0.00066c (13121124)                409665.81
3737858.98        0.00118c (12011124)
        409781.42   3737453.90        0.00108c (12011124)                409798.14
3737415.59        0.00106c (12011124)
        409922.21   3736790.35        0.00071c (13121124)                410297.34
3739153.38        0.01524c (12121024)
        409674.16   3739089.82        0.00322c (14120524)                409643.27
3739156.31        0.00284c (14120524)
        409667.22   3738779.89        0.00229c (12120524)                410521.21
3739107.26        0.37055c (14120524)
        409957.65   3739152.46        0.00504c (14120524)                409665.75
3737547.68        0.00109c (12011124)
        409652.24   3738351.46        0.00158  (13011724)                409646.25
3738288.85        0.00149  (13011724)
        408918.70   3739100.72        0.00138c (14120524)                409307.37
3739155.94        0.00189c (14120524)
        408854.06   3738639.95        0.00106c (12120524)

 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                   PAGE  80
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                               *** THE   6TH HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                   INCLUDING SOURCE(S):     AREAS       , A0000001
, OFFS0025    , OFFS0026    , OFFS0027    ,
                OFFS0028    , OFFS0029    , OFFS0030    , OFFS0031    , OFFS0032
, OFFS0033    , OFFS0034    , OFFS0035    ,
                OFFS0036    , OFFS0037    , OFFS0038    , OFFS0039    , OFFS0040
, OFFS0041    , OFFS0042    , OFFS0043    ,
                OFFS0044    , OFFS0045    , OFFS0046    , OFFS0047    , OFFS0048
, OFFS0049    , OFFS0050    ,  . . .      ,

                                    *** NETWORK ID: UCART1   ;  NETWORK TYPE:
GRIDCART ***

                                         ** CONC OF PM_10    IN MICROGRAMS/M**3
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Y-COORD (METERS)	X-COORD (METERS)				
	408822.38	408917.85	409013.32	409108.79	409204.26
3739318.9	0.00088c(13121224)	0.00094c(13121224)	0.00104c(16011224)	0.00115c(16011224)	0.00126 (16021124)
3739173.3	0.00090 (16021124)	0.00097 (16021124)	0.00105c(13121224)	0.00114c(13121224)	0.00125c(13121224)
3739027.7	0.00087c(13012224)	0.00094c(13012224)	0.00102c(16012224)	0.00111c(16012224)	0.00122c(16012224)
3738882.1	0.00087 (12122724)	0.00095c(15010224)	0.00104c(15010224)	0.00113 (16121424)	0.00125c(12120524)
3738736.5	0.00088 (16121424)	0.00094 (13013124)	0.00102 (16121424)	0.00109 (16121424)	0.00118 (16121424)
3738590.9	0.00080 (16121424)	0.00085c(14021024)	0.00091c(13010424)	0.00102c(13010424)	0.00110 (13011624)
3738445.4	0.00077 (13011624)	0.00081b(16011124)	0.00087c(15010224)	0.00097b(16011124)	0.00107c(12010424)
3738299.8	0.00075b(16011124)	0.00080b(16011124)	0.00085b(16011124)	0.00085 (16120124)	0.00091 (13011724)
3738154.2	0.00067c(12120524)	0.00071 (13012824)	0.00074b(16011124)	0.00077 (15120324)	0.00084 (15121124)
3738008.6	0.00062 (15120324)	0.00064 (15121124)	0.00069 (15121124)	0.00073 (16120124)	0.00074 (15122924)
3737863.0	0.00059 (15121124)	0.00061 (16120124)	0.00062 (16120124)	0.00065 (12012624)	0.00063 (16021024)
3737717.4	0.00053 (16120124)	0.00055 (12012624)	0.00053 (16021024)	0.00056 (15121124)	0.00055 (15012024)
3737571.8	0.00045 (16021024)	0.00048 (16021024)	0.00048 (15012024)	0.00049 (15012024)	0.00054c(12011124)
3737426.2	0.00042 (15121124)	0.00042 (15012024)	0.00043 (16012524)	0.00048 (16112324)	0.00048 (16112324)
3737280.6	0.00038 (15012024)	0.00040 (16012524)	0.00043 (16112324)	0.00042 (16112324)	0.00042 (13011724)
3737135.0	0.00037 (16021024)	0.00038 (16112324)	0.00038c(12121724)	0.00037 (13011724)	0.00037 (12020124)
3736989.5	0.00035 (16112324)	0.00035 (13011724)	0.00034 (16020224)	0.00033 (12020124)	0.00036c(13120924)
3736843.9	0.00031 (13011724)	0.00031 (16020224)	0.00029 (12020124)	0.00032c(13120924)	0.00033 (16020224)
3736698.3	0.00028 (12020124)	0.00026 (12020124)	0.00029c(13120924)	0.00030 (16020224)	0.00033c(13121124)
3736552.7	0.00024 (12020124)	0.00026c(13120924)	0.00028 (16020224)	0.00029c(13121124)	0.00034c(13121124)
3736407.1	0.00023c(13120924)	0.00026 (16020224)	0.00026 (16020224)	0.00030c(13121124)	0.00035c(13121124)
3736261.5	0.00024 (16020224)	0.00024 (16020224)	0.00027c(13121124)		

*** THE 6TH HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): AREAS , A0000001 , OFFS0025 , OFFS0026 , OFFS0027 ,
OFFS0028 , OFFS0029 , OFFS0030 , OFFS0031 , OFFS0032 , OFFS0033 , OFFS0034 , OFFS0035 ,
OFFS0036 , OFFS0037 , OFFS0038 , OFFS0039 , OFFS0040 , OFFS0041 , OFFS0042 , OFFS0043 ,
OFFS0044 , OFFS0045 , OFFS0046 , OFFS0047 , OFFS0048 , OFFS0049 , OFFS0050 , . . . ,

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)			
	409299.73	409395.20	409490.67	409586.14	409681.61
3739318.9	0.00137 (16021124)	0.00150 (16021124)	0.00163c(14120524)	0.00181 (16021124)	0.00201c(13121724)
3739173.3	0.00138c(13121224)	0.00153c(13121224)	0.00173c(12120724)	0.00196c(12120724)	0.00225c(12120724)
3739027.7	0.00135c(16012224)	0.00150c(16012224)	0.00169c(16012224)	0.00192c(16012224)	0.00222c(13012224)
3738882.1	0.00139 (12011224)	0.00154 (16121424)	0.00173 (16121424)	0.00195 (16121424)	0.00227c(12010424)
3738736.5	0.00129 (13011624)	0.00140 (13012824)	0.00156c(13010424)	0.00176 (13011624)	0.00202 (12020224)
3738590.9	0.00118b(16011124)	0.00132b(16011124)	0.00150 (12012624)	0.00163c(12010424)	0.00180b(16011124)
3738445.4	0.00111c(12120524)	0.00116 (16120124)	0.00127b(16011124)	0.00133 (15121124)	0.00154 (12020124)

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 3738299.8 |      0.00095b(16011124)      0.00103 (15121124)      0.00114 (16120124)
     0.00121 (15122924)      0.00126 (12012624)
 3738154.2 |      0.00090 (15121124)      0.00093 (15122924)      0.00097 (12012624)
     0.00099 (15121124)      0.00104 (16021024)
 3738008.6 |      0.00078 (12012624)      0.00078 (16112324)      0.00078 (15121124)
     0.00088 (16112324)      0.00099c(12121724)
 3737863.0 |      0.00066 (15121124)      0.00066 (16012524)      0.00074 (16112324)
     0.00082 (13011724)      0.00078 (13011724)
 3737717.4 |      0.00060 (16012524)      0.00063 (16112324)      0.00068 (13011724)
     0.00063 (13011724)      0.00073 (15122924)
 3737571.8 |      0.00055 (16112324)      0.00057 (13011724)      0.00055 (16020224)
     0.00061c(15121024)      0.00070c(13121124)
 3737426.2 |      0.00049 (13011724)      0.00048 (12020124)      0.00052c(15121024)
     0.00056c(13121124)      0.00070c(13121124)
 3737280.6 |      0.00042 (12020124)      0.00045c(15121024)      0.00048c(13121124)
     0.00059c(13121124)      0.00065 (16012524)
 3737135.0 |      0.00040c(13120924)      0.00041c(13121124)      0.00050c(13121124)
     0.00059 (16012524)      0.00057c(14010824)
 3736989.5 |      0.00037 (16020224)      0.00043c(13121124)      0.00051c(13121124)
     0.00051 (16012524)      0.00055c(14010824)
 3736843.9 |      0.00037c(13121124)      0.00044c(13121124)      0.00047 (16012524)
     0.00048c(14010824)      0.00054c(14010824)
 3736698.3 |      0.00039c(13121124)      0.00044 (16012524)      0.00042c(14010824)
     0.00047c(14010824)      0.00052c(14010824)
 3736552.7 |      0.00040c(13121124)      0.00039 (16012524)      0.00042c(14010824)
     0.00046c(14010824)      0.00050c(14010824)
 3736407.1 |      0.00036 (16012524)      0.00037c(14010824)      0.00041c(14010824)
     0.00045c(14010824)      0.00047c(12011124)
 3736261.5 |      0.00033c(14010824)      0.00037c(14010824)      0.00040c(14010824)
     0.00043c(14010824)      0.00043c(14012024)
 3736115.9 |      0.00033c(14010824)      0.00036c(14010824)      0.00039c(14010824)
     0.00040c(12011124)      0.00041c(13120924)
 3735970.3 |      0.00033c(14010824)      0.00036c(14010824)      0.00038c(14010824)
     0.00037c(12011124)      0.00039c(13120924)
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                   PAGE  82
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                               *** THE   6TH HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                   INCLUDING SOURCE(S):     AREAS       , A0000001
, OFFS0025    , OFFS0026    , OFFS0027    ,
                OFFS0028    , OFFS0029    , OFFS0030    , OFFS0031    , OFFS0032
, OFFS0033    , OFFS0034    , OFFS0035    ,
                OFFS0036    , OFFS0037    , OFFS0038    , OFFS0039    , OFFS0040
, OFFS0041    , OFFS0042    , OFFS0043    ,
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                OFFS0044    , OFFS0045    , OFFS0046    , OFFS0047    , OFFS0048
, OFFS0049    , OFFS0050    ,  . . .      ,

                                  *** NETWORK ID: UCART1   ;  NETWORK TYPE:
GRIDCART ***

                                       ** CONC OF PM_10    IN MICROGRAMS/M**3
                 **

  Y-COORD  |                                                 X-COORD (METERS)
  (METERS) |       409777.08              409872.55              409968.02
      410063.49              410158.96
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -

 3739318.9 |      0.00229c(13121724)      0.00265c(13121724)      0.00309c(13121724)
     0.00411c(15020424)      0.00476 (13013024)
 3739173.3 |      0.00263c(12121424)      0.00318c(12121424)      0.00395c(12122824)
     0.00537c(12122824)      0.00743c(16011224)
 3739027.7 |      0.00264c(15010224)      0.00329b(14120224)      0.00411 (12011224)
     0.00537 (12122724)      0.00751c(15010224)
 3738882.1 |      0.00265 (12122724)      0.00307 (12122724)      0.00381 (13012524)
     0.00474b(16011124)      0.00623c(13010424)
 3738736.5 |      0.00234b(16011124)      0.00271c(12010424)      0.00315b(16011124)
     0.00357 (12020124)      0.00422 (16120124)
 3738590.9 |      0.00192b(16011124)      0.00219 (12020124)      0.00240 (16120124)
     0.00252 (12012624)      0.00317 (12020124)
 3738445.4 |      0.00163 (15121124)      0.00170 (12012624)      0.00181 (16112324)
     0.00214 (12020124)      0.00243c(15121024)
 3738299.8 |      0.00127 (16021024)      0.00138 (16112324)      0.00156 (12020124)
     0.00170c(13121124)      0.00215 (16012524)
 3738154.2 |      0.00114c(12121724)      0.00120 (13011724)      0.00128 (15122924)
     0.00168c(15121024)      0.00180c(14010824)
 3738008.6 |      0.00094 (13011724)      0.00103 (15122924)      0.00129c(13121124)
     0.00136c(14010824)      0.00161c(14010824)
 3737863.0 |      0.00085 (15122924)      0.00102c(13121124)      0.00114 (16012524)
     0.00127c(14010824)      0.00143c(14010824)
 3737717.4 |      0.00082c(13121124)      0.00098 (16012524)      0.00101c(14010824)
     0.00116c(14010824)      0.00121c(13120924)
 3737571.8 |      0.00083c(13121124)      0.00082c(14010824)      0.00096c(14010824)
     0.00106c(14010824)      0.00103c(13120924)
 3737426.2 |      0.00074 (16012524)      0.00080c(14010824)      0.00089c(14010824)
     0.00092c(13120924)      0.00088c(13120924)
 3737280.6 |      0.00067c(14010824)      0.00076c(14010824)      0.00084c(13120924)
     0.00081c(13120924)      0.00080 (15121824)
 3737135.0 |      0.00065c(14010824)      0.00072c(14010824)      0.00077c(13120924)
     0.00071c(13120924)      0.00071c(13120224)
 3736989.5 |      0.00062c(14010824)      0.00067c(14010824)      0.00069c(13120924)
     0.00064 (15121824)      0.00066c(13120224)
 3736843.9 |      0.00059c(14010824)      0.00061c(13120924)      0.00061c(13120924)
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*** MODELOPTs: CONC ELEV URBAN ADJ_U*

*** THE 6TH HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): AREAS , A0000001 , OFFS0025 , OFFS0026 , OFFS0027 ,
OFFS0028 , OFFS0029 , OFFS0030 , OFFS0031 , OFFS0032 , OFFS0033 , OFFS0034 , OFFS0035 ,
OFFS0036 , OFFS0037 , OFFS0038 , OFFS0039 , OFFS0040 , OFFS0041 , OFFS0042 , OFFS0043 ,
OFFS0044 , OFFS0045 , OFFS0046 , OFFS0047 , OFFS0048 , OFFS0049 , OFFS0050 , . . . ,

*** NETWORK ID: UCART1 ; NETWORK TYPE: GRIDCART ***

** CONC OF PM_10 IN MICROGRAMS/M**3
**

Y-COORD (METERS)	X-COORD (METERS)			
	410254.43	410349.90	410445.37	410540.84	410636.31
3739318.9	0.00618 (13013024)	0.00736c(15020424)	0.01183c(13020524)	0.01413c(12101824)	0.01794c(13092024)
3739173.3	0.01055c(12010324)	0.01639c(14120524)	0.03021c(13010924)	0.09396 (16061424)	0.06530 (14111224)
3739027.7	0.01156c(14123024)	0.02239c(12120524)	0.05788 (13012424)	0.29429 (12122524)	0.11040c(14110424)

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 3738882.1 |      0.00813c(13010424)      0.01079 (15122924)      0.01686 (16122724)
     0.02167c(14011624)      0.02304c(16121324)
 3738736.5 |      0.00500 (16012524)      0.00660 (16012524)      0.00875c(15121024)
     0.00863c(14021224)      0.00895c(14011024)
 3738590.9 |      0.00372c(15121024)      0.00462c(14010824)      0.00530c(12011124)
     0.00518c(14021224)      0.00512c(12011724)
 3738445.4 |      0.00288c(14010824)      0.00356c(14010824)      0.00355c(12121724)
     0.00340 (15122424)      0.00332c(14012224)
 3738299.8 |      0.00248c(14010824)      0.00269c(13120924)      0.00264c(14021224)
     0.00253 (15122424)      0.00254c(14012224)
 3738154.2 |      0.00210c(14012024)      0.00203c(13120924)      0.00213c(14010824)
     0.00199 (15122424)      0.00191c(14021224)
 3738008.6 |      0.00171c(12011124)      0.00166 (15121824)      0.00169c(14010824)
     0.00162 (15122424)      0.00159c(14021224)
 3737863.0 |      0.00139c(13120924)      0.00140 (15121824)      0.00138c(14010824)
     0.00135 (15122424)      0.00136c(14021224)
 3737717.4 |      0.00117c(15121024)      0.00123c(14021224)      0.00116 (15121824)
     0.00116 (15122424)      0.00117c(14021224)
 3737571.8 |      0.00103c(14012224)      0.00108c(14010824)      0.00100 (15121824)
     0.00101 (15122424)      0.00101b(15011624)
 3737426.2 |      0.00091 (15121824)      0.00093c(13120224)      0.00087 (15121824)
     0.00089 (15122424)      0.00087b(15011624)
 3737280.6 |      0.00083c(14021224)      0.00081c(14010824)      0.00077 (15122424)
     0.00079 (15122424)      0.00077 (15122424)
 3737135.0 |      0.00077c(14021224)      0.00072 (15121824)      0.00069 (15122424)
     0.00071c(14011624)      0.00069 (15122424)
 3736989.5 |      0.00068c(14010824)      0.00064 (15121824)      0.00063 (15122424)
     0.00064c(14012024)      0.00063 (15122424)
 3736843.9 |      0.00061c(14010824)      0.00059 (15121824)      0.00058 (15122424)
     0.00057c(14012024)      0.00058 (15122424)
 3736698.3 |      0.00055 (15121824)      0.00053 (15121824)      0.00053 (15122424)
     0.00053c(14012024)      0.00053 (15122424)
 3736552.7 |      0.00051 (15121824)      0.00048 (15121824)      0.00049 (15122424)
     0.00048c(14012024)      0.00049 (15122424)
 3736407.1 |      0.00047 (15121824)      0.00044 (15121824)      0.00045 (15122424)
     0.00044c(14012024)      0.00045 (15122424)
 3736261.5 |      0.00043 (15121824)      0.00041 (15121824)      0.00042 (15122424)
     0.00040c(13120224)      0.00042 (15122424)
 3736115.9 |      0.00040 (15121824)      0.00038 (15121824)      0.00040 (15122424)
     0.00037c(13120224)      0.00039 (15122424)
 3735970.3 |      0.00038 (15121824)      0.00036 (15122424)      0.00037 (15122424)
     0.00035c(13120224)      0.00037 (15122424)
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

                                   PAGE  84
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*
```

```
                              *** THE   6TH HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                   INCLUDING SOURCE(S):     AREAS       , A0000001
, OFFS0025    , OFFS0026    , OFFS0027    ,
                OFFS0028    , OFFS0029    , OFFS0030    , OFFS0031    , OFFS0032
, OFFS0033    , OFFS0034    , OFFS0035    ,
                OFFS0036    , OFFS0037    , OFFS0038    , OFFS0039    , OFFS0040
, OFFS0041    , OFFS0042    , OFFS0043    ,
                OFFS0044    , OFFS0045    , OFFS0046    , OFFS0047    , OFFS0048
, OFFS0049    , OFFS0050    ,  . . .      ,

                                   *** NETWORK ID: UCART1   ;  NETWORK TYPE:
GRIDCART ***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3
                 **

  Y-COORD  |                                                  X-COORD (METERS)
  (METERS) |       410731.78              410827.25              410922.72
      411018.19
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -

 3739318.9 |      0.01253c(12070424)      0.00722b(13112024)      0.00431 (14111224)
     0.00296 (13020824)
 3739173.3 |      0.02061 (16050924)      0.01035 (13020824)      0.00620b(12041124)
     0.00427 (15101624)
 3739027.7 |      0.02970 (15122524)      0.01250c(13101424)      0.00707 (15112524)
     0.00473 (14120424)
 3738882.1 |      0.01886 (12012524)      0.01189c(14011524)      0.00718c(12120424)
     0.00507 (13020424)
 3738736.5 |      0.00838c(12120424)      0.00745c(12120424)      0.00618 (12012524)
     0.00439 (12012524)
 3738590.9 |      0.00525b(15011624)      0.00465c(14011024)      0.00423c(16020424)
     0.00385m(16012624)
 3738445.4 |      0.00347c(14011624)      0.00348c(14010324)      0.00311 (16121224)
     0.00287 (16121224)
 3738299.8 |      0.00248c(12011724)      0.00254c(14010324)      0.00259c(12011824)
     0.00230 (16121224)
 3738154.2 |      0.00198c(14011024)      0.00186 (14010724)      0.00196b(15011624)
     0.00200c(14011024)
 3738008.6 |      0.00158 (14010724)      0.00155c(12011724)      0.00159c(14010324)
     0.00164c(12011824)
 3737863.0 |      0.00130 (14010724)      0.00130c(16010424)      0.00126 (14010724)
     0.00136b(15011624)
 3737717.4 |      0.00110 (15020224)      0.00113c(14012124)      0.00106c(14011624)
     0.00111c(14010324)
 3737571.8 |      0.00096 (15020224)      0.00099 (14010724)      0.00091 (12012424)
     0.00093 (14010724)
 3737426.2 |      0.00083c(16121324)      0.00086 (14010724)      0.00083c(16010424)
```

```
    0.00079c(16020424)
 3737280.6 |      0.00073c(14012224)      0.00076 (14010724)      0.00074c(14011024)
    0.00070 (12012424)
 3737135.0 |      0.00067c(14021224)      0.00068 (15020224)      0.00068c(14012124)
    0.00064 (12012424)
 3736989.5 |      0.00061c(14012224)      0.00061 (15020224)      0.00062 (14010724)
    0.00059c(16010424)
 3736843.9 |      0.00056c(14012224)      0.00055c(16121324)      0.00057 (14010724)
    0.00054 (12012424)
 3736698.3 |      0.00052c(14012224)      0.00049 (14010724)      0.00051 (14010724)
    0.00050 (15020224)
 3736552.7 |      0.00048b(15011624)      0.00044 (14010724)      0.00047 (15020224)
    0.00047 (15020224)
 3736407.1 |      0.00044b(15011624)      0.00041c(14021224)      0.00044 (15020224)
    0.00044c(14012124)
 3736261.5 |      0.00040 (15122424)      0.00039c(14021224)      0.00040c(16121324)
    0.00042 (14010724)
 3736115.9 |      0.00038 (15122424)      0.00037 (15020224)      0.00037 (14010724)
    0.00038 (14010724)
 3735970.3 |      0.00036 (15122424)      0.00034 (15020224)      0.00034 (14010724)
    0.00036 (14010724)
 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                 PAGE  85
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                              *** THE   6TH HIGHEST 24-HR AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP:  ALL      ***
                                 INCLUDING SOURCE(S):     AREAS       , A0000001
, OFFS0025    , OFFS0026    , OFFS0027    ,
                 OFFS0028    , OFFS0029    , OFFS0030    , OFFS0031    , OFFS0032
, OFFS0033    , OFFS0034    , OFFS0035    ,
                 OFFS0036    , OFFS0037    , OFFS0038    , OFFS0039    , OFFS0040
, OFFS0041    , OFFS0042    , OFFS0043    ,
                 OFFS0044    , OFFS0045    , OFFS0046    , OFFS0047    , OFFS0048
, OFFS0049    , OFFS0050    ,  . . .      ,

                                    *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                  ** CONC OF PM_10    IN MICROGRAMS/M**3
                  **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)
Y-COORD (M)        CONC     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -
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        410534.87   3739069.90        0.37615c (13121724)               410510.27
3739071.28        0.23549  (15011224)
        410480.38   3739050.79        0.11635b (14120224)               410614.68
3739058.21        0.21032c (13122324)
        410488.84   3738970.72        0.04598c (13112924)               410523.96
3738968.83        0.05753c (12011124)
        410539.14   3738964.56        0.06162c (16020424)               410022.49
3739106.59        0.00454c (12120724)
        409807.88   3738961.18        0.00284  (12011224)               410575.24
3739112.39        0.36809c (14012124)
        410489.55   3739110.06        0.11656b (13121924)               410387.01
3739105.21        0.02882c (13010924)
        410202.17   3739109.74        0.00883c (12122824)               410298.91
3739108.92        0.01509c (12121024)
        410328.14   3739108.92        0.01801c (12121024)               410236.34
3739107.68        0.01053c (12122824)
        409720.27   3738798.64        0.00221  (13011624)               409716.40
3738851.88        0.00230c (14021024)
        409716.00   3738751.21        0.00214  (12020224)               409710.65
3738686.98        0.00208c (12120524)
        409675.64   3738120.52        0.00103  (16112324)               409675.28
3738102.43        0.00101  (16112324)
        409675.64   3738053.27        0.00095  (16112324)               409711.10
3738086.53        0.00100  (16112324)
        409711.10   3738117.05        0.00104  (16112324)               409713.29
3737638.31        0.00073c (13121124)
        409713.00   3737662.42        0.00073c (13121124)               409712.70
3737698.43        0.00072c (13121124)
        409715.69   3737909.47        0.00081  (13011724)               409714.26
3737887.32        0.00078  (13011724)
        409711.20   3738371.21        0.00143  (15121124)               409711.46
3738391.35        0.00147  (15121124)
        409935.60   3737259.21        0.00082c (14010824)               409934.69
3737240.68        0.00081c (14010824)
        409934.38   3737198.77        0.00079c (14010824)               409935.29
3737114.94        0.00074c (13120924)
        409973.26   3737093.07        0.00074c (13120924)               409989.17
3737004.29        0.00067c (13120924)
        409971.87   3736925.54        0.00065c (13120924)               409926.88
3736946.33        0.00066c (13120924)
        409934.12   3736923.94        0.00065c (13120924)               409932.71
3736877.05        0.00063c (13120924)
        409933.36   3736845.32        0.00061c (13120924)               409978.45
3736502.69        0.00048c (12121724)
        410014.70   3736509.56        0.00049c (13120224)               409934.76
3737060.89        0.00071c (14012024)
        409932.70   3737050.19        0.00071c (14012024)               410646.44
3738786.27        0.01158b (15011624)
        410989.51   3738635.08        0.00442m (16012624)               409556.89
3739118.80        0.00191c (13012224)
```

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        409652.94   3737604.55        0.00063c (13121124)               409649.88
3737492.91        0.00064c (13121124)
        409979.21   3736689.41        0.00053  (15121824)               409665.81
3737858.98        0.00078  (13011724)
        409781.42   3737453.90        0.00075  (16012524)               409798.14
3737415.59        0.00073c (14010824)
        409922.21   3736790.35        0.00059c (13120924)               410297.34
3739153.38        0.01376c (16011224)
        409674.16   3739089.82        0.00227c (13012224)               409643.27
3739156.31        0.00214  (16021124)
        409667.22   3738779.89        0.00202  (13011624)               410521.21
3739107.26        0.26960m (12123124)
        409957.65   3739152.46        0.00387c (12121424)               409665.75
3737547.68        0.00066c (13121124)
        409652.24   3738351.46        0.00134  (15121124)               409646.25
3738288.85        0.00123  (15121124)
        408918.70   3739100.72        0.00096c (13010924)               409307.37
3739155.94        0.00139  (16021124)
        408854.06   3738639.95        0.00085  (13011624)

 *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                      ***        10:58:25

                                   PAGE  86
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                                      *** THE SUMMARY OF MAXIMUM PERIOD ( 43848
HRS) RESULTS ***


                                    ** CONC OF PM_10    IN MICROGRAMS/M**3
             **


                      NETWORK
GROUP ID                      AVERAGE CONC                RECEPTOR  (XR, YR, ZELEV,
ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - -

ALL       1ST HIGHEST VALUE IS       0.14239 AT (  410575.24,  3739112.39,    16.00,
   16.00,    0.00)  DC
          2ND HIGHEST VALUE IS       0.07185 AT (  410534.87,  3739069.90,    16.00,
   16.00,    0.00)  DC
          3RD HIGHEST VALUE IS       0.05052 AT (  410521.21,  3739107.26,    16.00,
   16.00,    0.00)  DC
          4TH HIGHEST VALUE IS       0.04125 AT (  410614.68,  3739058.21,    16.39,
   16.39,    0.00)  DC
```

```
         5TH HIGHEST VALUE IS       0.03669 AT (  410510.27,  3739071.28,    16.00,
   16.00,    0.00)  DC
         6TH HIGHEST VALUE IS       0.03457 AT (  410540.84,  3739027.72,    16.00,
   16.00,    0.00)  GC  UCART1
         7TH HIGHEST VALUE IS       0.02285 AT (  410540.84,  3739173.31,    16.00,
   16.00,    0.00)  GC  UCART1
         8TH HIGHEST VALUE IS       0.02061 AT (  410636.31,  3739173.31,    16.70,
   16.70,    0.00)  GC  UCART1
         9TH HIGHEST VALUE IS       0.01785 AT (  410489.55,  3739110.06,    16.00,
   16.00,    0.00)  DC
        10TH HIGHEST VALUE IS       0.01433 AT (  410636.31,  3739027.72,    16.70,
   16.70,    0.00)  GC  UCART1


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
 *** AERMET - VERSION  16216 ***   ***
                       ***        10:58:25

                                  PAGE  87
 *** MODELOPTs:    CONC  ELEV  URBAN  ADJ_U*

                                                *** THE SUMMARY OF HIGHEST  1-HR
RESULTS ***


                                    ** CONC OF PM_10    IN MICROGRAMS/M**3
              **

                                                      DATE
                                          NETWORK
GROUP ID                              AVERAGE CONC     (YYMMDDHH)             RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - -

ALL      HIGH   1ST HIGH VALUE IS       4.15863  ON 12121708: AT (  410540.84,
3739027.72,    16.00,    16.00,    0.00)  GC  UCART1


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↑ *** AERMOD - VERSION 23132  ***   *** C:\Lakes\AERMOD View\24_074 Chapman
Residential\24_074 Chapman Resid ***        01/15/25
```

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF PM_10   IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE	CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	HIGH	1ST HIGH VALUE IS	0.53347c	ON 14120524:	AT (| 410534.87, 3739069.90, 16.00, 16.00, 0.00)	DC	
	HIGH	6TH HIGH VALUE IS	0.37615c	ON 13121724:	AT (| 410534.87, 3739069.90, 16.00, 16.00, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
                     GP = GRIDPOLR
                     DC = DISCCART
                     DP = DISCPOLR

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   2 Warning Message(s)
A Total of   2285 Informational Message(s)

A Total of   43848 Hours Were Processed

A Total of   1588 Calm Hours Identified

```
A Total of          697 Missing Hours Identified (  1.59 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
ME W186     830       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
    0.50
ME W187     830       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


   ***********************************
   *** AERMOD Finishes Successfully ***
   ***********************************
```

APPENDIX C – ESTIMATION OF PROJECT CONSTRUCTION DPM EMISSIONS

Basic Operational HRA Setup

Information Needed to Generate Emissions

Site Plan showing onsite trip distribution for trucks and cars
Trip generation Table with offsite trip distribution for trucks and cars
Operational Year
Land Use - refrigerated vs non-refrigerated
TRU usage (number of trucks and TRU size using TRUs and number of hours in opertion while at
Use of fire pumps, standby emergency generator, forklifts, and yard trucks (number, size, and
Emission factors: EMFAC2021, OFFROAD2021 (2017), CalEEMod
Idle time assumed to be 15 minutes

AERMOD Setup to Generate Ground-level Concentrations

Use site plan to delineate the locations of the onsite truck routes, offsite truck routesm fire pump
fork lifts, and yard trucks
Obtain the necessary meteorological data
Overlay site plan onto Google Earth and screen capture the site plan noting the Google x and
bottom left and upper right coordinates
Import the Google site plan into AERMOD
Layout the onsite and offsite truck routes on the imported site plan as line area sources
Locate the truck idling locations at the loading docks and define as a series of point sources to
over the entire length of the loading docks
Locate the fire pumps and generators as point sources
Locate the forklifts and yard trucks as area or volume sources
Set the AERMOD averaging times as 1-hour and Period
Enter the annual average DPM emissions for each source
Deploy a gridded network of receptors to cover the receptor locations that could be impacted
along the offsite travel routes, locations of nearest sensitive receptors, locations of the nec

Area Sources:				
Project Site:				
	Release:	5 meters	16.4042	
Release Heights:				Idling Source
Line Sources		3.11 meters	10.2034	
	Vehicle Height	3.11 meters	10.2034	
	Vehicle Width	meters		
	Emission Rate:			
				Idling Truck Source
Idle Trucks				
	Release	3.66	12.0079	
	Emission Rate			
	Gas Exit Temp	366.483		

Stack Diam	0.1		
Gas Exit Velocity	51.7		
Flow Rate	0.4061		
FirePump/Generator	2.256	meters	7.40157
Emission Rate:	4.13E-05		
Gas Exit Temp	749.261		
Stack Diam	0.104		
Gas Exit Velocity	43.587		
Flow Rate	0.3676		

Gold tabs are [raw] information inputs

Blue tabs are model inputs

Pink tabs are Air Qualtiy Calculation tabs

Unmitigated and over threshold

ɨ y corners of the screen capture

ɹrest worker receptors

Basic Operational HRA Setup

Information Needed to Generate Emissions

Site Plan showing onsite trip distribution for trucks and cars
Trip generation Table with offsite trip distribution for trucks and cars
Operational Year
Land Use - refrigerated vs non-refrigerated
TRU usage (number of trucks and TRU size using TRUs and number of hours in opertion while at
Use of fire pumps, standby emergency generator, forklifts, and yard trucks (number, size, and
Emission factors: EMFAC2021, OFFROAD2021 (2017), CalEEMod
Idle time assumed to be 15 minutes

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over the entire length of the loading docks
Locate the fire pumps and generators as point sources
Locate the forklifts and yard trucks as area or volume sources
Set the AERMOD averaging times as 1-hour and Period
Enter the annual average DPM emissions for each source
Deploy a gridded network of receptors to cover the receptor locations that could be impacted
along the offsite travel routes, locations of nearest sensitive receptors, locations of the nec

Area Sources:				
Project Site:				
	Release:	5 meters	16.4042	
Release Heights:				Idling Source
Line Sources		3.11 meters	10.2034	
	Vehicle Height	3.11 meters	10.2034	
	Vehicle Width	meters		
	Emission Rate:			
				Idling Truck Source
Idle Trucks				
	Release	3.66	12.0079	
	Emission Rate			
	Gas Exit Temp	366.483		

Stack Diam	0.1		
Gas Exit Velocity	51.7		
Flow Rate	0.4061		
FirePump/Generator	2.256	meters	7.40157
Emission Rate:	4.13E-05		
Gas Exit Temp	749.261		
Stack Diam	0.104		
Gas Exit Velocity	43.587		
Flow Rate	0.3676		

Gold tabs are [raw] information inputs

Blue tabs are model inputs

Pink tabs are Air Qualtiy Calculation tabs

Unmitigated and over threshold

ɨ y corners of the screen capture

ɹrest worker receptors

24-074 Chapman Avenue Garden Grove Apartments — **2026** operational year
Emission Assumptions — **DPM** Emissions

1) Vehicle Emissions

(a) Truck and Auto Traffic	EMFAC2021	Orange County (SC)	
(b) Location	SCAQMD	Garden Grove	
(c) Truck Mix			
Project Trip Generation Memo			
(e) Truck Idle time:	0	minutes (truck idling)	
(e.2) Total Dock Doors	0	How Many Modeled?	3 for LHDT, MHDT, and HHDT diesel trucks)
(f) Emission factors for	DPM	emissions	
(g) Emissions calculated for	2026	Calculated with 2025 emissions for conservative estimate.	

2) Refrigerated Land Uses

Percentage of Buildings used for Refrigeration (applies to DSL LHDT, MHDT and HHDT)

Land Use 1	0%	ASSUMPTION based on the % of building space devoted to cold storage	
	0		0
TRU Onsite Operating Time	**0**	hours - ASSUMPTION	

3) Traffic Allocation

1) Onsite travel emssions generated from vehicles traveling to building loading docks
2) Onsite idling emissions generated only for heavy duty diesel trucks
3) Offsite travel trips allocated in accordance with the Traffic Impact Memorandum

Land Use 1- Residential	63,047	100%
	0	0%
Total	63,047	100%

4) Emission Source Configuration

1) Vehicle traffic represented by a line source
2) Onsite idling represented as a series of point sources to accommodate the effects of building downwash

5) Venicle Trip Lengths

Onsite Travel Links

	Travel Distance (m)	Trip Distance (mi)	% of Truck Travel
Onsite 1: Onsite route	91	0.056544778	100%

Off site Travel Links (Construction Run)

	Travel Distance (m)	Travel Distance (mi)	% of Truck Travel
Offsite 1: W on Chapman Drive > S Magnolia St > Intersection	3388	2.105205599	100%
Offsite 2: W on Chapman Drive > S Magnolia St > W on 22	541.9	0.336721049	50%
Offsite 3: W on Chapman Drive > S Magnolia St > E on 22	338.5	0.210334149	50%

*analyzed as two lanes to be conservative

6) Other Input Parameters

Facility Operations for Warehouses (hr/day):	24
Annual Operations (days/year)	365

24-074 Chapman Avenue Garden Grove Apartments

Construction DPM Emissions
Data Source: CalEEMod Project Output

Work Schedule 8 hrs/day 5 days per week

Onsite DPM Construction Emissionsss acres: 0.97 42253.36901 SF
Building Area:
Size of the Construction Area: 3,925 m2 63,047.000 SF

Unit Emission Rate: 0.00025747 g/m2-sec unmitigated 0.33

CalEEMod Default Construction Vehicle Trip Length

Vehicle	Distance (miles)
Haul Truck	20
Vendor Truck	10.2
Worker	18.5

Activity	Start Date	End Date	Daily Max Onsite PM10E DPM Emissions lb/day	Work Days days	DPM Emissions (lbs)	DPM Emissions (tons)
Site Preparation	7/16/2025	7/17/2025	**0.3540**	1	0.35	0.000177
Grading	7/18/2025	8/1/2025	**0.7883**	11	8.67	0.004336
Building Construction	8/1/2025	12/18/2025	**0.3114**	100	31.14	0.015569
Paving	12/19/2025	12/25/2025	**0.2308**	5	1.15	0.000577
Architectural Coating-25	12/26/2025	12/31/2025	**0.0366**	5	0.18	0.000091
Architectural Coating-26	1/1/2025	1/8/2026	**0.0309**	5	0.15	0.000077
				1.7520	127	41.655	0.328

These numbers have been updated per Chapman PM10E CalEEMod. Please review where they came from <-----

Year	Annual DPM Emissions (tons/year)	# Construction Work Days	Average Daily DPM Emissions lbs	Average Hourly DPM Emissions (g/sec)	Average Hourly DPM Area Emission (g/m2-sec)		g/sec	g/m2-sec
2025	0.020750	122	0.3402	0.0018	4.549E-07	→	**4.1E-02**	**4.39E-07**
2026	0.000077	5	0.0309	0.0002	4.129E-08			
					0.002			

Offsite DPM Construction Emissionsss

Activity	Start Date	End Date	Work Days	Daily Max Onsite PM10E Offsite DPM Haul Truck (lb/day)	Offsite DPM Haul Truck (pounds)	Offsite DPM Haul Truck tons	Daily Max Onsite PM10E Offsite DPM Vendor Truck (lb/day)	Offsite DPM Vendor Truck (pounds)	Offsite DPM Vendor Trucks (tons)	Daily Max Onsite PM10E Offsite DPM Worker Vehicles (lb/day)	Offsite DPM Worker Vehicles (pounds)	Offsite DPM Worker Vehicles (tons)	
Site Preparation	7/16/2025	7/17/2025	1	0.0000	0	0	0.0000	0	0	0.0000	0	0	**0.0000**
Grading	7/18/2025	8/1/2025	11	0.0000	0	0	0.0000	0	0	0.0000	0	0	**0.0000**
Building Construction	8/1/2025	12/18/2025	100	0.0000	0	0	0.0008	0.08	0.00004	0.0000	0	0	**0.0008**
Paving	12/19/2025	12/25/2025	5	0.0000	0	0	0.0000	0	0	0.0000	0	0	**0.0000**
Architectural Coating-25	12/26/2025	12/31/2025	5	0.0000	0	0	0.0000	0	0	0.0000	0	0	**0.0000**
Architectural Coating-26	1/1/2025	1/8/2026	5	0.0000	0	0	0.0000	0	0	0.0000	0	0	**0.0000**
			127	0.0000	0.0000	0.0000	0.0008	0.0800	0.0000	0.0000	0.0000	0.0000	

These numbers have been updated per Chapman PM10E CalEEMod. Please review where they came from <-----

Offsite DPM Emissions (at the CalEEMOd Default Trip Distances)

Year	# of Construction Days	Haul Trucks AnnualEmissions (tons/year)	Haul Trucks Average Daily (lb/day)	Haul Trucks Average Hourly (lb/hr)	Haul Trucks Average Hourly (g/sec)	Vendor Trucks AnnualEmissions (tons/year)	Vendor Trucks Average Daily (lb/day)	Vendor Trucks Average Hourly (lb/hr)	Vendor Trucks Average Hourly (g/sec)	Worker Vehicles Annual Emissions (tons/year)	Worker Vehicles Average Daily (lb/day)	Worker Vehicles Average Hourly (lb/hr)	Worker Vehicles Average Hourly (g/sec)	
2025	122	0	0	0	0	0.00004	0.000655738	8.19672E-05	1.0337E-05	0	0	0	0	#REF!
2026	5	0	0	0	0	0	0	0	0	0	0	0	0	

CalEEMod Construction Vehicle Trip Length

Vehicle	Distance (miles)
Haul Truck	20
Vendor Truck	10.2
Worker	18.5

Onsite Travel Links

	Travel Distance (m)	Trip Distance (mi)	% of Truck Travel
Onsite 1: Onsite route	91	0.056544778	100%

Off site Travel Links (Operational Run)

	Travel Distance (m)	Travel Distance (mi)	% of Truck Travel
Offsite 1: W on Chapman Drive > S Magnolia St > Intersection	3388	2.105205599	100%
Offsite 2: W on Chapman Drive > S Magnolia St > W on 22	541.9	0.336721049	50%
Offsite 3: W on Chapman Drive > S Magnolia St > E on 22	338.5	0.210334149	50%

Offsite Scaled DPM Emissions to AERMOD Trip Distance

Year	Haul Trucks (g/sec)	Vendor Trucks (g/sec)	Worker Vehicles (g/sec)	Total (g/sec)	Total (lb/hr)	Total (lb/day)
2025 (From CalEEMOd)	0.000E+00	1.034E-05	0.000E+00			
Onsite 1: Onsite route	0.000E+00	5.730E-08	0.000E+00	5.730E-08	4.54E-07	3.635E-06
2025 (Scaled for Distance and Distribution)						
Offsite 1: W on Chapman Drive > S Magnolia St > Intersection	0.000E+00	2.133E-06	0.000E+00	2.133E-06	1.692E-05	1.353E-04
Offsite 2: W on Chapman Drive > S Magnolia St > W on 22	0.000E+00	8.531E-08	0.000E+00	8.531E-08	6.765E-07	5.412E-06
Offsite 3: W on Chapman Drive > S Magnolia St > E on 22	0.000E+00	5.329E-08	0.000E+00	5.329E-08	4.226E-07	3.380E-06
2026 (from CalEEMod)	0.000E+00	0.000E+00	0.000E+00			
Onsite 1: Onsite route	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
2026 (Scaled for Distance and Distribution)						
Offsite 1: W on Chapman Drive > S Magnolia St > Intersection	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Offsite 2: W on Chapman Drive > S Magnolia St > W on 22	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
Offsite 3: W on Chapman Drive > S Magnolia St > E on 22	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

heading has an 2026

Weighted Average Emissions	
Route 1	**2.049E-06 g/sec**
Route 2	**8.195E-08 g/sec**
Route 3	**5.119E-08 g/sec**

Onsite	**5.505E-08 g/sec**

Activity	Work Days	On-Site Maximum Daily DPM Emissions[1] (pounds/day)	Off-Site Maximum Daily DPM Emissions[1] (pounds/day)	Total Average Daily Construction Emissions (pounds/day)
2025				
Site Preparation	1	0.35	0.0000	
Grading	11	0.79	0.0000	
Building Construction	100	0.31	0.0008	
Paving	5	0.23	0.0000	
Architectural Coating-25	5	0.04	0.0000	
Average Daily Construction Emissions 2025		0.79	0.0008	**0.79**
2026				
Architectural Coating-26	5	0.03	0.00	
Average Daily Construction Emissions 2027		0.03	0.00	**0.03**
2025-2026 Maximum Daily Construction Emissions (pounds/day)				**0.79**

24-074 Chapman Avenue Garden Grove Apartments

Annual DPM Concentrations at Maximum Impacted Sensitive and Worker Receptor

Onsite Unit Emission Source Rate

Size of Construction Area	3,925	m2
Unit EmissionRate:	0.000254747	g/m2-sec

Inputs:

Actual Onsite Emission Source

Year	Average Hourly Emission Rate (g/m2-sec)	Weighted Avg (g/m2-sec)	
2025	4.54939E-07	**Area Source:**	**g/sec**
2026	4.12871E-08	4.39E-07	4.11E-02
2027	0		

Offsite Unit Emission Source:

	Average Hourly Emission Rate (g/sec)	Line Sources (g/sec)	
Onsite		5.50481E-08	g/sec
Offsite 1:	W on Chapman Drive > S M	2.04948E-06	g/sec
Offsite 2:	W on Chapman Drive > S M	8.1952E-08	g/sec
Offsite 3:	W on Chapman Drive > S M	5.11917E-08	g/sec

Results:

Max=School	
Max=Residential	
Max= Hospital	
Max^	
Max=Worker	

Note:
(1) Based on a unit emission rate

5mph

APPENDIX D – ESTIMATION OF CONSTRUCTION HEALTH RISK

Chapman Con HRA

Exposure Durations During Construction

	Start	End	Days	% Year	
Calendar Construction Days	7/16/2025	1/8/2026	176	0.48	
3rd Trimester (2025)	7/16/2025	10/14/2025	90	0.25	
0-1 year (2025)	10/15/2025	12/31/2025	77	0.21	
0-1 year (2026)	1/1/2026	1/8/2026	7	0.02	
				0.48	0.23
					5.720548

48)

Chapman Con HRA **Unmitigated**

Updated 1.16.2024

Annual DPM Concentrations at Maximum Impacted Sensitive and Worker Receptor

Onsite Unit Emission Source Rate

Size of Construction Area	63,047	m2
Unit EmissionRate:	1.58612E-05	g/m2-sec

Inputs:

Actual Onsite Emission Source

Year	Average Hourly Emission Rate (g/m2-sec)
2025	4.54939E-07
2026	4.12871E-08
2027	0

Weighted Avg (g/m2-sec)	
Area Source:	**g/sec**
4.39E-07	4.11E-02

Offsite Unit Emission Source:

Year	Average Hourly Emission Rate (g/sec)

	New 60mi Inputs (g/sec)	
Onsite	5.50E-08	g/sec
Offsite 1: W on Chapman Drive > S Magnolia St > Intersection	2.04948E-06	g/sec
Offsite 2: W on Chapman Drive > S Magnolia St > W on 22	8.1952E-08	g/sec
Offsite 3: W on Chapman Drive > S Magnolia St > E on 22	5.11917E-08	g/sec

Results:

Max School=	0
Max Residential=	0.07185
Max Hospital=	0
Max Sensitive Receptor=	0.07185
Max Worker=	0.14239

Health Risk Totals:

Receptor	Cancer Risk (per million)		Exceeds Significance Threshold?
	Maximum Lifetime Proposed Project Risk	Significance Threshold	
Maximum Impacted Sensitive Receptor – Infant to Adult (30 years)	2.47	10	No
Maximum Impacted Sensitive Receptor – Adult	0.09	10	No
Maximum Impacted Worker Receptor	0.17	10	No
Receptor	**Chronic Non-Cancer Hazard Index**		**Exceeds Significance Threshold?**
	Maximum Lifetime Proposed Project Risk	**Significance Threshold**	
Maximum Impacted Sensitive Receptor – Infant to Adult (30 years)	0.014	1	No
Maximum Impacted Sensitive Receptor – Adult	0.014	1	No
Maximum Impacted Worker Receptor	0.028478	1	No

Chapman Con HRA

No Mitigation

Cancer Risk Calculation - Location of Max Risk

SCAQMD Guidance	**Residential**	**30-year Exposure**	**Total Cancer risk**	**HI**
			2.4666	0.0144

Maximum Period DPM Concentration **7.19E-02** ug/m3

Year	**Year**	**Maximum DPM (ug/m3)**	**CPF (mg/kg-day)^-1**	**95% DBR (l/kg-day)**	**ED (years)**	**EF (days)**	**AT (years)**	**TAH (%)**	**ASF**	**Operational Risk (risk/million)**
3rd Trimester	2026	0.07185	1.1	361	0.25	250	25550	1.00	10	0.688376
1	2025	0.07185	1.1	1,090	0.21	250	25550	1.00	10	1.778250
2	2026	0.00000	1.1	745	0.02	250	25550	1.00	10	0.00

Chapman Con HRA No Mitigation

Cancer Risk Calculation - Location of Max Risk

SCAQMD Guidance	**Residential**	**30-year Exposure**	**Adult**	**Total Cancer risk**
				0.090156

Maximum Period DPM Concentration **0.07185** ug/m3

Year	**Year**	**Maximum DPM (ug/m3)**	**CPF (mg/kg-day)^-1**	**DBR (l/kg-day)**	**ED (years)**	**EF (days)**	**AT (years)**	**TAH (%)**	**ASF**	**Operational Risk (risk/million)**
1	2025	0.07185	1.1	335	0.46	250	25550	0.73	1	0.09
2	2026	0.07185	1.1	335	0.02	250	25550	0.73	1	0.00

Chapman Con HRA No Mitigation

Cancer Risk Calculation - Location of Max Risk

SCAQMD Guidance	**Worker**	**25-year Exposure**						**Total Cancer risk**	
								0.17	0.028

Maximum Period DPM Concentration **0.14239** ug/m3

Year	**Year**	**Maximum DPM (ug/m3)**	**CPF (mg/kg-day)^-1**	**DBR (l/kg-day)**	**ED (years)**	**EF (days)**	**AT (years)**	**ASF**	**Operational Risk (risk/million)**
1	2025	0.14239	1.1	230	0.46	250	25550	1	0.16
2	2026	0.14239	1.1	230	0.02	250	25550	1	0.01

Appendix F: Preliminary Water Quality Management Plan

GARDEN GROVE

Preliminary
Water Quality Management Plan
(PWQMP)

Project Name:

Chapman Avenue Apartments
9562 Chapman Avenue
Garden Grove, CA 92841
APN 133-091-03

Prepared for:

P&P Brothers Corp.
18685 Main Street, Suite 101-385
Huntington Beach, CA 92648

Prepared by:

DMS Consultants, Inc.
Engineer: Surender Dewan, P.E. Registration No.: 34559
12371 Lewis Street, Suite 203
Garden Grove, CA 92840
714-740-8840

Prepared: September 17, 2024

PROJECT OWNER'S CERTIFICATION			
Permit/Application No.	TBD	Grading Permit No.	TBD
Tract No.	N/A	Building Permit No.	
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract)			APN 133-091-03

This Preliminary Water Quality Management Plan (PWQMP) has been prepared for *P&P Brothers Corp.* by *DMS Consultants, Inc*. The PWQMP is intended to comply with the requirements of the local NPDES Stormwater Program requiring the preparation of the plan and serve as an environmental assessment document conforming with the requirements of the California Environmental Quality Act (CEQA) to identify project impacts and propose mitigation as part of the entitlement review process.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of the final plan and will ensure that the final plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the current Orange County Drainage Area Management Plan (DAMP) and the intent of the non-point source NPDES Permit for Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the incorporated Cities of Orange County within the Santa Ana Region. Once the undersigned transfers its interest in the property, its successors-in-interest shall bear the aforementioned responsibility to implement and amend the Final WQMP. An appropriate number of approved and signed copies of this document shall be available on the subject site in perpetuity.

Each Project Final WQMP will be stored within the City's files, and will continue with the property after completion of the construction phase, and the City will require that the terms, conditions and requirements be recorded with the County Recorder's office by the property owner or any successive owner as authorized by the Water Quality Ordinance. The City will also require the Project Final WQMP to include a Notice of Transfer Responsibility Form, which services to notify the City that a change in ownership has occurred and notify the new owner of its responsibility to continue implementing the Project Final WQMP.

The Project Final WQMP must include calculations to support the structural integrity of the selected LID or treatment control BMP as appropriate and be prepared by or under the direction of a California Registered Civil Engineer and affixed with their stamp.

OWNER:			
Name/Title	Thao Vu		
Company	P&P Brothers Corp.		
Address	18685 Main Street, Suite 101--385 Huntington Beach, CA 92648		
Email	Thao.pt.vu@gmail.com		
Telephone #	714.728.7401		
Signature	Thao Vu	Date	9/17/24

TABLE OF CONTENTS

Page No.

SECTION I DISCRETIONARY PERMITS AND WATER QUALITY CONDITIONS

The project's discretionary permit and water quality information are provided in the following:

PROJECT INFORMATION			
Permit/Application No.	TBD	Tract/Parcel No.	N/A
Additional Information/ Comments:	APN 133-091-03		
PRELIMINARY WATER QUALITY CONDITIONS			
Water Quality Conditions	1. 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 in a manner meeting the approval of the City Engineer in concert with the Orange County Health Department. The report shall make recommendations for pavement design of the interior streets and parking spaces. The report shall also test and analyze soil conditions for LID (Low Impact Development) principles and implementations, including potential infiltration alternatives, soil compaction, saturation, permeability and groundwater levels. a. WQMP i. Prior to the issuance of any grading or building permits or prior to recordation upon subdivision of land if determined applicable by the City Building Official, the applicant shall submit to the City for review and approval a Water Quality Management Plan that: ▪ Addresses Site Design BMPs such as minimizing impervious areas, maximizing permeability, minimizing directly connected impervious areas, creating reduced or "zero discharge" areas, and conserving natural areas. ▪ Incorporates the applicable Routine Source Control BMPs as defined in the DAMP.		

	▪ Incorporates structural and Treatment Control BMPs as defined in the DAMP. ▪ Generally, describes the long-term operation and maintenance requirements for the Treatment Control BMPs. ▪ Identifies the entity that will be responsible for long-term operation and maintenance of the Treatment Control BMPs. ▪ Describes the mechanism for funding the long-term operation and maintenance of the Treatment Control BMPs. 2. Prior to grading or building permit closeout and/or the issuance of a certificate of use or a certificate of occupancy, the applicant shall: ▪ 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. ▪ Demonstrate that applicant is prepared to implement all non-structural BMPs described in the Project WQMP. ▪ Demonstrate that an adequate number of copies of the approved Project WQMP are available onsite. ▪ Submit for review and approval by the City an Operations and Maintenance (O&M) Plan for all structural BMPs.
Provide applicable conditions from watershed - based plans including WIHMPs and TMDLS.	There is currently no approved WIHMP for the Anaheim Bay-Huntington Harbor Watershed. New development projects that create 10,000 SF or more of impervious surface. This category includes commercial, industrial, residential housing subdivisions, mixed-use, and public projects on private or public property that falls under the planning and building authority or the permittees.

SECTION II PROJECT DESCRIPTION

II.1 PROJECT DESCRIPTION

<table>
<tr><th colspan="3">DESCRIPTION OF PROPOSED PROJECT</th></tr>
<tr><td>Development Category (Verbatim from WQMP):</td><td colspan="2">Category 1 Development - New development projects that create 10,000 square feet or more of impervious surface. This category includes commercial, industrial, residential housing subdivisions, mixed-use, and public projects on private or public property that falls under the planning and building authority or the Permittees.</td></tr>
<tr><td>Project Area (ft^2):
36,150 square feet</td><td>Number of Dwelling Units:
36</td><td>SIC Code:
6552</td></tr>
<tr><td>Narrative Project Description:</td><td colspan="2">The proposed project is rectangular-shaped, approximately 0.83-acre site is bounded to the north by Chapman Avenue, and to the east, south, and west by existing properties. The site presently drains towards Chapman Avenue.

Proposed project is a 36-unit apartment complex.

The breakdown of the site conditions is as follows:
Total building coverage: 14,997 SF
Total private drive/parking/vehicle access: 16,222 SF
Total landscape area: 4,697 SF
Parking spaces: 49

All parking on the site will be consistent with City of Garden Grove parking regulations.

Entrance to the site will be provided via Chapman Avenue.

The project landscape area is shown on the site plan located in Section IV. The proposed landscaping consists of drought tolerant material, some of which will be native as required by the City of Garden Grove.

P&P Brothers Corp., owner of the project will be responsible for maintenance of the project until a property management company (PMC) is formed. After that the PMC will be responsible for long-term maintenance of common areas, including trash, landscaping, sewer, onsite paving and storm drains.</td></tr>
</table>

	An Infiltration Study/Geotechnical Report prepared by ALTA California Geotechnical, Inc. indicates that ground water was encountered at 10 feet below existing ground and as infiltration will not be feasible in absence of separation requirement of 10 feet between bottom of infiltrating surface and elevation of ground water. A copy of this report is included in Attachment E. To conform to LID requirements for BMPs, the project utilizes the use of a StormTech underground storage unit manufactured by Advanced Drainage Systems. On a weekly basis, daily generation of homeowner related trash will be collected and removed by local private waste management company for proper disposal to a central trash disposal facility off-site. There is one central covered trash area located in the project area. Trash interception screens will be installed at inlets with the latest State amendment. All BMPs are located in the common areas.

Project Area	Pervious		Impervious	
	Area (acres or sq ft)	Percentage	Area (acres or sq ft)	Percentage
Pre-Project Conditions	0.08 acres	10%	0.75 acres	90%
Post-Project Conditions	0.08 acres	10%	0.75 acres	90%

Drainage Patterns/ Connections

EXISTING CONDITIONS

The proposed project is located along the southerly side of Chapman Avenue in the City of Garden Grove. The overall site is rectangular in configuration and relatively flat. The approximate elevations of the site vary from 84.00 to 81.00 feet above mean sea level (msl). The site was a restaurant with AC parking lot.

PROPOSED CONDITIONS

The hydrology calculations included in Appendix B of this WQMP and the following summary table indicates that the post-development runoff volume does not exceed the pre-development volume, as such HCOC does not exist.

Summary – Q_{10} Runoff		
Item	Pre-Development	Post-Development
Peak Flow	2.20 cfs	1.84 cfs

	The proposed drainage concept consists of runoff from the site via drain inlets to connect to an inlet located in the main drive area. This inlet connects to a StormTech underground storage system manufactured by Advanced Drainage Systems, located along the drive area. The overflow runoff from thereon outlets via a pump system and parkway drain to existing curb and gutter on Chapman Avenue. All runoff eventually discharges into Anaheim Bay.

II.2 POTENTIAL STORMWATER POLLUTANTS

The table below, derived from Table 2 of the Countywide Model WQMP Technical Guidance Document (May 2011), summarizes the categories of land use or project features of concerns and the general pollutant categories associated with them.

POLLUTANTS OF CONCERN			
Pollutant	E=Expected to be of concern N=Not Expected to be of concern		Additional Information and Comments
Suspended-Solid/ Sediment	**E**		Existing landscaping areas and disturbed earth surfaces.
Nutrients	**E**		Fertilizers, sediment and trash/debris.
Heavy Metals	**E**		Vehicles and automotive fluids as well as various construction materials.
Pathogens (Bacteria/Virus)	**E**		Pets, food wastes and landscaping/sediment areas.
Pesticides	**E**		Landscaping and household sources.
Oil and Grease	**E**		Parked vehicles.
Toxic Organic Compounds	**E**		Public street.
Trash and Debris	**E**		Common litter and trash.

II.3 HYDROLOGIC CONDITIONS OF CONCERN

Determine if streams located downstream from the project area are determined to be potentially susceptible to hydromodification impacts.

☒ No – Show map

☐ Yes – Describe applicable hydrologic conditions of concern below.

The project is not susceptible to hydromodification impacts because all downstream receiving waters are stabilized.

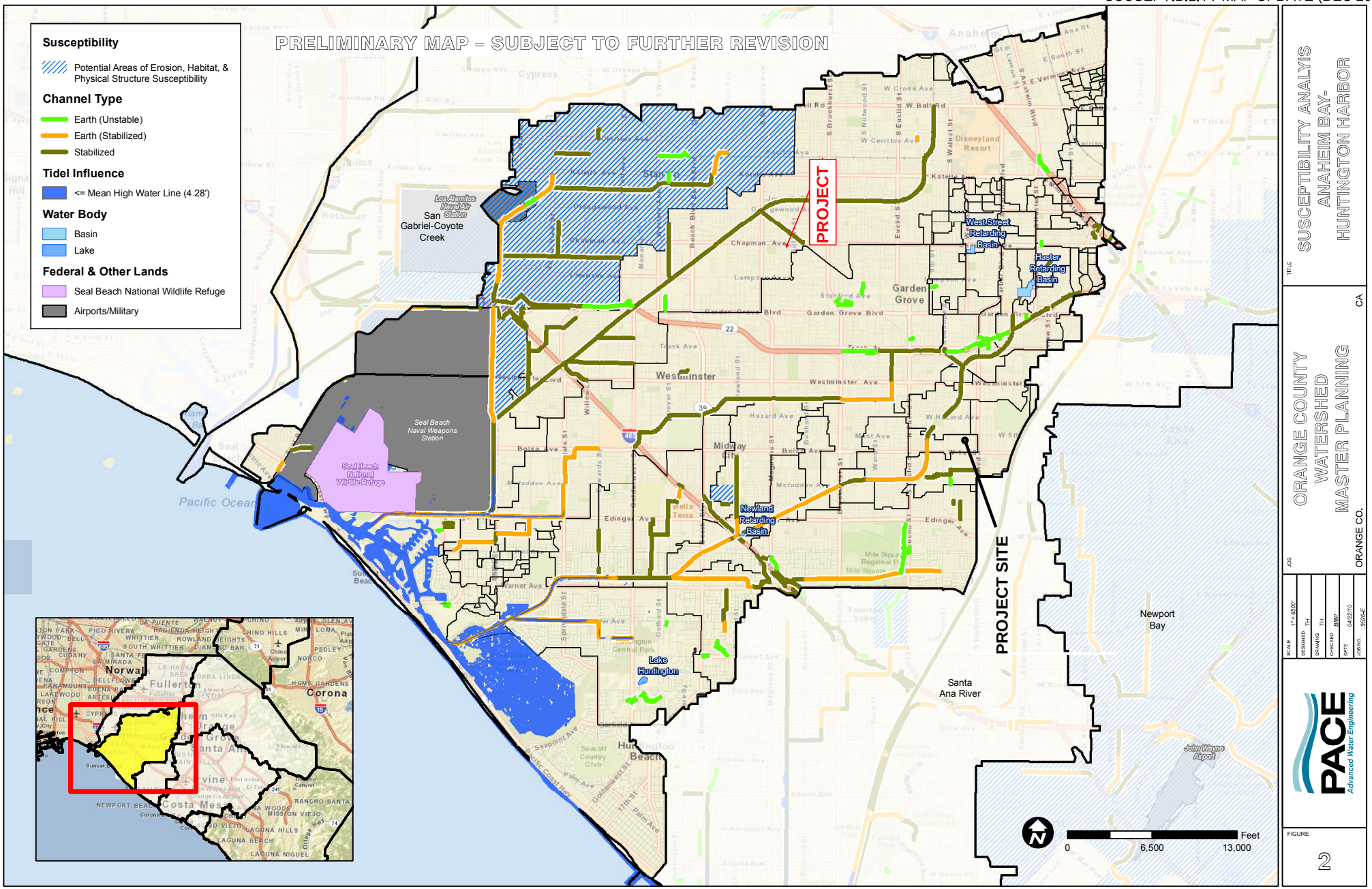
II.4 POST DEVELOPMENT DRAINAGE CHARACTERISTICS

The proposed drainage concept consists of runoff from the site via drain inlets to connect to an inlet located in the main drive area. This inlet connects to a StormTech underground storage system manufactured by Advanced Drainage Systems, located along the drive area. The overflow runoff from thereon outlets via a pump system and parkway drain to existing curb and gutter on Chapman Avenue. All runoff eventually discharges into Anaheim Bay.

II.5 PROPERTY OWNERSHIP/MANAGEMENT

The project is owned by P&P Brothers Corp. A property management company (PMC) will be retained at completion of the project that will be responsible for the long-term maintenance of the projects storm water facilities.

SUSCEPTIBILITY MAP UPDATE (DEC 2012)



SUSCEPTIBILITY ANALYIS
ANAHEIM BAY-
HUNTINGTON HARBOR

ORANGE COUNTY
WATERSHED
MASTER PLANNING

ORANGE CO., CA

JOB

SCALE	1" = 6500'
DESIGNED	TH
DRAWING	TH
CHECKED	BWC
DATE	04/22/10
JOB NO.	9526-E

PACE
Advanced Water Engineering

FIGURE
2

P:\9526E\x-GIS\Mxds\Workspace\Susceptible Analysis_20100422\9526E_AnaheimBay_20100331.mxd

SECTION III SITE DESCRIPTION

III.1 PHYSICAL SETTING

Planning Area/ Community Name	TBD
Location/Address	9562 Chapman Avenue
Land Use	Residential/ commercial mixed use 2 (RC1)
Zoning	Neighborhood mixed use (NMU)
Acreage	0.82 acres
Predominant Soil Type	Sand with silt

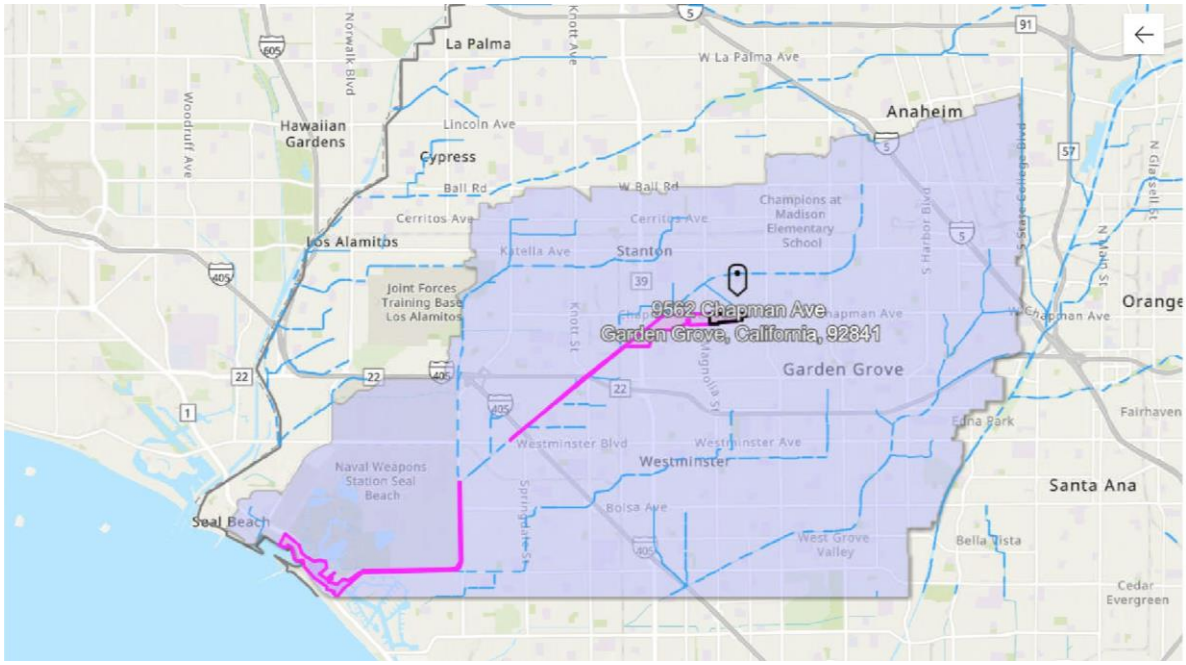
III.2 SITE CHARACTERISTICS

Precipitation Zone	0.95 inches (Ref. Figure XVI-1 Appendix XVI of T.G.D.
Topography	The site is relatively flat.
Drainage Patterns/Connections	The proposed drainage concept consists of runoff from the site via drain inlets to connect to an inlet located in the main drive area. This inlet connects to a StormTech underground storage system manufactured by Advanced Drainage Systems, located along the drive area. The overflow runoff from thereon outlets via a pump system and parkway drain to existing curb and gutter on Chapman Avenue. All runoff eventually discharges into Anaheim Bay.
Soil Type, Geology, and Infiltration Properties	According to the infiltration study constraint maps, Section XVI-2 of the T.G.D., the project is located in hydrological soil Group B. A geotechnical study conducted by ALTA California Geotechnical, Inc. on the project site indicates the soil to be sand with silt. Additionally, the report indicated that ground water was encountered at 10 feet below existing ground elevation.
Hydrogeologic (Groundwater) Conditions	None. See Attachment E for Geotechnical Investigation Report.
Geotechnical Conditions (relevant to infiltration)	Ground water was encountered at 10 feet below existing ground elevation, as such, infiltration is not feasible in absence of separation requirement of 10 feet between bottom of infiltrating

	surface and elevation of ground water.
Off-Site Drainage	None
Utility and Infrastructure Information	There are no existing subsurface utilities located in the project area.

III.3 WATERSHED DESCRIPTION

Receiving Waters	Anaheim Bay
303(d) Listed Impairments	Anaheim Bay: Nickel, Toxicity, PCBs
Applicable TMDLs	Anaheim Bay: Copper, Bacteria
Pollutants of Concern for the Project	Expected pollutants from residential developments include sediment, nutrients, pathogens, pesticides, oil and grease, and trash. Based on the 303(d) listed impairments and TMDLs for the project's receiving waters, the pollutants of concern are pathogens.
Environmentally Sensitive and Special Biological Significant Areas	There are no ESA's or SBSA's within the vicinity of the project.



SECTION IV BEST MANAGEMENT PRACTICES (BMPS)

IV. 1 PROJECT PERFORMANCE CRITERIA

(NOC Permit Area only) Is there an approved WIHMP or equivalent for the project area that includes more stringent LID feasibility criteria or if there are opportunities identified for implementing LID on regional or sub-regional basis?	YES ☐	NO ☒
If yes, describe WIHMP feasibility criteria or regional/sub-regional LID opportunities.		
If HCOC exists, list applicable hydromodification control performance criteria (Section 7.II-2.4.2.2 in MWQMP)	Not Applicable	
List applicable LID performance criteria (Section 7.II-2.4.3 from MWQMP)	Priority projects must infiltrate, harvest and use, evapotranspire, or biotreat/biofilter the 85th percentile, 24-hour storm drain event (Design Capture Volume).	
List applicable treatment control BMP performance criteria (Section 7.II-3.2.2 from MWQMP)	LID performance criteria also fully satisfy treatment control performance criteria.	
Calculate LID design storm capture volume for Project.	See calculations included in Attachment A.	

IV.2 SITE DESIGN AND DRAINAGE PLAN

The following section describes the site design BMPs used in this project and the methods used to incorporate them. Careful consideration of site design is a critical first step in storm water pollution prevention from new developments and redevelopments.

Minimize Impervious Area

Impervious area will be minimized with the site's design. Surface infiltration BMPs will be incorporated as part of the project, rather than placing impervious surfaces over areas for infiltration.

Preserve Existing Drainage Patterns

Existing drainage patterns will be preserved as indicated. The site will drain similarly to existing conditions.

Disconnect Impervious Areas

Buildings will drain to landscaping. Impervious surfaces will ultimately drain via a drainage system to an underground storage system.

Landscape Design

Drought tolerant plants have been utilized in the project's landscape design. The landscape plan has been submitted to the City, under separate review and approval.

Drainage Management Areas

The proposed drainage concept consists of runoff from the site via drain inlets to connect to an inlet located in the main drive area. This inlet connects to a StormTech underground storage system manufactured by Advanced Drainage Systems, located along the drive area. The overflow runoff from thereon outlets via a pump system and parkway drain to existing curb and gutter on Chapman Avenue. All runoff eventually discharges into Anaheim Bay.

IV.3 LID BMP SELECTION AND PROJECT CONFORMANCE ANALYSIS

IV.3.1 Hydrologic Source Controls

If required HSCs are included, fill out applicable check box forms. If the retention criteria are otherwise met with other LID BMPs, include a statement indicating HSCs not required.

HYDROLOGIC SOURCE CONTROLS		
ID	Name	Included?
HSC-1	Localized on-lot infiltration	☐
HSC-2	Impervious area dispersion (e.g. roof top disconnection)	☐
HSC-3	Street trees (canopy interception)	☐
HSC-4	Residential rain barrels (not actively managed)	☐
HSC-5	Green roofs/Brown roofs	☐
HSC-6	Blue roofs	☐
HSC-7	Impervious area reduction (e.g. permeable pavers, site design)	☐

Hydrologic Source Controls are not required.

IV.3.2 Infiltration BMPs

Identify infiltration BMPs to be used in project. If design volume cannot be met, state why BMPs cannot be met.

INFILTRATION		
ID	Name	Included?
INF-3	Bioretention without underdrains	☐
INF-4	Rain gardens	☐
	Porous landscaping	☐
	Infiltration planters	☐
	Retention swales	☐
INF-2	Infiltration trenches	☐
INF-1	Infiltration basins	☐
INF-5	Drywells	☐
INF-7	Subsurface infiltration galleries	☒

	Hydrodynamic separator	☐
--	French drains	☐
INF-6	Permeable asphalt	☐
	Permeable concrete	☐
	Permeable concrete pavers	☐
	Other:	☐

Infiltration BMPs have been selected for the project.

IV.3.3 Evapotranspiration, Rainwater Harvesting BMPs

If the full Design Storm Capture Volume cannot be met with infiltration BMPs, describe any evapotranspiration, rainwater harvesting BMPs.

EVAPOTRANSPIRATION		
ID	Name	Included?
--	All HSCs; *See Section IV.3.1*	☐
--	Surface-based infiltration BMPs	☐
--	Biotreatment BMPs	☐
--	Other:	☐

HARVEST & REUSE / RAINWATER HARVESTING		
ID	Name	Included?
HU-1	Above-ground cisterns and basins	☐
HU-2	Underground detention	☐
--	Other:	☐

Evapotranspiration and Rainwater Harvesting BMPs were considered but were not found feasible because of site restraints.

IV.3.4 Biotreatment BMPs

If the full Design Storm Capture Volume cannot be met with infiltration BMPs, and/or evapotranspiration and rainwater harvesting BMPs, describe biotreatment BMPs. Include sections for selection, suitability, sizing, and infeasibility, as applicable.

BIOTREATMENT		
ID	Name	Included?
BIO-1	Bioretention with underdrains	☐
	Stormwater planter boxes with underdrains	☐
	Rain gardens with underdrains	☐
BIO-5	Constructed wetlands	☐
BIO-2	Vegetated swales	☐
BIO-3	Vegetated filter strips	☐
BIO-7	Proprietary vegetated biotreatment systems	☐
BIO-4	Wet extended detention basin	☐
BIO-6	Dry extended detention basins	☐
	Other:	☐

Biotreatment BMPs are not required.

IV.3.5 Hydromodification Control BMPs

Describe hydromodification control BMPs. See Section 5 of the TGD. Include sections for selection, suitability, sizing, and infeasibility, as applicable. Detail compliance with Prior Conditions of Approval.

HYDROMODIFICATION CONTROLS	
BMP Name	BMP Description
Not applicable	

IV.3.6 Regional/Sub-Regional LID BMPs

Describe regional/sub-regional LID BMPs in which the project will participate.

REGIONAL/SUB-REGIONAL LID BMPS
Smart growth goals, water conservation and groundwater recharge.

IV.3.7 Treatment Control BMPs

Treatment control BMPs can only be considered if the project conformance analysis indicates that it is not feasible to retain the full design capture volume with LID BMPs. Describe treatment control BMPs including sections for selection, sizing, and infeasibility, as applicable.

TREATMENT CONTROL BMPs		
ID	Name	Included?
TRT-1	Sand filters	☐
TRT-2	Cartridge media filter	☐
PRE-1	Hydrodynamic separation device	☐
PRE-2	Catch basin insert	☐
--	Other:	☐

IV.3.8 Non-Structural Source Control BMPs

NON-STRUCTURAL SOURCE CONTROL BMPS				
ID	Name	Included	Not Applicable	If not applicable, state brief reason
N1	Education for Property Owners, Tenants and Occupants	☒	☐	
N2	Activity Restrictions	☒	☐	
N3	Common Area Landscape Management	☒	☐	
N4	BMP Maintenance	☒	☐	
N5	Title 22 CCR Compliance (How development will comply)	☐	☒	Not applicable - residential development
N6	Local Industrial Permit Compliance	☐	☒	Not applicable - residential development
N7	Spill Contingency Plan	☐	☒	Not applicable - residential development
N8	Underground Storage Tank Compliance	☐	☒	None proposed on project

N9	Hazardous Materials Disclosure Compliance	☐	☒	No hazardous materials
N10	Uniform Fire Code Implementation	☐	☒	Not applicable - residential development
N11	Common Area Litter Control	☒	☐	
N12	Employee Training	☒	☐	
N13	Housekeeping of Loading Docks	☐	☒	Not applicable - residential development
N14	Common Area Catch Basin Inspection	☒	☐	
N15	Street Sweeping Private Streets and Parking Lots	☒	☐	
N16	Retail Gasoline Outlets	☐	☒	None proposed on project

N1 - Education for Property Owners, Tenants, and Occupants

Educational materials will be provided to tenants, including brochures and restrictions to reduce pollutants from reaching the storm drain system. Examples include tips for pet care, household tips, and proper household hazardous waste disposal. Tenants will be provided with these materials by the property management prior to occupancy, and periodically thereafter. Refer to Section VII for a list of materials available and are included in Attachment C of this WQMP. Additional materials are available through:

County of Orange Storm Water Program website (http://ocwatersheds.com/PublicEd/)
California Storm Water Quality Association's (CASQA) BMP Handbooks (http://www.cabmphandbooks.com/).

N2 - Activity Restrictions

Handouts provided to tenants will identify surface water quality protection required. Surface water quality activities will also be conducted by PMC in conformance with the WQMP as it relates to the handling and disposal of contaminants.

N3 - Common Area Landscape Management

Management programs will be designed and established by PMC which will own and maintain all common areas within the project site. These programs will include how to mitigate the potential dangers of fertilizer and pesticide usage. Ongoing maintenance will be consistent with the City of Garden Grove Landscape Requirements, the County Water Conservation Resolution and the State of California Model Water-Efficient Landscape Ordinance. Fertilizer and pesticide usage shall be consistent with County Management Guidelines for Use of Fertilizers and Pesticides

N4 - BMP Maintenance

PMC will be responsible for implementation of each applicable non-structural BMP as well as scheduling inspection and maintenance cleaning of all applicable structural BMP facilities. PMC

through the landscape maintenance contractor will be responsible for inspection and maintenance activities in landscape areas. Debris and other water pollutants will be controlled, contained, and disposed of in a proper manner by the maintenance contractor.

N5 – Title 22 CCR Compliance

Owner will ensure that the project is in full compliance with hazardous waste management section of Title 22.

N11 - Common Area Litter Control

Regular litter control for the project shall be performed including trash pick-up on a weekly basis, and sweeping of littered common areas, as performed by the maintenance crew.

N12 - Employee Training

PMC will provide monthly training for both maintenance personnel and employees. PMC shall be responsible for providing tenants with educational materials regarding the impact of dumping oil, paints, solvents or other potentially harmful chemicals into storm drains; the proper use of fertilizer and pesticides in landscaping maintenance practices; and the impacts of littering and improper waste disposal.

N14 - Common Area Catch Basin Inspection

Includes routine maintenance of all catch basins, grate inlets, etc. for debris and litter removal. All on-site catch basins inspected and cleaned a minimum of two times annually, prior to and after the rainy season each year.

N15 - Street Sweeping Private Streets and Parking Lots

PMC through its landscape maintenance contractor will be responsible for having parking lot, open space parking, and paved areas vacuum swept on a weekly basis. This procedure will be intensified around October 1st of each year prior to the rainy season.

IV.3.9 Structural Source Control BMPs

STRUCTURAL SOURCE CONTROL BMPS				
ID	Name	Included	Not Applicable	If not applicable, state brief reason
S1	Provide storm drain system stenciling and signage	☒	☐	
S2	Design and construct outdoor material storage areas to reduce pollution introduction	☐	☒	No outdoor material storage areas.
S3	Design and construct trash and waste storage areas to reduce pollution introduction	☒	☐	
S4	Use efficient irrigation systems and landscape design, water conservation, smart controllers, and source control	☒	☐	
S5	Protect slopes and channels and provide energy dissipation	☐	☒	No channels and energy dissipater devices.
S6	Dock areas	☐	☒	None proposed. Residential development
S7	Maintenance bays	☐	☒	None proposed. Residential development
S8	Vehicle wash areas	☐	☒	None proposed. Residential development
S9	Outdoor processing areas	☐	☒	None proposed. Residential development
S10	Equipment wash areas	☐	☒	None proposed. Residential development
S11	Fueling areas	☐	☒	None proposed. Residential development
S12	Hillside landscaping	☐	☒	None proposed. Residential development
S13	Wash water control for food preparation areas	☐	☒	None proposed. Residential development
S14	Community car wash racks	☐	☒	None proposed. Residential development

S1- Storm Drain Stenciling

The phrase “NO DUMPING! DRAINS TO OCEAN”, will be stenciled on all major storm drain inlets within the project site to alert the public to the destination of pollutants discharged into storm water. Stencils shall be inspected for legibility on an annual basis and re-stenciled as necessary.

S4 - Common Area Runoff – Minimizing Landscape Design

Installing and maintaining efficient irrigation systems designed to minimize water by eliminating overspray to hardscape areas and setting irrigation timing and cycle lengths in accordance with water demands, given time of year, weather, and day and night temperatures.

IV.4 ALTERNATIVE COMPLIANCE PLAN (IF APPLICABLE)

IV.4.1 Water Quality Credits

<table>
<tr><th colspan="5">DESCRIPTION OF PROPOSED PROJECT</th></tr>
<tr><td colspan="5">Project Types that Qualify for Water Quality Credits (Select all that apply):</td></tr>
<tr><td>☐Redevelopment projects that reduce the overall impervious footprint of the project site.</td><td colspan="2">☐Brownfield redevelopment, meaning redevelopment, expansion, or reuse of real property which may be complicated by the presence or potential presence of hazardous substances, pollutants or contaminants, and which have the potential to contribute to adverse ground or surface WQ if not redeveloped.</td><td colspan="2">☐ Higher density development projects which include two distinct categories (credits can only be taken for one category): those with more than seven units per acre of development (lower credit allowance); vertical density developments, for example, those with a Floor to Area Ratio (FAR) of 2 or those having more than 18 units per acre (greater credit allowance).</td></tr>
<tr><td colspan="2">☐ Mixed use development, such as a combination of residential, commercial, industrial, office, institutional, or other land uses which incorporate design principles that can demonstrate environmental benefits that would not be realized through single use projects (e.g. reduced vehicle trip traffic with the potential to reduce sources of water or air pollution).</td><td colspan="2">☐ Transit-oriented developments, such as a mixed use residential or commercial area designed to maximize access to public transportation; similar to above criterion, but where the development center is within one half mile of a mass transit center (e.g. bus, rail, light rail or commuter train station). Such projects would not be able to take credit for both categories, but may have greater credit assigned</td><td>☐ Redevelopment projects in an established historic district, historic preservation area, or similar significant city area including core City Center areas (to be defined through mapping).</td></tr>
<tr><td>☐Developments with dedication of undeveloped portions to parks, preservation areas and other pervious uses.</td><td>☐ Developments in a city center area.</td><td>☐ Developments in historic districts or historic preservation areas.</td><td>☐ Live-work developments, a variety of developments designed to support residential and vocational needs together – similar to criteria to mixed use development; would not be able to take credit for both categories.</td><td>☐In-fill projects, the conversion of empty lots and other underused spaces into more beneficially used spaces, such as residential or commercial areas.</td></tr>
<tr><td>Calculation of Water Quality Credits</td><td colspan="4"></td></tr>
</table>

IV.4.2 Alternative Compliance Plan Information

Not Applicable

Section V Inspection/Maintenance Responsibility for BMPs

BMP INSPECTION/MAINTENANCE			
BMP	**Reponsible Party(s)**	**Inspection/ Maintenance Activities Required**	**Minimum Frequency of Activities**
N1. Education for Property Owners, Tenants and Occupants	Property Management Company (PMC)	At move in and on a monthly basis thereafter	At move in and on a monthly basis thereafter
N2. Activity Restriction	Property Management Company (PMC)	At move in and on a monthly basis thereafter	At move in and on a monthly basis thereafter
N3. Common Area Landscape Management	Property Management Company (PMC)	Monthly during regular maintenance	Monthly during regular maintenance
N4. BMP Maintenance	Property Management Company (PMC)	Inspect prior to rain season, October 1st.	Inspect prior to rain season, October 1st.
N5. Title 22 CCR Compliance	Property Management Company (PMC)	Monthly during regular maintenance	Monthly during regular maintenance
N7. **N/A** Spill Contingency Plan			
N8. **N/A** Underground Storage Tank Compliance			
N9. **N/A** Hazardous Materials Disclosure Compliance			
N10. **N/A** Uniform Fire Code Implementation			
N11. Common Area Litter Control	Property Management Company (PMC)	Weekly trash pick-up.	Weekly trash pick-up.
N12. Employee Training	Property Management Company (PMC)	Annual	Annual.

BMP INSPECTION/MAINTENANCE

BMP	Reponsible Party(s)	Inspection/ Maintenance Activities Required	Minimum Frequency of Activities
Non-Structural Source Control BMPs			
N13. **N/A** Housekeeping of Loading Docks			
N14. Common Area Catch Basin Inspection	Property Management Company (PMC)	Periodically and around October 1st prior to "first flush" storm. Clean out the basin to be free from debris.	Periodically and at least prior to wet season (October 1st).
N15. Street Sweeping Private Streets and Parking Lots	Property Management Company (PMC)	Weekly basis and around October 1st of each year prior to "first flush" storm.	Periodically and at least prior to wet season (October 1st).
N16. **N/A** Retail Gasoline Outlets			
Structural Source Control BMPs			
Provide Storm Drain System Stenciling and Signage	Property Management Company (PMC)	Twice a year	Twice a year
Design and Construct Outdoor Material Storage Areas to Reduce Pollutant Introduction **N/A**			
Design and Construct Trash and Waste Storage Areas to Reduce Pollutant Introduction	Property Management Company (PMC)	Check for trash spillage. Cleanout for overspill of trash.	Monthly during regular maintenance.
Use Efficient Irrigation Systems & Landscape Design	Property Management Company (PMC)	Timers will be checked periodically	Timers will be checked periodically
Protect Slopes and Channels and Provide Energy Dissipation **N/A**			
Loading Docks **N/A**			

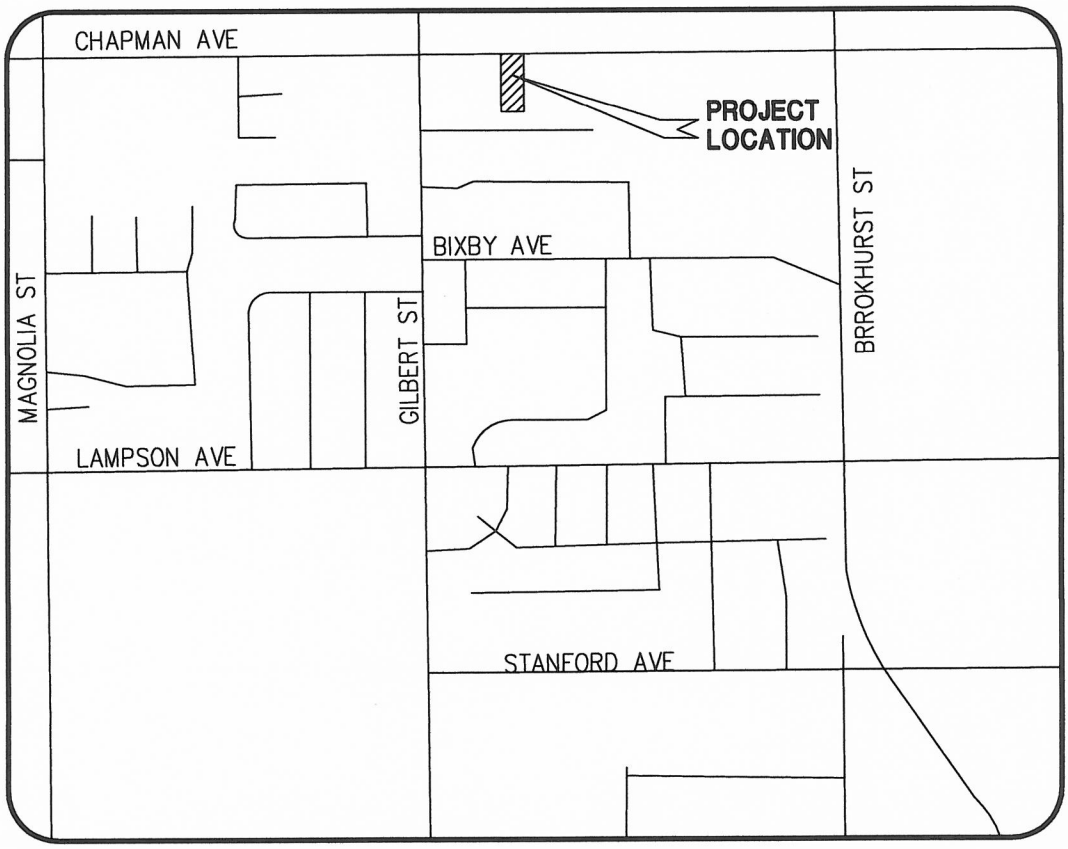
BMP INSPECTION/MAINTENANCE			
BMP	**Reponsible Party(s)**	**Inspection/ Maintenance Activities Required**	**Minimum Frequency of Activities**
Maintenance Bays **N/A**			
Vehicle Wash Areas **N/A**			
Outdoor Processing Areas **N/A**			
Equipment Wash Areas **N/A**			
Fueling Areas **N/A**			
Hillside Landscaping **N/A**			
Wash Water Controls for Food Preparation Areas **N/A**			
Community Car Wash Racks **N/A**			
LID BMPs			
LID BMP # 1 StormTech Underground Storage System MC-3500. Manufactured by Advanced Drainage Systems	Property Management Company (PMC)	In accordance with manufacturer's recommendations.	Twice a year
LID BMP # 2 Sump Pump	Property Management Company (PMC)	In accordance with manufacturer's recommendations.	Annually as-needed
LID BMP # 3 Covered Trash Enclosure	Property Management Company (PMC)	Check for trash spillage. Cleanout for overspill of trash.	Monthly during regular maintenance.

Funding:

Funding for the operations and maintenance of all treatment and structural BMPs will be provided by P&P Brothers Corp. By certifying this WQMP, the owner is certifying that the funding responsibilities have been addressed.

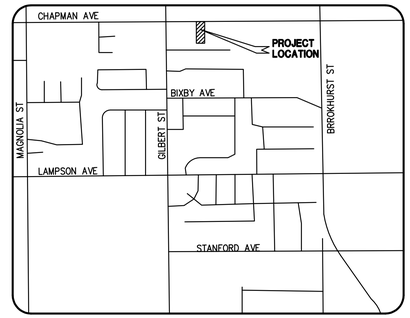
Section VI Site Plan and Drainage Plan

VI.1 SITE PLAN AND DRAINAGE PLAN

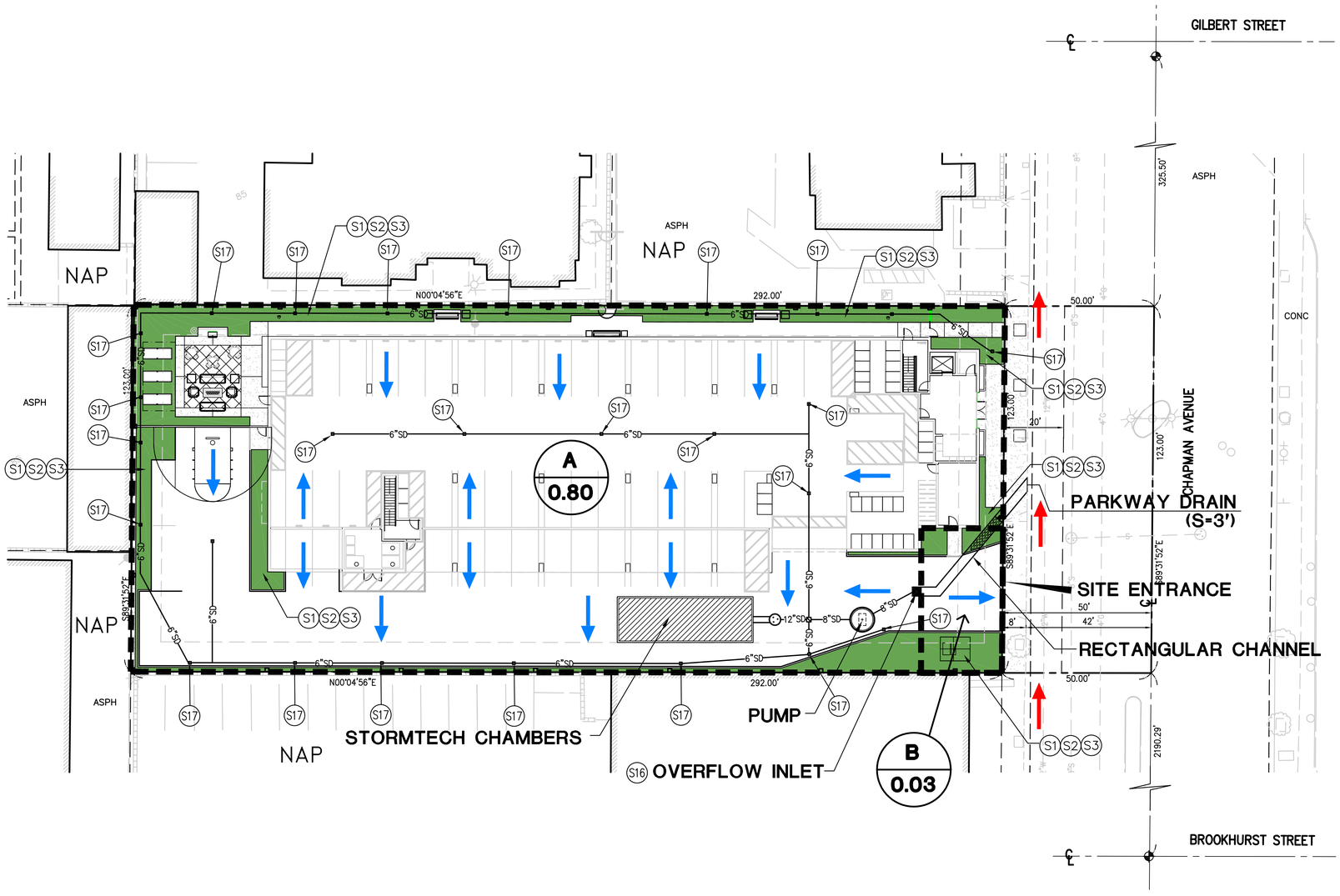


VICINITY MAP

NTS



VICINITY MAP
NTS



LEGEND

- LANDSCAPE AREAS WITH BMP's: (MAINTAINED BY PROPERTY OWNER/HOA)
  - SITE DESIGN/LANDSCAPE PLANNING (SD10)
  - COMMON AREA EFFICIENT IRRIGATION (SD12)
- (S1) FILTRATION: SURFACE RUNOFF SHALL BE DIRECTED TO LANDSCAPE AREAS WHEREVER PRACTICAL
- (S2) COMMON AREA EFFICIENT IRRIGATION
- (S3) COMMON AREA RUNOFF-MINIMIZING LANDSCAPE DESIGN
- TRACT BOUNDARY
- NAP NOT A PART
- X / X.XX — BMP AREA DESIGNATION / BMP AREA IN ACRES
- DIRECTION OF ONSITE SURFACE FLOW
- DIRECTION OF OFFSITE SURFACE FLOW
- (S16) WATER QUALITY INLET STENCILING "NO DUMPING, DRAINS TO OCEAN"
- (S17) DRAIN INLET
- BMP AREA LIMITS

N

0 20 30 40 60 100
(IN FEET)
1 inch = 20 ft.

REGISTERED PROFESSIONAL ENGINEER SURENDER M. DEMAN NO. 34559 Exp. 9/30/23 CIVIL STATE OF CALIFORNIA

PREPARED BY:

DMS CONSULTANTS, INC.
CIVIL ENGINEERS
12371 Lewis St. #203 Garden Grove CA. 92840 P. 714-740-8640 F. 714-740-8642

EXHIBIT 1

WQMP PLOT PLAN

SELECTED STRUCTURAL BMP'S

9562 CHAPMAN AVENUE
GARDEN GROVE, CA

CONCEPT GRADING PLAN/SITE PLAN

9562 CHAPMAN AVENUE, GARDEN GROVE, CA

BENCH MARK

BM# 1G-163-05

ELEV: 73.998 (NAVD88, ADJ 2005)

FOUND 3-3/4" OCS ALUMINUM BENCHMARK DISK STAMPED "1G-163-05", SET IN THE SOUTHWESTERLY CORNER OF A 4 FT. BY 3 FT. UTILITY VAULT. MONUMENT IS LOCATED IN THE NORTHWESTERLY CORNER OF THE INTERSECTION OF MAC MURRAY STREET AND CHAPMAN AVENUE, 32 FT. NORTHERLY OF THE CENTERLINE OF MAGNOLIA AND 120 FT. WESTERLY OF THE CENTERLINE OF MAC MURRAY.

EASEMENT NOTES

1. AN EASEMENT FOR WATER LINES AND INCIDENTAL PURPOSES, RECORDED IN BOOK 7568, PAGE 986 OF OFFICIAL RECORDS. (NOT PLOTTABLE)
2. AN EASEMENT FOR PUBLIC STREET AND HIGHWAY AND INCIDENTAL PURPOSES, IN FAVOR OF CITY OF GARDEN GROVE, RECORDED IN BOOK 8538, PAGE 41 OF OFFICIAL RECORDS.
3. AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY RECORDED IN BOOK 8754, PAGE 603 OF OFFICIAL RECORDS.

LEGAL DESCRIPTION

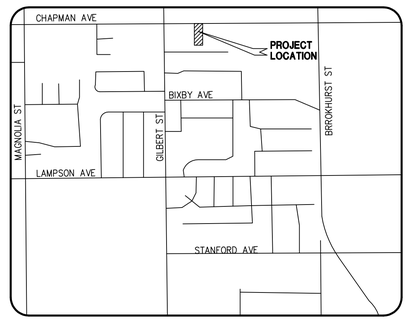
THE WEST 123.00 FEET OF THE NORTH 342.00 FEET OF LOT 14 OF BERRYFIELD, IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS SHOWN ON A MAP RECORDED IN BOOK 4, PAGE 97 OF MISCELLANEOUS MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN: 133-091-03

BASIS OF BEARING

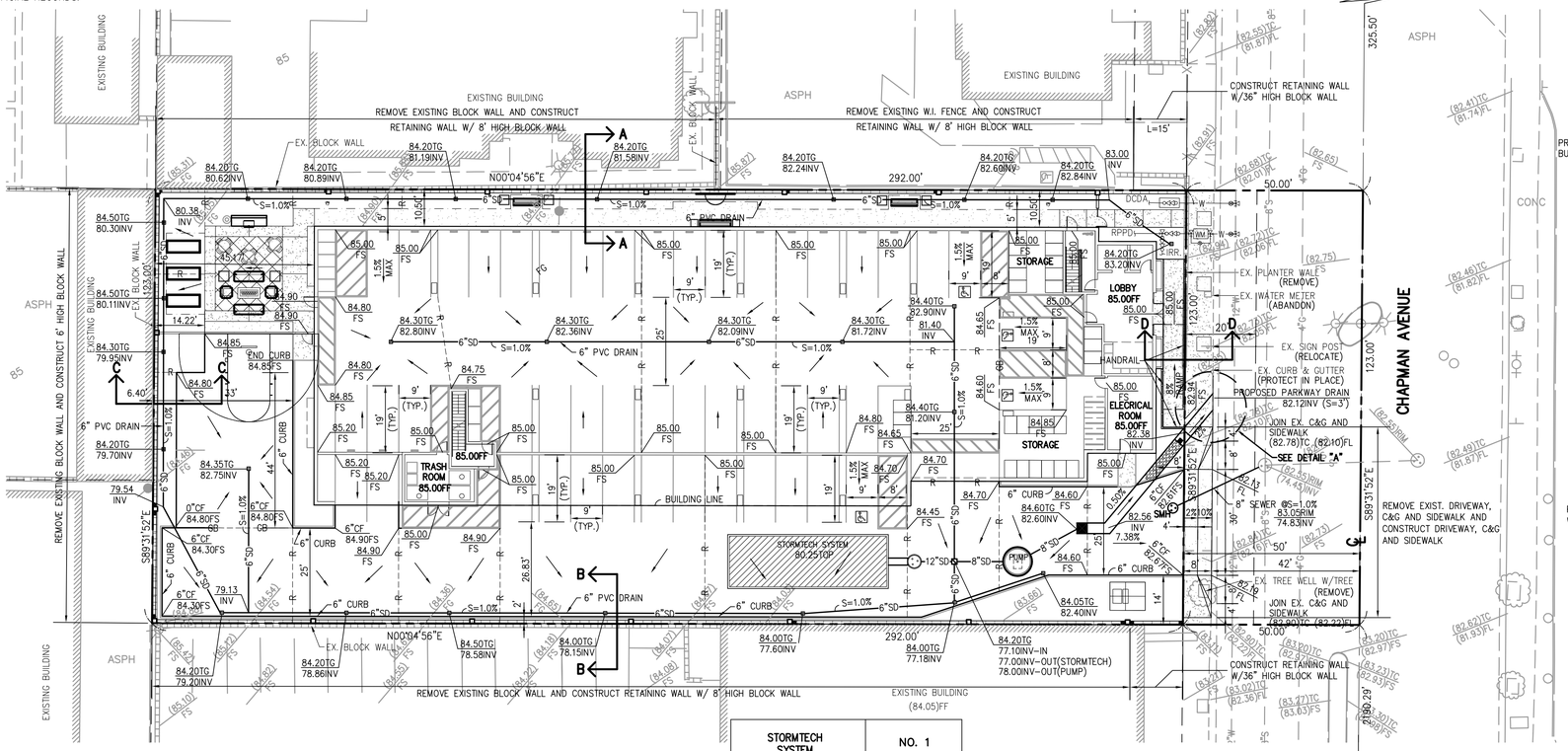
THE BEARINGS SHOWN HEREON ARE BASED ON THE BEARING BETWEEN O.C.S. HORIZONTAL CONTROL STATION GPS NO. 3013 & STATION GPS NO. 3008 BEING NORH 89°31'52" WEST PER RECORDS OF FILE IN THE OFFICE OF THE ORANGE COUNTY SURVEYOR.

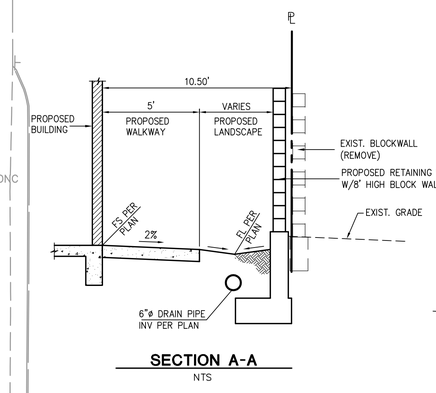
SHEET INDEX



VICINITY MAP

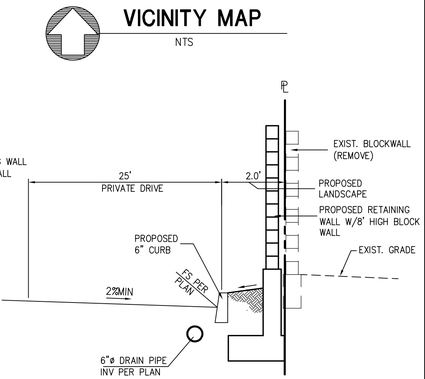
NTS





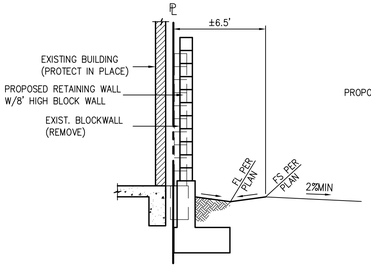
SECTION A-A

NTS



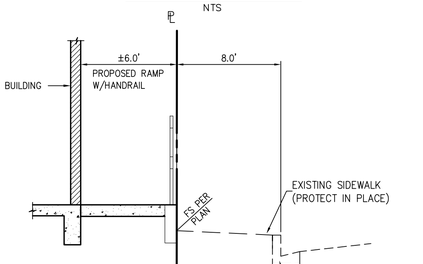
SECTION B-B

NTS



SECTION C-C

NTS



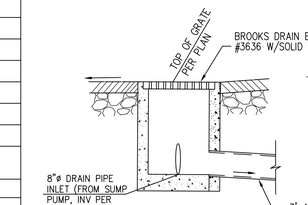
SECTION D-D

NTS

STORMTECH SYSTEM	NO. 1
MAX. LENGTH	45.51 FT.
MAX. WIDTH	15.33 FT.
EACH CHAMBER SIZE	52"x45"
NO. OF CHAMBERS	10
NO. OF END CAPS	4
BED SIZE	698 SQFT
STORAGE VOLUME (REQ.)	2000 CF
STORAGE VOLUME (PROVIDED)	2231 CF
PROPOSED ELEVATIONS	
TOP OF STONE	81.25
TOP OF CHAMBER	80.25
BOTTOM OF CHAMBER	76.50
BOTTOM OF STONE	75.75
INVERT @END CAP	76.50
INVERT @DRAIN INLET	77.00
BOTTOM OF SUMP	74.50

MC-3500 STORMTECH SYSTEM DATA

NTS



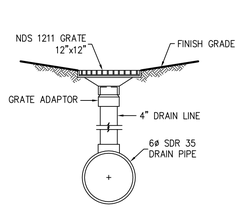
RECTANGLE CONC. DRAIN BOX

NTS

GRATE INLET DETAIL

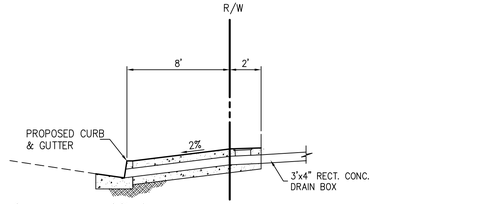
N.T.S.

(BROOKS DRAIN BOX NO. 2424)



YARD DRAIN INLET

NTS



DETAIL "A"

NTS

REGISTERED PROFESSIONAL ENGINEER SURENDER M. DEWAN NO. 34559 Exp.9/30/25 CIVIL STATE OF CALIFORNIA

SOILS ENGINEER:

ALTA CALIFORNIA
GEOTECHNICAL INC.
170 NORTH MAPLE ST, SUITE 108
CORONA, CA 92880
PROJECT NO. 1-0517

0 20 30 40 60 100

(IN FEET)
1 inch = 20 ft.

DESIGNED BY	DRAWN BY	CHECKED BY
S.D.	N.C.	S.D.

PLANS PREPARED UNDER THE SUPERVISION OF

SURENDER DEWAN

DATE 09/18/24 R.C.E. NO. 34559

REFERENCE PLANS FOR THESE IMPROVEMENTS

NO.	DATE	BY	DESCRIPTION	APP'D

REVISIONS

PREPARED BY :

DMS CONSULTANTS, INC.
CIVIL ENGINEERS
12371 Lewis St. #203 Garden Grove CA. 92840 P. 714-740-8840 F. 714-740-8842

09/18/24
SURENDER M. DEWAN RCE 34559 EXP. 9/30/25

OWNER

P&P BROS CORP.,
A CALIFORNIA CORPORATION
18685 MAIN STREET, SUITE 101-385
HUNTINGTON BEACH, CA 92648

ARCHITECT

BSB DESIGN
970 WEST 190TH ST, SUITE 250
TORRANCE, CA 90502
PH: 310-217-8885

PLANS PREPARED FOR

P&P BROS CORP.,
A CALIFORNIA CORPORATION
18685 MAIN STREET, SUITE 101-385
HUNTINGTON BEACH, CA 92648

CITY OF GARDEN GROVE

CONCEPT GRADING PLAN/SITE PLAN
9562 CHAPMAN AVENUE, GARDEN GROVE, CA

DATE: 09/18/24

C1

EXISTING TOPOGRAPHIC SURVEY PLAN

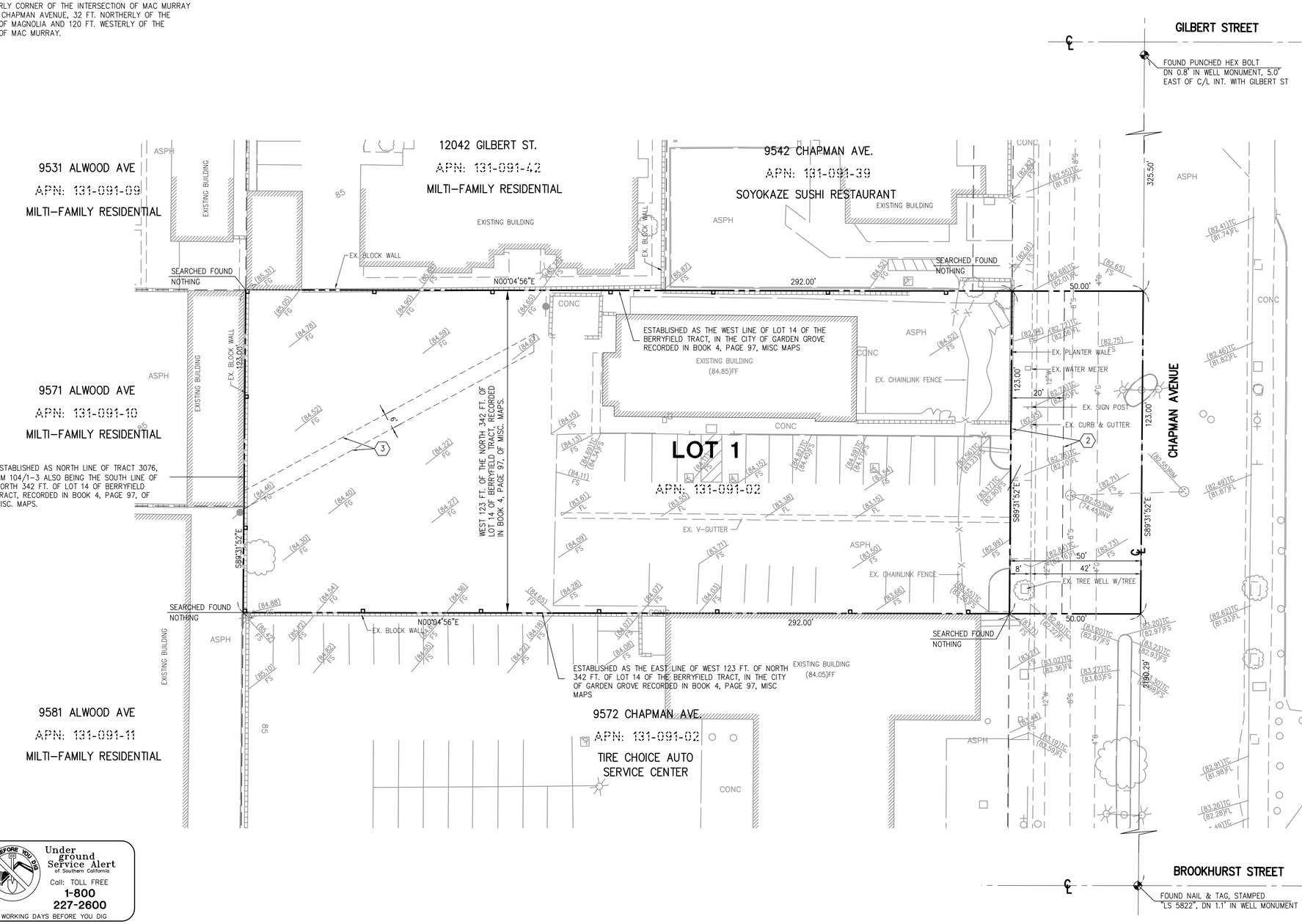
9562 CHAPMAN AVENUE, GARDEN GROVE, CA

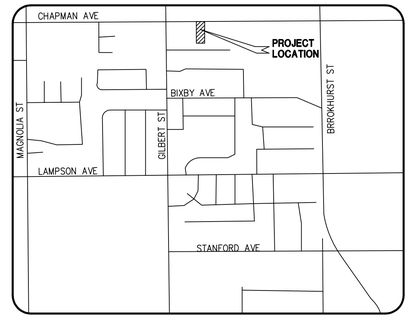
BENCH MARK

BM# 1G-163-05

ELEV: 73.998 (NAVD88, ADJ 2005)

FOUND 3-3/4" OCS ALUMINUM BENCHMARK DISK STAMPED "1G-163-05", SET IN THE SOUTHWESTERLY CORNER OF A 4 FT. BY 3 FT. UTILITY VAULT. MONUMENT IS LOCATED IN THE NORTHWESTERLY CORNER OF THE INTERSECTION OF MAC MURRAY STREET AND CHAPMAN AVENUE, 32 FT. NORTHERLY OF THE CENTERLINE OF MAGNOLIA AND 120 FT. WESTERLY OF THE CENTERLINE OF MAC MURRAY.





VICINITY MAP
NTS

LEGAL DESCRIPTION

THE WEST 123.00 FEET OF THE NORTH 342.00 FEET OF LOT 14 OF BERRYFIELD, IN THE CITY OF GARDEN GROVE, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS SHOWN ON A MAP RECORDED IN BOOK 4, PAGE 97 OF MISCELLANEOUS MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

APN: 133-091-03

BASIS OF BEARING

THE BEARINGS SHOWN HEREON ARE BASED ON THE BEARING BETWEEN O.C.S. HORIZONTAL CONTROL STATION GPS NO. 3013 & STATION GPS NO. 3008 BEING NORTH 89°31'52" WEST PER RECORDS OF FILE IN THE OFFICE OF THE ORANGE COUNTY SURVEYOR.

EASEMENT NOTES

1. AN EASEMENT FOR WATER LINES AND INCIDENTAL PURPOSES, RECORDED IN BOOK 7568, PAGE 986 OF OFFICIAL RECORDS. (NOT PLOTTABLE)
2. AN EASEMENT FOR PUBLIC STREET AND HIGHWAY AND INCIDENTAL PURPOSES, IN FAVOR OF CITY OF GARDEN GROVE, RECORDED IN BOOK 8538, PAGE 41 OF OFFICIAL RECORDS.
3. AN EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES, IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY RECORDED IN BOOK 8754, PAGE 603 OF OFFICIAL RECORDS.

Underground Service Alert of Southern California
Call: TOLL FREE
1-800 227-2600
TWO WORKING DAYS BEFORE YOU DIG

UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

ATTENTION IS DIRECTED TO THE POSSIBLE EXISTENCE OF UNDERGROUND FACILITIES NOT KNOWN OR IN A LOCATION DIFFERENT FROM THAT WHICH IS SHOWN ON THE PLANS OR IN THE SPECIAL PROVISIONS. THE CONTRACTOR SHALL TAKE STEPS TO ASCERTAIN THE EXACT LOCATION OF ALL UNDERGROUND FACILITIES PRIOR TO DOING WORK THAT MAY DAMAGE SUCH FACILITIES OR INTERFERE WITH THEIR SERVICE.

BEFORE EXCAVATING, THE CONTRACTOR SHALL VERIFY THE LOCATION OF UNDERGROUND UTILITIES BY CONTACTING UNDERGROUND SERVICE ALERT AT 1-(800)-227-2600

REGISTERED PROFESSIONAL ENGINEER
SURENDER M. DEWAN
NO. 34559
Exp. 9/30/25
CIVIL
STATE OF CALIFORNIA

SOILS ENGINEER:
ALTA CALIFORNIA
GEOTECHNICAL INC.
170 NORTH MAPLE ST, SUITE 108
CORONA, CA 92880
PROJECT NO. 1-0517

0 20 30 40 60 100
(IN FEET)
1 inch = 20 ft.

DESIGNED BY	DRAWN BY	CHECKED BY
S.D.	N.C.	S.D.

PLANS PREPARED UNDER THE SUPERVISION OF
SURENDER DEWAN
DATE 04/15/2024 R.C.E. NO. 34559

REFERENCE PLANS FOR THESE IMPROVEMENTS

NO.	DATE	BY	DESCRIPTION	APP'D

REVISIONS

PREPARED BY :
DMS CONSULTANTS, INC.
CIVIL ENGINEERS
12371 Lewis St #103 Garden Grove CA 92840 P. 714-740-8840 F. 714-740-8842
SURENDER M. DEWAN 09/18/24
RCE 34559 EXP. 9/30/25

OWNER
P&P BROS CORP.,
A CALIFORNIA CORPORATION
18685 MAIN STREET, SUITE 101-385
HUNTINGTON BEACH, CA 92648

ARCHITECT
BSB DESIGN
970 WEST 190TH ST, SUITE 250
TORRANCE, CA 90502
PH: 310-217-8885

PLANS PREPARED FOR
P&P BROS CORP.,
A CALIFORNIA CORPORATION
18685 MAIN STREET, SUITE 101-385
HUNTINGTON BEACH, CA 92648

CITY OF GARDEN GROVE

EXISTING TOPOGRAPHIC SURVEY PLAN
9562 CHAPMAN AVENUE, GARDEN GROVE, CA

DATE: 09/18/24

C2

Section VII Educational Materials

Refer to the Orange County Stormwater Program (ocwatersheds.com) for a library of materials available. For the copy submitted to the Permittee, only attach the educational materials specifically applicable to the project. Other materials specific to the project may be included as well and must be attached.

EDUCATION MATERIALS			
Residential Material (http://www.ocwatersheds.com)	**Check If Applicable**	**Business Material (http://www.ocwatersheds.com)**	**Check If Applicable**
The Ocean Begins at Your Front Door	☒	Tips for the Automotive Industry	☐
Tips for Car Wash Fund-raisers	☐	Tips for Using Concrete and Mortar	☐
Tips for the Home Mechanic	☐	Tips for the Food Service Industry	☐
Homeowners Guide for Sustainable Water Use	☒	Proper Maintenance Practices for Your Business	☐
Household Tips	☒	**Other Material**	**Check If Attached**
Proper Disposal of Household Hazardous Waste	☒		
Recycle at Your Local Used Oil Collection Center (North County)	☒	INF-7 Underground Infiltration (Attachment D)	☒
Recycle at Your Local Used Oil Collection Center (Central County)	☐		☐
Recycle at Your Local Used Oil Collection Center (South County)	☐		☐
Tips for Maintaining a Septic Tank System	☐		☐
Responsible Pest Control	☒		☐
Sewer Spill	☒		☐
Tips for the Home Improvement Projects	☐		☐
Tips for Horse Care	☐		☐
Tips for Landscaping and Gardening	☒		☐
Tips for Pet Care	☒		☐
Tips for Pool Maintenance	☐		☐
Tips for Residential Pool, Landscape and Hardscape Drains	☐		☐
Tips for Projects Using Paint	☐		☐

Attachments

Attachment A

TGD Worksheets and BMP Calculations

9562 Chapman Avenue
Garden Grove

Table 2.7: Infiltration BMP Feasibility Worksheet

	Infeasibility Criteria	*Yes*	*No*
1	**Would Infiltration BMPs pose significant risk for groundwater related concerns?** Refer to Appendix VII (Worksheet I) for guidance on groundwater-related infiltration feasibility criteria.		**X**
Provide basis: Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
2	Would Infiltration BMPs **pose significant risk of increasing risk of geotechnical hazards that cannot be mitigated to an acceptable level**? (Yes if the answer to any of the following questions is yes, as established by a geotechnical expert): • The BMP can only be located less than 50 feet away from slopes steeper than 15 percent • The BMP can only be located less than eight feet from building foundations or an alternative setback. • A study prepared by a geotechnical professional or an available watershed study substantiates that stormwater infiltration would potentially result in significantly increased risks of geotechnical hazards that cannot be mitigated to an acceptable level.		**X**
Provide basis: Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
3	Would infiltration of the DCV from drainage area **violate downstream water rights**?		**X**
Provide basis: Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			

Table 2.7: Infiltration BMP Feasibility Worksheet (continued)

	Partial Infeasibility Criteria	*Yes*	*No*
4	Is proposed infiltration facility **located on HSG D soils** or the site geotechnical investigation identifies presence of soil characteristics which support categorization as D soils?		**X**
Provide basis: Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
5	Is **measured infiltration rate below proposed facility less than 0.3 inches per hour**? This calculation shall be based on the methods described in Appendix VII.		**X**
Provide basis: Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
6	Would **reduction of over predeveloped conditions cause impairments to downstream beneficial uses, such as change of seasonality of ephemeral washes or increased discharge of contaminated groundwater to surface waters?**		**X**
Provide citation to applicable study and summarize findings relative to the amount of infiltration that is permissible: Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
7	Would **an increase in infiltration over predeveloped conditions cause impairments to downstream beneficial uses, such as change of seasonality of ephemeral washes or increased discharge of contaminated groundwater to surface waters?**		**X**
Provide citation to applicable study and summarize findings relative to the amount of infiltration that is permissible: Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			

Table 2.7: Infiltration BMP Feasibility Worksheet (continued)

Infiltration Screening Results (check box corresponding to result):		
8	Is there substantial evidence that infiltration from the project would result in a significant increase in I&I to the sanitary sewer that cannot be sufficiently mitigated? (See Appendix XVII) Provide narrative discussion and supporting evidence: Summarize findings of studies provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.	**NO**
9	If any answer from row 1-3 is yes: infiltration of any volume is **not feasible** within the DMA or equivalent. Provide basis: Summarize findings of infeasibility screening	**NO**
10	If any answer from row 4-8 is yes, infiltration is **permissible but is not presumed to be feasible for the entire DCV.** Criteria for designing biotreatment BMPs to achieve the maximum feasible infiltration and ET shall apply. Provide basis: Summarize findings of infeasibility screening	**NO**
11	If all answers to rows 1 through 10 are no, infiltration of the full DCV is potentially feasible, BMPs must be designed to infiltrate the full DCV to the maximum extent practicable.	**YES**

AREA "A" 0.83 ACRES

Worksheet B: Simple Design Capture Volume Sizing Method

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter design capture storm depth from Figure III.1, *d* (inches)	d=	**0.80**	inches
2	Enter the effect of provided HSCs, d_{HSC} (inches) (Worksheet A)	d_{HSC}=		inches
3	Calculate the remainder of the design capture storm depth, $d_{remainder}$ (inches) (Line 1 – Line 2)	$d_{remainder}$=	**0.80**	inches
Step 2: Calculate the DCV				
1	Enter Project area tributary to BMP (s), *A* (acres)	A=	**0.83**	acres
2	Enter Project Imperviousness, *imp* (unitless)	imp=	**0.90**	
3	Calculate runoff coefficient, *C= (0.75 x imp) + 0.15*	C=	**0.83**	
4	Calculate runoff volume, V_{design}= *(C x* $d_{remainder}$ *x A x 43560 x (1/12))*	V_{design}=	**2000**	cu-ft
Step 3: Design BMPs to ensure full retention of the DCV				
Step 3a: Determine design infiltration rate				
1	Enter measured infiltration rate, $K_{observed}$ [1] (in/hr) (Appendix VII)	$K_{observed}$=	**1.2**	In/hr
2	Enter combined safety factor from Worksheet H, S_{total} (unitless)	S_{total}=	**2**	
3	Calculate design infiltration rate, $K_{design} = K_{observed} / S_{total}$	K_{design}=	**0.60**	In/hr
Step 3b: Determine minimum BMP footprint				
4	Enter drawdown time, *T* (max 48 hours)	T=	**48**	Hours
5	Calculate max retention depth that can be drawn down within the drawdown time (feet), $D_{max} = K_{design} \times T \times (1/12)$	D_{max}=	**2.4**	feet
6	Calculate minimum area required for BMP (sq-ft), $A_{min} = V_{design} / d_{max}$	A_{min}=	**833.33**	sq-ft

Worksheet H: Factor of Safety and Design Infiltration Rate Worksheet

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	1	0.25
		Predominant soil texture	0.25	1	0.25
		Site soil variability	0.25	1	0.25
		Depth to groundwater / impervious layer	0.25	1	0.25
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			1.00
B	Design	Tributary area size	0.25	1	0.25
		Level of pretreatment/ expected sediment loads	0.25	3	0.75
		Redundancy	0.25	3	0.75
		Compaction during construction	0.25	3	0.25
		Design Safety Factor, $S_B = \Sigma p$			2.0

Combined Safety Factor, $S_{total} = S_A \times S_B$	2.0
Observed Infiltration Rate, inch/hr, $K_{observed}$ (corrected for test-specific bias)[1]	1.20 inches/hour
Design Infiltration Rate, in/hr, $K_{design} = K_{observed} / S_{total}$	0.60 inches/hour

Supporting Data

Briefly describe infiltration test and provide reference to test forms:

See Attachment E of the WQMP.

Note: The minimum combined adjustment factor shall not be less than 2.0 and the maximum combined adjustment factor shall not exceed 9.0.

1 - $K_{observed}$ is the vertical infiltration measured in the field, before applying a factor of safety. If field testing measures a rate that is different than the vertical infiltration rate (for example, three-dimensional borehole percolation rate), then this rate must be adjusted by an acceptable method (for example, Porchet method) to yield the field estimate of vertical infiltration rate, $K_{observed}$.

Attachment B

Proposed Hydrology

9562 Chapman Avenue
Garden Grove

HYDROLOGY STUDY

FOR

CHAPMAN AVENUE APARTMENTS
9562 CHAPMAN AVENUE
GARDEN GROVE, CALIFORNIA

Prepared For:

P&P Brothers Corp.
18685 Main Street, Suite 101-385
Huntington Beach, California 92648

Prepared By:

Surender Dewan, P.E.

DMS Consultants, Inc.
12371 Lewis Street, Suite 203
Garden Grove, California 92840
714.740.8840

September 18, 2024

DMS
CONSULTANTS, INC.
CIVIL ENGINEERS

TABLE OF CONTENTS

INTRODUCTION AND SUMMARY

Site Description

The proposed project is located at 9562 Chapman Avenue and encompasses 0.83 acres in the City of Garden Grove. The project consists of construction of a 36-unit apartment complex. The site is bounded to the north by Chapman Avenue, to the west, south and west by existing properties.

Existing Conditions

The proposed project is located along the southerly side of Chapman Avenue. The overall site is rectangular in configuration and relatively flat. The approximate elevations of the site vary from 84.00 to 81.00 feet above mean sea level (msl). Currently the site was a restaurant with asphalt concrete parking lot. Under existing conditions, the project drains to Chapman Avenue.

Proposed Conditions

The proposed drainage concept consists of runoff from the site via underground drainage system to a StormTech underground storage unit manufactured by Advanced Drainage Systems located in the project driveway. The overflow from the unit is pumped to Chapman Avenue via a parkway drain.

Purpose

The purpose of this study is to determine the runoff generated for a storm of 10-year and 25-year frequency for both existing and proposed conditions. For the purpose of this study, land use used for existing conditions is commercial and for proposed conditions the project site is an apartment complex.

Methodology

The hydrology calculations have been prepared using the A.E.S. Program based on the 1986 Orange County Hydrology Manual. The flow rate was calculated for a 10-year and 25-year frequency for both existing and proposed conditions.

EXISTING CONDITIONS			
DRAINAGE AREA DESIGNATION	AREA (acres)	DESIGN FLOW	
		Q10 cfs	Q25 cfs
A	0.83	2.20	2.63

PROPOSED CONDITIONS			
DRAINAGE AREA DESIGNATION	AREA (acres)	DESIGN FLOW	
		Q10 cfs	Q25 cfs
A	0.83	1.84	2.21

Soil Type

The soil type is Type "B" as determined from Plate B of the Hydrology Manual.

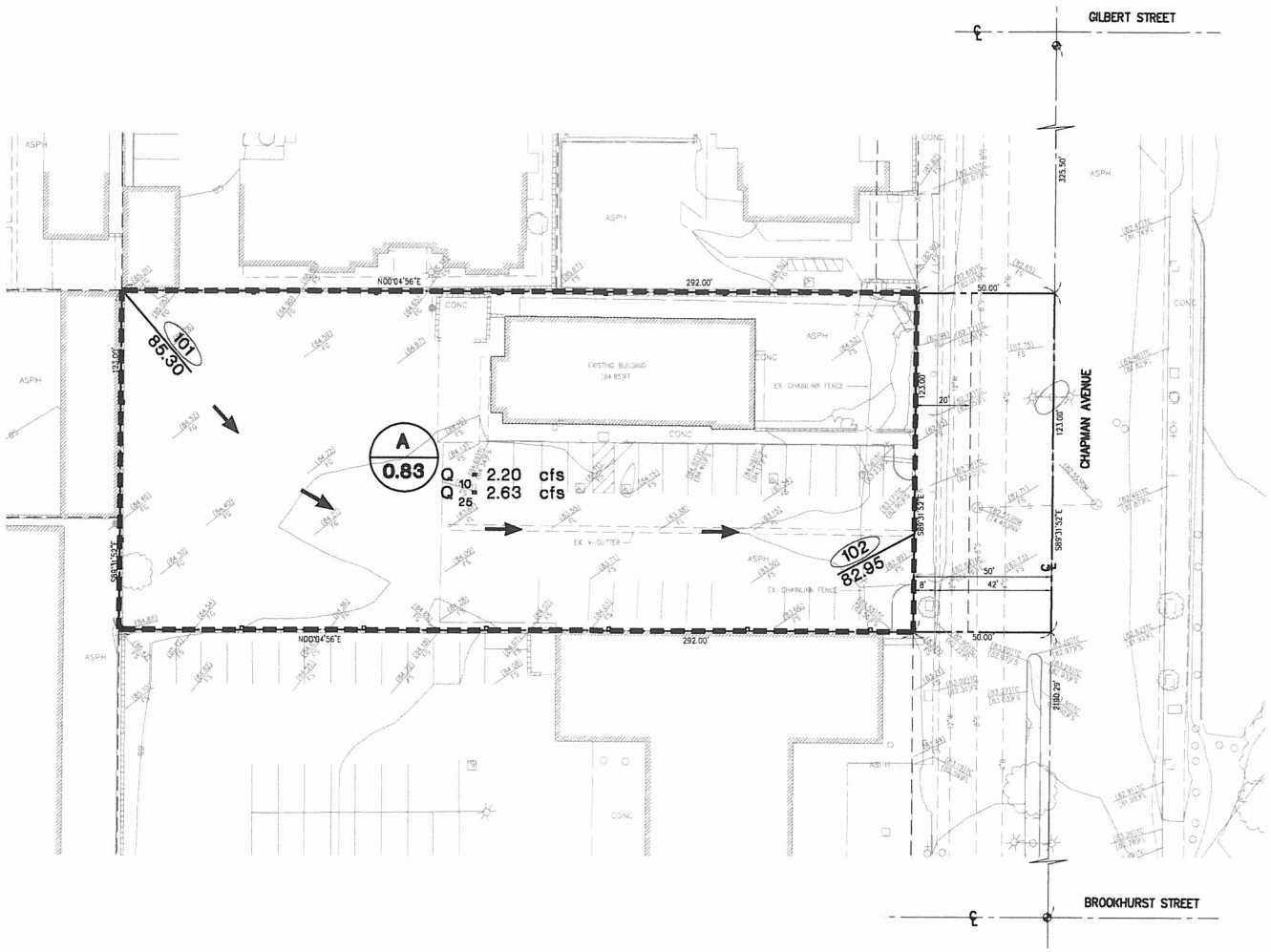
Land Use

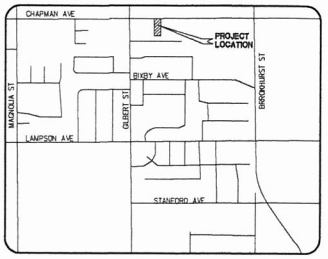
The entire watershed was taken as apartments for proposed conditions and commercial for existing conditions.

Conclusion

The attached study and map show the runoff from the site for a storm of 25-year and 100-year intensity for both existing and proposed conditions.

HYDROLOGY MAPS
EXISTING AND PROPOSED





VICINITY MAP
NTS

LEGEND

A / 0.00	AREA DESIGNATION / AREA IN ACRES
XXX	NODE DESIGNATION
45.00	ELEVATION
←	DIRECTION OF FLOW

N

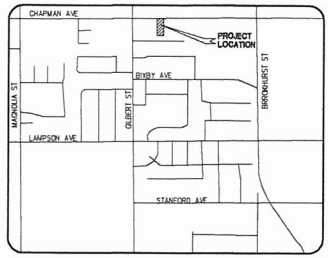
0 20 30 40 60 100

(IN FEET)
1 inch = 20 ft

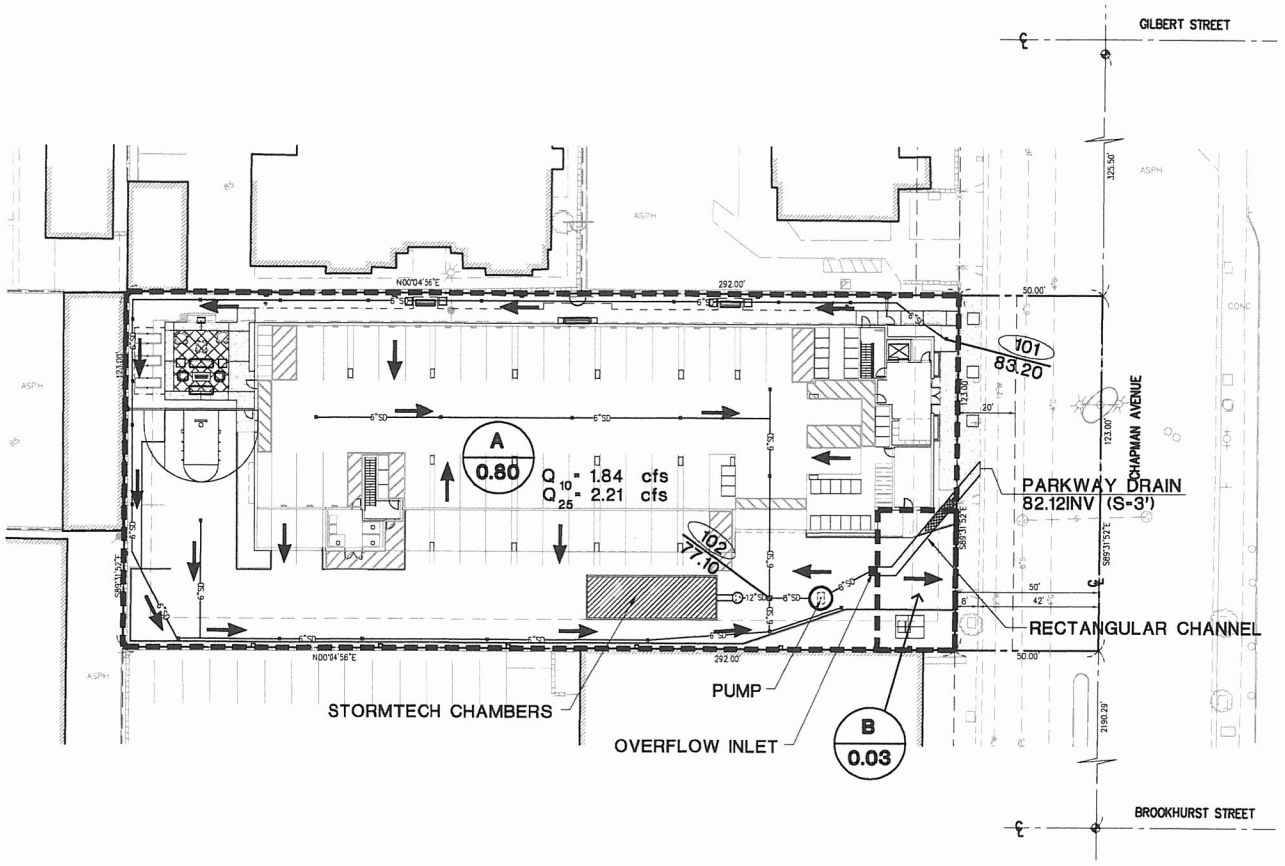
REGISTERED PROFESSIONAL ENGINEER
GREGORY M. GLANT
NO. 34559
Exp.9/30/23
CIVIL
STATE OF CALIFORNIA

PREPARED BY:
DMS CONSULTANTS, INC.
CIVIL ENGINEERS
12271 Lewis St. #203 Garden Grove CA. 92840 P. 714-740-6940 F. 714-740-6942

EXHIBIT 1
EXISTING CONDITIONS
HYDROLOGY PLAN
9562 CHAPMAN AVENUE
GARDEN GROVE, CA



VICINITY MAP
NTS



LEGEND

A / 0.00	AREA DESIGNATION / AREA IN ACRES
XXX	NODE DESIGNATION
45.00	ELEVATION
←	DIRECTION OF FLOW

N

0 20 30 40 60 100
(IN FEET)
1 inch = 20 ft.

REGISTERED PROFESSIONAL ENGINEER
ALEXANDER M. NASRALLAH
NO. 34559
Exp. 9/30/23
CIVIL
STATE OF CALIFORNIA

PREPARED BY:
DMS CONSULTANTS, INC.
CIVIL ENGINEERS
12371 Lewis St. #203 Garden Grove CA. 92840 P. 714-740-8842 F. 714-740-8842

EXHIBIT 1
PROPOSED CONDITIONS
HYDROLOGY PLAN
9562 CHAPMAN AVENUE
GARDEN GROVE, CA

HYDROLOGY - EXISTING CONDITIONS
10-YEAR FREQUENCY

```
**************************************************************************
          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
        (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
      (c) Copyright 1983-2005 Advanced Engineering Software (aes)
          Ver. 11.0  Release Date: 06/01/2005  License ID 1570

                        Analysis prepared by:

                        DMS Consultants, Inc.


--------------------------------------------------------------------------
  FILE NAME: CHAPE.DAT
  TIME/DATE OF STUDY: 08:27 09/18/2024
==========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==========================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   10.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   4.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.85
  *DATA BANK RAINFALL USED*
  *ANTECEDENT MOISTURE CONDITION (AMC) I ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  =====  ====  =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

**************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
==========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   350.00
  ELEVATION DATA: UPSTREAM(FEET) =     85.30  DOWNSTREAM(FEET) =     82.95

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    8.612
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.973
  SUBAREA Tc AND LOSS RATE DATA(AMC  I ):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                 B        0.83      0.30      0.100    36    8.61
```

```
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA RUNOFF(CFS) =      2.20
  TOTAL AREA(ACRES) =      0.83   PEAK FLOW RATE(CFS) =      2.20
================================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =      0.83  TC(MIN.) =      8.61
  EFFECTIVE AREA(ACRES) =      0.83  AREA-AVERAGED Fm(INCH/HR)=  0.03
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap = 0.100
  PEAK FLOW RATE(CFS)    =      2.20
================================================================================
================================================================================
  END OF RATIONAL METHOD ANALYSIS
```

HYDROLOGY - EXISTING CONDITIONS
25-YEAR FREQUENCY

```
**************************************************************************
          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
         (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
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                        Analysis prepared by:


                        DMS Consultants, Inc.


--------------------------------------------------------------------------
  FILE NAME: CHAPE.DAT
  TIME/DATE OF STUDY: 10:45 09/05/2024
==========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==========================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   25.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   4.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.85
  *DATA BANK RAINFALL USED*
  *ANTECEDENT MOISTURE CONDITION (AMC) I ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)     SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ==================  ======  =====  ====  =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

**************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
==========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   350.00
  ELEVATION DATA: UPSTREAM(FEET) =     85.30  DOWNSTREAM(FEET) =     82.95

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =    8.612
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  3.546
  SUBAREA Tc AND LOSS RATE DATA(AMC  I ):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  COMMERCIAL                 B        0.83      0.30      0.100    36    8.61
```

```
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.100
  SUBAREA RUNOFF(CFS) =      2.63
  TOTAL AREA(ACRES) =      0.83   PEAK FLOW RATE(CFS) =      2.63
================================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =      0.83  TC(MIN.) =      8.61
  EFFECTIVE AREA(ACRES) =      0.83  AREA-AVERAGED Fm(INCH/HR)=  0.03
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap = 0.100
  PEAK FLOW RATE(CFS)    =      2.63
================================================================================
================================================================================
  END OF RATIONAL METHOD ANALYSIS
```

HYDROLOGY - PROPOSED CONDITIONS
10-YEAR FREQUENCY

```
**************************************************************************
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                        Analysis prepared by:

                        DMS Consultants, Inc.


--------------------------------------------------------------------------
  FILE NAME: CHAP.DAT
  TIME/DATE OF STUDY: 08:27 09/18/2024
==========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==========================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   10.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   4.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.85
  *DATA BANK RAINFALL USED*
  *ANTECEDENT MOISTURE CONDITION (AMC) I ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)     SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================== ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

**************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
==========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   625.00
  ELEVATION DATA: UPSTREAM(FEET) =     83.20  DOWNSTREAM(FEET) =     77.10

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   10.740
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  2.619
  SUBAREA Tc AND LOSS RATE DATA(AMC  I ):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  APARTMENTS                 B        0.80      0.30      0.200    36   10.74
```

```
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.200
  SUBAREA RUNOFF(CFS) =      1.84
  TOTAL AREA(ACRES) =      0.80   PEAK FLOW RATE(CFS) =      1.84
================================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =      0.80  TC(MIN.) =     10.74
  EFFECTIVE AREA(ACRES) =       0.80  AREA-AVERAGED Fm(INCH/HR)=  0.06
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap = 0.200
  PEAK FLOW RATE(CFS)    =      1.84
================================================================================
================================================================================
  END OF RATIONAL METHOD ANALYSIS
```

HYDROLOGY - PROPOSED CONDITIONS
25-YEAR FREQUENCY

```
**************************************************************************
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                        Analysis prepared by:


                        DMS Consultants, Inc.


--------------------------------------------------------------------------
  FILE NAME: CHAP.DAT
  TIME/DATE OF STUDY: 10:44 09/05/2024
==========================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==========================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   25.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   4.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.85
  *DATA BANK RAINFALL USED*
  *ANTECEDENT MOISTURE CONDITION (AMC) I ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  =====  ====  =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

**************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
  >>USE TIME-OF-CONCENTRATION NOMOGRAPH FOR INITIAL SUBAREA<<
==========================================================================
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   625.00
  ELEVATION DATA: UPSTREAM(FEET) =     83.20  DOWNSTREAM(FEET) =     77.10

  Tc = K*[(LENGTH** 3.00)/(ELEVATION CHANGE)]**0.20
  SUBAREA ANALYSIS USED MINIMUM Tc(MIN.) =   10.740
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  3.129
  SUBAREA Tc AND LOSS RATE DATA(AMC  I ):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS   Tc
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN  (MIN.)
  APARTMENTS                 B        0.80      0.30      0.200    36   10.74
```

```
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.200
  SUBAREA RUNOFF(CFS) =      2.21
  TOTAL AREA(ACRES) =      0.80   PEAK FLOW RATE(CFS) =      2.21
================================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =      0.80  TC(MIN.) =     10.74
  EFFECTIVE AREA(ACRES) =       0.80  AREA-AVERAGED Fm(INCH/HR)=  0.06
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap = 0.200
  PEAK FLOW RATE(CFS)    =      2.21
================================================================================
================================================================================
  END OF RATIONAL METHOD ANALYSIS
```

PARKWAY CULVERT CAPACITY CALCULATIONS

```
**************************************************************************
                HYDRAULIC ELEMENTS - I  PROGRAM PACKAGE
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                          Analysis prepared by:

                          DMS Consultants, Inc.


--------------------------------------------------------------------------
  TIME/DATE OF STUDY: 11:03 09/18/2024
==========================================================================
 Problem Descriptions:
  Parkway Drain calculation


**************************************************************************
>>>>CHANNEL INPUT INFORMATION<<<<
--------------------------------------------------------------------------
    NORMAL DEPTH(FEET) =   0.33
    CHANNEL Z1(HORIZONTAL/VERTICAL) =    0.00
            Z2(HORIZONTAL/VERTICAL) =    0.00
    CONSTANT CHANNEL SLOPE(FEET/FEET) = 0.020000
    UNIFORM FLOW(CFS) =        2.21
    MANNINGS FRICTION FACTOR = 0.0130
==========================================================================
    NORMAL-DEPTH FLOW INFORMATION:
--------------------------------------------------------------------------
    >>>>> BASEWIDTH(FEET) =    1.17  (Required)  ---> Provided 2.00 feet (OK)
    FLOW TOP-WIDTH(FEET) =         1.17
    FLOW AREA(SQUARE FEET) =           0.39
    HYDRAULIC DEPTH(FEET) =     0.33
    FLOW AVERAGE VELOCITY(FEET/SEC.) =     5.73
    UNIFORM FROUDE NUMBER =    1.757
    PRESSURE + MOMENTUM(POUNDS) =           28.50
    AVERAGED VELOCITY HEAD(FEET) =      0.509
    SPECIFIC ENERGY(FEET) =      0.839
==========================================================================
    CRITICAL-DEPTH FLOW INFORMATION:
--------------------------------------------------------------------------
    CRITICAL FLOW TOP-WIDTH(FEET) =         1.17
    CRITICAL FLOW AREA(SQUARE FEET) =           0.56
    CRITICAL FLOW HYDRAULIC DEPTH(FEET) =     0.48
    CRITICAL FLOW AVERAGE VELOCITY(FEET/SEC.) =     3.93
    CRITICAL DEPTH(FEET) =     0.48
    CRITICAL FLOW PRESSURE + MOMENTUM(POUNDS) =           25.27
    AVERAGED CRITICAL FLOW VELOCITY HEAD(FEET) =      0.240
    CRITICAL FLOW SPECIFIC ENERGY(FEET) =      0.721
==========================================================================
```

Attachment C

Educational Materials

9562 Chapman Avenue
Garden Grove

The Pollution Solution

Several residential activities can result in water pollution. Among these activities are car washing and hosing off driveways and sidewalks. Both activities can waste water and result in excess runoff. Water conservation methods described in this pamphlet can prevent considerable amounts of runoff and conserve water. By taking your car to a commercial car wash and by sweeping driveways and sidewalks, you can further prevent the transport of pollutants to Orange County waterways. Here are some of the common pollutants for which you can be part of the solution:

1 Pesticides and Fertilizer

- **Pollution:** The same pesticides that are designed to be toxic to pests can have an equally lethal impact on our marine life. The same fertilizer that promotes plant growth in lawns and gardens can also create nuisance algae blooms, which remove oxygen from the water and clog waterways when it decomposes.
- **Solution:** Never use pesticides or fertilizer within 48 hours of an anticipated rainstorm. Use only as much as is directed on the label and keep it off driveways and sidewalks.

2 Dirt and Sediment

- **Pollution:** Dirt or sediment can impede the flow of the stormwater and negatively impact stream habitat as it travels through waterways and deposits downstream. Pollutants can attach to sediment, which can then be transported through our waterways.
- **Solution:** Protect dirt stockpiles by covering them with tarps or secure plastic sheets to prevent wind or rain from allowing dirt or sediment to enter the storm drain system.

3 Metals

- **Pollution:** Metals and other toxins present in car wash water can harm important plankton, which forms the base of the aquatic food chain.
- **Solution:** Take your car to a commercial car wash where the wash water is captured and treated at a local wastewater treatment plant.

DID YOU KNOW?

Did you know that most of the pollution found in our waterways is not from a single source, but from a "non-point" source meaning the accumulation of pollution from residents and businesses throughout the community

4 Pet Waste

- **Pollution:** Pet waste carries bacteria through our watersheds and eventually will be washed out to the ocean. This can pose a health risk to swimmers and surfers.
- **Solution:** Pick up after your pets!

5 Trash and Debris

- **Pollution:** Trash and debris can enter waterways by wind, littering and careless maintenance of trash receptacles. Street sweeping collects some of this trash; however, much of what isn't captured ends up in our storm drain system where it flows untreated out to the ocean.
- **Solution:** Don't litter and make sure trash containers are properly covered. It is far more expensive to clean up the litter and trash that ends up in our waterways than it is to prevent it in the first place. Come out to one of Orange County's many locations for Coastal and Inner-Coastal Cleanup Day, which is held in September.

6 Motor Oil / Vehicle Fluids

- **Pollution:** Oil and petroleum products from our vehicles are toxic to people, wildlife and plants.
- **Solution:** Fix any leaks from your vehicle and keep the maintenance up on your car. Use absorbent material such as cat litter on oil spills, then sweep it up and dispose of it in the trash. Recycle used motor oil at a local Household Hazardous Waste Collection Center.

A TEAM EFFORT

The Orange County Stormwater Program has teamed with the Municipal Water District of Orange County (MWDOC) and the University of California Cooperative Extension Program (UCCE) to develop this pamphlet.

Low Impact Development (LID) and sustainable water use prevents water pollution and conserves water for drinking and reuse. Reducing your water use and the amount of water flowing from your home protects the environment and saves you money.

Thank you for making water protection a priority!

For more information, please visit
www.ocwatersheds.com/publiced/

www.mwdoc.com

www.uccemg.com

To report a spill, call the Orange County 24-Hour Water Pollution Prevention Reporting Hotline at 1-877-89-SPILL \(1-877-897-7455)

Special Thanks to
The City of Los Angeles Stormwater Program for the use of its artwork

The Metropolitan Water District of Southern California for the use of the California-Friendly Plant and Native Habitat photos

Homeowners Guide for Sustainable Water Use

Low Impact Development, Water Conservation & Pollution Prevention

The Ocean Begins at Your Front Door

RUNOFF, RAINWATER AND REUSE

Where Does Water Runoff Go?

Stormwater, or water from rainfall events, and runoff from outdoor water use such as sprinklers and hoses flows from homes directly into catch basins and the storm drain system. After entering the storm drain, the water flows untreated into streams, rivers, bays and ultimately the Pacific Ocean. Runoff can come from lawns, gardens, driveways, sidewalks and roofs. As it flows over hard, impervious surfaces, it picks up pollutants. Some pollutants carried by the water runoff include trash, pet waste, pesticides, fertilizer, motor oil and more.

Water Conservation

Pollution not only impairs the water quality for habitat and recreation, it can also reduce the water available for reuse. Runoff allowed to soak into the ground is cleaned as it percolates through the soil, replenishing depleted groundwater supplies. Groundwater provides approximately 50% of the total water for drinking and other indoor household activities in north and central Orange County. When land is covered with roads, parking lots, homes, etc., there is less land to take in the water and more hard surfaces over which the water can flow.

In Orange County, 60-70% of water used by residents and businesses goes to irrigation and other outdoor uses. Reusing rainwater to irrigate our lawn not only reduces the impact of water pollution from runoff, but it also is a great way to conserve our precious water resources and replenish our groundwater basin.

What is Low Impact Development (LID)?

Low Impact Development (LID) is a method of development that seeks to maintain the natural hydrologic character of an area. LID provides a more sustainable and pollution-preventative approach to water management.

New water quality regulations require implementation of LID in larger new developments and encourage implementation of LID and other sustainable practices in existing residential areas. Implementing modifications to your lawn or garden can reduce pollution in our environment, conserve water and reduce your water bill.

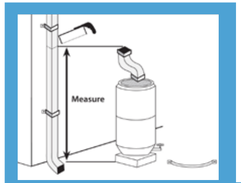
Permeable pavement allows water runoff to infiltrate through the soil and prevents most pollutants from reaching the storm drain system.

OPTIONS FOR RAINWATER HARVESTING AND REUSE

Rainwater harvesting is a great way to save money, prevent pollution and reduce potable water use. To harvest your rainwater, simply redirect the runoff from roofs and downspouts to rain barrels. Rain gardens are another option; these reduce runoff as well as encourage infiltration.

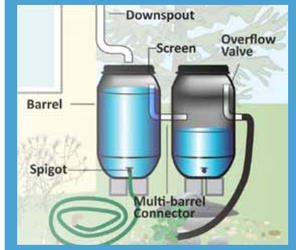
Downspout Disconnection/Redirection

Disconnecting downspouts from pipes running to the gutter prevents runoff from transporting pollutants to the storm drain. Once disconnected, downspouts can be redirected to rain gardens or other vegetated areas, or be connected to a rain barrel.



Rain Barrels

Rain barrels capture rainwater flow from roofs for reuse in landscape irrigation. Capacity of rain barrels needed for your home will depend on the amount of roof area and rainfall received. When purchasing your rain barrel, make sure it includes a screen, a spigot to siphon water for use, an overflow tube to allow for excess water to run out and a connector if you wish to connect multiple barrels to add capacity of water storage.

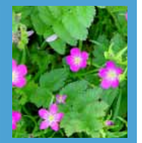


Mosquito growth prevention is very important when installing a rain barrel. The best way to prevent mosquito breeding is to eliminate entry points by ensuring all openings are sealed tightly. If these methods are unsuccessful, products are available to kill mosquito larvae, but that are harmless to animals and humans. Regular application of these products is essential. Please visit the Orange County Vector Control website for more information at www.ocvcd.org/mosquitoes3.php.

Rain Gardens

Rain gardens allow runoff to be directed from your roof downspout into a landscaped area. Vegetation and rocks in the garden will slow the flow of water to allow for infiltration into the soil. Plants and soil particles will absorb pollutants from the roof runoff. By utilizing a native plant palate, rain gardens can be maintained all year with minimal additional irrigation. These plants are adapted to the semi-arid climate of Southern California, require less water and can reduce your water bill.

Before modifying your yard to install a rain garden, please consult your local building and/or planning departments to ensure your garden plan follows pertinent building codes and ordinances. Besides codes and ordinances, some home owner associations also have guidelines for yard modifications. If your property is in hill areas or includes engineered slopes, please seek professional advice before proceeding with changes.



For information on how to disconnect a downspout or to install and maintain a rain barrel or rain garden at your home, please see the Los Angeles Rainwater Harvesting Program, A Homeowner's "How-To" Guide, November 2009 at www.larainwaterharvesting.org/

OTHER WATER CONSERVATION AND POLLUTION PREVENTION TECHNIQUES

Native Vegetation and Maintenance

"California Friendly" plants or native vegetation can significantly reduce water use. These plants often require far less fertilizers and pesticides, which are two significant pollutants found in Orange County waterways. Replacing water "thirsty" plants and grass types with water efficient natives is a great way to save water and reduce the need for potentially harmful pesticides and fertilizer.

Please see the California Friendly Garden Guide produced by the Metropolitan Water District of Southern California and associated Southern California Water Agencies for a catalog of California friendly plants and other garden resources at www.bewaterwise.com/Gardensoft.

Weed Free Yards

Weeds are water thieves. They often reproduce quickly and rob your yard of both water and nutrients. Weed your yard by hand if possible. If you use herbicides to control the weeds, use only the amount recommended on the label and never use it if rain is forecast within the next 48 hours.

Soil Amendments

Soil amendments such as green waste (e.g. grass clippings, compost, etc.) can be a significant source of nutrients and can help keep the soil near the roots of plants moist. However, they can cause algal booms if they get into our waterways, which reduces the amount of oxygen in the water and impacts most aquatic organisms. It is important to apply soil amendments more than 48 hours prior to predicted rainfall.

IRRIGATE EFFICIENTLY

Smart Irrigation Controllers

Water runoff from sprinklers left on too long will carry pollutants into our waterways.

Smart Irrigation Controllers have internal clocks as well as sensors that will turn off the sprinklers in response to environmental changes. If it is raining, too windy or too cold, the smart irrigation control sprinklers will automatically shut off.

Check with your local water agency for available rebates on irrigation controllers and smart timers.

- Aim your sprinklers at your lawn, not the sidewalk – By simply adjusting the direction of your sprinklers you can save water, prevent water pollution from runoff, keep your lawn healthy and save money.
- **Set a timer for your sprinklers** – lawns absorb the water they need to stay healthy within a few minutes of turning on the sprinklers. Time your sprinklers; when water begins running off your lawn, you can turn them off. Your timer can be set to water your lawn for this duration every time.
- **Water at Sunrise** – Watering early in the morning will reduce water loss due to evaporation. Additionally, winds tend to die down in the early morning so the water will get to the lawn as intended.
- **Water by hand** – Instead of using sprinklers, consider watering your yard by hand. Hand-watering ensures that all plants get the proper amount of water and you will prevent any water runoff, which wastes water and carries pollutants into our waterways.
- **Fix leaks** - Nationwide, households waste one trillion gallons of water a year to leaks – that is enough water to serve the entire state of Texas for a year. If your garden hose is leaking, replace the nylon or rubber hose washer and ensure a tight connection. Fix broken sprinklers immediately.

Do your part to prevent water pollution in our creeks, rivers, bays and ocean.

Clean beaches and healthy creeks, rivers, bays, and ocean are important to Orange County. However, many common household activities can lead to water pollution if you're not careful.

Remember the Water in Your Storm Drain is Not Treated BEFORE It Enters Our Waterways

Litter, oil, chemicals and other substances that are left on your yard or driveway can be blown or washed into storm drains that flow to the ocean. Over-watering your lawn and washing your car can also flush materials into the storm drains. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated.

You would never pour soap, fertilizers or oil into the ocean, so don't let them enter streets, gutters or storm drains. Follow the easy tips in this brochure to help prevent water pollution.

For more information, please call the **Orange County Stormwater Program** at **1-877-89-SPILL** (1-877-897-7455) or visit **www.ocwatersheds.com**

To report a spill, call the **Orange County 24-Hour Water Pollution Problem Reporting Hotline 1-877-89-SPILL** (1-877-897-7455).

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while performing everyday household activities. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

GENUINE RECYCLED PAPER
50% PRE-CONSUMER AND 15% POST-CONSUMER

RECYCLE USED OIL

Help Prevent Ocean Pollution:

Household Tips

The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Pollution Prevention

Household Activities

- **Do not rinse spills with water!** Sweep outdoor spills and dispose of in the trash. For wet spills like oil, apply cat litter or another absorbent material, then sweep and bring to a household hazardous waste collection center (HHWCC).
- Securely cover trash cans.
- Take household hazardous waste to a household hazardous waste collection center.
- Store household hazardous waste in closed, labeled containers inside or under a cover.
- Do not hose down your driveway, sidewalk or patio. Sweep up debris and dispose of in trash.
- Always pick up after your pet. Flush waste down the toilet or dispose of in the trash.
- Bathe pets indoors or have them professionally groomed.

Household Hazardous Wastes include:

- ▲ **Batteries**
- ▲ **Paint thinners, paint strippers and removers**
- ▲ **Adhesives**
- ▲ **Drain openers**
- ▲ **Oven cleaners**
- ▲ **Wood and metal cleaners and polishes**
- ▲ **Herbicides and pesticides**
- ▲ **Fungicides/wood preservatives**
- ▲ **Automotive fluids and products**
- ▲ **Grease and rust solvents**
- ▲ **Thermometers and other products containing mercury**
- ▲ **Fluorescent lamps**
- ▲ **Cathode ray tubes, e.g. TVs, computer monitors**
- ▲ **Pool and spa chemicals**

Gardening Activities

- Follow directions on pesticides and fertilizers, (measure, do not estimate amounts) and do not use if rain is predicted within 48 hours.
- Water your lawn and garden by hand to control the amount of water you use. Set irrigation systems to reflect seasonal water needs. If water flows off your yard and onto your driveway or sidewalk, your system is over-watering.
- Mulch clippings or leave them on the lawn. If necessary, dispose in a green waste container.
- Cultivate your garden often to control weeds.

Washing and Maintaining Your Car

- Take your car to a commercial car wash whenever possible.
- Choose soaps, cleaners, or detergents labeled "non-toxic," "phosphate free" or "biodegradable." Vegetable and citrus-based products are typically safest for the environment, **but even these should not be allowed into the storm drain.**
- Shake floor mats into a trash can or vacuum to clean.
- Do not use acid-based wheel cleaners and "hose off" engine degreasers at home. They can be used at a commercial facility, which can properly process the washwater.
- **Do not dump washwater onto your driveway, sidewalk, street, gutter or storm drain.** Excess washwater should be disposed of in the sanitary sewers (through a sink, or toilet) or onto an absorbent surface like your lawn.
- Use a nozzle to turn off water when not actively washing down automobile.
- Monitor vehicles for leaks and place pans under leaks. Keep your car well maintained to stop and prevent leaks.
- Use cat litter or other absorbents and sweep to remove any materials deposited by vehicles. Contain sweepings and dispose of at a HHWCC.
- Perform automobile repair and maintenance under a covered area and use drip pans or plastic sheeting to keep spills and waste material from reaching storm drains.
- **Never pour oil or antifreeze in the street, gutter or storm drains.** Recycle these substances at a service station, HHWCC, or used oil recycling center. For the nearest Used Oil Collection Center call 1-800-CLEANUP or visit www.ciwmb.ca.gov/UsedOil.

For locations and hours of Household Hazardous Waste Collection Centers in Anaheim, Huntington Beach, Irvine and San Juan Capistrano, call (714)834-6752 or visit www.oclandfills.com.

Do your part to prevent water pollution in our creeks, rivers, bays and ocean.

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, not properly disposing of household hazardous waste can lead to water pollution. Batteries, electronics, paint, oil, gardening chemicals, cleaners and other hazardous materials cannot be thrown in the trash. They also must never be poured or thrown into yards, sidewalks, driveways, gutters or streets. Rain or other water could wash the materials into the storm drain and eventually into our waterways and the ocean. In addition, hazardous waste must not be poured in the sanitary sewers (sinks and toilets).

NEVER DISPOSE OF HOUSEHOLD HAZARDOUS WASTE IN THE TRASH, STREET, GUTTER, STORM DRAIN OR SEWER.

For more information, please call the **Orange County Stormwater Program** at **1-877-89-SPILL** (1-877-897-7455) or visit **www.ocwatersheds.com**

To Report Illegal Dumping of Household Hazardous Waste call 1-800-69-TOXIC

To report a spill, call the **Orange County 24-Hour Water Pollution Problem Reporting Hotline 1-877-89-SPILL** (1-877-897-7455)**.**

For emergencies, dial 911.

RECYCLE USED OIL

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Help Prevent Ocean Pollution:

Proper Disposal of Household Hazardous Waste

The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

ORANGE COUNTY

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities such as pest control can lead to water pollution if you're not careful. Pesticide treatments must be planned and applied properly to ensure that pesticides do not enter the street, gutter or storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never dump pesticides into the ocean, so don't let it enter the storm drains. Pesticides can cause significant damage to our environment if used improperly. If you are thinking of using a pesticide to control a pest, there are some important things to consider.

For more information,
please call
University of California Cooperative
Extension Master Gardeners at
(714) 708-1646
or visit these Web sites:
www.uccemg.org
www.ipm.ucdavis.edu

For instructions on collecting a specimen sample visit the Orange County Agriculture Commissioner's website at:
http://www.ocagcomm.com/ser_lab.asp

To report a spill, call the
Orange County 24-Hour Water Pollution Problem Reporting Hotline at 1-877-89-SPILL (1-877-897-7455).

For emergencies, dial 911.

Information From:
Cheryl Wilen, Area IPM Advisor; Darren Haver, Watershed Management Advisor; Mary Louise Flint, IPM Education and Publication Director; Pamela M. Geisel, Environmental Horticulture Advisor; Carolyn L. Unruh, University of California Cooperative Extension staff writer. Photos courtesy of the UC Statewide IPM Program and Darren Haver.

Funding for this brochure has been provided in full or in part through an agreement with the State Water Resources Control Board (SWRCB) pursuant to the Costa-Machado Water Act of 2000 (Prop. 13).

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Help Prevent Ocean Pollution:

Responsible Pest Control

Tips for Pest Control

Key Steps to Follow:

Step 1: **Correctly identify the pest (insect, weed, rodent, or disease) and verify that it is actually causing the problem.**

Three life stages of the common lady beetle, a beneficial insect.

This is important because beneficial insects are often mistaken for pests and sprayed with pesticides needlessly.

Consult with a Certified Nursery Professional at a local nursery or garden center or send a sample of the pest to the Orange County Agricultural Commissioner's Office.

Determine if the pest is still present – even though you see damage, the pest may have left.

Step 2: **Determine how many pests are present and causing damage.**

Small pest populations may be controlled more safely using non-pesticide techniques. These include removing food sources, washing off leaves with a strong stream of water, blocking entry into the home using caulking and replacing problem plants with ones less susceptible to pests.

Integrated Pest Management (IPM) usually combines several least toxic pest control methods for long-term prevention and management of pest problems without harming you, your family, or the environment.

UC CE University of California Cooperative Extension

Step 3: **If a pesticide must be used, choose the least toxic chemical.**

Obtain information on the least toxic pesticides that are effective at controlling the target pest from the UC Statewide Integrated Pest Management (IPM) Program's Web site at www.ipm.ucdavis.edu.

Seek out the assistance of a Certified Nursery Professional at a local nursery or garden center when selecting a pesticide. Purchase the smallest amount of pesticide available.

Apply the pesticide to the pest during its most vulnerable life stage. This information can be found on the pesticide label.

Step 4: **Wear appropriate protective clothing.**

Follow pesticide labels regarding specific types of protective equipment you should wear. Protective clothing should always be washed separately from other clothing.

Step 5: **Continuously monitor external conditions when applying pesticides such as weather, irrigation, and the presence of children and animals.**

Never apply pesticides when rain is predicted within the next 48 hours. Also, do not water after applying pesticides unless the directions say it is necessary.

Apply pesticides when the air is still; breezy conditions may cause the spray or dust to drift away from your targeted area.

In case of an emergency call 911 and/or the regional poison control number at (714) 634-5988 or (800) 544-4404 (CA only).

For general questions you may also visit www.calpoison.org.

Step 6: **In the event of accidental spills, sweep up or use an absorbent agent to remove any excess pesticides. Avoid the use of water.**

Be prepared. Have a broom, dust pan, or dry absorbent material, such as cat litter, newspapers or paper towels, ready to assist in cleaning up spills.

Contain and clean up the spill right away. Place contaminated materials in a doubled plastic bag. All materials used to clean up the spill should be properly disposed of according to your local Household Hazardous Waste Disposal site.

Step 7: **Properly store and dispose of unused pesticides.**

Purchase Ready-To-Use (RTU) products to avoid storing large concentrated quantities of pesticides.

Store unused chemicals in a locked cabinet.

Unused pesticide chemicals may be disposed of at a Household Hazardous Waste Collection Center.

Empty pesticide containers should be triple rinsed prior to disposing of them in the trash.

Household Hazardous Waste Collection Center
(714) 834-6752
www.oclandfills.com

PROJECT Pollution PREVENTION

Sewage Spill Regulatory Requirements

Allowing sewage to discharge to a gutter or storm drain may subject you to penalties and/or out-of-pocket costs to reimburse cities or public agencies for clean-up efforts.

Here are the pertinent codes, fines, and agency contact information that apply.

Orange County Stormwater Program
24 Hour Water Pollution Reporting Hotline
1-877-89-SPILL (1-877-897-7455)

- County and city water quality ordinances prohibit discharges containing pollutants.

Orange County Health Care Agency Environmental Health
(714) 433-6419

California Health and Safety Code, Sections 5410-5416

- No person shall discharge raw or treated sewage or other waste in a manner that results in contamination, pollution or a nuisance.
- Any person who causes or permits a sewage discharge to any state waters:
  - must immediately notify the local health agency of the discharge.
  - shall reimburse the local health agency for services that protect the public's health and safety (water-contact receiving waters).
  - who fails to provide the required notice to the local health agency is guilty of a misdemeanor and shall be punished by a fine (between $500–$1,000) and/or imprisonment for less than one year.

Regional Water Quality Control Board
Santa Ana Region (951) 782-4130
San Diego Region (858) 467-2952

- Requires the prevention, mitigation, response to and reporting of sewage spills.

California Office of Emergency Services
(800) 852-7550

California Water Code, Article 4, Chapter 4, Sections 13268-13271
California Code of Regulations, Title 23, Division 3, Chapter 9.2, Article 2, Sections 2250-2260

- Any person who causes or permits sewage in excess of 1,000 gallons to be discharged to state waters **shall immediately notify the Office of Emergency Services.**
- Any person who fails to provide the notice required by this section is **guilty of a misdemeanor** and shall be punished by a fine (less than $20,000) and/or imprisonment for not more than one year.

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Sewage Spill
Reference Guide

Your Responsibilities as a Private Property Owner

Residences
Businesses
Homeowner/Condominium Associations
Federal and State Complexes
Military Facilities

Orange County Sanitation District

Health Care Agency
Environmental Health

PROJECT Pollution PREVENTION
www.ocwatersheds.com

This brochure was designed courtesy of the Orange County Sanitation District (OCSD). For additional information, call (714) 962-2411, or visit their website at www.ocsd.com

What is a Sewage Spill?

Sewage spills occur when the wastewater being transported via underground pipes overflows through a manhole, cleanout or broken pipe. Sewage spills can cause health hazards, damage to homes and businesses, and threaten the environment, local waterways and beaches.

Common Causes of Sewage Spills

Grease builds up inside and eventually blocks sewer pipes. Grease gets into the sewer from food establishments, household drains, as well as from poorly maintained commercial grease traps and interceptors.

Structure problems caused by tree roots in the lines, broken/cracked pipes, missing or broken cleanout caps or undersized sewers can cause blockages.

Infiltration and inflow (I/I) impacts pipe capacity and is caused when groundwater or rainwater enters the sewer system through pipe defects and illegal connections.

You Are Responsible for a Sewage Spill Caused by a Blockage or Break in Your Sewer Lines!

Time is of the essence in dealing with sewage spills. You are required to **immediately**:

Control and minimize the spill. Keep spills contained on private property and out of gutters, storm drains and public waterways by shutting off or not using the water.

Use sandbags, dirt and/or plastic sheeting to prevent sewage from entering the storm drain system.

Clear the sewer blockage. Always wear gloves and wash your hands. It is recommended that a plumbing professional be called for clearing blockages and making necessary repairs.

Always notify your city sewer/public works department or public sewer district of sewage spills. If the spill enters the storm drains also notify the Health Care Agency. In addition, if it exceeds 1,000 gallons notify the Office of Emergency Services. Refer to the numbers listed in this brochure.

Overflowing cleanout pipe located on private property

You Could Be Liable

Allowing sewage from your home, business or property to discharge to a gutter or storm drain may subject you to penalties and/or out-of-pocket costs to reimburse cities or public agencies for clean-up and enforcement efforts. See Regulatory Codes & Fines section for pertinent codes and fines that apply.

What to Look For

Sewage spills can be a very noticeable gushing of water from a manhole or a slow water leak that may take time to be noticed. Don't dismiss unaccounted-for wet areas.

Look for:

- Drain backups inside the building.
- Wet ground and water leaking around manhole lids onto your street.
- Leaking water from cleanouts or outside drains.
- Unusual odorous wet areas: sidewalks, external walls or ground/landscape around a building.

Caution

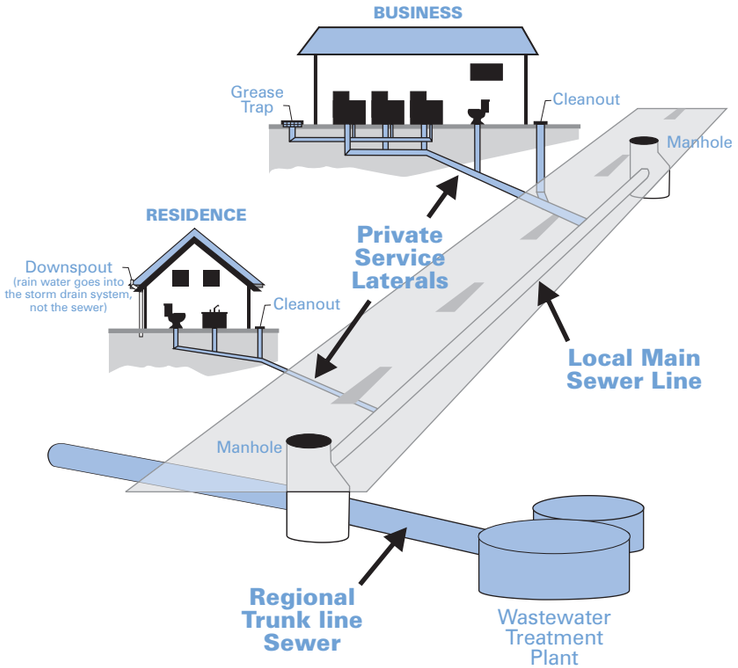
Keep people and pets away from the affected area. Untreated sewage has high levels of disease-causing viruses and bacteria. Call your local health care agency listed on the back for more information.

If You See a Sewage Spill Occurring, Notify Your City Sewer/Public Works Department or Public Sewer District IMMEDIATELY!

How a Sewer System Works

A property owner's sewer pipes are called service laterals and are connected to larger local main and regional trunk lines. Service laterals run from the connection at the home to the connection with the public sewer (including the area under the street). These laterals are the responsibility of the property owner and must be maintained by the property owner. Many city agencies have adopted ordinances requiring maintenance of service laterals. Check with your city sewer/local public works department for more information.

Operation and maintenance of **local and regional sewer lines** are the responsibility of the city sewer/public works departments and public sewer districts.



How You Can Prevent Sewage Spills

1. **Never put grease down garbage disposals, drains or toilets.**
2. **Perform periodic cleaning to eliminate grease, debris and roots in your service laterals.**
3. **Repair any structural problems in your sewer system and eliminate any rainwater infiltration/inflow leaks into your service laterals.**

Preventing Grease Blockages

The drain is not a dump! Recycle or dispose of grease properly and never pour grease down the drain.

Homeowners should mix fats, oils and grease with absorbent waste materials such as paper, coffee grounds, or kitty litter and place it in the trash. Wipe food scraps from plates and pans and dump them in the trash.

Restaurants and commercial food service establishments should always use "Kitchen Best Management Practices." These include:

- Collecting all cooking grease and liquid oil from pots, pans and fryers in covered grease containers for recycling.
- Scraping or dry-wiping excess food and grease from dishes, pots, pans and fryers into the trash.
- Installing drain screens on all kitchen drains.
- Having spill kits readily available for cleaning up spills.
- Properly maintaining grease traps or interceptors by having them serviced regularly. Check your local city codes.

Orange County Agency Responsibilites

- **City Sewer/Public Works Departments—** Responsible for protecting city property and streets, the local storm drain system, sewage collection system and other public areas.
- **Public Sewer/Sanitation District—** Responsible for collecting, treating and disposing of wastewater.
- **County of Orange Health Care Agency—** Responsible for protecting public health by closing ocean/bay waters and may close food-service businesses if a spill poses a threat to public health.
- **Regional Water Quality Control Boards—** Responsible for protecting State waters.
- **Orange County Stormwater Program—** Responsible for preventing harmful pollutants from being discharged or washed by stormwater runoff into the municipal storm drain system, creeks, bays and the ocean.

You Could Be Liable for Not Protecting the Environment

Local and state agencies have legal jurisdiction and enforcement authority to ensure that sewage spills are remedied.

They may respond and assist with containment, relieving pipe blockages, and/or clean-up of the sewage spill, especially if the spill is flowing into storm drains or onto public property.

A property owner may be charged for costs incurred by these agencies responding to spills from private properties.

Report Sewage Spills!

City Sewer/Public Works Departments

Aliso Viejo	(949) 425-2500
Anaheim	(714) 765-6860
Brea	(714) 990-7691
Buena Park	(714) 562-3655
Costa Mesa	(949) 645-8400
Cypress	(714) 229-6760
Dana Point	(949) 248-3562
Fountain Valley	(714) 593-4600
Fullerton	(714) 738-6897
Garden Grove	(714) 741-5375
Huntington Beach	(714) 536-5921
Irvine	(949) 453-5300
Laguna Beach	(949) 497-0765
Laguna Hills	(949) 707-2650
Laguna Niguel	(949) 362-4337
Laguna Woods	(949) 639-0500
La Habra	(562) 905-9792
Lake Forest	(949) 461-3480
La Palma	(714) 690-3310
Los Alamitos	(562) 431-3538
Mission Viejo	(949) 831-2500
Newport Beach	(949) 644-3011
Orange	(714) 532-6480
Orange County	(714) 567-6363
Placentia	(714) 993-8245
Rancho Santa Margarita	(949) 635-1800
San Clemente	(949) 366-1553
San Juan Capistrano	(949) 443-6363
Santa Ana	(714) 647-3380
Seal Beach	(562) 431-2527
Stanton	(714) 379-9222
Tustin	(714) 962-2411
Villa Park	(714) 998-1500
Westminster	(714) 893-3553
Yorba Linda	(714) 961-7170

Public Sewer/Water Districts

Costa Mesa Sanitary District	(714) 393-4433/ (949) 645-8400
El Toro Water District	(949) 837-0660
Emerald Bay Service District	(949) 494-8571
Garden Grove Sanitary District	(714) 741-5375
Irvine Ranch Water District	(949) 453-5300
Los Alamitos/Rossmoor Sewer District	(562) 431-2223
Midway City Sanitary District (Westminster)	(714) 893-3553
Moulton Niguel Water District	(949) 831-2500
Orange County Sanitation District	(714) 962-2411
Santa Margarita Water District	(949) 459-6420
South Coast Water District	(949) 499-4555
South Orange County Wastewater Authority	(949) 234-5400
Sunset Beach Sanitary District	(562) 493-9932
Trabuco Canyon Sanitary District	(949) 858-0277
Yorba Linda Water District	(714) 777-3018

Other Agencies

Orange County Health Care Agency	(714) 433-6419
Office of Emergency Services	(800) 852-7550

The Ocean Begins at Your Front Door

Follow these simple steps to help reduce water pollution:

Household Activities

- Do not rinse spills with water. Use dry cleanup methods such as applying cat litter or another absorbent material, sweep and dispose of in the trash. Take items such as used or excess batteries, oven cleaners, automotive fluids, painting products and cathode ray tubes, like TVs and computer monitors, to a Household Hazardous Waste Collection Center (HHWCC).
- For a HHWCC near you call (714) 834-6752 or visit www.oclandfills.com.
- Do not hose down your driveway, sidewalk or patio to the street, gutter or storm drain. Sweep up debris and dispose of it in the trash.

Automotive

- Take your vehicle to a commercial car wash whenever possible. If you wash your vehicle at home, choose soaps, cleaners, or detergents labeled non-toxic, phosphate- free or biodegradable. Vegetable and citrus-based products are typically safest for the environment.
- Do not allow washwater from vehicle washing to drain into the street, gutter or storm drain. Excess washwater should be disposed of in the sanitary sewer (through a sink or toilet) or onto an absorbent surface like your lawn.
- Monitor your vehicles for leaks and place a pan under leaks. Keep your vehicles well maintained to stop and prevent leaks.
- Never pour oil or antifreeze in the street, gutter or storm drain. Recycle these substances at a service station, a waste oil collection center or used oil recycling center. For the nearest Used Oil Collection Center call 1-800-CLEANUP or visit www.1800cleanup.org.

Pool Maintenance

- Pool and spa water must be dechlorinated and free of excess acid, alkali or color to be allowed in the street, gutter or storm drain.
- When it is not raining, drain dechlorinated pool and spa water directly into the sanitary sewer.
- Some cities may have ordinances that do not allow pool water to be disposed of in the storm drain. Check with your city.

Landscape and Gardening

- Do not over-water. Water your lawn and garden by hand to control the amount of water you use or set irrigation systems to reflect seasonal water needs. If water flows off your yard onto your driveway or sidewalk, your system is over-watering. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of waste by composting, hauling it to a permitted landfill, or as green waste through your city's recycling program.
- Follow directions on pesticides and fertilizer, (measure, do not estimate amounts) and do not use if rain is predicted within 48 hours.
- Take unwanted pesticides to a HHWCC to be recycled. For locations and hours of HHWCC, call (714) 834-6752 or visit www.oclandfills.com.

Trash

- Place trash and litter that cannot be recycled in securely covered trash cans.
- Whenever possible, buy recycled products.
- Remember: Reduce, Reuse, Recycle.

Pet Care

- Always pick up after your pet. Flush waste down the toilet or dispose of it in the trash. Pet waste, if left outdoors, can wash into the street, gutter or storm drain.
- If possible, bathe your pets indoors. If you must bathe your pet outside, wash it on your lawn or another absorbent/permeable surface to keep the washwater from entering the street, gutter or storm drain.
- Follow directions for use of pet care products and dispose of any unused products at a HHWCC.

Common Pollutants

Home Maintenance

- Detergents, cleaners and solvents
- Oil and latex paint
- Swimming pool chemicals
- Outdoor trash and litter

Lawn and Garden

- Pet and animal waste
- Pesticides
- Clippings, leaves and soil
- Fertilizer

Automobile

- Oil and grease
- Radiator fluids and antifreeze
- Cleaning chemicals
- Brake pad dust

The Ocean Begins at Your Front Door

Never allow pollutants to enter the street, gutter or storm drain!

Did You Know?

- Most people believe that the largest source of water pollution in urban areas comes from specific sources such as factories and sewage treatment plants. In fact, the largest source of water pollution comes from city streets, neighborhoods, construction sites and parking lots. This type of pollution is sometimes called “non-point source” pollution.
- There are two types of non-point source pollution: stormwater and urban runoff pollution.
- Stormwater runoff results from rainfall. When rainstorms cause large volumes of water to rinse the urban landscape, picking up pollutants along the way.
- Urban runoff can happen any time of the year when excessive water use from irrigation, vehicle washing and other sources carries trash, lawn clippings and other urban pollutants into storm drains.

Where Does It Go?

- Anything we use outside homes, vehicles and businesses – like motor oil, paint, pesticides, fertilizers and cleaners – can be blown or washed into storm drains.
- A little water from a garden hose or rain can also send materials into storm drains.
- Storm drains are separate from our sanitary sewer systems; unlike water in sanitary sewers (from sinks or toilets), water in storm drains is not treated before entering our waterways.

Sources of Non-Point Source Pollution

- Automotive leaks and spills.
- Improper disposal of used oil and other engine fluids.
- Metals found in vehicle exhaust, weathered paint, rust, metal plating and tires.
- Pesticides and fertilizers from lawns, gardens and farms.
- Improper disposal of cleaners, paint and paint removers.
- Soil erosion and dust debris from landscape and construction activities.
- Litter, lawn clippings, animal waste, and other organic matter.
- Oil stains on parking lots and paved surfaces.

The Effect on the Ocean

Non-point source pollution can have a serious impact on water quality in Orange County. Pollutants from the storm drain system can harm marine life as well as coastal and wetland habitats. They can also degrade recreation areas such as beaches, harbors and bays.

Stormwater quality management programs have been developed throughout Orange County to educate and encourage the public to protect water quality, monitor runoff in the storm drain system, investigate illegal dumping and maintain storm drains.

Support from Orange County residents and businesses is needed to improve water quality and reduce urban runoff pollution. Proper use and disposal of materials will help stop pollution before it reaches the storm drain and the ocean.

For More Information

Orange County Stormwater Program

California Environmental Protection Agency
www.calepa.ca.gov

- **Air Resources Board**
  www.arb.ca.gov
- **Department of Pesticide Regulation**
  www.cdpr.ca.gov
- **Department of Toxic Substances Control**
  www.dtsc.ca.gov
- **Integrated Waste Management Board**
  www.ciwmb.ca.gov
- **Office of Environmental Health Hazard Assessment**
  www.oehha.ca.gov
- **State Water Resources Control Board**
  www.waterboards.ca.gov

Earth 911 - Community-Specific Environmental Information 1-800-cleanup or visit www.1800cleanup.org

Health Care Agency's Ocean and Bay Water Closure and Posting Hotline
(714) 433-6400 or visit www.ocbeachinfo.com

Integrated Waste Management Dept. of Orange County (714) 834-6752 or visit www.oclandfills.com for information on household hazardous waste collection centers, recycling centers and solid waste collection

O.C. Agriculture Commissioner
(714) 447-7100 or visit www.ocagcomm.com

Stormwater Best Management Practice Handbook
Visit www.cabmphandbooks.com

UC Master Gardener Hotline
(714) 708-1646 or visit www.uccemg.com

The Orange County Stormwater Program has created and moderates an electronic mailing list to facilitate communications, take questions and exchange ideas among its users about issues and topics related to stormwater and urban runoff and the implementation of program elements. To join the list, please send an email to ocstormwaterinfo-join@list.ocwatersheds.com

Aliso Viejo	(949)	425-2535
Anaheim Public Works Operations	(714)	765-6860
Brea Engineering	(714)	990-7666
Buena Park Public Works	(714)	562-3655
Costa Mesa Public Services	(714)	754-5323
Cypress Public Works	(714)	229-6740
Dana Point Public Works	(949)	248-3584
Fountain Valley Public Works	(714)	593-4441
Fullerton Engineering Dept.	(714)	738-6853
Garden Grove Public Works	(714)	741-5956
Huntington Beach Public Works	(714)	536-5431
Irvine Public Works	(949)	724-6315
La Habra Public Services	(562)	905-9792
La Palma Public Works	(714)	690-3310
Laguna Beach Water Quality	(949)	497-0378
Laguna Hills Public Services	(949)	707-2650
Laguna Niguel Public Works	(949)	362-4337
Laguna Woods Public Works	(949)	639-0500
Lake Forest Public Works	(949)	461-3480
Los Alamitos Community Dev.	(562)	431-3538
Mission Viejo Public Works	(949)	470-3056
Newport Beach, Code & Water Quality Enforcement	(949)	644-3215
Orange Public Works	(714)	532-6480
Placentia Public Works	(714)	993-8245
Rancho Santa Margarita	(949)	635-1800
San Clemente Environmental Programs	(949)	361-6143
San Juan Capistrano Engineering	(949)	234-4413
Santa Ana Public Works	(714)	647-3380
Seal Beach Engineering	(562)	431-2527 x317
Stanton Public Works	(714)	379-9222 x204
Tustin Public Works/Engineering	(714)	573-3150
Villa Park Engineering	(714)	998-1500
Westminster Public Works/Engineering	(714)	898-3311 x446
Yorba Linda Engineering	(714)	961-7138
Orange County Stormwater Program	(877)	897-7455

Orange County 24-Hour
Water Pollution Problem Reporting Hotline
1-877-89-SPILL (1-877-897-7455)

On-line Water Pollution Problem Reporting Form
www.ocwatersheds.com

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Fertilizers, pesticides and other chemicals that are left on yards or driveways can be blown or washed into storm drains that flow to the ocean. Overwatering lawns can also send materials into storm drains. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never pour gardening products into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information,
please call the
Orange County Stormwater Program
at **1-877-89-SPILL** (1-877-897-7455)
or visit
www.ocwatersheds.com

UCCE Master Gardener Hotline:
(714) 708-1646

To report a spill,
call the
Orange County 24-Hour
Water Pollution Problem
Reporting Hotline
1-877-89-SPILL (1-877-897-7455)**.**

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while landscaping or gardening. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

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Help Prevent Ocean Pollution:

Tips for Landscape & Gardening

The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Tips for Landscape & Gardening

Never allow gardening products or polluted water to enter the street, gutter or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.
- Plant native vegetation to reduce the amount of water, fertilizers, and pesticide applied to the landscape.

- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.

Garden & Lawn Maintenance

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro spray systems. Periodically inspect and fix leaks and misdirected sprinklers.
- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.

- Use slow-release fertilizers to minimize leaching, and use organic fertilizers.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.

- Rinse empty pesticide containers and re-use rinse water as you would use the product. Do not dump rinse water down storm drains. Dispose of empty containers in the trash.
- When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting. For more information, visit **www.ipm.ucdavis.edu**.
- If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply an absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.
- Take unwanted pesticides to a Household Hazardous Waste Collection Center to be recycled. Locations are provided below.

Household Hazardous Waste Collection Centers

Anaheim:	1071 N. Blue Gum St.
Huntington Beach:	17121 Nichols St.
Irvine:	6411 Oak Canyon
San Juan Capistrano:	32250 La Pata Ave.

For more information, call (714) 834-6752 or visit www.oclandfills.com

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Pet waste and pet care products can be washed into the storm drains that flow to the ocean. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never put pet waste or pet care products into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information,
please call the
Orange County Stormwater Program
at **(714) 567-6363**
or visit
www.ocwatersheds.com

To report a spill,
call the
Orange County 24-Hour Water Pollution Problem Reporting Hotline
at **(714) 567-6363**.

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while caring for your pet. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

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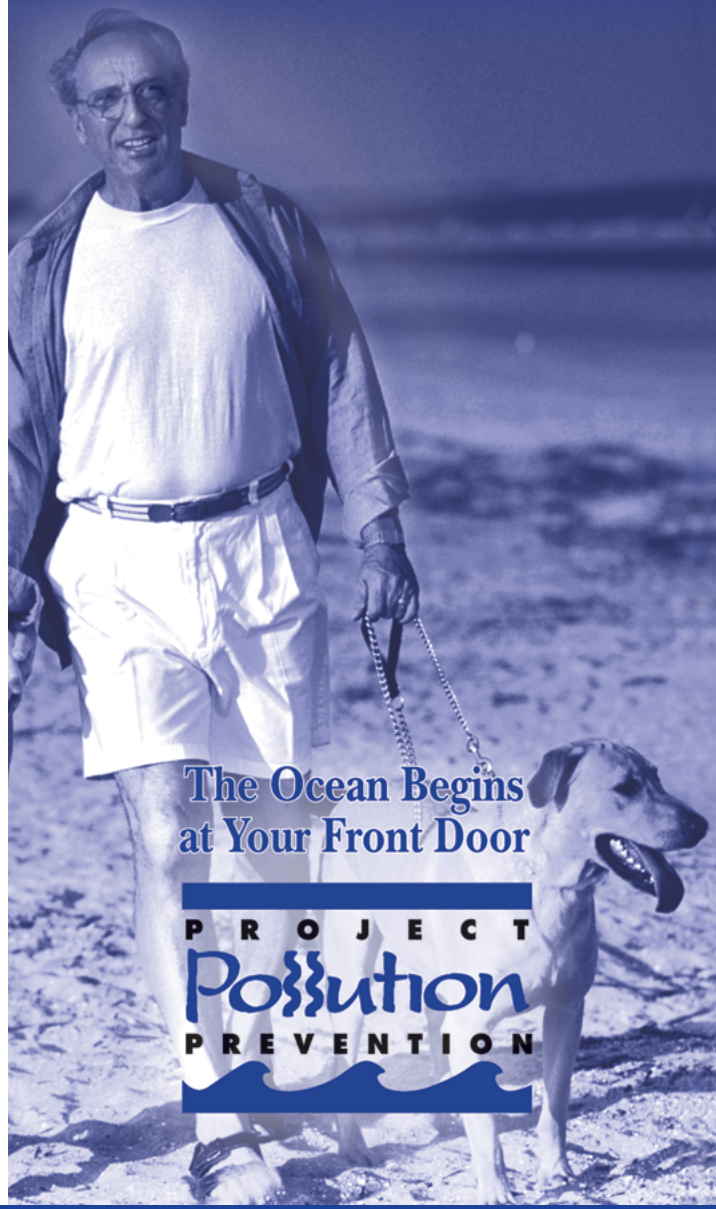
Help Prevent Ocean Pollution:

Tips for Pet Care



Tips for Pet Care

Never let any pet care products or washwater run off your yard and into the street, gutter or storm drain.

Washing Your Pets

Even biodegradable soaps and shampoos can be harmful to marine life and the environment.

- If possible, bathe your pets indoors using less-toxic shampoos or have your pet professionally groomed. Follow instructions on the products and clean up spills.

- If you bathe your pet outside, wash it on your lawn or another absorbent/ permeable surface to keep the washwater from running into the street, gutter or storm drain.

Flea Control

- Consider using oral or topical flea control products.

- If you use flea control products such as shampoos, sprays or collars, make sure to dispose of any unused products at a Household Hazardous Waste Collection Center. For location information, call **(714) 834-6752**.

Why You Should Pick Up After Your Pet

It's the law! Every city has an ordinance requiring you to pick up after your pet. Besides being a nuisance, pet waste can lead to water pollution, even if you live inland. During rainfall, pet waste left outdoors can wash into storm drains. This waste flows directly into our waterways and the ocean where it can harm human health, marine life and the environment.

As it decomposes, pet waste demands a high level of oxygen from water. This decomposition can contribute to killing marine life by reducing the amount of dissolved oxygen available to them.

Have fun with your pets, but please be a responsible pet owner by taking care of them and the environment.

- Take a bag with you on walks to pick up after your pet.

- Dispose of the waste in the trash or in a toilet.

PROJECT Pollution PREVENTION

Did you know that just one quart of oil can pollute 250,000 gallons of water?

A clean ocean and healthy creeks, rivers, bays and beaches are important to Orange County. However, not properly disposing of used oil can lead to water pollution. If you pour or drain oil onto driveways, sidewalks or streets, it can be washed into the storm drain. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering the ocean. Help prevent water pollution by taking your used oil to a used oil collection center.

Included in this brochure is a list of locations that will accept up to five gallons of used motor oil at no cost. Many also accept used oil filters. Please contact the facility before delivering your used oil. This listing of companies is for your reference and does not constitute a recommendation or endorsement of the company.

Please note that used oil filters may not be disposed of with regular household trash. They must be taken to a household hazardous waste collection or recycling center in Anaheim, Huntington Beach, Irvine or San Juan Capistrano. For information about these centers, visit www.oclandfills.com.

Please do not mix your oil with other substances!

For more information, please call the Orange County Stormwater Program at 1-877-89-SPILL (1-877-897-7455) or visit www.watersheds.com.

For information about the proper disposal of household hazardous waste, call the Household Waste Hotline at (714) 834-6752 or visit www.oclandfills.com.

RECYCLE USED OIL

For additional information about the nearest oil recycling center, call the Used Oil Program at 1-800-CLEANUP or visit www.cleanup.org.

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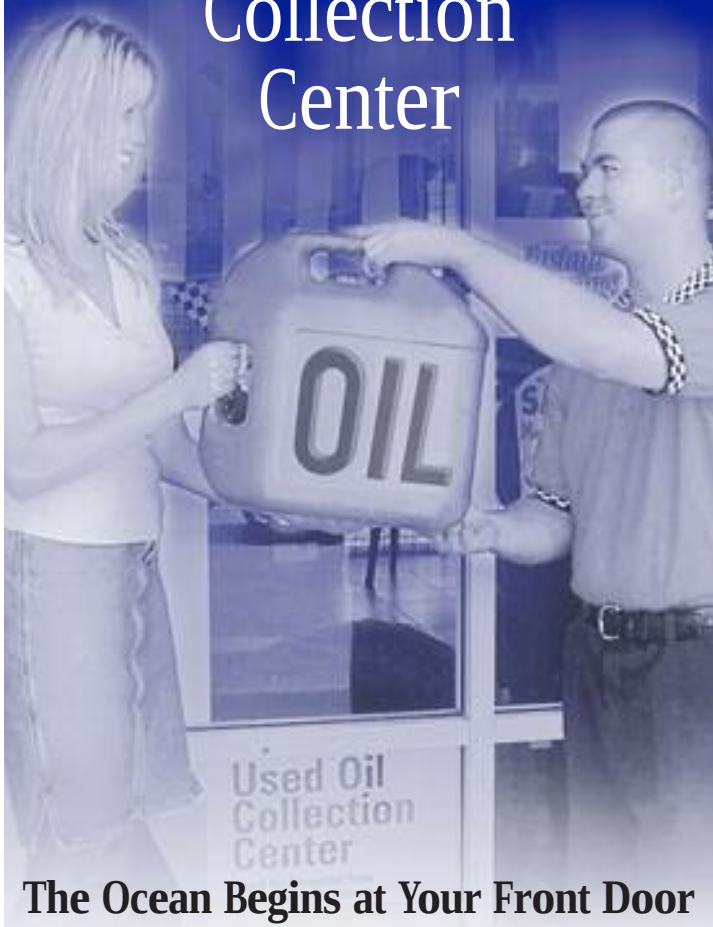
Help Prevent Ocean Pollution:

Recycle at Your Local Used Oil Collection Center



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

NORTH COUNTY

Used Oil Collection Centers

Anaheim

All Seasons Tire and Auto Center, Inc.
817 S Brookhurst St., Anaheim, CA 92804
(714)772-6090( )
CIWMB#: 30-C-03177

AutoZone #3317
423 N Anaheim Blvd., Anaheim, CA 92805
(714)776-0787( )
CIWMB#: 30-C-05263

AutoZone #5226
2145 W Lincoln Ave., Anaheim, CA 92801
(714)533-6599( )
CIWMB#: 30-C-04604

Bedard Automotive
3601 E Miraloma Ave., Anaheim, CA 92806
(714)528-1380( )
CIWMB#: 30-C-02205

Classic Chevrolet
1001 Weir Canyon Rd., Anaheim, CA 92807
(714)283-5400( )
CIWMB#: 30-C-05223

Econo Lube N' Tune #4
3201 W Lincoln Ave., Anaheim, CA 92801
(714)821-0128( )
CIWMB#: 30-C-01485

EZ Lube Inc - Savi Ranch #43
985 N Weir Canyon Rd., Anaheim, CA 92807
(714)556-1312( )
CIWMB#: 30-C-06011

Firestone Store #71C7
1200 S Magnolia Ave., Anaheim, CA 92804
(949)598-5520( )
CIWMB#: 30-C-05743

Great Western Lube Express
125 N Brookhurst St., Anaheim, CA 92801
(714)254-1300( )
CIWMB#: 30-C-05542

HR Pro Auto Service Center
3180 W Lincoln Ave., Anaheim, CA 92801
(714)761-4343( )
CIWMB#: 30-C-05927

Ira Newman Automotive Services
1507 N State College Blvd., Anaheim, CA 92806
(714)635-2392( )
CIWMB#: 30-C-01482

Jiffy Lube #1028
2400 W Ball Rd., Anaheim, CA 92804
(714)761-5211( )
CIWMB#: 30-C-00870

Jiffy Lube #1903
2505 E Lincoln Ave., Anaheim, CA 92806
(714)772-4000( )
CIWMB#: 30-C-05511

Jiffy Lube #2340
2181 W Lincoln Ave., Anaheim, CA 92801
(714)533-1000( )
CIWMB#: 30-C-04647

Kragen Auto Parts #1303
1088 N State College Blvd., Anaheim, CA 92806
(714)956-7351( )
CIWMB#: 30-C-03438

Kragen Auto Parts #1399
2245 W Ball Rd., Anaheim, CA 92804
(714)490-1274( )
CIWMB#: 30-C-04094

Kragen Auto Parts #1565
2072 Lincoln Ave., Anaheim, CA 92806
(714)502-6992( )
CIWMB#: 30-C-04078

Kragen Auto Parts #1582
3420 W Lincoln Ave., Anaheim, CA 92801
(714)828-7977( )
CIWMB#: 30-C-04103

Pep Boys #613
10912 Katella Ave., Anaheim, CA 92804
(714)638-0863( )
CIWMB#: 30-C-01756

Pep Boys #663
3030 W Lincoln Anaheim, CA 92801
(714)826-4810( )
CIWMB#: 30-C-03417

Pep Boys #809
8205 E Santa Ana Cyn Rd., Anaheim, CA 92808
(714)974-0105( )
CIWMB#: 30-C-03443

Pick Your Part
1235 S Beach Blvd., Anaheim, CA 92804
(714)527-1645( )
CIWMB#: 30-C-03744

PK Auto Performance
3106 W. Lincoln Ave., Anaheim, CA 92801
(714)826-2141( )
CIWMB#: 30-C-05628

Quick Change Lube and Oil
2731 W Lincoln Ave., Anaheim, CA 92801
(714)821-4464( )
CIWMB#: 30-C-04363

Saturn of Anaheim
1380 S Auto Center Dr., Anaheim, CA 92806
(714)648-2444( )
CIWMB#: 30-C-06332

Sun Tech Auto Service
105 S State College Blvd., Anaheim, CA 92806
(714)956-1389( )
CIWMB#: 30-C-06455

Vonic Truck Services
515 S Rose St., Anaheim, CA 92805
(714)533-3333( )
CIWMB#: 30-C-01142

Anaheim Hills

Anaheim Hills Car Wash & Lube
5810 E La Palma Ave., Anaheim Hills, CA 92807
(714)777-6605( )
CIWMB#: 30-C-01387

Brea

Firestone Store #27A9
891 E Imperial Hwy., Brea, CA 92821
(714)529-8404( )
CIWMB#: 30-C-01221

Oil Can Henry's
230 N Brea Blvd., Brea, CA 92821
(714)990-1900( )
CIWMB#: 30-C-04273

Buena Park

Firestone Store #71F7
6011 Orangethorpe Buena Park, CA 90620
(714)670-7912( )
CIWMB#: 30-C-01218

Firestone Store #71T8
8600 Beach Blvd., Buena Park, CA 90620
(714)827-5300( )
CIWMB#: 30-C-02121

Kragen Auto Parts #1204
5303 Beach Blvd., Buena Park, CA 90621
(714)994-1320( )
CIWMB#: 30-C-02623

Cypress

AutoZone #5521
5471 Lincoln Ave., Cypress, CA 90630
(714)995-4644( )
CIWMB#: 30-C-00836

Big O Tires
6052 Cerritos Ave., Cypress, CA 90630
(714)826-6334( )
CIWMB#: 30-C-04245

Econo Lube N' Tune #213
5497 Cerritos Ave., Cypress, CA 90630
(714)761-0456( )
CIWMB#: 30-C-06240

Jiffy Lube #851
4942 Lincoln Ave., Cypress, CA 90630
(626)965-9689( )
CIWMB#: 30-C-06182

M & N Coastline Auto & Tire Service
4005 Ball Rd., Cypress, CA 90630
(714)826-1001( )
CIWMB#: 30-C-04387

Masterlube #103
5904 Lincoln Cypress, CA 90630
(714)826-2323( )
CIWMB#: 30-C-01071

Masterlube #104
5971 Ball Rd., Cypress, CA 90630
(714)220-1555( )
CIWMB#: 30-C-04682

Metric Motors of Cypress
6042 Cerritos Ave., Cypress, CA 90630
(714)821-4702( )
CIWMB#: 30-C-05157

Fullerton

AutoZone #2898
146 N. Raymond Ave., Fullerton, CA 92831
(714)870-9772( )
CIWMB#: 30-C-04488

AutoZone #5522
1801 Orangethorpe W. Fullerton, CA 92833
(714)870-8286( )
CIWMB#: 30-C-06062

AutoZone #5523
102 N Euclid Fullerton, CA 92832
(714)870-8286( )
CIWMB#: 30-C-04755

EZ Lube #17
4002 N Harbor Blvd., Fullerton, CA 92835
(714)871-9980( )
CIWMB#: 30-C-03741

Firestone Store #27EH
1933 N Placentia Ave., Fullerton, CA 92831
(714)993-7100( )
CIWMB#: 30-C-02122

Fox Service Center
1018 W Orangethorpe Fullerton, CA 92833
(714)879-1430( )
CIWMB#: 30-C-02318

Fullerton College Automotive Technology
321 E Chapman Ave., Fullerton, CA 92832
(714)992-7275( )
CIWMB#: 30-C-03165

Kragen Auto Parts #0731
2978 Yorba Linda Fullerton, CA 92831
(714)996-4780( )
CIWMB#: 30-C-02628

Kragen Auto Parts #4133
904 W Orangethorpe Ave., Fullerton, CA 92832
(714)526-3570( )
CIWMB#: 30-C-06256

Pep Boys #642
1530 S Harbor Blvd., Fullerton, CA 92832
(714)870-0700( )
CIWMB#: 30-C-01755

Sunnyside 76 Car Care Center
2701 N Brea Blvd., Fullerton, CA 92835
(714)256-0773( )
CIWMB#: 30-C-01381

Garden Grove

76 Pro Lube Plus
9001 Trask Ave., Garden Grove, CA 92844
(714)393-0590( )
CIWMB#: 30-C-05276

AutoZone #5527
13190 Harbor Blvd., Garden Grove, CA 92843
(714)636-5665( )
CIWMB#: 30-C-04760

David Murray Shell
12571 Vly View St., Garden Grove, CA 92845
(714)898-0170( )
CIWMB#: 30-C-00547

Express Lube & Wash
8100 Lampson Ave., Garden Grove, CA 92841
(909)316-8261( )
CIWMB#: 30-C-06544

Firestone Store #7180
10081 Chapman Ave., Garden Grove, CA 92840
(714)530-4630( )
CIWMB#: 30-C-01224

Firestone Store #71W3
13961 Brookhurst St., Garden Grove, CA 92843
(714)590-2741( )
CIWMB#: 30-C-03690

Jiffy Lube #1991
13970 Harbor Blvd., Garden Grove, CA 92843
(714)554-0610( )
CIWMB#: 30-C-05400

Kragen Auto Parts #1251
13933 N Harbor Blvd., Garden Grove, CA 92843
(714)554-3780( )
CIWMB#: 30-C-02663

Kragen Auto Parts #1555
9851 Chapman Ave., Garden Grove, CA 92841
(714)741-8030( )
CIWMB#: 30-C-04079

Nissan of Grarden Grove
9670 Trask Ave., Garden Grove, CA 92884
(714)537-0900( )
CIWMB#: 30-C-06553

Toyota of Garden Grove
9444 Trask Ave., Garden Grove, CA 92844
(714)895-5595( )
CIWMB#: 30-C-06555

La Habra

AutoZone #5532
1200 W Imperial Hwy., La Habra, CA 90631
(562)694-5337( )
CIWMB#: 30-C-04784

Burch Ford
201 N Harbor Blvd., La Habra, CA 90631
(562)691-3225( )
CIWMB#: 30-C-05179

Firestone Store #2736
1071 S Beach Blvd., La Habra, CA 90631
(562)691-1731( )
CIWMB#: 30-C-01169

Kragen Auto Parts #1569
1621 W Whittier Blvd., La Habra, CA 90631
(562)905-2538( )
CIWMB#: 30-C-04076

Pep Boys #997
125 W Imperial Hwy., La Habra, CA 90631
(714)447-0601( )
CIWMB#: 30-C-04026

SpeeDee Oil Change & Tune-Up
1580 W Imperial Hwy., La Habra, CA 90631
(562)697-3513( )

Los Alamitos

Jiffy Lube #1740
3311 Katella Ave., Los Alamitos, CA 90720
(562)596-1827( )
CIWMB#: 30-C-03529

Midway City

Bolsa Transmission
8331 Bolsa Ave., Midway City, CA 92655
(714)799-6158( )
CIWMB#: 30-C-05768

Placentia

Advanced Auto & Diesel
144 S Bradford Placentia, CA 92870
(714)996-8222( )
CIWMB#: 30-C-06242

Castner's Auto Service
214 S. Bradford Ave., Placentia, CA 92870
(714)528-1311( )
CIWMB#: 30-C-06452

Econo Lube N' Tune
100 W Chapman Ave., Placentia, CA 92870
(714)524-0424( )
CIWMB#: 30-C-06454

Fairway Ford
1350 E Yorba Linda Blvd., Placentia, CA 92870
(714)524-1200( )
CIWMB#: 30-C-01863

Seal Beach

M & N Coastline Auto & Tire Service
12239 Seal Beach Blvd., Seal Beach, CA 90740
(714)826-1001( )
CIWMB#: 30-C-04433

Seal Beach Chevron
12541 Seal Beach Blvd., Seal Beach, CA 90740
(949)495-0774(14)
CIWMB#: 30-C-06425

Stanton

AutoZone #2806
11320 Beach Blvd., Stanton, CA 90680
(714)895-7665( )
CIWMB#: 30-C-04563

Joe's Auto Clinic
11763 Beach Blvd., Stanton, CA 90680
(714)891-7715( )
CIWMB#: 30-C-03253

Kragen Auto Parts #1742
11951 Beach Blvd., Stanton, CA 90680
(714)799-7574( )
CIWMB#: 30-C-05231

Scher Tire #20
7000 Katella Ave., Stanton, CA 90680
(714)892-9924( )
CIWMB#: 30-C-05907

USA 10 Minute Oil Change
8100 Lampson Ave., Stanton, CA 92841
(714)373-4432( )
CIWMB#: 30-C-05909

Westminster

AutoZone #5543
6611 Westminster Blvd., Westminster, CA 92683
(714)898-2898( )
CIWMB#: 30-C-04964

AutoZone #5544
8481 Westminster Blvd., Westminster, CA 92683
(714)891-3511( )
CIWMB#: 30-C-04966

City of Westminster Corporate Yard
14381 Olive St., Westminster, CA 92683
(714)895-2876(292)
CIWMB#: 30-C-02008

Honda World
13600 Beach Blvd., Westminster, CA 92683
(714)890-8900( )
CIWMB#: 30-C-03639

Jiffy Lube #1579
6011 Westminster Blvd., Westminster, CA 92683
(714)899-2727( )
CIWMB#: 30-C-02745

John's Brake & Auto Repair
13050 Hoover St., Westminster, CA 92683
(714)379-2088( )
CIWMB#: 30-C-05617

Kragen Auto Parts #0762
6562 Westminster Blvd., Westminster, CA 92683
(714)898-0810( )
CIWMB#: 30-C-02590

Midway City Sanitary District
14451 Cedarwood St., Westminster, CA 92683
(714)893-3553( )
CIWMB#: 30-C-01626

Pep Boys #653
15221 Beach Blvd., Westminster, CA 92683
(714)893-8544( )
CIWMB#: 30-C-03415

Yorba Linda

AutoZone #5545
18528 Yorba Linda Blvd., Yorba Linda, CA 92886
(714)970-8933( )
CIWMB#: 30-C-04971

Econo Lube N' Tune
22270 La Palma Ave., Yorba Linda, CA 92887
(714)692-8394( )
CIWMB#: 30-C-06513

EZ Lube Inc. #41
17511 Yorba Linda Blvd., Yorba Linda, CA 92886
(714)556-1312( )
CIWMB#: 30-C-05739

Firestone Store #27T3
18500 Yorba Linda Blvd., Yorba Linda, CA 92886
(714)779-1966( )
CIWMB#: 30-C-01222

Jiffy Lube #1532
16751 Yorba Linda Blvd., Yorba Linda, CA 92886
(714)528-2800( )
CIWMB#: 30-C-03777

Mike Schultz Import Service
4832 Eureka Ave., Yorba Linda, CA 92886
(714)528-4411( )
CIWMB#: 30-C-04313

This information was provided by the County of Orange Integrated Waste Management Department and the California Integrated Waste Management Board (CIWMB).

Clean beaches and healthy creeks, rivers, bays and ocean are important to Orange County. However, if we are not careful, our daily activities can lead directly to water pollution problems. Water that drains through your watershed can pick up pollutants which are then transported to our waterways and beautiful ocean.

You can prevent water pollution by taking personal action and by working with members of your watershed community to prevent urban runoff from entering your waterway.

For more information, please call the **Orange County Stormwater Program** at **1.877.89.SPILL** or visit **www.ocwatersheds.com**

To report a spill, call the **Orange County 24-Hour Water Pollution Problem Reporting Hotline** at **1.877.89.SPILL**.

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help protect your watershed. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.

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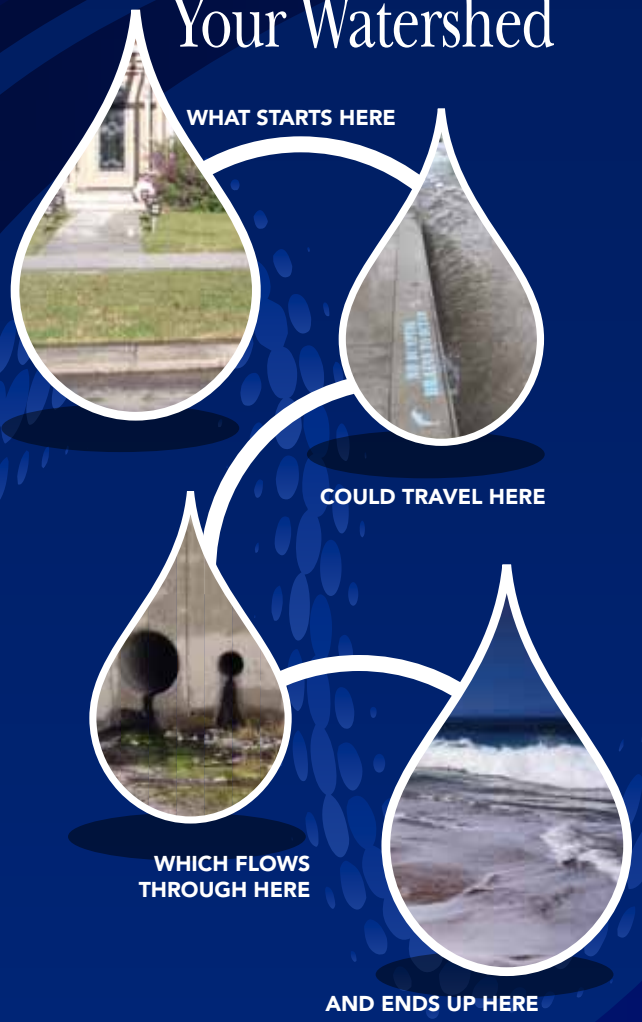
Help Prevent Ocean Pollution: Tips For Protecting Your Watershed



The Ocean Begins at Your Front Door

PROJECT Pollution PREVENTION

Tips for Protecting Your Watershed

My Watershed. Our Ocean.

Water + shed, *noun: A region of land within which water flows down into a specified water body, such as a river, lake, sea, or ocean; a drainage basin or catchment basin.*

Orange County is comprised of 11 major watersheds into which most of our water flows, connecting all of Orange County to the Pacific Ocean.

As water from rain (stormwater) or sprinklers and hoses (urban runoff) runs down your driveway and into your neighborhood streets, sidewalks and gutters, it flows into storm drains that lead to waterways within your watershed. The waterways from other cities merge as they make their way through our watersheds until all the runoff water in Orange County meets at the Pacific Ocean. The water that reaches our ocean is not pure. As it flows through the watershed, it picks up pollutants such as litter, cigarette butts, fertilizer, pesticides, pet waste, motor oil and lawn clippings. Unlike water that enters the sewer (from sinks and toilets), water that enters the storm drain is not treated before it flows, ultimately, to the ocean.

Water quality can be improved by "Adopting Your Watershed." Through this effort, we are challenging citizens and organizations to join the Orange County Stormwater Program and others who are working to protect and restore our creeks, rivers, bays and ocean.

There are many opportunities to get involved:

- Appreciate your watershed - explore the creeks, trails and ocean and make observations about its conditions. If you see anything abnormal (such as dead fish, oil spills, leaking barrels, and other pollution) contact the Orange County 24-hour water pollution problem reporting hotline at 1.877.89.SPILL to report the problem.
- Research your watershed. Learn about what watershed you live in by visiting www.ocwatersheds.com.
- Find a watershed organization in your community and volunteer to help. If there are no active groups, consider starting your own.
- Visit EPA's Adopt Your Watershed's Catalog of Watershed Groups at www.epa.gov/adopt to locate groups in your community.
- Organize or join in a creek, river, bay or ocean cleanup event such as Coastal & Inner Coastal Cleanup Day that takes place the 3rd Saturday of every September. For more information visit www.coast4u.org.

Follow these simple tips to protect the water quality of your watershed:

- **Sweep up debris and dispose of it in the trash. Do not hose down driveways or sidewalks into the street or gutter.**
- **Use dry cleanup methods such as cat litter to absorb spills and sweep up residue.**
- **Set your irrigation systems to reflect seasonal water needs or use weather-based controllers. Inspect for runoff regularly.**
- **Cover trashcans securely.**
- **Take hazardous waste to a household hazardous waste collection center. (For example, paint, batteries and petroleum products)**
- **Pick up after your pet.**
- **Follow application and disposal directions for pesticides and fertilizers.**
- **If you wash your car at home, wash it on your lawn or divert the runoff onto a landscaped area. Consider taking your car to a commercial car wash, where the water is reclaimed or recycled.**
- **Keep your car well maintained.**
- **Never pour oil or antifreeze in the street, gutter or storm drain.**

Attachment D

BMP Educational Materials

9562 Chapman Avenue
Garden Grove

INF-7: Underground Infiltration

Underground infiltration is a vault or chamber with an open bottom that used to store runoff and percolate into the subsurface. A number of vendors offer proprietary infiltration products that allow for similar or enhanced rates of infiltration and subsurface storage while offering durable prefrabricated structures. There are many varieties of proprietary infiltration BMPs that can be used for roads and parking lots, parks and open spaces, single and multi-family residential, or mixed-use and commercial uses.

Also known as:

- *Infiltration vault*
- *Recharge vault*

Underground Infiltration

Source: http://www.contech-cpi.com

Feasibility Screening Considerations

- Infiltration bains shall pass infeasible screening criteria to be considered for use.
- Underground infiltration galleries pose a potential risk of groundwater contamination; pretreatment should be used.

Opportunity Criteria

- Soils are adequate for infiltration or can be amended to provide an adequate infiltration rate.
- Appropriate for sites with limited surface space.
- Can be placed beneath roads, parking lots, parks, and athletic fields.
- Potential for groundwater contamination can be mitigated through isolation of pollutant sources, pretreatment of inflow, and/or demonstration of adequate treatment capacity of underlying soils.
- Infiltration is into native soil, or depth of engineered fill is ≤ 5 feet from the bottom of the facility to native material and infiltration into fill is approved by a geotechnical professional.
- Tributary area land uses include mixed-use and commercial, sngle-family and multi-family, roads and parking lots, and parks and open spaces. High pollutant land uses should not be tributary to infiltration BMPs.

OC-Specific Design Criteria and Considerations

- ☐ Placement of BMPs should observe geotechnical recommendations with respect to geological hazards (e.g. landslides, liquefaction zones, erosion, etc.) and set-backs (e.g., foundations, utilities, roadways, etc.)
- ☐ Minimum separation to mounded seasonally high groundwater of 10 feet shall be observed.
- ☐ Minimum pretreatment should be provided upstream of the infiltration facility, and water bypassing pretreatment should not be directed to the facility.
- ☐ Underground infiltration should not be used for drainage areas with high sediment production potential unless preceded by full treatment control with a BMP effective for sediment removal.
- ☐ Design infiltration rate should be determined as described in Appendix VII.
- ☐ Inspection ports or similar design features shall be provided to verify continued system performance and identify need for major maintenance.

☐ For infiltration facilities beneath roads and parking areas, structural requirements should meet H-20 load requirements.

Computing Underground Infiltration Device Size

Underground infiltration devices vary by design and by proprietary designs. The sizing method selected for use must be based on the BMP type it most strongly resembles.

- For underground infiltration devices with open pore volume (e.g., vaults, crates, pipe sections, etc), sizing will be most similar to infiltration basins.
- For underground infiltration devices with pore space (e.g., aggregate reservoirs), sizing will be most similar to permeable pavement.

Additional References for Design Guidance

- Los Angeles Unified School District (LAUSD) Stormwater Technical Manual, Chapter 5: http://www.laschools.org/employee/design/fs-studies-and-reports/download/white_paper_report_material/Storm_Water_Technical_Manual_2009-opt-red.pdf?version_id=76975850

User Inputs

Chamber Model:	MC-3500
Outlet Control Structure:	No
Project Name:	CHAPMAN AVE
Engineer:	N/A
Project Location:	California
Measurement Type:	Imperial
Required Storage Volume:	2000 cubic ft.
Stone Porosity:	40%
Stone Foundation Depth:	9 in.
Stone Above Chambers:	12 in.
Design Constraint Dimensions:	(30 ft. x 50 ft.)

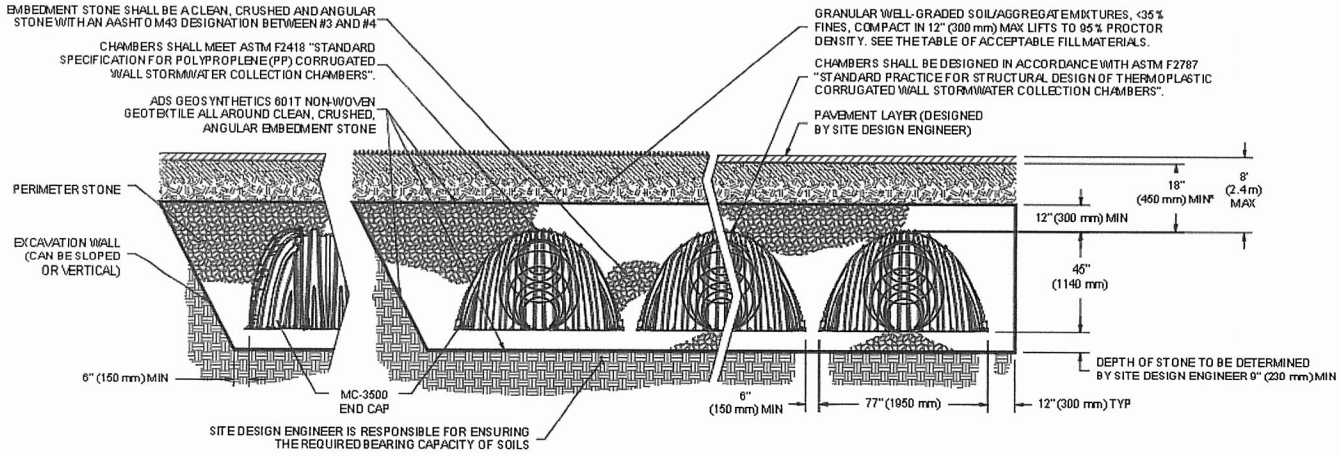
Results

System Volume and Bed Size

Installed Storage Volume:	2230.52 cubic ft.
Storage Volume Per Chamber:	109.90 cubic ft.
Number Of Chambers Required:	10
Number Of End Caps Required:	4
Chamber Rows:	2
Maximum Length:	45.51 ft.
Maximum Width:	15.33 ft.
Approx. Bed Size Required:	697.89 square ft.
Average Cover Over Chambers:	N/A .

System Components

Amount Of Stone Required:	100 cubic yards
Volume Of Excavation (Not Including Fill):	143 cubic yards
Total Non-woven Geotextile Required:	276 square yards
Woven Geotextile Required (excluding Isolator Row):	30 square yards
Woven Geotextile Required (Isolator Row):	47 square yards
Total Woven Geotextile Required:	76 square yards
Impervious Liner Required:	0 square yards



*MINIMUM COVER TO BOTTOM OF FLEXIBLE PAVEMENT. FOR UNPAVED INSTALLATIONS WHERE RUTTING FROM VEHICLES MAY OCCUR, INCREASE COVER TO 24"

StormTech®
Detention • Retention • Water Quality

MC-3500 Chamber

StormTech MC-3500 Chamber

Designed to meet the most stringent industry performance standards for superior structural integrity while providing designers with a cost-effective method to save valuable land and protect water resources. The StormTech system is designed primarily to be used under parking lots thus maximizing land usage for commercial and municipal applications.

StormTech MC-3500 Chamber (not to scale)

Nominal Chamber Specifications

Size (L x W x H)	90" (2286 mm) x 77" (1956 mm) x 45" (1143 mm)
Chamber Storage	109.9 ft³ (3.11 m³)
Min. Installed Storage*	178.9 ft³ (5.06 m³)
Weight	134 lbs (60.8 kg)

* This assumes a minimum of 12" (305 mm) of stone above, 9" (229 mm) of stone below chambers, 9" (229 mm) of row spacing, and 40% stone porosity.

StormTech MC-3500 End Cap (not to scale)

Nominal End Cap Specifications

Size (L x W x H)	25.7" (653 mm) x 75" (1905 mm) x 45" (1143 mm)
End Cap Storage	14.9 ft³ (0.42 m³)
Min. Installed Storage*	46.0 ft³ (1.30 m³)
Weight	49 lbs (22.2 kg)

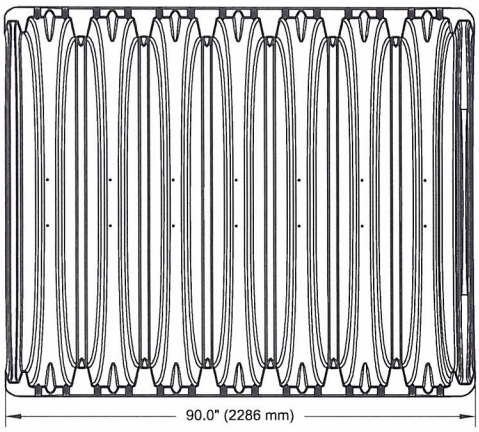
* This assumes a minimum of 12" (305mm) of stone above, 9" (229 mm) of stone below, 9" (229 mm) row spacing, 6" (152 mm) of stone perimeter, and 40% stone porosity.

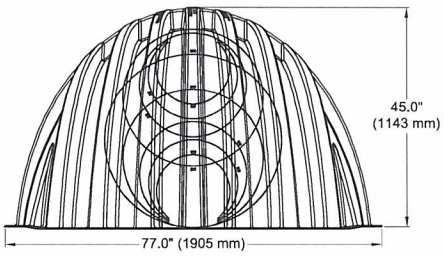
Shipping

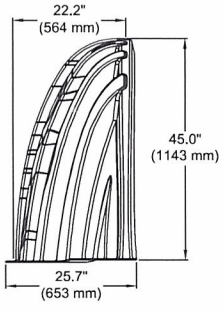
15 chambers/pallet

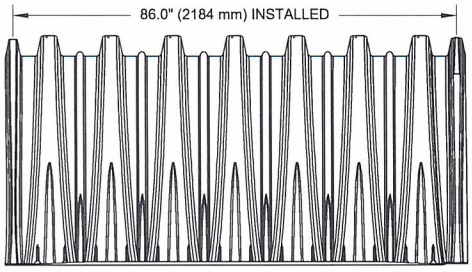
7 end caps/pallet

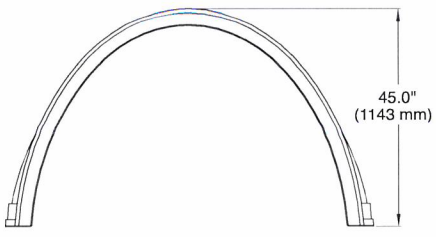
7 pallets/truck











Storage Volume Per Chamber/End Cap ft³ (m³)

	Bare Unit Storage ft³ (m³)	Chamber/End Cap and Stone Volume — Stone Foundation Depth in. (mm)			
		9 (229)	12 (305)	15 (381)	18 (457)
MC-3500 Chamber	109.9 (3.11)	178.9 (5.06)	184.0 (5.21)	189.2 (5.36)	194.3 (5.5)
MC-3500 End Cap	14.9 (0.42)	46.0 (1.33)	47.7 (1.35)	49.4 (1.40)	51.1 (1.45)

NOTE: Assumes 40% porosity for the stone plus the chamber/end cap volume. End Cap volume assumes 6" (152mm) stone perimeter.

Volume of Excavation Per Chamber/End Cap in yd³ (m³)

	Stone Foundation Depth in. (mm)			
	9 (229)	12 (305)	15 (381)	18 (457)
MC-3500	12.4 (9.5)	12.8 (9.8)	13.3 (10.2)	13.8 (10.5)
End Cap	4.1 (3.1)	4.2 (3.2)	4.4 (3.3)	4.5 (3.5)

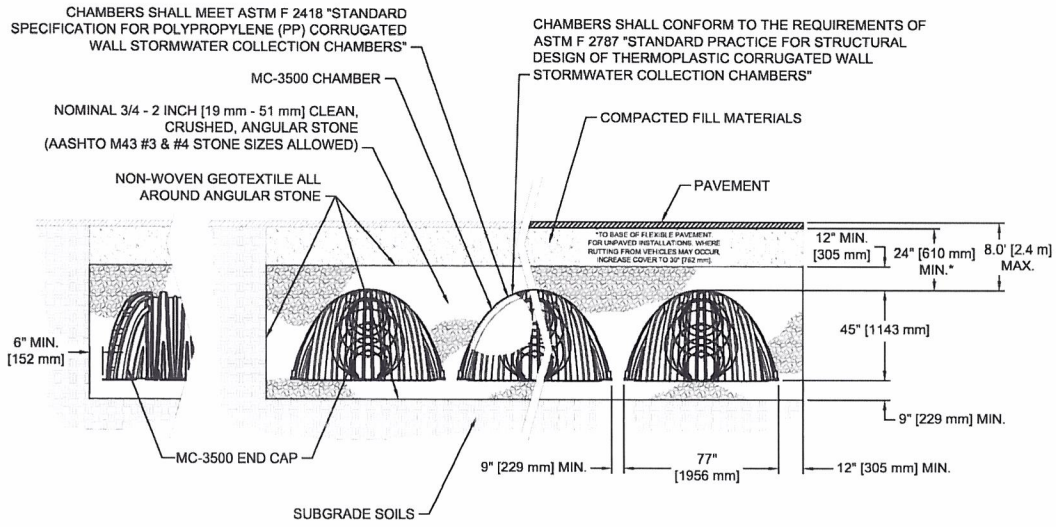
NOTE: Assumes 9" (229 mm) of separation between chamber rows, 6" (152 mm) of perimeter in front of end caps, and 24" (610 mm) of cover. The volume of excavation will vary as depth of cover increases.

Amount of Stone Per Chamber

ENGLISH tons (yd³)	Stone Foundation Depth			
	9 in.	12 in.	15 in.	18 in.
MC-3500	9.1 (6.4)	9.7 (6.9)	10.4 (7.3)	11.1 (7.8)
End Cap	4.1 (2.9)	4.3 (3.0)	4.5 (3.2)	4.7 (3.3)
METRIC kg (m³)	229 mm	305 mm	381 mm	457 mm
MC-3500	8220 (4.9)	8831 (5.3)	9443 (5.6)	10054 (6.0)
End Cap	3699 (2.2)	3900 (2.3)	4100 (2.4)	4301 (2.6)

NOTE: Assumes 12" (305 mm) of stone above, and 9" (229 mm) row spacing, and 6" (152mm) of perimeter stone in front of end caps.

General Cross Section



NOTES:

1. THIS CROSS SECTION PROVIDES GENERAL INFORMATION FOR THE MC-3500 CHAMBER. STORMTECH MC-3500 CHAMBERS MUST BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE MC-3500 DESIGN MANUAL AND MC-3500 CONSTRUCTION GUIDE.
2. PROPERLY INSTALLED MC-3500 CHAMBERS PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR EARTH AND LIVE LOADS WITH CONSIDERATION FOR IMPACT AND MULTIPLE PRESENCES.
3. PERIMETER STONE MUST ALWAYS BE BROUGHT UP EVENLY WITH BACKFILL OF BED. PERIMETER STONE MUST EXTEND HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH STRAIGHT OR SLOPED SIDEWALLS.

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S150909 03/2014

9.1 ISOLATOR ROW INSPECTION

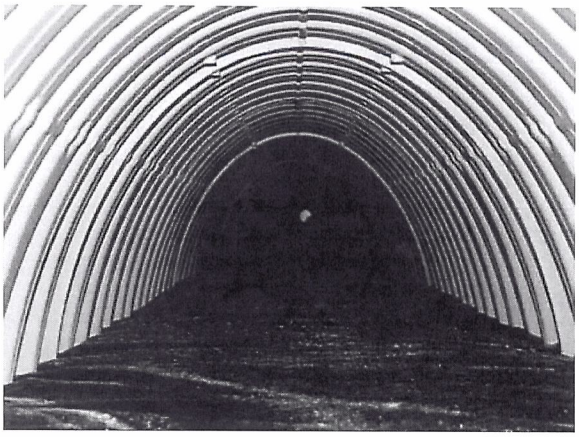
Regular inspection and maintenance are essential to assure a properly functioning stormwater system. Inspection is easily accomplished through the manhole or optional inspection ports of an Isolator Row. Please follow local and OSHA rules for a confined space entry.

Inspection ports can allow inspection to be accomplished completely from the surface without the need for a confined space entry. Inspection ports provide visual access to the system with the use of a flashlight. A stadia rod may be inserted to determine the depth of sediment. If upon visual inspection it is found that sediment has accumulated to an average depth exceeding 3" (76 mm), cleanout is required.

A StormTech Isolator Row should initially be inspected immediately after completion of the site's construction. While every effort should be made to prevent sediment from entering the system during construction, it is during this time that excess amounts of sediments are most likely to enter any stormwater system. Inspection and maintenance, if necessary, should be performed prior to passing responsibility over to the site's owner. Once in normal service, a StormTech Isolator Row should be inspected bi-annually until an understanding of the sites characteristics is developed. The site's maintenance manager can then revise the inspection schedule based on experience or local requirements.

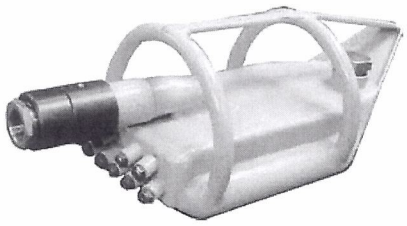
9.2 ISOLATOR ROW MAINTENANCE

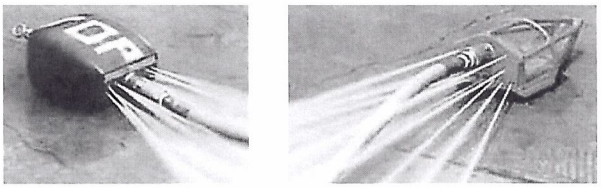
JetVac maintenance is recommended if sediment has been collected to an average depth of 3" (76 mm) inside the Isolator Row. More frequent maintenance may be required to maintain minimum flow rates through the Isolator Row. The JetVac process utilizes a high pressure water nozzle to propel itself down the Isolator Row while scouring and suspending sediments. As the nozzle is retrieved, a wave of suspended sediments is flushed back into the manhole for vacuuming. Most sewer and pipe maintenance companies have vacuum/ JetVac combination vehicles. Fixed nozzles designed for culverts or large diameter pipe cleaning are preferable. Rear facing jets with an effective spread of at least 45" (1143 mm) are best. The JetVac process shall only be performed on StormTech Rows that have AASHTO class 1 woven geotextile over their foundation stone (ADS 315WTM or equal).



Looking down the Isolator Row

A typical JetVac truck (This is not a StormTech product.)





Examples of culvert cleaning nozzles appropriate for Isolator Row maintenance. (These are not StormTech products).

Attachment E

Geotechnical Investigation

9562 Chapman Avenue
Garden Grove

ALTA CALIFORNIA
GEOTECHNICAL INC.

170 North Maple Street, Suite 108
Corona, CA 92880
www.altageotechnical.com

P&P BROTHERS CORP.
18685 Main St. Suite 101-385
Huntington Beach, CA 92648

May 2, 2024
Project No. 1-0517

Attention: Mr. Thao Vu

Subject: **GEOTECHNICAL INVESTIGATION**
9562 Chapman Avenue
City of Garden Grove, County of Orange, California

References: Appendix A

Dear Mr. Vu:

Alta California Geotechnical, Inc. (Alta) is pleased to present this geotechnical investigation for the proposed development located at 9562 Chapman Avenue, in the City of Garden Grove, County of Orange, California. This report is based on a recent subsurface investigation conducted by Alta, laboratory testing, a review of the referenced reports, and Alta's staff's experience with similar projects in this vicinity.

Alta's review of the data indicates that the propose development is feasible, from a geotechnical perspective, provided that the recommendations presented in this report are incorporated into the grading and improvement plans and implemented during site development.

Included in this report are:

- Discussion of the site geotechnical conditions.
- Recommendations for remedial and site grading, including unsuitable soil removals.
- Geotechnical site construction recommendations.
- Liquefaction analysis.
- Foundation design parameters.

If you have any questions or should you require any additional information, please contact the undersigned at (951) 509-7090. Alta appreciates the opportunity to provide geotechnical consulting services for your project.

Sincerely,
Alta California Geotechnical, Inc.

YOUSSEF F. HIJAZI
Engineering Geology Associate

LOGAN MARQUETTE
Civil Engineering Associate

Reviewed By:

SCOTT A. GRAY/RGE 2857
Reg. Exp.: 12-31-24
Registered Geotechnical Engineer
President

THOMAS J. MCCARTHY/CEG 2080
Reg. Exp.: 9-30-24
Certified Engineering Geologist
Vice President

Distribution: (1) Addressee

YFH:LM:SAG:TJM -1-0517, May 2, 2024 (Geotechnical Investigation, 9562 Chapman Ave, Garden Grove DRAFT)

1.0 INTRODUCTION

This report presents Alta's findings, conclusions, and geotechnical recommendations for the proposed development located at 9562 Chapman Avenue, in the City of Garden Grove, County of Orange, California.

1.1 Purpose

The purpose of this report is to examine the existing onsite geotechnical conditions and assess the impacts that the geotechnical conditions may have on the proposed development. This report is suitable for use in developing grading plans and engineer's cost estimates.

1.2 Scope of Work

Alta's *Scope of Work* for this geotechnical investigation included the following:

- Reviewing the referenced reports and air photos (Appendix A).
- Site geologic mapping.
- Drilling, logging, and sampling four (4) hollow-stem auger borings to a maximum depth of 51.5-feet below the existing surface (Appendix B).
- Conducting laboratory testing on samples obtained during our investigation (Appendix C).
- Conducting two (2) infiltration tests in two (2) additional borings at a maximum depth of 6.0-feet.
- Commission of two (2) cone penetration tests.
- Conducting a liquefaction analysis.
- Evaluating engineering geologic and geotechnical engineering data, including laboratory data, to develop recommendations for site remedial grading including specialized grading techniques for unsuitable soil removals along the property boundaries, import soil, foundations, and utilities.
- Preparing this report and accompanying exhibits.

1.3 Report Limitations

The conclusions and recommendations presented in this report are based on the field and laboratory information generated during this investigation, and a review of the referenced reports. The information contained in this report is intended to be used for development of grading plans and preliminary construction cost estimates.

2.0 PROJECT DESCRIPTION

2.1 Site Location and Background

The rectangular-shaped, approximately 0.8-acre site is bounded to the north by Chapman Avenue, and to the east, south, and west by existing properties. The site is currently occupied by a single existing structure on the northwestern portion of the site and associated parking.

Historic aerial photographs are available as far back as 1953 and indicate that the site originally was occupied by a single structure in the northern portion of the site and used for farming operations. In 1972, the single structure in the north was removed and the single structure that exists today was constructed in the northwestern portion and the site and paved with the exception of the southern portion. The site has remained largely unchanged since. (Historic Aerials, 2024).

2.2 Proposed Development

Alta anticipates that the site will be redeveloped to support a 5-story building, with the bottom floor consisting of retail or medical offices and residential units on the floors above. Alta anticipates that conventional cut-and-fill grading techniques will be used to develop the site. This grading will support structures consisting of wood frame construction with shallow foundations and reinforced concrete slabs-on-grade, and associated improvements.

3.0 SITE INVESTIGATION

3.1 Investigation and Laboratory Testing

Alta conducted a subsurface investigation on March 5th and March 6th 2024, consisting of the drilling, logging and select sampling of four (4) hollow-stem auger borings up to a maximum depth of 51.5 feet, and conducting two (2) infiltration tests in two (2) additional borings up to a maximum depth of 5.0 feet. Alta also commission two (2) cone penetration tests to a maximum depth of 50.0 feet. The locations of the exploratory borings are shown on enclosed Plate 1 and the boring logs are presented in Appendix B.

Laboratory testing was performed on bulk and ring samples obtained during the field investigation. A brief description of the laboratory test procedures and the test results are presented in Appendix C.

3.2 Infiltration Testing

It is Alta's understanding that the project may utilize infiltration systems for storm water disposal. Details of the system are not known at this time.

Infiltration testing was undertaken using two (2) borings to 5.0-ft. bgs (P-1 and P-2). The testing was performed in general accordance with the County of Orange Technical Guidance Document. The test wells were presoaked at least 24 hours prior to testing. During testing, the water level readings were recorded every 30 minutes until the readings stabilized.

The data was then adjusted to provide an infiltration rate utilizing the Porchet Method. The resulting infiltration rate is presented in Table 3-1. The results do not include a factor of safety. Recommendations for infiltration BMP design are presented in Section 6.2.

Table 3-1 Summary of Infiltration Testing (No Factor of Safety)		
Test Designation	P-1	P-2
Approximate Depth of Test	5.0 ft	5.0 ft
Final Time Interval	30 minutes	30 minutes
Radius of Test Hole	4 inches	4 inches
Tested Infiltration Rate	1.2 in/hr	0.8 in/hr

4.0 GEOLOGIC CONDITIONS

4.1 Geologic and Geomorphic Setting

Regionally, the subject site is located in the Peninsular Ranges geomorphic province, which characterizes the southwest portion of southern California where right lateral major active fault zones predominately trend northwest-southeast. The Peninsular Ranges province is composed of plutonic and metamorphic rock, with lesser amounts of Tertiary volcanic and sedimentary rock, Quaternary drainage in-fills and sedimentary veneers.

4.2 Stratigraphy

Based on our literature review and subsurface investigation, the site is underlain by artificial fill and young alluvial fan deposits. The geologic units are briefly described below.

4.2.1 Artificial fill undocumented (map symbol afu)

The artificial fill present within the site was not encountered during the subsurface investigation, but likely overlays the young alluvial fan deposits below the existing structure currently occupying the site.

4.2.2 Young alluvial fan deposits (map symbol Qyf)

The young alluvial fan deposits observed at the site consists mainly of brown, dark brown, tan brown, tan, tan gray, tan dark gray, and gray sand, sand with silt, silty sand, and sandy silt in a slightly moist to wet and loose to medium dense/firm condition. The unit was logged to a depth of 51.5 feet below the ground surface.

4.3 Geologic Structure

4.3.1 Tectonic Framework

Jennings (1985) defined eight structural provinces within California that have been classified by predominant regional fault trends and similar fold structure. These provinces are in turn divided into blocks and sub-blocks that are defined by "major Quaternary faults." These blocks and sub-blocks exhibit similar structural features. Within this framework, the subject site is located within Structural Province I, which is controlled by the dominant northwest trend of the San Andreas Fault and is divided into two blocks, the Coast Range Block and the Peninsular Range Block. The Peninsular Range Block, on which this site is located, is characterized by a series of parallel, northwest trending faults that exhibit right lateral dip-slip movement. These faults are terminated by the Transverse Range block to the north and extend southward into the Baja Peninsula. These northwest trending faults divide the Peninsular Range block into eight sub-blocks. The site is located on the northwest portion of the Santa Ana Sub-block, one of the eight sub-blocks, which is bound on the east by the Elsinore fault zone and on the west by the Newport-Inglewood fault zone.

4.3.2 Regionally Mapped Active Faults

Several large, active fault systems including the Elsinore-Whittier and the Newport-Inglewood occur in the region surrounding the site. These fault systems have been studied extensively and in a large part control the geologic structure of southern California.

4.3.3 Geologic Structure

Based upon our site investigation and literature review, the surficial sediments are of Quaternary age, and are not folded or faulted.

4.4 Groundwater

Groundwater was encountered at depths of 13.7, 14.0, 14.0, and 18.6 feet below the ground surface at four separate locations during our subsurface investigation. Based on state-provided information, the historic-high groundwater is approximately greater than 20.0 feet below the ground surface (CGS, 1997). Groundwater elevation data from a LUST cleanup site located approximately 0.5 miles to the east indicate groundwater was as shallow as 12 feet below the ground surface in 2012 (GeoTracker, 2024).

4.5 Earthquake Hazards

The subject site is located in southern California, which is a tectonically active area. The type and magnitude of seismic hazards affecting a site are dependent on the distance to the causative fault and the intensity and magnitude of the seismic event. The seismic hazard may be primary, such as surface rupture and/or ground shaking, or secondary, such as liquefaction and/or ground lurching.

4.5.1 Local and Regional Faulting

The site is located on the northwestern portion of the Santa Ana sub-block, where the Puente Hills, San Joaquin, Newport-Inglewood, Elsinore, Palos Verdes, San Jose Faults surround the site approximately 5.9, 6.7, 7.1, 11.4, 16.5, and 18.0 miles away, respectively.

4.5.2 Surface Rupture

Active faults are not known to exist within the project and a review of Special Publication 42 indicates the site is not within a California State designated earthquake fault zone. Accordingly, the potential for fault surface rupture on the subject site is very low.

4.5.3 Seismicity

Ground shaking hazards caused by earthquakes along other active regional faults do exist. The 2022 California Building Code requires use-modified spectral accelerations and velocities for most structural designs. Seismic design parameters using soil profile types identified in the 2022 California Building Code are presented in Section 7.3.

4.5.4 Liquefaction

Seismic agitation of relatively loose saturated sands, silty sands, and some silts can result in a buildup of pore pressure. If the pore pressure exceeds the overburden stresses, a temporary quick condition known as liquefaction can occur. Liquefaction effects can manifest in several ways including: 1) loss of bearing; 2) lateral spread; 3) dynamic settlement; and 4) flow failure. Lateral spreading has typically been the most damaging mode of failure.

In general, the more recent that a sediment has been deposited, the more likely it will be susceptible to liquefaction. Other factors that must

be considered are groundwater, confining stresses, relative density, and the intensity and duration of seismically induced ground shaking.

Groundwater was encountered during our subsurface investigation at depths of 13.7, 14.0, 14.0, and 18.6 feet below the ground surface in borings B-1, B-2, B-3, and B-4, respectively. The regional groundwater map indicates that the historic-high groundwater level is approximately greater than 20.0 feet below the ground surface (CGS, 1997).

Alta performed a liquefaction analysis utilizing data from our subsurface investigation to determine the liquefaction potential of the young alluvial fan deposits. A description of Alta's analysis and calculations are presented in Appendix D of this report. A groundwater level of greater than 10.0 feet below existing ground surface was assumed. The results of our findings are discussed below under the headings of the specific types of liquefaction which can be manifested during seismic shaking. Conclusions regarding liquefaction are presented in Section 6.3.

- **Loss of Bearing:**
  Liquefaction can potentially cause bearing failure due to ground softening and near-failure in bearing. Based on the removal recommendations presented in this report, Alta anticipates that the potential for loss of bearing shall be minimal.
- **Lateral Spreading:**
  The lateral displacement of surficial blocks of sediment can occur as a result of liquefaction in a subsurface layer. The most pervasive forms of lateral spreading typically involve sites located near a "free-face" (large slopes, channels, etc.), however, it has been noted that lateral spreading can occur on sites with gently sloping (1% or more) ground, such as the subject site.

  Determination of the potential for lateral spread is based on the presence of continuous potentially liquefiable soil layers underneath the structures, the presence of lateral confinement, and various analyses such as empirical modeling. Bartlett, Hansen

and Youd (2002) states that surface manifestation of lateral spread is typically limited to sites with liquefiable soils within 10 meters (32 feet) of grade, and that sites underlain by soils with $(N1)_{60}$ values 15 and greater do not experience significant displacements from earthquakes with magnitudes less than 8.

Given the flat nature of the site, the limited liquefiable layers with $(N1)_{60}$ values less than 15, our recommended unsuitable soil removals (Section 6.1.2) and our foundation design recommendations (Section 7.1), it is our opinion that the potential for lateral spread to occur onsite is considered within design tolerances of the proposed foundation systems, upon the completion of remedial grading.

- **Settlement:**
  Settlement due to seismic shaking can occur as a result of both liquefaction of saturated sediments or rearrangement of dry sand particles. Our liquefaction analysis was performed utilizing blow count data and laboratory test results to analyze the potential amount of settlement. A description of Alta's analysis and calculations are presented in Appendix D of this report. A discussion of settlement analysis results is presented in Section 6.3. Dynamic settlement design recommendations are presented in Section 7.1.

- **Flow Failure:**
  Due to the relatively flat nature of the site, and the relatively horizontal deposition of the underlying deposits, the potential for flow failure onsite is considered minimal.

4.5.5 Dry Sand Settlement

Dry sand settlement is the process of non-uniform settlement of the ground surface during a seismic event. Based on our subsurface investigation and our removal/recompaction recommendations, the potential for dry sand settlement is anticipated to be low and within foundation design tolerances. Design dynamic settlement parameters are presented in Table 7-1.

5.0 ENGINEERING PROPERTIES AND ANALYSIS

5.1 Materials Properties

Presented herein is a general discussion of the engineering properties of the onsite materials that will be encountered during construction of the proposed project. Descriptions of the soil (Unified Soil Classification System) are presented on the boring logs in Appendix B.

5.1.1 Excavation Characteristics

Based on the data provided from the subsurface investigations, it is our opinion that the onsite materials possess favorable excavation characteristics such that conventional earth moving equipment can be utilized.

5.1.2 Compressibility

The undocumented artificial fill and upper portions of the young alluvial fan deposits onsite are considered compressible and unsuitable to support the proposed improvements. Recommended removal depths are presented in Section 6.1.2.

5.1.3 Moisture

The young alluvial fan deposits that will require removal and recompaction as discussed in Section 6.1.2 are typically under-optimum.

5.1.4 Hydro-Consolidation

Hydro-consolidation is the effect of introducing water into soil that is prone to collapse. Upon loading and initial wetting, the soil structure and apparent strength are altered resulting in almost immediate settlement. That settlement can have adverse impacts on engineered structures, particularly in areas where it is manifested differentially. Differential settlements are typically associated with differential wetting,

irregularities in the subsurface soil conditions, or irregular loading patterns.

Based on our laboratory testing (Appendix C), there is minimal potential for hydro-collapse in the young alluvial fan deposits onsite.

5.1.5 Expansion Potential

Expansion index testing was performed on samples taken during our subsurface investigation. Based on the results, it is anticipated that the majority of materials onsite are "very low" to "low" in expansion potential (0≤EI≤50, Appendix C) when tested per ASTM D: 4829.

5.1.6 Earthwork Adjustments

The values presented in Table 5-1 are deemed appropriate for estimating purposes and may be used in an effort to balance earthwork quantities. As is the case with every project, contingencies should be made to adjust the earthwork balance when grading is in-progress and actual conditions are better defined.

TABLE 5-1
Earthwork Adjustment Factors

Geologic Unit	Adjustment Factor Range	Average
Young Alluvial Fan Deposits	Shrink 12% to 16%	14%

5.1.7 Chemical Analyses

Chemical testing was performed on samples of material underlying the proposed site. Soluble sulfate test results indicate that the soluble sulfate concentrations of the soils tested are classified as negligible (Category S0) per ACI 318-14.

Negligible chloride levels were detected in the onsite soils. Based on laboratory results of soluble sulfate, chloride, and pH testing as presented in Appendix C, the onsite soils are classified as "non-corrosive" to buried metals and concrete (Caltrans, 2022). Additional discussions on corrosion are presented in Section 7.9. Corrosion tests results are presented in Appendix C.

5.2 Engineering Analysis

Presented below is a general discussion of the engineering analysis methods that were utilized to develop the conclusions and recommendations presented in this report.

5.2.1 Bearing Capacity and Lateral Earth Pressures

Ultimate bearing capacity values were obtained using the graphs and formula presented in NAVFAC DM-7.1. Allowable bearing was determined by applying a factor of safety of at least 3 to the ultimate bearing capacity. Static lateral earth pressures were calculated using Rankine methods for active and passive cases. If it is desired to use Coulomb forces, a separate analysis specific to the application can be conducted.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on Alta's findings during our subsurface investigation, the laboratory test results, and our staff's previous experience in the area, it is Alta's opinion that the development of the site is feasible from a geotechnical perspective. Presented below are recommendations that should be incorporated into site development and construction plans.

6.1 Remedial Grading Recommendations

All grading shall be accomplished under the observation and testing of the project geotechnical consultant in accordance with the recommendations contained herein and the City of Garden Grove criteria.

6.1.1 Site Preparation

Significant amounts of vegetation, construction debris, and other deleterious materials are unsuitable as structural fill material and should be disposed of off-site prior to commencing grading/construction. Any septic tanks, seepage pits or wells should be abandoned as per the County of Orange Department of Health Services.

Existing concrete should be removed prior to the placement of engineered fill. The demolished concrete may be incorporated into compacted, engineered fills after it is crushed to a maximum size of six (6) inches. Prior to placement as engineered fill any protruding steel rebar should be cut from the concrete pieces and disposed of offsite.

Existing asphaltic concrete should be removed prior to the placement of engineered fill. From a geotechnical perspective, this material may be incorporated into compacted, engineered fills after it is crushed to a maximum size of six (6) inches. The crushed asphalt should not be placed under residential structures, but rather, it can be placed in approved non-residential areas, such as streets, parking areas or open space. These recommendations should be verified by the environmental consultant.

6.1.2 Unsuitable Soil Removals

The upper portions of young alluvial fan deposits are compressible and as such, are not suitable to support the proposed structures. As such, it is anticipated that, on average, the upper seven (7) to eight (8) feet of existing soils will require removal and recompaction, extending at a 1:1 projection horizontally outside the structures. This recommended removal combined with the foundation recommendations presented in Section 7.1 should provide suitable support for the proposed structures.

Footings for structures should be underlain by a minimum of two (2) feet of compacted fill. As such, for building pads where unsuitable soil removals do not provide the minimum depth of compacted fill, or where design grades and/or remedial grading activities create cut/fill transitions, the cut and shallow fill portions of the building pads should be over-excavated during grading and replaced with compacted fill.

The Project Geotechnical Consultant should observe the removal bottom prior to placing fill. If unsuitable soils are exposed upon the completion of the removals recommended above, additional removals may be required.

For fill areas in streets, in general, a minimum removal and recompaction of the upper two (2) feet is recommended, however all undocumented artificial fill shall be removed and recompacted. For cuts greater than two (2) feet in street areas, removals are not required so long as young alluvial fan deposits are exposed. For cuts less than two (2) feet, the two (2) foot removal and recompaction applies.

Material removed as part of the unsuitable soil removals can be used as artificial fill, provided it is free of deleterious materials.

6.2 General Earthwork Recommendations

6.2.1 Compaction Standards

All fill and processed natural ground shall be compacted to a minimum relative compaction of 90 percent, as determined by ASTM Test Method: D-1557. Fill material should be moisture conditioned to optimum moisture or above, and as generally discussed in Alta's Earthwork Specification Section presented in Appendix F. Compaction shall be achieved with the use of sheepsfoot rollers or similar kneading type equipment. Mixing and moisture conditioning will be required in order to achieve the recommended moisture conditions.

6.2.2 Groundwater/Seepage

It is anticipated that groundwater may be encountered during construction. Perched water conditions could be encountered depending on the time of year construction occurs.

6.2.3 Documentation of Removals

All removal/over-excavation bottoms should be observed and approved by the project Geotechnical Consultant prior to fill placement. Consideration should be given to surveying the removal bottoms and undercuts after approval by the geotechnical consultant and prior to the placement of fill. Staking should be provided in order to verify undercut locations and depths.

6.2.4 Treatment of Removal Bottoms

At the completion of removals/over-excavation, the exposed removal bottom should be ripped to a minimum depth of eight (8) inches, moisture-conditioned to above optimum moisture content and compacted in-place to the project standards.

6.2.5 Fill Placement

After removals, scarification, and compaction of in-place materials are completed, additional fill may be placed. Fill should be placed in eight-inch bulk maximum lifts, moisture conditioned to optimum moisture content or above, compacted and tested as grading/construction progresses until final grades are attained.

6.2.6 Moisture Conditioning

The moisture content of the upper in-situ soils varies, however the majority of these soils are under-optimum, as shown on the boring logs in Appendix B. Most soils will require moisture conditioning prior to placement as compacted fill.

6.2.7 Mixing

Mixing of materials may be necessary to prevent layering of different soil types and/or different moisture contents. The mixing should be accomplished prior to and as part of compaction of each fill lift.

6.2.8 Import Soils

Import soils, if necessary, should consist of clean, structural quality, compactable materials similar to the on-site soils and should be free of trash, debris, or other objectionable materials. The project Geotechnical Consultant should be notified not less than 72 hours in advance of the locations of any soils proposed for import. Import sources should be sampled, tested, and approved by the project Geotechnical Consultant at the source prior to the importation of the soils to the site. The project Civil Engineer should include these requirements on plans and specifications for the project.

6.2.9 Utility Trenches

6.2.9.1 Excavation

Utility trenches should be supported, either by laying back excavations or shoring, in accordance with applicable OSHA standards. In general, existing site soils are classified as Soil Type “B” and "C" per OSHA standards. Upon completion of the recommended removals and recompaction, the artificial fill will be classified as Soil Type "B". The Project Geotechnical Consulting should be consulted if geologic conditions vary from what is presented in this report.

6.2.9.2 Backfill

Trench backfill should be compacted to at least 90 percent of maximum dry density as determined by ASTM D-1557. Onsite soils will not be suitable for use as bedding material but will be suitable for use in backfill provided oversized materials are removed. No surcharge loads should be imposed above excavations. This includes spoil piles, lumber, concrete trucks, or other construction materials and equipment. Drainage above excavations should be directed away from the banks. Care should be taken to avoid saturation of the soils. Compaction should be accomplished by mechanical means. Jetting of native soils will not be acceptable.

Under-slab trenches should also be compacted to project specifications. If select granular backfill (SE > 30) is used, compaction by flooding will be acceptable.

6.2.10 Backcut Stability

Temporary backcuts, if required during unsuitable soil removals, should be made no steeper than 1:1 without review and approval of the geotechnical consultant. Flatter backcuts may be necessary where geologic conditions dictate and where minimum width dimensions are to be maintained.

Care should be taken during remedial grading operations in order to minimize risk of failure. Should failure occur, complete removal of the disturbed material will be required.

In consideration of the inherent instability created by temporary construction backcuts for removals, it is imperative that grading schedules are coordinated to minimize the unsupported exposure time of these excavations. Once started, these excavations and subsequent fill operations should be maintained to completion without intervening delays imposed by avoidable circumstances. In cases where five-day workweeks comprise a normal schedule, grading should be planned to avoid exposing at-grade or near-grade excavations through a non-work weekend. Where improvements may be affected by temporary instability, either on or offsite, further restrictions such as slot cutting, extending workdays, implementing weekend schedules, and/or other requirements considered critical to serving specific circumstances may be imposed.

6.3 Liquefaction

As discussed in Section 4.5.4 of this report, there is a potential for liquefaction to occur at the site during seismic shaking. More specifically, liquefaction could cause differential settlement. Typically, half to two thirds of that settlement should be considered differential (California Division of Mines and Geology, 2008, Special Publication 117a). If the analysis is based on multiple borings, seismic induced differential settlement may be determined as one-half the total settlement (City of Los Angeles, 2020). For lightly loaded, well-constructed structures underlain by a non-liquefiable layer over the liquefiable layers, such as will be developed at the site, the ultimate differential settlement across the structure may be more limited (Idriss and Boulinger, 2008).

In consideration of the proposed removal and recompaction of the soils below the proposed structures, the differential settlement shown in the liquefaction calculations, and the relatively uniform thickness of the liquefiable layers under the site, it is Alta's opinion that a dynamic differential settlement of 1.5-inches in 40 feet can be utilized in the design of the proposed structures onsite. It is recommended that the structures onsite be supported on a post-tensioned slab/foundation or mat slab system.

The liquefaction mitigation measures presented herein are intended to reduce the potential for liquefaction to affect the proposed structures to an acceptable level of risk as defined by the State of California and to within design parameters for post-tensioned or mat slabs per ASCE 7-16 Section 12.13.9. Some distress requiring repairs should still be anticipated if liquefaction occurs.

6.4 Storm Water Infiltration Systems

From a geotechnical perspective, allowing storm water to infiltrate the onsite soil in concentrated areas increases the potential for settlement, liquefaction, and water-related damage to structures/improvements, such as wet slabs or pumping subgrade, and should be avoided where possible. If infiltration systems are required on this site, care should be taken in designing systems that control the storm water as much as possible.

Preliminary infiltration testing was conducted at the site as part of this investigation, and the methodology is discussed in 3.2. The resulting infiltration rates for P-1 and P-2 were calculated to be 1.2 -inches per hour and 0.8-inches per hour, respectively. The results do not include a factor of safety.

Groundwater was encountered during our investigation at depths of 19.6, 14.1, and 13.3 feet below the ground surface in borings B-1, B-2, and B-3 respectively.

The WQMP designer should review the test results and determine if the proposed BMP system is appropriate for the site. The Project Geotechnical Consultant should review the final WQMP design prior to construction.

6.5 Boundary Conditions

The site is bounded to the north by Chapman Avenue, and to the east, south, and west by existing properties. Construction of retaining/screen walls along these boundaries may require additional geotechnical recommendations concerning unsuitable soil removals and foundation design parameters. Boundary conditions for the project should be reviewed by the Project Geotechnical Consultant as the design progresses.

7.0 DESIGN CONSIDERATIONS

7.1 Structural Design

It is anticipated that a five-story, wood-framed, multi-use structure with slab on-grade and shallow foundations will be constructed. Upon the completion of rough grading, finish grade samples should be collected and tested in order to provide specific recommendations as they relate to the individual building pads. These test results and corresponding design recommendations should be presented in a final rough grading report. Final slab and foundation design recommendations should be made based upon specific structure sitings, loading conditions, and as-graded soil conditions.

It is anticipated that the majority of onsite soils will possess “very low” to “low” expansion potential when tested in general accordance with ASTM Test Method D: 4829. For budgeting purposes, the following foundation design requirements for a range of potential expansion characteristics are presented. Due to the potential for dynamic settlement onsite, it is recommended to utilize post-tensioned or mat slabs for this project.

7.1.1 Foundation Design

Foundations may be preliminary designed based on the values presented in Table 7-1 below.

Table 7-1 Foundation Design Parameters*	
Allowable Bearing	Square Footings: 2000 lbs/ft^2 (assuming a minimum embedment depth and width of 24 inches) Continuous Footings: 1500 lbs/ft^2 (assuming a minimum embedment depth of 24 inches and width of 18 inches)
Lateral Bearing	250 lbs/ft^2 at a depth of 12 inches plus 250 lbs/ft^2 for each additional 12 inches of embedment to a maximum of 2000 lbs/ft^2.
Sliding Coefficient	0.30
Settlement	Static Settlement – 0.5 inch in 40 feet Dynamic Settlement – 1.5 inches in 40 feet

*These values may be increased as allowed by Code to resist transient loads such as wind or seismic. Building code and structural design considerations may govern depth and reinforcement requirements and should be evaluated.

7.1.2 Post-Tensioned Slabs/Foundation Design Recommendations

Post-tensioned slabs for the project may be designed utilizing the parameters presented in Tables 7-1 and 7-2. The parameters presented herein are based on methodology provided in the Design of Post-Tensioned Slabs-On-Ground, Third Edition, by the Post-Tensioning Institute, in accordance with the 2022 CBC.

TABLE 7-2
POST-TENSION SLAB DESIGN PARAMETERS

Category	Expansion Potential	Minimum Embedment*	Edge Lift		Center Lift	
			Em (ft)	Ym (inch)	Em (ft)	Ym (inch)
I	Very Low to Low	12 inches	5.4	0.61	9.0	0.26
Slab Subgrade Moisture						
Category I	Minimum 110% of optimum moisture to a depth of 12 inches prior to pouring concrete					
Embedment* The minimum footing embedments presented herein are based on expansion indexes. The structural engineer should determine minimum embedments based on the number of floors supported by the footings, the structural loading, and the requirements of the latest California Building Code. If mat slabs are utilized, alternate embedment depths can be provided.						
Moisture Barrier A moisture barrier should be provided in accordance with the recommendations presented in Section 7.2						
The parameters presented herein are based on procedures presented in the Design of Post-Tensioned Slabs-On-Ground, Third Edition. No corrections for vertical barriers at the edge of the slab, or for adjacent vegetation have been assumed. The design parameters are based on a Constant Suction Value of 3.9 pF.						

7.2 Moisture Barrier

A moisture and vapor retarding system should be placed below the slabs-on-grade in portions of the structure considered to be moisture sensitive and should be capable of effectively preventing the migration of water and reducing the transmission of water vapor to acceptable levels. Historically, a 10-mil plastic membrane, such as Visqueen, placed between two to four inches of clean sand, has been used for this purpose. The use of this system or other systems can be considered, at the discretion of the designer, provided the system reduces the vapor transmission rates to acceptable levels.

7.3 Seismic Design

The site classes were determined based on the referenced reports and published geologic maps in the area in general conformance with Chapter 20 of ASCE 7-16. Based on the density of the underlying soils, a Site Class of D (shear wave velocity of 259 m/s) was selected. The seismic design parameters were calculated using a program based on the USGS website and ASCE 7-16

procedures. The resulting values are presented in Table 7-3. These values are applicable providing the exceptions presented in Supplements 2 and 3 of ASCE 7-16 are utilized in the design of the structure. If the design does not include the exception methodology, then a site-specific analysis shall be conducted.

TABLE 7-3 Seismic Ground Motion Values
2022 CBC and ASCE 7-16

Parameter	*Value*
Site Class	D
Site Latitude	33.7880
Site Longitude	-117.9661
Spectral Response Acceleration Parameter, S_S	1.402
Spectral Response Acceleration Parameter, S_1	0.496
Site Coefficient, F_a	1.0
Site Coefficient, F_v	1.8
MCE Spectral Response Acceleration Parameter, S_{MS}	1.402
MCE Spectral Response Acceleration Parameter, S_{M1}	0.893
Design Spectral Response Acceleration Parameter, S_{DS}	0.934
Design Spectral Response Acceleration Parameter, S_{D1}	0.595
Peak Ground Acceleration, PGA_M	0.657

7.4 Fence and Garden Walls

Block walls, if used, should be embedded a minimum of 2 feet below the lowest adjacent grade. Construction joints (not more than 20 feet apart) should be included in the block wall construction. Side yard walls should be structurally separated from the rear yard wall.

7.5 Footing Excavations

Soils from the footing excavations should not be placed in slab-on-grade areas unless properly compacted and tested. The excavations should be cleaned of all loose/sloughed materials and be neatly trimmed at the time of concrete placement. The Project Geotechnical Consultant should observe the footing excavations prior to the placement of concrete to determine that the excavations are founded in suitably compacted material.

7.6 Retaining Walls

Retaining walls should be founded on engineered fill and should be backfilled with granular soils that allow for drainage behind the wall. Foundations may be designed in accordance with the recommendations presented in Table 7-1, above. Unrestrained walls, free to horizontally move 0.0005H (for dense cohesionless backfill), may be designed to resist lateral pressures imposed by a fluid with a unit weight determined in accordance with the Table 7-4 below. The table also presents design parameters for restrained (at-rest) retaining walls. These parameters may be used to design retaining walls that may be considered as restrained due to the method of construction or location (corner sections of unrestrained retaining walls).

TABLE 7-4
Equivalent Fluid Pressures for 90% Compacted Fill (Select Material)

Backfill	Active Pressure (psf/ft)	At-Rest Pressure (psf/ft)
Level	35	55

Per the requirements of the 2022 CBC, the seismic force acting on the retaining walls with backfill exceeding 6-feet in height may be resolved utilizing the formula $13.5H^2$ lb/lineal ft (H=height of the wall). This force acts at approximately 0.6H above the base of the wall. The seismic value can be converted as required by the retaining wall engineer. Retaining walls should be designed in general accordance with Section 1807A.2 of the 2022 CBC.

- Restrained retaining walls should be designed for “at-rest” conditions.
- The design loads presented in the above table are to be applied on the retaining wall in a horizontal fashion and as such friction between wall and retained soils should not be allowed in the retaining wall analyses.
- Additional allowances should be made in the retaining wall design to account for the influence of construction loads, temporary loads, and possible nearby structural footing loads.
- Select backfill should be granular, structural quality backfill with a Sand Equivalent of 20 or better and an ASCE Expansion Index of 20 or less. The backfill must encompass the full active wedge area. The upper one foot of backfill should be comprised of native on-site soils (see Plate A).
- The wall design should include waterproofing (where appropriate) and backdrains or weep holes for relieving possible hydrostatic pressures. The backdrain should be comprised of a 4-inch perforated PVC pipe in a 1 ft. by 1 ft., ¾-inch gravel matrix, wrapped with a geofabric. The backdrain should be installed with a minimum gradient of 2 percent and should be outletted to an appropriate location. For subterranean walls this may include drainage by sump pumps.
- No backfill should be placed against concrete until minimum design strengths are achieved.

It should be noted that the allowable bearing and lateral bearing values presented in Table 7-1 are based on level conditions at the toe. Modified design parameters can be presented for retaining walls with sloping condition at the toe. Other conditions should be evaluated on a case-by-case basis.

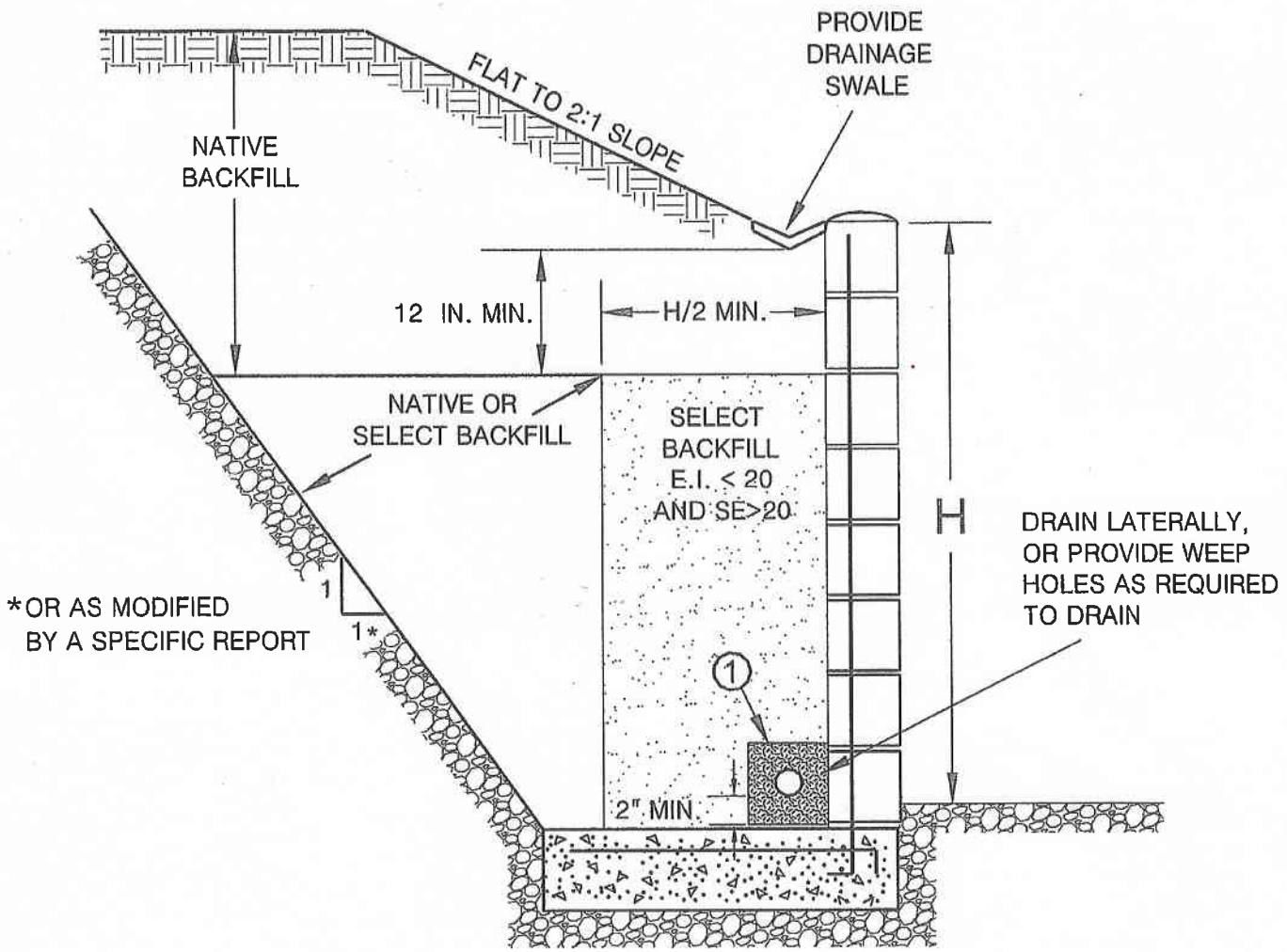
7.7 Exterior Slabs and Walkways

Exterior concrete slabs and walkways should be designed and constructed in consideration of the following recommendations.

7.7.1 Subgrade Compaction

The subgrade below exterior concrete slabs should be compacted to a minimum of 90 percent relative compaction as determined by ASTM Test Method: D 1557.

RETAINING WALL BACKFILL DETAIL



(1)

PIPE: 4-INCH PERFORATED PVC, SCHEDULE 40, SDR35 OR APPROVED ALTERNATE MINIMUM 8 PERFORATIONS (1/4-IN. DIA.) PER LINEAL FT. IN BOTTOM HALF OF PIPE

ROCK: MINIMUM VOLUME OF 1 CU. FT. OF 3/4-IN. MAX. ROCK PER. LINEAL FOOT OF PIPE, OR APPROVED ALTERNATE

FILTER FABRIC: MIRAFI 140 FILTER FABRIC OR APPROVED EQUIVALENT

7.7.2 Subgrade Moisture

The subgrade below concrete slabs should be moisture conditioned to a minimum of 110 percent of optimum moisture prior to concrete placement.

7.7.3 Concrete Slab Thickness

Concrete flatwork and driveways should be designed utilizing four-inch minimum thickness.

7.7.4 Concrete Slab Reinforcement

Utilization of reinforcement for flatwork and driveways is subject to a cost/benefit analysis. Reinforcement will decrease the amount of cracking that may occur in flatwork, however, planning for occasional repairs may be more cost effective. Utilizing closely spaced control joints is likely more cost-effective than utilizing reinforcement. The majority of the soils onsite are classified as very low in expansion potential. Consideration should be given to reinforcing flatwork with irregular (non-square/rectangular) shapes.

7.7.5 Control Joints

Weakened plane joints should be installed on walkways at intervals of approximately eight feet (maximum) or less. Exterior slabs should be designed to withstand shrinkage of the concrete.

7.8 Concrete Design

As stated in Section 5.1.7, negligible concentrations of sulfates were detected in the onsite soils (Class S0). Therefore, the use of sulfate resistant concrete is not required per ACI 318-14 at this time. Post-grading conditions should be evaluated, and final recommendations made at that time.

7.9 Corrosion

Based on preliminary testing, the onsite soils are moderately corrosive to buried metal objects. Buried ferrous metals should be protected against the effects of corrosive soils in accordance with the manufacturer's recommendations. Typical measures may include using non-corrosive backfill, protective coatings, wrapping, plastic pipes, or a combination of these methods. A corrosion engineer should be consulted if specific design recommendations are required by the improvement designer.

Per ACI 318-14, an exposure class of C1 would be applicable to metals encased in concrete (rebar in footings) due to being exposed to moisture from surrounding soils. Per Table 19.3.2.1 of ACI 318-14, the requirements for concrete with an exposure class of C1 are a minimum compressive strength of 2500 psi and a maximum water-soluble chloride ion content in concrete of 0.30 (percent by weight of cement).

7.10 Pavement Design

Pavement sections for the proposed streets shall be designed based on laboratory testing conducted on samples taken from the soil subgrade. Preliminarily, based on an assumed R-Value of 30, the pavement may be designed utilizing the sections presented in Table 7-5. These sections should be verified upon the completion of grading, based on R-Value testing. The ultimate pavement section design for public streets is under the City of Garden Grove's purview.

Table 7-5 Preliminary Pavement Sections		
Traffic Index	Pavement Section Options OR	
5.0	3-inch AC on 6-inch AB	4-inch AC on 4-inch AB
5.5	3-inch AC on 7-inch AB	4-inch AC on 5-inch AB
AC-Asphalt Concrete AB-Caltrans Class II Base		

Construction of the streets should be accomplished in accordance with the current criteria of the City of Garden Grove. Prior to the placement of base material, the subgrade should be suitably moisture conditioned, processed and compacted to a minimum 95 percent of the laboratory maximum density (ASTM: D 1557) to at least twelve (12) inches below subgrade. After subgrade compaction, the exposed grade should then be "proof"-rolled with heavy equipment to ensure the grade does not "pump" and is verified as non-yielding. Aggregate base material should be placed on the compacted subgrade and compacted in-place to a minimum 95 percent of the laboratory standard obtained per ASTM: D 1557.

7.11 Site Drainage

Positive drainage away from the proposed structures should be provided and maintained. Roof, pad, and lot drainage should be collected and directed away from the structures toward approved disposal areas through drainage terraces, gutters, down drains, and other devices. Design fine grade elevations should be maintained through the life of the structure or if design fine grade elevations are altered, adequate area drains should be installed in order to provide rapid discharge of water, away from structures.

8.0 LOT MAINTENANCE

Ongoing maintenance of the improvements is essential to the long-term performance of structures. As such, the owners must implement certain maintenance procedures. The attached " Maintenance and Improvement Considerations" presented in the Appendix E may be included as part of the sales packet to educate the owners in issues related to drainage, maintenance, improvements, etc. The following recommendations should also be implemented.

8.1 Lot Drainage

Roof, pad, and lot drainage should be collected and directed away from structures and slopes and toward approved disposal areas. Design fine grade elevations should be maintained throughout the life of the structure or if design fine grade elevations are altered, adequate area drains should be installed in order to provide rapid discharge of water, away from structures and slopes. Residents should be made aware that they are responsible for maintenance and cleaning of all drainage terraces, down drains, and other devices that have been installed to promote structure and slope stability.

8.2 Burrowing Animals

Owners should undertake a program for the elimination of burrowing animals.

9.0 FUTURE PLAN REVIEWS

This report represents a geotechnical review of the site. As the project design for the project progresses, site specific geologic and geotechnical issues should be considered in the design and construction of the project. Consequently, future plan reviews may be necessary. These reviews may include reviews of:

- Grading Plans
- Foundation Plans
- Utility Plans

These plans should be forwarded to the project Geotechnical Consultant for review.

10.0 CLOSURE

10.1 Geotechnical Review

For the purposes of this report, multiple working hypotheses were established for the project, utilizing the available data and the most probable model is used for the analysis. Future information collected during the proposed grading operations is intended to evaluate the hypothesis and as such, some of the assumptions summarized in this report may need to be changed. Some modifications of the grading recommendations may become necessary, should the conditions encountered in the field differ from the conditions hypothesized in this report.

Plans and sections of the project specifications should be reviewed by Alta to evaluate conformance with the intent of the recommendations contained in this report. If the project description or final design varies from that described in herein, Alta must be consulted regarding the applicability of the recommendations contained herein and whether any changes are required. Alta accepts no liability for any use of its recommendations if the project description or final design varies and Alta is not consulted regarding the alterations.

10.2 Limitations

This report is based on the following: 1) the project as presented on the attached plan; 2) the information obtained from Alta's laboratory testing included herein; and 3) from the information presented in the referenced reports. The findings and recommendations are based on the results of the subsurface investigation, laboratory testing, and office analysis combined with an interpolation and extrapolation of conditions between and beyond the subsurface excavation locations. However, the materials adjacent to or beneath those observed may have different characteristics than those observed, and no precise representations are made as to the quality or extent of the materials not

observed. The results reflect an interpretation of the direct evidence obtained. Work performed by Alta has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the geotechnical profession currently practicing in the same locality under similar conditions. No other representation, either expressed or implied, and no warranty or guarantee is included or intended.

The recommendations presented in this report are based on the assumption that an appropriate level of field review will be provided by a geotechnical consultant who is familiar with the design and site geologic conditions. That field review shall be sufficient to confirm that geotechnical and geologic conditions exposed during grading are consistent with the geologic representations and corresponding recommendations presented in this report.

The conclusions and recommendations included in this report are applicable to the specific design of this project as discussed in this report. They have no applicability to any other project or to any other location and any and all subsequent users accept any and all liability resulting from any use or reuse of the data, opinions, and recommendations without the prior written consent of Alta.

Alta has no responsibility for construction means, methods, techniques, sequences, procedures, safety precautions, programs in connection with the construction, acts or omissions of the CONTRACTOR or any other person performing any of the construction, or for the failure of any of them to carry out the construction in accordance with the final design drawings and specifications.

APPENDIX A

REFERENCES

APPENDIX A

Selected References

California Code of Regulations, 2022, California Building Code, Title 24, Part 2, Volume 2, Based on the 2021 International Building Code, Effective Date January 1, 2023.

California Department of Conservation, Division of Mines and Geology, 1997, Seismic Hazard Zone Report for the Anaheim and Newport Beach 7.5-Minute Quadrangles, Orange County, California, Seismic Hazard Zone Report 03.

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APPENDIX B

Subsurface Investigation

APPENDIX B

Subsurface Investigation

Alta's subsurface investigation consisted of excavating, logging, and sampling three (3) hollow-stem auger borings. Details of the subsurface investigation are presented in Table B. The approximate location of the exploratory excavation is shown on the accompanying Plate 1 and the Geotechnical Logs are attached.

TABLE B
SURFACE INVESTIGATION DETAILS

Equipment	Range of Depths	Sampling Methods	Sample Locations
Hollow-stem auger	Up to 51.5 feet	1. Bulk 2. Ring Samples 3. SPT Samples	1. Bulk-Select Depths 2. Rings-Every 2.5 feet or 5 Feet 3. SPT-At Depths Below 20 Feet

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		grf	ltr	Description
Coarse Grained Soils: More than 50% retained on No. 200 sieve	Gravel and Gravelly Soils: More than 50% of coarse fraction retained on No. 4 sieve		GW	Well-graded gravels or gravel sand mixtures, little or no fines
			GP	Poorly-graded gravels or gravel sand mixture, little or no fines
			GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	Sand and Sandy Soils: More than 50% of coarse fraction passes on No. 4 sieve		SW	Well-graded sands or gravelly sands, little or no fines
			SP	Poorly-graded sands or gravelly sands, little or no fines
			SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, and-clay mixtures

Major Divisions		grf	ltr	
Fine Grained Soils: More than 50% passes on No. 200 sieve	Silts And Clays LL,<50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silt-clays of low plasticity
	Silts And Clays LL,<50		MH	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts
			VH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly Organic Soils			PT	Peat and other highly organic soils

BOUNDARY CLASSIFICATION: Soils possessing characteristics of two groups are designated by combinations of group symbols.

PARTICLE SIZE LIMITS

U.S. STANDARD SERIES SIEVE — CLEAR SQUARE SIEVE OPENINGS

200	40	10	4	3/4"	3"	12"

Silts and Clays	Sand			Gravel		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

RELATIVE DENSITY

Sands and Gravels	Blows/Foot (SPT)
Very Loose	<4
Loose	4-10
Medium Dense	11-30
Dense	31-50
Very Dense	>50

CONSISTENCY CLASSIFICATION

Silts and Clays	Criteria
Very Soft	Thumb penetrates soil >1 in.
Soft	Thumb penetrates soil 1 in.
Firm	Thumb penetrates soil 1/4 in.
Stiff	Readily indented with thumbnail
Very Stiff	Thumbnail will not indent soil

HARDNESS

Bedrock
Soft
Moderately Hard
Hard
Very Hard

LABORATORY TESTS

Symbol	Test
DS	Direct Shear
DSR	Direct Shear (Remolded)
CON	Consolidation
SA	Sieve Analysis
MAX	Maximum Density
RV	Resistance (R) Value
EI	Expansion Index
SE	Sand Equivalent
AL	Atterberg Limits
CHEM	Chemical Analysis
HY	Hydrometer Analysis

SOIL MOISTURE

Increasing Visual Moisture Content

Dry - Dry to touch

Moist - Damp, but no visible free water

wet - Visible free water

SIZE PROPORTIONS

Trace - <5%

Few - 5 to 10%

Some - 15 to 25%

KEY TO EXPLORATORY BORING LOGS

ALTA CALIFORNIA GEOTECHNICAL INC.

PLATE B

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	80	BORING DESIG.	B-1
DATE FINISHED	3/5/24	GW DEPTH (FT)	14	LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
0	80				SP	**ASPHALT** 1" asphaltic concrete over 1" asphaltic base.				
						YOUNG ALLUVIAL FAN DEPOSITS (Qyf): SAND, fine grained, brown, slightly moist, loose.				
		R	13			@2.5 ft. trace gravel.	5.5	99	22	
5	75	R	22		SP-SM	@5.0 ft. SAND WITH SILT, fine grained, tan brown, slightly moist, medium dense.	5.8	94	20	MAX, EI, HY, CHEM
10	70	R	26			@10.0 ft. fine to medium grained, tan gray, some gravel.	7.2	98	28	
						@13.7 ft. groundwater encountered.				
15	65	R	34			@15.0 ft. wet.	22.3	99	89	
20	60	R	18		SM	@20.0 ft. SILTY SAND, fine grained, gray, slightly moist, medium dense.	22.4	104	99	
25	55	S	3,5,5				35.1			
30	50	S	3,6,11				26.6			
35	45	S	4,7,9		SP	@35.0 ft. SAND, fine grained, gray, slightly moist, medium dense.	24.1			
						Continued;				
40										

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-1

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	80	BORING DESIG.	B-1
DATE FINISHED	3/5/24	GW DEPTH (FT)	14	LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
	40	S	4,7,12		SM	Continued; **YOUNG ALLUVIAL FAN DEPOSITS** (Qyf): SILTY SAND, fine grained, tan gray, slightly moist, medium dense.	31.3			
45	35	S	8,19,19			@45.0 ft. wet.	28.9			
50	30	S	7,13,13				26.6			
						TOTAL DEPTH 51.5 FEET GROUNDWATER AT 13.7 FEET NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-1

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	82	BORING DESIG.	B-2
DATE FINISHED	3/5/24	GW DEPTH (FT)	14	LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SP	**ASPHALT**, 1" asphaltic concrete over 1" asphaltic base.				
						YOUNG ALLUVIAL FAN DEPOSITS (Qyf): SAND, fine grained, tan, slightly moist, loose.				
	80									
		R	16			@2.5 ft. tan gray, medium dense.	6.8	98	26	
5		R	20		SP-SM	@5.0 ft. SAND WITH SILT, fine grained, tan dark gray, slightly moist, medium dense.	4.9	98	19	CON, HY
	75									
10		R	30			@10.0 ft. fine to medium grained.	4.9	94	17	
	70									
						@14.0 ft. groundwater encountered.				
15		R	14			@15.0 ft. medium grained.	13.3	112	73	
	65									
20		R	11		SM	@20.0 ft. SILTY SAND, fine grained, gray, slightly moist, loose.	31.6	90	99	
	60									
25		R	20				24.3	99	96	
						TOTAL DEPTH 26.0 FEET GROUNDWATER AT 14.0 FEET NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-2

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	83	BORING DESIG.	B-3
DATE FINISHED	3/5/24	GW DEPTH (FT)	14	LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL** SILTY SAND, fine grained, dark brown, slightly moist, loose, with roots.				
	80	R	14		SP-SM	**YOUNG ALLUVIAL FAN DEPOSITS**(Qyf): SAND WITH SILT, fine grained, brown, slightly moist, medium dense.				
5		R	13		SP	@5.0 ft. SAND, fine grained, tan gray, slight moist, loose.	5.9	98	23	
	75									
10		R	27			@10.0 ft. medium dense.	2.8	99	11	
	70					@14.0 ft. groundwater encountered.				
15		R	27		SM	@15.0 ft. SILTY SAND, fine grained, gray, slightly moist, medium dense.	19.0	101	79	
	65									
20		R	29		ML	@20.0 ft. SANDY SILT, gray, slightly moist, firm.	33.6	86	97	
	60									
25		S	7,9,11		SP-SM	@25.0 ft. SAND WITH SILT, fine grained, gray, slightly moist, medium dense.	25.4	98	99	
						TOTAL DEPTH 26.0 FEET GROUNDWATER AT 14.0 FEET NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-3

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	83	BORING DESIG.	B-4
DATE FINISHED	3/5/24	GW DEPTH (FT)	19	LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL** SILTY SAND, fine grained, dark brown, slightly moist, loose, with roots.				
	80	R	11		SP-SM	**YOUNG ALLUVIAL FAN DEPOSITS**(Qyf): SAND WITH SILT, fine grained, brown, slightly moist, medium dense, trace roots.	9.1	105	42	
5		R	15		SP	@5.0 ft. SAND, fine grained, tan gray, slightly moist, medium dense.	8.5	99	33	
	75									
10		R	15		SM	@10.0 ft. SILTY SAND, fine grained, brown, moist, medium dense.	7.2	103	32	
	70									
15		R	27		SP	@15.0 ft. SAND, fine to medium grained, tan gray, moist, medium dense.	16.9	102	71	
	65					@18.6 ft. groundwater encountered.				
20		R	12		SM	@20.0 ft. SILTY SAND, fine grained, dark gray, moist, medium dense.	22.3	101	92	
	60									
25		S	3,4,6			@25.0 ft. gray, slightly moist.	27.5			
	55									
30		S	4,1,2			@30.0 ft. loose.	28.9			
	50									
35		S	3,2,3		ML	@35.0 ft. SANDY SILT, gray, moist, firm.	25.5			
	45					Continued;				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-4

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	83	BORING DESIG.	B-4
DATE FINISHED	3/5/24	GW DEPTH (FT)	19	LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
		S	3,6,8		ML	Continued; **YOUNG ALLUVIAL FAN DEPOSITS**(Qyf): SANDY SILT, gray, moist, firm.	25.6			
40										
45		S	3,6,9		SM	@45.0 ft. SILTY SAND, fine grained, gray, slightly moist, medium dense.	23.8			
35										
50		S	2,3,4		SP	@50.0 ft. SAND, gray, fine grained, slightly moist, loose.	30.5			
						TOTAL DEPTH 51.5 FEET GROUNDWATER AT 18.6 FEET NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-4

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	81	BORING DESIG.	P-1
DATE FINISHED	3/5/24	GW DEPTH (FT)		LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
	80				SM	**TOPSOIL** SILTY SAND, fine grained, brown, slightly moist, loose, with roots.				
					SM	**YOUNG ALLUVIAL FAN DEPOSITS** (Qyf): SILTY SAND, fine grained, brown, slightly moist, medium dense, trace roots.				
5					SP	@5.0 ft. SAND, fine grained, tan brown, slightly moist, medium dense.				
	75					TOTAL DEPTH 6.0 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-5

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	83	BORING DESIG.	P-2
DATE FINISHED	3/5/24	GW DEPTH (FT)		LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL** SILTY SAND, fine grained, brown, slightly moist, loose, with roots.				
	80				SM	**YOUNG ALLUVIAL FAN DEPOSITS** (Qyf): SILTY SAND, fine grained, brown, slightly moist, medium dense, trace roots.				
5					SP	@5.0 ft. SAND, fine grained, tan brown, slightly moist, medium dense.				
						TOTAL DEPTH 6.0 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-6

APPENDIX C

Laboratory Testing

LABORATORY TESTING

The following laboratory tests were performed on a representative sample in accordance with the applicable latest standards or methods from the ASTM, California Building Code (CBC) and California Department of Transportation.

Classification

Soils were classified with respect to the Unified Soil Classification System (USCS) in accordance with ASTM D-2487 and D-2488.

Particle Size Analysis

Modified hydrometer testing was conducted to aid in classification of the soil. The results of the particle size analysis are presented in Table C.

Maximum Density/Optimum Moisture

The maximum dry density and optimum moisture content of one representative bulk samples were evaluated in accordance with ASTM D-1557. The results are summarized in Table C.

Expansion Index Tests

One (1) expansion index test was performed to evaluate the expansion potential of typical on-site soil. Testing was carried out in general conformance with ASTM Test Method D-4829. The results are presented in Table C.

Consolidation Tests

Consolidation testing was performed on two (2) relatively "undisturbed" soil sample at its natural moisture content in accordance with procedures outlined in ASTM D-2435. The samples were placed in a consolidometer and loads were applied incrementally in geometric progression. The samples (2.42-inches in diameter and 1-inch in height) were permitted to consolidate under each load increment until the slope of the characteristic linear secondary compression portion of the thickness versus log of time plot was apparent. The percent consolidation for each load cycle was recorded as the ratio of the amount of vertical

compression to the original 1-inch height. The consolidation test results are shown on Plate C-1 and C-2.

Chemical Analyses

Chemical testing was performed on one select samples by Alta. The results of these tests (sulfate content, resistivity, chloride content and pH) are presented on Table C.

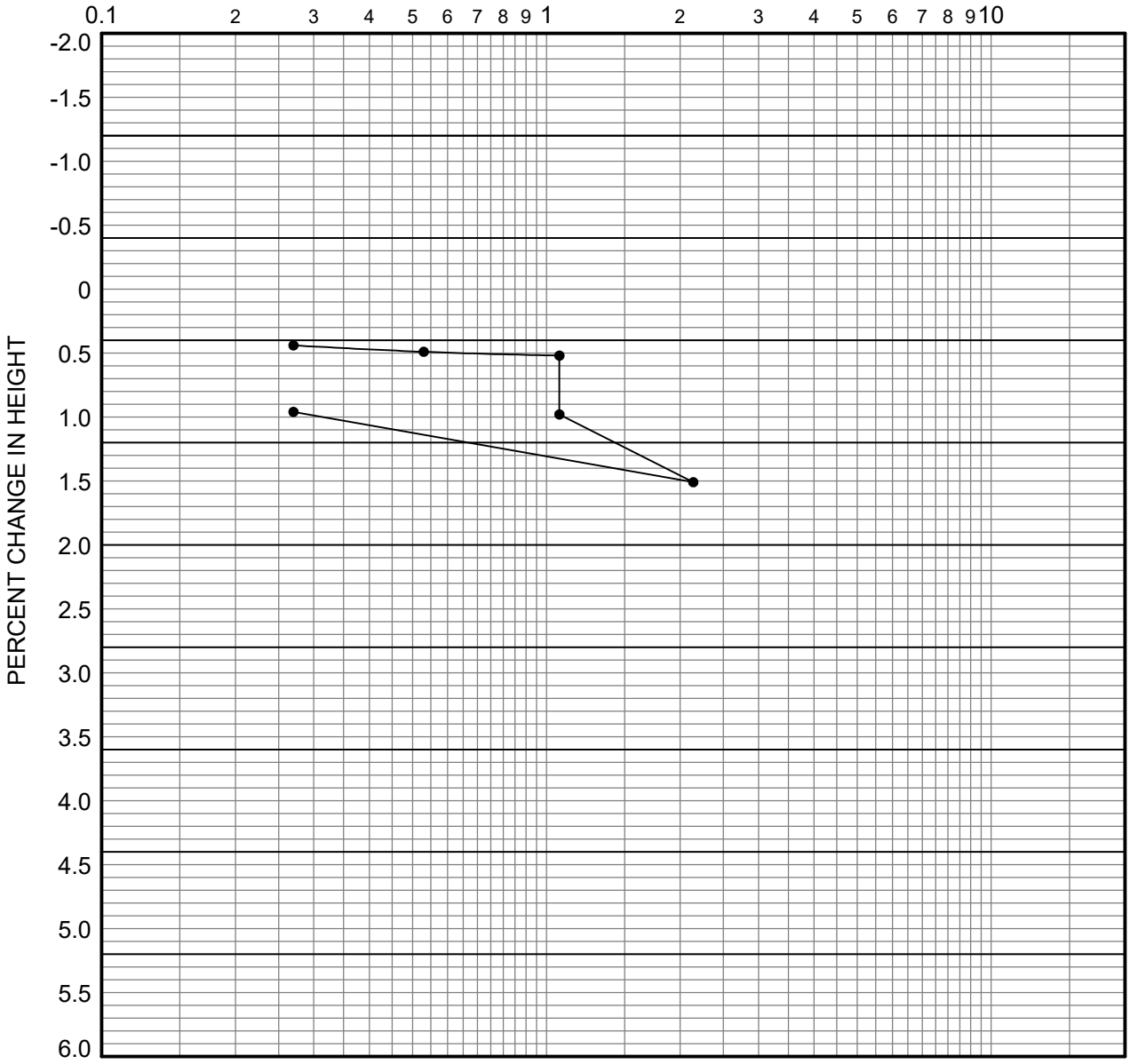
Atterberg Limits

Atterberg Limits testing was performed on four (4) select samples by Alta. The results of these tests are presented on Table C.

TABLE C
SUMMARY OF LABORATORY TEST DATA
P.N. 1-0517

BORING	DEPTH (FEET)	SOIL DESCRIPTION	GROUP SYMBOL	MAXIMUM DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	DIRECT SHEAR	PLUS NO.4 SEIVE (plus 4.76mm) (%)	SAND (4.76mm-0.075mm) (%)	SILT (0.075mm-0.005mm) (%)	CLAY (minus 0.005mm) (%)	EXPANSION INDEX UBC 18-2	CONSOL	OTHER TESTS REMARKS
B-1	5	Sand with Silt (Qyf)	SP-SM	120.3	11.0		2	88	6	4	0		Sulf: 0.002% Chlr: 50 ppm pH: 7.8, Resis: 16,238 Ohm-cm
B-2	5	Sand with Silt (Qyf)	SP-SM				1	93	5	1		SEE PLATE C	

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-2	5.0	98	4.9	19	6	SP-SM	Sand with Silt (Qyf)

REMARKS: WATER ADDED AT 1.07 TSF

CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0517

PLATE C

APPENDIX D

Liquefaction Analysis

APPENDIX D

LIQUEFACTION ANALYSIS

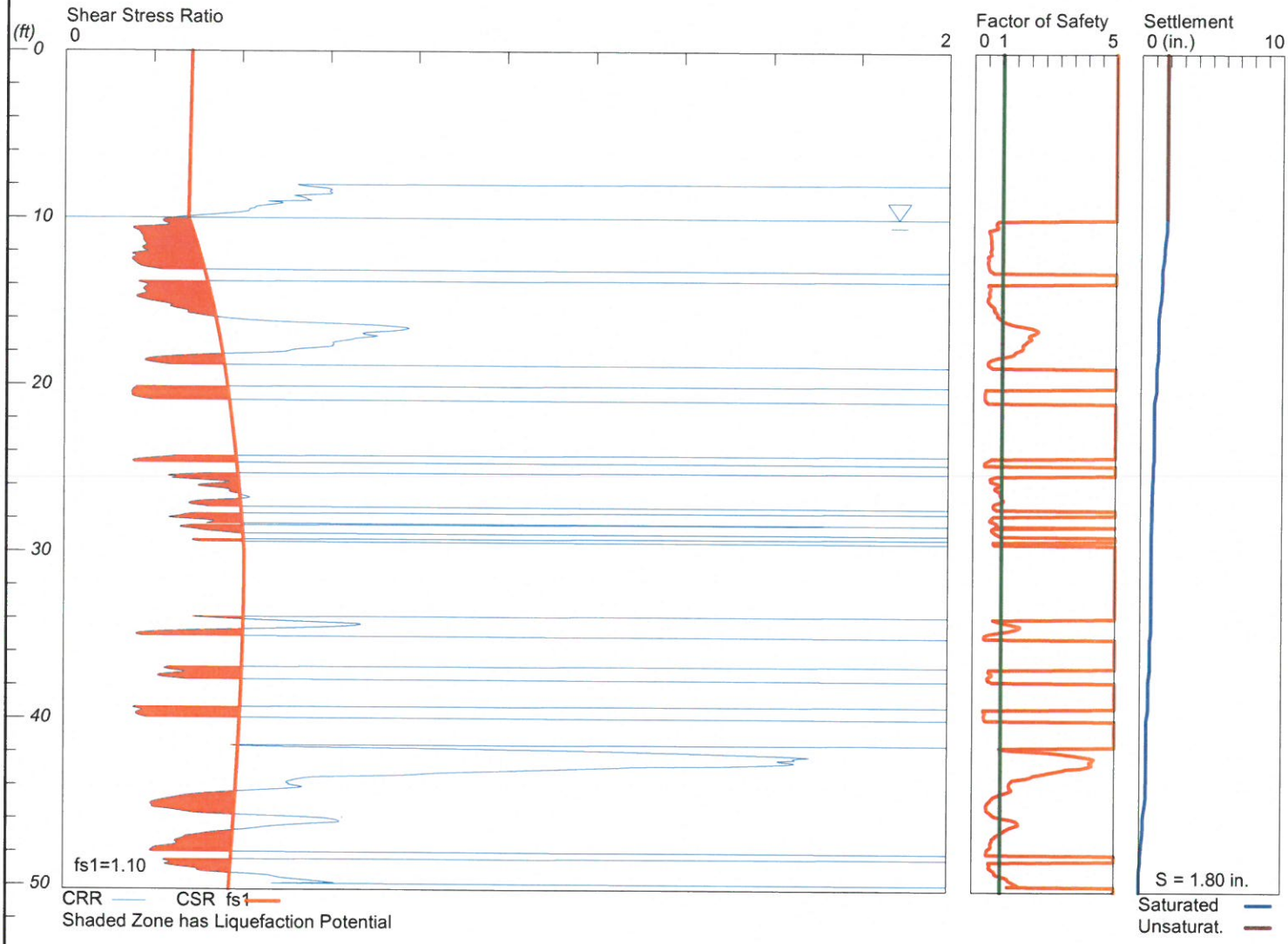
A liquefaction analysis was performed for the site based on CPT data for CPT-1 and CPT-2. Our analysis was based on City of Garden Grove guidelines (City of Garden Grove, 2020) and utilized two methods. Method 1 utilized 2/3 of the PGA_M, the predominant earthquake magnitude assuming a 10% probability of exceedance in 50 years, and a factor of safety of 1.1. Method 2 utilized the PGA_M, the predominant earthquake magnitude assuming a 2% probability of exceedance in 50 years, and a factor of safety of 1.0. The results for Method 1 are presented on Plates D-1 and D-3, and the results for Method 2 are presented on Plates D-2 and D-4.

LIQUEFACTION ANALYSIS

Method 1

Hole No.=CPT-1 Water Depth=10 ft

Magnitude=6.7
Acceleration=0.40g

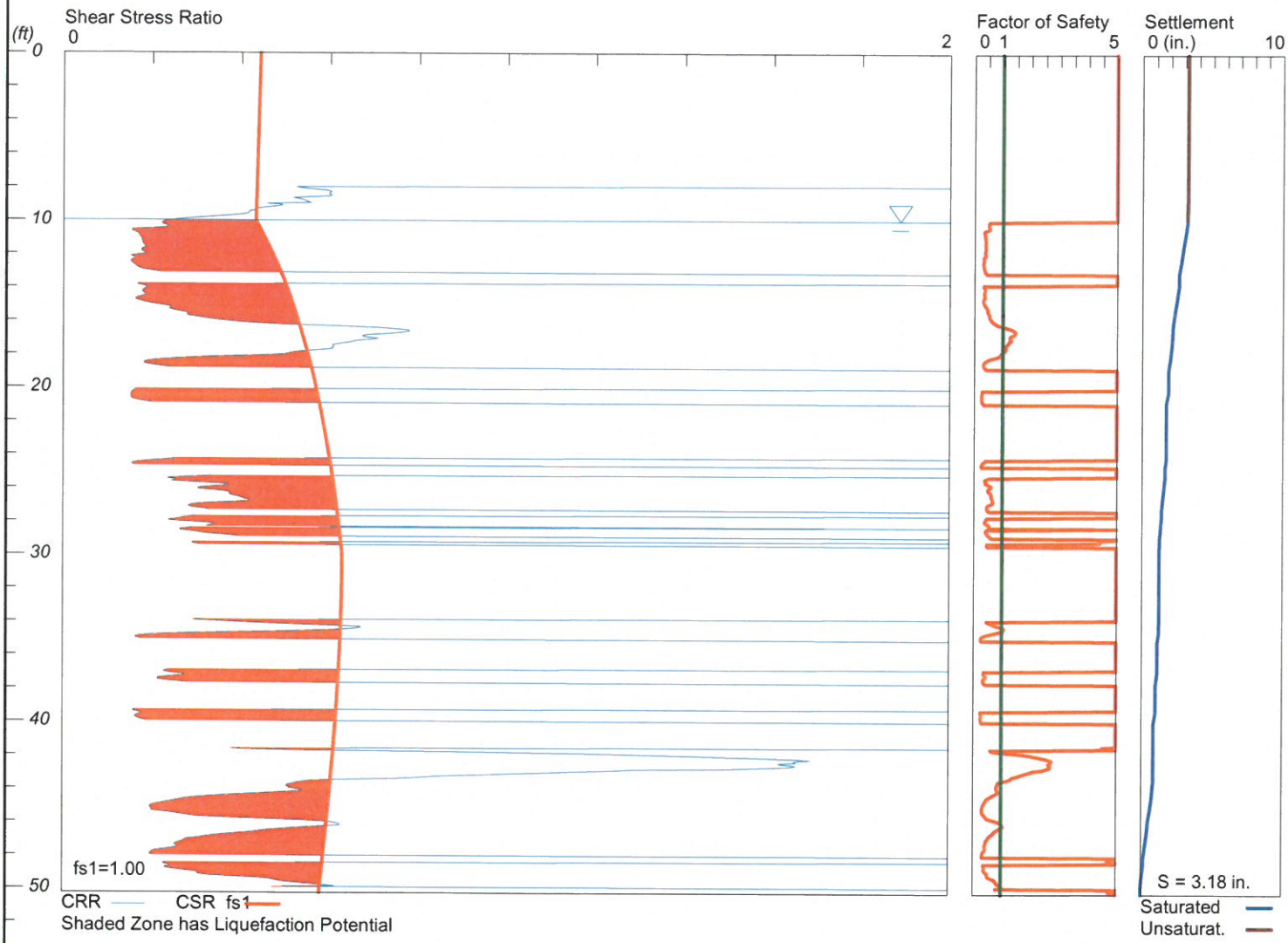


LIQUEFACTION ANALYSIS

Method 2

Hole No.=CPT-1 Water Depth=10 ft

Magnitude=6.7
Acceleration=0.68g

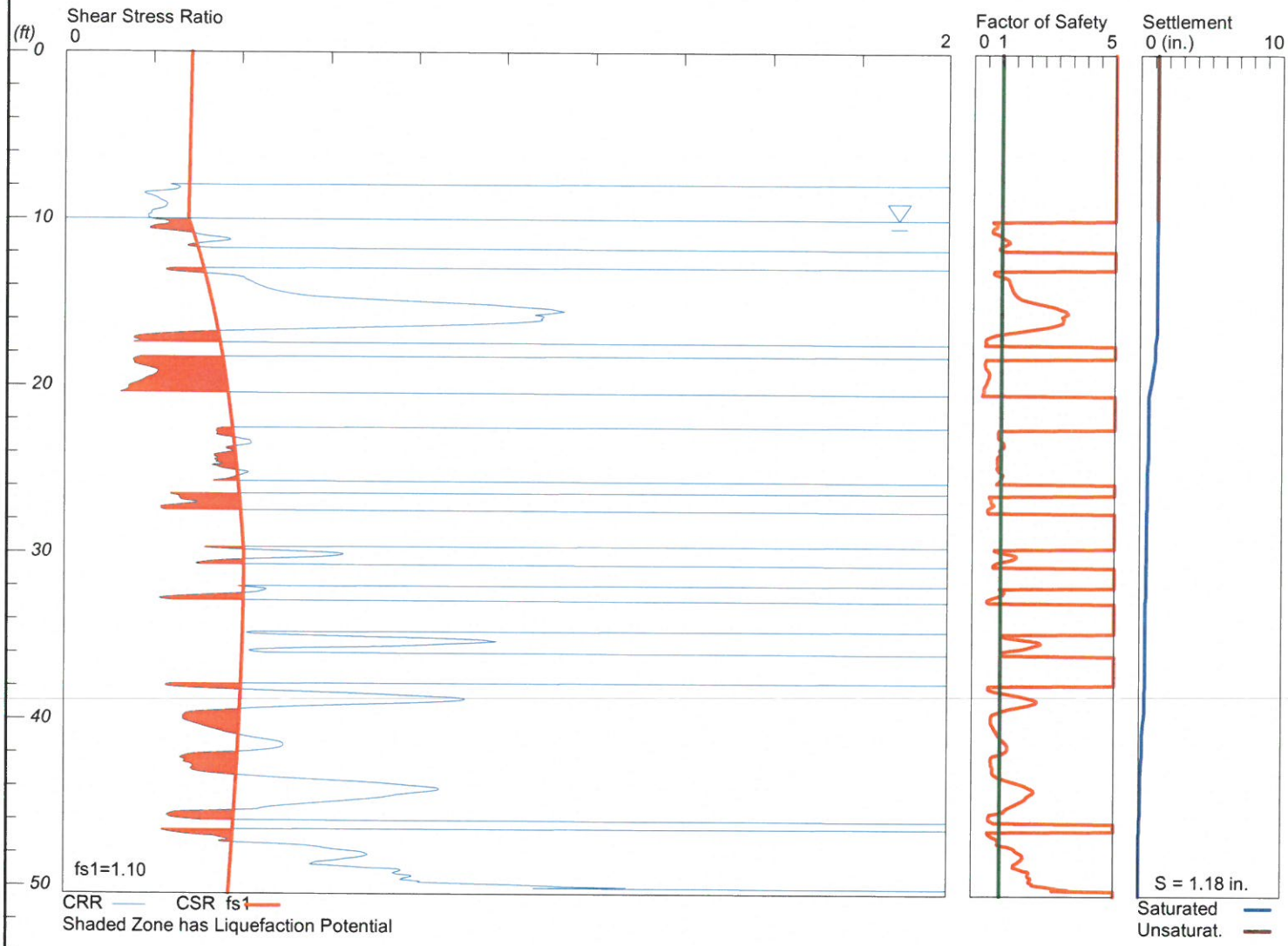


LIQUEFACTION ANALYSIS

Method 1

Hole No.=CPT-2 ***Water Depth=10 ft***

Magnitude=6.7
Acceleration=0.40g

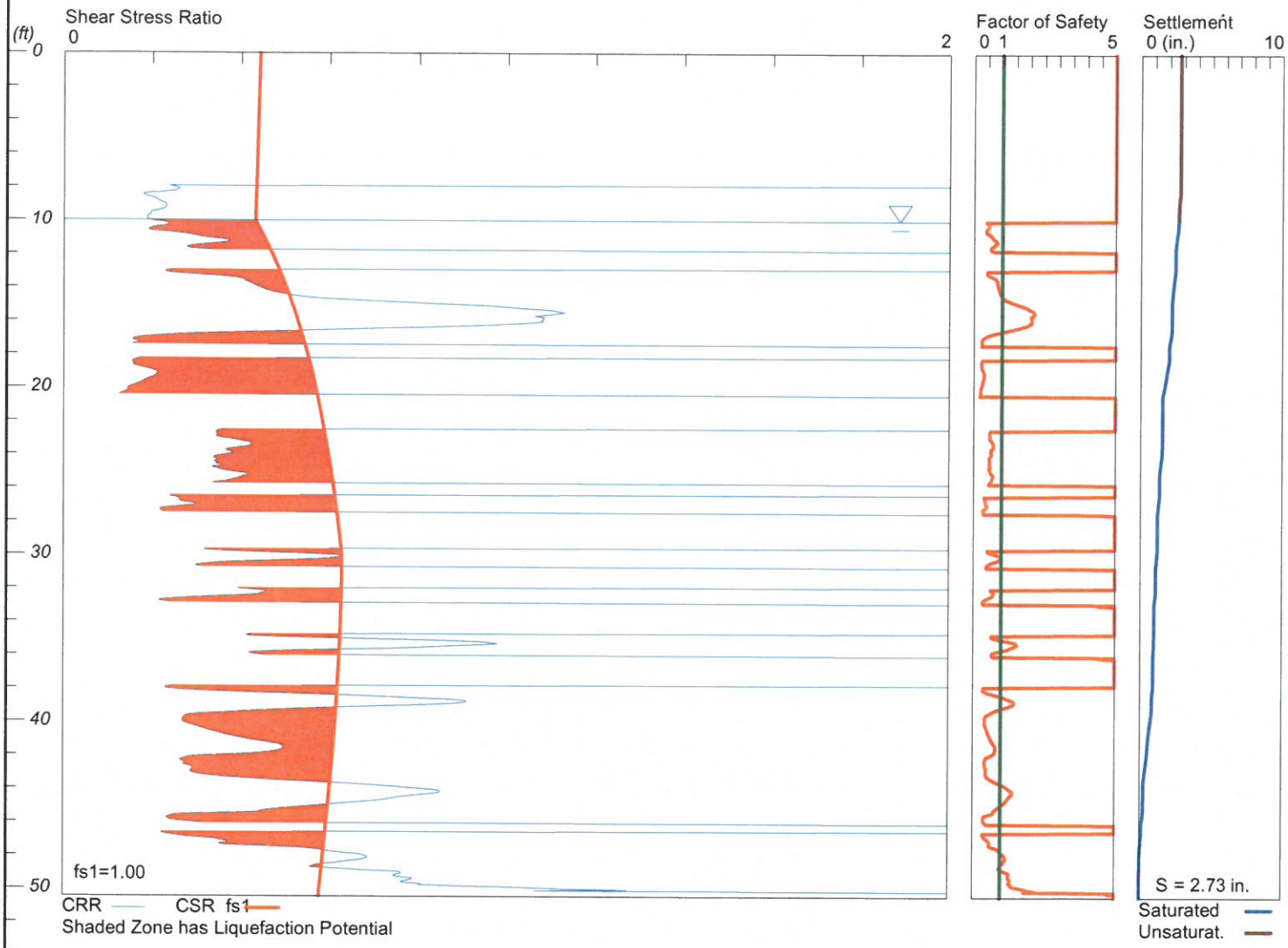


LIQUEFACTION ANALYSIS

Method 2

Hole No.=CPT-2 Water Depth=10 ft

Magnitude=6.7
Acceleration=0.68g



APPENDIX E

Maintenance and Improvement Considerations

MAINTENANCE AND IMPROVEMENT CONSIDERATIONS

General

Owners purchasing property must assume a certain degree of responsibility for improvements and for maintaining conditions around their home. Of primary importance from a geotechnical standpoint are maintaining drainage patterns and minimizing the soil moisture variation below all improvements. Such design, construction and owner maintenance provisions may include:

- Employing contractors for improvements who design and build in recognition of local building codes and specific site soils conditions.
- Establishing and maintaining positive drainage away from all foundations, walkways, driveways, patios, and other improvements.
- Avoiding the construction of planters adjacent to structural improvements. Alternatively, planter sides/bottoms can be sealed with an impermeable membrane and drained away from the improvements via subdrains into approved disposal areas.
- Sealing and maintaining construction/control joints within concrete slabs and walkways to reduce the potential for moisture infiltration into the subgrade soils.
- Utilizing landscaping schemes with vegetation that requires minimal watering. Watering should be done in a uniform manner, as equally as possible on all sides of the foundation, keeping the soil "moist" but not allowing the soil to become saturated.
- Maintaining positive drainage away from structures and providing roof gutters on all structures with downspouts that are designed to carry roof runoff directly into area drains or discharged well away from the foundation areas.
- Avoiding the placement of trees closer to the proposed structures than a distance of one-half the mature height of the tree.
- Observation of the soil conditions around the perimeter of the structure during extremely hot/dry or unusually wet weather conditions so that modifications can be made in irrigation programs to maintain relatively uniform moisture conditions.

Sulfates

Owners should be cautioned against the import and use of certain inorganic fertilizers, soil amendments, and/or other soils from offsite sources in the absence of specific information relating to their chemical composition. Some fertilizers have been known to leach sulfate compounds into soils and increase the sulfate concentrations to potentially detrimental levels.

Site Drainage

- The owners should be made aware of the potential problems that may develop when drainage is altered through construction of hardscape improvements. Ponded water, drainage over the slope face, leaking irrigation systems, overwatering, or other conditions which could lead to ground saturation must be avoided.
- No water should be allowed to flow over the slopes. No alteration of pad gradients should be allowed that would prevent pad and roof runoff from being directed to approved disposal areas.
- Drainage patterns have been established at the time of the fine grading should be maintained throughout the life of the structure. No alterations to these drainage patterns should be made unless designed by qualified professionals in compliance with local code requirements and site-specific soils conditions.

Slope Drainage

- Residents should be made aware of the importance of maintaining and cleaning all interceptor ditches, drainage terraces, down drains, and any other drainage devices, which have been installed to promote slope stability.
- Subsurface drainage pipe outlets may protrude through slope surfaces and/or wall faces. These pipes, in conjunction with the graded features, are essential to slope and wall stability and must be protected in-place. They should not be altered or damaged in any way.

Planting and Irrigation of Slopes

- Seeding and planting of the slopes should be planned to achieve, as rapidly as possible, a well-established and deep-rooted vegetal cover requiring minimal watering.
- It is the responsibility of the landscape architect to provide such plants initially and of the residents to maintain such planting. Alteration of such a planting scheme is at the resident's risk.
- The resident is responsible for proper irrigation and for maintenance and repair of properly installed irrigation systems. Leaks should be fixed immediately.

- Sprinklers should be adjusted to provide maximum uniform coverage with a minimum of water usage and overlap. Overwatering with consequent wasteful runoff and serious ground saturation must be avoided.
- If automatic sprinkler systems are installed, their use must be adjusted to account for seasonal and natural rainfall conditions.

Burrowing Animals

- Residents must undertake a program to eliminate burrowing animals. This must be an ongoing program in order to promote slope stability.

Owner Improvement

Owner improvements (pools, spas, patio slabs, retaining walls, planters, etc.) should be designed to account for the terrain of the project, as well as expansive soil conditions and chemical characteristics. Design considerations on any given lot may need to include provisions for differential bearing materials, ascending/descending slope conditions, bedrock structure, perched (irrigation) water, special geologic surcharge loading conditions, expansive soil stresses, and long-term creep/settlement.

All owner improvements should be designed and constructed by qualified professionals utilizing appropriate design methodologies, which account for the on-site soils and geologic conditions. Each lot and proposed improvement should be evaluated on an individual basis.

Setback Zones

Manufactured slopes maybe subject to long-term settlement and creep that can manifest itself in the form of both horizontal and vertical movement. These movements typically are produced as a result of weathering, erosion, gravity forces, and other natural phenomenon. A setback adjacent to slopes is required by most building codes, including the California Building Code. This zone is intended to locate and support the residential structures away from these slopes and onto soils that are not subject to the potential adverse effects of these natural phenomena.

The owner may wish to construct patios, walls, walkways, planters, swimming pools, spas, etc. within this zone. Such facilities may be sensitive to settlement and creep and should not be

constructed within the setback zone unless properly engineered. It is suggested that plans for such improvements be designed by a professional engineer who is familiar with grading ordinances and design and construction requirements. In addition, we recommend that the designer and contractor familiarize themselves with the site specific geologic and geotechnical conditions on the specific lot.

APPENDIX F

Earthwork Specifications

ALTA CALIFORNIA GEOTECHNICAL, INC.
EARTHWORK SPECIFICATIONS

These specifications present the generally accepted standards and minimum earthwork requirements for the development of the project. These specifications shall be the project guidelines for earthwork except where specifically superseded in preliminary geology and soils reports, grading plan review reports or by the prevailing grading codes or ordinances of the controlling agency.

A. GENERAL

1. The Contractor shall be responsible for the satisfactory completion of all earthwork in accordance with the project plans and specifications.

2. The project Geotechnical Engineer and Engineering Geologist, or their representatives, shall provide observation and testing services, and Geotechnical consultation for the duration of the project.

3. All clearing, grubbing, stripping and site preparation for the project shall be accomplished by the Contractor to the satisfaction of the Geotechnical Engineer/Engineering Geologist.

4. It is the Contractor's responsibility to prepare the ground surface to receive fill to the satisfaction of the Geotechnical Engineer and to place, spread, mix, moisture condition, and compact the fill in accordance with the job specifications and as required by the Geotechnical Engineer. The Contractor shall also remove all material considered by the Geotechnical Engineer to be unsuitable for use in the construction of engineered fills.

5. The Contractor shall have suitable and sufficient equipment in operation to handle the amount of fill being placed. When necessary, equipment will be shut down temporarily in order to permit the proper preparation of fills.

B. PREPARATION OF FILL AREAS

1. Excessive vegetation and all deleterious material should be disposed of offsite as required by the Geotechnical Engineer.

   Existing fill, soil, alluvium or rock materials determined by the Geotechnical Engineer as being unsuitable for placement in compacted fills shall be removed and hauled from the site. Where applicable, the Contractor may obtain the

approval of the Soils Engineer and the controlling authorities for the project to dispose of the above described materials, or a portion thereof, in designated areas onsite.

After removal of the deleterious materials have been accomplished, earth materials deemed unsuitable in their natural, in-place condition, shall be removed as recommended by the Geotechnical Engineer/Engineering Geologist.

2. Upon achieving a suitable bottom for fill placement, the exposed removal bottom shall be disced or bladed by the Contractor to the satisfaction of the Geotechnical Engineer. The prepared ground surfaces shall then be brought to the specified moisture content mixed as required, and compacted and tested as specified. In localities where it is necessary to obtain the approval of the controlling agency prior to placing fill, it will be the Contractor's responsibility to contact the proper authorities to visit the site.

3. Any underground structure such as cesspools, cisterns, mining shafts, tunnels, septic tanks, wells, pipelines or other structures not located prior to grading are to be removed or treated in a manner prescribed by the Geotechnical Engineer and/or the controlling agency for the project.

C. ENGINEERED FILLS

1. Any material imported or excavated on the property may be utilized as fill, provided the material has been determined to be suitable by the Geotechnical Engineer. Deleterious materials shall be removed from the fill as directed by the Geotechnical Engineer.

2. Rock or rock fragments less than twelve inches in the largest dimension may be utilized in the fill, provided they are not placed in concentrated pockets and the distribution of the rocks is approved by the Geotechnical Engineer.

3. Rocks greater than twelve inches in the largest dimension shall be taken offsite, or placed in accordance with the recommendations of the Geotechnical Engineer in areas designated as suitable for rock disposal.

4. All materials to be used as fill, shall be tested in the laboratory by the Geotechnical Engineer. Proposed import materials shall be approved by the Geotechnical Engineer 48 hours prior to importation.

5. The fill materials shall be placed by the Contractor in lifts, that when compacted, shall not exceed six inches. Each lift shall be spread evenly and shall be

thoroughly mixed to achieve a near uniform moisture condition and a uniform blend of materials.

All compaction shall be achieved at or above the optimum moisture content, as determined by the applicable laboratory standard. The Contractor will be notified if the fill materials are too wet or too dry to achieve the required compaction standard.

6. When the moisture content of the fill material is below the limit specified by the Geotechnical Engineer, water shall be added and the materials shall be blended until a uniform moisture content, within specified limits, is achieved. When the moisture content of the fill material is above the limits specified by the Geotechnical Engineer, the fill materials shall be aerated by discing, blading, mixed with dryer fill materials, or other satisfactory methods until the moisture content is within the specified limits.

7. Each fill lift shall be compacted to the minimum project standards, in compliance with the testing methods specified by the controlling governmental agency, and in accordance with recommendations of the Geotechnical Engineer.

   In the absence of specific recommendations by the Geotechnical Engineer to the contrary, the compaction standard shall be the most recent version of ASTM:D 1557.

8. Where a slope receiving fill exceeds a ratio of five-horizontal to one-vertical, the fill shall be keyed and benched through all unsuitable materials into sound bedrock or firm material, in accordance with the recommendations and approval of the Geotechnical Engineer.

9. Side hill fills shall have a minimum key width of 15 feet into bedrock or firm materials, unless otherwise specified in the soil report and approved by the Geotechnical Engineer in the field.

10. Drainage terraces and subdrainage devices shall be constructed in compliance with the ordinances of the controlling governmental agency and/or with the recommendations of the Geotechnical Engineer and Engineering Geologist.

11. The Contractor shall be required to maintain the specified minimum relative compaction out to the finish slope face of fill slopes, buttresses, and stabilization fills as directed by the Geotechnical Engineer and/or the governing agency for the project. This may be achieved by either overbuilding the slope and cutting

back to the compacted core; by direct compaction of the slope face with suitable equipment; or by any other procedure which produces the required result.

12. The fill portion of fill-over-cut slopes shall be properly keyed into rock or firm material; and the fill area shall be stripped of all soil or unsuitable materials prior to placing fill.

    The design cut portion of the slope should be made first and evaluated for suitability by the Engineering Geologist prior to placement of fill in the keyway above the cut slope.

13. Pad areas in cut or natural ground shall be approved by the Geotechnical Engineer. Finished surfaces of these pads may require scarification and recompaction, or over excavation as determined by the Geotechnical Engineer.

D. CUT SLOPES

1. The Engineering Geologist shall observe all cut slopes and shall be notified by the Contractor when cut slopes are to be started.

2. If, during the course of grading, unforeseen adverse or potentially adverse geologic conditions are encountered, the Engineering Geologist and Soil Engineer shall investigate, analyze and make recommendations to remediate these problems.

3. Non-erodible interceptor swales shall be placed at the top of cut slopes that face the same direction as the superjacent, prevailing drainage.

4. Unless otherwise specified in specific geotechnical reports, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of controlling governmental agencies.

5. Drainage terraces shall be constructed in compliance with the ordinances of the controlling governmental agencies, and/or in accordance with the recommendations of the Geotechnical Engineer or Engineering Geologist.

E. GRADING CONTROL

1. Fill placement shall be observed and tested by the Geotechnical Engineer and/or his representative during grading.

   Field density tests shall be made by the Geotechnical Engineer and/or his representative to evaluate the compaction and moisture compliance of each fill lift. Density tests shall be conducted at intervals not to exceed two feet of fill

height. Where sheepsfoot rollers are used, the fill may be disturbed to a depth of several inches. Density determinations shall be taken in the compacted material below the disturbed surface at a depth determined by the Geotechnical Engineer or his representative.

2. Where tests indicate that the density of any layer of fill, or portion thereof, is below the required relative compaction, or improper moisture content is in evidence, that particular layer or portion thereof shall be reworked until the required density and/or moisture content has been attained. Additional fills shall not be placed over an area until the previous lift of fill has been tested and found to meet the density and moisture requirements for the project and the previous lift is approved by the Geotechnical Engineer.

3. When grading activities are interrupted by heavy rains, fill operations shall not be resumed until field observations and tests by the Geotechnical Engineer indicate the moisture content and density of the fill are within the specified limits.

4. During construction, the Contractor shall properly grade all surfaces to maintain good drainage and prevent the ponding of water. The Contractor shall take remedial action to control surface water and to prevent erosion of graded areas until such time as a permanent drainage and erosion devices have been installed.

5. Observation and testing by the Geotechnical Engineer and/or his representative shall be conducted during filling and compacting operations in order that he will be able to state in his opinion that all cut and filled areas are graded in accordance with the approved specifications.

6. Upon the completion of grading activities and after the Geotechnical Engineer and Engineering Geologist have finished their observations of the work, final reports shall be submitted. No further excavation or fill placement shall be undertaken without prior notification of the Geotechnical Engineer and/or Engineering Geologist.

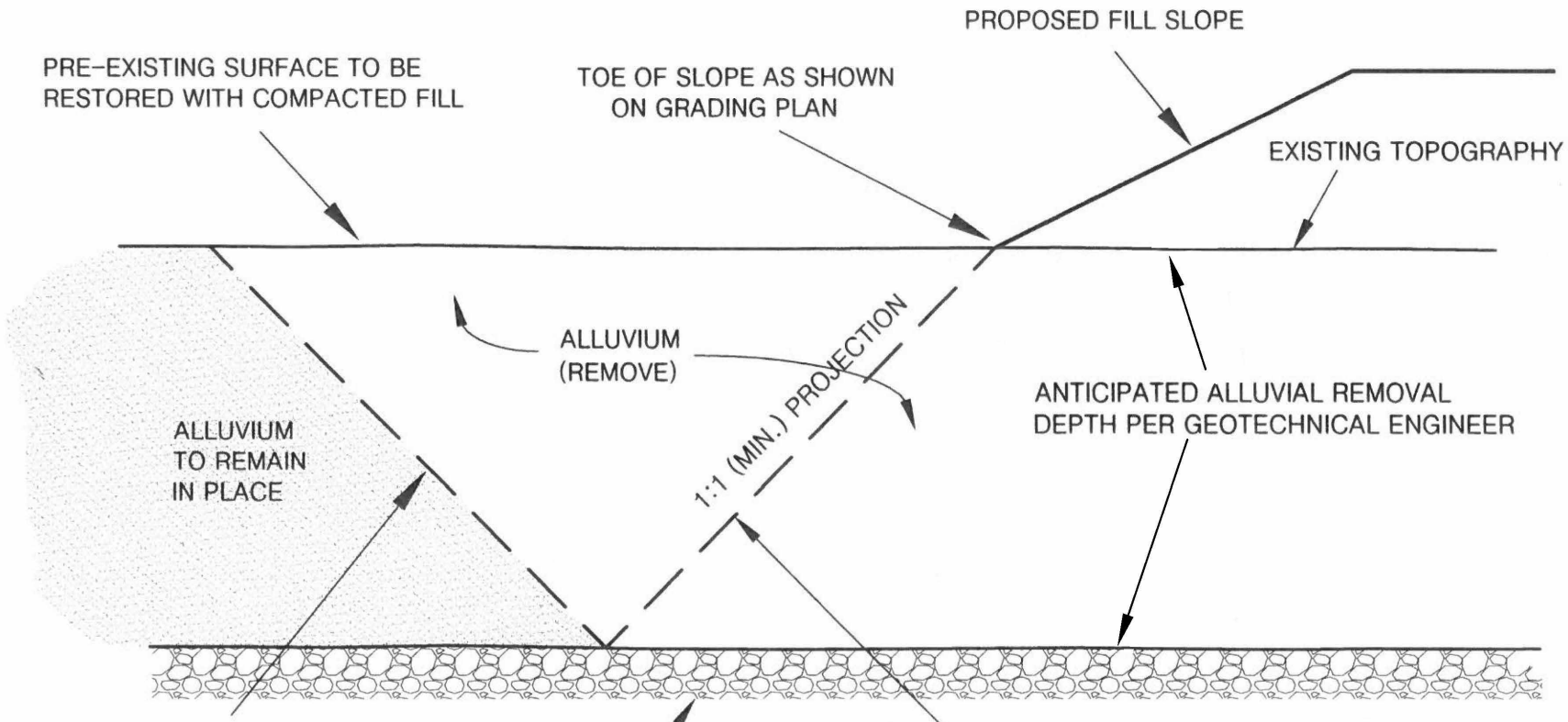
F. FINISHED SLOPES

All finished cut and fill slopes shall be planted and irrigated and/or protected from erosion in accordance with the project specifications, governing agencies, and/or as recommended by a landscape architect.

APPENDIX G

Grading Details

DETAIL FOR FILL SLOPE TOEING OUT ON FLAT ALLUVIATED CANYON



ALTA CALIFORNIA GEOTECHNICAL, INC.
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PLATE G-1

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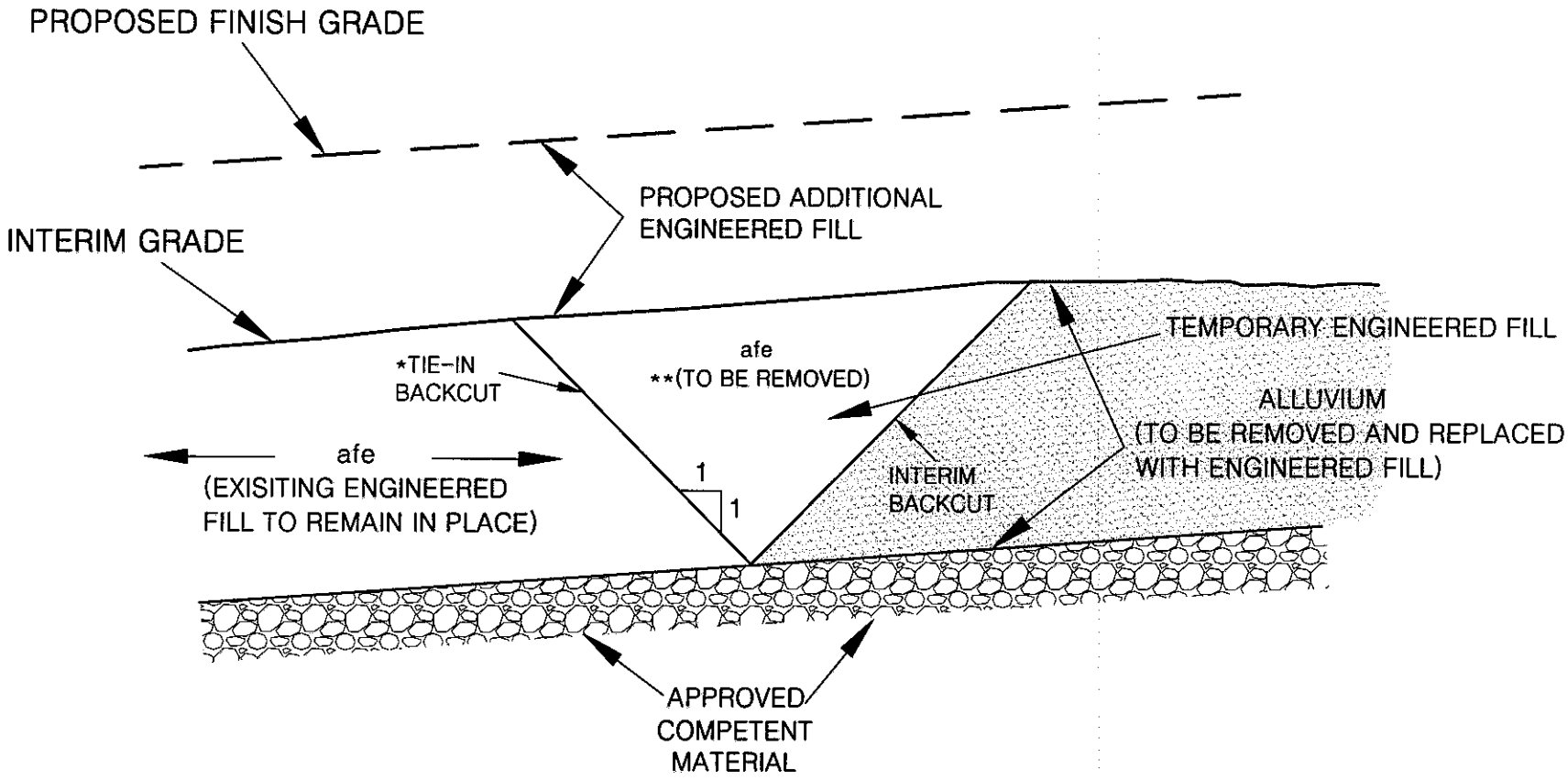
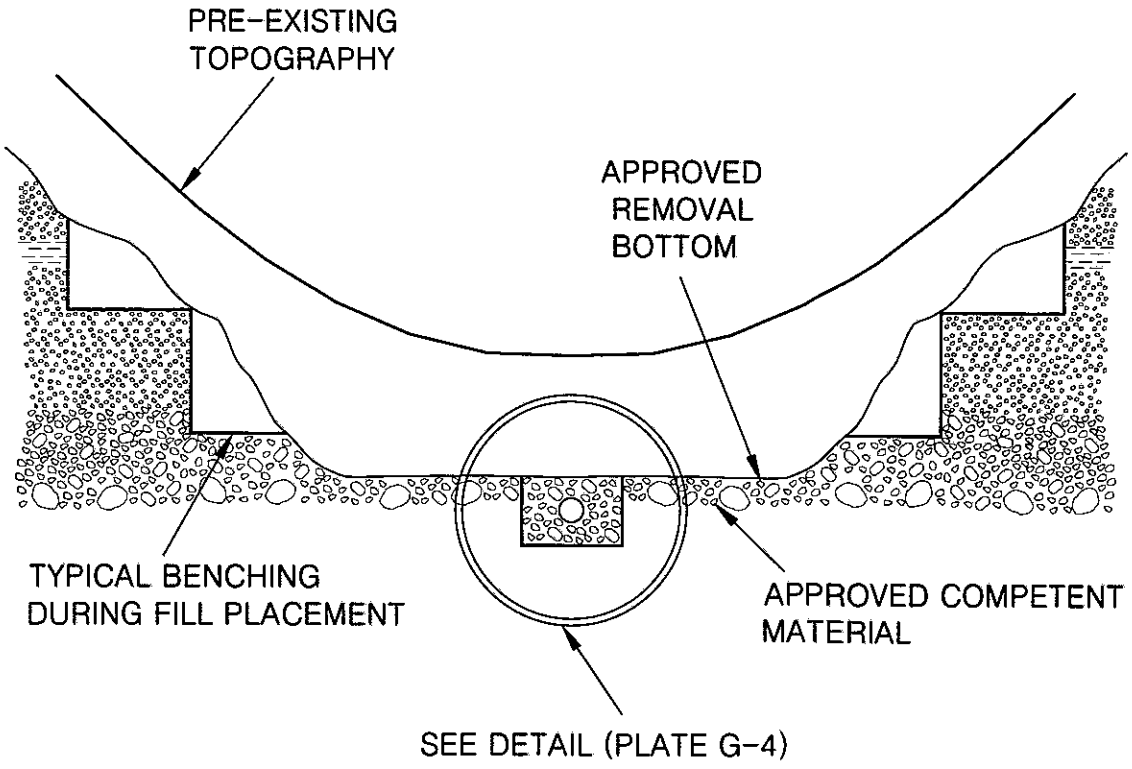
REMOVAL ADJACENT TO EXISTING FILL



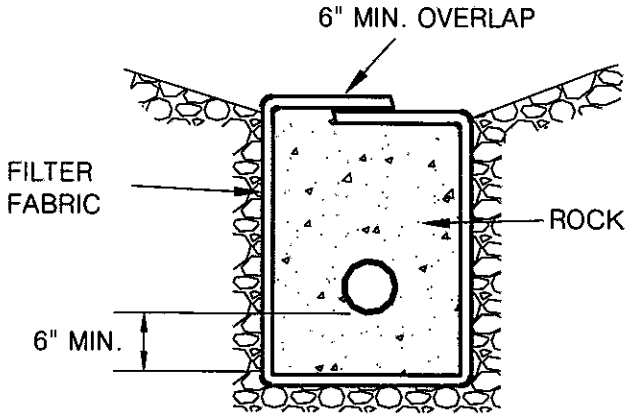
*INITIATE 1:1 TIE-IN BACKCUT TO INTERCEPT TOE OF INTERIM BACKCUT

**AS PART OF TIE-IN FOR ADDITIONAL ENGINEERED FILL

CANYON SUBDRAIN



CANYON SUBDRAIN DETAIL



PERFORATED PIPE SURROUNDED WITH ROCK AND FILTER FABRIC

ROCK: MIN. VOLUME OF 9 CU.FT. PER LINEAR FT. OF 3/4 IN. MAX. ROCK

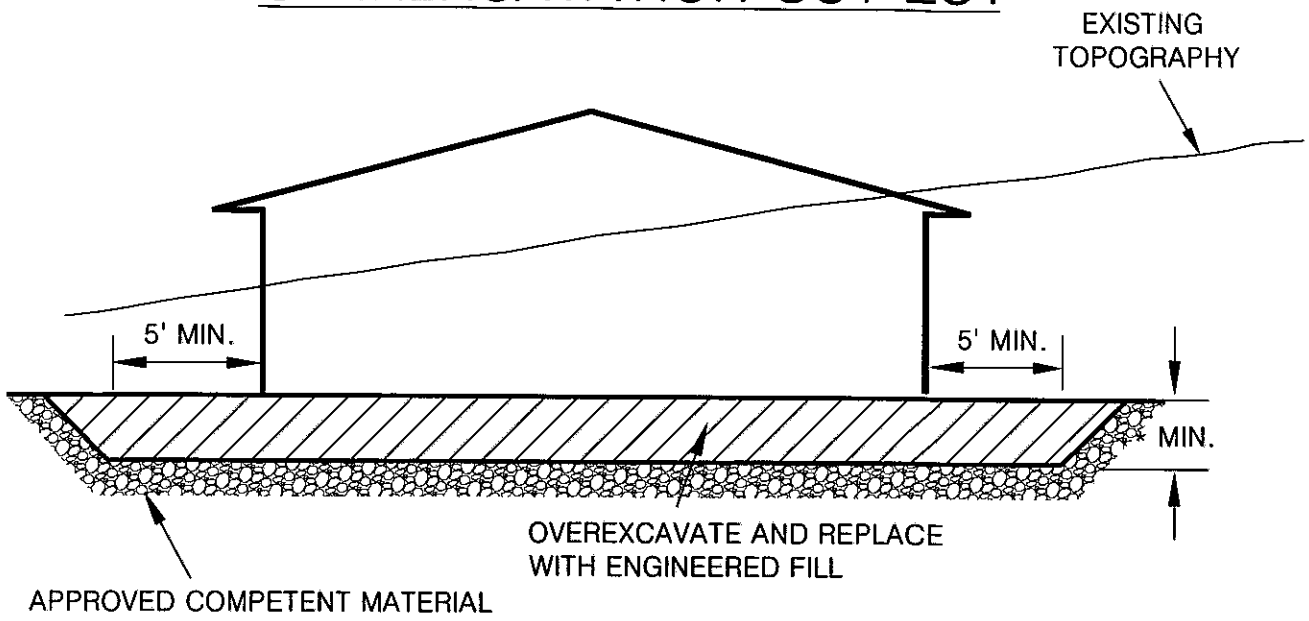
PIPE: 6 IN. ABS OR PVC PIPE WITH A MINIMUM OF 8 PERFORATIONS (1/4-IN. DIA.) PER LINEAL FT. IN BOTTOM HALF OF PIPE ASTM D2751, SDR 35, OR ASTM D3034 OR ASTM D1527, SCHD. 40 ASTM D1785, SCHD. 40

FILTER FABRIC: MIRAFI 140 FILTER FABRIC OR APPROVED EQUIVALENT

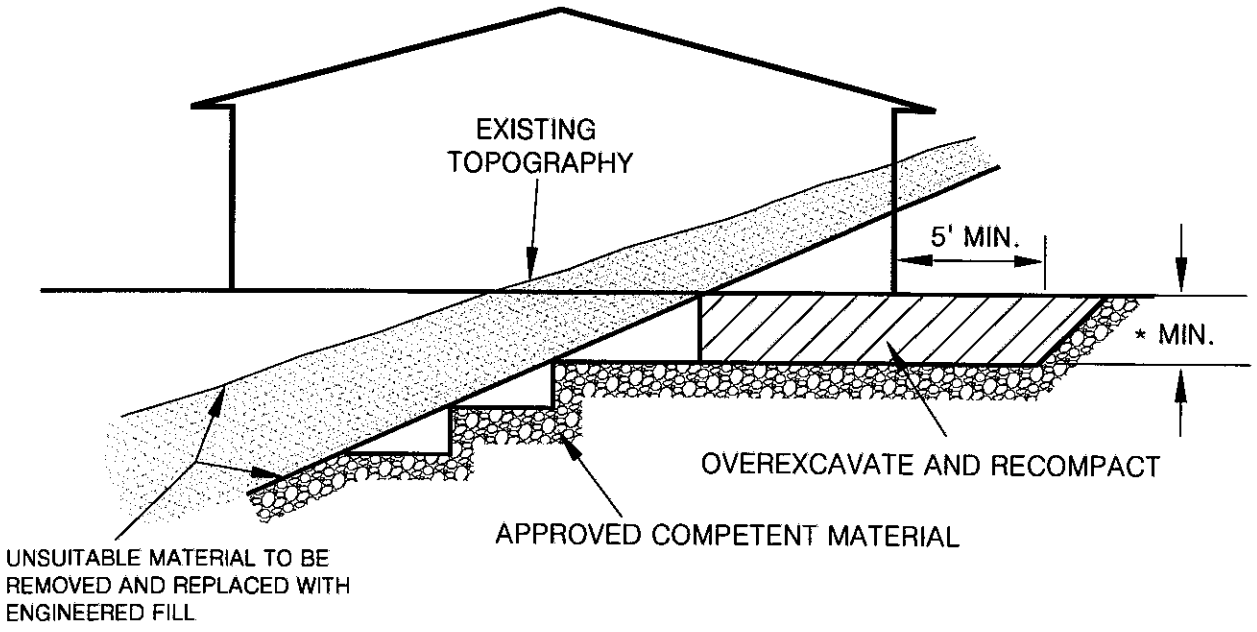
NOTES:

1. FOR CONTINUOUS RUN IN EXCESS OF 500. FT USE 8 IN. DIA. PIPE
2. ENGINEERED FILL PLACED BELOW DRAINS SHALL BE COMPACTED TO 93% OF THE LABORATORY MAXIMUM DRY DENSITY (ASTM:D1557)

OVEREXCAVATION CUT LOT



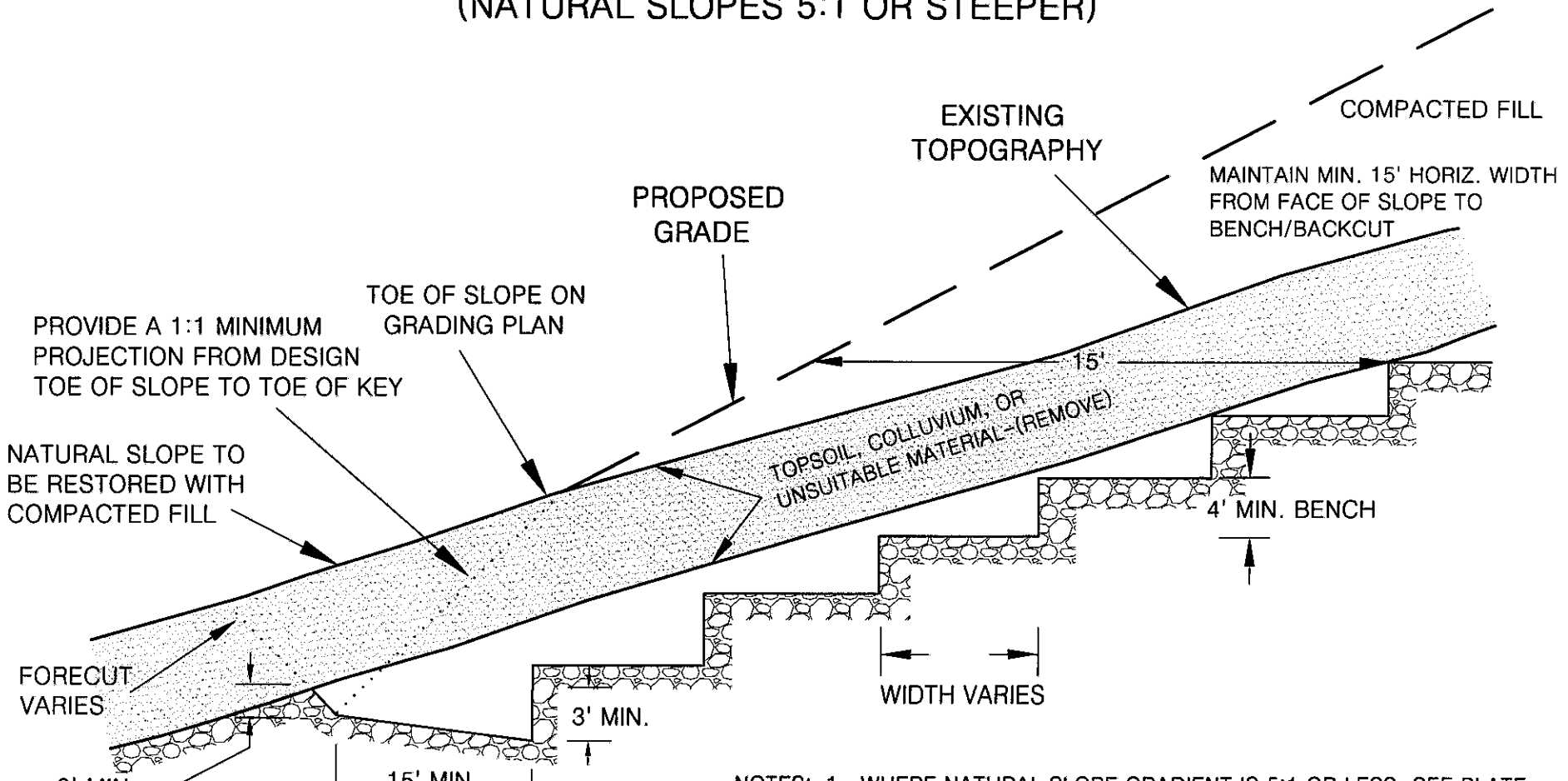
CUT-FILL LOT (TRANSITION)



*NOTE ALL BUILDING PADS SHALL BE OVER EXCAVATED TO A MINIMUM OF 1/3 OF THE MAXIMUM DEPTH OF FILL BELOW THE BUILDING PAD TO A MAXIMUM OF 17 FEET (SEE PLATE G-16)

SIDE HILL SLOPE FILL DETAIL

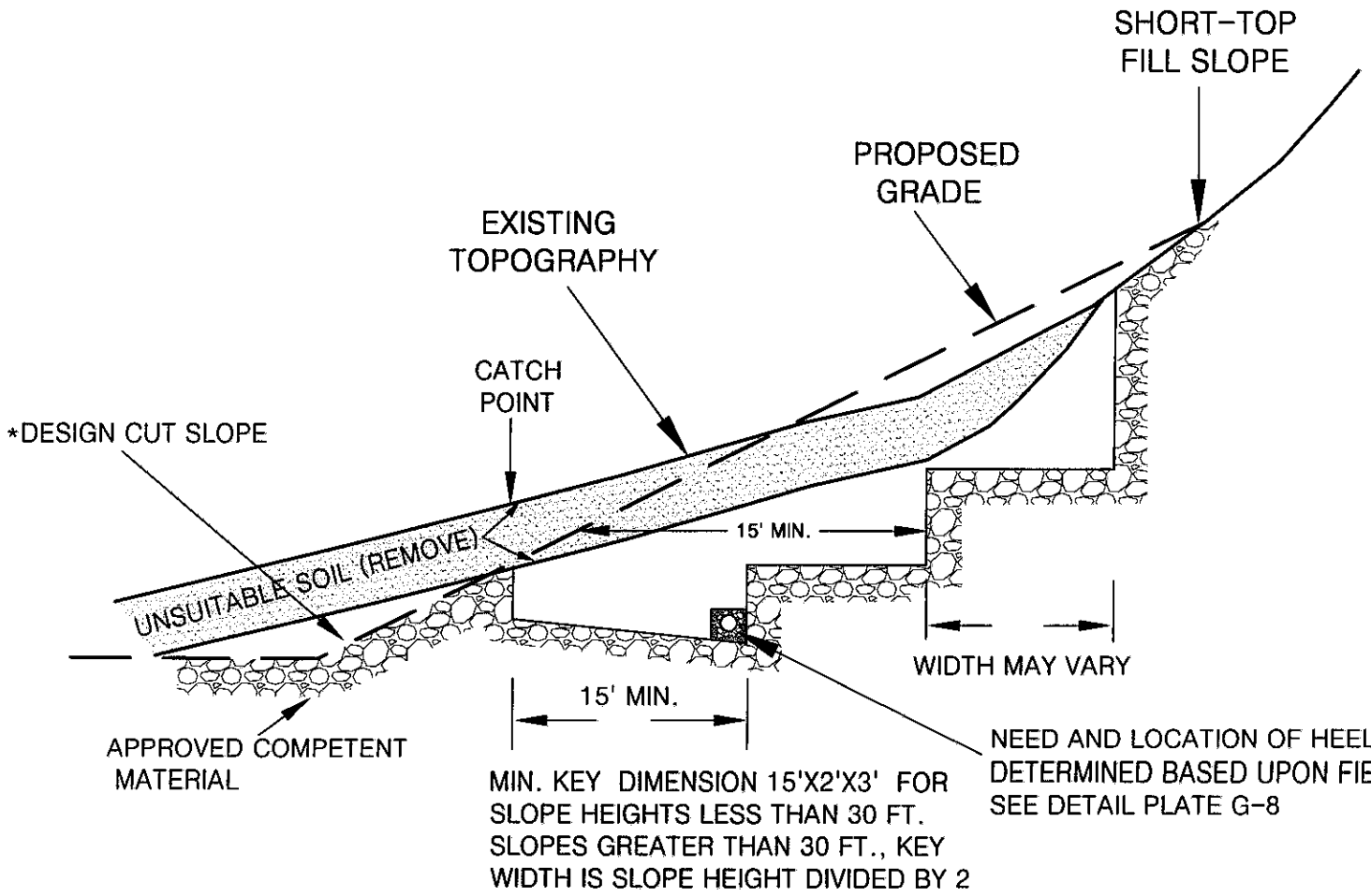
(NATURAL SLOPES 5:1 OR STEEPER)



NOTES:

1. WHERE NATURAL SLOPE GRADIENT IS 5:1 OR LESS, SEE PLATE G-1. WHERE THE NATURAL SLOPE APPROACHES OR EXCEEDS THE DESIGN SLOPE RATIO, SPECIAL RECOMMENDATIONS WILL BE PROVIDED BY THE GEOTECHNICAL ENGINEER.
2. THE NEED FOR AND PLACEMENT OF DRAINS WILL BE DETERMINED BY THE GEOTECHNICAL ENGINEER OR GEOLOGIST BASED UPON EXPOSED FIELD CONDITIONS.

FILL OVER CUT SLOPE DETAIL

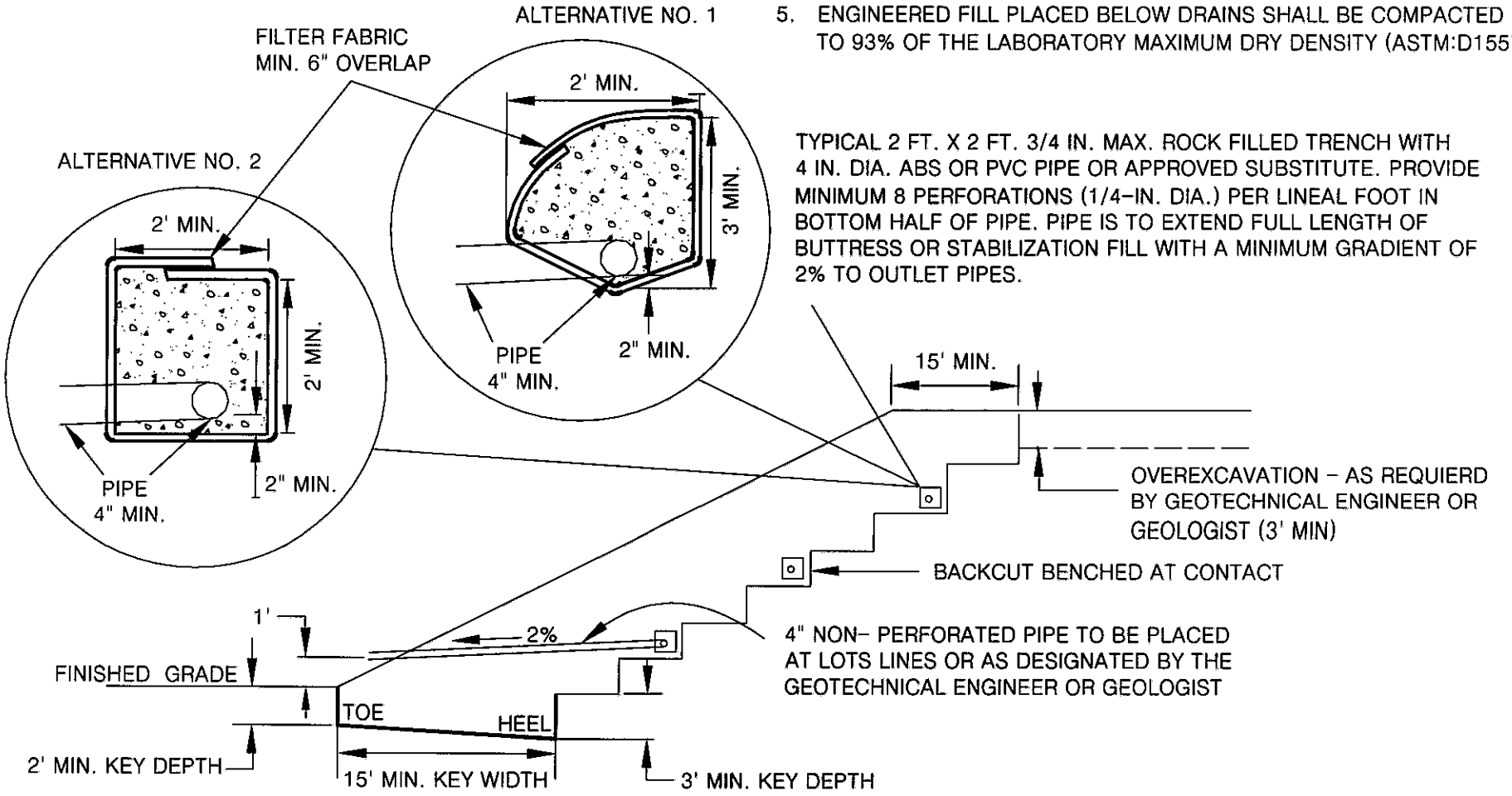


*THE CUT PORTION OF THE SLOPE SHOULD BE EXCAVATED AND EVALUATED BY THE ENGINEERING GEOLOGIST/GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTING THE FILL SLOPE

STABILIZATION/BUTTRESS FILL BACKDRAIN

NOTE:

1. ASTM D2751, SDR 35, OR ASTM D3034 OR ASTM D1527, SCHD. 40 ASTM D1785, SCHD. 40
2. SOLID PIPE OUTLETS TO BE PROVIDED EVERY 100 FT. AND JOINED TO PERFORATED BACKDRAIN PIPE WITH "L" OR "T"s. MIN. 2% GRADIENT.
3. GRAVEL TRENCH TO BE FILLED WITH 3/4 IN. MAXIMUM ROCK
4. THE NECESSITY FOR UPPER TIER BACKDRAINS SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER OR GEOLOGIST. UPPER TIER OUTLETS SHOULD DRAIN INTO PAVED TERRACE DRAINS.
5. ENGINEERED FILL PLACED BELOW DRAINS SHALL BE COMPACTED TO 93% OF THE LABORATORY MAXIMUM DRY DENSITY (ASTM:D1557)



ALTA CALIFORNIA GEOTECHNICAL, INC.
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PLATE G-8

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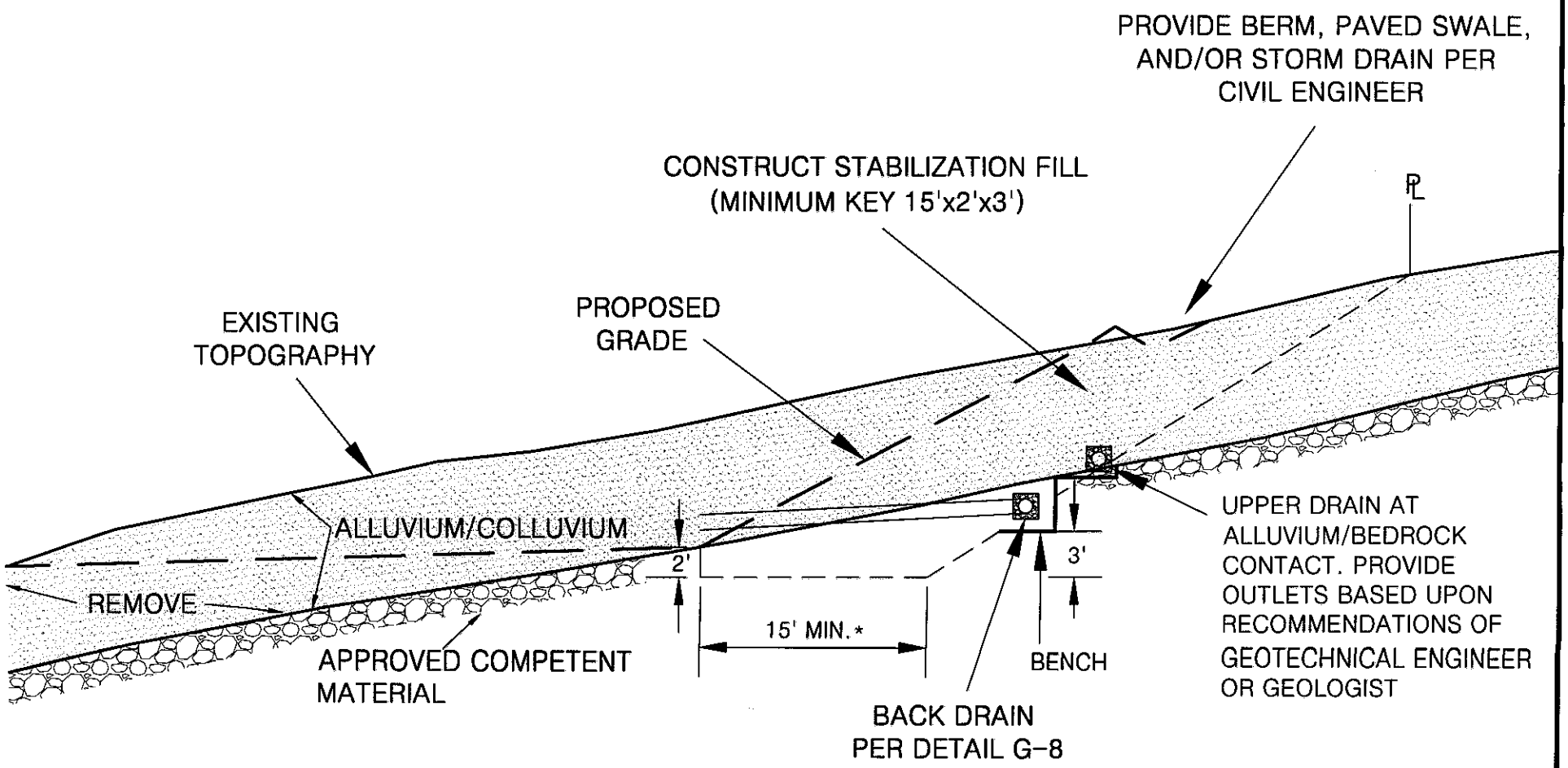
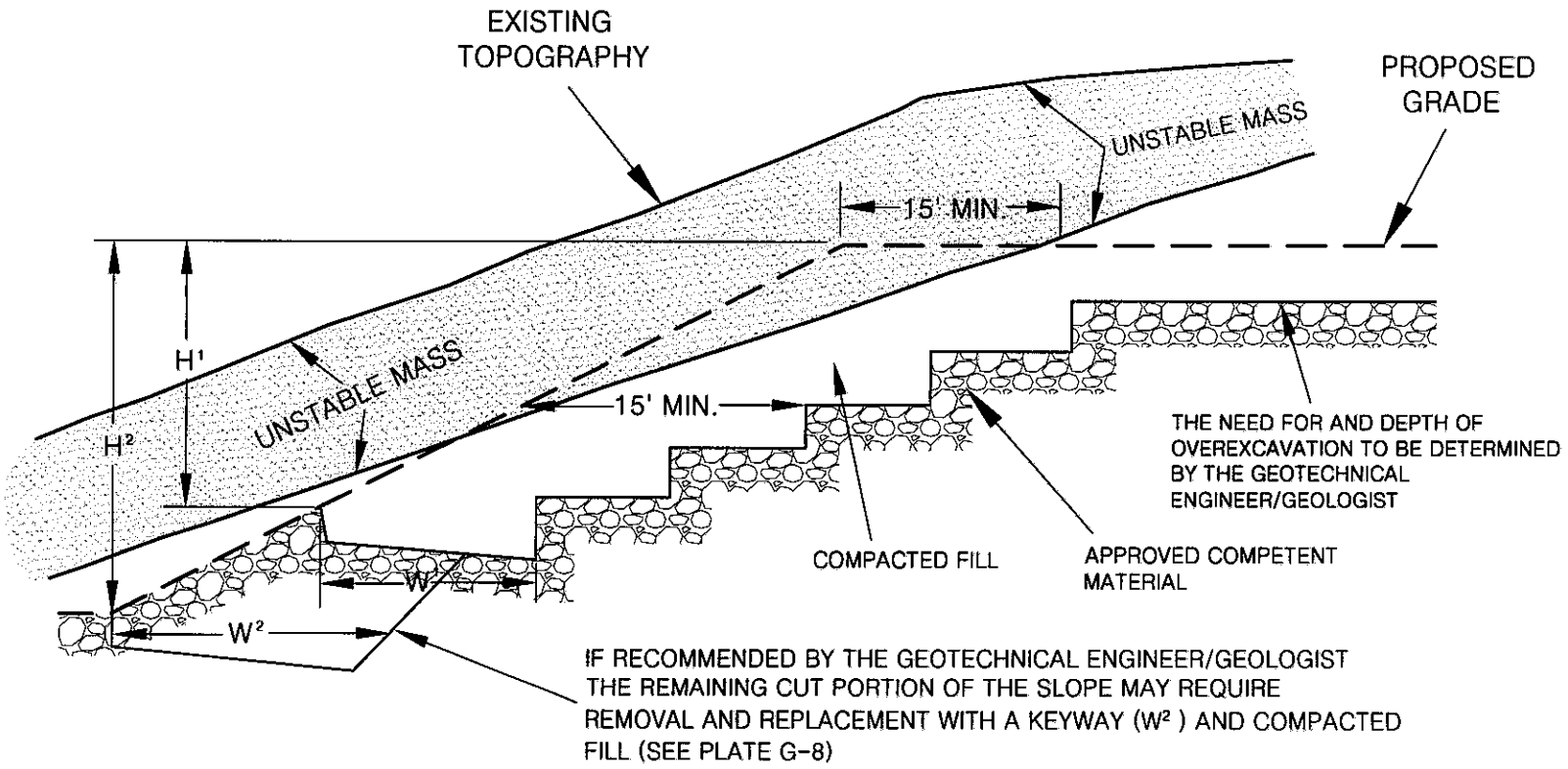
STABILIZATION FILL

(UPSLOPE ALLUVIATED AREA)



* FOR SLOPE HEIGHTS LESS THAN 30 FT. SLOPES GREATER THAN 30 FT., KEY WIDTH IS SLOPE HEIGHT DIVIDED BY 2

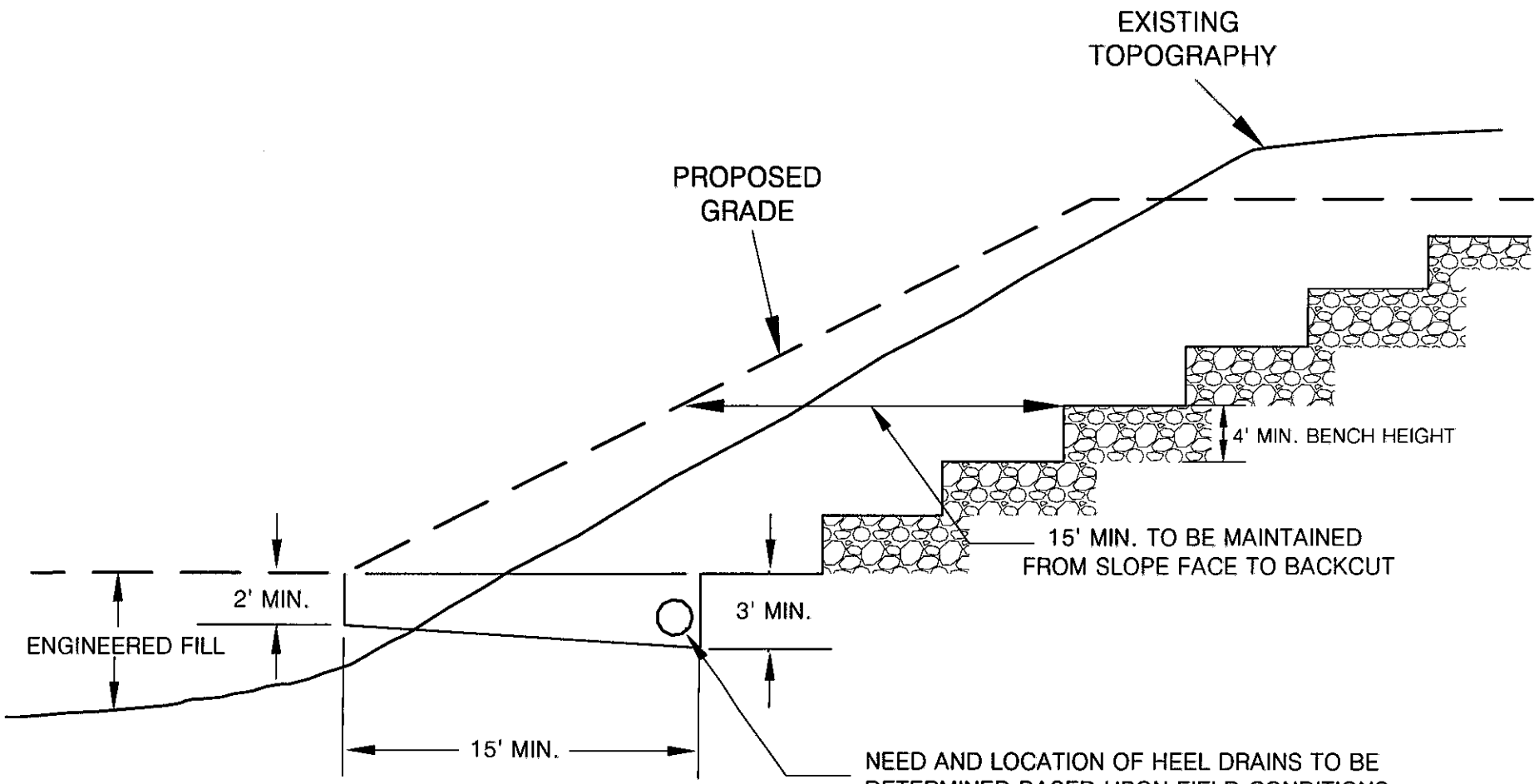
SELECTIVE GRADING DETAIL FOR STABILIZATION FILL
UNSTABLE MATERIAL EXPOSED IN PORTION OF CUT SLOPE



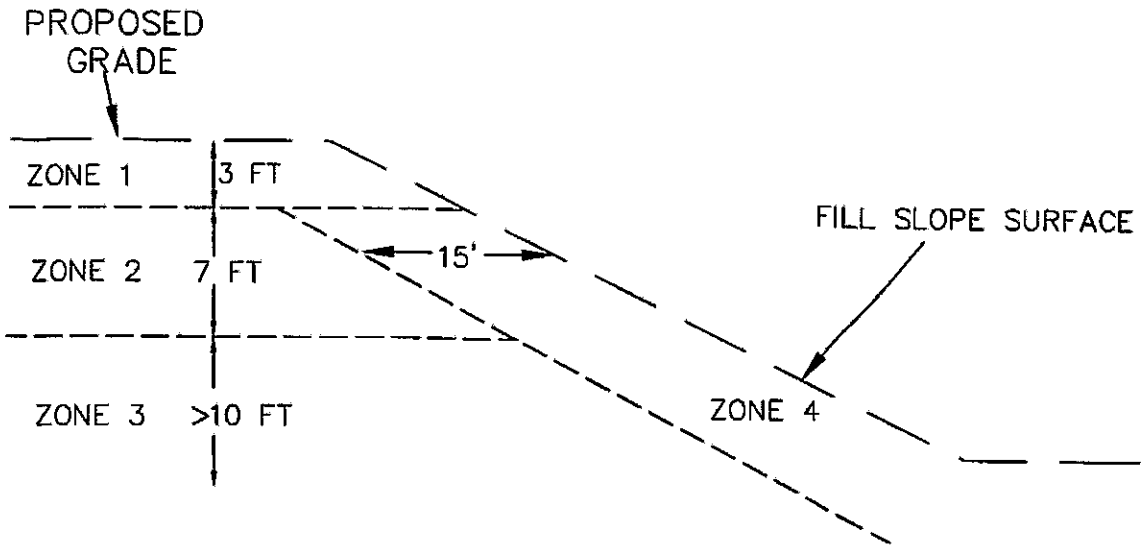
NOTES: 1. BACKDRAINS ARE NOT REQUIRED UNLESS SPECIFIED.

2. "W" SHALL BE EQUIPMENT WIDTH (15') FOR SLOPE HEIGHT LESS THAN 25 FEET. FOR SLOPES GREATER THAN 25 FEET, "W" SHALL BE DETERMINED BY THE PROJECT GEOTECHNICAL ENGINEER/GEOLOGIST. AT NO TIME SHALL "W" BE LESS THAN H/2.

SKIN FILL SLOPE OVER NATURAL GROUND



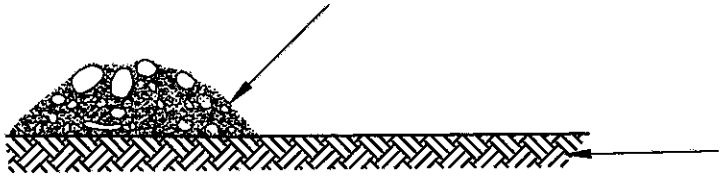
DETAIL FOR MAXIMUM PARTICLE DIMENSION



ZONE	DEPTH	PARTICLE MAX. DIMENSION	PLACEMENT METHOD
1	0-3 ft.	≤1.0 ft.	STANDARD OR CONVENTIONAL COMPACTION METHODS (SEE EARTHWORK SPECIFICATIONS)
2	3-10 ft.	≤2.0 ft.	ROCK BLANKETS (SEE PLATE G-13)
3	>10 ft.	≤8.0 ft.	ROCK BLANKETS (PLATE G-13) ROCK WINDROW (PLATE G-14) INDIVIDUAL ROCK BURIED (PLATE G-15)
4	15 HORIZONTAL FEET FROM FILL SLOPE FACE	≤1.0 ft.	STANDARD OR CONVENTIONAL COMPACTION METHODS (SEE EARTHWORK SPECIFICATIONS)

ROCK BLANKET DETAILS

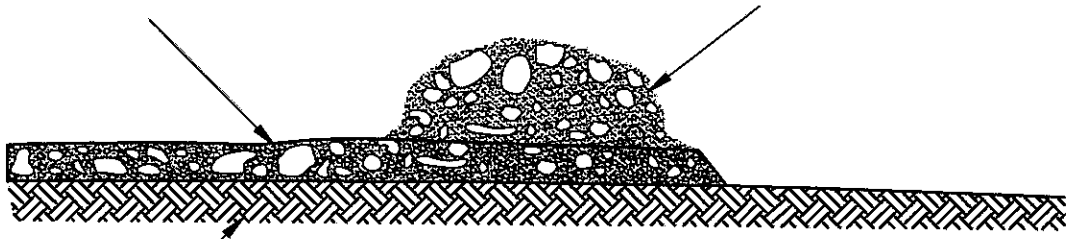
LOOSE PILE 1
LOOSE, DUMPED ROCK, GRAVEL AND SAND MIXTURE REMOVE FRAGMENTS LARGER THAT 2 FEET FOR ISOLATED BURIAL (PLATE G-15) OR WINDROW (PLATE G-10)



APPROVED BOTTOM, OR TOP OF PREVIOUSLY APPROVED BLANKET FILL

COMPACT PILE 1
SPREAD LOOSE PILE FORWARD WITH HEAVY TRACKED DOZER (D-8 OR LARGER). HEAVILY WATER, TRACK, AND APPLY ADDITIONAL SAND AND GRAVEL AS NECESSARY TO FILL VOIDS AND CREATE A DENSE MATRIX OF ROCK, COBBLES, GRAVEL AND SAND (2 FOOT MAXIMUM THICKNESS)

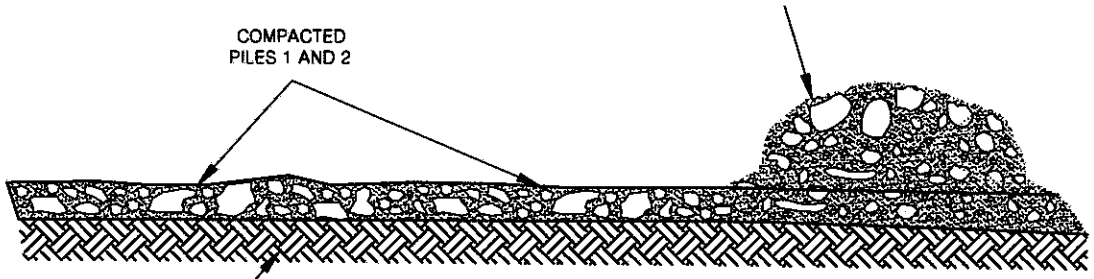
LOOSE PILE 2
DUMP SUCCESSIVE PILES OF LOOSE ROCK, GRAVEL AND SAND MIXTURE ON FORWARD EDGE OF PREVIOUSLY COMPACTED LIFT WITH TRUCKS AND/OR SCRAPERS. USE PREVIOUS LIFT TO ACCESS AND FURTHER COMPACT PILE 1.



APPROVED BOTTOM, OR TOP OF PREVIOUSLY APPROVED BLANKET FILL

LOOSE PILE 3
DUMP SUCCESSIVE PILES OF LOOSE ROCK, GRAVEL AND SAND MIXTURE ON FORWARD EDGE OF PREVIOUSLY COMPACTED LIFT WITH TRUCKS AND/OR SCRAPERS. USE PREVIOUS LIFT TO ACCESS AND FURTHER COMPACT EXISTING BLANKET.

COMPACTED PILES 1 AND 2

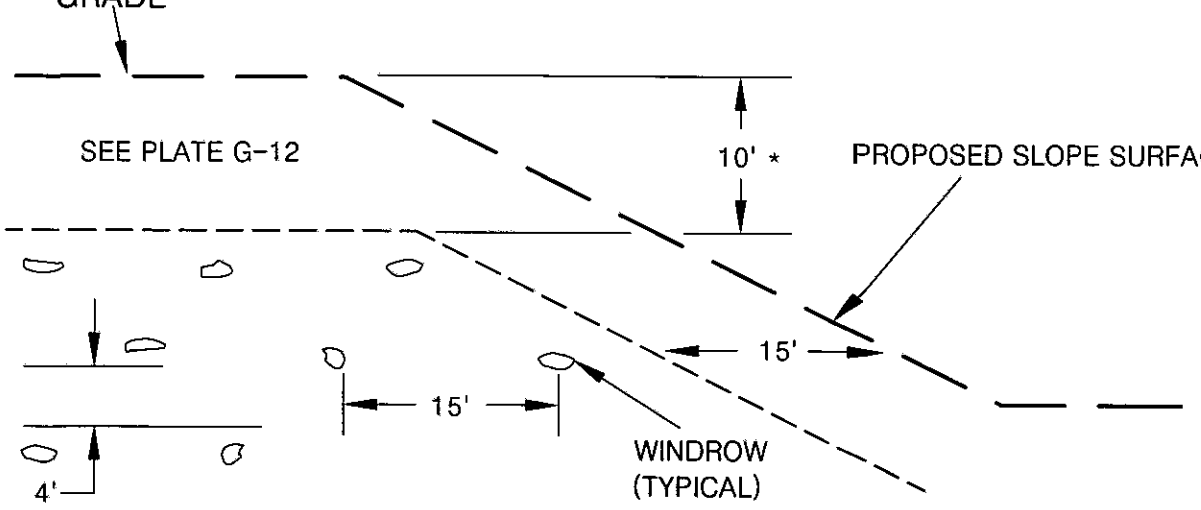


APPROVED BOTTOM, OR TOP OF PREVIOUSLY APPROVED BLANKET FILL

OBSERVATION TESTING AND APPROVAL PROCEDURES

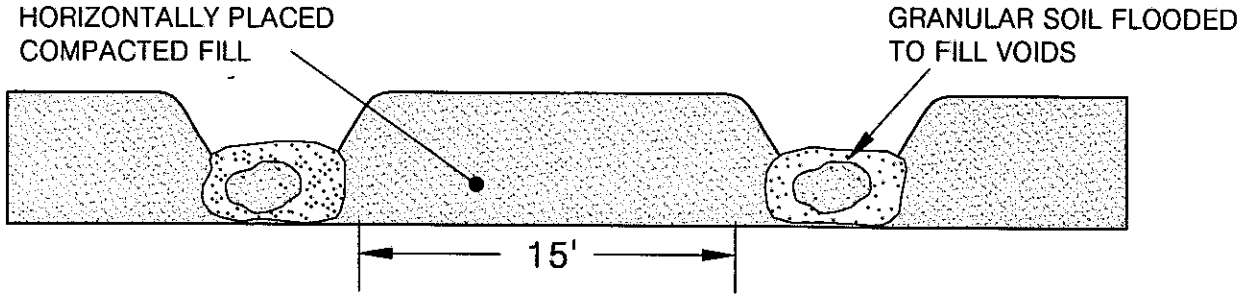
OBSERVE EQUIPMENT. SCRAPERS AND TRUCKS SHOULD BE FULLY SUPPORTED ON BLANKET WITHOUT SIGNIFICANT YIELDING. EXCAVATE TEST/OBSERVATION PITS TO CONFIRM EXISTENCE OF MIXTURE OF VARIOUS PARTICLE SIZES, WITHOUT SIGNIFICANT VOIDS, AND FORMING A DENSE, COMPACTED FILL MATRIX. TEST BY ASTM D1556, D2922 AND/OR D3017 WHEN APPROPRIATE. RECORD LIMITS AND ELEVATION OF BLANKET. ALL FILL AND COMPACTION OPERATIONS TO BE CONDUCTED UNDER THE OBSERVATION OF THE GEOTECHNICAL ENGINEER. SUBSEQUENT LIFTS TO BE APPLIED ONLY AFTER OBSERVATION AND CONFIRMATION OF SUITABILITY OF FILL AND RELEASE BY THE GEOTECHNICAL ENGINEER. BLANKETS TO BE CONSTRUCTED IN ACCORDANCE WITH PLATE G-12.

ROCK WINDROW DETAIL



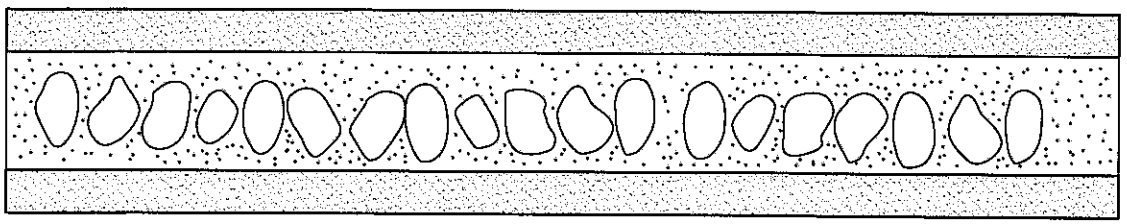
NOTE: OVERSIZED MATERIAL SHOULD BE REMOVED FROM THE 15' CLEAR ZONES WITH SPECIAL EQUIPMENT, SUCH AS A ROCK RAKE, PRIOR TO PLACING THE NEXT FILL LIFT.
*VARIANCES TO THE ABOVE ROCK HOLD DOWN MAY BE GRANTED SUBJECT TO APPROVAL BY THE OWNER, GEOTECHNICAL ENGINEER, AND GOVERNING AGENCY

TYPICAL WINDROW DETAIL (END VIEW)

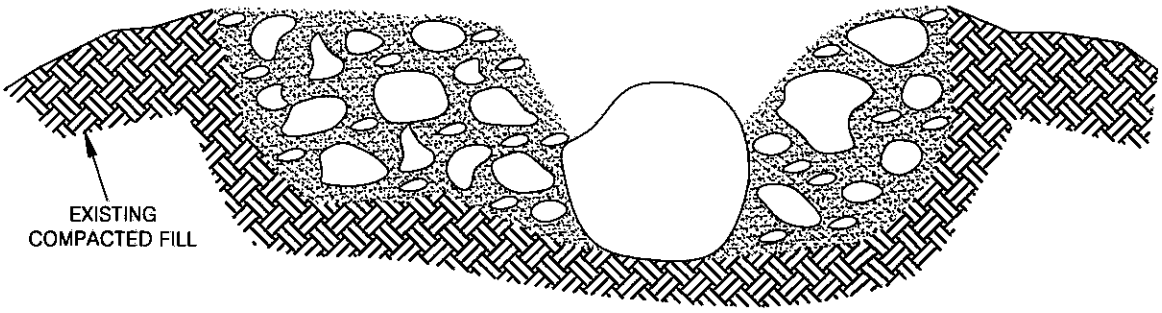


NOTE: COMPACTED FILL SHALL BE BROUGHT UP TO A HIGHER ELEVATION ALONG EACH WINDROW SO GRANULAR SOIL CAN BE FLOODED IN A "TRENCH CONDITION".

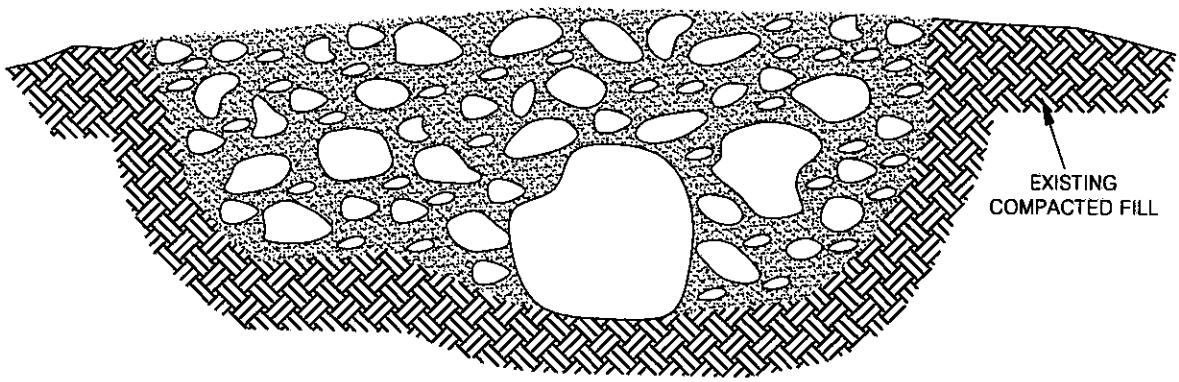
PROFILE VIEW



ISOLATED ROCK BURIAL DETAILS

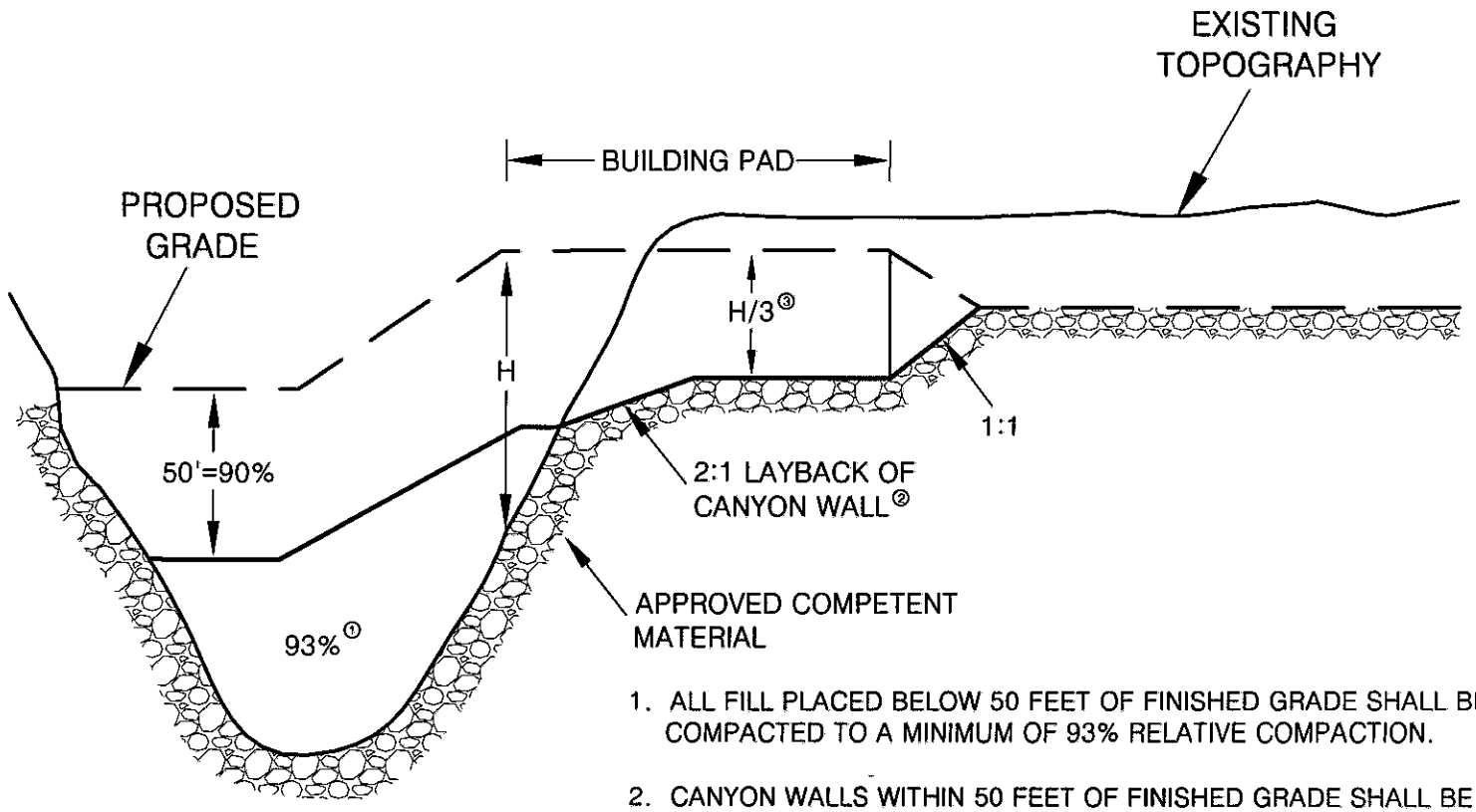


EXCAVATE HOLE INTO EXISTING FILL PRISM, PLACE BOULDER (< 8 feet in maximum dimension) INTO EXISTING COMPACTED FILL. SURROUND WITH SAND, GRAVEL, COBBLES AND WATER HEAVILY. TRACK WITH D8 OR LARGER EQUIPMENT UNTIL RESULTING FILL FULLY SUPPORTS EQUIPMENT. OBSERVE AND/OR TEST IN ACCORDANCE WITH ASTM D1556, D2922 OR D3017. ROCKS LARGER THAN 8 FEET SHALL BE FURTHER REDUCED IN SIZE BY SECONDARY BREAKING.



RELATIVE COMPACTION VS. DEPTH

CANYON WALL LAY BACK
DIFFERENTIAL FILL OVEREXCAVATION DETAILS



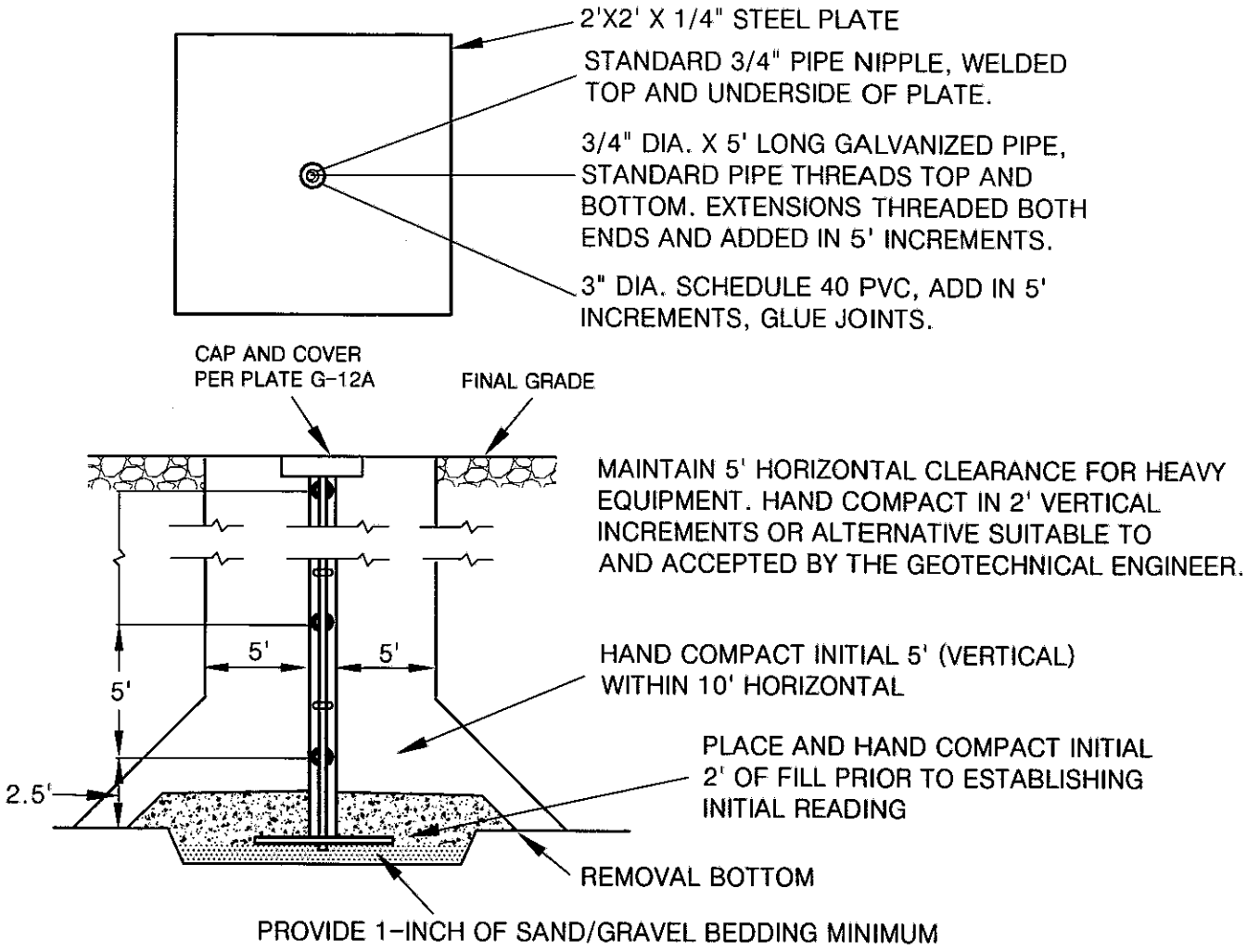
1. ALL FILL PLACED BELOW 50 FEET OF FINISHED GRADE SHALL BE COMPACTED TO A MINIMUM OF 93% RELATIVE COMPACTION.

2. CANYON WALLS WITHIN 50 FEET OF FINISHED GRADE SHALL BE LAID BACK TO A SLOPE RATIO OF 2:1 OR FLATTER.

3. ALL BUILDING PADS SHALL BE OVER EXCAVATED TO A MINIMUM OF 1/3 OF THE MAXIMUM DEPTH OF FILL BELOW THE BUILDING PAD TO A MAXIMUM OF 17 FEET.

4. IF THE 2:1 LAY BACK OF THE CANYON WALL IS IMPRACTICAL, THEN AS AN ALTERNATIVE THE INCREASED COMPACTION STANDARDS IN NOTE 1 SHOULD BE EXTENDED UP TO H/3 AND THE LAY BACK WILL NOT BE REQUIRED.

SETTLEMENT PLATE DETAIL



NOTES:

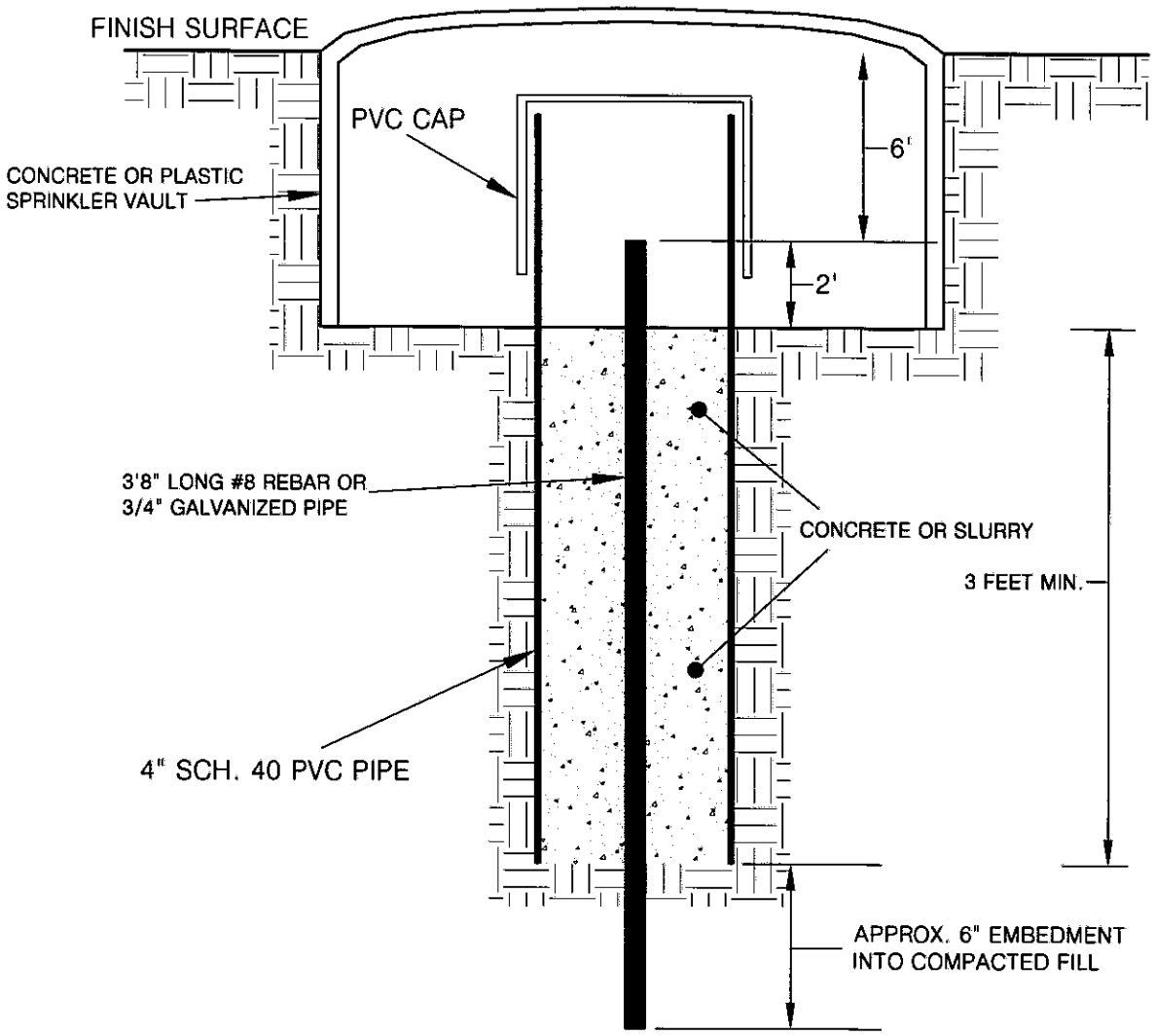
1) LOCATIONS OF SETTLEMENT PLATES SHALL BE CLEARLY MARKED AND READILY VISIBLE (RED FLAGGED) TO EQUIPMENT OPERATORS.

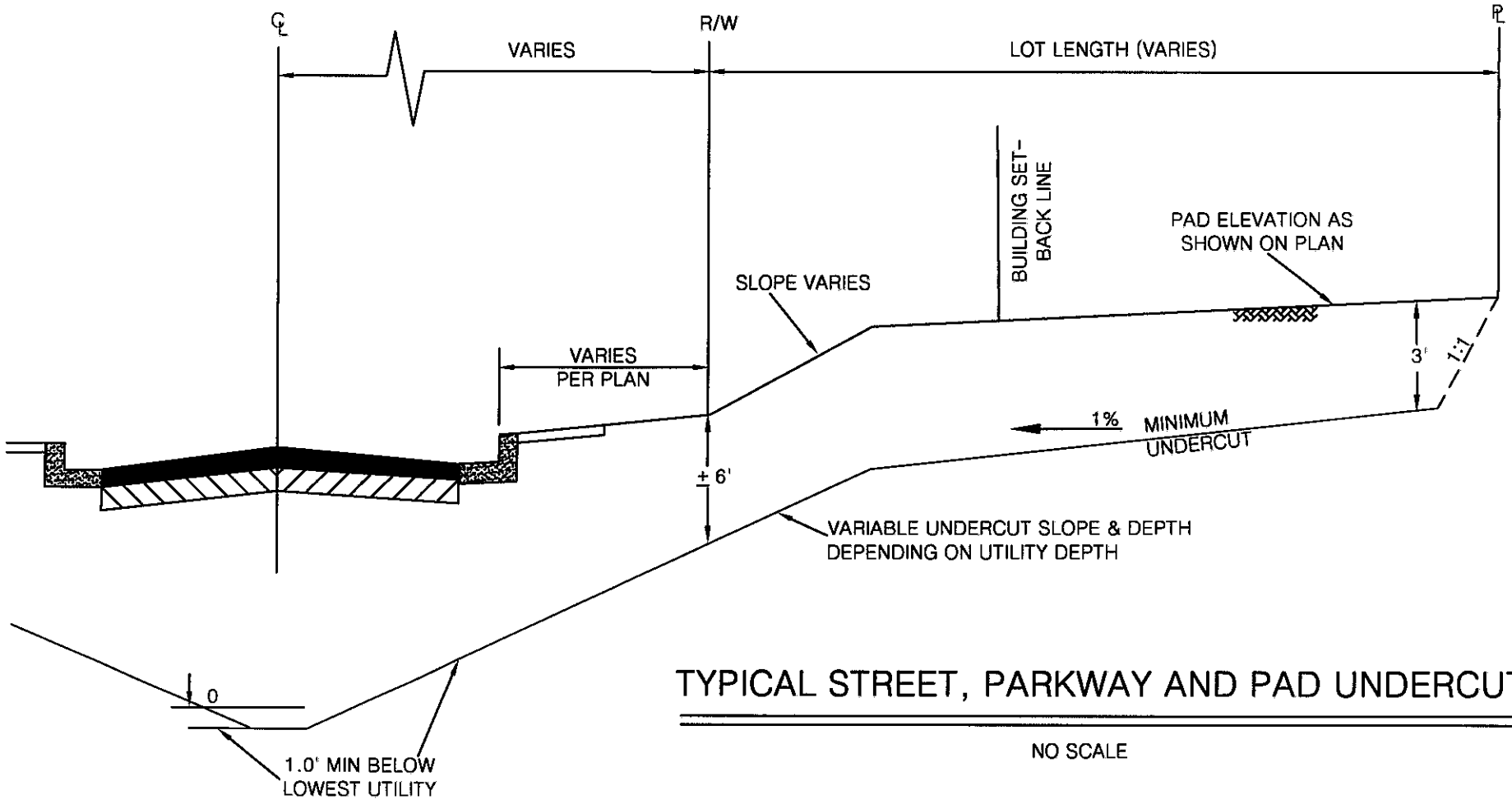
2) CONTRACTOR SHALL MAINTAIN 10' HORIZONTAL CLEARANCE FOR HEAVY EQUIPMENT WITHIN 5' (VERTICAL) OF PLATE BASE. FILL WITHIN CLEARANCE AREA SHALL BE HAND COMPACTED TO PROJECT SPECIFICATIONS OR COMPACTED BY ALTERNATIVE APPROVED BY THE GEOTECHNICAL ENGINEER.

3) AFTER 5' (VERTICAL) OF FILL IS IN PLACE, CONTRACTOR SHALL MAINTAIN 5' HORIZONTAL EQUIPMENT CLEARANCE. FILL IN CLEARANCE AREA SHALL BE HAND COMPACTED (OR APPROVED ALTERNATIVE) IN VERTICAL INCREMENTS NOT TO EXCEED 2 FEET.

4) IN THE EVENT OF DAMAGE TO SETTLEMENT PLATE OR EXTENSION RESULTING FROM EQUIPMENT OPERATING WITHIN PRESCRIBED CLEARANCE AREA, CONTRACTOR SHALL IMMEDIATELY NOTIFY GEOTECHNICAL ENGINEER AND SHALL BE RESPONSIBLE FOR RESTORING THE SETTLEMENT PLATE AND EXTENSION RODS TO WORKING ORDER.

SURFACE SETTLEMENT MONUMENT DETAIL





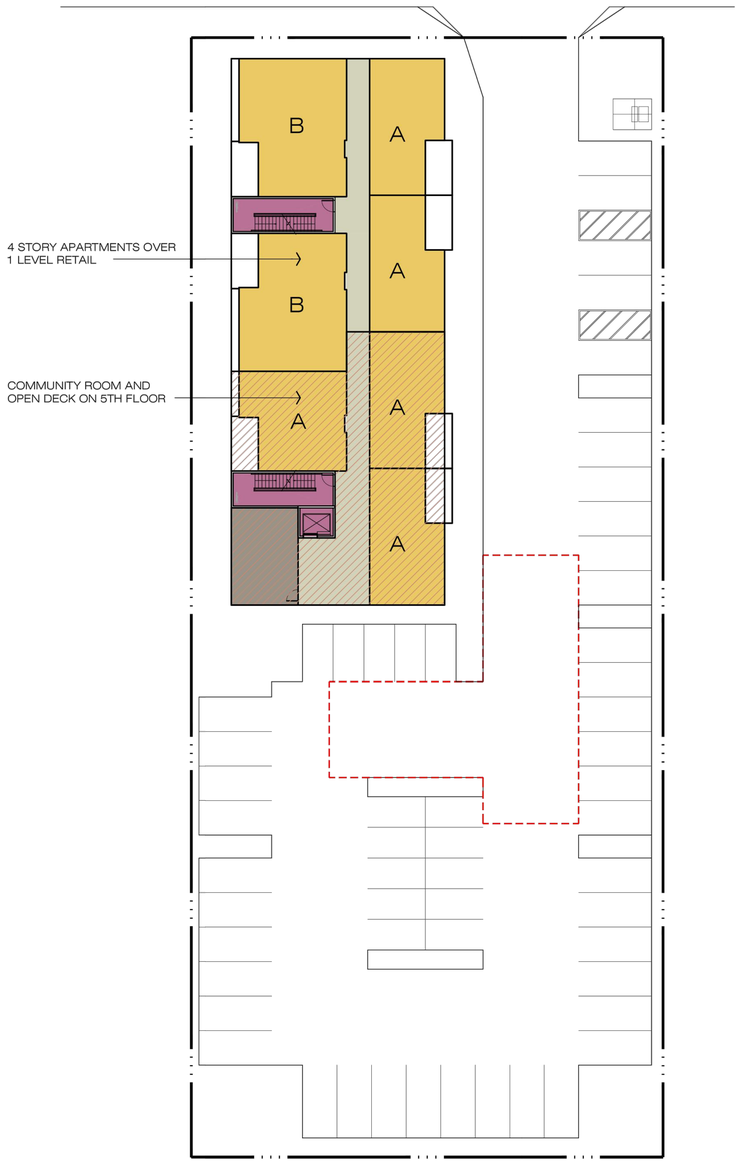
TYPICAL STREET, PARKWAY AND PAD UNDERCUT

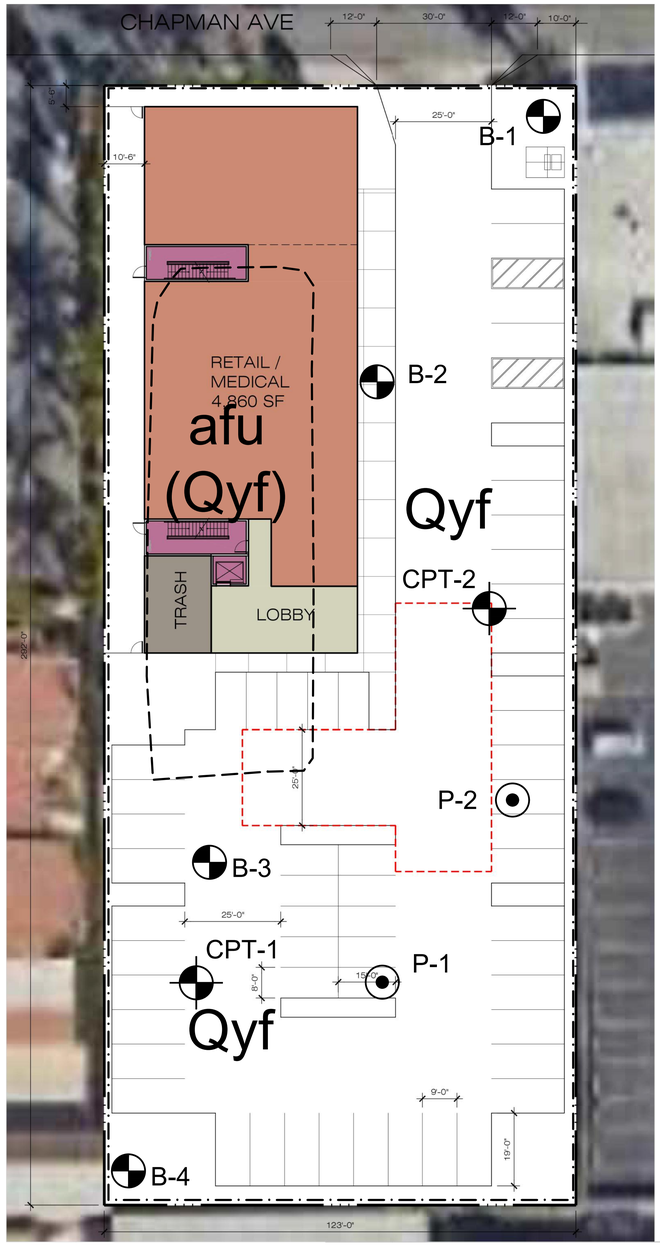
NO SCALE

ALTA CALIFORNIA GEOTECHNICAL, INC .
VER. 3/13

PLATE G-19

PATH: C:\Users\Jinks\Desktop\Drafting\GRADING DETAILS\G-19.dwg





LEGEND

afu	ARTIFICIAL FILL - UNDOCUMENTED
Qyf	YOUNG ALLUVIAL FAN DEPOSITS (BRACKETED WHERE BURIED)
B-4	APPROXIMATE LOCATION OF HOLLOW STEM BORING
P-2	APPROXIMATE LOCATION OF INFILTRATION TEST
CPT-2	APPROXIMATE LOCATION OF CPT
	LIMITS OF REPORT
	GEOLOGIC CONTACT

PROJECT S
GROSS LAN
NET LAND /
DENSITY 26.04 AC/DU
(25 DU PROPOSED)
5 STORY TYPE III-A
GROSS - 29,600 SF (TYPE III) - RESIDENTIAL
GROSS - 4,860 SF (TYPE III) - RETAIL

UNIT BREAKDOWN

UNIT TYPE	AREA	AMOUNT	
A - 1 BD / 1 BA	656 SF.	17 DU	(68%)
B - 2 BD / 2 BA	935 SF.	8 DU	(32%)
TOTAL		25 DU	

PARKING PROVIDED PER STATE DENSITY BONUS

1 SPACE PER 1 BR (1 x 17 DU)	=	17 SPACES
1.5 SPACE PER 2 BR (1 X 8 DU)	=	12 SPACES
TOTAL	=	29 SPACES

PARKING PROVIDED (MEDICAL OFFICE @ 3,060 SF)

1 SPACE PER 170 SF RETAIL	=	18 SPACES
TOTAL	=	18 SPACES

PARKING PROVIDED (RETAIL @ 1,800 SF)

1 SPACE PER 200 SF RETAIL	=	9 SPACES
TOTAL	=	9 SPACES

STANDARD PARKING PROVIDED:	=	41 SPACES
COMPACT PARKING PROVIDED	=	15 SPACES
TOTAL	=	56 SPACES

PLATE 1

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0517 DATE: MAY 2, 2024

SITE STUDY #2A - RETAIL / APARTMENTS

CHAPMAN AVE. APARTMENTS

9562 CHAPMAN AVE, GARDEN GROVE, CA. 92844

APPLICANT:
JAGER COMPANY LLC.

Project No. MKTG.
January 16, 2024
BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425
BSB DESIGN

Attachment F

Operations and Maintenance Plan

9562 Chapman Avenue
Garden Grove

TO BE INCLUDED IN FINAL WQMP

Attachment G

Conditions of Approval

9562 Chapman Avenue
Garden Grove

TO BE INCLUDED IN FINAL WQMP

Attachment H

Notice of Transfer

9562 Chapman Avenue
Garden Grove

Appendix G: Phase I Environmental Site Assessment

S & S Commercial Environmental Services, Inc.

Phone(949)650-4994 Fax (909)498-0302 e-mail s.quart@verizon.net s.quart@att.net

TOP: May 2024 View of North Side of Subject Property & Parking

BOTTOM: July 2024 View South To North Across Subject Property

PHASE ONE ENVIRONMENTAL SITE ASSESSMENT
9562 CHAPMAN AVENUE
GARDEN GROVE, CA 92841

24732 Overlook Drive Corona, CA 92883

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TABLE OF CONTENTS
(continued)

June 13, 2024 **S&S Job JN24012**

CONFIDENTIAL / LENDER-CLIENT PRIVILEGE / WORK PRODUCT

ATTN: **P&P Brothers Corp.,**
Thao Vu
18685 Main St.
Suite 101-385
Huntington Beach, CA. 92648

RE: **Phase I Environmental Site Assessment**
9652 Chapman Avenue
Garden Grove, CA 92841

N 33-47-17, W 117-57-58 ((NAD 83)
33.788114, -117.966244
Township: 04S Range: 10W Section: 31
Baseline: San Bernardino

1.0 INTRODUCTION

This report presents the results of our Phase I Environmental Site Assessment (Phase 1) performed on the subject property known in the record as 9652 Chapman Avenue located in the City of Garden Grove in the County of Orange, California.

The User of this Phase I is the addressee above. The former restaurant building on the subject property has been demolished and the site cleared. A development is planned which includes a 5-story building, with the bottom floor consisting of retail or medical offices and residential units on the floors above.

This Phase I Report is being performed as disclosure for a loan with the property as collateral.

The following Phase I Site Assessment is intended to meet the Scope of Work requirements and procedures included within 40 CFR §312 et al and ASTM E 1527-21 for a finance loan on the above property.

The purpose of this report is to provide an AAI- Compliant Phase I environmental Site Assessment to evaluate the risks associated with providing financing and accepting the Property as collateral.

There were no Special Conditions for this Phase I Site Assessment Environmental Report.

The site inspection was performed on Monday Thursday June 13, 2024. This Phase I is valid per ASTM 1527 -21 Section 4.6 for 180 days from that date or December 13, 2024.

Writing of the report was delayed until after the demolition activities had taken place in the first part of July to show site as existing today.

All appropriate inquiry into the previous ownership and uses of the Property was conducted to identify all potential environmental conditions that may have a material impact on the Property and to minimize the liability both on-site and from adjoining and adjacent properties which may have environmental issues germane to the subject property.

Current and former State of California & Local Agency Information Reviewed

*	Cal-EPA	Envirostor
*	Regional Water Quality Control Board	Geotracker
*	Southcoast Air Quality District – FIND	SCAQMD
*	DOGGR	Oil Well Maps

No Significant Data Gaps were identified.

A Preliminary Title Report was not provided for research for Environmental Liens. Based on the research for this report, a Google Internet Search, CAL-EPA Envirostor and known history, no environmental liens are expected.

Sanborn Fire Insurance Maps were not available for research as they stopped east of the subject property in the last map drawn 1929 - 1932.

Cross Streets Directories were not considered necessary based upon the other information identified in the research

There were no current De Minimis Environmental Conditions that would include environmental concerns identified by S&S that warrant discussion but do not qualify as RECs, as defined by the ASTM Standard Practice E1527-21 or ASTM - 2600-22. Those are discussed in 2.0 Principal Findings.

This report is intended to satisfy the requirements of a Phase I Environmental Site Audit as outlined in the *ASTM E-1527-21, ASTM 2600-22* and the EPA "*All Appropriate Inquiries"* November 2006 ruling.

Report Organization

This report is divided into sections which discuss the field investigation, government records search, regulatory agency contacts and recommendations. Appendices follow the text.

1.1 Purpose and Scope of Work

The purpose of a Phase I Environmental Site Assessment is to discover any past or present environmentally related events which may negatively impact the subject property. This includes a search of all available records concerning the property and the performance of an on-site inspection. Procedures followed in the performance of a Phase I Environmental Site Assessment include executing a government records search, researching permits for the site where prudent, interviewing the tenants of the subject property or neighbors in close proximity, studying aerial photographs, interviewing personnel at the appropriate regulatory agencies and conducting a physical survey of the subject property.

1.2 Involved Parties/Information Sources

This ***S & S Commercial Environmental Services, Inc.***, Phase I Environmental Site Assessment is produced through the efforts of an Environmental Professional EPA CFR 40 Section 312.22 working in conjunction with Federal, State and county regulatory agencies. Environmental Records Search (ERS) (2018) and

Environmental Data Resources (2014) maintain a comprehensive, computerized database of pertinent, environmentally related records, referred to as an ERS or EDR Report, which is updated on a regular basis. This data base is researched for Category I, II, III and IV sites within a mile of the subject property and a report is generated based upon the available regulatory records. The report is reviewed for sites which might impact the subject property and an inquiry is directed toward those sites within the 2,000-foot hazardous waste disclosure zone.

An ASTM 1527-21 AIA Questionnaire is completed by the Client as part of the process and was used in completion of the report.

A pre-demolition asbestos sampling was performed and provided for review with no asbestos being identified.

A Geotechnical Testing and report was also conducted and provided for review.

Copies of the ASTM 1527-21 AIA Questionnaire, pre-demolition Asbestos survey and Geotechnical report are attached after the Environmental Records Search Report in the appendix for ease of filing.

The field investigation includes a site assessment, observations of the neighboring facilities and verification of permits and building records, as necessary. This review and inspection were performed by Stephen A. Quartararo, Environmental Professional CFR Title 40 Section 312.22, California General Engineering Contractor, Hazardous Materials Certified, California General Building Contractor, California Certified Asbestos Contractor, California Drilling Contractor and *ASPE* Professional Estimator.

Definitions modified and added in the ASTM-1527 2013/2021 Revision include:

a. Simplified Recognized Environmental Condition (REC) definition to "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."

b. Stated a Limitation on the definition of an HREC (historical REC) to closed RECs that have been completely resolved ("clean closure") with no restrictions. Those undergoing continued maintenance or monitoring should be discussed.

   Also, for HREC's, if there has been a change in the regulatory criteria and if the Environmental Professional (EP) considers this past release to now be a REC at the time the Phase I ESA investigation is conducted," ... the condition shall be included in the conclusions section of the report as a REC."

c. Review of Title and Judicial Records for Environmental Liens or Activity and Use Limitations (AULs) continues to be a User (Client) requirement that is to be conducted by a Title professional, not the EP or Phase I Professional. Buyer or

Lender needs to ensure that Title companies are searching for judicial records.

d. (VES) Vapor Encroachment Screening under E2600-22 is a referenced document in E1527 2021 under Section 2.1. Under this Standard Vapor migration should be treated no differently than the way contaminated groundwater migration is considered in a Phase I ESA and should be discussed using the CERCLA definition of "release" and "environment" which includes vapor.

Section 2.1 of ASTM E1527 Standard - Vapor Encroachment Screening -
42 U.S.C. § 9601(22) defines a "release" as "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discharging of barrels, containers, and other closed receptacles containing any hazardous substances or pollutant or contaminant" This includes solid, liquid and the ensuing migration of vapor into soil and water or from water upwards through soil occupied areas.

Based upon the historical and present uses identified regarding the subject and adjoining properties, a vapor intrusion issue is possible, and Tier II Vapor Testing is recommended. See 12.10 Tier I Vapor Encroachment Screening (VES) in Appendix

BACKGROUND OF CALIFORNIA VAPOR REGULATIONS
During the early 2000's the EPA and DTSC formulated guidelines for soil vapor including Volatile Organic Compounds known as VOC. This was because while VOCs are sinkers with a heavy center of gravity, remnants of chlorinated hydrocarbons, including cleaning solvents used in the circuit board industry, dry cleaning industry and Benzene in Gasoline and any cleaners for engines such as PCE left residual amounts of VOC in the soil which later became airborne and were related to future cancers.

In 2009 the EPA Published Regional Screening levels (RSLs) which included Vapor and PCE also known as VOCs or Volatile Organic Compounds.

In 2010 California (CAL EPA-DTSC) Published California Human Health Screening Levels (CHHSLs) which included vapor and VOCs/PCE.

In 2011 DTSC required that vapor intrusion into buildings be assessed at sites where VOCs are present in soil vapor…[if regulated compounds are found in soil then testing of the vapor should be performed]

… Assessment of the indoor air exposure pathway involves characterizing subsurface VOC vapor plumes, obtaining appropriate environmental data, using an attenuation factor to predict indoor air concentrations from vapor intrusion, and conducting a human health risk assessment for the inhalation pathway to estimate cancer risk and noncancer hazard.

DTSC provides guidance for assessing potential for health risks from the indoor air exposure pathway [DTSC, 2011].

In 2013 ASTM 1527-13 was published and CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) was expanded to include vapor along with soil and water as potential sources of contamination and human health risk.

In 2015 ASTM 2600-15 was modified from the previous version as a model for soil vapor investigation where regulated soil contaminants were known or suspected in soil or vapor. This was modified again as ASTM 2600 – 22.

2019 saw the publication of ASTM E 1903 : 2019 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process. In 2022 ASTM 2600 was updated as an initial reference for soil vapor investigations if soil vapor was suspected and is known as ASTM 2006-22.

The most current version of the CA CHHSLs are included in HHRA Note 3 (DTSC 2020). HHRA Note 3 which lists the recommended DTSC modified screening levels for soil, tap water, and ambient air. The DTSC-SLs along with the U.S. EPA Regional Screening Levels (RSLs) are to be used when conducting a screening level risk assessment.

There are no known adjoining or adjacent uses which would be considered a potential soil vapor intrusion issue.

e. Controlled Recognized Environmental Condition (CREC) is a new term introduced in the ASTM E1527 -13 standard for Phase I Environmental Site Assessments (ESAs) and continued in 2021. The Controlled REC concept was introduced to address contaminated sites that have received risk-based regulatory closure, where no further remediation is required but residual contamination still exists at a site and the property is subject to some sort of control or use restriction. These sites, where contamination is controlled but could still pose ongoing or future obligations on the owner (such as special precautions during construction or grading activities), have been a source of some confusion to the environmental due diligence industry with regards to how they should be classified.

The CREC, as subset of the Recognized Environmental Condition (REC) category and a distinct category from Historical Recognized Environmental Condition

(HREC), is intended to clarify the level of risk these sites represent.
The environmental professional is required to list any CRECs (as well as RECs) identified in the findings and conclusions section of the Phase I Environmental Site Assessment report.

The ASTM definition of CREC in the E1527-21 standard is as follows: “a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by

regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)."

There were no CREC's noted in the records researched.

2.0 PRINCIPAL FINDINGS

2.1 Summary of Operations and Environmental Discrepancies

Former Operations – The subject property was vacant or agricultural until 1952 when it became the site of a Chicken Ranch and Egg Farm. (see For Sale ads in 12.2 Historical Aerial Photographs & Sanborn Fire Insurance Map in appendix). In 1968 the chicken ranch use ended, and a hamburger restaurant named Burger Chef was constructed with 40 parking spaces. There was a Nutters Produce on site in 1971 and then Knollwood Burgers in 1975.

There were other restaurant uses including Sultan Palace Restaurant and in 2018 Raoushi Lebanese Restaurant and Hookah Lounge.

Current Operations - The restaurant and adjoining structures have been demolished and the land cleared for a new use. (see 12.4 Environmental Features)

Neighboring Properties – West is a restaurant and then a Dental office. South is multi-family residential. East is a tire shop and north across Chapman Avenue is retail.

No were no past or current significant environmental issues noted adjacent or adjoining the subject property.

2.2 Summary of Building Materials and Environmental Discrepancies De Minimis Environmental Issues

Building Materials – There are no buildings on the subject property and no presumed or suspected Asbestos, Lead or Pcb.

A summary of the current regulatory status of asbestos precedes further description as non-friable asbestos is still legally sold in the United States.

2.2.1 Asbestos

Background - Asbestos is a naturally occurring mineral fiber utilized in a multitude of building material products due to its high tensile strength and excellent fire-resistant properties. The *EPA* has defined asbestos materials as being either *friable* or *non- friable* materials. *Friable* material is defined as being easily broken or crushed by hand pressure (e.g., soft acoustical ceilings or blown-on fireproofing).

Non-friable asbestos is generally found in pre-manufactured products that bind the asbestos in an adhesive material, such as roofing felts, floor tile, transite pipe and mastics. This is significant, due to the ability to create a fiber release and cause

human exposure during normal activities. The *EPA* currently does not require the removal of asbestos-containing materials that do not present a problem for human exposure. Most *friable* asbestos-containing materials were banned in building materials by 1978.

In October 1995, a new *FED-OSHA* ruling became effective which redefined building materials perceived as asbestos-containing into four classes of work and modified the way in which these asbestos-containing materials are handled.

Under the *NESHAPS* laws of 1976 and as later amended, asbestos does not have to be removed from a facility until such time as it undergoes major renovations or is demolished. Until that time, the present emphasis by the *EPA* is to recommend repair of any damaged areas and management of the asbestos-containing materials.

Prior to any renovation work being done involving asbestos-containing materials of 260 lineal feet or 160 square feet in area, the local branch of the *EPA* must be notified.

Prior to the demolition of any building or house, mandatory bulk sampling must be accomplished and, if asbestos is present, notification must be made to the local branch of the *EPA* and *Air Quality Management District*.

In California, for the removal of any asbestos-containing materials greater than 0.1% by weight, notifications must also be made to *CAL-OSHA* and a licensed contractor with an asbestos certification is required for any work which exceeds 100 square feet.

2.2.2 Building Materials Presumed to Contain Friable Asbestos

Friable asbestos-containing building materials were banned for manufacture and sale in the United States in 1978 and all stocks remaining on the shelves are presumed to have been used up by 1980. A pre-demolition asbestos survey and bulk sampling was completed. No asbestos was identified. There are currently no buildings and no presumed asbestos

2.2.3 Building Materials Presumed to Contain Non-Friable Asbestos

Asbestos was never banned from use in building materials such as floor tile, cement-based products and roofing materials, as these materials were considered *non-friable* by the *EPA* and not potentially a great hazard. After *friable* asbestos was banned, significant labeling requirements went into effect for the *non-friable* asbestos-containing materials and many substitutes became available. Asbestos-containing flooring materials and mastic were used less and less in construction after 1978 and, by 1984, their use in buildings constructed in the United States was nearly non-existent due to the labeling requirements and potential liability to both the manufacturer and real estate developer. Building materials presumed to contain asbestos are as follows.

There are no buildings and no flooring materials or roof mastic presumed to contain presumed nob-friable asbestos. The developer is cautioned to specify non-asbestos in the building specifications.

2.2.2. Radon- The subject property is in a Radon Zone "3" (Predicted avg for county: < 2 pCi/L) and no Radon Exposure Issues are expected.

2.2.3 Lead Paint – Lead paint is outside the scope of this investigation. There are no buildings and lead paint is not suspected.

2.2.4. Poly-Chlorinated Biphenyl (Pcb) was a material widely used as a coolant in electrical equipment from the 1920s to the 1970s. Pcb was banned from use in most electrical equipment in the latter part of the 1970s and 1980s, after it was determined that Pcb could cause health problems if ingested and cancer when they underwent a chemical change as a result of a fire or explosion. Small amounts of Pcb were used as a coolant in fluorescent light fixture ballasts until 1978, at which time they were banned, and all fluorescent light ballasts were labeled with a "no pcb" label. Pcb was outlawed for use in Transformers and Florescent Light Fixture ballasts in 1978/79. There are no buildings and no Pcb containing light transformers or ballasts suspected on the subject property.

Prior discussions with *Southern California Edison* found that all of the pad and pole-mounted transformers in the City have been checked. There is no threat of Pcb-containing transformers in the area.

2.2.5 Lead In Drinking Water No studies of lead in drinking water were performed. A prohibition on lead in residential plumbing materials has been in effect since 1986. There are no buildings and no water valves containing lead. Lead in water valves is outside the scope of this investigation.

2.2.6 Mold results from water leaks and plumbing leaks. Mold was not seen in the view of the property and is not an issue for this report.

2.2.7 Flood Plain

Panel: 06059C0137J, Effective Date: 12/3/2009
Zone X - Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.

2.2.8. Wetlands

The subject property is not part of any National Wetlands Inventory, and no Wetlands were noted on the subject property during the site inspection.

2.2.9. Indoor Air Quality - Subjective

Unexpected or unsatisfactory indoor air quality was not identified via Olfaction (smell). There were no areas identified in this research of concern for Unsatisfactory Indoor Air Quality from chemicals, gases or regulated materials being used on or off site, present from past activities or building materials used in building construction.

2.2.10 Vapor Intrusion

Vapor intrusion is a potential human exposure pathway that people may come into contact with hazardous vapors while performing their day-to-day indoor activities.

Vapor intrusion occurs when vapor-forming chemicals migrate from any subsurface source into an overlying building which can occur in ways similar to that of radon gas seeping into homes.

2.1.11 Underground Tanks

There were no underground tanks known to have been on the subject property and none currently.

2.1.12 Oil and Gas Wells Within 1500 Feet

A review of DOGGR Oil and Gas Maps did not identify and oil wells within one mile of the subject property. (See Map in DOGGR Section of Appendix)

2.2.13 Vapor Encroachment Condition

ASTM E2600 - 22: ASTM defines the term "Vapor Encroachment Condition" - presence or likely presence of "chemical of concern" vapors in the subsurface of the Target Property caused by the release of vapors from contaminated soil or groundwater or both either on or near the Target Property as identified by the Tier 1 or Tier 2 procedure**.**

The EPA has established a 100-foot vapor encroachment zone which requires properties known or suspected to be contaminated within this zone to be discussed**.**

A Tier 1 Vapor Encroachment Screening was performed with no suspected vapor Encroachment Condition.

2.2.14 Permits and Status

There are no permits and no operations currently.

2.2.15 Air Emissions

There are no sources of air emissions.

3.0 SITE OVERVIEW

3.1 Location

The subject property is on the south side of Chapman Avenue just east of Gilbert Street and west of Brookhurst Street in the City of Garden Grove located in Orange County, CA.

3.2 Adjacent Properties

To the south of the subject property are multifamily residential buildings.

East is a tire store.

West is a restaurant and then a Dental office.

North is Chapman Avenue then retail.

There are no environmentally unsafe emissions or discharges currently noted from any adjacent properties during the site visit and there is nothing in the published

record or seen during the site inspection which would indicate long-term problems for the subject property from any of those properties.

3.3 Site Description

The subject property is a rectangular parcel just under an acre in area with asphalt on the northeast side, grass on the south side of the parcel and dirt where a building was recently demolished on the northwest side of the property. An asphalt covered former ground level parking area remains.

There were no current underground tanks or vent pipes found on or around the subject property

4.0 SITE HISTORY AND OPERATIONS

4.1 Building Permit History & Sanborn Fire Insurance Map Review

According to for sales ads found on Newspapers.com, City of Garden Grove on line file review and Historical Aerials Photographs the land was vacant until 1952 when a chicken ranch was constructed. That use lasted until the 1968 when a restaurant building was constructed. The use in the building permit file remained restaurant until the building was demolished.

Sanborn Fire Insurance Maps stopped east of the subject property when the last map was drawn for the area in 1932.

4.2 Operations

Former Operations – The subject property was agricultural then the site of a chicken ranch in 1952. In 1968 a restaurant was constructed for the sale of hamburgers and related food items. Those uses ended and more recently the building was demolished and the land cleared.

Current Operations - The property is currently vacant with a commercial and residential use soon to be under development.

4.3 Operational Permits, Manifests, MSDS

EPA ID Number - An *EPA* ID number is used by a facility to dispose of regulated hazardous chemicals over a certain specified quantity. There are no EPA RCRA regulated hazardous materials being generated or disposed of from the subject property.

Hazardous Waste Manifests - Hazardous waste manifests are used to transport regulated hazardous wastes for legal disposal. There are no manifests for the disposal of EPA or CA regulated wastes being generated and disposed of from the subject property as there are no activities and the former activities were no hazardous.

Air Emissions - There are no sources of air emissions historically or currently from the subject property.

Material Safety Data Sheets (MSDS) - Material Safety Data Sheets are required for hazardous materials being used in a business on-site. There are no MSDS needed.

5.0 ENVIRONMENTAL SETTING

5.1 Regional Physiographic

The subject property is in a coastal area at a level approximately 84 feet above sea level, according to the US Geological Survey.

Geology - The Orange County Coastal Plain is underlain by a sedimentary trough which began forming in the Miocene time. The Miocene to Late Pleistocene sediments consists of interbedded marine and nonmarine sequences. The Late Pleistocene to Recent deposits is continental alluvial and fluvial sediments which represent changing depositional environments interrupted by erosional events. The principal geologic unit of interest in the area is the recent alluvium consisting of unconsolidated gravel, sand and silt.

The subject site is located in an area referred to by the California Water Resources Board as the Santa Ana River Basin. As such, the subject property is located on widely distributed sedimentary deposits of alluvium and colluvium from the stream channel deposits of the Santa Ana River and its local tributary.

The site geology consists of alluvial deposits of the Santa Ana River Flood Plain, whose active channel exists approximately one mile west of the subject property. Soil types derived from these sediments consist of fine to medium-grained, silty to very coarse sand.

5.2 Soil Conditions

The subject property is covered with dirt, asphalt and concrete and no soil contamination from past uses on or adjoining the property is expected.

There are no standing water or wetland issues.

5.3 Groundwater Conditions

Site specific depth to groundwater is not within the scope of this survey. Site specific depth to groundwater can only be determined by soil borings. Groundwater is shallow in west Garden Grove.

There were no tests found of the groundwater directly under the subject property.

6.0 RESULTS OF INVESTIGATION

6.1 Site Inspection Observations

There were no spots or discolorations of the dirt, asphalt or concrete to indicate the storage or use of regulated materials or stressed vegetation to indicate corrosive material usage formerly or currently.

The surrounding properties appear to be free of any current problems or safety issues which would be a source of migratory contamination to the subject property.

6.2 Regulatory Agency Contacts

6.2.1 Garden Grove Water Department

Mr. Boyd Conkle, Production Supervisor with the Garden Grove Water Department, was formerly contacted regarding contamination of the groundwater and the quality of the drinking water to the subject property. He said that there were 12 wells in the City, with water being drawn at an average depth of 950 feet. He stated that there was a problem with nitrates in some wells, which were cured by blending the City's water with water from the Metropolitan Water District or abandoning the wells. He explained that the average static water level in the City was at about 80 feet and, on a yearly average, about 30% of the water was imported from the Metropolitan Water District. He stated that all water in the system meets the State of California's drinking water standards.

6.2.2 California Department of Conservation, Division of Mines and Geology

The California Department of Conservation, Division of Mines and Geology, was contacted regarding the proximity of active earthquake faults. The subject property is not part of any special studies zone pursuant to the Alquist-Priolo Earthquake Fault Zones Act of 1972, which mandated studies of active faults in California. An active fault zone is described by the State Mining and Geology Board "as one which had surface displacement within the Holocene time (about the last 11,000 years)."

6.2.3 California Division of Oil and Gas

A review of the State of California Division of Oil and Gas Maps did not indicate any oil wells within 1,500 feet of the subject property. It does not appear that any wells were surface drilled into the subject property. (See DOGGR in Appendix)

6.2.4 Southern California Edison

There is no Pcb in any of the transformers owned by SCE. Any transformers with Pcb have been replaced or the fluids have been changed.

6.2.5 South Coast Air Quality Management District (SCAQMD)

Find, was accessed online regarding air emission permits on the property. There are no permits or applications..

6.2.6 Department of Health Services, State Department of Radon

Mr. David Quinton, Environmental Health Specialist with the *State Department of Radon*, was previously contacted regarding the presence of radon in the area. He said that the most recent studies done predicted less than 2.4% of homes and less than 0.04% of the schools in the State of California would be over the *EPA's* action level of four picocuries/liter. He stated that this study was performed in existing homes and that there was no effective methodology of correlating soil samples to houses. Mr. Quinton explained that much is dependent upon the soil under a residence and the type of foundation a house is built upon. Additionally, the standard is based upon exposure of 18 hours per day for 70 years, which would not correlate to a business exposure. Mr. Quinton said that, with the exception of Madera County in Northern California, the *State of California* has nearly concluded all radon testing in the State

and has found that there is little likelihood of a significant radon exposure in California.

Mr. Quinton said that business exposures had not been within the parameters of any of these studies due to the limited time most businesspeople are in one location. He also said that the State does not plan to study businesses based upon the previous studies and that there is no standard for a commercial enterprise being conducted outside of a home.

6.2 Personal Interviews, Site Records Review

6.2.6 Personal Interviews

Mr. Mark Mazurco, Athos Construction – Mr. Mazurco provided access for a site inspection.

6.2.7 Site Records Review

There are no businesses and no records to reviewed.

6.3 Historical Aerial Photograph & Sanborn Fire Insurance Map Review

Sanborn Fire Insurance Map and historical aerial photos were reviewed as available for historical uses of the property. Historical Aerials Photos from 1938, 1949, 1959, 1972, 1985, 1992, 2007, 2013, 2023 and a *USGS* topographic map from 1965 were reviewed to determine structures on or around the subject property. The photographs were specifically examined for evidence of hazardous materials, as well as on and off-site features that may affect the environmental quality of the property. These features include sumps, pits, ponds, lagoons, aboveground tanks, landfills, outside storage of hazardous materials and general land use. None were identified.

Sanborn Map Review – Sanborn Fire Insurance Maps for the subject property from 1928 – 1932 found the subject property west of the maps drawn. See appendix.

1938 – The area has still not developed.

1949 – The area has still not developed.

1952- For Sale Ads. The subject property is a chicken ranch agricultural with agricultural or residential activities in the area.

1959 – The subject property has a chicken ranch on most of the property. The surrounding properties are residential and vacant land with a few small buildings.

1972 – There is a rectangular building on the northwest side of the property, an asphalt lot on the south side of the property and asphalt parking lot on the northeast side of the property. There is a retail center north of Chapman Avenue, residential buildings to the south and commercial buildings west.

1985 – There are no significant changes to the subject or surrounding properties.

1992 - There are no significant changes to the subject property or surrounding properties.

2007 - There are no significant changes to the subject property or surrounding properties

2013 - There are no significant changes to the subject property or surrounding properties.

2023 - There are no significant changes to the subject property or surrounding properties.

Closeups of sections of relevant aerial photographs, and the topographic map were selected to appear in this report to show any structures that might have been formerly constructed on or around the subject property.

6.4 Synopsis of Previous Environmental Investigations

There were no prior environmental reports identified in the records researched or provided by the Client.

6.5 Summary of Government Records Search

NOTE: This government records summary is based, in part, on investigating critical or "border zone" properties near the subject property. The *State of California, Department of Health Services* has defined these sites as being within 2,000 feet (or approximately 0.4 mile) of the subject property. Other sites more distant in proximity may be listed but not considered critical and, therefore, not further investigated.

The following is a summarized form of the detail provided in the ERS Report in the Appendix.

The subject property is not listed.

CATEGORY ONE: NPL, SCL, SPL, RCRA CORRACTS, CERCLIS/NFRAP, RCRA TSD, SWLF, TRIBAL LANDS, Envirostor

This category is composed of lists compiled by the *US Environmental Protection Agency* and the *State of California* Equivalency lists. This category includes National Priority List sites, RCRA Corrective Actions by the *EPA* and *USEPA* permitted treatment, storage and disposal facilities within a one-mile radius of the subject property. This includes sites for designation under the Federal SUPERFUND Program, permitted solid waste landfills, incinerator sites or transfer stations and the State Bond Program for sites representing an environmental concern for the discharge of hazardous wastes.

There are no Category One sites listed as being within a one-mile radius of the subject property as of the date of this report.

CATEGORY TWO: (½ mile) **LUST, DEED RSTR, TOXIC PITS,CORTESE,**
The sites within this category include sites selected for possible placement on the Federal NPL list or the State risks to human health and the environment. This category also includes leaking underground tank sites from both the *Regional Water Quality Control Board* and the State mandated CORTESE lists of properties with hazardous wastes, sites with DEED restrictions and Toxic Pits Cleanup facilities. Sites within this category are provided in this list within a one-half mile as of the date of this report , with other DEED restrictions and Toxic Pits sites from 1994 and 1995.

There are six listed Category Three underground tank sites listed within a one-quarter mile radius of the subject property. These sites are on The CA and County Databases and there are duplicates. All sites are closed, and no migratory contamination is expected.

None of the offsite Category Two sites are thought to represent a potential problem for migratory contamination to the subject property, based upon their closure or remediation status, distance, topography and a neighborhood review.

CATEGORY THREE: (1/4 mile) **RCRA VIOL, TRIS, UST/AST**
Sites in this list are the result of RCRA enforcement actions, the Toxic release inventory base and registered aboveground or underground tanks. The data bases range from 1994 information for underground tanks as of the date of this report for information concerning RCRA actions and registered aboveground storage tanks.

There is one historical listed Category Three underground tank sites listed within a one-quarter mile radius of the subject property. It is not an issue. The subject property is not a listed UST site.

CATEGORY FOUR: (1/8 mile) **ERNS, GNRTR, SPILLS**, **RCRA GENERATORS**
ERNS - ERNS is a national database retrieval system of Incident-Notification information as initially reported by any party regarding incidents of reported releases of oil and hazardous substances. The information in this report combines data from the *United States Coast Guard National Response Center* data base with data from the 10 *EPA* regions. ERNS support the release notification requirements of Section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended; Section 311 of the Clean Water Act; and Sections 300.51 and 300.65 of the National Oil and Hazardous Substances Contingency Plan. There is no response / ERNS sites listed within one-eighth mile of the subject property as of the date of this report.

RCRA GNRTR - Sites which generate regulated hazardous waste above a certain quantity are required to use *EPA* identification numbers and are called RCRA sites. An *EPA* identification number does not indicate a problem with a site, but merely that they use or dispose of a minimum quantity of a hazardous waste. There are twenty-five RCRA site listed within a one-eighth mile radius of the subject property as of the date of this report. The subject property is not an RCRA site.

SPILLS - These sites are on the *State of California* lists as having had spills of regulated hazardous waste as of the date of this report. There are no spill sites listed as of the date of this report.

7.0 DISCUSSION OF INVESTIGATION

Asbestos ASTM 1527-21 Section 21.1.5.1 De-Minimis Condition – There are no buildings and no presumed friable & non-friable presumed asbestos-containing materials on the subject property.

Pcb *ASTM 1527-21 Section 9.4.1.10* De-Minimis Condition - There should not be any Pcb in any of the utility transformers on or near the site, according to SCE.

There are no buildings and no fluorescent lights on site suspected of containing a small amount of Pcb in the cooling oil.

Aboveground Storage Tanks *ASTM 1527- 21 Section 9.4.4* - The physical site survey did not evidence the existence of aboveground tanks.

Underground Storage Tanks *ASTM 1527-21 Section 9.4.1.3 9.4.1.4 & .5* - The physical site survey did not evidence the existence of an underground tank formerly or currently.

Air Conditioning & Heating & Cooling 1527-21 Sections 9.4.3.1 - Heating & Cooling is by electrically powered HVAC units in any new construction. There are no fuel oil tanks on site.

Site & Building Drainage 1527 – 21 Section 9.4.3.3, 7.6 - There were no standing pools of liquid or odors on site, floor drains or sumps. Stormwater drainage was designed into the site.

Wells - Oil, Water, Injection, Irrigation, Abandoned 1527-21- 9.4.4.6 - There are no wells of any type on site nor were any identified adjoining the subject property. See DOGGR section in appendix.

Air Emissions - The physical site survey and record research did not evidence any sources of current or former regulated air emissions.

Water Supplies Potable Water *ASTM 1527- 21 Section 9.4.1.9* - Discussions with the local Water District evidenced a water supply to the site which meets all of California's Drinking Water Requirements.

Wastewater *ASTM 1527-21 Section 9.4.1.10 & 9.4.4.7* - Site observations did not evidence any source of regulated hazardous materials being discharged into the sanitary sewer.

Waste Generation, Storage and Disposal *ASTM 1527-21 Section 9.4.1.4.4 & .5 & .6 & .7* - There are no regulated wastes currently being generated, stored and disposed of from the subject and none historically in the record reviewed.

Pesticides, Herbicides - There was no current use of herbicides or pesticides noted beyond the normal residential and commercial insect and pest control.

Radon - Radon comes from the natural breakdown (radioactive decay) of uranium. The *Environmental Protection Agency* (*EPA*) estimates that the average soil in the United States contains only about one part per million of uranium. Uranium is found in about 150 minerals including granite, phosphate and shale. Granite is a major concern for the presence of radon, as some deposits have been found to contain extremely high levels of uranium. The area of the subject property does not indicate any large deposits of granite material which would be of concern to test for the presence of radon. Phosphorous is an essential ingredient in chemical fertilizers and comes from phosphate rock. There does not appear to ever have been much fertilizer used around the subject property. According to Mr. David Quinton of the *State Department of Radon*, the chance of radon being a hazard in Southern California is less than 1%.

Lead-Based Paint - Specific testing is required to determine if paint or other materials formerly used in the construction of buildings contained significant levels of lead. These tests are not within the scope of work for this report and no investigation for lead content was, or will be, performed unless agreed to by the property owner as an additional service, incurring additional costs.

Regulatory Actions - No evidence of regulatory actions on the subject property were found in any of the records checked.

Known Site Problems – There are no known site problems.

Regional or Adjacent Problems - There was no direct evidence of regional or adjacent problems found in the records checked that indicated a conclusive impact on the subject property during any of the time periods reviewed.

8.0 CONCLUSIONS

8.1 Areas of No Apparent Concern

There is no concern for current or former migration of contaminants from one-site or off-site.

8.2 Areas of Further Concern

The physical site survey and record research did not indicate any areas of further concern

9.0 RECOMMENDATIONS

9.1 Areas of No Action

There was no evidence of current hazardous wastes migrating from off-site to cause further concern.

9.2 Further Investigation

In this Environmental Professional's Opinion there is no concern for contamination and no further investigation is recommended.

9.3 **Performance Statement 1527-21 12.8.1**- We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527 – 21 of 9562 Chapman Avenue Garden Grove, CA 92841. Any exceptions to, or deletions from, this practice are described in Section 1 of this report. This assessment has revealed no evidence of a Recognized Environmental Condition (REC) or a Historical Recognized Environmental Condition (HREC).

10.0 LIMITATIONS

This report is intended to satisfy the requirements of a Phase I Environmental Site Audit as outlined in the ASTM 1527- 21, ASTM 2600-22 Standards and the November 2006 EPA "All Appropriate Inquiries" Rule. These standards are intended to define the scope of due diligence necessary in a real estate transaction to provide for the "innocent buyer's defense" under the SARA amendments to CERCLA.

The findings set forth in this Phase I Environmental Site Assessment are strictly limited in time and scope to the date of evaluation(s). Government records searched are limited to the accuracy of the agency prepared lists. The conclusions presented in the report are based solely on the services described therein and not on scientific tasks or procedures beyond the scope of the agreed upon Phase I Environmental Site Assessment. It is hereby acknowledged that, within the scope of this survey, no level of assessment can ensure the real property is completely free of chemicals or toxic substances. This report is intended only for reliance by the client and their lender. No further reliance is intended without written authorization. This public records search was conducted with available Federal, State, County and City agency departments, according to recognized procedures and current availability of records. Conclusions resulting from these searches are solely a result of the same. ***S & S Commercial Environmental Services, Inc.*** assumes no responsibility for events that are not part of these public records.

Reliance on this Phase I is limited to the Lenders and Borrower to this transaction.

S&S Commercial Environmental Services, Inc.

Stephen A Quartararo, CEO
Environmental Professional
Title 40, Code of Federal
Regulations CFR Part 312.22

11.0 REFERENCES

11.1 Published References

ERS Environmental Report –

11.1.1 Aerial Photograph Review – USGS

11.1.2 Topographic Maps - *USGS*

11.1.3 *DOGR* Maps/1992 Munger Map Book Division of Oil & Gas http://www.conservation.ca.gov/dog/Pages/Index.aspx

11.1.4 Alquist-Priolo Earthquake Fault Rupture Hazard Special Study Zones

11.1.5 California Code of Regulations Title 22 Chapter 30, Regulations for Hazardous Waste Transport and Disposal, *California Highway Patrol*

11.1.6 FEDERAL, 29 CFR, Part 1910.120; 40 CFR Part 761, DOT; 49 CFR Parts 172.516; Toxic Substance Control Act

11.1.7 http://www.lapl.org/ Los Angeles Public Library Sanborn Fire Insurance Map Collection

11.1.8 CAL EPA Envirostor With Links To Regional Water Quality Control Board http://www.envirostor.dtsc.ca.gov/public/

1 http://www.epa.gov/swerosps/bf/aai/aai_final_factsheet.htm

WHAT IS "ALL APPROPRIATE INQUIRIES?"

"All appropriate inquiries" is the process of evaluating a property's environmental conditions and assessing potential liability for any contamination.

WHY IS EPA ESTABLISHING STANDARDS FOR CONDUCTING ALL APPROPRIATE INQUIRIES?

The 2002 Brownfields Amendments to CERCLA require EPA to promulgate regulations establishing standards and practices for conducting all appropriate inquiries.

11.1.9 Internet Research http://www.google.com

11.2 Record of Personal Communications

11.2.1 Garden Grove Water Department Mr. Boyd Conkle, Production Supervisor	June 2024 (714)741-5078
11.2.2 California Division of Mines and Geology Mr. Edward Keisling, Geologist	June 2024 (213)620-3560
11.2.3 California Division of Oil and Gas Cerritos Office	June 2024 (916)322-1080
11.2.4 Southern California Edison Company Ms. Barbara Hauser, Service Planner	June 2024 (714)592-3718

11.2 Record of Personal Communications (cont.)

11.2.5 South Coast Air Quality Management District Find Online	June 2024 909.396.2900
11.2.6 State Department of Radon Mr. David Quinton, Env. Health Specialist	February 1996 916.324.1826
11.2.7 ATHOS CONSTRUCTION Mr. Mark Mazurco	June 2024 714-815-4316

12.0 APPENDIX

12.1 Site Location Map

12.2 Historical Aerial Photographs & Sanborn Fire Insurance Maps

12.3 USGS Topographic Map of Site

12.4 Environmental Features

12.5 Building Permits

12.6 Southcoast Air Quality Management District (SCAQMD)

12.7 DTSC Map & Local Sites

12.8 DOGGR Map Section

12.9 City Directories

12.10 Tier I Vapor Encroachment Screening (VES)

12.11 Oil and Gas Wells Within 1500 feet

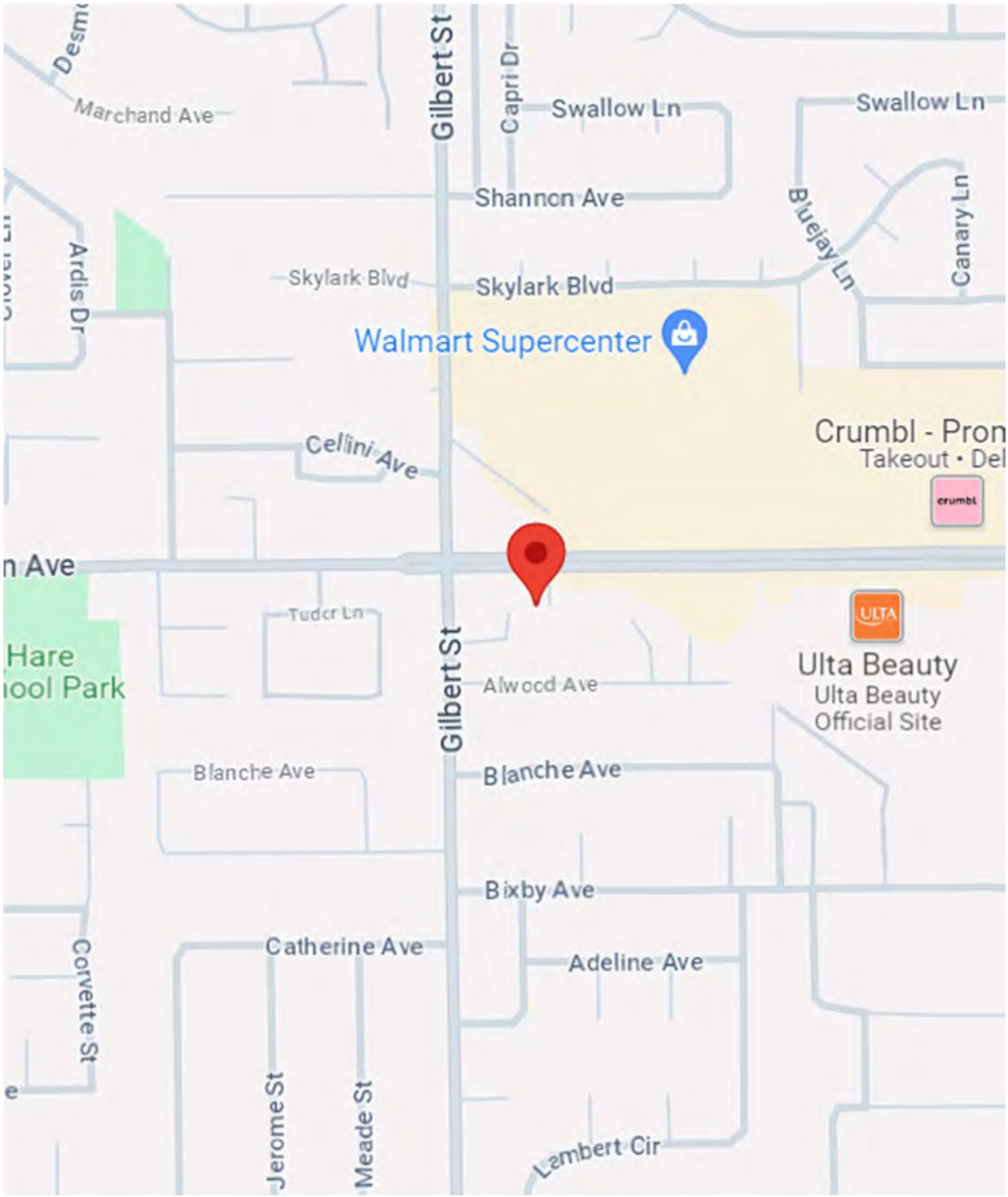
12.12 Letter from Magnetek

12.13 Certification

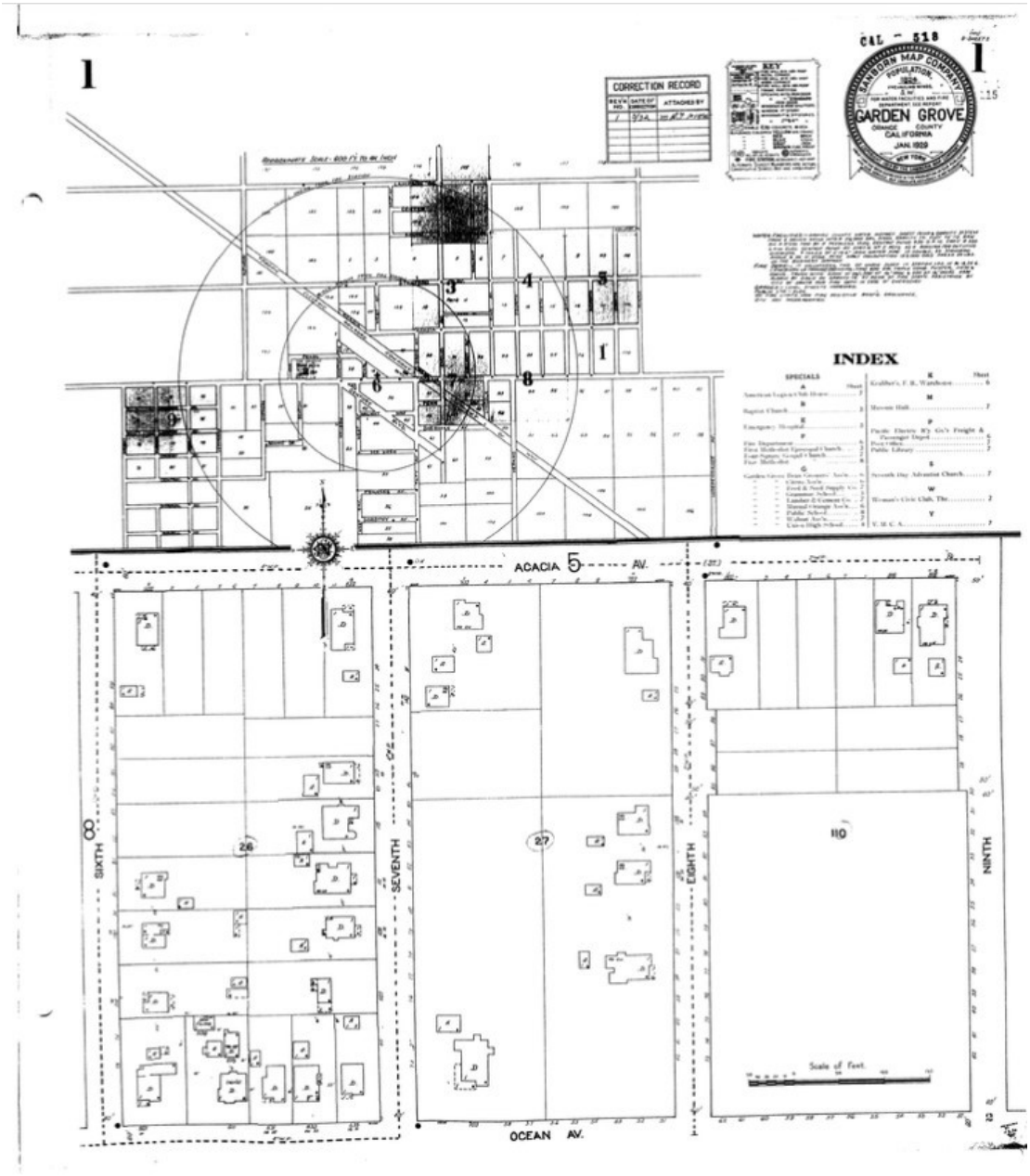
12.14 Resume

12.15 ERS Environmental Report

12.1 Site Location Map


Marchand Ave
Gilbert St
Capri Dr
Swallow Ln
Swallow Ln
Shannon Ave
Bluejay Ln
Canary Ln
Ardis Dr
Skylark Blvd
Skylark Blvd
Walmart Supercenter
Cellini Ave
Crumbl - Pron
Takeout • Del
crumbl
n Ave
Tudor Ln
Hare
ool Park
Gilbert St
Alwood Ave
Ulta Beauty
Ulta Beauty
Official Site
Blanche Ave
Blanche Ave
Bixby Ave
Catherine Ave
Adeline Ave
Corvette St
Jerome St
Meade St
Lambert Cir

12.2 Historical Aerial Photographs & Sanborn Fire Insurance Map

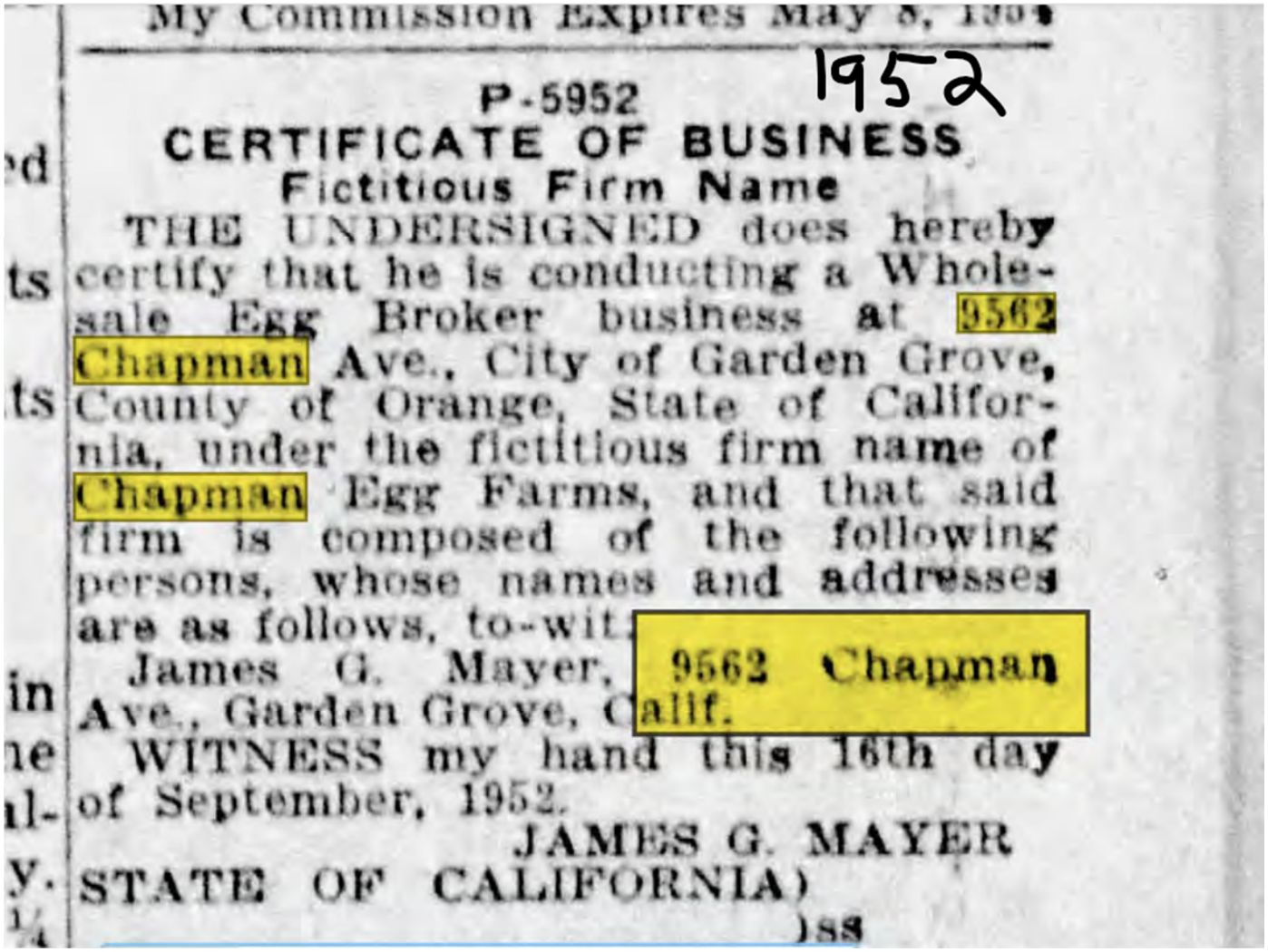


Sanborn Fire Insurance Map Section 1929 – 1932

No Coverage

1938

1949



My Commission Expires May 8, 195

1952

P-5952

CERTIFICATE OF BUSINESS

Fictitious Firm Name

THE UNDERSIGNED does hereby certify that he is conducting a Wholesale Egg Broker business at 9562 Chapman Ave., City of Garden Grove, County of Orange, State of California, under the fictitious firm name of Chapman Egg Farms, and that said firm is composed of the following persons, whose names and addresses are as follows, to-wit:

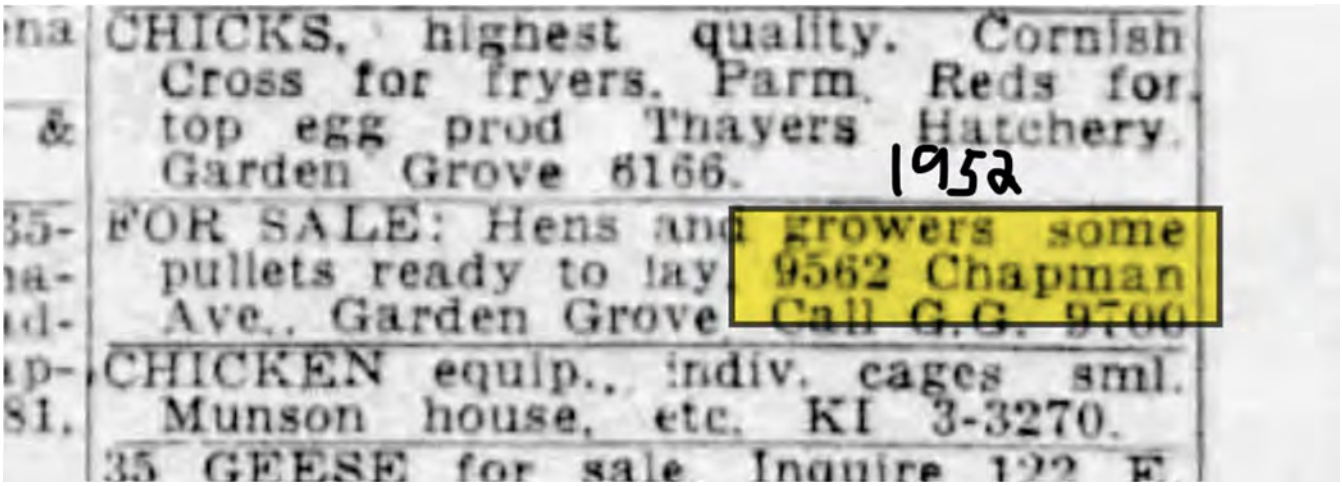
James G. Mayer, 9562 Chapman Ave., Garden Grove, Calif.

WITNESS my hand this 16th day of September, 1952.

JAMES G. MAYER

STATE OF CALIFORNIA)

)ss



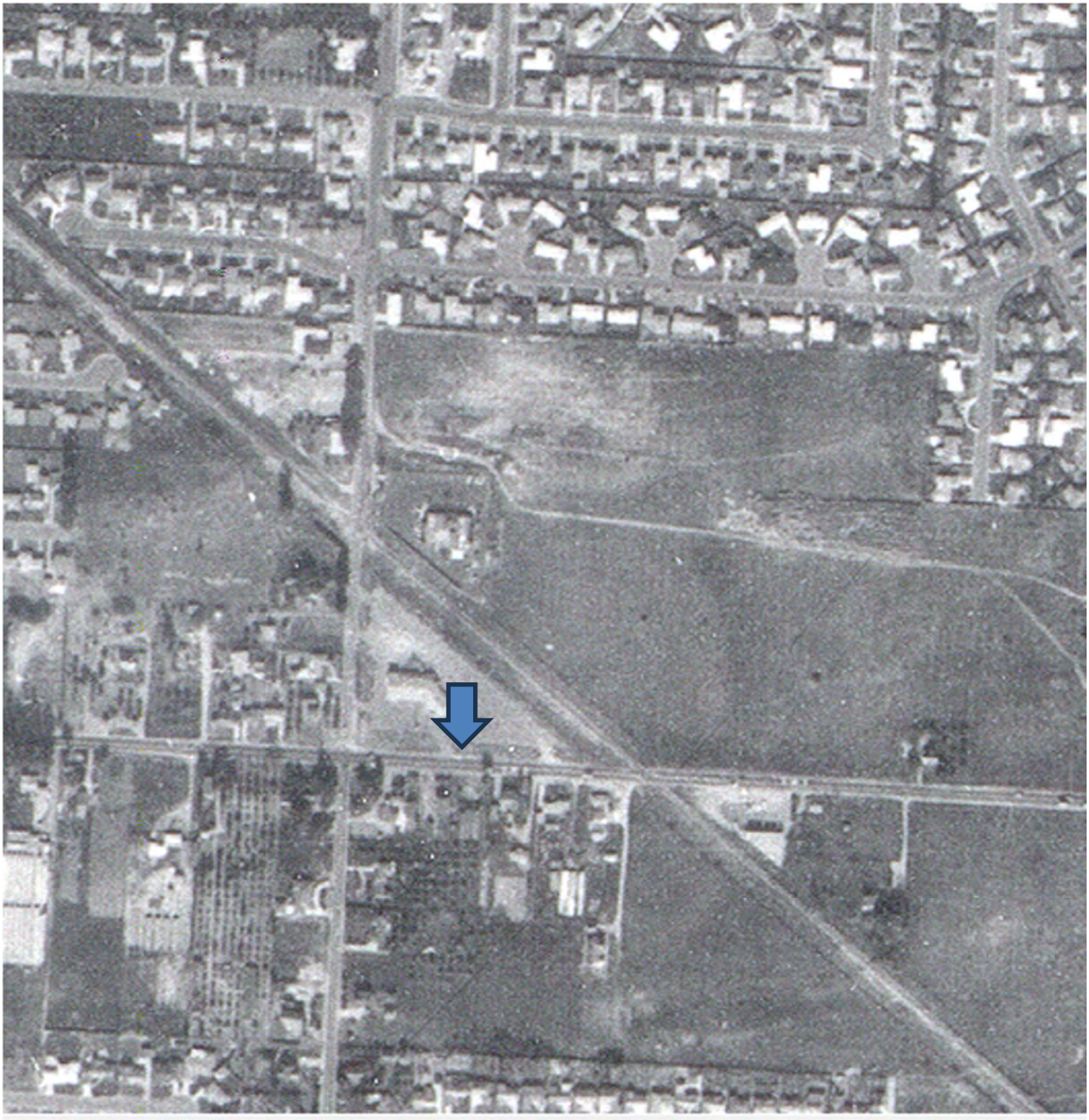
CHICKS, highest quality. Cornish Cross for fryers. Parm Reds for top egg prod Thayers Hatchery. Garden Grove 6166.

1952

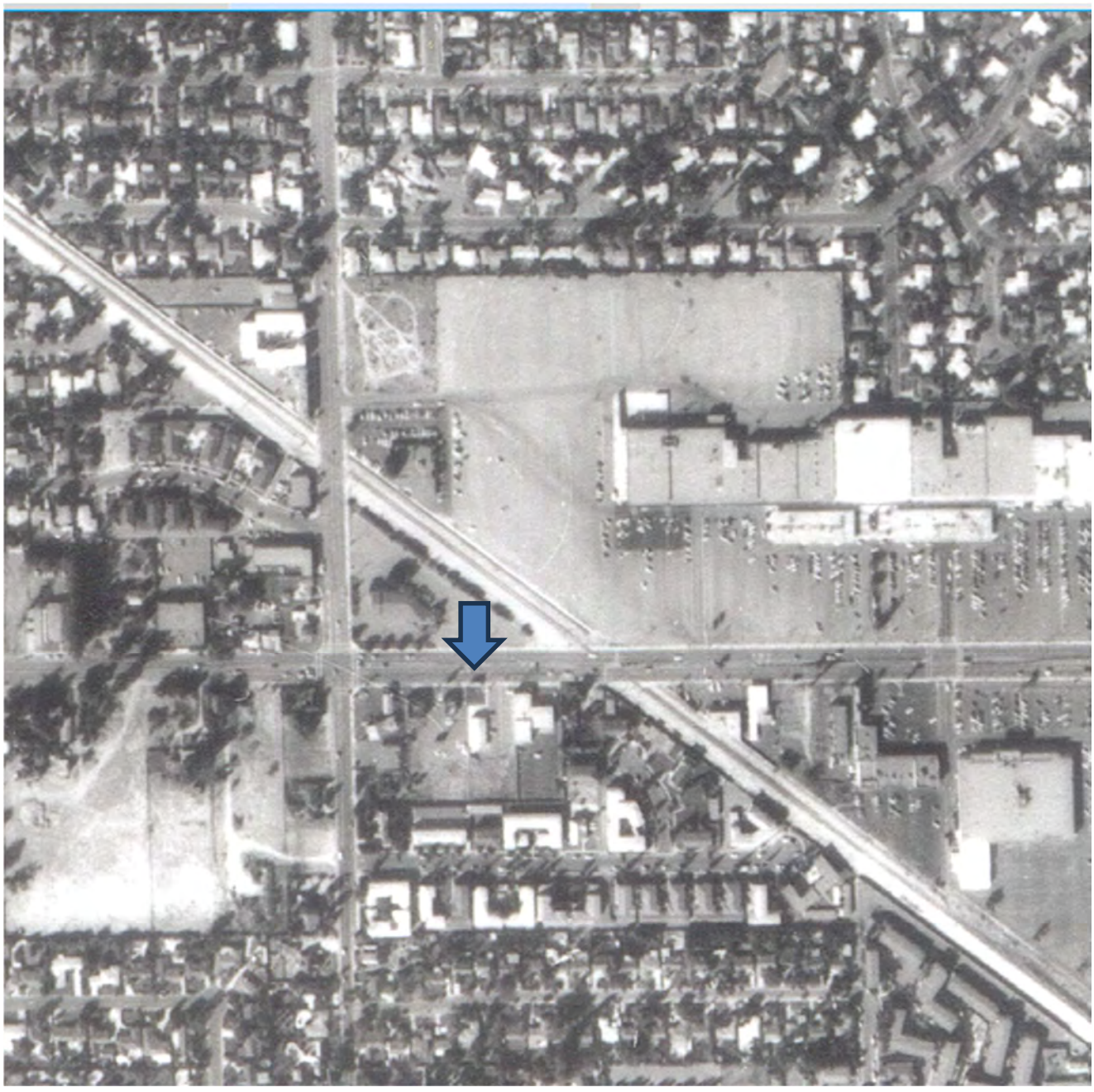
FOR SALE: Hens and growers some pullets ready to lay 9562 Chapman Ave., Garden Grove Call G.G. 9706

CHICKEN equip., indiv. cages sml. Munson house, etc. KI 3-3270.

35 GEESE for sale. Inquire 122 E

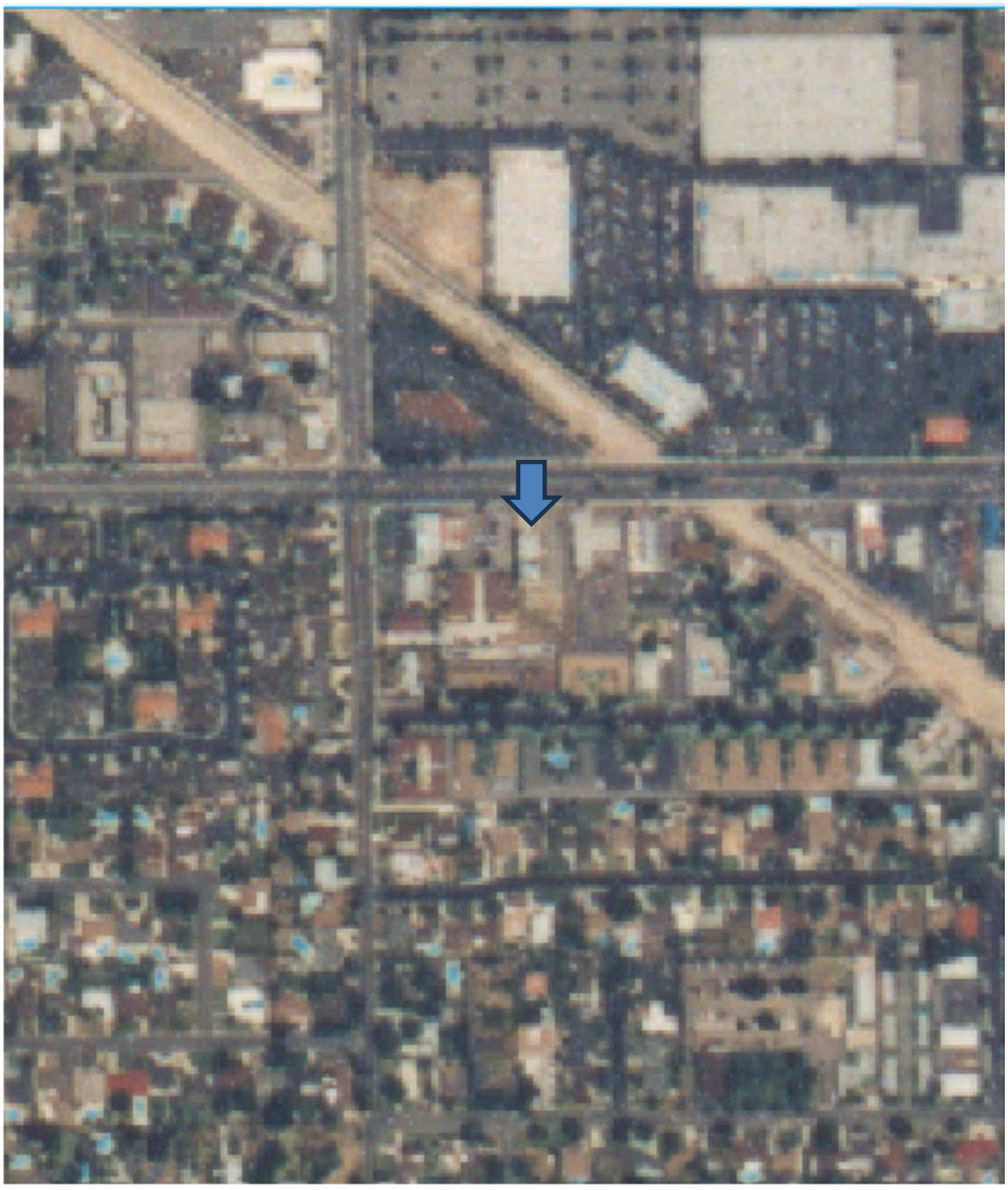


1958



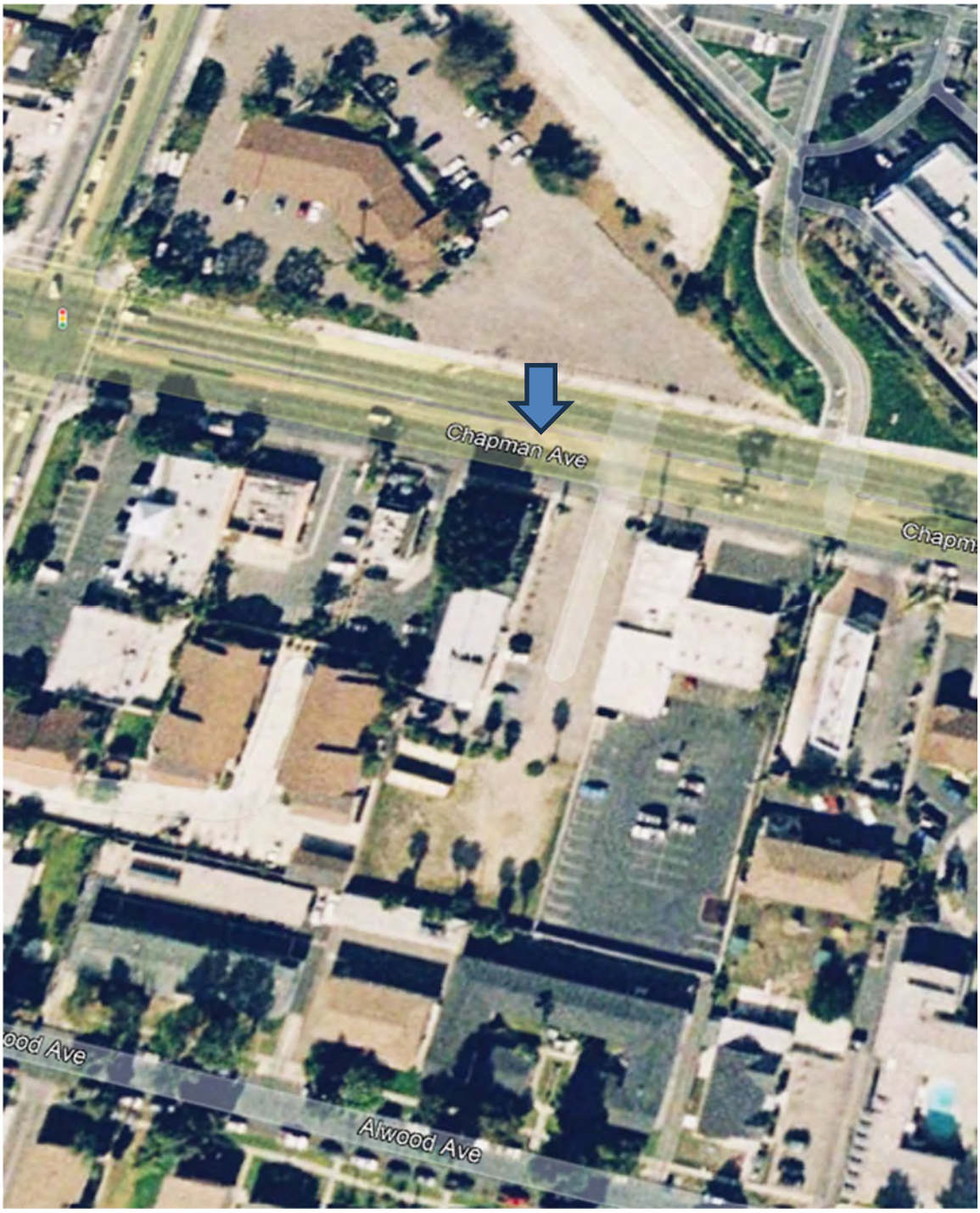
1972

1985

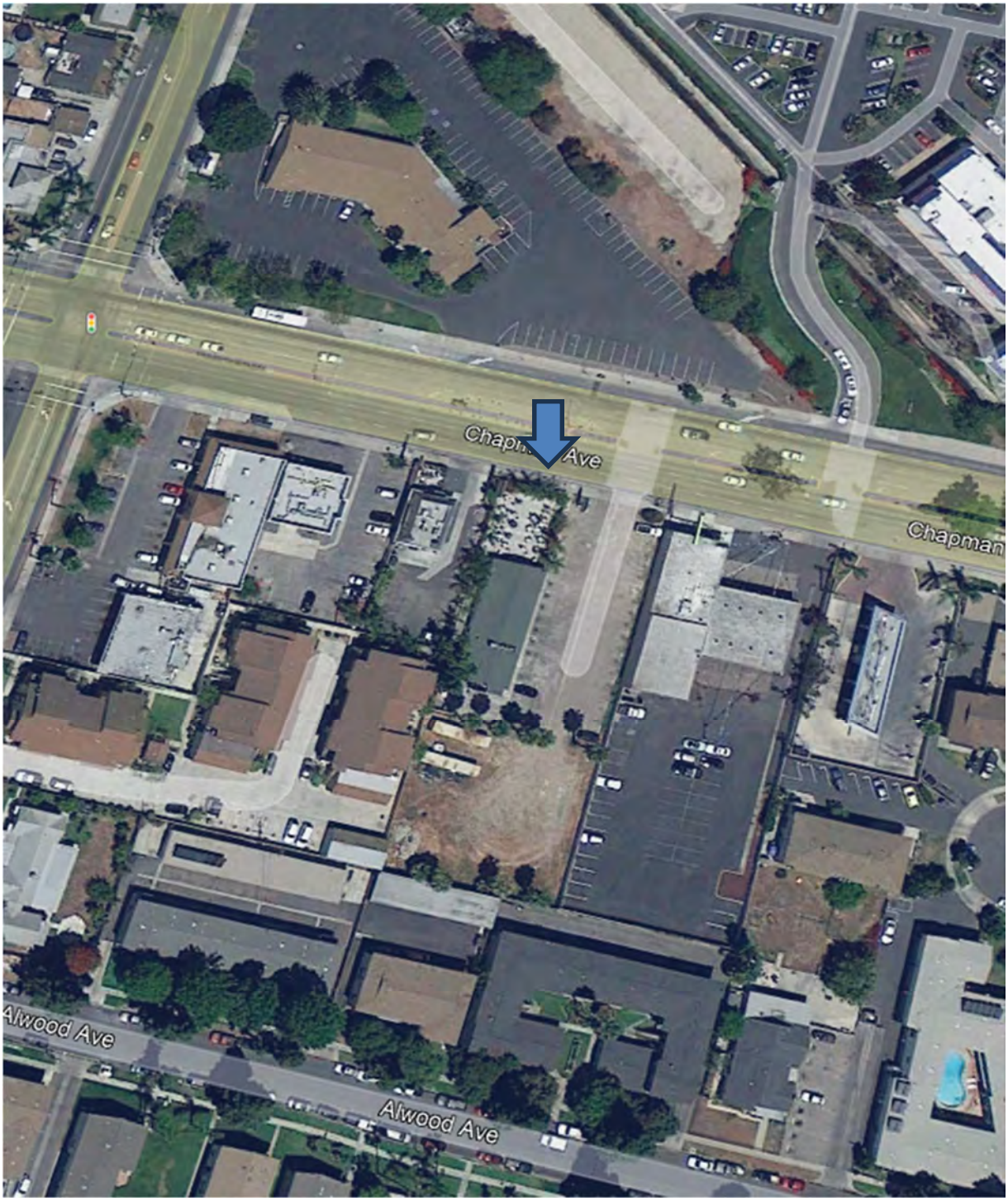


1992

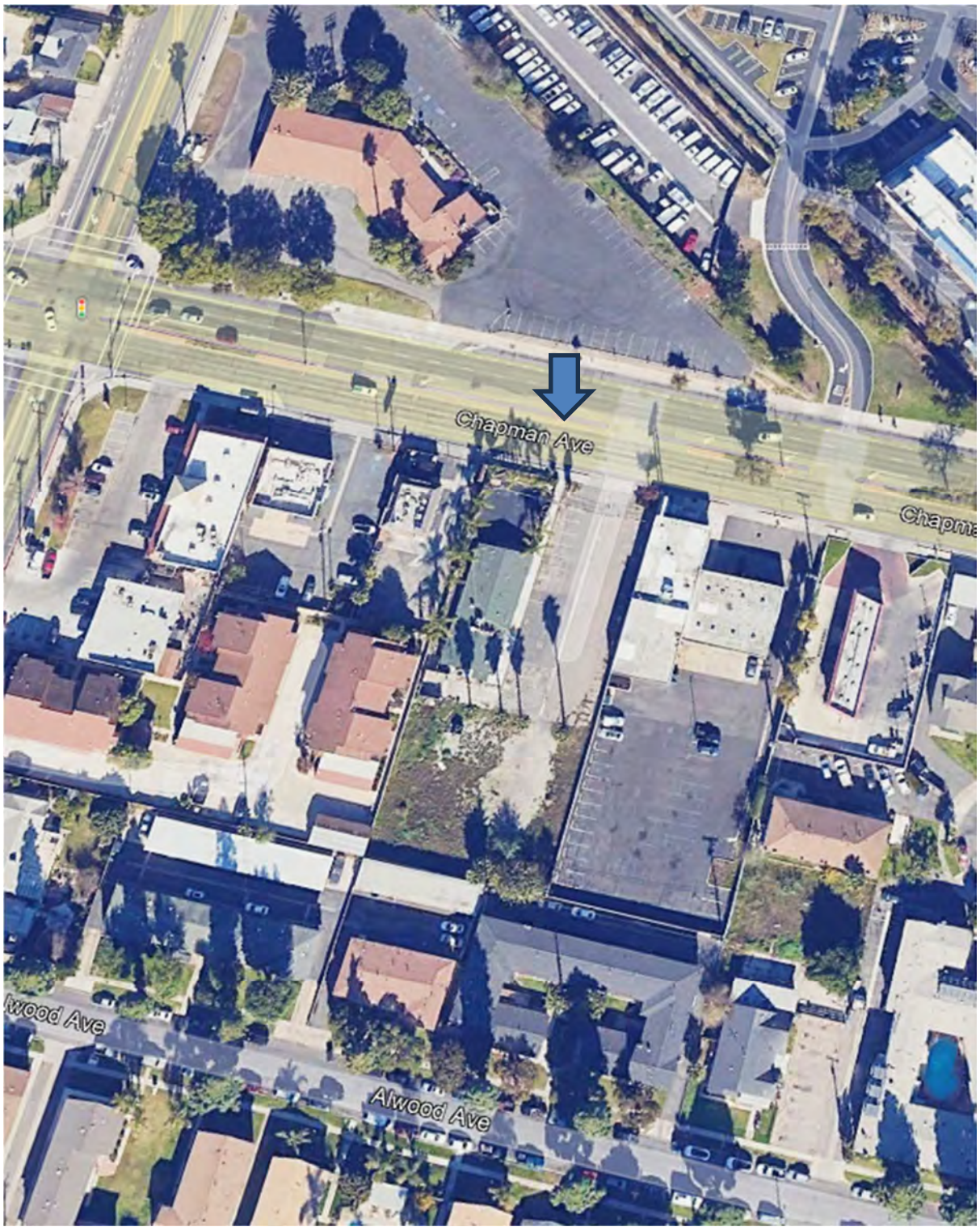
2004



2007

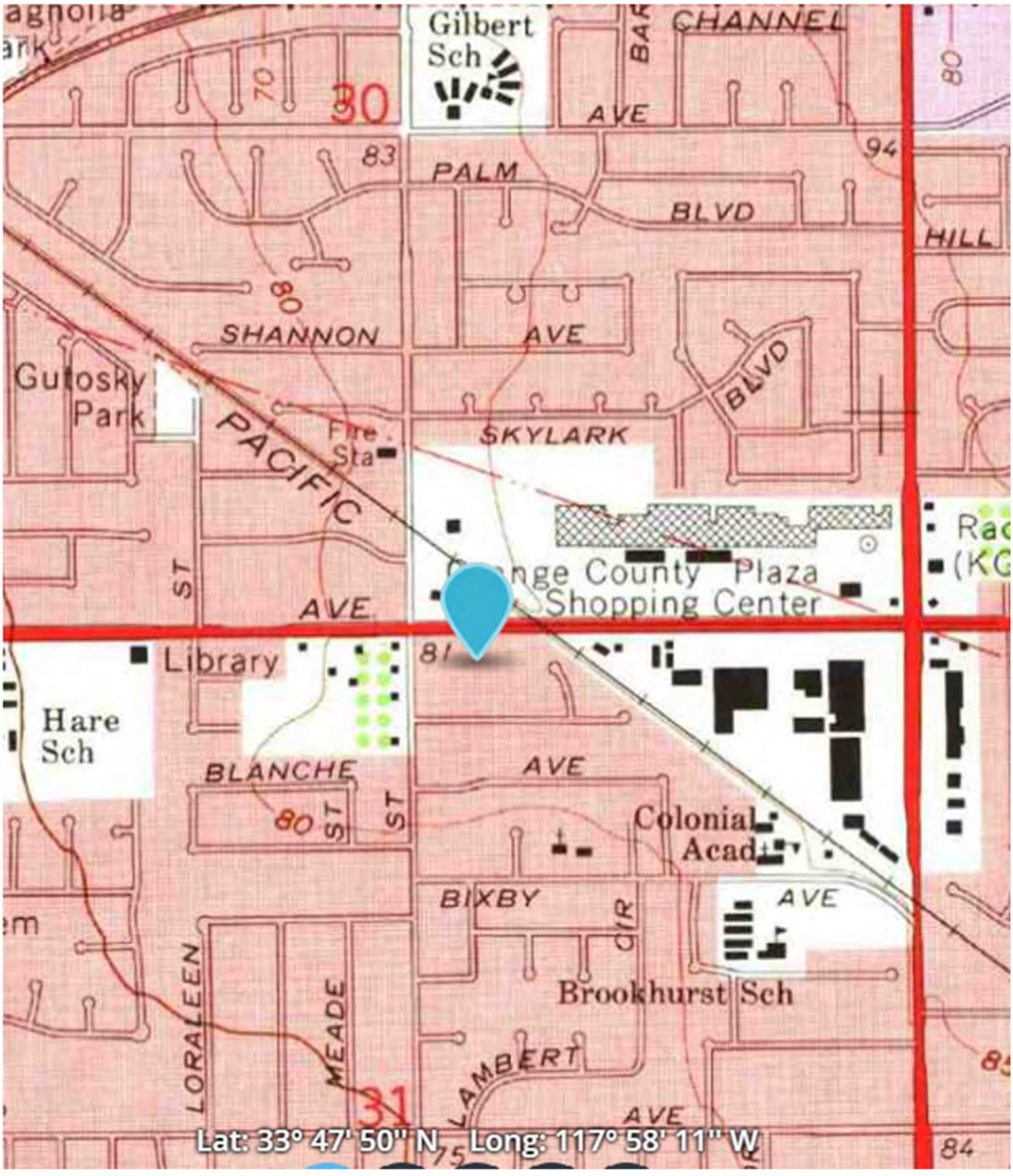


2013



2023

12.3 USGS Topographic Map of Site



1965 Anaheim 7.5 Minute USGS Topographic Map

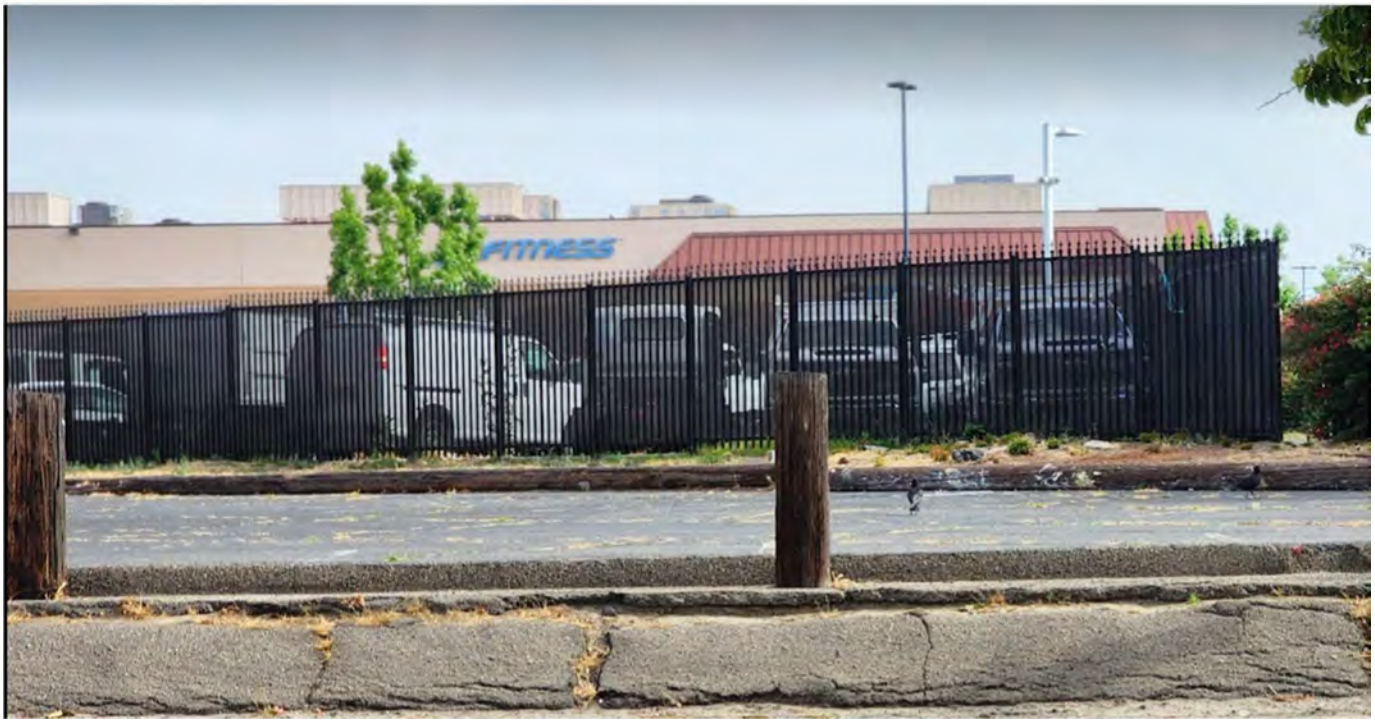
12.4 Environmental Features

Inside Restaurant Prior To Demolition

Restaurant Being Demolished

Demolition In Progress

Cleared Parcel With Asphalt Parking Lot



North Chapman Avenue Then Retail

South – Residential

East – Tire Store

West – Restaurant Then Dentist

12.5 Building Permits

CERTIFICATE OF OCCUPANCY 2

DEPARTMENT OF BUILDING

HARRY R. PEIRCE, Director

CITY OF GARDEN GROVE

11391 ACACIA

JOB ADDRESS 9582 Chapman Ave. PERMIT NO. 27019A

USE OF BUILDING restaurant GROUP F-2 TYPE VA

USE ZONE C-1 APPROVED BY W. R. Hiller DATE 12-30-68

ZONING REMARKS 25 parking spaces required

Floor load sign installed per Section 2308 Yes ☐ No ☐

Room capacity sign installed per section 3301 (1) Yes ☒ No ☐

The above described building has been inspected and found to comply with the provisions of the Uniform Building Code.

ISSUED TO S. V. Munster, jr. ADDRESS P.O. Box 3020 Fullerton 92634

Authorized By David R. Nibley, Principal Bldg. Insp. DATE Nov. 1, 1968

Notice: Post in a Conspicuous Place on the Premises

BUILDING PERMIT

DEPARTMENT OF BUILDING & SAFETY, GARDEN GROVE PH. 537-4200

FIRE ZONE | OCCUPANCY F-2 | TYPE VN | OCC. LOAD 28

REMARKS Paint Booth Exhaust

PLANNING

USE ZONE C-1

SETBACKS	FRONT	LEFT	RIGHT	REAR
EAVE PROJ.	*	*	*	*

PLANNING ACTION | PARK. SPACES REQUIRED *

Zoning Approved By [illegible] Date 2-9-68

Remarks * See Plot Plan.

PUBLIC WORKS

	Amount	Req'd	Provided
Parcel Map		NO	
R/W Dedication		YES	
Bonds		~~YES~~	
Street Bond	1700.00	YES	
Water Bond		NO	
Water Assmt. Fee	495.00	YES	
Fire Hydrant F.F. Fee	24.00	YES	
Parkway Tree Fee	15.00	YES	
Landscape Bond	45.00	YES	

Remarks Fees paid 2/23

INSPECTION RECORD

APPROVAL	DATE	INSPECTOR
Foundation and Location	2-23-68	[illegible]
Reinforcing		
Roof Shtg.	6-10-68	[illegible]
Rough Frame	6-10-68	[illegible]
Lath or Drywall	6-11-68	[illegible]
Plas. Brown Ct.	7-1-68	[illegible]
Other		
Final	10-30-68	[illegible]
Utility Release	10-30-68	JS

VALUATION NOTE: INCLUDE LABOR, MAT., WIRING, PLUMB., HEAT., ETC. $ 30,000

FEES

Plan Check $ 45 — 2.5 Building Permit $ 902.50

Bond $

Expiration Date

Permit Authorized By 1 Bldg. Inspector [illegible] Date 3/2/68

INSTRUCTIONS: PRINT IN AREA WITHIN HEAVY LINES. USE TYPEWRITER OR BALL POINT PEN. PRESS FIRMLY. BE SURE ALL COPIES ARE LEGIBLE. NO ERASURES PERMITTED. A DOUBLE FEE WILL BE CHARGED IF WORK IS STARTED BEFORE PERMIT IS ISSUED.

Job Address 12563 Chapman Ave. | Permit No. 027019 A

Lot No. | Tract No. PC 1644

Owner S. V. Hunsaker Jr. | Tel. No. 537-4711

Mailing Address 1000 S. 3rd E. | City Fullerton | Zip No. 92634

☐ Arch. ☐ Engr. T. M. Sharman | State Lic. No. | Tel. No. 538-9267

Mailing Address 1041 E. Fruita Ave. | City Anaheim | Zip No.

Contractor S. V. Hunsaker | Lic. No. [illegible] | Tel. No. 542-1424

Mailing Address 1000 S. 3rd E. | City Costa Mesa | Zip No.

PRESENT BLDG. USE | PROPOSED BLDG. USE Assembly

MAR-8-68 11,247

Validation JAN 23-68 11 030 M ****45.25

DESCRIBE WORK TO BE DONE

NEW ☒ ADD'N ☐ ALTER. ☐ REPAIR ☐ DEMOLISH ☐

FLOOR AREA (SQ. FT.) 240 | NO. OF STORIES 1 | NO. OF DWELLING UNITS

I certify that I have read this application and state that the above information is correct. I agree to comply to all City Ordinances and State laws relating to building construction. I certify that in the performance of the above work I shall not employ any person in violation of the Labor Code of California relating to Workmen's Compensation Insurance. I further agree to hold the City of Garden Grove free and harmless from any liability arising out of injury or bodily damage resulting from work performed relevant to this permit.

CONTRACTORS SIGN BELOW

I certify that I am a licensed contractor and that my license is in full force and effect.

S. V. Hunsaker By

Contractor | Authorized Agent | Date

OWNER-BUILDER SIGN BELOW

I certify that I am exempt from the provisions of Ch. 9, Div. 3, B and P. Code (Contractor's License Law) because (check one):

☐ I am the owner of the above property and will personally perform the above work.

☒ I am the owner of the above property and I will contract to have all of the above work performed by licensed contractors.

☐ I am the owner of the above property and will employ persons to perform the above work, with wages as their sole compensation. I will furnish insurance for my employees as required by the Labor Code of California.

S. V. Hunsaker By

Owner's Signature | Authorized Agent | Date

If work is not started within 60 days from date of issue or if abandoned for more than 120 days, this permit will be null and void.

RELOCATION

PRESENT BLDG. ADDRESS

MOVING CONTRACTOR

Department of Building

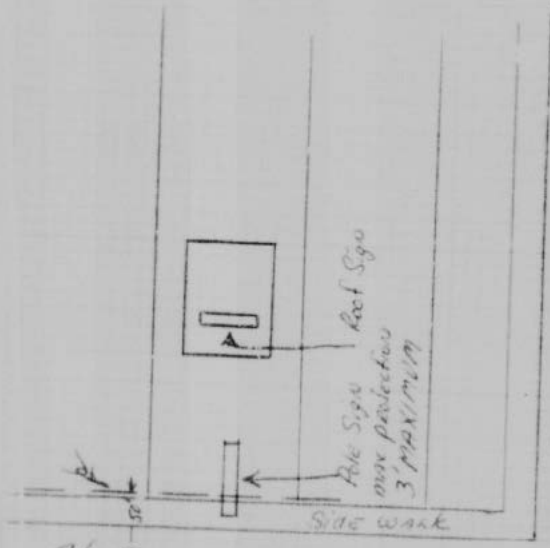
CITY OF GARDEN GROVE

Job Address	Permit Number
9562 CHAPMAN	28324-5
Lot / Tract / Blk.	

DIMENSION PLOT PLAN COMPLETELY SHOWING ALL BLDGS. ON THE LOT AND THEIR USE

PC 1282

2 Signs



N

certify the information hereon is complete and correct.
Routing: #1 Building Inspector #2 Office File #3 Owner

By Ad Art Inc Date 5-7-68

ELECTRICAL PERMIT

DEPARTMENT OF DEVELOPMENT SERVICES

GARDEN GROVE, CALIFORNIA PHONE: 638-6771

PERMITTED. A DOUBLE FEE WILL BE CHARGED IF WORK IS STARTED BEFORE PERMIT IS ISSUED.

ADDRESS: 9562 Chapman Ave — PERMIT NO.: 054836 A

OWNER: Nutters Produce — PHONE: 539-4411

OWNER'S ADDRESS: 9562 Chapman Ave — CITY: Garden Grove

NEW BUILDING OR ADDITION — AREA, SQ. FT. | EXISTING BUILDING REMODEL AREA, SQ. FT. | OCCUPANCY GROUP | USE OF BUILDING AND OR NUMBER OF UNITS

ELECTRICAL CONTRACTOR: Mitchell/Logari Inc — CITY: Buena Park — PHONE: 522 65 38

ADDRESS: 7662 Beach Blvd-Buena Park — CITY: Buena Park — STATE LICENSE NO.: 210 222 C/10

VALIDATION: JUL 20-72 11 084 M ****10.00

I HAVE CAREFULLY READ THE ABOVE APPLICATION AND KNOW THE SAME TO BE TRUE AND CORRECT. ALL PROVISIONS OF STATE AND LOCAL LAWS COVERING THIS TYPE OF CONSTRUCTION WILL BE COMPLIED WITH WHETHER SPECIFIED HEREIN OR NOT. NO PERSON SHALL BE EMPLOYED IN VIOLATION OF THE LABOR CODE OF THE STATE OF CALIFORNIA.

SIGNATURE OF PERMITTEE: x Nancy T. Logari — DATE: 7/20/72

LOT NO.	TRACT NO.	NUMBER	EACH	FEE
Residential (I & H) sq. ft.			.01	
Garage, Resid. (J) sq. ft.			005	
Service, Single Phase			$1.00	
Service, Three Phase			1.00	
Meters, Single Phase Existing			1.00	
Meters, Three Phase			1.00	
Pole, Power, Light, etc.			2.00	
Sub-Panels 1 Φ			1.00	
Sub-Panels 3 Φ			1.00	
Outlets 1st 20		3	20	60
Outlets Over 20			.10	
Fixtures 1st 20		2	.20	40
Fixtures Over 20			.10	
Fixtures, Mercury, Arc, etc.			1.00	
Heater			1.00	
Washer			1.00	
Dryer			1.00	
Hot Water Heaters			1.00	
Dishwasher			1.00	
Domestic Range or Oven			1.00	
Motors Not Over 1 HP Furn. Fan		2	1.00	2 00
Motors Over 1 Not Over 3 HP Furn. Fan		2	1.50	3 00
A/C 5HP		1	2.00	2 00
Time Clock			1.00	
Sign, 1 Tran. or 1 Ballast			2.00	
Each Additional Tran. or Ballast			1.00	
Sign Hookup			1.00	
ISSUANCE OF PERMIT				2 00
TOTAL FEE				10 00

BRANCH CIRCUIT PANEL: CIRCUITRY

CIR. NO.	BRKR SIZE	WIRE SIZE	NOMENCLATURE	NO. OF OUTLET	WATTS L1	WATTS L2	WATTS L3
1							
2							
3							
4							
5							
6							

INSPECTION RECORD

APPROVAL	DATE	INSPECTOR
Underground		
Conduit		
Wiring		
Heater		
Fixtures		
Service Existing	7-25-72	[illegible]
FINAL		
Utility Notified	7-26-72	[illegible]

SINGLE PHASE SERVICE SIZE ☐ 00 ☐ 0H — AMPS — WIRE — RIG. CONDUIT

THREE PHASE SERVICE SIZE ☐ 3 + 1 ☐ 4 + 1 ☐ 00 ☐ 0H — AMPS — WIRE — RIG. CONDUIT

BUILDING PERMIT NO.	SIGN PERMIT NO.	VENT. HEAT. AIR COND. PERMIT NO.

1 INSPECTOR | PERMIT AUTHORIZED BY [signature] | DATE 7-20-72

EL-101-1

PLUMBING PERMIT

DEVELOPMENT SERVICES DEPT.
GARDEN GROVE, CAL. 638-6771

INSTRUCTION: USE TYPEWRITER OR BALL POINT PEN. PRESS FIRMLY. BE SURE ALL COPIES ARE LEGIBLE. NO ERASURES PERMITTED. **A DOUBLE FEE WILL BE CHARGED IF WORK IS STARTED BEFORE PERMIT IS ISSUED.**

For Applicant to Fill in (Please Print)

Address: 9562 Chapman Ave. | Permit No.: 079073A
Lot No.: 14 | Tract No.: Berry Field
Owner: Knowlwood Restaurant
Owner's Address: Same
Plumbing Contractor: R.C. Plumbing
Contractor's Address: 2243 Brecburn | City: Fullerton
Phone: 773-4622 | State License No.: 291476
Occupancy:

New Bldg. ☐ Exist. Bldg. ☒

VALIDATION
JUL 22-75 11 003 M ★★★★15.50

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all ordinances and State laws regulating plumbing.
I hereby certify that I am properly registered with and/or licensed as required by the City of Garden Grove and/or State of California, or that I am the legal owner of the above described property, and I certify that in the performance of the work for which this permit is issued I shall not employ any person in violation of the workmen's compensation laws of the State of California.

Signature of Permittee: Ken Clark | Date: 7-22-75

PERMIT FEES

NO.	TYPE OF FIXTURE OR ITEM	EACH	$ FEE
	Water Closet (toilet)	$1.75	
	Bath Tub	1.75	
	Shower	1.75	
	Lavatory (Wash Basin)	1.75	
3	Kitchen Sink	1.75	5 25
1	Garbage Disposal	1.75	1 75
	Laundry Tub or Tray	1.75	
	Water Heater	1.75	
1	Floor Sink	1.75	1 75
	Floor Drain	1.75	
	Dish Washer	1.75	
	Drinking Fountain	1.75	
	Urinal	1.75	
3	Gas System - Outlets 3	1.75	1 75
	Building Sewer (First 100 ft.)	6.00	
	Building Sewer (Add'l 100 ft.)	4.00	
	Building Sewer (ea. add'l drain)	3.00	
	Rainwater Drain	2.00	
	Swimming Pool Piping	1.75	
	Sand Traps/Receptors	1.75	
	Automatic Washing Machine	1.75	
	Water Softeners	1.75	
	Backwash - Trap	1.75	
	Water Lateral	1.75	
	Backflow Protective Devices	2.00	
1	Water Piping (ea. 100 ft.)	2.00	2 00
	Lawn Sprinklers (Single Dwellings Only)	2.00	
	Lawn Sprinklers (other)	10.00	
	ISSUANCE OF PERMIT		3 00

FEES

Plan Check $ —— | Plumbing Permit $ 15 50

Permit Authorized By: Phil Ka | Date: 7/22/75

INSPECTION RECORD

APPROVALS	DATE	INSPECTOR
Soil Piping		
Ground Plumbing		
Rough Plumbing	7-24-75	[illegible]
Gas Piping	7-24-75	[illegible]
Gas Vent		
Sewer		
Main Drain and Vacuum Lines		
Water Heater		
Backwash		
Water Lateral		
FINAL	10-2-75	[illegible]
UTILITY CO. NOTIFIED	10-3-75	[illegible]

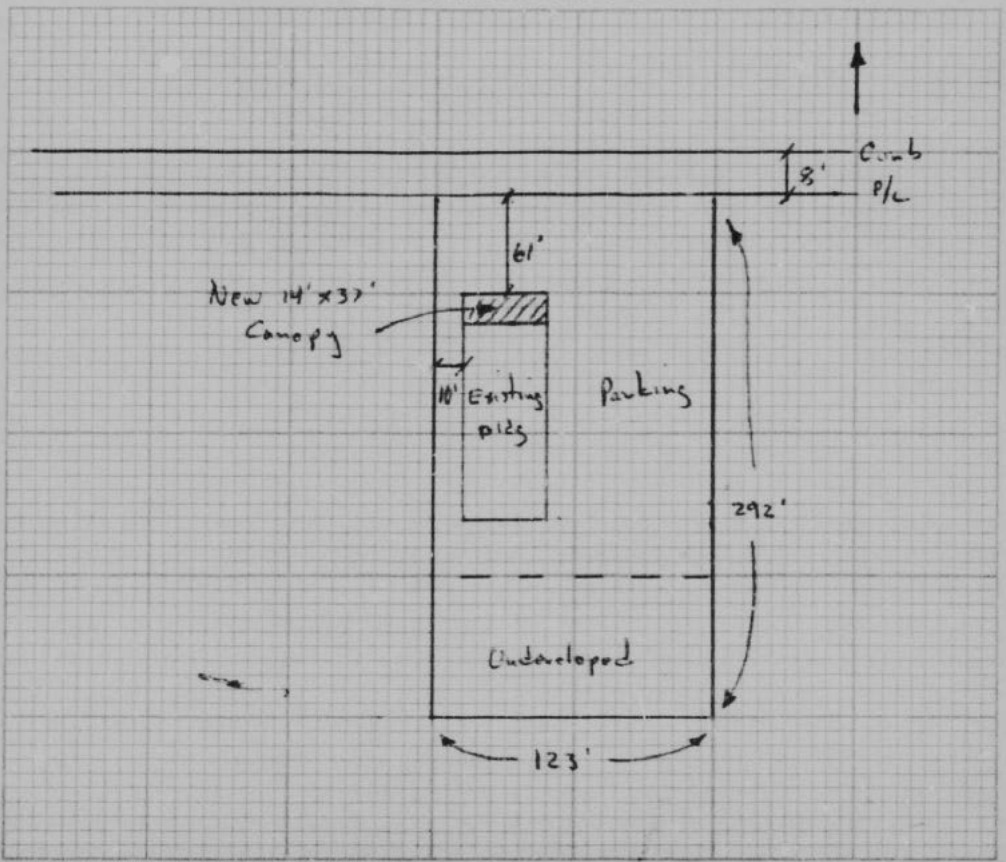
I. INSPECTOR

Bldg. Permit # 78937A

BUILDING PERMIT PLOT PLAN
Development Services Department
CITY OF GARDEN GROVE

JOB ADDRESS				PERMIT NO.
9562 Chapman				78937A
ASSESSORS PARCEL NO.	LOT	BLOCK	TRACT	
133-091-03	14		Berryfield	
PLOT PLAN APPROVED BY	JOB DESCRIPTION (PLEASE CHECK)			
	☐ New ☒ Addition ☒ Alteration ☐ Repair ☐ Move ☐ Demolish			
OWNER	DATE	USE		PERMIT VALUE
Knowlwood Enf.	7-15-75	Refurbish Interior & Add Canopy		15,000.00

DIMENSION PLOT PLAN COMPLETELY SHOWING ALL STRUCTURES ON THE LOT AND THEIR USE



#1 Building Insp. / #2 Assessor / #3 File / #4 Permittee
I certify the information hereon is complete and correct. By _____ Date _____

HEATING, VENTILATING, REFRIGERATION & AIR COND. PERMIT

DEVELOPMENT SERVICE DEPT.
GARDEN GROVE, CAL. 638-6771

INSTRUCTION USE TYPEWRITER OR BALL POINT PEN. PRESS FIRMLY. BE SURE ALL COPIES ARE LEGIBLE. NO ERASURES PERMITTED. A DOUBLE FEE WILL BE CHARGED IF WORK IS STARTED BEFORE PERMIT IS ISSUED.

For Applicant to Fill in (PLEASE PRINT) Permit No.

ADDRESS: 9562 CHAPMAN — 79182A

LOT NO. TRACT NO. — 079182 A

OWNER: ROY KNOWLWOOD

OWNER'S ADDRESS

CONTRACTOR: RELIABLE SHEET METAL

CONTRACTOR'S ADDRESS: 115 So. LEMON CITY: FULLERTON

PHONE: 525-2343 STATE LICENSE NO.: 272202

OCCUPANCY: RESTRAUNT

NEW BLDG. ☐

EXIST. BLDG. X — JUL 25-75 11 074 M ****15.00

VALUATION

I hereby acknowledge that I have read this application and state that the above is correct and agree to comply with all ordinances and State laws regulating plumbing. I hereby certify that I am properly registered with and/or licensed as required by the City of Garden Grove and/or State of California, or that I am the legal owner of the above described property, and I certify that I am the performer of the work for which this permit is issued. I am not employing any person in violation of the workmen's compensation laws of the State of California.

SIGNATURE OF APPLICANT: [signature] 7/25/75

PERMIT FEES

TYPE OF FIXTURE OR ITEM	NO.	EA.	TOTAL
Furnace to & including 100,000 B.T.U.		5.00	
More than 100,000 & including 500,000 B.T.U.		7.50	
More than 500,000 & including 1,000,000 B.T.U.		10.00	
More than 1,000,000 & including 2,000,000 B.T.U.		15.00	
More than 2,000,000 B.T.U.		25.00	
Installation or Relocation of Floor Furnace		5.00	
Installation or Relocation of Susp. Heater		5.00	
Installation or Relocation of Wall Heater		5.00	
Installation or Relocation of Unit Heater		5.00	
Installation of Appliance Vent Only		2.00	
Repair, Alteration or Addition to an Heating or Cooling System		5.00	
Incidental Gas Piping		1.75	
Each Range Hood including Duct and Fan	1	5.00	5.00
Each Vent Fan Connected to a Single Duct	2	2.00	4.00
Each Ventilating System not a Part of a Heating or Air Conditioning System Authorized by Permit		4.00	
Boiler or Compressor to & including 5 Horsepower		5.00	
Absorption System to & including 100,000 B.T.U.		5.00	
Boiler or Compressor to & including 15 Horsepower		7.50	
Absorption System to & including 500,000 B.T.U.		7.50	
Boiler or Compressor to & including 30 Horsepower		10.00	
Absorption System to & including 1,000,000 B.T.U.		10.00	
Boiler or Compressor to & including 50 Horsepower		15.00	
Absorption System to & including 2,000,000 B.T.U.		15.00	
Boiler or Compressor over 50 Horsepower		25.00	
Absorption System over 2,000,000 B.T.U.		25.00	
Each Evaporative Cooler	1	3.00	3.00
Air Handling Unit to & including 2,000 C.F.M.		2.00	
Air Handling Unit to & including 10,000 C.F.M.		5.00	
Air Handling Unit over 10,000 C.F.M.		10.00	
Each Appliance or Equipment Regulated by this Code but not specifically listed in the Fee Schedule		4.00	
ISSUANCE OF PERMIT			3 00

FEES

PLAN CHECK $

TOTAL PERMIT $ 15 00

Permit Authorized By: Phil B. Date: 7/25/75

1. INSPECTOR

INSPECTION RECORD

APPROVALS	DATE	INSPECTOR
FURNACE		
FURNACE VENTS		
GAS PIPING		
DUCTS		
SINGLE DUCT FAN VENT		
KITCHEN HOOD		
AIR HANDLING UNIT		
EVAPORATIVE COOLER		
BOILER OR COMPRESSOR		
FINAL	10 31 75	
UTILITY CO. NOTIFIED		

CITY OF GARDEN GROVE
Public Works & Development

BUILDING PERMIT

Inspection Requests
638-6771

General Information
638-6661

P.C. #

INSPECTION RECORD

APPROVAL	DATE	INSPECTOR
FOUNDATION & LOCATION	4/9/81	IW
CONCRETE FLOOR		
REINFORCING		
ROOF SHTG.		
ROUGH FRAME		
INSULATION, ENERGY		
LATH OR DRYWALL		
PLAS. BROWN CT.		
SOUND INSULATION		
SMOKE DETECTOR		
PARKING		
LANDSCAPING		
LAND USE FINAL		
FINAL	5/18/81	IW
UTILITY RELEASE		

OCCUPANCY	TYPE	OCC. LOAD	FIRE SPRINK.

		FRONT	LEFT	RIGHT	REAR
USE ZONE					
FIRE ZONE	Esv Proj. Setbacks				

PLANNING ACTION: Approved — PLANS DATE

LAND USE APPROVED BY: Donald Jay Bloka 3/4/81

REMARKS: Dble Pole Sign Approved. 72ft.

G.G. SANT. DIS. FEE REQ'D.	O.C. SANT. DIS. FEE REQ'D.	DATE	INITIAL

	REQ'D	PROVIDED
PARCEL MAP		
R/W DEDICATION		

FEES AND BONDS

	REV. CODE	AMOUNT
ST. BOND		
WATER BOND		
WATER ASSMT. FEE (ACRG.)		
WATER ASSMT. FEE (FT.)		
PARKWAY TREE FEE		
PARK & REC. FEE (DIST.)		
DRAIN ASSMT. FEE (DIST.)		
PLAN RETENTION FEE		
BLDG. PLAN CHECK	527	13.00
BLDG. PERMIT FEE	226	20.00
ISSUANCE	517	6.00
VALUATION $ 1200.00	TOTAL FEES	39.00

AUTHORIZED BY: jm — DATE: 3-6-81

1. INSPECTOR

IDENTIFICATION CODE

WORKER'S COMPENSATION REQUIREMENTS

State Compensation Insurance Policy No. 135932-81 Expiration Date 2-16-82

☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation laws of California.

NOTE: If, after making such certificate, the applicant for the permit should become subject to the Worker's Compensation provisions of this code, he shall forthwith comply with the provisions of Section 3700 or his permit shall be deemed revoked.

☑ I certify that I have read this application and state that the above information is correct. I agree to comply with all City ordinances and State laws relating to pending construction. I further agree to hold the City of Garden Grove free and harmless from any liability arising out of injury or bodily damage resulting from work performed relevant to this permit.

PERMIT APPLICANT SIGNATURE — DATE: 2/3/81

BUSINESS TAX CERTIFICATE INFORMATION

I certify that the following Contractor's License No. _____ and Classification _____ is in full force and effect.

(PRINT) _____ (SIGNATURE) CONTRACTOR OR AUTHORIZED AGENT _____ DATE

BUSINESS TAX CERTIFICATE NO. _____ EXPIRATION DATE _____

I certify that I am exempt from Section 7031.5 of the Business and Professions Code, Division 3, Chapter 9, Contractors' License Law, under the following Section:

Owner: Section 7044 ☐ Minor work under $100: Section 7048 ☐
Employee working for wages only: Section 7053 ☐

Other: _____

(PRINT) PROPERTY OWNER (SIGNATURE) PROPERTY OWNER OR AUTHORIZED AGENT _____ DATE

For Applicant to Fill in

ADDRESS: 9562 CHAPMAN BD.

LOT NO. _____ BLK NO. _____ TRACT NO. _____ PARCEL NO. 133-091-03

OWNER: KNOWLWOOD TEL. NO. G.G.

MAILING ADDRESS: 9562 CHAPMAN CITY _____ ZIP _____

☐ ARCH
☐ ENGR.

MAILING ADDRESS _____ CITY _____ ZIP _____

TEL. NO. _____ STATE LIC. NO. & TYPE _____

VALIDATION

03/06/81	#0193 E
PLANCK	13.00
BDGPER	20.00
ISSUE	6.00
CHK	39.00

CONTRACTOR: NEILE NON Inc. SAME

MAILING ADDRESS: 16892 S. HARBOR CITY _____ ZIP _____

TEL. NO. 531-3374 STATE LIC. NO. 292276

PRESENT BLDG. USE _____ PROPOSED BLDG. USE comm'l

DESCRIBE WORK TO BE DONE: manufactured sign
MFG. & INSTALL ELEC. SIGN

NEW ☑ ADD'N ☐ ALTER. ☐ REPAIR ☐ DEMOLISH ☐

FLOOR AREA (SQ. FT.)	NO. OF STORIES	NO. OF DWELLING UNITS

If work is not started within 120 days from date of issue or if abandoned for more than 120 days, this permit will be null and void.

A FEE MAY BE CHARGED FOR RE-INSPECTION DUE TO NEGLIGENCE, INCOMPLETE WORK, OR FAILURE TO MAKE CORRECTIONS.

RELOCATION

PRESENT BLDG. ADDRESS _____

MOVING CONTRACTOR _____

ADDRESS _____

DS-9607-9-79

ELECTRICAL PERMIT

DEPARTMENT OF DEVELOPMENT SERVICES

GARDEN GROVE, CALIFORNIA PHONE: 638-6771

PERMITTED. A DOUBLE FEE WILL BE CHARGED IF WORK IS STARTED BEFORE PERMIT IS ISSUED.

ADDRESS: 9562 Chapman Ave — PERMIT NO.: 054836 A

OWNER: Nutters Produce — PHONE: 539-4411

OWNER'S ADDRESS: 9562 Chapman Ave — CITY: Garden Grove

NEW BUILDING OR ADDITION — AREA, SQ. FT. | EXISTING BUILDING REMODEL AREA, SQ. FT. | OCCUPANCY GROUP | USE OF BUILDING AND OR NUMBER OF UNITS

ELECTRICAL CONTRACTOR: Mitchell/Logari Inc — CITY: Buena Park — PHONE: 522 65 38

ADDRESS: 7662 Beach Blvd-Buena Park — CITY: Buena Park — STATE LICENSE NO.: 210 222 C/10

VALIDATION: JUL 20-72 11 084 M ****10.00

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SIGNATURE OF PERMITTEE: x Nancy T. Logari — DATE: 7/20/72

LOT NO.	TRACT NO.	NUMBER	EACH	FEE
Residential (I & H) sq. ft.			.01	
Garage, Resid. (J) sq. ft.			005	
Service, Single Phase			$1.00	
Service, Three Phase			1.00	
Meters, Single Phase Existing			1.00	
Meters, Three Phase			1.00	
Pole, Power, Light, etc.			2.00	
Sub-Panels 1 Φ			1.00	
Sub-Panels 3 Φ			1.00	
Outlets 1st 20		3	20	60
Outlets Over 20			.10	
Fixtures 1st 20		2	.20	40
Fixtures Over 20			.10	
Fixtures, Mercury, Arc, etc.			1.00	
Heater			1.00	
Washer			1.00	
Dryer			1.00	
Hot Water Heaters			1.00	
Dishwasher			1.00	
Domestic Range or Oven			1.00	
Motors Not Over 1 HP Furn. Fan		2	1.00	2 00
Motors Over 1 Not Over 3 HP Furn. Fan		2	1.50	3 00
A/C 5HP		1	2.00	2 00
Time Clock			1.00	
Sign, 1 Tran. or 1 Ballast			2.00	
Each Additional Tran. or Ballast			1.00	
Sign Hookup			1.00	
ISSUANCE OF PERMIT				2 00
TOTAL FEE				10 00

BRANCH CIRCUIT PANEL: CIRCUITRY

CIR. NO.	BRKR SIZE	WIRE SIZE	NOMENCLATURE	NO. OF OUTLET	WATTS L1	WATTS L2	WATTS L3
1							
2							
3							
4							
5							
6							

INSPECTION RECORD

APPROVAL	DATE	INSPECTOR
Underground		
Conduit		
Wiring		
Heater		
Fixtures		
Service Existing	7-25-72	[illegible]
FINAL		
Utility Notified	7-26-72	[illegible]

SINGLE PHASE SERVICE SIZE ☐ 00 ☐ 0H — AMPS — WIRE — RIG. CONDUIT

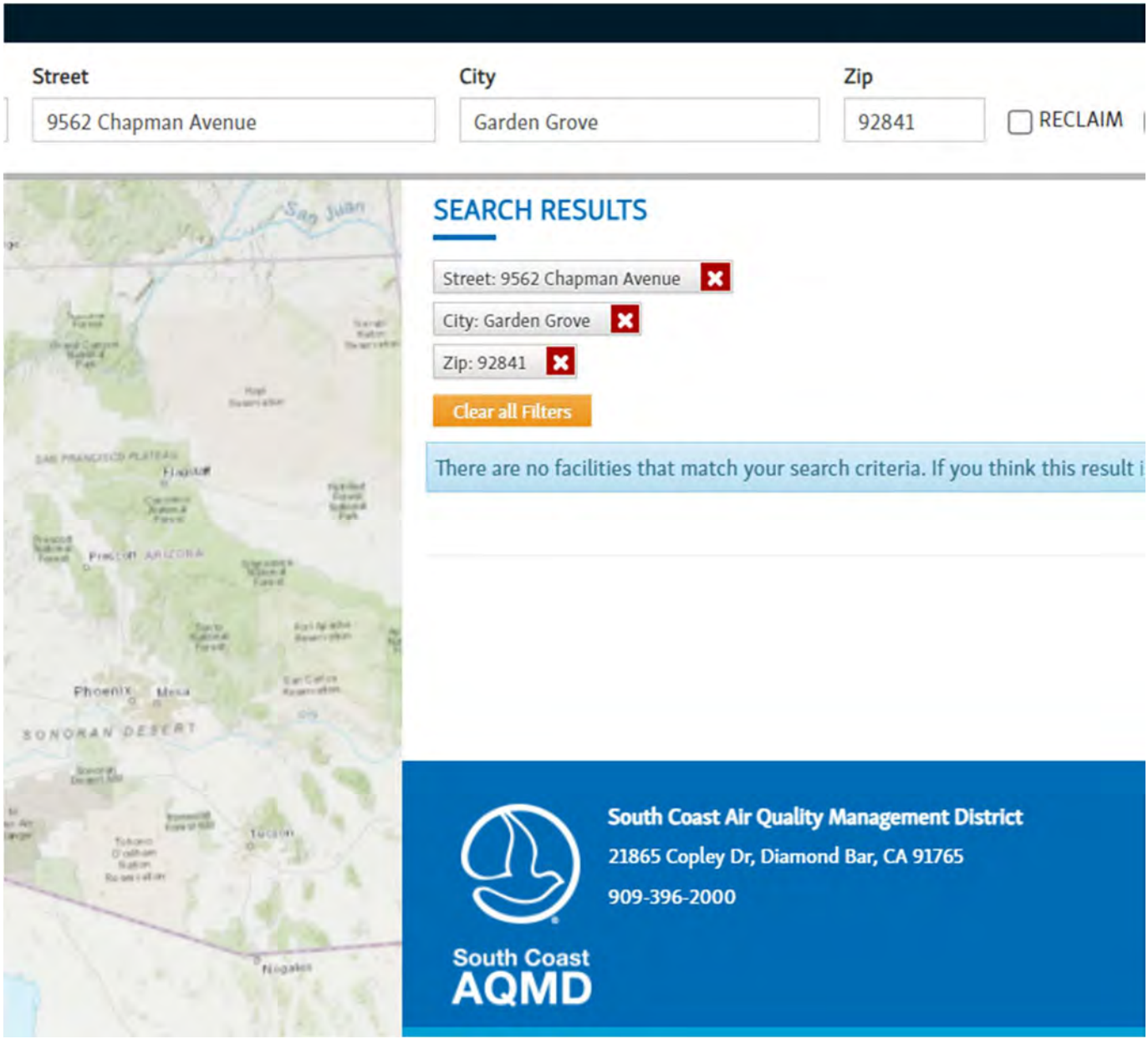
THREE PHASE SERVICE SIZE ☐ 3 + 1 ☐ 4 + 1 ☐ 00 ☐ 0H — AMPS — WIRE — RIG. CONDUIT

BUILDING PERMIT NO.	SIGN PERMIT NO.	VENT. HEAT. AIR COND. PERMIT NO.

1 INSPECTOR | PERMIT AUTHORIZED BY [signature] | DATE 7-20-72

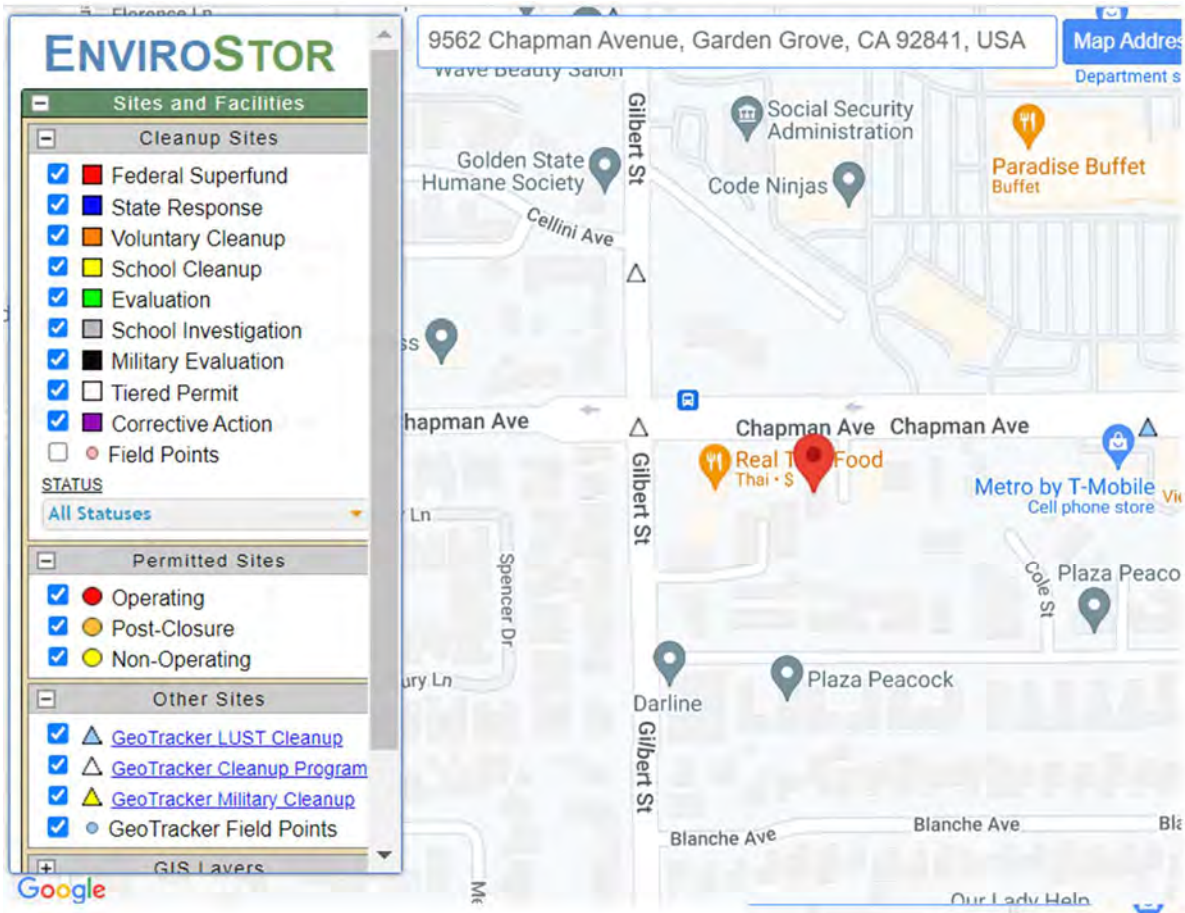
EL-101-1

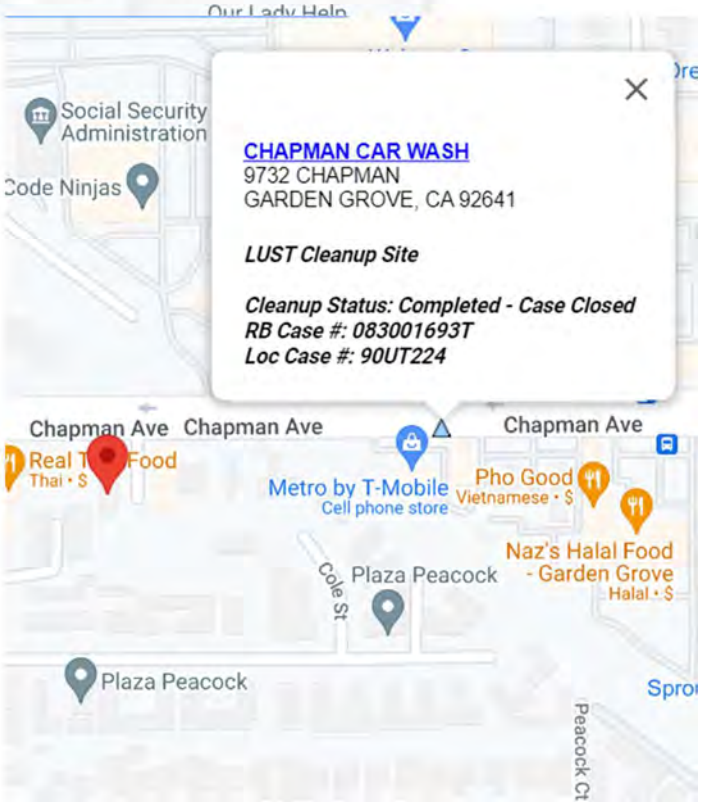
12.6 Southcoast Air Quality Management District (SCAQMD)


Street
9562 Chapman Avenue
City
Garden Grove
Zip
92841
RECLAIM
SEARCH RESULTS
Street: 9562 Chapman Avenue
City: Garden Grove
Zip: 92841
Clear all Filters
There are no facilities that match your search criteria. If you think this result i
Phoenix
Mesa
SONORAN DESERT
Tucson
Nogales
South Coast Air Quality Management District
21865 Copley Dr, Diamond Bar, CA 91765
909-396-2000
South Coast
AQMD

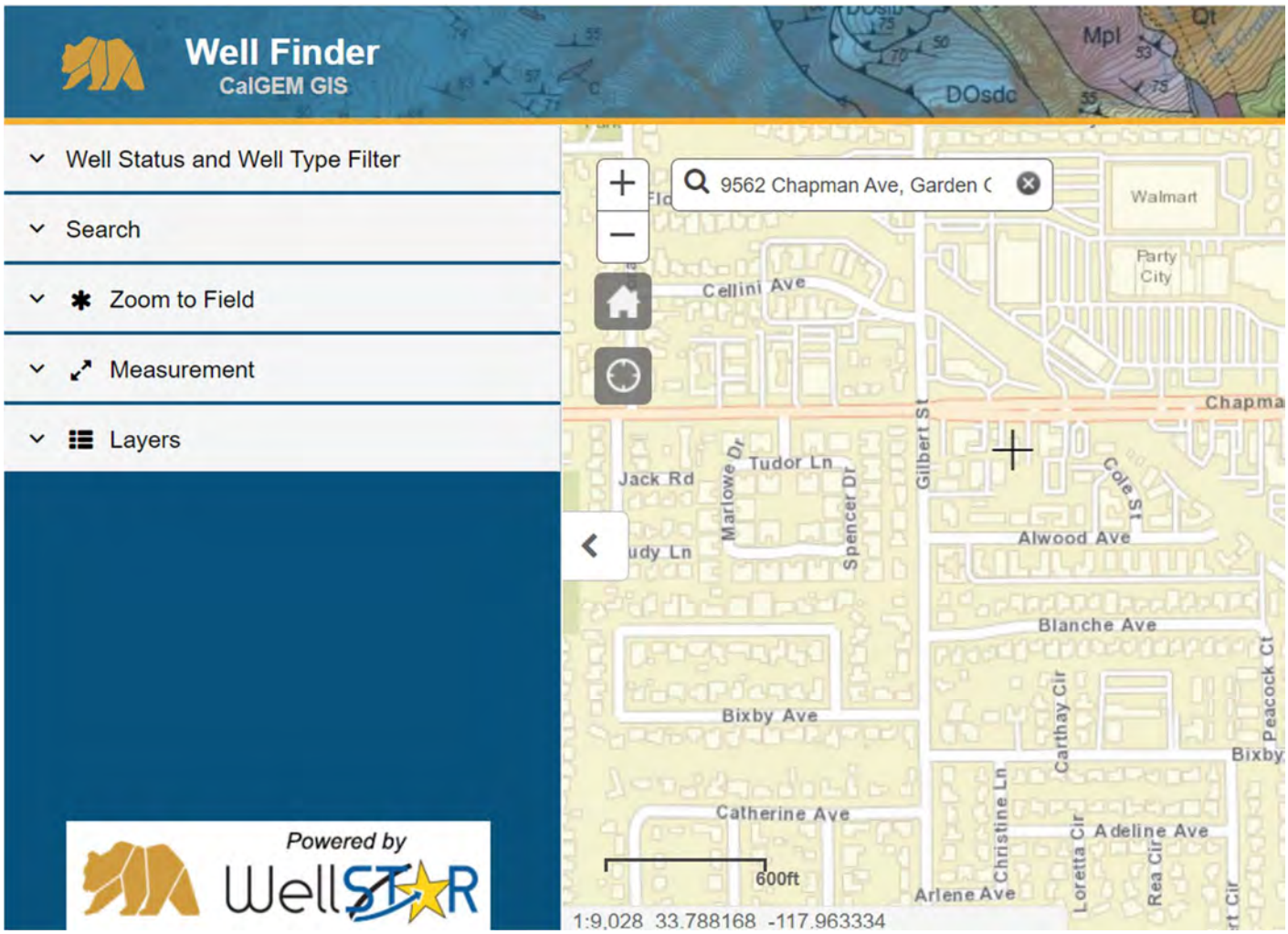
12.8 DTSC Map & Local Sites

Subject Property: 9562 Chapman Avenue Garden Grove CA 92841





12.9 DOGGR Map Section


Well Finder
CalGEM GIS
Well Status and Well Type Filter
Search
Zoom to Field
Measurement
Layers
Powered by
WellSTAR
9562 Chapman Ave, Garden C
Walmart
Party City
Cellini Ave
Chapma
Jack Rd
Tudor Ln
Marlowe Dr
Spencer Dr
Gilbert St
Cole St
Alwood Ave
Blanche Ave
Bixby Ave
Carthay Cir
Peacock Ct
Bixby
Catherine Ave
Christine Ln
Loretta Cir
Adeline Ave
Rea Cir
Arlene Ave
600ft
1:9,028 33.788168 -117.963334

No Oil Wells

12. 10 City Directories

Not Used

12.11Tier I Vapor Encroachment Screening (VES)

TIER I VAPOR ENCHROACHMENT SCREENING (VES) Conducted As Part of Phase I ESA

E2600 − 22

PROJECT NAME:

QUESTIONNAIRE COMPLETED BY: S&S Commercial Environmental Services, Inc.

PROPERTY ADDRESS: 9652 Chapaman Avenue
Garden Grove, CA 92841

UNITS: 0

NAME: Stephen A. Quartararo
TITLE: C.E.O., Environmental Professional CFR Title 40 Section 412.22
ADDRESS: 24732 Overlook Drive CITY/STATE/ZIP: Corona, CA 92883
TELEPHONE: (949)650-4994 EMAIL ADDRESS: s.quart@att.net8

DATE OF RESPONSE :7-17-24

1	Property type	[x] Commercial	[ ] Industrial [ ] Multi-Tenant x[ ] Vacant Land Res [ ]	
2	Are there any buildings/ structures on the property?	Yes [ ]	No [x]	Unknown [ ]
3	Will buildings/structures be constructed on the property in the future?	If yes, type construction _Concrete Tilt Up Wood Frame and Stucco Yes [x]	No [x]	Unknown [ ]
4	If buildings exist or are proposed, do/will they have	If yes, type construction _____ Yes [X]Hydraulic	No [X]	
5	elevators? Type of level below grade (existing)	[ ] Full Basement [ ] Parking Garage	[ ] Crawl Space [ ] Multi-level	[x] Slab on Grade
6	Ventilation in level below grade?	Yes [ ]	No [X]	Unknown [ ]
7	Sump pumps, floor drains, or trenches (existing) Radon or	Yes [ ]	No [X]	Unknown [ ]
8	methane mitigation system installed? Not Needed	Yes [ ]	No [X]	Unknown [ ]
9	Heating system type (existing)	(CHECK ALL THAT APPLY) [ ] Hot Air Circulation [ ] Hot Air Radiation [ ] Hot Water Radiation [ ] Kerosene Heater [ ] Fireplace [ ] Radiant Floor Heat [ ] Fuel Oil Furnace [ ] Other		[ ] Electric Baseboard [X] Heat Pump [ ] Wood Stove [ ] Steam Radiation [ ] Coal Furnace [ ] Hot Water Circulation [ ] Gas Furnace
10	Type of fuel energy (existing or proposed)?	(CHECK ALL THAT APPLY) [X] Natural Gas [ ] Propane [ ] Kerosene [ ] Coal [ ] Other		[X] Electric [ ] Fuel Oil [ ] Wood [X] Solar
11	Have there ever been any environmental problems at the property?	Yes [ ]	No [X]	Unknown {]
12	Does/was/will a gas station or dry cleaner operate anywhere on the property?	If yes, describe _____ Yes [ ]	No [X]	Unknown [ ]
13	Do any tenants use hazardous chemicals in relatively large quantities on the property?	Yes [ ]	No [X]	Unknown [ ]
14	Have any tenants ever complained about odors in the building or experienced health-related problems that may have been associated with the building?	If yes, describe _____ Yes [ ]	No [X]	Unknown [ ]
15	Are the operations (or proposed operations to be performed) on the property	Yes [ ]	No [X]	Unknown [ ]
16	Were/Are there any existing or proposed underground storage tanks (USTs) or above ground storage tanks (ASTs)?	Yes [ ]	No [ ]	Unknown [ ]
17	Are there any sensitive receptors (for example, children, elderly, people in poor health, and so forth) that occupy or will occupy the property? Senior Citizens Apartment's?	Yes [ ]	No [X]	Unknown [ ]
18	Is property a collection of parcels tied together for current use?	Yes [X]	No [ ]	Unknown [ ]
19	Where there any uses identified in Phase I research on the subject or adjoining properties which used chemical formulations considered Chemicals of Concern (COC)	Yes [X]	No [ ]	Unknown [ ]
20	If COC were identified, is COC use continuing on the property?	Yes [X]	No [ ]	Unknown [ ]
21.	If COC were identified on the adjoining properties, continuing?	Yes [ ]	No [X]	Unknown [ ]
22	If COC were identified, was/is their use significant?	Yes [X]	No [ ]	Unknown [ ]
23	If COC use was/is significant is/was there mitigation? Explain - see below	Yes [ ]	No [X]	Unknown [ ]
24.	Is a source of vapor within 100 feet of TP - Encroachment Condition	Yes [X]	No [ ]	Unknown [ ]
25.	Does Tier I Phase I or HUD 4128 Screening Indicate Need for Tier 2	Yes [ ]	No [X]	Unknown [ ]

Subject Property a former agricultural parcel then a restaurant from 1968 forward bldg.

demolished and will be commercial on bottom with residential on upper four floors.

Federal Regional & California Human Health Screening Levels (CHHSLs) 2010., CAL HERO 2020 note 3, HUD 2021, ASTM E2600 - 22 Vapor Intrusion, Vapor Encroachment Condition.

This list is a voluntary checklist to determine if a VEC is identified for the Target Property (TP) (that is, the presence or likely presence of COC vapors in the vadose zone of the TP caused by the release of vapors from contaminated soil and/or groundwater either on or near the TP

ASTM defines the term "Vapor Encroachment Condition" - presence or likely presence of "chemical of concern" vapors in the subsurface of the Target Property caused by the release of vapors from contaminated soil or groundwater or both either on or near the Target Property as identified by the Tier 1or Tier 2 procedures.

12.12 Letter from Magnetek

The following is a reprint of:

MagneTek
Universal Manufacturing

200 Robin Road
Paramus, NJ 07652
Phone (201) 967-7600
TELEX 753330
Fax (201) 967-0904

Mailing Address
P.O. Box 3028
Paterson, NJ 07509

RE: PCB's

Ballasts are used in fluorescent fixtures in business, commercial and industrial establishments, as well as in schools. One of the devices used in these ballasts is called a capacitor, which makes the ballasts operate more efficiently. These capacitors, used in ballasts made by every manufacturer in the industry, including Universal, used PCBs in small amounts until 1978, when a change was made to another liquid. Universal ballasts manufactured since January 1979 do not contain PCBs and the label of all these ballasts contain the statement "No PCB's".

The capacitor is a hermetically sealed device, which entirely isolates the PCB from human contact. The typical fluorescent ballast contained about 0.05 lbs. of 100% PCB liquid. That represents 1-2 liquid ounces. The weight of PCB used in relationship to the total capacitor weight, was approximately 15%. In relationship to the total ballast weight it varied from 0.6% (Slimline ballasts) to 1.5% (2 lamp, 40 watt ballasts). The degree of chlorination was 42%.

For HID ballasts where larger capacitors were used, it may have been as much as 5-6 ounces of liquid. In all cases the amount of "free PCBs" (the quantity that could leak if the can ruptured), was much less because most of the liquid was absorbed by the blotter-like dielectric material.

Ballasts occasionally fail in service and sometimes the asphalt (tar) with which they are filled melts and leaks out. On very rare occasions, the capacitor will also rupture and its contents mix with the tar. If a leak occurs, it should be cleaned up with any petroleum-based solvent.

Such a leak does not represent any significant immediate or long-term hazard. The United States Environmental Protection Agency has recognized the existence of PCBs in ballasts, has carefully evaluated the situation and in the regulations controlling the use and disposal of PCBs has concluded that continued use in existing lighting installations is acceptable; also that the occasional ballasts which becomes defective in service may be disposed of in compliance with 40 CFR* Part 761 or check with your local State Environmental Protection Agency for instruction.

Should you have any questions regarding this matter, please do not hesitate to call me at your convenience.

Very truly yours,

MagneTek Universal Manufacturing

Robert E. Babcock
Manager, Marketing Engineering

REB:cp

* Code of Federal Regulations

12.13 Certification

ENVIRONMENTAL PROFESSIONAL CERTIFICATION

I, Stephen A. Quartararo declare that, to the best of my professional knowledge and belief, I meet the definition of an Environmental Professional as defined in Section 312.10 of this part [40CFR Part 312].

I have the specific qualifications based upon education, training, and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

S&S Commercial Environmental Services, Inc.

Stephen A Quartararo, CEO
Environmental Professional
Title 40, Code of Federal
Regulations CFR Part 312.22

12.14 Resume

RESUME

STEPHEN A. QUARTARARO http://www.phase1reports.com
Environmental Professional, CFR Title 40 Code of Federal Regulations Section 312.22, ASTM-1527-2021, ASTM 2600-22, CA 2010 CHHSLs, CA HERO 2021, Note 3, SBA 2019

Owner S&S Commercial Environmental Services, Inc. since formation 1997. General Engineering Contractor A Hazardous Materials Certified, General Building Contractor B, Insulation and Acoustical C-2, Asbestos Certified, Water Well Drilling Contractor C-57.
CA Real Estate Brokers Licenses/MLS Endorsement
Life & Health Insurance License (former).

Phase I Site Surveys, Phase II Soil and Groundwater Investigations, Phase III Remediation of Soil and Groundwater leading to No Further Action or Closure by Local, County, State and Federal Agencies. Environmental Hazard Assessment, Project Cost to Cure Physical Deterioration, Construction Management, Environmental Site Appraisals. Storm and Irrigation Water Conservation, Re-use.

Coordinator- Oil Well Re-abandonment Signal Hill, CA 2009 - Valencia, California Site in 2006.

Recent Projects
2020 – 2022 Phase II & II Characterization &Vapor Extraction - former dry cleaner in Ventura County CA

2020 - Phase I and Phase II of former auto wrecking yard in Inland Empire with one area owned by City and other area part of DTSC Conditionally Closed former Gas Manufacturing Plant.

2020 - Phase I, II, III, Lead Dust Abatement Excavation and Disposal of 12 tons of lead and copper contaminated soil in former radiator shop in South Bay.

2019 – Clarifier Closure including off excavation and off haul of 8 truckloads of contaminated soil in Gardena, CA under LADPW oversight.

2019 – Clarifier Abandonment and Closure Cypress, CA under LADPW oversight.

2018 – Phase I and Phase II with Risk Assessment by others to prove property adjoining HITCO, a regional soil and groundwater contamination site on 135th Street Gardena CA was safe for Commercial Worker Occupancy leading to approval for SBA Loan. June 2017 - Closure Investigation after nine years Under Regional Water Quality Board Oversight including 2 groundwater monitoring wells in City Sidewalk Long Beach CA.

June 2017 - Closure Investigation after nine years Under Regional Water Quality Board Oversight including 2 groundwater monitoring wells in City Sidewalk Long Beach CA.

May 2017 - Investigation - Remediation of Gas Station in Calexico, CA under Regional Water Quality Board Oversight.

December 2016 - Facilitator with LA County Fire Department Site Mitigation Unit and General Engineering Contractor for Closure of 3.5-acre industrial property in Carson, CA over a five-year period. Removal of PCE Vapor in three major areas to 45 feet. Removal and off haul of 30 = twenty-four-ton truckloads of gasoline and diesel, pce and tce contaminated waste under over site of LA

County Fire Department Site Mitigation Unit in a final remediation of source. Closure ofminimally contaminated groundwater at 58 feet as non-beneficial water attenuating naturally.

March 2016 - Facilitator for No Further Action (NFA) Closure Letter for Soil, Soil Vapor and Groundwater for large light industrial property in Carson, CA after four years of testing and remediation. Relieved Owner from for further quarterly monitoring and remediation of groundwater under NFA property by proving that the contamination was from an off-site VOC contaminant source being remediated by Others.

EXPERIENCE

6,000 plus Phase I site assessments in CA, AL, AZ, AR, NV, NY and TN. 100's of Phase II and Phase III site investigations and closures in CA.

42 years as asbestos and environmental consultant and abatement contractor direct and subcontract. 20 of those years as owner of an Environmental Company, 19 as a General Engineering Contractor with Hazardous Certification and 3 of those years with related storm and irrigation water conservation related companies.

Professional cost estimation, third party verification of sampling activities, underground tank removal monitoring and property assessment consultant for soil and groundwater.

Coordinator of design and construction in two Los Angeles high rise office buildings for fire safety retrofit under the City of Los Angeles fire life safety ordinance.

Develop and Design of Affordable Housing, including site selection, negotiation, planning and permit process and funding sourcing.

MAJOR CONTRACTS

UC Santa Barbara (1979) - HVAC system cleaning of five-story Chemistry and Physical Sciences buildings on campus.
VA Medical Center LA Jolla (1980) - After-fire decontamination of Surgery Floor HVAC.
TRW (1983) - Bulk materials sampling for asbestos in 65-building facility, Redondo Beach, CA.
UC Chancellors Office, UC San Francisco Medical Center (1984) - Survey design, field work completion, report design, report completion for UC Chancellor's office's funding request to State Assembly funding for asbestos abatement and management - 103 buildings - hospital, classrooms, administrative offices.
California Hospital Medical Center (1983) - Contract and specification design and completion of asbestos abatement projects.
County of Los Angeles (1984) - Approval of specifications, third party monitoring of contractor during Building 5 Asbestos Abatement Project at Rancho Los Amigos Medical Center.
JMB Property Management (1985) - Coordination as part of Pacific Abatement Group with building management and Med Tox abatement and hygiene personnel on 3 stories of asbestos containment project in 25 story high rise office building, Century City, CA.
UC Riverside (1985) - Asbestos management and control in utility tunnels under campus.
Tishman Construction (1985) - Area containment for electrical work adjacent to occupied areas in asbestos affected Bank of America offices at ARCO Towers, Los Angeles, CA.
Equitable Real Estate Investment Management (1986) - Asbestos abatement and containment projects, including elevator lobby doors, full floor abatement and after-fire decontamination projects in former First Interstate Bank and Union Bank buildings, Los Angeles, CA.
Baxter Pharmaceutical (1988) - Building materials sampling for asbestos and reports for 14 buildings in seven Midwest States.

Fremont Indemnity (1991) - Independent owner's agent for fire protection citation response to LAFD and construction of tenant improvements for asbestos abatement and fire life safety rehabilitation of 11-story office building in midtown Los Angeles. Included removal of underground diesel tank.
Redlands Federal Savings (1990) - Phase I Environmental Assessments of raw land in Inland Empire and San Diego areas of Southern California.
SPS Technologies (1993) - "Qualified Risk Assessment"(QRA) for sale of existing 20-acre site in Costa Mesa, CA: Work involved review of commercial appraisals, Environmental Site Remediation work completed, further remediation cost proposals, interviews with responsible government agencies, interviews with banking authorities, preparation of report detailing current conditions and value of property less expected remediation costs, results of interviews with regulatory agencies and financial authorities, four scenarios under which the property might be sold and the anticipated financial return and liability concerns of each scenario.
Money Store Investment Corporation (from 1992 until sold) - Related - 400+ Phase I Environmental Assessments of commercial property as collateral for SBA backed commercial loans in California.
First Union/Wachovia - Successors to Money Story Investment Corporation, Then Wells Fargo
Coast Federal Savings (Former- early 1990's) - 300+ Phase I Environmental Assessments and Asbestos Inspections of residential apartment buildings, commercial shopping centers and other commercial buildings from San Diego to San Francisco and Sacramento to New York State.
Chevron Real Estate Services (1991) - Coordination and management of gasoline contaminated soil remediation project in Blythe, CA; work included shoring to 30 feet along the western perimeter of project to protect adjacent restaurant, removal and bio-remediation of 3,500 cubic feet of contaminated soil, removal of 5,000 gallons of contaminated water, placement of filter over local groundwater, back filling of excavation with remediated soil.

Carlsberg Management Company (1989-1995) - Independent owner's agent for fire protection citation response to LAFD and construction of tenant improvements for asbestos abatement and fire life safety rehabilitation of 10-story office building in West Los Angeles.
Owner's representative: work included selection and coordination of architect, mechanical, electrical, fire sprinkler, asbestos abatement/containment and industrial hygiene contractors and interface with the City of Los Angeles Building, Electrical and Structural Departments and Inspectors over a five-year period under occupied and vacant building conditions.
California Federal Bank (1993) - Phase I Environmental Assessments and Asbestos Inspections of commercial and residential buildings in Northern and Southern California.
Folger & Levin, Law Firm (1995) - "Environmental Risk Assessment" (ERA) for 3-acre parcel in West Los Angeles. Review of six environmental soil and groundwater studies, practical expansion of research and coordinated explanation of real environmental issues for use by commercial property appraiser.
State Farm Insurance Company (1995) - Asbestos expert for client negotiations.
Berger, Kahn, Shafton, Moss, Figler, Simon & Gladstone (1996/1997) - Asbestos expert witness.
Prestholt, Kleeger, Fidone & Villasenor (1996) - Asbestos expert witness.
S&S Commercial Environmental Services (1997 - Present) - Phase I Site Assessments and Miscellaneous Independent Project Management and General Engineering Contractor for soil and groundwater sampling and remediation leading to site closure letter from County and City Fire Departments, Health Departments and CA Regional Water Boards ranging from thousands to hundreds of thousands of dollars. Oil Well Re-abandonment.
Bank of America - Related - Phase I Environmental Assessments Southern California.
Wells Fargo Bank - Phase I Environmental Assessments and Asbestos Inspections in California for Standard and SBA backed RE property loans. (Successor To Wachovia Bank - SBA Division)

Chase Bank - Phase I Site Assessments
First Foundation Bank - Phase I Environmental Site Assessments & Phase I Reviews, Phase II Site Investigations. California and Nevada
Standard Life Insurance Company - Phase I Site Assessments
Metropolitan Life Insurance Company - Phase I Site Assessments
Textron Financial - Heritage Golf Group - 127 Acre Golf Course Santa Clarita - Phase I
Blue Green Preservation - Phase I and Phase II Site Assessments HUD Senior Housing California, Alabama, Tennessee, Arkansas
Miscellaneous Independent Cost Estimation for required remediation of contaminated sites with commercial and industrial property appraisers.

EDUCATION
B.S. Urban Environmental Management; Cal State University Dominguez Hills
J.D. Candidate Classes in Torts, Contracts, Criminal Law, Legal Writing; Western State University, Southern California College of Law
Major Emphasis - Tort Theory and the implications to modern environmental contamination and clean-up problems.
"Low Risk Closure Guidelines" - California Regional Water Quality Board - Los Angeles Region Seminar June 1996.
Miscellaneous Classes provided by State Agencies in past twenty years and job site discussion regarding water quality standards and remediation with Regulators for Closure.
California Storm Water Association (CASQA - Member and participation as vendor representing OSORB as Absorb Concentrate & Eliminate (AC&E San Diego August 2012.
Member and participation as vendor representing ASRE (Advanced Stormwater Recovery & Engineering Garden Grove September 2014.

LICENSES
California A General Engineering Contractor, Hazardous Materials Certified
California B General Building Contractor
California C-2 Contractors License, Asbestos Certified
California C-57 Water Well Driller
California Real Estate Broker (MLO)
CA Life & Health Agent (former)

Current & Former
CERTIFICATIONS
Certified Asbestos Consultant (CAC, State of California
EPA/AHERA Competent Person, Supervisor/ Management Planner/Project Designer
Hazwhopper 48 Hour OSHA Certified Field Supervisor
Certified Professional Estimator (CPE) Lead Abatement Supervisor

REGISTRATIONS
Registered Environmental Assessor (REA)
Registered Property Manager (RPM)

AFFILIATIONS
American Society of Professional Estimators (ASPE)
California Society of Real Estate Appraisers (CSOREA)
American Institute of Plant Engineers (AIPE)
California Society of Hospital Engineers (CSHE)
National Society of Power Engineers (NSPE)
Kiwanis International, Greater Anaheim, CA (KIWANIS)

PUBLICATIONS
Industrial Real Estate Association Fall 1997 Newsletter, "The Environmental Report, To Close or Not To Close", 1997
Home Trader Publications, Copyright 1994 - Residential properties for sale or trade. American
Numerous articles on asbestos in "Asbestos Issues", a nationally published magazine, and the "Los Angeles BOMA" magazine.

SEMINAR SPEAKER
IRS (Internal Revenue Service), "Discounted Value of Asbestos and Environmentally Affected Property"
CATL (CA Assoc of Thrift and Loans), "The Effect of Asbestos and Environmental Discounts on Loans"
American Society of Professional Estimators - "The Design and Estimate of an Asbestos Abatement Project"
Los Angeles Board of Realtors, "Asbestos in Homes and Property"
(AIPE) American Institute of Plant Engineers, "Asbestos, History and Challenges" (CSHE) California Society of Hospital Engineers, "Asbestos, History and Challenges"
(SCACEO)Southern California Association of Code Enforcement Officials "Single Room Occupancy Hotels, History and Modern Operations"

TRAINING CLASSES PRESENTED
8-hour Asbestos Awareness Class presented to:
* City of LA Fire Safety Inspectors
* Zurn Cosco Supervisors and Workers
* Grinnell Fire Protection Supervisors and Workers

EDUCATION VIDEOS
Installation of Fire Sprinkler Hangers within asbestos affected environments, 1986
SROs, The Myth and Reality, 1991

DEVELOPMENT DESIGN
General Partner - 210-unit Single Room Occupancy (SRO residential project in Anaheim, CA.
General Partner - 55-unit Single Room Occupancy (SRO residential project in Santa Ana, CA.

EMPLOYMENT HISTORY AND OWNERSHIP
S & S Commercial Environmental Services, Inc., ASRE, Inc. AC&E, Inc., Enviroprop, Home Trader Realty, Inc., Equity Funding Mortgage, NATEC International, Inc., McClelland Management Services, National Abatement Corporation, Med-Tox Consultants, Pacific Abatement Group, Asbestos

12.15 ERS Report

ENVIRONMENTAL RECORD SEARCH

"The Intelligent Choice"

RecCheck

Report Results

The Standard for ASTM/AAI Radius Searches

(One Mile Environmental Records Search, Exceeds ASTM 1527/1528 and EPA All Appropriate Inquiry)

REPORT RESULTS

Site Location:

9562 Chapman Avenue
Garden Grove, CA 92841
(N 33-47-17, W 117-57-58) NAD83

Client:

S&S Commercial Environmental Services, Inc.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

INFORMATION ON THE REQUESTED LOCATION

Site Address:	9562 Chapman Avenue Garden Grove, CA 92841
Client Project Name/Number:	2104782376
Coordinates:	N 33-47-17, W 117-57-58 (NAD 83) 33.788114, -117.966244
Date of Report	July 5, 2024
ERS Project Number:	2104782376
Subject Site Listed on the following lists:	Not Listed
Subject Site Listed as Map ID#:	N/A
USGS 7.5 Minute Quad Map:	Anaheim (Date Unavailable)
Subject Site Located within a Potential Area of Concern:	No
Township, Section and Range:	Township: 04S Range: 10W Section: 31 Baseline: San Bernardino
Site Elevation: (feet above or below (-) mean sea level)	84
Flood Zone: (Digital Flood Insurance Rate Maps - DFIRMs) Only available digital data is provided	Panel: 06059C0137J, Effective Date: 12/3/2009 Zone X - Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.
Fire Insurance Map Coverage:	There may be coverage of your site.
Radon Information:	EPA Radon Zone: 3 (Predicted avg for county: < 2 pCi/L)
Search Radius Expansion Size: (In Miles)	0

Soil Type: **(USDA Soil Survey Geographic Database) (SSURGO)**	Map Unit Name: Hueneme fine sandy loam, drained Map Unit Type: Consociation Drainage Class - Dominant Condition: Poorly drained General Information: Coarse-loamy, mixed (calcareous), thermic Aquic Xerofluvents Top 3 Map Unit Components are below (if available): Component Name: Hueneme, Bolsa, Hueneme Component Percentage: 5%, 5%, 85% Hydric: No, No, Yes
Zip Codes Searched for "Un-Mappable" Sites:	Not Researched
Occurrence Count:	98

SUMMARY OF OCCURRENCES

MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
1 Maps: 1, 2, 3, 4	104360 CERTIFIED TIRE & SERVCE CENTERS	Not Reported by Agency	CRSP-CA	Listed	0.03 E	-1
2 Maps: 1, 2, 3, 4	10407094 Tire Choice	9572 Chapman Ave Garden Grove	CERS-CA	Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	FA0025331-ORG CERTIFIED TIRE AND SERVICE CENTERS	9572 CHAPMAN AVE GARDEN GROVE	County-Others-CA	Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	110033210273 TIRE CHOICE 1616	9572 Chapman Ave Garden Grove	FRS-US	Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	110006467322 MAGNESS GOODYEAR TIRE CTR	9572 Chapman Ave Garden Grove	FRS-US	Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	75298 CERTIFIED TIRE & SERVICE CENTERS	9572 Chapman Ave Garden Grove	Hist-Auto Repair	Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	39825 Certified Tire & Svc Inc	9572 Chapman Ave Garden Grove	Hist-Auto Repair	Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	550273 GOOD YEAR TIRE CENTER	9572 Chapman Ave Garden Grove	Hist-CA	No Longer Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	CAL000175450 WEST CNTY TIRES/AUTOMOTIV E INC/GOODYEAR	9572 Chapman Ave Garden Grove	Hist-CA	No Longer Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	CAL000153631 CERTIFIED TIRE & SERVICE CENTERS	9572 Chapman Ave Garden Grove	Hist-CA	No Longer Listed	0.03 NE	-2

MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
2 Maps: 1, 2, 3, 4	CAD050747781 MAGNESS GOODYEAR TIRE CTR	9572 Chapman Ave Garden Grove	Hist-CA	No Longer Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	1326509-PD U-HAUL CO	9572 Chapman Ave Garden Grove	Hist-Rental	Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	9174E6E3-0514500758 DESOTO GATHERING - SHARKEY CPF	9572 Chapman Ave Garden Grove	Hist-US	No Longer Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	1283032 GOOD YEAR TIRE CENTER	9572 Chapman Ave Garden Grove	Hist-USTReg-CA	Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	1569586-PD WEST COUNTY TIRE & AUTOMOTIVE	9572 Chapman Ave Garden Grove	Hist-Vehicle-Parts	Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	CAL000153631 CERTIFIED TIRE & SERVICE CENTERS	9572 Chapman Ave Garden Grove	RCRA-NON-US	Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	CAL000444602 TIRE CHOICE 1616	9572 Chapman Ave Garden Grove	RCRA-NON-US	Listed	0.03 NE	-2
2 Maps: 1, 2, 3, 4	CAD050747781 MAGNESS GOODYEAR TIRE CTR	9572 Chapman Ave Garden Grove	RCRA-SQG-US	Listed	0.03 NE	-2
3 Maps: 1, 2, 3, 4	13024 Fast Wash	9616 CHAPMAN AVE Garden Grove	Cleaners-CA	Listed	0.05 NE	1
4 Maps: 1, 2, 4	211819 ABDULWAHAB R SABEH	9522 Chapman Ave Garden Grove	Hist-UST-CA	Listed	0.07 NW	-3

MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
5 Maps: 1, 2, 4	418982 Verizon Wireless: Las Bolsas Relo	Not Reported by Agency	CRSP-CA	Listed	0.07 NW	-1
5 Maps: 1, 2, 4	10726924 Verizon Wireless: Las Bolsas Relo	9501 CHAPMAN AVE GARDEN GROVE	CERS-CA	Listed	0.07 NW	-1
6 Maps: 1, 2, 4	546631 OCTD RIGHT OF WAY	UNK GILBERT & CHAPMAN GARDEN GROVE	ENF-CA	Listed	0.07 W	-3
6 Maps: 1, 2, 4	T10000020570 OCTD RIGHT OF WAY	UNK GILBERT & CHAPMAN GARDEN GROVE	SCP-Closed-CA	COMPLETED - CASE CLOSED	0.07 W	-3
7 Maps: 1, 2, 4	RO0000328-ORG OCTD RIGHT OF WAY UNK	GILBERT & CHAPMAN Garden GROVE	County-Others-CA	Listed	0.07 NW	-3
8 Maps: 1, 2, 4	123106 Hometown Buffet #704	Not Reported by Agency	CRSP-CA	Listed	0.1 NE	0
9 Maps: 1, 2, 4	CAD981975485 AIR INDUSTRIES COMPANY	7100 CHAPMAN AVENUE GARDEN GROVE	RCRA-LQG-US	Listed	0.1 W	-3
10 Maps: 1, 2, 4	CAC003258920 PEACOCK APARTMENTS UNIT#1	12082 Cole St Apt 1 Garden Grove	RCRA-NON-US	Listed	0.11 SE	0
11 Maps: 1, 2, 4	CAC003159784 GOLDEN STATE HUMANE SOCIETY	11901 Gilbert St Garden Grove	RCRA-NON-US	Listed	0.12 NW	-1
12 Maps: 1, 2, 4	CAC003013860 STEVE PHAN	12102 Spencer Dr Garden Grove	RCRA-NON-US	Listed	0.12 W	-3
13 Maps: 1, 2, 4	22196 T Kim Dry Clean & Alteration	9676 CHAPMAN AVE Garden Grove	Cleaners-CA	Listed	0.12 E	0
14 Maps: 1, 2, 4	369785 Party City #736 Garden Grove	Not Reported by Agency	CRSP-CA	Listed	0.12 E	0
15 Maps: 1, 2, 4	412780 24 Hour Fitness #156	Not Reported by Agency	CRSP-CA	Listed	0.12 N	3

MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
15 Maps: 1, 2, 4	10716748 24 Hour Fitness #156	9561 CHAPMAN AVE GARDEN GROVE	CERS-CA	Listed	0.12 N	3
16 Maps: 1, 2, 4	FA0072917-ORG PARTY CITY #736	9661 CHAPMAN AVE GARDEN GROVE	County-Others-CA	Listed	0.12 E	0
16 Maps: 1, 2, 4	CAR000213082 RITE AID 5740	9661 CHAPMAN AVE GARDEN GROVE	RCRA-CESQG-US	Listed	0.12 E	0
16 Maps: 1, 2, 4	CAL000417920 PARTY CITY CORPORATION #736	9661 CHAPMAN AVE GARDEN GROVE	RCRA-NON-US	Listed	0.12 E	0
16 Maps: 1, 2, 4	CAR000213082 RITE AID 5740	9661 CHAPMAN AVE GARDEN GROVE	RCRA-SQG-US	Listed	0.12 E	0
17 Maps: 1, 2, 4	CAC003189704 ELSA DO	9562 Blanche Ave Garden Grove	RCRA-NON-US	Listed	0.13 S	-2
18 Maps: 1, 2, 4	221359 CHAPMAN CAR WASH	Not Reported by Agency	CRSP-CA	Listed	0.13 E	0
19 Maps: 1, 2, 4	FA0054003-ORG DOLLAR TREE STORES	9679 CHAPMAN Ave GARDEN GROVE	County-Others-CA	Listed	0.14 E	0
19 Maps: 1, 2, 4	CAL000386570 DOLLAR TREE #02053	9679 CHAPMAN AVE GARDEN GROVE	RCRA-NON-US	Listed	0.14 E	0
20 Maps: 1, 2, 4	25803 Dollar Tree #02053	Not Reported by Agency	CRSP-CA	Listed	0.14 E	0
21 Maps: 1, 2, 4	10862641 AT&T California - CA18P	11978 Gilbert St Garden Grove	CERS-CA	Listed	0.15 NW	1
22 Maps: 1, 2, 4	RO0003379-ORG HEWSON PROPERTY	11950 GILBERT ST GARDEN GROVE	County-Others-CA	Listed	0.15 NW	1
22 Maps: 1, 2, 4	T10000017761 HEWSON PROPERTY	11950 Gilbert St Garden Grove	SCP-Closed-CA	COMPLETED - CASE CLOSED	0.15 NW	1

MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
23 Maps: 1, 2, 4	CAD981627995 STAR DUST CLEANERS	9705 CHAPMAN AVE GARDEN GROVE	DryCleaners-CA	Listed	0.15 E	0
23 Maps: 1, 2, 4	CAD981627995 STAR DUST CLEANERS	9705 CHAPMAN AVE GARDEN GROVE	RCRA-SQG-US	Listed	0.15 E	0
23 Maps: 1, 2, 4	SL208363891 STARDUST DRY CLEANERS (FORMER)	9705 CHAPMAN AVE GARDEN GROVE	SCP-Closed-CA	COMPLETED - CASE CLOSED	0.15 E	0
24 Maps: 1, 2, 4	178011-SC WALMART #4171 WAL-MART STORES, INC	11822 GILBERT ST GARDEN GROVE	AIR-DIST-CA	Listed	0.17 NW	0
24 Maps: 1, 2, 4	10506235 Walmart #4171	11822 Gilbert St Garden Grove	CERS-CA	Listed	0.17 NW	0
24 Maps: 1, 2, 4	CAC003125080 AUSTIN JONES CORP	11822 Gilbert St Garden Grove	RCRA-NON-US	Listed	0.17 NW	0
24 Maps: 1, 2, 4	CAC003142139 AUSTIN JONES CORP	11822 Gilbert St Garden Grove	RCRA-NON-US	Listed	0.17 NW	0
24 Maps: 1, 2, 4	CAR000245787 WALMART SUPERCENTER #4171	11822 Gilbert St Garden Grove	RCRA-SQG-US	Listed	0.17 NW	0
25 Maps: 1, 2, 4	10853182 Chipotle Mexican Grill #2545	9737 CHAPMAN AVE STE A GARDEN GROVE	CERS-CA	Listed	0.18 E	2
26 Maps: 1, 2, 4	RO0002337-ORG CHAPMAN CAR WASH	9732 CHAPMAN AVE GARDEN GROVE	County-LUST-Closed-CA	Closed	0.18 E	1
26 Maps: 1, 2, 4	1242978 CHAPMAN CAR WASH	9732 CHAPMAN AVENUE GARDEN GROVE	Hist-Regional-UST-CA	Listed	0.18 E	1
27 Maps: 1, 2, 4	94036-SC ROBERTSON ROOFING	11851 GILBERT ST GARDEN GROVE	AIR-DIST-CA	Listed	0.18 NW	0
28 Maps: 1, 2, 4	CAL000259056 MARISSA WOOLLEY, DMD, INC.	9355 Chapman Ave Ste 100 Garden Grove	RCRA-NON-US	Listed	0.18 W	-3

MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
29 Maps: 1, 2, 4	121936-SC PIC N SAVE STORE #4019	9801 CHAPMAN AVE GARDEN GROVE	AIR-DIST-CA	Listed	0.19 E	0
29 Maps: 1, 2, 4	157124-SC SMART & FINAL #356	9891 CHAPMAN AVE GARDEN GROVE	AIR-DIST-CA	Listed	0.19 E	0
30 Maps: 1, 2, 4	CAC003021578 MARILYN HALE	9361 Canterbury Ln Garden Grove	RCRA-NON-US	Listed	0.2 W	-2
30 Maps: 1, 2, 4	CAC003163717 MARILYN HALE C/O ROBERT HALE	9361 Canterbury Ln Garden Grove	RCRA-NON-US	Listed	0.2 W	-2
31 Maps: 1, 2, 4	56323-SC ADAMS CLEANERS #1	9752 CHAPMAN GARDEN GROVE	AIR-DIST-CA	Listed	0.2 E	1
31 Maps: 1, 2, 4	51541-SC ADAM CLEANER	9752 CHAPMAN GARDEN GROVE	AIR-DIST-CA	Listed	0.2 E	1
31 Maps: 1, 2, 4	7972 Adams Cleaner	9752 CHAPMAN AVE Garden Grove	Cleaners-CA	Listed	0.2 E	1
31 Maps: 1, 2, 4	CAD981977309 ADAM 1 CLEANERS	9752 CHAPMAN AVE GARDEN GROVE	DryCleaners-CA	Listed	0.2 E	1
31 Maps: 1, 2, 4	291657-PD ADAMS CLEANER	9752 CHAPMAN AVE GARDEN GROVE	Hist-Cleaners	Listed	0.2 E	1
32 Maps: 1, 2, 4	259316 GARDEN GROVE FIRE STATION # 2	Not Reported by Agency	CRSP-CA	Listed	0.2 NW	0
33 Maps: 1, 2, 4	407283 Walmart #4171	Not Reported by Agency	CRSP-CA	Listed	0.2 N	4
34 Maps: 1, 2, 4	437394 REGAL CINEMA GARDEN GROVE 16	Not Reported by Agency	CRSP-CA	Listed	0.2 NE	4
34 Maps: 1, 2, 4	10580869 REGAL CINEMA GARDEN GROVE 16	9741 CHAPMAN AVE GARDEN GROVE	CERS-CA	Listed	0.2 NE	4

MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
35 Maps: 1, 2, 4	CAC002991846 MYRA NYGUYEN	9351 Cellini Ave Garden Grove	RCRA-NON-US	Listed	0.21 NW	-4
36 Maps: 1, 2, 4	16637 Liz Water & Dry Clean	9770 CHAPMAN AVE Garden Grove	Cleaners-CA	Listed	0.22 E	1
37 Maps: 1, 2, 4	CAC003187823 MELVIN WILSON	12101 Marlowe Dr Garden Grove	RCRA-NON-US	Listed	0.22 W	-2
38 Maps: 1, 2, 4	110711-SC GARDEN GROVE CITY OF	11805 GILBERT ST GARDEN GROVE	AIR-DIST-CA	Listed	0.22 N	0
38 Maps: 1, 2, 4	RO0001557-ORG GARDEN GROVE FIRE STATION # 2	11805 GILBERT ST GARDEN GROVE	County-LUST-Closed-CA	Closed	0.22 N	0
38 Maps: 1, 2, 4	3078469 GARDEN GROVE FIRE STATION #2	11805 GILBERT STREET GARDEN GROVE	Hist-Regional-UST-CA	Listed	0.22 N	0
38 Maps: 1, 2, 4	T0605901511 GARDEN GROVE FIRE STATION # 2	11805 Gilbert St Garden Grove	LUST-Closed-CA	COMPLETED - CASE CLOSED	0.22 N	0
39 Maps: 1, 2, 4	CAC003184264 BYONG KIM	9602 Bixby Ave Garden Grove	RCRA-NON-US	Listed	0.22 S	-5
40 Maps: 1, 2, 4	SP220400.002 Padre Pio Academy Beverage Container Recycling	9621 Bixby Ave Garden Grove	SWRCY-CA	Listed	0.22 S	-5
41 Maps: 1, 2, 4	370189 CITY OF GG FIRE STATION 2	Not Reported by Agency	CRSP-CA	Listed	0.24 NW	-1
42 Maps: 1, 2, 4	CAC002985591 TOMMY LENARD	9672 Bixby Ave Garden Grove	RCRA-NON-US	Listed	0.25 SE	-4
42 Maps: 1, 2, 4	CAC002985378 TOMMY LENARD	9672 Bixby Ave Garden Grove	RCRA-NON-US	Listed	0.25 SE	-4
43 Maps: 1, 2, 4	CAC003164229 KRISDEN APARTMENTS	11811 Gilbert St Garden Grove	RCRA-NON-US	Listed	0.25 N	0

MAP ID	ID/SITE NAME	ADDRESS	DATABASE	STATUS	DISTANCE (MILES)	ELEV DIFF (FEET)
44 Maps: 1, 4	CAN000900085 Mercury Face Creams Sites	9775 BIXBY AVE GARDEN GROVE	SEMS-Active-US	Listed	0.31 SE	-2
45 Maps: 1, 4	T10000018320 TOPS QUALITY CLEANERS	9881 CHAPMAN AVE GARDEN GROVE	SCP-Closed-CA	COMPLETED - CASE CLOSED	0.35 E	6
46 Maps: 1, 4	RO0002050-ORG UNOCAL	11971 BROOKHURST ST GARDEN GROVE	County-LUST-Closed-CA	Closed	0.43 E	5
46 Maps: 1, 4	T0605900340 UNOCAL	11971 Brookhurst St Garden Grove	LUST-Closed-CA	COMPLETED - CASE CLOSED	0.43 E	5
47 Maps: 1, 4	RO0001458-ORG CHEVRON #9-1085	12012 BROOKHURST ST GARDEN GROVE	County-LUST-Closed-CA	Closed	0.43 E	6
47 Maps: 1, 4	RO0002488-ORG CHEVRON #9-1085	12012 BROOKHURST ST GARDEN GROVE	County-LUST-Closed-CA	Closed	0.43 E	6
47 Maps: 1, 4	T0605902067 CHEVRON #9-1085	12012 Brookhurst St Garden Grove	LUST-Closed-CA	COMPLETED - CASE CLOSED	0.43 E	6
47 Maps: 1, 4	T0605900758 CHEVRON #9-1085	12012 Brookhurst St Garden Grove	LUST-Closed-CA	COMPLETED - CASE CLOSED	0.43 E	6
48 Maps: 1, 4	RO0001345-ORG MOBIL	11962 W BROOKHURST ST GARDEN GROVE	County-LUST-Closed-CA	Closed	0.44 E	6
48 Maps: 1, 4	RO0001935-ORG MOBIL #18-GWN	11962 BROOKHURST ST GARDEN GROVE	County-LUST-Closed-CA	Closed	0.44 E	6
48 Maps: 1, 4	T0605900825 MOBIL	11962 Brookhurst St Garden Grove	LUST-Closed-CA	COMPLETED - CASE CLOSED	0.44 E	6
48 Maps: 1, 4	T0605901982 MOBIL #18-GWN	11962 Brookhurst St Garden Grove	LUST-Closed-CA	COMPLETED - CASE CLOSED	0.44 E	6
49 Maps: 1, 4	60002817 Former Le Grand Cleaner	10084 Chapman Ave Garden Grove	VCP-Active-CA	Active	0.49 E	6

POTENTIAL AREAS OF CONCERN/CONTAMINATION SUMMARY

DATABASE SEARCHED	SUBJECT SITE WITHIN POTENTIAL AREA OF CONCERN	AREAS FOUND WITHIN 1-MILE RADIUS
MethaneLF-CA	No	0
LA-LF-CA	No	0
Military-Bases-US	No	0
SGV-Deep-Plumes-CA	No	0
SGV-Shallow-Plumes-Puente-Valley-CA	No	0
SGV-Shallow-Plumes-CA	No	0
NPL-US	No	0

DATABASE OCCURRENCE SUMMARY

HIGH RISK* OCCURRENCES IDENTIFIED IN REQUESTED SEARCH RADIUS		
DATABASE SEARCHED	DISTANCE SEARCHED (MILES)	HIGH RISK OCCURRENCES FOUND
CorAct-Open-CA	0.5	0
County-LUST-Open-CA	0.5	0
County-SLIC-Open-CA	0.5	0
Eval-Hist-Active-CA	0.5	0
Hist-UST-Cleanup-CA	0.5	0
LUST-Open-CA	0.5	0
Military-Active-CA	1	0
NPL-Proposed-US	1	0
NPL-US	1	0
Response-CA	1	0
SAA-Agreements-US	1	0
School-Active-CA	0.5	0
SCP-Open-CA	0.5	0
SEMS-Active-US	0.5	1
State-Response-Active-CA	1	0
Superfund-Active-CA	1	0
Tribal-LUST-Open-US	0.5	0
VCP-Active-CA	0.5	1

* For the purposes of this report, “high risk” occurrences are those that have known contamination and have not received a “case closed” or “no further action” status from the agency that maintains the records.

ASTM/AAI STANDARD RECORD SOURCES SUMMARY				
STANDARD ENVIRONMENTAL RECORD SOURCES	ASTM MIN. SEARCH DIST. / ERS SEARCH DIST. (MILES)	ERS DATABASE NAME	TOTAL LISTINGS	MAP ID #’S
Federal NPL site list	1.0 / 1.0	NPL-US	0	None Listed
		Proposed-NPL-US	0	None Listed

Federal Delisted NPL site list	0.5 / 1.0	Delisted-NPL-US	0	None Listed
Federal CERCLIS list	0.5 / 0.5	CERCLIS-US	0	None Listed
Federal CERCLIS NFRAP site list	0.5 / 0.5	CERCLIS-Archived-US	0	None Listed
Federal RCRA CORRACTS facilities list	1.0 / 1.0	RCRA-COR-US	0	None Listed
Federal RCRA non-CORRACTS TSD facilities list	0.5 / 0.5	RCRA-TSDF-US	0	None Listed
Federal RCRA generators list	Property and adjoining properties / 0.25	RCRA-CESQG-US	1	16
		RCRA-LQG-US	1	9
		RCRA-NON-US	19	2, 2, 10, 11, 12, 16, 17, 19, 24, 24, 28, 30, 30, 35, 37, 39, 42, 42, 43
		RCRA-SQG-US	4	2, 16, 23, 24
Federal Inst/Eng control registries	Property Only / 0.25	Controls-RCRA-US	0	None Listed
		Controls-US	0	None Listed
		Hist-US-EC	0	None Listed
		Hist-US-IC	0	None Listed
		LIENS-US	0	None Listed
Federal ERNS list	Property Only / 0.0625	ERNS-US	0	None Listed
State and Tribal-Equivalent NPL	1.0 / 1.0	Response-CA	0	None Listed
		State-Response-Active-CA	0	None Listed
		State-Response-NFA-CA	0	None Listed
		State-Response-Other-CA	0	None Listed
State and Tribal-Equivalent CERCLIS	0.5 / 0.5	Superfund-Active-CA	0	None Listed
		Superfund-NFA-CA	0	None Listed
		Superfund-Other-CA	0	None Listed
State and Tribal landfill and/or solid waste disposal sites	0.5 / 0.5	County-SWF-CA	0	None Listed
		Debris-US	0	None Listed
		Hist-Dumps-US	0	None Listed
		Land-Disposal-CA	0	None Listed
		SWIS-CA	0	None Listed
		SWLF-US	0	None Listed
		Tribal-ODI-US	0	None Listed
State and Tribal Leaking Storage Tank Lists	0.5 / 0.5	County-LUST-CA	0	None Listed
		County-LUST-Closed-CA	7	26, 38, 46, 47, 47, 48, 48
		County-LUST-Open-	0	None Listed

		CA		
		Hist-UST-Cleanup-CA	0	None Listed
		LUST-Closed-CA	6	38, 46, 47, 47, 48, 48
		LUST-Open-CA	0	None Listed
		Tribal-LUST-Closed-US	0	None Listed
		Tribal-LUST-Open-US	0	None Listed
State and Tribal Registered Storage Tank Lists	Property and adjoining properties / 0.25	AST-CA	0	None Listed
		City-AST-CA	0	None Listed
		City-UST-CA	0	None Listed
		County-AST-CA	0	None Listed
		County-UST-CA	0	None Listed
		FEMA-UST-US	0	None Listed
		Hist-AST2-CA	0	None Listed
		Hist-UST-CA	1	4
		Military-UST-CA	0	None Listed
		Tribal-LUST-Open-US	0	None Listed
		UST-Abandoned-CA	0	None Listed
		UST-CA	0	None Listed
		UST-Closed-CA	0	None Listed
		USTComp-CA	0	None Listed
		UST-Priority-CA	0	None Listed
		UST-Proposed-CA	0	None Listed
State and Tribal Inst/Eng Control Registries	Property Only / 0.5	Controls-CA	0	None Listed
		Deed-CA	0	None Listed
		Hist-Controls-CA	0	None Listed
		HWMP-Controls-CA	0	None Listed
		Liens-CA	0	None Listed
State and Tribal Voluntary Cleanup Sites	0.5 / 0.5	Military-Active-CA	0	None Listed
		Military-NFA-CA	0	None Listed
		Military-Other-CA	0	None Listed
		School-Active-CA	0	None Listed
		School-NFA-CA	0	None Listed
		School-Other-CA	0	None Listed
		VCP-Active-CA	1	49
		VCP-NFA-CA	0	None Listed
		VCP-Other-CA	0	None Listed
State and Tribal Brownfield Sites	0.5 / 0.5	BF-MOA-CA	0	None Listed
		BF-Tribal-US	0	None Listed

FEDERAL ASTM/AAI DATABASES							
DATABASE SEARCHED	**DISTANCE SEARCHED**	**SUBJECT SITE**	**0.125 MILES**	**0.25 MILES**	**0.5 MILES**	**1.0 MILES**	**TOTAL**
BF-Tribal-US	0.5	0	0	0	0	-	0

FEDERAL ASTM/AAI DATABASES							
DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
BF-US	0.5	0	0	0	0	-	0
Controls-RCRA-US	0.5	0	0	0	0	-	0
Controls-US	0.5	0	0	0	0	-	0
ERNS-US	0.0625	0	0	-	-	-	0
FTTS-ENF-US	0.25	0	0	0	-	-	0
Hist-Debris-US	0.5	0	0	0	0	-	0
Hist-Dumps-US	0.5	0	0	0	0	-	0
Hist-FEMA-UST-US	0.25	0	0	0	-	-	0
Hist-US-EC	0.5	0	0	0	0	-	0
Hist-US-IC	0.5	0	0	0	0	-	0
HMIS-US	0.0625	0	0	-	-	-	0
LIENS-US	0.0625	0	0	-	-	-	0
NPL-Delisted-US	1	0	0	0	0	0	0
NPL-Proposed-US	1	0	0	0	0	0	0
NPL-US	1	0	0	0	0	0	0
PADS-US	0.0625	0	0	-	-	-	0
PCB-US	0.25	0	0	0	-	-	0
RCRA-CESQG-US	0.25	0	1	0	-	-	1
RCRA-COR-US	1	0	0	0	0	0	0
RCRA-LQG-US	0.25	0	1	0	-	-	1
RCRA-NON-US	0.25	0	8	11	-	-	19
RCRA-SQG-US	0.25	0	3	1	-	-	4
RCRA-TSDF-US	0.5	0	0	0	0	-	0
SAA-Agreements-US	1	0	0	0	0	0	0
SEMS-Active-US	0.5	0	0	0	1	-	1
SEMS-Archived-US	0.5	0	0	0	0	-	0
SWLF-US	0.5	0	0	0	0	-	0
Tribal-LUST-Closed-US	0.5	0	0	0	0	-	0
Tribal-LUST-Open-US	0.5	0	0	0	0	-	0
Tribal-ODL-US	0.5	0	0	0	0	-	0
Tribal-UST-US	0.25	0	0	0	-	-	0

STATE ASTM/AAI DATABASES							
DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
AST-CA	0.25	0	0	0	-	-	0
BF-MOA-CA	0.5	0	0	0	0	-	0
BZ-HazWaste-CA	0.5	0	0	0	0	-	0
CERS-CA	0.25	0	4	3	-	-	7
CHMIRS-CA	0.0625	0	0	-	-	-	0
City-AST-CA	0.25	0	0	0	-	-	0
City-CUPA-CA	0.25	0	0	0	-	-	0
City-Others-CA	0.25	0	0	0	-	-	0
City-UST-CA	0.25	0	0	0	-	-	0
Controls-CA	0.5	0	0	0	0	-	0
CorAct-Closed-CA	0.5	0	0	0	0	-	0
CorAct-Open-CA	0.5	0	0	0	0	-	0
CorAct-Other-CA	0.5	0	0	0	0	-	0
CORTESE-CA	0.25	0	0	0	-	-	0
County-AST-CA	0.25	0	0	0	-	-	0
County-Hist-CA	0.25	0	0	0	-	-	0
County-LUST-CA	0.5	0	0	0	0	-	0
County-LUST-Closed-CA	0.5	0	0	2	5	-	7

STATE ASTM/AAI DATABASES

DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
County-LUST-Open-CA	0.5	0	0	0	0	-	0
County-Others-CA	0.25	0	5	0	-	-	5
County-SLIC-Closed-CA	0.25	0	0	0	-	-	0
County-SLIC-Open-CA	0.5	0	0	0	0	-	0
County-SML-CA	0.5	0	0	0	0	-	0
County-SWF-CA	0.5	0	0	0	0	-	0
County-UST-CA	0.25	0	0	0	-	-	0
CRSP-CA	0.25	0	7	4	-	-	11
CUPA-CA	0.25	0	0	0	-	-	0
Deed-CA	0.5	0	0	0	0	-	0
ENF-CA	0.25	0	1	0	-	-	1
ENF-SMARTS-CA	0.25	0	0	0	-	-	0
ENF-Wastewater-CA	0.25	0	0	0	-	-	0
Eval-Hist-Active-CA	0.5	0	0	0	0	-	0
Eval-Hist-NFA-CA	0.5	0	0	0	0	-	0
Eval-Hist-Other-CA	0.5	0	0	0	0	-	0
HazWaste-CA	0.25	0	0	0	-	-	0
Hist-AST2-CA	0.25	0	0	0	-	-	0
Hist-Controls-CA	0.5	0	0	0	0	-	0
Hist-Cort-CA	0.25	0	0	0	-	-	0
HIST-R4-CA	0.25	0	0	0	-	-	0
HIST-SLIC-CV-CLOSED-CA	0.5	0	0	0	0	-	0
HIST-SLIC-CV-OPEN-CA	0.5	0	0	0	0	-	0
Hist-UST-CA	0.25	0	1	0	-	-	1
Hist-UST-Cleanup-CA	0.5	0	0	0	0	-	0
Hist-WIP-Active-CA	0.5	0	0	0	0	-	0
Hist-WIP-Backlog-CA	0.5	0	0	0	0	-	0
Hist-WIP-Historical-CA	0.5	0	0	0	0	-	0
HWIS-CA	0.0625	0	0	-	-	-	0
HWMP-Controls-CA	0.5	0	0	0	0	-	0
ICE-CA	0.25	0	0	0	-	-	0
Land-Disposal-CA	0.5	0	0	0	0	-	0
Liens-CA	0.0625	0	0	-	-	-	0
LUST-Closed-CA	0.5	0	0	1	5	-	6
LUST-Open-CA	0.5	0	0	0	0	-	0
Manifest2-RI	0.0625	0	0	-	-	-	0
Military-Active-CA	1	0	0	0	0	0	0
Military-NFA-CA	1	0	0	0	0	0	0
Military-Other-CA	1	0	0	0	0	0	0
Military-UST-CA	0.25	0	0	0	-	-	0
PR-MOA-CA	0.25	0	0	0	-	-	0
Response-CA	1	0	0	0	0	0	0
School-Active-CA	0.5	0	0	0	0	-	0
School-NFA-CA	0.5	0	0	0	0	-	0
School-Other-CA	0.5	0	0	0	0	-	0
SCP-Closed-CA	0.5	0	3	0	1	-	4
SCP-Open-CA	0.5	0	0	0	0	-	0
SML-CA	0.5	0	0	0	0	-	0
State-Response-Active-CA	1	0	0	0	0	0	0
State-Response-NFA-CA	0.5	0	0	0	0	-	0
State-Response-Other-CA	0.5	0	0	0	0	-	0
Superfund-Active-CA	1	0	0	0	0	0	0
Superfund-NFA-CA	1	0	0	0	0	0	0
Superfund-Other-CA	1	0	0	0	0	0	0
SWIS-CA	0.5	0	0	0	0	-	0

STATE ASTM/AAI DATABASES

DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
SWRCY-CA	0.5	0	0	1	0	-	1
UST-Abandoned-CA	0.25	0	0	0	-	-	0
UST-CA	0.25	0	0	0	-	-	0
UST-Closed-CA	0.25	0	0	0	-	-	0
USTComp-CA	0.25	0	0	0	-	-	0
UST-Priority-CA	0.5	0	0	0	0	-	0
UST-Proposed-CA	0.25	0	0	0	-	-	0
VCP-Active-CA	0.5	0	0	0	1	-	1
VCP-NFA-CA	0.5	0	0	0	0	-	0
VCP-Other-CA	0.5	0	0	0	0	-	0

SUPPLEMENTAL DATABASES

DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
Air-CA	0.25	0	0	0	-	-	0
AIR-DIST-CA	0.25	0	0	7	-	-	7
BioFuel-US	0.25	0	0	0	-	-	0
CAF-CA	0.25	0	0	0	-	-	0
CDL-CA	0.0625	0	0	-	-	-	0
CDL-US	0.0625	0	0	-	-	-	0
CHWF-CA	0.5	0	0	0	0	-	0
Cleaners-CA	0.25	0	2	2	-	-	4
Coal-Ash-Dams-US	0.5	0	0	0	0	-	0
County-BI-CA	0.25	0	0	0	-	-	0
Dams-CA	0.25	0	0	0	-	-	0
DPR-CA	0.25	0	0	0	-	-	0
DryCleaners-CA	0.25	0	1	1	-	-	2
EGRID-US	0.5	0	0	0	0	-	0
EPA-Watch-List-US	0.25	0	0	0	-	-	0
FA-HW-CA	0.0625	0	0	-	-	-	0
FA-HW-US	0.0625	0	0	-	-	-	0
FA-SWF-CA	0.0625	0	0	-	-	-	0
FRS-US	0.0625	0	2	-	-	-	2
FTTS-INSP-US	0.0625	0	0	-	-	-	0
FUDS-US	1	0	0	0	0	0	0
FUSRAP-US	0.25	0	0	0	-	-	0
Haulers-CA	0.0625	0	0	-	-	-	0
Hist-AFS2-US	0.25	0	0	0	-	-	0
Hist-AFS-US	0.25	0	0	0	-	-	0
Hist-AST-CA	0.25	0	0	0	-	-	0
Hist-AWS-CA	0.25	0	0	0	-	-	0
Hist-CA	0.0625	0	4	-	-	-	4
Hist-CalFID-CA	0.25	0	0	0	-	-	0
Hist-CALSITES-CA	0.25	0	0	0	-	-	0
Hist-CERCLIS-NFRAP-US	0.25	0	0	0	-	-	0
Hist-CERCLIS-US	0.25	0	0	0	-	-	0
Hist-City-UST-CA	0.25	0	0	0	-	-	0
Hist-Deed-CA	0.25	0	0	0	-	-	0
Hist-DTG-CA	0.25	0	0	0	-	-	0
Hist-ERNS-US	0.0625	0	0	-	-	-	0
Hist-FIFRA-US	0.25	0	0	0	-	-	0
Hist-FINDS-US	0.0625	0	0	-	-	-	0
Hist-HWS-CA	0.25	0	0	0	-	-	0

SUPPLEMENTAL DATABASES							
DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
Hist-LUSTIS-CA	0.25	0	0	0	-	-	0
HIST-MLTS-US	0.25	0	0	0	-	-	0
HIST-MTBE-CA	0.25	0	0	0	-	-	0
Hist-NPL-US	0.25	0	0	0	-	-	0
Hist-Orange-County-LF-CA	0.25	0	0	0	-	-	0
Historical-CA	0.5	0	0	0	0	-	0
Hist-Prop65-CA	0.25	0	0	0	-	-	0
Hist-RCRIS-US	0.25	0	0	0	-	-	0
Hist-Regional-LUST-CA	0.25	0	0	0	-	-	0
Hist-Regional-Other-CA	0.25	0	0	0	-	-	0
Hist-Regional-SLIC-CA	0.25	0	0	0	-	-	0
Hist-Regional-Spills-CA	0.25	0	0	0	-	-	0
Hist-Regional-SWLF-CA	0.25	0	0	0	-	-	0
Hist-Regional-UST-CA	0.25	0	0	2	-	-	2
Hist-SCL-CA	0.25	0	0	0	-	-	0
Hist-SWIS-CA	0.25	0	0	0	-	-	0
Hist-ToxicPits-CA	0.25	0	0	0	-	-	0
Hist-Tribal-VCP-US	0.5	0	0	0	0	-	0
Hist-TRIS-US	0.25	0	0	0	-	-	0
Hist-US	0.0625	0	1	-	-	-	1
Hist-USGS-WaterWells-CA	0.0625	0	0	-	-	-	0
Hist-USTReg-CA	0.25	0	1	0	-	-	1
Hist-WaterWells-US	0.0625	0	0	-	-	-	0
Hist-WMUDS-CA	0.25	0	0	0	-	-	0
HWT-CA	0.25	0	0	0	-	-	0
ICIS-Air-US	0.0625	0	0	-	-	-	0
ICIS-FEC-US	0.0625	0	0	-	-	-	0
ICIS-NPDES-US	0.0625	0	0	-	-	-	0
LA-Waste-Haulers-CA	0.0625	0	0	-	-	-	0
Lead-Smelter-2-US	0.25	0	0	0	-	-	0
Lead-US	0.25	0	0	0	-	-	0
LMOP-US	0.5	0	0	0	0	-	0
Mines2-CA	0.0625	0	0	-	-	-	0
Mines-CA	0.0625	0	0	-	-	-	0
Mines-CDMG-CA	0.0625	0	0	-	-	-	0
MINES-US	0.0625	0	0	-	-	-	0
MLTS-US	0.0625	0	0	-	-	-	0
Mortgage-CA	0.25	0	0	0	-	-	0
MRDS-US	0.25	0	0	0	-	-	0
MWMP-CA	0.25	0	0	0	-	-	0
NCI-CA	0.25	0	0	0	-	-	0
NEI-LF-CA	0.25	0	0	0	-	-	0
NPDES-CA	0.0625	0	0	-	-	-	0
NPDES-SW-CA	0.0625	0	0	-	-	-	0
OGM-CA	0.0625	0	0	-	-	-	0
OGW-CA	0.0625	0	0	-	-	-	0
OSCF-CA	0.5	0	0	0	0	-	0
PCS-US	0.25	0	0	0	-	-	0
Perch1-CA	0.25	0	0	0	-	-	0
Perch2-CA	0.25	0	0	0	-	-	0
Project-CA	0.25	0	0	0	-	-	0
RADINFO-US	0.0625	0	0	-	-	-	0
RFG-Lab-US	0.25	0	0	0	-	-	0
RMP-US	0.0625	0	0	-	-	-	0
ROD-US	0.5	0	0	0	0	-	0

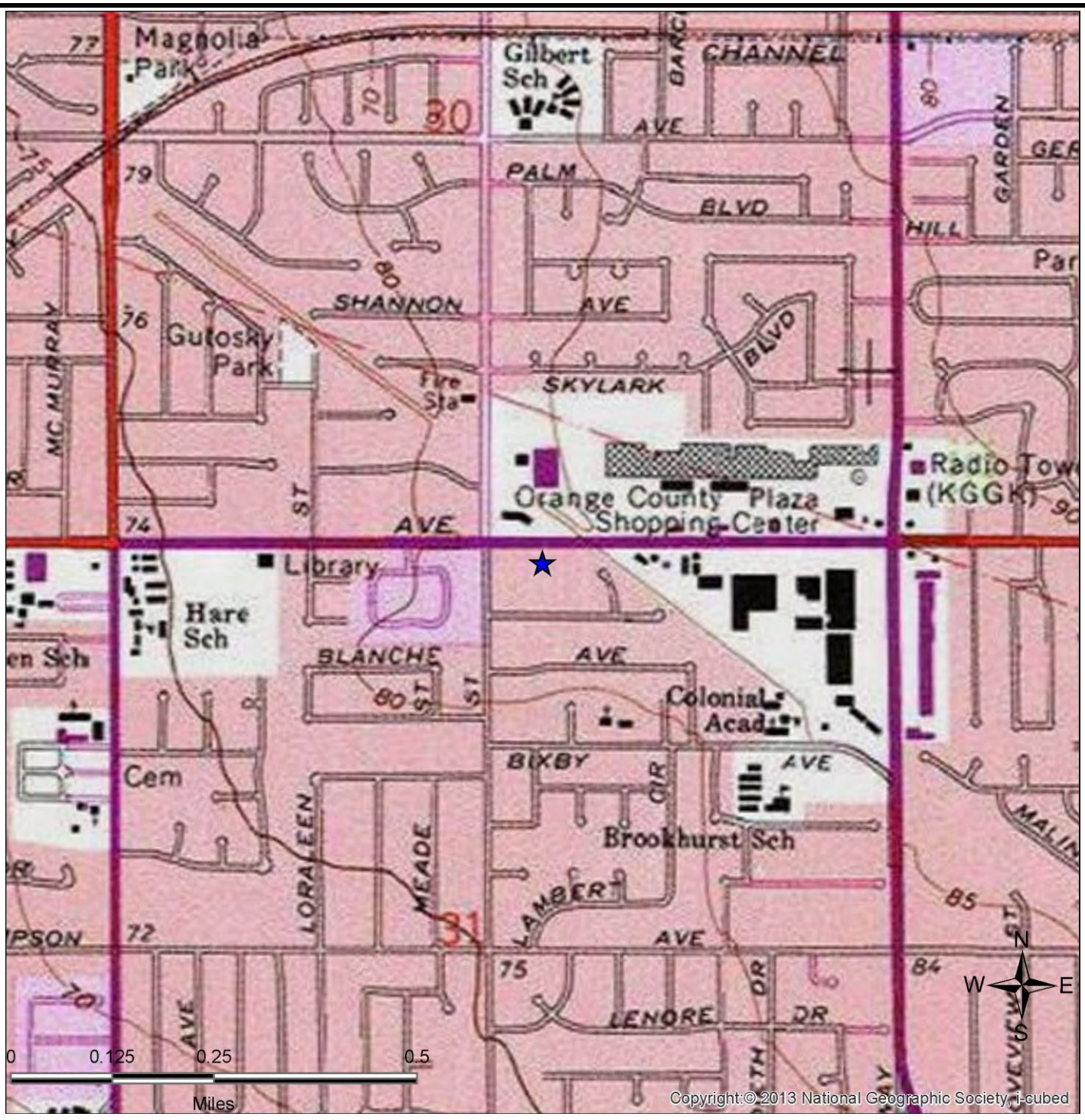
SUPPLEMENTAL DATABASES

DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
SDWIS-US	0.25	0	0	0	-	-	0
SP-CA	0.25	0	0	0	-	-	0
Spills-SSO-CA	0.0625	0	0	-	-	-	0
SSTS-US	0.0625	0	0	-	-	-	0
TierPer-CA	0.25	0	0	0	-	-	0
TOMS-CA	0.0625	0	0	-	-	-	0
Tribal-Air-US	0.25	0	0	0	-	-	0
TRIS2000-US	0.0625	0	0	-	-	-	0
TRIS2010-US	0.0625	0	0	-	-	-	0
TRIS80-US	0.0625	0	0	-	-	-	0
TRIS90-US	0.0625	0	0	-	-	-	0
TSCA-US	0.0625	0	0	-	-	-	0
UIC2-CA	0.0625	0	0	-	-	-	0
UIC-CA	0.0625	0	0	-	-	-	0
UMTRA-US	0.0625	0	0	-	-	-	0
USGS-Waterwells-US	0.0625	0	0	-	-	-	0
Vapor-Intrusions-US	0.5	0	0	0	0	-	0
WDR-CA	0.25	0	0	0	-	-	0

PROPRIETARY HISTORIC DATABASES

DATABASE SEARCHED	DISTANCE SEARCHED	SUBJECT SITE	0.125 MILES	0.25 MILES	0.5 MILES	1.0 MILES	TOTAL
Hist-Agriculture	0.0625	0	0	-	-	-	0
Hist-Auto Dealers	0.0625	0	0	-	-	-	0
Hist-Auto Repair	0.25	0	2	0	-	-	2
Hist-Chemical Manufacturing	0.0625	0	0	-	-	-	0
Hist-Chemical-Storage	0.0625	0	0	-	-	-	0
Hist-Cleaners	0.25	0	0	1	-	-	1
Hist-Convenience	0.0625	0	0	-	-	-	0
Hist-Disposal-Recycle	0.0625	0	0	-	-	-	0
Hist-Food-Processors	0.0625	0	0	-	-	-	0
Hist-Gun-Ranges	0.0625	0	0	-	-	-	0
Hist-Machine Shop	0.0625	0	0	-	-	-	0
Hist-Manufacturing	0.0625	0	0	-	-	-	0
Hist-Metal Plating	0.0625	0	0	-	-	-	0
Hist-Mining	0.0625	0	0	-	-	-	0
Hist-Mortuaries	0.0625	0	0	-	-	-	0
Hist-Oil-Gas	0.0625	0	0	-	-	-	0
Hist-OilGas-Refiners	0.0625	0	0	-	-	-	0
Hist-Other	0.0625	0	0	-	-	-	0
Hist-Paint-Stores	0.0625	0	0	-	-	-	0
Hist-Petroleum	0.0625	0	0	-	-	-	0
Hist-Post-Offices	0.0625	0	0	-	-	-	0
Hist-Printers	0.0625	0	0	-	-	-	0
Hist-Rental	0.0625	0	1	-	-	-	1
Hist-RV-Dealers	0.0625	0	0	-	-	-	0
Hist-Salvage	0.0625	0	0	-	-	-	0
Hist-Service Stations	0.25	0	0	0	-	-	0
Hist-Steel-Metals	0.0625	0	0	-	-	-	0
Hist-Textile	0.0625	0	0	-	-	-	0
Hist-Transportation	0.0625	0	0	-	-	-	0
Hist-Trucking	0.0625	0	0	-	-	-	0
Hist-Vehicle-Parts	0.0625	0	1	-	-	-	1

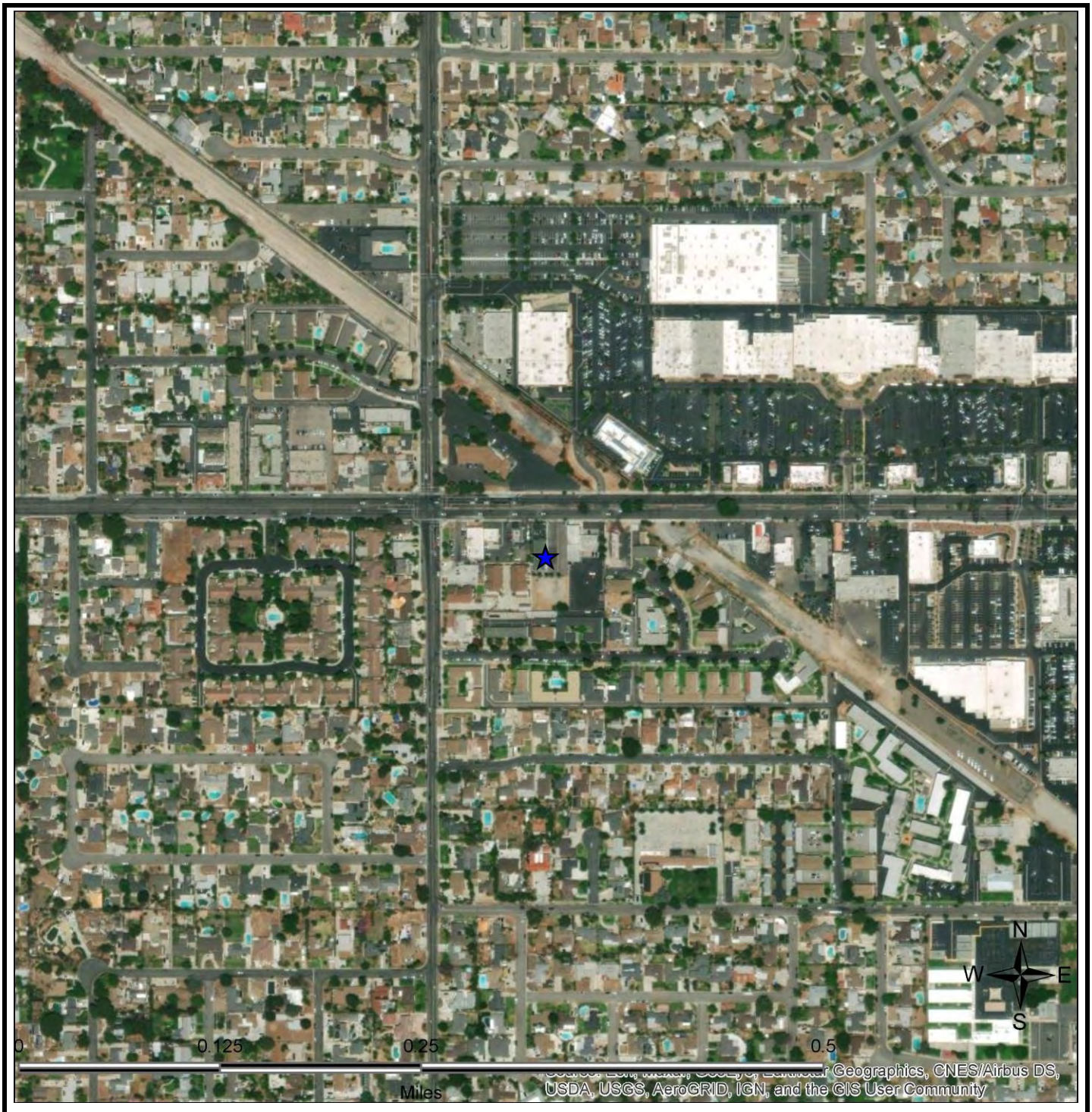
PROPRIETARY HISTORIC DATABASES							
DATABASE SEARCHED	**DISTANCE SEARCHED**	**SUBJECT SITE**	**0.125 MILES**	**0.25 MILES**	**0.5 MILES**	**1.0 MILES**	**TOTAL**
Hist-Vehicle-Washing	0.0625	0	0	-	-	-	0



SITE LOCATION TOPOGRAPHIC MAP

U.S. Geological Survey. Anaheim (Date Unavailable) Quadrangle, 7.5 Minute Series

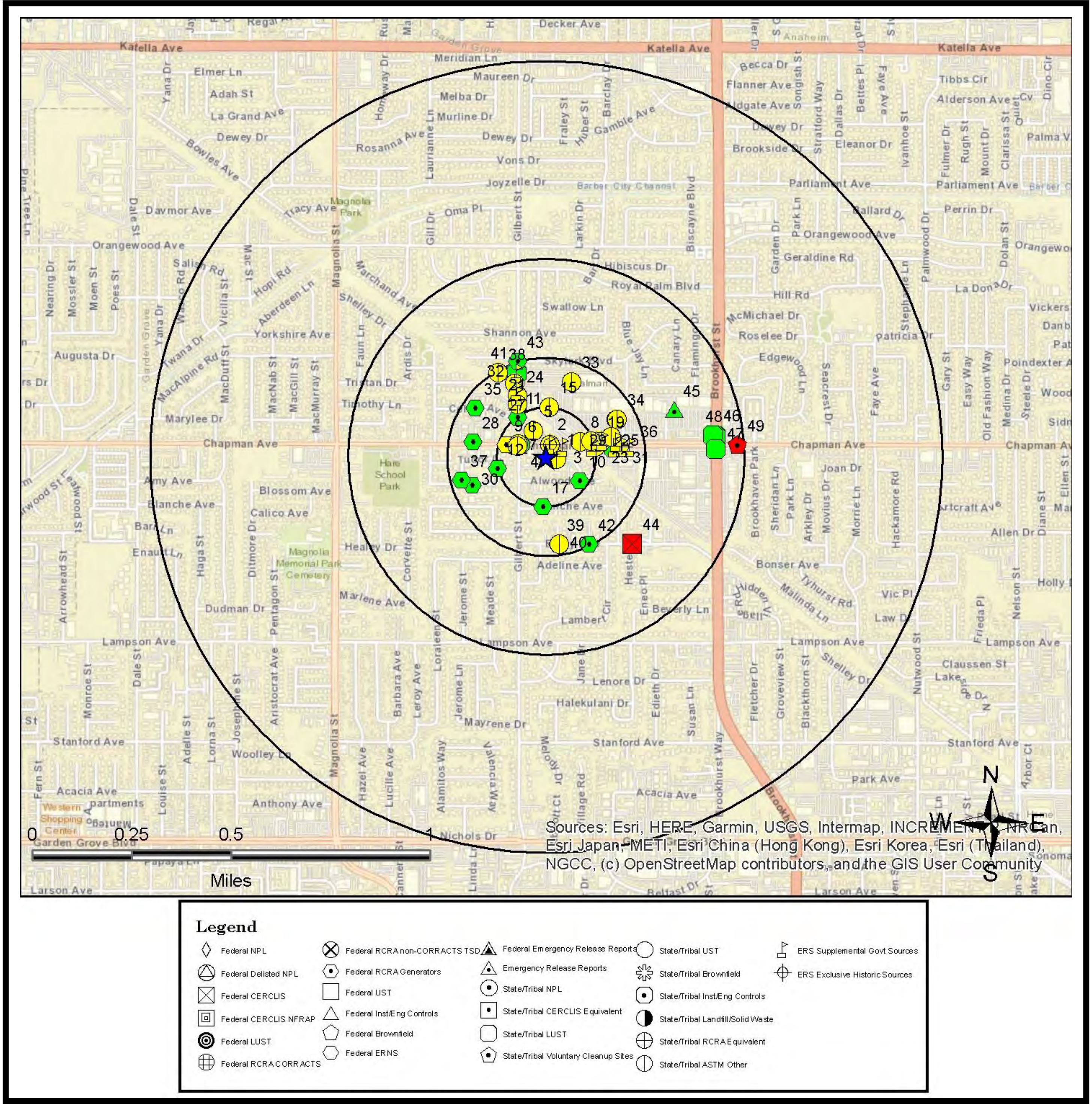
S&S Commercial Environmental Services, Inc.	9562 Chapman Avenue Garden Grove, CA 92841	FIGURE: 1 JOB: 2104782376 DATE: 7/5/2024



SITE LOCATION MAP

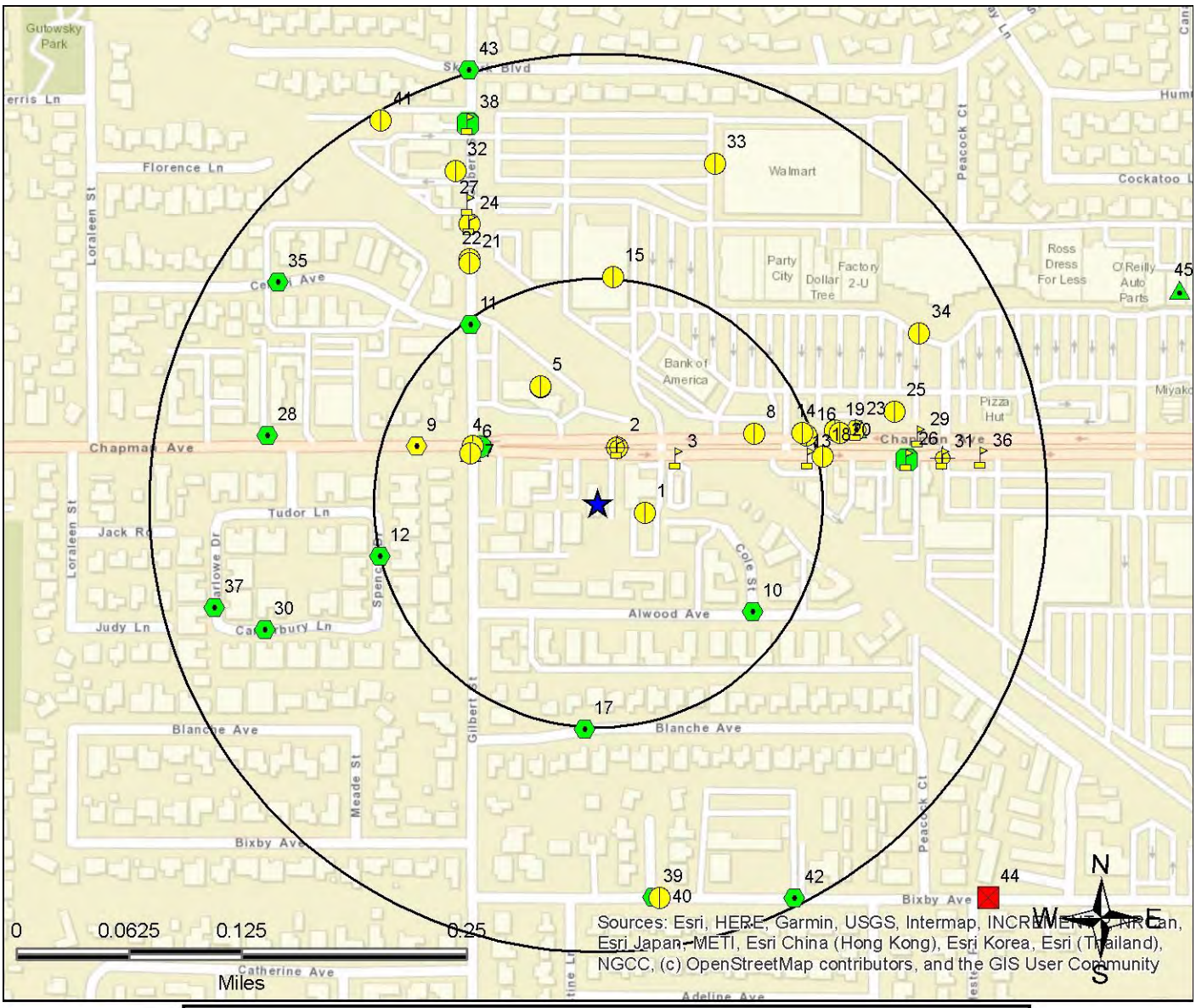
S&S Commercial Environmental Services, Inc.	9562 Chapman Avenue Garden Grove, CA 92841	FIGURE: 2 JOB: 2104782376 DATE: 7/5/2024

1-MILE RADIUS STREET MAP W/OCCURRENCES (MAP1)



All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.

0.25-MILE RADIUS STREET MAP W/OCCURRENCES (MAP2)

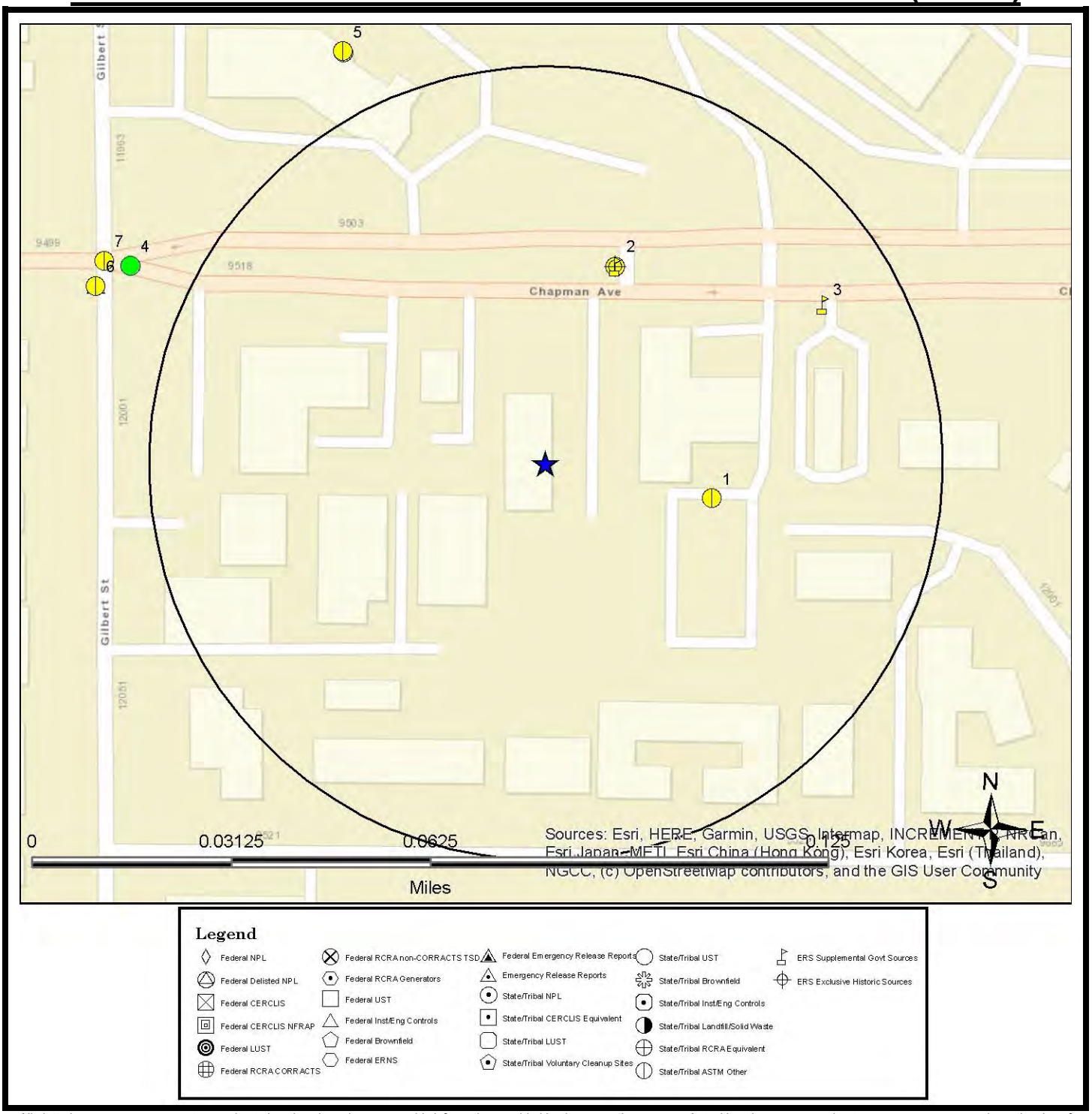


Legend

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

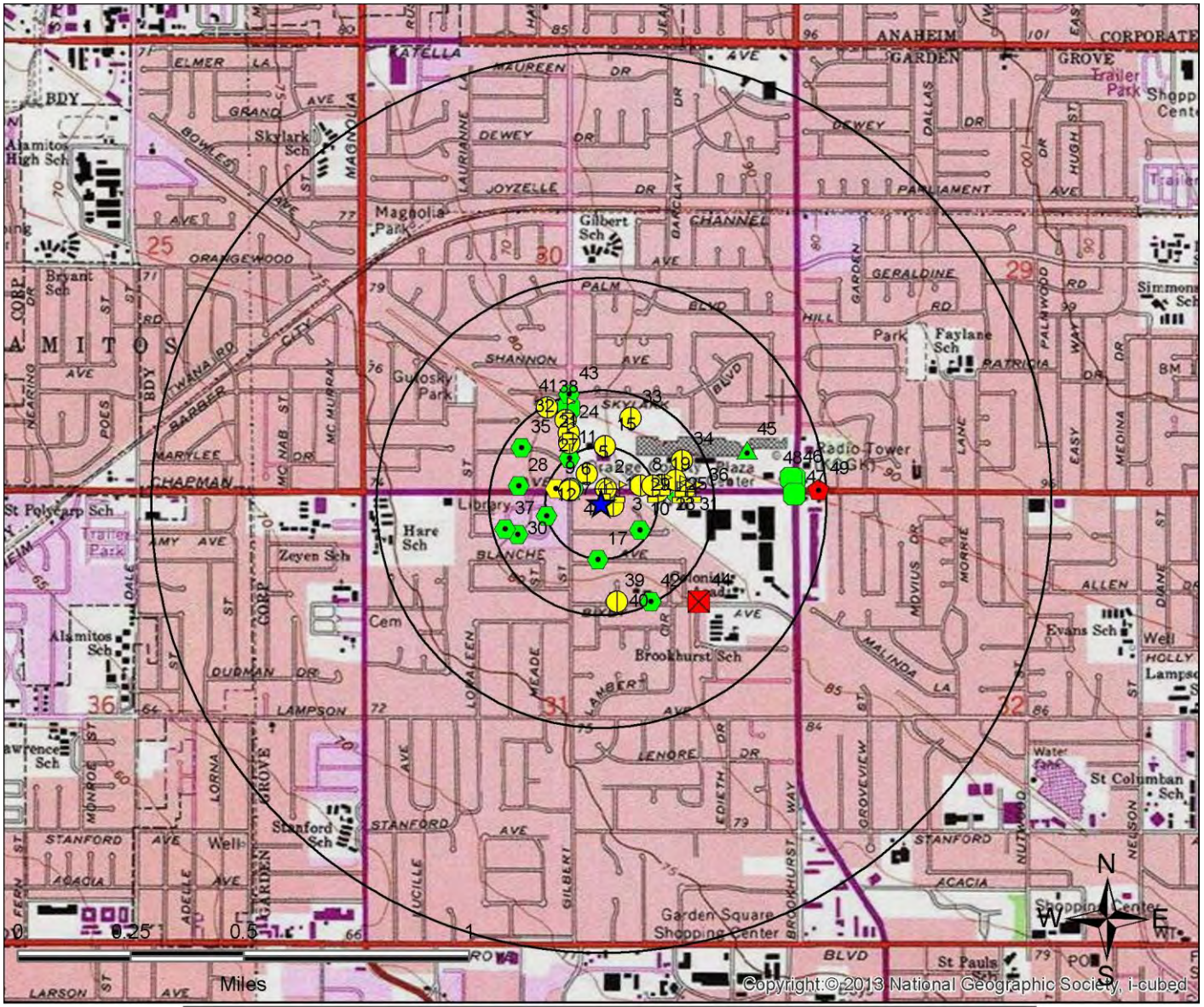
All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.

0.0625-MILE RADIUS STREET MAP W/ OCCURRENCES (MAP3)



All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.

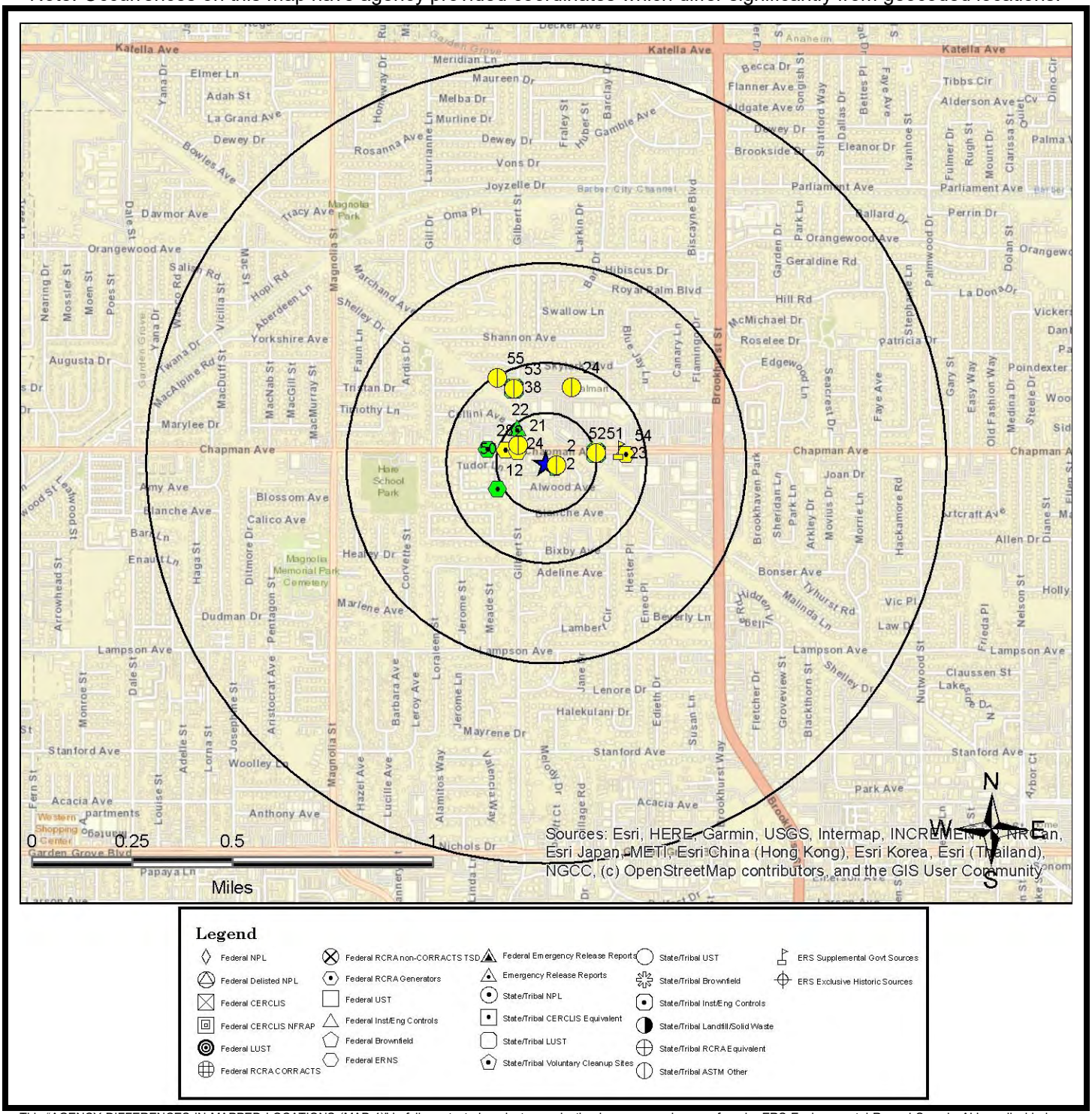
1-MILE TOPOGRAPHIC MAP W/OCCURRENCES (MAP4)



All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. **Occurrences are shown in three colors** to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in **RED** are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in **YELLOW** have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the listing should be reviewed for further information. Occurrences shown in **GREEN** are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore, do not likely present an environmental risk.

AGENCY DIFFERENCES IN MAPPED LOCATIONS (MAP5)

Note: Occurrences on this map have agency provided coordinates which differ significantly from geocoded locations.



Legend

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

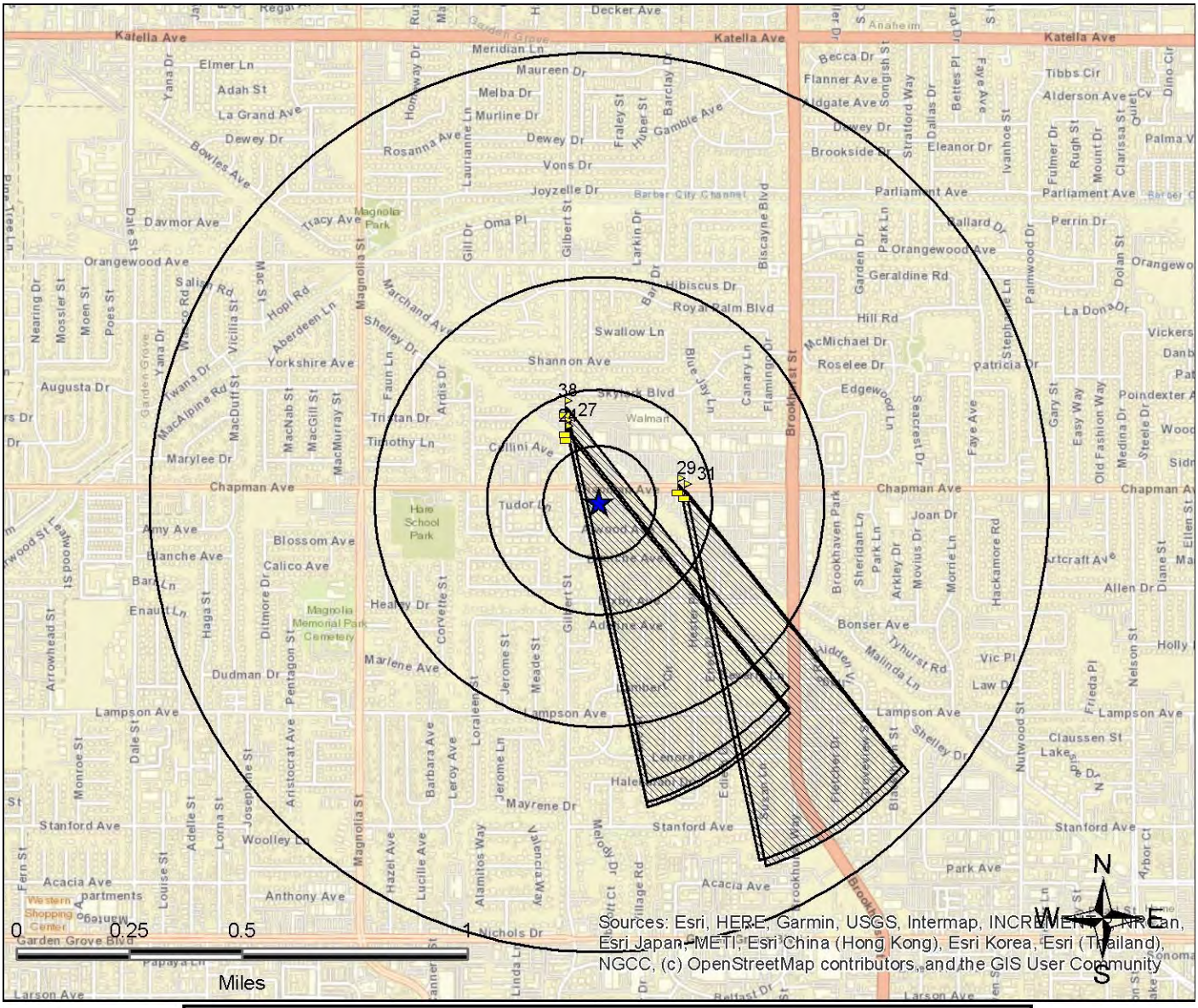
SUMMARY OF AGENCY DIFFERENCES

MAP ID	ID / SITE NAME	ADDRESS / DATABASE	AGENCY COORDINATES	DISTANCE (MILES)	DIRECTION
2	10407094 Tire Choice	9572 Chapman Ave CERS-CA	-117.965729, 33.788006	0.03	E
2	CAD050747781 MAGNESS GOODYEAR TIRE CTR	9572 Chapman Ave Hist-CA	-117.96574, 33.78799	0.03	E
2	CAL000444602 TIRE CHOICE 1616	9572 Chapman Ave RCRA-NON-US	-117.967943, 33.788532	0.1	W
12	CAC003013860 STEVE PHAN	12102 Spencer Dr RCRA-NON-US	-117.968291, 33.787128	0.14	SW
21	10862641 AT&T California - CA18P	11978 Gilbert St CERS-CA	-117.96737, 33.78872	0.08	NW
22	T10000017761 HEWSON PROPERTY	11950 Gilbert St SCP-Closed-CA	-117.967443, 33.7893419	0.11	NW
23	CAD981627995 STAR DUST CLEANERS	9705 CHAPMAN AVE DryCleaners-CA	-117.96299, 33.78858	0.19	E
24	10506235 Walmart #4171	11822 Gilbert St CERS-CA	-117.96508, 33.790844	0.2	N
24	CAR000245787 WALMART SUPERCENTER #4171	11822 Gilbert St RCRA-SQG-US	-117.9674, 33.788482	0.07	W
28	CAL000259056 MARISSA WOOLLEY, DMD, INC.	9355 Chapman Ave Ste 100 RCRA-NON-US	-117.968735, 33.78855	0.15	W
38	T0605901511 GARDEN GROVE FIRE STATION # 2	11805 Gilbert St LUST-Closed-CA	-117.9675922, 33.7907629	0.2	NW
50	CAR000140640 EVANS MFG INC	7422 Chapman Ave RCRA-SQG-US	-117.967943, 33.788532	0.1	W
51	300137 CHAPMAN CAR WASH	9732 Chapman Ave ENF-CA	-117.9640053, 33.7884812	0.13	E
52	T0605901279 CHAPMAN CAR WASH	9732 Chapman Ave LUST-Closed-CA	-117.9640053, 33.7884812	0.13	E
53	283604 GARDEN GROVE FIRE STATION # 2	11805 Gilbert St ENF-CA	-117.9675922, 33.7907629	0.2	NW

MAP ID	ID / SITE NAME	ADDRESS / DATABASE	AGENCY COORDINATES	DISTANCE (MILES)	DIRECTION
54	CAD981977309 ADAMS CLEANERS	9752 Chapman Ave RCRA-SQG-US	-117.962706, 33.788435	0.2	E
55	10568779 ORANGE COUNTY FIRE AUTHORITY Station #82 Garden Grove	11805 Gilbert St CERS-CA	-117.968315, 33.791157	0.24	NW

MAPPED AIR PERMITS WITH POTENTIAL DISPERSION (MAP6)

Note: Occurrences on this map are reported in Air Quality databases. Potential air plumes are drawn in the direction of the prevailing wind.



Legend

- Federal NPL
- Federal Delisted NPL
- Federal CERCLIS
- Federal CERCLIS NFRAP
- Federal LUST
- Federal RCRA CORRACTS
- Federal RCRA non-CORRACTS TSD
- Federal RCRA Generators
- Federal UST
- Federal Inst/Eng Controls
- Federal Brownfield
- Federal ERNS
- Federal Emergency Release Reports
- Emergency Release Reports
- State/Tribal NPL
- State/Tribal CERCLIS Equivalent
- State/Tribal LUST
- State/Tribal Voluntary Cleanup Sites
- State/Tribal UST
- State/Tribal Brownfield
- State/Tribal Inst/Eng Controls
- State/Tribal Landfill/Solid Waste
- State/Tribal RCRA Equivalent
- State/Tribal ASTM Other
- ERS Supplemental Govt Sources
- ERS Exclusive Historic Sources

All plotted occurrences represent approximate locations based on geographic information provided by the respective agency/source. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. Potential air dispersion plumes are depicted to graphically show the direction contaminates may travel based on prevailing wind data and provide a visual screening tool only. Actual direction will vary especially by season. Depending on the actual contaminate, amount released, and other variables, the distance from the source the contaminate may travel can and will vary. Interpretation and review of all the actual relevant data by an environmental professional is recommended before making any decisions, conclusions or otherwise based on the map depictions, air data, and potential air dispersion plumes.

LISTED OCCURRENCE DETAILS

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.03 miles E	83 ft (1 ft lower than site)	1
SITE NAME			**MAPS**	**ID**
CERTIFIED TIRE & SERVCE CENTERS			1, 2, 3, 4	104360
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency			GARDEN GROVE	92841

DETAILS

Site Regulated Program Information
Site ID: 104360
Site EI ID: 10407094
Agency Provided Latitude: 33.788006
Agency Provided Longitude: -117.965729

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 8/16/2017
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Mark Sutphin on site to conduct routine hazardous waste inspection. Permission to enter, inspect, and take photographs granted by Dan Wright the Manager. I walked through the facility, perimeter and inspected waste storage area. The facility generates Waste oil , waste antifreeze, used oil filter , and waste brake fluid The drums with hazardous waste are properly labeled and stored closed All containers were labeled with the following information: 1. "HAZARDOUS WASTE" 2. Waste (name) 3. Hazardous property of the waste (e.g. - toxic, flammable, corrosive, etc.) 4. Physical state of the waste (liquid or solid) 5. Name and address of the business 6. The Accumulation start date Manifests were reviewed at site and in good order. Hazardous waste is hauled by Asbury Environmental Business emergency plan at site. The perimeter of the facility was also inspected; no obvious signs of releases were noted. The dumpster was inspected and no hazardous waste was in it [Truncated]
Evaluation Division: Orange County Environmental Health
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 8/16/2017
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Mark Sutphin at site for routine Hazmat Facility inspection . Permission to enter, inspect and take photographs granted by Dan Wright . Auto repair shop has submit hazmat business plan on CERS 1040794 Facility has reported ATF 240 gal, antifreeze 110 gal, helium 1800 cf, waste oil 240 gal, waste brake fluid 55 gal, waste antifreeze 165 gal, nitrogen liquid, and motor oil 240 gal Site plan appears correct. Facility has implemented hazmat business plan and employees receive training
Evaluation Division: Orange County Environmental Health

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
Tire Choice			1, 2, 3, 4	10407094
ADDRESS			**CITY**	**ZIP**
9572 Chapman Ave			Garden Grove	92841

DETAILS
SiteID: 104360 EI ID: 10407094 Description: Chemical Storage Facilities Hazardous Waste Generator

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
CERTIFIED TIRE AND SERVICE CENTERS			1, 2, 3, 4	FA0025331-ORG
ADDRESS			**CITY**	**ZIP**
9572 CHAPMAN AVE			GARDEN GROVE	92841
DETAILS				
County: Orange Responsible Agency: Orange County Environmental Health Type of Listing: Hazardous Waste Facilities Facility ID: FA0025331 Date Run: 7/13/2018 5:50 PM				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
FRS-US	Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
TIRE CHOICE 1616			1, 2, 3, 4	110033210273
ADDRESS			**CITY**	**ZIP**
9572 Chapman Ave			Garden Grove	92841
DETAILS				
FRS Facility Detail Report URL: https://frs-public.epa.gov/ords/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110033210273 Registry ID: 110033210273				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
FRS-US	Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
MAGNESS GOODYEAR TIRE CTR			1, 2, 3, 4	110006467322
ADDRESS			**CITY**	**ZIP**
9572 Chapman Ave			Garden Grove	92841
DETAILS				
FRS Facility Detail Report URL: https://frs-public.epa.gov/ords/frs_public2/fii_query_detail.disp_program_facility?p_registry_id=110006467322 Registry ID: 110006467322				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Auto Repair	Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
CERTIFIED TIRE & SERVICE CENTERS			1, 2, 3, 4	75298
ADDRESS			**CITY**	**ZIP**
9572 Chapman Ave			Garden Grove	92841
DETAILS				
Site Added: 1/1/2013				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Auto Repair	Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
Certified Tire & Svc Inc			1, 2, 3, 4	39825
ADDRESS			**CITY**	**ZIP**
9572 Chapman Ave			Garden Grove	92841

DETAILS
Sic Code: 5531 Desc: Auto, Truck & Tire Service Site Added: 2/2010

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-CA	No Longer Listed	0.03 miles NE	82 ft (2 ft lower than site)	2

SITE NAME	MAPS	ID
GOOD YEAR TIRE CENTER	1, 2, 3, 4	550273

ADDRESS	CITY	ZIP
9572 Chapman Ave	Garden Grove	92841

DETAILS

Original Database: UST-CA
Last Agency Status: Listed
Archive Date: 03/27/17
No Longer Listed-More Information on Site? Go to Following Link:
http://geotracker.waterboards.ca.gov/search.asp
Global ID: 7041
COUNTY: Orange
Permitting Agency: ORANGE COUNTY
Agency Provided Latitude: 33.7894462
Agency Provided Longitude: -117.9644939
PROJECT TYPE: Not Reported
RB Case Number: Not Reported
LOC Case Number: Not Reported
Case Worker: Not Reported
MTBE DATE: Not Reported
GW CONC (PPB): Not Reported
MATRIX: Not Reported

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-CA	No Longer Listed	0.03 miles NE	82 ft (2 ft lower than site)	2

SITE NAME	MAPS	ID
WEST CNTY TIRES/AUTOMOTIVE INC/GOODYEAR	1, 2, 3, 4	CAL000175450

ADDRESS	CITY	ZIP
9572 Chapman Ave	Garden Grove	92841

DETAILS

Original Database: HWIS-CA
Last Agency Status: Listed
Archive Date: 10/07/21
No Longer Listed-EPA ID: CAL000175450
Facility County: 30
Mailing Street: 421 W CHAPMAN AVE
Mailing City: ANAHEIM
Mailing State: CA
Mailing Zip: 928023504
Contact Name: WEST CNTY TIRES & AUTOMOTIVE
Contact Phone: 0000000000

Year: 1998
TONS: 0.0417
TSD EPA ID: CAT000613893
Category Code: 134
Category Description: Aqueous solution with total organic residues less than 10 percent
Method Description: TRANSFER STATION

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-CA	No Longer Listed	0.03 miles NE	82 ft (2 ft lower than site)	2

SITE NAME	MAPS	ID
CERTIFIED TIRE & SERVICE CENTERS	1, 2, 3, 4	CAL000153631

ADDRESS	CITY	ZIP
9572 Chapman Ave	Garden Grove	92841

DETAILS
Original Database: HWIS-CA Last Agency Status: Listed Archive Date: 10/07/21 No Longer Listed-EPA ID: CAL000153631 Facility County: 30 Mailing Street: 23900 ALESSANDRO BLVD STE D Mailing City: MORENO VALLEY Mailing State: CA Mailing Zip: 925530000 Contact Name: MICHELLE SCHOOF/OFF MGR Contact Phone: 9096532868 Year: 2017 TONS: 0.05 TSD EPA ID: CAD097030993 Category Code: 352 Category Description: Other organic solids Method Description: STORAGE, BULKING, AND/OR TRANSFER OFF SITE--NO TREATMENT/REOVERY (H010-H129) OR (H131-H135) Year: 2017 TONS: 0.22935 TSD EPA ID: CAT080013352 Category Code: 223 Category Description: Unspecified oil-containing waste Method Description: OTHER RECOVERY OF RECLAMATION FOR REUSE INCLUDING ACID REGENERATION, ORGANICS RECOVERY ECT Year: 2011 More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-CA	No Longer Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
MAGNESS GOODYEAR TIRE CTR			1, 2, 3, 4	CAD050747781
ADDRESS			**CITY**	**ZIP**
9572 Chapman Ave			Garden Grove	92841

DETAILS
Original Database: HWIS-CA Last Agency Status: Listed Archive Date: 10/07/21 No Longer Listed-EPA ID: CAD050747781 Facility County: 30 Mailing Street: 9572 CHAPMAN AVE Mailing City: GARDEN GROVE Mailing State: CA Mailing Zip: 928412705 Contact Name: Not Reported Contact Phone: 0000000000 Year: 1996 TONS: 1.4386 TSD EPA ID: CAD050099696 Category Code: 135 Category Description: Unspecified aqueous solution Method Description: RECYCLER Year: 1995 TONS: 0.5629 TSD EPA ID: CAD050099696 Category Code: 135 Category Description: Unspecified aqueous solution Method Description: RECYCLER Year: 1995 More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Rental	Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
U-HAUL CO			1, 2, 3, 4	1326509-PD
ADDRESS			**CITY**	**ZIP**
9572 Chapman Ave			Garden Grove	92841
DETAILS				
Listing Year: 1997 SIC Category: RENTAL SERVICE-STORES & YARDS SIC Code: 735910				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-US	No Longer Listed	0.03 miles NE	82 ft (2 ft lower than site)	2

SITE NAME	MAPS	ID
DESOTO GATHERING - SHARKEY CPF	1, 2, 3, 4	9174E6E3-0514500758

ADDRESS	CITY	ZIP
9572 Chapman Ave	Garden Grove	92841

DETAILS

Original Database: AFS-US
Last Agency Status: Listed
Archive Date: 05/09/2014
URL:
http://www.epa-echo.gov/cgi-bin/get1cReport.cgi?tool=echo&IDNumber=110030489031
Primary Sic Code: 4922
NAIC Code: 486210
Federally Reportable?: Y
EPA Classification: Pot Emissions below major source thesholds if complies with FED REGS/LIMITS
Operating Status: Operating
EPA Compliance Status: in compliance with procedural requirements
Air Program: SIP
Pollutant Compliance Status: in compliance with procedural requirements
Air Program: MACT (SECTION 63 NESHAPS)
Air Program Status: Operating
EPA-State Classification: Pot Emissions below major source thesholds if complies with FED REGS/LIMITS
EPA-State Compliance Status: in compliance with procedural requirements
Pollutant Classification: Pot Emissions below major source thesholds if complies with FED REGS/LIMITS
Pollutant Compliance Status: in compliance with procedural requirements
Air Program: SIP
Air Program Status: Operating
EPA-State Classification: Pot Emissions below major source thesholds if complies with FED REGS/LIMITS
EPA-State Compliance Status: in compliance with procedural requirements
Pollutant Compliance Status: in compliance with procedural requirements
Air Program: NSPS
Air Program Status: Operating
EPA-State Classification: Pot Emissions below major source thesholds if complies with FED REGS/LIMITS
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-USTReg-CA	Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
GOOD YEAR TIRE CENTER			1, 2, 3, 4	1283032
ADDRESS			**CITY**	**ZIP**
9572 Chapman Ave			Garden Grove	92841
DETAILS				
Reported Date: 1998				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Vehicle-Parts	Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
WEST COUNTY TIRE & AUTOMOTIVE			1, 2, 3, 4	1569586-PD
ADDRESS			**CITY**	**ZIP**
9572 Chapman Ave			Garden Grove	92841
DETAILS				
Listing Year: 1997 SIC Category: TIRE-DEALERS-RETAIL SIC Code: 553123				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
CERTIFIED TIRE & SERVICE CENTERS			1, 2, 3, 4	CAL000153631
ADDRESS			**CITY**	**ZIP**
9572 Chapman Ave			Garden Grove	92841

DETAILS
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAL000153631 Reporting Universe: Other

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
TIRE CHOICE 1616			1, 2, 3, 4	CAL000444602
ADDRESS			**CITY**	**ZIP**
9572 Chapman Ave			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAL000444602 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-SQG-US	Listed	0.03 miles NE	82 ft (2 ft lower than site)	2
SITE NAME			**MAPS**	**ID**
MAGNESS GOODYEAR TIRE CTR			1, 2, 3, 4	CAD050747781
ADDRESS			**CITY**	**ZIP**
9572 Chapman Ave			Garden Grove	92841

DETAILS
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAD050747781 Reporting Universe: SQG

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Cleaners-CA	Listed	0.05 miles NE	85 ft (1 ft higher than site)	3
SITE NAME			**MAPS**	**ID**
Fast Wash			1, 2, 3, 4	13024
ADDRESS			**CITY**	**ZIP**
9616 CHAPMAN AVE			Garden Grove	92841

DETAILS

Facility and Program Information
County: Orange
Executive First Name: Not Reported
Executive Last Name: Not Reported
Professional Title: Not Reported
Executive Title: Not Reported
Executive Gender: Not Reported
ZIP Four: 2707
Carrier Route: C024
Delivery Point Barcode: 163
Metro Area: LA-Long Bch, CA
Neighborhood: Not Reported
Phone Number Combined: (714) 534-9508
Fax Number Combined: 0
Toll Free Number Combined: 0
Website: Not Reported
Company Description: Not Reported
Primary SIC Code: 721201
Primary SIC Description: Cleaners
Primary SIC Ad Size: Regular
Primary SIC Year Appeared: 2014
SIC Code 1: 721201
SIC Code 1 Description: Cleaners
SIC Code 1 Ad Size: Not Reported
SIC Code 1 Year Appeared: Not Reported
SIC Code 2: Not Reported
SIC Code 2 Description: Not Reported
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-UST-CA	Listed	0.07 miles NW	81 ft (3 ft lower than site)	4
SITE NAME			**MAPS**	**ID**
ABDULWAHAB R SABEH			1, 2, 4	211819
ADDRESS			**CITY**	**ZIP**
9522 Chapman Ave			Garden Grove	92841
DETAILS				
Note: ID has been assigned by ERS Tank Details: https://documents.geotracker.waterboards.ca.gov/ustpdfs/pdf/00027f7a.pdf County: Los Angeles				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.07 miles NW	83 ft (1 ft lower than site)	5
SITE NAME			**MAPS**	**ID**
Verizon Wireless: Las Bolsas Relo			1, 2, 4	418982
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency			GARDEN GROVE	92841

DETAILS

Site Regulated Program Information
Site ID: 418982
Site EI ID: 10726924
Agency Provided Latitude: 33.789024
Agency Provided Longitude: -117.966751

Program Description: Chemical Storage Facilities

Evaluation Information
Evaluation Date: 4/23/2018
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Reviewed and not accepted by M Sutphin. the local CUPA phone number is incorrect. Please change to 714-433-6000 CERS submittal Reviewed and accepted by M Sutphin. Facility inventory for lead acid batteries and diesel fuel and site plan appear correct this date. Emergency contingency plan reviewed and accepted. The Local CUPA phone number on the Emergency Contingency plan must be corrected to 714-433-6000
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

Violation Information
: Not Reported
:Enforcement Information
: Not Reported
:Chemical Information
: Not Reported
:Coordinate Information
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.07 miles NW	83 ft (1 ft lower than site)	**5**
SITE NAME			**MAPS**	**ID**
Verizon Wireless: Las Bolsas Relo			1, 2, 4	10726924
ADDRESS			**CITY**	**ZIP**
9501 CHAPMAN AVE			GARDEN GROVE	92841

DETAILS

SiteID: 418982
EI ID: 10726924
Description: Chemical Storage Facilities

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
ENF-CA	Listed	0.07 miles W	81 ft (3 ft lower than site)	6
SITE NAME			**MAPS**	**ID**
OCTD RIGHT OF WAY			1, 2, 4	546631
ADDRESS			**CITY**	**ZIP**
UNK GILBERT & CHAPMAN			GARDEN GROVE	92640

DETAILS

Note: This is an ERS generated SOURCEID
SOURCEID: 546631
Action Type: ENFORCEMENT
Action Date: 2/10/2023
Action Taken: Historic Files
Street Number: UNK
Street Name: GILBERT & CHAPMAN
Status: Completed - Case Closed
Status Date: 9/25/1991
County: Orange
EPA Region: 9
LATITUDE: 33.7884814
Case Type: Cleanup Program Site
Is the site linked to a Cleanup Fund SCUFIIS case?: NO
Lead Agency: ORANGE COUNTY LOP
Local Agency: ORANGE COUNTY LOP
Local Agency case number: 91IC041
File Location: All Files are on GeoTracker or in the Local Agency Warehouse

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
SCP-Closed-CA	COMPLETED - CASE CLOSED	0.07 miles W	81 ft (3 ft lower than site)	6
SITE NAME			**MAPS**	**ID**
OCTD RIGHT OF WAY			1, 2, 4	T10000020570
ADDRESS			**CITY**	**ZIP**
UNK GILBERT & CHAPMAN			GARDEN GROVE	92640

DETAILS
Global ID: T10000020570 Site/Facility Type: CLEANUP PROGRAM SITE County: ORANGE Report URL: https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000020570 Map URL: https://geotracker.waterboards.ca.gov/map/?global_id=T10000020570 Contact Name: IC SUPERVISOR Contact Organiztion Name: ORANGE COUNTY LOP COntact Address: 1241 E. DYER RD., SUITE 120 Contact City: SANTA ANA Contact Email: ghiggins@ochca.com Business Name: OCTD RIGHT OF WAY EPA Region: 9 Case Type: Cleanup Program Site Status Date: 9/25/1991 Is the site linked to a Cleanup Fund SCUFIIS case?: NO Lead Agency: ORANGE COUNTY LOP Local Agency: ORANGE COUNTY LOP Local Agency Case Number: 91IC041 File Location: All Files are on GeoTracker or in the Local Agency Warehouse Site History: Please refer to recent Site Documents or Monitoring Reports for site history. Orange County is not responsible for the accuracy of any professional interpretations provided in reports submitted by consultants for the responsible party. Case Begin Date: 9/25/1991 Site Closure Date: 9/25/1991 Is the site a Military or DOD site?: No Type of Regulatory Action: ENFORCEMENT Date of Action: 2/10/2023 More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.07 miles NW	81 ft (3 ft lower than site)	7
SITE NAME			**MAPS**	**ID**
OCTD RIGHT OF WAY UNK			1, 2, 4	RO0000328-ORG
ADDRESS			**CITY**	**ZIP**
GILBERT & CHAPMAN			Garden GROVE	92640

DETAILS
County: Orange Type: Industrial Site Cleanups Case ID: 91IC041 Record ID: RO0000328 Released Substance(s: DATA NOT ENTERED, SEE FILE Status Description: CLOSED Case Closed Date: 9/25/1991 Type of Closure: Closed pre 1994, file review required to determine closure type

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.1 miles NE	84 ft (0 ft higher than site)	8
SITE NAME			**MAPS**	**ID**
Hometown Buffet #704			1, 2, 4	123106
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency			GARDEN GROVE	92841

DETAILS
Site Regulated Program Information Site ID: 123106 Site EI ID: 10410307 Agency Provided Latitude: 33.788662 Agency Provided Longitude: -117.964677 Program Description: Chemical Storage Facilities Evaluation Information Evaluation Date: 12/5/2018 Violations Found? (Y/N): No Evaluation General Type: Compliance Evaluation Inspection Evaluation Type: Routine done by local agency Evaluation Note(s): Facility has one dewar and one cylinder of CO2 and one cylinder of helium. Facility in good order. E Mail str0704@hometownbuffet.com Evaluation Division: Orange County Environmental Health Evaluation Program: HMRRP Evaluation Source: CERS Evaluation Date: 3/18/2016 Violations Found? (Y/N): No Evaluation General Type: Other/Unknown Evaluation Type: Other, not routine, done by local agency Evaluation Note(s): The following documents were received and ACCEPTED on the CERS Portal: Business Activities Form Business Owner/Operator Form Chemical Inventory for 2 Facility site Map Evaluation Division: Orange County Environmental Health Evaluation Program: HMRRP Evaluation Source: CERS More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-LQG-US	Listed	0.1 miles W	81 ft (3 ft lower than site)	9
SITE NAME			**MAPS**	**ID**
AIR INDUSTRIES COMPANY			1, 2, 4	CAD981975485
ADDRESS			**CITY**	**ZIP**
7100 CHAPMAN AVENUE			GARDEN GROVE	92841-0000

DETAILS
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAD981975485 Reporting Universe: LQG Violations: VIOLATION_TYPE_DESC: Standards Applicable to Recordkeeping and Reporting Applicable to Small and Large Quantity Generators DATE_VIOLATION_DETERMINED: 08/24/2021 ACTUAL_RTC_DATE: 09/30/2021 SCHEDULED_COMPLIANCE_DATE: Not Reported Evaluations: EVALUATION_IDENTIFIER: 001 EVALUATION_DESC: FOCUSED COMPLIANCE INSPECTION EVALUATION_START_DATE: 04/07/2005 FOUND_VIOLATION: N EVALUATION_IDENTIFIER001 EVALUATION_DESCCOMPLIANCE EVALUATION INSPECTION EVALUATION_START_DATE03/28/1994 FOUND_VIOLATIONN EVALUATION_IDENTIFIER601 EVALUATION_DESCCOMPLIANCE EVALUATION INSPECTION EVALUATION_START_DATE06/01/2020 FOUND_VIOLATIONN More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.11 miles SE	84 ft (0 ft higher than site)	10

SITE NAME	MAPS	ID
PEACOCK APARTMENTS UNIT#1	1, 2, 4	CAC003258920

ADDRESS	CITY	ZIP
12082 Cole St Apt 1	Garden Grove	92841

DETAILS
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC003258920 Reporting Universe: Other

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.12 miles NW	83 ft (1 ft lower than site)	11
SITE NAME			**MAPS**	**ID**
GOLDEN STATE HUMANE SOCIETY			1, 2, 4	CAC003159784
ADDRESS			**CITY**	**ZIP**
11901 Gilbert St			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC003159784 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.12 miles W	81 ft (3 ft lower than site)	12
SITE NAME			**MAPS**	**ID**
STEVE PHAN			1, 2, 4	CAC003013860
ADDRESS			**CITY**	**ZIP**
12102 Spencer Dr			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC003013860 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Cleaners-CA	Listed	0.12 miles E	84 ft (0 ft higher than site)	13

SITE NAME	MAPS	ID
T Kim Dry Clean & Alteration	1, 2, 4	22196

ADDRESS	CITY	ZIP
9676 CHAPMAN AVE	Garden Grove	92841

DETAILS

Facility and Program Information
County: Orange
Executive First Name: Not Reported
Executive Last Name: Not Reported
Professional Title: Not Reported
Executive Title: Not Reported
Executive Gender: Not Reported
ZIP Four: 2707
Carrier Route: C024
Delivery Point Barcode: 767
Metro Area: LA-Long Bch, CA
Neighborhood: Not Reported
Phone Number Combined: (714) 591-5552
Fax Number Combined: 0
Toll Free Number Combined: 0
Website: Not Reported
Company Description: Not Reported
Primary SIC Code: 721201
Primary SIC Description: Cleaners
Primary SIC Ad Size: Not Reported
Primary SIC Year Appeared: 2016
SIC Code 1: 721201
SIC Code 1 Description: Cleaners
SIC Code 1 Ad Size: Not Reported
SIC Code 1 Year Appeared: Not Reported
SIC Code 2: Not Reported
SIC Code 2 Description: Not Reported
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.12 miles E	84 ft (0 ft higher than site)	14

SITE NAME	MAPS	ID
Party City #736 Garden Grove	1, 2, 4	369785

ADDRESS	CITY	ZIP
Not Reported by Agency	GARDEN GROVE	92841

DETAILS

Site Regulated Program Information
Site ID: 369785
Site EI ID: 10668928
Agency Provided Latitude: 33.788665
Agency Provided Longitude: -117.964213

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 9/7/2016
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Party City #736 Garden Grove 9661 Chapman Ave Garden Grove, CA 92841 INSPECTOR COMMENTS On site for a routine hazardous waste inspection. Consent to inspect and take any necessary photos was given by Bill Voyce, manager. Walked throughout the facility. Observed hazardous waste storage areas. Containers were closed and properly labeled. Waste has not been hauled yet, the program is new to Party City. Manifests were not reviewed because none were available. Employees are reported to be trained. Emergency plan is posted in the back of the store. The dumpster/enclosure was observed, no signs of dumping.
Evaluation Division: Orange County Environmental Health
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 9/7/2016
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Party CIty #736 Garden Grove 9661 Chapman Ave Garden Grove, CA 92841 INSPECTOR COMMENTS On site for routine hazardous materials and business emergency plan inspection. Consent to enter, inspect, and taken any necessary photos was given by Bill Voyce, manager. Observed the facility and inspected hazardous materials storage. The following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure: -Helium, nine, 291 cubic feet cylinders, totaling 2,619 cubic feet Business emergency plan is maintained on site. Annual employee training is conducted. The facility is responsible for identifying all hazardous materials, to include hazardous wastes, which are above disclosure thresholds. If there is a change in the type or amount of chemicals that are maintained on site, please submit revised documents (electronically) within 30 days of the change.
Evaluation Division: Orange County Environmental Health

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.12 miles N	87 ft (3 ft higher than site)	15

SITE NAME	MAPS	ID
24 Hour Fitness #156	1, 2, 4	412780

ADDRESS	CITY	ZIP
Not Reported by Agency	GARDEN GROVE	92841

DETAILS

Site Regulated Program Information
Site ID: 412780
Site EI ID: 10716748
Agency Provided Latitude: 33.789913
Agency Provided Longitude: -117.966057

Program Description: Chemical Storage Facilities

Evaluation Information
Evaluation Date: 12/7/2016
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): 24 HOUR FITNESS #156 9561 CHAPMAN GARDEN GROVE CA 92841 CERS ID 10716748
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

Violation Information
: Not Reported
:Enforcement Information
: Not Reported
:Chemical Information
: Not Reported
:Coordinate Information
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.12 miles N	87 ft (3 ft higher than site)	15
SITE NAME			**MAPS**	**ID**
24 Hour Fitness #156			1, 2, 4	10716748
ADDRESS			**CITY**	**ZIP**
9561 CHAPMAN AVE			GARDEN GROVE	92841
DETAILS				

SiteID: 412780
EI ID: 10716748
Description: Chemical Storage Facilities

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.12 miles E	84 ft (0 ft higher than site)	16
SITE NAME			**MAPS**	**ID**
PARTY CITY #736			1, 2, 4	FA0072917-ORG
ADDRESS			**CITY**	**ZIP**
9661 CHAPMAN AVE			GARDEN GROVE	92841
DETAILS				

County: Orange
Responsible Agency: Orange County Environmental Health
Type of Listing: Hazardous Waste Facilities
Facility ID: FA0072917
Date Run: 7/13/2018 5:50 PM

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-CESQG-US	Listed	0.12 miles E	84 ft (0 ft higher than site)	16
SITE NAME			**MAPS**	**ID**
RITE AID 5740			1, 2, 4	CAR000213082
ADDRESS			**CITY**	**ZIP**
9661 CHAPMAN AVE			GARDEN GROVE	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAR000213082 Reporting Universe: VSQG				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.12 miles E	84 ft (0 ft higher than site)	16
SITE NAME			**MAPS**	**ID**
PARTY CITY CORPORATION #736			1, 2, 4	CAL000417920
ADDRESS			**CITY**	**ZIP**
9661 CHAPMAN AVE			GARDEN GROVE	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAL000417920 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-SQG-US	Listed	0.12 miles E	84 ft (0 ft higher than site)	16
SITE NAME			**MAPS**	**ID**
RITE AID 5740			1, 2, 4	CAR000213082
ADDRESS			**CITY**	**ZIP**
9661 CHAPMAN AVE			GARDEN GROVE	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAR000213082 Reporting Universe: VSQG				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.13 miles S	82 ft (2 ft lower than site)	17
SITE NAME			**MAPS**	**ID**
ELSA DO			1, 2, 4	CAC003189704
ADDRESS			**CITY**	**ZIP**
9562 Blanche Ave			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC003189704 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.13 miles E	84 ft (0 ft higher than site)	18
SITE NAME			**MAPS**	**ID**
CHAPMAN CAR WASH			1, 2, 4	221359
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency			GARDEN GROVE	92641

DETAILS

Site Regulated Program Information
Site ID: 221359
Site EI ID: T0605901279
Agency Provided Latitude: 33.788481
Agency Provided Longitude: -117.964005

Program Description: Leaking Underground Storage Tank Cleanup Site

Evaluation Information
: Not Reported
:Violation Information
: Not Reported
:Enforcement Information
: Not Reported
:Chemical Information
: Not Reported
:Coordinate Information
: Not Reported
:

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.14 miles E	84 ft (0 ft higher than site)	19
SITE NAME			**MAPS**	**ID**
DOLLAR TREE STORES			1, 2, 4	FA0054003-ORG
ADDRESS			**CITY**	**ZIP**
9679 CHAPMAN Ave			GARDEN GROVE	92841

DETAILS
County: Orange Responsible Agency: Orange County Environmental Health Type of Listing: Hazardous Waste Facilities Facility ID: FA0054003 Date Run: 7/13/2018 5:50 PM

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.14 miles E	84 ft (0 ft higher than site)	19
SITE NAME			**MAPS**	**ID**
DOLLAR TREE #02053			1, 2, 4	CAL000386570
ADDRESS			**CITY**	**ZIP**
9679 CHAPMAN AVE			GARDEN GROVE	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAL000386570 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.14 miles E	84 ft (0 ft higher than site)	20
SITE NAME			**MAPS**	**ID**
Dollar Tree #02053			1, 2, 4	25803
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency			GARDEN GROVE	92841

DETAILS

Site Regulated Program Information
Site ID: 25803
Site EI ID: 10448617
Agency Provided Latitude: 33.788668
Agency Provided Longitude: -117.963852

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 12/5/2018
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Facility has a tote system in the back room for hazardous waste . the hazardous waste is hauled by . Hazardous waste is hauled about every six months. Manifests reviewed at site. Business emergency plan at site. Facility EPA ID # is CAL000386570. facility has 7 291 cubic feet cylinders for helium at site but they are all empty due to helium shortage
Evaluation Division: Orange County Environmental Health
Evaluation Program: HW
Evaluation Source: CERS

Evaluation Date: 12/5/2018
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Facility has 7 291 cubic feet cylinders for helium at site but they are all empty due to helium shortage
Evaluation Division: Orange County Environmental Health

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.15 miles NW	85 ft (1 ft higher than site)	**21**
SITE NAME			**MAPS**	**ID**
AT&T California - CA18P			1, 2, 4	10862641
ADDRESS			**CITY**	**ZIP**
11978 Gilbert St			Garden Grove	92841

DETAILS

SiteID: 571447
EI ID: 10862641
Description: Chemical Storage Facilities

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-Others-CA	Listed	0.15 miles NW	85 ft (1 ft higher than site)	22
SITE NAME			**MAPS**	**ID**
HEWSON PROPERTY			1, 2, 4	RO0003379-ORG
ADDRESS			**CITY**	**ZIP**
11950 GILBERT ST			GARDEN GROVE	92841
DETAILS				

County: Orange
Type: Industrial Site Cleanups
Case ID: 06IC005
Record ID: RO0003379
Released Substance(s: ARSENIC
Status Description: CLOSED
Case Closed Date: 5/29/2008
Type of Closure: Closure
certification
issued

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
SCP-Closed-CA	COMPLETED - CASE CLOSED	0.15 miles NW	85 ft (1 ft higher than site)	22
SITE NAME			**MAPS**	**ID**
HEWSON PROPERTY			1, 2, 4	T10000017761
ADDRESS			**CITY**	**ZIP**
11950 Gilbert St			Garden Grove	92841

DETAILS

Global ID: T10000017761
Site/Facility Type: CLEANUP PROGRAM SITE
County: ORANGE
Report URL:
https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000017761
Map URL:
https://geotracker.waterboards.ca.gov/map/?global_id=T10000017761
Contact Name: IC SUPERVISOR
Contact Organiztion Name: ORANGE COUNTY LOP
COntact Address: 1241 E. DYER RD., SUITE 120
Contact City: SANTA ANA
Contact Email: ghiggins@ochca.com
Business Name: HEWSON PROPERTY
EPA Region: 9
Case Type: Cleanup Program Site
Status Date: 5/29/2008
Is the site linked to a Cleanup Fund SCUFIIS case?: NO
Lead Agency: ORANGE COUNTY LOP
Local Agency: ORANGE COUNTY LOP
Local Agency Case Number: 06IC005
File Location: All Files are on GeoTracker or in the Local Agency Warehouse
Site History: Please refer to recent Site Documents or Monitoring Reports for site history. Orange County is not responsible for the accuracy of any professional interpretations provided in reports submitted by consultants for the responsible party.
Case Begin Date: 5/29/2008
Site Closure Date: 5/29/2008
Is the site a Military or DOD site?: No

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
DryCleaners-CA	Listed	0.15 miles E	84 ft (0 ft higher than site)	23
SITE NAME			**MAPS**	**ID**
STAR DUST CLEANERS			1, 2, 4	CAD981627995
ADDRESS			**CITY**	**ZIP**
9705 CHAPMAN AVE			GARDEN GROVE	926410000

DETAILS

EPA ID: CAD981627995
Create Date: 4/10/1987
Facility Act Ind: N
Inact Date: 1/1/1995
Facility Street2: Not Reported
County: Orange
Latitude: 33.788576
Longitude: -117.96299
Mailing Name: Not Reported
Facility Mailing Address: 9705 CHAPMAN AVE
Facility Mailing Address 2: Not Reported
Facility Mailing City: GARDEN GROVE
Facility Mailing State: CA
Facility Mailing Zip Code: 926410000
Region Code: 4
Owner Name: --
Owner Address: --
Owner Address2: Not Reported
Owner City: --
Owner State: 99
Owner Zip Code: --
Owner Phone Number: 0000000000
Owner Fax Number: Not Reported
Contact Name: UNDELIVERABLE PER SURVEY
Contact Address: 12/94 AD
Contact Address2: Not Reported
Contact City: --
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-SQG-US	Listed	0.15 miles E	84 ft (0 ft higher than site)	23

SITE NAME	MAPS	ID
STAR DUST CLEANERS	1, 2, 4	CAD981627995

ADDRESS	CITY	ZIP
9705 CHAPMAN AVE	GARDEN GROVE	92841

DETAILS

More Details:
https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAD981627995
Reporting Universe: SQG

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
SCP-Closed-CA	COMPLETED - CASE CLOSED	0.15 miles E	84 ft (0 ft higher than site)	23

SITE NAME	MAPS	ID
STARDUST DRY CLEANERS (FORMER)	1, 2, 4	SL208363891

ADDRESS	CITY	ZIP
9705 CHAPMAN AVE	GARDEN GROVE	

DETAILS

Global ID: SL208363891
Site/Facility Type: CLEANUP PROGRAM SITE
County: ORANGE
Census Tract: 6059088201
Report URL:
https://geotracker.waterboards.ca.gov/profile_report?global_id=SL208363891
Map URL:
https://geotracker.waterboards.ca.gov/map/?global_id=SL208363891
Business Name: STARDUST DRY CLEANERS (FORMER)
EPA Region: 9
Coordinate Source: Manual Entry on Screens
Case Type: Cleanup Program Site
Status Date: 9/28/2000
Is the site linked to a Cleanup Fund SCUFIIS case?: NO
Lead Agency: SANTA ANA RWQCB (REGION 8)
Regional Water Board Case Number: SL208363891
Case Begin Date: 8/1/1998
Leak Reported Date: 1/2/1965
How Leak was Discovered: * RPR
Site Closure Date: 9/28/2000
CalWater Watershed Name: Santa Ana River - Lower Santa Ana River - East Coastal Plain (801.11)
DWR Groundwater Sub-Basin Name: Coastal Plain Of Orange County (8-001)
CalEnviroScreen 3 Percentile: 61-65%
CalEnviroScreen 4 Percentile: 50-55%
Is the site a Military or DOD site?: No
Regional Board Office Region: SANTA ANA RWQCB (REGION 8)
Type of Regulatory Action: ENFORCEMENT
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.17 miles NW	84 ft (0 ft higher than site)	24

SITE NAME	MAPS	ID
WALMART #4171 WAL-MART STORES, INC	1, 2, 4	178011-SC

ADDRESS	CITY	ZIP
11822 GILBERT ST	GARDEN GROVE	92841

DETAILS

District: South Coast AQMD
Compliance URL:
https://xappprod.aqmd.gov/find//facility/AQMDsearch?facilityID=178011
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 178011
County Code: OR
County: Orange
Facility Status Code: A
Facility Status: ACTIVE
Number of Employees: 0
Location Zip Code Extension: Not Reported
Facility Representative First Name: DAVID
Facility Representative Last Name: BLAGG
Location Area Code: 479
Location Phone Number: 4303405
Location Phone Extension: Not Reported
Mailing Address: 11206 THOMPSON AVE ATTN: LICENSING SUPPORT
Mailing City: LENEXA
Mailing State: KS
Mailing Zip Code: 66219
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 479
Mailing Phone Number: 4303405
Mailing Phone Extension: Not Reported
Mailing Representative First Name: DAVID
Mailing Representative Last Name: BLAGG

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.17 miles NW	84 ft (0 ft higher than site)	24
SITE NAME			**MAPS**	**ID**
Walmart #4171			1, 2, 4	10506235
ADDRESS			**CITY**	**ZIP**
11822 Gilbert St			Garden Grove	92841
DETAILS				
SiteID: 407283 EI ID: 10506235 Description: Chemical Storage Facilities Hazardous Waste Generator				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.17 miles NW	84 ft (0 ft higher than site)	24
SITE NAME			**MAPS**	**ID**
AUSTIN JONES CORP			1, 2, 4	CAC003125080
ADDRESS			**CITY**	**ZIP**
11822 Gilbert St			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC003125080 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.17 miles NW	84 ft (0 ft higher than site)	24
SITE NAME			**MAPS**	**ID**
AUSTIN JONES CORP			1, 2, 4	CAC003142139
ADDRESS			**CITY**	**ZIP**
11822 Gilbert St			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC003142139 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-SQG-US	Listed	0.17 miles NW	84 ft (0 ft higher than site)	24
SITE NAME			**MAPS**	**ID**
WALMART SUPERCENTER #4171			1, 2, 4	CAR000245787
ADDRESS			**CITY**	**ZIP**
11822 Gilbert St			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAR000245787 Reporting Universe: SQG				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.18 miles E	86 ft (2 ft higher than site)	25
SITE NAME			**MAPS**	**ID**
Chipotle Mexican Grill #2545			1, 2, 4	10853182
ADDRESS			**CITY**	**ZIP**
9737 CHAPMAN AVE STE A			GARDEN GROVE	92841
DETAILS				

SiteID: 568870
EI ID: 10853182
Description: Chemical Storage Facilities

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-LUST-Closed-CA	Closed	0.18 miles E	85 ft (1 ft higher than site)	26
SITE NAME			**MAPS**	**ID**
CHAPMAN CAR WASH			1, 2, 4	RO0002337-ORG
ADDRESS			**CITY**	**ZIP**
9732 CHAPMAN AVE			GARDEN GROVE	92641
DETAILS				

County: Orange
Record ID: RO0002337
Case ID: 90UT224

Case Closed Date: 1/10/2003
Type of Closure: Closure certification issued
Status: Not Reported
Case Type Code: O
Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Regional-UST-CA	Listed	0.18 miles E	85 ft (1 ft higher than site)	26
SITE NAME			**MAPS**	**ID**
CHAPMAN CAR WASH			1, 2, 4	1242978
ADDRESS			**CITY**	**ZIP**
9732 CHAPMAN AVENUE			GARDEN GROVE	
DETAILS				
Reported Date: 1998 List: Region #8-Santa Ana Regional Underground Tank Database List Agency: Regional Water Quality Control Board, Region #8				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.18 miles NW	84 ft (0 ft higher than site)	27
SITE NAME			**MAPS**	**ID**
ROBERTSON ROOFING			1, 2, 4	94036-SC
ADDRESS			**CITY**	**ZIP**
11851 GILBERT ST			GARDEN GROVE	92841

DETAILS
District: South Coast AQMD Compliance URL: https://xappprod.aqmd.gov/find//facility/AQMDsearch?facilityID=94036 Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs. Facility Id: 94036 County Code: OR County: Orange Facility Status Code: A Facility Status: ACTIVE Number of Employees: 0 Location Zip Code Extension: Not Reported Facility Representative First Name: Not Reported Facility Representative Last Name: Not Reported Location Area Code: Not Reported Location Phone Number: Not Reported Location Phone Extension: Not Reported Mailing Address: 11851 GILBERT ST Mailing City: GARDEN GROVE Mailing State: CA Mailing Zip Code: 92841 Mailing Zip Code Extension: Not Reported Mailing Area Code: Not Reported Mailing Phone Number: Not Reported Mailing Phone Extension: Not Reported Mailing Representative First Name: Not Reported Mailing Representative Last Name: Not Reported More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.18 miles W	81 ft (3 ft lower than site)	**28**
SITE NAME			**MAPS**	**ID**
MARISSA WOOLLEY, DMD, INC.			1, 2, 4	CAL000259056
ADDRESS			**CITY**	**ZIP**
9355 Chapman Ave Ste 100			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAL000259056 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.19 miles E	84 ft (0 ft higher than site)	29

SITE NAME	MAPS	ID
PIC N SAVE STORE #4019	1, 2, 4	121936-SC

ADDRESS	CITY	ZIP
9801 CHAPMAN AVE	GARDEN GROVE	92683

DETAILS

District: South Coast AQMD
Compliance URL:
https://xappprod.aqmd.gov/find//facility/AQMDsearch?facilityID=121936
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 121936
County Code: OR
County: Orange
Facility Status Code: A
Facility Status: ACTIVE
Number of Employees: 0
Location Zip Code Extension: Not Reported
Facility Representative First Name: DAVE
Facility Representative Last Name: WILLYERD
Location Area Code: 614
Location Phone Number: 2787011
Location Phone Extension: Not Reported
Mailing Address: 300 PHILLIPI RD
Mailing City: COLUMBUS
Mailing State: OH
Mailing Zip Code: 43228
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 614
Mailing Phone Number: 2787011
Mailing Phone Extension: Not Reported
Mailing Representative First Name: DAVE
Mailing Representative Last Name: WILLYERD

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.19 miles E	84 ft (0 ft higher than site)	**29**

SITE NAME	MAPS	ID
SMART & FINAL #356	1, 2, 4	157124-SC

ADDRESS	CITY	ZIP
9891 CHAPMAN AVE	GARDEN GROVE	92841

DETAILS

District: South Coast AQMD
Compliance URL:
https://xappprod.aqmd.gov/find//facility/AQMDsearch?facilityID=157124
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 157124
County Code: OR
County: Orange
Facility Status Code: A
Facility Status: ACTIVE
Number of Employees: 0
Location Zip Code Extension: 2710
Facility Representative First Name: TOM
Facility Representative Last Name: APODACA
Location Area Code: 323
Location Phone Number: 8697895
Location Phone Extension: Not Reported
Mailing Address: 600 CITADEL DR
Mailing City: COMMERCE
Mailing State: CA
Mailing Zip Code: 90040
Mailing Zip Code Extension: 1562
Mailing Area Code: 323
Mailing Phone Number: 8697895
Mailing Phone Extension: Not Reported
Mailing Representative First Name: TOM
Mailing Representative Last Name: APODACA

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.2 miles W	82 ft (2 ft lower than site)	30
SITE NAME			**MAPS**	**ID**
MARILYN HALE			1, 2, 4	CAC003021578
ADDRESS			**CITY**	**ZIP**
9361 Canterbury Ln			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC003021578 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.2 miles W	82 ft (2 ft lower than site)	30
SITE NAME			**MAPS**	**ID**
MARILYN HALE C/O ROBERT HALE			1, 2, 4	CAC003163717
ADDRESS			**CITY**	**ZIP**
9361 Canterbury Ln			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC003163717 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.2 miles E	85 ft (1 ft higher than site)	31

SITE NAME	MAPS	ID
ADAMS CLEANERS #1	1, 2, 4	56323-SC

ADDRESS	CITY	ZIP
9752 CHAPMAN	GARDEN GROVE	92841

DETAILS

District: South Coast AQMD
Compliance URL:
https://xappprod.aqmd.gov/find//facility/AQMDsearch?facilityID=56323
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 56323
County Code: OR
County: Orange
Facility Status Code: A
Facility Status: ACTIVE
Number of Employees: 0
Location Zip Code Extension: Not Reported
Facility Representative First Name: DAN
Facility Representative Last Name: LY
Location Area Code: 714
Location Phone Number: 5391130
Location Phone Extension: Not Reported
Mailing Address: 9752 CHAPMAN
Mailing City: GARDEN GROVE
Mailing State: CA
Mailing Zip Code: 92841
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 714
Mailing Phone Number: 5391130
Mailing Phone Extension: Not Reported
Mailing Representative First Name: DAN
Mailing Representative Last Name: LY

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.2 miles E	85 ft (1 ft higher than site)	31

SITE NAME	MAPS	ID
ADAM CLEANER	1, 2, 4	51541-SC

ADDRESS	CITY	ZIP
9752 CHAPMAN	GARDEN GROVE	92641

DETAILS

District: South Coast AQMD
Compliance URL:
https://xappprod.aqmd.gov/find//facility/AQMDsearch?facilityID=51541
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 51541
County Code: OR
County: Orange
Facility Status Code: S
Facility Status: SOLD
Number of Employees: 0
Location Zip Code Extension: Not Reported
Facility Representative First Name: BUU MINH
Facility Representative Last Name: LAM
Location Area Code: 714
Location Phone Number: 5391130
Location Phone Extension: Not Reported
Mailing Address: 9752 CHAPMAN
Mailing City: GARDEN GROVE
Mailing State: CA
Mailing Zip Code: 92641
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 714
Mailing Phone Number: 5391130
Mailing Phone Extension: Not Reported
Mailing Representative First Name: BUU MINH
Mailing Representative Last Name: LAM

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Cleaners-CA	Listed	0.2 miles E	85 ft (1 ft higher than site)	31

SITE NAME	MAPS	ID
Adams Cleaner	1, 2, 4	7972

ADDRESS	CITY	ZIP
9752 CHAPMAN AVE	Garden Grove	92841

DETAILS

Facility and Program Information
County: Orange
Executive First Name: Not Reported
Executive Last Name: Not Reported
Professional Title: Not Reported
Executive Title: Not Reported
Executive Gender: Not Reported
ZIP Four: 2719
Carrier Route: C024
Delivery Point Barcode: 520
Metro Area: LA-Long Bch, CA
Neighborhood: Not Reported
Phone Number Combined: (714) 539-1130
Fax Number Combined: 0
Toll Free Number Combined: 0
Website: Not Reported
Company Description: Not Reported
Primary SIC Code: 721201
Primary SIC Description: Cleaners
Primary SIC Ad Size: Regular
Primary SIC Year Appeared: 2014
SIC Code 1: 721201
SIC Code 1 Description: Cleaners
SIC Code 1 Ad Size: Not Reported
SIC Code 1 Year Appeared: Not Reported
SIC Code 2: Not Reported
SIC Code 2 Description: Not Reported
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
DryCleaners-CA	Listed	0.2 miles E	85 ft (1 ft higher than site)	31

SITE NAME	MAPS	ID
ADAM 1 CLEANERS	1, 2, 4	CAD981977309

ADDRESS	CITY	ZIP
9752 CHAPMAN AVE	GARDEN GROVE	926410000

DETAILS

EPA ID: CAD981977309
Create Date: 7/3/1987
Facility Act Ind: N
Inact Date: 6/30/2002
Facility Street2: Not Reported
County: Orange
Latitude: 33.78854
Longitude: -117.962357
Mailing Name: Not Reported
Facility Mailing Address: 9752 CHAPMAN AVE
Facility Mailing Address 2: Not Reported
Facility Mailing City: GARDEN GROVE
Facility Mailing State: CA
Facility Mailing Zip Code: 926410000
Region Code: 4
Owner Name: DAN LY & TUGET THI NUYUYAN
Owner Address: 10242 BELLEHUNTS
Owner Address2: Not Reported
Owner City: WESTMINSTER
Owner State: CA
Owner Zip Code: 926830000
Owner Phone Number: 7148391596
Owner Fax Number: Not Reported
Contact Name: CANX VQ96 DAN LY _____AH
Contact Address: 9752 CHAPMAN AVE
Contact Address2: Not Reported
Contact City: GARDEN GROVE
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Cleaners	Listed	0.2 miles E	85 ft (1 ft higher than site)	31
SITE NAME			**MAPS**	**ID**
ADAMS CLEANER			1, 2, 4	291657-PD
ADDRESS			**CITY**	**ZIP**
9752 CHAPMAN AVE			GARDEN GROVE	92841-2719
DETAILS				
Listing Year: 1997 SIC Category: CLEANERS SIC Code: 721201				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.2 miles NW	84 ft (0 ft higher than site)	32
SITE NAME			**MAPS**	**ID**
GARDEN GROVE FIRE STATION # 2			1, 2, 4	259316
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency			GARDEN GROVE	92643

DETAILS

Site Regulated Program Information
Site ID: 259316
Site EI ID: T0605901511
Agency Provided Latitude: 33.790763
Agency Provided Longitude: -117.967592

Program Description: Leaking Underground Storage Tank Cleanup Site

Evaluation Information
: Not Reported
:Violation Information
: Not Reported
:Enforcement Information
: Not Reported
:Chemical Information
: Not Reported
:Coordinate Information
: Not Reported
:

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.2 miles N	88 ft (4 ft higher than site)	33
SITE NAME			**MAPS**	**ID**
Walmart #4171			1, 2, 4	407283
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency			GARDEN GROVE	92841

DETAILS

Site Regulated Program Information
Site ID: 407283
Site EI ID: 10506235
Agency Provided Latitude: 33.790844
Agency Provided Longitude: -117.96508

Program Description: Chemical Storage Facilities

Program Description: Hazardous Waste Generator

Evaluation Information
Evaluation Date: 1/11/2016
Violations Found? (Y/N): No
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): INSPECTOR COMMENTS On site for routine hazardous materials and business emergency plan inspection. Consent to enter and inspect was given by Jaime Valadez, Assistant manager. Observed the facility and inspected hazardous materials storage. The following materials were observed in amounts that meet or exceed the minimum volumes required for disclosure: -Propane, eight, 238.7 cubic feet cylinders, three, 170.1 cubic feet cylinders, totaling 2,419.9 cubic feet -Waste Car batteries, 10 gallons, Jaime stated that they just had a pick up and normally have more -Helium, six, 282 cubic feet cylinders, one, 170 cubic feet cylinder, totaling 1,867 cubic feet -R407A, 180 pounds -Operational equipment batteries, about 100 gallons Business emergency plan is maintained on site. Annual employee training is conducted. Site map was confirmed on site. The facility is responsible for identifying all hazardous materials, to include hazardous wastes, which are above [Truncated]
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

Violation Information
: Not Reported
:Enforcement Information
: Not Reported
:Chemical Information
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.2 miles NE	88 ft (4 ft higher than site)	**34**
SITE NAME			**MAPS**	**ID**
REGAL CINEMA GARDEN GROVE 16			1, 2, 4	437394
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency			GARDEN GROVE	92841

DETAILS

Site Regulated Program Information
Site ID: 437394
Site EI ID: 10580869
Agency Provided Latitude: 33.789482
Agency Provided Longitude: -117.963089

Program Description: Chemical Storage Facilities

Evaluation Information
Evaluation Date: 10/3/2016
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): Mark Sutphin on site to conduct a routine hazardous waste inspection. Permission to enter, inspect, and take photographs granted by Todd Bredenbeck Facility has submitted HMBP on E submit Facility has disclosed 4420 cubic feet of CO2 Per my on site inspection the CO2 inventory appears correct and the HMBP has been implemented and training of employees is performed A plot plan of the facility should also be submitted with the hazmat business plan
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 7/15/2014
Violations Found? (Y/N): Yes
Evaluation General Type: Compliance Evaluation Inspection
Evaluation Type: Routine done by local agency
Evaluation Note(s): ESUBMIT. TANK OUTSIDE.
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CERS-CA	Listed	0.2 miles NE	88 ft (4 ft higher than site)	**34**
SITE NAME			**MAPS**	**ID**
REGAL CINEMA GARDEN GROVE 16			1, 2, 4	10580869
ADDRESS			**CITY**	**ZIP**
9741 CHAPMAN AVE			GARDEN GROVE	92841

DETAILS

SiteID: 437394
EI ID: 10580869
Description: Chemical Storage Facilities

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.21 miles NW	80 ft (4 ft lower than site)	35
SITE NAME			**MAPS**	**ID**
MYRA NYGUYEN			1, 2, 4	CAC002991846
ADDRESS			**CITY**	**ZIP**
9351 Cellini Ave			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC002991846 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Cleaners-CA	Listed	0.22 miles E	85 ft (1 ft higher than site)	36
SITE NAME			**MAPS**	**ID**
Liz Water & Dry Clean			1, 2, 4	16637
ADDRESS			**CITY**	**ZIP**
9770 CHAPMAN AVE			Garden Grove	92841

DETAILS

Facility and Program Information
County: Orange
Executive First Name: Not Reported
Executive Last Name: Not Reported
Professional Title: Not Reported
Executive Title: Not Reported
Executive Gender: Not Reported
ZIP Four: 2719
Carrier Route: C024
Delivery Point Barcode: 700
Metro Area: LA-Long Bch, CA
Neighborhood: Not Reported
Phone Number Combined: (714) 636-6796
Fax Number Combined: 0
Toll Free Number Combined: 0
Website: Not Reported
Company Description: Not Reported
Primary SIC Code: 721201
Primary SIC Description: Cleaners
Primary SIC Ad Size: Not Reported
Primary SIC Year Appeared: 2006
SIC Code 1: 569919
SIC Code 1 Description: Tailors
SIC Code 1 Ad Size: Not Reported
SIC Code 1 Year Appeared: Not Reported
SIC Code 2: 721101
SIC Code 2 Description: Laundries
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.22 miles W	82 ft (2 ft lower than site)	37
SITE NAME			**MAPS**	**ID**
MELVIN WILSON			1, 2, 4	CAC003187823
ADDRESS			**CITY**	**ZIP**
12101 Marlowe Dr			Garden Grove	92841

DETAILS

More Details:
https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC003187823
Reporting Universe: Other

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
AIR-DIST-CA	Listed	0.22 miles N	84 ft (0 ft higher than site)	**38**

SITE NAME	MAPS	ID
GARDEN GROVE CITY OF	1, 2, 4	110711-SC

ADDRESS	CITY	ZIP
11805 GILBERT ST	GARDEN GROVE	92841

DETAILS

District: South Coast AQMD
Compliance URL:
https://xappprod.aqmd.gov/find//facility/AQMDsearch?facilityID=110711
Note: For additional Facility, Equipment, Emissions, Hearing Board or Transporation Plan Information click on different tabs.
Facility Id: 110711
County Code: OR
County: Orange
Facility Status Code: A
Facility Status: ACTIVE
Number of Employees: 0
Location Zip Code Extension: Not Reported
Facility Representative First Name: CANDACE
Facility Representative Last Name: WARE
Location Area Code: 714
Location Phone Number: 2280526
Location Phone Extension: Not Reported
Mailing Address: 11222 ACACIA ST
Mailing City: GARDEN GROVE
Mailing State: CA
Mailing Zip Code: 92840
Mailing Zip Code Extension: Not Reported
Mailing Area Code: 714
Mailing Phone Number: 2280526
Mailing Phone Extension: Not Reported
Mailing Representative First Name: CANDACE
Mailing Representative Last Name: WARE

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-LUST-Closed-CA	Closed	0.22 miles N	84 ft (0 ft higher than site)	38

SITE NAME	MAPS	ID
GARDEN GROVE FIRE STATION # 2	1, 2, 4	RO0001557-ORG

ADDRESS	CITY	ZIP
11805 GILBERT ST	GARDEN GROVE	92643

DETAILS

County: Orange
Record ID: RO0001557
Case ID: 92UT027

Case Closed Date: 5/21/1997
Type of Closure: Closure certification issued
Status: Not Reported
Case Type Code: S
Released Substance: Diesel fuel oil and additives, Nos.1-D,
2-D, 2-4
Gasoline-Automotive (motor gasoline
and additives), leaded & unleaded

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
Hist-Regional-UST-CA	Listed	0.22 miles N	84 ft (0 ft higher than site)	38

SITE NAME	MAPS	ID
GARDEN GROVE FIRE STATION #2	1, 2, 4	3078469

ADDRESS	CITY	ZIP
11805 GILBERT STREET	GARDEN GROVE	

DETAILS

Reported Date: 1998
List: Region #8-Santa Ana Regional Underground Tank Database List
Agency: Regional Water Quality Control Board, Region #8

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	COMPLETED - CASE CLOSED	0.22 miles N	84 ft (0 ft higher than site)	38

SITE NAME	MAPS	ID
GARDEN GROVE FIRE STATION # 2	1, 2, 4	T0605901511

ADDRESS	CITY	ZIP
11805 Gilbert St	Garden Grove	92841

DETAILS

Global ID: T0605901511
Site/Facility Type: LUST CLEANUP SITE
County: ORANGE
Census Tract: 6059088002
EPA Region: 9
Case Type: LUST Cleanup Site
Status Date: 5/21/1997
CUF Case: NO
Lead Agency: ORANGE COUNTY LOP
Regional Water Board Case Case Number: 083002026T
Local Agency Case Number: 92UT027
File Location: Local Agency
Potential Contaminants of Concern: Diesel, Gasoline
Quantity Released (Gallons): 0
Potential Media of Concern: Soil
Case Begin Date: 1/16/1992
Leak Reported Date: 1/16/1992
How Leak was Discovered: Tank Closure
How Leak was Stopped: Close and Remove Tank
No Further Action Date: 5/21/1997
CalWater Watershed Name: Santa Ana River - Lower Santa Ana River - East Coastal Plain (801.11)
DWR Groundwater Sub-Basin Name: Coastal Plain Of Orange County (8-001)
CalEnviroScreen 3 Percentile: 46-50%
CalEnviroScreen 4 Percentile: 45-50%
Is the site a Military or DOD site?: No
Regional Board Office Region: SANTA ANA RWQCB (REGION 8)

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.22 miles S	79 ft (5 ft lower than site)	39

SITE NAME	MAPS	ID
BYONG KIM	1, 2, 4	CAC003184264

ADDRESS	CITY	ZIP
9602 Bixby Ave	Garden Grove	92841

DETAILS
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC003184264 Reporting Universe: Other

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
SWRCY-CA	Listed	0.22 miles S	79 ft (5 ft lower than site)	40
SITE NAME			**MAPS**	**ID**
Padre Pio Academy Beverage Container Recycling			1, 2, 4	SP220400.002
ADDRESS			**CITY**	**ZIP**
9621 Bixby Ave			Garden Grove	92841
DETAILS				
ACCOUNT NUMBER: SP220400.002 OPERATION BEGIN DATE: 1/12/2015 ORGANIZATION NAME: Padre Pio Academy				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
CRSP-CA	Listed	0.24 miles NW	83 ft (1 ft lower than site)	41
SITE NAME			**MAPS**	**ID**
CITY OF GG FIRE STATION 2			1, 2, 4	370189
ADDRESS			**CITY**	**ZIP**
Not Reported by Agency			GARDEN GROVE	92841

DETAILS

Site Regulated Program Information
Site ID: 370189
Site EI ID: 10568779
Agency Provided Latitude: 33.791157
Agency Provided Longitude: -117.968315

Program Description: Chemical Storage Facilities

Evaluation Information
Evaluation Date: 12/1/2016
Violations Found? (Y/N): No
Evaluation General Type: Other/Unknown
Evaluation Type: Other, not routine, done by local agency
Evaluation Note(s): Mark Sutphin reviewed CERS submittal
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

Evaluation Date: 11/17/2016
Violations Found? (Y/N): No
Evaluation General Type: Other/Unknown
Evaluation Type: Other, not routine, done by local agency
Evaluation Note(s): CERS submittal facility information reviewed and accepted by M Sutphin
Evaluation Division: Orange County Environmental Health
Evaluation Program: HMRRP
Evaluation Source: CERS

More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.25 miles SE	80 ft (4 ft lower than site)	42

SITE NAME	MAPS	ID
TOMMY LENARD	1, 2, 4	CAC002985591

ADDRESS	CITY	ZIP
9672 Bixby Ave	Garden Grove	92841

DETAILS

More Details:
https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC002985591
Reporting Universe: Other

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.25 miles SE	80 ft (4 ft lower than site)	42
SITE NAME			**MAPS**	**ID**
TOMMY LENARD			1, 2, 4	CAC002985378
ADDRESS			**CITY**	**ZIP**
9672 Bixby Ave			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC002985378 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
RCRA-NON-US	Listed	0.25 miles N	84 ft (0 ft higher than site)	43
SITE NAME			**MAPS**	**ID**
KRISDEN APARTMENTS			1, 2, 4	CAC003164229
ADDRESS			**CITY**	**ZIP**
11811 Gilbert St			Garden Grove	92841
DETAILS				
More Details: https://enviro.epa.gov/envirofacts/rcrainfo/facility?handlerId=CAC003164229 Reporting Universe: Other				

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
SEMS-Active-US	Listed	0.31 miles SE	82 ft (2 ft lower than site)	44

SITE NAME	MAPS	ID
Mercury Face Creams Sites	1, 4	CAN000900085

ADDRESS	CITY	ZIP
9775 BIXBY AVE	GARDEN GROVE	92841

DETAILS

Region: 09
Site ID: 0900085
EPA ID: CAN000900085
Site Name: Mercury Face Creams Sites
Street Address: 9775 Bixby Ave
City: GARDEN GROVE
State: CA
Zip: 92841
County: ORANGE
Latitude: 33.785009
Longitude: -117.961863
Federal Facility.1: N
Federal Facility Docket.1: N
NPL: Not on the NPL
Non NPL Status: Removal Only Site (No Site Assessment Work Needed)

NPL: N
Action: PRP RV
Start (Actual): 4/3/2014
Finish (Actual): 9/4/2014
Qualifier: C
Current Action Lead: EPA Ovrsght

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
SCP-Closed-CA	COMPLETED - CASE CLOSED	0.35 miles E	90 ft (6 ft higher than site)	45

SITE NAME	MAPS	ID
TOPS QUALITY CLEANERS	1, 4	T10000018320

ADDRESS	CITY	ZIP
9881 CHAPMAN AVE	GARDEN GROVE	92641

DETAILS

Global ID: T10000018320
Site/Facility Type: CLEANUP PROGRAM SITE
County: ORANGE
Report URL:
https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000018320
Map URL:
https://geotracker.waterboards.ca.gov/map/?global_id=T10000018320
Contact Name: IC SUPERVISOR
Contact Organiztion Name: ORANGE COUNTY LOP
COntact Address: 1241 E. DYER RD., SUITE 120
Contact City: SANTA ANA
Contact Email: ghiggins@ochca.com
Business Name: TOPS QUALITY CLEANERS
EPA Region: 9
Case Type: Cleanup Program Site
Status Date: 9/24/1997
Is the site linked to a Cleanup Fund SCUFIIS case?: NO
Lead Agency: ORANGE COUNTY LOP
Local Agency: ORANGE COUNTY LOP
Local Agency Case Number: 96IC022
File Location: All Files are on GeoTracker or in the Local Agency Warehouse
Site History: Please refer to recent Site Documents or Monitoring Reports for site history. Orange County is not responsible for the accuracy of any professional interpretations provided in reports submitted by consultants for the responsible party.
Case Begin Date: 9/24/1997
Site Closure Date: 9/24/1997
Is the site a Military or DOD site?: No

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-LUST-Closed-CA	Closed	0.43 miles E	89 ft (5 ft higher than site)	**46**
SITE NAME			**MAPS**	**ID**
UNOCAL			1, 4	RO0002050-ORG
ADDRESS			**CITY**	**ZIP**
11971 BROOKHURST ST			GARDEN GROVE	92641

DETAILS
County: Orange Record ID: RO0002050 Case ID: 86UT052 Case Closed Date: 7/2/1986 Type of Closure: Closure certification issued Status: Not Reported Case Type Code: S Released Substance: Waste oil/Used oil Gasoline-Automotive (motor gasoline and additives), leaded & unleaded

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	COMPLETED - CASE CLOSED	0.43 miles E	89 ft (5 ft higher than site)	46
SITE NAME			**MAPS**	**ID**
UNOCAL			1, 4	T0605900340
ADDRESS			**CITY**	**ZIP**
11971 Brookhurst St			Garden Grove	92840

DETAILS

Global ID: T0605900340
Site/Facility Type: LUST CLEANUP SITE
County: ORANGE
Census Tract: 6059088201
EPA Region: 9
Case Type: LUST Cleanup Site
Status Date: 7/2/1986
CUF Case: NO
Lead Agency: ORANGE COUNTY LOP
Regional Water Board Case Case Number: 083000425T
Local Agency Case Number: 86UT052
File Location: Local Agency
Potential Contaminants of Concern: Waste Oil / Motor / Hydraulic / Lubricating, Gasoline
Quantity Released (Gallons): 0
Potential Media of Concern: Soil
Case Begin Date: 7/2/1986
Leak Reported Date: 1/1/1965
How Leak was Discovered: Tank Closure
How Leak was Stopped: Close and Remove Tank
No Further Action Date: 7/2/1986
CalWater Watershed Name: Santa Ana River - Lower Santa Ana River - East Coastal Plain (801.11)
DWR Groundwater Sub-Basin Name: Coastal Plain Of Orange County (8-001)
CalEnviroScreen 3 Percentile: 61-65%
CalEnviroScreen 4 Percentile: 50-55%
Is the site a Military or DOD site?: No
Regional Board Office Region: SANTA ANA RWQCB (REGION 8)

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-LUST-Closed-CA	Closed	0.43 miles E	90 ft (6 ft higher than site)	47
SITE NAME			**MAPS**	**ID**
CHEVRON #9-1085			1, 4	RO0001458-ORG
ADDRESS			**CITY**	**ZIP**
12012 BROOKHURST ST			GARDEN GROVE	92840

DETAILS
County: Orange Record ID: RO0001458 Case ID: 97UT019 Case Closed Date: 4/6/2015 Type of Closure: Closure certification issued Status: Not Reported Case Type Code: O Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-LUST-Closed-CA	Closed	0.43 miles E	90 ft (6 ft higher than site)	47

SITE NAME	MAPS	ID
CHEVRON #9-1085	1, 4	RO0002488-ORG

ADDRESS	CITY	ZIP
12012 BROOKHURST ST	GARDEN GROVE	92640

DETAILS
County: Orange Record ID: RO0002488 Case ID: 85UT071 Case Closed Date: 9/17/1985 Type of Closure: Closure certification issued Status: Not Reported Case Type Code: U Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	COMPLETED - CASE CLOSED	0.43 miles E	90 ft (6 ft higher than site)	47

SITE NAME	MAPS	ID
CHEVRON #9-1085	1, 4	T0605902067

ADDRESS	CITY	ZIP
12012 Brookhurst St	Garden Grove	92840

DETAILS

Global ID: T0605902067
Site/Facility Type: LUST CLEANUP SITE
County: ORANGE
Census Tract: 6059088203
EPA Region: 9
Case Type: LUST Cleanup Site
Status Date: 4/6/2015
CUF Case: NO
Lead Agency: ORANGE COUNTY LOP
Regional Water Board Case Case Number: 083003032T
Local Agency Case Number: 97UT019
File Location: Local Agency
Potential Contaminants of Concern: Gasoline
Quantity Released (Gallons): 0
Potential Media of Concern: Other Groundwater (uses other than drinking water)
Site History: Please refer to recent Site Documents or Monitoring Reports in GeoTracker for site history. Orange County is not responsible for the accuracy of any professional interpretations provided in reports submitted by consultants for the responsible party.
Case Begin Date: 6/10/1997
Leak Reported Date: 6/11/1997
How Leak was Discovered: UST System Modification
Discharge Source: Piping
How Leak was Stopped: Replace product piping
No Further Action Date: 4/6/2015
CalWater Watershed Name: Santa Ana River - Lower Santa Ana River - East Coastal Plain (801.11)
DWR Groundwater Sub-Basin Name: Coastal Plain Of Orange County (8-001)
CalEnviroScreen 3 Percentile: 56-60%
CalEnviroScreen 4 Percentile: 50-55%
Is the site a Military or DOD site?: No
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	COMPLETED - CASE CLOSED	0.43 miles E	90 ft (6 ft higher than site)	47

SITE NAME	MAPS	ID
CHEVRON #9-1085	1, 4	T0605900758

ADDRESS	CITY	ZIP
12012 Brookhurst St	Garden Grove	92840

DETAILS

Global ID: T0605900758
Site/Facility Type: LUST CLEANUP SITE
County: ORANGE
Census Tract: 6059088203
EPA Region: 9
Case Type: LUST Cleanup Site
Status Date: 9/17/1985
CUF Case: NO
Lead Agency: ORANGE COUNTY LOP
Regional Water Board Case Case Number: 083000954T
Local Agency Case Number: 85UT071
File Location: Local Agency
Potential Contaminants of Concern: Gasoline
Quantity Released (Gallons): 0
Potential Media of Concern: Under Investigation
Case Begin Date: 9/17/1985
Leak Reported Date: 1/1/1965
How Leak was Discovered: Tank Closure
How Leak was Stopped: Close and Remove Tank
No Further Action Date: 9/17/1985
CalWater Watershed Name: Santa Ana River - Lower Santa Ana River - East Coastal Plain (801.11)
DWR Groundwater Sub-Basin Name: Coastal Plain Of Orange County (8-001)
CalEnviroScreen 3 Percentile: 56-60%
CalEnviroScreen 4 Percentile: 50-55%
Is the site a Military or DOD site?: No
Regional Board Office Region: SANTA ANA RWQCB (REGION 8)

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-LUST-Closed-CA	Closed	0.44 miles E	90 ft (6 ft higher than site)	48

SITE NAME	MAPS	ID
MOBIL	1, 4	RO0001345-ORG

ADDRESS	CITY	ZIP
11962 W BROOKHURST ST	GARDEN GROVE	92640

DETAILS
County: Orange Record ID: RO0001345 Case ID: 87UT217 Case Closed Date: 3/6/1989 Type of Closure: Closure certification issued Status: Not Reported Case Type Code: S Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
County-LUST-Closed-CA	Closed	0.44 miles E	90 ft (6 ft higher than site)	48

SITE NAME	MAPS	ID
MOBIL #18-GWN	1, 4	RO0001935-ORG

ADDRESS	CITY	ZIP
11962 BROOKHURST ST	GARDEN GROVE	92840

DETAILS
County: Orange Record ID: RO0001935 Case ID: 96UT038 Case Closed Date: 8/25/2015 Type of Closure: Closure certification issued Status: Not Reported Case Type Code: O Released Substance: Gasoline-Automotive (motor gasoline and additives), leaded & unleaded

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	COMPLETED - CASE CLOSED	0.44 miles E	90 ft (6 ft higher than site)	48

SITE NAME	MAPS	ID
MOBIL	1, 4	T0605900825

ADDRESS	CITY	ZIP
11962 Brookhurst St	Garden Grove	92840

DETAILS

Global ID: T0605900825
Site/Facility Type: LUST CLEANUP SITE
County: ORANGE
Census Tract: 6059088202
EPA Region: 9
Case Type: LUST Cleanup Site
Status Date: 3/6/1989
CUF Case: NO
Lead Agency: ORANGE COUNTY LOP
Regional Water Board Case Case Number: 083001044T
Local Agency Case Number: 87UT217
File Location: Local Agency
Potential Contaminants of Concern: Gasoline
Quantity Released (Gallons): 0
Potential Media of Concern: Soil
Site History: All records available on GeoTracker - No additional records maintained by OCLOP
Case Begin Date: 10/19/1987
Leak Reported Date: 10/19/1987
How Leak was Discovered: Tank Closure
How Leak was Stopped: Close and Remove Tank
No Further Action Date: 3/6/1989
CalWater Watershed Name: Santa Ana River - Lower Santa Ana River - East Coastal Plain (801.11)
DWR Groundwater Sub-Basin Name: Coastal Plain Of Orange County (8-001)
CalEnviroScreen 3 Percentile: 41-45%
CalEnviroScreen 4 Percentile: 35-40%
Is the site a Military or DOD site?: No
Regional Board Office Region: SANTA ANA RWQCB (REGION 8)
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
LUST-Closed-CA	COMPLETED - CASE CLOSED	0.44 miles E	90 ft (6 ft higher than site)	48

SITE NAME	MAPS	ID
MOBIL #18-GWN	1, 4	T0605901982

ADDRESS	CITY	ZIP
11962 Brookhurst St	Garden Grove	92840

DETAILS

Global ID: T0605901982
Site/Facility Type: LUST CLEANUP SITE
County: ORANGE
Census Tract: 6059088202
EPA Region: 9
Case Type: LUST Cleanup Site
Status Date: 8/25/2015
CUF Case: YES
Lead Agency: ORANGE COUNTY LOP
Regional Water Board Case Case Number: 083002893T
Local Agency Case Number: 96UT038
File Location: Local Agency
Potential Contaminants of Concern: Gasoline
Quantity Released (Gallons): 0
Potential Media of Concern: Aquifer used for drinking water supply
Site History: Please refer to recent Site Documents or Monitoring Reports in GeoTracker for site history. Orange County is not responsible for the accuracy of any professional interpretations provided in reports submitted by consultants for the responsible party.
Case Begin Date: 8/26/1996
Leak Reported Date: 8/27/1996
How Leak was Discovered: Line Leak Detector
Discharge Source: Piping
Discharge Cause: Physc / Mech Damage
How Leak was Stopped: Repair Product Piping
No Further Action Date: 8/25/2015
CalWater Watershed Name: Santa Ana River - Lower Santa Ana River - East Coastal Plain (801.11)
DWR Groundwater Sub-Basin Name: Coastal Plain Of Orange County (8-001)
CalEnviroScreen 3 Percentile: 56-60%
CalEnviroScreen 4 Percentile: 35-40%
More Details Link

DATABASE	STATUS	DISTANCE	ELEVATION	MAP ID
VCP-Active-CA	Active	0.49 miles E	90 ft (6 ft higher than site)	49

SITE NAME	MAPS	ID
Former Le Grand Cleaner	1, 4	60002817

ADDRESS	CITY	ZIP
10084 Chapman Ave	Garden Grove	92840

DETAILS

ENVIROSTOR_ID: 60002817
URL:
https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60002817
COUNTY: ORANGE
SITE_TYPE_DETAILED: Voluntary Agreement
ACRES: 0.51
APN: 089-452-18
NATIONAL_PRIORITIES_LIST: NO
REGULATORY_AGENCIES_INVOLVED: SMBRP
LEAD_AGENCY: SMBRP
PROJECT_MANAGER: Nicholas Ta
SUPERVISOR: Patrick Hsieh
DIVISION_BRANCH: Cleanup Cypress
SITE_CODE: 401874
SPECIAL_PROGRAM: Voluntary Agreement - Standard Voluntary Agreement
STATUS_DATE: 43586
PAST_USES: NONE SPECIFIED
RESTRICTED_USE: NO
Column AA:
SITE_CODE: 401874
ASSEMBLY: 70
SENATE: 36
CONGRESSIONAL_DISTRICT: 45
SPECIAL_PROGRAM: Voluntary Agreement - Standard Voluntary Agreement
POTENTIAL_COC: NONE SPECIFIED
CONFIRMED_COC: NONE SPECIFIED
POTENTIAL_MEDIA_AFFECTED: NONE SPECIFIED

More Details Link

RECORDS SOURCES SEARCHED

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Air-CA	Air Permits with Emissions	ERS Supplemental Govt Sources	Click Here	None Found
AIR-DIST-CA	Air Pollution Control District	ERS Supplemental Govt Sources	Click Here	7
AST-CA	Aboveground Storage Tanks	State/Tribal UST	Click Here	None Found
BF-MOA-CA	Brownfield MOA Sites (aka Considered Brownfield Sites, SWRCB MOA, Brownfield Memorandum of Agreement)	State/Tribal Brownfield	Click Here	None Found
BF-Tribal-US	Tribal Brownfields	Federal Brownfield	Click Here	None Found
BF-US	Brownfields Sites	Federal Brownfields	Click Here	None Found
BioFuel-US	Bio Diesel Fuel	ERS Supplemental Govt Sources	Click Here	None Found
BZ-HazWaste-CA	Border Zone or Hazardous Waste Property	State/Tribal ASTM Other Med	Click Here	None Found
CAF-CA	Confined Animal Facilities	ERS Supplemental Govt Sources	Click Here	None Found
CDL-CA	Clandestine Drug Labs	ERS Supplemental Govt Sources	Click Here	None Found
CDL-US	National Clandestine Drug Lab Register	ERS Supplemental Govt Sources	Click Here	None Found
CERS-CA	California Environmental Reporting System (CERS)	State/Tribal ASTM Other Med	Click Here	7
CHMIRS-CA	California Hazardous Material Incident Report System	Emergency Release Reports	Click Here	None Found
CHWF-CA	Commercial Offsite Hazardous Waste Facilities	ERS Supplemental Govt Sources	Click Here	None Found
City-AST-CA	Underground Storage Tanks	State/Tribal UST	Click Here	None Found
City-CUPA-CA	Certified Unified Program Agency	State/Tribal ASTM Other Med	Click Here	None Found
City-Others-CA	Hazardous Material Facilities	State/Tribal ASTM Other Med	Click Here	None Found
City-UST-CA	City Agency Underground Storage Tanks	State/Tribal UST	Click Here	None Found
Cleaners-CA	Cleaners	ERS Supplemental Govt Sources	Click Here	4
Coal-Ash-Dams-US	Coal Ash Contaminated Sites and Hazard Dams	ERS Supplemental Govt Sources	Click Here	None Found
Controls-CA	California sites with Deed Restrictions or other Controls	State/Tribal Inst/Eng Controls	Click Here	None Found

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Controls-RCRA-US	RCRA Institutional and Engineering Controls Summary (aka Federal RCRA with Controls)	Federal Institutional/Engineering Controls	Click Here	None Found
Controls-US	US CERCLA Sites with Controls (aka US IC/EC, Institutional/Engineering List Controls, Land Use Controls)	Federal Institutional/Engineering Controls	Click Here	None Found
CorAct-Closed-CA	Corrective Action Sites	State/Tribal ASTM Other Low	Click Here	None Found
CorAct-Open-CA	Corrective Action Sites	State/Tribal ASTM Other High	Click Here	None Found
CorAct-Other-CA	Corrective Action Sites	State/Tribal ASTM Other Low	Click Here	None Found
CORTESE-CA	Cortese Hazardous Waste & Substances Sites List	State/Tribal ASTM Other Med	Click Here	None Found
County-AST-CA	Aboveground Storage Tanks	State/Tribal UST	Click Here	None Found
County-BI-CA	Business Inventory	ERS Supplemental Govt Sources	Click Here	None Found
County-Hist-CA	Historic Environmental County Listings	State/Tribal ASTM Other Med	Click Here	None Found
County-LUST-CA	County Agency Leaking Underground Storage Tanks	State/Tribal LUST	Click Here	None Found
County-LUST-Closed-CA	County Agency Leaking Underground Storage Tanks, Closed Cases	State/Tribal LUST	Click Here	7
County-LUST-Open-CA	County Agency Leaking Underground Storage Tanks, Open Cases	State/Tribal LUST	Click Here	None Found
County-Others-CA	Environmental Related Databases	State/Tribal ASTM Other Med	Click Here	5
County-SLIC-Closed-CA	County SLIC Sites	Emergency Release Reports	Click Here	None Found
County-SLIC-Open-CA	County SLIC Sites	Emergency Release Reports	Click Here	None Found
County-SML-CA	County Site Mitigation Unit List	State/Tribal ASTM Other Med	Click Here	None Found
County-SWF-CA	County Solid Waste Facilities	State/Tribal Landfill/Solid Waste	Click Here	None Found
County-UST-CA	County Agency Underground Storage Tanks	State/Tribal UST	Click Here	None Found
CRSP-CA	Cal EPA Regulated Site Portal	State/Tribal ASTM Other Med	Click Here	11

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
CUPA-CA	Certified Unified Program Agency	State/Tribal ASTM Other Med	Click Here	None Found
Dams-CA	California Dams	ERS Supplemental Govt Sources	Click Here	None Found
Deed-CA	Deed Restrictions/Land Use Restrictions	State/Tribal Inst/Eng Controls	Click Here	None Found
DPR-CA	Pesticide Regulation Licenses	ERS Supplemental Govt Sources	Click Here	None Found
DryCleaners-CA	Dry Cleaner Facilities	ERS Supplemental Govt Sources	Click Here	2
EGRID-US	Emissions & Generation Resource Facilities	ERS Supplemental Govt Sources	Click Here	None Found
ENF-CA	Enforcement Actions Data	State/Tribal ASTM Other Med	Click Here	1
ENF-SMARTS-CA	Storm Water Enforcement Actions	State/Tribal ASTM Other Med	Click Here	None Found
ENF-Wastewater-CA	Wastewater Enforcement Actions	State/Tribal ASTM Other Med	Click Here	None Found
EPA-Watch-List-US	Historical EPA Watch List	ERS Supplemental Govt Sources	Click Here	None Found
ERNS-US	Emergency Response Notification System	Federal ERNS	Click Here	None Found
Eval-Hist-Active-CA	EnviroStor Evaluation History Sites	State/Tribal ASTM Other	Click Here	None Found
Eval-Hist-NFA-CA	EnviroStor Database Evaluation History NFA Sites	State/Tribal ASTM Other	Click Here	None Found
Eval-Hist-Other-CA	EnviroStor Database Evaluation History NFA Sites	State/Tribal ASTM Other	Click Here	None Found
FA-HW-CA	Financial Assurance, Hazardous Waste	ERS Supplemental Govt Sources	Click Here	None Found
FA-HW-US	Financial Assurance, Hazardous Waste	ERS Supplemental Govt Sources	Click Here	None Found
FA-SWF-CA	Financial Assurance, Solid Waste Facilities	ERS Supplemental Govt Sources	Click Here	None Found
FRS-US	Facility Registry Index (FINDS)	ERS Supplemental Govt Sources	Click Here	2
FTTS-ENF-US	Historical FIFRA/TSCA Tracking System (FTTS) Enforcement Actions	Federal ASTM Other	Click Here	None Found
FTTS-INSP-US	Historical FIFRA/TSCA Tracking System (FTTS) Inspections	ERS Supplemental Govt Sources	Click Here	None Found

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
FUDS-US	Formerly Used Defense Sites	ERS Supplemental Govt Sources	Click Here	None Found
FUSRAP-US	Formerly Utilized Sites Remedial Action Program Sites	ERS Supplemental Govt Sources	Click Here	None Found
Haulers-CA	Registered Waste Tire Haulers Listing	ERS Supplemental Govt Sources	Click Here	None Found
HazWaste-CA	Hazardous Waste Facilities	State/Tribal ASTM Other Med	Click Here	None Found
Hist-AFS2-US	Historical Air Facility System for Clean Air Act stationary sources	ERS Supplemental Govt Sources	Click Here	None Found
Hist-AFS-US	Historical Air Facility System for Clean Air Act stationary sources	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Agriculture	Historical Ranches/Farms, Livestock/Agriculture	ERS Exclusive Historic Sources	Click Here	None Found
Hist-AST2-CA	Historical Aboveground Storage Tanks	State/Tribal UST	Click Here	None Found
Hist-AST-CA	Historical Aboveground Storage Tanks	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Auto Dealers	Historical Auto and Truck Dealers	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Auto Repair	Historical Automotive Repair	ERS Exclusive Historic Sources	Click Here	2
Hist-AWS-CA	Historical Annual Workplan Sites	ERS Supplemental Govt Sources	Click Here	None Found
Hist-CA	Previously Listed California Sites	ERS Supplemental Govt Sources	Click Here	4
Hist-CalFID-CA	Historical Facility Inventory Database	ERS Supplemental Govt Sources	Click Here	None Found
Hist-CALSITES-CA	Historical Calsites Database	ERS Supplemental Govt Sources	Click Here	None Found
Hist-CERCLIS-NFRAP-US	Historical CERCLIS-NFRAP	ERS Supplemental Govt Sources	Click Here	None Found
Hist-CERCLIS-US	Historical CERCLIS Sites	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Chemical Manufacturing	Historical Manufacturing and Distribution of Chemicals, Gases, and/or Solids	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Chemical-Storage	Historical Chemical/Hazardous Use Storage	ERS Exclusive Historic Sources	Click Here	None Found
Hist-City-UST-CA	Historical Underground Storage Tanks	ERS Supplemental Govt Sources	Click Here	None Found

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Hist-Cleaners	Historical Laundry, Cleaners, and Dry Cleaning Services	ERS Exclusive Historic Sources	Click Here	1
Hist-Controls-CA	Historical Restricted Use Sites	State/Tribal Inst/Eng Controls	Click Here	None Found
Hist-Convenience	Historical Convenience Store with Possible Gas	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Cort-CA	Historical Cortese list	State/Tribal ASTM Other Med	Click Here	None Found
Hist-Debris-US	Historical Debris Sites	Federal Solid Waste	Click Here	None Found
Hist-Deed-CA	Historical Deed Restriction Properties	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Disposal-Recycle	Historical Hazardous Disposal/Recycle and Dumps/Waste	ERS Exclusive Historic Sources	Click Here	None Found
Hist-DTG-CA	Depth to Groundwater	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Dumps-US	Historical Dumps Inventory of 1985	Federal Solid Waste	Click Here	None Found
Hist-ERNS-US	Historical Emergency Response Notification System (ERNS)	ERS Supplemental Govt Sources	Click Here	None Found
Hist-FEMA-UST-US	Historical FEMA Underground Storage Tanks	Federal UST	Click Here	None Found
Hist-FIFRA-US	Historical Case Administration Data from National Compliance Database (Federal Insecticide, Fungicide, and Rodenticide Act)	ERS Supplemental Govt Sources	Click Here	None Found
Hist-FINDS-US	Historical Facility Index System	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Food-Processors	Historical Food Processing Manufacturers	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Gun-Ranges	Historical Gun Ranges/Clubs	ERS Exclusive Historic Sources	Click Here	None Found
Hist-HWS-CA	Historical Cortese List-Hazardous Waste Substance Site List	ERS Supplemental Govt Sources	Click Here	None Found
Hist-LUSTIS-CA	Historical Lust Information System (LUSTIS)	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Machine Shop	Historical Machine Shops, Welding, Machine Repair	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Manufacturing	Historical Sources US: Manufacturing	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Metal Plating	Historical Metal Plating	ERS Exclusive Historic Sources	Click Here	None Found

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Hist-Mining	Historical Mining Operations	ERS Exclusive Historic Sources	Click Here	None Found
HIST-MLTS-US	Historical Material Licensing Tracking System	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Mortuaries	Historical Crematories/Mortuaries	ERS Exclusive Historic Sources	Click Here	None Found
HIST-MTBE-CA	Historical Sites With MTBE (Methyl Tertiary-Butyl Ether) Contamination	ERS Supplemental Govt Sources	Click Here	None Found
Hist-NPL-US	Historical National Priority List	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Oil-Gas	Historical Oil and Gas Well Related Facilities	ERS Exclusive Historic Sources	Click Here	None Found
Hist-OilGas-Refiners	Historical Oil/Gas Refiners/Manufacturers/Plants	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Orange-County-LF-CA	Historical Orange County Landfills	ERS Supplemental Govt Sources	Click Here	None Found
Historical-CA	Historical Sites	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Other	Historical Environmental Facilities	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Paint-Stores	Historical Paint Stores	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Petroleum	Historical Petroleum Refining/ Manufacturing/ Chemicals	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Post-Offices	Historical Post Offices	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Printers	Historical Printers and Publishers	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Prop65-CA	Historical Prop 65 Sites	ERS Supplemental Govt Sources	Click Here	None Found
HIST-R4-CA	Historical sites	State/Tribal ASTM Other Med	Click Here	None Found
Hist-RCRIS-US	Historical EPA's Resource Conservation and Recovery Act	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Regional-LUST-CA	Historical Leaking Underground Storage Tanks	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Regional-Other-CA	Historical Toxic Lists, Site Mitigation, and Groundwater Cleanup Program	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Regional-SLIC-CA	Historical Spills and Leak Sites	ERS Supplemental Govt Sources	Click Here	None Found

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Hist-Regional-Spills-CA	Historical Industrial Cleanup Sites	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Regional-SWLF-CA	Historical County Landfills and Transfer Stations	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Regional-UST-CA	Historical Underground Storage Tanks	ERS Supplemental Govt Sources	Click Here	2
Hist-Rental	Historical Rental Equipment & Yards	ERS Exclusive Historic Sources	Click Here	1
Hist-RV-Dealers	Historical Trailer and Recreational Vehicle Dealers	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Salvage	Historical Vehicle Salvage Yards or Wreckers	ERS Exclusive Historic Sources	Click Here	None Found
Hist-SCL-CA	Historical California Cerclis Sites	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Service Stations	Historical Service Stations/Vehicle Fueling	ERS Exclusive Historic Sources	Click Here	None Found
HIST-SLIC-CV-CLOSED-CA	Historical Central Valley Spills and Leak Sites	Emergency Release Reports	Click Here	None Found
HIST-SLIC-CV-OPEN-CA	Historical Central Valley Spills and Leak Sites	Emergency Release Reports	Click Here	None Found
Hist-Steel-Metals	Historical Steel Mills/Manufacturers/Foundries/Smelters	ERS Exclusive Historic Sources	Click Here	None Found
Hist-SWIS-CA	Historical Solid Waste Information System (SWIS)	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Textile	Historical Textile Mills/Manufacturers	ERS Exclusive Historic Sources	Click Here	None Found
Hist-ToxicPits-CA	Historical Toxic Pits Cleanup Facilities	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Transportation	Historical Transportation Facilities	ERS Exclusive Historic Sources	Click Here	None Found
Hist-Tribal-VCP-US	Historical Tribal VCP	ERS Supplemental Govt Sources	Click Here	None Found
Hist-TRIS-US	Historical Toxic Release Inventory System	ERS Supplemental Govt Sources	Click Here	None Found
Hist-Trucking	Historical Trucking, Shipping, Delivery, and/or Storage	ERS Exclusive Historic Sources	Click Here	None Found
Hist-US	Historical Previously Listed Federal Sites	ERS Supplemental Govt Sources	Click Here	1

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Hist-US-EC	Historical Engineering Controls Sites (aka US EC, Engineering Controls, Land Use Controls)	Federal Institutional/Engineering Controls	Click Here	None Found
Hist-USGS-WaterWells-CA	Historical Ground Water Site Inventory for California	ERS Supplemental Govt Sources	Click Here	None Found
Hist-US-IC	Historical Sites with Institutional Controls (aka US IC, Institutional Controls, Land Use Controls)	Federal Institutional/Engineering Controls	Click Here	None Found
Hist-UST-CA	Historical Hazardous Substance Storage Infirmation (aka Historical Underground Storage Tanks)	State/Tribal UST	Click Here	1
Hist-UST-Cleanup-CA	Historic UST Cases Recommended for Closure under UST Cleanup Fund 5 Year Review (aka UST Cleanup Fund Cases)	State/Tribal LUST	Click Here	None Found
Hist-USTReg-CA	Historical Underground Storage Tank Registrations Database	ERS Supplemental Govt Sources	Click Here	1
Hist-Vehicle-Parts	Historical Vehicle Parts	ERS Exclusive Historic Sources	Click Here	1
Hist-Vehicle-Washing	Historical Vehicle/Truck Washing Facilities	ERS Exclusive Historic Sources	Click Here	None Found
Hist-WaterWells-US	Historical Public Community Water Supply/Well Head Protection Database	ERS Supplemental Govt Sources	Click Here	None Found
Hist-WIP-Active-CA	Historical Well Investigation Program Case List, Active Sites (aka WIP)	State/Tribal ASTM Other Med	Click Here	None Found
Hist-WIP-Backlog-CA	Historical Well Investigation Program Case List, Backlog Sites (aka WIP)	State/Tribal ASTM Other Med	Click Here	None Found
Hist-WIP-Historical-CA	Historical Well Investigation Program Case List, Historical Sites (aka WIP)	State/Tribal ASTM Other Low	Click Here	None Found
Hist-WMUDS-CA	Historical Waste Management Unit Database System	ERS Supplemental Govt Sources	Click Here	None Found
HMIS-US	Hazardous Materials Information System	Federal Emergency Release Reports	Click Here	None Found
HWIS-CA	Hazardous Waste Information Summary	State/Tribal RCRA Equivalent	Click Here	None Found
HWMP-Controls-CA	Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction	State/Tribal Inst/Eng Controls	Click Here	None Found
HWT-CA	Hazardous Waste Transporters	ERS Supplemental Govt Sources	Click Here	None Found
ICE-CA	Inspection, Compliance, and Enforcement	State/Tribal ASTM Other Med	Click Here	None Found

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
ICIS-Air-US	Integrated Compliance Information System for Air	ERS Supplemental Govt Sources	Click Here	None Found
ICIS-FEC-US	Integrated Compliance Information System for Federal Enforcement Data	ERS Supplemental Govt Sources	Click Here	None Found
ICIS-NPDES-US	National Pollutant Discharge Elimination System (NPDES)	ERS Supplemental Govt Sources	Click Here	None Found
LA-LF-CA	Los Angeles County Landfills	State/Tribal Solid Waste	Click Here	None Found
Land-Disposal-CA	Geotracker - Land Disposal Sites (aka Landfills, LDS)	State/Tribal Landfill/Solid Waste	Click Here	None Found
LA-Waste-Haulers-CA	Waste Haulers	ERS Supplemental Govt Sources	Click Here	None Found
Lead-Smelter-2-US	Historical Lead Smelter Sites	ERS Supplemental Govt Sources	Click Here	None Found
Lead-US	Lead Smelter Sites	ERS Supplemental Govt Sources	Click Here	None Found
Liens-CA	Environmental Liens	State/Tribal Inst/Eng Controls	Click Here	None Found
LIENS-US	Superfund Liens	Federal Institutional/Engineering Controls	Click Here	None Found
LMOP-US	Landfill Methane Outreach Program	ERS Supplemental Govt Sources	Click Here	None Found
LUST-Closed-CA	Geotracker - Leaking Underground Storage Tanks, Closed Cases	State/Tribal LUST	Click Here	6
LUST-Open-CA	Geotracker - Leaking Underground Storage Tanks, Open Cases	State/Tribal LUST	Click Here	None Found
Manifest2-RI	Hazardous Waste Manifest	State/Tribal RCRA Equivalent	Click Here	None Found
MethaneLF-CA	Methane Producing Landfills	State/Tribal Other	Click Here	None Found
Military-Active-CA	EnviroStor Database Military Active Sites (aka MCS)	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
Military-Bases-US	Military Base Boundaries	ERS Supplemental Govt Sources	Click Here	None Found
Military-NFA-CA	EnviroStor Database Military Active Sites (aka MCS)	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
Military-Other-CA	EnviroStor Database Military Active Sites (aka MCS)	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
Military-UST-CA	Underground Storage Tanks	State/Tribal UST	Click Here	None Found

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Mines2-CA	California Mines	ERS Supplemental Govt Sources	Click Here	None Found
Mines-CA	Historical Death Valley Mines	ERS Supplemental Govt Sources	Click Here	None Found
Mines-CDMG-CA	California Division of Mines and Geology	ERS Supplemental Govt Sources	Click Here	None Found
MINES-US	Mines Master Index File	ERS Supplemental Govt Sources	Click Here	None Found
MLTS-US	Material Licensing Tracking System	ERS Supplemental Govt Sources	Click Here	None Found
Mortgage-CA	Cal Mortgage Facilities	ERS Supplemental Govt Sources	Click Here	None Found
MRDS-US	Mineral Resources Data System (MRDS)	ERS Supplemental Govt Sources	Click Here	None Found
MWMP-CA	Medical Waste Management Program	ERS Supplemental Govt Sources	Click Here	None Found
NCI-CA	Non-Case Information	ERS Supplemental Govt Sources	Click Here	None Found
NEI-LF-CA	Historical NEI (National Emission Inventory) Landfill Point Sources	ERS Supplemental Govt Sources	Click Here	None Found
NPDES-CA	National Pollutant Discharge Elimination System	ERS Supplemental Govt Sources	Click Here	None Found
NPDES-SW-CA	Notice of Intent Data	ERS Supplemental Govt Sources	Click Here	None Found
NPL-Delisted-US	Delisted NPL Sites	Federal Delisted NPL	Click Here	None Found
NPL-Proposed-US	Proposed NPL Sites	Federal NPL	Click Here	None Found
NPL-US	National Priorities List	Federal NPL	Click Here	None Found
NPL-US	NPL Boundaries	Federal NPL	Click Here	None Found
OGM-CA	Oil and Gas Monitoring	ERS Supplemental Govt Sources	Click Here	None Found
OGW-CA	California Oil and Gas Wells	ERS Supplemental Govt Sources	Click Here	None Found
OSCF-CA	Orphan Site Cleanup Fund	ERS Supplemental Govt Sources	Click Here	None Found
PADS-US	PCB Registration Database System	Federal ASTM Other	Click Here	None Found
PCB-US	PCB Transformers	Federal ASTM Other	Click Here	None Found
PCS-US	Historical Permit Compliance System for Clean Water Act	ERS Supplemental Govt Sources	Click Here	None Found
Perch1-CA	Perchlorate Confirmed Contaminant Sites	ERS Supplemental Govt Sources	Click Here	None Found

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Perch2-CA	Perchlorate Confirmed Contaminant Sites	ERS Supplemental Govt Sources	Click Here	None Found
PR-MOA-CA	Polanco Redevelopment MOA Sites	State/Tribal ASTM Other Med	Click Here	None Found
Project-CA	Project - Multipurpose Site Type	ERS Supplemental Govt Sources	Click Here	None Found
RADINFO-US	Radiation Information Database	ERS Supplemental Govt Sources	Click Here	None Found
RCRA-CESQG-US	Resource Conservation and Recovery Act, Conditionally Exempt Small Quantity Generators (aka RCRA CESQG)	Federal RCRA Generators	Click Here	1
RCRA-COR-US	Resource Conservation and Recovery Act, - Corrective Actions (aka RCRA CORRACTS)	Federal RCRA CORRACTS	Click Here	None Found
RCRA-LQG-US	Resource Conservation and Recovery Act, Large Quantity Generators (aka RCRA LQG)	Federal RCRA Generators	Click Here	1
RCRA-NON-US	Resource Conservation and Recovery Act, Non-Hazardous Generators (aka RCRA Non-Haz, RCRA NonGen, RCRA No longer Regulated)	Federal RCRA Generators	Click Here	19
RCRA-SQG-US	Resource Conservation and Recovery Act, Small Quantity Generators (aka RCRA SQG)	Federal RCRA Generators	Click Here	4
RCRA-TSDF-US	Resource Conservation and Recovery Act -, Treatment, Storage, and Disposal Facilities (aka RCRA TSD, RCRA TSDF)	Federal RCRA non-CORRACTS TSD	Click Here	None Found
Response-CA	State Response Sites and National Priorities List (NPL)	State/Tribal NPL	Click Here	None Found
RFG-Lab-US	Reformulated Gasoline (RFG)	ERS Supplemental Govt Sources	Click Here	None Found
RMP-US	Risk Management Plans	ERS Supplemental Govt Sources	Click Here	None Found
ROD-US	Records of Decision	ERS Supplemental Govt Sources	Click Here	None Found
SAA-Agreements-US	Sites with Superfund Alternative Approach Agreements	Federal ASTM Other	Click Here	None Found
School-Active-CA	EnviroStor Database School Active Sites (aka School Property Evaluation Program, SCH)	State/Tribal Voluntary Cleanup Sites	Click Here	None Found

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
School-NFA-CA	EnviroStor Database School Active Sites (aka School Property Evaluation Program, SCH)	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
School-Other-CA	EnviroStor Database School Active Sites (aka School Property Evaluation Program, SCH)	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
SCP-Closed-CA	Site Cleanup Program, Closed Cases	Emergency Release Reports	Click Here	4
SCP-Open-CA	Site Cleanup Program, Open Cases	Emergency Release Reports	Click Here	None Found
SDWIS-US	Safe Drinking Water Information System	ERS Supplemental Govt Sources	Click Here	None Found
SEMS-Active-US	Superfund Enterprise Management System Active Sites (AKA List 8R Active Site Inventory)	Federal CERCLIS	Click Here	1
SEMS-Archived-US	Superfund Enterprise Management System, Archived Site Inventory (AKA List 8R Archived Site Inventory)	Federal CERCLIS NFRAP	Click Here	None Found
SGV-Deep-Plumes-CA	San Gabriel Valley Deep Plumes	State/Tribal Solid Waste	Click Here	None Found
SGV-Shallow-Plumes-CA	San Gabriel Valley Shallow Plumes	State/Tribal Solid Waste	Click Here	None Found
SGV-Shallow-Plumes-Puente-Valley-CA	Puente Valley Shallow Plumes	State/Tribal Solid Waste	Click Here	None Found
SML-CA	Site Mitigation List	State/Tribal ASTM Other Med	Click Here	None Found
SP-CA	Sampling Points	ERS Supplemental Govt Sources	Click Here	None Found
Spills-SSO-CA	Sanitary Sewer System	ERS Supplemental Govt Sources	Click Here	None Found
SSTS-US	Section 7 Tracking System	ERS Supplemental Govt Sources	Click Here	None Found
State-Response-Active-CA	EnviroStor State Response Active Sites	State/Tribal NPL	Click Here	None Found
State-Response-NFA-CA	EnviroStor State Response NFA Sites	State/Tribal NPL	Click Here	None Found
State-Response-Other-CA	EnviroStor State Response Other Sites	State/Tribal NPL	Click Here	None Found

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
Superfund-Active-CA	Envirorstor Superfund Active Sites (aka BEAP, CalSites, Brownfields and Environmental Restoration Program)	State/Tribal CERCLIS Equivalent	Click Here	None Found
Superfund-NFA-CA	EnviroStor Superfund NFA Sites (aka BEAP, CalSites, Brownfields and Environmental Restoration Program)	State/Tribal CERCLIS Equivalent	Click Here	None Found
Superfund-Other-CA	EnviroStor Superfund Sites (aka BEAP, CalSites, Brownfields and Environmental Restoration Program)	State/Tribal CERCLIS Equivalent	Click Here	None Found
SWIS-CA	Solid Waste Information System	State/Tribal Landfill/Solid Waste	Click Here	None Found
SWLF-US	Solid Waste Facilities	Federal Solid Waste	Click Here	None Found
SWRCY-CA	Beverage Container Recycler Database	State/Tribal ASTM Other Med	Click Here	1
TierPer-CA	Tiered Permits	ERS Supplemental Govt Sources	Click Here	None Found
TOMS-CA	Topographically Occurring Mine Symbols	ERS Supplemental Govt Sources	Click Here	None Found
Tribal-Air-US	Tribal Air Permitted Facilities	ERS Supplemental Govt Sources	Click Here	None Found
Tribal-LUST-Closed-US	Tribal Leaking Underground Storage Tanks, Closed Cases	Federal LUST	Click Here	None Found
Tribal-LUST-Open-US	Tribal Leaking Underground Storage Tanks, Open Cases	Federal LUST	Click Here	None Found
Tribal-ODL-US	Tribal Open Dump Sites	Federal Solid Waste	Click Here	None Found
Tribal-UST-US	Tribal Underground Storage Tanks	Federal UST	Click Here	None Found
TRIS2000-US	Historical Toxics Release Inventory System	ERS Supplemental Govt Sources	Click Here	None Found
TRIS2010-US	Toxics Release Inventory System	ERS Supplemental Govt Sources	Click Here	None Found
TRIS80-US	Historical Toxics Release Inventory System	ERS Supplemental Govt Sources	Click Here	None Found
TRIS90-US	Historical Toxics Release Inventory System	ERS Supplemental Govt Sources	Click Here	None Found
TSCA-US	Toxics Substance Control Sites	ERS Supplemental Govt Sources	Click Here	None Found
UIC2-CA	Injection Wells	ERS Supplemental Govt Sources	Click Here	None Found
UIC-CA	Underground Injection Control Wells	ERS Supplemental Govt Sources	Click Here	None Found
UMTRA-US	Historical Uranium Mill Tailings Remedial Action Sites	ERS Supplemental Govt Sources	Click Here	None Found

ABREVIATION	DATABASE FULLNAME	DATABASE CATEGORY	DATABASE DETAILS LINK	TOTAL LISTINGS
USGS-Waterwells-US	Ground Water Site Inventory	ERS Supplemental Govt Sources	Click Here	None Found
UST-Abandoned-CA	Abandoned UST Initiative (aka Inventory of Abandoned Tank Sites)	State/Tribal UST	Click Here	None Found
UST-CA	Geotracker - Underground Storage Tanks	State/Tribal UST	Click Here	None Found
UST-Closed-CA	UST Case Closure Review Denials and Approved Orders (aka Closure of Underground Storage Tank (UST) Cases)	State/Tribal UST	Click Here	None Found
USTComp-CA	Previously Abandoned Tanks Now in Compliance (aka Compliance UST)	State/Tribal UST	Click Here	None Found
UST-Priority-CA	UST Cleanup Fund Priority List	State/Tribal UST	Click Here	None Found
UST-Proposed-CA	Proposed Closure of UST Cases (aka UST Proposed for Closure)	State/Tribal UST	Click Here	None Found
Vapor-Intrusions-US	Vapor Intrusion Database	ERS Supplemental Govt Sources	Click Here	None Found
VCP-Active-CA	EnviroStor VCP Active Sites	State/Tribal Voluntary Cleanup Sites	Click Here	1
VCP-NFA-CA	EnviroStor Database VCP NFA Listing	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
VCP-Other-CA	EnviroStor VCP Other Sites	State/Tribal Voluntary Cleanup Sites	Click Here	None Found
WDR-CA	Waste Discharge Requirements	ERS Supplemental Govt Sources	Click Here	None Found

UN-MAPPABLE OCCURRENCES

The following occurrences were not mapped primarily due to incomplete or inaccurate address information. All of the following occurrences were determined to share the same zip code as the area searched. General status information is given with each occurrence along with any address information entered by the agency responsible for the list.

ID	Facility Name	Address	Database	Status
No "un-mapped" sites requested.				

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ASTM 1517 – 21 AIA QUESTIONNAIRE

PHASE I ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE

The following questionnaire is required by the ASTM Standard E 1527-21, which adheres to the All Appropriate Inquiries (AAI) Rule (United States Environmental Protection Agency) (40 CFR 312).

As defined by ASTM, the User of the report is the *"party seeking to use Practice E 1527 to complete an environmental site assessment of the property. A user may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager. The user has specific obligations for completing a successful application of this practice."*

PROPERTY ADDRESS:	9562 Chapman Ave
PROPERTY CITY, STATE ZIP:	Garden Grove, CA 92841

1. **Environmental liens that are filed or recorded against the property (40 CFR 312.25)**

   Did a search of recorded land title records (or judicial records) identify any environmental liens filed or recorded against the property under federal, tribal, state or local law?

   ☐ YES ☑ NO

2. **Activity and use limitations (AULs) that are in place on the property or that have been filed or records against the property (40 CFR 312.26(a)(1)(v) and (vi))**

   Did a search of recorded land title records (or judicial records) identify any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law?

   ☐ YES ☑ NO

3. **Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28)**

   Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

   ☐ YES ☑ NO

4. **Relationship of the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29)**
   Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?
   ☐ YES ☑ NO

5. **Commonly known or reasonably ascertainable information about the Property (40 CFR 312.30)**
   Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases?
   ☐ YES ☑ NO

   a. Do you know the past uses of the property?
   ☑ YES ☐ NO
   Restaurant

   b. Do you know of specific chemicals that are present or once were present at the property?
   ☐ YES ☑ NO

   c. Do you know of spills or other chemical releases that have taken place at the property?
   ☐ YES ☑ NO

   d. Do you know of any environmental cleanups that have taken place at the property?
   ☐ YES ☑ NO

   e. Do you have any prior knowledge that the property was developed as a gas station, dry cleaner, manufacturing/industrial facility in the past?
   ☐ YES ☑ NO

   f. Are you aware of historical use of hazardous materials or petroleum products used or present on the property?
   ☐ YES ☑ NO

g. Do you know if the property is currently or was formerly equipped with underground storage tanks (USTs) or septic tanks?

☐ YES ☑ NO

h. Do you know of any past, threatened or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?

☐ YES ☑ NO

6. The degree of obviousness of the presence or likely presence of contamination at the property**, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31)**

Based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of releases at the property?

☐ YES ☑ NO

Signature of User/Person Interviewed: _____

Name of User/Person Interviewed: Thao Vu

Title/Relationship to Property: CFO

Phone Number/Email: thao.pt.vu@gmail.com

Date: 7/1/2024

Contact for additional information:

Name: _____

Relationship to Property: _____

Phone Number/Email: _____

ASTM E1527- 21 USER QUESTIONNAIRE

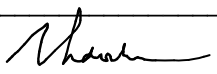
SUBJECT PROPERTY ADDRESS:

As part of this study, which of the following are you providing?

1. Previous environmental site assessment reports ☐ Yes ☒ No
2. Environmental compliance audit reports ☐ Yes ☒ No
3. Environmental permits (including but not limited to solid waste disposal permits, hazardous waste disposal permits, wastewater permits, NPDES permits, underground injection permits) ☐ Yes ☒ No
4. Registrations for underground and aboveground storage tanks ☐ Yes ☒ No
5. Registrations for underground injection systems ☐ Yes ☒ No
6. Material safety data sheets ☐ Yes ☒ No
7. Community Right-to-Know plan ☐ Yes ☒ No
8. Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans; etc. ☐ Yes ☒ No
9. Reports regarding hydrogeologic conditions on the property or surrounding area ☒ Yes ☐ No
10. Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the property or relating to environmental liens encumbering the property ☒ Yes ☐ No
11. Hazardous waste generator notices or reports ☐ Yes ☒ No
12. Geotechnical studies ☐ Yes ☒ No
13. Risk assessments ☐ Yes ☒ No
14. Recorded Activity and Use Limitations (AULs). ☐ Yes ☒ No

Please contact us if you have any questions regarding these ASTM requirements. **Please return the completed document to S&S Commercial Environmental Services, Inc. s.quart@att.net**

Completed by: Thao Vu

Signature: 

Title: CFO

Company: P & P Bros corp

Relationship to site
(i.e. lender, purchaser,owner): _____

Date: 7/1/2024

ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE

INSTRUCTIONS: As soon as possible, please complete to the best of your knowledge and return (fax preferred) to:

S&S Commercial Environmental Services, Inc. 714-337-4323
24732 Overlook Drive
Corona, CA 92883 s.quart@att.net 909-498-0302 fax

Project Number:

GENERAL INFORMATION

Property Name: _____

Address: 9562 Chapman Ave

City, State, Zip Garden Grove, CA 92841

PROPERTY INFORMATION

Property Size (in acres): 0.97 acre # of Buildings: N/A

Gross Building Square Footage: _____ # of Tenant Spaces: _____

Net Rentable Square Footage: _____ # of Parking Spaces: _____

Date of Construction: unknown # of ADA Parking Spaces: _____

Please attach a Property Site Plan and a current Tenant List or Rent Roll to the returned Questionnaire

UTILITY AND SERVICE PROVIDERS

Electric No, The site is currently vacant Pest Control _____

Gas		HVAC Maintenance	
Drinking Water		Roof Maintenance	
Sanitary Sewer		Fire Systems	
Storm Water		Security Systems	
Solid Waste		Elevator (if applicable)	
Landscaping		Other	

The questionnaire information was provided by:

Name: Thao Vu Title: CFO

Signature:

Date: 7/1/2024

ENVIRONMENTAL INFORMATION

PREVIOUS REPORTS, DOCUMENTS AND OWNERS

1. Are you aware if a previous Environmental Assessment has ever been performed on the subject property? If yes, are you aware of the recommendations made in the report or please provide a copy of the report?

☐ Yes ☒ No ☐ Do not Know

2. Do you have any other environmentally associated documents, such as compliance audits, environmental permits (such as an NPDES permit, boiler permit, wastewater permit), registrations (such as for a underground storage tank) or material safety data sheets? If yes, please provide a copy of the document(s)

☐ Yes ☒ No ☐ Do not Know

3. Can you provide contact information (name and phone number) of the previous owner of the property? If yes, please provide below.

☐ Yes ☐ No ☒ Do not Know

HISTORICAL & PRESENT USAGE/SITE CONDITIONS – SUBJECT AND ADJOINING PROPERTIES

1. Are you aware of the prior use of the subject property, i.e., any previous development, undeveloped? If so, please describe.

Restaurant

2. Has fill dirt ever been brought onto the subject property that originated from a contaminated site or from an unknown source?

Í- Yes Í X No Í- Do not Know

3. Are there currently or have there ever been any pits, ponds or lagoons on the subject property utilized in connection with waste treatment or waste disposal?

Í- Yes Í X No Í- Do not Know

4. Are you currently aware of or have there ever been any hazardous substances, petroleum products, tires, car or industrial batteries, pesticides or other chemicals or waste materials that have been dumped, buried or burned on the subject property?

Í- Yes Í X No Í- Do not Know

5. Have any of the adjoining properties ever been used for industrial purposes? (including but not limited to a gas station, dry cleaner, auto repair facility, landfill, waste treatment, printing facility etc)? If yes, please describe.

Í- Yes Í X No Í- Do not Know

6. Are any of the adjoining properties currently being used for industrial purposes? If yes, please describe.

Í- Yes Í X No Í- Do not Know

7. Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

Í- Yes Í X No Í- Not Applicable

8. If the subject property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system or that the well has been designated as contaminated by any government environmental/health agency? If an on-site well is present, please attach a copy of the most recent water quality testing report.

Í- Yes Í X No Í- Not Applicable

AAI and REGULATORY QUESTIONS

In order to qualify for one of the Landowner Liability Protections offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001, you must provide the following information (if available). Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete.

1. Are you aware of any past or current existence of hazardous substances, specific chemicals, or petroleum products on the subject property or any facility located on the property?

Í- Yes Í X No Í- Do not Know

2. Are you aware of any past or current spills or other chemical releases that have taken place at the property?

Í- Yes Í X No Í- Do not Know

3. Do you know of any clean ups (with respect to hazardous substances, specific chemicals, or petroleum products) that have occurred at the property?

☐ - Yes ☒ - No ☐ - Do not Know

4. Are you aware, based on your knowledge of the property, if there are any obvious indicators that point to the presence or likely presence of contamination at the property?

☐ - Yes ☒ - No ☐ - Do not Know

5. Do you have any knowledge of filed or recorded environmental cleanup liens under federals, state or local law or governmental notification relating to past or recurrent violations of environmental laws with respect to the subject property or any facility located on the property?

- Yes ☒ No ☐ - Do not Know

6. Are there any potential or pending lawsuits or administrative actions concerning a release or threatened release of hazardous substances or petroleum product involving the subject property or any facility located on the property?

☐ - Yes ☒ - No ☐ - Do not Know

7. Are you aware of any areas of activity or use limitations (AULs) such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been recorded or filed in a registry under federal, state or tribal law?

☐ - Yes ☒ - No ☐ - Do not Know

8. (Answer this question only if this is an acquisition) Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If there is a difference, have you considered or determined whether the lower price is because contamination is known or believed to be present at the property?

☐ - Yes ☒ - No ☐ - Do not Know

STORAGE TANKS AND DRAINS

1. Are there currently or are you aware if there have ever previously been any registered or unregistered storage tanks, aboveground or underground, located on the subject property? If so, please attach copies of documentation such as tank closure/removal reports, tank tightness tests or registration/regulatory information.

☐ - Yes ☒ - No ☐ - Do not Know

2. Are there currently or are you aware if there have ever previously been any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the subject property?

☐ - Yes ☒ - No ☐ - Do not Know

3. Are there currently or are you aware if there have ever previously been any current evidence of leaks, spills, or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the subject property?

☐ - Yes ☒ - No ☐ - Do not Know

TRANSFORMERS AND HYDRAULIC EQUIPMENT

1. Are there are any transformers, capacitors, and/or hydraulic equipment on the subject property?

☐ - Yes ☒ - No ☐ - Do not Know

2. If yes, are there any records indicating the presence or absence of PCBs in this equipment. If so, please attach copies of this documentation.

☐ - Yes ☒ - No ☐ - Do not Know

3. Are the transformers owned by the subject property or by the local utility? If owned by the utility, please note the name of the utility.

ASBESTOS CONTAINING MATERIALS

1. Has the subject property ever been tested for the presence of asbestos containing materials (ACM)?

☒ - Yes ☐ - No ☐ - Do not Know

2. If yes, are you aware if asbestos containing materials were identified? If so, please note what asbestos containing materials were identified and their locations or please attach a copy of the test results?

☐ - Yes ☒ - No ☐ - Not Applicable

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3. Is there an Asbestos Operations and Maintenance Program in place at the subject property?

☐ - Yes ☒ - No ☐ - Do not Know

RADON

1. Has the subject property ever been tested for the presence of radon?

☐ - Yes ☒ - No ☐ - Do not Know

2. If yes, do you have the results of the testing? Please attach.

☐ - Yes ☒ - No ☐ - Not Applicable

LEAD BASED PAINT

1. Has the subject property ever been tested for the presence of lead based paint (LBP)?

☐ - Yes ☒ - No ☐ - Do not Know

2. If yes, are you aware if lead based paint was identified? If so, please note where it was identified or please attach a copy of the test results?

☐ - Yes ☒ - No ☐ - Not Applicable

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3. Is there a Lead Based Paint Operations and Maintenance Program in place at the subject property?

☐ - Yes ☒ - No ☐ - Do not Know

4. If the property was constructed prior to 1979, do you provide Lead Based Paint Notification to the tenants? If yes, please attach a copy of the notification.

☐ - Yes ☒ - No ☐ - Not Applicable

MOLD

1. Is there any evidence of mold and/or mildew on the subject property? If yes, please provide information as to the location, extent and the cause of the mold/mildew. Please note what actions are currently or have formerly been taken to address this concern.

☐ - Yes ☒ - No

---

2. Is there a Mold and Moisture Minimization Program in place at the subject property?

☐ - Yes ☒ - No ☐ - Do not Know

COMMENTS/ADDITIONAL INFORMATION (If necessary, please provide any additional relevant environmental information that has not been discussed above.)

PRE DEMOLTION ASBESTOS SURVEY AND SAMPLING

Environmental Monitoring Group

REPORT
Demolition

For

ASBESTOS CONTAINING-MATERIALS (ACM)

Prepared for

Open Plan Construction
10502 Garden Grove Boulevard
Garden Grove, CA 92843

Located At

Commercial Property
9562 Chapman Avenue
Garden Grove, CA 92841

EMG Project Number: 985463

Prepared by

ENVIRONMENTAL MONITORING GROUP (EMG)
12861 Western Avenue, Unit #F
Garden Grove, CA 92841
(714) 893-5166

August 10, 2023

TABLE OF CONTENT

1.0 SCOPE OF WORK

The purpose of an asbestos-containing materials (ACM) survey is to identify, characterize and quantify the presence of suspect friable and non-friable building materials. The survey did not include sampling materials such as concrete flooring, wooden, metal doors and concrete block walls. EMG completed the sampling of the project work area using and Asbestos Hazard Emergency Response Act (AHERA) accredited. The survey results will be used to assess and to properly manage the abatement work in the building areas. Other reasons for the survey are to evaluate and to ensure occupants/workers safety and compliance with regulatory requirements and to manage the handling of asbestos containing-materials for demolition work at the site as required by the EPA's National Emission Standards for Hazards Air Pollutants (NESHAP) in 40 CFR Part 61. The findings set forth in this report are strictly limited to the time, date and scope of the inspection or investigation. The results presented in this report are based on the analytical testing performed by certified laboratory.

On August 2, 2023 Thi Doan DOSH Certified Asbestos Consultant (CAC #03-3382) performed a survey for future demolition of the residential property area located at 9562 Chapman Avenue, Garden Grove, CA 92841 for asbestos-containing materials (ACM) and/or asbestos-containing construction materials (ACCM).

2.0 BUILDING DESCRIPTION

The subject site is commercial property. For the purpose of this inspection and sampling, the building materials in each locations/areas were considered to be homogeneous.

There is fire damage or structural damage observed at the site location.

The property is constructed wood frame on a slap concrete foundation. The interior area is consists of black mastic under ceramic tile, drywall and joint compound material. The exterior walls area consists of stucco material. The roof area consists of roof mastic, barrier paper and roofing shingle material.

3.0 INSPECTION INTRODUCTION AND INVESTIGATIVE METHODS

The visual inspection and sampling were completed on August 2, 2023 at the above mentioned property site.

Inaccessible suspect building materials such as pipe insulation; mastic, flooring and surfacing materials may exist within walls, pipe chases, ceiling cavities and sub-floors. During renovation and or demolition activities, material may be uncovered that are different from those accessible for sampling during this survey. If suspect material is found, additional sampling should be performed to determine if the materials contain asbestos and or lead

Cal-OSHA Certified Asbestos Consultant Mr. Thi Doan CAC 03#-3882 exp 07/31/2024. performed the bulk sample collection for ACM.

All Bulk samples for ACM were submitted for analysis by Polarized Light Microscopy (PLM) to a NVLAP accredited laboratory. Certifications are available upon request

Patriot Laboratory
1041 S. Placentia Avenue
Fullerton, CA 92831
Tel: (714) 899-8900
NVLAP# 200358-0

The commercial property was inspected for the presence of ACM or PACM where demolition may occurs.

The inspector performed an inspection for suspect asbestos containing materials listed above following the provisions of 40 CFR Part 763.107 and conformed to procedure outlined in the EPA Building Inspector Course.

3.1 PROCEDURES AND METHODOLOGY

The inspection included visual examination and sampling of suspected ACM in the building. Observations were made regarding the condition, friability and accessibility of the materials. The strategy used for ACM bulk sample collection was consistent with the guideline in Chapter 2 of EPA, "Purple Book", EPA 560/5-85-024, Guidance for Controlling Asbestos-Containing Materials in Buildings, 1985, and OSHA 29 CFR 1926.1101 concerning building inspection and hazard assessment for asbestos. Bulk samples of homogeneous materials that were suspected ACM were collected. A homogeneous material is defined as a surfacing material, thermal system insulation, or miscellaneous material that is uniform in color, texture, use, construction/application date, and general appearance.

Bulk samples of suspect ACM and/or ACCM were collected for laboratory analysis. Areas sampled were misted with detergent-amended water prior to sample collection. Water was used to mist, rinse, or wipe sampling tools after sample collection. Sealed sample containers were indelibly marked with sample number.

Typically, at least three bulk samples were collected from each homogeneous area, if the material was greater than 100 square feet. As these materials were identified, bulk samples were collected and properly placed into individual sampling containers and assigned with sample numbers and submitted under chain-of-custody procedures to the in house laboratory.

3.2 LABORATORY ANALYTICAL METHODS

All Physical bulk samples for ACM were submitted and analyzed by Patriot for analysis by Polarized Light Microscopy (PLM) method. The method of analysis was EPA 600/M4-82020 and NVLAP accredited laboratory (200358-0). Certifications are available upon request.

All samples submitted for analysis were analyzed by Polarized Light Microscopy (PLM) with dispersion staining as described by the "Interim Method for the Determination of Asbestos in Bulk Insulation Samples", NIOSH Method 7403 (Federal Register/Volume 47, No. 103/May 27, 1982) and 40 CFR 763, Subpart F. Appendix A (AHERA). This is a standard method of analysis in optical mineralogy and a definitive method the determination of asbestos in Bulk Sample. A suspected material is immersed in a solution of known refrative index and subject to illumination by Polarized Light Microscopy. The characteristic color display enables mineral identification.

4.0 RESULTS OF INVESTIGATION AND FINDINGS

A total of **(21)** samples were submitted to the laboratory for analysis and **none** of the samples were found to contain asbestos mineral type. Material containing more than 1% asbestos by weight is considered Asbestos Containing Material at the Federal Level and those materials identified to contain "trace" amounts or more than one tenth of one percent asbestos is considered a regulated materials at the State level. When "None Detected" (ND) appears in this report, it should be interpreted as meaning that no asbestos was observed in the sample material.

The following lists of building bulk samples – none-detected are as follows:

- Sample #ID 1-3 Roofing shingle material
- Sample #ID 4-6 Roof mastic material
- Sample #ID 7-9 Barrier paper material
- Sample #ID 10-12 Drywall material
- Sample #ID 13-15 Joint compound material
- Sample #ID 16-18 Stucco material
- Sample #ID 19-21 Black floor mastic material

5.0 INSPECTION DISCLAIMERS

The survey was performed using the degree of care and skill ordinarily exercised under similar circumstances by reputable environmental consultants practicing in this or other localities. The information in this report is deemed reliable, but there cannot be guarantee that all hazardous materials and conditions have been located or identified.

EMG made their best effort to determine the location of inaccessible ACBM. EMG shall not be responsible for indentifying all ACBM located behind walls and/or columns, beneath flooring, above solid ceilings, underground or any other inaccessible areas.

The results from the sampled locations area representative of the entire homogeneous material/areas and just the locations sample.

The findings and areas of investigation are based on visual observations and limitation of the access to the areas/locations during the inspection. Materials and conditions, which are concealed or are inaccessible, may not have been discovered. No other samples were taken for other Materials except as noted in this report. Sampling was performed on a random basis and all material sampled was assumed to be homogeneous. The possibility exists that material composition may differ from the sampling location.

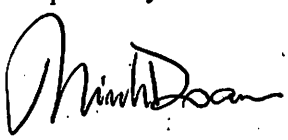
This report was based on those conditions observed on the day (s) the field of evaluation or investigation was accomplished.

EMG shall not be held responsible for deficiencies, commissions, omissions and all other particulars related to the services contracted herein.

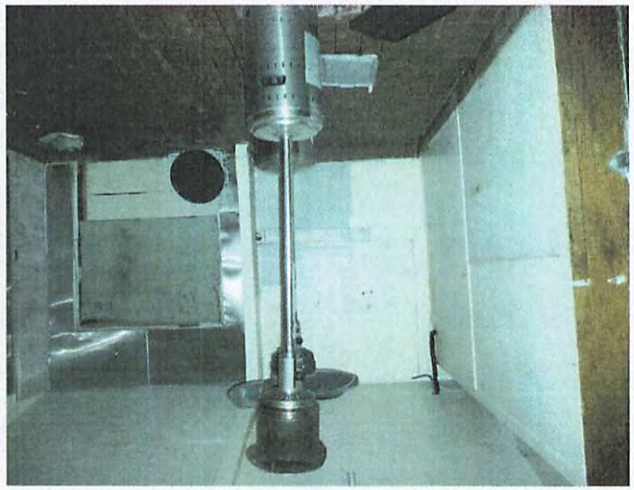
6.0 CONCLUSIONS

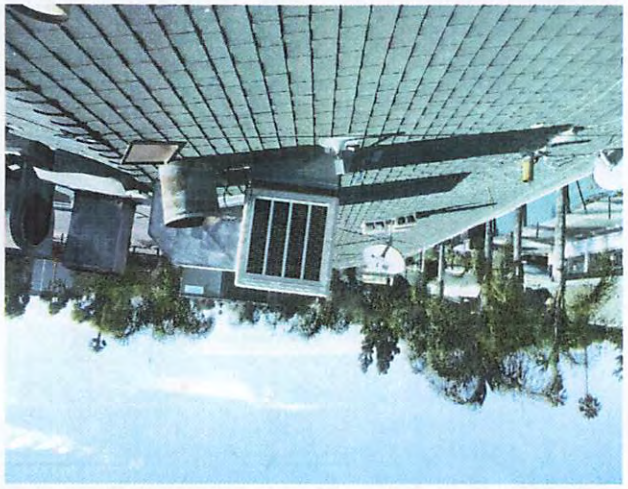
No asbestos containing-materials were discovered during our investigation or inspection of the commercial property.

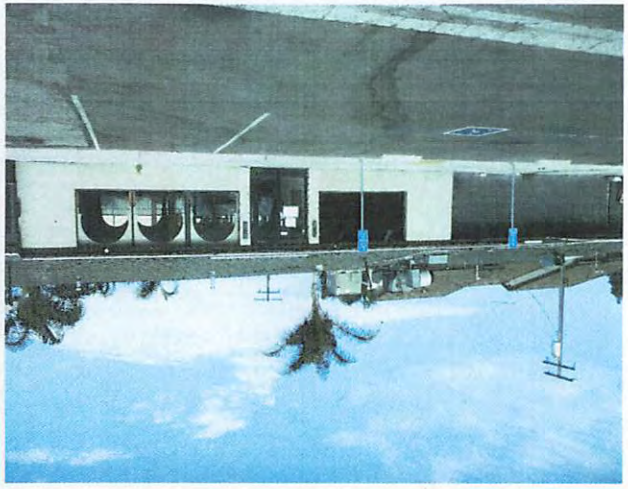
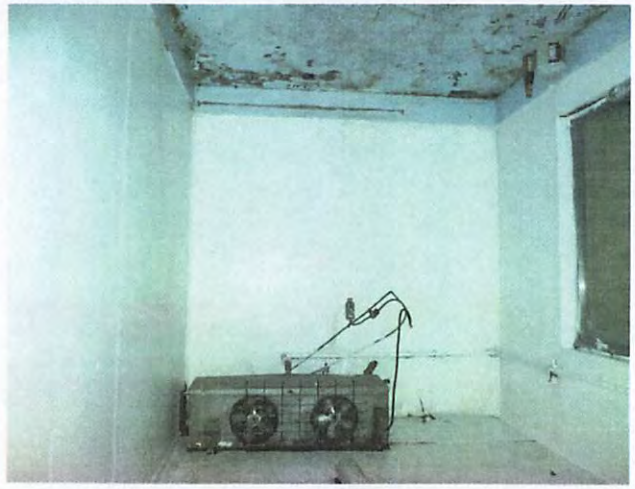
Respectfully Submitted;



Thi Doan
Industrial Hygienist
CAC #03-3382 exp 07/31/2024
Email: thi@emg-co.com




STATE OF CALIFORNIA Gavin Newsom, Governor

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety and Health-Asbestos Certification
1750 Howe Avenue, Suite 460
Sacramento, CA 95825
(916) 574-2993 Office http://www.dir.ca.gov/dosh/asbestos.html actu@dir.ca.gov

306033382C 255

June 07, 2023

EMG Company
Thi A Doan
12861 Western Avenue, #F
Garden Grove CA 92841

Dear Certified Asbestos Consultant or Technician:

Enclosed is your certification card. **To maintain your certification, you must abide by the rules printed on the back of the certification card.**

Your certification is valid for a period of one year. If you wish to renew your certification, you must apply for renewal at least 60 days before the expiration date shown on your card. [8 CCR 341.15(h)(1)].

Please hold and do not send copies of your required AHERA refresher renewal certificates to our office until you apply for renewal of your certification.

Certificates must be kept current if you are actively working as a CAC or CSST. The grace period is only for those who are not actively working as an asbestos consultant or site surveillance technician.

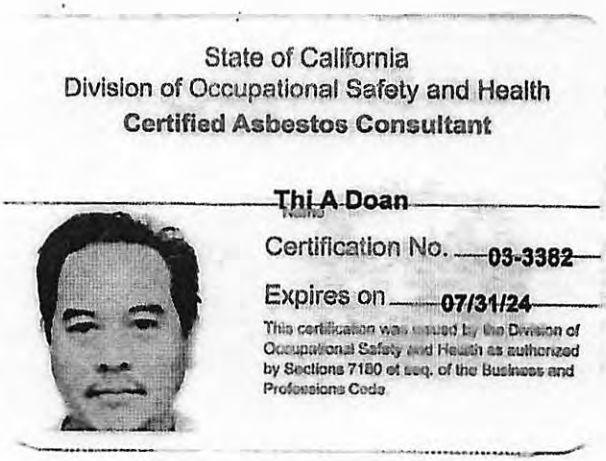
Please contact our office at the above address or email w any changes in your contact/mailing information within 15 days of the change.

Sincerely,

Kevin Graulich
Principal Safety Engineer

Attachment: Certification Card

cc: File



Renewal – Card Attached

Certificate of Analysis
PLM Asbestos Identification

tel - 714-607-5227
free - 855-968-7522
OCLab@patriotlab.com
1041 S. Placentia Avenue, Fullerton, CA 92831

PATRIOT LAB

EMG Company
12861 Western Ave Unit F
Garden Grove, CA 92841

Report Number: 985463
Project Number:
Project Name: 9562 Chapman Ave
Project Location: Garden Grove, CA 92841

Date Collected: 8/2/2023
Date Received: 8/3/2023
Date Analyzed: 8/3/2023
Date Reported: 8/4/2023

Collected By: Thi Doan
Claim Number:
PO Number:
Number of Samples: 21

Lab/Client ID/Layer	Location	Material Description	Color	Composition (%)
985463-001 01	North Roof Area	Roofing Shingle Material	Black	80% Non-Fibrous Material 20% Glass Fibers
Total Asbestos	**None Detected**			
985463-002 02	East Roof Area	Roofing Shingle Material	Black	80% Non-Fibrous Material 20% Glass Fibers
Total Asbestos	**None Detected**			
985463-003 03	South Roof Area	Roofing Shingle Material	Black	80% Non-Fibrous Material 20% Glass Fibers
Total Asbestos	**None Detected**			
985463-004 04	AC Unit Area	Roof Mastic Material	Brown Black	95% Non-Fibrous Material 5% Cellulose
Total Asbestos	**None Detected**			
985463-005 05	Edges Area	Roof Mastic Material	Brown Black	95% Non-Fibrous Material 5% Cellulose
Total Asbestos	**None Detected**			

Certificate of Analysis
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PO Number:
Number of Samples: 21

Lab/Client ID/Layer	Location	Material Description	Color	Composition (%)
985463-006 06	Flue Area	Roof Mastic Material	Brown Black	95% Non-Fibrous Material 5% Cellulose
Total Asbestos	**None Detected**			
985463-007 07	North Area	Barrier Paper Material	Black	85% Cellulose 15% Non-Fibrous Material
Total Asbestos	**None Detected**			
985463-008 08	East Area	Barrier Paper Material	Black	85% Cellulose 15% Non-Fibrous Material
Total Asbestos	**None Detected**			
985463-009 09	South Area	Barrier Paper Material	Black	85% Cellulose 15% Non-Fibrous Material
Total Asbestos	**None Detected**			
985463-010 10	Dining Area	Drywall Material	White	85% Non-Fibrous Material 8% Cellulose 7% Glass Fibers
Total Asbestos	**None Detected**			

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Date Reported: 8/4/2023

Collected By: Thi Doan
Claim Number:
PO Number:
Number of Samples: 21

Lab/Client ID/Layer	Location	Material Description	Color	Composition (%)
985463-011 11	Kitchen Area	Drywall Material	White	85% Non-Fibrous Material 8% Cellulose 7% Glass Fibers
Total Asbestos	**None Detected**			
985463-012 12	Pantry Area	Drywall Material	White	85% Non-Fibrous Material 8% Cellulose 7% Glass Fibers
Total Asbestos	**None Detected**			
985463-013 13	Dining Corner Area	Joint Compound Material	White	100% Non-Fibrous Material
Total Asbestos	**None Detected**			
985463-014 14	Kitchen Corner Area	Joint Compound Material	White	100% Non-Fibrous Material
Total Asbestos	**None Detected**			
985463-015 15	Pantry Corner Area	Joint Compound Material	White	100% Non-Fibrous Material
Total Asbestos	**None Detected**			
985463-016 16	North Wall Area	Stucco Material	Grey	100% Non-Fibrous Material
Total Asbestos	**None Detected**			

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PLM Asbestos Identification

tel - 714-607-5227
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OCLab@patriotlab.com
1041 S. Placentia Avenue, Fullerton, CA 92831

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Project Name: 9562 Chapman Ave
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Date Received: 8/3/2023
Date Analyzed: 8/3/2023
Date Reported: 8/4/2023

Collected By: Thi Doan
Claim Number:
PO Number:
Number of Samples: 21

Lab/Client ID/Layer	Location	Material Description	Color	Composition (%)
985463-017 17	West Wall Area	Stucco Material	Grey	100% Non-Fibrous Material
Total Asbestos	**None Detected**			
985463-018 18	East Wall Area	Stucco Material	Grey	100% Non-Fibrous Material
Total Asbestos	**None Detected**			
985463-019 19	Cashier Area	Mastic Under Ceramic Tile	Black	100% Non-Fibrous Material
Total Asbestos	**None Detected**			
985463-020 20	Dining Area 1	Mastic Under Ceramic Tile	Black	100% Non-Fibrous Material
Total Asbestos	**None Detected**			
985463-021 21	Dining Area 2	Mastic Under Ceramic Tile	Black	100% Non-Fibrous Material
Total Asbestos	**None Detected**			

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PLM Asbestos Identification

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Claim Number:
PO Number:
Number of Samples: 21

Lab/Client ID/Layer	Location	Material Description	Color	Composition (%)

Jose Quinones - Analyst

Ian Reyes - Laboratory Director - Approved By

Bulk sample(s) submitted was (were) analyzed in accordance with the procedure outlined in the US Federal Register 40 CFR 763, Subpart F, Appendix A; EPA-600/R-93/116 (Method for Determination of Asbestos in Building Materials), and EPA-600/M4-82-020 (US EPA Interim Method for the Determination of Asbestos in Bulk Insulation Samples). Samples were analyzed using Calibrated Visual Estimations (CVES); therefore, results may not be reliable for samples of low asbestos concentration levels. Samples of wall systems containing discrete and separable layers are analyzed separately and reported as composite unless specifically requested by the customer to report analytical results for individual layers. This report applies only to the items tested. Results are representative of the samples submitted and may not represent the entire material from which the samples were collected. "None Detected" means that no asbestos was observed in the sample. "<1%" (less than one percent) or Trace means that asbestos was observed in the sample but the concentration is below the quantifiable level of 1%. This report was issued by a NIST/NVLAP (Lab Code 200358-0) and CA Water Board ELAP (Cert. No. 2540) accredited laboratory and may not be reproduced, except in full without the expressed written consent of Patriot Environmental Laboratory Services, Inc. This report may not be used to claim product certification, approval or endorsement by NIST, NVLAP, CA-ELAP or any government agency.

ASB_Rep_2.23

REPORT NUMBER *(Lab Use Only)*

985463

PATRIOT LAB
FULLERTON | LOS ANGELES | SAN DIEGO | SAN JOSE
Tel: (888)743-0998 Email: laboratory@patriotlab.com

PATRIOT LAB - CHAIN OF CUSTODY

COMPANY INFORMATION		PROJECT INFORMATION	
Company Name:	EMG, COMPANY	Project No.:	PO#:
Contact Person:	JOHN	Project Name:	9562 CHAPMAN AVE
Company Address:	12861 WESTERN AVE. # F GARDEN GROVE, CA 92841	Project Location:	GARDEN GROVE, CA 92841
Contact Phone:	(714) 893-5166	Sample(s) Collected By:	THI DOAN Date: 8/2/23
Email(s) For Report:	INFO@EMG-CO.COM	Special Instructions:	
Turnaround Time (Business Hours/Days)	☐ 1 HR ☐ 3 HR ☐ 6 HR ☑ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY		

ANALYSIS REQUESTED

ASBESTOS

- ☑ PLM (Bulk Asbestos) EPA 600/M4-82-020 EPA 600 / R-93 / 116
- ☐ PCM (Fiber Count) NIOSH 7400
- ☐ PLM POINT COUNT 400
- ☐ PLM POINT COUNT 1000
- ☐ GRAVIMETRIC REDUCTION

MICROBIOLOGY

FUNGI
Viable (Colony ID & Enumeration)
- ☐ SWAB/BULK

Non-Viable Surface
- ☐ TAPE LIFT/SWAB/BULK
- ☐ AIR SPORE TRAP

BACTERIA
- ☐ PRESENCE/ABSENCE
  Total Coliform & E.coli - Surfaces, Swabs, and Bulk Solids, Liquids (non-potable, non-wastewater)

CHEMISTRY

LEAD BY FLAME AA - EPA 3050B/7420mod, NIOSH 7082mod
☐ PAINT ☐ DUST WIPE ☐ SOILS/SOLIDS ☐ AIR ☐ WATER (non-potable)

LEAD WASTE PROFILE (by Flame AA) ☐ Check here to perform ALL THREE tests necessary for disposal (5-7 Days TAT)
☐ TTLC ONLY (Total Threshold by EPA 3050B mod) ☐ STLC/CAL WET ONLY (CCR Ch11, Article 5, App II) ☐ TCLP ONLY (EPA 1331)
(NOTE: Please provide approx. 200 grams (approx. ½ lb.) of sample for complete profile)

☐ ROTOMETER CALIBRATION Total Rotometers:

☐ pH TESTING (Soils, solids, liquids, misc.) EPA 9045

Sample ID	Sample Type	Location Sampled	Description of Sample (Material Type, Dimensions, etc.)	(FOR AIR SAMPLES ONLY!) Start Time	Stop Time	Total Min.	Ave. Flow Rate	Total Vol.
01	BAG	North roof area	Roofing shingle material					
02	|	East |	| |					
03	|	South |	| |					
04	|	AC unit area	Roof mastic material					
05	|	Edges |	| |					
06	|	flue |	| |					
07	|	North area	Barrier paper material					
08	|	East |	| |					
09	|	South |	| |					

Relinquished By:	(Print) THI DOAN	(Sign) Thi Doan	Relinquished By:	(Print)	(Sign)
	(Date) 8/2/23	(Time) 4:50 PM		(Date)	(Time)
Received By:	(Print) Kathryn Medina	(Sign) KM	Received By:	(Print)	(Sign)
	(Date) 8.3.23	(Time) 8am		(Date)	(Time)

Method of Shipment / Preservation During Shipment: PB

Condition of Samples: Acceptable – YES / NO
Comments:

v.8.09.2022

8/3 8am

REPORT NUMBER *(Lab Use Only)*

985463

PATRIOT LAB
FULLERTON | LOS ANGELES | SAN DIEGO | SAN JOSE
Tel: (888)743-0998 Email: laboratory@patriotlab.com

PROJECT NAME: _____
PROJECT NUMBER: _____

Sample ID	Sample Type	Location Sampled	Description of Sample (Material Type, Dimensions, etc.)	(FOR AIR SAMPLES ONLY!) Start Time	Stop Time	Total Min.	Ave. Flow Rate	Total Vol.
10	Bag	Dining area	Drywall material					
11	"	Kitchen	" "					
12	"	Pantry	" "					
13	"	Dining corner area	joint compound material					
14	"	Kitchen	" "					
15	"	Pantry	" "					
16	"	North wall area	stucco material					
17	"	West	" "					
18	"	East	" "					
19	"	Cashier area	Black mastic				stop @ 1st positive	
20	"	Dining area #1	" "				" "	
21	"	" " #2	" "				" "	
			(under ceramic tile)					

Relinquished By:	(Print) THi DOAN	(Sign) Thi Doan	Relinquished By:	(Print)	(Sign)
	(Date) 8/2/23	(Time) 4:50 pm		(Date)	(Time)
Received By:	(Print) Kathryn Medina KM	(Sign)	Received By:	(Print)	(Sign)
	(Date) 8-3-23	(Time) 8am DB		(Date)	(Time)

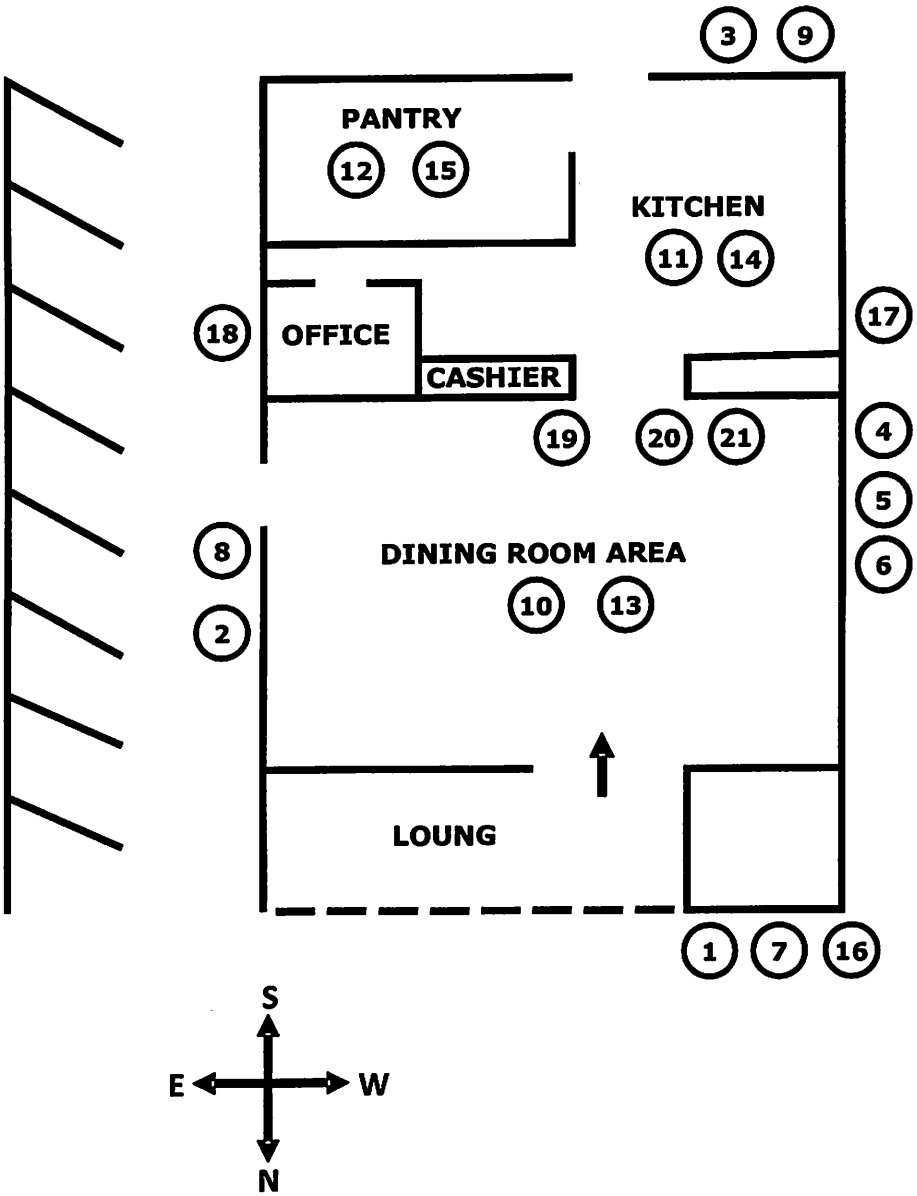
v.6.22.2022

Notes: Patriot's holding time for all samples submitted 30 days for solid samples, 7 days for digests, and immediate for lead in air after analytical results are reported. Unless customer provides written instructions to extend holding time, samples will be disposed of in accordance with local, state, and federal law.

*3 Hour Turnaround Time available until 2pm PST. Gravimetric Reduction requires minimum 10 HR Turnaround Time. Viable fungi samples require minimum 5-7 days Turnaround Time. Bacterial cultures require minimum 30 HR Turnaround Time. STLC/CAL-WET and TCLP require minimum 72 HR Turnaround Time.

9562 CHAPMAN AVE.

GARDEN GROVE, CA 92841



GEO-TECHNICAL INVESTIGATION

ALTA CALIFORNIA
GEOTECHNICAL INC.

170 North Maple Street, Suite 108
Corona, CA 92880
www.altageotechnical.com

P&P BROTHERS CORP.
18685 Main St. Suite 101-385
Huntington Beach, CA 92648

May 2, 2024
Project No. 1-0517

Attention: Mr. Thao Vu

Subject: **GEOTECHNICAL INVESTIGATION**
9562 Chapman Avenue
City of Garden Grove, County of Orange, California

References: Appendix A

Dear Mr. Vu:

Alta California Geotechnical, Inc. (Alta) is pleased to present this geotechnical investigation for the proposed development located at 9562 Chapman Avenue, in the City of Garden Grove, County of Orange, California. This report is based on a recent subsurface investigation conducted by Alta, laboratory testing, a review of the referenced reports, and Alta's staff's experience with similar projects in this vicinity.

Alta's review of the data indicates that the propose development is feasible, from a geotechnical perspective, provided that the recommendations presented in this report are incorporated into the grading and improvement plans and implemented during site development.

Included in this report are:

- Discussion of the site geotechnical conditions.
- Recommendations for remedial and site grading, including unsuitable soil removals.
- Geotechnical site construction recommendations.
- Liquefaction analysis.
- Foundation design parameters.

If you have any questions or should you require any additional information, please contact the undersigned at (951) 509-7090. Alta appreciates the opportunity to provide geotechnical consulting services for your project.

Sincerely,
Alta California Geotechnical, Inc.

Reviewed By:

YOUSSEF F. HIJAZI
Engineering Geology Associate

SCOTT A. GRAY/RGE 2857
Reg. Exp.: 12-31-24
Registered Geotechnical Engineer
President

LOGAN MARQUETTE
Civil Engineering Associate

THOMAS J. MCCARTHY/CEG 2080
Reg. Exp.: 9-30-24
Certified Engineering Geologist
Vice President

Distribution: (1) Addressee

YFH:LM:SAG:TJM -1-0517, May 2, 2024 (Geotechnical Investigation, 9562 Chapman Ave, Garden Grove DRAFT)

1.0 INTRODUCTION

This report presents Alta's findings, conclusions, and geotechnical recommendations for the proposed development located at 9562 Chapman Avenue, in the City of Garden Grove, County of Orange, California.

1.1 Purpose

The purpose of this report is to examine the existing onsite geotechnical conditions and assess the impacts that the geotechnical conditions may have on the proposed development. This report is suitable for use in developing grading plans and engineer's cost estimates.

1.2 Scope of Work

Alta's *Scope of Work* for this geotechnical investigation included the following:

- Reviewing the referenced reports and air photos (Appendix A).
- Site geologic mapping.
- Drilling, logging, and sampling four (4) hollow-stem auger borings to a maximum depth of 51.5-feet below the existing surface (Appendix B).
- Conducting laboratory testing on samples obtained during our investigation (Appendix C).
- Conducting two (2) infiltration tests in two (2) additional borings at a maximum depth of 6.0-feet.
- Commission of two (2) cone penetration tests.
- Conducting a liquefaction analysis.
- Evaluating engineering geologic and geotechnical engineering data, including laboratory data, to develop recommendations for site remedial grading including specialized grading techniques for unsuitable soil removals along the property boundaries, import soil, foundations, and utilities.
- Preparing this report and accompanying exhibits.

1.3 Report Limitations

The conclusions and recommendations presented in this report are based on the field and laboratory information generated during this investigation, and a review of the referenced reports. The information contained in this report is intended to be used for development of grading plans and preliminary construction cost estimates.

2.0 PROJECT DESCRIPTION

2.1 Site Location and Background

The rectangular-shaped, approximately 0.8-acre site is bounded to the north by Chapman Avenue, and to the east, south, and west by existing properties. The site is currently occupied by a single existing structure on the northwestern portion of the site and associated parking.

Historic aerial photographs are available as far back as 1953 and indicate that the site originally was occupied by a single structure in the northern portion of the site and used for farming operations. In 1972, the single structure in the north was removed and the single structure that exists today was constructed in the northwestern portion and the site and paved with the exception of the southern portion. The site has remained largely unchanged since. (Historic Aerials, 2024).

2.2 Proposed Development

Alta anticipates that the site will be redeveloped to support a 5-story building, with the bottom floor consisting of retail or medical offices and residential units on the floors above. Alta anticipates that conventional cut-and-fill grading techniques will be used to develop the site. This grading will support structures consisting of wood frame construction with shallow foundations and reinforced concrete slabs-on-grade, and associated improvements.

3.0 SITE INVESTIGATION

3.1 Investigation and Laboratory Testing

Alta conducted a subsurface investigation on March 5th and March 6th 2024, consisting of the drilling, logging and select sampling of four (4) hollow-stem auger borings up to a maximum depth of 51.5 feet, and conducting two (2) infiltration tests in two (2) additional borings up to a maximum depth of 5.0 feet. Alta also commission two (2) cone penetration tests to a maximum depth of 50.0 feet. The locations of the exploratory borings are shown on enclosed Plate 1 and the boring logs are presented in Appendix B.

Laboratory testing was performed on bulk and ring samples obtained during the field investigation. A brief description of the laboratory test procedures and the test results are presented in Appendix C.

3.2 Infiltration Testing

It is Alta's understanding that the project may utilize infiltration systems for storm water disposal. Details of the system are not known at this time.

Infiltration testing was undertaken using two (2) borings to 5.0-ft. bgs (P-1 and P-2). The testing was performed in general accordance with the County of Orange Technical Guidance Document. The test wells were presoaked at least 24 hours prior to testing. During testing, the water level readings were recorded every 30 minutes until the readings stabilized.

The data was then adjusted to provide an infiltration rate utilizing the Porchet Method. The resulting infiltration rate is presented in Table 3-1. The results do not include a factor of safety. Recommendations for infiltration BMP design are presented in Section 6.2.

Table 3-1 Summary of Infiltration Testing (No Factor of Safety)		
Test Designation	P-1	P-2
Approximate Depth of Test	5.0 ft	5.0 ft
Final Time Interval	30 minutes	30 minutes
Radius of Test Hole	4 inches	4 inches
Tested Infiltration Rate	1.2 in/hr	0.8 in/hr

4.0 GEOLOGIC CONDITIONS

4.1 Geologic and Geomorphic Setting

Regionally, the subject site is located in the Peninsular Ranges geomorphic province, which characterizes the southwest portion of southern California where right lateral major active fault zones predominately trend northwest-southeast. The Peninsular Ranges province is composed of plutonic and metamorphic rock, with lesser amounts of Tertiary volcanic and sedimentary rock, Quaternary drainage in-fills and sedimentary veneers.

4.2 Stratigraphy

Based on our literature review and subsurface investigation, the site is underlain by artificial fill and young alluvial fan deposits. The geologic units are briefly described below.

4.2.1 Artificial fill undocumented (map symbol afu)

The artificial fill present within the site was not encountered during the subsurface investigation, but likely overlays the young alluvial fan deposits below the existing structure currently occupying the site.

4.2.2 Young alluvial fan deposits (map symbol Qyf)

The young alluvial fan deposits observed at the site consists mainly of brown, dark brown, tan brown, tan, tan gray, tan dark gray, and gray sand, sand with silt, silty sand, and sandy silt in a slightly moist to wet and loose to medium dense/firm condition. The unit was logged to a depth of 51.5 feet below the ground surface.

4.3 Geologic Structure

4.3.1 Tectonic Framework

Jennings (1985) defined eight structural provinces within California that have been classified by predominant regional fault trends and similar fold structure. These provinces are in turn divided into blocks and sub-blocks that are defined by "major Quaternary faults." These blocks and sub-blocks exhibit similar structural features. Within this framework, the subject site is located within Structural Province I, which is controlled by the dominant northwest trend of the San Andreas Fault and is divided into two blocks, the Coast Range Block and the Peninsular Range Block. The Peninsular Range Block, on which this site is located, is characterized by a series of parallel, northwest trending faults that exhibit right lateral dip-slip movement. These faults are terminated by the Transverse Range block to the north and extend southward into the Baja Peninsula. These northwest trending faults divide the Peninsular Range block into eight sub-blocks. The site is located on the northwest portion of the Santa Ana Sub-block, one of the eight sub-blocks, which is bound on the east by the Elsinore fault zone and on the west by the Newport-Inglewood fault zone.

4.3.2 Regionally Mapped Active Faults

Several large, active fault systems including the Elsinore-Whittier and the Newport-Inglewood occur in the region surrounding the site. These fault systems have been studied extensively and in a large part control the geologic structure of southern California.

4.3.3 Geologic Structure

Based upon our site investigation and literature review, the surficial sediments are of Quaternary age, and are not folded or faulted.

4.4 Groundwater

Groundwater was encountered at depths of 13.7, 14.0, 14.0, and 18.6 feet below the ground surface at four separate locations during our subsurface investigation. Based on state-provided information, the historic-high groundwater is approximately greater than 20.0 feet below the ground surface (CGS, 1997). Groundwater elevation data from a LUST cleanup site located approximately 0.5 miles to the east indicate groundwater was as shallow as 12 feet below the ground surface in 2012 (GeoTracker, 2024).

4.5 Earthquake Hazards

The subject site is located in southern California, which is a tectonically active area. The type and magnitude of seismic hazards affecting a site are dependent on the distance to the causative fault and the intensity and magnitude of the seismic event. The seismic hazard may be primary, such as surface rupture and/or ground shaking, or secondary, such as liquefaction and/or ground lurching.

4.5.1 Local and Regional Faulting

The site is located on the northwestern portion of the Santa Ana sub-block, where the Puente Hills, San Joaquin, Newport-Inglewood, Elsinore, Palos Verdes, San Jose Faults surround the site approximately 5.9, 6.7, 7.1, 11.4, 16.5, and 18.0 miles away, respectively.

4.5.2 Surface Rupture

Active faults are not known to exist within the project and a review of Special Publication 42 indicates the site is not within a California State designated earthquake fault zone. Accordingly, the potential for fault surface rupture on the subject site is very low.

4.5.3 Seismicity

Ground shaking hazards caused by earthquakes along other active regional faults do exist. The 2022 California Building Code requires use-modified spectral accelerations and velocities for most structural designs. Seismic design parameters using soil profile types identified in the 2022 California Building Code are presented in Section 7.3.

4.5.4 Liquefaction

Seismic agitation of relatively loose saturated sands, silty sands, and some silts can result in a buildup of pore pressure. If the pore pressure exceeds the overburden stresses, a temporary quick condition known as liquefaction can occur. Liquefaction effects can manifest in several ways including: 1) loss of bearing; 2) lateral spread; 3) dynamic settlement; and 4) flow failure. Lateral spreading has typically been the most damaging mode of failure.

In general, the more recent that a sediment has been deposited, the more likely it will be susceptible to liquefaction. Other factors that must

be considered are groundwater, confining stresses, relative density, and the intensity and duration of seismically induced ground shaking.

Groundwater was encountered during our subsurface investigation at depths of 13.7, 14.0, 14.0, and 18.6 feet below the ground surface in borings B-1, B-2, B-3, and B-4, respectively. The regional groundwater map indicates that the historic-high groundwater level is approximately greater than 20.0 feet below the ground surface (CGS, 1997).

Alta performed a liquefaction analysis utilizing data from our subsurface investigation to determine the liquefaction potential of the young alluvial fan deposits. A description of Alta's analysis and calculations are presented in Appendix D of this report. A groundwater level of greater than 10.0 feet below existing ground surface was assumed. The results of our findings are discussed below under the headings of the specific types of liquefaction which can be manifested during seismic shaking. Conclusions regarding liquefaction are presented in Section 6.3.

- **Loss of Bearing:**
  Liquefaction can potentially cause bearing failure due to ground softening and near-failure in bearing. Based on the removal recommendations presented in this report, Alta anticipates that the potential for loss of bearing shall be minimal.
- **Lateral Spreading:**
  The lateral displacement of surficial blocks of sediment can occur as a result of liquefaction in a subsurface layer. The most pervasive forms of lateral spreading typically involve sites located near a "free-face" (large slopes, channels, etc.), however, it has been noted that lateral spreading can occur on sites with gently sloping (1% or more) ground, such as the subject site.

  Determination of the potential for lateral spread is based on the presence of continuous potentially liquefiable soil layers underneath the structures, the presence of lateral confinement, and various analyses such as empirical modeling. Bartlett, Hansen

and Youd (2002) states that surface manifestation of lateral spread is typically limited to sites with liquefiable soils within 10 meters (32 feet) of grade, and that sites underlain by soils with $(N1)_{60}$ values 15 and greater do not experience significant displacements from earthquakes with magnitudes less than 8.

Given the flat nature of the site, the limited liquefiable layers with $(N1)_{60}$ values less than 15, our recommended unsuitable soil removals (Section 6.1.2) and our foundation design recommendations (Section 7.1), it is our opinion that the potential for lateral spread to occur onsite is considered within design tolerances of the proposed foundation systems, upon the completion of remedial grading.

- **Settlement:**
  Settlement due to seismic shaking can occur as a result of both liquefaction of saturated sediments or rearrangement of dry sand particles. Our liquefaction analysis was performed utilizing blow count data and laboratory test results to analyze the potential amount of settlement. A description of Alta's analysis and calculations are presented in Appendix D of this report. A discussion of settlement analysis results is presented in Section 6.3. Dynamic settlement design recommendations are presented in Section 7.1.

- **Flow Failure:**
  Due to the relatively flat nature of the site, and the relatively horizontal deposition of the underlying deposits, the potential for flow failure onsite is considered minimal.

4.5.5 Dry Sand Settlement

Dry sand settlement is the process of non-uniform settlement of the ground surface during a seismic event. Based on our subsurface investigation and our removal/recompaction recommendations, the potential for dry sand settlement is anticipated to be low and within foundation design tolerances. Design dynamic settlement parameters are presented in Table 7-1.

5.0 ENGINEERING PROPERTIES AND ANALYSIS

5.1 Materials Properties

Presented herein is a general discussion of the engineering properties of the onsite materials that will be encountered during construction of the proposed project. Descriptions of the soil (Unified Soil Classification System) are presented on the boring logs in Appendix B.

5.1.1 Excavation Characteristics

Based on the data provided from the subsurface investigations, it is our opinion that the onsite materials possess favorable excavation characteristics such that conventional earth moving equipment can be utilized.

5.1.2 Compressibility

The undocumented artificial fill and upper portions of the young alluvial fan deposits onsite are considered compressible and unsuitable to support the proposed improvements. Recommended removal depths are presented in Section 6.1.2.

5.1.3 Moisture

The young alluvial fan deposits that will require removal and recompaction as discussed in Section 6.1.2 are typically under-optimum.

5.1.4 Hydro-Consolidation

Hydro-consolidation is the effect of introducing water into soil that is prone to collapse. Upon loading and initial wetting, the soil structure and apparent strength are altered resulting in almost immediate settlement. That settlement can have adverse impacts on engineered structures, particularly in areas where it is manifested differentially. Differential settlements are typically associated with differential wetting,

irregularities in the subsurface soil conditions, or irregular loading patterns.

Based on our laboratory testing (Appendix C), there is minimal potential for hydro-collapse in the young alluvial fan deposits onsite.

5.1.5 Expansion Potential

Expansion index testing was performed on samples taken during our subsurface investigation. Based on the results, it is anticipated that the majority of materials onsite are "very low" to "low" in expansion potential (0≤EI≤50, Appendix C) when tested per ASTM D: 4829.

5.1.6 Earthwork Adjustments

The values presented in Table 5-1 are deemed appropriate for estimating purposes and may be used in an effort to balance earthwork quantities. As is the case with every project, contingencies should be made to adjust the earthwork balance when grading is in-progress and actual conditions are better defined.

TABLE 5-1
Earthwork Adjustment Factors

Geologic Unit	Adjustment Factor Range	Average
Young Alluvial Fan Deposits	Shrink 12% to 16%	14%

5.1.7 Chemical Analyses

Chemical testing was performed on samples of material underlying the proposed site. Soluble sulfate test results indicate that the soluble sulfate concentrations of the soils tested are classified as negligible (Category S0) per ACI 318-14.

Negligible chloride levels were detected in the onsite soils. Based on laboratory results of soluble sulfate, chloride, and pH testing as presented in Appendix C, the onsite soils are classified as "non-corrosive" to buried metals and concrete (Caltrans, 2022). Additional discussions on corrosion are presented in Section 7.9. Corrosion tests results are presented in Appendix C.

5.2 Engineering Analysis

Presented below is a general discussion of the engineering analysis methods that were utilized to develop the conclusions and recommendations presented in this report.

5.2.1 Bearing Capacity and Lateral Earth Pressures

Ultimate bearing capacity values were obtained using the graphs and formula presented in NAVFAC DM-7.1. Allowable bearing was determined by applying a factor of safety of at least 3 to the ultimate bearing capacity. Static lateral earth pressures were calculated using Rankine methods for active and passive cases. If it is desired to use Coulomb forces, a separate analysis specific to the application can be conducted.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on Alta's findings during our subsurface investigation, the laboratory test results, and our staff's previous experience in the area, it is Alta's opinion that the development of the site is feasible from a geotechnical perspective. Presented below are recommendations that should be incorporated into site development and construction plans.

6.1 Remedial Grading Recommendations

All grading shall be accomplished under the observation and testing of the project geotechnical consultant in accordance with the recommendations contained herein and the City of Garden Grove criteria.

6.1.1 Site Preparation

Significant amounts of vegetation, construction debris, and other deleterious materials are unsuitable as structural fill material and should be disposed of off-site prior to commencing grading/construction. Any septic tanks, seepage pits or wells should be abandoned as per the County of Orange Department of Health Services.

Existing concrete should be removed prior to the placement of engineered fill. The demolished concrete may be incorporated into compacted, engineered fills after it is crushed to a maximum size of six (6) inches. Prior to placement as engineered fill any protruding steel rebar should be cut from the concrete pieces and disposed of offsite.

Existing asphaltic concrete should be removed prior to the placement of engineered fill. From a geotechnical perspective, this material may be incorporated into compacted, engineered fills after it is crushed to a maximum size of six (6) inches. The crushed asphalt should not be placed under residential structures, but rather, it can be placed in approved non-residential areas, such as streets, parking areas or open space. These recommendations should be verified by the environmental consultant.

6.1.2 Unsuitable Soil Removals

The upper portions of young alluvial fan deposits are compressible and as such, are not suitable to support the proposed structures. As such, it is anticipated that, on average, the upper seven (7) to eight (8) feet of existing soils will require removal and recompaction, extending at a 1:1 projection horizontally outside the structures. This recommended removal combined with the foundation recommendations presented in Section 7.1 should provide suitable support for the proposed structures.

Footings for structures should be underlain by a minimum of two (2) feet of compacted fill. As such, for building pads where unsuitable soil removals do not provide the minimum depth of compacted fill, or where design grades and/or remedial grading activities create cut/fill transitions, the cut and shallow fill portions of the building pads should be over-excavated during grading and replaced with compacted fill.

The Project Geotechnical Consultant should observe the removal bottom prior to placing fill. If unsuitable soils are exposed upon the completion of the removals recommended above, additional removals may be required.

For fill areas in streets, in general, a minimum removal and recompaction of the upper two (2) feet is recommended, however all undocumented artificial fill shall be removed and recompacted. For cuts greater than two (2) feet in street areas, removals are not required so long as young alluvial fan deposits are exposed. For cuts less than two (2) feet, the two (2) foot removal and recompaction applies.

Material removed as part of the unsuitable soil removals can be used as artificial fill, provided it is free of deleterious materials.

6.2 General Earthwork Recommendations

6.2.1 Compaction Standards

All fill and processed natural ground shall be compacted to a minimum relative compaction of 90 percent, as determined by ASTM Test Method: D-1557. Fill material should be moisture conditioned to optimum moisture or above, and as generally discussed in Alta's Earthwork Specification Section presented in Appendix F. Compaction shall be achieved with the use of sheepsfoot rollers or similar kneading type equipment. Mixing and moisture conditioning will be required in order to achieve the recommended moisture conditions.

6.2.2 Groundwater/Seepage

It is anticipated that groundwater may be encountered during construction. Perched water conditions could be encountered depending on the time of year construction occurs.

6.2.3 Documentation of Removals

All removal/over-excavation bottoms should be observed and approved by the project Geotechnical Consultant prior to fill placement. Consideration should be given to surveying the removal bottoms and undercuts after approval by the geotechnical consultant and prior to the placement of fill. Staking should be provided in order to verify undercut locations and depths.

6.2.4 Treatment of Removal Bottoms

At the completion of removals/over-excavation, the exposed removal bottom should be ripped to a minimum depth of eight (8) inches, moisture-conditioned to above optimum moisture content and compacted in-place to the project standards.

6.2.5 Fill Placement

After removals, scarification, and compaction of in-place materials are completed, additional fill may be placed. Fill should be placed in eight-inch bulk maximum lifts, moisture conditioned to optimum moisture content or above, compacted and tested as grading/construction progresses until final grades are attained.

6.2.6 Moisture Conditioning

The moisture content of the upper in-situ soils varies, however the majority of these soils are under-optimum, as shown on the boring logs in Appendix B. Most soils will require moisture conditioning prior to placement as compacted fill.

6.2.7 Mixing

Mixing of materials may be necessary to prevent layering of different soil types and/or different moisture contents. The mixing should be accomplished prior to and as part of compaction of each fill lift.

6.2.8 Import Soils

Import soils, if necessary, should consist of clean, structural quality, compactable materials similar to the on-site soils and should be free of trash, debris, or other objectionable materials. The project Geotechnical Consultant should be notified not less than 72 hours in advance of the locations of any soils proposed for import. Import sources should be sampled, tested, and approved by the project Geotechnical Consultant at the source prior to the importation of the soils to the site. The project Civil Engineer should include these requirements on plans and specifications for the project.

6.2.9 Utility Trenches

6.2.9.1 Excavation

Utility trenches should be supported, either by laying back excavations or shoring, in accordance with applicable OSHA standards. In general, existing site soils are classified as Soil Type “B” and "C" per OSHA standards. Upon completion of the recommended removals and recompaction, the artificial fill will be classified as Soil Type "B". The Project Geotechnical Consulting should be consulted if geologic conditions vary from what is presented in this report.

6.2.9.2 Backfill

Trench backfill should be compacted to at least 90 percent of maximum dry density as determined by ASTM D-1557. Onsite soils will not be suitable for use as bedding material but will be suitable for use in backfill provided oversized materials are removed. No surcharge loads should be imposed above excavations. This includes spoil piles, lumber, concrete trucks, or other construction materials and equipment. Drainage above excavations should be directed away from the banks. Care should be taken to avoid saturation of the soils. Compaction should be accomplished by mechanical means. Jetting of native soils will not be acceptable.

Under-slab trenches should also be compacted to project specifications. If select granular backfill (SE > 30) is used, compaction by flooding will be acceptable.

6.2.10 Backcut Stability

Temporary backcuts, if required during unsuitable soil removals, should be made no steeper than 1:1 without review and approval of the geotechnical consultant. Flatter backcuts may be necessary where geologic conditions dictate and where minimum width dimensions are to be maintained.

Care should be taken during remedial grading operations in order to minimize risk of failure. Should failure occur, complete removal of the disturbed material will be required.

In consideration of the inherent instability created by temporary construction backcuts for removals, it is imperative that grading schedules are coordinated to minimize the unsupported exposure time of these excavations. Once started, these excavations and subsequent fill operations should be maintained to completion without intervening delays imposed by avoidable circumstances. In cases where five-day workweeks comprise a normal schedule, grading should be planned to avoid exposing at-grade or near-grade excavations through a non-work weekend. Where improvements may be affected by temporary instability, either on or offsite, further restrictions such as slot cutting, extending workdays, implementing weekend schedules, and/or other requirements considered critical to serving specific circumstances may be imposed.

6.3 Liquefaction

As discussed in Section 4.5.4 of this report, there is a potential for liquefaction to occur at the site during seismic shaking. More specifically, liquefaction could cause differential settlement. Typically, half to two thirds of that settlement should be considered differential (California Division of Mines and Geology, 2008, Special Publication 117a). If the analysis is based on multiple borings, seismic induced differential settlement may be determined as one-half the total settlement (City of Los Angeles, 2020). For lightly loaded, well-constructed structures underlain by a non-liquefiable layer over the liquefiable layers, such as will be developed at the site, the ultimate differential settlement across the structure may be more limited (Idriss and Boulinger, 2008).

In consideration of the proposed removal and recompaction of the soils below the proposed structures, the differential settlement shown in the liquefaction calculations, and the relatively uniform thickness of the liquefiable layers under the site, it is Alta's opinion that a dynamic differential settlement of 1.5-inches in 40 feet can be utilized in the design of the proposed structures onsite. It is recommended that the structures onsite be supported on a post-tensioned slab/foundation or mat slab system.

The liquefaction mitigation measures presented herein are intended to reduce the potential for liquefaction to affect the proposed structures to an acceptable level of risk as defined by the State of California and to within design parameters for post-tensioned or mat slabs per ASCE 7-16 Section 12.13.9. Some distress requiring repairs should still be anticipated if liquefaction occurs.

6.4 Storm Water Infiltration Systems

From a geotechnical perspective, allowing storm water to infiltrate the onsite soil in concentrated areas increases the potential for settlement, liquefaction, and water-related damage to structures/improvements, such as wet slabs or pumping subgrade, and should be avoided where possible. If infiltration systems are required on this site, care should be taken in designing systems that control the storm water as much as possible.

Preliminary infiltration testing was conducted at the site as part of this investigation, and the methodology is discussed in 3.2. The resulting infiltration rates for P-1 and P-2 were calculated to be 1.2 -inches per hour and 0.8-inches per hour, respectively. The results do not include a factor of safety.

Groundwater was encountered during our investigation at depths of 19.6, 14.1, and 13.3 feet below the ground surface in borings B-1, B-2, and B-3 respectively.

The WQMP designer should review the test results and determine if the proposed BMP system is appropriate for the site. The Project Geotechnical Consultant should review the final WQMP design prior to construction.

6.5 Boundary Conditions

The site is bounded to the north by Chapman Avenue, and to the east, south, and west by existing properties. Construction of retaining/screen walls along these boundaries may require additional geotechnical recommendations concerning unsuitable soil removals and foundation design parameters. Boundary conditions for the project should be reviewed by the Project Geotechnical Consultant as the design progresses.

7.0 DESIGN CONSIDERATIONS

7.1 Structural Design

It is anticipated that a five-story, wood-framed, multi-use structure with slab on-grade and shallow foundations will be constructed. Upon the completion of rough grading, finish grade samples should be collected and tested in order to provide specific recommendations as they relate to the individual building pads. These test results and corresponding design recommendations should be presented in a final rough grading report. Final slab and foundation design recommendations should be made based upon specific structure sitings, loading conditions, and as-graded soil conditions.

It is anticipated that the majority of onsite soils will possess “very low” to “low” expansion potential when tested in general accordance with ASTM Test Method D: 4829. For budgeting purposes, the following foundation design requirements for a range of potential expansion characteristics are presented. Due to the potential for dynamic settlement onsite, it is recommended to utilize post-tensioned or mat slabs for this project.

7.1.1 Foundation Design

Foundations may be preliminary designed based on the values presented in Table 7-1 below.

Table 7-1 Foundation Design Parameters*	
Allowable Bearing	Square Footings: 2000 lbs/ft^2 (assuming a minimum embedment depth and width of 24 inches) Continuous Footings: 1500 lbs/ft^2 (assuming a minimum embedment depth of 24 inches and width of 18 inches)
Lateral Bearing	250 lbs/ft^2 at a depth of 12 inches plus 250 lbs/ft^2 for each additional 12 inches of embedment to a maximum of 2000 lbs/ft^2.
Sliding Coefficient	0.30
Settlement	Static Settlement – 0.5 inch in 40 feet Dynamic Settlement – 1.5 inches in 40 feet

*These values may be increased as allowed by Code to resist transient loads such as wind or seismic. Building code and structural design considerations may govern depth and reinforcement requirements and should be evaluated.

7.1.2 Post-Tensioned Slabs/Foundation Design Recommendations

Post-tensioned slabs for the project may be designed utilizing the parameters presented in Tables 7-1 and 7-2. The parameters presented herein are based on methodology provided in the Design of Post-Tensioned Slabs-On-Ground, Third Edition, by the Post-Tensioning Institute, in accordance with the 2022 CBC.

TABLE 7-2
POST-TENSION SLAB DESIGN PARAMETERS

Category	Expansion Potential	Minimum Embedment*	Edge Lift		Center Lift	
			Em (ft)	Ym (inch)	Em (ft)	Ym (inch)
I	Very Low to Low	12 inches	5.4	0.61	9.0	0.26
Slab Subgrade Moisture						
Category I	Minimum 110% of optimum moisture to a depth of 12 inches prior to pouring concrete					
Embedment*						
The minimum footing embedments presented herein are based on expansion indexes. The structural engineer should determine minimum embedments based on the number of floors supported by the footings, the structural loading, and the requirements of the latest California Building Code. If mat slabs are utilized, alternate embedment depths can be provided.						
Moisture Barrier						
A moisture barrier should be provided in accordance with the recommendations presented in Section 7.2						
The parameters presented herein are based on procedures presented in the Design of Post-Tensioned Slabs-On-Ground, Third Edition. No corrections for vertical barriers at the edge of the slab, or for adjacent vegetation have been assumed. The design parameters are based on a Constant Suction Value of 3.9 pF.						

7.2 Moisture Barrier

A moisture and vapor retarding system should be placed below the slabs-on-grade in portions of the structure considered to be moisture sensitive and should be capable of effectively preventing the migration of water and reducing the transmission of water vapor to acceptable levels. Historically, a 10-mil plastic membrane, such as Visqueen, placed between two to four inches of clean sand, has been used for this purpose. The use of this system or other systems can be considered, at the discretion of the designer, provided the system reduces the vapor transmission rates to acceptable levels.

7.3 Seismic Design

The site classes were determined based on the referenced reports and published geologic maps in the area in general conformance with Chapter 20 of ASCE 7-16. Based on the density of the underlying soils, a Site Class of D (shear wave velocity of 259 m/s) was selected. The seismic design parameters were calculated using a program based on the USGS website and ASCE 7-16

procedures. The resulting values are presented in Table 7-3. These values are applicable providing the exceptions presented in Supplements 2 and 3 of ASCE 7-16 are utilized in the design of the structure. If the design does not include the exception methodology, then a site-specific analysis shall be conducted.

TABLE 7-3 Seismic Ground Motion Values
2022 CBC and ASCE 7-16

Parameter	*Value*
Site Class	D
Site Latitude	33.7880
Site Longitude	-117.9661
Spectral Response Acceleration Parameter, S_S	1.402
Spectral Response Acceleration Parameter, S_1	0.496
Site Coefficient, F_a	1.0
Site Coefficient, F_v	1.8
MCE Spectral Response Acceleration Parameter, S_{MS}	1.402
MCE Spectral Response Acceleration Parameter, S_{M1}	0.893
Design Spectral Response Acceleration Parameter, S_{DS}	0.934
Design Spectral Response Acceleration Parameter, S_{D1}	0.595
Peak Ground Acceleration, PGA_M	0.657

7.4 Fence and Garden Walls

Block walls, if used, should be embedded a minimum of 2 feet below the lowest adjacent grade. Construction joints (not more than 20 feet apart) should be included in the block wall construction. Side yard walls should be structurally separated from the rear yard wall.

7.5 Footing Excavations

Soils from the footing excavations should not be placed in slab-on-grade areas unless properly compacted and tested. The excavations should be cleaned of all loose/sloughed materials and be neatly trimmed at the time of concrete placement. The Project Geotechnical Consultant should observe the footing excavations prior to the placement of concrete to determine that the excavations are founded in suitably compacted material.

7.6 Retaining Walls

Retaining walls should be founded on engineered fill and should be backfilled with granular soils that allow for drainage behind the wall. Foundations may be designed in accordance with the recommendations presented in Table 7-1, above. Unrestrained walls, free to horizontally move 0.0005H (for dense cohesionless backfill), may be designed to resist lateral pressures imposed by a fluid with a unit weight determined in accordance with the Table 7-4 below. The table also presents design parameters for restrained (at-rest) retaining walls. These parameters may be used to design retaining walls that may be considered as restrained due to the method of construction or location (corner sections of unrestrained retaining walls).

TABLE 7-4
Equivalent Fluid Pressures for 90% Compacted Fill (Select Material)

Backfill	Active Pressure (psf/ft)	At-Rest Pressure (psf/ft)
Level	35	55

Per the requirements of the 2022 CBC, the seismic force acting on the retaining walls with backfill exceeding 6-feet in height may be resolved utilizing the formula $13.5H^2$ lb/lineal ft (H=height of the wall). This force acts at approximately 0.6H above the base of the wall. The seismic value can be converted as required by the retaining wall engineer. Retaining walls should be designed in general accordance with Section 1807A.2 of the 2022 CBC.

- Restrained retaining walls should be designed for “at-rest” conditions.
- The design loads presented in the above table are to be applied on the retaining wall in a horizontal fashion and as such friction between wall and retained soils should not be allowed in the retaining wall analyses.
- Additional allowances should be made in the retaining wall design to account for the influence of construction loads, temporary loads, and possible nearby structural footing loads.
- Select backfill should be granular, structural quality backfill with a Sand Equivalent of 20 or better and an ASCE Expansion Index of 20 or less. The backfill must encompass the full active wedge area. The upper one foot of backfill should be comprised of native on-site soils (see Plate A).
- The wall design should include waterproofing (where appropriate) and backdrains or weep holes for relieving possible hydrostatic pressures. The backdrain should be comprised of a 4-inch perforated PVC pipe in a 1 ft. by 1 ft., ¾-inch gravel matrix, wrapped with a geofabric. The backdrain should be installed with a minimum gradient of 2 percent and should be outletted to an appropriate location. For subterranean walls this may include drainage by sump pumps.
- No backfill should be placed against concrete until minimum design strengths are achieved.

It should be noted that the allowable bearing and lateral bearing values presented in Table 7-1 are based on level conditions at the toe. Modified design parameters can be presented for retaining walls with sloping condition at the toe. Other conditions should be evaluated on a case-by-case basis.

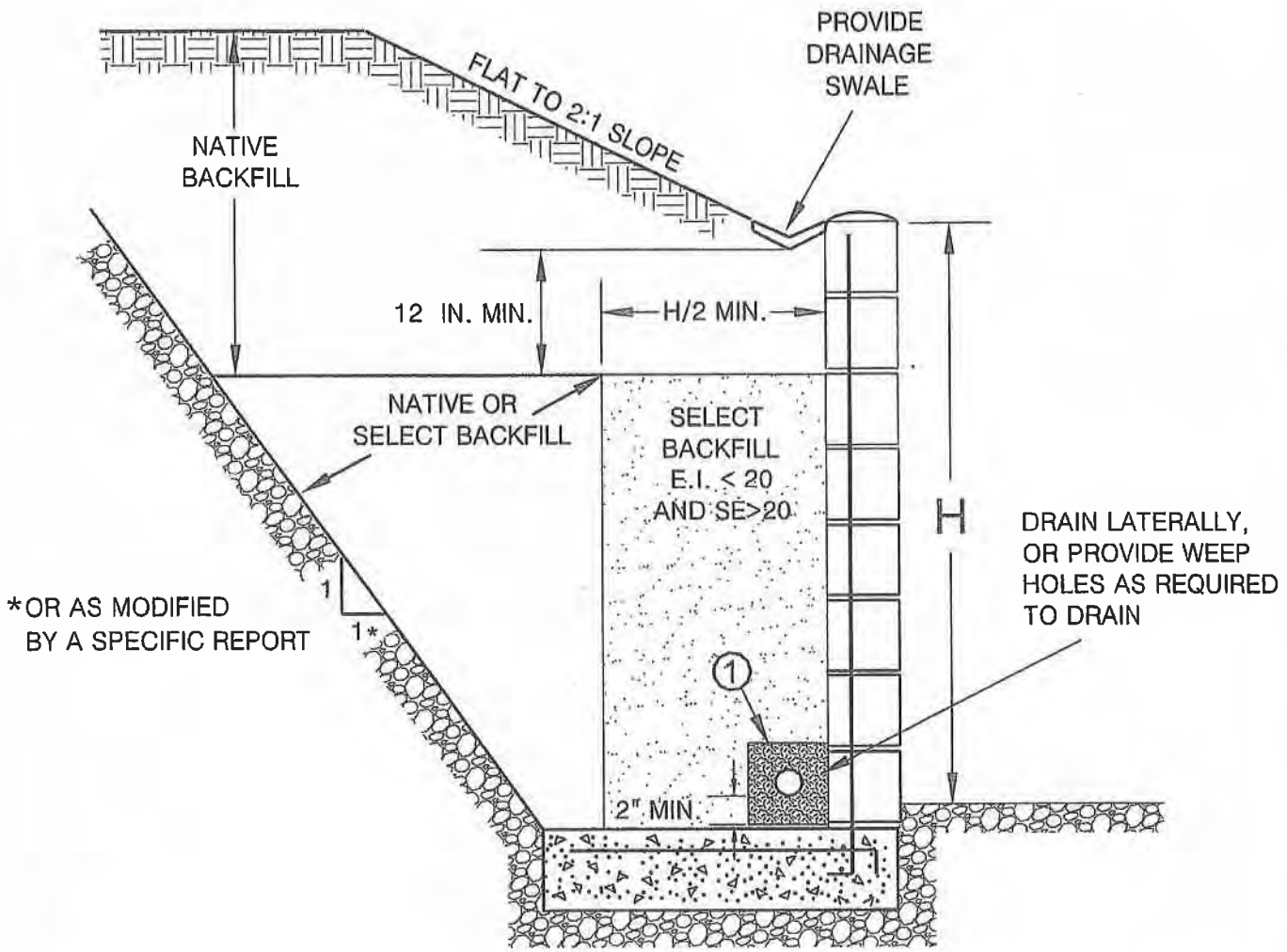
7.7 Exterior Slabs and Walkways

Exterior concrete slabs and walkways should be designed and constructed in consideration of the following recommendations.

7.7.1 Subgrade Compaction

The subgrade below exterior concrete slabs should be compacted to a minimum of 90 percent relative compaction as determined by ASTM Test Method: D 1557.

RETAINING WALL BACKFILL DETAIL



(1)

PIPE: 4-INCH PERFORATED PVC, SCHEDULE 40, SDR35 OR APPROVED ALTERNATE MINIMUM 8 PERFORATIONS (1/4-IN. DIA.) PER LINEAL FT. IN BOTTOM HALF OF PIPE

ROCK: MINIMUM VOLUME OF 1 CU. FT. OF 3/4-IN. MAX. ROCK PER. LINEAL FOOT OF PIPE, OR APPROVED ALTERNATE

FILTER FABRIC: MIRAFI 140 FILTER FABRIC OR APPROVED EQUIVALENT

7.7.2 Subgrade Moisture

The subgrade below concrete slabs should be moisture conditioned to a minimum of 110 percent of optimum moisture prior to concrete placement.

7.7.3 Concrete Slab Thickness

Concrete flatwork and driveways should be designed utilizing four-inch minimum thickness.

7.7.4 Concrete Slab Reinforcement

Utilization of reinforcement for flatwork and driveways is subject to a cost/benefit analysis. Reinforcement will decrease the amount of cracking that may occur in flatwork, however, planning for occasional repairs may be more cost effective. Utilizing closely spaced control joints is likely more cost-effective than utilizing reinforcement. The majority of the soils onsite are classified as very low in expansion potential. Consideration should be given to reinforcing flatwork with irregular (non-square/rectangular) shapes.

7.7.5 Control Joints

Weakened plane joints should be installed on walkways at intervals of approximately eight feet (maximum) or less. Exterior slabs should be designed to withstand shrinkage of the concrete.

7.8 Concrete Design

As stated in Section 5.1.7, negligible concentrations of sulfates were detected in the onsite soils (Class S0). Therefore, the use of sulfate resistant concrete is not required per ACI 318-14 at this time. Post-grading conditions should be evaluated, and final recommendations made at that time.

7.9 Corrosion

Based on preliminary testing, the onsite soils are moderately corrosive to buried metal objects. Buried ferrous metals should be protected against the effects of corrosive soils in accordance with the manufacturer's recommendations. Typical measures may include using non-corrosive backfill, protective coatings, wrapping, plastic pipes, or a combination of these methods. A corrosion engineer should be consulted if specific design recommendations are required by the improvement designer.

Per ACI 318-14, an exposure class of C1 would be applicable to metals encased in concrete (rebar in footings) due to being exposed to moisture from surrounding soils. Per Table 19.3.2.1 of ACI 318-14, the requirements for concrete with an exposure class of C1 are a minimum compressive strength of 2500 psi and a maximum water-soluble chloride ion content in concrete of 0.30 (percent by weight of cement).

7.10 Pavement Design

Pavement sections for the proposed streets shall be designed based on laboratory testing conducted on samples taken from the soil subgrade. Preliminarily, based on an assumed R-Value of 30, the pavement may be designed utilizing the sections presented in Table 7-5. These sections should be verified upon the completion of grading, based on R-Value testing. The ultimate pavement section design for public streets is under the City of Garden Grove's purview.

Table 7-5
Preliminary Pavement Sections

Traffic Index	Pavement Section Options OR	
5.0	3-inch AC on 6-inch AB	4-inch AC on 4-inch AB
5.5	3-inch AC on 7-inch AB	4-inch AC on 5-inch AB

AC-Asphalt Concrete
AB-Caltrans Class II Base

Construction of the streets should be accomplished in accordance with the current criteria of the City of Garden Grove. Prior to the placement of base material, the subgrade should be suitably moisture conditioned, processed and compacted to a minimum 95 percent of the laboratory maximum density (ASTM: D 1557) to at least twelve (12) inches below subgrade. After subgrade compaction, the exposed grade should then be "proof"-rolled with heavy equipment to ensure the grade does not "pump" and is verified as non-yielding. Aggregate base material should be placed on the compacted subgrade and compacted in-place to a minimum 95 percent of the laboratory standard obtained per ASTM: D 1557.

7.11 Site Drainage

Positive drainage away from the proposed structures should be provided and maintained. Roof, pad, and lot drainage should be collected and directed away from the structures toward approved disposal areas through drainage terraces, gutters, down drains, and other devices. Design fine grade elevations should be maintained through the life of the structure or if design fine grade elevations are altered, adequate area drains should be installed in order to provide rapid discharge of water, away from structures.

8.0 LOT MAINTENANCE

Ongoing maintenance of the improvements is essential to the long-term performance of structures. As such, the owners must implement certain maintenance procedures. The attached " Maintenance and Improvement Considerations" presented in the Appendix E may be included as part of the sales packet to educate the owners in issues related to drainage, maintenance, improvements, etc. The following recommendations should also be implemented.

8.1 Lot Drainage

Roof, pad, and lot drainage should be collected and directed away from structures and slopes and toward approved disposal areas. Design fine grade elevations should be maintained throughout the life of the structure or if design fine grade elevations are altered, adequate area drains should be installed in order to provide rapid discharge of water, away from structures and slopes. Residents should be made aware that they are responsible for maintenance and cleaning of all drainage terraces, down drains, and other devices that have been installed to promote structure and slope stability.

8.2 Burrowing Animals

Owners should undertake a program for the elimination of burrowing animals.

9.0 FUTURE PLAN REVIEWS

This report represents a geotechnical review of the site. As the project design for the project progresses, site specific geologic and geotechnical issues should be considered in the design and construction of the project. Consequently, future plan reviews may be necessary. These reviews may include reviews of:

- Grading Plans
- Foundation Plans
- Utility Plans

These plans should be forwarded to the project Geotechnical Consultant for review.

10.0 CLOSURE

10.1 Geotechnical Review

For the purposes of this report, multiple working hypotheses were established for the project, utilizing the available data and the most probable model is used for the analysis. Future information collected during the proposed grading operations is intended to evaluate the hypothesis and as such, some of the assumptions summarized in this report may need to be changed. Some modifications of the grading recommendations may become necessary, should the conditions encountered in the field differ from the conditions hypothesized in this report.

Plans and sections of the project specifications should be reviewed by Alta to evaluate conformance with the intent of the recommendations contained in this report. If the project description or final design varies from that described in herein, Alta must be consulted regarding the applicability of the recommendations contained herein and whether any changes are required. Alta accepts no liability for any use of its recommendations if the project description or final design varies and Alta is not consulted regarding the alterations.

10.2 Limitations

This report is based on the following: 1) the project as presented on the attached plan; 2) the information obtained from Alta's laboratory testing included herein; and 3) from the information presented in the referenced reports. The findings and recommendations are based on the results of the subsurface investigation, laboratory testing, and office analysis combined with an interpolation and extrapolation of conditions between and beyond the subsurface excavation locations. However, the materials adjacent to or beneath those observed may have different characteristics than those observed, and no precise representations are made as to the quality or extent of the materials not

observed. The results reflect an interpretation of the direct evidence obtained. Work performed by Alta has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the geotechnical profession currently practicing in the same locality under similar conditions. No other representation, either expressed or implied, and no warranty or guarantee is included or intended.

The recommendations presented in this report are based on the assumption that an appropriate level of field review will be provided by a geotechnical consultant who is familiar with the design and site geologic conditions. That field review shall be sufficient to confirm that geotechnical and geologic conditions exposed during grading are consistent with the geologic representations and corresponding recommendations presented in this report.

The conclusions and recommendations included in this report are applicable to the specific design of this project as discussed in this report. They have no applicability to any other project or to any other location and any and all subsequent users accept any and all liability resulting from any use or reuse of the data, opinions, and recommendations without the prior written consent of Alta.

Alta has no responsibility for construction means, methods, techniques, sequences, procedures, safety precautions, programs in connection with the construction, acts or omissions of the CONTRACTOR or any other person performing any of the construction, or for the failure of any of them to carry out the construction in accordance with the final design drawings and specifications.

APPENDIX A

REFERENCES

APPENDIX A

Selected References

California Code of Regulations, 2022, California Building Code, Title 24, Part 2, Volume 2, Based on the 2021 International Building Code, Effective Date January 1, 2023.

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APPENDIX B

Subsurface Investigation

APPENDIX B

Subsurface Investigation

Alta's subsurface investigation consisted of excavating, logging, and sampling three (3) hollow-stem auger borings. Details of the subsurface investigation are presented in Table B. The approximate location of the exploratory excavation is shown on the accompanying Plate 1 and the Geotechnical Logs are attached.

TABLE B
SURFACE INVESTIGATION DETAILS

Equipment	Range of Depths	Sampling Methods	Sample Locations
Hollow-stem auger	Up to 51.5 feet	1. Bulk 2. Ring Samples 3. SPT Samples	1. Bulk-Select Depths 2. Rings-Every 2.5 feet or 5 Feet 3. SPT-At Depths Below 20 Feet

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		grf	ltr	Description
Coarse Grained Soils: More than 50% retained on No. 200 sieve	Gravel and Gravelly Soils: More than 50% of coarse fraction retained on No. 4 sieve		GW	Well-graded gravels or gravel sand mixtures, little or no fines
			GP	Poorly-graded gravels or gravel sand mixture, little or no fines
			GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	Sand and Sandy Soils: More than 50% of coarse fraction passes on No. 4 sieve		SW	Well-graded sands or gravelly sands, little or no fines
			SP	Poorly-graded sands or gravelly sands, little or no fines
			SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, and-clay mixtures

Major Divisions		grf	ltr	
Fine Grained Soils: More than 50% passes on No. 200 sieve	Silts And Clays LL,<50		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silt-clays of low plasticity
	Silts And Clays LL,<50		MH	Inorganic silts, micaceous or diatomaceous fine or silty soils, elastic silts
			VH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly Organic Soils			PT	Peat and other highly organic soils

BOUNDARY CLASSIFICATION: Soils possessing characteristics of two groups are designated by combinations of group symbols.

PARTICLE SIZE LIMITS

U.S. STANDARD SERIES SIEVE				CLEAR SQUARE SIEVE OPENINGS			
200	40	10	4	3/4"	3"	12"	
Silts and Clays	Sand			Gravel		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

RELATIVE DENSITY

Sands and Gravels	Blows/Foot (SPT)
Very Loose	<4
Loose	4-10
Medium Dense	11-30
Dense	31-50
Very Dense	>50

CONSISTENCY CLASSIFICATION

Silts and Clays	Criteria
Very Soft	Thumb penetrates soil >1 in.
Soft	Thumb penetrates soil 1 in.
Firm	Thumb penetrates soil 1/4 in.
Stiff	Readily indented with thumbnail
Very Stiff	Thumbnail will not indent soil

HARDNESS

Bedrock
Soft
Moderately Hard
Hard
Very Hard

LABORATORY TESTS

Symbol	Test
DS	Direct Shear
DSR	Direct Shear (Remolded)
CON	Sieve Analysis
SA	Maximum Density
MAX	Resistance (R) Value
RV	Expansion Index
EI	Sand Equivalent
SE	Atterberg Limits
AL	Chemical Analysis
CHEM	Hydrometer Analysis
HY	

SOIL MOISTURE

Increasing Visual Moisture Content

Dry - Dry to touch

Moist - Damp, but no visible free water

wet - Visible free water

SIZE PROPORTIONS

Trace - <5%

Few - 5 to 10%

Some - 15 to 25%

KEY TO EXPLORATORY BORING LOGS

ALTA CALIFORNIA GEOTECHNICAL INC.

PLATE B

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	80	BORING DESIG.	B-1
DATE FINISHED	3/5/24	GW DEPTH (FT)	14	LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
0	80				SP	**ASPHALT** 1" asphaltic concrete over 1" asphaltic base.				
						YOUNG ALLUVIAL FAN DEPOSITS (Qyf): SAND, fine grained, brown, slightly moist, loose.				
		R	13			@2.5 ft. trace gravel.	5.5	99	22	
5	75	R	22		SP-SM	@5.0 ft. SAND WITH SILT, fine grained, tan brown, slightly moist, medium dense.	5.8	94	20	MAX, EI, HY, CHEM
10	70	R	26			@10.0 ft. fine to medium grained, tan gray, some gravel.	7.2	98	28	
						@13.7 ft. groundwater encountered.				
15	65	R	34			@15.0 ft. wet.	22.3	99	89	
20	60	R	18		SM	@20.0 ft. SILTY SAND, fine grained, gray, slightly moist, medium dense.	22.4	104	99	
25	55	S	3,5,5				35.1			
30	50	S	3,6,11				26.6			
35	45	S	4,7,9		SP	@35.0 ft. SAND, fine grained, gray, slightly moist, medium dense.	24.1			
						Continued;				
40										

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-1

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	80	BORING DESIG.	B-1
DATE FINISHED	3/5/24	GW DEPTH (FT)	14	LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
	40	S	4,7,12		SM	Continued; **YOUNG ALLUVIAL FAN DEPOSITS** (Qyf): SILTY SAND, fine grained, tan gray, slightly moist, medium dense.	31.3			
45	35	S	8,19,19			@45.0 ft. wet.	28.9			
50	30	S	7,13,13				26.6			
						TOTAL DEPTH 51.5 FEET GROUNDWATER AT 13.7 FEET NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-1

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	82	BORING DESIG.	B-2
DATE FINISHED	3/5/24	GW DEPTH (FT)	14	LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
0	82				SP	**ASPHALT**, 1" asphaltic concrete over 1" asphaltic base.				
						YOUNG ALLUVIAL FAN DEPOSITS (Qyf): SAND, fine grained, tan, slightly moist, loose.				
	80	R	16			@2.5 ft. tan gray, medium dense.	6.8	98	26	
5		R	20		SP-SM	@5.0 ft. SAND WITH SILT, fine grained, tan dark gray, slightly moist, medium dense.	4.9	98	19	CON, HY
	75									
10		R	30			@10.0 ft. fine to medium grained.	4.9	94	17	
	70									
						@14.0 ft. groundwater encountered.				
15		R	14			@15.0 ft. medium grained.	13.3	112	73	
	65									
20		R	11		SM	@20.0 ft. SILTY SAND, fine grained, gray, slightly moist, loose.	31.6	90	99	
	60									
25		R	20				24.3	99	96	
						TOTAL DEPTH 26.0 FEET GROUNDWATER AT 14.0 FEET NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-2

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	83	BORING DESIG.	B-3
DATE FINISHED	3/5/24	GW DEPTH (FT)	14	LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL** SILTY SAND, fine grained, dark brown, slightly moist, loose, with roots.				
	80	R	14		SP-SM	**YOUNG ALLUVIAL FAN DEPOSITS**(Qyf): SAND WITH SILT, fine grained, brown, slightly moist, medium dense.				
5		R	13		SP	@5.0 ft. SAND, fine grained, tan gray, slight moist, loose.	5.9	98	23	
	75									
10		R	27			@10.0 ft. medium dense.	2.8	99	11	
	70					@14.0 ft. groundwater encountered.				
15		R	27		SM	@15.0 ft. SILTY SAND, fine grained, gray, slightly moist, medium dense.	19.0	101	79	
	65									
20		R	29		ML	@20.0 ft. SANDY SILT, gray, slightly moist, firm.	33.6	86	97	
	60									
25		S	7,9,11		SP-SM	@25.0 ft. SAND WITH SILT, fine grained, gray, slightly moist, medium dense.	25.4	98	99	
						TOTAL DEPTH 26.0 FEET GROUNDWATER AT 14.0 FEET NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-3

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	83	BORING DESIG.	B-4
DATE FINISHED	3/5/24	GW DEPTH (FT)	19	LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL** SILTY SAND, fine grained, dark brown, slightly moist, loose, with roots.				
	80	R	11		SP-SM	**YOUNG ALLUVIAL FAN DEPOSITS**(Qyf): SAND WITH SILT, fine grained, brown, slightly moist, medium dense, trace roots.	9.1	105	42	
5		R	15		SP	@5.0 ft. SAND, fine grained, tan gray, slightly moist, medium dense.	8.5	99	33	
	75									
10		R	15		SM	@10.0 ft. SILTY SAND, fine grained, brown, moist, medium dense.	7.2	103	32	
	70									
15		R	27		SP	@15.0 ft. SAND, fine to medium grained, tan gray, moist, medium dense.	16.9	102	71	
	65					@18.6 ft. groundwater encountered.				
20		R	12		SM	@20.0 ft. SILTY SAND, fine grained, dark gray, moist, medium dense.	22.3	101	92	
	60									
25		S	3,4,6			@25.0 ft. gray, slightly moist.	27.5			
	55									
30		S	4,1,2			@30.0 ft. loose.	28.9			
	50									
35		S	3,2,3		ML	@35.0 ft. SANDY SILT, gray, moist, firm.	25.5			
	45					Continued;				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

▼ GROUNDWATER
► SEEPAGE
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B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-4

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	83	BORING DESIG.	B-4
DATE FINISHED	3/5/24	GW DEPTH (FT)	19	LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
		S	3,6,8		ML	Continued; **YOUNG ALLUVIAL FAN DEPOSITS**(Qyf): SANDY SILT, gray, moist, firm.	25.6			
40										
45		S	3,6,9		SM	@45.0 ft. SILTY SAND, fine grained, gray, slightly moist, medium dense.	23.8			
35										
50		S	2,3,4		SP	@50.0 ft. SAND, gray, fine grained, slightly moist, loose.	30.5			
						TOTAL DEPTH 51.5 FEET GROUNDWATER AT 18.6 FEET NO CAVING OBSERVED				

SAMPLE TYPES:
R RING (DRIVE) SAMPLE
S SPT (SPLIT SPOON) SAMPLE
B BULK SAMPLE T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-4

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	81	BORING DESIG.	P-1
DATE FINISHED	3/5/24	GW DEPTH (FT)		LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
	80				SM	**TOPSOIL** SILTY SAND, fine grained, brown, slightly moist, loose, with roots.				
					SM	**YOUNG ALLUVIAL FAN DEPOSITS** (Qyf): SILTY SAND, fine grained, brown, slightly moist, medium dense, trace roots.				
5					SP	@5.0 ft. SAND, fine grained, tan brown, slightly moist, medium dense.				
	75					TOTAL DEPTH 6.0 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-5

GEOTECHNICAL BORING LOG

PROJECT NO.	1-0517	PROJECT NAME	9562 Chapman Ave		
DATE STARTED	3/5/24	GROUND ELEV.	83	BORING DESIG.	P-2
DATE FINISHED	3/5/24	GW DEPTH (FT)		LOGGED BY	YH
DRILLER	2R	DRIVE WT.	140 lbs	NOTE	
TYPE OF DRILL RIG	8" Hollow Stem Auger	DROP	30 in.		

DEPTH (Feet)	ELEV	SAMPLE TYPE	BLOWS	LITHOLOGY	GROUP SYMBOL	GEOTECHNICAL DESCRIPTION	MOISTURE CONT (%)	DRY (pcf) DENSITY	SAT-URATION (%)	OTHER TESTS
					SM	**TOPSOIL** SILTY SAND, fine grained, brown, slightly moist, loose, with roots.				
	80				SM	**YOUNG ALLUVIAL FAN DEPOSITS** (Qyf): SILTY SAND, fine grained, brown, slightly moist, medium dense, trace roots.				
5					SP	@5.0 ft. SAND, fine grained, tan brown, slightly moist, medium dense.				
						TOTAL DEPTH 6.0 FEET NO GROUNDWATER ENCOUNTERED NO CAVING OBSERVED				

SAMPLE TYPES:
- R RING (DRIVE) SAMPLE
- S SPT (SPLIT SPOON) SAMPLE
- B BULK SAMPLE
- T TUBE SAMPLE

GROUNDWATER
SEEPAGE
J: JOINTING C: CONTACT
B: BEDDING F: FAULT
S: SHEAR RS: RUPTURE SURFACE

Alta California Geotechnical, Inc.

P.N. 1-0517 PLATE B-6

APPENDIX C

Laboratory Testing

LABORATORY TESTING

The following laboratory tests were performed on a representative sample in accordance with the applicable latest standards or methods from the ASTM, California Building Code (CBC) and California Department of Transportation.

Classification

Soils were classified with respect to the Unified Soil Classification System (USCS) in accordance with ASTM D-2487 and D-2488.

Particle Size Analysis

Modified hydrometer testing was conducted to aid in classification of the soil. The results of the particle size analysis are presented in Table C.

Maximum Density/Optimum Moisture

The maximum dry density and optimum moisture content of one representative bulk samples were evaluated in accordance with ASTM D-1557. The results are summarized in Table C.

Expansion Index Tests

One (1) expansion index test was performed to evaluate the expansion potential of typical on-site soil. Testing was carried out in general conformance with ASTM Test Method D-4829. The results are presented in Table C.

Consolidation Tests

Consolidation testing was performed on two (2) relatively "undisturbed" soil sample at its natural moisture content in accordance with procedures outlined in ASTM D-2435. The samples were placed in a consolidometer and loads were applied incrementally in geometric progression. The samples (2.42-inches in diameter and 1-inch in height) were permitted to consolidate under each load increment until the slope of the characteristic linear secondary compression portion of the thickness versus log of time plot was apparent. The percent consolidation for each load cycle was recorded as the ratio of the amount of vertical

compression to the original 1-inch height. The consolidation test results are shown on Plate C-1 and C-2.

Chemical Analyses

Chemical testing was performed on one select samples by Alta. The results of these tests (sulfate content, resistivity, chloride content and pH) are presented on Table C.

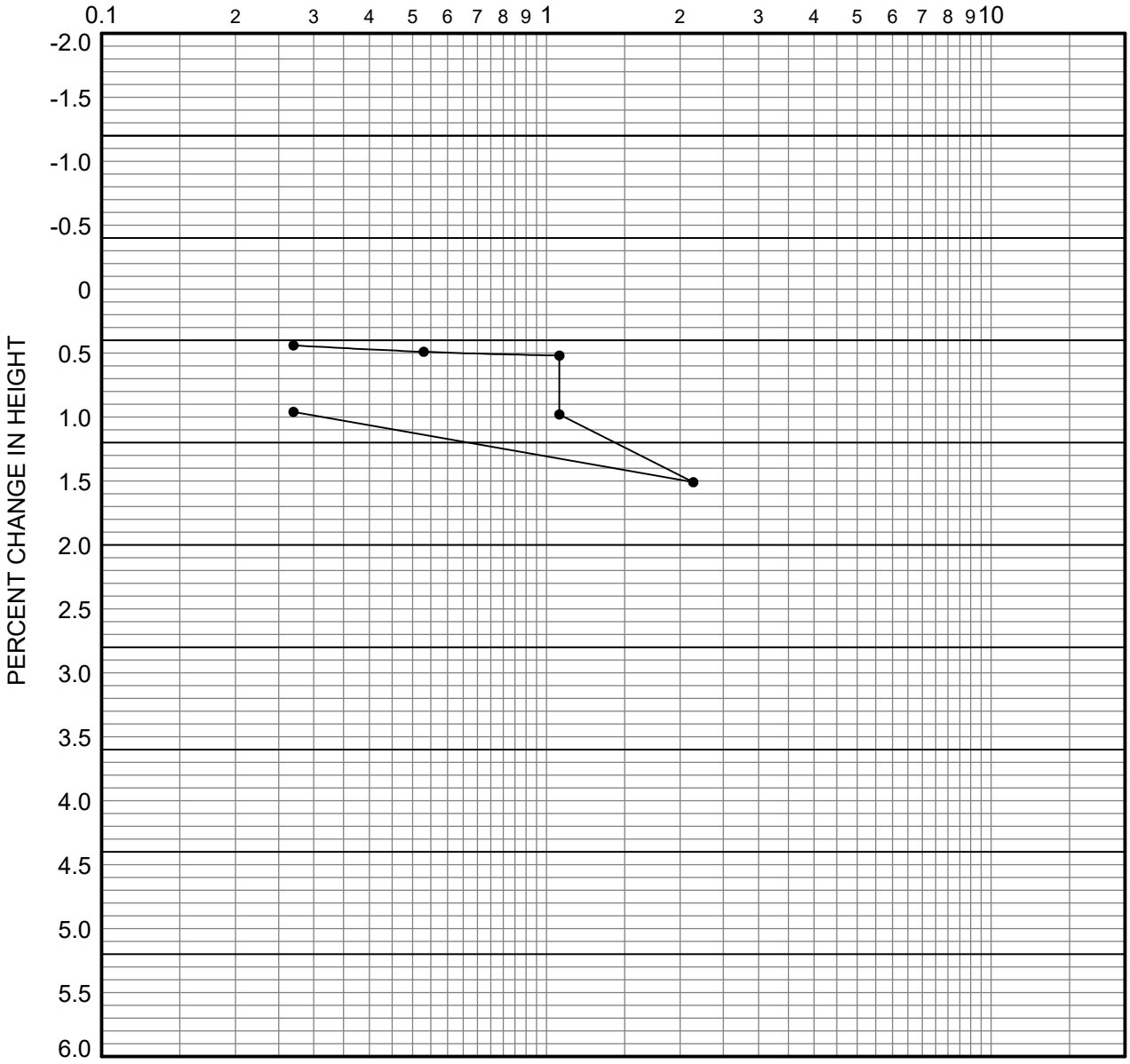
Atterberg Limits

Atterberg Limits testing was performed on four (4) select samples by Alta. The results of these tests are presented on Table C.

TABLE C
SUMMARY OF LABORATORY TEST DATA
P.N. 1-0517

BORING	DEPTH (FEET)	SOIL DESCRIPTION	GROUP SYMBOL	MAXIMUM DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)	DIRECT SHEAR	PLUS NO.4 SEIVE (plus 4.76mm) (%)	SAND (4.76mm-0.075mm) (%)	SILT (0.075mm-0.005mm) (%)	CLAY (minus 0.005mm) (%)	EXPANSION INDEX UBC 18-2	CONSOL	OTHER TESTS REMARKS
B-1	5	Sand with Silt (Qyf)	SP-SM	120.3	11.0		2	88	6	4	0		Sulf: 0.002% Chlr: 50 ppm pH: 7.8, Resis: 16,238 Ohm-cm
B-2	5	Sand with Silt (Qyf)	SP-SM				1	93	5	1		SEE PLATE C	

COMPRESSIVE STRESS IN TSF



boring	depth (ft.)	dry density (pcf)	in situ moist. (%)	in situ satur. (%)	-200 sieve (%)	group symbol	typical names
B-2	5.0	98	4.9	19	6	SP-SM	Sand with Silt (Qyf)

REMARKS: WATER ADDED AT 1.07 TSF

CONSOLIDATION CURVE

Alta California Geotechnical, Inc.

P.N. 1-0517

PLATE C

APPENDIX D

Liquefaction Analysis

APPENDIX D

LIQUEFACTION ANALYSIS

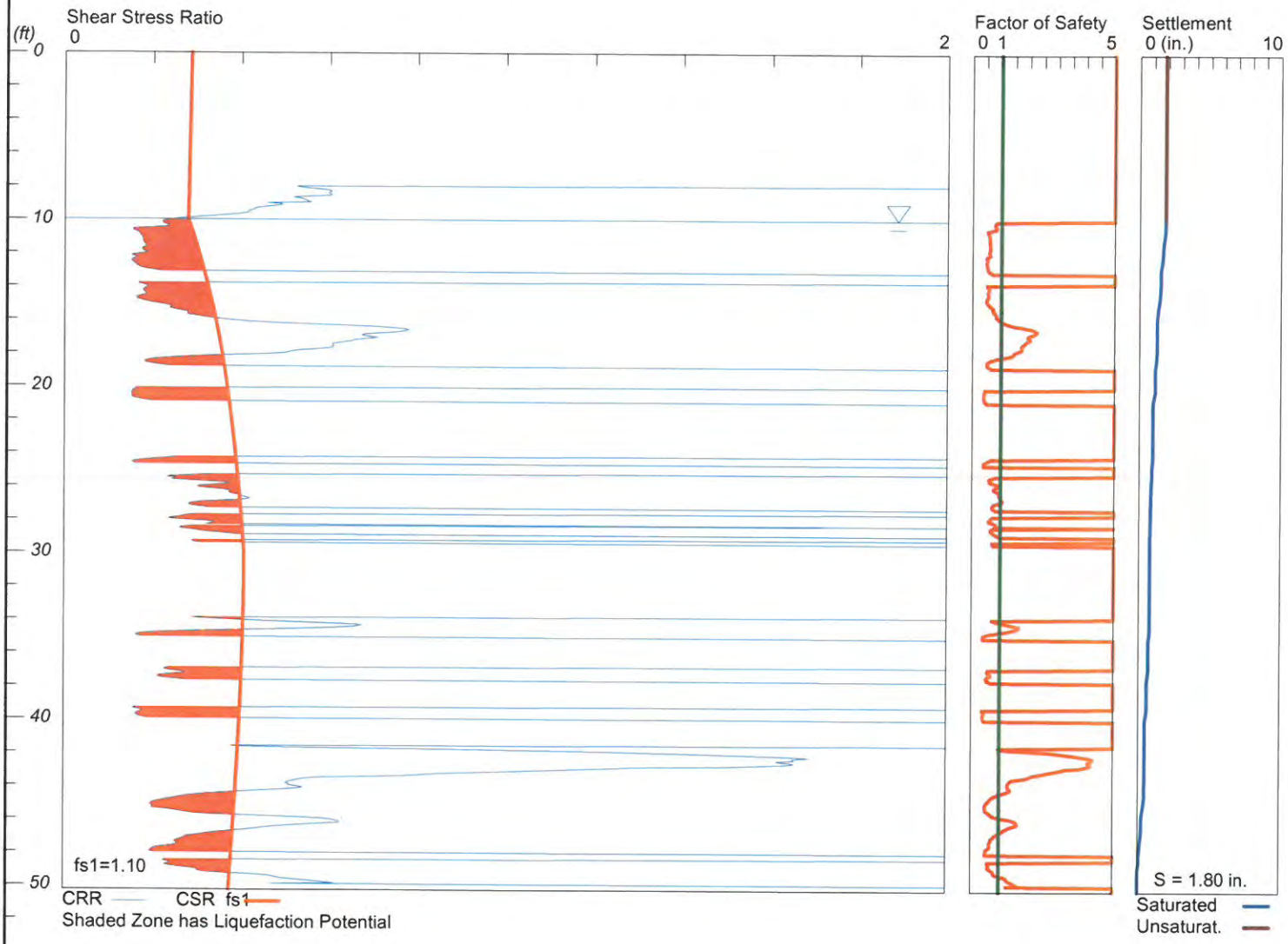
A liquefaction analysis was performed for the site based on CPT data for CPT-1 and CPT-2. Our analysis was based on City of Garden Grove guidelines (City of Garden Grove, 2020) and utilized two methods. Method 1 utilized 2/3 of the PGA_M, the predominant earthquake magnitude assuming a 10% probability of exceedance in 50 years, and a factor of safety of 1.1. Method 2 utilized the PGA_M, the predominant earthquake magnitude assuming a 2% probability of exceedance in 50 years, and a factor of safety of 1.0. The results for Method 1 are presented on Plates D-1 and D-3, and the results for Method 2 are presented on Plates D-2 and D-4.

LIQUEFACTION ANALYSIS

Method 1

Hole No.=CPT-1 Water Depth=10 ft

Magnitude=6.7
Acceleration=0.40g



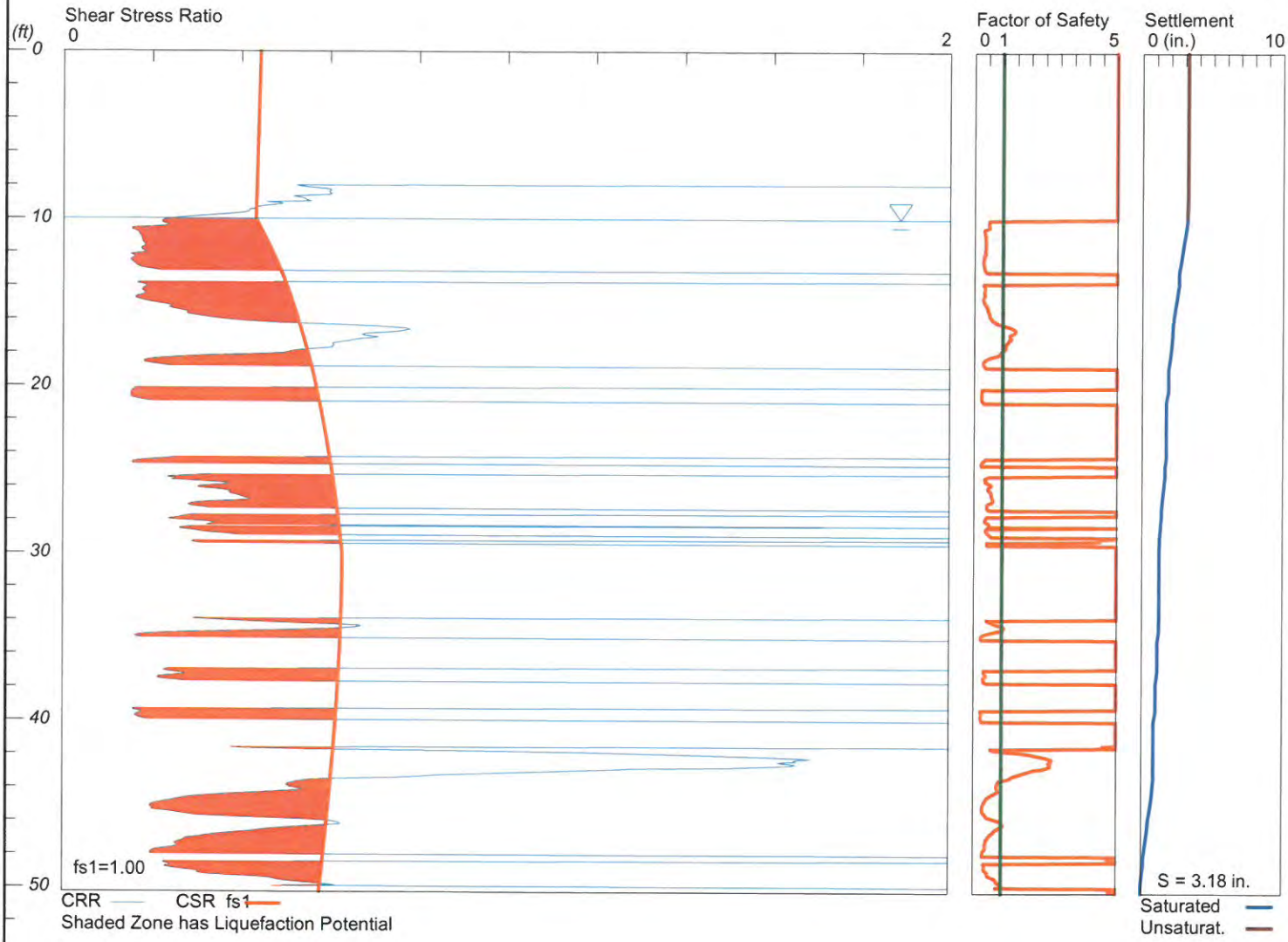
LiquefyPro CivilTech Software USA www.civiltech.com

LIQUEFACTION ANALYSIS

Method 2

Hole No.=CPT-1 Water Depth=10 ft

Magnitude=6.7
Acceleration=0.68g

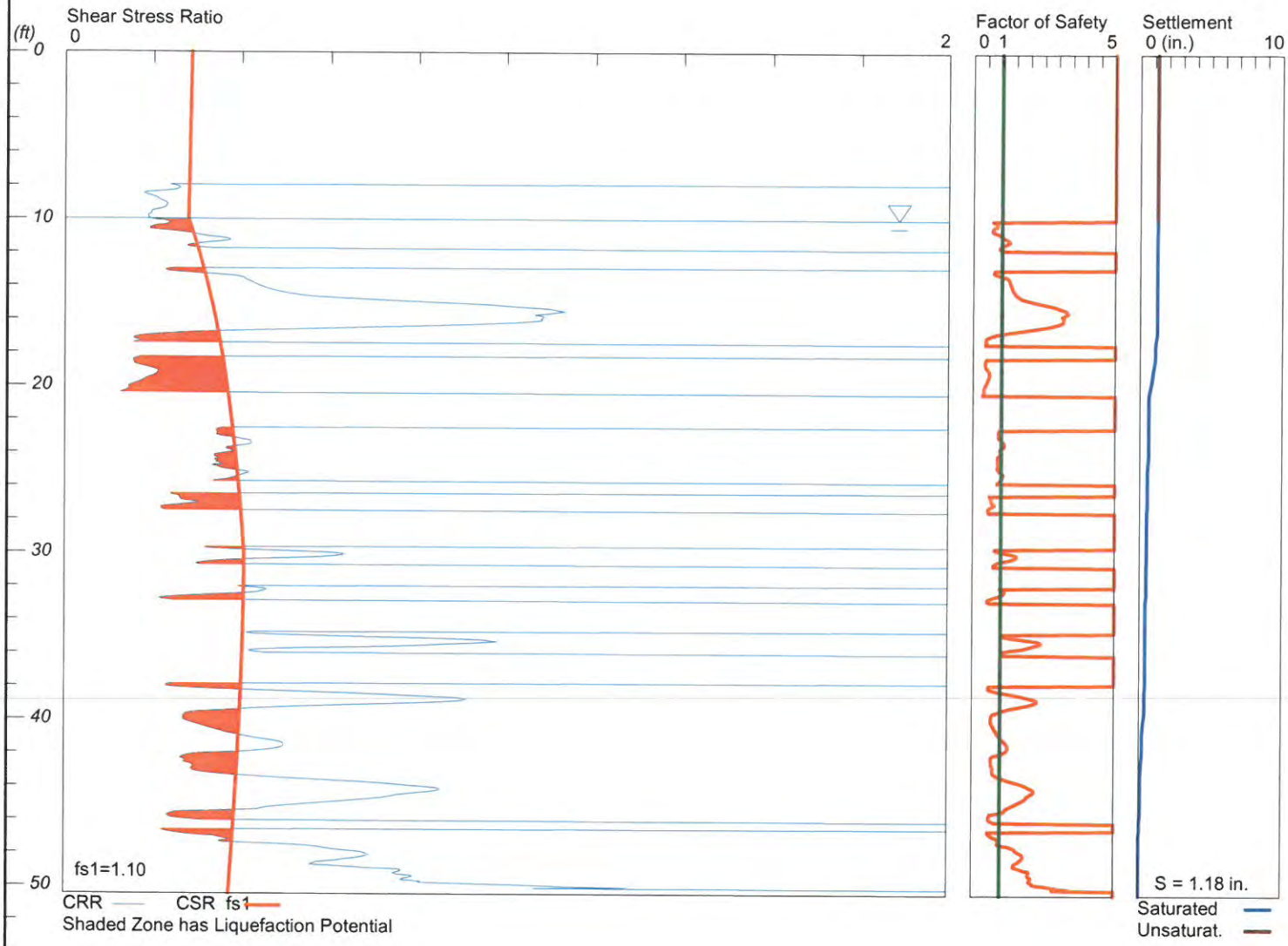


LIQUEFACTION ANALYSIS

Method 1

Hole No.=CPT-2 Water Depth=10 ft

Magnitude=6.7
Acceleration=0.40g

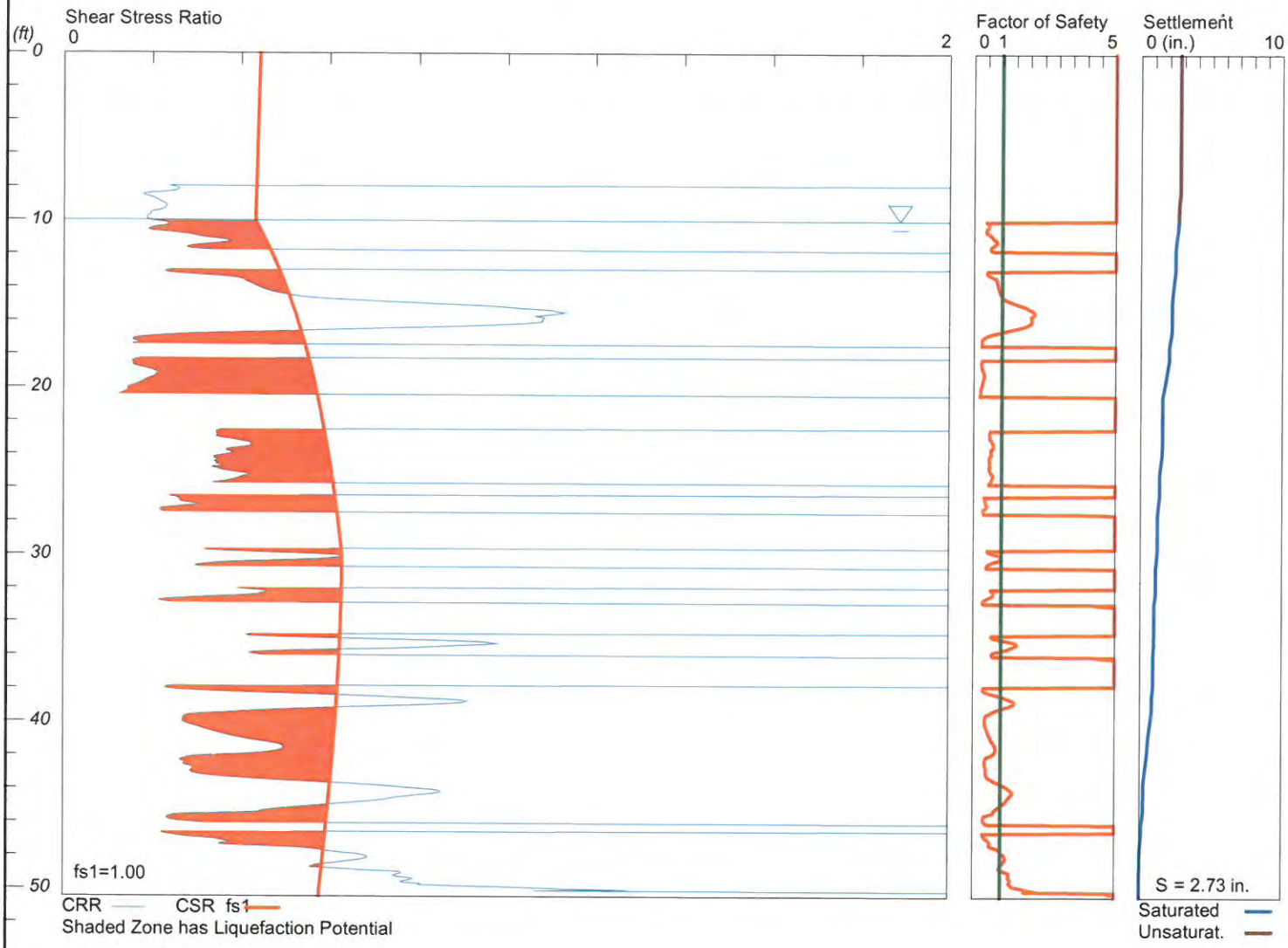


LIQUEFACTION ANALYSIS

Method 2

Hole No.=CPT-2 Water Depth=10 ft

Magnitude=6.7
Acceleration=0.68g



APPENDIX E

Maintenance and Improvement Considerations

MAINTENANCE AND IMPROVEMENT CONSIDERATIONS

General

Owners purchasing property must assume a certain degree of responsibility for improvements and for maintaining conditions around their home. Of primary importance from a geotechnical standpoint are maintaining drainage patterns and minimizing the soil moisture variation below all improvements. Such design, construction and owner maintenance provisions may include:

- Employing contractors for improvements who design and build in recognition of local building codes and specific site soils conditions.
- Establishing and maintaining positive drainage away from all foundations, walkways, driveways, patios, and other improvements.
- Avoiding the construction of planters adjacent to structural improvements. Alternatively, planter sides/bottoms can be sealed with an impermeable membrane and drained away from the improvements via subdrains into approved disposal areas.
- Sealing and maintaining construction/control joints within concrete slabs and walkways to reduce the potential for moisture infiltration into the subgrade soils.
- Utilizing landscaping schemes with vegetation that requires minimal watering. Watering should be done in a uniform manner, as equally as possible on all sides of the foundation, keeping the soil "moist" but not allowing the soil to become saturated.
- Maintaining positive drainage away from structures and providing roof gutters on all structures with downspouts that are designed to carry roof runoff directly into area drains or discharged well away from the foundation areas.
- Avoiding the placement of trees closer to the proposed structures than a distance of one-half the mature height of the tree.
- Observation of the soil conditions around the perimeter of the structure during extremely hot/dry or unusually wet weather conditions so that modifications can be made in irrigation programs to maintain relatively uniform moisture conditions.

Sulfates

Owners should be cautioned against the import and use of certain inorganic fertilizers, soil amendments, and/or other soils from offsite sources in the absence of specific information relating to their chemical composition. Some fertilizers have been known to leach sulfate compounds into soils and increase the sulfate concentrations to potentially detrimental levels.

Site Drainage

- The owners should be made aware of the potential problems that may develop when drainage is altered through construction of hardscape improvements. Ponded water, drainage over the slope face, leaking irrigation systems, overwatering, or other conditions which could lead to ground saturation must be avoided.
- No water should be allowed to flow over the slopes. No alteration of pad gradients should be allowed that would prevent pad and roof runoff from being directed to approved disposal areas.
- Drainage patterns have been established at the time of the fine grading should be maintained throughout the life of the structure. No alterations to these drainage patterns should be made unless designed by qualified professionals in compliance with local code requirements and site-specific soils conditions.

Slope Drainage

- Residents should be made aware of the importance of maintaining and cleaning all interceptor ditches, drainage terraces, down drains, and any other drainage devices, which have been installed to promote slope stability.
- Subsurface drainage pipe outlets may protrude through slope surfaces and/or wall faces. These pipes, in conjunction with the graded features, are essential to slope and wall stability and must be protected in-place. They should not be altered or damaged in any way.

Planting and Irrigation of Slopes

- Seeding and planting of the slopes should be planned to achieve, as rapidly as possible, a well-established and deep-rooted vegetal cover requiring minimal watering.
- It is the responsibility of the landscape architect to provide such plants initially and of the residents to maintain such planting. Alteration of such a planting scheme is at the resident's risk.
- The resident is responsible for proper irrigation and for maintenance and repair of properly installed irrigation systems. Leaks should be fixed immediately.

- Sprinklers should be adjusted to provide maximum uniform coverage with a minimum of water usage and overlap. Overwatering with consequent wasteful runoff and serious ground saturation must be avoided.
- If automatic sprinkler systems are installed, their use must be adjusted to account for seasonal and natural rainfall conditions.

Burrowing Animals

- Residents must undertake a program to eliminate burrowing animals. This must be an ongoing program in order to promote slope stability.

Owner Improvement

Owner improvements (pools, spas, patio slabs, retaining walls, planters, etc.) should be designed to account for the terrain of the project, as well as expansive soil conditions and chemical characteristics. Design considerations on any given lot may need to include provisions for differential bearing materials, ascending/descending slope conditions, bedrock structure, perched (irrigation) water, special geologic surcharge loading conditions, expansive soil stresses, and long-term creep/settlement.

All owner improvements should be designed and constructed by qualified professionals utilizing appropriate design methodologies, which account for the on-site soils and geologic conditions. Each lot and proposed improvement should be evaluated on an individual basis.

Setback Zones

Manufactured slopes maybe subject to long-term settlement and creep that can manifest itself in the form of both horizontal and vertical movement. These movements typically are produced as a result of weathering, erosion, gravity forces, and other natural phenomenon. A setback adjacent to slopes is required by most building codes, including the California Building Code. This zone is intended to locate and support the residential structures away from these slopes and onto soils that are not subject to the potential adverse effects of these natural phenomena.

The owner may wish to construct patios, walls, walkways, planters, swimming pools, spas, etc. within this zone. Such facilities may be sensitive to settlement and creep and should not be

constructed within the setback zone unless properly engineered. It is suggested that plans for such improvements be designed by a professional engineer who is familiar with grading ordinances and design and construction requirements. In addition, we recommend that the designer and contractor familiarize themselves with the site specific geologic and geotechnical conditions on the specific lot.

APPENDIX F

Earthwork Specifications

ALTA CALIFORNIA GEOTECHNICAL, INC.
EARTHWORK SPECIFICATIONS

These specifications present the generally accepted standards and minimum earthwork requirements for the development of the project. These specifications shall be the project guidelines for earthwork except where specifically superseded in preliminary geology and soils reports, grading plan review reports or by the prevailing grading codes or ordinances of the controlling agency.

A. GENERAL

1. The Contractor shall be responsible for the satisfactory completion of all earthwork in accordance with the project plans and specifications.

2. The project Geotechnical Engineer and Engineering Geologist, or their representatives, shall provide observation and testing services, and Geotechnical consultation for the duration of the project.

3. All clearing, grubbing, stripping and site preparation for the project shall be accomplished by the Contractor to the satisfaction of the Geotechnical Engineer/Engineering Geologist.

4. It is the Contractor's responsibility to prepare the ground surface to receive fill to the satisfaction of the Geotechnical Engineer and to place, spread, mix, moisture condition, and compact the fill in accordance with the job specifications and as required by the Geotechnical Engineer. The Contractor shall also remove all material considered by the Geotechnical Engineer to be unsuitable for use in the construction of engineered fills.

5. The Contractor shall have suitable and sufficient equipment in operation to handle the amount of fill being placed. When necessary, equipment will be shut down temporarily in order to permit the proper preparation of fills.

B. PREPARATION OF FILL AREAS

1. Excessive vegetation and all deleterious material should be disposed of offsite as required by the Geotechnical Engineer.

   Existing fill, soil, alluvium or rock materials determined by the Geotechnical Engineer as being unsuitable for placement in compacted fills shall be removed and hauled from the site. Where applicable, the Contractor may obtain the

approval of the Soils Engineer and the controlling authorities for the project to dispose of the above described materials, or a portion thereof, in designated areas onsite.

After removal of the deleterious materials have been accomplished, earth materials deemed unsuitable in their natural, in-place condition, shall be removed as recommended by the Geotechnical Engineer/Engineering Geologist.

2. Upon achieving a suitable bottom for fill placement, the exposed removal bottom shall be disced or bladed by the Contractor to the satisfaction of the Geotechnical Engineer. The prepared ground surfaces shall then be brought to the specified moisture content mixed as required, and compacted and tested as specified. In localities where it is necessary to obtain the approval of the controlling agency prior to placing fill, it will be the Contractor's responsibility to contact the proper authorities to visit the site.

3. Any underground structure such as cesspools, cisterns, mining shafts, tunnels, septic tanks, wells, pipelines or other structures not located prior to grading are to be removed or treated in a manner prescribed by the Geotechnical Engineer and/or the controlling agency for the project.

C. ENGINEERED FILLS

1. Any material imported or excavated on the property may be utilized as fill, provided the material has been determined to be suitable by the Geotechnical Engineer. Deleterious materials shall be removed from the fill as directed by the Geotechnical Engineer.

2. Rock or rock fragments less than twelve inches in the largest dimension may be utilized in the fill, provided they are not placed in concentrated pockets and the distribution of the rocks is approved by the Geotechnical Engineer.

3. Rocks greater than twelve inches in the largest dimension shall be taken offsite, or placed in accordance with the recommendations of the Geotechnical Engineer in areas designated as suitable for rock disposal.

4. All materials to be used as fill, shall be tested in the laboratory by the Geotechnical Engineer. Proposed import materials shall be approved by the Geotechnical Engineer 48 hours prior to importation.

5. The fill materials shall be placed by the Contractor in lifts, that when compacted, shall not exceed six inches. Each lift shall be spread evenly and shall be

thoroughly mixed to achieve a near uniform moisture condition and a uniform blend of materials.

All compaction shall be achieved at or above the optimum moisture content, as determined by the applicable laboratory standard. The Contractor will be notified if the fill materials are too wet or too dry to achieve the required compaction standard.

6. When the moisture content of the fill material is below the limit specified by the Geotechnical Engineer, water shall be added and the materials shall be blended until a uniform moisture content, within specified limits, is achieved. When the moisture content of the fill material is above the limits specified by the Geotechnical Engineer, the fill materials shall be aerated by discing, blading, mixed with dryer fill materials, or other satisfactory methods until the moisture content is within the specified limits.

7. Each fill lift shall be compacted to the minimum project standards, in compliance with the testing methods specified by the controlling governmental agency, and in accordance with recommendations of the Geotechnical Engineer.

   In the absence of specific recommendations by the Geotechnical Engineer to the contrary, the compaction standard shall be the most recent version of ASTM:D 1557.

8. Where a slope receiving fill exceeds a ratio of five-horizontal to one-vertical, the fill shall be keyed and benched through all unsuitable materials into sound bedrock or firm material, in accordance with the recommendations and approval of the Geotechnical Engineer.

9. Side hill fills shall have a minimum key width of 15 feet into bedrock or firm materials, unless otherwise specified in the soil report and approved by the Geotechnical Engineer in the field.

10. Drainage terraces and subdrainage devices shall be constructed in compliance with the ordinances of the controlling governmental agency and/or with the recommendations of the Geotechnical Engineer and Engineering Geologist.

11. The Contractor shall be required to maintain the specified minimum relative compaction out to the finish slope face of fill slopes, buttresses, and stabilization fills as directed by the Geotechnical Engineer and/or the governing agency for the project. This may be achieved by either overbuilding the slope and cutting

back to the compacted core; by direct compaction of the slope face with suitable equipment; or by any other procedure which produces the required result.

12. The fill portion of fill-over-cut slopes shall be properly keyed into rock or firm material; and the fill area shall be stripped of all soil or unsuitable materials prior to placing fill.

    The design cut portion of the slope should be made first and evaluated for suitability by the Engineering Geologist prior to placement of fill in the keyway above the cut slope.

13. Pad areas in cut or natural ground shall be approved by the Geotechnical Engineer. Finished surfaces of these pads may require scarification and recompaction, or over excavation as determined by the Geotechnical Engineer.

D. CUT SLOPES

1. The Engineering Geologist shall observe all cut slopes and shall be notified by the Contractor when cut slopes are to be started.

2. If, during the course of grading, unforeseen adverse or potentially adverse geologic conditions are encountered, the Engineering Geologist and Soil Engineer shall investigate, analyze and make recommendations to remediate these problems.

3. Non-erodible interceptor swales shall be placed at the top of cut slopes that face the same direction as the superjacent, prevailing drainage.

4. Unless otherwise specified in specific geotechnical reports, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of controlling governmental agencies.

5. Drainage terraces shall be constructed in compliance with the ordinances of the controlling governmental agencies, and/or in accordance with the recommendations of the Geotechnical Engineer or Engineering Geologist.

E. GRADING CONTROL

1. Fill placement shall be observed and tested by the Geotechnical Engineer and/or his representative during grading.

   Field density tests shall be made by the Geotechnical Engineer and/or his representative to evaluate the compaction and moisture compliance of each fill lift. Density tests shall be conducted at intervals not to exceed two feet of fill

height. Where sheepsfoot rollers are used, the fill may be disturbed to a depth of several inches. Density determinations shall be taken in the compacted material below the disturbed surface at a depth determined by the Geotechnical Engineer or his representative.

2. Where tests indicate that the density of any layer of fill, or portion thereof, is below the required relative compaction, or improper moisture content is in evidence, that particular layer or portion thereof shall be reworked until the required density and/or moisture content has been attained. Additional fills shall not be placed over an area until the previous lift of fill has been tested and found to meet the density and moisture requirements for the project and the previous lift is approved by the Geotechnical Engineer.

3. When grading activities are interrupted by heavy rains, fill operations shall not be resumed until field observations and tests by the Geotechnical Engineer indicate the moisture content and density of the fill are within the specified limits.

4. During construction, the Contractor shall properly grade all surfaces to maintain good drainage and prevent the ponding of water. The Contractor shall take remedial action to control surface water and to prevent erosion of graded areas until such time as a permanent drainage and erosion devices have been installed.

5. Observation and testing by the Geotechnical Engineer and/or his representative shall be conducted during filling and compacting operations in order that he will be able to state in his opinion that all cut and filled areas are graded in accordance with the approved specifications.

6. Upon the completion of grading activities and after the Geotechnical Engineer and Engineering Geologist have finished their observations of the work, final reports shall be submitted. No further excavation or fill placement shall be undertaken without prior notification of the Geotechnical Engineer and/or Engineering Geologist.

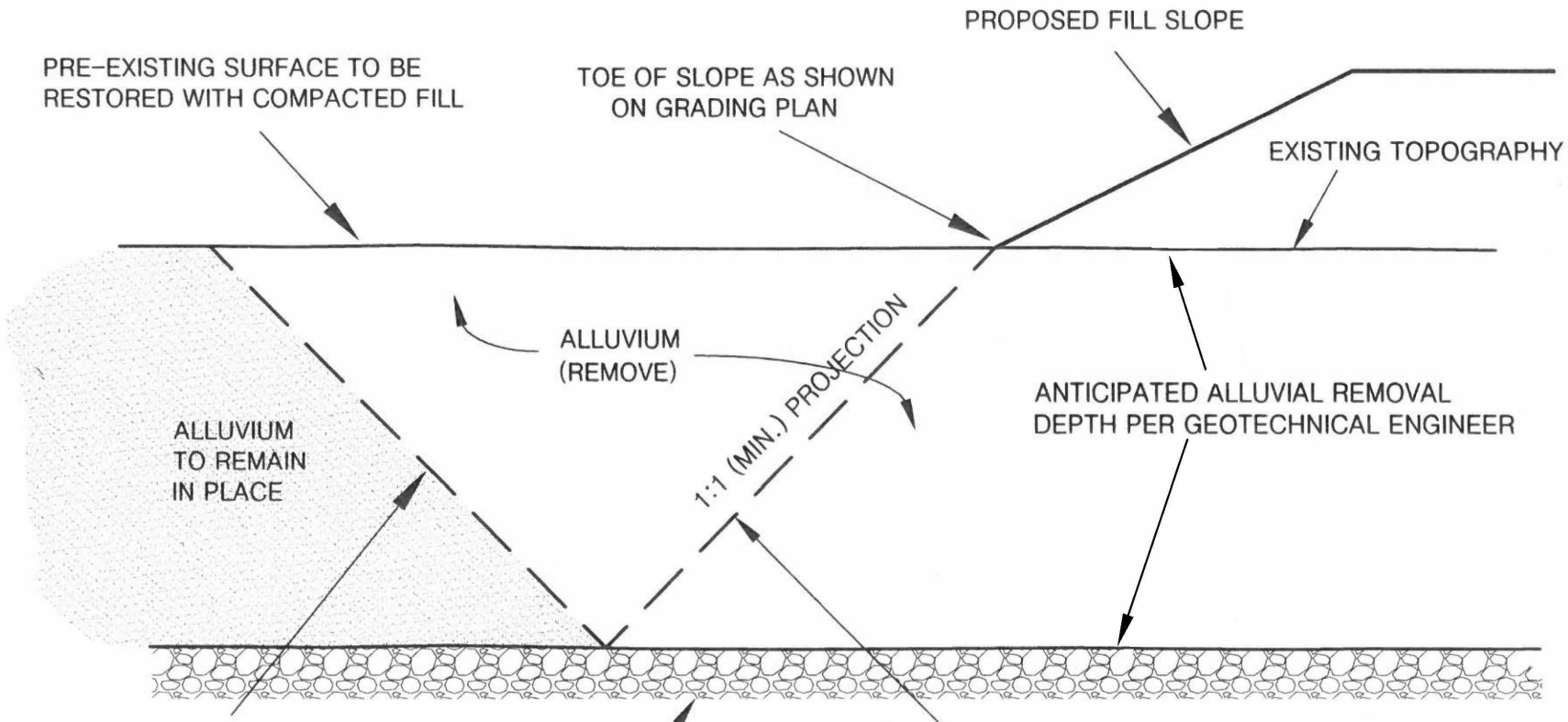
F. **FINISHED SLOPES**

All finished cut and fill slopes shall be planted and irrigated and/or protected from erosion in accordance with the project specifications, governing agencies, and/or as recommended by a landscape architect.

APPENDIX G

Grading Details

DETAIL FOR FILL SLOPE TOEING OUT ON FLAT ALLUVIATED CANYON

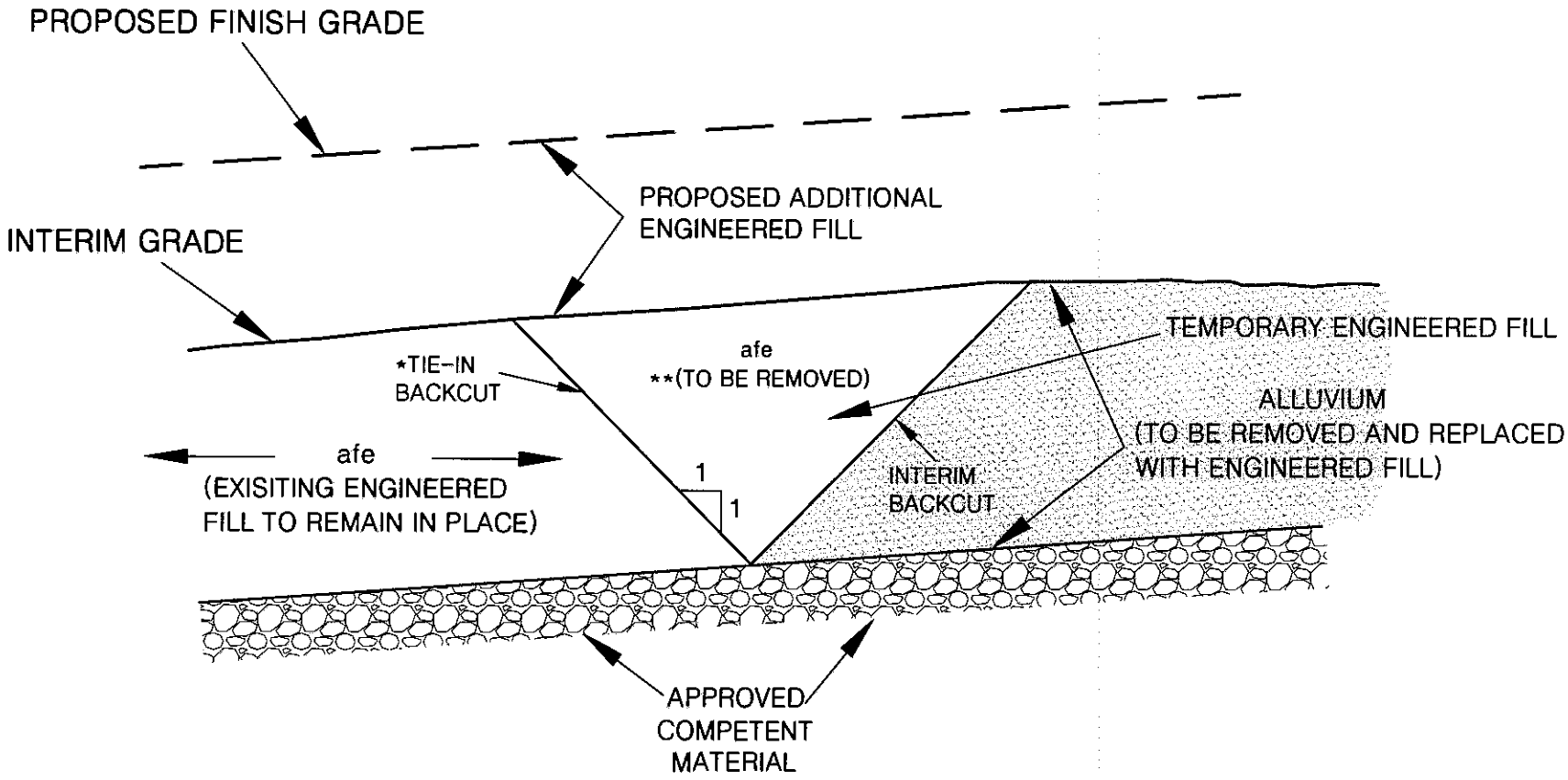


ALTA CALIFORNIA GEOTECHNICAL, INC.
VER. 3/12

PLATE G-1

PATH: C:\Users\Jinks\Desktop\Drafting\GRADING DETAILS\G-1.dwg

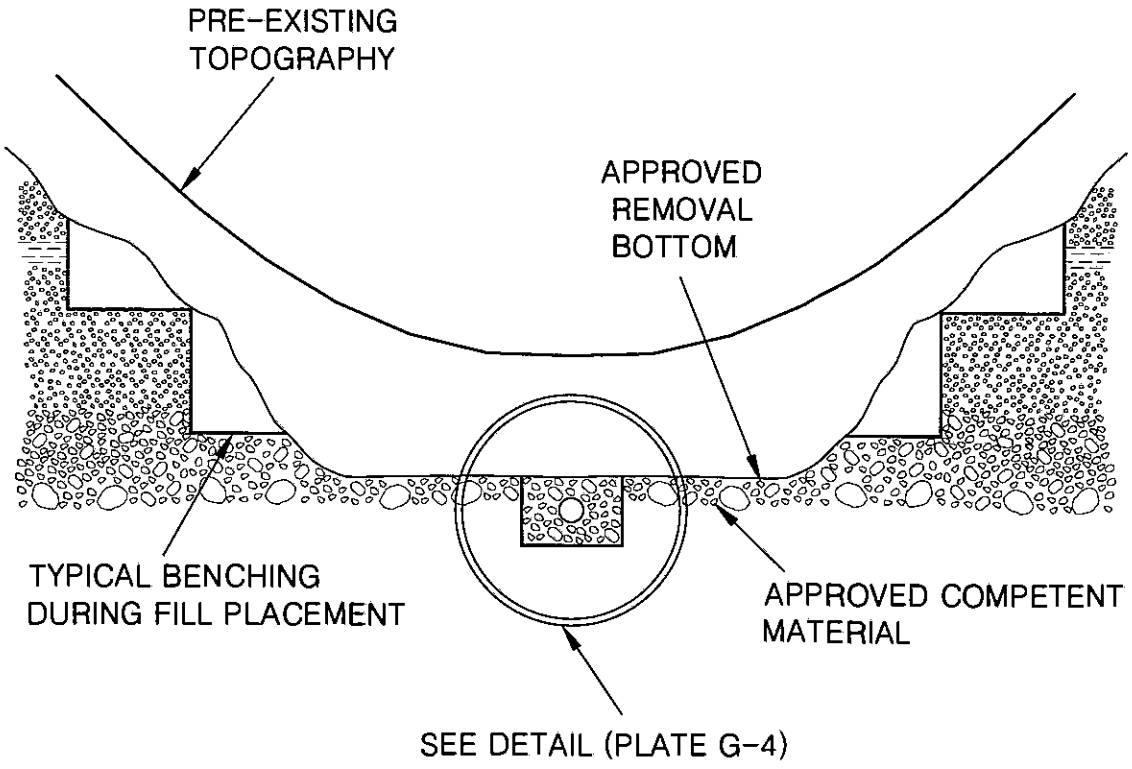
REMOVAL ADJACENT TO EXISTING FILL



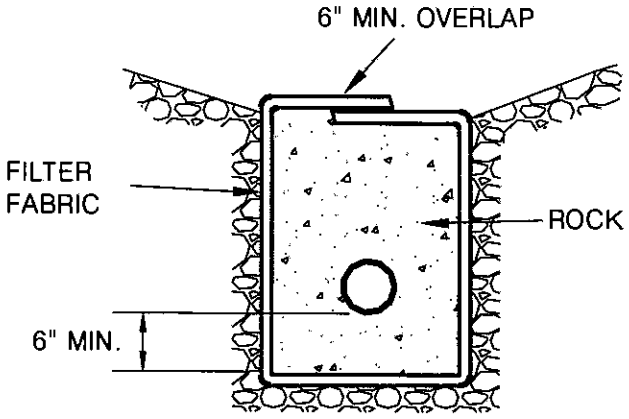
*INITIATE 1:1 TIE-IN BACKCUT TO INTERCEPT TOE OF INTERIM BACKCUT

**AS PART OF TIE-IN FOR ADDITIONAL ENGINEERED FILL

CANYON SUBDRAIN



CANYON SUBDRAIN DETAIL



PERFORATED PIPE SURROUNDED WITH ROCK AND FILTER FABRIC

ROCK: MIN. VOLUME OF 9 CU.FT. PER LINEAR FT. OF 3/4 IN. MAX. ROCK

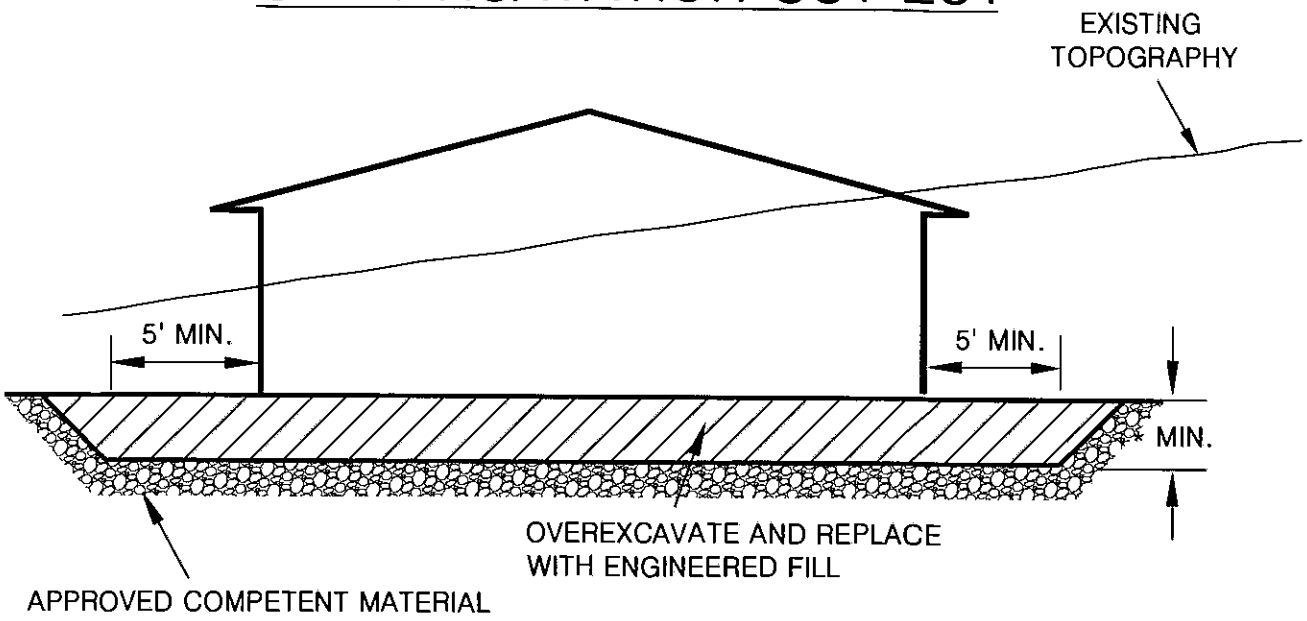
PIPE: 6 IN. ABS OR PVC PIPE WITH A MINIMUM OF 8 PERFORATIONS (1/4-IN. DIA.) PER LINEAL FT. IN BOTTOM HALF OF PIPE ASTM D2751, SDR 35, OR ASTM D3034 OR ASTM D1527, SCHD. 40 ASTM D1785, SCHD. 40

FILTER FABRIC: MIRAFI 140 FILTER FABRIC OR APPROVED EQUIVALENT

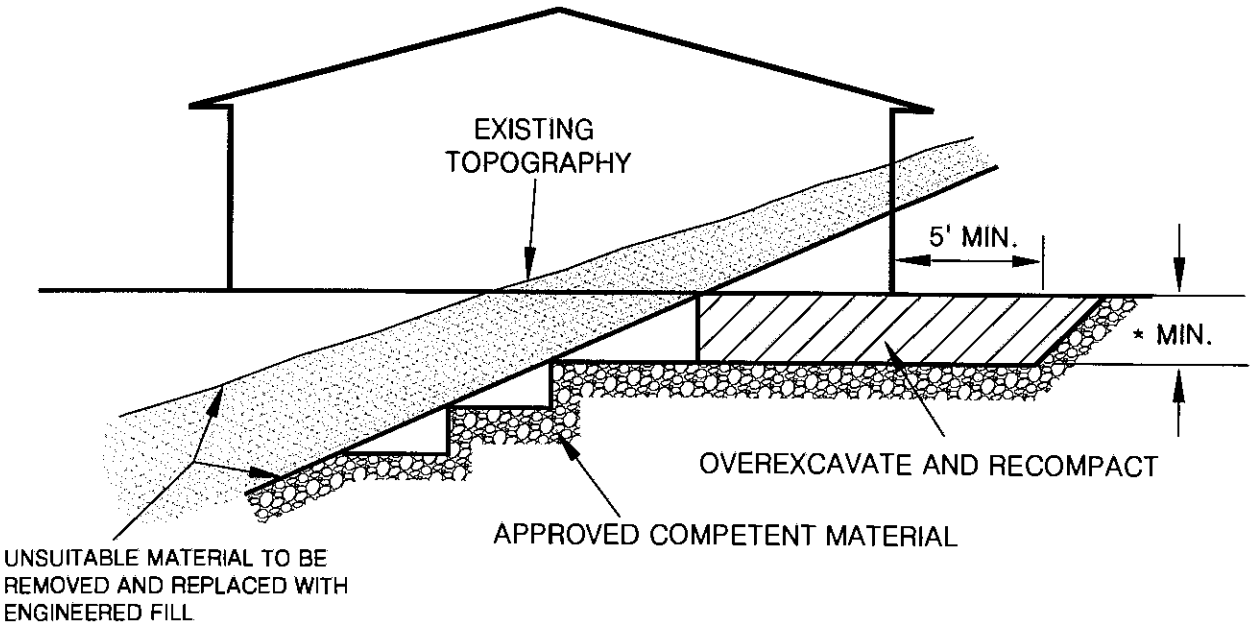
NOTES:

1. FOR CONTINUOUS RUN IN EXCESS OF 500. FT USE 8 IN. DIA. PIPE
2. ENGINEERED FILL PLACED BELOW DRAINS SHALL BE COMPACTED TO 93% OF THE LABORATORY MAXIMUM DRY DENSITY (ASTM:D1557)

OVEREXCAVATION CUT LOT



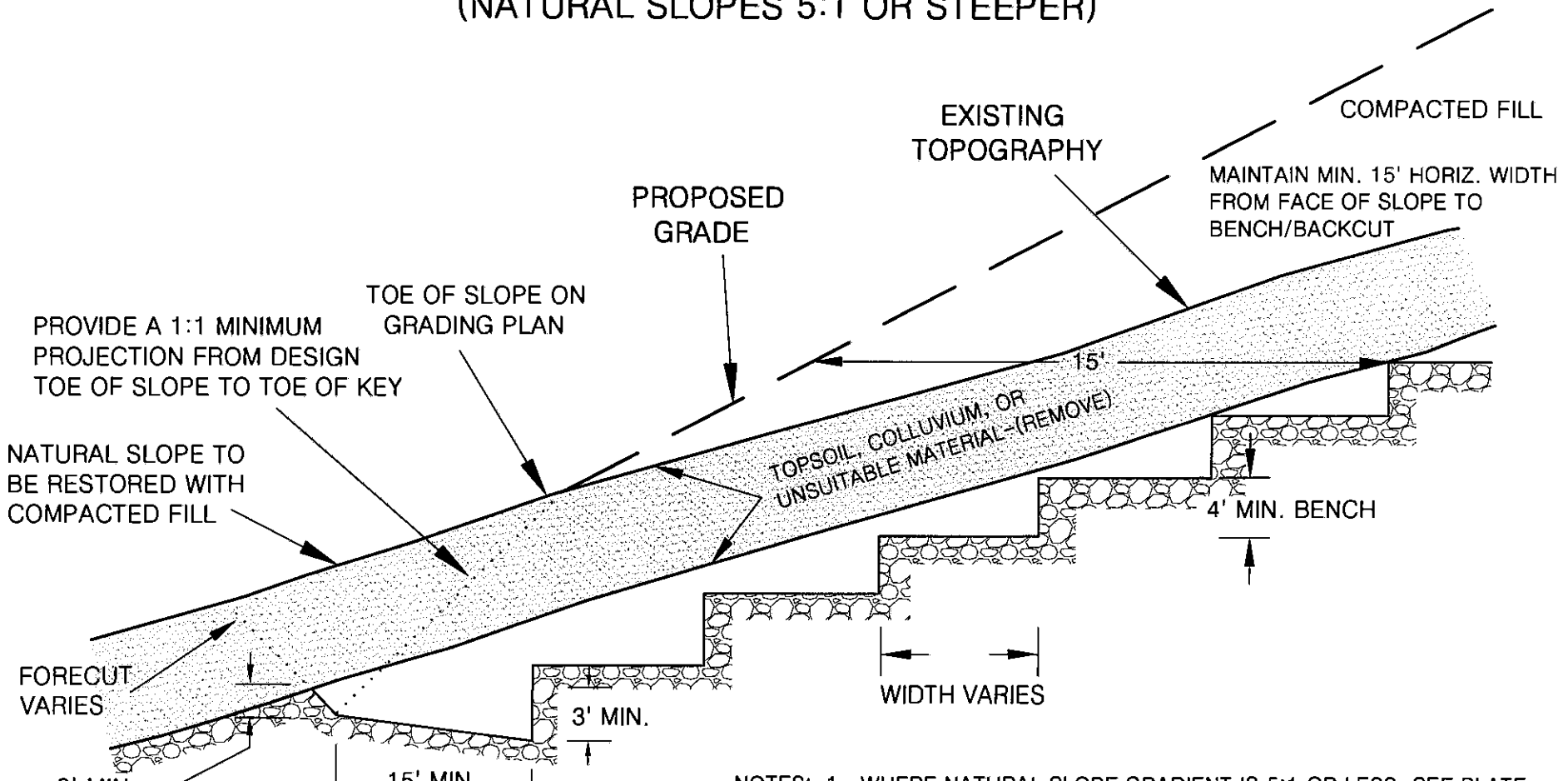
CUT-FILL LOT (TRANSITION)



*NOTE ALL BUILDING PADS SHALL BE OVER EXCAVATED TO A MINIMUM OF 1/3 OF THE MAXIMUM DEPTH OF FILL BELOW THE BUILDING PAD TO A MAXIMUM OF 17 FEET (SEE PLATE G-16)

SIDE HILL SLOPE FILL DETAIL

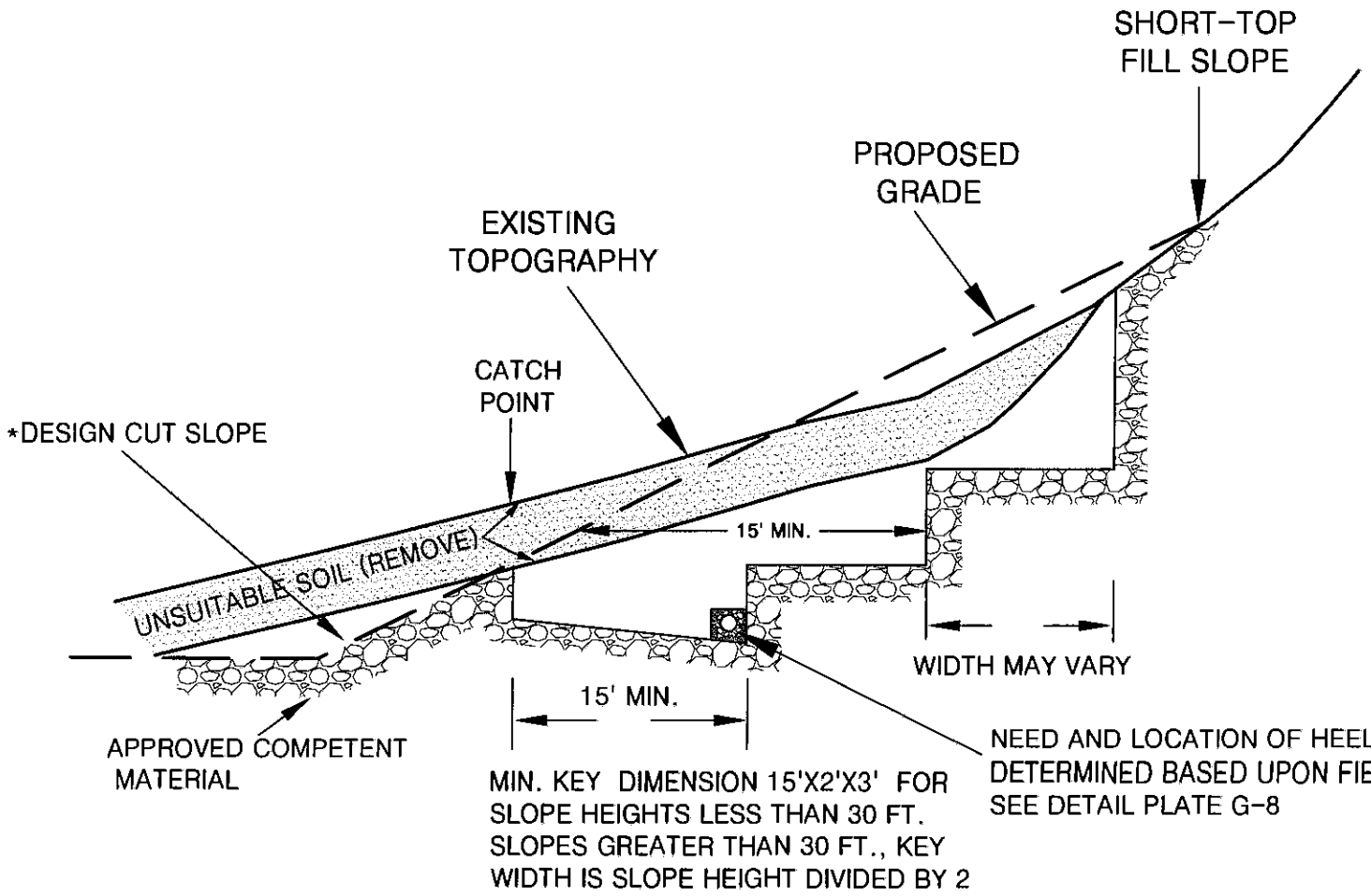
(NATURAL SLOPES 5:1 OR STEEPER)



NOTES:

1. WHERE NATURAL SLOPE GRADIENT IS 5:1 OR LESS, SEE PLATE G-1. WHERE THE NATURAL SLOPE APPROACHES OR EXCEEDS THE DESIGN SLOPE RATIO, SPECIAL RECOMMENDATIONS WILL BE PROVIDED BY THE GEOTECHNICAL ENGINEER.
2. THE NEED FOR AND PLACEMENT OF DRAINS WILL BE DETERMINED BY THE GEOTECHNICAL ENGINEER OR GEOLOGIST BASED UPON EXPOSED FIELD CONDITIONS.

FILL OVER CUT SLOPE DETAIL



*THE CUT PORTION OF THE SLOPE SHOULD BE EXCAVATED AND EVALUATED BY THE ENGINEERING GEOLOGIST/GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTING THE FILL SLOPE

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VER. 1/18

PLATE G-7

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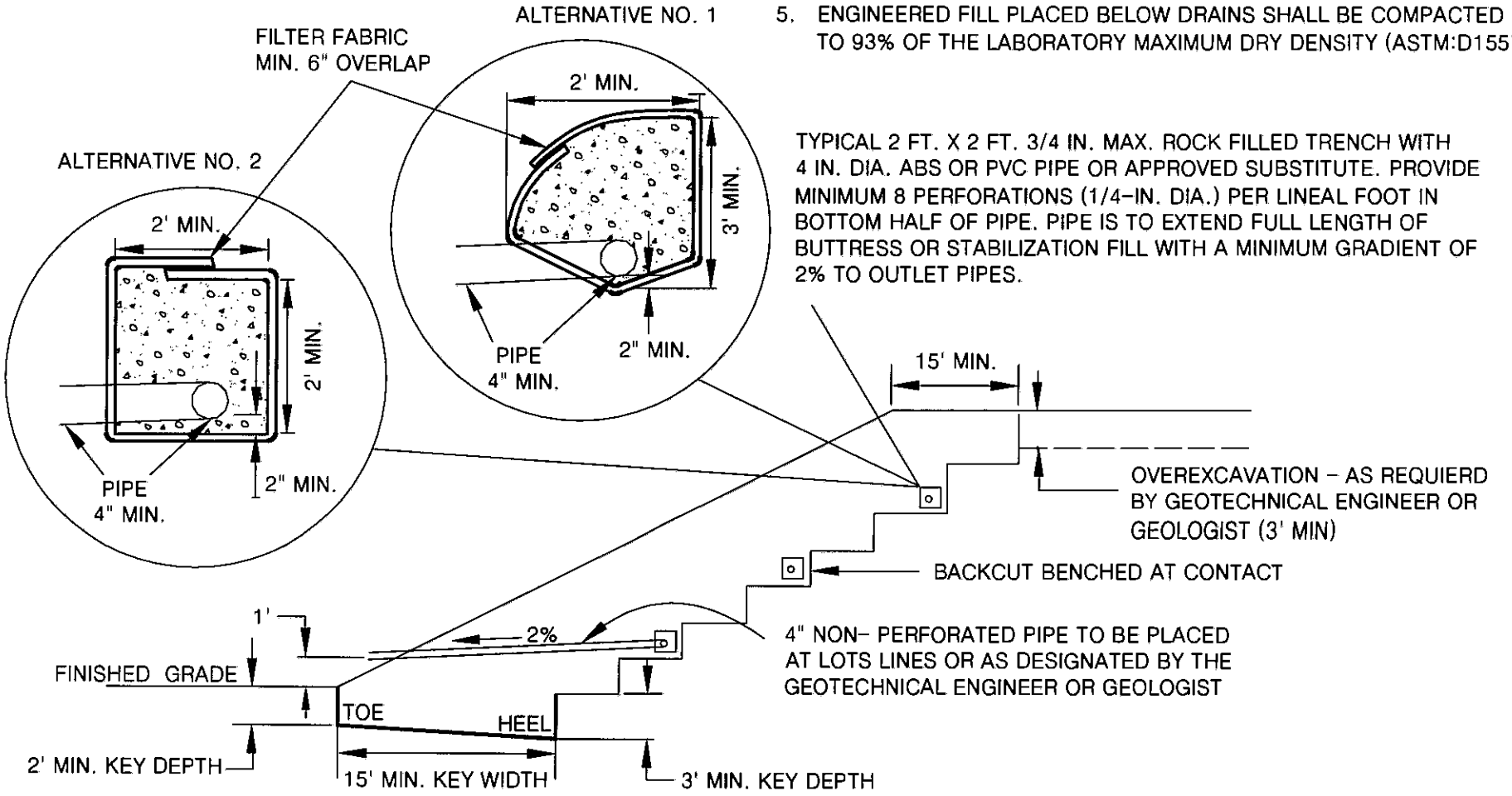
STABILIZATION/BUTTRESS FILL BACKDRAIN

NOTE:

1. ASTM D2751, SDR 35, OR ASTM D3034 OR ASTM D1527, SCHD. 40 ASTM D1785, SCHD. 40
2. SOLID PIPE OUTLETS TO BE PROVIDED EVERY 100 FT. AND JOINED TO PERFORATED BACKDRAIN PIPE WITH "L" OR "T"s. MIN. 2% GRADIENT.
3. GRAVEL TRENCH TO BE FILLED WITH 3/4 IN. MAXIMUM ROCK
4. THE NECESSITY FOR UPPER TIER BACKDRAINS SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER OR GEOLOGIST. UPPER TIER OUTLETS SHOULD DRAIN INTO PAVED TERRACE DRAINS.
5. ENGINEERED FILL PLACED BELOW DRAINS SHALL BE COMPACTED TO 93% OF THE LABORATORY MAXIMUM DRY DENSITY (ASTM:D1557)



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VER. 3/12

PLATE G-8

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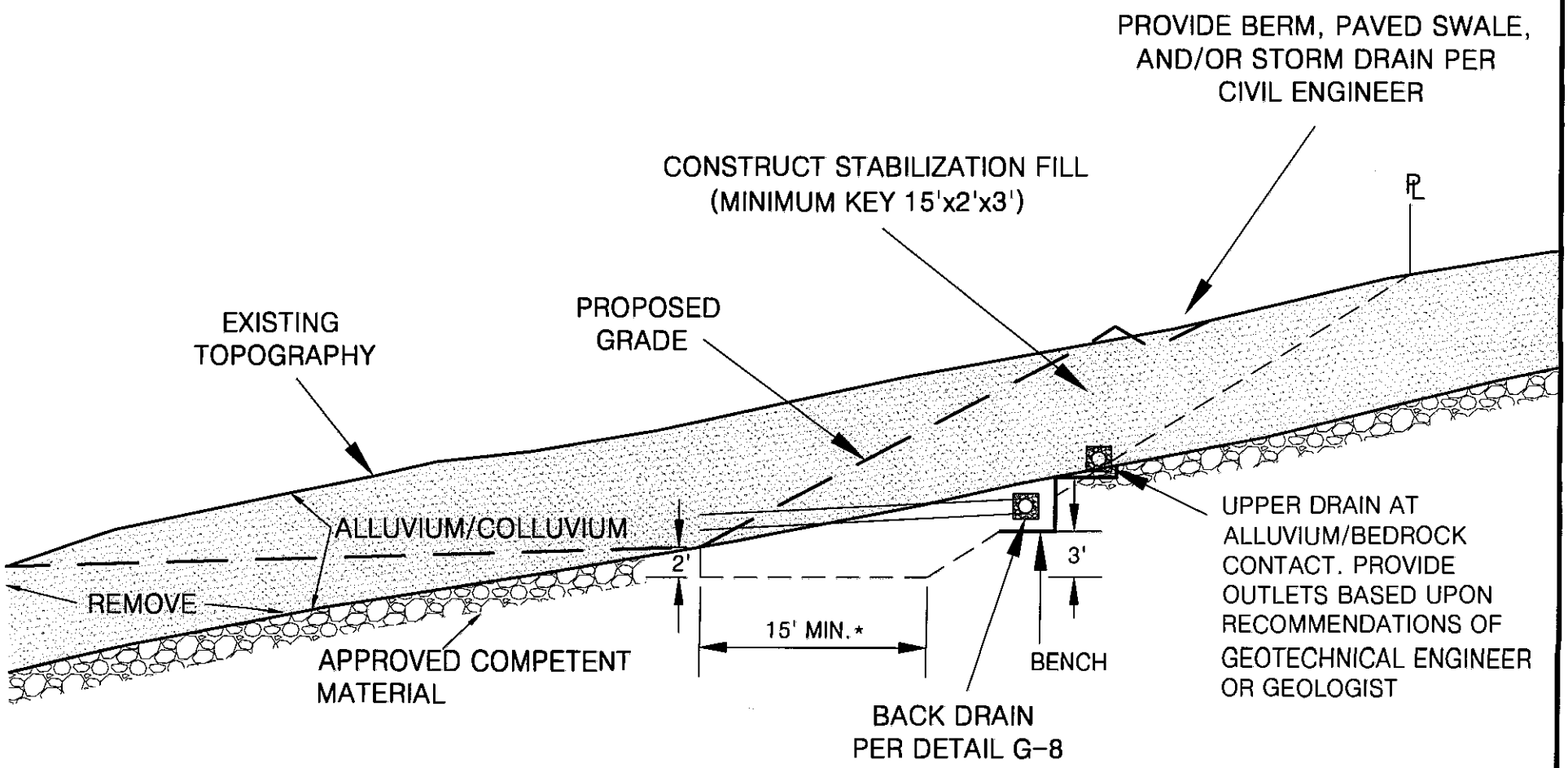
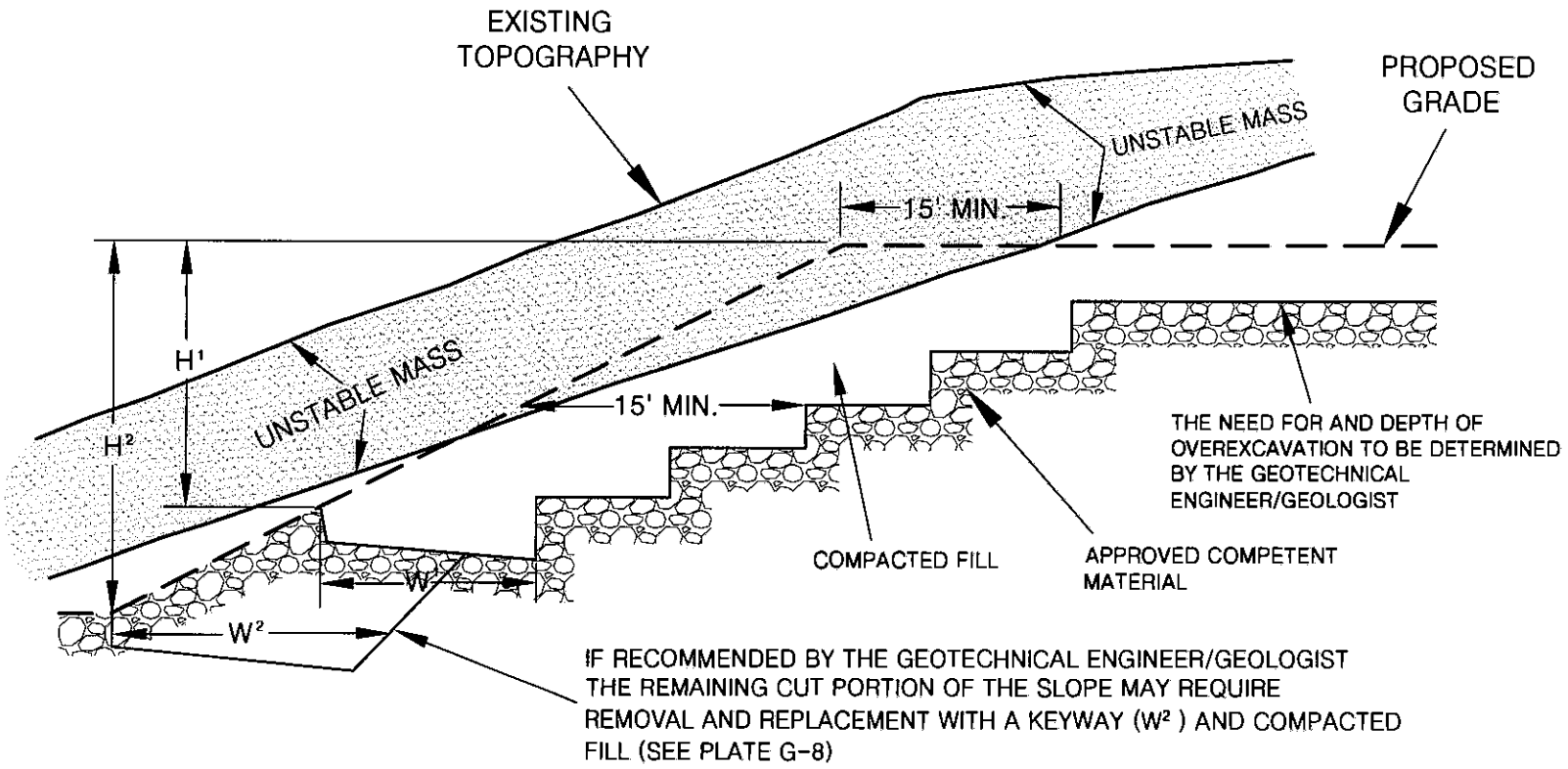
STABILIZATION FILL

(UPSLOPE ALLUVIATED AREA)



* FOR SLOPE HEIGHTS LESS THAN 30 FT. SLOPES GREATER THAN 30 FT., KEY WIDTH IS SLOPE HEIGHT DIVIDED BY 2

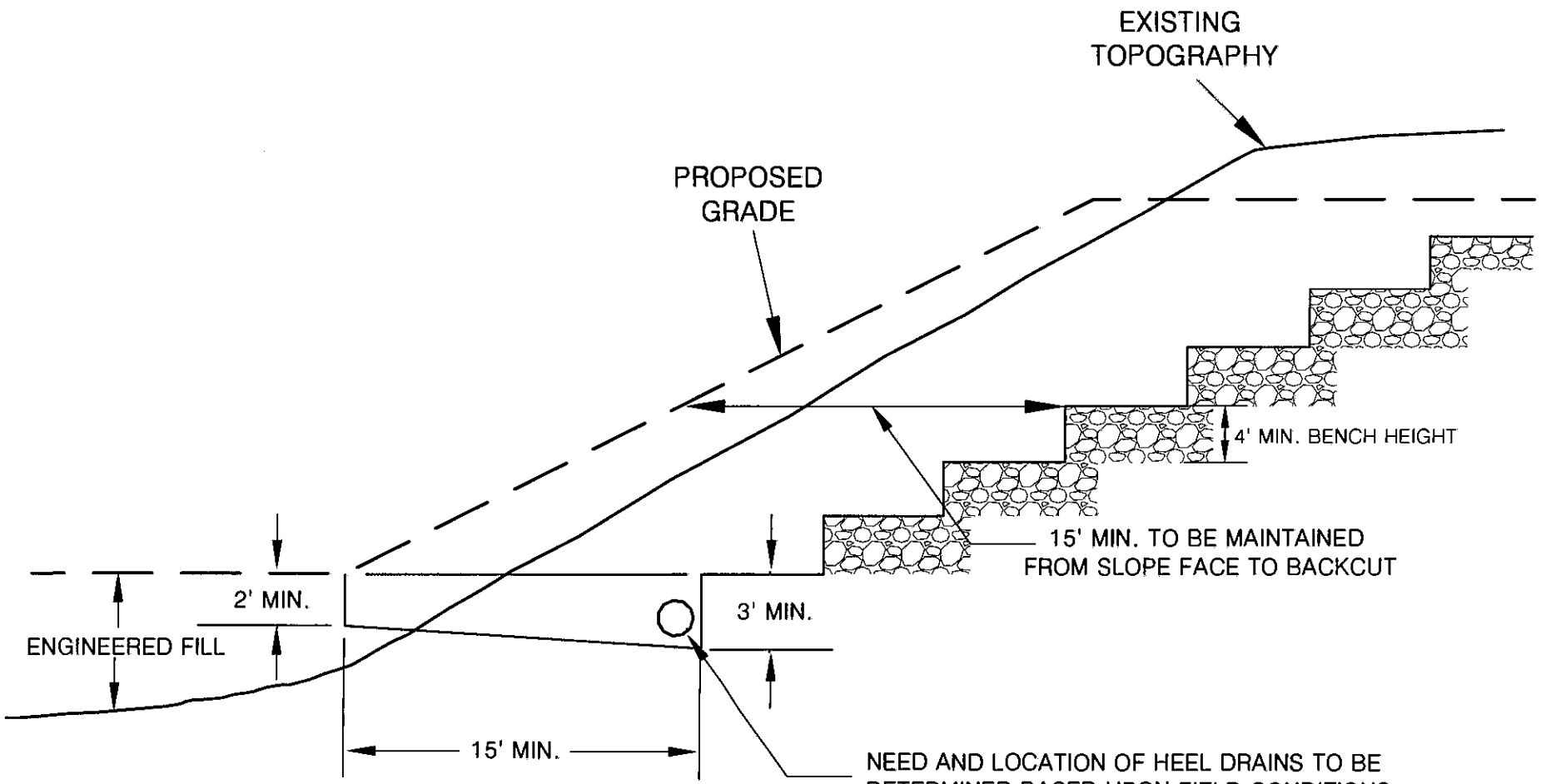
SELECTIVE GRADING DETAIL FOR STABILIZATION FILL
UNSTABLE MATERIAL EXPOSED IN PORTION OF CUT SLOPE



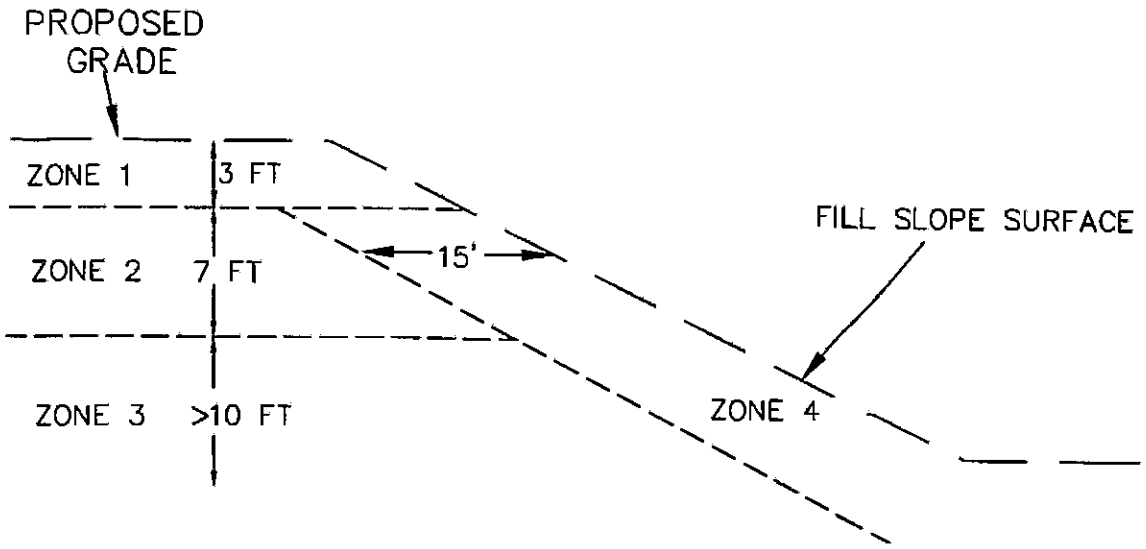
NOTES: 1. BACKDRAINS ARE NOT REQUIRED UNLESS SPECIFIED.

2. "W" SHALL BE EQUIPMENT WIDTH (15') FOR SLOPE HEIGHT LESS THAN 25 FEET. FOR SLOPES GREATER THAN 25 FEET, "W" SHALL BE DETERMINED BY THE PROJECT GEOTECHNICAL ENGINEER/GEOLOGIST. AT NO TIME SHALL "W" BE LESS THAN H/2.

SKIN FILL SLOPE OVER NATURAL GROUND



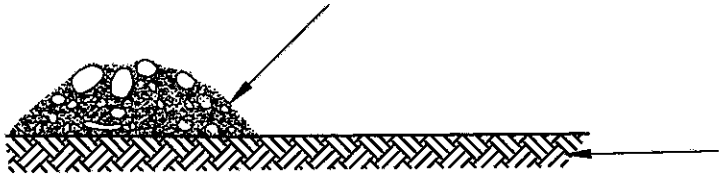
DETAIL FOR MAXIMUM PARTICLE DIMENSION



ZONE	DEPTH	PARTICLE MAX. DIMENSION	PLACEMENT METHOD
1	0-3 ft.	≤1.0 ft.	STANDARD OR CONVENTIONAL COMPACTION METHODS (SEE EARTHWORK SPECIFICATIONS)
2	3-10 ft.	≤2.0 ft.	ROCK BLANKETS (SEE PLATE G-13)
3	>10 ft.	≤8.0 ft.	ROCK BLANKETS (PLATE G-13) ROCK WINDROW (PLATE G-14) INDIVIDUAL ROCK BURIED (PLATE G-15)
4	15 HORIZONTAL FEET FRDM FILL SLOPE FACE	≤1.0 ft.	STANDARD OR CONVENTIONAL COMPACTION METHODS (SEE EARTHWORK SPECIFICATIONS)

ROCK BLANKET DETAILS

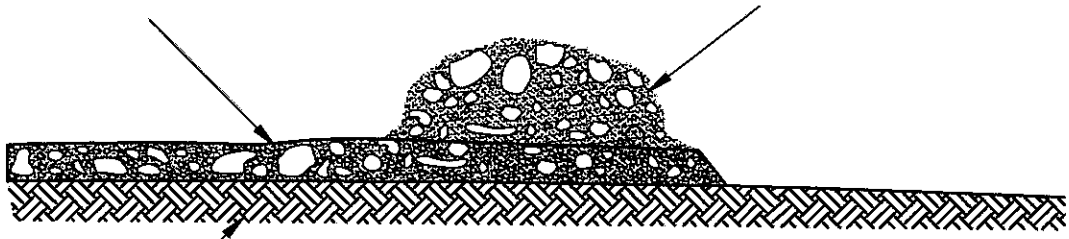
LOOSE PILE 1
LOOSE, DUMPED ROCK, GRAVEL AND SAND MIXTURE REMOVE FRAGMENTS LARGER THAT 2 FEET FOR ISOLATED BURIAL (PLATE G-15) OR WINDROW (PLATE G-10)



APPROVED BOTTOM, OR TOP OF PREVIOUSLY APPROVED BLANKET FILL

COMPACT PILE 1
SPREAD LOOSE PILE FORWARD WITH HEAVY TRACKED DOZER (D-8 OR LARGER). HEAVILY WATER, TRACK, AND APPLY ADDITIONAL SAND ANO GRAVEL AS NECESSARY TO FILL VOIDS AND CREATE A DENSE MATRIX OF ROCK, COBBLES, GRAVEL ANO SAND (2 FOOT MAXIMUM THICKNESS)

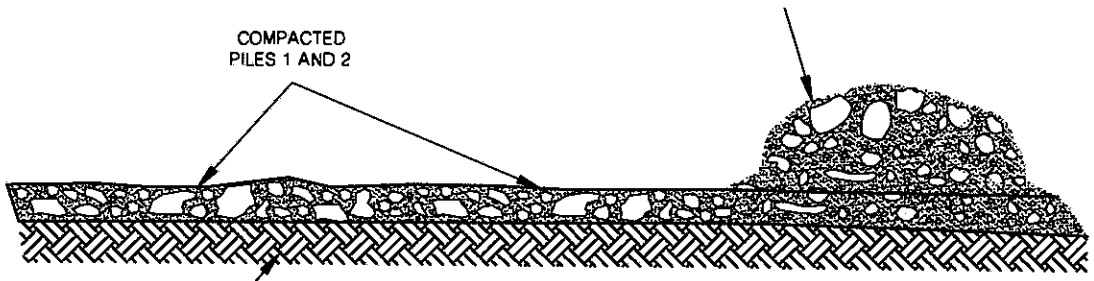
LOOSE PILE 2
DUMP SUCCESSIVE PILES OF LOOSE ROCK, GRAVEL AND SAND MIXTURE ON FORWARD EDGE OF PREVIOUSLY COMPACTED LIFT WITH TRUCKS AND/OR SCRAPERS. USE PREVIOUS LIFT TO ACCESS AND FURTHER COMPACT PILE 1.



APPROVED BOTTOM, OR TOP OF PREVIOUSLY APPROVED BLANKET FILL

LOOSE PILE 3
DUMP SUCCESSIVE PILES OF LOOSE ROCK, GRAVEL AND SAND MIXTURE ON FORWARD EDGE OF PREVIOUSLY COMPACTED LIFT WITH TRUCKS AND/OR SCRAPERS. USE PREVIOUS LIFT TO ACCESS AND FURTHER COMPACT EXISTING BLANKET.

COMPACTED PILES 1 AND 2

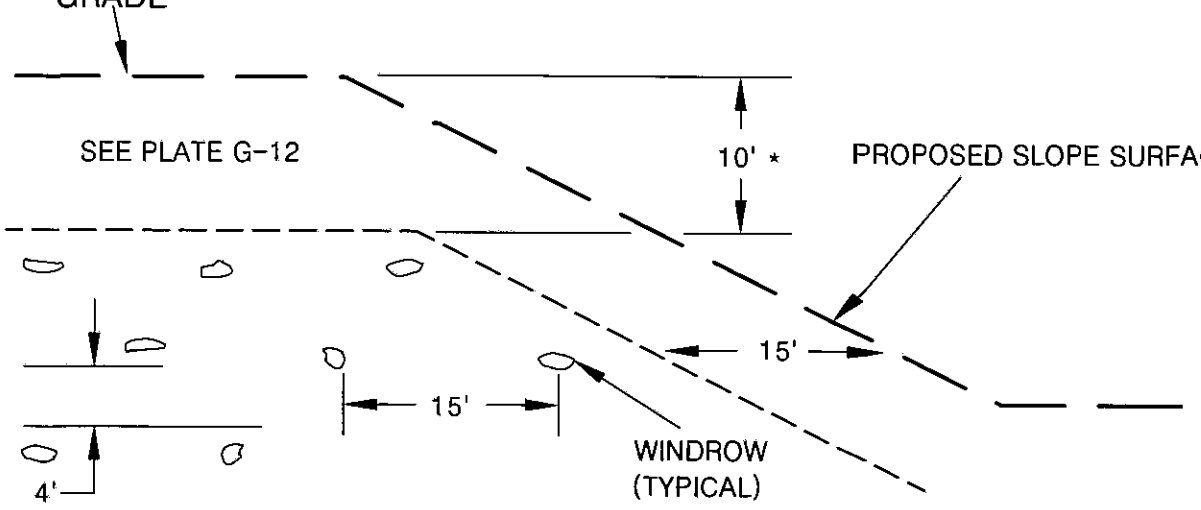


APPROVED BOTTOM, OR TOP OF PREVIOUSLY APPROVED BLANKET FILL

OBSERVATION TESTING AND APPROVAL PROCEDURES

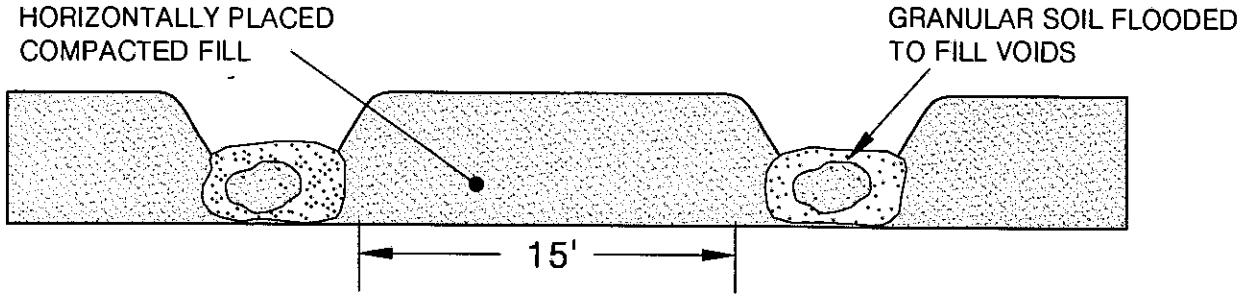
OBSERVE EQUIPMENT. SCRAPERS AND TRUCKS SHOULD BE FULLY SUPPORTED ON BLANKET WITHOUT SIGNIFICANT YIELDING. EXCAVATE TEST/OBSERVATION PITS TO CONFIRM EXISTENCE OF MIXTURE OF VARIOUS PARTICLE SIZES, WITHOUT SIGNIFICANT VOIDS, AND FORMING A DENSE, COMPACTED FILL MATRIX. TEST BY ASTM D1556, D2922 AND/OR D3017 WHEN APPROPRIATE. RECORD LIMITS AND ELEVATION OF BLANKET. ALL FILL AND COMPACTION OPERATIONS TO BE CONDUCTED UNDER THE OBSERVATION OF THE GEOTECHNICAL ENGINEER. SUBSEQUENT LIFTS TO BE APPLIED ONLY AFTER OBSERVATION AND CONFIRMATION OF SUITABILITY OF FILL AND RELEASE BY THE GEOTECHNICAL ENGINEER. BLANKETS TO BE CONSTRUCTED IN ACCORDANCE WITH PLATE G-12.

ROCK WINDROW DETAIL



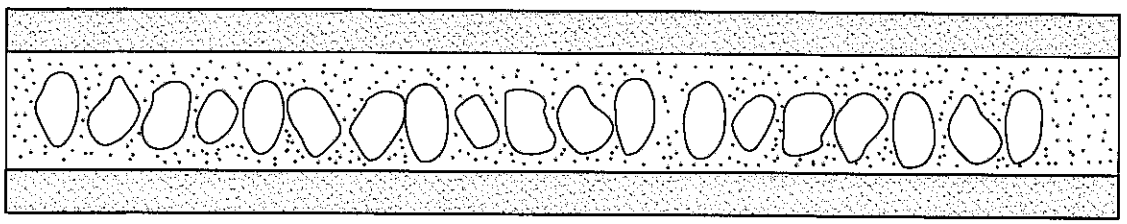
NOTE: OVERSIZED MATERIAL SHOULD BE REMOVED FROM THE 15' CLEAR ZONES WITH SPECIAL EQUIPMENT, SUCH AS A ROCK RAKE, PRIOR TO PLACING THE NEXT FILL LIFT.
*VARIANCES TO THE ABOVE ROCK HOLD DOWN MAY BE GRANTED SUBJECT TO APPROVAL BY THE OWNER, GEOTECHNICAL ENGINEER, AND GOVERNING AGENCY

TYPICAL WINDROW DETAIL (END VIEW)

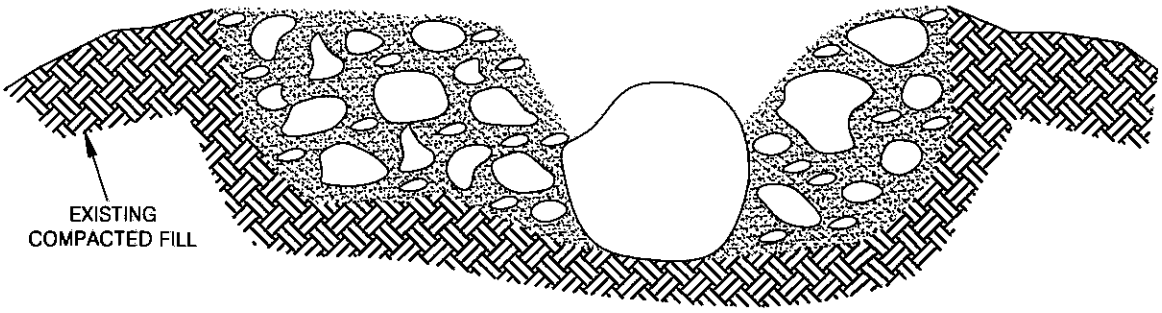


NOTE: COMPACTED FILL SHALL BE BROUGHT UP TO A HIGHER ELEVATION ALONG EACH WINDROW SO GRANULAR SOIL CAN BE FLOODED IN A "TRENCH CONDITION".

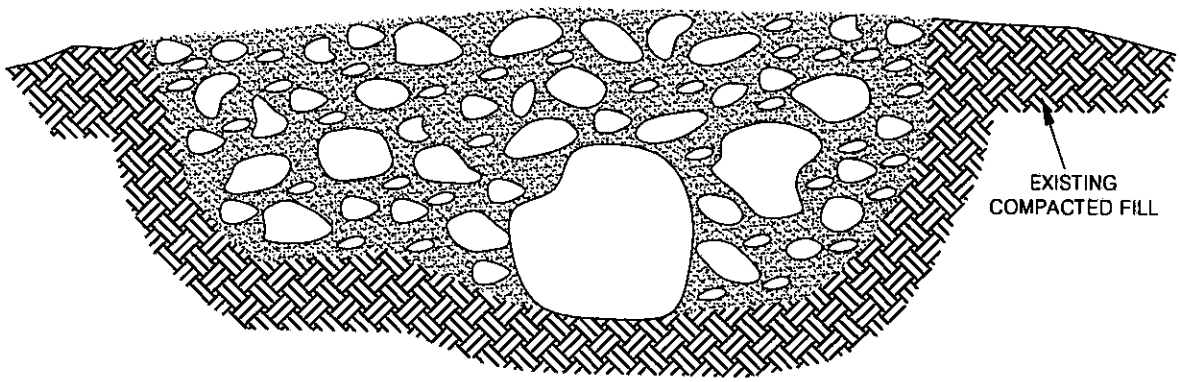
PROFILE VIEW



ISOLATED ROCK BURIAL DETAILS

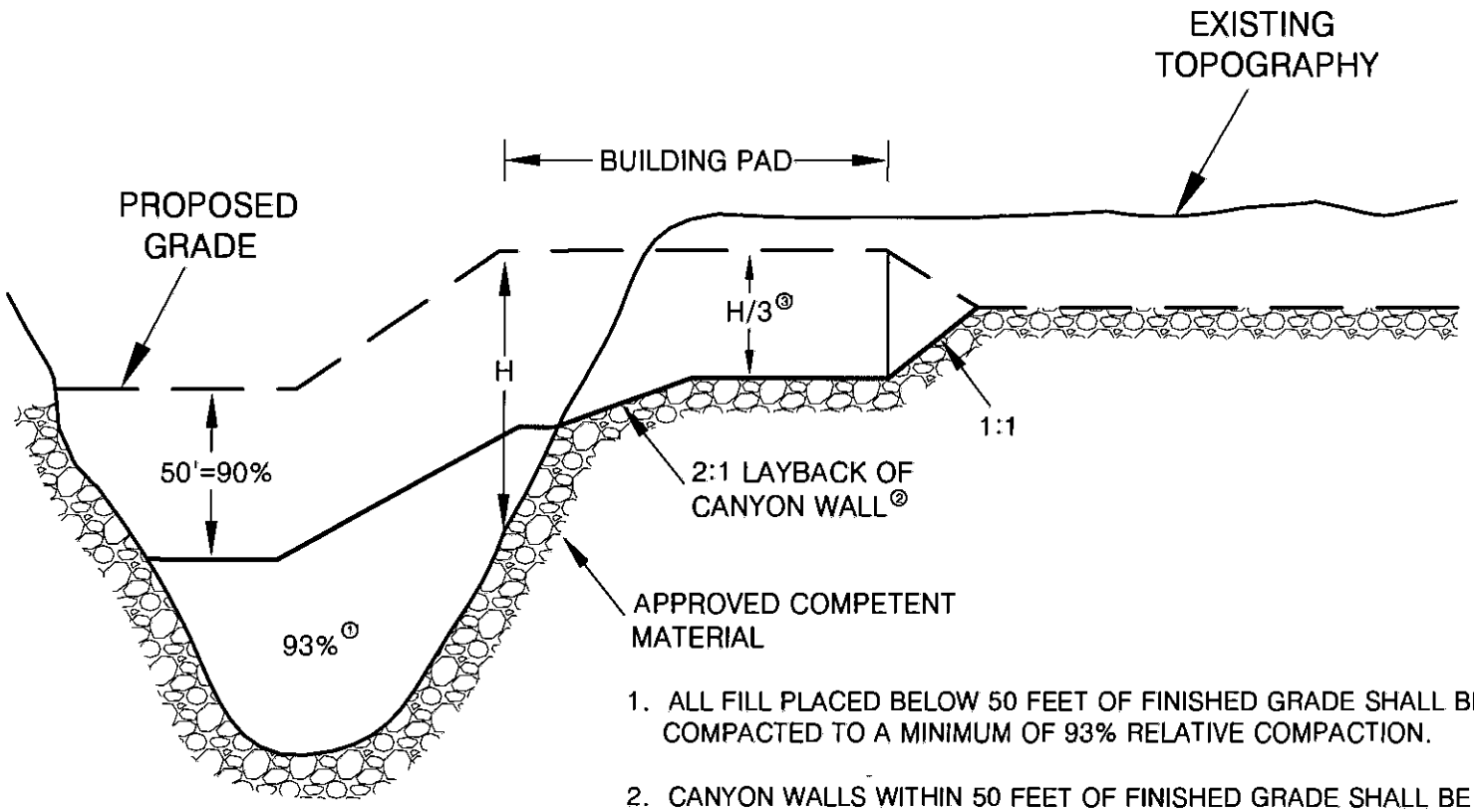


EXCAVATE HOLE INTO EXISTING FILL PRISM, PLACE BOULDER (< 8 feet in maximum dimension) INTO EXISTING COMPACTED FILL. SURROUND WITH SAND, GRAVEL, COBBLES AND WATER HEAVILY. TRACK WITH D8 OR LARGER EQUIPMENT UNTIL RESULTING FILL FULLY SUPPORTS EQUIPMENT. OBSERVE AND/OR TEST IN ACCORDANCE WITH ASTM D1556, D2922 OR D3017. ROCKS LARGER THAN 8 FEET SHALL BE FURTHER REDUCED IN SIZE BY SECONDARY BREAKING.



RELATIVE COMPACTION VS. DEPTH

CANYON WALL LAY BACK
DIFFERENTIAL FILL OVEREXCAVATION DETAILS



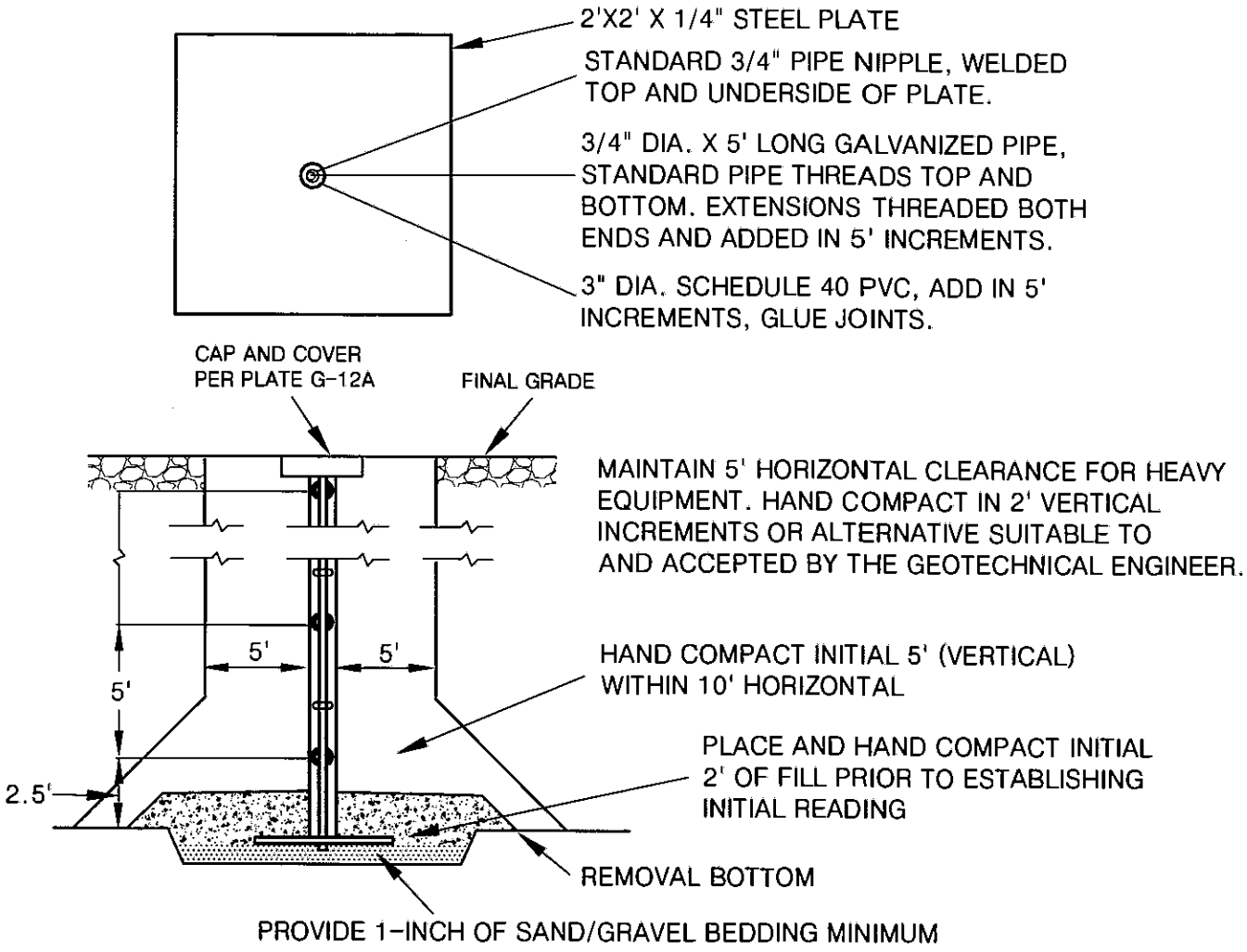
1. ALL FILL PLACED BELOW 50 FEET OF FINISHED GRADE SHALL BE COMPACTED TO A MINIMUM OF 93% RELATIVE COMPACTION.

2. CANYON WALLS WITHIN 50 FEET OF FINISHED GRADE SHALL BE LAID BACK TO A SLOPE RATIO OF 2:1 OR FLATTER.

3. ALL BUILDING PADS SHALL BE OVER EXCAVATED TO A MINIMUM OF 1/3 OF THE MAXIMUM DEPTH OF FILL BELOW THE BUILDING PAD TO A MAXIMUM OF 17 FEET.

4. IF THE 2:1 LAY BACK OF THE CANYON WALL IS IMPRACTICAL, THEN AS AN ALTERNATIVE THE INCREASED COMPACTION STANDARDS IN NOTE 1 SHOULD BE EXTENDED UP TO H/3 AND THE LAY BACK WILL NOT BE REQUIRED.

SETTLEMENT PLATE DETAIL



NOTES:

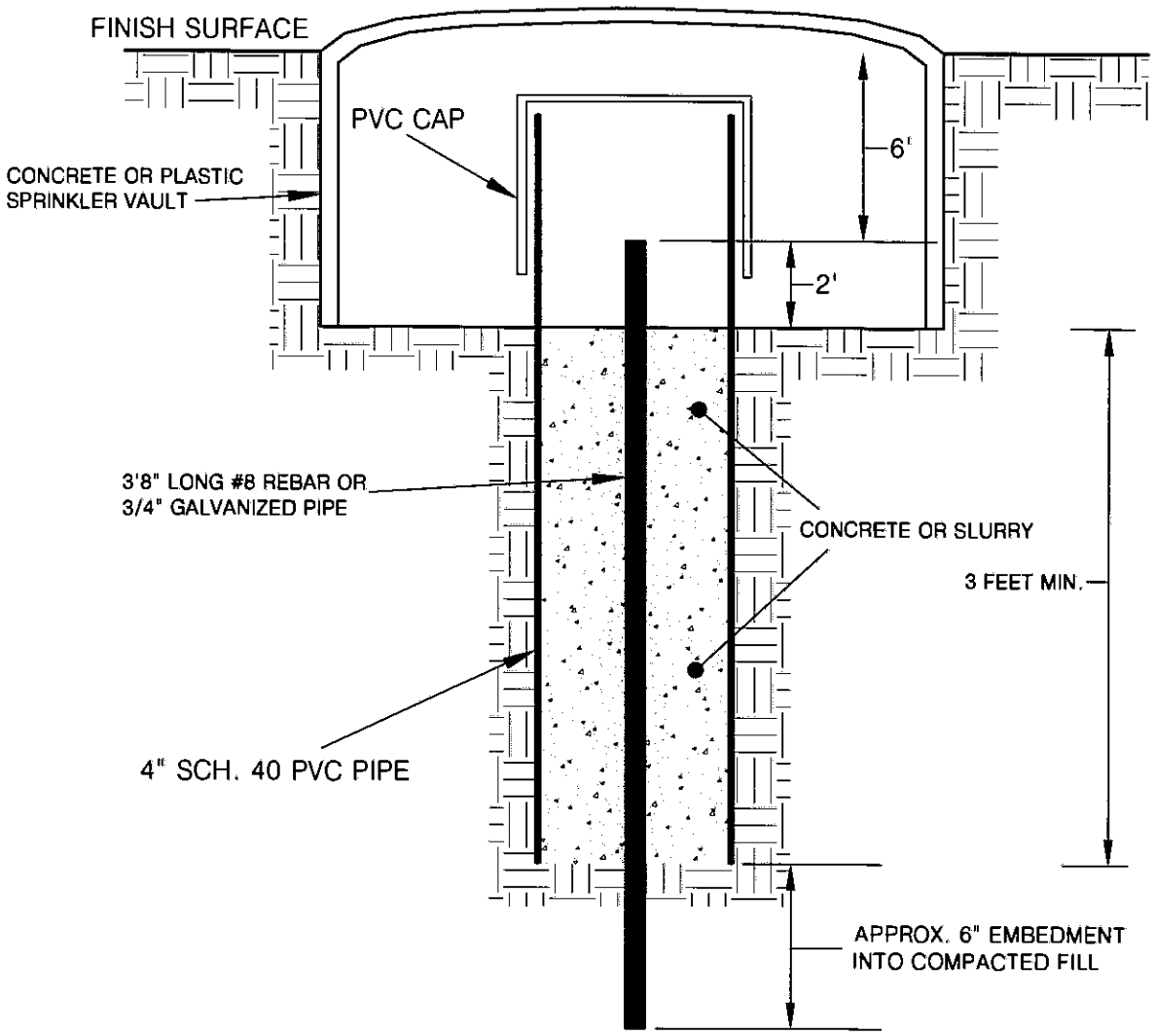
1) LOCATIONS OF SETTLEMENT PLATES SHALL BE CLEARLY MARKED AND READILY VISIBLE (RED FLAGGED) TO EQUIPMENT OPERATORS.

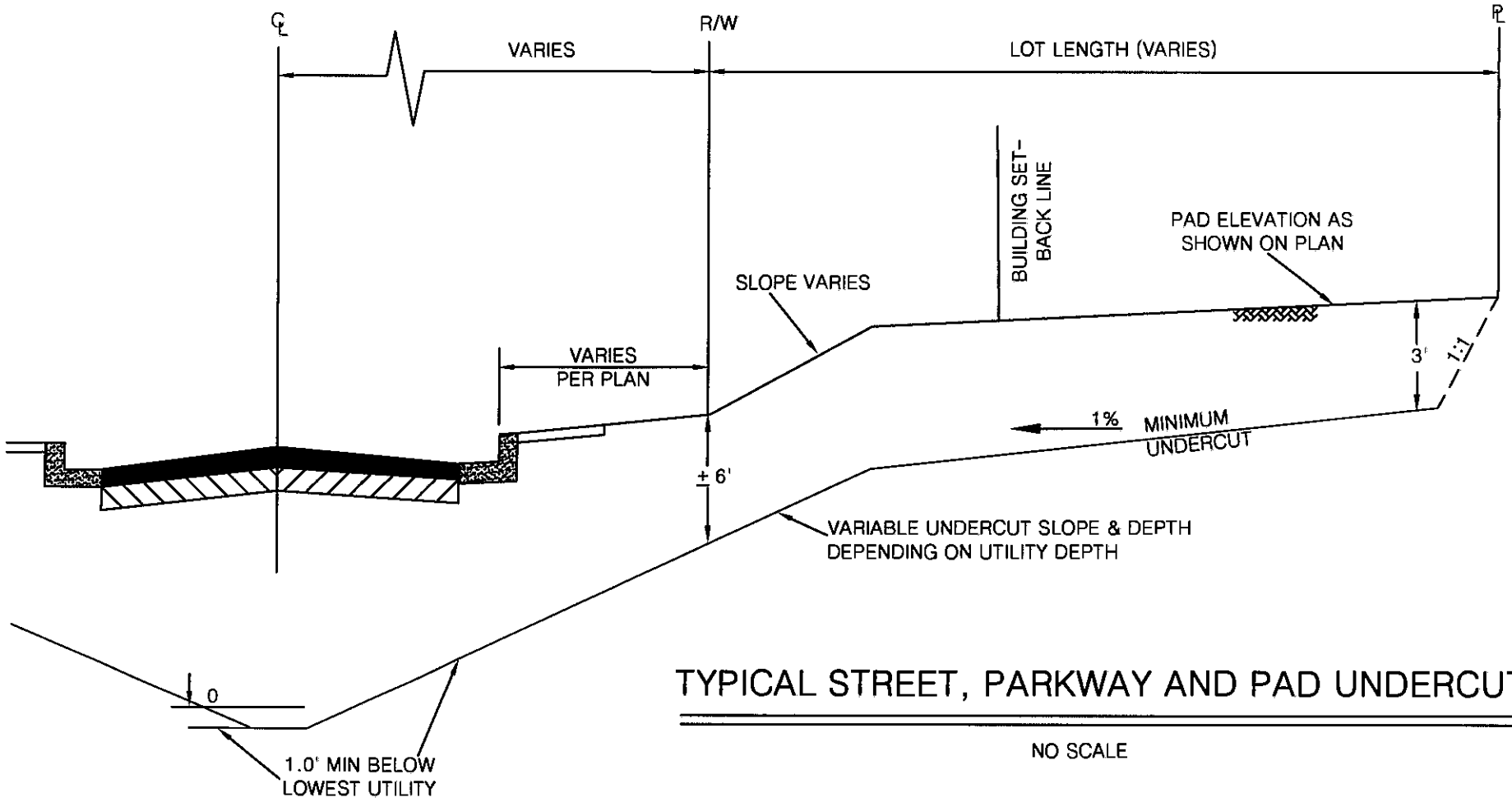
2) CONTRACTOR SHALL MAINTAIN 10' HORIZONTAL CLEARANCE FOR HEAVY EQUIPMENT WITHIN 5' (VERTICAL) OF PLATE BASE. FILL WITHIN CLEARANCE AREA SHALL BE HAND COMPACTED TO PROJECT SPECIFICATIONS OR COMPACTED BY ALTERNATIVE APPROVED BY THE GEOTECHNICAL ENGINEER.

3) AFTER 5' (VERTICAL) OF FILL IS IN PLACE, CONTRACTOR SHALL MAINTAIN 5' HORIZONTAL EQUIPMENT CLEARANCE. FILL IN CLEARANCE AREA SHALL BE HAND COMPACTED (OR APPROVED ALTERNATIVE) IN VERTICAL INCREMENTS NOT TO EXCEED 2 FEET.

4) IN THE EVENT OF DAMAGE TO SETTLEMENT PLATE OR EXTENSION RESULTING FROM EQUIPMENT OPERATING WITHIN PRESCRIBED CLEARANCE AREA, CONTRACTOR SHALL IMMEDIATELY NOTIFY GEOTECHNICAL ENGINEER AND SHALL BE RESPONSIBLE FOR RESTORING THE SETTLEMENT PLATE AND EXTENSION RODS TO WORKING ORDER.

SURFACE SETTLEMENT MONUMENT DETAIL





TYPICAL STREET, PARKWAY AND PAD UNDERCUT

NO SCALE

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VER. 3/13

PLATE G-19

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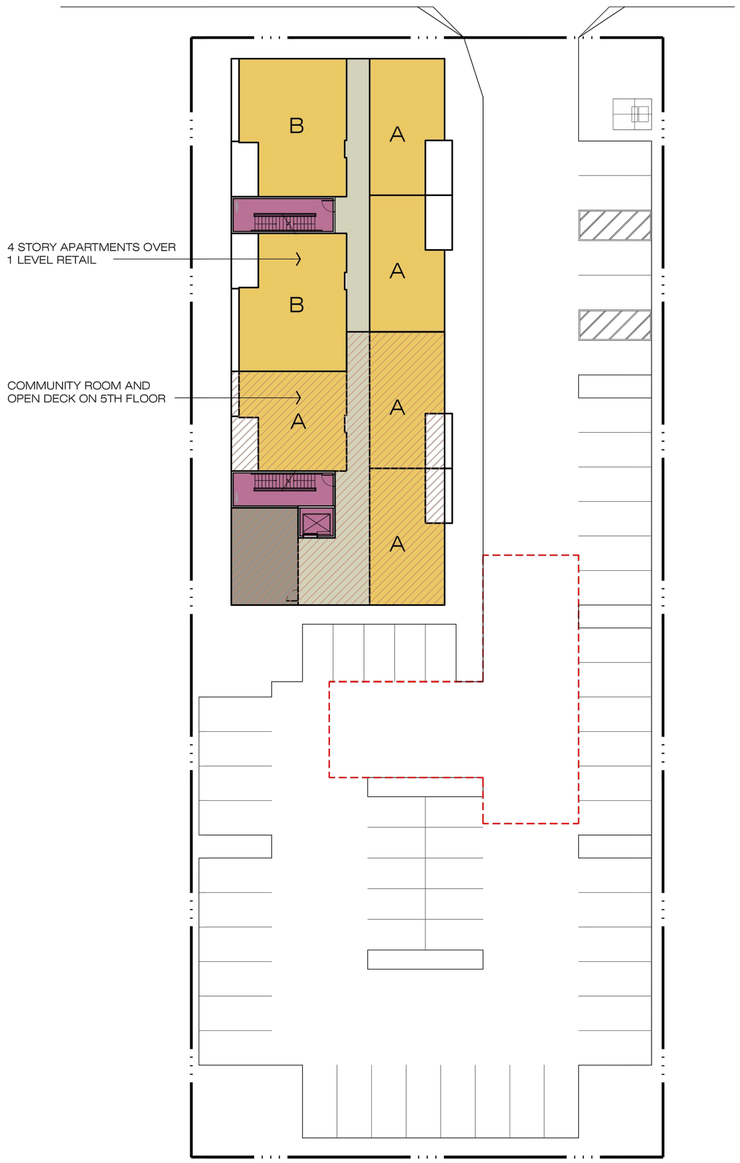

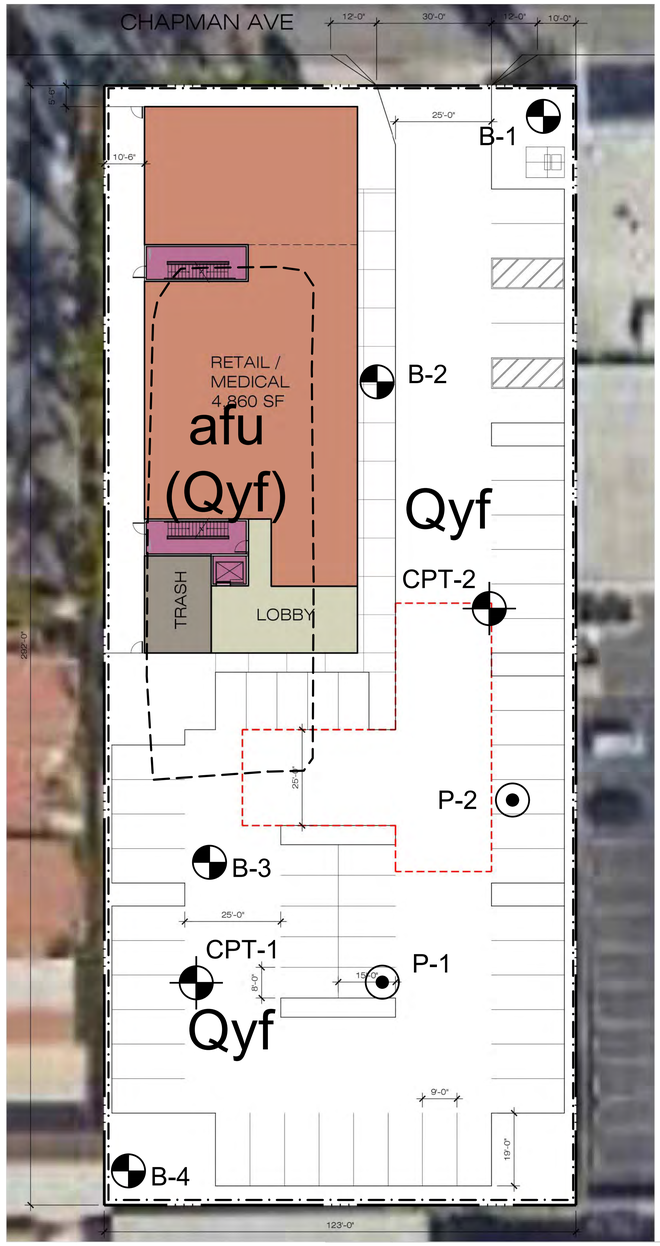

LEGEND

afu	ARTIFICIAL FILL - UNDOCUMENTED
Qyf	YOUNG ALLUVIAL FAN DEPOSITS (BRACKETED WHERE BURIED)
B-4	APPROXIMATE LOCATION OF HOLLOW STEM BORING
P-2	APPROXIMATE LOCATION OF INFILTRATION TEST
CPT-2	APPROXIMATE LOCATION OF CPT
	LIMITS OF REPORT
	GEOLOGIC CONTACT

PROJECT S
GROSS LAN
NET LAND /
DENSITY 26.04 AC/DU
(25 DU PROPOSED)
5 STORY TYPE III-A
GROSS - 29,600 SF (TYPE III) - RESIDENTIAL
GROSS - 4,860 SF (TYPE III) - RETAIL

UNIT BREAKDOWN

UNIT TYPE	AREA	AMOUNT	
A - 1 BD / 1 BA	656 SF.	17 DU	(68%)
B - 2 BD / 2 BA	935 SF.	8 DU	(32%)
TOTAL		25 DU	

PARKING PROVIDED PER STATE DENSITY BONUS

1 SPACE PER 1 BR (1 x 17 DU)	=	17 SPACES
1.5 SPACE PER 2 BR (1 X 8 DU)	=	12 SPACES
TOTAL	=	29 SPACES

PARKING PROVIDED (MEDICAL OFFICE @ 3,060 SF)

1 SPACE PER 170 SF RETAIL	=	18 SPACES
TOTAL	=	18 SPACES

PARKING PROVIDED (RETAIL @ 1,800 SF)

1 SPACE PER 200 SF RETAIL	=	9 SPACES
TOTAL	=	9 SPACES

STANDARD PARKING PROVIDED:	=	41 SPACES
COMPACT PARKING PROVIDED	=	15 SPACES
TOTAL	=	56 SPACES

PLATE 1

ALTA CALIFORNIA GEOTECHNICAL, INC.
170 N. MAPLE STREET, STE 108, CORONA, CA 92880
TELEPHONE: (951) 509-7090
PROJECT NUMBER: 1-0517 DATE: MAY 2, 2024

SITE STUDY #2A - RETAIL / APARTMENTS

CHAPMAN AVE. APARTMENTS

9562 CHAPMAN AVE, GARDEN GROVE, CA. 92844

APPLICANT:
JAGER COMPANY LLC.

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

Project No. MKTG.
January 16, 2024